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 Number.....36

Date of Update.....October 5, 2023

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

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

National Aeronautics and
Space Administration

Ames Research Center
Moffett Field, CA 94035-1000

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.

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: 2001970 *(1 of 50)*

Synopsis

PA28 pilot reported loss of engine power during approach. The flight crew executed an immediate landing at the airport.

ACN: 2000942 *(2 of 50)*

Synopsis

Sierra 24 pilot reported an engine failure occurred just after ATC cleared the aircraft to land. The pilot then safely performed an off-airport landing at a nearby field.

ACN: 2000206 *(3 of 50)*

Synopsis

A321 flight crew reported an ECAM Message FUEL FLOW/USED/FOB DISAGREE - FUEL LEAK PROC... APPLY in flight. The flight crew elected to perform an air turn back to the departure airport.

ACN: 1999249 *(4 of 50)*

Synopsis

SR22 pilot reported engine fuel flow and power loss in cruise and a diversion was necessary for a safe landing.

ACN: 1996107 *(5 of 50)*

Synopsis

Pilot reported an engine failure in climb was caused by fuel contaminated with water.

ACN: 1994807 *(6 of 50)*

Synopsis

C172 Flight Instructor reported smelling strong fuel fumes in the cockpit during a training flight. The flight crew performed an air turnback with the Flight Instructor assuming control as the Student Pilot was affected by the fumes. Maintenance found the aircraft's filler tube developed a crack in the area welded to the gas tank.

ACN: 1993743 *(7 of 50)*

Synopsis

B737-800 pilot reported a Dual FMGC Failure during cruise. The flight crew ran the QRH and checklists, then contacted Dispatch. Due to doubts as to the fuel on board being sufficient to reach the destination airport, the flight crew performed an air turn back to departure airport.

ACN: 1993008 *(8 of 50)*

Synopsis

B747-400 Captain reported observing uncontrollable fuel transfer from main tank four to the center tank at the rate of approximately 100 kilograms per 11 minutes or approximately 600 kilograms per hour. The flight crew determined it was impossible to continue to destination airport due to insufficient fuel remaining. The flight crew requested priority handling and performed an air turn back and precautionary landing at departure airport.

ACN: 1991480 *(9 of 50)*

Synopsis

A320 First Officer reported encountering navigation system failures after departure that would preclude RVSM operations and there was insufficient fuel to complete the flight. The flight crew diverted to another airport and made a normal landing.

ACN: 1988930 *(10 of 50)*

Synopsis

First Officer reported a suspected fuel quantity indication error resulted after correcting a fuel imbalance during cruise. After requesting a more direct route, the crew landed safely at the destination airport.

ACN: 1988881 *(11 of 50)*

Synopsis

B737-800 Captain reported a fuel imbalance indication during climb out and the need to return to the departure airport.

ACN: 1988358 *(12 of 50)*

Synopsis

B737-700 Flight Crew reported moderate turbulence during the final approach resulting in a go around in which ATC assigned an unsuitable heading due to weather and terrain restrictions. Captain invoked Captain's authority to maintain heading and altitude clearance and also requested clearance to the alternate airport.

ACN: 1986859 *(13 of 50)*

Synopsis

Stemme S12-G Pilot reported shutting off the fuel selector valve while in glide flight. During the return flight, altitude was too low so the Pilot restarted the engine. After five seconds the engine quit, forcing the Pilot to land on a golf course fairway with landing gear only partially extended, damaging the aircraft.

ACN: 1986024 *(14 of 50)*

Synopsis

MD-11 Captain reported Fuel Tank 2 had problems right after takeoff, and the #2 engine soon spooled down after. After an attempt to relight the engine was unsuccessful and the affected engine could not be restarted, the flight crew safely diverted to another airport.

ACN: 1983848 *(15 of 50)*

Synopsis

B777 Captain reported an increasing fuel Imbalance in cruise. The flight crew monitored the observed fuel imbalance and elected to continue to the destination airport.

ACN: 1983314 *(16 of 50)*

Synopsis

PA-28 pilot reported loss of Engine RPM after takeoff. The pilot executed an air turn back and landing at departure airport. It was deduced that water had contaminated the fuel and had not been properly sumped out during pre-flight.

ACN: 1983222 *(17 of 50)*

Synopsis

B737 Flight Crew reported a suspected Fuel Leak after takeoff. The Flight Crew ran the QRH and checklists and then requested vectors to return to the departure airport. The suspected Fuel Leak continued to worsen, so the Flight Crew requested priority handling and performed an in flight shut down. When complying with the inflight shutdown QRH, it was discovered that the Cross Feed Valve was still open. The flight crew continued to perform an air turn back and precautionary landing at departure airport.

ACN: 1983023 *(18 of 50)*

Synopsis

Pilot reported alternator failure during IFR training flight over terrain. The flight crew diverted to make a precautionary landing.

ACN: 1982755 *(19 of 50)*

Synopsis

B737 Flight Crew reported the Number 1 Engine Oil Bypass Light illuminated during the climb out. After conferring with Dispatch and Maintenance, the decision was first made that the engine did not need to be shut down. However, as the flight continued to the destination and the Oil Bypass Light would not extinguish, the engine was then shut down.

ACN: 1982224 *(20 of 50)*

Synopsis

C172S pilot reported a fuel sump drain could not be reseated while performing the preflight check. After completing the flight, the pilot found out that the aircraft had a history of leaking fuel sump drains.

ACN: 1980756 *(21 of 50)*

Synopsis

TRACON Controller reported two aircraft were low on fuel and there was no communication between the other ATC sectors about the aircraft. The controller provided assistance and both aircraft landed safely.

ACN: 1979936 *(22 of 50)*

Synopsis

King Air F90 Pilot reported an erratic fuel flow indication and suspected right engine loss during an approach to landing. After landing, it was discovered the right fuel tank was empty even though 400 lbs. remaining was displayed on the fuel indicator.

ACN: 1978461 *(23 of 50)*

Synopsis

Ag pilot reported they did not have enough fuel to return to base and made an off-field landing. After refueling, pilot returned to base.

ACN: 1977996 *(24 of 50)*

Synopsis

PA-31 Pilot reported Left and Right Fuel Boost Pump failures in climb. Both engines began to run rough and lose power. The Pilot was unable to make it to any airfield and was forced to land in a field 1.1 miles short of the airport.

ACN: 1977978 *(25 of 50)*

Synopsis

Pilot reported engine failure on approach to landing. After a safe landing was accomplished, the aircraft was determined to have a problem with the fuel lines by a local mechanic.

ACN: 1977488 *(26 of 50)*

Synopsis

B747 Captain reported a fuel imbalance during climb. A fuel leak was confirmed visually and the flight crew performed an in flight shut down of the left engine and a diversion for a precautionary landing.

ACN: 1975434 *(27 of 50)*

Synopsis

B737 Captain reported a Fuel Imbalance at top of climb. The flight crew ran the QRH and checklists. After conferring with Operations and Maintenance, the flight crew elected to divert and make a precautionary landing.

ACN: 1971876 *(28 of 50)*

Synopsis

A321 Captain reported receiving an ECAM message: Fuel Left Wing Tank Overflow in cruise. The flight crew ran the ECAM procedure and reviewed the ECAM Supplemental Manual. The flight crew requested priority handling and diverted to land.

ACN: 1971745 *(29 of 50)*

Synopsis

Ultralight aircraft pilot reported engine failure in downwind leg of traffic pattern. Pilot returned and landed immediately.

ACN: 1971073 *(30 of 50)*

Synopsis

PA-28 Safety Pilot reported engine power loss during cruise flight. Power was restored after safety pilot directed the student to switch fuel tanks.

ACN: 1969740 *(31 of 50)*

Synopsis

CRJ700 flight crew reported fuel quantity issues during preflight fueling. After takeoff, the total fuel showed to be rapidly decreasing and a fuel imbalance error message appeared. The flight crew then performed an air turnback.

ACN: 1969519 *(32 of 50)*

Synopsis

Flight Instructor with student reported the engine unexpectedly stopped operating on final approach. After landing, the Instructor found the student may have inadvertently turned off the fuel while switching tanks.

ACN: 1968127 *(33 of 50)*

Synopsis

Captain reported the aircraft fuel quantity indicators were on MEL and during descent the right fuel tank indicator showed a rapid loss of fuel. After landing, the fuel tank was found to be empty with no evidence of a leak.

ACN: 1968035 *(34 of 50)*

Synopsis

C172 Pilot reported engine failure due to fuel starvation while in the traffic pattern. The engine quit over the runway numbers and the Pilot continued to land while requesting priority handling.

ACN: 1967686 *(35 of 50)*

Synopsis

B757 First Officer reported a fuel quantity and totalizer malfunction in cruise. The flight crew elected to divert rather than continue ETOPS with an unreliable fuel quantity indicator.

ACN: 1853972 *(36 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 *(37 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 *(38 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 *(39 of 50)*

Synopsis

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

ACN: 1851573 *(40 of 50)*

Synopsis

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

ACN: 1851330 *(41 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 *(42 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 *(43 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 *(44 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 *(45 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 *(46 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 *(47 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 *(48 of 50)*

Synopsis

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

ACN: 1845466 *(49 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 *(50 of 50)*

Synopsis

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

Report Narratives

ACN: 2001970 *(1 of 50)*

Time / Day

Date : 202305
Local Time Of Day : 1201-1800

Place

Locale Reference.Airport : ZZZ.Airport
State Reference : US
Altitude.MSL.Single Value : 2000

Environment

Flight Conditions : VMC
Light : Daylight

Aircraft

Reference : X
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 : VFR
Mission : Training
Flight Phase : Initial Approach
Route In Use : Visual Approach

Component : 1

Aircraft Component : Fuel Selector
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
Function.Flight Crew : Pilot Flying
Qualification.Flight Crew : Commercial
Qualification.Flight Crew : Multiengine
Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Flight Instructor
Experience.Flight Crew.Total : 280
Experience.Flight Crew.Last 90 Days : 60
ASRS Report Number.Accession Number : 2001970
Human Factors : Human-Machine Interface

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

Events

Anomaly.Aircraft Equipment Problem : Critical
Anomaly.Deviation / Discrepancy - Procedural : Clearance
Anomaly.Inflight Event / Encounter : Fuel Issue
Detector.Person : Flight Crew
When Detected : In-flight
Result.General : Flight Cancelled / Delayed
Result.General : Maintenance Action
Result.Flight Crew : Landed As Precaution
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
Contributing Factors / Situations : Procedure
Primary Problem : Human Factors

Narrative: 1

We are flying VFR flight from ZZZ1 to ZZZ, its a time build flight, I flew with another pilot who is PVT with IFR rated, he is the one who flying the airplane, he haven't flew for a very long time, so his flying skill is not great, so I monitor the entire flight, as we get cleared into the Bravo airspace, ATC told to lower the ALT 2 times, which we did compiled , when we were 10 NM away from ZZZ, ATC told us to decent 2,500 ft. and contact Tower, when we report to Tower, the engine suddenly lost power, the RPM dropped, and the airplane start to decent, so I took over the control immediately, and start to pitch for VG, and [requested priority handling] with Tower, at the same time, I was also trying to restart the engine and looking for place to land, unfortunately we are over the lake, and we are too low, around less than 2,000 ft. MSL, no way we will make it to the runway, and I lost sight of the airport and the other pilot just froze. I asked for a heading from Tower, and got runway insight immediately. At the same time, my engine started to come back, but it was on and off. I was trying to maintain the RPM and my ALT, that extra RPM allowed me to stop sinking, and I told Tower that we will be able to make to the runway, but only straight in. With 13 kts. tailwind, the Tower cleared the area for me. When I was may be 2-3 NM away from final, my engine came back. I did not touch the throttle anymore, because I don't want my engine to shut off again, and I would rather be high and fast into the runway then low and stalled. I managed to land safe and soft. After we parked the airplane, I check the both tank, right tank fuel was totally empty and right tank has about 17 gallons at least, however the fuel selector was on left when the engine shut off, and we did set a timer to switch the tank every 22 minutes. I was the one who set the timer on the phone and reminded my copilot to switch the tank. The flying time is about 3 hours which is the same time on the way there, we were full fueled at ZZZ1, and we fueled about 22.5 gallons, which is how much fuel that we used to fly here. Out of a fuel tank capacity of 48 gallons of fuel, so we suspect a fuel leak.

Synopsis

PA28 pilot reported loss of engine power during approach. The flight crew executed an immediate landing at the airport.

ACN: 2000942 *(2 of 50)*

Time / Day

Date : 202305
Local Time Of Day : 1801-2400

Place

Locale Reference.Airport : ZZZ.Airport
State Reference : US
Altitude.AGL.Single Value : 900

Environment

Flight Conditions : VMC
Light : Night

Aircraft

Reference : X
ATC / Advisory.Tower : ZZZ
Aircraft Operator : Personal
Make Model Name : Sierra 24
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 D : ZZZ

Component : 1

Aircraft Component : Fuel System
Aircraft Reference : X
Problem : Improperly Operated

Component : 2

Aircraft Component : Reciprocating Engine Assembly
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
Qualification.Flight Crew : Instrument
Experience.Flight Crew.Total : 337
Experience.Flight Crew.Last 90 Days : 18
Experience.Flight Crew.Type : 5
ASRS Report Number.Accession Number : 2000942
Human Factors : Human-Machine Interface
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.Inflight Event / Encounter : Fuel Issue
Detector.Person : Flight Crew
When Detected : In-flight
Result.Flight Crew : Diverted
Result.Flight Crew : Landed in Emergency Condition

Assessments

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

Narrative: 1

I was headed to ZZZ1 from ZZZ to fill my tanks of which were 7 - 8 gallons per side. There was a band of heavy rain outside of ZZZ1 so I decided to try ZZZ2. There was rain that showed on the radar after turning toward ZZZZZ, so I decided to go back to ZZZ. About 7 miles out I was set up for landing and told by ZZZ Tower to report 3 miles. At 4.5 miles they cleared me to land and my engine sputtered, came back for 4 seconds, then sputtered and died. Because my mind was set on a fuel gauge reading on the fullest tank, left, I didn't try to switch tanks and knew that the Sierra goes down at 900 ft./minute, I had very little time to make a decision and set 85 kt. and looked for a landing spot. I was able to land uneventful in a field with no injury and gear down with no damage in the field. After landing the tank gauges were still not showing empty on their readouts. I have just under 6 hours in this plane and still reviewing its operating characteristics. I needed to do a better act of piloting on emergency procedures by switching tanks first. However, being so low to land at airport, in that moment felt that a landing spot was priority with a plane that has such a bad glide ratio.

Synopsis

Sierra 24 pilot reported an engine failure occurred just after ATC cleared the aircraft to land. The pilot then safely performed an off-airport landing at a nearby field.

ACN: 2000206 *(3 of 50)*

Time / Day

Date : 202305
Local Time Of Day : 0601-1200

Place

Locale Reference.ATC Facility : ZZZ.TRACON
State Reference : US

Environment

Flight Conditions : VMC
Light : Daylight

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 : Initial Climb
Flight Phase : Climb
Route In Use : Vectors

Component : 1

Aircraft Component : Fuel System
Aircraft Reference : X
Problem : Malfunctioning

Component : 2

Aircraft Component : Fuel Quantity-Pressure Indication
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 : Multiengine
Qualification.Flight Crew : Instrument
ASRS Report Number.Accession Number : 2000206

Person : 2

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 : Air Transport Pilot (ATP)
Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Multiengine
ASRS Report Number.Accession Number : 2000218
Human Factors : Troubleshooting

Events

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

Assessments

Contributing Factors / Situations : Aircraft
Primary Problem : Aircraft

Narrative: 1

Climbing through about FL240 we got an ECAM caution: FUEL FLOW/USED/FOB DISAGREE - FUEL LEAK PROC.....APPLY. We stopped the climb at FL260 and ran the appropriate checklists and ECAM actions. Captain assigned me pilot flying (PF) role while he works through the QRH. Due to suspected fuel leak we [requested priority handling] and in accordance with the QRH procedure informed ZZZ Center that we would be returning to ZZZ. I had set up the aircraft for a return to ZZZ and informed Dispatch of our return and situation while the Captain was working through the QRH and non normal landing checks. We returned to ZZZ with no further incident and after being checked and cleared by Airport Rescue and Firefighting (ARFF) we taxied to the gate without issues. Captain made an Aircraft Maintenance Logbook (AML) entry and the aircraft was taken out of service by Maintenance.

