

ASRS Database Report Set

Fuel Management Issues

Report Set Description.....A sampling of reports referencing incidents of fuel mismanagement, and operational concerns for fuel planning.

Update Number35

Date of UpdateMarch 30, 2022

Number of Records in Report Set.....50

Records within this Report Set have been screened to assure their relevance to the topic.



TH: 262-7

MEMORANDUM FOR: Recipients of Aviation Safety Reporting System Data

SUBJECT: Data Derived from ASRS Reports

The attached material is furnished pursuant to a request for data from the NASA Aviation Safety Reporting System (ASRS). Recipients of this material are reminded when evaluating these data of the following points.

ASRS reports are submitted voluntarily. Such incidents are independently submitted and are not corroborated by NASA, the FAA or NTSB. The existence in the ASRS database of reports concerning a specific topic cannot, therefore, be used to infer the prevalence of that problem within the National Airspace System.

Information contained in reports submitted to ASRS may be clarified by further contact with the individual who submitted them, but the information provided by the reporter is not investigated further. Such information represents the perspective of the specific individual who is describing their experience and perception of a safety related event.

After preliminary processing, all ASRS reports are de-identified and the identity of the individual who submitted the report is permanently eliminated. All ASRS report processing systems are designed to protect identifying information submitted by reporters; including names, company affiliations, and specific times of incident occurrence. After a report has been de-identified, any verification of information submitted to ASRS would be limited.

The National Aeronautics and Space Administration and its ASRS current contractor, Booz Allen Hamilton, specifically disclaim any responsibility for any interpretation which may be made by others of any material or data furnished by NASA in response to queries of the ASRS database and related materials.

A handwritten signature in blue ink, appearing to read "B. Hooey".

Becky L. Hooey, Director
NASA Aviation Safety Reporting System

CAVEAT REGARDING USE OF ASRS DATA

Certain caveats apply to the use of ASRS data. All ASRS reports are voluntarily submitted, and thus cannot be considered a measured random sample of the full population of like events. For example, we receive several thousand altitude deviation reports each year. This number may comprise over half of all the altitude deviations that occur, or it may be just a small fraction of total occurrences.

Moreover, not all pilots, controllers, mechanics, flight attendants, dispatchers or other participants in the aviation system are equally aware of the ASRS or may be equally willing to report. Thus, the data can reflect **reporting biases**. These biases, which are not fully known or measurable, may influence ASRS information. A safety problem such as near midair collisions (NMACs) may appear to be more highly concentrated in area “A” than area “B” simply because the airmen who operate in area “A” are more aware of the ASRS program and more inclined to report should an NMAC occur. Any type of subjective, voluntary reporting will have these limitations related to quantitative statistical analysis.

One thing that can be known from ASRS data is that the number of reports received concerning specific event types represents the **lower measure** of the true number of such events that are occurring. For example, if ASRS receives 881 reports of track deviations in 2010 (this number is purely hypothetical), then it can be known with some certainty that at least 881 such events have occurred in 2010. With these statistical limitations in mind, we believe that the **real power** of ASRS data is the **qualitative information** contained in **report narratives**. The pilots, controllers, and others who report tell us about aviation safety incidents and situations in detail – explaining what happened, and more importantly, **why** it happened. Using report narratives effectively requires an extra measure of study, but the knowledge derived is well worth the added effort.

Report Synopses

ACN: 1853972 *(1 of 50)*

Synopsis

B767 flight crew reported a mechanical diversion during an ETOPS flight due to a failed left fuel quantity and fuel totalizer indicators. After extensive coordination with Maintenance Control, Operations, and Chief Pilot flight executed a safe landing.

ACN: 1853217 *(2 of 50)*

Synopsis

Single Engine Pilot reported an engine failure due to fuel starvation. The pilot landed off airport and found the fuel tanks were dry. The pilot later landed at the nearby airport to refuel and continued to the original destination.

ACN: 1852403 *(3 of 50)*

Synopsis

Cessna 150 single pilot reported an alternator failure during cruise causing multiple electrical issues. Pilot requested priority handling and executed a mechanical diversion to a safe landing.

ACN: 1851855 *(4 of 50)*

Synopsis

C152 pilot reported total loss of communications and elected to divert to a precautionary landing.

ACN: 1851573 *(5 of 50)*

Synopsis

A321 Captain reported a fuel transfer problem caused a diversion and precautionary landing.

ACN: 1851330 *(6 of 50)*

Synopsis

B737-800 flight crew reported that another airline crew and ATC communicated that their aircraft had a fuel leak from the top of the wing. The flight crew elected to make an air turn back and a precautionary landing.

ACN: 1849677 *(7 of 50)*

Synopsis

Citabria pilot reported engine roughness occurred during cruise flight and landed safely off-airport. Post-flight, the pilot found that one fuel tank was empty and the other contained minimal fuel.

ACN: 1847334 *(8 of 50)*

Synopsis

Pilot reported fuel starvation caused engine power loss during climb, resulting in a return to the departure airport and a precautionary landing.

ACN: 1847198 *(9 of 50)*

Synopsis

Dash 8 Captain reported a fuel imbalance was indicated after takeoff. The crew elected to continue to the destination, believing the imbalance was due to an indicating anomaly, not an actual fuel imbalance. Post-flight, it was determined there was a large fuel imbalance which had been developing during the flight.

ACN: 1846936 *(10 of 50)*

Synopsis

Corporate pilot reported ZJX Center rerouted them such that flying time was increased considerably and caused a low fuel situation. Reporter stated concerns that reroutes using the new RNAV procedures in the area may be inefficient and creating unsafe situations.

ACN: 1846925 *(11 of 50)*

Synopsis

Experimental aircraft pilot reported the engine quit during approach due to it sucking air from the right fuel tank. Pilot was high enough on the approach to perform a normal glide

landing. Reportedly, the right tank transfers fuel to the left-hand tank when the fuel selector is on the "BOTH" position causing the right tank to go low on fuel.

ACN: 1846866 *(12 of 50)*

Synopsis

PA-23 Pilot reported an engine lost a significant amount of oil which resulted in a diversion to landing. Maintenance determined a loose screw on a newly installed part caused the leak. After repairs were made the pilot departed without refueling, which resulted in fuel starvation and a diversion to landing.

ACN: 1845772 *(13 of 50)*

Synopsis

Student pilot flying experimental aircraft reported engine power loss on final approach. Conducted off airport landing without incident.

ACN: 1845466 *(14 of 50)*

Synopsis

BE-35 pilot reported the engine quit after having selected the wrong fuel tank during scheduled fuel management procedure. The pilot decided to successfully divert and land at the nearest airport rather than troubleshoot in the air.

ACN: 1844355 *(15 of 50)*

Synopsis

Air Carrier First Officer reported a fume event during initial climb.

ACN: 1843317 *(16 of 50)*

Synopsis

A320 flight crew reported a fuel leak from the #2 engine resulted in a fuel imbalance. The flight crew performed a successful diversion and landing.

ACN: 1842134 *(17 of 50)*

Synopsis

A321 Captain reported a fuel imbalance during flight. Captain reported an incorrect MEL was applied to the aircraft when it made the return flight to ZZZ with another crew.

ACN: 1838701 *(18 of 50)*

Synopsis

B737-800 First Officer reported a fuel imbalance message in flight, causing an in-flight shut down of the #2 engine and a return to the departure airport.

ACN: 1837145 *(19 of 50)*

Synopsis

B737-800 flight crew reported a fuel imbalance after departure. The crew ran the QRH checklist and determined there was a possible fuel leak. The crew made the decision to shutdown the suspect engine and return to their departure airport for maintenance.

ACN: 1834396 *(20 of 50)*

Synopsis

B737 flight crew reported that shortly after takeoff, the First Officer's flight director began malfunctioning, leading to the MCP and heading bug also being inoperative.

ACN: 1834068 *(21 of 50)*

Synopsis

Technician reported that during preparation for a repair procedure, it was discovered that Engineering had mistakenly applied the wrong MEL and did not have the authority to perform that function. The aircraft flew in service out of compliance for ETOPS.

ACN: 1833540 *(22 of 50)*

Synopsis

Flight Instructor and Student reported the engine failed during cruise due to fuel exhaustion and an off airport landing was done.

ACN: 1833334 *(23 of 50)*

Synopsis

Dispatcher reported failure of the automated ACARS function on their work station complicated an event with an aircraft having fuel trapped in a wing tank due to component malfunction.

ACN: 1832670 *(24 of 50)*

Synopsis

Flight Instructor reported that a miscalculation of fuel requirements resulted in fuel exhaustion and an off-airport landing.

ACN: 1832413 *(25 of 50)*

Synopsis

Pilot reported performing an in-flight engine shut down due to a suspected fuel issue and conducted a precautionary landing.

ACN: 1832206 *(26 of 50)*

Synopsis

Twin Engine Instructor Pilot reported an engine failure in flight due to fuel starvation. One main wing tank ran dry after not being serviced at the FBO.

ACN: 1831723 *(27 of 50)*

Synopsis

Pilot of a small aircraft reported an uneventful landing off airport due to running out of fuel. The reporter stated the aircraft had "engine blow by" and the fuel consumption rate in the manual is not correct.

ACN: 1829863 *(28 of 50)*

Synopsis

Pilot of a single engine aircraft reported losing engine power on departure, returned to the airport, and landed safely. The reporter stated after landing they discovered the fuel gauge was inoperative.

ACN: 1828101 *(29 of 50)*

Synopsis

Pilot reported engine failure at cruise and elected to divert to the nearest suitable airport. Reporter discovered that the airport was no longer suitable for aircraft landings, and needs to be updated on charts and aircraft software.

ACN: 1827829 *(30 of 50)*

Synopsis

B777-200 Flight Crew reported overweight configuration inflight due to overfueling.

ACN: 1827200 *(31 of 50)*

Synopsis

C320 pilot reported landing without clearance due to low fuel caused by a go-around and conflict with military jet aircraft and a commercial passenger jet that didn't clear the runway in time.

ACN: 1825280 *(32 of 50)*

Synopsis

Pilot reported encountering engine issues during initial climb and immediately returned to the airport where it was discovered the aircraft had been mistakenly fueled with Jet-A.

ACN: 1824040 *(33 of 50)*

Synopsis

Air carrier Captain reported an overweight landing at destination airport caused by failure to monitor fuel burn during flight. Captain cited rusty pilot skills caused by COVID inactivity as a contributing factor.

ACN: 1821753 *(34 of 50)*

Synopsis

GA pilot reported running low on fuel with the runway closed and without sufficient fuel to divert, elected to land on a taxiway.

ACN: 1821354 *(35 of 50)*

Synopsis

MD11 flight crew reported multiple systems failures that required attention and distracted them, resulting in exceeding an airspeed limitation.

ACN: 1821200 *(36 of 50)*

Synopsis

TRACON Controller and Air Carrier pilot reported the pilot descended below the Minimum Vectoring Altitude due to a misunderstanding of the assigned altitude between the two parties.

ACN: 1819534 *(37 of 50)*

Synopsis

Experimental aircraft pilot reported engine problems developed during cruise, resulting in an off-airport landing. Pilot suspected that the fuel supply system was not working properly.

ACN: 1819298 *(38 of 50)*

Synopsis

BE-50 pilot reported the right engine lost power in flight. The reporter landed safely and discovered the right fuel tank was empty even though they had requested the fueler to fill it prior to departure.

ACN: 1818516 *(39 of 50)*

Synopsis

GA pilot reported making an off airport landing due to fuel starvation.

ACN: 1817984 *(40 of 50)*

Synopsis

Bonanza pilot reported distraction contributed to improper fuel balance, causing fuel starvation to the engine and an In flight Shut Down and precautionary landing.

ACN: 1817247 *(41 of 50)*

Synopsis

A321 Captain reported a wing fuel imbalance limit exceedance during cruise.

ACN: 1816825 *(42 of 50)*

Synopsis

B737 Captain reported communication difficulties exacerbated conditions during bad weather causing a diversion to refuel and later arrive safely at original destination airport.

ACN: 1815189 *(43 of 50)*

Synopsis

ZAN Controller reported providing vectors to an IFR aircraft that after losing its navigational avionics, experienced a temporary engine failure, and was also low on fuel.

ACN: 1814644 *(44 of 50)*

Synopsis

DA-20 instructor pilot reported executing a successful forced landing in a field after experiencing engine problems related to fuel supply issues.

ACN: 1814266 *(45 of 50)*

Synopsis

Air carrier flight crew reported numerous overlapping problems caused them to depart for destination airport with reduced IMC capability and minimum fuel, resulting in minimum fuel before landing.

ACN: 1813934 *(46 of 50)*

Synopsis

Captain reported diverting due to fuel indication issues and realized that he had been misinformed about a CAS miscomparison message being related to the fuel system MEL. On final approach a Gear Disagree occurred which was resolved through the alternate gear extension procedure.

ACN: 1812829 *(47 of 50)*

Synopsis

B737 flight crew reported an air turn back after 3 knob throttle split developed in climb with a lack of power on an engine following a 2.5 hour maintenance delay for a fuel leak issue.

ACN: 1811820 *(48 of 50)*

Synopsis

ERJ-175 flight crew reported electing to land with a fuel imbalance rather than complete the QRH procedure.

ACN: 1811457 *(49 of 50)*

Synopsis

B737 NG First Officer reported differences between MEL narrative and the actual indications of the aircraft systems when departing on an ETOPS flight.

ACN: 1811311 *(50 of 50)*

Synopsis

C182 pilot reported a force landing due to a fuel issue during landing approach.

Report Narratives

Time / Day

Date : 202111

Local Time Of Day : 0601-1200

Place

Locale Reference.ATC Facility : ZZZZ.ARTCC

State Reference : FO

Altitude.MSL.Single Value : 32000

Environment

Flight Conditions : VMC

Aircraft

Reference : X

ATC / Advisory.Center : ZZZZ

Aircraft Operator : Air Carrier

Make Model Name : B767 Undifferentiated or Other Model

Crew Size.Number Of Crew : 3

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Cruise

Component

Aircraft Component : Indicating and Warning - Fuel System

Aircraft Reference : X

Problem : Failed

Person : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : First Officer

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Instrument

Experience.Flight Crew.Total : 1550

Experience.Flight Crew.Last 90 Days : 207

Experience.Flight Crew.Type : 830

ASRS Report Number.Accession Number : 1853972

Human Factors : Workload

Human Factors : Troubleshooting

Person : 2

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Pilot Not Flying

Function.Flight Crew : Captain
Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Multiengine
Qualification.Flight Crew : Air Transport Pilot (ATP)
Experience.Flight Crew.Last 90 Days : 124
Experience.Flight Crew.Type : 1442
ASRS Report Number.Accession Number : 1853991
Human Factors : Workload
Human Factors : Troubleshooting

Events

Anomaly.Aircraft Equipment Problem : Less Severe
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy
Anomaly.Deviation / Discrepancy - Procedural : Clearance
Anomaly.Inflight Event / Encounter : Fuel Issue
Detector.Person : Flight Crew
When Detected : In-flight
Result.General : Maintenance Action
Result.General : Flight Cancelled / Delayed
Result.Flight Crew : Overcame Equipment Problem

Assessments

Contributing Factors / Situations : Aircraft
Primary Problem : Aircraft

Narrative: 1

Prior to ETOPS entry, our left fuel tank indicator and totalizer blanked. After consulting with Maintenance Control, Chief Pilot and Dispatch, we determined our best course of action was to divert to ZZZ to refuel so we had the gas to take a non ETOPS track. When we made this decision, we were approximately 30000 lbs overweight, and we decided that since it was not time critical, we would burn down to below maximum landing weight, instead of breaking a limitation. In order to do so, we had to hold for approximately 2 hours, and dump roughly 4,500 lbs of fuel between 22,000 and 20,000 feet.

Narrative: 2

During Preflight Planning I was briefed by our Dispatcher that the inbound crew had experienced a failure of one of fuel quantity indicators and that if ZZZ1 Maintenance could not fix it we would need to be routed on a Non-ETOPS route as the MEL for a deferral of this system does not allow for [type] Operations. When we arrived at the aircraft, the Maintenance Technician reported that the Fuel Quantity indicator had been repaired and that is what we observed during preflight. Shortly after reaching our cruise altitude out of ZZZ1 we noticed that the Left Fuel Quantity indicator and Totalizer were blank. While the FO (First Officer) and I both agreed that MEL Restrictions do not apply after the point of Dispatch, we were questioning whether or not this would effect our ETOPS ability since we were not yet at the Oceanic Entry Point [OEP]. Unable to find a specific reference for this in the FM, FOM, or [manual] we decided to contact Dispatch and Maintenance Control via Satcom to consult on this. Doing so is highly encouraged per the FOM. The aircraft MEL includes requirements unique to the dispatching of ETOPS flights. Each ETOPS category (120, 180, 207, etc.) has specific system requirements which become progressively more stringent. For systems which fail or are degraded prior to beginning the takeoff roll, information on required system redundancy, operating constraints, ETOPS area applicability, etc., is provided in the MEL information for the item in question. Note: For

defects discovered before flight, the MEL and/or Configuration Deviation List [CDL] considerations must be applied prior to flight (the beginning of the takeoff roll). Equipment that becomes inoperative during flight (in or prior to ETOPS airspace) is handled using Flight Manual [FM] guidance and is not subject to MEL/CDL considerations or limitations until after that flight. The Captain and Dispatcher are strongly encouraged to consult with Maintenance Control when determining if a diversion for a mechanical reason. It should be noted that we could find no checklist in the 767 Flight Manual [FM] for a failed or blanked fuel quantity indicator. With both Dispatch and Maintenance Control on the call we discussed our status. While we all agreed that the MEL for this malfunction involved a restriction on Extended Range operations, we also agreed that those restriction do not apply after the point of dispatch, however the Dispatcher had a concern that the FARs require a review of the plane's system capabilities prior to the OEP and that an adjustment to the Flight Plan may be prudent. Dispatch advised us that we did not currently have the fuel to accomplish a re-route north on to Track A, which was a Non-ETOPS track, so if we wanted to use a Non-ETOPS route, we would need to divert and re-fuel. Since the necessity of this was still a question in my mind, I decided to ask for the Chief Pilot to give input as an additional resource. With the Chief Pilot now on the call we discussed this further. While we again agreed to what was previously discussed concerning any restrictions around continuing the flight, the subject of continuing the flight past the OEP on an ETOPS route was a concern for the Dispatcher, who referenced FAR 121.631 (e) which states: (e) Before the ETOPS Entry Point, the pilot in command for a supplemental operator or a dispatcher for a flag operator must use company communications to update the flight plan if needed because of a re-evaluation of aircraft system capabilities. With this in mind, the Chief Pilot's input was that the flight is operated as a shared responsibility between the Captain and Dispatcher and that we should discuss and agree to a course of action. While at first, the FO and I were leaning toward continuing the flight, the input and concern of the Dispatcher gave my further pause for thought. I have a little less than 2 years operating flights in the International ETOPS Theater and this was my first time dealing with a diversion scenario. With this in mind, the FO and I felt that while the Dispatcher's idea of a diversion and re-fuel for a Non-ETOPS route was conservative, it was also likely the safest course of action, so that's what we decided to do. We coordinated with Dispatch for a diversion into ZZZ with a "gas and go" recovery plan. Since we were well above the aircraft's maximum landing weight, this would involve dumping approximately 5000lbs of fuel from the Center Tank and then holding for 1 hour to burn down to our Maximum Landing weight of 320,000 lbs. We considered an overweight landing as a way of expediting the recovery plan, but as there was no immediate safety need to get the airplane on the ground, we decided that the safer course of action was to reduce our weight to within the FM Limits. With the diversion plan agreed to, we recalled the Relief Pilot to the flight deck, accomplished the necessary non-normal checklists to include the Diversion/Recovery guide and proceeded to ZZZ. As for the Fuel Jettison, we coordinated and received clearance from ZZZZ ATC to dump our center tank fuel. This was accomplished off the Western Coast of Country X between FL220 and FL200. We then held at Fix ZZZZZ northwest of ZZZ at 8000ft for approximately 55 minutes to burn down to landing weight. After arriving in ZZZ we coordinated with Dispatch, ZZZ Station, and local Maintenance to apply the necessary MEL to the Fuel Indicating System, re-flight plan for a Non-ETOPS flight, perform a Lav and Water service and take on additional catering for the next leg. Before departing we confirmed our legality to continue with the FAR 117 Desk. We also coordinated with the Chief Purser as to the legality and fitness of the flight attendants to continue. With all crew members in agreement that we were fit to continue we departed and flew from ZZZ to ZZZ1. Of note, during our Hold to reduce weight, we did have a Medical Situation Develop involving an elderly passenger. I would like to handle that as a separate [report] which will follow this [report] so that we keep these two issues separate.

Synopsis

B767 flight crew reported a mechanical diversion during an ETOPS flight due to a failed left fuel quantity and fuel totalizer indicators. After extensive coordination with Maintenance Control, Operations, and Chief Pilot flight executed a safe landing.

Time / Day

Date : 202111

Local Time Of Day : 0001-0600

Place

Altitude.AGL.Single Value : 0

Environment

Flight Conditions : VMC

Weather Elements / Visibility.Visibility : 10

Light : Daylight

Ceiling.Single Value : 22000

Aircraft

Reference : X

Aircraft Operator : Personal

Make Model Name : Small Aircraft, Low Wing, 1 Eng, Retractable Gear

Crew Size.Number Of Crew : 1

Operating Under FAR Part : Part 91

Flight Plan : VFR

Mission : Personal

Flight Phase : Landing

Route In Use : Direct

Route In Use : Visual Approach

Component : 1

Aircraft Component : Fuel

Aircraft Reference : X

Problem : Improperly Operated

Component : 2

Aircraft Component : Fuel Line, Fittings, & Connectors

Aircraft Reference : X

Problem : Malfunctioning

Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Personal

Function.Flight Crew : Single Pilot

Qualification.Flight Crew : Commercial

Experience.Flight Crew.Total : 556.8

Experience.Flight Crew.Last 90 Days : 10.5

Experience.Flight Crew.Type : 150

ASRS Report Number.Accession Number : 1853217

Human Factors : Confusion

Human Factors : Time Pressure

Human Factors : Troubleshooting
Human Factors : Situational Awareness

Events

Anomaly.Aircraft Equipment Problem : Critical
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy
Anomaly.Ground Event / Encounter : Other / Unknown
Anomaly.Inflight Event / Encounter : Fuel Issue
Detector.Person : Flight Crew
Were Passengers Involved In Event : N
When Detected : In-flight
Result.Flight Crew : Took Evasive Action
Result.Flight Crew : Landed in Emergency Condition

Assessments

Contributing Factors / Situations : Aircraft
Contributing Factors / Situations : Human Factors
Primary Problem : Human Factors

Narrative: 1

Miss Calculation of On Board Usable Fuel. Inaccurate Gauge Reading Along with Additional Flight Time. Estimated Time En-Route 2 Hours 20 Minutes. Flight Time At Low Fuel Was 3 hours into flight. 40 Gallons of Gas Was Estimated Onboard at Take off. After Reviewing the situation, its likely more accurate that 35-37 Gallons of Fuel Were On Board. it Was also noted that a "Sump Valve" Had fallen off during flight (though no evidence of leaking fuel was found). At approx 2.5 hours into the flight we cancelled Flight Following to descend and land at ZZZ to get fuel. At which time we noted approx. 8 gallons of fuel on board. 15 minutes later, we ran out of fuel and the engine began to "sputter". Assuming we were in fact running out of fuel it was my decision to land on a county road just south of ZZZ. There was no visual fuel inside of the tanks upon inspection. After retrieving 15 gallons of fuel from ZZZ , we put 10 gallons in the left side and 5 gallons in the right side so i could take off and fly to ZZZ were i would pick up 20 more gallons of fuel. After putting in the 15 gallons on the county road is when i noticed the "sump valve" was missing (but no noticeable leaks were found). After landing at ZZZ. Again no noticeable leaks were found. And yet again after our final landing at ZZZ1, no dripping leaks were found, but the valve body and bottom of wing were damp from fuel moisture, but its not noted at the a "large" amount of fuel had been lost. The local mechanic is scheduled to inspect and fix the Valve before any further flying. Myself, [the] Pilot in command has a learned a hefty lesson that watching the "flight time" needs to be more of a priority, rather than assumptions time, and indicated fuel in the tank gauges. Moving forward, flight planning will be better done and executed to avoid such an incident from happening again. No Bodily Injuries. No Aircraft Damage. No Property Damage. There were no other incidents. All other factors contributing to the flight went as expected. It is noted that flying at 8,500 Feet we experience 32-35 knot heads winds for the duration of our flight.

Synopsis

Single Engine Pilot reported an engine failure due to fuel starvation. The pilot landed off airport and found the fuel tanks were dry. The pilot later landed at the nearby airport to refuel and continued to the original destination.

Time / Day

Date : 202111

Local Time Of Day : 1201-1800

Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Relative Position.Distance.Nautical Miles : 349

Altitude.MSL.Single Value : 7000

Environment

Flight Conditions : VMC

Weather Elements / Visibility.Visibility : 10

Ceiling : CLR

Aircraft

Reference : X

ATC / Advisory.Tower : ZZZ

Aircraft Operator : Personal

Make Model Name : Cessna 150

Crew Size.Number Of Crew : 1

Operating Under FAR Part : Part 91

Flight Plan : IFR

Mission : Personal

Flight Phase : Cruise

Route In Use : Direct

Airspace.Class D : ZZZ

Component

Aircraft Component : AC Generator/Alternator

Aircraft Reference : X

Problem : Failed

Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Personal

Function.Flight Crew : Single Pilot

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Multiengine

Experience.Flight Crew.Total : 750

Experience.Flight Crew.Last 90 Days : 72

Experience.Flight Crew.Type : 600

ASRS Report Number.Accession Number : 1852403

Human Factors : Communication Breakdown

Human Factors : Troubleshooting

Human Factors : Workload

Human Factors : Time Pressure

Communication Breakdown.Party1 : Flight Crew
Communication Breakdown.Party2 : ATC

Events

Anomaly.Aircraft Equipment Problem : Critical
Anomaly.ATC Issue : All Types
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy
Anomaly.Deviation / Discrepancy - Procedural : Clearance
Anomaly.Inflight Event / Encounter : Fuel Issue
Detector.Person : Flight Crew
When Detected : In-flight
Result.General : Maintenance Action
Result.General : Flight Cancelled / Delayed
Result.Flight Crew : Requested ATC Assistance / Clarification
Result.Flight Crew : Landed in Emergency Condition
Result.Air Traffic Control : Provided Assistance

Assessments

Contributing Factors / Situations : Aircraft
Primary Problem : Aircraft

Narrative: 1

Departed ZZZ1 for ZZZ2 4h 14 min flight with full main and auxiliary tanks 3h 45min and 2hr 25 min endurance respectively. Activated fuel transfer after 2 hrs of flight unaware there was insufficient electrical power to pump the fuel. About an hour later I Experienced complete electrical failure with loss of all communication/ GPS and unable to pump fuel from auxiliary to main tanks with fuel tank reading empty. ATC indicated that my transponder had failed and asked me to recycle it. They were unable to hear my transmission on a hand held radio. I tried Guard 121.50 without response. I saw there was no traffic in my vicinity on my iPad and descended from my assigned altitude towards the nearest airport ZZZ broadcasting at Tower frequency alternating with 121.50. Close to ZZZ, I could hear the controller intermittently. I continued to broadcast my situation and radio failure. The Controller told me that he could hardly hear me and that radio failure was not urgent. As I descended toward Runway XX he asked me to go-around. I replied unable and landed. I asked for progressive taxi to the closest FBO and he told me that was not urgent either and asked me to hold where I was. I waited until a maintenance vehicle came to me and I explained my situation and he directed me to the closest maintenance facility where my engine started to stutter from fuel exhaustion. The mechanic confirmed alternator failure with depleted battery and ordered a replacement alternator and removed my battery for charging.

Synopsis

Cessna 150 single pilot reported an alternator failure during cruise causing multiple electrical issues. Pilot requested priority handling and executed a mechanical diversion to a safe landing.

Time / Day

Date : 202110

Local Time Of Day : 0601-1200

Place

Locale Reference.ATC Facility : ZZZ.TRACON

State Reference : US

Relative Position.Distance.Nautical Miles : 3

Altitude.MSL.Single Value : 1200

Environment

Light : Daylight

Aircraft

Reference : X

ATC / Advisory.TRACON : ZZZ

Make Model Name : Cessna 152

Operating Under FAR Part.Other

Flight Plan : VFR

Mission : Training

Flight Phase : Landing

Route In Use : Visual Approach

Airspace.Class C : ZZZ

Component

Aircraft Component : Reciprocating Engine Assembly

Aircraft Reference : X

Problem : Malfunctioning

Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Corporate

Function.Flight Crew : Single Pilot

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Private

Experience.Flight Crew.Total : 115.8

ASRS Report Number.Accession Number : 1851855

Human Factors : Situational Awareness

Human Factors : Troubleshooting

Human Factors : Communication Breakdown

Communication Breakdown.Party1 : Flight Crew

Communication Breakdown.Party2 : ATC

Events

Anomaly.Aircraft Equipment Problem : Critical

Anomaly.Deviation / Discrepancy - Procedural : Clearance

Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy

Anomaly.Inflight Event / Encounter : Fuel Issue
Detector.Person : Flight Crew
Were Passengers Involved In Event : N
When Detected : In-flight
Result.General : Maintenance Action
Result.General : Flight Cancelled / Delayed
Result.Flight Crew : Landed As Precaution
Result.Flight Crew : Diverted

Assessments

Contributing Factors / Situations : Aircraft
Contributing Factors / Situations : Human Factors
Primary Problem : Aircraft

Narrative: 1

I acknowledge my mistakes when I diverted my flight to ZZZ on DATE. First of all, my radios stopped working when I switched my frequency to ZZZ1 Approach at XXX.XX. I tried reaching them multiple times to see if they could still hear me. Unfortunately, I am not certain if my means to contact them and inform them about my situation worked. Thus, I was forced to notify them about my need to terminate the flight following and squawk VFR. Secondly, I looked up to the red voltage warning light to look for any signal, however, it was also not working. I was already at a lower altitude at that time, avoiding the ZZZ and class Charlie airspace. When I was already 3 miles east of ZZZ, I decided not to continue to ZZZ2 because the engine began to travel roughly and the fuel gauges were going back and forth to the red line. At that time, I thought I was running out of fuel because I remembered from my very first solo flight from time building I consumed 21.6 gallons out of 24.0 gallons which was a lot. So, I did not climb up to 1,499 feet anymore to wait for light signals. Nevertheless, I still tried my best to observe where the traffic was, and they were using Runway XX. However, I needed to land on Runway XY because I did not have enough space and altitude to make it on Runway XX. I then contacted the ZZZ immediately to let them know what has happened. Lastly, in order to look closely into what has caused the incident to occur, our school's mechanic inspected the airplane. They have confirmed that I experienced an alternator failure.

