

**ASRS Database Report Set**

**Cockpit Resource Management (CRM) Issues**

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Report Set Description.....Crew Resource Management (CRM) inflight situations  
(conflicts, NMACs, and emergencies).

Update Number.....33

Date of Update .....March 7, 2024

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.

A handwritten signature in cursive script that reads "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: 2032687 *(1 of 50)*

### Synopsis

ERJ175 flight crew reported lack of CRM to update FMS resulted in an unstable approach to a non standard go around. The flight crew experienced loss of situational awareness during the go around, a GPWS alert, flap over speed, and aircraft misconfiguration.

ACN: 2032683 *(2 of 50)*

### Synopsis

Air carrier B777 flight crew reported lack of response from flying pilot on unstable approach resulted in Pilot Monitoring taking control of the aircraft for a go around and subsequent landing.

ACN: 2032403 *(3 of 50)*

### Synopsis

Air carrier First Officer reported an altitude deviation during a visual approach to DRO airport resulting in a CFTT event. The crew disconnected the autopilot, initiated a climb and continued with the approach and landing.

ACN: 2028427 *(4 of 50)*

### Synopsis

A300 flight crew reported a controlled flight toward terrain event while being vectored for a visual approach in smoky/hazy conditions. ATC issued a low altitude alert to crew who climbed back to the cleared altitude and subsequently made an uneventful landing.

ACN: 2020758 *(5 of 50)*

### Synopsis

Air carrier First Officer reported they descended 500 feet below glideslope and had a track heading deviation during approach. Reportedly, the FO did not enter the missed approach altitude at the right time and there was confusion over who had control of the aircraft during the event.

ACN: 2018142 *(6 of 50)*

## Synopsis

B737-800 flight crew reported a tail strike occurred during takeoff in gusty wind conditions. Flight crew diverted and post flight inspection found minor damage.

ACN: 2017960 *(7 of 50)*

## Synopsis

C750 pilot reported descending below the minimum altitude depicted on a descend via STAR because of an improperly set altitude pre-select value. Crew queried ATC and were given a heading and altitude for terrain avoidance and landed normally.

ACN: 2012197 *(8 of 50)*

## Synopsis

B737 flight crew reported receiving a late visual approach clearance from ATC resulting in the aircraft being high for a stabilized approach, then also receiving a EGPWS obstacle alert warning when descending to the ATC assigned altitude. The flight crew climbed back to the correct altitude and continued the approach to landing.

ACN: 2008256 *(9 of 50)*

## Synopsis

Air carrier Captain reported a ground conflict with the pushback tug shortly after initiating taxi. The Captain reported he failed to ensure the tug was clear before calling for taxi.

ACN: 1999892 *(10 of 50)*

## Synopsis

C172 Flight Instructor with student reported low voltage indications during cruise. The flight crew diverted and made a precautionary landing.

ACN: 1999556 *(11 of 50)*

## Synopsis

B787 flight crew reported misdiagnosing a hydraulic system failure as flap and slat systems failure. The flight crew continued to destination airport and made a precautionary landing.

ACN: 1997702 *(12 of 50)*

### Synopsis

B767 flight crew reported loss of C hydraulic system during cruise. The flight crew continued to destination airport and made a precautionary landing.

ACN: 1992202 *(13 of 50)*

### Synopsis

B737-700 Flight Crew reported the left main landing gear lights stayed illuminated despite the landing gear handle being in the up position. After consulting with Dispatch and Maintenance Control, the Flight Crew then decided to divert and safely landed at a suitable airport.

ACN: 1989977 *(14 of 50)*

### Synopsis

A319 Flight Crew reported a HYD G ENG 1 PUMP LO PR message annunciated during climb out, followed by multiple other associated warnings. The Flight Crew completed a diversion and landing.

ACN: 1987914 *(15 of 50)*

### Synopsis

Air Carrier Captain reported the Marshaller did not use their headset to communicate and used non standard hand movements resulting in confusion and a delay parking the aircraft.

ACN: 1987625 *(16 of 50)*

### Synopsis

B767 Flight Crew reported #1 Engine failure at landing gear retraction after take-off. The Flight Crew performed an inflight shut down of the engine and returned to land at departure airport.

ACN: 1986835 *(17 of 50)*

## Synopsis

Air Carrier Flight Attendant reported a passenger passed out and vomited around the surrounding seating area during pre-flight. After an extensive discussion ensued regarding the Hazmat cleanup responsibility without a safe resolution, the aircraft departed in an unsuitable condition.

ACN: 1986757 *(18 of 50)*

## Synopsis

ERJ-175 First Officer reported extending final flaps below 1000 ft. on approach into LAX after a distraction related to turbulence.

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: 1979603 *(20 of 50)*

## Synopsis

Air Carrier First Officer reported a Captain that displayed poor decision making skills, a lack of understanding of basic tasks, and inadequate CRM during multiple legs of a trip.

ACN: 1971073 *(21 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: 1966915 *(22 of 50)*

## Synopsis

EMB-170 Flight Crew reported a wind shear event during final approach in turbulent conditions. The Flight Crew executed a successful wind shear recovery procedure which caused momentary airspeed and altitude deviations.



ACN: 1966482 *(23 of 50)*

### Synopsis

Air carrier flight crew reported a loss of control and runway excursion during landing. There was a strong crosswind reported according to the pilots. The Captain made a go-around from the safe area off the runway. The second landing on a different runway was successful.

ACN: 1966378 *(24 of 50)*

### Synopsis

Honda Jet PIC reported a loss of directional control during landing rollout when attempting to correct a center line drift after taking controls from the SIC. Ultimately the aircraft stopped on runway with only a left blown tire.

ACN: 1964588 *(25 of 50)*

### Synopsis

B777 Flight Crew reported confusion with the departure and after takeoff procedures due to a deferred engine bleed system. The cabin altitude reached a higher than desired level until the air conditioning packs were turned back on. The weather, nonstandard verbalization during takeoff, and the jumpseater may have also been additional factors.

ACN: 1963777 *(26 of 50)*

### Synopsis

EMB-145 Captain reported a gate return after being unable to taxi the aircraft over a ridge of frozen slush on the ramp. Use of a super tug to tow the aircraft over the frozen slush was ineffective.

ACN: 1960091 *(27 of 50)*

### Synopsis

B757 First Officer reported master Caution light with multiple EICAS messages, and both ADI, EICAS and HSI screens blanked off and on. Immediately afterwards, noticed that the secondary EICAS and FO HSI displays remained blank. The Flight Crew started the APU, but no systems were recovered. The flight crew requested priority handling and performed an air turn back and precautionary landing at departure airport.

ACN: 1958425 *(28 of 50)*

### Synopsis

Piper Arrow Pilot with Instructor reported an alternator failure during flight. After determining only battery power was available, the decision was made to return to the departure airport where light gun signals were required due to loss of comms.

ACN: 1934551 *(29 of 50)*

### Synopsis

B737-700 Captain reported receiving a 'TOO LOW' altitude alert from ATC. The Captain then realized the wrong altitude was set in the FMC. The Captain states CRM should have caught the error.

ACN: 1927874 *(30 of 50)*

### Synopsis

First Officer reported a breakdown in Crew Resource Management led to a cabin altitude exceedance and an immediate descent to minimize the possible affects of hypoxia on the crew.

ACN: 1923198 *(31 of 50)*

### Synopsis

Air Carrier Captain reported FO, who had not flown in over a month, experienced tailwind that resulted in an unstable approach with two go-arounds and failed CRM procedures.

ACN: 1918449 *(32 of 50)*

### Synopsis

A319 First Officer reported that SOP's were not followed during gate push-back. Communication with the ground push-back crew was not clear, distraction from another aircraft passing near and CRM procedures not followed resulted in brakes not set during engine start and the aircraft moving several feet.

ACN: 1909755 *(33 of 50)*

## Synopsis

A330 Captain reported concerns over loss of crew coordination and situational awareness during a rejected take off event.

ACN: 1909015 *(34 of 50)*

## Synopsis

EMB ERJ 170/175 First Officer reported the failure of MAU 2B in cruise. The Flight Crew made a precautionary landing at destination airport and the aircraft was towed to the gate.

ACN: 1905846 *(35 of 50)*

## Synopsis

B747-400 Captain reported oil quantity was low and decreasing on #2 engine. The Flight Crew was advised to return to departure airport for additional maintenance. The Flight Crew conducted an air turn back and dumped fuel prior to landing.

ACN: 1905840 *(36 of 50)*

## Synopsis

EMB-145 Captain reported an engine #2 bleed air leak on climb out. The flight was operating in conditions of known icing with the #1 pack deferred when cabin pressure became uncontrollable. An air turn back and precautionary landing were made at departure airport.

ACN: 1903143 *(37 of 50)*

## Synopsis

CRJ-200 Flight Crew reported letting the aircraft's speed get to Vref-5 on final approach producing a momentary stick shaker. The unstable approach was caused by inattention to detail during the approach, possible fatigue, and a drive to complete the mission after 2 failed attempts that day and poor CRM.

ACN: 1902202 *(38 of 50)*

## Synopsis

B737 NG Flight Crew reported a high speed rejected takeoff due to a takeoff configuration warning.

ACN: 1898853 *(39 of 50)*

### Synopsis

Flight Crew reported an incorrect altitude read back and a CRM failure, resulted in a low altitude alert.

ACN: 1895453 *(40 of 50)*

### Synopsis

Flight Crew flying CE-650 aircraft reported gear up landing which triggered a go around. Aircraft landed safely on second attempt.

ACN: 1894250 *(41 of 50)*

### Synopsis

Flight crew reported confusion during QRH procedures for a hydraulic system low quantity event. This led to an unnecessary manual extension of the landing gear, complicating the landing at destination airport.

ACN: 1893569 *(42 of 50)*

### Synopsis

Flight Crew reported a course deviation due to a breakdown in CRM.

ACN: 1893503 *(43 of 50)*

### Synopsis

First Officer reported fatigue, unfamiliar airport departure, time pressure, CRM breakdown, altitude overshoot with FMC error, resulted in ATC action for terrain avoidance and TCAS RA.

ACN: 1887488 *(44 of 50)*

## Synopsis

Air Carrier Flight Crew reported when ATC canceled their RNAV approach and assigned a heading for an ILS Approach they failed to set a new hard altitude in the autopilot.

ACN: 1880912 *(45 of 50)*

## Synopsis

B737 Flight Crew reported a failure of an FMC with the other FMC already on MEL. The Captain exercised his authority to reactivate the MEL'd FMC and continued the flight to destination airport.

ACN: 1877269 *(46 of 50)*

## Synopsis

B737 MAX 8 Captain reported an Oil Filter Bypass Light illuminated in flight. The flight crew shut down # 2 engine, continued to destination airport, and made a safe landing.

ACN: 1877053 *(47 of 50)*

## Synopsis

Air Carrier flight crew reported after starting to taxi from the deice pad the aircraft began to skid and left the taxiway pavement. The crew called Maintenance for help to tow the aircraft. The aircraft's landing gear, for safety, was inspected and the aircraft was returned to service. The Line Check Airman, who was giving a line check, was witness to the incident and is not sure if SOP's were followed while leaving the deice pad.

ACN: 1873732 *(48 of 50)*

## Synopsis

Flight Crew and Dispatcher reported communications issues after the Flight Crew elected to perform an air turn back caused by trim failure.

ACN: 1873528 *(49 of 50)*

## Synopsis

Light jet Captain reported they received a low altitude alert from ATC departing SJC.

## Synopsis

B737 Captain reported an air turn back after a fuel imbalance was detected during climbout.