Narrative: 2

Aircraft X. ZZZ-ZZZ1. ATB (Air Turn Back) ZZZ. Captain-pilot flying (PF). First Officer (FO)-pilot monitoring (PM). Departed ZZZ XXL. SID ZZZZZ 3. ATC cleared to FL350. Climbing through FL240: ECAM: FUEL F. USED/FOB DISAGREE - FUEL LEAK PROC.....APPLY. Applied initial steps of strategy to resolve ECAM. Assigned FO-PF and ATC radios. Leveled off FL260. Continued applying strategy, ECAM and QRH procedure (Fuel leak procedures). First step of the procedure: LAND ASAP. Directed FO to [request priority handling] and briefly discussed closest landing option. Determined ZZZ was the best option. Directed FO to get vectors back to ZZZ. Informed flight attendants (FAs) we are returning to ZZZ stand by for more information. Completed FUEL LEAK procedure and non-routine landing considerations. Directed FO to communicate to the Dispatcher of our divert (task and time permitting). Communicated with FAs and

passengers of a precautionary landing and presence of safety vehicles after taxiing clear of the runway. FO coordinated landing ZZZ XXR. Assumed PF duties. Completed normal checklist procedures. Landed, taxied clear XXR for Airport Rescue and Firefighting (ARFF) inspection. Reminded passengers to remain seated with seat belts fastened. Directed by ARFF to shut down #1 Engine for suspected leak. ARFF determined fluid to be a nonflammable substance. Taxied to the gate with ARFF following. System malfunction or actual fuel leak. Followed QRH checklist procedures and did not notice any excessive fuel depleting from the fuel tanks after the checklist was complete.

Synopsis

A321 flight crew reported an ECAM Message FUEL FLOW/USED/FOB DISAGREE - FUEL LEAK PROC... APPLY in flight. The flight crew elected to perform an air turn back to the departure airport.

ACN: 1999249 *(4 of 50)*

Time / Day

Date : 202304
Local Time Of Day : 1201-1800

Place

Locale Reference.ATC Facility : ZZZ.Tower
State Reference : US
Altitude.MSL.Single Value : 7000

Environment

Flight Conditions : VMC
Weather Elements / Visibility : Turbulence
Weather Elements / Visibility.Visibility : 10
Light : Daylight

Aircraft

Reference : X
ATC / Advisory.Tower : ZZZ
Aircraft Operator : Personal
Make Model Name : SR22
Crew Size.Number Of Crew : 1
Operating Under FAR Part : Part 91
Flight Plan : IFR
Mission : Personal
Flight Phase : Cruise
Airspace.Class D : 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 : Single Pilot
Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Private
Experience.Flight Crew.Total : 877
Experience.Flight Crew.Last 90 Days : 32
Experience.Flight Crew.Type : 609
ASRS Report Number.Accession Number : 1999249
Human Factors : Troubleshooting
Human Factors : Situational Awareness

Events

Anomaly.Aircraft Equipment Problem : Critical
Anomaly.Deviation / Discrepancy - Procedural : Clearance
Anomaly.Ground Event / Encounter : Other / Unknown
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 : Maintenance Action
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

Normal climb initially, then first indication of low fuel flow approximately 10 minutes into the flight. The aircraft had a recent history of fuel flow and manifold pressure indication issues and was just tuned/checked/cleared at a Cirrus maintenance facility in ZZZ3 2 days prior and following 3 visits within a few weeks to the Cirrus maintenance shop - at my home airport in ZZZ1 for the same reason, including the replacement of the propeller governor. I decided to carry on with the flight and monitor all indications to better assess the issue, and started developing alternative scenarios. Fuel flow indication (GPH) dropped to the mid-20s in climb while on normal power settings of ~100%, normal RPM indication of 2,450 and normal Man HG pressure of ~35 (fuel flow on full power climb should be closer to 40GPH). The manifold pressure indicator then started showing rapid variations up and down, including in the yellow/caution zone; the fuel flow indicator dropped further to ~22GPH while on full mixture and climb setting of 100%, well below normal/expected. I reduced the power setting to keep the manifold pressure in the safe/green range, probably around 80%, essentially moving to a cruise climb setting. Climb was slow, but oil pressure and temperature were all within range At cruise altitude of 7,000 the aircraft accelerated to normal speed. Approximately 10 minutes into the cruise, the indicated cruise speed started dropping slowly with no change in power or mixture setting (80% power) and fuel flow in the green range. Within 5 minutes, speed dropped by ~40 KTS. I called ATC to advise that I was unable to maintain filed speed of 175 KTS. I believe I gave them a 140 KTS. new speed, which was the indication when I made the call. Within another few minutes, the airspeed dropped to close to VREF (30% above stall speed), getting closer to stall speed. Loss of speed was at constant power and mixture settings, indicating a loss of engine power. I called ATC and asked to vector to land immediately and they pointed to ZZZ which I had just passed. I had an earlier exchange with ATC a few minutes prior, asking for vectors to ZZZ4, where a Cirrus maintenance facility is located; ATC had mentioned the ZZZ option if needed. Before I could get the vectors, I realized I would not make it to ZZZ4 and asked ATC for ZZZ landing. I initiated an immediate descent at idle power from 7,000 ft., dropping quickly with the field just under me. ATC switched me to ZZZ Tower, and I was immediately cleared to land. Emergency vehicles were lined up. Tower asked if I needed equipment to get me off the run-way upon landing, and thinking I would still have minimum power to taxi, I declined. Gliding towards the field on short approach into strong head winds (I believe it was gusting close to 40 KTS.), I attempted to add power to avoid a stall and there was little response. I dropped the nose further to

avoid a stall and make the threshold and felt that my ground speed was becoming idle into the headwind. I made it to the threshold and trying to land softly, the aircraft stalled and dropped on the runway in the last few feet. Landed on the main gears hard, and I am guessing from approximately from 10 ft. I could taxi (with difficulty; felt like little power). Personnel checked me from the outside and cleared me to taxi to the FBO where I was met by authorities. No injury. Visible damage to the main gear fairings, right and left. Under cracks on fairings, apparent damage to one the brake disks. The aircraft which is just one year old is under the Cirrus nose-to-tail warranty and maintenance program. The service manager is now in charge of assessing damage and addressing repairs. I believe an inspection was performed at ZZZ and a parts list is under development. I expect to hear more details this week.

Synopsis

SR22 pilot reported engine fuel flow and power loss in cruise and a diversion was necessary for a safe landing.

ACN: 1996107 *(5 of 50)*

Time / Day

Date : 202304
Local Time Of Day : 1201-1800

Place

Locale Reference.ATC Facility : ZZZ.TRACON
State Reference : US
Relative Position.Angle.Radial : 310
Relative Position.Distance.Nautical Miles : 11
Altitude.MSL.Single Value : 7800

Environment

Flight Conditions : VMC
Light : Daylight

Aircraft

Reference : X
Aircraft Operator : Corporate
Make Model Name : PA-31 Navajo/Chieftan/Mojave/T1040
Operating Under FAR Part : Part 91
Flight Plan : IFR
Mission : Passenger
Flight Phase : Climb

Component : 1

Aircraft Component : Fuel
Aircraft Reference : X
Problem : Malfunctioning

Component : 2

Aircraft Component : Reciprocating Engine Assembly
Aircraft Reference : X
Problem : Failed

Person

Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Corporate
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 : 1630
Experience.Flight Crew.Last 90 Days : 27
Experience.Flight Crew.Type : 126
ASRS Report Number.Accession Number : 1996107

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.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

Assessments

Contributing Factors / Situations : Aircraft
Primary Problem : Aircraft

Narrative: 1

It's suspected that there may have been fuel contaminated by water which caused the engine stoppage.

Synopsis

Pilot reported an engine failure in climb was caused by fuel contaminated with water.

ACN: 1994807 *(6 of 50)*

Time / Day

Date : 202304

Place

Locale Reference.Airport : ZZZ.Airport
State Reference : US
Altitude.MSL.Single Value : 2000

Environment

Flight Conditions : VMC
Weather Elements / Visibility.Visibility : 10
Weather Elements / Visibility.Other
Ceiling.Single Value : 4000

Aircraft

Reference : X
ATC / Advisory.Tower : ZZZ
Aircraft Operator : FBO
Make Model Name : Skyhawk 172/Cutlass 172
Crew Size.Number Of Crew : 2
Operating Under FAR Part : Part 91
Mission : Training
Flight Phase : Climb
Route In Use : None
Airspace.Class D : ZZZ

Component

Aircraft Component : Fuel Tank
Aircraft Reference : X
Problem : Failed

Person

Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : FBO
Function.Flight Crew : Instructor
Function.Flight Crew : Pilot Flying
Qualification.Flight Crew : Commercial
Qualification.Flight Crew : Multiengine
Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Flight Instructor
Experience.Flight Crew.Total : 6800
Experience.Flight Crew.Last 90 Days : 20
Experience.Flight Crew.Type : 800
ASRS Report Number.Accession Number : 1994807
Human Factors : Situational Awareness
Human Factors : Time Pressure
Human Factors : Communication Breakdown

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

Events

Anomaly.Aircraft Equipment Problem : Critical
Anomaly.Flight Deck / Cabin / Aircraft Event : Smoke / Fire / Fumes / Odor
Anomaly.Flight Deck / Cabin / Aircraft Event : Illness / Injury
Anomaly.Deviation / Discrepancy - Procedural : Clearance
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
Result.Flight Crew : Landed in Emergency Condition

Assessments

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

Narrative: 1

On or about Day 0, I departed ZZZ in a C172 with a student working on his instructor rating. Shortly after takeoff we smelled raw fuel fumes and returned for a landing. The scent of the fumes got stronger in our descent. The student asked me to land. On the ground he told me he got a migraine headache from the fumes. It appeared he was incapacitated from the fumes. If he was by himself this could have been deadly. The plane was withdrawn from service and the fuel tank sent to a welding shop. Apparently the filler tube developed a crack where it is welded to the gas tank. We were lucky that there was no fire or explosion, as in Aircraft Y. This was the second time this year that this fuel tank leaked. Last [eight or nine months ago] I refused to fly the plane after smelling fumes on another training/demonstration flight. The plane continued to be operated by other instructors and students, despite my emailed warnings to them, until it was pulled from service for its 100-hour inspection. The fuel tank was apparently sent to a welding shop for repair. I spoke with another Aircraft Inspector who works for a different school and was told that this was a common problem in their Cessna aircraft. This Inspector believes the problem is caused by the fuelers letting the fuel nozzle apply too much force on the filler neck. Our Inspector/Director of Maintenance thinks is caused by the fuel tank walls or top flexing, and causing stress cracks where the nozzle is welded. Person A at Company confirmed that a lot of Cessna fuel tanks have cracks where the filler neck joins the top of the tank. They seem to think it is from the fuelers letting the nozzles put too much pressure on the filler necks. However, they said the top of the tanks also develop cracks. The Cessna leaking fuel tanks appear to be a systemic problem and it is inconceivable that the FAA is unaware of the problem and obscene that there have been no ADs issued to warn pilots to have mandatory fuel tank inspections [and] ground the aircraft anytime there is the smell of fuel in the cockpit or fuel stains behind the filler caps or under the wing above the door. Some operators have taken the step of not filling the fuel tanks to the top. However, in a descent, there will be fuel behind and consequently above the filler neck to create a pressure head to drive fuel through the crack in the neck weld. Partially

filling a tank with a known leak should be considered operating an aircraft in a reckless manner and consequent violation of FAR 91.13.

Synopsis

C172 Flight Instructor reported smelling strong fuel fumes in the cockpit during a training flight. The flight crew performed an air turnback with the Flight Instructor assuming control as the Student Pilot was affected by the fumes. Maintenance found the aircraft's filler tube developed a crack in the area welded to the gas tank.

ACN: 1993743 *(7 of 50)*

Time / Day

Date : 202304
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
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 : Cruise
Route In Use : Vectors

Component : 1

Aircraft Component : FMS/FMC
Manufacturer : FMGC1
Aircraft Reference : X
Problem : Malfunctioning

Component : 2

Aircraft Component : FMS/FMC
Manufacturer : FMGC2
Aircraft Reference : X
Problem : Malfunctioning

Person

Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Air Carrier
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Multiengine
ASRS Report Number.Accession Number : 1993743
Human Factors : Human-Machine Interface
Human Factors : Situational Awareness
Human Factors : Troubleshooting
Human Factors : Communication Breakdown

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

Events

Anomaly.Aircraft Equipment Problem : Critical
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
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 : Returned To Departure Airport
Result.Air Traffic Control : Provided Assistance

Assessments

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

Narrative: 1

During climbout we experienced a Dual FMGC Failure. After multiple attempts to reset the system in guidance with Maintenance we're unsuccessful we returned to ZZZ after consulting with Dispatch. Before the Systems Failed, we had a CAT 3 Dual ECAM Message. While we were looking into the reason for this both FMGCs failed which resulted in the Autopilot Disconnecting. We were able to use the backup NAV and use VOR navigation but due to lack of Autopilot we couldn't remain in RVSM Airspace. When I queried the Dispatcher about fuel burn to ZZZ1 he stated that we would land with 7.3. We found this odd because our original release had us landing with 7.0 and a cruise of FL350. I didn't feel we could realistically make ZZZ1 at FL270 and we decided that a return to ZZZ was best.

Synopsis

B737-800 pilot reported a Dual FMGC Failure during cruise. The flight crew ran the QRH and checklists, then contacted Dispatch. Due to doubts as to the fuel on board being sufficient to reach the destination airport, the flight crew performed an air turn back to departure airport.

ACN: 1993008 *(8 of 50)*

Time / Day

Date : 202304
Local Time Of Day : 0001-0600

Place

Locale Reference.ATC Facility : ZZZ.ARTCC
State Reference : US
Altitude.MSL.Single Value : 35000

Environment

Flight Conditions : VMC
Light : Night

Aircraft

Reference : X
ATC / Advisory.Center : ZZZ
Aircraft Operator : Air Carrier
Make Model Name : B747-400
Crew Size.Number Of Crew : 2
Operating Under FAR Part : Part 121
Flight Plan : IFR
Mission : Cargo / Freight / Delivery
Flight Phase : Cruise
Route In Use : Vectors
Airspace.Class A : ZZZ

Component : 1

Aircraft Component : Fuel Crossfeed
Aircraft Reference : X
Problem : Malfunctioning

Component : 2

Aircraft Component : Fuel Line, Fittings, & Connectors
Aircraft Reference : X
Problem : Malfunctioning

Component : 3

Aircraft Component : Air Conditioning and Pressurization Pack
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 : Instrument

Qualification.Flight Crew : Multiengine
Qualification.Flight Crew : Air Transport Pilot (ATP)
ASRS Report Number.Accession Number : 1993008
Human Factors : Human-Machine Interface
Human Factors : Situational Awareness
Human Factors : Time Pressure
Human Factors : Troubleshooting
Human Factors : Communication Breakdown
Communication Breakdown.Party1 : Flight Crew
Communication Breakdown.Party2 : Flight Crew

Events

Anomaly.Aircraft Equipment Problem : Critical
Anomaly.Flight Deck / Cabin / Aircraft Event : Smoke / Fire / Fumes / Odor
Anomaly.Deviation / Discrepancy - Procedural : Maintenance
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
When Detected : In-flight
Result.General : Maintenance Action
Result.General : Flight Cancelled / Delayed
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
Contributing Factors / Situations : Human Factors
Contributing Factors / Situations : Procedure
Primary Problem : Aircraft

Narrative: 1

Website reflected an issue was written up on Day 0 with a due date of Day 2 for uncontrolled fuel transfer from tank four to the center tank. I spoke with Dispatch before leaving the hotel regarding the maintenance item appearing to be active in the website and was informed the only active MEL was the APU. Upon arrival at the airplane, the inbound crew relayed they had experienced an uncontrollable fuel transfer for their flight between ZZZ1 and ZZZ but that it was minor. I discussed this issue with Local Maintenance and was told this aircraft has a history of that problem, but it is intermittent. During pre-flight a puddle was observed below engine 4 and was thought to be hydraulic fluid from servicing. It was night. Armed with all of that information, we monitored the fuel page immediately after departure. We observed uncontrollable fuel transfer from main tank four to the center tank at the rate of approximately 100 kilograms per 11 minutes or approximately 600 kilograms per Hour. By the second hour of flight and with no change to the condition, we were observing the need for balancing fuel between 1 and 4. Tank 4 was continuing to transfer its fuel to the center tank. We consulted the QRH, determined at that time no fuel was being lost overboard and balanced fuel accordingly. We consulted with Dispatch and the Chief Pilot via SATCOM regarding the situation. We discussed the potential for loss of all fuel in tank number four under the current conditions and the

potential for #4 engine loss during configuration for landing in ZZZZ. We received message that after consulting with an engineer, evaluating the curfew for alternatives in ZZZZ1, and the overall situation that we were going to return to ZZZ. We had flown approximately 2.7 hours at this point. Note: departure fuel level 122 tons. At approximately 80-85 tons, with no center tank fuel remaining, the uncontrollable loss from tank 4 reduced to approximately 100 kilos per 22 minutes and appeared to be going overboard. We informed ATC of our divert and rerouted back to ZZZ. While enroute, ZZZ ATC informed us they had [requested priority handling] for our aircraft. We downgraded the situation. We determined we would be below maximum landing weight and set ourselves up for the ILS approach to Runway X left at ZZZ's request. Flaps 30, brakes 3, full reverse. After landing, and during thrust reverser operation we experienced intermittent smoke crew rest EICAS messages, haze on the flight deck, and an acrid odor. As we exited the runway on Taxiway X, I directed one crew member to determine if there was a fire in the crew rest area in preparation to park on Y and exit the aircraft. He returned with information of no fire but haze and odor on the flight deck. I directed him down to the main deck with an oxygen bottle to see if there was a fire on the main deck considering the hazmat we had onboard. He returned with information of no fire but haze on the main deck as well. I informed Ground Control of smoke/fumes on the flight deck during the landing roll but that the issue was dissipating as soon as we cleared the runway. I also observed a hazy cloud over the runway as we turned parallel onto Taxiway Y. As a precaution, fire trucks and equipment escorted us to parking at Company 2. We turned off packs two and three and turned on the flight deck fan switch as a precaution. Pack two subsequently failed and generated a status message. I suspected fuel contamination in the ducting as a potential source of the haze and directed my relief crew member to add it to the logbook along with other items. We were towed into parking with engine 4 running due to the APU MEL. I directed everyone to prepare and get off the airplane immediately after the door is opened. Firemen swept the main deck and upper deck with no finding of fire and reported to me on the flight deck as I discussed the details with Maintenance prior to exiting the aircraft myself. Cause - Kicking the maintenance can down the road. Suggestions - I have no suggestion.

