AGENDA

AVIATION TECHNICAL COMMITTEE MEETINGS
of the
Coordinating Research Council, Inc.

Hyatt Regency Savannah
Savannah, Georgia

April 29 - May 2, 2013

Charter Members

API Pratt & Whitney
The Boeing Company Shell Aviation & Shell Global
DLA Energy United States Air Force
Federal Aviation Administration United States Navy
NASA

Contributing Members

Air BP IATA
Air Total Innospec Fuel Specialties
Chevron Global Aviation Phillips 66 Company
ExxonMobil Research & Engineering Rolls-Royce Plc
Flint Hills Resources SASOL Technology
GE Aviation

Sponsor Members

Facet International Gammon Technical Products
<table>
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<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
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<tbody>
<tr>
<td>12:00 PM</td>
<td>Registration</td>
<td>Ballroom Foyer</td>
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</tbody>
</table>
| 1:00 PM - 3:55 PM | Aviation Gasoline and Piston Fuels Group  
Roger Gaughan, Chair, and Dave Atwood, Vice-Chair | Regency Ballroom AB   |
| 3:55 PM - 4:25 PM | BREAK                                                                | Ballroom Foyer        |
| 4:25 PM - 6:00 PM | Aviation Gasoline & Piston Fuels Group (continued)  
Roger Gaughan, Chair, and Dave Atwood, Vice-Chair | Regency Ballroom AB   |
| 6:00 PM - 7:00 PM | Hosted Reception                                                      | Garden Terrace         |
| 7:00 AM - 8:00 AM | Continental Breakfast Buffet                                          | Ballroom Foyer        |
| 8:00 AM - 8:30 AM | CRC Introduction and Overview                                         | Regency Ballroom AB   |
| 8:30 AM - 9:30 AM | Operability Group                                                      | Regency Ballroom AB   |
| 10:00 AM - 11:15 AM | Production and Delivery Group                                          | Regency Ballroom AB   |
| 11:15 AM - 12:00 PM | Low Temperature Group                                                 | Regency Ballroom AB   |
| 12:00 PM - 1:30 PM | LUNCH ON OWN                                                          |                       |
| 1:30 PM - 3:30 PM | Emerging Fuels Group - Session 1                                      | Regency Ballroom AB   |
| 6:00 PM - 9:30 PM | Dinner Cruise aboard Savannah River Queen  
Meet at 5:50 pm in lobby to walk to boat as a group. Boarding 6:00; cruise departs at 7:00. | Regency Ballroom AB   |
### Wednesday, May 1, 2013

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<tr>
<th>Time</th>
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<tr>
<td>7:00 AM - 8:00 AM</td>
<td>Continental Breakfast Buffet</td>
<td>Ballroom Foyer</td>
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</table>
| 8:00 AM - 10:30 AM | Fuel Stability Group  
Chris Lewis, Chair, and Steve Zabarnick, Vice-Chair | Regency Ballroom AB |
| 10:30 AM - 10:50 AM | BREAK                                                              | Ballroom Foyer |
| 10:50 AM - 12:20 PM | Properties and Emissions Group  
Edwin Corporan, Chair, and David Abdallah, Vice-Chair | Regency Ballroom AB |
| 12:20 PM - 1:50 PM | LUNCH ON OWN                                                        |               |
| 12:20 PM - 1:50 PM | CRC Aviation Steering Committee Working Lunch  
Tim Edwards, Chair, and Alisdair Clark, Vice-Chair  
*(Members and Invited Guests Only)* | Savannah Room |
| 1:50 PM - 3:20 PM | Emerging Fuels Group - Session 2                                   | Regency Ballroom AB |
| 3:20 PM - 3:40 PM | BREAK                                                              | Ballroom Foyer |
| 3:40 PM - 5:25 PM | Emerging Fuels Group - Session 3                                   | Regency Ballroom AB |
| 6:00 PM - 7:00 PM | Hosted Reception                                                    | Windows Room |

