



Society of Aircraft Performance and Operations Engineers

Welcome to the SAPOE Newsletter. We encourage our members to contribute ideas and articles for future newsletters.

A semi-annual Newsletter, dependent on community involvement

Issue 4 - Winter 2014

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President's Message

Paul Giesman is the president of SAPOE and a Technical Fellow with Boeing's Flight Operations Engineering. He can be reached at paul.d.giesman@boeing.com

I hope you all have had a great holiday season and start to the New Year. The following are to address various items.

2013 SAPOE Meeting

We were very happy with the participation and turnout for our first meeting outside of the United States. We would also like to thank Walter Emmerling, Heinz Conrad and Alexander Fitz for putting together such an excellent program. Mike Byham should also be recognized for handling of the logistics for SAPOE at the hotel. Finally, Boeing and Aerodata should be recognized for their donations in support of the conference.

Jorge Lasso has a summary of the evaluations from the conference and some photos in this newsletter. Also the presentations are on the SAPOE site along with a set of notes which was sent to the membership in November.

2014 SAPOE Conference

It is never too early to start looking ahead to next year. As in the past we would prefer to have the SAPOE meeting in conjunction with

another industry event. This often helps member's ability to attend. At this point the only industry event we have identified is the IATA APTF in November on the 10/11 in Miami, Fla. USA.

Question to the membership; are there alternate industry meetings in the Sept./Oct. time frame of which you are aware that would be appropriate to consider? Is there a different venue we should consider? One idea floated was with a university. If you have thoughts on the subject please send them to officers@sapoe.org.

We would also like to know if you could help putting together the technical program for the 2014 meeting. If interested please let us know at the same e-mail address.

SAPOE Web Site

As many of you may have noticed the SAPOE web site has been moved to a new host. We hope this will address some of the issues we have had in the past. The content is being ported over as time allows.

Newsletter

The next planned newsletter will be in the August time frame as a precursor to the 2014 meeting. Please contact Craig Nordstrom if you have an idea for an article or if you can help Craig with the next newsletter.

Retirement

A SAPOE member that many of us have worked with for a number of years is retiring as of 2 May 2014. We would like to pass on our organization's best wishes and thank Don Stimson of the United States FAA and formerly of Boeing for his contribution to the industry over the last 30+ years. Don has been recognized by those who have interacted with him for his technical excellence, personal integrity and professionalism.

Graduation

A belated congratulations to Jeff Wilschke on his graduation from UCLA with an MS, Aerospace Engineering. Jeff took a job with Boeing as a Propulsion Engineer primarily supporting the 787 program and is our first member to go from a student member to a full member.



Society of Aircraft Performance and Operations Engineers

Membership Report

[Walt Blake](#) is SAPOE's membership coordinator and a retired Boeing Flight Operations Engineer. The following is a summary of both his membership report from the 2013 Conference and the current Membership Report on [sapoe.org](#).

As of the end of 2013, SAPOE's membership was at 181, up from 171 at the end of 2012. SAPOE still has representatives from 49 airlines (unchanged due to industry consolidation). There are now 37 affiliated organizations (manufacturers, regulators, etc.) taking advantage of the SAPOE network.

The full membership report is available on the Publications page in the Members Only section of [sapoe.org](#)

If you have any questions or comments about the membership process, such as changes to your data in the roster, those concerns can be sent to Walt at membership@sapoe.org



ABOUT SAPOE

President - [Paul Giesman](#)

Vice President - [Jorge Lasso](#)

Treasurer - [Mike Byham](#)

Secretary - [Ravin Agarwal](#)

Webmaster - [Chad Gill](#)

Thank you for taking the time to read the SAPOE newsletter. I still hope to eventually publish quarterly, but we will depend on you, the members, for content in future editions.