Synopsis

B747-400 Captain reported observing uncontrollable fuel transfer from main tank four to the center tank at the rate of approximately 100 kilograms per 11 minutes or approximately 600 kilograms per hour. The flight crew determined it was impossible to continue to destination airport due to insufficient fuel remaining. The flight crew requested priority handling and performed an air turn back and precautionary landing at departure airport.

ACN: 1991480 *(9 of 50)*

Time / Day

Date : 202304
Local Time Of Day : 1201-1800

Place

Locale Reference.ATC Facility : ZZZ.TRACON
State Reference : US
Relative Position.Angle.Radial : 305
Relative Position.Distance.Nautical Miles : 27
Altitude.MSL.Single Value : 6000

Environment

Flight Conditions : VMC
Weather Elements / Visibility.Visibility : 10
Light : Daylight

Aircraft

Reference : X
ATC / Advisory.TRACON : ZZZ
Aircraft Operator : Air Carrier
Make Model Name : A320
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 E : ZZZ

Component

Aircraft Component : INS / IRS / IRU
Manufacturer : ADR3
Aircraft Reference : X
Problem : Malfunctioning

Person

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 : Multiengine
Qualification.Flight Crew : Instrument
Experience.Flight Crew.Total : 22148
Experience.Flight Crew.Last 90 Days : 46
Experience.Flight Crew.Type : 3946
ASRS Report Number.Accession Number : 1991480
Human Factors : Troubleshooting

Events

Anomaly.Aircraft Equipment Problem : Critical
Anomaly.Deviation - Track / Heading : All Types
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
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 : Aircraft
Contributing Factors / Situations : Procedure
Primary Problem : Aircraft

Narrative: 1

We operated an Airbus A320, on a part 91 ferry flight from ZZZ with an intended destination of ZZZ1. The flight was dispatched with an inop ADR 3 (Air Data Reference) compliant with the aircraft's MEL, provided that IR1, IR 2, ADR 1, and ADR 2 are operative. They were. Shortly after take-off, we began receiving a stream of amber ECAM messages. Messages included VENT Blower Fault, NAV ADR 3 Fault, AUTO FLT AP OFF, and other navigation-related faults. After complying with ECAM procedures, and troubleshooting, we determined that we could not recover the autopilot. As the autopilot is required for RVSM operations, and as we planned to climb to FL390, we realized that we would have insufficient fuel reserves at ZZZ1 flying at FL270 with the higher fuel burn. We elected to return to our point of origin, ZZZ1, for repairs. While descending into the ZZZ2 airspace, we were aware of significant VFR traffic at ZZZ3 and other VFR aircraft operating in the local area. When we requested vectors and a descent for landing at ZZZ2, ZZZ Approach Control advised us that our dispatcher requested we divert to ZZZ. In what appeared to us to be an encouraging tone of voice, the Controller asked if we were requesting priority handling. We affirmed, provided fuel and souls on board, and stated that we would not need Crash Fire Rescue (CFR) equipment standing by and that our problem was multiple indications of failures of secondary systems, and that our return to ZZZ was driven by the fuel problem that resulted from our technical inaccessibility of RVSM airspace. The landing at ZZZ was otherwise normal and uneventful. In debriefing this flight, we concluded that the multiple issues we encountered seemed to stem from the inoperative ADR 3.

Synopsis

A320 First Officer reported encountering navigation system failures after departure that would preclude RVSM operations and there was insufficient fuel to complete the flight. The flight crew diverted to another airport and made a normal landing.

ACN: 1988930 *(10 of 50)*

Time / Day

Date : 202304
Local Time Of Day : 1801-2400

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 : Commercial Fixed Wing
Crew Size.Number Of Crew : 2
Operating Under FAR Part : Part 121
Flight Plan : IFR
Mission : Passenger
Route In Use : Vectors

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 Not Flying
Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Multiengine
Qualification.Flight Crew : Air Transport Pilot (ATP)
ASRS Report Number.Accession Number : 1988930
Human Factors : Troubleshooting

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
When Detected : In-flight
Result.General : Maintenance Action
Result.Flight Crew : Requested ATC Assistance / Clarification
Result.Flight Crew : Landed As Precaution
Result.Air Traffic Control : Provided Assistance
Result.Aircraft : Equipment Problem Dissipated

Assessments

Contributing Factors / Situations : Aircraft
Primary Problem : Aircraft

Narrative: 1

During cruise, we had just finished a cross feed (Low 2) to balance the tanks from a minor imbalance of around 200 pounds. About a minute later, we got a master caution accompanied by a fuel imbalance caution on the EICAS. We looked at the fuel quantities on the EICAS, and the right tank had dropped about 1,000 pounds below what it had just been indicating (~2,600 to ~1,600 pounds). The MFD showed the same quantities, and the totalizer showed the two added together. I ran the QRH checklist, however since we did not suspect a fuel leak (the level was not dropping faster than we were burning it after the initial 1,000 pound decrease) and believed it to be an indication error, we did not continue to cross feed as directed by the checklist. We believed this would create an actual imbalance out of what was likely a sensor or indication problem. We requested and were cleared direct to ZZZ since we were unable to ascertain how much fuel we actually had on board. During the descent, the right tank indication went to all amber dashes, as did the totalizer. That made us even more sure it was only a sensing problem, and we continued on to land via the ILS as planned without further incident. The indication came back during the approach with the correct amount we expected to have on board, but we still had the Airport Rescue and Firefighting (ARFF) that were already standing by perform a visual inspection to confirm no fuel leak once we taxied clear of the runway. They did not note any leak.

Synopsis

First Officer reported a suspected fuel quantity indication error resulted after correcting a fuel imbalance during cruise. After requesting a more direct route, the crew landed safely at the destination airport.

ACN: 1988881 *(11 of 50)*

Time / Day

Date : 202304
Local Time Of Day : 1801-2400

Place

Locale Reference.ATC Facility : ZZZ.TRACON
State Reference : US

Environment

Flight Conditions : VMC
Light : Night

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 : Climb
Flight Phase : Initial Climb
Route In Use : Vectors
Airspace.Class E : ZZZ

Component

Aircraft Component : Fuel System
Aircraft Reference : X
Problem : Malfunctioning

Person

Location Of Person.Aircraft : X
Reporter Organization : Air Carrier
Function.Flight Crew : Pilot Flying
Function.Flight Crew : Captain
Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Multiengine
ASRS Report Number.Accession Number : 1988881
Human Factors : Troubleshooting

Events

Anomaly.Aircraft Equipment Problem : Critical
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy
Anomaly.Deviation / Discrepancy - Procedural : Clearance
Anomaly.Deviation / Discrepancy - Procedural : Weight And Balance
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 : Maintenance Action
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

I was the pilot flying on Aircraft X, ZZZ-ZZZZ. While completing the After Takeoff Checklist, my First Officer (FO) called my attention to a FUEL IMBAL indication on fuel quantity indicator. The left main tank was indicating about 1,000 pounds less than the right main tank and we were also burning center tank fuel. Having taken off with full mains and roughly 14,000 pounds in the center tank, we knew we should not be seeing an imbalance indication. I was hand flying at the time and called for the FUEL IMBALANCE CHECKLIST. As she was pulling up the checklist on the QRH, I tried engaging the Autopilot on CMD A so I could transfer control and run the checklist. It didn't engage so I continued to hand fly and had her run the checklist. The fuel level rate decrease in the left main was alarming which led us to the FUEL LEAK ENGINE CHECKLIST. I tried re-engaging the Autopilot on CMD B which successfully engaged this time. I informed ATC of our situation and we may need to return to ZZZ. As per the checklist, we turned off the center tank fuel pumps and the fuel level rate decrease immediately slowed. I called the flight attendants to see if they noticed fuel spray out of the left engine/wing/pylon area. They called back and said no. The checklist led us to turning the center tank pumps back on. The engines seemed to be mostly burning out of the center tank however we noticed the left main began decreasing again, however this time at a much lower rate. I transferred aircraft control to the FO while I attempted to call Dispatch on the local ZZZ frequency. They didn't respond so I tried to call Maintenance to see if they was anything we could do. They offered no suggestions. The fuel level was still decreasing out of the left main. It was obvious we could not continue on to ZZZZ nor could we afford to burn fuel down to below max landing weight as the fuel imbalance was out of limits and worsening. I advised ATC and informed them of our need to return. I informed the flight attendants, passengers, and completed the non routine landing checklist, reprogrammed the FMS, and advised Dispatch via ACARS, computed landing performance. I took control of the airplane and we returned for an overweight landing. After clearing the runway, the Airport Rescue and Firefighting (ARFF) vehicles inspected the aircraft and saw no visible signs of a fuel leak. We taxied to the gate uneventfully.

Synopsis

B737-800 Captain reported a fuel imbalance indication during climb out and the need to return to the departure airport.

ACN: 1988358 *(12 of 50)*

Time / Day

Date : 202304
Local Time Of Day : 1201-1800

Place

Locale Reference.ATC Facility : ZZZ.TRACON
State Reference : US
Altitude.MSL.Single Value : 11000

Environment

Light : Daylight

Aircraft

Reference : X
Aircraft Operator : Air Carrier
Make Model Name : B737-700
Crew Size.Number Of Crew : 2
Operating Under FAR Part : Part 121
Flight Plan : IFR
Mission : Passenger
Flight Phase : Initial Approach

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 : 1988358
Human Factors : Workload
Human Factors : Time Pressure
Human Factors : Communication Breakdown
Human Factors : Situational Awareness
Communication Breakdown.Party1 : Flight Crew
Communication Breakdown.Party2 : ATC

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 : Multiengine
Qualification.Flight Crew : Air Transport Pilot (ATP)
Experience.Flight Crew.Last 90 Days : 39

Experience.Flight Crew.Type : 39
ASRS Report Number.Accession Number : 1988372
Human Factors : Workload
Human Factors : Time Pressure
Human Factors : Communication Breakdown
Communication Breakdown.Party1 : Flight Crew
Communication Breakdown.Party2 : ATC

Events

Anomaly.ATC Issue : All Types
Anomaly.Deviation - Track / Heading : All Types
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy
Anomaly.Deviation / Discrepancy - Procedural : Clearance
Anomaly.Inflight Event / Encounter : Fuel Issue
Anomaly.Inflight Event / Encounter : Weather / Turbulence
Anomaly.Inflight Event / Encounter : Unstabilized Approach
Anomaly.Inflight Event / Encounter : CFTT / CFIT
Detector.Person : Flight Crew
Detector.Person : Air Traffic Control
When Detected : In-flight
Result.Flight Crew : Took Evasive Action
Result.Flight Crew : Executed Go Around / Missed Approach
Result.Flight Crew : Diverted

Assessments

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

Narrative: 1

We were descending into ZZZ on a flight from ZZZ1. We knew there would be moderate turbulence in the area and experienced at least occasional moderate on our descent below 16,000 ft. There were clouds in the area that indicated moderate turbulence and passed through a portion of them on our descent at about 16,000 ft. This turbulence was greater-than-moderate. Maybe not quite severe, but as you'll see we did not want to go back through them again. We were given a visual approach to Runway XXL and experienced moderate turbulence on the approach. In the flare the main wheels barely touched down, and we got a gust that picked us back up. After realizing the landing could not be made safely, we accomplished a normal go-around. On the go around we were given a climb to 11,000 ft. and a heading of 170. We complied with these instructions. Then as we were still cleaning up the airplane, ATC gave us a left turn to a heading of 070. Turbulence at the time was moderate and just bordering on, but not quite, severe. We told ATC that we wanted to maintain our heading and climb as the vector would have put us directly in the nearly severe turbulence in the clouds we flew through descending into ZZZ. The conditions were VMC on the west side of those clouds and we monitored clearance from the terrain. ATC gave us another easterly heading which, again, would have taken us through possibly severe turbulence; and we asked to maintain heading and climb above the turbulence so we could evaluate fuel and whether another approach could be made. Maintaining terrain clearance and using Captain's emergency authority, I elected to maintain heading and we told ATC we could not comply with the turn and requested a climb. ATC gave further instructions which we complied with that didn't require a heading

into the turbulence, but no further climb was given. I assessed our fuel and made a decision at that time to divert to our alternate of ZZZ2. We requested the diversion. We were given a heading and altitude toward ZZZ2 and proceeded and landed. En route we were given a number to call for a "possible deviation." We acknowledged the number and landed without incident at ZZZ2. I probably should have declared an emergency for fuel. In hindsight ATC was probably vectoring us back for another approach. We were still evaluating whether that was possible. But ATC, I think, misunderstood our request to stay out of potentially severe turbulence. Better communication between us and ATC might have helped the situation. ATC's intent to keep us in their airspace while try to vector us back and our intent to avoid severe turbulence (while maintaining terrain clearance) and evaluate whether a return was possible conflicted.

Narrative: 2

ZZZ1 to ZZZ for visual, Runway XXL. For context: 1) I'm on Day 2 out of IOE. I know where information is available to me in the flight deck, but my scan is not innate, yet. As much as I'd like to have better numbers for what the winds were doing at each spot and exactly what our assigned headings and altitudes were, I'm just not there, yet. I'm very much using conscious brainpower to gather and process info. 2) On our way into ZZZ, we were vectored north along the eastern edge of a mountain ridge southeast of the city and clipped the easternmost edge of the clouds over those peaks. There was immediate moderate turbulence (closer to severe than light) just clipping the edge of those clouds. I'll call them the "turbulent clouds." At the time, they looked like a collection of several merged cumulous clouds. We were warned of gains/losses of airspeed 10-15 kts. by PIREPS in front of us and the crosswinds were pretty strong from west-to-east. Just about at touchdown, we got a gust of wind and the Captain executed a "go-around." We climbed out in VMC, on runway heading, roughly following the southbound valley that the interstate follows. We had unlimited visibility along our path to the south and clear awareness of the terrain on both sides. Departure gave us a level off at 11,000 ft., which ended up being right in moderate (nearly severe) turbulence as we were level with the mountain peaks to our west (only a couple miles away), and downwind of the west-to-east winds. I asked for an immediate climb to get out of the turbulence, and the controller issued it with a turn to the east, directly towards the turbulent clouds over the city. I informed the Controller we were unable the turn to the east because of the weather, at which point he stated we were below MVA and needed to turn in order for him to climb us. After a couple of radio exchanges, it was clear we only had to climb 100 ft. on an easterly heading before we could request a turn to the south again, so we attempted that. Ultimately, we ended up on a 170 heading and climbed above the turbulence (though I tried to get further to the right/west because we were brushing right up against the turbulent clouds). Somewhere in the exchanges, Departure did ask for our intentions; and I let them know we wanted to continue south for about 10 more miles. At the time, that was to get around the turbulent clouds and give us time to analyze/discuss our next decisions (try again or divert). Ultimately, the Captain decided we needed to divert because of our fuel state, and that process went smoothly. This was a very compressed timeline with highs winds, terrain, and turbulence, and a challenging mental model to share with the Controller who couldn't see or experience what we could. I was confident then, and now, that the safest actions we needed take at that time were to continue climbing out of the turbulence in the direction where we had great visibility and terrain clearance, while NOT turning directly into the heart of the clouds to our east that we already knew had strong, moderate turbulence on its fringes. Of note, on our return flight from ZZZ2 to ZZZ about two hours later, the clouds over the city appeared as a collection of several standing lenticular clouds, interconnected along the spine of the mountains underneath them. The only options I can think of that would have allowed us to continue with our own terrain clearance and climb in VMC would have been to declare an

emergency or cancel IFR for two minutes then pick it back up. I don't know of an in-between way to concisely communicate to ATC that we were in a great spot to take responsibility for terrain clearance while on a south ground track that would avoid the turbulent clouds. I think the Controller was trying to vector us back for another approach and/or shortest direction back into an area where we would be above the MVA. If there's a way to relieve the Controller of his/her terrain clearance responsibility without saying "emergency" or "cancel," I don't know what it is. It would have been nice to be able to say something like, "We got terrain clearance, continuing 180, climbing to ___ (assigned), let us know when you can turn us west to go to ZZZ2.

