

## TUG Meeting Notes – May 9, 2017

### Introductions

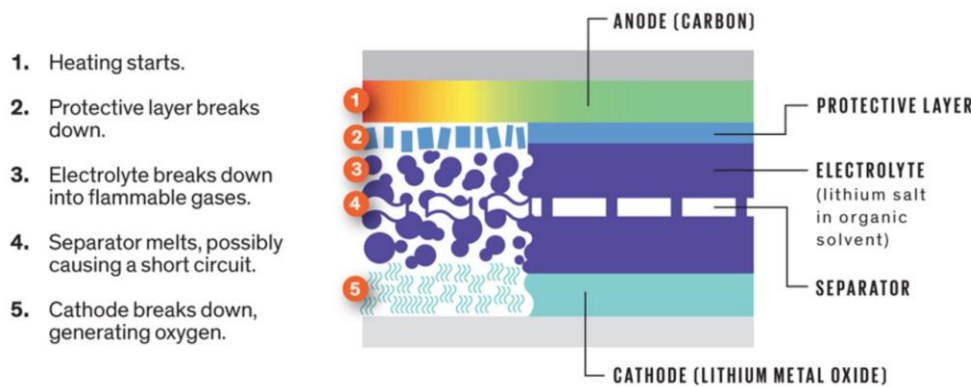
- TUG President Dave Belastock welcomed a packed room to the meeting, facilitated introductions of all present and introduced TUG's newest board member – Carlos Correa.

### Featured speaker: Captain John Cox, CEO of [Safety Operating Systems](#)

Discussed the risks and containment strategies for lithium-ion batteries. Key takeaways:

- Passengers carry an average of four L-ion batteries with them. Eight passengers could equate to 32 L-ion batteries in the cabin!
- The supply of OEM and third party L-ion batteries (of unknown quality) is increasing drastically. If Apple and Samsung can have recalls, question the quality of knockoffs.
- There were 32 “battery-related events” in 2016 alone, and statistics reveal an increasing trend. The most notable battery related event was the thermal runaway.
- A thermal runaway is unpredictable in that there is no way of knowing if it will cause an explosion, just burn or produce smoke. FAA test findings have revealed that there is a 50% vision obscuration within 5 minutes of a thermal runaway.
- A thermal runaway is ‘self-sustaining’ due to the intense heat generated. Halon 1211 will extinguish the open flame (by stopping the chemical reaction of the fire triangle), but will NOT stop a thermal runaway.
- Do not use ice to cover an overheated battery as it simply acts as an insulator and a re-ignition will take place under the ice. The Cathode within is still producing oxygen!
- The only way to stop a thermal runaway is by pouring a non-alcoholic water-based liquid over it (once you extinguish the flame). The primary objective is to COOL IT in order to prevent re-ignition and/or propagation to adjacent cells.
- Current guidance is inadequate and the FAA is working on changing Advisory Circulars, putting out new InFOs and SAFOs. Do not pick up a unit experiencing a thermal runaway but instead relocate passengers, if able. The issue here is adequate protection for crewmembers responding to an event. Remember the primary objective – stop the thermal runaway by pouring a non-alcoholic water based liquid on the device.

## Thermal Runaway in a Lithium-Ion Battery



John M. Cox – Safety Operating Systems

### Featured speaker: [Ed Bolen](#), NBAA President and CEO

- The topic of ATC privatization has been around for more than 20 years. First targets included the low-cost carriers and recently the new target is general aviation users.
- With ATC privatization, as proposed, airline executives want the ability to control where investments in the aviation system are made and therefore affects access to the system.
- According to an NBAA white paper; “This issue of ATC privatization is not one of economic efficiency, but of economic power, economic domination and economic control”.
- Today’s political landscape is different in that previous White House administrations have not weighed in on the Congressional deliberations over privatization. In 2017, the current Trump Administration will be introducing comprehensive infrastructure legislation that is expected to include provisions that make fundamental changes to the ATC system.
- The NBAA’s position on ATC privatization is that our nation’s airspace and airport system belongs to the public. Analysis of business aviation operations and system funding in countries with privatized ATC systems has found that giving system governance to airlines may allow them to restrict where and when companies using business aviation can fly, and how much they pay to use the system.
- Ed Bolen communicated that the business aviation community needs to do more and better than in the past because of White House involvement in today’s legislative agenda.
- Beyond contacting local, state and federal representatives in government, the business aviation community has to take the issue directly to the top of the organizational chart, where possible. Top C-level executives, principals and decision makers need to be properly informed that ATC privatization goes beyond financial efficiency and modernization but also towards restricted access to the national airspace system for general aviation as a result of a big airline monopoly over governance of the U.S. airspace system.

**Featured speaker: Michael Gilchrist, [HighWater Innovations](#)**

- The PlaneGard fire containment case focuses on capture and containment of a device experiencing a thermal runaway from a lithium-ion battery.
- A lithium-ion battery needs about 180°F to go into thermal runaway.
- Only a water-based liquid will reverse then stop a thermal runaway
- The highly toxic smoke that emanates from a thermal runaway is Hydrogen Fluoride which when it comes into contact with mucus membranes it turns into Hydrofluoric Acid.

Demonstration of PlaneGard can be viewed at: <https://vimeo.com/107607577>

**Bedminster TFR updates**

- During a TFR there are no West gates out of Teterboro – no PARKE intersection.
- The north and south gates are the biggest impact points, once the west gates are taken away.
- Plan ahead and consider the impacts of SWAP on the remaining gates during a TFR.

*(Carlos notes – The information on the website covers this topic quite well)*