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2016 Data Collection for ELR

2016 Project Update

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Field Trials

Summer Objective

To collect temperature data from two aircraft from all flights in BC.

- Conair had two aircraft with the required sensors stationed in BC this past summer.
- The RJ85's were based in Kamloops and Penticton from mid June until August 20th . These were on experimental trials for BC Wildfire.
- It was generally a quiet summer in Southern BC.

2016 Summer Plans

FPInnovations collected the following data during the summer of 2016:

- Flight data for each fire related flight the RJ85 is involved with.
- Tephigram data for each day the RJ85 flies. These will come from Kelowna, Prince George, Edmonton, Fort Nelson or Port Hardy. The actual station used will depend on where the RJ85 travels within the province of BC.
- Fire and smoke column photos data from BC Wildfire Service.

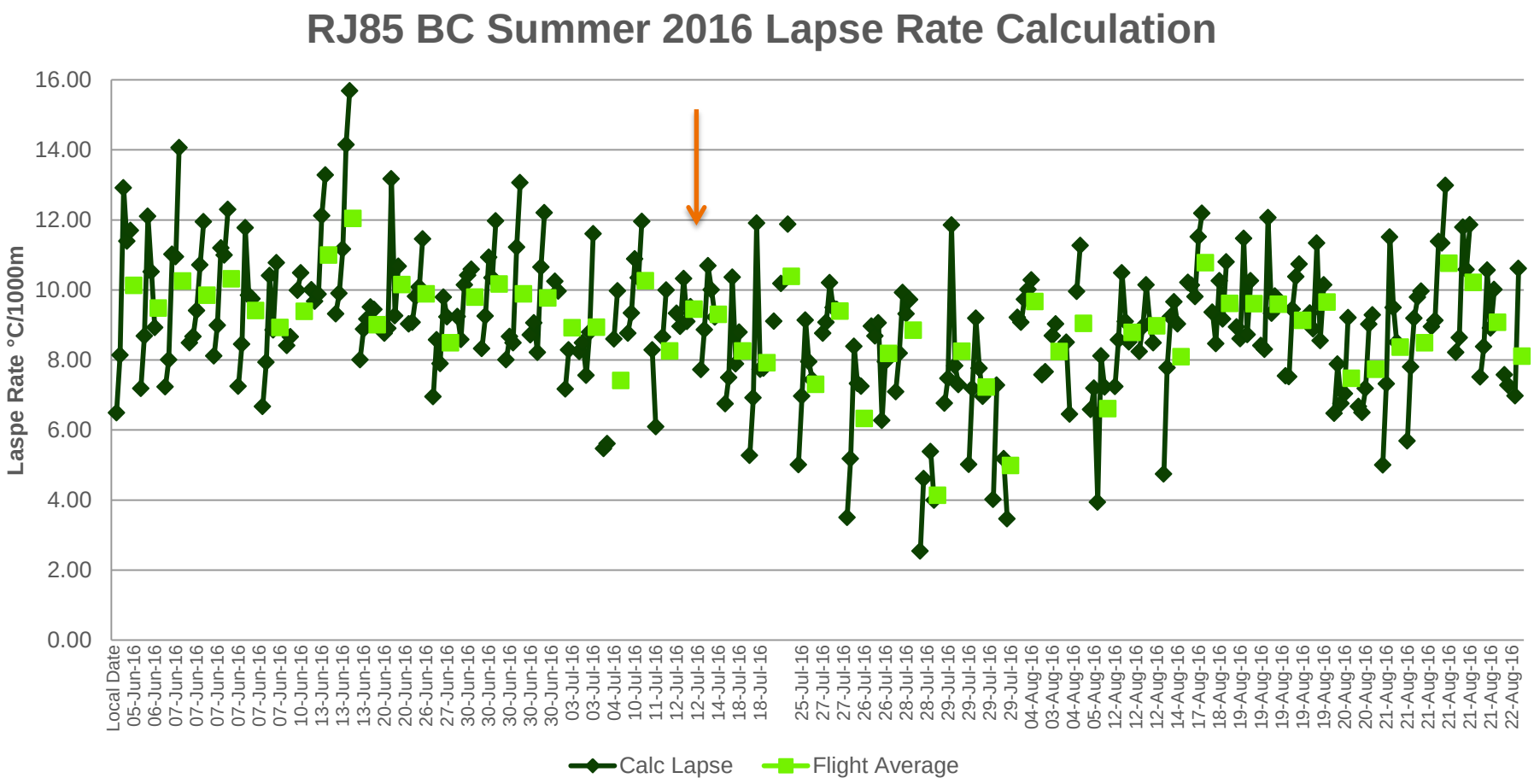
2016 Summer Data Collection

- Aircrafts T465 and T466 flew over 40 missions in BC this summer. We collected data from 32 of these flights.
- Data was collected at: takeoff, 1000 m AGL, 3000 m ASL (~700 mb level), at the drop, 3000 m ASL , 1000 m AGL and at landing.
- This created an atmospheric temperature profile from the airport to the fire and back again.
- This data was then compared to Atmospheric Soundings, satellite images and smoke photos from birddog aircraft.

