



Advisory Board Meeting  
Minutes – August 25, 2017

Board Members Present:

Barry Gore, Chair – Economic Development Representative (Phone-in)  
David Rose – Citizen Representative  
Paul Deaderick – Space Sector Representative  
Rick Ward, Vice Chair – Aviation Sector  
Scott Ullerick – Business Sector  
Steve Hogan – Intergovernmental

Board Members Absent:

Jeffrey Price – UAV Sector  
Meredith Champlin-Eaton – FTG Tenant/Aviation Operations Representative DIA  
Raymond Gonzales – Adams County Government Representative

Staff:

Dave Ruppel, Airport Director – Front Range Airport (Excused Absent)  
Bob Lewan, Operations Manager – Front Range Airport  
Jeri Coin, Executive Assistant – Front Range Airport

Welcome & Introductions

Vice Chairman Rick Ward welcomed the members and guests and all rose to give Pledge of Allegiance to the Flag of the United States.

Agenda & Minutes

Vice Chairman Ward asked if there were any changes to the agenda, or minutes and seeing none, he requested a motion that was given by Paul Deaderick, seconded by Dave Rose; the May 2017 minutes and the August agenda were accepted as submitted.

Reaction Engines Presentation

Vice Chairman Ward introduced Lewis Dawney, and Daniel Larson, both with Reaction Engines. Reaction Engines Ltd was founded in 1989 by Alan Bond, Richard Varvill and John Scott. The three propulsion engineers worked together at Rolls Royce on the RB545 engine, destined for use on the HOTOL vehicle. Reaction Engines was formed to evolve the HOTOL and RB545 concepts into the SABRE engine class and its associated airframe concepts, which are now under active development in Oxfordshire, UK.

Understanding that heat exchangers were far from reaching their physical limits in terms of miniaturization, the Reaction Engines team began developing high power lightweight heat exchangers and designing new engines and vehicles that they would enable. Once the focus of 'the three rocketeers', Reaction Engines is dedicated to realizing their vision.

SABRE engines are fast – they can be used for air travel at over five times the speed of sound or for reusable space launch vehicles. SABRE class engines can power aircraft capable of flying from London to Australia in four and half hours or spaceplanes that take off into orbit from a runway before returning to base and doing it all over again.

The RB545 engine showed great promise for application in a reusable spaceplane, which would be capable of delivering satellites and returning to Earth without jettisoning any parts like conventional rockets. At the time it was viewed as a natural progression from NASA's Space Shuttle, building on the advantages of reusability to the point where space launch operations would become similar to those of traditional aircraft. The potential operational and economic

benefits of this approach to Space access were noted by the British Government, who funded Rolls Royce and British Aerospace to design a spaceplane capable of Horizontal Take-Off and Landing. Reaction Engines is taking innovative technologies to US markets with their US-based and US-staffed subsidiary, Reaction Engines, Inc. based in Castle Rock, Colorado. Reaction Engines, Inc. supports the expansion of the company's development efforts and leads engagement with potential US government and industry partners. Our US arm builds upon the excellent collaborative R&D efforts already accomplished with the Air Force Research Laboratory and NASA, and positions Reaction Engines' technology for future users and markets. Colorado features the US's second largest aerospace economy and provides an excellent location for Reaction Engines' US business with access to a variety of aerospace infrastructure. The plan now is to build a rocket testing facility at Front Range Airport, which should start sometime at the beginning of 2018; testing will begin at this facility in the spring of 2018. Vice Chairman Ward thanked them both for their insightful presentation.