Synopsis

B737-700 Flight Crew reported moderate turbulence during the final approach resulting in a go around in which ATC assigned an unsuitable heading due to weather and terrain restrictions. Captain invoked Captain's authority to maintain heading and altitude clearance and also requested clearance to the alternate airport.

ACN: 1986859 *(13 of 50)*

Time / Day

Date : 202303
Local Time Of Day : 0601-1200

Place

Locale Reference.ATC Facility : ZZZ.TRACON
State Reference : US
Relative Position.Angle.Radial : 040
Relative Position.Distance.Nautical Miles : 8
Altitude.MSL.Single Value : 3500

Environment

Flight Conditions : VMC
Weather Elements / Visibility.Visibility : 12
Light : Daylight
Ceiling.Single Value : 9000

Aircraft

Reference : X
ATC / Advisory.TRACON : ZZZ
Aircraft Operator : Personal
Make Model Name : Sail Plane
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 E : ZZZ

Component

Aircraft Component : Fuel Selector
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
Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Multiengine
Qualification.Flight Crew : Commercial
Qualification.Flight Crew : Glider
Experience.Air Traffic Control.Supervisory : 10040
Experience.Flight Crew.Total : 5000
Experience.Flight Crew.Last 90 Days : 15
Experience.Flight Crew.Type : 1000
ASRS Report Number.Accession Number : 1986859

Human Factors : Human-Machine Interface
Human Factors : Situational Awareness
Human Factors : Confusion

Events

Anomaly.Aircraft Equipment Problem : Critical
Anomaly.Flight Deck / Cabin / Aircraft Event : Smoke / Fire / Fumes / Odor
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy
Anomaly.Ground Event / Encounter : Loss Of Aircraft Control
Anomaly.Ground Event / Encounter : Ground Strike - Aircraft
Anomaly.Ground Event / Encounter : Gear Up Landing
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.General : Maintenance Action
Result.Aircraft : Aircraft Damaged

Assessments

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

Narrative: 1

I was doing a sight seeing flight out of ZZZ1 Friday afternoon. Around 5,000 feet I entered a thermal and turned off the engine. Shortly thereafter I had a very faint fuel smell in the cabin so I turned off the fuel selector valve, something I have never done before while soaring. I flew northeast of ZZZ while monitoring ZZZ Approach and ZZZ Tower. Traffic was busy. I notified ZZZ Tower that I was the glider they were reporting traffic about. I also had traffic on two screens on my panel. ZZZ reported to me that there were multiple IFR jet flights arriving shortly into ZZZ at my altitude which probably was around 3,500 feet at the time. At that point I turned back west and descended to get below arriving traffic. As I approached [the mountain peak] I was getting too low, turned back east and started the engine. I was in a down draft at the time. I gunned the engine which suddenly stopped 5 seconds later. I had forgotten to open the fuel valve selector in that urgent situation. The only option to land at that point was on the fairway of the Golf Course. There were two fairways to choose from. One had 3 carts (14th fairway) and the other had only one cart (15th) off to the right side. I put the landing gear switch to the down position, pulled full spoilers and landed on the grass. The gear had not extended at that point and retracted back into the fuselage. The right wing tip hit the ground and the plane spun around into the opposite direction. No injuries. The gear was surprisingly undamaged, but the gear doors were damaged. The right wing tip was also damaged. The surrounding terrain was very hilly and rocky, and I suspect the outcome would have been fatal if the fairway was not accessible. Bottom line: I turned off the fuel cock which sits above and behind me, and I never have done that before. I got distracted and too low, and got myself into a situation where my check list could not be used. Lesson learned. 1. Start the engine much earlier when you are not in a situation where options are limited. 2. Don't sight see in crowded airspace. 3. Have an emergency start sequence memorized and practiced before every flight. I'm a better pilot than what I demonstrated last week, and I have been kicking myself ever since. Thankfully once again, no one was injured.

Synopsis

Stemme S12-G Pilot reported shutting off the fuel selector valve while in glide flight. During the return flight, altitude was too low so the Pilot restarted the engine. After five seconds the engine quit, forcing the Pilot to land on a golf course fairway with landing gear only partially extended, damaging the aircraft.

ACN: 1986024 *(14 of 50)*

Time / Day

Date : 202303
Local Time Of Day : 0601-1200

Place

Locale Reference.ATC Facility : ZZZ.ARTCC
State Reference : US

Environment

Flight Conditions : VMC
Light : Daylight

Aircraft

Reference : X
ATC / Advisory.Tower : ZZZ
Aircraft Operator : Air Carrier
Make Model Name : MD-11
Crew Size.Number Of Crew : 2
Operating Under FAR Part : Part 121
Flight Plan : IFR
Mission : Cargo / Freight / Delivery
Flight Phase : Descent
Airspace.Class B : ZZZ

Component : 1

Aircraft Component : Fuel Booster Pump
Aircraft Reference : X
Problem : Malfunctioning

Component : 2

Aircraft Component : Fuel Quantity-Pressure Indication
Aircraft Reference : X
Problem : Malfunctioning

Component : 3

Aircraft Component : Turbine Engine
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 : 1986024
Human Factors : Troubleshooting
Human Factors : Confusion

Events

Anomaly.Aircraft Equipment Problem : Critical
Anomaly.Inflight Event / Encounter : Fuel Issue
Detector.Automation : Aircraft Other Automation
Detector.Person : Flight Crew
When Detected : In-flight
Result.General : Flight Cancelled / Delayed
Result.General : Maintenance Action
Result.Flight Crew : Landed As Precaution
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

Tank 2 Transfer Pump Off and Tank 2 Forward Pump Off Level 1 Alert approximately 2 minutes and 35 seconds after takeoff. Complied with QRH procedures. Approximately 5 minutes later, engine 2 spooled down. Complied with QRH procedures. Attempted in flight relight, unable to start engine. Requested priority handling, landed at ZZZ. Nearest suitable airport. From inflight shutdown to rollout, Fuel Tank 2 quantity indicated 9,900 lb. At block-in, indicated 4,800 lb.

Synopsis

MD-11 Captain reported Fuel Tank 2 had problems right after takeoff, and the #2 engine soon spooled down after. After an attempt to relight the engine was unsuccessful and the affected engine could not be restarted, the flight crew safely diverted to another airport.

ACN: 1983848 *(15 of 50)*

Time / Day

Date : 202303
Local Time Of Day : 1201-1800

Place

Altitude.MSL.Single Value : 34000

Environment

Flight Conditions : VMC
Light : Daylight

Aircraft

Reference : X
Aircraft Operator : Air Carrier
Make Model Name : B777 Undifferentiated or Other Model
Crew Size.Number Of Crew : 2
Operating Under FAR Part : Part 121
Flight Plan : IFR
Mission : Passenger
Flight Phase : Cruise
Route In Use : Vectors

Component : 1

Aircraft Component : Fuel Quantity-Pressure Indication
Aircraft Reference : X
Problem : Malfunctioning

Component : 2

Aircraft Component : Fuel Distribution System
Aircraft Reference : X
Problem : Malfunctioning

Component : 3

Aircraft Component : Fuel Crossfeed
Aircraft Reference : X
Problem : Malfunctioning

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 : 1245
Experience.Flight Crew.Last 90 Days : 137

Experience.Flight Crew.Type : 940
ASRS Report Number.Accession Number : 1983848
Human Factors : Human-Machine Interface
Human Factors : Troubleshooting
Human Factors : Communication Breakdown
Communication Breakdown.Party1 : Flight Crew
Communication Breakdown.Party2 : Maintenance

Events

Anomaly.Aircraft Equipment Problem : Critical
Anomaly.Deviation / Discrepancy - Procedural : Maintenance
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy
Anomaly.Ground Event / Encounter : Fuel Issue
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 : Maintenance Action
Result.Aircraft : Equipment Problem Dissipated

Assessments

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

Narrative: 1

Inbound aircraft had the Fuel Imbalance EICAS written up and Maintenance cleared the write with no fault codes found. We briefed the threat as I experienced the same EICAS four months ago. We briefed to monitor the Fuel Synoptic after we got the Fuel Low Center EICAS to monitor the Fuel Balance. In cruise once we got that EICAS we monitored the Fuel Synoptic at XA29. The Fuel Values were (63.4/1.8/64.0) (L/C/R) for an Imbalance of 600 pounds. The Left Engine had a fuel flow of 300 pounds higher per hour. At XB13 it was (58.2/2.0/59.3) for an imbalance of 1,100 pounds. At XB42 it was (54.5/1.7/56.0) for an imbalance of 1,500 pounds. At XC19 it was (49.0/0.2/52.2) for an imbalance of 3,300 pounds. We discussed why the Center Tank Fuel was at 0.2 when the fuel scavenge was not supposed to operate yet, due to the main tank fuel being above the onset value per the FM system section. Fuel Imbalance EICAS annunciated, and we accomplished the checklist, made an ELB write up. Contacted Dispatch and Maintenance Control to discuss the issue, they advised to keep monitoring and we gave Maintenance Control all the data above. During re-balancing we reviewed the Fuel Leak checklist and started monitoring the progress pages for totalizer fuel and calculated fuel as well as fuel remaining at ZZZ. After re-balancing we saw the imbalance numbers start to rise again. At XD12 the fuel was (42.4/0.0/44.8) for an imbalance of 2,400 pounds. At XD42 the fuel was (38.5/0.0/41.8) for an imbalance of 3,300 pounds. The :30 rate of difference was 900 pounds for XD42 and then at XE12 was 1,000 pounds. All other indications were normal the fuel totalizer and calculated fuel difference started at 1,300 pounds and went down to 400 pounds over this time period. The fuel remaining at touchdown remained consistent with our flight conditions. The HOWGOZIT fuel and the time reflected our flight. The Relief Pilot came up, and I went back to view door 3L and 4L for any sign of a Fuel Leak Spray from the Left Engine. No Spray was observed. We accomplished the checklist for Fuel Imbalance again

and notified Dispatch and Maintenance Control and gave them more data and discussed diverting into ZZZZ if the :30 fuel rate of difference exceeded 1,000 pounds. After the second re balancing the imbalance only increased to 1,100 pounds for the remainder of the flight. All other values and indications were consistent with the flight (totalizer/calculated/fuel reaming at touchdown/HOWGOZIT). We decided to not blindly follow the Fuel Leak checklist and shut down the engine for just the 1,000-pound limit, as all other values and indications were within tolerances and fuel remaining and the HOWGOZIT numbers were reflective of our flight plan. The fuel imbalance, fuel totalizer calculated values did not increase after the second re balancing. Flight landed uneventful at ZZZ. Gave Maintenance Control our thoughts on the fuel scavenge system as well as the fuel imbalance issue stopped after the main tank fuel dropped below 25,000 pounds.

Synopsis

B777 Captain reported an increasing fuel Imbalance in cruise. The flight crew monitored the observed fuel imbalance and elected to continue to the destination airport.

ACN: 1983314 *(16 of 50)*

Time / Day

Date : 202303
Local Time Of Day : 0601-1200

Place

Locale Reference.Airport : ZZZ.Airport
State Reference : US
Altitude.MSL.Single Value : 500

Environment

Flight Conditions : VMC
Weather Elements / Visibility.Visibility : 10
Light : Daylight
Ceiling.Single Value : 9000

Aircraft

Reference : X
Aircraft Operator : FBO
Make Model Name : PA-28 Cherokee/Archer/Dakota/Pillan/Warrior
Operating Under FAR Part : Part 91
Flight Plan : VFR
Mission : Training
Flight Phase : Takeoff / Launch
Route In Use : Direct

Component : 1

Aircraft Component : Fuel System
Aircraft Reference : X
Problem : Malfunctioning
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
Function.Flight Crew : Pilot Flying
Qualification.Flight Crew : Private
Qualification.Flight Crew : Instrument
Experience.Air Traffic Control.Supervisory : 5204
Experience.Flight Crew.Total : 95
Experience.Flight Crew.Last 90 Days : 45
Experience.Flight Crew.Type : 45

ASRS Report Number.Accession Number : 1983314
Human Factors : Confusion
Human Factors : Situational Awareness
Human Factors : Fatigue
Human Factors : Human-Machine Interface
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
Detector.Automation : Aircraft Other Automation
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 : Requested ATC Assistance / Clarification
Result.Flight Crew : Overcame Equipment Problem
Result.Flight Crew : Landed As Precaution
Result.Flight Crew : Returned To Departure Airport
Result.Air Traffic Control : Provided Assistance
Result.Aircraft : Equipment Problem Dissipated

Assessments

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

Narrative: 1

Upon departing from Runway XX at ZZZ, I experienced a sudden loss of 400-500rpm after reaching 500ft msl. full power returned after 2 seconds, and then dropped again by 400-500rpm 5 seconds after that. After the 2nd drop in RPM I notified Tower of the issue and requested to return to land as soon as possible. Tower [gave priority handling] for me and cleared me for Runway XX or XY, and I took YY. No further issues occurred after the second drop in RPM and I was able to land and taxi back with no issue. After talking to ground ops we both suspect the issue came from the fuel system, and as it rained the night before and was still cold and damp the morning of, we agreed the most likely issue was fuel contaminated with water. Although I did sump the fuel before the flight, I only had 6 hours of sleep prior and was still shrugging off tiredness from the morning and I suspect that a small quantity of water had been missed during the sump. I'll definitely be a little more thorough on inspection of fuel sumps in the future to mitigate future contamination occurrences (assuming fuel contamination was the issue on this particular flight).

Synopsis

PA-28 pilot reported loss of Engine RPM after takeoff. The pilot executed an air turn back and landing at departure airport. It was deduced that water had contaminated the fuel and had not been properly sumped out during pre-flight.