### Thursday, May 2, 2013

<table>
<thead>
<tr>
<th>Time</th>
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<th>Meeting Room</th>
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<tr>
<td>6:00 AM - 8:00 AM</td>
<td>Continental Breakfast Buffet</td>
<td>Ballroom Foyer</td>
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</table>
| 8:00 AM - 9:00 AM | Advanced Research and Test Methods Group  
Robert E. Morris, Chair, and Jim Kinder, Vice-Chair | Regency Ballroom AB |
| 9:00 AM - 10:00 AM | Publications Group  
Tedd Biddle, Chair, and Melanie Thom, Vice-Chair | Regency Ballroom AB |
| 10:00 AM - 10:20 AM | BREAK                                                              | Ballroom Foyer |
| 10:20 AM - 11:05 AM | Fuel System Safety Group  
Mark Orr, Chair, and Nathan Diedrich, Vice-Chair | Regency Ballroom AB |
| 11:05 AM - 11:35 AM | CRC Aviation Technical Committee  
Bill Taylor, Chair, and Chi-Ming Lee, Vice-Chair | Regency Ballroom AB |
| 11:35 AM - 11:50 AM | CRC Aviation Committee Meeting Wrap-up and Discussion  
Tim Edwards, Chair, and Alisdair Clark, Vice Chair |               |
| 11:50 AM | End of meetings                                      |               |
CRC Activity: Aviation Gasoline and Piston Fuels Group
Roger Gaughan, Chair & Dave Atwood, Vice-Chair

Date: Monday, April 29, 2013
Time: 1:00 pm - 6:00 pm
Place: Hyatt Regency Savannah
Savannah, GA

Agenda:
1:00 PM Ultra-low Lead Fuel Update
   Alisdair Clark, AirBP
1:20 PM European Avgas Initiatives
   Alisdair Clark, AirBP
1:40 PM Cessna Programs Updates - UL91, CI/Jet-A approvals
   Nathan Diedrich, Cessna

2:00 PM BREAK

2:20 PM Engine Parametric Study for the FAA Technical Center
   Herb Schlickenmeir, Crown Consulting; Ron Wilkinson, AvSouth

3:05 PM Swift Fuels Update
   Chris D'Acosta, Swift Fuels
3:25 PM Carburetor Icing Test
   Roger Gaughan, ExxonMobil Research and Engineering

3:55 PM BREAK

4:25 PM Update on EPA Pb sampling results
   Mark Rumizen, FAA

4:45 PM Pre-Broad Agency Announcement, PAFI Update
   Mark Rumizen, FAA

5:10 PM Jet for Diesel TF Update
   Roger Gaughan, ExxonMobil Research and Engineering

6:00 PM Adjourn
Meeting Agenda

CRC Activity: **CRC Introduction and Overview**

*Tim Edwards, Chair, and Alisdair Clark, Vice-Chair*

**Date:** Tuesday, April 30, 2013  
**Time:** 8:00 AM - 8:30 AM  
**Place:** Hyatt Regency Savannah  
Savannah, GA

**Agenda:**  
Opening of the 2013 CRC Aviation Meeting, **Alisdair Clark, AirBP**  
[on behalf of Tim Edwards, USAF]  
   - Welcome  
   - Call to Order  
   - Introduction  
   - Opening Remarks

Meeting Items of Interest, **Jan Tucker, Coordinating Research Council**  
   - Activities  
   - CRC Group/Panel Memberships

Membership and Information Exchange/Ownership, **Brent Bailey, Coordinating Research Council**

Aviation Committee Status/Current Activities, **Brent Bailey, Coordinating Research Council**

Open Forum - Member Issues
Meeting Agenda

CRC Activity: Fuel Handling and Contamination Group
Haydee Carlton, Chair, and Jack Buffin, Vice-Chair

