

TIME LINE OVERVIEW FOR VIRGIN ATLANTIC (VS) FLIGHT 1K DIVERSION-  
Tuesday, June 22-23, 2010

Below is a glossary of the major acronyms and terms that are used in the time line:

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| A/C – Aircraft                              | AOS – Airport Operations Specialist |
| ARFF – Aircraft Rescue and Fire Fighting    | APU – Auxiliary Power Unit          |
| ASIG – Aircraft Service International Group | ATC – Air Traffic Control           |
| BDL - Bradley International Airport         | CBP – Customs Boarder Protection    |
| CSP – Connecticut State Police              | EWR – Newark International Airport  |
| FIS – Federal Inspection Services           | GPU – Ground Power Unit             |
| LHR – Heathrow International Airport.       | VS – Virgin Atlantic Airlines       |
| W/L – Windsor Locks                         |                                     |

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| Air-Start Cart – | A piece of portable ground equipment that forces compressed air into the engines of an aircraft causing the turbines of the engine to spin, allowing the engine to start without assistance from the aircraft. Use of an Air-Start Cart is necessary, for instance, when the aircraft’s auxiliary power unit (APU) is not functioning to provide the power needed to start the engines.  |
| AOS –            | A CT DOT employee working at BDL in the Airport Operations Specialist unit, which is staffed 24 hours a day seven days a week.   |
| ARFF -           | BDL’s fire department that handles both airside and landside emergency events at the airport.  |
| ASIG -           | ASIG operates as a Fixed Base Operator (FBO) at BDL. FBOs like ASIG handle charters, fueling, ground handling of aircraft, and customer service for airlines and diversions. Most mid-size airports lease space to FBOs like ASIG who are permitted on site to sell their services to the airlines that serve the airport and to airlines that do not serve the airport, the latter of which is often the case with diversions. FBOs like ASIG must comply with applicable federal rules and regulations and also are subject to the provisions of their lease agreement with the airport. |
| Flight Release - | A flight release is paperwork that is usually provided to a flight crew by their corporate dispatch center. The flight release can have information such as the weight and balance of the aircraft. Also contained in this release is data to make sure that the aircraft is within tolerance for take off and landings. It may also contain weather information for departure, in-route and arrival points.   |

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| Follow Me -      | This practice involves using a BDL state vehicle to lead an aircraft on the ground to a parking spot. This is done when airline crews are not familiar with the airport.  |
| Fuel and Go -    | Terminology used to describe a diversion aircraft's flight status when it intends to land, take fuel on, and depart to its final destination.   |
| Fuel Imbalance - | This can occur on an aircraft when fuel is not properly transferred to the appropriate fuel tanks on the aircraft. This transfer of fuel is usually performed by the flight crew on board the aircraft and not by the FBO on the ground performing the fueling.   |
| Fuel Slip -      | This is a document that an FBO, such as ASIG, keeps to record events surrounding the fueling process of an aircraft. This document contains information about when the fueling began, how many gallons of fuel were delivered, and what time the job was finished.  |
| GPU -            | A piece of ground equipment that provides electrical power to an aircraft by plugging a high voltage capacity cable into it. For example, the FBO may provide a GPU to an aircraft on the ground to provide power on-board (e.g., for lights and air conditioning) when the APU is not functioning.                               |
| Gravity Weight - | Weight per unit volume, used in this report in referencing fuel. The Virgin crew (and ASIG) had trouble calculating the weight of the fuel on their aircraft due to the use of different units volume in the US (gallons) versus the UK (liters) requiring conversion of the weight of a gallon to the weight of a liter of fuel. |
| Ground ATC-      | FAA Air Traffic Control (ATC) staff located in FAA's Air Traffic Control Tower (ATCT) at BDL. Ground ATC gives instructions to aircraft on what routes to take to make its way around (using taxiways and runways) the airport.   |
| In-op –          | Inoperative; usually referring to a piece of (broken) equipment on an aircraft (A/C).   |
| On The Freq -    | This phrase is used by the airport community when speaking with Air Traffic Controllers. It refers to someone being or coming onto a certain ATC frequency such as "ground" frequency. The ground frequency at BDL is 121.90, one of the main frequencies that BDL uses to communicate with the Air Traffic Control Tower.        |
| Timed Out -      | This phraseology is used in the airline industry to refer to a flight   |