# Report Narratives

## Time / Day

Date : 202309

Local Time Of Day : 1801-2400

## Place

Locale Reference.ATC Facility : ZZZ.Tower

State Reference : US

## Environment

Flight Conditions : VMC

Light : Night

## Aircraft

Reference : X

ATC / Advisory.Tower : ZZZ

Aircraft Operator : Air Carrier

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

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Initial Approach

Airspace.Class B : ZZZ

## Component

Aircraft Component : FMS/FMC

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 : 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 : 2032687

Human Factors : Communication Breakdown

Human Factors : Situational Awareness

Human Factors : Time Pressure

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 Not 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 : 2031780  
Human Factors : Time Pressure  
Human Factors : Confusion  
Human Factors : Troubleshooting

## Events

Anomaly.Aircraft Equipment Problem : Less Severe  
Anomaly.Deviation - Speed : All Types  
Anomaly.Deviation - Track / Heading : All Types  
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy  
Anomaly.Deviation / Discrepancy - Procedural : Clearance  
Anomaly.Inflight Event / Encounter : Unstabilized Approach  
Anomaly.Inflight Event / Encounter : CFTT / CFIT  
Detector.Automation : Aircraft Terrain Warning  
Detector.Person : Flight Crew  
When Detected : In-flight  
Result.Flight Crew : Returned To Clearance  
Result.Flight Crew : Executed Go Around / Missed Approach  
Result.Flight Crew : Overrode Automation

## Assessments

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

## Narrative: 1

Flight was vectored to base for a RNAV approach while flying with full automation. The vectors brought us inside the fix that the FMS had been extended off of. I failed to direct the PM to advance the FMS to a fix in front of us or to activate vectors. This caused the aircraft not to capture the final approach course so I had to manually turn the aircraft back toward the final approach course. By the time we got back on course, we were significantly high and the FMS still didn't capture the course. I directed the PM to go gear down, flap 3, then flap full. I then mistimed my attempt to get on glide slope by dropping the nose too quickly after disengaging the autopilot, overspending the flaps. Unable to regain glide slope, I elected to discontinue prior to 1000 ft. As I did so, I directed the PM to go flap 4 and cycle the FMS forward. I believe my direction to sequence the FMS at this point was a key error since it distracted from getting the flaps retracted quickly. When the PM struggled to sequence the FMS, I opted to hit TO/GA and do a Go Around instead of discontinue. I was hand flying and did not pull the nose up quickly enough so the aircraft rapidly accelerated to the point we almost overspend the flaps again. I overrode the auto throttle to slow the aircraft and we immediately got an EGPWS warning, surprising us both. After a split second of shock, I climbed rapidly to honor the warning. We then stabilized, caught our breath and were vectored back around for a landing. Cause: 1) Failure to properly sequence the FMS on base leg. 2) Poor timing of instructions on discontinue/ go around. 3) Not realizing how quickly you accelerate to flap 4 limits on a

flap full go around. 4) Not expecting a EGPWS warning as a result of overriding the auto throttle in that regime of flight. Suggestions: This starts with properly identifying that a base turn is inside the waypoint the final approach course has been extended from and proper direction from the PF. Second, I would brief the additional threats in a flap full go around due to the lower speeds required and how quickly the aircraft can accelerate if nose attitude control is delayed (hand flying).

## Narrative: 2

Flight was delayed due to late FA (Flight Attendant). I am an FO on reserve with approx 117 hours, It was a one leg flight in which I was PF. Preflight, taxi, climb out and cruise were standard. We began being vectored on downwind. PF had me configure normally and at around base PF had me clean up the approach from a waypoint behind us. I suggested that we would not capture lateral guidance this way but PF said we would. We were cleared for the approach and the aircraft did not capture lateral or vertical guidance so I informed ATC we were correcting back on course. We were VMC at this point. PF disconnected the autopilot and followed the white lateral guidance. We were on course laterally but we were high. In addition to being high, we needed lateral and vertical guidance to continue the approach so we reached the conclusion that we needed to go missed. No approach call outs were performed because the course was never alive and path was never alive. No missed approach altitude was set due to the same reason. We were switched over to tower. We decided to go missed after the FAF and PF had me tell tower. I did not hear the missed approach call out so I said "missed approach flap 4" and PF said "positive rate gear up". I suggested he press TOGA. I noticed that we were descending and the flight director guidance was in its standard pitch up attitude for a go around so I suggested we pitch up. PF did not pitch up so I took the controls and pitched up then handed controls back after we were established on a climb. We over-spiced on the Missed approach due to the pitch down attitude. The "climb sequence after takeoff checklist" call out was not made but the PF asked me to clean up the flaps. The plane was no longer over speeding and I called Autopilot on Autothrottle on because I noticed that those were not on and it would increase situational awareness if those were on. I switched over to approach and they asked if we were climbing. I said we were, they started vectoring us. At this point the AP and AT were on and I continued monitoring the trajectory of the airplane. We were vectored on downwind. On base, PF had me clean it up from a waypoint behind us I suggested vectors to final. We were configuring normally. While on base I confirmed and activated vectors to final but we had no guidance in front of us. We may have gone through final again, I do not recall precisely. I re-loaded the approach and confirmed and activated vectors to final again. It seemed like we captured lateral and vertical guidance. PF disconnected AP and continued the approach. PF said he could not see the runway, we were not fully established on course yet. I pointed out the runway. By 1000 ft. we were stabilized and clear to land so we continued and landed and taxied normally. Cause: Lack of lateral and vertical guidance on the first approach, in addition to being high, caused us to go missed. No standard approach call outs were made since lateral and vertical guidance were not captured and no missed approach altitude was set. The SOP was not followed on the missed approach causing us not to pitch up and clean up the flaps on that phase of flight. Suggestions: Both pilots anticipating when the FMS will not provide lateral and vertical guidance and understanding how this can be corrected. Both pilots attempting to follow SOP as much as possible for the missed approach even when the approach call outs are not made because the approach guidance never captured.

## Synopsis

ERJ175 flight crew reported lack of CRM to update FMS resulted in an unstable approach to a non standard go around. The flight crew experienced loss of situational awareness during the go around, a GPWS alert, flap over speed, and aircraft misconfiguration.

## Time / Day

Date : 202309

Local Time Of Day : 0601-1200

## Place

Locale Reference.ATC Facility : ZZZZ.Tower

State Reference : FO

## Environment

Flight Conditions : Marginal

Weather Elements / Visibility.Other

## Aircraft

Reference : X

ATC / Advisory.Tower : ZZZZ

Aircraft Operator : Air Carrier

Make Model Name : B777-200

Crew Size.Number Of Crew : 4

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Final Approach

## Component

Aircraft Component : Autothrottle/Speed Control

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 : Relief Pilot

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 : 2032683

Human Factors : Confusion

Human Factors : Fatigue

Human Factors : Situational Awareness

Human Factors : Time Pressure

Human Factors : Communication Breakdown

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 : Relief Pilot  
Function.Flight Crew : First Officer  
Qualification.Flight Crew : Multiengine  
Qualification.Flight Crew : Instrument  
Qualification.Flight Crew : Air Transport Pilot (ATP)  
ASRS Report Number.Accession Number : 2032684  
Human Factors : Time Pressure  
Human Factors : Situational Awareness  
Human Factors : Fatigue  
Human Factors : Confusion  
Human Factors : Communication Breakdown  
Human Factors : Physiological - Other  
Communication Breakdown.Party1 : Flight Crew  
Communication Breakdown.Party2 : Flight Crew

## Events

Anomaly.Aircraft Equipment Problem : Critical  
Anomaly.Flight Deck / Cabin / Aircraft Event : Other / Unknown  
Anomaly.Deviation - Speed : All Types  
Anomaly.Deviation - Track / Heading : All Types  
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy  
Anomaly.Inflight Event / Encounter : Unstabilized Approach  
Detector.Person : Flight Crew  
When Detected : In-flight  
Result.Flight Crew : Overcame Equipment Problem  
Result.Flight Crew : Executed Go Around / Missed Approach

## Assessments

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

## Narrative: 1

I was the RFO (Relief Flight Officer) in the center seat. The Captain was PF (Pilot Flying) and FO (First Officer) was PM (Pilot Monitoring). We were slightly high on base during vectors. PM stated "Captain we will need boards and flaps to get down". PF complied. We intercepted LOC and PM called it out. However, we never captured GS. As RFO I articulated "we are high, no GS" this was echoed by RFO2 stating "you're in ALT". The PM was also aware and told the Captain "if we are not going to be stable at 1k, we will need to go around." PF said "ok" and with AP (Autopilot) already off, decreased pitch slightly as an attempted capture GS. At that point no action was taken for several seconds except that slight descent and we were well above GS unable to make a safe landing (4 white PAPI and well above GS). The PM directed a go around around moments later at 1300ft. TOGA was not pushed and no words were spoken by PF. But the aircraft pitched up as Captain flying said something quietly. At this point the PM noticed the PF seemed to be low SA (Situational Awareness) after making callouts for the Captain that he missed. A moment later the FO stated "I have the aircraft" and started to execute the go around. This was the right call since we had hardly climbed and there were no commands from the Captain. I began filling in additional missed call outs as well as the FO. No thrust set call

was made because TOGA had not been pushed. The FO was now doing double duty essentially. I did not see the thrust ref FMA or magenta reference on n1, so I began to fixate on the throttle position and speed. We got slow and I said "we are slow, add power." The FO turned off FDs at some point. A few seconds later RFO 2 said set climb attitude since the aircraft was now at 5NL. Next, we worked as a team to confirm heading and ALT by ATC. I noticed we were off and told FO "20 right for heading." He has his hands full from the non standard go around, but immediately corrected the heading deviation. The Captain wanted to fly but we agreed the FO keep the aircraft and make the landing. At some point TOGA was pushed. The Captain believes he hit it at some point he admitted in debrief. I don't know when, but I believe this is what caused the 5NL attitude because of when we expected the go around and what we had set in the MCP. That is why I believe the FO had to turn off the FDs. Cause: Breakdown in crew communication (captain to FO) Solution: Brief go around procedures.

## Narrative: 2

Captain and FO (First Officer) had the last rest. The other RFO and I swapped out with the flying crew to go change in the supernumerary at approximately top of descent, after having briefed the change over. We had loaded the ZZZZ arrival and ILS YYR. The other RFO and I returned to the flying crew half way down the arrival. The FO mentioned a runway change back to XXL. On vectors to final and descending through approximate 8-10000, the FO verbalized to the CA (Captain) that we were high and suggest speed brakes to help descend. The CA was noticeably flustered, nervous, and seemed to shake slightly. We were at about 4,000 ft. on a base leg for about a 7-8 NM final. The CA disconnected the AP (Autopilot) and continued a descent to join final and cross the final approach fix a few hundred feet high. The vertical FMA went to ALT and the CA leveled at 1,800 ft. We were at 3 white and a red on the PAPI, but leveling at 1800 ft. resulted in the G/S indicator rapidly indicating we were again high. I announced that "we are in ALT mode and not descending". The CA again initiated a descent. The FO at that time announced "if we are not stable by 1,000 ft., we are going around." At 1,300 ft. and still high/unstable, the FO announced "let's go around." The CA mostly leveled the airplane, but I did not notice the TO/GA button pushed and 10-15 seconds into the GA (Go Around), we were not climbing significantly. The FO was coaching the CA through GA call outs to get the aircraft flight path under control, getting flaps to 20 and calling positive rate. Without significant response by the CA, the FO declared, "I have the airplane" and took the controls. The FO had his hands full with a slow airplane from being level at 1,300 ft. The other RFO called "Push the throttle up!" The CA may have pushed the TOGA button after the FO took the controls, causing more confusion. At the same time I noticed our attitude 5 deg nose low and banked slightly left. I called "Set a climb attitude!" And the FO immediately pitched to resume a climb. The Tower assigned a climb to 4,000 ft. Our heading on departed drifted left 15-20 degree, the other RFO called this out for a correction, and the FO corrected. After stabilizing at 4,000 ft., I called for getting the AP on and in proper FMA's, which the FO did. Approach gave us vectors for the approach. On downwind, the CA said "Okay, I'll take the airplane back." The FO stated "I think I should take this landing." The CA did not argue the point. The FO made an uneventful landing and the CA taxied back to the gate. Cause: The captain had mentioned he had not slept well on the flight and had not eaten much on the flight. It's possible that or some other medical issue could have played a factor in this crew member's breakdown in performance. He didn't seem the same as he was on departure. Solution: Good CRM can bring things back under control when things get undesirable in the flight deck. Sim training for go around at 1,000 ft. would be a huge help to the pilot group. We are most likely to GA at or above 1,000 ft. and those becoming a handful quickly.

## Synopsis

Air carrier B777 flight crew reported lack of response from flying pilot on unstable approach resulted in Pilot Monitoring taking control of the aircraft for a go around and subsequent landing.

