

Final Report on the Proof-of-Concept

Pilot Proficiency Project™

Conducted by the
Society of Aviation and Flight Educators

In Cooperation with
Redbird Flight Simulations and Experimental Aircraft Association

AirVenture 2012, Oshkosh, WI

20 August 2012



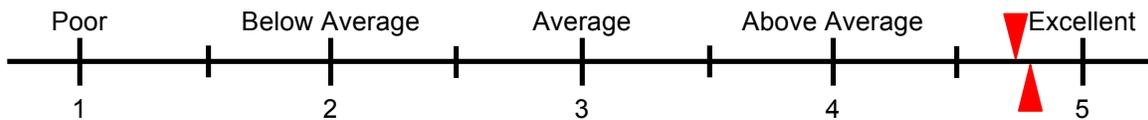
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EXECUTIVE SUMMARY

The Society of Aviation and Flight Educators (SAFE) successfully debuted its Pilot Proficiency Project™ during AirVenture in Oshkosh, WI in August 2012. First conceived by SAFE in 2010, the demonstration project was a cooperative effort that involved Redbird Flight Simulations (Redbird) and the Experimental Aircraft Association (EAA).

SAFE developed topics and provided 20 speakers/instructors for 14 Forums and more than 100, twenty-minute Simulator Training Sessions; Redbird provided FMX and Crosswind Trainer simulators as well as critical pre-event and on-site technical support; and EAA provided the venue and associated support. Representatives from SAFE and Redbird co-developed the eleven simulator scenarios used during the project. Participating pilots were eligible to receive WINGS credit.

Thirty-two percent of participants responded to written surveys provided by SAFE throughout the project. All of the key metrics averaged **Excellent**, with the project as a whole garnering a **4.7 out of a possible 5.0** on the grading scale used. As a group, SAFE member-educators scored an impressive **4.8+ out of 5.0**.



Given the success of the proof-of-concept project at AirVenture, SAFE is exploring additional venues, resources, and recommendations for future Pilot Proficiency Projects™.

ABOUT SAFE

Founded in 2009 as a member-centric, professional organization for aviation educators, SAFE is a 501(c)(3) tax-exempt public charity. The organization's mission includes seeking a reduction in aviation accidents, increased professionalism among aviation educators, and lifelong learning by everyone involved in aviation.

SAFE currently has nearly 700 members, including many of the training industry's movers and shakers. For example, the majority of Master Instructors as well as winners of General Aviation Awards at the local, regional, and national levels are SAFE members. SAFE's proactive, "get it done" spirit is embodied in a number of the bold initiatives successfully undertaken in the three years since its founding, including:

- Providing a Premier Flight Instructor Liability Insurance Program for Members
- Developing an Aviation Educator Mentoring Program
- Hosting the Pilot Training Reform Symposium
- Creating the New CFI/DPE Forum Series for the FAASTeam
- Conducting an Introductory Flight Fundraiser in a P-51 Mustang
- Spearheading the Aviation Educator Hall of Fame (now a stand alone entity)
- Debuting the SAFE Pilot Proficiency Project™ during AirVenture 2012

ABOUT THE PILOT PROFICIENCY PROJECT™

The genesis of SAFE's Pilot Proficiency Project™ began as a series of discussions among SAFE members during AirVenture 2010. Subsequently, an informal survey of potential forum speakers from among the SAFE membership revealed considerable interest in participating. Discussions with potential sponsors, Redbird Flight Simulations, and EAA ensued in 2011.

The proof-of-concept project was conducted during AirVenture 2012. Hosted by EAA, the project was located in the Learn to Fly Discovery Center. As envisioned by SAFE, the project offered pilots targeted forums and simulator training sessions that addressed key safety of flight topics, including: angle of attack awareness, type-specific aircraft issues, glass panels, aeronautical decision making, CFIT, and much more. Panels of experts discussed transitioning to experimental aircraft and flying in instrument meteorological conditions. Eleven pre-programmed simulator training scenarios were co-developed by SAFE and Redbird educators, including engine failures during takeoff, overshoots during base-to-final, and approaches to minimums with a tailwind.

In addition to the 14 forums conducted by SAFE member-presenters, the project featured more than 100, twenty-minute training slots in Redbird FMX and Crosswind Trainer simulators. Pilots who participated in the simulator sessions worked with experienced SAFE member-instructors. Project participants were also eligible to receive WINGS credit.

THE RESULTS

An estimated 716 people participated in the Pilot Proficiency Project™ during AirVenture 2012. Participants were encouraged to provide feedback via survey forms provided by SAFE. A total of 227 surveys were analyzed: 190 surveys from Forums; 37 surveys from Simulator Training Sessions. This represents an overall response rate of 32%.