Synopsis

C152 pilot reported total loss of communications and elected to divert to a precautionary landing.

Time / Day

Date : 202110

Local Time Of Day : 1201-1800

Place

Locale Reference.ATC Facility : ZZZ.ARTCC

State Reference : US

Altitude.MSL.Single Value : 32000

Environment

Flight Conditions : VMC

Light : Daylight

Aircraft

Reference : X

ATC / Advisory.Center : ZZZ

Aircraft Operator : Air Carrier

Make Model Name : A321

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Cruise

Route In Use : Direct

Airspace.Class A : ZZZ

Component

Aircraft Component : Fuel Distribution System

Aircraft Reference : X

Problem : Malfunctioning

Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Captain

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Multiengine

Experience.Flight Crew.Total : 30000

Experience.Flight Crew.Last 90 Days : 240

Experience.Flight Crew.Type : 4000

ASRS Report Number.Accession Number : 1851573

Events

Anomaly.Aircraft Equipment Problem : Critical

Anomaly.Deviation / Discrepancy - Procedural : Weight And Balance

Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy

Anomaly.Deviation / Discrepancy - Procedural : Clearance

Anomaly.Inflight Event / Encounter : Fuel Issue

Detector.Automation : Aircraft Other Automation

Detector.Person : Flight Crew

Were Passengers Involved In Event : N

Result.General : Flight Cancelled / Delayed

Result.Flight Crew : Landed in Emergency Condition

Result.Flight Crew : Requested ATC Assistance / Clarification

Result.Flight Crew : Diverted

Result.Air Traffic Control : Provided Assistance

Assessments

Contributing Factors / Situations : Aircraft

Primary Problem : Aircraft

Narrative: 1

Aircraft X - On DATE, Flight from ZZZ to ZZZ1, made a priority landing due to it being an overweight landing by about 1,500 lbs over max landing weight and a fuel system Fault problem. Landing at ZZZ2. Fuel system Fault caused by the Left Aft Aux tank failed to transfer to center tank. Performed ECAM procedure, called company Dispatch and Company Maintenance to help trouble shoot, but was unable to get fuel out of Aux tank. Myself, my First Officer, Dispatch and Maintenance all agreed best action was to land at ZZZ2, overweight if needed, to get repairs and for better care of passengers. Priority handling was requested with ATC, which is called for in our Company Manual (QRH). CFR was standing at ZZZ2 on landing. Urgency was due to overweight landing and fuel system problem.

Synopsis

A321 Captain reported a fuel transfer problem caused a diversion and precautionary landing.

Time / Day

Date : 202110

Local Time Of Day : 0601-1200

Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Altitude.AGL.Single Value : 200

Environment

Flight Conditions : VMC

Light : Dawn

Aircraft

Reference : X

ATC / Advisory.Tower : ZZZ

Aircraft Operator : Air Carrier

Make Model Name : B737-800

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Takeoff / Launch

Route In Use : Vectors

Airspace.Class B : ZZZ

Component

Aircraft Component : Fuel Storage System

Aircraft Reference : X

Problem : Malfunctioning

Person : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Pilot Flying

Function.Flight Crew : First Officer

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Instrument

Experience.Flight Crew.Total : 1302

Experience.Flight Crew.Last 90 Days : 179

Experience.Flight Crew.Type : 1302

ASRS Report Number.Accession Number : 1851330

Person : 2

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier
Function.Flight Crew : Pilot Not Flying
Function.Flight Crew : Captain
Qualification.Flight Crew : Multiengine
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Instrument
Experience.Flight Crew.Total : 10543
Experience.Flight Crew.Last 90 Days : 240
Experience.Flight Crew.Type : 3593
ASRS Report Number.Accession Number : 1851038
Human Factors : Troubleshooting

Events

Anomaly.Aircraft Equipment Problem : Critical
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy
Anomaly.Deviation / Discrepancy - Procedural : Clearance
Anomaly.Inflight Event / Encounter : Fuel Issue
Detector.Person : Other Person
Detector.Person : Flight Crew
Detector.Person : Air Traffic Control
Were Passengers Involved In Event : N
When Detected : In-flight
Result.General : Maintenance Action
Result.General : Flight Cancelled / Delayed
Result.Flight Crew : Overcame Equipment Problem
Result.Flight Crew : Landed As Precaution
Result.Flight Crew : Returned To Departure Airport
Result.Flight Crew : Requested ATC Assistance / Clarification
Result.Air Traffic Control : Provided Assistance

Assessments

Contributing Factors / Situations : Aircraft
Primary Problem : Aircraft

Narrative: 1

While in the takeoff roll (high speed regime) from Runway XXL we heard a Company crew state on the tower frequency that they noticed a fuel leak from our right wing. Shortly after we rotated Tower also stated that they noticed fuel leaking from our right wing (near the aileron). Engine and fuel instruments were normal. We were handed over to Departure. We requested priority handling, requested vectors and to maintain our initial altitude (4,000 feet MSL). With the autopilot engaged I handled the PF (Pilot Flying) duties along with communications with ATC while CA (Captain) ran the QRH procedure. Due to the nature of our fuel leak the QRH procedure did not give any guidance. CA consulted via radio with Dispatch, Maintenance Control, and the Chief Pilot. After the CA consulted via radio we agreed that the safest course of action was to return back to ZZZ. Due to unknown nature of the fuel leak we felt it was safer to perform an overweight landing than to loiter for more than three hours to burn off sufficient fuel to land below MGLW. Due to the strong NW winds and the high landing speeds we requested Runway XXR for our landing. Aircraft was prepared for landing, FAs (Flight Attendants) and passengers were briefed. CA performed a smooth landing and we stopped the aircraft on the runway for ARFF (Airport Rescue and Firefighting) inspection. ARFF gave us the all clear and we

continued to taxi to our gate. Maintenance met the aircraft at the gate. CA did a great job utilizing all resources at his disposal to manage the situation to a safe outcome.

Narrative: 2

ZZZ, clear, very windy and gusty conditions departing N on [Runway] XXL. I believe the winds were out of the NW at 23G37. We did a max blast, Flaps 5 takeoff using Vr max due to the conditions. In the high speed regime during the takeoff roll. An aircraft on tower frequency said something like, "Aircraft X you are leaking fuel out your right wing". We continued the takeoff and roughly at 150/200 feet I thought Tower said, "Aircraft X, you have smoke coming from your right wing." I said, "Did you say smoke coming from our right wing? Controller said, "No a big cloud of fuel spraying out of your right wing." I asked Controller if they could see where and Controller said it looks like it is on the top of the wing. Controller asked us what our intentions were and I initially said we would like vectors back around to land. Then I told Controller instead of an immediate return, we would like an area where we could run some checklists first. We received priority and I told FO to continue flying and work the radios and I would get out the appropriate checklists. On my iPad I looked up the fuel leak procedures but none really matched what we had. The only procedure was the fuel leak engine checklist. I read it several times and it wanted us to shut the engine down. I searched for any other guidance. Our fuel leak was reported from the top of the wing and not the engine. I asked my FO to see if he could find anything in our manuals more appropriate to our situation. He looked but said he could not find anything. So I asked Dispatch to call me and get a phone patch with Maintenance Control. I told Maintenance Control what we had and that I was open to suggestions. He had no suggestions. I told him there did not appear to be a huge leak and asked him about an over weight landing versus burning fuel down to be within normal landing weight. The Dispatcher said he could get the Chief Pilot on as well to see if he had any suggestions. I said great and he tied in Duty Pilot. Duty Pilot gave me his thoughts and suggestions which I appreciated. Duty Pilot also said to reiterate it is your decision as the Captain using your emergency authority. Communications were spotty and dispatch had to ACARS me the rest of our conversation. After hanging up with Dispatch, FO and I talked further and decided with all things considered we did not want to shut the engine down and add to our problems. Especially with a single engine app. and the winds reporting out of the NW at 23G40 knots. So we decided to return to the airport and do an overweight landing. I briefed the Flight Attendants. After running all the appropriate checklists, briefing the approach and looking at the overweight landing in the FOM we asked ATC for vectors back to Runway XXR. Additionally I requested fire fighting equipment and told Tower we would be stopping on the runway for inspection. I landed smoothly and tried to go easy on the brakes and brought the plane to a stop. Did not set the brakes to keep them cool in case fuel were to drip on them and start a fire. Fire fighters said we looked okay so I told them to follow us to the gate. After clearing the runway I shut the Number 2 Engine down just in case to avoid any potential fire on the Number 2 Engine. Taxied to the gate.

Synopsis

B737-800 flight crew reported that another airline crew and ATC communicated that their aircraft had a fuel leak from the top of the wing. The flight crew elected to make an air turn back and a precautionary landing.

Time / Day

Date : 202110

Local Time Of Day : 1801-2400

Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Altitude.MSL.Single Value : 2200

Environment

Flight Conditions : VMC

Weather Elements / Visibility : Fog

Weather Elements / Visibility.Visibility : 10

Ceiling.Single Value : 10000

Aircraft

Reference : X

Aircraft Operator : Personal

Make Model Name : Champion Citabria Undifferentiated

Crew Size.Number Of Crew : 1

Operating Under FAR Part : Part 91

Flight Plan : None

Mission : Personal

Flight Phase : Cruise

Route In Use : Direct

Component

Aircraft Component : Fuel System

Aircraft Reference : X

Problem : Malfunctioning

Problem : Improperly Operated

Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Personal

Function.Flight Crew : Single Pilot

Qualification.Flight Crew : Private

Experience.Flight Crew.Total : 330

Experience.Flight Crew.Last 90 Days : 13

Experience.Flight Crew.Type : 131

ASRS Report Number.Accession Number : 1849677

Human Factors : Situational Awareness

Events

Anomaly.Aircraft Equipment Problem : Critical

Anomaly.Inflight Event / Encounter : Fuel Issue

Detector.Person : Flight Crew

When Detected : In-flight
Result.General : Flight Cancelled / Delayed
Result.Flight Crew : Landed As Precaution
Result.Flight Crew : Diverted

Assessments

Contributing Factors / Situations : Aircraft
Contributing Factors / Situations : Human Factors
Primary Problem : Ambiguous

Narrative: 1

Approximately 13 miles from destination, [I] experienced rapid engine RPM drop from 2400 to 1500. Called Tower to let them know of engine roughness. Applied carb heat, which lowered engine RPM even greater and it was difficult to maintain altitude. Flew on for a while and removed carb heat to gain additional RPM as I was searching for a field to land in. I was concerned that I would not be able to regain engine power and continued to slowly lose altitude and be out of good options for landing. I found and committed to a grass field and landed uphill without incident. Called Tower from phone to let them know of the safe landing. Checked fuel approximately 30 minutes after landing and noted fuel caps were hard to remove and required me to grab coat to help get a good enough grip to open. Right wing showed empty on dip stick and left wing showed 13 gallons.

Synopsis

Citabria pilot reported engine roughness occurred during cruise flight and landed safely off-airport. Post-flight, the pilot found that one fuel tank was empty and the other contained minimal fuel.

Time / Day

Date : 202110

Local Time Of Day : 1201-1800

Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Altitude.MSL.Single Value : 4500

Environment

Flight Conditions : VMC

Weather Elements / Visibility.Visibility : 10

Light : Daylight

Aircraft

Reference : X

ATC / Advisory.Tower : ZZZ

Aircraft Operator : Personal

Make Model Name : Small Aircraft, Low Wing, 1 Eng, Retractable Gear

Crew Size.Number Of Crew : 1

Operating Under FAR Part : Part 91

Flight Plan : VFR

Mission : Personal

Flight Phase : Cruise

Route In Use : None

Airspace.Class D : ZZZ

Maintenance Status.Maintenance Deferred : N

Maintenance Status.Records Complete : Y

Maintenance Status.Released For Service : Y

Maintenance Status.Required / Correct Doc On Board : Y

Maintenance Status.Maintenance Type : Scheduled Maintenance

Maintenance Status.Maintenance Items Involved : Inspection

Maintenance Status.Maintenance Items Involved : Installation

Maintenance Status.Maintenance Items Involved : Repair

Maintenance Status.Maintenance Items Involved : Testing

Component

Aircraft Component : Fuel Quantity-Pressure Indication

Aircraft Reference : X

Problem : Malfunctioning

Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Personal

Function.Flight Crew : Single Pilot

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Private

Experience.Flight Crew.Total : 1100

Experience.Flight Crew.Last 90 Days : 10
Experience.Flight Crew.Type : 150
ASRS Report Number.Accession Number : 1847334
Human Factors : Time Pressure
Human Factors : Troubleshooting
Human Factors : Situational Awareness

Events

Anomaly.Aircraft Equipment Problem : Critical
Anomaly.Deviation / Discrepancy - Procedural : Weight And Balance
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy
Anomaly.Ground Event / Encounter : Fuel Issue
Anomaly.Inflight Event / Encounter : Fuel Issue
Detector.Person : Flight Crew
Were Passengers Involved In Event : N
When Detected : In-flight
Result.General : Maintenance Action
Result.General : Flight Cancelled / Delayed
Result.Flight Crew : Overcame Equipment Problem
Result.Flight Crew : Inflight Shutdown
Result.Flight Crew : Returned To Departure Airport
Result.Flight Crew : Requested ATC Assistance / Clarification
Result.Air Traffic Control : Provided Assistance

Assessments

Contributing Factors / Situations : Aircraft
Contributing Factors / Situations : Human Factors
Contributing Factors / Situations : Procedure
Primary Problem : Aircraft

Narrative: 1

This marked the first flight of this aircraft in over 2 years after an engine overhaul that simply took longer than expected. This first flight started with an engine start-up, a warm up in the Run-Up Area of ZZZ at Runway XXR, with a positive all-systems check and run-up according to the check-list, a subsequent high-speed taxi on Runway XXR and after a final check a careful first flight of a box-climb to 4,500 ft. directly over the ZZZ airport. The new engine performed flawlessly during all of these trials and all indications were good until the engine experienced loss of power and I was unable to get it to run with full power again. I called ATC and reported the loss of power along with a request to land back on Runway XXR which was granted by ATC. I descended, turned base-to-final and landed on Runway XXR without incident but with a stalled engine and couldn't exit the Runway until I got a requested tow from Operations Truck from ZZZ. Upon thorough inspection it turned out that the cause of the loss of power was fuel starvation and that there was no more remaining fuel in the airplane's tanks, while upon take-off there was an indicated 37 gallons remaining, which, under normal flying conditions and a 12.5 GPH fuel burn should've provided an almost 3 hour flight time, but my flight time was no more than 30 minutes. The last time I fueled the plane (top-off) was a 12 gallon fill-up back in 6 months ago, after which time the Fuel Totalizer had indicated 40 gallons available fuel. Trying to figure out how this was possible, either the plane lost fuel between the last fill-up that did not get indicated on the Fuel Totalizer, or the last fill-up was in fact not a fill-up.

Synopsis

Pilot reported fuel starvation caused engine power loss during climb, resulting in a return to the departure airport and a precautionary landing.

Time / Day

Date : 202110

Local Time Of Day : 1201-1800

Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Altitude.AGL.Single Value : 0

Aircraft

Reference : X

Aircraft Operator : Air Carrier

Make Model Name : Dash 8 Series Undifferentiated or Other Model

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Climb

Component : 1

Aircraft Component : Indicating and Warning - Fuel System

Aircraft Reference : X

Problem : Malfunctioning

Component : 2

Aircraft Component : Fuel Storage System

Aircraft Reference : X

Problem : Improperly Operated

Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Captain

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Instrument

ASRS Report Number.Accession Number : 1847198

Human Factors : Human-Machine Interface

Human Factors : Troubleshooting

Human Factors : Confusion

Events

Anomaly.Aircraft Equipment Problem : Critical

Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy

Anomaly.Inflight Event / Encounter : Fuel Issue

Detector.Automation : Aircraft Other Automation

When Detected : In-flight
Result.General : Maintenance Action

Assessments

Contributing Factors / Situations : Aircraft
Contributing Factors / Situations : Human Factors
Primary Problem : Ambiguous

Narrative: 1

This report is to document an 800 lb fuel imbalance we experienced immediately after take off from ZZZ to ZZZ1. Aircraft X was fueled prior to departure to an indicated 5,900 lbs. Holding short of the runway prior to departure approximately 50 lbs of fuel was transferred from the right to the left tank to achieve 0 lb imbalance indication. This transfer took about :30 seconds to accomplish. Immediately after a normal take off I noticed the fuel quantity numbers changing rapidly. I mentioned to the First Officer we don't have it yet but we are going to get a fuel imbalance message on the ED. At acceleration height we observed a flashing balance message in amber on the ED. I assumed we had a fuel quantity indication problem and elected not to transfer any fuel believing it was balanced perfectly minutes prior. My First Officer wondered if we had developed a massive fuel leak. Observing the quantity indicators it appeared we did not as the two quantity's were decreasing together in lock step, at a normal rate and what appeared to be exactly 400 more on the left and 400 less on the right. We contacted the flight attendants and requested they observe the right wing for evidence of a fuel leak. Referencing the checklist under transfer problems ended with the statement to land at solid bug if imbalance exceeded 600 lbs. First Officer was hand flying the aircraft and trims were centered and no abnormal control forces were noted. I contacted Dispatch to inform them we had a suspected fuel quantity discrepancy. Informed Maintenance Control we had a suspected fuel quantity discrepancy with a 800 lb imbalance left wing heavy. Plan was to proceed to ZZZ1. First Officer hand flew the aircraft from enroute phase to a normal landing somewhere between open bug and solid bug. The First Officer and I believed we had an indication anomaly. That we had perfectly balanced indication prior to departure. That the variance was exactly +400 on the left and -400 on the right. That the trims were centered. That the plane felt normal in control forces. I was humbled and embarrassed when the mechanic lowered the left wing mag stick with my penny and it indicated 360 gallons, approximately 2400 lbs, the same as what was indicated on the left quantity indicator. The walk around to the right wing was marked with much emotion with the realization I/we had disregarded correct information potentially compromising the safety of flight. The right wing mag stick revealed 170 gallons, approximately 1140 lbs resulting in a more than 1200 lb imbalance. The right fuel quantity gauge was indicating approximately 1650 lbs at that time so there was an indication problem. A problem that existed on the ground in ZZZ when the plane was refueled. A problem that remained during the taxi, in flight and remained on the ground in ZZZ1. The right wing quantity I do not believe ever read correctly. We had just started our duty day in ZZZ. Not to discount the possibility you are getting correct information and it was incorrect before. Confirmation bias is strong.

Synopsis

Dash 8 Captain reported a fuel imbalance was indicated after takeoff. The crew elected to continue to the destination, believing the imbalance was due to an indicating anomaly, not an actual fuel imbalance. Post-flight, it was determined there was a large fuel imbalance which had been developing during the flight.

Time / Day

Date : 202110

Local Time Of Day : 0601-1200

Place

Locale Reference.ATC Facility : ZJX.ARTCC

State Reference : FL

Relative Position.Angle.Radial : 0

Relative Position.Distance.Nautical Miles : 0

Altitude.MSL.Single Value : 35000

Environment

Flight Conditions : VMC

Light : Daylight

Aircraft

Reference : X

ATC / Advisory.Center : ZJX

Aircraft Operator : Corporate

Make Model Name : Medium Transport

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 91

Flight Plan : IFR

Mission : Passenger

Flight Phase : Descent

Route In Use.STAR : PRICY1

Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Corporate

Function.Flight Crew : Captain

Qualification.Flight Crew : Flight Instructor

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Air Transport Pilot (ATP)

Experience.Flight Crew.Total : 18000

Experience.Flight Crew.Last 90 Days : 350

Experience.Flight Crew.Type : 1200

ASRS Report Number.Accession Number : 1846936

Events

Anomaly.ATC Issue : All Types

Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy

Anomaly.Inflight Event / Encounter : Fuel Issue

Anomaly.No Specific Anomaly Occurred : Unwanted Situation

Detector.Person : Flight Crew

When Detected : In-flight

Result.Flight Crew : Requested ATC Assistance / Clarification

Result.Air Traffic Control : Issued New Clearance

Assessments

Contributing Factors / Situations : Human Factors

Contributing Factors / Situations : Procedure

Primary Problem : Procedure

Narrative: 1

Concerning trend of increasingly surprising and inefficient ATC reroutes with new RNAV procedures, today was just an example. We received a completely unexpected reroute from JAX Center, significantly of original course via the PRICY1 Arrival. We expressed concerns to two Jax Center Sectors and one Miami Center Sector that the reroute would put us in an uncomfortable fuel situation due to the excessive addition to our original planned route. ATC not only did not respond constructively to our comments, they proceeded to route us further out of the way. We were one or two minutes away from declaring minimum fuel and considering declaring a fuel emergency and diverting when they finally turned us towards our destination. The reroute added over 100nm and 20 minutes of flying time to our original route, most at a very low altitude at high fuel flow and low speed. We've been flying in and out of ZZZ, our home base, for over 20 years and NEVER have received a routing such as this, it was not a "plannable" occurrence. In the end, we went from landing with 1000 lbs of fuel above target reserves, to landing with 700 lbs under target reserves. Unexpected and unreasonable ATC reroutes onto new RNAV procedures and the unwillingness or inability of controllers to work with pilots when the situations create a significant situation is creating extreme hazard in the NAS. This is only an example, many operators I've talked to, including our own pilots, have noticed a marked increase in inefficient or even unflyable reroutes in the Florida airspace since the launch of the new airspace initiative in April. Some of our common regional city pairs now take 30 percent more time and fuel than they did last March and ATC seems less able to be flexible when needed for weather avoidance or other operational considerations.

Synopsis

Corporate pilot reported ZJX Center rerouted them such that flying time was increased considerably and caused a low fuel situation. Reporter stated concerns that reroutes using the new RNAV procedures in the area may be inefficient and creating unsafe situations.

Time / Day

Date : 202110

Local Time Of Day : 0601-1200

Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Altitude.MSL.Single Value : 1800

Environment

Flight Conditions : VMC

Weather Elements / Visibility.Visibility : 10

Light : Daylight

Aircraft

Reference : X

ATC / Advisory.Tower : ZZZ

Aircraft Operator : Personal

Make Model Name : Amateur/Home Built/Experimental

Crew Size.Number Of Crew : 1

Operating Under FAR Part : Part 91

Flight Plan : None

Mission : Personal

Flight Phase : Landing

Route In Use : Visual Approach

Airspace.Class D : ZZZ

Component

Aircraft Component : Fuel System

Aircraft Reference : X

Problem : Malfunctioning

Problem : Design

Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Personal

Function.Flight Crew : Single Pilot

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Air Transport Pilot (ATP)

ASRS Report Number.Accession Number : 1846925

Human Factors : Confusion

Events

Anomaly.Aircraft Equipment Problem : Critical

Anomaly.Inflight Event / Encounter : Fuel Issue

Detector.Person : Flight Crew

When Detected : In-flight

Result.Flight Crew : Landed in Emergency Condition

Assessments

Contributing Factors / Situations : Aircraft

Contributing Factors / Situations : Human Factors

Primary Problem : Human Factors

Narrative: 1

The airplane I am flying is an experimental type and is in phase one flight testing operating out of ZZZ. Returning to ZZZ after an hour personal flight. Wing tanks selected to BOTH feeding the engine. The right fuel tank would always drain more quickly than the left tank when the fuel selector is selected to BOTH. This is because the right tank has a little shorter routing then the left tank. Neither tank has a check valve in the fuel line so fuel does transfer back and forth during turns. Having done several takeoffs and landings at another airport with left hand pattern the right tank had been transferring fuel to the left hand tank in the turns since the fuel selector was on BOTH selection. On returning to land at ZZZ the engine quit due to sucking air from the right tank. I was high enough that a normal landing was made without further incident. I had assumed that by leaving the fuel selector in the BOTH position that the engine would draught fuel from the other tank if one was low. Wrong assumption. Check valves are being installed in the fuel tank lines to prevent cross ship transferring of fuel. Also, the POH is being changed to show tank to engine operation and not BOTH selection.

Synopsis

Experimental aircraft pilot reported the engine quit during approach due to it sucking air from the right fuel tank. Pilot was high enough on the approach to perform a normal glide landing. Reportedly, the right tank transfers fuel to the left-hand tank when the fuel selector is on the "BOTH" position causing the right tank to go low on fuel.

Time / Day

Date : 202110

Local Time Of Day : 0601-1200

Place

Locale Reference.Airport : ZZZZ.Airport

State Reference : FO

Relative Position.Distance.Nautical Miles : 50

Altitude.MSL.Single Value : 120

Environment

Weather Elements / Visibility : Cloudy

Weather Elements / Visibility.Visibility : 10

Light : Daylight

Ceiling.Single Value : 3000

Aircraft

Reference : X

ATC / Advisory.Center : ZZZ

Aircraft Operator : Personal

Make Model Name : PA-23 Apache/Geronimo Apache

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 91

Flight Plan : IFR

Mission : Personal

Flight Phase : Cruise

Route In Use : Oceanic

Route In Use : Visual Approach

Route In Use.Airway : ZZZ

Component : 1

Aircraft Component : Vacuum Pump

Aircraft Reference : X

Problem : Improperly Operated

Component : 2

Aircraft Component : Fuel Storage System

Aircraft Reference : X

Problem : Improperly Operated

Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Personal

Function.Flight Crew : Single Pilot

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Private

Qualification.Flight Crew : Instrument
Experience.Flight Crew.Total : 1096
Experience.Flight Crew.Last 90 Days : 23
Experience.Flight Crew.Type : 416
ASRS Report Number.Accession Number : 1846866
Human Factors : Troubleshooting
Human Factors : Situational Awareness
Human Factors : Time Pressure

Events

Anomaly.Aircraft Equipment Problem : Critical
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy
Anomaly.Inflight Event / Encounter : Fuel Issue
Detector.Automation : Aircraft Other Automation
Detector.Person : Flight Crew
Were Passengers Involved In Event : N
When Detected : In-flight
Result.General : Flight Cancelled / Delayed
Result.General : Maintenance Action
Result.Flight Crew : Requested ATC Assistance / Clarification
Result.Flight Crew : Landed in Emergency Condition
Result.Flight Crew : Landed As Precaution
Result.Flight Crew : Diverted
Result.Air Traffic Control : Provided Assistance

Assessments

Contributing Factors / Situations : Aircraft
Contributing Factors / Situations : Human Factors
Primary Problem : Ambiguous

Narrative: 1

Landed at ZZZZ1 on Date. Approximately 110 NM from airport lost right engine vacuum pump. Left engine vacuum pump was working perfectly. In the ensuing days, I travelled to get a replacement vacuum pump. The same was installed at ZZZZ1 and upon starting right engine, vacuum pump operated normally. On Date1 my passenger and I departed ZZZZ1 on an IFR plan to ZZZ. Total fuel was 6 hours and 30 minutes. Estimated total time on route was 4 hours and 50 minutes. About two hours into the flight or 50 NM west of ZZZ we noticed significant amount of oil coming from inside the right engine. I contacted ZZZ Center, requested a divert to ZZZZ and received priority. Right engine was shut off as per airplane manual. Oil pressure and temperature never reached red mark. Landed uneventfully at ZZZZ and taxied to the FBO ramp. After required paper work was filled out and COVID-19 regulations were explained to us, including the possibility of mandatory quarantine for 7 days in a hotel room, despite the fact that both of us were vaccinated against it, we were serviced by an airplane mechanic who found out one of the nuts on the recently installed vacuum pump was loose and causing the oil leak. In order to tighten it up, he had to remove the right magneto. I called the A&P at ZZZZ and he confirmed he did not remove the magneto because he had a "special tool" to tighten it up. After testing the airplane, we were able to depart on an IFR flight plan to our destination ZZZ at around XA: 40 local time. Needless to say, in the duress of the moment I thought I had enough fuel to reach my destination plus 90 minutes reserve. Unfortunately, I neglected to deduct fuel consumption for a climb to 12,000 ft. While being vectored over ZZZZ to ZZZ, both engines began to run rough despite fuel pumps on and switching tanks. Another [priority

was received] and we landed uneventfully at ZZZ2. Next morning, I found out the airplane only had 16 gallons left on all four tanks. In the stress and haste of the moment, my mistake was not refueling at ZZZZ. I am sorry for the delays to air traffic this event caused.

Synopsis

PA-23 Pilot reported an engine lost a significant amount of oil which resulted in a diversion to landing. Maintenance determined a loose screw on a newly installed part caused the leak. After repairs were made the pilot departed without refueling, which resulted in fuel starvation and a diversion to landing.