## Time / Day

Date : 202309

Local Time Of Day : 1201-1800

## Place

Locale Reference.Airport : DRO.Airport

State Reference : CO

Altitude.MSL.Single Value : 8000

## Environment

Flight Conditions : VMC

Light : Daylight

## Aircraft

Reference : X

ATC / Advisory.Center : ZDV

Aircraft Operator : Air Carrier

Make Model Name : Commercial Fixed Wing

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Initial Approach

Airspace.Class E : ZDV

## 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 : 2032403

Human Factors : Situational Awareness

## Events

Anomaly.Deviation - Altitude : Excursion From Assigned Altitude

Anomaly.Deviation / Discrepancy - Procedural : Clearance

Anomaly.Inflight Event / Encounter : CFTT / CFIT

Detector.Person : Flight Crew

When Detected : In-flight

Result.Flight Crew : Returned To Clearance

## Assessments

Contributing Factors / Situations : Human Factors

Primary Problem : Human Factors



## Narrative: 1

We were cleared for the visual approach into DRO. PF set the aircraft up to enter a left base for Runway 21. We began to configure about 10 NM out. As we got closer and began to descend we determined we were too close to the runway and opted to turn into a brief downwind to provide more room before turning in. During this time the descent continued and we got below 8,000 ft. The FAF on the RNAV is 8,800 ft., so as we neared that point and began to turn in towards the runway we got an EGPWS caution terrain audio message. Just prior to getting the caution message I noticed we were not at the prescribed altitude for the instrument procedure and then the caution message went off, I informed the PF that the nearest prescribed altitude which was 8,800 ft. PF followed procedure and disconnected the autopilot, began to climb back up to 8,800 and continue turn towards the runway. The rest of the approach was uneventful. Cause: Lack of situational awareness in regards to our altitude and terrain, a possible miscommunication on what altitude we should be at when we decided to extend the approach to provide more maneuvering room. Suggestions: Next time I would opt to do the straight in RNAV approach allowing time to not only slow and configure and have positive course guidance and altitudes to follow. Another suggestion is for both of us to be more aware of preassigned altitudes such as an FAF or step down fix even if we are on a visual approach. This can be mitigated through briefings and continued CRM by both pilots.

## Synopsis

Air carrier First Officer reported an altitude deviation during a visual approach to DRO airport resulting in a CFTT event. The crew disconnected the autopilot, initiated a climb and continued with the approach and landing.

## Time / Day

Date : 202308

Local Time Of Day : 1201-1800

## Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Altitude.MSL.Single Value : 3000

## Environment

Flight Conditions : VMC

Weather Elements / Visibility : Haze / Smoke

## Aircraft

Reference : X

Aircraft Operator : Air Carrier

Make Model Name : A300

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Cargo / Freight / Delivery

Flight Phase : Initial Approach

Airspace.Class C : ZZZ

## Component

Aircraft Component : Autoflight System

Aircraft Reference : X

Problem : Malfunctioning

Problem : Improperly Operated

## Person : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Pilot Not Flying

Function.Flight Crew : Captain

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Multiengine

ASRS Report Number.Accession Number : 2028427

Human Factors : Distraction

Human Factors : Human-Machine Interface

Human Factors : Other / Unknown

Human Factors : Situational Awareness

Human Factors : Communication Breakdown

Communication Breakdown.Party1 : Flight Crew

Communication Breakdown.Party2 : Flight Crew

## Person : 2

Location Of Person.Aircraft : X  
Location In Aircraft : Flight Deck  
Reporter Organization : Air Carrier  
Function.Flight Crew : First Officer  
Function.Flight Crew : Pilot Flying  
Qualification.Flight Crew : Multiengine  
Qualification.Flight Crew : Air Transport Pilot (ATP)  
Qualification.Flight Crew : Instrument  
ASRS Report Number.Accession Number : 2028429  
Human Factors : Situational Awareness  
Human Factors : Distraction  
Human Factors : Communication Breakdown  
Human Factors : Human-Machine Interface  
Communication Breakdown.Party1 : Flight Crew  
Communication Breakdown.Party2 : Flight Crew

## Events

Anomaly.Aircraft Equipment Problem : Less Severe  
Anomaly.Deviation - Altitude : Overshoot  
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy  
Anomaly.Inflight Event / Encounter : Unstabilized Approach  
Anomaly.Inflight Event / Encounter : CFTT / CFIT  
Detector.Automation : Air Traffic Control  
Detector.Person : Flight Crew  
When Detected : In-flight  
Result.Flight Crew : Returned To Clearance  
Result.Flight Crew : Became Reoriented  
Result.Air Traffic Control : Issued Advisory / Alert

## Assessments

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

## Narrative: 1

Weather was a broken ceiling with tops at 5500 and bottoms at 4500. We were VFR below 4500 feet. Air quality was condition yellow. On a 3000 feet downwind we were turned to a heading of 050 (80 degree cut), cleared to descend to 2500, and asked if we had the runway in sight. I was PM, repeated the directions, and said we were "looking." PF started his turn, set 2500, and in the turn looked for the field. We were about 9 miles from the field, so wasn't easy to find at that altitude. There was a slight haze from the fires. Visual details were slightly monochromatic. As we rolled out on the 050 heading I felt even lower" vertical angle to the field was off when I called "field in sight." I then realized we were at 2000 feet and descending. We were still a mile from ZZZZZ [fix], which is at 2600 feet. My first thought was, "we are cleared the visual" it's ok " then did the math and realized we were uncomfortably low. About that time we received the aircraft "One Thousand" cockpit call, tower said they had a low alert warning and I told the PF to climb back to 2500 feet. We hit ZZZZZ on altitude, fully configured, and returned to our approach. We were a little high and fast for most of the approach" wanting to be on the

high side after that event. Landed safely, took a longer than normal debrief and again talked about it over dinner. Lessons Learned: Below Average on PM duties. PF was an excellent stick. On departure, he was on and on, very tight control of all axes. I let my guard down on the arrival, when it should've been higher. With the airport elevation at 950 feet I should have done the math sooner. I also didn't see what mode the PF selected on the descent from 3000 to 2500. I thought it was LVL/CH, but might have captured Vertical Speed and that's why it went below 2500. And in hind-sight he might have put in 2000 feet" but even so, it went below 2000 while PF was still in autopilot. Fatigue was not a factor, but complacency was. I did not realize we went right through 2500 ft in the turn. Normally, as PF, I set my wicket at the IAF. As PM I should have been more involved with that target, but I wasn't. Cause: Lack of altitude awareness. It was set, but both sets of eyes were looking for the field and not realizing we descended below our set altitude. Suggestions: Stick to the basics: Altitude, Heading, and Airspeed. I hate forgetting something I've learned, applied and taught for 30 years.

## Narrative: 2

PF for a single leg from ZZZ1 to ZZZ. Takeoff, departure and cruise were uneventful. Vectored letdown to a downwind then dogleg/base heading 050 for RWY XX at 3000 feet. On a heading of 050, tower states field at 2 o'clock, call the field in sight. We report field in sight. I hear descend 2000 and cleared visual approach Runway XX. I select 2000, LVL/CH and arm approach while slowing to configure. The FAF (ZZZZZ [Fix]) is at 2600 ft. which I had briefed however, it did not enter my mind that I had dialed an altitude below the FAF. As we started to approach ZZZZZ the CA states we are low and we're only cleared to 2500 ft. I instinctively dialed 2500 ft. into the FCP (Flight Control Panel) thinking we would level off there. We must have been below as the altitude never captured which allowed the descent to continue. Approaching ZZZZZ, I became somewhat channelized on finding the runway due to haze when the autopilot kicks off while still descending. We near simultaneously receive the 1000 ft. cockpit call and tower reports a low altitude alert. At that time the CA directs a climb back to 2500 ft. which we execute and then request and receive confirmation from the tower that we are on glide path. The approach is eventually stabilized and landing uneventful. Cause: PF error in visual approach procedures. CRM breakdown in communication. Channelized attention and poor cross-check. Suggestions: When proceeding into a visual field, I will foot stomp the FAF altitude as a no lower than altitude. Visualize and brief PF/PM responsibilities for the arrival and approach. Reset my personal procedures to instrument basics regardless of weather conditions. Finally, ensure all aircraft states are fully verbalized and acknowledged with clarity.

## Synopsis

A300 flight crew reported a controlled flight toward terrain event while being vectored for a visual approach in smoky/hazy conditions. ATC issued a low altitude alert to crew who climbed back to the cleared altitude and subsequently made an uneventful landing.

## Time / Day

Date : 202307

Local Time Of Day : 0601-1200

## Place

Locale Reference.ATC Facility : ZZZ.TRACON

State Reference : US

## Aircraft

Reference : X

ATC / Advisory.TRACON : ZZZ

Aircraft Operator : Air Carrier

Make Model Name : Regional Jet 900 (CRJ900)

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Initial Approach

## Person

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 : 2020758

Human Factors : Confusion

Human Factors : Human-Machine Interface

Human Factors : Situational Awareness

Human Factors : Training / Qualification

Human Factors : Workload

Human Factors : Communication Breakdown

Communication Breakdown.Party1 : Flight Crew

Communication Breakdown.Party2 : Flight Crew

## Events

Anomaly.Deviation - Altitude : Excursion From Assigned Altitude

Anomaly.Deviation - Altitude : Overshoot

Anomaly.Deviation - Track / Heading : All Types

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

Anomaly.Deviation / Discrepancy - Procedural : FAR

Anomaly.Deviation / Discrepancy - Procedural : Clearance

Anomaly.Inflight Event / Encounter : Loss Of Aircraft Control

Detector.Person : Flight Crew

When Detected : In-flight

Result.Flight Crew : Returned To Clearance

Result.Flight Crew : Regained Aircraft Control  
Result.Flight Crew : Overrode Automation  
Result.Flight Crew : Became Reoriented

## Assessments

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

## Narrative: 1

ATC instructed us to turn left heading 260 and descend down to 2,000 feet until established on the localizer for ILS XXL at ZZZ. First Officer (FO) selected 260 on the heading selector followed by NAV mode. FO then selected the altitude of 2,000 ft. followed by VS. Localizer for ILS XXL was captured. FO asked Captain (CA) if we were cleared for the approach. Captain replied yes. FO selected APP and armed the approach. FO selected the missed approach altitude of 3,000 ft. prior to capturing the glideslope as aircraft was descending towards 2,000 ft. Aircraft started to descend below 2,000 ft. and CA said we did not capture the glideslope. FO selected ALT. CA took the controls. Autopilot was overridden by Captain's input on the yolk. FO mentioned that we were off course of the approach and descending even lower. Captain asked to rearm the approach. Aircraft continued descending and was off course. Undesired aircraft state was potentially 500 ft. below flightpath at one point. Captain then said, "my controls." There was confusion over who had the controls when Captain took the controls prior to stating, "my controls." CA asked for autopilot to be reengaged again. Aircraft's flight path was eventually stabilized on the approach prior to 1,000 ft. CA asked if FO wanted the controls to land the aircraft. FO agreed and took the controls and landed the aircraft safely. Captain and First Officer debriefed at the completion of the flight and discussed what mistakes were made on both ends. FO realized selecting the missed approach altitude prior to FAF during the descent to the previously cleared altitude was incorrect. FO selected the missed approach altitude prior to FAF during the descent to the previously cleared altitude. Confusion was also created when captain took controls of the aircraft overriding the autopilot, without stating "my controls". Waiting to set the missed approach altitude at the correct time, after descending to at least 300 ft. below FAF altitude. FO could use CRM and delegate to CA to set missed approach altitude when needed if task saturated. Both PF/PM should delineate who has controls of the aircraft if confusion exists. A missed approach should be initiated if aircraft is not stabilized on the approach or aircraft was found in an undesired aircraft state rather than continuing with the approach

## Synopsis

Air carrier First Officer reported they descended 500 feet below glideslope and had a track heading deviation during approach. Reportedly, the FO did not enter the missed approach altitude at the right time and there was confusion over who had control of the aircraft during the event.