#### Air & Spaceport Update

##### **Spaceport License**

Vice Chair Ward read a written report prepared by Dave Ruppel that had been sent out to the Board on the 22<sup>nd</sup>—I wanted to give you a brief update on the Spaceport License effort. By way of review, we have changed the Horizontal Launch Vehicle focus of our license to the Concept X, dual propulsion type vehicle. We determined in a February meeting with the FAA that the Concept Y vehicle was proving to be too challenging for the FAA to complete airspace analysis on and, with the FAA's very strong support, agreed to change to the Concept X. The FAA has taken the lead on helping us to make the necessary changes to the Environmental Assessment (EA) and is completing the airspace analysis for the new spacecraft type. The FAA held an Environmental Assessment Scoping Meeting on June 13<sup>th</sup> at Front Range Airport and it was a very positive success. The focus of the meeting was to make sure that the stakeholders and members of the public who might be impacted by the change had an opportunity to hear about the EA and ask questions. In the stakeholder portion that was held in the morning we had representatives from all of the interested FAA lines of business as well as United Airlines, Buckley AFB, and DEN. There was excellent discussion including questions on the specifics of operations from United and DEN and I was very encouraged to see the problem solving approach taken by all of the participants. In the evening public event the FAA gave an in depth presentation of the changes and the EA and there were no questions from those in attendance, only positive supporting comments. We continue to move forward on the Application and LOA changes as well and have regular conference calls with the FAA that include, the Office of Commercial Space, ATC, other FAA lines of business as appropriate concerning the progress on the airspace analysis and the ATC LOA.

As of this week we have two special use airspace areas designated and are working with Denver Center to prioritize the specifics of those operations areas as well as flight durations and best days of the week and times of day for prospective flights. We have started the analysis of these areas for noise, sonic boom, and hazard impact. I expect to have the final determination back from Denver Center in two weeks so that we can complete the changes to the application and will provide that information as soon as I receive it. The scope of work for completing our work on the changes to the license is expected to cost about \$80,000 and I am working to get some outside funding to help with that cost. I expect we will be able to cover about half of it with outside funds and I will be requesting the remainder in the form of a supplemental. Adams County Procurement is working on the contract for Kimley-Horn to complete this Scope of Work. The noise, hazard, and sonic boom analysis needed for the application update are also the final items needed for the EA update. Denver Center has indicated that the LOA should be

approved in the next few weeks and that as soon as it is signed they will communicate with Denver International to brief them on the procedures established for Spaceport operations and ATC's approval of these prospective operations. The FAA expects to provide their findings on the EA by the end of this year or early in 2018 at the latest and the license decision will follow closely after that. There is still very strong support and momentum from and within the FAA and the change to the Concept X vehicle are what is driving it. Please let me know if you have any questions.

#### **Airport Project Update**

The Vice Chairman recognized Bob Lewan, Operations Manager, who presented a PowerPoint on the various projects allocated to take place this fall, and next year.

- ✈ Rehab on Taxiway A8C Two inch mill and fill area approximately 50,000 Sq. Foot, paving of taxiway A8 to take place in 2018
- ✈ Restripe the centerline of Runway 8-26
- ✈ Restripe runway hold short lines, and taxiways B, C, D, and E
- ✈ Request for proposals (RFP) to add a water purification system to the east side water system for Reaction Engines and the airport maintenance building
- ✈ Purchased a used loader at the DIA auction; CDOT Division of Aeronautics funded 80% of the purchase price, and cost to the airport is \$3,000
- ✈ Solar farm construction has begun at Imboden Road, on a 15 acre site
- ✈ UAS survey of airfield by Kimley-Horn, they used Drones for survey mapping
- ✈ Crack seal will begin in October on the Terminal ramp

The Vice Chairman thanked Bob Lewan for the update.

#### **Master Plan Update**

Jim Mikklas, Project Manager and with Jviation gave an update on the master plan. Jim said they were in the final production stages of the master plan, and the chapters are finalized, there had been a small delay, in attaining the environmental components; however he assured everyone they are now squared away, and resolved. The Airport Layout Plan (ALP) is in production, and that too had a hiccup with the uploading of the aerial survey data into the FAA system, and we have overcome that as well. There are two major deliverables, the report itself, and the ALP, which is a legal document that the FAA will sign. Jim stated that they anticipate final delivery of the documents by the end of September. The document will be uploaded into the FAA system, and once uploaded goes into FAA world, and it could take a little bit longer to review, and approve; he anticipated it would be a 60 to 90 day review period.