Time / Day

Date : 202110

Local Time Of Day : 1201-1800

Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Relative Position.Distance.Nautical Miles : 0.25

Altitude.MSL.Single Value : 800

Environment

Weather Elements / Visibility.Visibility : 15

Light : Daylight

Ceiling.Single Value : 12000

Aircraft

Reference : X

Aircraft Operator : Personal

Make Model Name : Amateur/Home Built/Experimental

Crew Size.Number Of Crew : 1

Operating Under FAR Part : Part 91

Flight Plan : None

Mission : Training

Flight Phase : Final Approach

Route In Use : Direct

Component

Aircraft Component : Fuel Selector

Aircraft Reference : X

Problem : Malfunctioning

Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Personal

Function.Flight Crew : Pilot Flying

Function.Flight Crew : Single Pilot

Qualification.Flight Crew : Student

Qualification.Other

Experience.Flight Crew.Total : 840

Experience.Flight Crew.Last 90 Days : 86

Experience.Flight Crew.Type : 68

ASRS Report Number.Accession Number : 1845772

Events

Anomaly.Aircraft Equipment Problem : Critical

Anomaly.Inflight Event / Encounter : Fuel Issue

Detector.Person : Flight Crew

When Detected : In-flight
Result.Flight Crew : Diverted
Result.Flight Crew : Inflight Shutdown

Assessments

Contributing Factors / Situations : Aircraft
Primary Problem : Aircraft

Narrative: 1

On final approach to ZZZ in perfect VFR conditions landing Runway XX, my aircraft experienced power loss. I had just completed two S turns for spacing (authorized by ATC) and after leveling for short final the engine started to sputter. I had 8 gallons of fuel on board. I was 800 feet AGL and 0.25 miles from the runway. I realized I was not going to clear the airport fence and immediately diverted to an adjacent concrete culvert adjacent to the airport. The engine stopped prior to my landing. I touched down on the mains at 66 knots. No damage to the aircraft or property occurred. No individuals or myself were harmed. I was flying solo. I experienced loss of power likely due to fuel starvation NOT exhaustion. There is a possible issue with the fuel valve selector that may have contributed to air getting into the fuel lines. The S turns on final may have also contributed to fuel sloshing around in the tanks and air being drawn into the system. I plan on changing the fuel valve selector and avoid S turns on final in the future.

Synopsis

Student pilot flying experimental aircraft reported engine power loss on final approach. Conducted off airport landing without incident.

Time / Day

Date : 202110

Local Time Of Day : 0601-1200

Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Relative Position.Angle.Radial : 270

Relative Position.Distance.Nautical Miles : 5

Altitude.MSL.Single Value : 10500

Environment

Flight Conditions : VMC

Weather Elements / Visibility : Turbulence

Weather Elements / Visibility.Visibility : 10

Light : Daylight

Ceiling.Single Value : 10000

Aircraft

Reference : X

ATC / Advisory.UNICOM : ZZZ

Aircraft Operator : Personal

Make Model Name : Bonanza 35

Crew Size.Number Of Crew : 1

Operating Under FAR Part : Part 91

Flight Plan : None

Mission : Personal

Flight Phase : Climb

Route In Use : None

Airspace.Class E : ZZZ1

Airspace.Class G : ZZZ1

Component

Aircraft Component : Fuel Selector

Aircraft Reference : X

Problem : Improperly Operated

Problem : Design

Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Personal

Function.Flight Crew : Single Pilot

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Flight Instructor

Experience.Flight Crew.Total : 11498

Experience.Flight Crew.Last 90 Days : 240
Experience.Flight Crew.Type : 35
ASRS Report Number.Accession Number : 1845466
Human Factors : Training / Qualification
Human Factors : Confusion

Events

Anomaly.Aircraft Equipment Problem : Critical
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy
Anomaly.Inflight Event / Encounter : Fuel Issue
Anomaly.Inflight Event / Encounter : Weather / Turbulence
Detector.Person : Flight Crew
When Detected : In-flight
Result.Flight Crew : Diverted
Result.Flight Crew : Landed As Precaution
Result.Flight Crew : Took Evasive Action
Result.Flight Crew : Landed in Emergency Condition

Assessments

Contributing Factors / Situations : Aircraft
Contributing Factors / Situations : Human Factors
Primary Problem : Human Factors

Narrative: 1

On a pleasure flight around the area. I flew from my home base ZZZ1 to the area of ZZZ. During the flight I was burning fuel from the LEFT main tank per the normal fuel management procedure. As all fuel is returned to the LEFT tank on my airplane. As the flight progressed, I burned fuel first from the LEFT tank, then from the RIGHT tank back to the left tank then to the AUX tank. At this point I had encounter some pretty heavy moderate turbulence and as I was attempting to select the fuel selector back to the LEFT tank I inadvertently selected the RIGHT tank from the AUX position. On my aircraft the location of the fuel selector is below my left leg making it very difficult to see. My aircraft also is equipped with only one fuel gauge and a switch to toggle between left and right tank. As I made my way around ZZZ airport and was turning to return to ZZZ1, the engine quit. At this point I turned to return to ZZZ airport and ran through the engine failure procedure. I verified the fuel in the left tank and thinking I had the left tank selected from before, I did not reach down to verify it by hand. Had I done that I would have caught my error. I was near the airport at this point, so I devoted my attention to safely returning to the airport, rather than further troubleshoot my failure. I made a radio broadcast on the UNICOM frequency and landed on Runway XX. The landing was uneventful and I was able to rollout and clear the runway. Ground support personnel met the aircraft and towed me to a parking area by the FBO. As I climbed out of the aircraft I looked down and the Fuel selector and realized my error. A visual inspection of the right fuel tank confirmed it, I had run the tank dry. After refilling the right tank and selecting the left tank the engine fired right up. The cause of the incident was not verifying the correct fuel tank per the fuel management schedule. Contributing factors: Pilot proficiency in aircraft type. Although I fly a lot it is not in this specific aircraft. More proficiency would have made me more mindful of the unique fuel management schedule of this aircraft, and made me more familiar with the fuel selector by feel rather than visually. Which is more difficult based on its location. Another contributing factor is the fuel gauge design of the aircraft. Having two gauges installed would draw attention to an empty tank and trigger a verification of the fuel selector. Environmental factors, bouncing around in the turbulence made the error

easier by causing the distraction during the fuel selection process. This incident has driven home the importance of staying proficient in the different aircraft that I intend to fly regularly. It has also driven a commitment to upgrade some systems and displays in my aircraft.

Synopsis

BE-35 pilot reported the engine quit after having selected the wrong fuel tank during scheduled fuel management procedure. The pilot decided to successfully divert and land at the nearest airport rather than troubleshoot in the air.

Time / Day

Date : 202110

Local Time Of Day : 0601-1200

Place

Locale Reference.ATC Facility : ZZZZ.TRACON

State Reference : FO

Environment

Flight Conditions : VMC

Aircraft

Reference : X

ATC / Advisory.Tower : ZZZ

ATC / Advisory.TRACON : ZZZ

Aircraft Operator : Air Carrier

Make Model Name : Super King Air 300

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Climb

Route In Use.Other

Airspace.Class C : ZZZ

Component

Aircraft Component : Fuel Tank

Aircraft Reference : X

Problem : Malfunctioning

Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : First Officer

Function.Flight Crew : Pilot Not Flying

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Multiengine

ASRS Report Number.Accession Number : 1844355

Human Factors : Time Pressure

Human Factors : Physiological - Other

Events

Anomaly.Aircraft Equipment Problem : Less Severe

Anomaly.Deviation / Discrepancy - Procedural : Clearance

Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy

Anomaly.Inflight Event / Encounter : Fuel Issue

Detector.Person : Flight Crew

When Detected : In-flight

Result.Flight Crew : Returned To Departure Airport

Result.Flight Crew : Requested ATC Assistance / Clarification

Result.Flight Crew : Overcame Equipment Problem

Result.Air Traffic Control : Provided Assistance

Assessments

Contributing Factors / Situations : Aircraft

Contributing Factors / Situations : Human Factors

Primary Problem : Aircraft

Narrative: 1

Right aux bladder had been replaced the previous week. Noticed a fuel imbalance during preflight and maintenance said they only had 35 gals in the right aux since they replaced the bladder. We added fuel and left. First landing was uneventful but due to weather, we had just used the fuel in the aux tanks and were just a little bit into the mains tanks. The airplane was fueled and sat for about 1.5 hours while the crew coordinated the next inspection. When crew went to leave, another aircraft was parking on the ramp in front of our airplane while we had the main cabin door open. Crew noticed fuel/exhaust smell in aircraft but attributed it to the exhaust of the other aircraft. Crew started engines and taxied out for takeoff. Several comments were made by the crew members on how bad the smell was inside the aircraft. After takeoff, fuel fumes became more present in the cockpit and cabin. Burning eyes, irritation in throat was experienced by all crew members. Crew elected to go on supplemental Oxygen and return to departure airport for precautionary landing. Crew was getting vectors and believed the smell was getting worse. In order to not have any delays, PIC [requested priority handling] for immediate landing. No further assistance required. Landed without incident. PIC called off [support] trucks when switching to tower. Crew believes there was improper installation of the right fuel bladder causing a fuel leak in the belly of the aircraft.

Synopsis

Air Carrier First Officer reported a fume event during initial climb.

Time / Day

Date : 202110

Local Time Of Day : 1201-1800

Place

Locale Reference.ATC Facility : ZZZZ.ARTCC

State Reference : FO

Altitude.MSL.Single Value : 28000

Environment

Flight Conditions : VMC

Aircraft

Reference : X

ATC / Advisory.Center : ZZZZ

Aircraft Operator : Air Carrier

Make Model Name : A320

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Climb

Component

Aircraft Component : Fuel System

Aircraft Reference : X

Problem : Malfunctioning

Person : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Captain

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Instrument

Experience.Flight Crew.Total : 679.90

Experience.Flight Crew.Last 90 Days : 107.92

Experience.Flight Crew.Type : 679.90

ASRS Report Number.Accession Number : 1843317

Human Factors : Workload

Human Factors : Troubleshooting

Person : 2

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Pilot Not Flying
Function.Flight Crew : First Officer
Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Multiengine
Qualification.Flight Crew : Air Transport Pilot (ATP)
Experience.Flight Crew.Total : 867.48
Experience.Flight Crew.Last 90 Days : 54.4
Experience.Flight Crew.Type : 867.48
ASRS Report Number.Accession Number : 1843339
Human Factors : Workload
Human Factors : Troubleshooting

Events

Anomaly.Aircraft Equipment Problem : Critical
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy
Anomaly.Inflight Event / Encounter : Fuel Issue
Result.General : Maintenance Action
Result.General : Flight Cancelled / Delayed
Result.Flight Crew : Diverted
Result.Flight Crew : Landed in Emergency Condition
Result.Flight Crew : Requested ATC Assistance / Clarification
Result.Air Traffic Control : Provided Assistance

Assessments

Contributing Factors / Situations : Aircraft
Primary Problem : Aircraft

Narrative: 1

During climb passing approximately FL280 the flight attendant called and informed me that a passenger believed we were trailing fuel out of our #2 engine. All engine indications appeared normal including engine fuel flow. Checking our fuel we determined we were showing an imbalance of approximately 1500 pounds with the right wing being low. We continued to monitor to determine if the fuel imbalance remained stable or if the imbalance was increasing. We received a second call from the flight attendant informing us we had a company A320 instructor pass riding. He and I spoke and he told me it appeared to be fuel trailing the #2 engine. I sent the First Officer back to the cabin for a visual inspection and told him to look forward and aft of the wing and specifically any damage he might see on the forward edge of the wing. While he performed a visual inspection, the flight attendant in the cockpit showed me cell phone video of the leak. I leveled off at FL380 and verified the fuel imbalance was increasing to about 1700lbs with the right wing on the low side. I referenced the QRH for fuel leak and sent dispatch a message that we had a fuel leak, needed to divert and would be shutting down the #2 engine. The First Officer returned and informed me of the same information and we began running the fuel leak QRH. Dispatch recommended ZZZZ and looking at our distance and time required for descent I determined it to be a proper divert location. I [requested priority] with ZZZZ Center and requested an immediate turn to ZZZZ and descent to FL 200. The First Officer and I ran the fuel leak QRH which directed an engine shutdown for a fuel leak out of the engine or pylon followed by the engine shutdown checklist. We shut the engine down in an idle power descent and I started the APU. I then transferred flying duties to the First Officer. ZZZZ Center handed us off to ZZZZ Approach. ZZZZ is a non radar airfield. They told us to report 30 miles from the airfield and asked if we could maintain VMC. Weather was scattered to broken with some vertical development but was sufficient to maintain

VMC and the field was reporting 6,000 scattered. Approach gave us a descent to 7,000 and offered the [non-precision] Approach to Runway XX. I asked for the ILS for XX. Approach asked if we could fly a visual to Runway 26 and conditions were sufficient for that and we were cleared for the visual approach. We never received guidance information on our ILS though it was programmed correctly. After an uneventful landing by the First Officer we taxied to a hard stand. Foreign Country aviation authorities inspected our certificates/medical/airworthiness certificate/insurance certificate which the company instructor was very helpful working that while I worked with operations. Operations moved the passengers indoors to a gate seating area. I worked with the Chief Pilot and Maintenance Control. They informed me that the passengers would be taken on a flight from ZZZZ-ZZZZ1-ZZZ. I made several announcements and trips to the gate holding area and informed all passengers of our plan. Most of the passengers had left carry-on bags on the aircraft, but Foreign Country security wouldn't let them return to retrieve it. I coordinated with Station Operations to have aft air stairs brought up so we could get the passenger to come back and file front to back through the airplane to retrieve their items before their inbound flight arrived and coordinated with Foreign Country security. Foreign Country security eventually agreed but only allowing 4 passengers at a time.

Narrative: 2

On climbout from ZZZZ1 we were passing FL280 when the Flight Attendant (FA) called us. He said a passenger (who is a pilot) said that it looked like fuel was coming out of our #2 engine. We monitored the fuel page. The engine fuel used totals were identical, as were the wingtip tanks. The inboard wing tanks showed an imbalance of 1000 pounds. Over the remaining 5 minutes of our climbout we watched the imbalance increase to 1400 pounds. During this time we got another call from the FA. He put us on with an Airbus Instructor that was non-revving in the back. He told us it appeared that fuel was coming from the engine exhaust. The Captain took over the aircraft and I went back to look for myself. There was nothing visible on the front of the wing or the front of the engine. I went back to row XX and could clearly see a fluid coming out of the exhaust of #2. I returned to the flight deck and told the Captain. We ran the Fuel Leak checklist and it directed us to shut down the engine. After starting a descent to FL200, we did so. We secured the engine and talked to dispatch. He directed us to either ZZZZ1 or ZZZZ. ZZZZ1 was further and the weather was reported as suboptimal. We chose ZZZZ. The Captain and I turned the aircraft back to ZZZZ and finished the descent to FL200. We briefed up the approach and I took control of the aircraft. Approach control informed us there was no radar service. We used the local MSA to ensure terrain clearance until we were clear of the clouds and could see the airfield. I maneuvered the aircraft to a 6-7 mile final and we configured the aircraft for landing. There was no glideslope which we knew, but the localizer wasn't working either. We confirmed with Tower that they could see us and that we were lined up on the correct airport. During the confusion we forgot the Before Landing Checklist, but the Spoilers Not Armed message reminded us. We accomplished the checklist and were fully stable and complete by 500 ft. AGL. Landing was normal, the Captain took the aircraft around 80 knots on the rollout. We taxied clear to a hard stand near the terminal. Most of the passengers deplaned into the terminal. We coordinated with the Foreign Country equivalent of the FAA, as well as dispatch and maintenance. After the passengers got on the rescue airplane, we closed up the plane and went to the hotel.

Synopsis

A320 flight crew reported a fuel leak from the #2 engine resulted in a fuel imbalance. The flight crew performed a successful diversion and landing.

Time / Day

Date : 202109

Local Time Of Day : 1201-1800

Place

Locale Reference.Airport : ZZZ1.Airport

State Reference : US

Altitude.AGL.Single Value : 0

Environment

Flight Conditions : VMC

Light : Daylight

Aircraft

Reference : X

ATC / Advisory.Tower : ZZZ

Aircraft Operator : Air Carrier

Make Model Name : A321

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Cruise

Airspace.Class C : ZZZ

Maintenance Status.Maintenance Type : Unscheduled Maintenance

Maintenance Status.Maintenance Items Involved : Testing

Maintenance Status.Maintenance Items Involved : Inspection

Component

Aircraft Component : Fuel Distribution System

Aircraft Reference : X

Problem : Malfunctioning

Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Captain

Function.Flight Crew : Pilot Not Flying

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Multiengine

ASRS Report Number.Accession Number : 1842134

Human Factors : Communication Breakdown

Communication Breakdown.Party1 : Flight Crew

Communication Breakdown.Party2 : Maintenance

Events

Anomaly.Aircraft Equipment Problem : Critical
Anomaly.Deviation / Discrepancy - Procedural : Weight And Balance
Anomaly.Deviation / Discrepancy - Procedural : MEL / CDL
Anomaly.Deviation / Discrepancy - Procedural : Maintenance
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy
Anomaly.Deviation / Discrepancy - Procedural : FAR
Anomaly.Inflight Event / Encounter : Fuel Issue
Detector.Person : Flight Crew
Were Passengers Involved In Event : N
When Detected : In-flight
Result.General : Maintenance Action
Result.Flight Crew : Overcame Equipment Problem

Assessments

Contributing Factors / Situations : Aircraft
Contributing Factors / Situations : Human Factors
Contributing Factors / Situations : MEL
Contributing Factors / Situations : Procedure
Primary Problem : MEL

Narrative: 1

On Date, I was the Captain of Aircraft X operating from ZZZ to ZZZ1. The aircraft for this flight was an Airbus A321. The aircraft had NO MEL items and only 1 NEF item - CABIN LT LENSES. The aircraft was properly fuel in ZZZ with our Release FUEL of 43,250 Lbs. Both wings and center tanks were full, and we had the remainder of the fuel in ACT AFT TANK 1. The fuel utilization (burn) was normal with the ACT AFT 1 and the center tank operating normally. After the ACT AFT 1 and center tanks were depleted, the fuel quantity in the RIGHT WING tank started to decrease more than the LEFT WING tank. Both engines showed the same fuel flow and fuel used amounts. The rate in which the RIGHT WING fuel tank was decreasing started to increase over time. When the fuel imbalance exceeded 1,000 Lbs. between wing tanks, First Officer and myself independently preformed the Fuel On Board (FOB) calculation list in the QRH. We both confirmed that we had the correct amount of fuel remaining and there was no fuel leak. At no time did we have any ECAM advisories or alerts. We both came to the same conclusion that somehow fuel was moving from the RIGHT WING tank to supply the left side. The ECAM - Fuel page showed: 1) Fuel transfer value in the Closed Position; 2) AFT 1 and CTR FUEL TANK empty; 3) CRT FUEL TANK PUMPS OFF. Fuel imbalance limitations were check and we well with the limitation. We had an uneventful normal landing at ZZZ1. We arrived at the gate with approximately a 2,400 lb fuel imbalance. After shutdown I called dispatch and talked with Company Maintenance while the dispatcher monitored the phone call. The fuel imbalance / fuel transfer problem was entered into the AML. Maintenance told me on the phone they were going to get one of the fuel computers reset. When the hotel van arrived, the informed the outbound Captain about the fuel problem and informed him at the had called dispatch/maintenance. The outbound flight was delayed while maintenance was working on the aircraft. The next day I was having a conversation with my dispatcher about the routing of our return flight to ZZZ and enroute weather. When I asked if the Dispatched could explain the MEL that was now listed for aircraft X. I explained what had happened the day before with the fuel transferring itself during the flight. The dispatched told me the aircraft had landed that morning in ZZZ with a 3,000 lb fuel imbalance and the crew did a repeat entry in the AML. The aircraft's fuel was checked in ZZZ and the wing tanks did have a 3,000 lb fuel imbalance and it was not just an indication problem. At this time maintenance returned the aircraft to service using MEL 28-XX-X. This MEL has nothing to

do with the in-flight problem with the fuel transferring itself. This MEL has to do with refueling the aircraft on the ground. (Indication Problem) The dispatcher called over to maintenance and asked about the issue with aircraft X. He was told that they believe a solenoid that controls the transferring of fuel from ACT AFT 1 tank was at fault. The solenoid was causing the fuel to transfer wing tanks with no indication of the FUEL X FEED valve. The solenoid was replaced the night of DATE1 in ZZZ2.

Synopsis

A321 Captain reported a fuel imbalance during flight. Captain reported an incorrect MEL was applied to the aircraft when it made the return flight to ZZZ with another crew.

Time / Day

Date : 202108

Local Time Of Day : 0601-1200

Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Environment

Flight Conditions : VMC

Light : Daylight

Aircraft

Reference : X

ATC / Advisory.Center : ZZZ

Aircraft Operator : Air Carrier

Make Model Name : B737-800

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Cruise

Route In Use : Vectors

Airspace.Class A : ZZZ

Component

Aircraft Component : Fuel Quantity-Pressure Indication

Aircraft Reference : X

Problem : Malfunctioning

Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : First Officer

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Multiengine

ASRS Report Number.Accession Number : 1838701

Events

Anomaly.Aircraft Equipment Problem : Critical

Anomaly.Deviation / Discrepancy - Procedural : Clearance

Anomaly.Deviation / Discrepancy - Procedural : Weight And Balance

Anomaly.Inflight Event / Encounter : Fuel Issue

Detector.Person : Flight Crew

Were Passengers Involved In Event : N

When Detected : In-flight
Result.General : Flight Cancelled / Delayed
Result.General : Maintenance Action
Result.Flight Crew : Inflight Shutdown
Result.Flight Crew : Requested ATC Assistance / Clarification
Result.Flight Crew : Landed in Emergency Condition
Result.Flight Crew : Returned To Departure Airport
Result.Air Traffic Control : Provided Assistance

Assessments

Contributing Factors / Situations : Aircraft
Primary Problem : Aircraft

Narrative: 1

Enroute from ZZZ to ZZZ1, shortly after leveling off at cruise altitude, we received an IMBAL (imbalance) message and saw that our right fuel tank had 1,000 lbs less than the left tank. We had just turned off our center fuel pumps a few minutes prior. We performed the IMBAL checklist which then led us to the Fuel Leak Engine checklist. By this point it was decided that the safest course of action was to return to ZZZ. We requested priority handling and were cleared direct to ZZZ and were given a descent clearance. We shut down the #2 engine per the Fuel Leak Engine checklist. We also performed the One Engine Inoperative Landing checklist, the Non-Routine Landing Considerations checklist, and the Overweight Landing checklist. I was the Pilot Flying until downwind, at which time the Captain took the controls and landed the aircraft. We stopped on the runway and had the firefighters check out the aircraft. Everything looked ok to them and we were cleared to taxi to the gate. The Captain made an AML (Aircraft Maintenance Logbook) entry for the suspected fuel leak and overweight landing. The only causal factor was the mechanical irregularity of the right fuel tank showing 1,000 lbs less than the left, which gave us the IMBAL message.

Synopsis

B737-800 First Officer reported a fuel imbalance message in flight, causing an in-flight shut down of the #2 engine and a return to the departure airport.

Time / Day

Date : 202109

Local Time Of Day : 1201-1800

Place

Locale Reference.ATC Facility : ZZZ.ARTCC

State Reference : US

Altitude.MSL.Single Value : 26000

Aircraft

Reference : X

ATC / Advisory.Center : ZZZ

Aircraft Operator : Air Carrier

Make Model Name : Commercial Fixed Wing

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Nav In Use : GPS

Nav In Use : FMS Or FMC

Flight Phase : Initial Climb

Flight Phase : Climb

Route In Use : Direct

Airspace.Class A : ZZZ

Component

Aircraft Component : Fuel System

Aircraft Reference : X

Problem : Malfunctioning

Person : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Pilot Flying

Function.Flight Crew : First Officer

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Instrument

ASRS Report Number.Accession Number : 1837145

Human Factors : Workload

Human Factors : Time Pressure

Human Factors : Situational Awareness

Human Factors : Troubleshooting

Human Factors : Confusion

Human Factors : Distraction

Person : 2

Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Air Carrier
Function.Flight Crew : Captain
Function.Flight Crew : Pilot Flying
Qualification.Flight Crew : Multiengine
Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Air Transport Pilot (ATP)
ASRS Report Number.Accession Number : 1837148
Human Factors : Workload
Human Factors : Distraction
Human Factors : Confusion
Human Factors : Troubleshooting
Human Factors : Time Pressure
Human Factors : Situational Awareness

Events

Anomaly.Aircraft Equipment Problem : Critical
Anomaly.Inflight Event / Encounter : Fuel Issue
Detector.Automation : Aircraft Other Automation
Detector.Person : Flight Crew
Were Passengers Involved In Event : N
When Detected : In-flight
Result.Flight Crew : Requested ATC Assistance / Clarification
Result.Flight Crew : Returned To Departure Airport
Result.Flight Crew : Landed in Emergency Condition
Result.Flight Crew : FLC complied w / Automation / Advisory

Assessments

Contributing Factors / Situations : Aircraft
Primary Problem : Aircraft

Narrative: 1

On climbout of ZZZ Flight ABC we experienced a 1000 pound differential between main tanks on initial departure/climb-out. The Captain pointed to the wing fuel quantity indicators and the left was amber indicating an imbalance between wing tanks. We were on center tank feed so no fuel should be used in this condition. I continued flying to a level off at FL260 and the CA ran the QRH for a fuel imbalance followed by the me backing him up by going through the QRH to confirm our situation. The CA plotted our fuel to the next waypoint which was ZZZZZ and were 1000 lbs below planned. Within a few minutes our fuel was 1500 lbs below planned fuel to the next waypoint ZZZZZ. The decision was made to request priority handling, shutdown engine #1 per the QRH, and return to ZZZ. I ran the non normal checklists, cleanup items, and reviewed the evacuation checklist. The CA flew the approach and landing which were uneventful, stopped the aircraft on the runway, and had ARFF check for a visible leak. After confirmation that there were no fuel leaks we taxied the aircraft to parking and shutdown the aircraft normally. There are no causal factors by me that played a role in the event. I believe an aircraft history should be pulled to check for any history of fuel quantity malfunctions or any fuel system maintenance has been completed for this this tail number.

Narrative: 2

Fuel imbalance developed during climb of 1000 lbs - left wing low within minutes of departure. Leaving 10,000 feet. Cabin crew was asked to perform a cabin walk through with attention paid to possible fuel emissions visible aft of wing from No.1 engine. No visible fuel leak was evident as communicated by cabin crew. We stopped climb at FL260. Position, time and fuel comparison with Flight Plan Review showed us 1000 lbs low at first fix after level off as we ran QRH IMBAL checklist. Subsequent FMC PROG fix (fix name: ZZZZZ) initially showed us estimating 1000 lbs low crossing the fix, then 1500 lbs low, then 1700 lbs low as we approached ZZZZZ. FMC PROG fuel estimate deterioration occurred rapidly over the course of just a few minutes. QRH IMBAL checklist led to Fuel Leak Engine Checklist - parameters indicated probable fuel leak No.1 engine - which led to Engine No. 1 shutdown. All checklists to include precautionary landing checklist were performed. ATC and Dispatch notified. Flight attendants and Passengers advised of return to ZZZ for a precautionary landing. Single engine landing was performed - Captain flying. After landing we stopped on the runway, ARFF inspected aircraft, found no leaks or damage, and we taxied to the gate. The following AML entries were made: 1) possible fuel leak leading to engine No. 1 shutdown, 2) info to maintenance item: No 1 engine windmilling time 15 minutes, 3) info to maintenance item: landing was accomplished below maximum landing weight. Report made to Dispatch of engine failure and emergency declaration. FO did a great job - especially so given his approx 100 hours in seat and on type. Comment: cabin crew kept cool and were professional. Comment: I made every effort to be both clear and deliberate during each step of the event, to solicit FO's input, and - as we returned to ZZZ - I slowed the aircraft approximately 20 miles from the field and kept the cockpit CRM "in the green" to the maximum extent possible.

Synopsis

B737-800 flight crew reported a fuel imbalance after departure. The crew ran the QRH checklist and determined there was a possible fuel leak. The crew made the decision to shutdown the suspect engine and return to their departure airport for maintenance.

Time / Day

Date : 202108

Local Time Of Day : 1801-2400

Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Environment

Flight Conditions : VMC

Aircraft

Reference : X

ATC / Advisory.Tower : ZZZ

Aircraft Operator : Air Carrier

Make Model Name : B737 Next Generation Undifferentiated

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Nav In Use : FMS Or FMC

Flight Phase : Climb

Route In Use : Direct

Airspace.Class B : ZZZ

Component : 1

Aircraft Component : Navigational Equipment and Processing

Aircraft Reference : X

Component : 2

Aircraft Component : Altitude Hold/Capture

Aircraft Reference : X

Problem : Malfunctioning

Component : 3

Aircraft Component : Flight Director

Problem : Failed

Person : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Pilot Not Flying

Function.Flight Crew : Captain

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Multiengine

Experience.Flight Crew.Last 90 Days : 89

Experience.Flight Crew.Type : 3528
ASRS Report Number.Accession Number : 1834396
Human Factors : Distraction
Human Factors : Situational Awareness
Human Factors : Time Pressure
Human Factors : Workload
Human Factors : Confusion

Person : 2

Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Air Carrier
Function.Flight Crew : First Officer
Qualification.Flight Crew : Multiengine
Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Air Transport Pilot (ATP)
Experience.Flight Crew.Last 90 Days : 53
Experience.Flight Crew.Type : 1131
ASRS Report Number.Accession Number : 1834427
Human Factors : Workload
Human Factors : Situational Awareness
Human Factors : Distraction
Human Factors : Confusion
Human Factors : Time Pressure

Events

Anomaly.Aircraft Equipment Problem : Critical
Anomaly.Deviation / Discrepancy - Procedural : Clearance
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy
Anomaly.Inflight Event / Encounter : Fuel Issue
Detector.Person : Flight Crew
Were Passengers Involved In Event : N
When Detected : In-flight
Result.Flight Crew : Overrode Automation
Result.Flight Crew : Overcame Equipment Problem
Result.Flight Crew : Requested ATC Assistance / Clarification
Result.Air Traffic Control : Provided Assistance

Assessments

Contributing Factors / Situations : Aircraft
Primary Problem : Aircraft

Narrative: 1

Climbing through approximately 500 ft. AGL in a right turn to 360, the departure heading selected on the MCP by the FO (First Officer) prior to takeoff, the FO's flight director, FD2, failed; the MCP (Mode Control Panel) altitude window indicated 50,000, not the pre-takeoff selected altitude of 3,000, and the FO's command bars biased out of view. The PF continued the climbing turn using PFD (Primary Flight Display) raw data in night-time VMC conditions. Cross-checking respective PFDs revealed no flags or indications as to the specific failure. In the busy initial climb segment, confusion as to the cause of current flight instrument condition gave way to confidence in the raw data. Directing the PF to continue to climb using raw data, I attempted to select 3000 ft. on the MCP; the altitude

knob spun freely without any effect on the window. I then turned off the FD1 and FD2, reselected 3000 ft. in the MCP altitude window, confirmed the heading bug was at 360, selected heading, and turned the FD switches back on, FD2 first, in an attempt to restore FD2 guidance for the PF. Immediately upon switching on FD2, the MCP altitude returned to 50,000 and no command bars appeared on the FO's PFD. Switching to Departure Control, ATC gave us direct routing to the first fix, ZZZZZ, and continue climb to 11,000. I asked ATC for a heading, mentioning our concern that our navigation might be unreliable. They provided a 010 heading which when selected, had no effect on the FO's heading bug. Changing heading on the MCP failed to change the bugs on the FO's ND (Navigation Display) and PFD compass displays. I confirmed compass heading on the wet compass corresponded with both the Captain's and FO's compasses. They asked if we needed to declare an emergency; I declined as we had good raw data and were still diagnosing the malfunction. I attempted a second reset of FD2 with the same negative result. Leveling at 11,000, the PF reported the autothrottles were not holding commanded airspeed; we disengaged the autothrottles. Turning both FDs off again and selecting FD1 on provided accurate command bars on the Captain's PFD. We agreed that continuing using raw data was possible, and that full FD capability was available from FD1. I transferred aircraft control to myself and agreed with my FO's suggestion of going to the QRH for additional troubleshooting/procedural steps. A satisfactory QRH procedure to handle this malfunction was difficult to find and both FMS1 on the Captain's ND and FMS2 on the FO's confirmed FMC operation. We asked ATC for direct down range and confirmed FMS accuracy using FD1 guidance of MCDU1 entered direct routing. I engaged the autopilot and autothrottles and we continued on course using LNAV/VNAV. We discussed the status of the aircraft and the conditions at our destination, ZZZ. We elected to continue to ZZZ where we completed the trip without incident. I submitted an electronic logbook entry and called Maintenance Control after arrival. Approximately 35 minutes into our hour-long flight, I realized we had not requested [the] planned climb above our initial cruise altitude, FL310, and that contingency fuel had been burned during a slower climb than normal. Burn, alternate, ZZZ1, and 45-minute FAA fuel was still available, though a missed approach would have compelled diversion to ZZZ1. The FD2 diagnosis and distraction lead to the initial loss of SA regarding erosion to our fuel state. Beginning descent and approach planning brought for our new fuel and prepared us for contingencies. Communication throughout was key to understanding the status of the aircraft and mitigated the initial startle and confusion at such a low altitude early flight stage.