## Time / Day

Date : 202307

Local Time Of Day : 1201-1800

## Place

Locale Reference.ATC Facility : ZZZ.Tower

State Reference : US

## Environment

Light : Daylight

## Aircraft

Reference : X

Aircraft Operator : Air Carrier

Make Model Name : B737-800

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Flight Phase : Takeoff / Launch

## Component

Aircraft Component : Fuselage Tail Cone

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 : Pilot Not Flying

Function.Flight Crew : First Officer

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Instrument

Experience.Flight Crew.Last 90 Days : 190

Experience.Flight Crew.Type : 1995

ASRS Report Number.Accession Number : 2018142

Human Factors : Troubleshooting

## Person : 2

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Captain

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Instrument

Experience.Flight Crew.Last 90 Days : 78  
Experience.Flight Crew.Type : 78  
ASRS Report Number.Accession Number : 2017494  
Human Factors : Troubleshooting

## Events

Anomaly.Aircraft Equipment Problem : Critical  
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy  
Anomaly.Ground Event / Encounter : Weather / Turbulence  
Anomaly.Ground Event / Encounter : Ground Strike - Aircraft  
Anomaly.Inflight Event / Encounter : Weather / Turbulence  
Detector.Person : Flight Crew  
When Detected : In-flight  
Result.General : Maintenance Action  
Result.General : Flight Cancelled / Delayed  
Result.Flight Crew : Diverted  
Result.Aircraft : Aircraft Damaged

## Assessments

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

## Narrative: 1

The day was a long duty day, scheduled for 10 hours. It was a 3-leg day, starting in ZZZ with a short flight to ZZZ, continuing to ZZZ1, and eventually ending at ZZZ2. On our arrival into ZZZ1, the ATIS showed a 10-knot tail wind, to which the Captain and I felt was in our best interest to request a more suitable runway, which would give us the least risk of landing in ZZZ1. This was our mentality the entire trip. Take it slow, make good decisions using our risk analysis model, and CRM. The winds in ZZZ1 were swirling around that day, as we landed on XXR versus XYL. Upon arrival at the gate, I did my walkaround and noticed a screw in the left main inboard tire. I notified the Captain, and he contacted Maintenance. It was determined that we would need a tire change. This, of course, caused our delay for departure to ZZZ2. The winds were still gusty, but nothing out of limitations, so we taxied to XYR for departure. The original ATIS, at time of pushback, was showing variable at 5 to 6 knots. However, just prior to lining up, the winds were now a gusty crosswind from the left. I was Pilot Monitoring (PM), and we were cleared for takeoff. The Pilot Flying (PF) applied the correct crosswind correction on the takeoff roll, and I made the appropriate takeoff callouts. At Vr, the PF rotated at a normal rate, to approximately 10 degrees. Immediately after, the aircraft pitched up more aggressively, before the main wheels were off the runway. The mains then lifted, and we both heard a thump. I believed the tail had struck. We continued the cleanup sequence, and we were handed to Departure. It was a busy time, as we were given a climb via, which had the low altitude hold-down, but then we were immediately given a vector from the Departure and altitude changes off the departure for traffic. Once the workload began to decrease, we were able to discuss the takeoff, as well as take a call from the Flight Attendants, who said they heard the sound of metal, as well as the feeling of hitting a speed bump. At this point the Captain transferred controls and contacted Maintenance in ZZZ1 to confirm how to locate on the document page of the FMC for the pitch, to determine tail strike. We were still unable to find the Pitch selection from ZZZ1 Maintenance. We leveled off at an intermediate altitude and ran the QRH and monitored pressurization. The Captain and I discussed the need to patch in with Dispatch and Maintenance via ARINC for a diversion



plan. He was patched through and discussed a plan of action and options for diversion to either ZZZ1 or ZZZ3. We both agreed after looking at equal distances from either airport, that ZZZ3 was the better option with the winds showing three-knots and a long runway. This would also allow us to land under max landing weight. The diversion was confirmed with Dispatch and received via ACARS. The Captain notified the Passengers as to the plan as well as the Flight Attendants. The new route was put in, and the diversion checklist was completed. All normal checklists were complied with as well. Flight controls were then transferred to the Captain, and the briefings for ZZZ3 were completed, as well as the PM coordinating with ATC for lower altitudes to ensure fuel burn to be under max landing weight for landing. The longest runway was requested (XY), and a smooth min breaking touchdown was accomplished. We taxied to Gate XXX, to be met by Maintenance, Operations Agent, and Assistant Chief Pilot. Maintenance notified us that there was a tail strike, but the cartridge was in the green band, and the shoe was scraped and would only need to be repainted for the aircraft to be returned to service.

## Narrative: 2

Aircraft pushed following short delay for tire-swap (screw imbedded in tire found by First Officer (FO) during walkaround). Captain was Pilot Flying (PF). Weather was VMC, winds were left crosswind with gusts to 24. Once cleared, normal takeoff roll with slight left yoke deflection to counter crosswind. PF rotated the aircraft at Vr at normal rate of pitch change. During liftoff Captain/FO felt vibration at near simultaneous main gear lifting from runway surface. Continued clean up and initial climb out per SID. Following 10,000 ft. announcement by Flight Attendants (FA), two dings from Cabin Crew were made and Captain responded. FA's stated that they had heard a metallic scrape during takeoff. Captain and FO suspected possible tail strike during takeoff based on flight deck observations and FA input. In order to further confirm suspected strike, flight deck Crew attempted to access pitch angle during takeoff data in order to crosscheck aircraft data. As no appropriate data was located within ACARS or ACMS, Captain contacted ZZZ1 Maintenance on station frequency to attempt to verify onboard data for takeoff pitch for further verification. Captain was informed by Maintenance that this data was not available after aircraft becomes airborne. Finding that no other means were available to confirm the tail strike, flight deck Crew coordinated an intermediate level off and commenced the QRH Checklist for tail strike during takeoff. The flight deck Crew observed the cabin differential in the mid-range level and was functioning properly with normal rates. The FO was passed control of aircraft and continued to communicate with ATC. Captain contacted Dispatch through ARINC to discuss return or diversion. Dispatch remained on patch while flight crew finalized assessments and weighed risks of identified options. The Flight Crew commenced discussion of return to ZZZ1 or diversion. The flight deck Crew prioritized landing with lowest possible airframe stress. All available information to execute this course of action was considered. Although not out of limits, the winds at ZZZ1 were less favorable than ZZZ3. ZZZ3 was reporting calm winds, had multiple long runways, and the need to burn down fuel below MLGW were present with either option. ZZZ3 location was also equally suitable as it offered an extensive maintenance presence, and robust Passenger re-accommodations, as well as additional flight deck and In-flight Crew Personnel. After thoroughly considering the best course of action, the two locations were nearly equal in distance, time and fuel burn and the aircraft was still above its MLGW. Per the QRH, Captain made decision to divert to ZZZ3 as the nearest suitable airport (checklist complete). The Diversion Checklist was then continued. Diversion was coordinated with Dispatch, and data/plan was received from Dispatch via ACARS. Captain confirmed with Dispatch that the landing would not be overweight. As the FO coordinated the diversion with ATC and subsequent routing and lower altitudes to assist fuel burn to ZZZ3, the Captain informed the Flight Attendants of the aircraft status and decision to divert. The Passengers were then addressed via PA and notified of diversion. Diversion checklist was

complete. As the aircraft continued to descend, the flight deck Crew reevaluated pressurization and Captain determined the pressurization would remain in the AUTO schedule to ensure the most advanced scheduling was available to protect the aircraft and Passengers during high Air Crew task loading in rising terrain environment. The Captain's intent was to not exacerbate a possible existent condition (tail strike) with the potential of a manual control error of too rapidly depressurizing the cabin while above 10,000 ft. MSL. This error would have likely yielded Passenger discomfort and possible injury. FO returned controls to Captain. Captain completed arrival, approach, and landing (runway exit) briefings. Descent and Approach Checklists were completed. To reduce structural loads on touchdown, the Captain made a Flaps 30 landing, at minimal descent rate, using minimal required brake pressure and long rollout, at less than MLGW on Runway XX. Taxied to gate. Immediate coordination with Station Personnel that were standing by began upon shutdown (Asst Chief Pilot, Maintenance, Operations Agent, Customer Service Agent, In-flight supervisor). Captain conducted a face-to-face brief with Maintenance and an inspection commenced. Maintenance inspected aircraft and informed Captain that a tail strike had indeed occurred but there was no significant damage although bare metal was visible on a portion of the shoe. The cartridge was also deemed serviceable as the green band was visible. An appropriate logbook entry was made by the Captain, signed off by Maintenance and OK to continue. The aircraft then continued immediately to ZZZ2. The Captain departed aboard subject aircraft as a DH Passenger to ZZZ2 where he then contacted Dispatch per FOM chapter. To avoid future incidents of tail strike Air Crew should be vigilant in ensuring proper rotation rate is achieved regardless of winds or other dynamics that would affect pitch rate during takeoff.

## Synopsis

B737-800 flight crew reported a tail strike occurred during takeoff in gusty wind conditions. Flight crew diverted and post flight inspection found minor damage.

## Time / Day

Date : 202307

Local Time Of Day : 0601-1200

## Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Altitude.MSL.Single Value : 8000

## Environment

Flight Conditions : VMC

Weather Elements / Visibility.Visibility : 20

Ceiling.Single Value : 6000

## Aircraft

Reference : X

ATC / Advisory.TRACON : ZZZ

Aircraft Operator : Corporate

Make Model Name : Citation X (C750)

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 91

Flight Plan : IFR

Mission : Passenger

Flight Phase : Initial Approach

Route In Use : Vectors

Airspace.Class E : ZZZ

## Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Corporate

Function.Flight Crew : First Officer

Function.Flight Crew : Pilot Not Flying

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Flight Instructor

Experience.Flight Crew.Total : 4100

Experience.Flight Crew.Last 90 Days : 100

Experience.Flight Crew.Type : 275

ASRS Report Number.Accession Number : 2017960

Human Factors : Distraction

Human Factors : Fatigue

Human Factors : Situational Awareness

Human Factors : Communication Breakdown

Communication Breakdown.Party1 : Flight Crew

Communication Breakdown.Party2 : Flight Crew

## Events

Anomaly.ATC Issue : All Types  
Anomaly.Deviation - Altitude : Overshoot  
Anomaly.Deviation - Altitude : Crossing Restriction Not Met  
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy  
Anomaly.Deviation / Discrepancy - Procedural : Clearance  
Anomaly.Inflight Event / Encounter : CFTT / CFIT  
Detector.Person : Flight Crew  
Miss Distance.Vertical : 2500  
When Detected : In-flight  
Result.Flight Crew : Returned To Clearance  
Result.Flight Crew : Requested ATC Assistance / Clarification  
Result.Air Traffic Control : Issued New Clearance  
Result.Air Traffic Control : Issued Advisory / Alert