In addition to other metrics, responses were collected for a total of nine questions/statements divided equally among three broad categories. A grading scale of 1-to-5 was used where 1=Poor, 2=Below Average, 3=Average, 4=Above Average, 5=Excellent.

The broad categories for Forums were Presentation, Speaker, and Venue; the broad categories for Simulator Training Sessions were Simulator Scenario, Instructor, and Briefing/Debriefing. The average scores are tabulated in the Appendix. Of particular note:

- **4.7 out of 5.0** — This was the aggregate grade for the Pilot Proficiency Project™ as a whole— Forums plus Simulator Training Sessions. In other words, respondents rated their experience with the project as *Excellent*.
- **4.8+ out of 5.0** — The overall grade for the corps of SAFE member-presenters/instructors and was *Excellent*, indicative of the extremely high quality of those SAFE members enlisted as project speakers/instructors.

Although all of the broad categories ranked *Excellent* on the grading scale, the “Speaker/Instructor” category ranked the highest. The “Venue” category under Forums scored highly at 4.69 as well; however, the range of grades varied considerably from 3.5 (essentially Average) to 5.0 (Excellent). The lowest grade occurred during the first forum when the audio/visuals had not been thoroughly tested. Audio/visuals can often play a significant role not only in the quality of the overall learning experience, but also in the perception participants have in other areas as evidenced in the range of grades for this

category; thus, the importance of establishing and maintaining solid audio/visuals throughout the project cannot be overemphasized (see Appendix, Feedback – Forums, Topic #5).

The 37 pilots who provided feedback on their Simulator Training Sessions flew a total of 74 scenarios divided as shown below:

Scenario #	1	2	3	4	5	6	7	8	9	10	11
Frequency	12	3	4	6	4	13	13	5	3	4	7

Simulator Scenarios Flown by Survey Respondents

FORUM–SIMULATOR CROSSOVER

Since the project provided opportunities to participate in Forums as well as Simulator Training Sessions, questions to ascertain the degree of crossover between forum attendees and simulator participants were included in the surveys.

Of Forum participants who answered the question, “Have you, or do you plan to fly the simulator scenarios?” 43% responded *Yes*. By contrast, 97% of those who participated in Simulator Training Sessions also attended one or more Forums, grading the “Informative” metric for those Forums as *Excellent* (4.8 out of 5.0).

ADDITIONAL FEEDBACK

Surveys specifically asked, “What topics would you like to see ... next year?” Many respondents provided unsolicited comments/suggestions on the survey forms as well.

General comments from participants:

- Forums:
 - Mount the screen higher, make it bigger so those in back can see it better
 - Training aids/use of video in some instances would have been helpful
 - Provide better/sturdier/more comfortable chairs; greater seating capacity
 - Cooling fan was too loud
 - Fix sound system issues, including volume, microphone feedback, quality, etc.
 - Venue was too hot, too much external noise
 - Better signage to the venue, better promotion about the project
 - Some of the forums could be longer so as not to cram too much into the hour

- Simulator Training Sessions:
 - Provide a photo of the avionics prior to the sim session
 - Provide visuals/scenarios ahead of time if possible
 - Load feel not real enough

Topics suggested by participants:

- Forums:
 - Weather
 - Carb Icing
 - Radio Communications
 - Mountain Flying
 - Integration of Simulators into Personal Currency
 - Life Stories
 - “What to Expect” for Students
 - Interpreting Engine Monitors
 - Planning Upgrades
 - More In-Depth Topics on IFR
 - “Knobology”
 - Crosswind Tips & Techniques

- Simulator Training Scenarios:
 - More Emergency Scenarios
 - Engine Failure over Difficult Terrain with “Pure Survival” Option
 - Night IFR below Minimums, Missed to Alternate
 - Engine Out IFR
 - Water Landings
 - Successful “Impossible Turn”
 - VFR Pilot Inadvertently Encountering IFR Conditions (Emergency)

RECOMMENDATIONS

Based on the resounding success of this demonstration project, SAFE recommends expanding the concept to include other venues, resources, and recommendations to improve not only the quality of the Pilot Proficiency Project™, but also its reach. Other recommendations include (in no particular order):

Venue

1. Larger capacity venues dedicated exclusively to Pilot Proficiency Project™ activities.
2. Improved audio/visual capabilities, adequately tested prior to the start of Project-related activities.
3. Larger screens/TVs—and possibly multiple screens/TVs—positioned such that all participants can easily see what is being projected.
4. Regarding Simulator Training Sessions, conduct at least one Forum about the simulators and scenarios being used (including visuals of the cockpits), and/or consider setting up a kiosk running a continuous loop program that discusses same and provides visuals and explanations of simulator cockpit layouts. This could be useful in further preparing simulator participants for their training sessions.
5. Larger monitors to show simulator training sessions in progress.
6. Provide a full-time on-site coordinator/MC for Forums and Simulator Training Sessions.
7. Provide a central Pilot Proficiency Program™ information desk/kiosk staffed by qualified educators to answer questions about various aviation topics and/or to provide follow-up information after Forums and Simulator Training Sessions.