crew member (or members) who have reached a legal amount of hours that they may not work past, referred to as “Crew Time” or “Duty Time”. There remains a question whether a flight crew, once “timed out,” is still permitted to taxi an aircraft from one spot to another on the ground as long as there is no intent to take-off and whether there are exceptions to Crew Time restrictions in the case of emergencies.

Weight and Balance - An aircraft must not exceed a certain weight and must also not have too much weight forward or aft of its center of gravity, the middle fuselage area. The aircraft must have its weight and balance calculated on the ground to make sure that it is within its operating parameters. If the weight and balance is outside the aircraft parameters, then the weight must be redistributed or removed to balance the aircraft before it can be cleared for flight.

- **2000 (local time)** VS Flight 1K traveling from London Heathrow Airport (LHR) to Newark New Jersey Airport (EWR) notifies ASIG that the flight will be diverting to BDL and is going to take on fuel and then continue to EWR (fuel and go).
- **2000** ASIG notifies U.S. Customs and Border Protection stationed at BDL (“CPB”) of an international Fuel and Go.
- **2030** VS flight lands at BDL and exits runway where it is met by a BDL Operations vehicle. The vehicle is used as a “Follow Me” vehicle so the A/C can taxi to a parking spot on the remote ramp (specifically, the de-icing spot “Z2”, which is located approximately 300-350 yards from the FIS). Pursuant to information the Department has received from ASIG, ASIG parks the A/C and asks standard questions (e.g., how are you on Crew Time; do you need anything special; we know that your APU is in-op, do you need an air-conditioning cart or Ground Power Unit (GPU)?) Pursuant to information the Department has received from ASIG, the VS crew answers that there is no problem with Crew Time, and that they do not want an air-conditioning cart. At this time, AOS personnel are at Z2 and witness ASIG attaching a GPU to the aircraft. The GPU has a mechanical issue. The GPU begins spitting sparks and flames out of its exhaust system, and AOS personnel instructs ASIG to shut down the GPU.
- **2040** Another GPU is attached to VS A/C.
- **2042** VS calls Ground ATC and requests fuel from ASIG.
- **2102** ASIG requests that a fire truck stand-by for ASIG’s fueling of the VS A/C. (An ARFF truck is required to stand-by when an aircraft is remotely parked, has passengers on board and is going to be involved in a fueling procedure.)
- **2108** ARFF truck arrives at VS A/C.
- **2116** VS calls Ground ATC and asks if it knows what the landing time was. Ground responds that landing time was approximately 45 minutes ago.
- **2124** Fueling is started pursuant to information taken from ASIG fuel slip.