Narrative: 2

We were cleared for takeoff by ZZZ3 Tower with instructions to turn to heading 360 and maintain 3,000 ft. The pilot flying which was me, the First Officer, put 360 in the MCP and deselected LNAV. We took off and as we were climbing through about 500 ft., the command bars disappeared and altitude went to 50,000 on both the PFD and MCP. We leveled at 3,000 on heading 360. ATC gave us climb to 11,000 and direct to a fix. The Captain told him we needed a heading we were having trouble with the flight director. ATC gave us a head of 010 and climb to 11,000 ft. The heading bug on the First Officer's PFD and MFD was stuck on heading 360 but was 010 on the MCP and on the Captain's displays. The Captain checked the PFD heading with the compass and it matched. We had no flags on the PFD or MFD. The Captain turned off both flight directors and then turned them both back on with the First Officer's being the master. When he turned it back on, the altitude went back to 50,000 and we could not change it. The command bars never came back. We saw that the Captain had a flight director and that his heading bug would turn with the MCP. The Captain then turned the FDs off and put his FD as the master. When he did that, the altitude went back to normal. On the FO's (First Officer) displays there was still no FD and the heading bug was stuck on 360 but now the altitude was correct. We continued the flight to ZZZ with the Captain flying.

Synopsis

B737 flight crew reported that shortly after takeoff, the First Officer's flight director began malfunctioning, leading to the MCP and heading bug also being inoperative.

Time / Day

Date : 202108

Local Time Of Day : 0601-1200

Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Altitude.AGL.Single Value : 0

Environment

Flight Conditions : VMC

Light : Dawn

Aircraft

Reference : X

ATC / Advisory.Ground : ZZZ

Aircraft Operator : Air Carrier

Make Model Name : Commercial Fixed Wing

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Parked

Maintenance Status.Maintenance Deferred : Y

Maintenance Status.Records Complete : N

Maintenance Status.Released For Service : Y

Maintenance Status.Required / Correct Doc On Board : N

Maintenance Status.Maintenance Type : Unscheduled Maintenance

Maintenance Status.Maintenance Items Involved : Testing

Maintenance Status.Maintenance Items Involved : Inspection

Maintenance Status.Maintenance Items Involved : Installation

Component

Aircraft Component : Indicating and Warning - Fuel System

Aircraft Reference : X

Problem : Malfunctioning

Person

Location Of Person : Gate / Ramp / Line

Reporter Organization : Air Carrier

Function.Maintenance : Technician

Qualification.Maintenance : Airframe

Qualification.Maintenance : Powerplant

ASRS Report Number.Accession Number : 1834068

Human Factors : Training / Qualification

Human Factors : Troubleshooting

Human Factors : Communication Breakdown

Communication Breakdown.Party1 : Maintenance

Communication Breakdown.Party2 : Other

Events

Anomaly.Aircraft Equipment Problem : Critical
Anomaly.Deviation / Discrepancy - Procedural : MEL / CDL
Anomaly.Deviation / Discrepancy - Procedural : Maintenance
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy
Anomaly.Deviation / Discrepancy - Procedural : FAR
Anomaly.Ground Event / Encounter : Fuel Issue
Anomaly.Inflight Event / Encounter : Fuel Issue
Detector.Person : Maintenance
Were Passengers Involved In Event : N
When Detected : Aircraft In Service At Gate
Result.General : Maintenance Action
Result.General : Flight Cancelled / Delayed

Assessments

Contributing Factors / Situations : Aircraft
Contributing Factors / Situations : Human Factors
Contributing Factors / Situations : MEL
Contributing Factors / Situations : Procedure
Primary Problem : Procedure

Narrative: 1

While operating Aircraft X ZZZ-ZZZ1, the flight crew noted a fuel imbalance message on the FQIS (Fuel Quantity Indicating System) display. A snapshot was recorded, and 0.0 readings were noted at L/H tank probes #14 and #16. Later, the R/H tank #10 position and L/H tank #12 position reported 0.0, as well. 777/787 Maintenance Control Technician then AOG'd probes to ZZZ1 to repair system prior to flight. Overnight, at some point, Engineering became involved and issued an EA (Engineering Authority) stating a specific MEL to use (which they do not have the authority to do) that was incorrect and bypassed the usage of the correct MEL, which limits the flight to 50 nm of land. Engineering must not be allowed to specify MEL usage in EAs. They do not have the authority nor knowledge to do so. Engineering must not be allowed to circumvent MEL usage causing a safety of flight or Out of Compliance issue. The correct MEL application is MEL 28-XX-Y, which limits the aircraft to within 50 nm of land. This created a major Non-Compliance and Safety of Flight issue.

Synopsis

Technician reported that during preparation for a repair procedure, it was discovered that Engineering had mistakenly applied the wrong MEL and did not have the authority to perform that function. The aircraft flew in service out of compliance for ETOPS.

Time / Day

Date : 202108

Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Relative Position.Angle.Radial : 090

Relative Position.Distance.Nautical Miles : 1

Altitude.MSL.Single Value : 1000

Environment

Flight Conditions : VMC

Light : Night

Aircraft

Reference : X

Aircraft Operator.Other

Make Model Name : Small Aircraft, Low Wing, 1 Eng, Retractable Gear

Crew Size.Number Of Crew : 2

Operating Under FAR Part.Other

Flight Plan : VFR

Mission : Training

Flight Phase : Initial Approach

Flight Phase : Final Approach

Flight Phase : Cruise

Route In Use : Visual Approach

Airspace.Class D : ZZZ

Component

Aircraft Component : Engine

Aircraft Reference : X

Problem : Failed

Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization.Other

Function.Flight Crew : Trainee

Function.Flight Crew : Pilot Flying

Function.Other.Other

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Private

ASRS Report Number.Accession Number : 1833540

Human Factors : Workload

Human Factors : Time Pressure

Human Factors : Situational Awareness

Human Factors : Distraction

Human Factors : Troubleshooting

Human Factors : Confusion

Events

Anomaly.Aircraft Equipment Problem : Critical
Anomaly.Deviation / Discrepancy - Procedural : Clearance
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy
Anomaly.Ground Event / Encounter : Other / Unknown
Anomaly.Inflight Event / Encounter : Weather / Turbulence
Anomaly.Inflight Event / Encounter : Fuel Issue
Detector.Person : Flight Crew
Were Passengers Involved In Event : N
When Detected : In-flight
Result.Flight Crew : Requested ATC Assistance / Clarification
Result.Flight Crew : Diverted
Result.Flight Crew : Landed in Emergency Condition
Result.Flight Crew : Took Evasive Action
Result.Air Traffic Control : Provided Assistance

Assessments

Contributing Factors / Situations : Aircraft
Contributing Factors / Situations : Human Factors
Primary Problem : Aircraft

Narrative: 1

Myself and an Instructor flight planned to do a commercial long cross country going ZZZ1 - ZZZ2-ZZZ-ZZZ3. The flight plan read that we would have used up less than half our fuel (50 useable per POH) going to ZZZ2. We departed ZZZ1 having a ground speed much higher than expected of 125-131 using up less fuel than expected. Other than deviating around clouds and cells it was an uneventful flight. I have done this flight before and last time made the smart decision of fueling up in ZZZ2 to go back to ZZZ1. When we landed this time in ZZZ2 during day light, It was shown that we had used about 21 gallons. Leaving 29 gallons remaining. Then once our preflight was done in ZZZ2 we jumped in the plane and started it up. At this point it was night time. The plan was still to go to ZZZ. So we departed and start to head in that direction. We found ourselves deviating around storms and making sure we are of course not running into airspace. We found that we had a greater headwind than expected and our ground speed ending up being around 90. When we were en route to ZZZ the engine began sputtering south of ZZZ4. I thought we were having an engine failure because throughout the flight I had constantly been checking the fuel gauges to show we had fuel. I turn the fuel pump on and switch the tanks from left to right. Once I was complete the engine ran normally. It was after this that I said to the Instructor that I wanted to get on the ground as soon as possible. He reassured me that we had plenty of fuel based on the aircraft fuel gauges and the secondary JPI. The left fuel gauge read a quarter of a tank of fuel when we ran out. We were still going toward ZZZ and continued. We contacted ZZZ Tower and they instructed us to enter left base and report a 3 mile final for Runway XX. We enter the base to final and report a 3 mile final. Followed by the Tower's instruction that we were number two and cleared to land on Runway XX. On about a 1 mile final we had the engine sputter again. I turn the fuel pump on and switched tanks from right to left hoping there was a possibility we have a little bit more fuel in there to keep the propeller going. Unfortunately, there was no more fuel even though the gauges read there was and the JPI indicated we had 8.8 gallons remaining when the engine died. The Instructor [advised] Tower and we then landing on [the] highway.

Synopsis

Flight Instructor and Student reported the engine failed during cruise due to fuel exhaustion and an off airport landing was done.

Time / Day

Date : 202108

Local Time Of Day : 1801-2400

Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Altitude.AGL.Single Value : 0

Environment

Flight Conditions : VMC

Light : Night

Aircraft

Reference : X

ATC / Advisory.TRACON : ZZZ1

Aircraft Operator : Air Carrier

Make Model Name : McDonnell Douglas Undifferentiated or Other Model

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Cargo / Freight / Delivery

Flight Phase : Cruise

Airspace.Class C : ZZZ

Component : 1

Aircraft Component : ACARS

Aircraft Reference : X

Problem : Malfunctioning

Component : 2

Aircraft Component : Fuel Storage System

Aircraft Reference : X

Problem : Malfunctioning

Person

Location Of Person : Hangar / Base

Reporter Organization : Air Carrier

Function.Dispatch : Dispatcher

Qualification.Dispatch : Dispatcher

ASRS Report Number.Accession Number : 1833334

Human Factors : Communication Breakdown

Human Factors : Time Pressure

Communication Breakdown.Party1 : Dispatch

Communication Breakdown.Party2 : Flight Crew

Events

Anomaly.Aircraft Equipment Problem : Critical
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy
Anomaly.Deviation / Discrepancy - Procedural : Weight And Balance
Anomaly.Inflight Event / Encounter : Fuel Issue
Detector.Person : Flight Crew
Were Passengers Involved In Event : N
When Detected : In-flight
Result.General : Maintenance Action
Result.Flight Crew : Overcame Equipment Problem
Result.Flight Crew : Requested ATC Assistance / Clarification
Result.Air Traffic Control : Provided Assistance

Assessments

Contributing Factors / Situations : Aircraft
Contributing Factors / Situations : Software and Automation
Contributing Factors / Situations : Procedure
Primary Problem : Aircraft

Narrative: 1

5,500 pounds of fuel became trapped due to #1 float switch issue. They [requested priority handling] and landed in ZZZ. While trying to communicate with the aircraft the ACARS send function in FPS failed. I tried the backup in the services link and that also failed. I had to have a fellow dispatcher send the ACARS for me since time was of the essence. It was a brief outage but at a very critical moment. Advised [supervisor] and contacted ZZZ Tower.

Synopsis

Dispatcher reported failure of the automated ACARS function on their work station complicated an event with an aircraft having fuel trapped in a wing tank due to component malfunction.

Time / Day

Date : 202108

Local Time Of Day : 1801-2400

Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Relative Position.Distance.Nautical Miles : 3

Altitude.MSL.Single Value : 1500

Environment

Flight Conditions : VMC

Weather Elements / Visibility.Visibility : 25

Light : Night

Ceiling.Single Value : 10000

Aircraft

Reference : X

ATC / Advisory.Tower : ZZZ

Aircraft Operator : Personal

Make Model Name : PA-28 Cherokee/Archer/Dakota/Pillan/Warrior

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 91

Flight Plan : None

Mission : Training

Flight Phase : Landing

Route In Use : Direct

Airspace.Class D : ZZZ

Component

Aircraft Component : Fuel System

Aircraft Reference : X

Problem : Improperly Operated

Person

Location Of Person.Aircraft : X

Function.Flight Crew : Instructor

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Flight Instructor

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Commercial

Experience.Flight Crew.Total : 775

Experience.Flight Crew.Last 90 Days : 250

Experience.Flight Crew.Type : 500

ASRS Report Number.Accession Number : 1832670

Human Factors : Situational Awareness

Events

Anomaly.Aircraft Equipment Problem : Critical
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy
Anomaly.Deviation / Discrepancy - Procedural : FAR
Anomaly.Inflight Event / Encounter : Fuel Issue
Result.General : Flight Cancelled / Delayed
Result.Flight Crew : Landed in Emergency Condition

Assessments

Contributing Factors / Situations : Aircraft
Contributing Factors / Situations : Human Factors
Primary Problem : Human Factors

Narrative: 1

Started our flight in ZZZ2 to ZZZ1, ZZZ, ZZZ2 for our commercial cross country requirement. Had flight planned around XA:00am with the student for our departure at XH:30 pm. Flight up to ZZZ1 was uneventful, burned we burned 21 gallons going up, leaving us with 29 gallons to get to ZZZ. The flight planned showed we required 19 gallons to land at ZZZ where we planned to refuel before returning to ZZZ2. This left us with 10 gallons reserve, meaning over 1 hour of flight time at cruise. Roughly 50 miles out from ZZZ we had engine roughness and realized we had pulled the tank dry, so we swapped tanks again with no issue. We knew we had a reserve left and headed directly for ZZZ. Upon entering the pattern and turning base (2 miles) the engine sputtered again and we knew we had run out of gas. Knowing we would not make the runway we notified ATC and landed uneventfully on highway. Fire responded with no injuries or damage. ZZZ ground crew towed the airplane to the airport we had an A&P check everything over, added fuel, did a ground run, everything checked out good and we continued the flight to ZZZ2. Coincidentally when we fueled at ZZZ knowing the airplane has a 50 gallon capacity and the POH says all 50 gallons usable, from dead empty the plane only took 48.2 gallons. In conclusion, during the flight back from ZZZ1 to ZZZ we knew the head wind was more than we had factored for so we recalculated midair and that is where our mathematical error came into play. A simple addition mistake caused us to land just short of the runway that night.

Synopsis

Flight Instructor reported that a miscalculation of fuel requirements resulted in fuel exhaustion and an off-airport landing.

Time / Day

Date : 202108

Local Time Of Day : 0601-1200

Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Altitude.MSL.Single Value : 12000

Environment

Flight Conditions : IMC

Weather Elements / Visibility.Visibility : 10

Light : Daylight

Ceiling.Single Value : 9500

Aircraft

Reference : X

ATC / Advisory.TRACON : ZZZ

Aircraft Operator : Personal

Make Model Name : Baron 55/Cochise

Crew Size.Number Of Crew : 1

Operating Under FAR Part : Part 91

Flight Plan : IFR

Mission : Personal

Flight Phase : Cruise

Airspace.Class E : ZZZ

Component

Aircraft Component : Reciprocating Engine Assembly

Aircraft Reference : X

Problem : Malfunctioning

Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Personal

Function.Flight Crew : Pilot Flying

Function.Flight Crew : Single Pilot

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Private

Experience.Flight Crew.Total : 1367

Experience.Flight Crew.Last 90 Days : 32

Experience.Flight Crew.Type : 550

ASRS Report Number.Accession Number : 1832413

Human Factors : Troubleshooting

Events

Anomaly.Aircraft Equipment Problem : Critical
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy
Anomaly.Inflight Event / Encounter : Fuel Issue
Detector.Person : Flight Crew
Were Passengers Involved In Event : N
When Detected : In-flight
Result.General : Flight Cancelled / Delayed
Result.General : Maintenance Action
Result.Flight Crew : Diverted
Result.Flight Crew : Requested ATC Assistance / Clarification
Result.Flight Crew : Overcame Equipment Problem
Result.Air Traffic Control : Provided Assistance

Assessments

Contributing Factors / Situations : Aircraft
Primary Problem : Aircraft

Narrative: 1

Flying from ZZZ to ZZZ1 takes approximately four hours in this aircraft. Normal fuel management requires the takeoff and the first hour on the mains, then two hours on the auxiliary tanks, finishing the final hour on the main tanks. There was a tail wind that day so the distance traveled on each set of tanks increased. Just prior to ZZZ [VOR] the final fuel switch was made from the auxiliary tanks to the mains. Approximately twenty minute later, the left engine started to surge. Scanning all engine monitoring instruments showed normal temperatures, RPM, fuel flow, and manifold pressures being matched by each engine. The engine returned to normal cruise profile for about fifteen to twenty seconds, then surged violently. Thinking it may be a fuel contamination problem, I switched the left tank back to the auxiliary tank knowing that there was approximately fifteen minutes of fuel remaining. The left engine continued to surge and RPM of the left engine would not go above fifteen hundred RPM. I contacted Approach, apprised them of the situation and requested vectors to the closest airport, which happened to be ZZZ2. They vectored me towards ZZZ2 when the engine decided that it had had enough. The aircraft was handling erratically, so I decided to cage the engine and make the approach and landing on the remaining right engine, I had seven thousand feet to descend to airport elevation with only ten miles to accomplish it, so I circled the airport to the south to keep a right hand pattern into the airport. There was a successful landing and difficult taxi to tie down where I was met with the local [officials] and rescue squad. An inspection a couple days later with a certified A&P found that there was a leak around the filler cap on the left main tank which allowed the low pressure over the wing to suction out the entire tank. The main filler caps are hid from the pilot's view by the engine nacelle. I believe that after three and a half hours of flying through IMC up to the point of the incident weighed heavily on my initial decision not to cage the engine, but to try to troubleshoot problem and on this particular aircraft, the fuel gauges are obscured by the power levers and my initial scan failed to see the amount remaining in the left main tank.

Synopsis

Pilot reported performing an in-flight engine shut down due to a suspected fuel issue and conducted a precautionary landing.

Time / Day

Date : 202108

Local Time Of Day : 1201-1800

Place

Locale Reference.ATC Facility : ZZZ.ARTCC

State Reference : US

Relative Position.Angle.Radial : 050

Relative Position.Distance.Nautical Miles : 10

Altitude.MSL.Single Value : 11500

Environment

Flight Conditions : VMC

Weather Elements / Visibility : Haze / Smoke

Weather Elements / Visibility.Visibility : 10

Light : Daylight

Ceiling.Single Value : 18000

Aircraft

Reference : X

Aircraft Operator : Personal

Make Model Name : Small Aircraft, Low Wing, 2 Eng, Retractable Gear

Crew Size.Number Of Crew : 1

Operating Under FAR Part : Part 91

Flight Plan : VFR

Mission : Training

Flight Phase : Cruise

Route In Use : Direct

Airspace.Class E : ZZZ

Airspace.Class G : ZZZ

Component : 1

Aircraft Component : Engine

Aircraft Reference : X

Problem : Improperly Operated

Problem : Failed

Component : 2

Aircraft Component : Fuel Tank

Aircraft Reference : X

Problem : Improperly Operated

Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Personal

Function.Flight Crew : Pilot Flying

Function.Flight Crew : Instructor

Qualification.Flight Crew : Multiengine
Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Flight Instructor
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Other
Experience.Flight Crew.Total : 6300
Experience.Flight Crew.Last 90 Days : 31
Experience.Flight Crew.Type : 21
ASRS Report Number.Accession Number : 1832206
Human Factors : Communication Breakdown
Human Factors : Time Pressure
Human Factors : Training / Qualification
Human Factors : Troubleshooting
Human Factors : Workload
Human Factors : Situational Awareness
Communication Breakdown.Party1 : Flight Crew
Communication Breakdown.Party2 : Flight Crew

Events

Anomaly.Aircraft Equipment Problem : Critical
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy
Anomaly.Inflight Event / Encounter : Fuel Issue
Detector.Automation : Aircraft Other Automation
Detector.Person : Flight Crew
Were Passengers Involved In Event : N
Result.Flight Crew : Diverted

Assessments

Contributing Factors / Situations : Aircraft
Contributing Factors / Situations : Human Factors
Primary Problem : Human Factors

Narrative: 1

The flight was conducted by an experienced ATP-AMEL owner as PIC and training Captain and an experienced commercial AMEL pilot as Trainee. No passengers were on board. The purpose of the flight was a training mission from ZZZ to ZZZ1 and back to ZZZ and for aircraft familiarization and to run an errand in ZZZ3. The flight landed ZZZ1 uneventfully after about 2.0 hours and estimated 28 gallons of fuel burn. Fuel on board at departure from ZZZ was 70 gallons of 84 gallons maximum usable and flight on only the main tanks (48 gal avail, 28 required) was planned. The two pilots parked at the FBO and requested fuel to be topped then proceeded to take the crew car to town for a couple hours to take care of some business in town and get lunch. Upon return to the FBO line service had already serviced the aircraft and a receipt for 26 gallons of fuel was provided. The pilots performed the pre-flight on the aircraft. The ATP checked the fuel quantity visually on the left side and the commercial pilot checked fuel visually on the right side. By verbal agreement the fuel was observed full in all 4 tanks left and right. The receipt for fuel purchase showed approximately the expected amount of 26 gallons burned on the previous flight. Approximately halfway back to ZZZ from ZZZ1, at about 1.3 hours flight time, the right engine failed. The ATP took over controlling the aircraft and completed all of the memorized and checklist emergency procedures and diverted to ZZZ2 in visual conditions. The landing was uneventful with no damage to the aircraft, no injury to the pilots and no passengers nor ground personnel were involved. Upon inspection of the

aircraft the problem was determined to be the right main fuel tank was empty. This should not have been the case because it held 27 gallons usable and the 1.3 hour flight should've only burned 8-9 gallons on the right side, flown entirely on the main tanks. The aircraft was fueled at ZZZ2 and the left main took 8.5 gallons commensurate with fuel burn estimates. The fuel selector valves and fuel strainers were tested repeatedly and found to be in working condition. There were no evidences of fuel leakage and the tanks all held fuel properly after refuel. The inescapable conclusion is that the FBO failed to fuel the right main tank. One can account for the volume of fuel added at ZZZ1 prior to departure because auxiliary tanks and main tanks were not full at original departure. This made the quantity placed on board commensurate with the quantity used yet it is inexplicable why the Fueler would have not fueled the right main tank. The right main tank would have had 10 gallons in it. This is commensurate with the one 1.3 hour flight to the point of failure. The pilot in training who checked the right main tank either saw what he expected or saw a glare but didn't properly check fuel quantity on the right main tank. Corrective actions for the future: The PIC should always supervise the personnel during fueling to alleviate any confusion about where the fuel is to be placed. Secondly, the PIC should always check fuel tanks visually himself never trust even another experienced pilot to do that for you. Also, while fuel gauges are properly never to be trusted as a reliable fuel assessment or fuel planning tool and many pilots properly rely on visual checks of fuel and fuel burn calculations, a gauge that show a grossly different from what was visually checked should indicate that a visual recheck is required. Also, stay current on emergency procedures. In this case being absolutely current on engine failure procedures and knowing where VMC alternate were made for an uneventful approach and landing.

Synopsis

Twin Engine Instructor Pilot reported an engine failure in flight due to fuel starvation. One main wing tank ran dry after not being serviced at the FBO.

Time / Day

Date : 202108

Local Time Of Day : 0601-1200

Place

Locale Reference.ATC Facility : ZZZ.ARTCC

State Reference : US

Relative Position.Distance.Nautical Miles : 6

Altitude.MSL.Single Value : 4500

Environment

Flight Conditions : VMC

Weather Elements / Visibility.Visibility : 20

Light : Daylight

Ceiling.Single Value : 30000

Aircraft

Reference : X

Aircraft Operator : Personal

Make Model Name : Small Aircraft

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 91

Flight Plan : VFR

Mission : Personal

Flight Phase : Descent

Route In Use : VFR Route

Airspace.Class E : ZZZ

Component

Aircraft Component : Engine

Problem : Malfunctioning

Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Personal

Function.Flight Crew : Pilot Flying

Function.Flight Crew : Single Pilot

Qualification.Flight Crew : Flight Instructor

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Instrument

Experience.Flight Crew.Total : 4177.5

Experience.Flight Crew.Last 90 Days : 36.2

Experience.Flight Crew.Type : 109

ASRS Report Number.Accession Number : 1831723

Human Factors : Distraction

Human Factors : Human-Machine Interface

Human Factors : Situational Awareness

Human Factors : Troubleshooting

Human Factors : Workload
Human Factors : Confusion

Events

Anomaly.Aircraft Equipment Problem : Critical
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy
Anomaly.Ground Event / Encounter : Other / Unknown
Anomaly.Inflight Event / Encounter : Fuel Issue
Detector.Person : Flight Crew
When Detected : In-flight
Result.Flight Crew : Inflight Shutdown

Assessments

Contributing Factors / Situations : Aircraft
Contributing Factors / Situations : Human Factors
Contributing Factors / Situations : Manuals
Primary Problem : Human Factors

Narrative: 1

Departed ZZZ VFR. Our destination airport was ZZZ1. Standard FAA Telephone Weather Briefing was conducted by co-pilot. That information [was] High Pressure, No Significant Weather, Winds Aloft at planned Altitude - 7 knots. NOTAMS/TFRs Checked. Flight Planned distance was 440 miles. Altitude was 6,500 feet. Engine was Leaned as per Pilot's Operating Handbook (POH). Aircraft Fuel Gauges were Operational. At 15 miles from ZZZ1 the Engine began to Sputter. I positioned the Mixture Control to Full Rich, Turned On Aux pump (A) and switched fuel tanks. The Engine Came Back Alive. 3 Minutes Later, the engine began to sputter again. I switched to AUX Pump 2. The engine came back alive momentarily, then quit. At this point, I was descending at L/D Max Whilst Looking for a suitable landing site. A country highway was selected, and used. The off airport landing was uneventful. No Injuries or damage to equipment or property occurred. I telephoned the FAA right-away, and advised them of the situation. After FAA Approval, we put fuel in airplane, [officials] blocked [the] road, and I took off (solo) Flying the airplane to ZZZ1. At ZZZ1 an FAA Field Inspector met me, and I gave him a written statement of the events. The airplane has "Engine Blow-BY". The oil turns black in 15 hours of operation. The manual (1979 Aircraft X) "Book Performance Values" are not accurate. The Engine was Consuming 11.1 Gallons per hour, that should not be. I should have stopped for fuel sooner! Do not believe older owner airplane manuals/POHs. If fuel guages read low to empty - believe them!!

Synopsis

Pilot of a small aircraft reported an uneventful landing off airport due to running out of fuel. The reporter stated the aircraft had "engine blow by" and the fuel consumption rate in the manual is not correct.