Jim invited questions, and none were heard.

Jon Weeks, Project Planner with Jviation gave an update on Taxiway A7, where they are doing a rehabilitation of the asphalt, which translates to a mill and fill in the existing hangar area. At the same time they will do an embankment for the extension of Taxiway A8, so the airport will have a secondary access point to the hangars; he added that it will eventually be paved. The project was put out to bid on July 19<sup>th</sup>, and there were 80 people on the plan holders list; unfortunately we didn't have any bids for the job. Jon said they contacted approximately 15 contractors to find out why they didn't bid the job, and because of the all the building going on statewide, the contractors basically said the same thing; too small of a project, and too late in the season. Jon had assurance from several contractors that if they rebid it in the fall for a 2018 spring start time, they would definitely be on board. Jon said after discussion with Dave Ruppel, and FAA representatives we decided to put it back on the street in November; we are trying to push it far enough away that the contract suppliers will be able to get oil prices locked in, and by starting the project in the spring, it will allow the contractors to get their feet wet before the big summer projects begin.

Jon said they would start work next month in September to put a quick repackage, and put it back on the streets in October for a November bid.

Jon opened it up for questions, and Scott Ullerick asked if Adams County could do the project. Bob Lewan said they have FAA grant money for the project. Scott then asked if Adams County could use their road and bridge departments for the job. Jon said you would still have to bid the job, and stated it is an interesting question, and he wasn't sure if the county could bid on the job. They would have to follow all of the rules as a competing contractor, and follow FAA regulations. Jon explained that A8 embankment was a little different, as their intention is to leave it in such good condition that the Adams County Road and Bridge crew will come out and pave it, and that would be separate from FAA money.

Walt Barbo, tenant asked what the estimated cost was for the project. Jon replied \$320,000. Walt explained when he was with the FAA there was a precedence for someone like the county working for the local share of a project without doing the entire project. Jon said like a subcontractor, and Walt agreed, and added that was how it was done in his time with the FAA. No other questions were heard, and the Vice Chairman thanked Jim and Jon for their updates.

Board Member Comment

The Vice Chairman asked if anyone would like to comment, Barry Gore, Chairman had phoned in, and asked if anyone had seen in the news, where Huntsville, Alabama had started the application process with the FAA to be able to land Dream Chaser at a local airport in Huntsville. Chairman Gore said it would take off in Florida, and land in Huntsville, and he didn't know if that would classify the airport as a spaceport.

Scott Ullerick asked Reaction Engines how many they would employee once they relocated to Front Range Airport; the answer was 10 onsite employees to start.

Dave Rose attended the WarBird Auto show, and thought the event was great; he added very good weather and everyone seemed to be having a good time. He asked Bob Lewan what his thoughts were and Bob Replied it went real well. Dave then asked him about the \$20 parking fee, and asked if it had gone up. Bob said it had, and it is a charge from the promoter, Pit Rally, we don't receive any proceeds from the parking fee. Veterans were able to get in for \$10 a car load with a proper ID. Dave Rose added that he has an acquaintance that has applied to be a FRAA board member; he is in real estate, and a former united airline pilot.

Vice Chairman Ward thanked the Board for their comments.

Public Comment

Bill Totten, long time FTG tenant and part of the EAA Young Eagles, Chapter 301, reported on the August 5<sup>th</sup> event; there had been 39 kids, 9 pilots with aircraft, and 14 ground crew. To date there had been 6,821 since it began at Front Range. Their next event will take place on Saturday, August 26<sup>th</sup>.

The Vice Chairman thanked Bill for his report.

Set Agenda

No agenda items were discussed. Items can be emailed to the Chairman and Dave Ruppel.

Adjournment

No further business came before the Board and the meeting was adjourned at 1:45 p.m. The next Front Range Airport Advisory Board meeting, is scheduled for Friday, September 29, 2017 at 1:00 p.m., in the second floor, large conference room in the Airport Terminal.

Approved by: Barry A Gore 10-27-17  
Vice-Chairman Date