## Assessments

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

## Narrative: 1

We descended below our cleared altitude during a "descend via" arrival procedure due to a programming error on the setting of the altitude preselector. I was SIC and Pilot Monitoring on a flight from ZZZZ to ZZZ, ZZZ is our home airport. During cruise flight, the PIC and I discussed that we would be flying the ZZZZZ arrival and we both looked at the arrival plate together, because it's one we typically don't fly very often. Some time later in the flight, we were cleared to "descend via" the arrival. The PIC was the PF (pilot flying) and he set up the AFCS (Aircraft Flight Control System) parameters for the arrival. I did not have the plate up on my iPad yet since I was preparing paperwork for Customs upon our arrival. I observed the PIC checking the restrictions in the FMS against the arrival plate on his iPad. I also observed him set the bottom altitude on the Altitude Preselect, and arm the Vertical Navigation Mode. About two minutes later I brought up the arrival plate on my own iPad and I compared the plate to the FMS, and the altitude and speed restrictions matched the approach plate. I believe I checked the "bottom altitude" on the Altitude Preselector as I am supposed to do, but it is possible that I did not; it seems illogical that I wouldn't verify that since it is critical to be set correctly, but either way, neither the PIC nor I noticed that he had set the Altitude Preselect incorrectly. (Note: it's possible that the Preset was set correctly at this point, we don't know for sure, it could have been incorrectly changed later in the Arrival). We descended in VFR conditions on the IFR arrival, verifying altitudes and speeds against the FMS display as we proceeded, and before reaching the last fix on the arrival we prepared to configure for landing. I was SIC (pilot monitoring) working the radios, and Approach Control switched me to; when I checked in I stated "(callsign), 7,700 descending via the Arrival", and the controller acknowledged "roger". We continued descending in VFR conditions. Having flown the other ZZZ arrivals many times in the past (ZZZ is my home airport), it occurred to me during the end of the arrival that a preset altitude of 5,000 feet seemed rather low, knowing the minimum vectoring altitude is usually 7,100 feet. At this point we were close to abeam the airport on a right downwind, anticipating the visual XXL. We were descending thru approximately 6,000 feet and at this point I asked the PIC "When were we cleared to 5,000 feet?" and glancing at the AFCS panel the PIC replied to me 'Oh no, we are too low here, what happened, we were supposed to stop at 8,000 feet, and I said, "well there is terrain coming up ahead, we need to turn or climb" and the PIC agreed with me. The PIC stopped the descent and immediately called the approach controller and stated, "(callsign)

we need to turn right here for terrain clearance". A few seconds later the controller responded "(callsign) yeah, altitude alert, turn right 20 degrees, and climb to 7,100 feet vectors for the Visual XXL". The PIC responded "ok, we'll turn right and we'll climb, but we have the terrain and the airport in sight for the visual", and the controller then cleared us for the Visual Approach to XXL. We descend and landed without incident. We descended below 8,000 which was the bottom of the 'descend via' arrival because the altitude preselect was incorrectly set for 5,000. It's unclear if the incorrect altitude was set when the "descend via" was commanded by ATC, or after the fact, but either way we busted the arrival. Cause: Poor crew coordination; the PIC loaded the arrival and briefed it out loud when setting the bottom altitude, but the SIC was not ready for that step when it occurred. We did not brief the arrival together as a crew, as is our SOP. The SIC (me) reviewed the programming independent of the PIC, but we should have briefed the arrival together with one looking at the FMS and one verifying the approach plate, which is how we usually complete this task. We were very tired after an 8 day international run of flights, and were preoccupied with the task of preparing for Customs upon arrival, so we let our guard down flying in clear VFR conditions to our home airport. CRM: The PIC is also my Supervisor and has over ten years of experience flying this airplane, compared to my one year in the plane, so from time-to-time he configures the AFCS very quickly and I am playing 'catch up' to understand what he has programmed; our SOP is to have the pilot making any change to the AFCS to verbalize that change, and the PM to confirm the change verbally, however we did not do this correctly in this particular case. Also contributing to a small degree was the approach controller not responding to my check-in radio call, when I stated we were "7,700 feet and descending via"...however it was very busy on the radios that day and we had already busted 8,000 feet at that point. Fortunately, it was VFR and we were visually maintaining traffic and terrain clearance at the time even though we on the IFR Arrival.

## Synopsis

C750 pilot reported descending below the minimum altitude depicted on a descend via STAR because of an improperly set altitude pre-select value. Crew queried ATC and were given a heading and altitude for terrain avoidance and landed normally.

## Time / Day

Date : 202306  
Local Time Of Day : 1201-1800

## Place

Locale Reference.ATC Facility : ZZZ.TRACON  
State Reference : US  
Altitude.MSL.Single Value : 2400

## Environment

Flight Conditions : VMC

## Aircraft

Reference : X  
ATC / Advisory.TRACON : ZZZ  
Aircraft Operator : Air Carrier  
Make Model Name : B737 Next Generation Undifferentiated  
Crew Size.Number Of Crew : 2  
Operating Under FAR Part : Part 121  
Flight Plan : IFR  
Mission : Passenger  
Nav In Use.Localizer/Glideslope/ILS : ILS XXR  
Flight Phase : Final Approach  
Route In Use : Visual Approach

## Person : 1

Location Of Person.Aircraft : X  
Location In Aircraft : Flight Deck  
Reporter Organization : Air Carrier  
Function.Air Traffic Control : Approach  
Function.Flight Crew : Pilot Flying  
Function.Flight Crew : First Officer  
Qualification.Flight Crew : Multiengine  
Qualification.Flight Crew : Instrument  
Qualification.Flight Crew : Air Transport Pilot (ATP)  
Experience.Flight Crew.Last 90 Days : 212  
Experience.Flight Crew.Type : 710  
ASRS Report Number.Accession Number : 2012197  
Human Factors : Situational Awareness  
Human Factors : Workload  
Human Factors : Communication Breakdown  
Communication Breakdown.Party1 : ATC  
Communication Breakdown.Party2 : ATC

## Person : 2

Location Of Person.Aircraft : X  
Location In Aircraft : Flight Deck  
Reporter Organization : Air Carrier  
Function.Air Traffic Control : Approach

Function.Flight Crew : Pilot Not Flying  
Function.Flight Crew : Captain  
Qualification.Flight Crew : Multiengine  
Qualification.Flight Crew : Instrument  
Qualification.Flight Crew : Air Transport Pilot (ATP)  
Experience.Flight Crew.Last 90 Days : 204  
Experience.Flight Crew.Type : 491  
ASRS Report Number.Accession Number : 2012216  
Human Factors : Situational Awareness  
Human Factors : Communication Breakdown  
Communication Breakdown.Party1 : Flight Crew  
Communication Breakdown.Party2 : ATC

## Events

Anomaly.ATC Issue : All Types  
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy  
Anomaly.Inflight Event / Encounter : Unstabilized Approach  
Anomaly.Inflight Event / Encounter : CFTT / CFIT  
Detector.Automation : Aircraft Terrain Warning  
Detector.Person : Flight Crew  
When Detected : In-flight  
Result.Flight Crew : Took Evasive Action  
Result.Air Traffic Control : Issued New Clearance

## Assessments

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

## Narrative: 1

ZZZ Controller clears Flight XXX into obstacle. Flight XXX ZZZ1 to ZZZ. Cleared direct ZZZZZ (fix on ILS XXR, listed at 2800 ft.) descend to 4000 ft. I descend to 4000 ft, 7 miles from ZZZZZ with flaps 1 already extended. I slow from 240 KIAS to 180 KIAS (based on my math 10 kts. per mile). The Captain perceived that we were high. I was not concerned because I was following my 3:1 descent plan. At 3 miles from ZZZZZ I leveled off at 4000 ft. As I slow to 180 KIAS, I finally see the runway. Because we stopped the descent at 4000, we are high. I ask the Captain to ask for Approach Clearance, which they do. The Controller clears us for the approach, approximately 1 mile from ZZZZZ. This was too late of a clearance and without our prompt the Controller forgot to clear us. The Captain suggests asking for s turns, I think I am too high to fix this so I ask for a right 360. Captain relays this to the Controller. The Controller clears us to make a right 360 and descend to 2000 ft. This is too low of a clearance. During the right 360, about 2400 we get an "Obstacle" aural alert. We climbed to 2800. We again ask for clearance and are cleared for the approach. We meet all stable approach gates and land normally. We had to prompt the Controller 3 times. I should have had the situational awareness that we would be high, I was so focused on my descent plan I did not take into account that the Controller might forget to clear us and by the time I asked the Captain to ask the Controller to clear us we were too high. The Captain exhibited excellent SA, he was aware that we were about to be high and helped point out the runway to me both times. The first error was the Controller did not clear us for the approach in time. The second error was that the Controller cleared us into an unsafe altitude that caused an obstacle aural alert. The error I made was not recognizing the impending high situation by trying to time the descent with no margin for

error. The Captain exhibited strong SA the whole time and excellent CRM, he helped me respond to the obstacle quickly.

## Narrative: 2

On arrival to from the North on the arrival ZZZ the Approach Controller gave us direct to ZZZZZ which is the FAF on the ILS XXR and maintain 4000. As we were approaching ZZZZZ we were gear down and flaps 15 and it appeared that we were starting to become high as the GS altitude at ZZZZZ is 2770. We were still at 4000 and the Controller forgot to give us a clearance. As we were receiving our visual approach clearance we were now too high to make a straight in from ZZZZZ at 4000. We requested a 360 degree turn to lose altitude. The Controller approved a right 360 and maintained 2000. As we were halfway through the 360 descending through 2500, we received an "Obstacle" warning and immediately began correcting until the warning stopped at 2800. We rejoined the localizer and were cleared the visual and landed meeting all the stabilized approach criteria.

## Synopsis

B737 flight crew reported receiving a late visual approach clearance from ATC resulting in the aircraft being high for a stabilized approach, then also receiving a EGPWS obstacle alert warning when descending to the ATC assigned altitude. The flight crew climbed back to the correct altitude and continued the approach to landing.



## Time / Day

Date : 202306

Local Time Of Day : 0601-1200

## Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Altitude.AGL.Single Value : 0

## Aircraft

Reference : X

ATC / Advisory.Ramp : ZZZ

Aircraft Operator : Air Carrier

Make Model Name : A300

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Taxi

## 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 : 2008256

Human Factors : Communication Breakdown

Human Factors : Distraction

Human Factors : Workload

Communication Breakdown.Party1 : Flight Crew

Communication Breakdown.Party2 : Flight Crew

## Events

Anomaly.Conflict : Ground Conflict, Critical

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

Anomaly.Ground Event / Encounter : Vehicle

Detector.Person : Flight Crew

When Detected : Taxi

Result.General : Flight Cancelled / Delayed

Result.Flight Crew : Returned To Gate

## Assessments

Contributing Factors / Situations : Human Factors

Primary Problem : Human Factors

## Narrative: 1

We received pushback clearance off gate X to push long and stop abeam gate Y. Pushback commenced and tug crew cleared us to start engines. Engine start was completed before pushback was complete. Once pushback was complete, brakes were set and the tug crew was cleared to disconnect. Tug crew announced they were departing to the right, FO side. While completing the after start checklist checklist I announced the tug crew was departing to the FO (First Officer) side. With the after start checklist complete we delayed calling Ramp Tower for taxi due to a 767 in front of us that had yet to begin taxi. This was the same aircraft that required our long pushback. Once the 767 started rolling we asked and received taxi clearance. I announced clear left, the FO responded clear right and we began to taxi. After approximately 15-20 ft. and 2-3 GS (Ground Speed), we made physical contact with the pushback tug. I immediately stopped the aircraft, then set the parking brake. I had the immediate realization that we made contact with the tug. Tug crew announced that the aircraft nose tires made contact with the tug. Tug crew announced they were OK. A breakdown in HF/CRM (Human Factors/Crew Resource Management). I failed to ensure the tug crew was clear of the aircraft before calling for taxi. I perceived the FOs "clear right" as the tug crew was clear. In retrospect, I now know I never heard the FO announce specifically the tug crew was clear nor did I observe the tug crew clearing off to the right. In my mental checklist, I checked off that the tug crew was moving away from the aircraft and the FOs clear right call confirmed the tug crew was indeed clear. I accept full responsibility the the dangerous situation I created. I own the parking brake. I further apologize for all the additional work and time others will be required to provide to correct my mistake. Suggestion: Strict adherence to the [company procedures]. Do not taxi or call for taxi clearance until maintenance is verified to be clear of aircraft.

## Synopsis

Air carrier Captain reported a ground conflict with the pushback tug shortly after initiating taxi. The Captain reported he failed to ensure the tug was clear before calling for taxi.