Marketing/Promotion

1. Stronger marketing campaigns announcing upcoming Pilot Proficiency Projects™ and activities.
2. Better on-site signage and promotion.
3. Stronger branding of the Pilot Proficiency Project™ through PowerPoint templates for Forum presenters, briefing note cards for Simulator Instructors, apparel for project presenters, instructors and staff.

Sponsorship

1. Seek sponsorship to expand project activities, possibly to include stipends for presenters, instructors, and other project staff.
2. Fund pre- and post-project activities, possibly to include items such as DVDs of Forums and Simulator Training Sessions for participants, etc.
3. Fund the development of additional forum topics and simulator scenarios, the mentoring of presenters and instructors, the creation of a bureau of qualified project speakers and instructors, etc.

APPENDIX

Feedback – Forums

Feedback – Simulator Training Sessions

Acknowledgements – Forum Presenters, Simulator Instructors, Redbird Team

AirVenture Forum Schedule

AirVenture Simulator Training Scenarios

Representative Feedback Forms:

Forums

Simulator Sessions

FEEDBACK – FORUMS

Broad Category	Topic #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Average Grades				
	# Surveys	18	3	10	13	18	3	3	12	14	1	8	11	42	34	Per Metric	Broad Categories	Overall		
Presentation	Informative	4.89	5.00	4.50	4.85	4.44	5.00	4.67	4.50	4.78	5.00	5.00	5.00	4.55	4.76	4.70	4.64	4.72		
	Overall Impression	4.83	5.00	4.50	4.85	4.28	4.33	4.67	4.42	4.78	5.00	4.88	4.91	4.55	4.74	4.65				
	Met Your Needs	4.83	5.00	4.60	4.77	4.33	4.67	4.67	4.25	4.38	5.00	5.00	4.82	4.36	4.65	4.56				
Speaker	Knowledge	5.00	5.00	4.90	5.00	4.83	5.00	5.00	4.92	4.92	5.00	5.00	5.00	4.86	5.00	4.94	4.84		4.72	
	Easy to Understand	4.86	5.00	4.90	4.85	4.33	4.67	4.67	4.75	4.86	5.00	5.00	4.82	4.80	4.97	4.81				
	Held Your Interest	4.94	5.00	4.70	4.77	4.50	4.00	5.00	4.50	5.00	5.00	5.00	5.00	4.63	4.88	4.76				
Venue	Cleanliness	4.89	5.00	5.00	4.73	4.82	5.00	4.67	4.67	4.93	5.00	4.75	4.82	4.71	4.91	4.82	4.69			4.72
	Easy to Find	4.88	5.00	4.90	4.62	4.83	4.67	4.67	4.42	4.43	5.00	4.88	4.54	4.61	4.74	4.69				
	Audio/ Visuals	4.89	5.00	4.90	4.92	3.50	5.00	4.67	4.25	4.71	5.00	5.00	4.64	4.36	4.70	4.55				

Notes:

1. A total of 190 surveys were collected from participants of the 14 forums conducted by SAFE member-educators during AirVenture 2012
2. Grades are based on the scale 1=Poor, 2=Below Average, 3=Average, 4=Above Average, 5=Excellent
3. Per Topic grades are straight averages; Per Metric, Broad Categories, and Overall grades are weighted averages

FEEDBACK – SIMULATOR TRAINING SESSIONS

Broad Category	Individual Metrics	Average Grades		
		Per Metric	Broad Categories	Overall
Simulator Scenario	Challenge	4.64	4.61	4.72
	Overall Impression	4.68		
	Met Your Needs	4.51		
Instructor	Knowledge	4.84	4.87	
	Proper Guidance	4.92		
	Held Your Interest	4.86		
Briefing & Debriefing	Effectiveness of Briefing	4.54	4.68	
	Organization	4.76		
	Effectiveness of Debriefing	4.75		

Notes:

1. A total of 37 surveys were collected from simulator training session participants during AirVenture 2012
2. Grades are based on the scale 1=Poor, 2=Below Average, 3=Average, 4=Above Average, 5=Excellent
3. Grades represent straight averages; no attempt has been made to separate out individual scenarios