ACN: 1983222 *(17 of 50)*

Time / Day

Date : 202303
Local Time Of Day : 1801-2400

Place

Locale Reference.ATC Facility : ZZZ.TRACON
State Reference : US

Environment

Flight Conditions : VMC
Light : Night

Aircraft

Reference : X
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
Route In Use : Vectors

Component : 1

Aircraft Component : Fuel Crossfeed
Aircraft Reference : X
Problem : Improperly Operated

Component : 2

Aircraft Component : Turbine Engine
Aircraft Reference : X
Problem : Improperly Operated

Component : 3

Aircraft Component : Other Documentation
Aircraft Reference : X
Problem : Improperly Operated

Person : 1

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 : Multiengine
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Instrument
ASRS Report Number.Accession Number : 1983222

Human Factors : Communication Breakdown
Human Factors : Fatigue
Human Factors : Human-Machine Interface
Human Factors : Situational Awareness
Human Factors : Time Pressure
Human Factors : Troubleshooting
Human Factors : Confusion
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 : Pilot Flying
Function.Flight Crew : First Officer
Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Multiengine
Qualification.Flight Crew : Air Transport Pilot (ATP)
ASRS Report Number.Accession Number : 1983224
Human Factors : Workload
Human Factors : Troubleshooting
Human Factors : Situational Awareness
Human Factors : Fatigue
Human Factors : Confusion
Human Factors : Communication Breakdown
Human Factors : Human-Machine Interface
Communication Breakdown.Party1 : Flight Crew
Communication Breakdown.Party2 : Flight Crew

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.Automation : Aircraft Other Automation
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 : Requested ATC Assistance / Clarification
Result.Flight Crew : Inflight Shutdown
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
Contributing Factors / Situations : Human Factors
Contributing Factors / Situations : Procedure
Primary Problem : Human Factors

Narrative: 1

Shortly after completing the after takeoff checklist I noticed that fuel was flowing from the left fuel tank at a very alarming rate. We thought that there was a fuel leak because of the rapid fuel flow out of the left tank. The First Officer (FO) continued to fly the aircraft while I ran the Engine Fuel Leak QRH. We briefly discussed continuing straight to ZZZ1 but the weather was better in ZZZ and the rate of fuel loss out of the left side was very concerning to us. While I ran the QRH the FO [requested priority handling] and requested vectors back to ZZZ. The rapid loss led us to confirm a fuel leak in the QRH which led us to shutting down the number one engine. We continued to an uneventful single engine landing in ZZZ. After securing the engine we became aware the cross feed valve was open. I know I pointed at it in the QRH and verified it closed. I did not see a dim blue light and did not expect it to be open, because the only time it is open is when I open it. While we did discuss the issue at hand before delving into the QRC we felt a great urgency to act quickly due to the very rapid loss of fuel. A longer safety pause would have been more appropriate. The FO did a great job flying the plane and handling the radios but the approach environment is very distracting. I left the checklist to get ATC SOB count after we [requested priority handling], and again to talk to the Flight Attendants (FAs) when they felt the plane turning around. Better managing distractions during critical junctures of the checklist would have gone a long way. I feel like I have good working knowledge of the 737 fuel systems, and know that one pump can overpower the others and the high power setting and fuel flow was the reason why the draw on the left side was so alarming. In retrospect there were a number of opportunities to trap this error before becoming an undesirable aircraft state. Fatigue may have been a contributing factor as this incident occurred on daylight savings day. I had a hard time falling asleep and woke up at XA:30 AM body time. My watch estimated my sleep for the night as 4 hours 13 minutes. I was tired that day and using caffeine to get me home. I have learned a lot from previous company guidance on this issue and never wanted to be the one to go down this rabbit hole. Look out for tunnel vision, confirmation bias, don't rush!

Narrative: 2

Shortly after completing the after takeoff checklist the Captain noticed that fuel was depleting from the left fuel tank at an alarming rate. After a quick discussion we agreed that a fuel leak was suspected. I continued flying the aircraft and took over radio duties while the Captain ran the QRH for fuel leak. I [requested priority handling] and requested radar vectors back to ZZZ after a quick discussion with the Captain as the weather was significantly better there than ZZZ1. The checklist lead us to shut down the left engine and we prepared for a single-engine approach and landing. While on downwind our jump seater noticed that our cross feed valve was in the open position and neither the Captain nor I had caught it. We were so busy and inundated with task-saturation that a step was missed in the QRH. I think we were pretty shocked to see how fast our fuel was depleting from the left side and that caused us to rush the checklist and miss key steps. The volume of radio calls and vectors kept me from doing a great job of backing up the Captain while they ran the checklist. Fatigue was definitely a contributing factor as we had an early van in ZZZ2 on the morning of daylight savings. This is a prime example of needing to slow down and take a better assessment of the situation before rushing to conclusions.

Synopsis

B737 Flight Crew reported a suspected Fuel Leak after takeoff. The Flight Crew ran the QRH and checklists and then requested vectors to return to the departure airport. The suspected Fuel Leak continued to worsen, so the Flight Crew requested priority handling and performed an in flight shut down. When complying with the inflight shutdown QRH, it

was discovered that the Cross Feed Valve was still open. The flight crew continued to perform an air turn back and precautionary landing at departure airport.

ACN: 1983023 *(18 of 50)*

Time / Day

Date : 202303
Local Time Of Day : 0601-1200

Place

Locale Reference.Airport : ZZZ.Airport
State Reference : US
Relative Position.Angle.Radial : 020
Relative Position.Distance.Nautical Miles : 16
Altitude.MSL.Single Value : 7000

Environment

Flight Conditions : IMC
Weather Elements / Visibility : Rain
Weather Elements / Visibility.Visibility : 1.25
Light : Daylight
Ceiling.Single Value : 1200
RVR.Single Value : 6000

Aircraft

Reference : X
Aircraft Operator : FBO
Make Model Name : Skyhawk 172/Cutlass 172
Crew Size.Number Of Crew : 3
Operating Under FAR Part : Part 91
Flight Plan : IFR
Mission : Training
Flight Phase : Cruise
Route In Use : Vectors

Component

Aircraft Component : AC Generator/Alternator
Aircraft Reference : X
Problem : Malfunctioning

Person

Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : FBO
Function.Flight Crew : Pilot Not Flying
Function.Flight Crew : Instructor
Qualification.Flight Crew : Multiengine
Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Commercial
Qualification.Flight Crew : Flight Instructor
Qualification.Other
Experience.Flight Crew.Total : 1759
Experience.Flight Crew.Last 90 Days : 22
Experience.Flight Crew.Type : 425

ASRS Report Number.Accession Number : 1983023
Human Factors : Troubleshooting
Human Factors : Confusion

Events

Anomaly.Aircraft Equipment Problem : Critical
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
When Detected : In-flight
Result.General : Flight Cancelled / Delayed
Result.General : Maintenance Action
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
Contributing Factors / Situations : Human Factors
Primary Problem : Aircraft

Narrative: 1

During an instrument instruction flight in IMC with Person A (private pilot) at the controls in a Cessna 172, after having completed a practice approach to ZZZ to a missed approach (planned as such), we were getting vectors to ZZZ1, expecting the RNAV XX. Over the mountains, the fuel gauge began to indicate losing fuel rapidly, a low fuel warning light activated, and moments later we lost all Nav/Com/transponder/ADS-B out. I took over flying duties while a back seat passenger Person B (Commercial/Instrument rated pilot) accessed his tablet with Foreflight while Person A tried to diagnose the issue, including reducing electrical load and attempting to regain power. Believing that we had lost our alternator and had been on ship's battery power, I made the decision that we were in an emergency situation and asked Person B to provide vectors and safe altitudes based on his GPS equipped tablet. Person B accessed his hand-held transceiver while I continued to fly using the Garmin GI275 w/ battery back-up. Not knowing how long the battery back-up had been keeping the AI and DG operating, nor how long or how accurately I could trust the TC, I decided that we needed to get down and to ZZZ1 as soon as possible. Person A established contact on the handheld, [requested priority handling] (per my instruction as PIC), and provided position & altitude information based on his tablet. Following roughly, but offset from, the RNAV XX approach, we descended towards ZZZ2, making visual contact with the ground several miles out from ZZZ1. I saw Runway XX from a bit over a mile while at Traffic Pattern Altitude. The flight ended with a normal landing and long role-out. I believe I did all the right things given what we knew at the time. I believe we did a fair job of using all available resources, including cockpit resource management between the three of us. We checked the battery voltage on the ground, it had gone down to ~15 volts (nominal 24 volts). The maintenance shop is still looking to find out what happened to ship's power and why we never saw a "volts" warning light when (putatively) we lost the alternator / charging system I highly recommend all flights into IMC carry tablets with GPS and hand-held radios. What could we have done better? There was a Davtron clock w/

OAT & voltmeter. Since we were in IMC, we had to on the OAT. We could have occasionally checked the voltmeter.

Synopsis

Pilot reported alternator failure during IFR training flight over terrain. The flight crew diverted to make a precautionary landing.

ACN: 1982755 *(19 of 50)*

Time / Day

Date : 202303
Local Time Of Day : 0601-1200

Place

Locale Reference.ATC Facility : ZZZ.ARTCC
State Reference : US
Altitude.MSL.Single Value : 23000

Environment

Flight Conditions : VMC
Light : Daylight

Aircraft

Reference : X
ATC / Advisory.Center : 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 : Descent
Flight Phase : Climb

Component : 1

Aircraft Component : Oil Filter
Aircraft Reference : X
Problem : Malfunctioning

Component : 2

Aircraft Component : Powerplant Lubrication System
Aircraft Reference : X
Problem : Malfunctioning

Component : 3

Aircraft Component : Turbine Engine
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 : Instrument
Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Air Transport Pilot (ATP)
Experience.Flight Crew.Last 90 Days : 165
Experience.Flight Crew.Type : 720
ASRS Report Number.Accession Number : 1982755
Human Factors : Confusion
Human Factors : Troubleshooting
Human Factors : Communication Breakdown
Communication Breakdown.Party1 : Flight Crew
Communication Breakdown.Party2 : Flight Attendant

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 : Air Transport Pilot (ATP)
Qualification.Flight Crew : Multiengine
Experience.Flight Crew.Last 90 Days : 102
Experience.Flight Crew.Type : 102
ASRS Report Number.Accession Number : 1982777
Human Factors : Troubleshooting
Human Factors : Situational Awareness
Communication Breakdown.Party1 : Flight Crew
Communication Breakdown.Party2 : Flight Attendant

Events

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

Assessments

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

Narrative: 1

On climb-out from ZZZ through about 26,000 ft., the No 1 Engine Oil Bypass Light illuminated. We followed the Engine Oil Bypass Light QRH. The Bypass Light went out with the Number 1 Engine at about 77% N1. The checklist says to confer with Dispatch and Maintenance about safest course of action. I sent a message to Dispatch, "Call me, " on

Commercial Radio frequency. Dispatch quickly responded with a frequency, but we had to wait about 10+ minutes since another aircraft was handling a medical issue with a passenger. Once they were finally done and the frequency was clear, we were able to establish a phone patch with Dispatch and Maintenance. By this time, we were nearly over the top of ZZZ1. After explaining what happened, telling them the checklist we followed, and after having a brief discussion with Dispatch, Maintenance, and the FO (First Officer), we all agreed it was safe to continue to ZZZ2 as long as the Number 1 Engine parameters stayed within normal limits, and it did not need to be shut down. Maintenance suspected it was an instrumentation issue since we had oil pressure and oil temperature within normal limits. We all agreed it was not necessary to [request priority handling] with the Number 1 Engine operating at reduced thrust, so we did not do so at this point. I called the flight attendants to give a briefing. Person A answered. I told her, I need to give you a briefing. Her exact response was, "But, I am right in the middle of my service. " I told her this was more important, and she put Person B on the phone. I had to repeat to Person B that I needed to give her a briefing, and she seemed better prepared for one asking me to wait just a moment while she got ready to take notes on her link device. Once she was ready, I advised her that one of our engines was operating at reduced power because of an oil issue. It was still running, and we were still continuing to ZZZ2, but there was a chance we would divert with only 20+ minutes warning to the cabin if the engine performance significantly degraded. I told her we had about an hour to go, there was no need to prep for an evacuation, I had no special instructions, and I would update her if things changed. We reviewed the Engine Shutdown Checklist, kept the fuel balanced, checked the single-engine performance page of the FMC, and continued to monitor the engine. The Bypass Light reilluminated about every 3 - 5 minutes during flight and go out when the throttle was slightly reduced. Each time the N1 needed for the light to go out was a little lower. I sent a maintenance write-up and info report, logging the multiple N1 numbers when the Bypass Light came on, and what setting it went off. Per the Oil Bypass Light Checklist and our conversations with Dispatch / Maintenance, we continued towards ZZZ2. It appeared more likely that we would end up shutting down the engine, so I called the flight attendants and gave an updated briefing. I told her we were about 10 - 15 minutes of committed to continuing to ZZZ2, and to consider no news is good news on the need to divert. Fortunately, ATC needed a slower than normal speed from us, as we would not have been able to hold a fast, 0.78 mach or 300+ kt. if they needed it. We requested to descend early so the Number 1 Engine could operate at a further reduced setting. Just after the start of descent, the Oil Bypass Light came on again, and did not extinguish with the throttle at idle. The Oil Bypass checklist directed us to the Engine Failure or Shutdown Checklist. We followed the checklist, shut down the engine, advised Dispatch we were shutting down the engine, and about to [request priority handling]. After shutting down the Number 1 Engine, [requested priority handling] with ATC. After completing the checklist to the descent briefing portion, I did another briefing with the flight attendants and made a PA to the passengers. I did not have the flight attendants prepare the cabin for an evacuation - as we would be landing on a dry, long runway it did not seem necessary. In my view, "Prepare the Cabin" meant briefing the passengers on brace positions, and additional briefings with the passengers in the exit rows. Discussions with Person B after landing determined that she thought "Prepare for Evacuation" simply meant being more spring-loaded to evacuate herself, but no extra briefings of the passengers. There was obviously a big gap between what they think and what we think "Prepare for Evacuation" means in an immediate situation and this should be looked at and further addressed. I calmly told the passengers to expect a little faster than normal landing, they would see fire trucks follow us, and despite all this, we would still have them into ZZZ2 early, and I will see them at the gate. We had the checklist completed well before joining the approach to [Runway] XXL. We landed and fire / rescue confirmed there was no smoke / no evidence of abnormalities / no hot brakes before we taxied into the gate.

Narrative: 2

Normal ground operations and checks, with uneventful takeoff and initial departure out of ZZZ. Around XA:38, while climbing through approximately 23,000 ft. MSL for FL290 the Captain's side, Number 1 Engine Oil Bypass Light illuminated. Oil pressure was normal, RPM was normal, Number 1 Engine Oil Temperature was noted as slightly warmer - approximately N1 - 95 degrees, N2 - 77 degrees. Captain directed execution of 737 FM Non-Normal procedures. Checklist was accomplished in order, condition and light was confirmed. Autothrottle was disengaged, LNAV and VNAV remained engaged. Thrust lever was confirmed, then retarded slowly until approximately 77% N1 when the light extinguished. Light had extinguished so we proceeded. The Captain then contacted Dispatch and Maintenance after we discussed factors and positive control of the aircraft was passed to me. Dispatch and Maintenance recommendation was to continue, Captain and I used CRM / TEM (Threat and Error Management) and discussed possible threats to continuing the flight, and made the decision we concurred the flight could continue. After the Captain completed discussion with Dispatch / Maintenance he conducted a briefing with the FA (Flight Attendant) then took back control of the aircraft. Shortly after the Oil Filter Bypass Light illuminated again at approximately 77% N1, thrust was reduced to 75% N1, and the light extinguished. The decision was made to continue the flight in accordance with the current game plan while while we discussed CRM / TEM for possible engine failure and divert options. Decision point was made that prior to beginning descent into ZZZ2, an engine failure would be addressed by diverting to either ZZZ3 or ZZZ4. Once on the arrival at current altitude we would continue to ZZZ2. As we continued, the light illuminated again and another N1 reduction of approximately 2% was accomplished with the light extinguishing once again. The frequency of this trend then began to increase initial reduction to reillumination of the light was about 5 minutes between and by the time we began descent for the arrival we had decreased from 71% N1 to 68% and the light only remained off for approximately 1 - 2 minutes. By 27,000 ft. in the descent the light would illuminate again after only 30 seconds from each thrust reduction and Engine 1 Oil Temperature was noted as rising from 99 to 107 degrees Celsius as thrust was reduced all the way to idle closed. Once closed, step three of the Engine Oil Filter Bypass was conducted, following Oil Filter Bypass Light stays illuminated and Engine Failure or Shutdown Checklist for the NG, 737 FM was then executed per the publication. At this time the Captain [requested priority handling] with ZZZ2 Center. ZZZ2 Center kept us initially on the arrival but lifted all speed restrictions and gave a hard altitude of 14,000 ft. MSL for our descent. The Captain passed controls one more time with good confirmation to allow him to update the FAs, Dispatch / Maintenance, and review the arrival brief while covering CRM / TEM threats and mitigation. Once complete, controls were passed back to the Captain. I completed the remainder of the Engine Failure or Shutdown Non-Normal procedure, then proceeded to the Once Engine Inoperative Landing Non-Normal Checklist 737 FM. At this point ZZZ2 Approach had passed us to a single channel Approach frequency with a dedicated control and cleared us for the Visual XXL per our request as as that was our expected arrival and was loaded in the system. The checklist was completed in its entirety and the approach to landing was without incident and in accordance with all procedures and very much so reflected exactly the situations and training that we receive at the training center in the simulators. Airport & Rescue Firefighting (ARFF) was able to inspect the brakes and do a general safety check once we cleared the runway and an uneventful taxi to the gate was accomplished followed by shutdown. Training, support from ATC, Approach, Tower, Dispatch, Maintenance, and ARFF was all expertly and professionally handled with no issues detracting from the safe accomplishment of the flight. Training and checklist usage and the 737 FM were excellent tools for the situation with one suggestion in regards to the FM Checklist and Fuel Balance. By short final or landing rollout my best recollection was our fuel was at an imbalance of approximately 600

lb. with about 4,200 lb. on the Engine 1 side and 3,600 lb. on the Number 2 side. Although in tolerance and not unsafe this was a larger split than intended and the Captain and I had discussed a game plan for management and monitoring. The checklist however only mentions it one time during Step 9 of FM well prior to final landing, where much time might be spent with a growing imbalance of fuel. I recommend "Balance Fuel as Needed" be added to the end of the engine failure again, prior to Step 15 on FM, and then again add "Balance Fuel as Needed" prior to deferred items on FM during the Engine Inoperative Landing Non-Normal Checklist.