## Time / Day

Date : 202305  
Local Time Of Day : 1201-1800

## Place

Locale Reference.ATC Facility : ZZZ.TRACON  
State Reference : US  
Relative Position.Distance.Nautical Miles : 10  
Altitude.MSL.Single Value : 10000

## Environment

Flight Conditions : VMC  
Light : Daylight

## Aircraft

Reference : X  
ATC / Advisory.TRACON : ZZZ  
Aircraft Operator : FBO  
Make Model Name : Skyhawk 172/Cutlass 172  
Crew Size.Number Of Crew : 2  
Operating Under FAR Part : Part 91  
Flight Plan : IFR  
Mission : Training  
Flight Phase : Cruise

## Component : 1

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

## Component : 2

Aircraft Component : Electrical Distribution Relay  
Aircraft Reference : X  
Problem : Malfunctioning

## Person

Location Of Person.Aircraft : X  
Location In Aircraft : Flight Deck  
Reporter Organization : FBO  
Function.Flight Crew : Instructor  
Function.Flight Crew : Pilot Not Flying  
Qualification.Flight Crew : Commercial  
Qualification.Flight Crew : Instrument  
Qualification.Flight Crew : Multiengine  
Qualification.Flight Crew : Flight Instructor  
Experience.Flight Crew.Total : 1294  
Experience.Flight Crew.Last 90 Days : 151  
Experience.Flight Crew.Type : 1234

ASRS Report Number.Accession Number : 1999892  
Human Factors : Workload  
Human Factors : Situational Awareness  
Human Factors : Troubleshooting

## Events

Anomaly.Aircraft Equipment Problem : Critical  
Anomaly.Deviation / Discrepancy - Procedural : Clearance  
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy  
Detector.Automation : Aircraft Other Automation  
When Detected : In-flight  
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  
Contributing Factors / Situations : Human Factors  
Contributing Factors / Situations : Procedure  
Primary Problem : Aircraft

## Narrative: 1

At approximately XA: 30 in level cruise flight at 10,000 ft. on an IFR flight, we heard an aural alert and my student noted a Low Volts annunciator on the aircraft's PFD. The Low Volts annunciator extinguished within a few seconds, but both myself and my student noticed the M BUS Amps erratically varying from +24/-10 over the course of a few minutes. Since our destination of ZZZ1 was still roughly an hour away, I instructed my student to request a diversion to ZZZ (which we were abeam at the time). We did not [request priority handling]. The student stated to ATC that we just lost our alternator and we would like to divert to ZZZ. ATC started to vector us, provided a revised clearance, and asked how long it would take for us to get down? Assuming the controller meant to our new assigned altitude of 7,000 ft., I replied about 3 minutes. Leaving the autopilot engaged, I set a descent rate of 1,000 FPM and began to run through the Low Volts Annunciator Checklist. We cycled the Alternator off, noted that the ALT FLD circuit breaker was still pushed in, and then turned the Alternator switch back on. Engine indications appeared relatively normal for a few minutes while we continued our descent, although the M BUS Volts read closer to 25 Volts. Approach Control provided a few more heading and altitude changes, and cleared us for the ILS XXR as we had some difficulty visually identifying the airport due to the sun reflecting off a shallow haze layer. As we turned onto the LOC, the M BUS Amps dipped again, and we received another Low Volt Annunciator. We were within a couple minutes of landing and had not yet begun to draw off the standby battery. Since landing with main battery power seemed assured, we did not execute the Reduce Electrical Load Checklist. Around this same time, I heard Approach Control mention something to another aircraft about them following an aircraft. I was too focused on monitoring the electrical system, so did not fully grasp that ATC had [requested priority handling] on our behalf, although I do not recall ATC making any direct mention of this or ask for souls/fuel remaining. We continued along the ILS, and were given a change to Tower frequency for landing clearance. As we approached the runway, ATC's prior statement about the priority aircraft became clear to me because there were fire trucks waiting along the runway for our arrival. We had a normal landing on Runway XXR, taxied

clear of the runway and to the FBO under our own power and without further incident. In retrospect, I believe the diversion decision was the prudent and safe call to make. However, as this was the first time I've had to deal with an anomaly of this sort in flight, the execution of tasks wasn't totally perfect and there are a few things I would do differently in the future. The timing of requesting the diversion may have been slightly premature as we had not yet run the appropriate troubleshooting checklists. However, given our proximity to the airport at the time and the lack of Towered airports along our remaining flight path, requesting the diversion when we did seemed to make the most sense. Had we run through the checklists first, we would have been further away from our best diversion option. Rather than asking the student to request the diversion, I should have tasked them with running the checklists while I coordinated with ATC. This would have helped me to maintain better situational awareness about ATC's decision to [request priority handling] on our behalf. I could have also more clearly communicated the nature of our diversion, and helped ATC to coordinate the response from the ground personnel more effectively. I believe the decision to leave the autopilot engaged was correct as this reduced the workload of hand-flying the aircraft as we worked to resolve the issue, and increased our ability to exercise CRM (Crew Resource Management). Had we reduced the Electrical Load per the aircraft checklist, we would not have had autopilot functionality. If we had a longer distance to travel in a future diversion, this would not be something I could rely upon and would need to adhere to the aircraft's checklist more closely.

## Synopsis

C172 Flight Instructor with student reported low voltage indications during cruise. The flight crew diverted and made a precautionary landing.

## Time / Day

Date : 202305

Local Time Of Day : 0601-1200

## Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Altitude.MSL.Single Value : 10000

## Environment

Flight Conditions : VMC

Light : Daylight

## Aircraft

Reference : X

Aircraft Operator : Air Carrier

Make Model Name : B787 Dreamliner Undifferentiated or Other Model

Crew Size.Number Of Crew : 3

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Final Approach

Route In Use : Vectors

## Component

Aircraft Component : Hydraulic Main System

Aircraft Reference : X

Problem : Malfunctioning

## Person : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Pilot Not Flying

Function.Flight Crew : Captain

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Multiengine

Experience.Flight Crew.Total : 14269

Experience.Flight Crew.Last 90 Days : 130

Experience.Flight Crew.Type : 2286

ASRS Report Number.Accession Number : 1999556

Human Factors : Troubleshooting

Human Factors : Communication Breakdown

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 : Multiengine  
Qualification.Flight Crew : Instrument  
Qualification.Flight Crew : Air Transport Pilot (ATP)  
Experience.Flight Crew.Total : 634  
Experience.Flight Crew.Last 90 Days : 83  
Experience.Flight Crew.Type : 11  
ASRS Report Number.Accession Number : 2000079  
Human Factors : Communication Breakdown  
Human Factors : Troubleshooting  
Communication Breakdown.Party1 : Flight Crew  
Communication Breakdown.Party2 : Flight Crew

### Person : 3

Location Of Person.Aircraft : X  
Location In Aircraft : Flight Deck  
Reporter Organization : Air Carrier  
Function.Flight Crew : Relief Pilot  
Function.Flight Crew : Pilot Not Flying  
Function.Flight Crew : First Officer  
Qualification.Flight Crew : Multiengine  
Qualification.Flight Crew : Instrument  
Qualification.Flight Crew : Air Transport Pilot (ATP)  
Experience.Flight Crew.Total : 4110  
Experience.Flight Crew.Last 90 Days : 167  
Experience.Flight Crew.Type : 1952  
ASRS Report Number.Accession Number : 2000122  
Human Factors : Communication Breakdown  
Human Factors : Troubleshooting  
Communication Breakdown.Party1 : Flight Crew  
Communication Breakdown.Party2 : Flight Crew

### Events

Anomaly.Aircraft Equipment Problem : Critical  
Anomaly.Deviation / Discrepancy - Procedural : Clearance  
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 : 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

During flap extension the center hydraulic system failed. Initially the ECL (Electronic Checklist) presented "FLAPS PRIMARY FAIL" and "SLATS PRIMARY FAIL". After delegating the First Officer to flying and communicating, I began those checklists. Shortly thereafter, ECL presented "HYD PRESS SYSTEM C" and that checklist was accomplished as well. We asked for delay vectors to accomplish all the required tasks. We requested priority handling with ATC, contacted Dispatch with the situation notification as well. Flight Attendants were briefed with no need to prepare for evacuation. Notified passengers with multiple announcements. We requested the longest runway, and asked that the fire equipment be standing by. We extended the gear with the alternate system and used the secondary system for flap extension. After landing, nose wheel steering was available and we taxied to the gate. I debriefed with the flight attendants and then the other pilots. An area for improvement in my performance was accomplishing the first two checklists in the order they presented, rather than waiting for the "HYD PRESS SYSTEM C" that presented after a period of time. That would have made things easier.

#### Narrative: 2

I was beginning to configure and perform my first landing in the 787 on my first IOE trip. After our attempt to lower flaps 1, we saw and heard the master caution alarm. The right flap had fully extended and the left had not. The FLAPS PRIMARY FAIL and SLATS PRIMARY FAIL ECLs appeared. The Captain transferred radios to me while he addressed the ECLs. Several more ECLs appeared and it became clear the primary issue was that the center hydraulic tank quantity and pressure were extremely low. We decided to request priority handling, which I told ZZZ Tower and that we would need to use [Runway] XXL and to send crash fire and rescue trucks. We received vectors and ATC asked if it was a flap issue which the Captain agreed it was, and I told ATC that it was. The Captain discussed and performed the ECLs with the relief pilot and LCA (Line Check Airman) / Instructor in the jump seats. I focused on flying the aircraft using autopilot and monitored for any abnormalities. There were no observable differences in aerodynamics or performance. After we completed the ECLs and discussed our fuel on board, the Captain took control of the aircraft for the approach and I became pilot monitoring. We received vectors to fly the ILS approach to XXL. Landing gear and flaps 20 extended without issue and the approach and landing were normal. After landing we were able to taxi normally using nose wheel steering and we proceeded to taxi to the gate and park normally.

#### Narrative: 3

While on approach at ZZZ ATC directed 210 knots and Flaps 1, just prior to intercepting the localizer, we received 2 EICAS messages, "FLAPS PRIMARY FAIL" and "SLATS PRIMARY FAIL". The Captain was PM (Pilot Monitoring) and a LCP (Line Check Airman) giving an IOE to a student on her 2nd IOE flight. The Captain assigned tasks IAW (In Accordance With) FOM recommendations: First Officer was assigned to continue flying and handle ATC communications, the 2nd Relief Pilot (an observing LCP on a previous airframe converting to a 787 LCP) was assigned to monitor and assist the PF (Pilot Flying) in her duties and I was assigned to assist the Captain in his checklist duties. As the Captain began the EICAS non-normal checklist for the FLAPS PRIMARY FAIL, we received another EICAS, "HYD PRESS SYS C". About this time, the PF intercepted the Localizer at 10,000 feet, 210 KIAS, IAW ATC instructions. The Captain had me confirm the EICAS and confirm the systems indications with him on the HYD SYS (Hydraulic Systems) Status page. All indications confirmed the EICAS messages we were seeing. At this point, the Captain communicated



his thoughts that we needed to terminate the approach and coordinate a place to hold so we could properly address the checklists and configure the aircraft properly for landing. This was coordinated by the PF and we were continuously vectored by ZZZ Approach control south of the airport. From this point, the Captain did an outstanding job of executing all appropriate checklists while communicating with all of the pilots. Of note, I consider the Captain's CRM/TEM (Threat and Error Management) Skills the best I have ever witnessed. He kept all of the flight crew's situational awareness extremely high at all times through his calm and clear communication skills. His workload management was outstanding - delegating appropriate tasks to each flight deck crew member. Monitor, crosscheck and flight path monitoring was maintained all times, despite multiple checklists and tasks. Overall, the Captain's leadership effectiveness was outstanding. Once all checklists were completed and understood, the Captain had the First Officer request priority handling with our intentions to land on RWY XXL, the longest runway available with an initial plan to stop on the runway since there was a possibility of nose wheel steering being inoperative. The Captain had me coordinate Airport Fire and Rescue through our Dispatcher. He also had me communicate the cabin briefing with the purser - we did not have them prepare for evacuation. He also had the 2nd relief pilot review all the checklists again to make sure we had not missed anything. Then the Captain set up the aircraft for the new approach runway and proceeded to brief the approach and plan while the PF continued to fly vectors south of the airport. Once the approach was briefed and we all confirmed the plan and all checklists competed, the approach was commenced. The 2nd relief pilot made an outstanding input from the checklist review and reminded the Captain that although the checklists directed us to NOT arm the auto speed brakes for landing, we were supposed to manually deploy them upon touchdown. So that was a great catch and another example of the outstanding CRM/TEM skills employed by the Captain to ensure nothing was missed. The Captain assumed flying duties and the approach was commenced and flown without any incident. Upon landing, even though the speed brakes were not armed, they did deploy upon thrust reverser initiation. When we reached taxi speed, the Captain tested the nose wheel steering and determined it was functioning properly. We discussed as a crew clearing the runway since nose wheel steering was operational, and we all decided that was appropriate and safe based on our system knowledge and our understanding of the HYD system display that showed the isolation valve in HYD SYS C had isolated hydraulic pressure in the nose wheel steering system. We stopped the aircraft after clearing the runway. We all agreed it was safe to taxi to the gate and terminated our need for airport fire and rescue, although they still followed us to the gate. The remaining taxi to the gate and engine shutdown was normal although we did not retract the flaps. A thorough debriefing of what went well and what could we have done better was completed after the airplane was deplaned. The Captain mentioned his checklist management should have been better, but I disagree. I think he did everything exceptionally well throughout. For some reason, the "FLAPS PRIMARY FAIL" and the "SLATS PRIMARY FAIL" checklists both kept coming up first despite them both showing "CHECKLIST COMPLETE". Eventually he overrode these checklists after confirming with me they were both complete to avoid the nuisance of them continuing to prevent him from accessing other checklists that needed to be completed. I do not think this was his mistake, but regardless, he took appropriate action to manage the situation.