Results

- 28 of our days had lapse rates greater than 9.8^{o}C/1000m as collected by the aircraft for parts or all of their flights. These fires were relatively uneventful and did not exhibit extreme fire behaviour.
- Kamloops and Penticton are ‘hot and dry’ locations. Although we had 28 days above the threshold. Temperatures were near normal, with only a few extreme temperature days.
- Next Steps……

Flight Data



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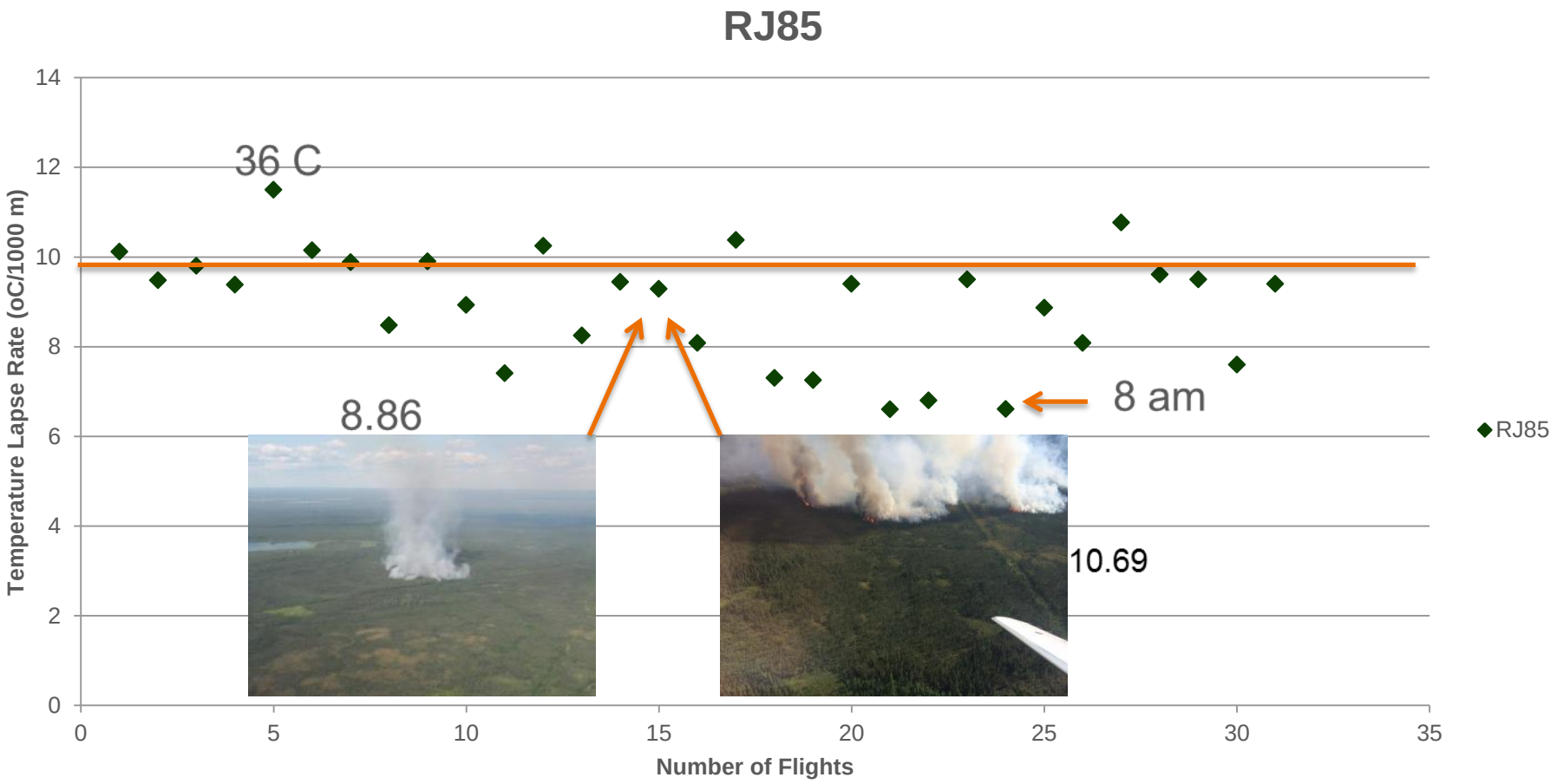
Summer Results



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Observations

1. Just the 9.8^{o}C/1000 m threshold in itself does not always lead to extreme fire behaviour.
2. Aircraft data produces useable lapse rate data.
3. More data from blow-up fires would be helpful.
4. Need to meet with Conair and Latitude Technologies to discuss possibility of more aircraft equipped with this sensor and then how to download and use the collected data.

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Questions?