Time / Day

Date : 202108

Local Time Of Day : 1201-1800

Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Relative Position.Distance.Nautical Miles : 1

Altitude.AGL.Single Value : 500

Environment

Flight Conditions : VMC

Weather Elements / Visibility.Visibility : 10

Light : Daylight

Aircraft

Reference : X

ATC / Advisory.Tower : ZZZ

Aircraft Operator : Personal

Make Model Name : PA-32 Cherokee Six/Lance/Saratoga/6X

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 91

Flight Plan : VFR

Mission : Personal

Flight Phase : Initial Climb

Airspace.Class D : ZZZ

Component

Aircraft Component : Fuel Quantity-Pressure Indication

Aircraft Reference : X

Problem : Failed

Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Personal

Function.Flight Crew : Single Pilot

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Commercial

Experience.Flight Crew.Total : 435

Experience.Flight Crew.Last 90 Days : 68

Experience.Flight Crew.Type : 30

ASRS Report Number.Accession Number : 1829863

Human Factors : Confusion

Human Factors : Situational Awareness

Human Factors : Time Pressure

Human Factors : Troubleshooting

Human Factors : Workload
Human Factors : Distraction

Events

Anomaly.Aircraft Equipment Problem : Critical
Anomaly.Ground Event / Encounter : Fuel Issue
Anomaly.Inflight Event / Encounter : Fuel Issue
Detector.Person : Flight Crew
When Detected : In-flight
Result.Flight Crew : Landed in Emergency Condition
Result.Flight Crew : Inflight Shutdown
Result.Flight Crew : Returned To Departure Airport
Result.Flight Crew : Requested ATC Assistance / Clarification
Result.Flight Crew : Overcame Equipment Problem
Result.Air Traffic Control : Issued New Clearance
Result.Air Traffic Control : Provided Assistance

Assessments

Contributing Factors / Situations : Aircraft
Primary Problem : Aircraft

Narrative: 1

During preflight fuel was indicated as follows in the 4 tank system in the PA32. L Tip 15 gal, L Main 4 gal, R Main 11 gal, R Tip 17 gal. Through past experience in this aircraft, the gauges had an accuracy of +/- 1 gallon and were considered to be accurate. Fuel was visible in all tanks. I started and taxied on R main tank with the intention of burning fuel from the R main tank to match the L main level. The handbook recommends exhaustion of the main tanks before using the tip tanks. The flight that was going to be conducted was expected to be less than 45 minutes with an expected burn of 12 gallons. Indicated fuel onboard was 47 gallons. Takeoff was accomplished with the fuel selected on R Main tank. At 500 feet as I just started my climbing left-hand turn engine power was suddenly lost. I immediately [advised the tower] and requested Runway XX for an landing. Because I was at such a low altitude I was only focused on airspeed and the best place to land, not restarting the engine. Luckily I had a local flight instructor on board who troubleshot while I flew the airplane. After switching to a tank with fuel (R tip) power was restored almost immediately. I was a bit high and fast for a Runway XX landing and had I continued for runway XX I would have had a significant tailwind. With power restored I elected to land into the wind on Runway XYR because I deemed I was within glide even if power was lost again. I landed on Runway XYR uneventfully. After shutting down it was discovered that R Main tank was completely empty however the gauge was still indicating approximately 11 gallons. Many lessons were learned and I am going to employ the following actions to prevent a reoccurrence. Have fuel gauge for R main inspected and repaired. Heavily scrutinize the level of fuel observed vs the level of fuel indicated on the preflight.

Synopsis

Pilot of a single engine aircraft reported losing engine power on departure, returned to the airport, and landed safely. The reporter stated after landing they discovered the fuel gauge was inoperative.

Time / Day

Date : 202107

Local Time Of Day : 1801-2400

Place

Locale Reference.Airport : OOR9.Airport

State Reference : OR

Relative Position.Angle.Radial : 45

Relative Position.Distance.Nautical Miles : .1

Altitude.MSL.Single Value : 7500

Environment

Flight Conditions : VMC

Weather Elements / Visibility.Visibility : 100

Light : Daylight

Ceiling.Single Value : 20000

Aircraft

Reference : X

Aircraft Operator : Personal

Make Model Name : Small Aircraft

Crew Size.Number Of Crew : 1

Operating Under FAR Part : Part 91

Flight Plan : None

Mission : Personal

Flight Phase : Cruise

Route In Use : Direct

Airspace.Class G : ZSE

Component : 1

Aircraft Component : Reciprocating Engine Assembly

Aircraft Reference : X

Problem : Malfunctioning

Component : 2

Aircraft Component : Fuel Distribution System

Aircraft Reference : X

Problem : Malfunctioning

Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Personal

Function.Flight Crew : Single Pilot

Qualification.Flight Crew : Private

Experience.Flight Crew.Total : 1263

Experience.Flight Crew.Last 90 Days : 52

Experience.Flight Crew.Type : 309

ASRS Report Number.Accession Number : 1828101

Human Factors : Confusion

Human Factors : Time Pressure

Human Factors : Situational Awareness

Events

Anomaly.Aircraft Equipment Problem : Critical

Anomaly.Deviation / Discrepancy - Procedural : FAR

Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy

Anomaly.Ground Event / Encounter : Other / Unknown

Anomaly.Inflight Event / Encounter : Fuel Issue

Detector.Person : Flight Crew

Were Passengers Involved In Event : N

When Detected : In-flight

Result.General : Evacuated

Result.Flight Crew : Diverted

Result.Flight Crew : Took Evasive Action

Result.Flight Crew : Landed in Emergency Condition

Assessments

Contributing Factors / Situations : Aircraft

Contributing Factors / Situations : Airport

Contributing Factors / Situations : Software and Automation

Contributing Factors / Situations : Procedure

Contributing Factors / Situations : Chart Or Publication

Primary Problem : Aircraft

Narrative: 1

About 45 minutes into my flight from ZZZ to ZZZ1 at 7,500 MSL, my aircraft engine experienced a sudden and what appeared to be total power loss leaving the prop wind milling. The engine did not cough or sputter. The fuel gauges indicated approximately 1/4 tank in both left and right tanks. Attempts to restart the engine were made but were unsuccessful. I trimmed for best glide speed and turned toward nearest airport on my VFR chart. Upon arrival I found the airport to be unsuitable for landing due to a large barn constructed at approach end of runway and multiple vehicles parked on pavement of the former runway. Houses and trees were also obstructing the runway sides. Subsequently, I made a forced landing in a clearing adjacent to former runway. The aircraft occupants egressed safely and noticed that fuel was leaking from the airplane's right-wing root and left wing fuel cap. Remove OOR9 (Hanel Field) airstrip a defunct and non-operational airport from the FAA sectional charts and the airport facility directory. There is no possibility to safely land on the runways there. This should also apply to any other non operational airports which have runway obstructions.

Synopsis

Pilot reported engine failure at cruise and elected to divert to the nearest suitable airport. Reporter discovered that the airport was no longer suitable for aircraft landings, and needs to be updated on charts and aircraft software.

Time / Day

Date : 202107

Local Time Of Day : 1801-2400

Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Altitude.AGL.Single Value : 0

Aircraft

Reference : X

Aircraft Operator : Air Carrier

Make Model Name : B777-200

Crew Size.Number Of Crew : 3

Operating Under FAR Part : Part 121

Mission : Passenger

Flight Phase : Parked

Component

Aircraft Component : Indicating and Warning - Fuel System

Aircraft Reference : X

Problem : Malfunctioning

Person : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Pilot Not Flying

Function.Flight Crew : Relief Pilot

Function.Flight Crew : First Officer

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Instrument

ASRS Report Number.Accession Number : 1827829

Human Factors : Communication Breakdown

Communication Breakdown.Party1 : Flight Crew

Communication Breakdown.Party2 : Ground Personnel

Person : 2

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Check Pilot

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Air Transport Pilot (ATP)

ASRS Report Number.Accession Number : 1827586

Human Factors : Communication Breakdown

Communication Breakdown.Party1 : Flight Crew
Communication Breakdown.Party2 : Ground Personnel

Person : 3

Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Air Carrier
Function.Flight Crew : Pilot Not Flying
Qualification.Flight Crew : Multiengine
Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Air Transport Pilot (ATP)
ASRS Report Number.Accession Number : 1827837
Human Factors : Communication Breakdown
Communication Breakdown.Party1 : Flight Crew
Communication Breakdown.Party2 : Ground Personnel

Events

Anomaly.Aircraft Equipment Problem : Critical
Anomaly.Deviation / Discrepancy - Procedural : Weight And Balance
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy
Anomaly.Deviation / Discrepancy - Procedural : FAR
Anomaly.Ground Event / Encounter : Fuel Issue
Anomaly.Inflight Event / Encounter : Fuel Issue
Detector.Person : Flight Crew
When Detected : In-flight
Result.General : None Reported / Taken

Assessments

Contributing Factors / Situations : Aircraft
Contributing Factors / Situations : Company Policy
Contributing Factors / Situations : Human Factors
Contributing Factors / Situations : Procedure
Primary Problem : Human Factors

Narrative: 1

Overloaded Takeoff Push back, engine start, fuel indications all normal. Initial taxi took additional power to move aircraft, which is unusual in a B777-200 at typical [long distance] weights. On takeoff roll, initial acceleration was sluggish even though we were TO2 max; the takeoff roll seemed longer than normal and climbout was less than usual. We were filed for initial cruise FL350, but given option of FL370 as FL350 taken, so we climbed FL370 (FMC said Max FL391). Upon level off at FL370, aircraft struggled to maintain normal cruise Mach speed .83, and I noticed amber hook was seemingly higher than normal (about 245 kts). Shortly after level off, EICAS caution "FUEL DISAGREE". Followed Emergency Check List and Progress Page 2 indicated totalizer about 10,000 lbs. higher than calculated. Determined no fuel leak, and followed up with QRH review of ETOPS failures, selected fuel probes synoptic display from maintenance section in FMC, and noticed many center tank fuel probes inoperative. We called Dispatch/Maintenance conference call on satcom and sent fuel maintenance display to them, all three parties agreed no fuel leak, use calculated fuel, determined it was appropriate to continue flight. We started to burn substantially above plan, and we started to suspect we were heavier than closeout. We referred to performance manual cruise pages, 1.3g maneuver data, and .84 cruise data, and our suspicions were confirmed: amber hook was indicating

maneuvering speeds for approximately 50,000 lbs. heavier aircraft, also fuel flow predictions the same. We called Dispatch and Duty Pilot, asked them to contact ZZZ Station Personnel to obtain FUEL UPLIFT in gallons from fuel company. Prior procedures required us to check this information from the fuel slip. It would have caught this serious error. Initially fuel company kept sending info strictly off our aircraft gauges, but we explained to Dispatch this was not correct, due to inoperative center fuel probes, and we strongly suspected fueler had overfilled the amount required for the flight to ZZZ1. After an hour or so, Dispatch confirmed that we were approximately 50,000 lbs. (7500 gallons) heavier than planned. Our performance data/climb, cruise, descent, and landing data were invalid. The flight crew, not knowing this situation at the time of departure, could have encountered serious consequences; if an emergency such as engine failure occurred the crew may not have acted appropriately because of the unknown situation. implications for engine failure at V1 on takeoff, implications for stopping on wet runway from V1, implications for enroute engine out performance and drift down, implications for correct Vref in ZZZ1. This is an extremely serious incident in my opinion, possibly could have been caught with a simple fuel slip check. Inexperienced fuelers, lack of back up checks by the pilots, cross checking required fuel vs actual loaded fuel, possible fuel sensor failures Recommend having someone in the crew cross check the fuel slip provided by the fueler against the master flight plan.

Narrative: 2

Overloaded Takeoff by 50,000 lbs. Push back, engine start, fuel indications all normal. Initial taxi took additional power to move, which is unusual in a -200 weights. On takeoff roll, initial acceleration seemed sluggish even though we were TO2 max; the takeoff roll seemed longer than normal (I'm new as 777 Captain) and climbout was less than stellar. We were filed for initial cruise FL350, but given option of 370 as 350 taken, so we climbed 370 (FMC said Max 391). Upon level off at 370, aircraft struggled to maintain normal cruise Mach.83, and I noticed amber hook was seemingly higher than normal (about 245 kts). Shortly after level off, EICAS caution "FUEL DISAGREE". Followed Emergency Check List and Progress Page 2 indicated totalizer about 10,000 higher than calculated. Determined no fuel leak, and followed up with QRH review of ETOPS failures, selected fuel probes display from maintenance selection on FMC, and noticed center tank fuel probes inoperative. I called Dispatch/Maintenance conference call on satcom and sent fuel maintenance display to them, all three parties agreed no fuel leak, use calc fuel, ok to continue. We started to burn substantially above plan, and I started to suspect we were heavier than closeout. I referred to performance manual cruise pages, 1.3g maneuver data, and .84 cruise data, and my suspicions were confirmed: amber hook was indicating maneuvering speeds for approximately 50,000 lbs heavier aircraft, also fuel flow predictions the same. I called Dispatch and Duty Pilot, asked them to contact ZZZ Station Personnel to obtain FUEL UPLIFT in gallons from fuel company. We used to check this information from the fuel slip, it would have caught this serious error. Initially fuel company kept sending info strictly off our aircraft gauges, but I explained to Dispatch that was no good due to inoperative center probes, and I strongly suspected fueler had overshoot the mark substantially and not checked uplift gallons from bowser. After an hour or so, Dispatch confirmation came through: 50,000 lbs. (7500 gallons) extra fuel had been loaded by accident. Our performance data was invalid, we were going to be just barely under max landing weight in ZZZ1, implications for engine failure at V1 on takeoff, implications for stopping on wet runway from V1, implications for enroute engine out performance and drift down, implications for correct Vref in ZZZ1. We prepared for the landing in ZZZ1 using max landing weight assumption for Vref and distance calculation. The difference in Vref for FMC calc weight and max wt was nearly 10 kts., and at the higher speed green AOA band was correct. Landed normally. This is an extremely serious incident in my opinion, possibly could have been caught with a simple fuel slip check. Lack

of due care by fueller combined with fuel probe failure. Lack of fuel slip check in procedures. Recommend a fuel slip check prior to departure by crew.

Narrative: 3

[Report narrative contained no additional information.]

Synopsis

B777-200 Flight Crew reported overweight configuration inflight due to overfueling.

Time / Day

Date : 202107

Local Time Of Day : 1201-1800

Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Altitude.MSL.Single Value : 500

Environment

Flight Conditions : VMC

Light : Daylight

Aircraft : 1

Reference : X

ATC / Advisory.Tower : ZZZ

Aircraft Operator : Personal

Make Model Name : Skynight 320

Crew Size.Number Of Crew : 1

Operating Under FAR Part : Part 91

Flight Plan : VFR

Mission : Personal

Flight Phase : Landing

Route In Use : Visual Approach

Airspace.Class C : ZZZ

Aircraft : 2

Reference : Y

ATC / Advisory.Tower : ZZZ

Aircraft Operator : Air Carrier

Make Model Name : Commercial Fixed Wing

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Landing

Route In Use : Vectors

Airspace.Class C : ZZZ

Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Personal

Function.Flight Crew : Pilot Flying

Function.Flight Crew : Single Pilot

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Commercial

Experience.Flight Crew.Total : 1150

Experience.Flight Crew.Last 90 Days : 228
Experience.Flight Crew.Type : 130
ASRS Report Number.Accession Number : 1827200
Human Factors : Situational Awareness
Human Factors : Time Pressure
Human Factors : Communication Breakdown
Communication Breakdown.Party1 : Flight Crew
Communication Breakdown.Party2 : ATC

Events

Anomaly.Conflict : Ground Conflict, Less Severe
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy
Anomaly.Deviation / Discrepancy - Procedural : Clearance
Anomaly.Deviation / Discrepancy - Procedural : Landing Without Clearance
Anomaly.Inflight Event / Encounter : Fuel Issue
Detector.Person : Air Traffic Control
Detector.Person : Flight Crew
Were Passengers Involved In Event : N
When Detected : In-flight
Result.Air Traffic Control : Provided Assistance

Assessments

Contributing Factors / Situations : Human Factors
Contributing Factors / Situations : Procedure
Primary Problem : Procedure

Narrative: 1

Landing at ZZZ with about 40 minutes of fuel estimated upon arrival. Upon entering traffic pattern, I experienced some delays due to faster aircraft on final for [Runway] XXR. Cleared to land number two behind a military F-16 and ahead of another military jet, I believe an F15. Tried keeping my speed up, but it wasn't enough and told to go-around. Upon going around and entering the traffic pattern a second time, I was now at minimum fuel and declared minimum fuel. Tower told me they will get me down and that I'm number two behind a Company jet. Following behind the Company jet, I noticed they were taking a long time to get off the runway, so I slowed down as much as I could so I could avoid another go-around. The Company jet began to exit the runway as I was getting close to touching down and then I was told a second time to go-around. I replied "Unable" and landed. By the time of touchdown the jet was clear of the runway completely. Tower and I both exchanged apologies as I was taxiing to the FBO and went on our way. I wanted to report this since I did land without a landing clearance, but I was uncomfortable with doing another lap in the pattern with such low amount of fuel. I felt the safety of flight would be compromised and decided to land rather than risk a worse situation.

Synopsis

C320 pilot reported landing without clearance due to low fuel caused by a go-around and conflict with military jet aircraft and a commercial passenger jet that didn't clear the runway in time.

Time / Day

Date : 202107

Local Time Of Day : 0601-1200

Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Relative Position.Distance.Nautical Miles : 1

Altitude.AGL.Single Value : 0

Environment

Flight Conditions : VMC

Light : Daylight

Aircraft

Reference : X

ATC / Advisory.CTAF : ZZZ

Aircraft Operator : Personal

Make Model Name : Golden Eagle 421

Crew Size.Number Of Crew : 1

Operating Under FAR Part : Part 91

Flight Plan : None

Mission : Personal

Flight Phase : Initial Climb

Route In Use : Direct

Airspace.Class G : ZZZ

Component : 1

Aircraft Component : Fuel

Aircraft Reference : X

Problem : Improperly Operated

Component : 2

Aircraft Component : Reciprocating Engine Assembly

Aircraft Reference : X

Problem : Malfunctioning

Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Personal

Function.Flight Crew : Single Pilot

Qualification.Flight Crew : Commercial

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Multiengine

Experience.Flight Crew.Total : 2200

Experience.Flight Crew.Last 90 Days : 100

Experience.Flight Crew.Type : 350

ASRS Report Number.Accession Number : 1825280
Human Factors : Communication Breakdown
Communication Breakdown.Party1 : Flight Crew
Communication Breakdown.Party2 : Ground Personnel

Events

Anomaly.Aircraft Equipment Problem : Critical
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy
Anomaly.Deviation / Discrepancy - Procedural : FAR
Anomaly.Ground Event / Encounter : Fuel Issue
Anomaly.Inflight Event / Encounter : Fuel Issue
Detector.Person : Flight Crew
Were Passengers Involved In Event : N
When Detected : In-flight
Result.General : Maintenance Action
Result.General : Flight Cancelled / Delayed
Result.Flight Crew : Returned To Departure Airport

Assessments

Contributing Factors / Situations : Aircraft
Contributing Factors / Situations : Human Factors
Contributing Factors / Situations : Procedure
Primary Problem : Human Factors

Narrative: 1

After arriving at ZZZ, I requested 50 gallon of a gas, 25 per side. On initial departure climb CHTs (Cylinder Head Temperature) on both engines spiked to red line. I verified mixtures rich, airspeed and deck angle. Immediately decided to make a left 180 and land. After landing queried lineman about fueling. He verified that aircraft had been misfueled with Jet A.

Synopsis

Pilot reported encountering engine issues during initial climb and immediately returned to the airport where it was discovered the aircraft had been mistakenly fueled with Jet-A.

Time / Day

Date : 202107

Local Time Of Day : 0001-0600

Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Environment

Flight Conditions : VMC

Light : Night

Aircraft

Reference : X

Aircraft Operator : Air Carrier

Make Model Name : B737 Next Generation Undifferentiated

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Taxi

Flight Phase : Landing

Route In Use : Vectors

Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Pilot Not Flying

Function.Flight Crew : Captain

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Air Transport Pilot (ATP)

Experience.Flight Crew.Total : 161995

Experience.Flight Crew.Last 90 Days : 14

Experience.Flight Crew.Type : 616

ASRS Report Number.Accession Number : 1824040

Human Factors : Situational Awareness

Human Factors : Training / Qualification

Human Factors : Communication Breakdown

Communication Breakdown.Party1 : Flight Crew

Communication Breakdown.Party2 : Flight Crew

Events

Anomaly.Deviation / Discrepancy - Procedural : Weight And Balance

Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy

Anomaly.Inflight Event / Encounter : Fuel Issue

Detector.Person : Flight Crew

Were Passengers Involved In Event : N

When Detected : Aircraft In Service At Gate
Result.General : Maintenance Action

Assessments

Contributing Factors / Situations : Aircraft
Contributing Factors / Situations : Human Factors
Contributing Factors / Situations : Procedure
Primary Problem : Human Factors

Narrative: 1

We took off out of ZZZ to ZZZ1 for a night ETOPS flight. Everything was normal. Although the crew was current, all hadn't flown much in the past XX months due to COVID. We briefed this fact and were aware that we would all have to be on our toes due to the fact that our flying skills were rusty. The flight was normal. We operated the flight very close to the flight plan. After a normal approach and smooth landing, we taxied to the gate. After shutting down the engines and performing the Parking Checklist, we were surprised to see an overweight landing message being printed. We had landed approximately 700 pounds overweight. We sent the appropriate overweight landing code and I called local maintenance to report the issue.

Synopsis

Air carrier Captain reported an overweight landing at destination airport caused by failure to monitor fuel burn during flight. Captain cited rusty pilot skills caused by COVID inactivity as a contributing factor.

Time / Day

Date : 202107

Local Time Of Day : 1201-1800

Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Altitude.AGL.Single Value : 0

Environment

Flight Conditions : VMC

Light : Daylight

Aircraft : 1

Reference : X

ATC / Advisory.CTAF : ZZZ

Aircraft Operator : Personal

Make Model Name : Extra 200/300 Series

Crew Size.Number Of Crew : 1

Operating Under FAR Part : Part 91

Flight Plan : None

Mission : Personal

Flight Phase : Landing

Airspace.Class G : ZZZ

Aircraft : 2

Reference : Y

ATC / Advisory.CTAF : ZZZ

Make Model Name : PA-28 Cherokee/Archer/Dakota/Pillan/Warrior

Crew Size.Number Of Crew : 1

Operating Under FAR Part : Part 91

Mission : Training

Flight Phase : Initial Approach

Airspace.Class G : ZZZ

Aircraft : 3

Reference : Z

ATC / Advisory.CTAF : ZZZ

Aircraft Operator : Personal

Make Model Name : Skylane 182/RG Turbo Skylane/RG

Crew Size.Number Of Crew : 1

Operating Under FAR Part : Part 91

Mission : Training

Flight Phase : Initial Approach

Airspace.Class G : ZZZ

Person

Location Of Person.Aircraft : X
Reporter Organization : Personal
Function.Flight Crew : Single Pilot
Function.Flight Crew : Pilot Flying
Qualification.Flight Crew : Flight Instructor
Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Multiengine
Qualification.Flight Crew : Air Transport Pilot (ATP)
Experience.Flight Crew.Total : 4282
Experience.Flight Crew.Last 90 Days : 216
Experience.Flight Crew.Type : 137
ASRS Report Number.Accession Number : 1821753
Human Factors : Situational Awareness

Events

Anomaly.Conflict : Airborne Conflict
Anomaly.Conflict : Ground Conflict, Critical
Anomaly.Deviation / Discrepancy - Procedural : Clearance
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy
Anomaly.Inflight Event / Encounter : Fuel Issue
Detector.Person : Flight Crew
Were Passengers Involved In Event : N
When Detected : In-flight
Result.Flight Crew : Landed As Precaution
Result.Flight Crew : Took Evasive Action

Assessments

Contributing Factors / Situations : Aircraft
Contributing Factors / Situations : Human Factors
Contributing Factors / Situations : Procedure
Primary Problem : Procedure

Narrative: 1

After conducting an aerobatic practice flight, I entered the pattern on the 45 degree leg to downwind behind two other aircraft, a Cherokee and a C182. The Cherokee was operated by the local flight school and was in front of the C182. The C182 was flying a wider than normal downwind, 3 times the size recommended by the airport. The Cherokee did the same and flew a 1.7 mile long final with no other traffic in front of him. This caused me to perform two 360 degree turns to increase spacing. I also performed S-turns on final but got too close to the C182 so I went around. During the go-around the C182 announced that he was disabled on the runway. I orbited and then started to divert to ZZZ1 but realized that I did not have enough gas to get there. I returned to the ZZZ pattern, declared a fuel emergency on CTAF and landed without incident on taxiway A. My low fuel state was caused by two factors: the excessively large traffic patterns flown by flight schools causing two 360 deg turns, s-turns, and a go-around; and the limitation of the Extra 300/S to prohibit aerobatic flight with fuel in the wing tanks limiting the amount of fuel on board to 12.9 gallons. The FAA must push flight schools to fly tighter traffic patterns. The ZZZ airport requests GA traffic to fly a 1/2 to 3/4 mile downwind and flight schools typically fly 1 to 1.5 mile down winds.

Synopsis

GA pilot reported running low on fuel with the runway closed and without sufficient fuel to divert, elected to land on a taxiway.

Time / Day

Date : 202107

Local Time Of Day : 0601-1200

Place

Locale Reference.ATC Facility : ZZZ.TRACON

State Reference : US

Environment

Flight Conditions : IMC

Light : Dawn

Aircraft

Reference : X

Aircraft Operator : Air Carrier

Make Model Name : MD-11

Crew Size.Number Of Crew : 3

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Cargo / Freight / Delivery

Flight Phase : Climb

Flight Phase : Initial Climb

Route In Use : Vectors

Airspace.Class B : ZZZ

Component : 1

Aircraft Component : Turbine Engine

Aircraft Reference : X

Problem : Malfunctioning

Component : 2

Aircraft Component : Leading Edge Slat

Aircraft Reference : X

Problem : Malfunctioning

Person : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Pilot Flying

Function.Flight Crew : Captain

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Instrument

ASRS Report Number.Accession Number : 1821354

Human Factors : Troubleshooting

Human Factors : Situational Awareness

Human Factors : Communication Breakdown

Human Factors : Distraction
Communication Breakdown.Party1 : Flight Crew
Communication Breakdown.Party2 : Flight Crew

Person : 2

Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Air Carrier
Function.Flight Crew : First Officer
Function.Flight Crew : Relief Pilot
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Multiengine
Qualification.Flight Crew : Instrument
ASRS Report Number.Accession Number : 1821353
Human Factors : Troubleshooting
Human Factors : Communication Breakdown
Human Factors : Distraction
Communication Breakdown.Party1 : Flight Crew
Communication Breakdown.Party2 : Flight Crew

Events

Anomaly.Aircraft Equipment Problem : Critical
Anomaly.Deviation - Speed : All Types
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy
Anomaly.Deviation / Discrepancy - Procedural : FAR
Anomaly.Deviation / Discrepancy - Procedural : Clearance
Anomaly.Deviation / Discrepancy - Procedural : Weight And Balance
Anomaly.Inflight Event / Encounter : Loss Of Aircraft Control
Anomaly.Inflight Event / Encounter : Fuel Issue
Detector.Person : Flight Crew
Were Passengers Involved In Event : N
When Detected : In-flight
Result.Flight Crew : Regained Aircraft Control
Result.Flight Crew : Overcame Equipment Problem
Result.Flight Crew : Became Reoriented

Assessments

Contributing Factors / Situations : Aircraft
Contributing Factors / Situations : Human Factors
Contributing Factors / Situations : MEL
Contributing Factors / Situations : Procedure
Primary Problem : Aircraft