We welcome all submissions for technical and industry news. This is the forum that will be read by your counterparts worldwide. Has your regulatory authority imposed a novel (worthy or otherwise) requirement on your operation? Tell us how you resolved it. Have you been facing an unusual operational challenge? Lend your peers your insight into how you not only conquered the technical aspects, but also how you brought other stakeholders (management, labor groups, regulators, etc.) into agreement over the ultimate solution.

We also welcome non-technical articles. Have you traveled somewhere that the members might find appealing? Write a travel article for us and include photos! Is there an air show or other unique event occurring in your region? Give your fellow SAPOE members the inside information to make the most of a visit to your area. While aviation-centric destinations are obvious, feel free to expand the memberships' knowledge of where else we might exercise our pass travel privileges!

More information can always be found on our website, [sapoe.org](#).

Respectfully,

Craig Nordstrom - Newsletter Editor

editor@sapoe.org

Treasurer's Report

[Mike Byham](#) is the founding treasurer of SAPOE and works in Operations Engineering at American Airlines., Mike cannot emphasize strongly enough that members need to establish a V1 policy *before* getting into your car.

Hello Members,

Here is your annual financial report. We started 2013 with close to \$6900 USD in the bank. Our first European SAPOE conference was a big success but it costs us close to \$5900 USD, \$870 USD of which was spent on SAPOE-branded beer steins to commemorate the meeting in Berlin. Almost \$4000 USD of our conference expenses were graciously subsidized by our sponsors leaving us with a net expenditure of about \$1900 USD. So once again we'd like to send a great big THANK YOU to our event sponsors.

AeroData Inc. - www.aerodata.aero

The Boeing Company - www.boeing.com

In 2013 we collected about \$3900 USD in dues and so far in 2014 (as of this writing) we have collected close to \$1600 USD with \$3000 USD left outstanding to be paid. We have heard from many members that the web site is not as robust or as functional as desired, so we have committed to spend some of our existing moneys on beefing up our web presence and enabling a web site with more features. So far we have spent a little over \$400 USD in this effort. The U.S. Internal Revenue System (taxes) costs us \$220 USD this year for administrative fees. So we ended January 2014 with a little more than \$7700 USD in the bank.

We have promised to be frugal and transparent. To demonstrate that we are indeed keeping our costs to run the society to a minimum, our financial information may be found in the Members-Only section of the website. The information is provided in workbook form and is update every couple of months (see below).

ITEM	2013											
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Donations - PayPal	\$1,125.00	\$270.00	\$480.00	\$240.00	\$390.00	\$445.00	\$261.00	\$120.00	\$145.00	\$190.00		\$120.00
Donations - Direct	\$180.00	\$60.00								\$3,949.00		
Website Costs										(\$32.15)	(\$32.15)	
Taxes / Filing Fee					(\$105.90)							(\$115.94)
PayPal Fees	(\$50.80)	(\$12.03)	(\$20.82)	(\$10.56)	(\$16.71)	(\$18.31)	(\$11.63)	(\$5.28)	(\$2.37)	(\$9.12)		(\$4.68)
Interest Income												
Event Expenditures		(\$800.00)							(\$3,481.15)	(\$1,543.21)		
Shirts Costs												
Shirts Income												
Account Fees (invoice program)												
Member Gifts									(\$871.43)			
Total Balance	\$6,891.59	\$6,409.56	\$6,868.74	\$7,098.18	\$7,365.57	\$7,792.26	\$8,041.63	\$8,156.35	\$3,946.40	\$6,500.92	\$6,468.77	\$6,468.15
Transfer PayPal to Account					\$3,111.23				\$847.82			
Available Account Balance	\$5,100.24	\$4,360.24	\$4,360.24	\$4,360.24	\$7,365.57	\$7,365.57	\$7,365.57	\$7,365.57	\$3,860.81	\$6,234.45	\$6,202.30	\$6,086.36

If you have any questions, please feel free to email me at treasurer@sapoe.org.

SAPOE 2013

Jorge Lasso is SAPOE's current Vice President. He can be reached at JLasso@copaair.com.