## Synopsis

B787 flight crew reported misdiagnosing a hydraulic system failure as flap and slat systems failure. The flight crew continued to destination airport and made a precautionary landing.

## Time / Day

Date : 202305

Local Time Of Day : 0601-1200

## Place

Locale Reference.Airport : ZZZZ.Airport

State Reference : FO

Altitude.MSL.Single Value : 4000

## Environment

Flight Conditions : IMC

Light : Daylight

## Aircraft

Reference : X

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 : Final Approach

Route In Use : Vectors

## Component : 1

Aircraft Component : Hydraulic Main System

Aircraft Reference : X

Problem : Malfunctioning

## Component : 2

Aircraft Component : Traffic Collision Avoidance System (TCAS)

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 : Multiengine

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Instrument

Experience.Flight Crew.Total : 5808

Experience.Flight Crew.Last 90 Days : 212

Experience.Flight Crew.Type : 5574

ASRS Report Number.Accession Number : 1997702

Human Factors : Situational Awareness

Human Factors : Confusion  
Human Factors : Human-Machine Interface

## Person : 2

Location Of Person.Aircraft : X  
Location In Aircraft : Flight Deck  
Reporter Organization : Air Carrier  
Function.Flight Crew : Captain  
Function.Flight Crew : Pilot Flying  
Qualification.Flight Crew : Multiengine  
Qualification.Flight Crew : Air Transport Pilot (ATP)  
Qualification.Flight Crew : Instrument  
Experience.Flight Crew.Total : 167  
Experience.Flight Crew.Last 90 Days : 74  
Experience.Flight Crew.Type : 167  
ASRS Report Number.Accession Number : 1997662  
Human Factors : Human-Machine Interface  
Human Factors : Confusion  
Human Factors : Situational Awareness

## Person : 3

Location Of Person.Aircraft : X  
Location In Aircraft : Flight Deck  
Reporter Organization : Air Carrier  
Function.Flight Crew : First Officer  
Function.Flight Crew : Relief Pilot  
Function.Flight Crew : Pilot Not Flying  
Qualification.Flight Crew : Multiengine  
Qualification.Flight Crew : Air Transport Pilot (ATP)  
Qualification.Flight Crew : Instrument  
Experience.Flight Crew.Total : 2529  
Experience.Flight Crew.Last 90 Days : 141  
Experience.Flight Crew.Type : 141  
ASRS Report Number.Accession Number : 1997663  
Human Factors : Human-Machine Interface  
Human Factors : Confusion  
Human Factors : Situational Awareness

## Events

Anomaly.Aircraft Equipment Problem : Less Severe  
Anomaly.Conflict : Airborne Conflict  
Anomaly.Deviation - Altitude : Excursion From Assigned Altitude  
Anomaly.Deviation / Discrepancy - Procedural : Clearance  
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy  
Anomaly.Inflight Event / Encounter : Unstabilized Approach  
Detector.Automation : Aircraft RA  
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 : Executed Go Around / Missed Approach

Result.Flight Crew : Overcame Equipment Problem  
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  
Contributing Factors / Situations : Procedure  
Primary Problem : Aircraft

## Narrative: 1

I was on break when the event occurred, but arrived after break and was briefed on the center system hydraulic leak and QRH actions taken. We reviewed the situation and QRH actions for loss of C HYD pressure in case the remaining fluid leaked when the C HYD system was pressurized. On approach we [requested priority handling], ran remaining items on the C HYD quantity checklist and configured early for the ILS XXL. At 1500 ft. AGL on a coupled ILS approach we got a TCAS TA followed by a climb RA. Despite being a priority and having no visual on any aircraft, we respected the RA. We were visual with the terrain but inflight visibility was hazy. The RA was abnormal because during the RA the target stayed at 00 and at the tip of the airplane display during the 1000 ft. climb in response to RA. Tower announced there was no traffic in the area, but we elected to follow the RA. After resolution, we were too high to resume the ILS, and asked for a 360, but accepted vectors back to ZZZZZ to re complete the full approach. We had briefed no configuration changes during missed approach due to our hydraulic situation. We reset the Mode Control Panel (MCP) and FMC after RA completion and continued for subsequent approach. We got clearance for direct ZZZZZ and then clearance for the approach. Slight deviations to altitude occurred as we tried to re engage VNAV path. We realized the issue was re cruising VNAV and then VNAV path properly engaged just prior to ZZZZZ. Again, during the descent through 4500 MSL onto the dogleg out of ZZZZZ we again got a TCAS TA followed by a climb RA. This time we noted the altitude of the target always reading 00 and staying with us. Tower assured us that we did not have traffic in the area. We applied the direction on page x that complying a second time with a likely anomalous RA would subject the aircraft to further hazard. On ILS final the nuisance RA was not an issue, and we landed uneventfully. We cleared the runway when the hydraulic system showed normal indications. Once clear, we had fire crews examine the aircraft for leaking fluid. We asked for and received tug assistance to a hard stand and deplaned. Local Maintenance personnel met the aircraft, and confirmed that the C HYD RES was empty.

## Narrative: 2

I was the Pilot flying (PF) and First Officer (FO) was PM. FO was still on break. During the last 2 hours of cruise, all auto-flight on at FL350, EICAS warned us of low center hydraulic system quantity. We noted C HYD QTY at 0.48 with refill light on and followed checklist guidance to turn off all center pumps until final approach. After the checklists were complete, we elected to let FO remain on rest, but wake them 15 minutes early to review the checklist completion issues together. We called Dispatch, and spoke with Maintenance. They agreed with the continuation to ZZZ, with the likelihood that normal configuration for landing was still likely, and Dispatch agreed to notify the station of a need for tow in and the airport of our need for the long Runway XXL which is normally takeoffs only. FM (Flight Manager) was called to the cockpit, and briefed on the issues. We told them to share the problem with the crew, that a prep for evacuation was not needed yet, and that the passengers would not be briefed unless the situation deteriorated. They asked what could

make this worse and I shared the issue of a 20 flaps non normal landing was possible if the rest of the fluid leaked out before final approach. In that case we would reevaluate the need to prepare for evacuation. They understood everything and went back to the cabin. After FO came back to the cockpit, and during descent, we [requested priority handling] as we were not sure if we would be stuck with only 20 flaps (alternate extension method) if the hydraulic quantity ran out. On downwind, we completed the deferred checklist items and were able to fully configure the aircraft with gear and 30 flaps. C HYD quantity decreased to about 35% after gear and flaps extension. We cleared the ILS to the longer Runway (XXL) which for ZZZ is not the standard for arrivals. We had coordinated with Approach Control about 30 minutes prior so they could switch the ILS to the inner runway. Weather was about 1 mile visibility mostly due to smog, but cloudiness still allowed us to see most of the terrain north of the airport while above 4000 ft. At 1500 ft. AGL on a coupled ILS approach we got a TCAS TA followed by a climb RA. Despite being a priority aircraft and have no visual on any aircraft, we respected the RA. After resolution, we were too high to resume the ILS, and asked for a 360, but accepted longer vectors back around. Due to the checklist directions for a C HYD malfunction, this maneuver was flown fully configured. Since we could not use a standard go-around procedure, and the maneuver required me to hand fly, minor deviations from 6000 MSL assigned altitude occurred until we reset the flight director. We still had plenty of fuel for about 2 hours. We were vectored by to the ZZZZZ IAF for the ILS XXL with gear down and 30 flaps. We got clearance direct ZZZZZ and then clearance for the approach. Slight deviations to altitude occurred as we tried to re engage VNAV path. We realized the issue was re cruising VNAV and then VNAV path properly engaged just prior to ZZZZZ. Again, during the descent through 4500 MSL locked onto the dogleg out of ZZZZZ we again got a TCAS TA followed by a climb RA. This time we noted the altitude of the target always reading 00 and staying with us. Tower assured us that we did not have traffic in the area. We applied the direction on page x that complying a second time with a likely anomalous RA would subject the aircraft to further hazard. On ILS final the nuisance RA was not an issue, and we landed uneventfully. We cleared the runway noting proper C HYD pressure at all times, and the preserved fluid for brakes and steering. Once clear, we had fire crews examine the aircraft for leaking fluid. There was none evident. We asked for and received tug assistance to a hard stand and deplaned. Local Maintenance personnel met the aircraft, and confirmed that the C HYD RES was empty. Superior job by my flight crew, and the Flight Attendants who were very attentive to my directions. Both FO's were fantastic at ensuring the safest operation of the aircraft, and supporting me as the PF, despite the dramatic challenges we faced. They ensured we all maintained the proper awareness in a very challenging priority approach, including language barriers, poor visibility, terrain, and challenges to using auto flight as the auto pilot needed to be off at certain points during a low altitude condition. Checklist direction on fluid amounts below 50% could be much clearer, and I will submit suggested changes. The manual seems to indicate that if the C HYD system goes into isolation for reserve brakes and steering (occurs below 50% QTY) that the normal movement of flaps and gear may not occur. We knew the center system was in isolation (light on the right side panel illuminated during descent and prior to turning the CTR pumps on again). We stuck with the checklist discipline of just doing the deferred items on the QTY checklist but had the uncomfortable feeling that we might end up with a gear sequence error if the handle was lowered and zero fluid was available due to the isolation condition. We had tons of time to review such guidance and clarity had it been in the manual. It should help the crew with confidence to run the QTY checklist until the system cannot maintain pressure, then switch to the pressure checklist to complete configuration to flaps 20.

### Narrative: 3

I was the PM while the other First Officer (FO) was on break and Captain (CA) was the Pilot flying (PF). With about 2 hours remaining in the flight, approximately 1000 miles

from ZZZ, we got an EICAS C HYD QTY. We checked the HYD QTY and it showed approximately .48. We ran the appropriate QRH and turned off all center hydraulic pumps until on approach and ready to configure. We contacted Dispatch/Maintenance and elected to continue to ZZZ, have a tow ready and land on the long Runway, XXL. We woke FO name up from their break 15 min early to brief them on the situation and have them study the QRH and discuss all possible contingencies. They [requested priority handling] at that time. They configured normally about 20 miles out on approach and finished the QRH. We were watching the C HYD QTY closely and it got down to about .32 after finally configured. At 1500 ft. AGL on the ILS, we received a TCAS RA. Even though it was hazy, we were VMC and did not have any visual on an aircraft, so we respected the RA. The target stayed with us at 00 as we climbed, very unusual. Tower broke us off right and we continued back to ZZZZZ to try the approach again. We elected to stay fully configured because of the hydraulic issue and we had plenty of gas to afford that decision. FO re-loaded the approach and there was some slight confusion on getting VNAV to engage until we realized it was a re cruise issue. Once that occurred, the approach was continued from ZZZZZ normally. Once again, at the same exact location, we receive the same exact TCAS RA. This time, CA elected to continue and ignore the RA in accordance with the manual which states you must comply with an RA unless there is an obvious TCAS system failure. We landed uneventfully on XXL and cleared the runway with normal hydraulic indications. Fire crews examined the aircraft for leaking fluid and a tow assisted us to a hard stand for deplaning. Local Maintenance personnel met the aircraft, and confirmed that the C HYD RES was empty. Overall, this was some of the best CRM I have experienced in my flying career. CA fostered an environment that made everyone comfortable to review the information, come to conclusions and discuss openly. Luckily, we had plenty of time to review the HYD QTY checklist as well as HYD SYS PRESS checklist for contingencies. We studied the hydraulic system section in the manual and had all available information at the forefront of our brain. FO and CA are both extremely competent pilots and I could not have asked for a better crew when handling this non-normal, urgent situation. Everyone's situational awareness was at a peak and there was absolutely no tunnel vision during the entire event. We were all on the same page with a go-around plan which made the TCAS RA event a non-event because we all knew how we were going to respond as a crew. Our system's information can be improved, however. Specifically with respect to the C HYD SYS light and respective system. It led us to believe we may not have fluid to configure normally due to the system fluid being diverted only to reserve brakes and steering. We stuck with checklist discipline and followed the HYD QTY checklist and it was a non-factor, but with that light, there seemed to be conflicting information. Had we turned the pumps on and lost all of our fluid rapidly, we would have had to do alternate flaps and landing gear in the HYD SYS PRESS checklist, but nothing directed us to review that. Luckily we had plenty of time to review all of this, but it still left us with confusion until we actually finished the checklist.