Narrative: 1

During an 18-hour duty day with multiple discrepancies, write-ups, MEL's, a rejected takeoff, a turnback to the gate, and other issues, we departed Runway XXL at ZZZ for the ZZZZ RNAV departure. We had just finished 5 hours on the ground dealing with a hydraulic 3 elevator shutoff valve and inoperative 3-2 non-reversible motor pump, and had briefed the possibility of an associated flight control problem on departure. During the initial climb, we were instructed to maintain 250 kts and acknowledged. Our speed did not require a high-speed climb. Repeatedly during this event (prior to slat retraction, and intermittently all the way to final cruise altitude), we got an amber-boxed engine 1

compressor vibration indication, averaging 4.5 units of vibration. This required retarding power on engine 1 (up to one knob-width, and up to 7-10% N1 reduction), to bring the vibration out of the amber range. When reaching 3,000 feet and just beyond ZZZZ1 on the ZZZZ, we began the clean-up process on schedule, and upon slat retraction, the airplane rolled left. I countered with considerable right aileron. The strong rolling moment occurred coincident with slat retraction. Shortly after, we got a master caution and two level 1 EAD messages (SEL LSAS LOB OFF, SEL LSAS RIB OFF), for which I called for the [Relief Pilot] and FO (First Officer) to address and confirm before selecting off. As that occurred, we got a caution light with a lateral fuel imbalance (LAT FUEL UNBAL), which occurred three more times (four total), along with a 2,000 kg drop in fuel quantity (repeat write-up). While focused on the control issue, I allowed airspeed to increase briefly above the 250 kts limit, estimated to be 270 kts, before decreasing speed again to maintain 250 kts to 10,000 feet ATC did not mention the overspeed, but the [Relief Pilot] did call "airspeed." The ZZZZ departure includes a restriction to remain below 3,000 until ZZZZ1, then a climb to 15,000 or above, by ZZZZ. My priority was addressing the control issue, but adjusted pitch per the flight director to return to 250 kts. No further variations from the speed schedule occurred during the remainder of the climb, or flight. Additional distractions occurring in series (except the engine vibration indication, which occurred intermittently throughout the event), one after the other, did not cause the airspeed excursion, but certainly worked to divert attention, and increase cockpit workload. I became aware of the amber boxed vibration indication about the time we entered the 1100 ft. ceiling, departing ZZZ. I became aware of the rolling moment immediately upon slat retraction, and the airspeed excursion upon the "airspeed" call by the [Relief Pilot]. I did note the pitch attitude below that commanded by the flight director, and noted speed increasing, but the intent was to increase airspeed through slat retract speed to 250, and I focused on the immediate concern, the rolling moment. I did not notice the speed exceed 250 until the [Relief Pilot] brought it to the crew attention with the "airspeed" call. At that time, I observed approximately 270 on the airspeed indication, and increased pitch to the flight director pitch bar to reduce speed. The FO was occupied retracting slats, and performing the follow-up flow associated with my call, "slats retract, after takeoff checklist." Aside from being distracted by the rolling moment, the illumination of the amber compressor vibration indication on engine 1, subsequent LSAS failure, and fuel imbalance were contributing errors to detection, and detection was voiced by the [Relief Pilot]. I became aware of the LSAS issue, and the lateral fuel imbalance issues, with illumination of the master caution light. The LSAS issue caused loss of autopilot 2. I delayed autopilot engagement until the series of issues were addressed, given that they included flight control and subsequent autopilot engagement problems. Once those were addressed and we were outside the busier airspace, the enroute climb and remainder of the flight until descent, were largely uneventful, except for continued monitoring and adjusting of engine 1 throttle position to prevent high compressor vibration. The period of time between detection of the event and the filing of this report is accounted by the end of a long duty day, the necessity of filing another report on the previous leg rejected takeoff in ZZZ1, and then flying home. We had briefed the possibility of a flight control problem, given the return to the gate for the system 3 Hydraulic elevator shutoff valve, and associated 3-2 non-reversible motor pump. The fix on the ramp had been to add another two gallons of fluid to system three, with the explanation that "maybe the gauge is just reading high." I did not find that explanation satisfactory, but following an engine run in which the problem did not reoccur, maintenance was satisfied, the write-up was signed off, and we departed. About the time we entered the cloud layer, the amber-boxed engine 1 compressor vibration alert illuminated, and power was reduced on engine 1 slightly (up to one knob width) to reduce the vibration indication. This indication came and went, as we climbed, necessitating further slight reductions in power. The flight control problem which occurred after departure (strong left rolling moment, coincident with slat retraction)

did not match the potential problem (possible elevator shutoff valve actuation and NRMP malfunction), but did merit attention, during which time I let the airspeed slip. I focused on leveling the wings and reduced angle of attack. I should have maintained pitch with the flight director, but divided the task of roll and pitch to prioritize directional control, while addressing the uncommanded rolling moment. Additional subsequent illumination of the master caution with the LSAS failure, and the lateral fuel imbalance level 2 warning and master caution illumination, were peripheral distractions, as was the engine vibration issue. I was hand flying at the time, and believe it was better to be hand-flying with the potential to feel a problem, than have it masked by the autopilot. Had the autopilot been flying, the speed excursion would likely not have occurred, but we may not have seen or felt the rolling moment as much, if at all. I did feel a shift in the controls when the LSAS was selected off, but couldn't say afterward exactly what I'd felt. In retrospect, the best course would have been to focus on the flight director while addressing the roll. The natural tendency when experiencing that event (rolling moment), for me, was to decrease angle of attack slightly, which I did, which resulted in the excess speed as we accelerated while cleaning up. The rolling moment was caused, I am certain, by asymmetric slat retraction; the degree of asymmetry I couldn't say, but it was significant in feel and the amount of aileron deflection needed to counter the roll. There was no buffet. It was significant enough that on arrival in the ZZZ2 area, we briefed the possibility of the same event when extending slats, and I hand flew the descent and arrival, configuring slats early. A rolling moment did occur, but not to the same degree as departing ZZZ. (We also experienced a strong rolling motion that resulted in heading change, with autopilot engaged, when deploying speed brakes, and observed speed brake asymmetry on the configuration synoptic page, and determined not to use speed brakes further on the subsequent ZZZ2 arrival). These aircraft discrepancies, while important, should not have detracted from the basic task of flying the airplane, or maintaining the assigned/required 250 kts. on departure from ZZZ. Additionally, the subsequent illumination of the master caution light several times with LSAS failure and lateral fuel imbalance issues served as peripheral distractions. The tendency for engine 1 compressor vibration to show high with amber-boxed indication, repeatedly, and to require the engine power to be retarded repeatedly, was also a distraction. Retarding power on the no. 1 engine further caused a slight yawing motion, and subsequent potential rolling moment. Flying all night and then a five hours of trouble shooting on the ramp in a hot airplane didn't help, prior to this takeoff. My reaction to the high compressor vibration indication on engine 1 was to retard the No. 1 throttle slightly; the problem was known and a recurring one which had become a repeat write-up. My reaction to the "airspeed" call was to note the speed and increase pitch to the flight director pitch bar, after observing airspeed in excess of 250 kts. I followed the flight director command while re-acquiring and holding 250 kts, and flying the departure. My reaction to the subsequent master caution illumination was to direct the First Officer and [Relief Pilot] to work together, specifically on the LSAS issue, because with one FCC affected, I wanted confirmation on selecting the correct switches off. The lateral fuel level 2 warning was familiar, as it keeps happening and keeps being written up on this airplane. On arrival, I wrote it up again. The engine vibration was a repeat write-up that was squawked multiple times, and was subsequently written up again on arrival in ZZZ2. On arrival in ZZZ2, the [Relief Pilot] asked if I thought we should file an report, and I advised that yes, I thought it prudent. I advised the crew to file what they saw, individually. After that, I was occupied discussing multiple discrepancies and write-ups with Maintenance, and with the incoming crew as they arrived. It was a very long night and day, and a full duty day. We had a rejected takeoff, ATC directed, at ZZZ1 on the first leg, and I had to write a report for that, after arriving at the hotel. I made that report, and the next day flew home, where I slept for an extended period. This report is submitted outside the 24-hour window, when I had rested adequately to be awake to write it. I did write up the flight control issues, to be addressed by Company Maintenance Personnel. My

actions were my own, and my responsibility. I was the Pilot Flying, and the Captain, and I was hand flying, and regardless of distractions, should not have allowed the airspeed excursion to occur. That said, we should not be seeing so many discrepancies and issues, especially on one flight (let alone one phase of flight simultaneously or subsequently in close succession, and especially not items which have been written up multiple times). These issues ranged from multiple flight control issues to fuel system indications and issues, engine vibration, and even a TCAS fail during the initial climb. The subsequent issues that occurred on the flight including multiple items that were repeat write ups, including a level 2 fuel lateral fuel imbalance several times during the departure. The LSAS failure is also a repeat write-up. I do not include these as excuses for failing to maintain the airspeed at 250 kts, as that was my responsibility, but these are certainly things which do not need to be happening on every flight, as a regular part of flight operations, and this can be fixed. So far as preventing this specific event from occurring again, my counsel is to point my finger at myself and what I would say to anyone else: "fly the damn airplane." I need look no farther than myself as the reason for failing to maintain 250 kts as cleared, and as required by the regulation, and as the captain, the buck stops with me. We can prevent it, in my cockpit, by my not allowing it to occur again. The question will arise why the autopilot was not engaged earlier in the series of events. I had briefed a hand-flown departure. The engine vibration, while a distraction, did not rise to the level of needing automated intervention, and was familiar, having occurred previously and been a repeat write-up. The rolling moment was not something I wanted masked by engaging the autopilot, and the LSAS failure on the heels of the slat retraction impacted autopilot use. At that point we were above the marine layer and climbing in the clear, flight control was good, speed restored, and the problems in hand between the FO and [Relief Pilot]. None of the events warranted a return to land at ZZZ3, and we continued the climb away from busier airspace. We were light enough that the power reduction on engine 1 did not hinder our ability to eventually reach FL390, though with each step climb, reduced power on engine 1 was required, due to compressor vibration indications. I did not see secondary engine instrument indications suggesting a complication or a return, and the indications matched what has been seen on previously flights, written up, and signed off each time. Transitioning to automation was neither necessary, nor in my opinion, the right choice at the time of occurrence, and the airspeed overage was simply due to my momentary focus on the rolling moment. The issue of this report is the airspeed above 250, and the other events discussed are peripheral, to establish the setting.

Narrative: 2

After getting handed off to approach ATC instructed us to limit our speed to 250 kts. However because of multiple issues going on and the flight deck our speed had increased to 300 kts. Once I called airspeed the Captain and then proceeded to reduce the speed to 250. Use auto pilot in airspace in which is busy and cockpit work load is heavy. Have a proper scan and use auto pilot when workload is heavy.

Synopsis

MD11 flight crew reported multiple systems failures that required attention and distracted them, resulting in exceeding an airspeed limitation.

Time / Day

Date : 202107

Local Time Of Day : 1201-1800

Place

Locale Reference.ATC Facility : ZZZ.TRACON

State Reference : US

Altitude.MSL.Single Value : 2000

Aircraft

Reference : X

ATC / Advisory.TRACON : ZZZ

Aircraft Operator : Air Carrier

Make Model Name : Medium Transport, Low Wing, 2 Turbojet Eng

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Ferry / Re-Positioning

Flight Phase : Descent

Route In Use : Vectors

Airspace.Class C : ZZZ

Person : 1

Location Of Person.Aircraft : X

Location Of Person.Facility : ZZZ.TRACON

Reporter Organization : Government

Function.Air Traffic Control : Approach

Qualification.Air Traffic Control : Fully Certified

Experience.Air Traffic Control.Time Certified In Pos 1 (yrs) : 2

ASRS Report Number.Accession Number : 1821200

Human Factors : Situational Awareness

Human Factors : Communication Breakdown

Communication Breakdown.Party1 : ATC

Communication Breakdown.Party2 : Flight Crew

Person : 2

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : First Officer

Function.Flight Crew : Pilot Not Flying

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Flight Instructor

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Multiengine

Experience.Flight Crew.Total : 1800

Experience.Flight Crew.Last 90 Days : 120

Experience.Flight Crew.Type : 400

ASRS Report Number.Accession Number : 1822773

Human Factors : Situational Awareness
Human Factors : Confusion
Human Factors : Communication Breakdown
Communication Breakdown.Party1 : Flight Crew
Communication Breakdown.Party2 : ATC

Events

Anomaly.Aircraft Equipment Problem : Less Severe
Anomaly.ATC Issue : All Types
Anomaly.Deviation - Altitude : Overshoot
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy
Anomaly.Deviation / Discrepancy - Procedural : Clearance
Anomaly.Inflight Event / Encounter : Fuel Issue
Anomaly.Inflight Event / Encounter : CFTT / CFIT
Detector.Person : Air Traffic Control
When Detected : In-flight
Result.Flight Crew : Returned To Clearance
Result.Flight Crew : Requested ATC Assistance / Clarification
Result.Air Traffic Control : Issued Advisory / Alert
Result.Air Traffic Control : Issued New Clearance

Assessments

Contributing Factors / Situations : Aircraft
Contributing Factors / Situations : Airspace Structure
Contributing Factors / Situations : Human Factors
Contributing Factors / Situations : Procedure
Primary Problem : Human Factors

Narrative: 1

Aircraft X was issued a descent to 2500 feet but as soon as I said 2000, the pilot started to read back 2000. This caused the 500 (of the 2500) to be blocked and when I un-keyed, I just heard the call sign portion of the transmission. The aircraft descended to 2000 feet and asked for an altimeter setting and I noticed the aircraft below the 2500 minimum vectoring altitude (MVA) and assigned altitude. I issued low altitude alert and instructed them to climb to 2500 feet. I missed the read back. This all stemmed from the aircraft departing ZZZ with a known mechanical issue and low on fuel. They had diverted to ZZZ earlier (unknown to me) and was trying to reposition back to ZZZ1. They departed ZZZ1 minimum fuel and would not accept an approach at ZZZ1 that was consistent with the flow of traffic. I should have [requested priority handling] for the pilot immediately and handled it as one. The pilot put the FAA in a tough situation as I was trying to do my best to help the pilots who were in a bind, but I also missed many things I should have done. I did not ensure the aircraft had the weather and NOTAMs at ZZZ1, [request priority handling] for the aircraft, advise them of their position when vectoring them on to the localizer, allowed them to intercept the localizer inside the final approach fix. I did not catch the lack of read back when I issued 2500 MVA altitude and they over keyed me with a read back of 2000. Issue a brasher to the pilot. I need to make sure all the phraseology and regulations are followed on our side (ATC) However, Aircraft X's principle operations inspector needs to investigate if the flight from ZZZ to ZZZ1 was conducted legally and safely. It was very apparent the urgency to land immediately after taking off from ZZZ. This should not have happened. This caused me to make shortcuts and put the FAA at risk of liability as well as put the pilots at risk of missing something like landing on runway XX at ZZZ1, a closed runway. The pilots were wanting to land on runway XX at one point.

Narrative: 2

Upon departure from ZZZ to ZZZ1, a short 5 minute or so flight, we were given a heading and an initial altitude of 3000 feet on initial departure. Given we were taking the plane in for maintenance, the plane had enough fuel to meet the minimum FAR requirements for an IFR flight. While setting up for the approach at hand, we were told by the controlling facility to descend and maintain 2,000 feet which was read back. A couple minutes went by as we were being vectored in for the approach and ATC gave us a low altitude alert followed by a command to "descend and maintain 2,500 feet MSL". Having already been cleared down to 2000 feet initially after we asked for lower, we read back the instruction for 2,500 feet followed by a "we were initially cleared down to 2,000 feet MSL". At that point, the controlling facility told us that they weren't going to debate over it and we instigated the climb to 2,500 feet. We only meant to reiterate the initial 2,000 foot altitude instruction for clarification purposes, not for argumentative purposes, as that was the initial instruction given to us after all. After landing, we received a phone call to contact the appropriate controlling facility to clarify the situation. We pulled the tapes from the appropriate controlling facility at the time of the incident and the tapes coincide with our initial hearing of "2,000 feet MSL," not "2,500 feet MSL". The altitude is clearly heard as 2,000 feet being the instruction given and 2000 feet being the instruction read back; not "2,500". In order to keep a situation like this from reoccurring, an articulate tone should be adopted in order to hear and say the correct altitude assigned. Given that a weather system was rolling through as well, that added extra workloads on both us, the pilots, along with the controlling facility.

Synopsis

TRACON Controller and Air Carrier pilot reported the pilot descended below the Minimum Vectoring Altitude due to a misunderstanding of the assigned altitude between the two parties.

Time / Day

Date : 202106

Local Time Of Day : 1801-2400

Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Relative Position.Angle.Radial : 329

Relative Position.Distance.Nautical Miles : 5.7

Altitude.AGL.Single Value : 1500

Environment

Flight Conditions : VMC

Weather Elements / Visibility.Visibility : 10

Light : Daylight

Ceiling.Single Value : 6000

Aircraft

Reference : X

Aircraft Operator : Personal

Make Model Name : Amateur/Home Built/Experimental

Crew Size.Number Of Crew : 1

Operating Under FAR Part : Part 91

Flight Plan : None

Mission : Personal

Flight Phase : Cruise

Route In Use : None

Airspace.Class G : ZZZ

Component : 1

Aircraft Component : Fuel Storage System

Aircraft Reference : X

Problem : Malfunctioning

Component : 2

Aircraft Component : Reciprocating Engine Assembly

Aircraft Reference : X

Problem : Malfunctioning

Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Personal

Function.Flight Crew : Single Pilot

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Private

Experience.Flight Crew.Total : 2750

Experience.Flight Crew.Last 90 Days : 40

Experience.Flight Crew.Type : 450
ASRS Report Number.Accession Number : 1819534
Human Factors : Troubleshooting

Events

Anomaly.Aircraft Equipment Problem : Critical
Anomaly.Inflight Event / Encounter : Fuel Issue
Detector.Person : Flight Crew
Were Passengers Involved In Event : N
When Detected : In-flight
Result.General : Maintenance Action
Result.Flight Crew : Landed in Emergency Condition
Result.Flight Crew : Took Evasive Action

Assessments

Contributing Factors / Situations : Aircraft
Primary Problem : Aircraft

Narrative: 1

I was flying along the highway at 1,500 feet AGL with the mountains to my north and the ocean to my south. I took the plane on a personal flight out to Location. I was returning to my home base airport ZZZ and was 5 miles out when the engine started to cough/quit very erratic. It was apparent that I needed to land immediately as the plane would not be able to hold altitude. My landing options at 1,500 feet in this area were limited. The tide was in so there were no beach options along the ocean and the mountains were cliffs down to the road. I landed the aircraft on the highway with the motor still coughing. After safely landing the plane with no damage to aircraft or risk to other traffic on the road I shut down the motor and pushed it off on a shoulder. It appeared to me that I was having a fuel delivery issue and that was causing my motor to choke. I had 12 gallons of fuel in the plane and was operating with 1.25 hours remaining. I sumped the fuel and was unable to find contaminants at the time. I poured 3 each 5 gallon travel bags of fuel into the wings and sumped the fuel again. After 40 minutes of inspection, I started the motor up again, It ran rough for short period of time and then came back to full power and normal operation condition. I departed right after traffic was momentarily stopped on either end and returned to my home airport without further issue. I have scheduled a full mechanical inspection of the fuel tank plumbing system. I suspect the vent caps and/or vent lines for the new fuel tanks are not venting as fast as the motor is sucking fuel when the tanks get down to 12 gallons remaining. This is an experimental aircraft which received a new wing and fuel tank system and I have only flown the new wing for approximately 60 hours. We will also retest each tank to verify usable fuel in each tank and make determination if fuel indicating lines need to be re-placarded for usable. Plane will not be returned to service until root cause has been identified with mechanic.

Synopsis

Experimental aircraft pilot reported engine problems developed during cruise, resulting in an off-airport landing. Pilot suspected that the fuel supply system was not working properly.

Time / Day

Date : 202106

Local Time Of Day : 0601-1200

Place

Locale Reference.ATC Facility : ZZZ.ARTCC

State Reference : US

Altitude.MSL.Single Value : 7000

Environment

Flight Conditions : Mixed

Weather Elements / Visibility : Rain

Weather Elements / Visibility.Visibility : 10

Light : Daylight

Ceiling.Single Value : 1600

Aircraft

Reference : X

ATC / Advisory.Center : ZZZ

Aircraft Operator : Personal

Make Model Name : Twin Bonanza 50

Crew Size.Number Of Crew : 1

Operating Under FAR Part : Part 91

Flight Plan : IFR

Mission : Personal

Flight Phase : Cruise

Airspace.Class E : ZZZ

Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Personal

Function.Flight Crew : Pilot Flying

Function.Flight Crew : Single Pilot

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Private

Experience.Flight Crew.Total : 1600

Experience.Flight Crew.Last 90 Days : 30

Experience.Flight Crew.Type : 400

ASRS Report Number.Accession Number : 1819298

Human Factors : Situational Awareness

Human Factors : Troubleshooting

Human Factors : Workload

Human Factors : Distraction

Events

Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy

Anomaly.Inflight Event / Encounter : Fuel Issue

Detector.Person : Flight Crew
When Detected : In-flight
Result.General : Flight Cancelled / Delayed
Result.Flight Crew : Diverted
Result.Flight Crew : Requested ATC Assistance / Clarification
Result.Flight Crew : Landed in Emergency Condition
Result.Air Traffic Control : Issued New Clearance

Assessments

Contributing Factors / Situations : Environment - Non Weather Related
Contributing Factors / Situations : Human Factors
Contributing Factors / Situations : Procedure
Primary Problem : Human Factors

Narrative: 1

I returned from a short flight to ZZZ1 and ordered fuel at the FBO (Fixed Base Operator). The instructions were to top off both inboards and add 20 gal/side on the outboards - 100LL. The outboards were both empty, so this should have given me 44 gal/side in the mains and 20 gal/side in the aux (770 pound fuel load, which is my standard). I stayed with the plane to show the line person the filler locations and ensure that the fuel was 100LL. I then went into the FBO. I paid for the fuel but got no receipt, due to a change in their payment system being ongoing. I then returned to the aircraft, started it, and put it in the hangar. The next morning I returned to preflight for a trip with my entire family (me plus 4). My preflight checks oil first. This was done and OK. I then check fuel quantity using a calibrated dipstick. I then sump. I work left to right. The first dipstick goes into the left aux tank. It was completely full. I then measured the left main which was also completely full. I concluded that the line guy had topped all four fillers and the aircraft would be overweight without removal of my spares kits, my tools, and some baggage. As I was going to measure the right tanks my youngest child said he had to go to the bathroom. He is undergoing chemotherapy and my wife and I respond to bathroom requests quickly. I stopped the preflight and we took him to a bathroom nearby. I resumed the preflight upon my return, but was only 2 or 3 minutes into it when he had to go to the bathroom again. When we returned from the second bathroom trip I finished measuring the tanks and wrote the quantities in my preflight form. I wrote "LM - 44, LA - 46, RM - 44, RA - 46." I then sumped the fuel, which was OK. Ordinarily I would pour the sumped fuel into the right main filler but I put it instead into my power tug because I did not want one ounce of extra weight in the plane. I then did a weight and balance to reduce the weight until we were at max gross. I had to remove material from the plane that is ordinarily kept there. We then boarded and flew from ZZZ1 to ZZZ2 without incident. At ZZZ2 we dropped off our 3 kids with grandparents and prepared for the next leg to ZZZ3. I always buy fuel when I stop anywhere and then dip and sump it. However, I had loads of fuel because of the over-fueling at ZZZ1 and ZZZ2 is only a 4,000 foot runway. I apologized for not buying fuel and promised to buy some when coming back through. I did not dip the tanks. I fired up the plane and my wife and I took off for ZZZ3. While in cruise, about 25 minutes into the flight, the right engine abruptly lost power. I looked and saw that it had no fuel pressure. I engaged the right boost pump. Fuel pressure returned to normal and the engine ran normally. I concluded I had lost the right engine-driven pump. About 1 minute later it started to surge again. I switched to the right aux tank but this did not help. I still believed I had lost the engine driven pump, but I had run through the checklist and was not able to restore power. I decided not to mess with it further in the air. I went through the shutdown list and feathered the right engine. I then called Center to notify. Center suggested ZZZ and I concurred. I descended toward ZZZ, in and out of

IMC. I loaded the RNAV approach as it looked like I might need it. I did a 360 at the holding point to lose altitude. I decided to make a left racetrack even though that was the unprotected side of the hold because I wanted to turn into the running engine (I was way above any obstructions). I intercepted the centerline and flew the approach on the left engine. The approach and landing were uneventful. I was able to taxi in and park on the left engine. The FBO at ZZZ told me they had already contacted ATC and informed them I was safely down. We dropped our bags at the FBO and my wife started trying to get a rental car. I went out to the plane and opened the cowlings to see if there was anything obvious. There wasn't anything. All fuel lines (including return) were intact. I visually inspected the engine driven pump but nothing was apparent. I sat thinking through the symptoms and finally went and pulled the right main filler cap. It was bone dry. I ordered fuel. After adding fuel the engine started and once the prop spun fast enough to get out of the feather detents it returned to normal operation. There were only two possible explanations: (1) A massive fuel leak, but there was no evidence for that; or (2) The ZZZ1 line guy filled both aux tanks, and filled the left main tank, but put no fuel at all in the right main tank. I think #2 is what happened. I thought I had dipped the right main (I even wrote it on the form) but the double interruption in preflight must have meant that I started again in the wrong place and never checked the right main. After the initial ground start I again stopped to check for fuel leaks. There were none. I then did a 30 minute ground run all of which was normal. We reloaded the plane and took off for ZZZ3. The plane has had no trouble since. It was simply a dry tank. But, it was set up by the following unusual circumstances all lining up: (1) Line guy fails to fuel as directed (2) Problem not immediately caught because I was just putting it in the hangar and did not dip as per usual, (3) Lack of fuel receipt which would have shown the wrong quantity, (4) Double distraction in preflight, (5) further distraction by consternation over being heavy and having to unload the plane, (6) Failure to take fuel at ZZZ2, and (7) Failure to dip at ZZZ2 anyway. Lessons Learned: (1) If you are interrupted in preflight start over from the beginning; (2) Dip the fuel every time before you leave the ground. The landing at ZZZ2 was the first takeoff without dipping I can remember in many years. (3) With plenty of altitude under you maybe consider working the restart problem a bit longer but not much longer because it's better to work that problem on the ground. The reason for #3 is I should have been able to restart the right engine. If I had left the right selector on aux (which had about 40 gallons in it) for a minute or two I suspect the engine driven pump would have re-primed (There is no boost pump available for the aux tanks in the BE-50). Even better - I should have cross fed the right engine from the left main and used the left main boost pump to re-prime the engine driven pump. This last option would have worked and power would have been restored. On the other hand - I am glad I have done training at least once per quarter and the actual handling of the aircraft was not challenging, even though it was an IMC approach down to about 1500 feet. I think this is the main reason I thought "Just cage the ***%@@ thing and figure it out on the ground." In writing this explanation I want to make plain that responsibility for all these events rests with me. Line guys make errors and it is the pilot's job to catch them. It is striking to me that there were 3 separate events deviating from my normal habits of operation. Inspect fuel immediately after fueling, do not re-start a pre-flight in the middle, never take off without dipping all four fillers. Had I conformed to my normal habits on any of the three, this would not have happened. Lastly, I feel a bit bad about declaring and tying up resources. However I would do it again. ATC was just as helpful as you would expect and it was nice to be able to offload distractions, looking up weather and frequencies, when I was single engine in IMC.

Synopsis

BE-50 pilot reported the right engine lost power in flight. The reporter landed safely and discovered the right fuel tank was empty even though they had requested the fueler to fill it prior to departure.

Time / Day

Date : 202106

Local Time Of Day : 0601-1200

Environment

Flight Conditions : VMC

Weather Elements / Visibility. Visibility : 10

Light : Daylight

Aircraft

Reference : X

Aircraft Operator : Personal

Make Model Name : Amateur/Home Built/Experimental

Operating Under FAR Part : Part 91

Flight Plan : None

Mission : Personal

Flight Phase : Descent

Route In Use : Direct

Airspace. Class E : ZZZ

Component

Aircraft Component : Fuel Tank

Aircraft Reference : X

Problem : Malfunctioning

Person

Location Of Person. Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Personal

Function. Flight Crew : Pilot Flying

Function. Flight Crew : Single Pilot

Qualification. Flight Crew : Air Transport Pilot (ATP)

Experience. Flight Crew. Total : 22000

Experience. Flight Crew. Last 90 Days : 25

Experience. Flight Crew. Type : 200

ASRS Report Number. Accession Number : 1818516

Events

Anomaly. Aircraft Equipment Problem : Critical

Anomaly. Deviation / Discrepancy - Procedural : Published Material / Policy

Anomaly. Inflight Event / Encounter : Fuel Issue

Detector. Person : Flight Crew

Were Passengers Involved In Event : N

When Detected : In-flight

Result. General : Maintenance Action

Result. General : Flight Cancelled / Delayed

Result. Flight Crew : Landed in Emergency Condition

Result. Flight Crew : Took Evasive Action

Assessments

Contributing Factors / Situations : Aircraft

Primary Problem : Aircraft

Narrative: 1

Returning from a camping trip, while descending over mountains east of ZZZ near ZZZ1 the fuel low level light came on, I checked the fuel and the sight gauge on the right tank showed half full indicating at least 6.5 gallons of fuel. The left tank sight gauge showed empty. Shortly after that the fuel pressure began to fluctuate and the engine began surging. I turned on the second boost pump and moved the stick around to try and keep the engine running. The engine continued to surge but did not quit. However the engine power was not enough to maintain altitude. I continued to descend and decided I would not make the airport. At that time I picked an open, grass field and landed. There was no damage to the aircraft nor any injuries. I called a friend to bring me some fuel. When he arrived I added 8 gallons to the left tank. I had help in pushing the aircraft up onto the county road at which time I started the engine and ran it up to full power. The engine ran with no adverse indications. I took off from the county road and flew to ZZZ. I rechecked the engine operation after topping off both tanks. On my continued trip to my home field, at altitude I turned the left tank valve off. Within 8 to 10 minutes the fuel low level light would illuminate. Turning the left tank back on would extinguish the light. I will be examining the right tank fuel feed system as there could be some kind of blockage.

Synopsis

GA pilot reported making an off airport landing due to fuel starvation.

Time / Day

Date : 202106

Local Time Of Day : 0001-0600

Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Relative Position.Angle.Radial : 270

Relative Position.Distance.Nautical Miles : 8

Altitude.MSL.Single Value : 4000

Environment

Flight Conditions : VMC

Weather Elements / Visibility.Visibility : 10

Light : Night

Aircraft

Reference : X

Aircraft Operator : Air Carrier

Make Model Name : Bonanza 36

Crew Size.Number Of Crew : 1

Operating Under FAR Part : Part 135

Flight Plan : IFR

Mission : Cargo / Freight / Delivery

Flight Phase : Descent

Route In Use : Visual Approach

Airspace.Class C : ZZZ

Component : 1

Aircraft Component : Reciprocating Engine Assembly

Aircraft Reference : X

Problem : Malfunctioning

Component : 2

Aircraft Component : Fuel Storage System

Aircraft Reference : X

Problem : Improperly Operated

Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Captain

Function.Flight Crew : Single Pilot

Qualification.Flight Crew : Flight Instructor

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Commercial

Experience.Flight Crew.Total : 3700
Experience.Flight Crew.Last 90 Days : 240
Experience.Flight Crew.Type : 300
ASRS Report Number.Accession Number : 1817984
Human Factors : Time Pressure
Human Factors : Distraction
Human Factors : Human-Machine Interface
Human Factors : Situational Awareness

Events

Anomaly.Aircraft Equipment Problem : Critical
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy
Anomaly.Inflight Event / Encounter : Fuel Issue
Detector.Person : Flight Crew
Were Passengers Involved In Event : N
When Detected : In-flight
Result.General : Maintenance Action
Result.Flight Crew : Inflight Shutdown
Result.Flight Crew : Landed in Emergency Condition
Result.Flight Crew : Requested ATC Assistance / Clarification
Result.Air Traffic Control : Provided Assistance

Assessments

Contributing Factors / Situations : Aircraft
Contributing Factors / Situations : Human Factors
Contributing Factors / Situations : Procedure
Primary Problem : Human Factors

Narrative: 1

The flight was approximately 5 hours. Had fuel for 6.5 hours. Approximately 2/3rds of the way through the flight the engine began to get rough and vibrate. I started to troubleshoot with the checklist after verifying temperatures and fuel pressure. I used the "engine discrepancy check rough running engine". After doing this I determined the problem to be a spark plug on the third cylinder While on L mag. This process distracted me and I most likely did not keep up with changing tanks for the next bit of time as I was thinking about it. After about 15 minutes it went smooth again and so I re checked the magnetos and they were both back to normal. Again I was thinking about it for maybe 15 more minutes. Because of this I believe the fuel on the left tank was left on too long and the fuel gauge did not show an accurate amount. As I got closer to the airport and started descending I used the descent checklist and changed to the right tank. The left at the time was indicating about 13 gallons and the right about 19 gallons. I knew this was probably not correct because I had been flying already for 5 hours and that would mean I have 2 more hours of fuel. I reduced power when I started my descent slowly retarding throttle back to 18 in. As I descended to 4,000 feet and reached 18 in. the engine began to run rough again. I checked the instruments and saw that the cylinder 4 EGT was too low on the annunciator. And also the fuel flow was fluctuating. The engine started surging from lack of fuel. I quickly did the Engine Failure After Liftoff and noticed I was already on the tank with higher indicated fuel so tried the left tank. Without helping I tried to go back to right tank. Notified ATC that I was requesting priority handling and turning to the airport for [Runway] XXL. I knew there was a Learjet approaching for [Runway] XXR and this influenced my decision. Performed the maximum glide checklist. Shut down engine when I had the field made. Landed safely on Runway XXL with no damage to airplane requested

for a tow and called my Dispatcher. The fuel gauges were indicating top of yellow arc still on left and half on right tank. After parking it settled down to 1/8th left tank half right tank. Confirming my suspicion, they were not accurate. After fueling the aircraft to bottom of tabs after Maintenance checked it out they found 3-4 gallons useable in the left tank and the remaining fuel in the right tank of approximately 20 gallons. Maintenance did not find anything wrong with the airplane. It is clear to me that I got distracted dealing with the problem Midway in the flight and missed changing the tank for an extended period of time. In the future I will write down the time I change fuel tanks and the estimated remaining fuel in each tank and compare it against the fuel gauge. I will also change tanks more frequently to prevent such a big imbalance. Every 30 minutes. I am unsure of why the airplane struggled to produce power other than the potential low fuel on the left tank. I would think switching to the tank that was fuller in the descent checklist would have solved this issue. Fuel was checked prior to the flight to confirm it was correctly filled.