The 2013 SAPOE conference was held at the beginning of October in Berlin, Germany. This was the first time that the SAPOE has held a conference outside the USA.

During the organization for the event, concerns existed that this might adversely affect the attendance. Thus, it was a pleasant surprise that this concern was unfounded as more than 40 SAPOE members attended the Berlin Conference. This certainly attests to the international breadth of the organization.

Walter Emmerling, Heinz Conrad, and Alexander Fitz were asked to propose, organize, and acquire speakers, and in turn, then organize an agenda for the conference. They very kindly accepted and enthusiastically did a SUPER job! The meeting would certainly not have been the success it was without their outstanding contribution. The membership does owe them our recognition and gratitude. (did I mention that Walter, Heinz, and Alexander did a super job..; well it really was so!)

Again, the attendance was indeed strong, so much so that we soon found ourselves with the minor problem that the conference room was a little smaller than we had expected for our needs based on the invitation feedback responses. Yet, this is the type of problem that at the end of the day, brings a smile to our faces, since it is a proof of the member's interest in attending. Nevertheless it was an inconvenience, which we the SAPOE officers do have to apologize to the members for having to bear. Our sincere apologies. And on the same token; keep the enthusiasm!

From the conference, the items that resulted in the "to-do" list were:

1/ SAPOE needs to work on improving its website to more contemporary standards for the benefits of its members. As with many organizations, the SAPOE website is becoming our public face.

2/ The SAPOE officers requests for collaboration from within the members that might have website and IT technical expertise to please give us a hand in trying to improve this. For those willing to help (within their reach) please contact the SAPOE officers. And thank you in advance!!

After the conference, we sent a small survey to the attendees for feedback. Among the highlight were:

1/ The SAPOE meetings are highly valued.

2/ Networking with colleagues is one of the most valued things.

3/ The presentations themselves are highly valued. For which the topic preferences (and probable needs) show to be diverse.

4/ Linking the Conference to another major event is preferable for the foreseeable future.



Airports need to know... Who are they going to call?

Mike Byham reports on SAPOE's contribution to the industry.

I have had the privilege of seeing the organization grow from the germ of an idea to where we are today. Following our first conference held outside the boundaries of the US, it is gratifying to see how far we've come and how relevant the Society has become in the eyes of others. When we originally envisioned the variety of roles our association could play, one of primary thoughts was that we could serve as an industry focal point and technical resource on matters pertaining to aircraft performance and weight & balance. It appears that – thanks in large measure to the qualifications and reputations of our members – we have achieved a sizable measure of prominence.

In 2012 we were asked to provide a member to serve as a technical resource and panel member on the Airports Cooperative Research Program for Project 02-41, Estimating Takeoff Thrust Settings for Airport Emissions Inventories. I was able to obtain support from my predecessor company, US Airways, to participate as a SAPOE representative (at no cost to the Society). The objective of the research is to develop a Guidebook, with an associated takeoff thrust-setting estimator tool, referred to as Takeoff Thrust-Reduction Emissions Analysis Tool (TTREAT), to help airports and their stakeholders more accurately reflect aircraft takeoff thrust settings when calculating airport emissions inventories. The project is nearing the end of its life and I'm pleased to say that the TTREAT tool appears to have hit the mark.

The TTREAT tool was designed and developed by the folks at Metron Aviation in collaboration with Ricardo-AEA, Cadmus and George Mason University. Metron collected thousands of operations data points from a number of airlines. The data were collected such that correlations were made between various parameters including aircraft type, runway length, airport altitude, average temperature, route distance, etc., and resulting takeoff thrust used. A combination of data from dispatch systems and data taken from flight data recorder were used to ensure robustness. The result allows the TTREAT user – typically an airport designer or consultant – to input a full schedule as a batch file and solve for estimated average thrust levels required for each flight. These results can then be exported for use in the AEDT program which actually calculates emissions based on takeoff thrust.