PILOT PROFICIENCY PROJECT ACKNOWLEDGEMENTS

Forum Presenters

Mark Adams, Larry Bothe, Jeff Edwards, Tony Johnstone, John Krug, Michael Phillips, Mike Radomsky, Mark Robidoux, Roger Sharp, Doug Stewart, Rich Stowell, Hobie Tomlinson, Tom Turner, Jack Vandeventer

Simulator Instructors

Mark Adams, Bill Ervin, Meg Godlewski, Robert Lussow, Jeff Melau, Michael Phillips, Phillip Seizinger, Roger Sharp, Martin Sobel, Jack Vandeventer, Radek Wyrzykowski

Redbird Team

Jerry Gregoire, Charlie Gregoire, Josh Harnegal, Roger Sharp, The Other Fine People at Redbird

Special Thanks

Mike Arcamuzi

PILOT PROFICIENCY PROJECT FORUM SCHEDULE – AIRVENTURE 2012

Monday 7/23/2012

09:30 – 10:45 – Hobie Tomlinson – “Avoiding CFIT– Why Pilots Run Perfectly Good Airplanes into the Ground” ([Forum Feedback Topic #5](#))

12:30 – 1:45 – Tom Turner – “Safety Choices: Outflying the NTSB” ([Forum Feedback Topic #7](#))

Tuesday 7/24/2012

8:00 – 9:15 – Jack Vandeventer – “Is Light Sport for You? Evaluating the LSA Alternative” ([Forum Feedback Topic #9](#))

11:00 – 12:15 – Roger Sharp – “The Benefits of Simulator Training!” ([Forum Feedback Topic #8](#))

Wednesday 7/25/2012

9:30 – 10:45 – Doug Stewart – “Single Pilot IFR – Skilled, Confident, and SAFE” ([Forum Feedback Topic #13](#))

11:00 – 12:15 – Jeff Edwards, Mike Radomsky, Hobie Tomlinson – “Transition Training Panel” ([Forum Feedback Topic #10](#))

12:30 – 1:45 – Michael Phillips – “Is it Safe, Is it Legal, Is it Smart? How to Define and Set Personal Limits” ([Forum Feedback Topic #6](#))

Thursday 7/26/2012

8:00 – 9:15 – Doug Stewart & Rich Stowell – “Tailwheel Tips and Tricks – Tricks & Tips Any Pilot Can Use for Better Takeoffs & Landings” ([Forum Feedback Topic #14](#))

11:00 – 12:15 – Tony Johnstone – “Stick & Rudder Skills in a Glass Cockpit World” ([Forum Feedback Topic #12](#))

Friday 7/27/2012

9:30 – 10:45 – Rich Stowell – “Angle of Attack Awareness– How to Prevent Accidents through Angle of Attack Awareness” ([Forum Feedback Topic #1](#))

12:30 – 1:45 – IFR Mastery Panel – “Here’s the Scenario – What Would YOU Do?” Mark Robidoux, *et al.* ([Forum Feedback Topic #2](#))

Saturday 7/28/2012

8:00 – 9:30 – Larry Bothe – “Dealing With Emergencies!” ([Forum Feedback Topic #3](#))

11:00 – 12:15 – IFR Mastery Panel - “Here’s the Scenario – What Would YOU Do?” Mark Robidoux, *et al.* ([Forum Feedback Topic #4](#))

Sunday 7/29/2012

9:30 – 10:45 – Doug Stewart – “Fast Track To Your Pilot Certificate” ([Forum Feedback Topic #11](#))

PILOT PROFICIENCY PROJECT

SIMULATOR SCENARIOS – AIRVENTURE 2012

Scenario # 1 – Johnson Creek Idaho, Maximum Performance Takeoff with Obstacles.

This scenario requires the pilot to assess the risks associated with a high density altitude takeoff over obstacles.

Scenario # 2 – St. George Island, FL. Overwater Takeoff followed by a Partial Power loss on climb out.

This scenario emphasizes alternative courses of action should a partial or complete loss of power occur.

Scenario # 3 – St. George Island, FL. Engine Failure after takeoff necessitating a ditching just off shore

This scenario will require proper pre-flight planning. The scenario will depart over the water with an engine failure at approximately 800'.

Scenario # 4 – ILS Approach to Runway 18 at Denton TX followed by a missed approach flown to the missed approach holding pattern.

This scenario is an ILS approach to minimums at KDTO.

Scenario # 5 – LOC only approach to KOWD with a tailwind.

