

Section Officers:

Chairperson:

- Elise Woolliams

Vice Chair:

- Colin Keddle

Treasurer:

- Stuart Evans

Secretary

- David Musil

Vice Chair, Student

Activities:

- Manal Faour

Appointed Officer:

- Antonio Marchet

Appointed Officer:

- Dehong Zhang

Appointed Officer:

- Colin Blair

Appointed Officer:

- Martin Jackson

Appointed Officer:

- Jeff Turner

Historian:

- Dave Gourley

Newsletter Editor:

- Casey Keulen

Contact Us:

On the web:

<http://www.britishcolumbia.sae.org>

E-mail us at:

ms007@email.sae.org

Like us on Facebook:

<https://www.facebook.com/SAEBritishColumbia?ref=bookmarks>

**UPCOMING EVENT:
A SEMINAR ON:
COMPOSITES IN THE AUTOMOTIVE INDUSTRY
FOLLOWED BY A TOUR OF:
COMPOSITES RESEARCH NETWORK LAB AT UBC**

WHEN: March 23, 2015, starting at 6:00 pm

WHERE: University of British Columbia,
Brimacombe/AMPEL Building, Rm. 311

WHO: The Composites Research Network, hosted by Dr. Casey Keulen, P.Eng.

WHAT: Due to the perpetually rising cost of fuel and impending stricter emission regulations, automotive manufacturers are investing a considerable amount of effort to reduce the fuel consumption of their vehicles. An effective method of reducing fuel consumption is by reducing the weight of the vehicle. This means exploring lighter material options and configurations. Composite materials are a great candidate for automotive applications because they are light weight, stiff, readily moldable and have excellent corrosion properties.

The event will start out with a seminar presented by Dr. Casey Keulen, P.Eng. on the history, current status, and expected future of composite materials in the automotive industry along with a brief overview of the composite materials industry in Canada and the Composites Research Network (CRN) based at the University of British Columbia. Following the seminar, a tour of CRN's lab and facilities will be hosted.

COST: Free for members and students, \$10 for guests

RSVP: To save your seat, please RSVP Elise Woolliams:
elise.woolliams@afcc-auto.com

Light refreshments will be provided

SUMMARY OF LAST MONTH'S EVENT: SEMINAR AND FACILITY TOUR



Elise Woolliams thanking Larry Rinek for his excellent talk



Fraser Maclean discussing the finer points of Air Canada's Embraer 190

Our last event was an amazing seminar titled: 'Defects in aircraft design and materials' by SAE International Guest Speaker Larry Rinek, followed by a tour of the Air Canada maintenance hangar hosted by Embraer Fleet Specialist Fraser Maclean.

The event started out in a conference room in the Air Canada maintenance facility with about 45 attendees. Larry began his talk by with a pie chart that outlined the causes of aircraft accidents. Interestingly, a surprisingly large percent were due to management decisions. Typically these were related to the modification of maintenance schedules, service guidelines, and standard operating procedures. After those statistics he delved into some classic case studies starting right from the very beginning with the Wright brothers' Wright Flyer; citing unstable pitch that was related to the location of the center of gravity, unstable roll that was related to anhedral wings and the fact that the controls cross-coupled the roll and yaw. Next up were a number military and commercial aircraft. The military included the Martin B26 Marauder, USAF B-47E, USAF F-100, USAF B-58A, F-111, and USAF F-117A, while the commercial included Boeing 377, De Havilland Comet, McDonald DC-10, Boeing 737, and finally the Airbus A330. Issues related to undersized wings, rubber plugs coming loose inside propellers, square windows, aileron ineffectiveness, inertial roll coupling, sound pressure waves, wheel failure, loss of wings, poor aerodynamics causing loss of control, engine loss, a 'hard over' rudder, and finally, software issues were all discussed in depth. Larry was quite thorough with his presentation citing the issues, the causes, and the fixes.

After the talk was over everyone headed down to the maintenance facility. The tour started in an engine room that housed a number of jet engines. It was clear that Fraser is quite knowledgeable; not only about the engines and aircraft but the operations side as well. An interesting anecdote about the cost of leasing aircraft parts came up that included an ~\$800/day part sitting idle for over six months until someone realized what was happening and had the part promptly returned. After the engine room we went into the hangar to get a hands on tour of an Embraer 190. Fraser was quite enthusiastic about the aircraft and explained nearly every nut, bolt, and rivet. He told us about the 'Fraser switch' and how it came about. The Fraser switch is a manual switch that turns on the pitot tube defrost system. Originally the aircraft did not come with one because they were controlled automatically, however, after Fraser's suggestion that they be installed, eventually Embraer agreed and now they're a standard feature. After about half an hour of touring the plane, a second Embraer 190 came into the hangar followed shortly by an Airbus A330-300. Everyone got a chance to walk around the outside of the aircraft but unfortunately by the time the A330-300 came in, the evening was coming to a close as it was nearly 10:00 pm. Guests were led back to the conference room for some closing remarks and thank-yous before leaving the facility.