No Report for this meeting
## Meeting Agenda

**CRC Activity:** Operability Group  
*John Rhode, Chair, and Rob Midgley, Vice Chair*

**Date:** Tuesday, April 30, 2013  
**Time:** 8:30 AM - 9:30 AM  
**Place:** Hyatt Regency Savannah  
Savannah, GA

### Agenda:

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<th>Time</th>
<th>Topic</th>
<th>Presenter</th>
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<tr>
<td>8:35 AM - 8:55 AM</td>
<td>DRA in Jet Fuel</td>
<td><strong>Jason Mengel, Buckeye Pipeline</strong></td>
</tr>
<tr>
<td>8:55 AM - 9:15 AM</td>
<td>Rapid Degassing: Progress Against D4054</td>
<td><strong>Jim Rice, Nanovapor Fuels Inc.</strong></td>
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<tr>
<td>9:30 AM</td>
<td>Adjournment</td>
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</table>
## Meeting Agenda

**CRC Activity:** Production and Delivery Group  
*Enrico Lodrigueza, Chair and Ron Osman, Vice-Chair*

**Date:** Tuesday, April 30, 2013  
**Time:** 10:00 AM - 11:15 AM  
**Place:** Hyatt Regency Savannah, Savannah, GA

**Agenda:**

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<tr>
<th>Time</th>
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<tbody>
<tr>
<td>10:00 AM - 10:25 AM</td>
<td>Shared Inspection Group and API 1595 Update</td>
<td>John Rhode, Air BP</td>
</tr>
<tr>
<td>10:25 AM - 10:45 AM</td>
<td>Corrosion Inhibitors Emulsion Forming Study</td>
<td>Enrico Lodrigueza, Phillips 66</td>
</tr>
<tr>
<td>10:45 AM - 11:15 AM</td>
<td>EI 1530 Update</td>
<td>Martin Hunnybun, Energy Institute</td>
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<tr>
<td>11:15 AM</td>
<td>Adjournment</td>
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</table>
Meeting Agenda

CRC Activity: Low Temperature Performance Group
*Don Phelps, Chair and Dennis Hoskin, Vice-Chair (represented by Steve Zabarnick)*

Date: Tuesday, April 30, 2013
Time: 11:15 AM - 12:00 PM
Place: Hyatt Regency Savannah
Savannah, GA

Agenda:
11:15 AM - 11:35 AM  Developing a Cold Fuel Flowability Test (Project AV-16-11)
                       *Steve Zabarnick, University of Dayton Research Institute*

                       *Larry Spino, PAC L.P.*

11:55 AM - 12:00 PM  Update: FSII Reduction Program
                       *Don Phelps, Air Force Research Laboratory (presented by Steve Zabarnick)*

Adjournment
Meeting Agenda

CRC Activity: Emerging Fuels Group Session 1
Joanna Bauldreay, Chair and Tim Edwards, Vice-Chair

Date: Tuesday, April 30, 2013
Time: 1:30 PM - 3:30 PM
Place: Hyatt Regency Savannah
Savannah, GA

Agenda:

1:30 PM - 1:35 PM Introduction
PANEL: Synthetic Jet Fuel Approval Process - Task Forces
Joanna Bauldreay, Shell, and Tim Edwards, U.S. Air Force

1:35 PM - 1:50 PM ASTM Alternative Fuel Task Forces Overview
Mark Rumizen, FAA

1:50 PM - 2:05 PM ASTM Task Force Update - ATJ
Glenn Johnston, Gevo, and Kevin Weiss, Byogy

2:05 PM - 2:20 PM ASTM Task Force Update - SKA
Cliff Moses, Consultant

2:20 PM - 2:35 PM ASTM Task Force Update - HDCJ
Jeff Trewella, Petrotech

2:35 PM - 2:50 PM ASTM Task Force Update - DSHC
Fernando Garcia, Amyris

2:50 PM - 3:10 PM Investigation into the impact of normal, iso- and cyclo paraffins on elastomeric seals using stress relaxation
Yue Liu and Christopher W Wilson, University of Sheffield