Synopsis

B737 Flight Crew reported the Number 1 Engine Oil Bypass Light illuminated during the climb out. After conferring with Dispatch and Maintenance, the decision was first made that the engine did not need to be shut down. However, as the flight continued to the destination and the Oil Bypass Light would not extinguish, the engine was then shut down.

ACN: 1982224 *(20 of 50)*

Time / Day

Date : 202303
Local Time Of Day : 1201-1800

Environment

Flight Conditions : VMC
Weather Elements / Visibility.Visibility : 10
Light : Dusk

Aircraft

Reference : X
Aircraft Operator : FBO
Make Model Name : Skyhawk 172/Cutlass 172
Crew Size.Number Of Crew : 1
Operating Under FAR Part : Part 91
Flight Plan : None
Mission : Training
Flight Phase : Parked

Component

Aircraft Component : Fuel Drain
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 : Pilot Flying
Function.Flight Crew : Single Pilot
Qualification.Flight Crew : Private
Qualification.Flight Crew : Instrument
Experience.Flight Crew.Total : 202
Experience.Flight Crew.Last 90 Days : 55
Experience.Flight Crew.Type : 202
ASRS Report Number.Accession Number : 1982224
Human Factors : Communication Breakdown
Human Factors : Troubleshooting
Human Factors : Situational Awareness
Communication Breakdown.Party1 : Flight Crew
Communication Breakdown.Party2 : Other

Events

Anomaly.Aircraft Equipment Problem : Critical
Anomaly.Deviation / Discrepancy - Procedural : FAR
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 : Routine Inspection
When Detected : Pre-flight
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 : Aircraft

Narrative: 1

After arriving at the cross-country destination in my flight school's Cessna 172S, I had the FBO refuel and fill up the tanks. I sumped the 13 fuel sump locations after checking the level with a fuel stick as per the checklist. Upon collecting the fuel sample from the last left-wing fuel sump, the o-ring would not reseal correctly. After pushing the needle into the sump gently, collecting the sample, and pulling the needle out, as I have always done, straight up and straight down with no excessive force, fuel began to leak out of the sump nozzle in a continuous stream. I finessed the needle of the sump cup in and out to seal the sump as best as I could but it was still leaking. At this point, which was after closing time for the FBO with no maintenance staff, I video-called my Commercial Pilot's License Instructor on my phone's [video calling] to ask for help with reseating the o-ring and to show him video evidence of the situation. He instructed me to continue to attempt to reseat the o-ring with the fuel sump cup needle. After retrying to seal it, the leak had begun to stream from the sump again as opposed to the drip I managed to reduce it to. He immediately hung up with me to call the owner of the flight school to which the plane belonged. My instructor called me back and told me that the owner wanted me to fly back to the home airport, as-is. My instructor was adamant that this was my decision and stressed that it was up to me if I felt comfortable with the situation as pilot in command. A first-hand witness of the owner's side of the conversation, who was in the room with the owner when he was on the phone with my instructor, back at the school, confirmed to me that the owner was resolute and uncompromising on the matter, fully intent on me to fly the aircraft back with the leak. Whether it was a demand or not, I'm not entirely sure. Again, my instructor relayed this to me but was clear that if I felt uncomfortable or unable, that was my choice. My instructor is a considerate man with strong moral integrity; a combat US Army veteran with the utmost respect for safety and regulation. I want to be very clear on that point. While still on [the video call] with my instructor I managed to seal the sump enough to contain the leak so a very slow drip. By now, the leak was reduced to about a single drop every few seconds. I told him I would let him know of my decision. This is where my ASRS report becomes important. I exercised poor ADM and decided to fly the plane back home. I rechecked the level of fuel in both tanks and confirmed with the fuel stick to still have 26.5 gallons in each tank. When I left the home airport there were 50 gallons onboard, and when I refueled, 13 gallons were administered. Meaning that, with a headwind, the flight, including taxi, run-up, takeoff, and climb-out consumed 10 gallons with a 50-degree rich of peak EGT mixture with an actual time enroute of 1.2 hours. Knowing my destination was 110 NM away, with a calculated KTAS of 110 kt. and a strong tailwind, I would be at my destination in, conservatively, one hour. With an overly conservative fuel burn rate of 12 gallons per hour, 3 gallons for taxi, run-up, takeoff, and climb-out, which is double what the POH specifies, and considering an extremely

conservative estimate of leaking 5 gallons per hour, I would make it back home well within legal VFR fuel minimum requirements. The leak rate was nowhere near this high. I knew that I could make it back with the fuel entirely in the right tank alone, if necessary. Especially if I ran the mixture at peak EGT. I would be flying a straight-in approach to a runway aligned with my route of flight and my route took me directly over an alternate airport, with a runway aligned with surface winds and pilot-controlled lighting, as well as along paved, lighted, wide stretches of highway, in a plane that was equipped with G1000 avionics containing calibrated fuel level sensors and a fuel flow rate gauge. Then after considering the amount of leaking fuel, the location of the leak, i.e., on the aft underside of the wing with no electrical or mechanical equipment behind it, and what kind of fire hazards it might present if any, I determined the minuscule leak was of an inconsequential nature to the safety of flight. I contacted my instructor via text to inform him of my decision and began following the checklists for departure. I climbed out and requested VFR flight following with Center frequency. Upon being instructed to contact Approach for my destination, I informed the Approach Controller of a small fuel leak and requested to expedite the approach for a straight-in landing on my desired runway. After doing so, ATC asked me if I knew where the leak was coming from and I informed them that it was insight and coming from the left wing sump nozzle. At this point, they gave me priority handling, said that they were rolling the fire trucks out to the runway, and asked for remaining fuel and souls onboard. I landed the plane without incident and was escorted back to the flight school's Ramp by a fire truck. The owner was outside the hangar waiting for me with a tow bar and bucket to catch any leaking fuel. I checked the level in each tank after shutting down and found 17 gallons in the right-wing tank and 15 gallons in the left-wing tank with the leak. This was a life lesson I won't soon forget. Aside from never doing something like that again, it has taught me that I can truly only rely on myself for taking my complete safety into serious consideration because the school owner didn't seem to mind much knowing there was a leak and insisting I fly home like that. After telling my wife what had happened, she was beside herself with my lack of judgment in putting our mutual future together in jeopardy. It prompted me to retake a hazardous attitudes inventory test and, after finding out later that that very plane has had the same exact fuel sump nozzle leak profusely, to start looking for a new school to finish my CPL and to later instruct for. Neither I nor my instructor knew that this plane had experienced that issue in the recent past. I was not informed of it before renting it.

Synopsis

C172S pilot reported a fuel sump drain could not be reseated while performing the preflight check. After completing the flight, the pilot found out that the aircraft had a history of leaking fuel sump drains.

ACN: 1980756 *(21 of 50)*

Time / Day

Date : 202303
Local Time Of Day : 1201-1800

Place

Altitude.MSL.Single Value : 40000

Aircraft : 1

Reference : X
ATC / Advisory.TRACON : ZZZ
Aircraft Operator : Military
Make Model Name : Military
Crew Size.Number Of Crew : 2
Operating Under FAR Part : Part 91
Flight Plan : IFR
Mission : Tactical
Flight Phase : Descent

Aircraft : 2

Reference : Y
ATC / Advisory.TRACON : ZZZ
Aircraft Operator : Military
Make Model Name : Military
Crew Size.Number Of Crew : 2
Operating Under FAR Part : Part 91
Flight Plan : IFR
Mission : Tactical
Flight Phase : Descent

Component

Aircraft Component : Fuel
Aircraft Reference : X
Problem : Malfunctioning

Person

Location Of Person.Facility : ZZZ.TRACON
Reporter Organization : Government
Function.Air Traffic Control : Enroute
Qualification.Air Traffic Control : Fully Certified
ASRS Report Number.Accession Number : 1980756
Human Factors : Communication Breakdown
Communication Breakdown.Party1 : ATC
Communication Breakdown.Party2 : ATC

Events

Anomaly.Aircraft Equipment Problem : Critical
Anomaly.Airspace Violation : All Types
Anomaly.ATC Issue : All Types

Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy
Anomaly.Inflight Event / Encounter : Fuel Issue
Detector.Person : Flight Crew
When Detected : In-flight
Result.Flight Crew : Landed in Emergency Condition
Result.Air Traffic Control : Provided Assistance

Assessments

Contributing Factors / Situations : Aircraft
Primary Problem : Aircraft

Narrative: 1

While working ZZZ with limited airspace available due to multiple Restricted Areas/ALTRVs in sector, I had a handful of traffic including VFR flight following, multiple IFR ZZZ1 practice approaches, [and] IFR inbounds to ZZZ2 when I received a call from both Aircraft X and Aircraft Y on the frequency. Both Aircraft X and Aircraft Y checked in as "[priority handling] aircraft" descending from FL400 "bingo fuel" from the Warning Areas well above and east of my airspace. I asked them to IDENT - then, I contacted ZZZ3 to ask if they had any prior comms with Aircraft X or Aircraft Y, which they responded negative. I then contacted the ZZZ4 sector of ZZZ5 to ask if they had any information on the traffic, to which they responded they had taken a point out from ZZZ3 on both. My supervisor, not certified on the position I was working, nor the position between where I was working and the airspace these aircraft were coming from, sat down next to me to monitor the situation but had to ask the sector beside me to coordinate for me because they were unequipped to complete the coordination. The supervisor was only there to write down the information: SOB (Souls on Board), fuel remaining. I continued to work the traffic in my airspace, including breaking one aircraft off a cleared approach due to the inbound [priority handling] aircraft. I was able to radar identify the first aircraft because they were squawking 7700 and IDENT-ing when instructed. I had to instruct the other aircraft to squawk 7700 so I could positively radar identify them as both were still well above and outside my airspace, outside my STARS filter limits. Both aircraft were pointed out to the adjacent ZZZ6 Approach sector, vectored to ZZZ1 for the visual approach Runway XX. Both aircraft were safe on deck shortly after. To my knowledge I did everything in my power to complete all coordination, provide positive control, and handle the unexpected and rapid event in accordance with 7110.65. It was as if all sectors between where the aircraft departed and myself "passed the buck" on any coordination about these aircraft. Warning Area airspace is still controlled airspace and at the time of this event, the airspace was owned by ZZZ3. ZZZ3 cannot keep critical information to themselves in events like these.

Synopsis

TRACON Controller reported two aircraft were low on fuel and there was no communication between the other ATC sectors about the aircraft. The controller provided assistance and both aircraft landed safely.

ACN: 1979936 *(22 of 50)*

Time / Day

Date : 202302
Local Time Of Day : 1201-1800

Place

Locale Reference.Airport : ZZZ.Airport
State Reference : US
Relative Position.Distance.Nautical Miles : 8
Altitude.MSL.Single Value : 1800

Environment

Flight Conditions : VMC
Light : Daylight

Aircraft

Reference : X
ATC / Advisory.Tower : ZZZ
Aircraft Operator : Personal
Make Model Name : Beech F90
Crew Size.Number Of Crew : 1
Operating Under FAR Part : Part 91
Flight Plan : IFR
Mission : Personal
Flight Phase : Descent
Route In Use : Visual Approach
Airspace.Class D : ZZZ

Component : 1

Aircraft Component : Fuel Quantity-Pressure Indication
Aircraft Reference : X
Problem : Malfunctioning

Component : 2

Aircraft Component : Fuel Storage System
Aircraft Reference : X
Problem : Improperly Operated

Component : 3

Aircraft Component : Turbine Engine
Aircraft Reference : X
Problem : Malfunctioning

Component : 4

Aircraft Component : Main Gear Tire
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 : Multiengine
Qualification.Flight Crew : Private
Qualification.Flight Crew : Instrument
Experience.Flight Crew.Total : 679
Experience.Flight Crew.Last 90 Days : 29
Experience.Flight Crew.Type : 124
ASRS Report Number.Accession Number : 1979936

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.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 : Maintenance Action
Result.General : Flight Cancelled / Delayed
Result.Flight Crew : Landed in Emergency Condition
Result.Air Traffic Control : Provided Assistance
Result.Aircraft : Aircraft Damaged

Assessments

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

Narrative: 1

We were approx. 8 miles from ZZZ on the visual for Runway XX at 1800 feet when the fuel flow started becoming erratic and it appeared we were losing the right engine. I immediately [requested priority handling] with the Tower they instructed me I was cleared to land on Runway XX. I landed a little fast and blew a right main tire upon landing. We taxied off the Runway onto Taxiway 1 due to no thrust in the right engine we could not turn left. I called Tower and they dispatched a tug. No emergency vehicles were dispatched. The ground crew towed us in to maintenance hangar after about 15 minute wait on Taxiway. The problem was triaged by mechanics and we had no fuel in the right tank. The fuel gauges were showing more than 400 lbs in each side. We replaced the tire and topped off the aircraft and departed for ZZZ our home base. The mechanics prepared work orders and there are log entries for the return to service for our trip home. Our mechanics are currently trouble shooting the fuel system to see if it is a probe issue, gauge issue or something else.

Synopsis

King Air F90 Pilot reported an erratic fuel flow indication and suspected right engine loss during an approach to landing. After landing, it was discovered the right fuel tank was empty even though 400 lbs. remaining was displayed on the fuel indicator.

ACN: 1978461 *(23 of 50)*

Time / Day

Date : 202302
Local Time Of Day : 0601-1200

Place

Locale Reference.Airport : ZZZ.Airport
State Reference : US
Altitude.MSL.Single Value : 800

Aircraft

Reference : X
Aircraft Operator : Corporate
Make Model Name : Small Aircraft
Crew Size.Number Of Crew : 1
Operating Under FAR Part : Part 91
Mission : Agriculture
Flight Phase : Cruise

Component

Aircraft Component : Fuel System
Aircraft Reference : X
Problem : Improperly Operated

Person

Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Corporate
Function.Flight Crew : Single Pilot
Qualification.Flight Crew : Commercial
ASRS Report Number.Accession Number : 1978461
Human Factors : Situational Awareness
Human Factors : Time Pressure

Events

Anomaly.Aircraft Equipment Problem : Critical
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy
Anomaly.Deviation / Discrepancy - Procedural : FAR
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 : Landed As Precaution
Result.Flight Crew : Returned To Departure Airport

Assessments

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

Narrative: 1

I began preparing for an aerial application from ZZZ. Ground crew loaded hopper with chemical and I took on fuel. Proceeded to application area. Completed application and was returning to ZZZ when I realized I was running short on fuel. I made a landing on a highway without incident and waited for fuel truck and proceeded to take off and landed safely at ZZZ. State trooper stopped to control traffic so I could make a safe take off from highway. My take away from this experience, fill fuel tanks to capacity. Ensure proper reserves for duration of flight.

Synopsis

Ag pilot reported they did not have enough fuel to return to base and made an off-field landing. After refueling, pilot returned to base.

ACN: 1977996 *(24 of 50)*

Time / Day

Date : 202302
Local Time Of Day : 1801-2400

Place

Locale Reference.Airport : ZZZ.Airport
State Reference : US
Relative Position.Distance.Nautical Miles : 13
Altitude.MSL.Single Value : 11000

Environment

Flight Conditions : VMC
Light : Night

Aircraft

Reference : X
ATC / Advisory.TRACON : ZZZ
Aircraft Operator : Corporate
Make Model Name : PA-31 Navajo/Chieftan/Mojave/T1040
Crew Size.Number Of Crew : 1
Operating Under FAR Part : Part 91
Flight Plan : IFR
Mission : Passenger
Flight Phase : Cruise
Route In Use : Direct
Airspace.Class E : ZZZ

Component : 1

Aircraft Component : Fuel Booster Pump
Manufacturer : L/H
Aircraft Reference : X
Problem : Malfunctioning

Component : 2

Aircraft Component : Reciprocating Engine Assembly
Manufacturer : L/H
Aircraft Reference : X
Problem : Malfunctioning

Component : 3

Aircraft Component : Fuel Booster Pump
Manufacturer : R/H
Aircraft Reference : X
Problem : Malfunctioning

Component : 4

Aircraft Component : Reciprocating Engine Assembly
Manufacturer : R/H

Aircraft Reference : X
Problem : Malfunctioning

Person

Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Corporate
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 : 1296
Experience.Flight Crew.Last 90 Days : 220
Experience.Flight Crew.Type : 22
ASRS Report Number.Accession Number : 1977996
Human Factors : Troubleshooting

Events

Anomaly.Aircraft Equipment Problem : Critical
Anomaly.Deviation / Discrepancy - Procedural : Clearance
Anomaly.Ground Event / Encounter : Ground Strike - Aircraft
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 : 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

Left ZZZ1 climbing up to 11000 feel started to run our cruise check list about 2 minutes after received a left boost pump failure indication engine was still running rough. Got the checklist out and started to perform it then the right boost pump failed as well engine running rough [advised ATC] and they had told us that ZZZ was at our 12 o'clock and 13 miles I started to pitch for best glide and aim for the airport and secure the airplane. I was losing altitude fast and saw I wasn't going to make the runway so I saw a dark opening and shot for it ended up landing in a field 1.1 miles of ZZZ.