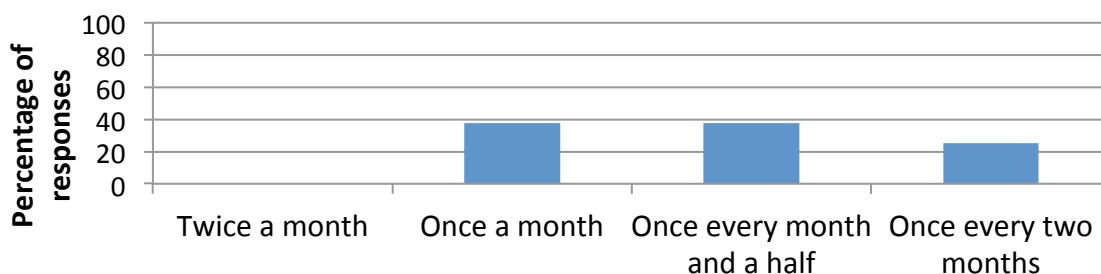
On behalf of those in attendance we'd like to wish a sincere "Thank you!" to both Larry and Fraser for the effort they clearly put into the event. We apologize to those that were not able to make it. This was a highly anticipated event with seats filling up hours after sending out the flyer.

SAE BC FIVE-YEAR PLAN

Thank you to those members that responded to our first SAE BC long-term planning question of the year. As always, your feedback is important to us and helps shape the governance of the Section. The results show that people would like one event every one to one and a half months. We'll use these results to plan our upcoming event schedule. The column chart below shows the results.

After a random draw of all participating members (excluding board members), our first winner is **Doug Romilly** – congratulations! Doug has won a \$10 Starbucks gift card. Please contact a member of the Board to collect your prize.

RESPONSE TO LAST MONTH'S QUESTION: HOW OFTEN SHOULD SAE BC HOLD EVENTS?



THIS MONTH'S QUESTION:

Which form of communication from SAE BC have you heard of and which do you prefer?

- a) Email (PDF attachment of newsletter)
- b) Facebook page
- c) Facebook group
- d) Website

Fill out the questionnaire to enter a chance to win a \$10 gift card

Please answer the survey and enter to win a \$10 Starbucks gift card:

<https://www.surveymonkey.com/s/WP5TTDM>



UPCOMING EVENTS

Below is a list of the upcoming events for this season. All events are held on Mondays unless stated otherwise. Please mark your calendars! Note that the Board Meetings are open to volunteers to come listen and to share your ideas. Let one of the board members know if you are interested in attending!

2015 March 23	UBC Composites Research Network (CRN)
2015 April 13	Board meeting
2015 April 27	eatART
2015 May 11	Board meeting
2015 May 23 (Saturday)	LNG – State of Affairs
2015 June 7 (Sunday)	Formula 1 Social Event
2015 June 8	Board meeting
2015 June	Year-end event – ideas for a wrap-up event are welcome!!

WELCOME NEW MEMBERS



Let's welcome the following new members to the SAE BC Section for 2015:

Sarkis Teghararian

Scott Chubbs

Armin Rashidi Mehrabadi Sr

The BC Section of SAE International is now entering its 59th year, since being officially designated as the SAE British Columbia Group on June 12, 1946. The Section has about 250 regular members with additional student chapter members at UBC, UVic, SFU and BCIT.

The majority of our Members live and work in the Lower Mainland, and represent a wide spectrum of technical interests. We have a regular program of local events, mostly centered in the Vancouver area, although we have had meetings elsewhere in BC on occasion.

VISION STATEMENT

SAE BC will be the active resource to the professional and student community for advancing the level of mobility engineering in the province of British Columbia.

MISSION STATEMENT

To enrich the professional life of the membership by:

1. Providing recognized leadership for mobility in British Columbia.
2. Creating opportunities for technical meetings, tours, events and continuing professional career development.
3. Supporting young membership through mentorship and funding of student activities.
4. Communicating through the newsletter, website and timely responses to members.
5. Striving for membership satisfaction at every opportunity.