The ACRP project panel was assembled to ensure that the direction the companies involved in the creation of the TTREAT tool and user guidance met the stated requirements and that the tasks were being performed within the stated timeline

and meeting budget constraints. SAPOE involvement is intended to assist with technical guidance to the panel and subsequently to the contractors. I was very happy to see that I wasn't the only SAPOE member on the panel. SAPOE member John Novelli, Program Manager, Fuel & Carbon Solutions at GE Fuel & Carbon Solutions was a member of the panel. Also, President and Chief Engineer of Flight Operations Engineering and SAPOE member Paul Hannah was a primary TTREAT tester. Paul provided an excellent document to the panel summarizing the results of his thorough testing. Paul's comments will be digested and incorporated into the final version of TTREAT and the User Guidance document expected to be completed in July of 2014.

A number of SAPOE members whose companies are subject to FAA regulations are hopeful that SAPOE participation in research is not limited to the ACRP project. The FAA is currently in the process of evaluating current Weight & Balance requirements as provided in Advisory Circular 120-27E – especially with respect to passenger and baggage weight standards. The FAA is proposing abandonment of the practice of publishing standard average weights in the Advisory Circular. This would require all US operators, big and small, to conduct individual passenger and baggage weight surveys to define an average that is suitable to use for their operations. There are a number of very compelling reasons that make this a bad idea.

One primary reason is that there is a diversity of technical expertise among the operators and within the FAA and finding engineers with the necessary skill set to do this type of work – properly understanding where to provide emphasis on accuracy and implications of errors – is not easy. This is where SAPOE could help. Through the A4A response to proposed AC120-27F, SAPOE has offered to assist the FAA with conducting and publishing an industry survey if this is required and/or desired. Another industry group, the Society of Allied Weight Engineers, has also offered their assistance in doing the same. Since SAWE has an excellent reputation with the FAA and industry as well as a legacy of publishing standards, it may make sense for SAPOE and SAWE to work together. We're waiting to see what the response to industry comments is from the FAA. Hopefully the FAA will seek assistance from the experts to treat this issue with the technical respect it deserves. SAPOE stands at the ready willing to help.

We'll keep members informed on any progress with these efforts. If you have any other ideas on

where SAPOE could become involved in the formation of regulations, guidance or establishment of best practices, please let us know.

In addition to being the founding treasurer of SAPOE, Mike Byham's day job is in Operations Engineering at American Airlines.

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CDL

This column is intended to carry miscellaneous information, corrections, and other items not quite suited for a full article. Thus, those non-standard items go here in the Configuration Deviation List. Please send your items to editor@sapoe.org.

A recent travel article on the CNN website purports to list the World's 14 (yes, fourteen) best aviation museums. While the article (<http://edition.cnn.com/2014/02/07/travel/best-aviation-museums/>) lists a fine variety of museums, as engineers, we are bound to notice gaping omissions of other outstanding museums. Some famous, others perhaps less so. Let's start a discussion on sapoe.org on what other museums ought to be on any aviation enthusiast's "must-see" list. Bonus discussion: How many the alleged top 14 have you been to?

From member Richard Boll: FAA/Industry Transport Airplane Performance Planning Working Group (TAPP WG), chartered through the FAA Aeronautical Charting, seeks to improve pilot and operator understanding of transport airplane performance planning and operational practices. The TAPP WG has begun this process by addressing long-standing questions and issues related to one-engine-inoperative takeoff obstacle avoidance planning, IFR departure procedure planning, landing distances assessment and other topics through a series of videos that addresses the most frequently encountered questions in transport airplane performance planning. These videos were prepared with participation of subject matter experts (including SAPOE) in the fields of transport airplane certification, airplane performance engineering, and IFR procedure development with the goal of providing operators with the definitive explanation of the certification rules and their application to the operating rules in part 91 and part 135.

Go to <http://www.nbaa.org/ops/safety/climb-performance/videos/>