3:10 PM - 3:30 PM Investigation into the impact of normal, iso- and cyclo paraffins on elastomeric seals using stress relaxation, Part II. A solvency perspective
Jeff Trewella, Petrotech, and Christopher W Wilson and Yue Liu, University of Sheffield

3:30 PM Adjournment
Meeting Agenda

CRC Activity: Fuel Stability Group  
Chris Lewis, Chair and Steve Zabarnick, Vice-Chair

Date: Wednesday, May 01, 2013  
Time: 8:00 AM - 10:30 AM  
Place: Hyatt Regency Savannah  
Savannah, GA

Agenda:

8:00 AM - 8:30 AM  SwRI Small Scale, High Reynolds Thermal Stability Test System  
George Wilson, Southwest Research Institute

8:30 AM - 9:00 AM  Evaluation of the Impact of FAME Contamination on Thermal Stability of Jet Fuel  
Steve Zabarnick, University of Dayton Research Institute for Bob Morris, Air Force Research Laboratory

9:00 AM - 9:30 AM  The Use of Antioxidants in Jet Fuel  
Alisdair Clark, AirBP

9:30 AM - 10:00 AM  Impact of FAME, Phenols and Additives on Jet Fuel Thermal Stability  
David Abdallah, ExxonMobil

10:00 AM - 10:30 AM  Ellipsometer Panel Report  
George Wilson, Southwest Research Institute

10:30 AM  Adjournment
Meeting Agenda

CRC Activity:  Properties and Emissions Group
Edwin Corporan, Chair and David Abdallah, Vice-Chair

Date:  Wednesday, May 01, 2013
Time:  10:50 AM - 12:20 PM
Place:  Hyatt Regency Savannah
        Savannah, GA

Agenda:

11:00 AM - 11:20 AM  Next-Generation Low-Emissions Combustor Technologies
  Chi-Ming Lee, NASA

11:20 AM - 11:40 AM  NASA Alternative Fuels Research Program
  Dan Bulzan, NASA

11:40 AM - 12:20 PM  Update and Discussion on AV-14-11
  David Abdallah, ExxonMobil, and Alisdair Clark, AirBP

12:20 PM  Adjournment
## Meeting Agenda

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<td>PANEL</td>
<td>Synthetic Jet Fuels for Aviation Panel (CA-69-98) - Program reviews</td>
</tr>
<tr>
<td>1:55 PM - 2:10 PM</td>
<td></td>
<td>ASTM D4054 update</td>
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<tr>
<td>2:10 PM - 2:30 PM</td>
<td></td>
<td>Formalizing the FAA/OEM Panel Review Process</td>
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<tr>
<td>2:30 PM - 2:45 PM</td>
<td></td>
<td>ASTM Task Force Update - SAK/SK</td>
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<tr>
<td>2:45 PM - 3:05 PM</td>
<td></td>
<td>n-butanol to Jet/Diesel Fuel (ATJ-SPK), synthetic aromatics (added to our SPK fuels)</td>
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<tr>
<td>3:05 PM - 3:20 PM</td>
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<td>ReadiJet update</td>
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### Meeting Agenda