Synopsis

PA-31 Pilot reported Left and Right Fuel Boost Pump failures in climb. Both engines began to run rough and lose power. The Pilot was unable to make it to any airfield and was forced to land in a field 1.1 miles short of the airport.

ACN: 1977978 *(25 of 50)*

Time / Day

Date : 202301
Local Time Of Day : 1801-2400

Place

Locale Reference.Airport : ZZZ.Airport
State Reference : US
Altitude.MSL.Single Value : 2600

Environment

Flight Conditions : VMC
Light : Night

Aircraft

Reference : X
ATC / Advisory.CTAF : ZZZ
Aircraft Operator : FBO
Make Model Name : Skyhawk 172/Cutlass 172
Operating Under FAR Part : Part 91
Flight Plan : None
Mission : Personal
Flight Phase : Initial Approach
Route In Use : Visual Approach
Airspace.Class E : ZZZ

Component : 1

Aircraft Component : Reciprocating Engine Assembly
Aircraft Reference : X
Problem : Malfunctioning

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 : Pilot Not Flying
Qualification.Flight Crew : Multiengine
Qualification.Flight Crew : Commercial
Qualification.Flight Crew : Instrument
Experience.Air Traffic Control.Supervisory : 204
Experience.Flight Crew.Total : 517
Experience.Flight Crew.Last 90 Days : 262
Experience.Flight Crew.Type : 299
ASRS Report Number.Accession Number : 1977978

Human Factors : Communication Breakdown
Human Factors : Troubleshooting
Human Factors : Human-Machine Interface
Communication Breakdown.Party1 : Flight Crew
Communication Breakdown.Party2 : Flight Crew

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.Automation : Aircraft Other Automation
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 in Emergency Condition
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

An engine failure during an approach. I was the Pilot Monitoring for this flight. We made it to the field and landed safely. We depart ZZZ at XA:47 PM, perform an approach at ZZZ1 and ZZZ2, and when preparing for another approach at ZZZ2, we notice a drop in our RPM, then the engine stops; we perform the procedure for a landing without the engine at ZZZ3 and make it to the field safely. After landing, we notice an imbalance in our fuel tanks. The left tank was lower than the right tank. The fuel selector was positioned on "both" during the flight as we performed the before-take-off checklist and before landing. The fuel gauges showed the perfect amount of fuel before the engine started, but the plane vibration made the needle swing once it started. We also estimate the fuel based on our calculations. Our Mechanic told us we had an issue if our fuel lines which caused us to lose the engine power. As a Pilot Monitoring, I help my Pilot Flying directing him to the Runway, and also performing the ABCDE checklist after an engine failure. He lands the plane safely.

Synopsis

Pilot reported engine failure on approach to landing. After a safe landing was accomplished, the aircraft was determined to have a problem with the fuel lines by a local mechanic.

ACN: 1977488 *(26 of 50)*

Time / Day

Date : 202302
Local Time Of Day : 0601-1200

Place

Locale Reference.ATC Facility : ZZZ.ARTCC
State Reference : US
Altitude.MSL.Single Value : 30000

Environment

Flight Conditions : VMC
Light : Daylight

Aircraft

Reference : X
ATC / Advisory.Center : ZZZ
Aircraft Operator : Air Carrier
Make Model Name : B737-400
Crew Size.Number Of Crew : 3
Operating Under FAR Part : Part 91
Flight Plan : IFR
Mission : Ferry / Re-Positioning
Flight Phase : Climb
Flight Phase : Initial Climb
Route In Use : Vectors
Airspace.Class A : ZZZ

Component : 1

Aircraft Component : Fuel Storage System
Aircraft Reference : X
Problem : Malfunctioning

Component : 2

Aircraft Component : Turbine Engine
Aircraft Reference : X
Problem : Malfunctioning

Component : 3

Aircraft Component : Powerplant Fuel System
Aircraft Reference : X
Problem : Malfunctioning

Component : 4

Aircraft Component : Fuel Booster Pump
Aircraft Reference : X
Problem : Improperly Operated

Person

Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Air Carrier
Function.Flight Crew : Check Pilot
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 : 1977488

Events

Anomaly.Aircraft Equipment Problem : Critical
Anomaly.Deviation / Discrepancy - Procedural : Weight And Balance
Anomaly.Deviation / Discrepancy - Procedural : Maintenance
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy
Anomaly.Deviation / Discrepancy - Procedural : FAR
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 : Maintenance Action
Result.General : Flight Cancelled / Delayed
Result.Flight Crew : Inflight Shutdown
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
Contributing Factors / Situations : Human Factors
Contributing Factors / Situations : Procedure
Primary Problem : Procedure

Narrative: 1

During climb out in the low 30's, I noticed a 1100 lb fuel imbalance (left wing low). This was not the case on the ground. We had 28000 lbs on board at takeoff and should only have been burning fuel from the center tank. I observed the fuel quantity indicator for a couple of minutes and observed that the left wing fuel quantity was decreasing by 10 lbs every 1-2 seconds. I then asked our flight maintenance technician to do a visual inspection of the wing for fuel. He returned and reported that there was indeed significant fuel leaking from the engine pylon and upper wing surface. I went to look for myself and confirmed that there was a significant amount of fuel pouring from the upper surface of the engine pylon, an inspection panel just aft of the pylon, and from several seams in the upper wing also aft of the pylon. I returned to my duty station, contacted dispatch via Satcom, advised that we needed to make a precautionary landing. We agreed that ZZZ was best option. We ran the engine fuel leak QRH procedure, which necessitated a precautionary engine shut down and diversion. I advised ATC of the situation. We performed a single engine approach and landing at ZZZ. By the time we landed the amount of fuel lost was 1800 lbs from the left wing. I understand that a main fuel pump

on that side had recently been replaced. Was a seal or sealant overlooked? The fuel leak stopped by the time we were on the ground. Was instruction Operating Evaluation Student (Captain) on doing a proper fuel check during climb and enroute when I noticed the imbalance. Reported situation to dispatch via Satcom; followed engine fuel leak QRH procedure, landed at ZZZ.

Synopsis

B747 Captain reported a fuel imbalance during climb. A fuel leak was confirmed visually and the flight crew performed an in flight shut down of the left engine and a diversion for a precautionary landing.

ACN: 1975434 *(27 of 50)*

Time / Day

Date : 202302
Local Time Of Day : 0001-0600

Place

Locale Reference.ATC Facility : ZZZ.ARTCC
State Reference : US
Altitude.MSL.Single Value : 32000

Environment

Flight Conditions : VMC
Light : Night

Aircraft

Reference : X
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 : 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 : Pilot Flying
Function.Flight Crew : Captain
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Multiengine
Qualification.Flight Crew : Instrument
Experience.Flight Crew.Total : 5521
Experience.Flight Crew.Last 90 Days : 125
Experience.Flight Crew.Type : 5041
ASRS Report Number.Accession Number : 1975434
Human Factors : Troubleshooting

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.Automation : Aircraft Other Automation
Detector.Person : Flight Crew
Were Passengers Involved In Event : N
When Detected : Aircraft In Service At Gate
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

Shortly after reaching top of climb, #2 engine fuel indicated imbalance of ~900 lbs. lower. Center tank fuel was .61 lbs. remaining and all fuel pumps were on. Completed the QRH, initiated cross feed, contacted Operations Control/Maintenance Control via comms. Observed #2 fuel quantity increase +/- 500 lbs. based on observations we did not suspect fuel leak. FMC annunciations of using reserve fuel, followed by insufficient fuel. Observed #1 engine fuel imbalance. Discussed situation with Operations Control/Maintenance Control and diverted to ZZZ at Dispatch's request. Briefed cabin and passengers. Observed at lower altitude fuel remained balanced but additional FMC messages of insufficient fuel. Observed structural landing weight limit 129.2 lbs. Uneventful landing and termination. Worked with station to disembark passengers into terminal. Communicated with Operations Control and contract maintenance. Contract maintenance was not familiar with aircraft or procedures to diagnose. Maintenance Control was unable to determine the cause of the indication problems and FMC messages. Trip reassigned to reserve crew and departed ~ 11 hours later with a MEL.

Synopsis

B737 Captain reported a Fuel Imbalance at top of climb. The flight crew ran the QRH and checklists. After conferring with Operations and Maintenance, the flight crew elected to divert and make a precautionary landing.

ACN: 1971876 *(28 of 50)*

Time / Day

Date : 202302
Local Time Of Day : 0001-0600

Place

Locale Reference.ATC Facility : ZZZ.ARTCC
State Reference : US
Altitude.MSL.Single Value : 27000

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 : Vectors
Airspace.Class A : 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 : Captain
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 : 1971876
Human Factors : Troubleshooting

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
When Detected : In-flight

Result.General : Maintenance Action
Result.General : Flight Cancelled / Delayed
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
Contributing Factors / Situations : Human Factors
Primary Problem : Aircraft

Narrative: 1

After level off at FL270 we received the ECAM message: Fuel Left Wing Tank Overflow. We followed the non-normal methodology. We ran the ECAM procedure and reviewed the ECAM Supplemental Manual. We were unable to solve the problem and continue the flight. [Priority handling] was requested and we diverted to ZZZ. Normal approach and landing at ZZZ. Aircraft was taken out of service in ZZZ.

Synopsis

A321 Captain reported receiving an ECAM message: Fuel Left Wing Tank Overflow in cruise. The flight crew ran the ECAM procedure and reviewed the ECAM Supplemental Manual. The flight crew requested priority handling and diverted to land.

ACN: 1971745 *(29 of 50)*

Time / Day

Date : 202302
Local Time Of Day : 0601-1200

Place

Locale Reference.Airport : ZZZ.Airport
State Reference : US
Relative Position.Distance.Nautical Miles : 0
Altitude.AGL.Single Value : 900

Environment

Flight Conditions : VMC
Light : Daylight

Aircraft

Reference : X
ATC / Advisory.UNICOM : ZZZ
Aircraft Operator : FBO
Make Model Name : Ultralight
Crew Size.Number Of Crew : 1
Operating Under FAR Part : Part 91
Flight Plan : None
Mission : Personal
Flight Phase : Initial Climb
Route In Use.Other
Airspace.Class E : ZZZ

Component

Aircraft Component : Fuel Selector
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 : Private
Experience.Flight Crew.Total : 175
Experience.Flight Crew.Last 90 Days : 12
Experience.Flight Crew.Type : 175
ASRS Report Number.Accession Number : 1971745
Human Factors : Human-Machine Interface

Events

Anomaly.Aircraft Equipment Problem : Critical
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy

Anomaly.Inflight Event / Encounter : Fuel Issue
Detector.Person : Flight Crew
When Detected : In-flight
Result.Flight Crew : Inflight Shutdown
Result.Flight Crew : Overcame Equipment Problem
Result.Flight Crew : Landed in Emergency Condition

Assessments

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

Narrative: 1

After a touch and go on Runway XX, I climbed out normally, turned right crosswind, then turned downwind. Upon completing the turn into the right downwind, the engine (Rotax 912ULS) sputtered, then died completely. I quickly requested priority, then established best glide speed at 55 kts. Since I had just begun the downwind leg, I quickly judged that if I was to glide straight ahead, I might be too low to be able to successfully turn 180 degrees and land on Runway XX. So, instead, I turned to the right 90 degrees, added 10 degrees of flaps, flew a base leg, and then turned left towards Runway XY. I was high, and I knew I would have a tailwind of about 10-14 kts (straight down the runway), so I added 10 more degrees of flaps (20 is max) and slipped the plane to lose altitude, heading straight for the Runway "XY" numbers, maintaining 55 kts. When I was low enough, I released the slip and flew straight into a downwind landing. The landing was very smooth, though a bit fast as expected. I used the brakes to slow down, and turned at the first available taxiway. My momentum carried me across the runway threshold, where I announced over UNICOM that my landing was successful, that neither I nor the plane were damaged, and that the active runway was clear. Sitting on the taxiway, I quickly discovered that both fuel valves were in the "off" (horizontal) position. I remembered that just previous to my last touch and go, I had noticed that the right tank fuel level was significantly lower than the left tank, and so I shut off the fuel to the right tank hoping to equalize the levels. Before doing so, I did not check the position of the left tank valve lever, which is located right behind the pilot's left shoulder, and takes some effort to see or feel. I assumed it was open when I closed the right tank valve, but actually, it was closed. The engine dying was my fault, I had starved the engine of fuel. Upon opening the fuel valves, the engine started immediately and ran normally.

Synopsis

Ultralight aircraft pilot reported engine failure in downwind leg of traffic pattern. Pilot returned and landed immediately.

ACN: 1971073 *(30 of 50)*

Time / Day

Date : 202301
Local Time Of Day : 1801-2400

Place

Locale Reference.ATC Facility : ZZZ.TRACON
State Reference : US
Relative Position.Distance.Nautical Miles : 5
Altitude.MSL.Single Value : 2000

Environment

Flight Conditions : VMC
Weather Elements / Visibility.Visibility : 10
Light : Night

Aircraft

Reference : X
ATC / Advisory.TRACON : ZZZ
Aircraft Operator : FBO
Make Model Name : PA-28 Cherokee/Archer/Dakota/Pillan/Warrior
Crew Size.Number Of Crew : 2
Operating Under FAR Part : Part 91
Flight Plan : VFR
Mission : Training
Flight Phase : Cruise
Route In Use : Direct
Airspace.Class E : ZZZ

Component

Aircraft Component : Fuel Selector
Aircraft Reference : X
Problem : Improperly Operated

Person

Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : FBO
Function.Flight Crew : Pilot Not Flying
Function.Other.Other
Qualification.Flight Crew : Private
Qualification.Flight Crew : Instrument
Experience.Flight Crew.Total : 223
Experience.Flight Crew.Last 90 Days : 26
Experience.Flight Crew.Type : 223
ASRS Report Number.Accession Number : 1971073
Human Factors : Communication Breakdown
Human Factors : Training / Qualification
Human Factors : Troubleshooting
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.Deviation / Discrepancy - Procedural : FAR
Anomaly.Inflight Event / Encounter : Fuel Issue
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

This report details the priority call, on Day 0 from Aircraft X with ZZZ Approach Control. On this day, I agreed to be a safety pilot for a student at the flight school, while they flew "Under the Hood". This was my first time acting as a safety pilot for this student. They were issued a Piper PA28-181. Our plan was to fly to ZZZ, ZZZ1, which was approximately 51 miles from our location. From the beginning, I must confess, I have only had 1 familiarization flight, and 2 additional flights in this type of aircraft, however, I was very proficient with its avionics. One of the things I noticed right off the bat, before taking off, was that the student did not have a checklist for this aircraft, and so I pulled out the POH to at least verify the speeds of the aircraft, while they proceeded to "download" a checklist on their iPad. After fueling, we took off real close to XA00z. Immediately I noticed that they were was not using their airspeed indicator to climb via Vx or Vy, but simply establish a 500 FPM climb. I also noticed they did not use the turn coordinator to make standard rate turns, and after questioning them about it, I come to understand that they did not understand the basic fundamentals of the turn coordinator. We proceeded to ZZZ, flew the ILS for Runway XR and completed 1 full stop landing, and then proceeded to fly the approach 2 more times, with 1 touch and go, and 1 missed approach, with the intention of proceeding back to ZZZ2. On the way back, we established with ZZZ Center that we would like the RNAV GPS YYR approach into ZZZ2, beginning at ZZZZZ; and were "Cleared Direct, ZZZZZ" by the Controller. Approximately 5 NM approaching ZZZZZ, at approximately 2000 MSL / AGL the engine begins to "sputter" and lose power. It appeared the student began to panic, and did not follow any checklist, or execute the simple ABCD's (Pitch for best glide, identify best place to land, complete checklist, or declare an emergency). I assumed control of the aircraft, pitched for best glide speed, and steered the aircraft to line up with the highway which was the closest, "safe" place to land. After checking the throttle mixture settings, and looking at the instruments I could see from my seat, I decided to call for [priority handling]. I could not see the fuel indicators, as they were on the far side of the instrument panel; and the panel did not have adequate lighting for me to see it from my position, anyway. After calling, and declaring my intentions to head for the highway, a voice came over the radio and said "check the fuel system." At this point, I asked the student if they had switched the tanks. They did not respond to this question, so I then instructed them to "switch the tank." They reached down, and I heard the tanks switch, and within a couple of seconds, the engine came back to life; and I immediately pitched for Vy, and the aircraft began to climb. Upon returning to 2000 ft. MSL, I informed the Controller that we regained engine power, and we were headed direct

to ZZZ2. The Controller asked if we were in need of any emergency services, and I replied that we did not. We proceeded direct to ZZZ2, following normal traffic procedures, and landed on [Runway] YYR at ZZZ2, safely, and without incident. Following this incident, I reviewed the incident with an instructor, and the owner of the flight school, and agreed to a ground safety class regarding fuel system management, and CRM with an emphasis on making better PIC decisions when flying with people I don't know.