This scenario will require the pilot to fly a LOC only approach to minimums with a ten-knot tailwind. The pilot will have to make a decision before beginning the approach whether or not to land with the tailwind or conduct a circling approach with a ragged ceiling at circling minimums.

Scenario # 6– Visual Approach to 88R with a crosswind.

This is a visual approach to a runway with a 15-knot crosswind. The runway is 4185' x 30' and sits atop a bluff giving the visual illusion of being high.

Scenario # 7 – Johnson Creek, Idaho. Maximum performance landing over obstacles with a crosswind.

Scenario # 8 – Night Visual Approach to T91 (The Carter MEM).

This scenario will have the pilot fly to and enter a downwind for a full traffic pattern to a night visual approach. The runway has non-standard LIRL.

Scenario # 9 – Continued VMC into IMC conditions.

This scenario will have the pilot flying inbound for visual traffic pattern in deteriorating VMC weather conditions at night.

Scenario # 10 – Oshkosh arrival to runway 27 with a moderate crosswind.

Scenario will introduce a loss of oil pressure followed by a complete engine failure requiring a base turn to final with an overshooting wind. This scenario will require a great deal of situational awareness and the possibility of stall/spin entry turning final.

Scenario # 11 – Visual Approach and Landing on the Ronald Reagan.

This is a bonus scenario for pure fun. The pilot will depart runway 27 at KSAN and upon turning crosswind be cleared for the visual approach to the flight deck of the U.S.S Ronald Reagan. (No WINGS credit for this scenario.)

Pilot Proficiency Program Forum Feedback

Please take a few moments to let us know what you thought about today's presentation. Your feedback is greatly appreciated and will help us improve future presentations such as the one you just participated in.

Using a scale from 1 (poor) to 5 (excellent) please rate the following:

Presentation

Which presentation did you attend? AOA

How did you hear about this presentation?

EAA website / schedule EAA radio SAFE website SAFE E-news

Other (Please specify) _____

Was the presentation informative?

1 2 3 4 5

What was your overall impression of today's presentation?

1 2 3 4 5

Did the topic meet your needs?

1 2 3 4 5

Speaker

How would you rate the speaker's knowledge of the presentation material?

1 2 3 4 5

The speaker was easy to understand.

1 2 3 4 5

The speaker held my interest throughout the presentation.

1 2 3 4 5

Great presentation!
Helps me connect
the dots with
my flight training
Thank you!

Venue

The venue was clean and well kept.

1 2 3 4 5

The location was well marked and easy to find.

1 2 3 4 5

I was able to hear the speaker clearly throughout the presentation.

1 2 3 4 5

What topics would you like to see at the Pilot Proficiency Program next year?

Have you, or do you plan to fly the simulator scenarios? Yes No

Which simulator scenarios did you fly? (circle all that apply)

1 2 3 4 5 6 7 8 9 10 11

Pilot Proficiency Program Simulator Feedback

Please take a few moments to let us know what you thought about today's simulator event. Your feedback is greatly appreciated and will help us improve future scenarios such as the one(s) you just participated in.

Using a scale from 1 (poor) to 5 (excellent) please rate the following:

Simulator Scenario

Which simulator scenario(s) did you fly? (circle all that apply).

1 2 3 4 5 **6** 7 8 9 10 11

How did you hear about this presentation?

EAA website EAA radio SAFE website SAFE E-news

Other (Please specify) EAA OshKosh

Did you find the simulator scenario(s) challenging?

1 2 3 4 **5**

What was your overall impression of the simulator scenarios you flew?

1 2 3 4 **5**

*great very helpful
to my flight
crosswind correction*

Did the simulator scenarios meet your needs? *yes*

1 2 3 4 **5**

Instructor

How would you rate the instructor's knowledge of the simulator sessions material?

1 2 3 4 **5**

*Bill was great &
very patient*

The instructor provided clear and concise guidance when necessary to increase my learning during the simulator session.

1 2 3 4 **5**

The instructor held my interest throughout the event. (briefing, simulator, debriefing)

1 2 3 4 **5**

Briefing/Debriefing

The briefing was an effective means to prepare me for the simulator scenario(s).

1 2 3 4 **5**

The briefing was conducted in an organized manner consistent with the scenario flown.

1 2 3 4 **5**

The debriefing was an effective way to review and summarize the simulator scenario(s).

1 2 3 4 **5**

What simulator scenarios would you like to see at the Pilot Proficiency Program next year?

Have you, or do you plan to attend one of the Pilot Proficiency Program Forums?

Yes No
Very much

Did you find the Pilot Proficiency Program Forums informative?

1 2 3 4 **5**

*Best help I've received at the airshow with
crosswind handling - Thank you Franjo*