- **2140** Pursuant to information the Department has received from ASIG (gathered during the event by verbal communication), ASIG shuts down the second GPU (which they indicate is overheating) and halts the fueling process.
- **2151** Pursuant to information the Department has received from ASIG, ASIG attaches a third GPU and resumes fueling.
- **2218** ASIG completes fueling. ARFF truck clears from the scene.
- **Approximately 2220** Pursuant to information the Department has received from ASIG, VS asks ASIG a question about the fuel's Gravity Weight using gallons versus liters. There is some question as to the weight of the fuel in the aircraft. VS crew discovers that there is a fuel imbalance. No fuel was transferred to the outer wing tanks causing a weight and balance issue. This fuel distribution problem is being worked on by ASIG and VS. ASIG (Dave Stillwagon) stated that the fuel distribution is always done by the flight crew and not ASIG. This comment was made by Mr. Stillwagon in an after-event debriefing on June 23, 2010. Had the fuel been properly transferred, VS flight 1K would have been ready for departure.
- **2226** ARFF is requested to return to VS due to VS needing more fuel for the outer tanks located in the aircrafts wings.
- **2232** AOS requests Connecticut State Police (CSP) be dispatched to VS for an unruly passenger. CSP speaks with VS flight attendant who states that CSP trooper is not needed on the A/C. The CSP trooper returns to his car but remains on scene. Shortly after, he is called again, and this time the trooper enters the A/C and walks from front to back of A/C. No arrest is made.
- **Approximately 2245** AOS Eric Larson places a call to CBP to inform them that while it is still a Fuel and Go, there is a greater possibility that VS may cancel the flight. Mr. Larson wanted to forewarn CBP that this might happen. VS at this point in time had not canceled the flight.
- **Approximately 2230 – 2245** AOS John Moody informs the VS captain that, once an international diverted flight is canceled, it generally takes CPB three hours or more to clear all passengers. Mr. Moody did this so the captain of VS would understand the process with CBP at BDL.
- **Approximately 2300-2310** VS crew cancels the flight.
- **Approximate time is unknown but took place after VS canceled** AOS Phil Attanasio called CBP to notify them of the cancellation and the need to clear VS customers at BDL. AOS Attanasio placed three calls to CPB. The first call to CBP was answered by an agent (name not know). Mr. Attanasio asked this agent if VS could be deplaned into CBP (at that time) the answer from the agent is “no - I’m only one person I need more staff - let me get off the phone and I will call more (CBP) agents in.” The second and third call was to CBP Supervisor Mr. Chula’s. AOS Attanasio asked if they can deplane the VS customers into the FIS building. Mr. Chula’s response was “let me get off the phone so that I can call more agents (CBP) in.” Mr. Attanasio’s places the final call to Mr. Chula at approximately **2330-2350**; CBP had full staffing and was ready for VS to enter the FIS building.
- AOS John Moody talked with the captain of VS about options to get the A/C to the FIS facility – i.e., taxi A/C, busing passengers or ASIG towing the A/C. VS

Captain looks at FIS gate layout with AOS John Moody and decides he will taxi A/C.

- **2303** Medical issue on board A/C is reported.
- **2303** CSP Trooper 1148 reports that the crew is almost ready to time out for flying for the night.
- **2304** CSP Trooper 1148 reports that CBP is trying to get more officers into FIS.
- **Approximately 2315 – 2330** AOS Phil Attanasio recalls the VS captain having a conversation with a group of (ASIG) employees stating that he wanted to get customers off the aircraft. Mr. Attanasio interjects to the VS captain that the unloading of customers is a CPB call (decision).
- **2315** Airport Operations reports that two Hertz buses and two BDL buses will be used to escort passengers off aircraft. When the captain of VS decided to taxi the A/C to FIS, these buses were canceled, but remained ready to assist and were available if needed.
- **Approximately 2320** ASIG attaches an air-conditioning cart to A/C (which was requested by VS crew shortly after canceling the flight).
- **2349** VS crew calls ATC Ground and requests to start engines and advises that they need an air-start cart to turn engines.
- **2351** VS asks BDL ATC ground if they are clear to start engines. BDL ground reaches out to BDL Airport Operations via phone to ascertain if equipment is clear of rear of the A/C. BDL Airport Operations (AOS John Moody) advises that he will be on the freq in one minute.
- **2352** VS advises BDL air traffic control (ATC) ground that they need to start engines or else they will run out of (duty) unclear. BDL ATC advises that vehicles are being moved out of the way. State-6 on BDL ground states VS needs to talk to ground handler (via headset plug-in through A/C) for clearance to start engines. VS crew attempts to start their engines but the one air-start cart is not powerful enough to accomplish this. ASIG goes to retrieve another air-start cart; they are escorted by AOS John Moody. Mr. Moody escorts ASIG so as to provide them with the quickest route to and from the staging area where the air-start carts are kept. ASIG has to borrow an air-start cart from one of the airlines. ASIG has to test three air-start carts since two would not operate properly, the third one works and ASIG (with BDL Operations escort) are in route back to A/C.
- **0007** VS crew (captain) calls BDL ATC ground saying he has lost contact with ground crew (ASIG) and he asks what frequency he can use to contact them. BDL airport operations State Six answers that the ground crew (ASIG) is coming with another air-start unit. VS crew answers back (not sure of the transmission) saying something about having 10-minutes and “not your fault” (State-6) until they timed out.
- **0009** VS Crew (multiple transmissions garbled) advises that they will not move A/C (saying something about 30 minutes to move A/C [possible timed out]). VS crew wants customers off. BDL State-6 answers back that they will bring the air-stairs up and will start busing. Operations reaches out for buses from landside stakeholders.
- **0015 - 0019** Operations has organized six vehicles to shuttle VS passengers from the VS A/C parked on the deicing pad to the FIS building. Two Hertz buses, two