Synopsis

PA-28 Safety Pilot reported engine power loss during cruise flight. Power was restored after safety pilot directed the student to switch fuel tanks.

ACN: 1969740 *(31 of 50)*

Time / Day

Date : 202301
Local Time Of Day : 1201-1800

Place

Locale Reference.Airport : ZZZ.Airport
State Reference : US

Environment

Flight Conditions : VMC
Light : Daylight

Aircraft

Reference : X
Aircraft Operator : Air Carrier
Make Model Name : Regional Jet 700 ER/LR (CRJ700)
Crew Size.Number Of Crew : 2
Operating Under FAR Part : Part 121
Flight Plan : IFR
Mission : Passenger
Airspace.Class C : ZZZ

Component

Aircraft Component : Fuel Quantity-Pressure Indication
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 : Air Transport Pilot (ATP)
Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Multiengine
ASRS Report Number.Accession Number : 1969740
Human Factors : Communication Breakdown
Human Factors : Confusion
Human Factors : Troubleshooting
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 : Captain

Function.Flight Crew : Pilot Not Flying
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Multiengine
Qualification.Flight Crew : Instrument
ASRS Report Number.Accession Number : 1969742
Human Factors : Troubleshooting
Human Factors : Communication Breakdown
Human Factors : Confusion
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.Deviation / Discrepancy - Procedural : Clearance
Anomaly.Ground Event / Encounter : Fuel Issue
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.Flight Crew : Returned To Departure Airport
Result.Flight Crew : Requested ATC Assistance / Clarification
Result.Flight Crew : Landed As Precaution
Result.Air Traffic Control : Provided Assistance

Assessments

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

Narrative: 1

We were first fueled to 9,600 lb. of fuel. From the time at which the Fueler disconnected till we completed the Before-Start Checklist, the total fuel decreased to 8,900 lb. I thought that the Fueler may have offloaded the 700 lb. of fuel but the Fueler said they can't offload fuel. We called the Fueler back and added about another 600 lb. so we had 9,600 lb. total before we started the engines/left the ramp. On the taxi out during the Before-Takeoff Checklist, we announced we had 8,700 lb. required and 9,300 lb. indicating with balanced tanks and about 50 lb. in the center tank - all looked normal. We took off well within our required takeoff fuel amount. At about 12,000 ft., myself and the Captain noticed that the total fuel was decreasing 10 lb. every second and there was a 500 lb. fuel imbalance with the LH XFLOW MSG appearing. Total fuel decreased to approximately 8,100 lb. We turned back directly to ZZZ. The Captain asked ATC if there were any closer fields but we still elected to proceed to ZZZ due to the low cloud ceilings and our familiarity with the airport. Once fully established in a descent, we noticed the total fuel being lost eventually corrected relative to the fuel flow. We still continued to ZZZ thinking that the total fuel indication may not be accurate at all. The Captain called back to the FAs (Flight Attendant) to tell them we were landing immediately due to a suspected fuel leak, that there was no need to brace, and that they would see fire trucks but to remained seated and there was

no need to evacuate at that time. We had very limited time due to the situation so we did not get the procedure items in exact order. We were vectored in for the ILS XXL and landed normally. ATC rolled the ARFF (Airport Rescue and Firefighting) trucks which followed us to the ramp, and stated they did not see an active fuel leak. We stopped on the ramp for about a couple minutes while Operations opened a gate for us, and then blocked in with approximately 8,500 lb. of fuel. Try to get the procedure items done to company standards if able. Root cause [was] fuel dropping abnormally through climb.

Narrative: 2

When initially fueled, we had 9,680 lb. of fuel, surpassing our EDR (Estimated Dispatch Required) amount of 9,281 lb. From the time at which the Fueler disconnected till we completed the Before-Start Checklist, about five or so minutes - the total fuel decreased to 8,910 lbs. I thought that the Fueler may have offloaded the 700 lb. of fuel thinking that it went over the planned amount and it wasn't going to roll back the normal 100 - 150 lb. or so. We called the Fueler back and added about another 600 lb. so we had just over 9,500 lb. total before we started the engines/left the ramp. On the taxi out during the Before-Takeoff Checklist, we announced we had 8,700 lb. required and 9,300 lb. indicating with balanced tanks and about 50 lb. in the center tank - all looked normal. We took off well within our required takeoff fuel amount, and began our normal climb profile. At about 12,000 ft., the FO (First Officer) and I noticed that the total fuel was rapidly decreasing, approximately 10 lb. every second, and there was a 500 lb. fuel imbalance with the LH XFLOW MSG appearing. Total fuel decreased rapidly to approximately 8,100 lb. We turned back directly to ZZZ. I asked ATC if there were any closer fields as I thought we may not have enough fuel to land at ZZZ. We still elected to proceed to ZZZ due to the low cloud ceilings and our familiarity with the airport. Once fully established in a descent, we noticed the total fuel being lost eventually corrected relative to the fuel flow. We still continued to ZZZ with haste as I thought that the total fuel indication may not be accurate at all. I called back to the FAs (Flight Attendant) to tell them we were landing immediately due to a suspected fuel leak, that there was no need to brace, and that they would see fire trucks but to remained seated and there was no need to evacuate at that time. We did not run the procedure items per standard as we did not have time. We were vectored in for the ILS XXL and landed normally. ATC rolled the ARFF (Airport Rescue and Firefighting) trucks, the trucks followed us to the ramp, and the ARFF did not see an active fuel leak. We stopped on the ramp for about four minutes while Operations opened a gate for us, and then blocked in with approximately 8,550 lb. of fuel. I think we all handled the situation well. We had a suspected fuel leak as the total fuel during the climb was rapidly dropping.

Synopsis

CRJ700 flight crew reported fuel quantity issues during preflight fueling. After takeoff, the total fuel showed to be rapidly decreasing and a fuel imbalance error message appeared. The flight crew then performed an air turnback.

ACN: 1969519 *(32 of 50)*

Time / Day

Date : 202301
Local Time Of Day : 1201-1800

Place

Locale Reference.ATC Facility : ZZZ.Tower
State Reference : US
Relative Position.Distance.Nautical Miles : 6
Altitude.MSL.Single Value : 2100

Environment

Flight Conditions : VMC
Weather Elements / Visibility.Visibility : 10
Light : Daylight

Aircraft

Reference : X
Aircraft Operator : FBO
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 : Initial Approach

Component

Aircraft Component : Fuel Selector
Aircraft Reference : X
Problem : Improperly Operated

Person

Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : FBO
Function.Flight Crew : Pilot Not Flying
Function.Flight Crew : Instructor
Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Multiengine
Qualification.Flight Crew : Flight Instructor
Experience.Flight Crew.Total : 944
Experience.Flight Crew.Last 90 Days : 141
Experience.Flight Crew.Type : 883
ASRS Report Number.Accession Number : 1969519
Human Factors : Communication Breakdown
Human Factors : Situational Awareness
Human Factors : Training / Qualification
Human Factors : Human-Machine Interface
Communication Breakdown.Party1 : Flight Crew
Communication Breakdown.Party2 : Flight Crew

Events

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

Assessments

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

Narrative: 1

My student and I departed our home field in the afternoon for an instruction flight. We practiced several maneuvers without issue and headed back to the airport. At about 10 miles north of the field, I had my student switch the fuel tank since that needs to be done periodically during the flight. We were heading to enter a left base for Runway XX when the engine unexpectedly quit. We made a safe landing but, on the ground, I realized that the student may have inadvertently turned off the fuel while switching tanks.

Synopsis

Flight Instructor with student reported the engine unexpectedly stopped operating on final approach. After landing, the Instructor found the student may have inadvertently turned off the fuel while switching tanks.

ACN: 1968127 *(33 of 50)*

Time / Day

Date : 202301
Local Time Of Day : 1201-1800

Place

Locale Reference.ATC Facility : ZZZ.TRACON
State Reference : US

Environment

Flight Conditions : VMC
Light : Daylight

Aircraft

Reference : X
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 : Descent

Component

Aircraft Component : Fuel Quantity-Pressure Indication
Aircraft Reference : X
Problem : Malfunctioning
Problem : Improperly Operated

Person

Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Air Carrier
Function.Flight Crew : Check Pilot
Function.Flight Crew : Captain
Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Multiengine
ASRS Report Number.Accession Number : 1968127

Events

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

Assessments

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

Narrative: 1

Aircraft X has an MEL for fuel quantity indicator and when fueling aircraft, the quantity has to be verified manually. In ZZZ this procedure was accomplished and log book entry was entered. We flew the first leg ZZZ to ZZZ1 with no issues. We did the turn without taking on more fuel so no manual quantity check was required. Then we flew leg ZZZ1 to ZZZ2 in the descent the right fuel indicator started showing a rapid loss of the quantity of fuel in the right tank. (It went from the expected proper fuel level to 0 lbs in tank within 2 minutes) Since the MEL was specifically in place for this reason this quantity change was expected on the indicators no priority handling was requested. We continued on with the flight using normal procedures and landed with no incident. I showed the Maintenance Department the fuel indication after landing and which prompted them to check it manually to compare the quantity against the indicator and was found the right tank had no fuel in the tank. It should have had 600+ lbs remaining in tank. The aircraft was inspected for any signs of a fuel leak or residual fuel of any kind and none was found. Maintenance Control, Chief Pilot, and operations director we're all called and notified of the incident. MELS Pertaining to fuel need to be addressed asap. Better or more specific training and or procedures need to be in place to assure the aircraft has the appropriate amount of fuel.

Synopsis

Captain reported the aircraft fuel quantity indicators were on MEL and during descent the right fuel tank indicator showed a rapid loss of fuel. After landing, the fuel tank was found to be empty with no evidence of a leak.

ACN: 1968035 *(34 of 50)*

Time / Day

Date : 202301
Local Time Of Day : 1201-1800

Place

Relative Position.Angle.Radial : 040
Relative Position.Distance.Nautical Miles : 0.5
Altitude.MSL.Single Value : 2900

Environment

Flight Conditions : VMC
Weather Elements / Visibility.Visibility : 10
Light : Daylight

Aircraft

Reference : X
Aircraft Operator : Personal
Make Model Name : Skyhawk 172/Cutlass 172
Operating Under FAR Part : Part 91
Flight Plan : None
Mission : Personal
Flight Phase : Cruise

Component

Aircraft Component : Powerplant Fuel 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 : Single Pilot
Function.Flight Crew : Pilot Flying
Qualification.Flight Crew : Private
Experience.Flight Crew.Total : 903
Experience.Flight Crew.Last 90 Days : 44
Experience.Flight Crew.Type : 236
ASRS Report Number.Accession Number : 1968035
Human Factors : Human-Machine Interface

Events

Anomaly.Aircraft Equipment Problem : Critical
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 : Maintenance

Detector.Person : Flight Crew
Were Passengers Involved In Event : N
When Detected : Routine Inspection
When Detected : In-flight
Result.General : Flight Cancelled / Delayed
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 : Human Factors
Contributing Factors / Situations : Procedure
Primary Problem : Human Factors

Narrative: 1

Engine stoppage due to fuel exhaustion, excessive fuel usage due to loose B nut. Upon refueling aircraft, leak was visible. Motor was recently changed, no reason to loosen the hose at the position of leak. No one admits to loosening it. Torque stripe enamel will be applied to all fuel lines for easy inspection of torque and or tampering. Contributing human performance factors include pressure to complete aircraft repairs to meet flight schedule, possible distracted worker. Pilot was the Mechanic that installed motor, as Pilot/Mechanic, preflight could have been better. Positive outcome was no accident, entire two hour flight was conducted within 2.5 miles of a runway. Motor quit over the numbers 1600 ft, AGL. [Priority handling was requested], after that, all was routine.

Synopsis

C172 Pilot reported engine failure due to fuel starvation while in the traffic pattern. The engine quit over the runway numbers and the Pilot continued to land while requesting priority handling.

ACN: 1967686 *(35 of 50)*

Time / Day

Date : 202301
Local Time Of Day : 0601-1200

Place

Locale Reference.ATC Facility : ZZZZ.ARTCC
State Reference : FO
Altitude.MSL.Single Value : 34000

Environment

Flight Conditions : VMC
Light : Daylight

Aircraft

Reference : X
ATC / Advisory.Center : ZZZZ
Aircraft Operator : Air Carrier
Make Model Name : B757 Undifferentiated or Other Model
Crew Size.Number Of Crew : 2
Operating Under FAR Part : Part 121
Flight Plan : IFR
Mission : Passenger
Flight Phase : Cruise

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 Not Flying
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Multiengine
Experience.Flight Crew.Last 90 Days : 45
Experience.Flight Crew.Type : 45
ASRS Report Number.Accession Number : 1967686

Events

Anomaly.Aircraft Equipment Problem : Critical
Anomaly.Deviation / Discrepancy - Procedural : Clearance
Anomaly.Deviation / Discrepancy - Procedural : Maintenance
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 : Maintenance Action
Result.General : Flight Cancelled / Delayed
Result.Flight Crew : Diverted
Result.Flight Crew : Landed As Precaution
Result.Flight Crew : Requested ATC Assistance / Clarification
Result.Air Traffic Control : Provided Assistance

Assessments

Contributing Factors / Situations : Aircraft
Primary Problem : Aircraft

Narrative: 1

Fuel quantity maintenance. Upon coming back from my scheduled rest break into the flight deck, I noticed the Captain was talking to Maintenance Control over the SATCOM. The flying First Officer was checking weather in ZZZZ for a possible diversion. We had determined that the fuel quantity indicator was not working properly. The right tank indicator and totalizer were turning on and off and the left side quantity indicator was showing 1200 lb. or so low, and then returning to its normal value. The center tank pumps were on and working, but the wings were showing an imbalance, without a FUEL CONFIG annunciation. There was also a status message annunciation about the fuel quantity indicator indicating a malfunction. This fuel quantity indicator was also written up before for erratically turning off and on the right side. We decided that the best course of action was to divert to ZZZZ as an unknown fuel quantity reduces safety margins considerably. We turned to ZZZZ and conducted the diversion checklist to make sure we had everything completed prior to and after our arrival. The diversion was uneventful and we got to the hardstand without further issue. Passengers were deplaned, Maintenance was called, and preparations were made for accommodations.

Synopsis

B757 First Officer reported a fuel quantity and totalizer malfunction in cruise. The flight crew elected to divert rather than continue ETOPS with an unreliable fuel quantity indicator.

ACN: 1853972 *(36 of 50)*

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.

ACN: 1853217 *(37 of 50)*

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.

ACN: 1852403 *(38 of 50)*

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 were 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 were 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.

ACN: 1851855 *(39 of 50)*

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.

ACN: 1851573 *(40 of 50)*

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. Preformed 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.

ACN: 1851330 *(41 of 50)*

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.

ACN: 1849677 *(42 of 50)*

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.

ACN: 1847334 *(43 of 50)*

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.

ACN: 1847198 *(44 of 50)*

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.

ACN: 1846936 *(45 of 50)*

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 then 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.

ACN: 1846925 *(46 of 50)*

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.

ACN: 1846866 *(47 of 50)*

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 : Diverted
Result.Flight Crew : Landed As Precaution
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
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 lose 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 ZZZ2 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.

ACN: 1845772 *(48 of 50)*

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.

ACN: 1845466 *(49 of 50)*

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 the 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.

ACN: 1844355 *(50 of 50)*

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.