Synopsis

Bonanza pilot reported distraction contributed to improper fuel balance, causing fuel starvation to the engine and an In flight Shut Down and precautionary landing.

Time / Day

Date : 202106

Local Time Of Day : 0601-1200

Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Aircraft

Reference : X

Aircraft Operator : Air Carrier

Make Model Name : A321

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Cruise

Component

Aircraft Component : Fuel Distribution System

Aircraft Reference : X

Problem : Failed

Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Captain

Function.Flight Crew : Pilot Not Flying

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Multiengine

ASRS Report Number.Accession Number : 1817247

Events

Anomaly.Aircraft Equipment Problem : Critical

Anomaly.Deviation / Discrepancy - Procedural : Weight And Balance

Anomaly.Deviation / Discrepancy - Procedural : Clearance

Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy

Anomaly.Inflight Event / Encounter : Fuel Issue

Detector.Person : Flight Crew

When Detected : In-flight

Result.General : Maintenance Action

Result.General : Flight Cancelled / Delayed

Result.Flight Crew : Diverted

Result.Flight Crew : Requested ATC Assistance / Clarification

Result.Flight Crew : Landed in Emergency Condition

Result.Air Traffic Control : Provided Assistance

Assessments

Contributing Factors / Situations : Aircraft

Primary Problem : Aircraft

Narrative: 1

Wing Fuel Imbalance exceeded limits. Advised ATC, landed in ZZZ, overweight landing.
Cause - Bad fuel transfer pumps/valves. Fix the old airplanes.

Synopsis

A321 Captain reported a wing fuel imbalance limit exceedance during cruise.

Time / Day

Date : 202106

Local Time Of Day : 1201-1800

Place

Locale Reference.ATC Facility : ZZZZ1.ARTCC

State Reference : US

Altitude.MSL.Single Value : 19000

Environment

Flight Conditions : Mixed

Weather Elements / Visibility : Rain

Weather Elements / Visibility : Thunderstorm

Light : Daylight

Aircraft

Reference : X

ATC / Advisory. TRACON : ZZZZ

Aircraft Operator : Air Carrier

Make Model Name : B737 Undifferentiated or Other Model

Crew Size.Number Of Crew : 2

Flight Plan : IFR

Mission : Passenger

Nav In Use : FMS Or FMC

Flight Phase : Descent

Route In Use : Vectors

Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Captain

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Air Transport Pilot (ATP)

Experience.Flight Crew.Total : 701

Experience.Flight Crew.Last 90 Days : 141

Experience.Flight Crew.Type : 4796

ASRS Report Number.Accession Number : 1816825

Human Factors : Workload

Human Factors : Communication Breakdown

Communication Breakdown.Party1 : Flight Crew

Communication Breakdown.Party2 : ATC

Events

Anomaly.Deviation - Track / Heading : All Types

Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy

Anomaly.Deviation / Discrepancy - Procedural : Clearance

Anomaly.Inflight Event / Encounter : Weather / Turbulence
Anomaly.Inflight Event / Encounter : Fuel Issue
Detector.Person : Flight Crew
Detector.Person : Air Traffic Control
Were Passengers Involved In Event : N
When Detected : In-flight
Result.Flight Crew : Requested ATC Assistance / Clarification
Result.Flight Crew : Diverted
Result.Air Traffic Control : Provided Assistance

Assessments

Contributing Factors / Situations : Human Factors
Contributing Factors / Situations : Procedure
Contributing Factors / Situations : Weather
Primary Problem : Weather

Narrative: 1

Starting with the descent into ZZZZ we were cleared the arrival and a descent to FL190 with thunderstorms and lightning on both sides of the route. Turbulence was light to moderate with intermittent rain and ice pellets. We were instructed that an airplane had gone around on the RNP Runway XX for lack of visibility although we could not get any exact information on what the conditions at the field were. ATIS was not operating for the station and we were relying on Approach Control to pass us that information. METAR through ACARS showed that the conditions at the field were OK with a few low clouds but high ceilings and almost no wind. Further complicating matters was the fact that enroute we received a message from Dispatch that the ILS for Runway XX was unserviceable thus forcing us into the RNP Approach with higher minimums and higher visibility requirements. Shortly after being told by Approach that an aircraft had gone around at ZZZZ we were instructed to hold at ZZZZZ as published at FL190. This hold was in airspace that was mostly clear from severe weather but with thunderstorms mostly to the north and east in close proximity to the hold. At this time we calculated a Bingo fuel to our filed alternate of ZZZZ1 which was 95 miles away. Fuel upon entering the hold was 10,200 and we calculated a BINGO for ZZZZ1 of 8,100 lbs. which would get us from a missed approach to ZZZZ1 with about 6,000 lbs. remaining. Requesting the METAR through ACARS showed the weather at ZZZZ1 was VMC. With little knowledge of the actual field conditions at ZZZZ other than that visibility may have been poor we elected to commence the arrival and attempt the RNP for Runway XX. Approach was still reporting that the conditions on the field were good but that an airplane had gone around about a half hour ago. We were then cleared a descent in the hold and then cleared for the approach. This was only after making many radio calls to ZZZZ Control to determine what their plan was for us. Other than being told to hold they provided no EFC (expect further clearance) time and we were given no options. We informed Approach that if we needed to execute the missed approach we would then need to proceed directly to our filed alternate, ZZZZ1. It was at this time we were informed that this was not possible and that ZZZZ1 was not accepting any more aircraft. I instructed the FO to contact Dispatch for clarification. Dispatch informed us that ZZZZ1 was in fact accepting aircraft but that the nearest alternate beside ZZZZ1 was ZZZZ2, which was over 300 miles away. During the approach ATC told several other aircraft requesting a diversion to ZZZZ1 including 2 other [Company] aircraft and a [Airline] heavy that they were not accepting aircraft. After Approach switched us to ZZZZ Tower they informed us that there was "no visibility". They also told us that they "cannot see the runway from the Tower" but they had the lights full up. We flew the approach to minimums and I did not see the runway and started the published missed approach. The

FO said he saw the runway just after we started the missed approach. During the missed approach we once again asked for vectors to ZZZZ1. This was a very high workload environment at night, in the weather with terrain and still burning fuel. Approach told us that ZZZZ1 was not accepting aircraft. He repeatedly told others the same thing. At this time we were looking for further options but in my mind we could not afford to hold and did not have the fuel to go to ZZZZ2. Exacerbating this problem was the fact that my years old iPad, although sufficiently charged was at times very slow to respond to my inputs. Several times I had to look across the flight deck at my FOs iPad to confirm information. After telling Approach that we needed to divert to our filed alternate they would again insist we couldn't go there then started talking to other aircraft. At this time I instructed the PM to tell approach that we were proceeding to ZZZZ1, that we were minimum fuel, and we put that at the top of the LEGS page and began heading that way at 10,000 ft. Approach was still being unhelpful and he was saturated with other aircraft and radio calls. I instructed the PM to remain on ZZZZ Control frequency and selected ZZZZ1 Approach on VHF2. After contacting them and relaying our position and intentions they said they would make room for us and to proceed direct the field. I told them we were still in contact with ZZZZ control and that we would be back with them shortly. Switching my attention back to the flight deck the PM had set up the FMC for ZZZZ1 and I sent the Diversion message to Dispatch and informed the Flight Attendants and passengers that we were proceeding to ZZZZ1. While proceeding direct to ZZZZ1 I used Captains Authority to deviate west and south for more thunderstorms between ZZZZ and ZZZZ1 as ZZZZ still wasn't responding to queries in a timely manner. The PM informed me that he could not get a word in edgewise with ZZZZ Control but they had reluctantly cleared us to ZZZZ1 at 12,000 ft. I instructed him to switch frequencies to ZZZZ1 Approach since we could not get ZZZZ to respond or give much helpful information at all. After the weather deviation ZZZZ1 approach was very helpful and accommodating and cleared us for the VOR DME Runway XX at ZZZZ1. The approach and landing were uneventful. After landing we held on a taxiway for about an hour waiting for a gate. There were at least 4 other diversions there in similar situations. At this time I called Dispatch and told them what had happened and we decided that we would attempt to refuel with a ZZZZ2 alternate and go to ZZZZ. There was no response with ZZZZ1 Operations so coordination was done with Ground and Operations personnel there. They were very helpful. The Flight Attendants also informed us that several passengers were asking if they could disembark at ZZZZ1. After seeing the situation I said that this was not possible.... we didn't even have a gate or jetway driver let alone Customs personnel or ground handlers to retrieve bags. After coordinating the short flight back to ZZZZ we departed and landed relatively uneventfully at ZZZZ a little over 3 hours late. The only issue upon arrival was that although METAR said that conditions at ZZZZ were CAVOK upon switching to Tower we were once again informed that visibility was poor and that they could not see the runway from the Tower. ATIS was still not updated or even operating. We saw the runway at about 800 ft. AFE. There was significant low level fog but the approach was safe and uneventful. Taxi in and shutdown was also uneventful. A few things to note here: The ILS being unserviceable significantly impacted our ability to land in poor visibility. ATIS was not operating and Approach and Tower were passing conflicting, ambiguous field conditions. There was a significant problem in understanding what the conditions on the field actually were as METAR said one thing while Approach said another and then Tower advised there was "no visibility" with no concrete data on what the visibility really was. The runway has no centerline lights, no distance remaining markers, and no grooves even though it was wet. ZZZZ Control was far less than helpful in all regards. We had to "push the rope" to get any kind of clearance. They didn't even provide an EFC (Expect Further Clearance) time in the hold. They appeared task saturated which is completely understandable. However, his insistence that nobody could go to our legally filed alternate led to a lot of confusion. Ultimately we had to just be forceful and tell them that's where

we were going. They provided us a clearance there but no handoff. We felt like we basically had to affect our own rescue. Flying around in bad weather, at night, in terrain, with a developing fuel situation with little help from ATC was task saturating. The PM (the FO), although with low time and on probation, was excellent and we could not have accomplished the mission without him.

Synopsis

B737 Captain reported communication difficulties exacerbated conditions during bad weather causing a diversion to refuel and later arrive safely at original destination airport.

Time / Day

Date : 202106

Local Time Of Day : 1801-2400

Place

Locale Reference.ATC Facility : ZAN.ARTCC

State Reference : AK

Altitude.MSL.Single Value : 7000

Environment

Flight Conditions : IMC

Aircraft

Reference : X

ATC / Advisory.Center : ZAN

Aircraft Operator.Other

Make Model Name : Small Aircraft, Low Wing, 1 Eng, Fixed Gear

Crew Size.Number Of Crew : 1

Operating Under FAR Part : Part 91

Flight Plan : IFR

Flight Phase : Descent

Route In Use : Vectors

Airspace.Class E : ZAN

Component : 1

Aircraft Component : Navigational Equipment and Processing

Aircraft Reference : X

Problem : Failed

Component : 2

Aircraft Component : Engine

Aircraft Reference : X

Problem : Failed

Person

Location Of Person.Aircraft : X

Location Of Person.Facility : ZAN.ARTCC

Reporter Organization : Government

Function.Air Traffic Control : Enroute

Qualification.Air Traffic Control : Fully Certified

Experience.Air Traffic Control.Radar : 9

ASRS Report Number.Accession Number : 1815189

Human Factors : Time Pressure

Events

Anomaly.Aircraft Equipment Problem : Critical

Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy

Anomaly.Inflight Event / Encounter : Weather / Turbulence

Anomaly.Inflight Event / Encounter : Fuel Issue
Result.General : Maintenance Action
Result.Flight Crew : Landed in Emergency Condition
Result.Flight Crew : Requested ATC Assistance / Clarification
Result.Air Traffic Control : Provided Assistance

Assessments

Contributing Factors / Situations : Aircraft
Contributing Factors / Situations : Weather
Primary Problem : Aircraft

Narrative: 1

Aircraft X [requested priority handling] while enroute to KTN from an airport in the lower-48. The pilot reported a loss of navigational avionics including the heading indicator, and could navigate solely by compass heading. Using a series of no-gyro vectors, I attempted to guide the aircraft over the airport in order to establish visual contact with the ground to allow for a visual approach or cancellation of IFR. Without the use of navigational equipment, I assumed that all instrument approach procedures would be impossible. During the initial vectoring, the pilot reported a momentary loss of engine power. He was able to restart the engine, which remained functional for the duration of the flight. When the pilot was over the airport at the minimum IFR altitude but could not make visual contact, I guided him to an area with a lower MIA in the hope that he would find visual conditions. After a descent in the lower MIA area, he indicated he was beneath the cloud layer and I gave him further instructions based on the aircraft being in VMC even though he had not cancelled IFR. This included allowing the pilot to continue a descent below the MIA while I continued a series of no-gyro vectors utilizing the terrain map on my display. I attempted to keep the aircraft over the water while maneuvering to enter the Tongass Narrows from the north. This stretch of water leads directly to the airport and is regularly used by VFR traffic operating locally. While maneuvering, the pilot lost visual contact with land. I issued a climb instruction to regain the MIA altitude, 060, over the airport in order to recover adequate separation from the terrain. Shortly thereafter, with the pilot level at 060 and flying over the airport, a Company A pilot [in] Aircraft Y called on frequency with weather information and indicated he could see the aircraft as it passed overhead. Additionally, a local frequent flyer, Aircraft Z, was instructed possibly by KTN FSS to abandon its VFR approach to Runway 11 and continue southeast toward the aircraft [with priority handling] and [to] join my frequency. I utilized that aircraft as an airborne spotter to aid in guiding Aircraft X into the airport from the south below the MIA. At this time, the pilot of Aircraft X advised he had approximately 13 gallons of fuel remaining and was exhausting it at a rate of 18 gallons per hour. Given the limited fuel quantity, lack of navigational options, and uncertain weather, I determined I would have to take the aircraft on the most expedient path to the airport. The pilot of Aircraft Z was VMC in the same area, having climbed from less than 1,000 ft. north of Runway 11 to nearly 4,000 ft. all while over terrain. Depictions on the Company A RNAV M 29 approach plate indicated that the terrain was no higher than 3,000 ft. in the area Aircraft X needed to fly across in order to reach the airport. Using the information provided by Aircraft Y, Aircraft Z, and the approach plate, I felt it was the last reasonable option to guide Aircraft X north toward the airport, over terrain at 4,000 ft. Aircraft Z established visual contact with Aircraft X about 10 miles south of the airport and remained in close proximity. The pilot of Aircraft X reported the airport in sight while heading north over Gravina Island near Nichols Passage and Blank Inlet at about 4000 ft. Shortly thereafter, we received confirmation from KTN FSS that the aircraft had landed safely on Runway 29. I am not sure there is much I could recommend that would prevent future [priority handling] of this type. It is not uncommon

for pilots to encounter difficulty in Southeast Alaska, particularly those unfamiliar with Alaska flying. Perhaps more robust outreach to pilots from the lower-48 concerning the multitude of factors that present greater risk in the area is warranted. Weather, procedural and service limitations, lack of suitable landing sites, and the need for greater safety margins could all be presented to summer leisure flyers who visit our airspace. The pilot of Aircraft X performed incredibly well during a challenging situation. The pilots of Aircraft Y and Aircraft Z were crucial to my situational awareness and contributed directly to the successful resolution of this incident. KTN FSS and my colleagues at ZAN provided timely and useful assistance. All are to be recognized and commended for their efforts.

Synopsis

ZAN Controller reported providing vectors to an IFR aircraft that after losing its navigational avionics, experienced a temporary engine failure, and was also low on fuel.

Time / Day

Date : 202106

Local Time Of Day : 1201-1800

Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Relative Position.Distance.Nautical Miles : 3.5

Altitude.MSL.Single Value : 4000

Environment

Flight Conditions : VMC

Weather Elements / Visibility.Visibility : 10

Ceiling.Single Value : 5000

Aircraft

Reference : X

Aircraft Operator : FBO

Make Model Name : DA20 Undifferentiated

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 91

Flight Plan : None

Mission : Training

Flight Phase : Cruise

Component

Aircraft Component : Fuel Distribution System

Aircraft Reference : X

Problem : Malfunctioning

Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : FBO

Function.Flight Crew : Instructor

Qualification.Flight Crew : Flight Instructor

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Commercial

Experience.Flight Crew.Total : 344

Experience.Flight Crew.Last 90 Days : 47

Experience.Flight Crew.Type : 158

ASRS Report Number.Accession Number : 1814644

Events

Anomaly.Aircraft Equipment Problem : Critical

Anomaly.Inflight Event / Encounter : Fuel Issue

Detector.Person : Flight Crew

When Detected : In-flight

Result.Flight Crew : Landed in Emergency Condition

Assessments

Contributing Factors / Situations : Aircraft

Contributing Factors / Situations : Human Factors

Primary Problem : Aircraft

Narrative: 1

I met with a student and we began the preflight checks, which lasted about 1.5 hours in total. We visually verified fuel on the gauge as full and dipped the stick in the tank indicating full fuel. We began taxi and then run-up checks. We noticed fuel pressure and fuel quantity were reporting correctly. After takeoff, we did after takeoff checks and visually verified gauges were good. I vaguely remember seeing 3/4 full on the fuel tank by this point. The student [then] experienced an RPM drop. I took controls and pushed the throttle forward. The engine reacted normally and increased RPM, then shortly after reduced RPM without any throttle manipulation. I looked over and saw the fuel pressure was reducing and fuel quantity was in the yellow which indicates 1/4 tank. We were at about 4,000 ft. at this point. I squawked 7700. I called Approach who I had already been on the radio with this entire time. [We were] too far away for our glide ratio to get to an airport so I chose to land in a field. I was pitching for 73 knots which is Vg (best glide speed). We still had an operating engine at about 1400 RPM so I did not try to shut it off and restart it. At about 1,200 ft. or 1,000 ft. if memory serves me correct, the engine quit and I shut it down and secured it for landing. I applied flaps appropriately and made a soft field landing in the field. We applied brakes just in time to stop right as we made contact with a barbed fence. The fence was slightly bent, the owner came and saw as well. Our Tach time read about 0.9 so we were not up for even an hour. GPH burn is about 6 to 9 in our plane with a 24 gallon tank so we had more than enough for a full tank landing which is what we calculated before our flight.

Synopsis

DA-20 instructor pilot reported executing a successful forced landing in a field after experiencing engine problems related to fuel supply issues.

Time / Day

Date : 202106

Local Time Of Day : 1201-1800

Place

Locale Reference.ATC Facility : ZZZ.Tower

State Reference : US

Environment

Flight Conditions : IMC

Weather Elements / Visibility : Thunderstorm

Weather Elements / Visibility : Turbulence

Weather Elements / Visibility : Windshear

Light : Daylight

Aircraft

Reference : X

ATC / Advisory.Tower : ZZZ

Aircraft Operator : Air Carrier

Make Model Name : EMB ERJ 145 ER/LR

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Initial Approach

Route In Use : Vectors

Airspace.Class B : ZZZ

Component

Aircraft Component : Central Computer

Aircraft Reference : X

Problem : Malfunctioning

Person : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Pilot Not Flying

Function.Flight Crew : First Officer

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Multiengine

ASRS Report Number.Accession Number : 1814266

Human Factors : Distraction

Human Factors : Situational Awareness

Human Factors : Time Pressure

Human Factors : Workload

Human Factors : Communication Breakdown

Communication Breakdown.Party1 : Flight Crew
Communication Breakdown.Party2 : Dispatch

Person : 2

Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Air Carrier
Function.Flight Crew : Captain
Function.Flight Crew : Pilot Flying
Qualification.Flight Crew : Multiengine
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Instrument
ASRS Report Number.Accession Number : 1814267
Human Factors : Workload
Human Factors : Distraction
Human Factors : Communication Breakdown
Human Factors : Situational Awareness
Communication Breakdown.Party1 : Flight Crew
Communication Breakdown.Party2 : Dispatch

Events

Anomaly.Aircraft Equipment Problem : Critical
Anomaly.Deviation - Track / Heading : All Types
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy
Anomaly.Inflight Event / Encounter : Weather / Turbulence
Anomaly.Inflight Event / Encounter : Loss Of Aircraft Control
Anomaly.Inflight Event / Encounter : Fuel Issue
Anomaly.Inflight Event / Encounter : Unstabilized Approach
Detector.Person : Flight Crew
Were Passengers Involved In Event : N
When Detected : Aircraft In Service At Gate
Result.General : Maintenance Action
Result.Flight Crew : Landed in Emergency Condition
Result.Flight Crew : Requested ATC Assistance / Clarification
Result.Air Traffic Control : Provided Assistance

Assessments

Contributing Factors / Situations : Aircraft
Contributing Factors / Situations : Company Policy
Contributing Factors / Situations : Human Factors
Contributing Factors / Situations : MEL
Contributing Factors / Situations : Weather
Primary Problem : Aircraft

Narrative: 1

Upon taking the aircraft, the number 3 MFD was inoperative which, per the MEL, required the Captain to complete all flying duties. While at ZZZ the Captain noticed that the GPWS Inop, Windshear Inop, Terrain Inop, and Terrain fail message were indicated in the EICAS. The Captain called maintenance who immediately deferred the issue and the Captain completed the logbook entries. Prior to push I entered the appropriate information into ACARS which did not match the PERF INIT which the Captain entered. We verified the numbers multiple times and determined that the ACARS had to be inaccurate. We also

verified our numbers with the updated AOM. After calling Dispatch it appeared that there was a fleet wide issue with ACARS. It appeared to me that some information that is generally manually input may have already been calculated in the zero fuel weight of ACARS (85lbs for crew bags). Prior to the ACARS issue we notified Ground Control to receive an off time into ZZZ1 which we were given a departure time. At that point the Captain decided to complete the paper form X. We notified the ground crew of the delay who informed us they had to leave for another aircraft and would not be back for about 30-40 minutes. The Captain decided to have them push us from the gate in the event our issue was solved prior to their return. We completed the appropriate checklists and pushed but did not start any engines. Then notified ATC of the delay to void Off Time. The Captain then called the company for approval to open the cabin window to hand the form paper copy to the ground crew. Once the form was completed we called ops, handed the W&B out the window, and re-completed the before start checklist all the way through. We also discussed not utilizing ACARS W&B throughout the flight (added workload). We then notified Ground that we were ready to verify off time prior to starting engines (fuel management). They gave us an immediate wheels up time so we started the engines and taxied to [Runway] XX. I used my IPAD to verify weather at ZZZ1 prior to push which was reporting calm winds, few 050 TCU and 10 miles vis and again I checked prior to taxi which they were reporting calm winds, 046 CB, 10 miles. On departure from [Runway] XX we were given a turn to the west and eventually a heading to the north with a climb to 8,000 [feet]. When given direct to ZZZZZ for the ZZZZZ4 Arrival we had to vector around a few storms. We also had to vector around storm clouds on the arrival and were given vectors off the arrival by approach due to flow into ZZZ1. Within this period we both discussed the weather, verified the TAF, and discussed needing an alternate and potential fuel issues. After updating the D-ATIS we verified that the field visibility had dropped below 3 miles so we messaged Dispatch asking for/if we needed an alternate due to visibility. Dispatch responded that the TAF was good and we didn't need an alternate. The Captain started to become concerned because he was showing extreme areas of precipitation along the arrival and approach. Other aircraft ahead reported heavy rain. There were multiple discussions with ATC about getting in to ZZZ1 but I don't remember if they advised aircraft were going missed. We received normal vectors into the approach to Runway XYL and my first awareness of wind shear is when the aircraft in front of us called wind shear and missed. With our Windshear capabilities inoperative we were both paying very close attention to the aircraft's instruments. After intercepting the localizer and passing the Runway XYL FAF the precipitation was worsening. Somewhere between 1,700 and 1,200 feet the aircraft instruments were showing increased gains and losses and began to vibrate significantly. The Captain called wind shear and we completed the wind shear procedure up to the missed approach altitude of 3,000ft. Tower gave us runway heading and eventually turned us to the west with a hand off to approach. Prior to the handoff we began discussing fuel and alternates. The Captain suggested ZZZ2 which we messaged to Dispatch. Dispatch recommended ZZZ3. I recommend that we not go to ZZZ3 because of all the weather that was building between ZZZ1 and ZZZ3 and it also appeared weather was building at ZZZ3 per my IPAD. We asked ATC about ZZZ3 and they indicated that ZZZ3 had similar weather to ZZZ1 so we determined based on fuel and ATCs information that ZZZ3 was not an option. It seemed to me that Dispatch was adamant about diverting to ZZZ3. We also discussed other airport near ZZZ1 (off field) that could be potential alternates. After the check in with Approach they asked us our intentions which we replied stand by and began rough fuel calculations to ZZZ2. The Captain quickly determined that fuel to ZZZ2 was inadequate due to a 15-20 minute flight and approximately 2200lbs of fuel on board. (Increased fuel burn at lower altitude, storms in the area, and potential unknown issues on arrival at ZZZ2). We then asked ATC about aircraft success in to ZZZ1 which they replied that some aircraft were making it in and some were not. We then requested Runway XYR because it was the closer runway and

informed ATC of our minimum fuel situation. The Captain notified the Flight Attendant, we ran the appropriate checklist (ATIS, build it, bug, brief it) and continued vectors to Runway XYR. There were two aircraft in front of us which one was able to land and another missed (aircraft in front of us) due to wind shear. After recalculating fuel requirements the Captain determined that a missed would put us in an emergency fuel situation therefore we [advised ATC]. I believe that upon intercepting the localizer we were somewhere around 1700-1800lbs. During the approach the gains and losses of altitude did not seem significant but it appeared to be difficult to maintain the localizer although I did not see anything greater than one dot. There was also added pressure to continue the approach due to the fuel situation. During the approach tower asked the aircraft that made it in where they broke out and they replied "right at mins". At around 800 feet I called out that I could see the ground which was not visible as we got to 500 ft. At 300 feet I called approach lights in sight 12 o'clock and continued to call out the approach lights. The aircraft began to drift right and I called the runway environment insight at 11 o'clock. Throughout this period it was apparent that the Captain was having difficulty seeing the runway. When he finally looked up and determined that he did not have adequate references, and the aircraft was not in a safe position to land, he called the missed. Immediately on the missed it was apparent the at least 90 percent of the airfield was VFR. We could see all of Runway XZ/XA, including approach paths, so we made a decision request XZ and due a VFR pattern into XZ. Tower provided we could use whatever runway we needed so we continued with XZ, entered the left crosswind, base, and landed. During the miss we did not climb to the missed approach altitude, left the gear down, and kept the flaps at nine because of the immediate landing after the missed to Runway XYR. We updated the FMS with Runway XZ and extended a line for reference because there are no approaches in our pubs for XZ. We did not rerun the performance information again because the field length was 10,500 [feet] which was longer than Runway XYR and it was an immediate landing. We also received fuel EICAS alerts during the missed and a fuel critical prior to landing XZ. All approaches were conducted with flaps 22. Emergency vehicles were on scene which we did not require. Upon taxiing into the gate the field went in to a ground stop due to lightning. In all the entire flight segment from door closed to door open was 3.4 hours. I would say that this flight provided the crew with several threats. To name a few, my PFD was inop so only the CPT could fly, windshear, GPWS, and TCAS were inop, pop-up weather was occurring throughout the flight route, fuel considerations, ACARS not accurate due to new AOM changes, delays prior to departure, delays in route, other aircraft encountering wind shear, and potentially an inexperienced dispatcher. There was also a significant pressure to land the second approach. I felt that we handled the situation very well as a crew and discussed and analyzed any and all potential alternatives but were cornered due to the fuel situation. I do wish I had analyzed the winds better throughout the duration and been more aware of the weather at the field during the Runway XYL wind shear event. With most of the airfield being VFR it was absolutely possible to successfully complete approaches to the XB runways and XZ/XA [runways]. The only area impacted by the weather was the XY runways approach segments. Therefore, if winds were within landing limits we could have immediately requested an alternate runway from ATC.