BDL owned airfield buses, one Standard Parking bus and one ASIG crew van. VS passengers are deplaned in between the medical issues and at times are stopped to allow EMTs access to passengers.

- **0022** EMTs are called to the A/C for medical issues.
- **0024** ARFF calls for ambulance; East Granby is responding.
- **0028** ARFF call for another ambulance.
- **0029** East Windsor is responding.
- **0039** East Granby Ambulance arrives and is given two patients to assess; both refuse treatment.
- **0041** East Windsor ambulance arrives.
- **0115** East Windsor transports one patient with cardiac issue to St. Francis Hospital.
- **0117** East Granby ambulance dispatched to FIS building for another medical.
- **0119** ARFF requests another ambulance; Windsor Locks responding.
- **0127** Windsor Locks ambulance arrives.
- **0133** East Granby enroute to St. Francis from FIS.
- **Approximately 0130 - 0140** All VS customers are in the FIS with the exception of two unaccompanied minors (UM), who are being supervised by the lead VS flight attendant. Crew and UM's were bused shortly after this to the FIS building. The UMs were the charge of VS flight crew, which was confirmed by Lead VS flight attendant.
- **Approximately 0120 – 0130** ASIG working on off loading the bags from the belly of the VS flight. CBP was unwilling to start processing VS passengers until all of their bags were in the FIS building. ASIG (Sharon Scavatto) had a conversation with CBP and once bag amount reached 70% (per Gary Belanger CBP Port Director), Customs would start processing passengers.
- **Approximately 0230 – 0245** last bag is delivered to FIS building.
- **Approximately 0300** Multiple small buses (two airport owned and one Standard Parking) are positioned street side FIS to assist transporting passengers to the Sheraton Hotel. The Sheraton Hotel was used as a staging area for VS customers while ASIG worked with the bus companies on arrival / departure schedule (for busses) from BDL – EWR.
- **Approximately 0300 – 0315** One DATTCO bus took 57 VS customers (and some VS crew) from outside the FIS building to EWR.
- **Approximately 0530** The last passenger arrives at the Sheraton.
- **Approximately 0630** two buses depart from Sheraton to EWR.
- **Approximately 0700** Last 13 passengers (approximately) at the Sheraton elected to take a mid day bus to EWR, Sheraton provided rooms for them to take showers in.

Benjamin Parish, Bradley International Airport Assistant Administrator, arrived at 0020 at the airport. This timeline was established with the help of John Moody, Phil Attanasio and Eric Larson, who are Airport Operations Specialists (AOS). The times are as accurate as can be determined. The portion of the timeline relating to ARFF and CSP was gathered from the CSP dispatch and the CSP Call Summary Report. The communication between VS and BDL Air Traffic Control Tower (ATCT) was gathered

from LiveATC.net (a website that posts audio from ATCT). What is stated above is a snapshot of the events; multiple conversations took place between ASIG, Airport Operations, Customs, ARFF, Maintenance, etc. On the BDL operations shift change that took place at 2200, two AOS (Phil Attanasio and Eric Larson) were held over to help with the fuel and go and stayed on when it morphed into a cancellation. They were released around 0500.