**CRC Activity:** Emerging Fuels Group Session 3  
*Joanna Bauldreay, Chair, and Tim Edwards, Vice Chair*

**Date:** Wednesday, May 1, 2013  
**Time:** 3:40 - 5:25 PM  
**Place:** Hyatt Regency  
Savannah, GA

**Agenda:** Research Projects

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<td>Joanna Bauldreay, Shell</td>
<td>European activity on alternative fuels</td>
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<tr>
<td>3:50 PM - 4:10 PM</td>
<td>Tedd Biddle, P&amp;W</td>
<td>GTL Jet R&amp;D update</td>
</tr>
<tr>
<td>4:10 PM - 4:30 PM</td>
<td>Joanna Bauldreay, Shell</td>
<td>P&amp;W Canada Engine Test for CLEEN</td>
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<tr>
<td>4:30 PM - 4:50 PM</td>
<td>Cliff Moses, Consultant</td>
<td>Dielectric-Density Correlation Issue</td>
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<tr>
<td>4:50 PM - 5:10 PM</td>
<td>Chris Lewis, Rolls-Royce</td>
<td>BA/RR CLEEN programme</td>
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<tr>
<td>5:10 PM - 5:25 PM</td>
<td>Joanna Bauldreay, Shell, and session attendees</td>
<td>Where are we now, and what R&amp;D programmes are still needed? Revisit CAAFI White Papers</td>
</tr>
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</table>
**Meeting Agenda**

**CRC Activity:** Advanced Research & Test Methods Group  
*Robert E. Morris, Chair, and Jim Kinder, Vice-Chair*

**Date:** Thursday, May 2, 2013  
**Time:** 8:00 AM - 9:00 AM  
**Place:** Hyatt Regency Savannah  
Savannah, GA

**Agenda:**

- **8:00 AM - 8:20 AM** Detection and Quantification of Phenolic Antioxidants in Fuels by GC-MS  
  *Thomas Loegel, Nova Research Inc.*

- **8:20 AM - 8:40 AM** GCxGC TOFMS Implementation at Southwest Research Institute  
  *George Wilson III, Southwest Research Institute*

- **8:40 AM - 9:00 AM** Development of New Screening Tools for Certification of Alternative Fuels and Blends  
  *Jeffrey Cramer, U.S. Naval Research Laboratory*

- **9:00 AM** Adjournment
Meeting Agenda

CRC Activity: CRC Publications Group
Tedd Biddle, Chair, and Melanie Thom, Vice-Chair

Date: Thursday, 2 May 2013
Time: 9:00 AM - 10:00 AM
Place: Hyatt Regency Savannah
Savannah, GA

Agenda: Call to Order - Tedd Biddle
• Approval of 2012 minutes - Melanie Thom

OLD BUSINESS
• Water Solubility Plots - Alisdair Clark

NEW BUSINESS
• Open Discussion - Ideas for the next edition (5th Edition)
  - Short-term data additions & improvements that can be accomplished in 12 mo.
  - Longer-term data additions & improvements that can be accomplished in 24 - 36 mo.

Adjourn
Meeting Agenda

CRC Activity: Fuel System Safety Group  
Mark S. Orr, Chair, and Nathan Diedrich, Vice-Chair

Date: Thursday, May 2, 2013  
Time: 10:20 AM - 11:05 AM  
Place: Hyatt Regency Savannah  
Savannah, GA

Agenda:
10:20 AM - 10:25 AM  Welcome  
Mark S. Orr, FAA
10:25 AM - 10:50 AM  Assessing Gauging Performance of Alternative Fuels  
David Parmenter, Airbus Operations Ltd
10:50 AM - 11:05 AM  Confined Space and Jet Fuel, Different Meters, Different Results  
Jim Rice, CEO, Nanovapor Fuels, Inc.

11:05 AM  Adjournment
Meeting Agenda

CRC Activity: Aviation Technical Committee  
Bill Taylor, Chair and Chi-Ming Lee, Vice-Chair

Date: Thursday, May 2, 2013  
Time: 11:05 AM - 11:35 AM  
Place: Hyatt Regency Savannah  
Savannah, GA

Agenda:  
Call to Order  
Adoption of May 2012 Minutes  
Membership  
Group Reports - Action Item Summary  
New Business  
Action Items  
Next Meeting / Adjournment
CRC Activity: Aviation Committee Meeting Wrapup & Discussion
Tim Edwards, Chair, and Alisdair Clark, Vice-Chair

Date: Thursday, May 2, 2013
Time: 11:35 AM - 11:50 AM
Place: Hyatt Regency Savannah
Savannah, GA