Narrative: 2

While conducting the setup check in ZZZ, the GPWS Inop, Windshear Inop, Terr Inop, and Terr Fail messages appeared on the EICAS. Maintenance was called and the affected system was deferred per MEL. The aircraft also had an MEL for the First Officer MFD, and an NEF item in the cockpit. ACARS would not produce accurate weight and performance numbers, and Dispatch informed us that this was a known issue. We elected to perform a manual weight and balance with the Form X. The TAF for ZZZ1 was forecasting VFR and radar looked fairly benign. The First Officer obtained the D-ATIS for ZZZ1 which showed

Winds Calm, visibility 10SM, Few at 5000, Scattered at 8000, with no other weather (information M). Due to this, extra fuel for weather was not considered by us or Dispatch. While in our initial descent the First Officer and myself noticed the weather in ZZZ1 was deteriorating and sent an ACARS to Dispatch asking if we should get an alternate. Dispatch replied that no alternate was needed, and we assumed that they had more up to date information than available to us in the air. Our radar was depicting areas of extreme return (red and purple) blanketing the approach and airport with other aircraft saying it was a smooth ride, but heavy precipitation. While outside of the final approach fix on the ILS Runway XYL, other aircraft were heard going missed due to windshear. ATC informed us that some aircraft were landing and some were going around. We elected to continue the approach as we were not experiencing any abnormal flight conditions. Inside of the final approach fix, I was unable to maintain positive aircraft control on the approach path due to airspeed, altitude, and course fluctuations. I made the determination to execute a windshear escape/go around. The Flight Attendant was notified of our situation. We contacted Dispatch to request a diversion and suggested ZZZ2. Dispatch replied that ZZZ3 was a better option, but ATC informed us that ZZZ3 was having similar weather to ZZZ1. I used the FMS to determine a rough fuel burn to ZZZ2 as 1400 lbs not including any deviations or approaches. We were also low on fuel, approximately 2,200 lbs after the missed approach. We discussed and agreed that we did not want to end up in ZZZ3 with such low fuel and similar weather issues. We decided to attempt a second approach at ZZZ1 after ATC stated that some aircraft were landing successfully. It was apparent that we would be below divert and possibly final divert on the second approach so we declared Minimum Fuel. We requested ILS Runway XYR due to perceived improved conditions and the closer approach for that runway. During the approach, the Flight Attendant called and said that a passenger was in the bathroom and asked if we could delay the landing. I advised her that due to our fuel situation, it would not be possible. She was able to get the passenger back to his seat before final approach. While on the approach, we overheard the aircraft in front of us go around for windshear. Our fuel level was low and a go around would put us in a fuel critical situation. We [advised ATC] and continued the approach. We experienced difficulty in maintaining the approach course and I used my PIC authority to continue the approach since a missed approach would leave us with inadequate fuel for much option. The First Officer called approach lights in sight, and we continued to 100 feet above the field. The First Officer called Runway in sight, and when I looked up, I did not see a runway and was disoriented due to the extreme precipitation and reduced visibility and immediately executed a go around. We were now showing a very low fuel level, and it was unlikely we would have enough fuel to get to another airport or reattempt an approach. I used PIC emergency authority to request a circle to land Runway XZ. We were able to maintain visual contact with Runway XZ during the maneuver. We had no time to get any type of performance numbers, and reasoned that since it was longer than Runway XYR we could land. The landing was conducted without incident. As we engaged E/TO Reserve on the windshear escape, I entered this in the logbook and contacted maintenance. See attachments for reference if needed. Many threats existed in this incident including: pop up weather, weight restrictions, the need for paper performance calculations, an inoperative MFD, an inoperative Windshear system, and lack of an alternate. The weather and TAF looked ok during the planning portion of the flight, it was not until enroute, that everything deteriorated. I believe we acted in the best manner possible given the stressful situation and lack of backup options (fuel and/or alternate). It was a unique scenario that required a unique response. I believe we made safe decisions based on the current parameters. In hindsight, I would have been more assertive about requesting an alternate enroute. I do not believe we could have forecasted such bad weather, which is why we did not ask to remove passengers to add fuel in ZZZ. As we could not find a suitable alternate, we had little choice once we were low on fuel than to

attempt to land on any runway. A third go around would have likely had us considering an off field landing.

Synopsis

Air carrier flight crew reported numerous overlapping problems caused them to depart for destination airport with reduced IMC capability and minimum fuel, resulting in minimum fuel before landing.

Time / Day

Date : 202106

Local Time Of Day : 0001-0600

Place

Locale Reference.ATC Facility : ZZZ.ARTCC

State Reference : US

Environment

Flight Conditions : VMC

Light : Night

Aircraft

Reference : X

ATC / Advisory.Center : ZZZ

Aircraft Operator : Air Carrier

Make Model Name : Regional Jet 900 (CRJ900)

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Cruise

Route In Use : Vectors

Airspace.Class A : ZZZ

Component : 1

Aircraft Component : Indicating and Warning - Fuel System

Aircraft Reference : X

Problem : Malfunctioning

Component : 2

Aircraft Component : Fuel Quantity-Pressure Indication

Aircraft Reference : X

Problem : Malfunctioning

Component : 3

Aircraft Component : EICAS/EAD/ECAM

Aircraft Reference : X

Problem : Malfunctioning

Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Captain

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Multiengine
ASRS Report Number.Accession Number : 1813934
Human Factors : Time Pressure
Human Factors : Confusion

Events

Anomaly.Aircraft Equipment Problem : Critical
Anomaly.Deviation / Discrepancy - Procedural : MEL / CDL
Anomaly.Deviation / Discrepancy - Procedural : Maintenance
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy
Anomaly.Deviation / Discrepancy - Procedural : FAR
Anomaly.Inflight Event / Encounter : Fuel Issue
Detector.Person : Flight Crew
Were Passengers Involved In Event : N
When Detected : In-flight
Result.General : Maintenance Action
Result.General : Flight Cancelled / Delayed
Result.Flight Crew : Diverted
Result.Flight Crew : Requested ATC Assistance / Clarification
Result.Flight Crew : Landed As Precaution
Result.Air Traffic Control : Provided Assistance

Assessments

Contributing Factors / Situations : Procedure
Contributing Factors / Situations : Aircraft
Contributing Factors / Situations : MEL
Contributing Factors / Situations : Human Factors
Primary Problem : Procedure

Narrative: 1

Upon accepting Aircraft X, the inbound Captain, told me details about an MEL for Bulk Fuel Temp. He stated that there was an associated "CAS MISCOMP" (Crew Alerting System Miscomparison) status message and that this was relayed to him by the previous Captain. They had no issues on their flight. We accept aircraft and depart ZZZ1. Not long after reaching cruise about 60 miles SE of ZZZ we lost our left fuel tank quantity indication along with our total fuel quantity indication. I had also recently updated the fuel in the FMS after reaching cruise altitude. Due to the MEL, we had been monitoring the fuel system for any possible errors and we had additional fuel after reaching altitude than planned. Right before we lost our left fuel indication both tanks were even. We did not receive any cautions, nor any indication on the fuel EICAS page of a "Fuel Channel Fail" status or caution like you are supposed to. After approximately 3 minutes of no left tank fuel quantity indication, we referred to the QRH for "Fuel CH 1/2 FAIL" for guidance and equalized our fuel flow between engines. In this circumstance, in addition to another aspect of already have a MEL on the "BULK FUEL TEMP", along with not receiving EICAS indications like the system is designed to, we decided to divert to ZZZ. At some point during the beginning half of our descent to ZZZ, our left fuel quantity indication came back but my decision to divert was already made. We didn't have any fuel indication for approximately 8-12 minutes. We followed all procedures as far as alerting Dispatch, Flight Attendant, ATC, made a PA to passengers, In range to the line, followed by below the line and ensured we would not be overweight. We did not declare an emergency at that time. Upon getting vectors to final approach for runway, we intercepted the localizer below the glide slope. Approx 7-8 mile final when I called for "Gear Down, Flaps 30," but the gear did

not move. Shortly after we received a "GEAR DISAGREE" master warning. We were at approx 3,400 ft flying the glide slope and not yet past [the] FAF so instead of calling for a go around, I disconnected the autopilot and asked for delay vectors to troubleshoot. We received an altitude assignment of 3,000 ft, heading 190, which required a descent. We then ran the QRH for "GEAR DISAGREE", and after multiple attempts using the gear handle we used the alternate gear extension as called for in the QRH. All three gear came down and were indicating green. At this point I let ATC know we were ready to return for landing and we requested priority and to have trucks ready just in case. We also followed procedures to inform company of the [situation] and informed the flight attendants (FAs) of new situation. We also told the FAs to perform a "BRACE" command just in case due to the QRH stating directional control on the runway might be difficult. We ran through all the proper procedures except for the Go Around checklist. Looking back, we should have even though we did not miss any items. At the time, I did not consider the vectors as a go around due to being 6 miles out and having to descend to the assigned altitude. Upon touchdown, we received a "STEERING INOP" caution and I noticed directional control required more rudder than normal. Runway XXL does not have any high speed exits so we stopped on the runway, coordinated with airport command, and waited for buses to deplane the passengers. We did not use a tug to be pulled off the runway because I was unsure if the alternate gear extension was applying pressure to the nosewheel similar to nosewheel steering. I talked to Maintenance and they were also unsure. We did our best to keep the passengers up to date while waiting for the buses to deplane the passengers. We did not evacuate as there was no imminent danger after landing and the runway being closed. Unrelated to the gear, I should not have assumed and trusted another persons word that a CAS MISCOMP (Crew Alerting System Miscomparison) status message was in association to an MEL without verify the MEL procedure, and not just reviewing the MEL. We should have written that up at the gate in ZZZ1 although it may be completely unassociated to all our issues. I should have called for the go-around checklist to reconfirm we completed all the items even though we did not do a go-around maneuver.

Synopsis

Captain reported diverting due to fuel indication issues and realized that he had been misinformed about a CAS miscomparison message being related to the fuel system MEL. On final approach a Gear Disagree occurred which was resolved through the alternate gear extension procedure.

Time / Day

Date : 202106

Local Time Of Day : 0601-1200

Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Relative Position.Angle.Radial : 200

Relative Position.Distance.Nautical Miles : 10

Altitude.AGL.Single Value : 0

Environment

Flight Conditions : Mixed

Weather Elements / Visibility.Visibility : 10

Light : Daylight

Ceiling.Single Value : 4000

Aircraft

Reference : X

ATC / Advisory.Tower : ZZZ

Aircraft Operator : Air Carrier

Make Model Name : B737 Undifferentiated or Other Model

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Climb

Airspace.Class B : ZZZ

Maintenance Status.Maintenance Deferred : Y

Maintenance Status.Records Complete : Y

Maintenance Status.Released For Service : Y

Maintenance Status.Required / Correct Doc On Board : Y

Maintenance Status.Maintenance Type : Unscheduled Maintenance

Maintenance Status.Maintenance Items Involved : Inspection

Maintenance Status.Maintenance Items Involved : Testing

Component

Aircraft Component : Powerplant Fuel System

Aircraft Reference : X

Problem : Malfunctioning

Person : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : First Officer

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Air Transport Pilot (ATP)
Experience.Flight Crew.Last 90 Days : 175
Experience.Flight Crew.Type : 5030
ASRS Report Number.Accession Number : 1812829
Human Factors : Time Pressure
Human Factors : Troubleshooting

Person : 2

Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Air Carrier
Function.Flight Crew : Pilot Not Flying
Function.Flight Crew : Captain
Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Multiengine
Qualification.Flight Crew : Air Transport Pilot (ATP)
ASRS Report Number.Accession Number : 1812859
Human Factors : Training / Qualification
Human Factors : Time Pressure
Human Factors : Troubleshooting

Events

Anomaly.Aircraft Equipment Problem : Less Severe
Anomaly.Deviation / Discrepancy - Procedural : MEL / CDL
Anomaly.Deviation / Discrepancy - Procedural : Maintenance
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy
Anomaly.Deviation / Discrepancy - Procedural : FAR
Anomaly.Ground Event / Encounter : Fuel Issue
Anomaly.Inflight Event / Encounter : Fuel Issue
Detector.Person : Flight Crew
Were Passengers Involved In Event : N
When Detected : In-flight
When Detected : Aircraft In Service At Gate
Result.General : Maintenance Action
Result.General : Flight Cancelled / Delayed
Result.Flight Crew : Landed As Precaution
Result.Flight Crew : Returned To Gate
Result.Flight Crew : Requested ATC Assistance / Clarification
Result.Flight Crew : Returned To Departure Airport
Result.Air Traffic Control : Provided Assistance

Assessments

Contributing Factors / Situations : Aircraft
Contributing Factors / Situations : MEL
Contributing Factors / Situations : Procedure
Contributing Factors / Situations : Staffing
Primary Problem : Aircraft

Narrative: 1

All events through pushback were accomplished without note. During pushback, a puddle on the ramp aft of the normal oil spot was noticed behind the #2 engine. Puddle was not present on the walkaround. A stream of drops along the ramp was also noticed while the

#2 engine was run. After five minutes the fuel leak had not stopped and we towed back to a gate. Maintenance was called, ran several tests, and two engine runs. The leak dissipated as the tests were completed. No fuel appeared to be leaking while engines were running, except for one within limits from the heat exchanger. Forms were completed to indicate it. Aircraft pushed and started again. No leaks were noted. Shortly after takeoff/cleanup, Captain announced a split in the thrust levers. Autothrottles were used for takeoff with VNAV (climb page 2L adjusted for 202 knots at 1,000 feet AGL). Looking at the engine instruments, I noticed the #2 thrust lever about three knob widths ahead of the #1. #1 N1 was at commanded power with the #2 N1 showing the white commanded power bar of about 95%, but the engine only producing about 88-89%. Further advancement of the throttle lever produced no increase in power. Vertical Speed was selected and we reduced our climb rate to bring the power back. As the power came back, the throttle synced and power matched. VNAV was reselected and as the power returned to full climb, the split reappeared with the #2 indicating a commanded increase without the engine delivering the power. As this was being discussed, the center tank fuel pumps were turned on (750 pounds in the center tank). Immediately after the pumps were turned on, the power matched and all indication were normal. As soon as the center tank fuel was exhausted, the split returned. Crew leveled at FL 270 and elected to return to ZZZ. As power was less than full climb at cruise/descent, and no abnormal indication were present during these flight conditions, no QRH Checklists were run. The rest of the return to ZZZ was completed without note. Engine performed as expected from level off to shutdown. Contract Maintenance expressed an increased level of calls from aircraft coming from the paint shop; fuel leaks were common with these aircraft. Would recommend a Maintenance individual check and run engines prior to returning the aircraft to the line.

Narrative: 2

Origination flight on an aircraft that had just come out of the paint shop. Preflight was uneventful with no fuel drips or puddles noted. We pushed five minutes early. On push back #2 was dripping fuel and did not stop after a short time and engine was shutdown. After consultation with Maintenance Control, we returned to the gate and called Contract Maintenance. Contract Maintenance did four motoring tests as directed by [company's] Maintenance. With each test, the dripping became improved. Then an engine run was completed with decreased dripping, but not to a small enough level to allow Dispatch. Contract Maintenance then opened the cowl and did an engine run to determine location of drip. After that run, the component dripping was identified and the dripping had decreased to an amount that allowed MEL. MEL was completed. This was about a 2.5 hour process. Ground Ops and Operations were very helpful with accommodating the Passengers as well as they could. I had given periodic in-person updates to the passengers. Finally, we pushed-back and the engine starts were uneventful without any drips. Uneventful taxi. We took off on Runway XX with a headwind 20G30. On push up of thrust, #2 lagged a bit and I pushed the thrust lever up to get closer to match and continued my crosscheck. As we approached V1/VR I noticed #2 still lagging by a few percent and pushed up the throttle some more. Normal on centerline liftoff and climbout. After liftoff, I informed the F/O (First Officer) that we had a split throttle situation. We cleaned up on schedule and began to evaluate the situation (again the aircraft had no adverse flight characteristics). With the aircraft cleaned up and climb power set, we observed that although the #2 demand pointer was correct, the #2 N1 lagged approximately 2-5% N1. Once our climb rate was reduced in Vertical Speed and at a slightly lower climb thrust setting, the engine was normal and tracked normally with the demand pointers and thrust lever position. To this point we had continued to follow ATC instructions to keep it simple. We found that the engine reacted the same with the autothrottle On or Off. Also we had 750 pounds of fuel in the center tank, so once established in the climb we turned the pumps on and immediately #2 N1 returned to normal operation at full climb power. When center tank was empty and

pumps turned off, the malfunction returned. With this information we leveled off and informed ATC that we would probably need to return to the airport. While level we reconfirmed no other abnormal conditions or switches out of place. Also at level flight in this situation there were no conditions that warranted a QRH Checklist although it was discussed. F/O and I discussed the situation and decided that without the aircraft able to achieve full climb thrust on Main Fuel pumps only, the safest choice was to return to the airport. F/O flew and talked to ATC, while I informed flight attendants and passengers of need to return to the airport for safety reasons and gave them our ETA. I called Station Ops on VHF and informed them of our need to return, get a gate, and asked them to contact Dispatch. We also confirmed via ACARS with Dispatch the need to return due to engine unable to achieve full climb power (or something like that). The F/O did a very good job and stayed ahead of the aircraft preparing for the briefings, descent, and Approach Checklist. We referenced the Diversion Checklist to ensure we had covered the suggested items. We accomplished a normal descent and asked for a long visual approach to increase probability of a stable approach and landing without the need for a thrust needful go-around. F/O flew stable approach and landing with normal braking. No emergency was declared, no special handling requested, and a normal weight landing occurred. Uneventful taxi-in and shutdown. Flight was canceled and the passengers accommodated as best as Ops could. Debrief with the flight attendants yielded that although disappointed in their flight being cancelled, they were appreciative of the Safety of turning back. Immediate notification with XXXXXX was done after engine shutdown with Dispatch, Supervisor, Maintenance, and Chief Pilot. The Location X crews both above the wing and below the wing were very familiar with the Maintenance trouble shooting of engine drips on starts because they have seen it more the once from aircraft coming out of the paint shop. An engine run after paint shop would have found this problem before a revenue flight was disrupted. Maybe this may be a prudent practice--an ounce or prevention may have saved a pound of Customer frustration. Perhaps a faster crosscheck by myself might have allowed a reject option in the 70-90 knot range, but even then there was no decrease in power and I perceived the N2 engine thrust close-enough to N1 engine thrust to ensure a safer option than a medium speed reject.

Synopsis

B737 flight crew reported an air turn back after 3 knob throttle split developed in climb with a lack of power on an engine following a 2.5 hour maintenance delay for a fuel leak issue.

Time / Day

Date : 202106

Local Time Of Day : 1201-1800

Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Environment

Flight Conditions : VMC

Light : Daylight

Aircraft

Reference : X

ATC / Advisory.Tower : ZZZ

Aircraft Operator : Air Carrier

Make Model Name : EMB ERJ 170/175 ER/LR

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Final Approach

Flight Phase : Initial Approach

Airspace.Class B : ZZZ

Person : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Pilot Flying

Function.Flight Crew : Captain

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Instrument

ASRS Report Number.Accession Number : 1811820

Human Factors : Workload

Human Factors : Troubleshooting

Person : 2

Location Of Person.Aircraft : X

Reporter Organization : Air Carrier

Function.Flight Crew : First Officer

Function.Flight Crew : Pilot Not Flying

Qualification.Flight Crew : Air Transport Pilot (ATP)

ASRS Report Number.Accession Number : 1811825

Human Factors : Workload

Human Factors : Time Pressure

Events

Anomaly.Aircraft Equipment Problem : Less Severe
Anomaly.ATC Issue : All Types
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy
Anomaly.Inflight Event / Encounter : Fuel Issue
Detector.Automation : Aircraft Other Automation
Detector.Person : Flight Crew
When Detected : In-flight
Result.Flight Crew : Overcame Equipment Problem

Assessments

Contributing Factors / Situations : Aircraft
Contributing Factors / Situations : Human Factors
Primary Problem : Human Factors

Narrative: 1

During arrival into ZZZ we received 4 runway changes in about 5 minutes time. We were then broken off the arrival and vectored around for a visual approach to XXL. Reaching the ZZZZZ fix we received a fuel imbalance caution message. We then switched the fuel selector to the correct side to balance fuel and landed within limitations for a fuel imbalance. We felt rushed and focused on flying the visual correctly. Upon receiving the caution, we felt like going around was a more unsafe decision than continuing on the approach, due to the distraction and complexity that were that we were experiencing. Always go around whenever a caution message appears. Run the QRH as directed.

Narrative: 2

After a rushed departure due to company operations. The aircraft was initially over fueled (may have played a role). Descending on the ZZZZZ arrival we were assigned multiple runway changes and arrival transition changes in sterile. This caused task saturation. Finally we were assigned RNAV visual for [Runway] XXR. On the approach we received a fuel imbalance message turning onto final at ZZZZZ1. We were able to promptly balanced and corrected the issue. We landed with the selector off and a imbalance within limitations. Cause was gusty wind condition, multiple runway/transition changes, rushing because we were "leading the pack", and no clear reason why the fuel imbalance was caused (pilot error, mechanical, etc.) I feel we should have considered a go-around. I was behind the airplane and task saturated. I should have verbalized this to the captain. We could have requested delay vectors and potentially broke of the approach to fix and trouble shoot the issue.

Synopsis

ERJ-175 flight crew reported electing to land with a fuel imbalance rather than complete the QRH procedure.

Time / Day

Date : 202105

Local Time Of Day : 0001-0600

Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Altitude.AGL.Single Value : 0

Environment

Flight Conditions : VMC

Light : Night

Aircraft

Reference : X

ATC / Advisory.Tower : ZZZ

Aircraft Operator : Air Carrier

Make Model Name : B737 Next Generation Undifferentiated

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Taxi

Route In Use : Vectors

Maintenance Status.Maintenance Deferred : Y

Maintenance Status.Records Complete : Y

Maintenance Status.Released For Service : Y

Maintenance Status.Required / Correct Doc On Board : Y

Maintenance Status.Maintenance Type : Unscheduled Maintenance

Maintenance Status.Maintenance Items Involved : Testing

Maintenance Status.Maintenance Items Involved : Inspection

Component

Aircraft Component : Powerplant Fuel System

Aircraft Reference : X

Problem : Malfunctioning

Problem : Design

Person : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Pilot Not Flying

Function.Flight Crew : First Officer

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Instrument

Experience.Flight Crew.Total : 10094

Experience.Flight Crew.Last 90 Days : 60

Experience.Flight Crew.Type : 7295
ASRS Report Number.Accession Number : 1811457
Human Factors : Workload
Human Factors : Time Pressure
Human Factors : Troubleshooting

Person : 2

Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Air Carrier
Function.Flight Crew : Captain
Function.Flight Crew : Pilot Flying
Qualification.Flight Crew : Multiengine
Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Air Transport Pilot (ATP)
Experience.Flight Crew.Total : 6208
Experience.Flight Crew.Last 90 Days : 128
Experience.Flight Crew.Type : 6208
ASRS Report Number.Accession Number : 1810135
Human Factors : Confusion

Events

Anomaly.Aircraft Equipment Problem : Less Severe
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy
Anomaly.Deviation / Discrepancy - Procedural : Maintenance
Anomaly.Deviation / Discrepancy - Procedural : MEL / CDL
Anomaly.Deviation / Discrepancy - Procedural : FAR
Anomaly.Ground Event / Encounter : Fuel Issue
Anomaly.Inflight Event / Encounter : Fuel Issue
Detector.Person : Flight Crew
Were Passengers Involved In Event : N
When Detected : Aircraft In Service At Gate
When Detected : In-flight
When Detected : Taxi
Result.General : Maintenance Action
Result.General : Flight Cancelled / Delayed
Result.Flight Crew : Overcame Equipment Problem

Assessments

Contributing Factors / Situations : Aircraft
Contributing Factors / Situations : MEL
Contributing Factors / Situations : Procedure
Primary Problem : MEL

Narrative: 1

During our taxi-out and takeoff role, the Captain and I noted a Number 1 Fuel Filter Bypass Master Caution Light. We both felt this was part of a MEL condition entered into the aircraft's ELB, but feel the MEL procedure to be both ambiguous and poorly written. The condition should not be available for ER [Extended Range] operations. During our pre-flight planning activities, the Captain and I noted a defect of "Repeat. LH Fuel Filter Bypass warning light was on for 5 minutes" written up on the Electronic Log Maintenance Logbook (ELB). Maintenance indicated that "Fuel Filter Signal Disagree" on EEC #1 was the actual

issue causing this light to indicate. Maintenance deferred the fault by placing the #1 Fuel Filter Bypass Light on MEL 7304A. The ELB indicated that maintenance replaced the #1 engine fuel filter, did an engine idle run, and noted no gross contamination of the fuel in the filter. No further CDU faults were noted by maintenance. The number #1 engine "Fuel Filter Bypass Light" was placarded. Upon referencing the 737NG MEL, as far as we could tell, this is all the maintenance action items that need to be completed. As for the flight crew actions to be completed for MEL 7304A, we must only assure that the: 1. "Remaining fuel filter pressure warning system must operate normally." 2. "Maintenance is required to verify malfunction is in fuel filter bypass warning system on initial deferral." We noted that the flight crew actions for this MEL are rather sparse: Our normal pre-flight activities would ensure that the #2 Fuel Filter Bypass Light was extinguished and maintenance indicated they performed step 2. During our pre-flight briefing the Captain and I discussed this MEL, verified that the system was not needed for ER operations - as our flight to Destination would, of course, fall under this category. Unfortunately, a complete discussion and briefing about this item may have fallen slightly short as we became mildly distracted with a separate and unrelated new maintenance fault in the parking brake accumulator system that was noted during our flight deck pre-flight activities. In turn, our flight became delayed at the gate in ZZZ as the parking brake system needed to be deferred using another MEL. Additionally, we waited for connecting passengers from an inbound ZZZ1 flight. We pushed back from the gate in ZZZ started to taxi out for a departure on Runway XXR. During a turn on our taxi to the runway, we both noted that the Master Caution light illuminated for the Number 1 Fuel Filter Bypass Master Caution Light. I canceled the light and the Captain decided he wanted to stop in a safe area to deal with the possible issue. I agreed and ground control in ZZZ allowed us to stop on Taxiway 1. As the Captain stopped and set the parking brake, we both stated how confused we were about the fuel filter bypass light illuminating. I checked the 737QRH for this light and it only indicated that "erratic engine operation" may occur "in flight". The Captain and I discussed how it was extinguished after engine start, and only illuminated momentarily on taxi out, during a turn, and it was now extinguished again. We referenced MEL 7304A again from the 737NG MEL. Nowhere could we find whether the "inoperative/placarded" light should remain illuminated, extinguished, or momentarily indicate. We discussed that most MELs similar to this deferral would explain to the flight crew that a caution light may illuminate. (See example MEL 78030: "NOTE: The 'Master Caution' and 'ENG' MAY illuminate when performing master caution recall.") The Captain decided to call Dispatch and conference in maintenance while stopped on the taxiway. We told our Dispatcher about our issue and he brought in Maintenance on the phone line. The initial maintenance personnel transferred us to the "Specific area." The "Specific area" advisor told us that this momentarily illumination was normal and part of the MEL, the write-up was already in the ELB, and that it is "OK to continue." During our conversation the Captain, Maintenance, Dispatch, and I came to the conclusion: 1. There is no maintenance procedure to deactivate this light. 2. The issue is already indicated in the ELB. 3. Maintenance stated that was a normal and "very common" occurrence on the 737 fleet and we are OK to continue. After finishing our conversation with maintenance and dispatch, the Captain and I amended our takeoff briefing to be prepared for this light to illuminate during the takeoff roll. I, as the PNF, would indicate it was this light, cancel the alert, and the takeoff would continue in both the low speed and high-speed regimes. During the takeoff roll, at approximately 120 kts (at least 20 kts below V1), the Number 1 Fuel Filter Bypass Master Caution Light did illuminate. I called out that the fault adding "expected!", canceled the Master Caution Light, and we continued the takeoff. The light extinguished itself shortly thereafter. The light never illuminated again throughout the rest of the flight. The flight continued uneventfully to ZZZZ.

Narrative: 2

The maintenance release had an open write up for the "fuel filter differential pressure warning system". We read both the maintenance release and the MEL (7304A). Not much information other than the other system must be operative and if you do get the other filter bypass light, you should assume both engine filters have an impending bypass condition. Startup was normal. On taxi out, we got the left fuel filter bypass light, the side that was written up. It caught us off guard, because no where did it say that the light might come on. We pulled over and got a phone patch to Maintenance Control to discuss the light. Maintenance Control said it was normal with the problem and we were OK to continue. The light went and we taxied for takeoff. At approximately 120 knots, the light illuminated again. We continued the takeoff and the light went out shortly after we were airborne. The light did not illuminate again until taxi in.

Synopsis

B737 NG First Officer reported differences between MEL narrative and the actual indications of the aircraft systems when departing on an ETOPS flight.

Time / Day

Date : 202105

Local Time Of Day : 0601-1200

Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Altitude.AGL.Single Value : 0

Environment

Flight Conditions : VMC

Light : Daylight

Aircraft

Reference : X

Aircraft Operator : Personal

Make Model Name : Skylane 182/RG Turbo Skylane/RG

Crew Size.Number Of Crew : 1

Operating Under FAR Part : Part 91

Flight Plan : VFR

Mission : Skydiving

Flight Phase : Final Approach

Component

Aircraft Component : Engine

Aircraft Reference : X

Problem : Malfunctioning

Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : FBO

Function.Flight Crew : Pilot Flying

Function.Flight Crew : Single Pilot

Qualification.Flight Crew : Commercial

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Instrument

Experience.Flight Crew.Total : 1000

Experience.Flight Crew.Last 90 Days : 250

Experience.Flight Crew.Type : 250

ASRS Report Number.Accession Number : 1811311

Human Factors : Troubleshooting

Events

Anomaly.Aircraft Equipment Problem : Critical

Anomaly.Ground Event / Encounter : Other / Unknown

Anomaly.Inflight Event / Encounter : Fuel Issue

Detector.Person : Flight Crew

Were Passengers Involved In Event : N
When Detected : In-flight
Result.General : Flight Cancelled / Delayed
Result.General : Maintenance Action
Result.Flight Crew : Landed in Emergency Condition

Assessments

Contributing Factors / Situations : Aircraft
Contributing Factors / Situations : Human Factors
Primary Problem : Aircraft

Narrative: 1

We began the day at XA:00, the plane had 13 gallons of fuel on the pilots side, and 11 on the other. Generally we plan for 5-6 gallons per load of jumpers. After releasing jumpers I descended down from 9,000 feet AGL a couple miles east of the airport. Under 3,000 feet AGL on a 2/3 mile straight in approach to Runway XX @ ZZZ, I continued losing altitude as plane with the throttle fully out to lose airspeed. (It was put in every couple thousand feet descending to "clear" the engine.) When the desired speed and altitude was reached, I pushed the throttle in with no response. I enriched the mixture and pumped the throttle, and that also made no change. Checked fuel selectors, mags, etc, all with no luck. I realized the aircraft would not make the runway fairly shortly. Continuing straight in, I would have hit the side of an adobe hill. Right was rougher terrain, so left was the best option. I made an announcement on CTAF but may have been too low at that time. I navigated to the smoothest looking area I could find given the very short amount of time I had to deal with the situation. Dropped full flaps, and slowed down as best I could. The plane touched down, bounced over a few hills, and came to rest slightly upward on another hill. I exited the aircraft thru the pilots door, and looked over the plane, then called Person X to inform him of the situation and was able to text him GPS coordinates. While waiting I checked the fuel level in the aircraft, and the passenger side was empty, while the pilots seemed to have about 7 gallons, however the plane was at a slight angle so could have been inaccurate. Burning 17 gallons of fuel for 3 flights is about normal. Especially considering the slightly lengthy times to climb today.

Synopsis

C182 pilot reported a force landing due to a fuel issue during landing approach.