## Synopsis

B767 flight crew reported loss of C hydraulic system during cruise. The flight crew continued to destination airport and made a precautionary landing.

## Time / Day

Date : 202304

Local Time Of Day : 0601-1200

## Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Altitude.MSL.Single Value : 13000

## Environment

Flight Conditions : VMC

Light : Daylight

## Aircraft

Reference : X

ATC / Advisory.TRACON : ZZZ

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 : Climb

Airspace.Class B : ZZZ

## Component

Aircraft Component : Landing Gear Indicating System

Aircraft Reference : X

Problem : Malfunctioning

## Person : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Pilot Not Flying

Function.Flight Crew : Captain

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Multiengine

Experience.Flight Crew.Last 90 Days : 181

ASRS Report Number.Accession Number : 1992202

## Person : 2

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Captain

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Air Transport Pilot (ATP)  
Qualification.Flight Crew : Instrument  
Qualification.Flight Crew : Multiengine  
Experience.Flight Crew.Last 90 Days : 181  
Experience.Flight Crew.Type : 17800  
ASRS Report Number.Accession Number : 1992565

## Events

Anomaly.Aircraft Equipment Problem : Critical  
Anomaly.Deviation / Discrepancy - Procedural : Clearance  
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 : 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 : Human Factors  
Primary Problem : Aircraft

## Narrative: 1

Left main landing gear light illuminated. Both red and green lights illuminated and stayed illuminated as we ran through the QRH [for] gear disagree.

## Narrative: 2

Aircraft X, ZZZ to ZZZ1 diverted to ZZZ2 for landing gear problems. During the climb-out of ZZZ on the ZZZZZ ZZZZZ1 SID, we noticed the left main landing gear, red light and green light, stayed illuminated with the landing gear handle in the up position, and then in the off position. No other landing gear lights were illuminated. The First Officer was the pilot flying. I consulted the QRH Gear Disagree Checklist items. We ran the checklist to its completion to no avail as the lights stayed illuminated. As we were climbing out, we kept our air speed at approximately 250 kt. Using our training and the CRM techniques, we discussed all possible actions to rectify the situation or execute a return to ZZZ or a diversion to ZZZ2 primarily due to the maintenance, the long runways, and the weather "" ZZZ1 required an alternate. We contacted Dispatch and Maintenance Control through the ARINC frequencies in order to fix the landing gear issue and formulate a plan moving forward. Maintenance Control reminded us to go through the checklist again to rectify the problem. Once again, the lights stayed illuminated. In conjunction with Dispatch, we determined a diversion to ZZZ2 was the safest course of action. We informed ATC of our situation, then [requested priority handling], and diverted to ZZZ1. We also informed all three flight attendants of the situation and our diversion plan. We use the diversion checklist in the cockpit. We also calmly made a PA to the passengers that due to a mechanical issue, we would be diverting to ZZZ1. We had XX passengers onboard. We discussed all contingencies amongst the Captain and the First Officer. Possibly a low approach so the Tower could see if our landing gear was down. Also, the potential for a landing gear collapse on landing. Fire Rescue was standing by at our request. We discussed with the flight attendants, the remote possibility of a landing gear collapse, and



potential evacuation, and to review their procedures if they needed to. On the final ILS approach to Runway XX Left, I put the gear down early to leave us time to make good decisions pertaining to a possible go-around "" **we had plenty of fuel. Once the landing gear was down, we had three solid green lights illuminated.** We confirmed it with the overhead panel landing gear lights. The left main red landing gear light extinguished. We were confident our landing gear was down and locked and this was confirmed by the Control Tower. As the Captain and the pilot flying for this portion of the flight, I made a smooth landing within the 1,000 ft. to 1,500 ft. runway markings. We did a flaps 30, autobrakes two light weight landing and exited at [Taxiway] XX. The Fire Department did not detect any issues of smoke, fire, or hot brakes. We discussed having Maintenance come out and pin the gear, but we determined there were no further mechanical issues, so we taxied to Gate XX to write up the aircraft, turn it over to Maintenance, and debrief Dispatch, Maintenance, and the Company Operations Center Chief Pilot and ZZZZ Fire/Operations. We also talked with our flight attendants to see what their condition was emotionally and if they were up to continuing with the trip. The support was above and beyond by ATC and all of Company Operations personnel, which was very helpful.

## Synopsis

B737-700 Flight Crew reported the left main landing gear lights stayed illuminated despite the landing gear handle being in the up position. After consulting with Dispatch and Maintenance Control, the Flight Crew then decided to divert and safely landed at a suitable airport.

## Time / Day

Date : 202304

Local Time Of Day : 1801-2400

## Place

Locale Reference.ATC Facility : ZZZ.TRACON

State Reference : US

Altitude.MSL.Single Value : 15000

## Environment

Flight Conditions : VMC

Light : Night

## Aircraft

Reference : X

ATC / Advisory.TRACON : ZZZ

Aircraft Operator : Air Carrier

Make Model Name : A319

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 : Hydraulic Main System

Manufacturer : Green

Aircraft Reference : X

Problem : Malfunctioning

## Component : 2

Aircraft Component : Hydraulic Main System

Manufacturer : Yellow

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 : Captain

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Instrument

ASRS Report Number.Accession Number : 1989977

Human Factors : Troubleshooting  
Human Factors : Confusion

## 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 : 1990495  
Human Factors : Situational Awareness  
Human Factors : Confusion  
Human Factors : Troubleshooting

## Events

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

At about 10-12 minutes after takeoff climbing at approximately 15,000 MSL near ZZZZZ, Aircraft X annunciated a HYD G ENG 1 PUMP LO PR, a short flash first, then a solid ECAM message. We responded to the systems failure per SOP. Conducting the ECAM actions through the end of the status page review. Before I could accomplish the QRH follow-up and climbing toward 20,000 feet. MSL, a Flight Attendant (FA) called to report a loud grinding noise in the back of the aircraft. I told FA that it was probably associated with the hydraulic system failure and that I would call back. At that moment, the continuous repetitive chime sounded. The autopilot disconnected, we were presented with a red AUTO FLT AP OFF, RED HYD G+Y SYS LO PR, and a RED LAND ASAP on the upper ECAM. An Amber HYD Y RSVR OVHT, an Amber HYD Y SYS LO PR, and an Amber F/CTL ALTN LAW also appeared. I directed the First Officer (FO) to [request priority handling] and to get us a landing on the longest runway at ZZZ and discarded pursuit of the follow-up for the system failure to work the more severe problem now presented to us by the ECAM. The ECAM directed Power Transfer Unit (PTU) OFF and AFFECTED PUMPS OFF. It then directed:

"If Yellow SYS Lost by ENG 2 PUMP LO PR: YELLOW ELEC PUMP ON." Not knowing for sure whether the system hydraulic failure was caused by a leak or by the engine 2 pump, I decided not to activate the electric pump at this time. The airplane was flying and controllable. FO was descending us toward ZZZ. My goal was to work the ECAM top to bottom and slow down the situation. I accomplished windows 1 through 4 for the ECAM and sent an ACARS message for the divert to ZZZ, including "G + Y HYD SYS FAIL" in the text. I then made an all-call to the FAs and advised them that we would be making a precautionary landing at ZZZ in about XX minutes because two of our three hydraulic pumps had failed. I told them that the aircraft was controllable and asked if there were any additional symptoms in the back such as grinding or noise. They said that the grinding had gone away. I also asked them if they had any questions and advised that I would make a PA. My PA to the passengers advised that a failure of redundant systems would require us to divert and land at ZZZ. Apologizing for the inconvenience, I told them that we would be landing in approximately XX minutes, to follow Flight Attendant instructions, and that safety equipment would be present on both sides of the aircraft after we landed. FO was doing superbly. They were simultaneously hand-flying the aircraft, working with ZZZ Center, and setting up the FMS for the approach at ZZZ. They kept the speed under control, coordinated the approach to ZZZ Runway XXR, and, because the aircraft was in alternate law, decided not to use speed brakes in the descent--all excellent judgment calls. I turned my attention to the landing distance problem. FO was entering data into the performance approach page, and I asked them to leave the configuration in flaps full so that I could use that number for the land approach. 126 is what was the annunciated Vapp. The ECAM procedure calls for a flaps 3 approach. Using a G + Y hydraulic failure, the land app yielded a Vapp speed of 151 kts. and 9,517 feet on ZZZ Runway XXR which is 11,500 feet long. In the descent in the vicinity of 10,000 feet MSL, FO reminded me that I had not turned on the Yellow Electric HYD pump (previous judgment). I reviewed the verbiage about ENG PUMP LO PR, looked at the hydraulic page again, and turned the Yellow Electric Pump ON. This restored the Yellow Hydraulic System. The aircraft returned to normal with Blue and Yellow Systems providing power to the flight controls. Not wanting to backtrack through ECAM procedures or delay landing any further, I decided to keep the Vapp speed and landing distance that I had calculated for the dual (green + yellow) hydraulic system failure rather than recalculate for what was now a single (green) hydraulic system failure. The status page required landing gear gravity extension and annunciated that landing gear retract and nose wheel steering would be inoperative. I contacted ZZZ operations to advise them that we would need to be towed from the runway and that they would need to come up with a plan for deplaning the passengers, either by air stairs on the runway or a tow to the gate. We descended to 4,000 MSL. As I reviewed the landing gear gravity extension procedure in the QRH, FO sensed that I needed additional time and requested the ZZZ Approach to vector us across the localizer, which was helpful. We then turned in to intercept the final course. I resumed communications duties. We ran the descent checklist, ensured that the performance approach page was set for the flaps 3 approach, ensured that the GPWS flaps 3 button was depressed, and configured to flaps 3 per the QRH checklist. FO called for the gear, and I performed the landing gear gravity extension procedure. The procedure was uneventful. We completed the before landing checklist and agreed that the go-around would be a gear down, flaps 3, go-around straight out to 3,000 MSL. I reconfirmed with Tower and fire command that we would be stopping the aircraft on the runway, would be unable to taxi, and need to be towed to the gate. FO flew the approach flawlessly, landing on ZZZ XXR at XA:59 PM on center line and well within the touchdown zone, bringing the aircraft to a stop on the runway just short of taxiway intersection in about 7,500 feet of rollout. Note, lack of nose wheel steering caused slight nose wheel casting as the aircraft slowed through about 5-10 kts, but FO handled it nicely. I asked FO to set the parking brake and start the APU, called the flight attendants to let them know that we would

remain where we were on the runway, and made a PA to the passengers reminding them of the safety equipment around the aircraft and to follow FA instructions. I also let them know that we would remain on the runway because the aircraft was unable to taxi. FO noted later that the parking brake is difficult to set when the landing gear crank handle is pulled up. We stowed the handle. I then asked the fire command to approach both left and right sides of the aircraft to check for heat and/or fluid leaks. They then asked us to shut the engines down so that they could approach the aircraft. Fire command chalked the nose wheel. With APU running, we complied with the engine shutdown. They discovered significant fluid leaking from the right main wheel well and asked us to depressurize the hydraulic system. I secured the yellow electric hydraulic pump. My decision not to engage the yellow electric pump as part of the G + Y ECAM procedure was a result of the "fog of war." In retrospect, I should have turned on the yellow electric pump sooner, but good CRM and effective trapping of threats and errors got us to the right end state before landing. My decision not to recalculate landing distance and Vapp was based on knowing that the numbers we had were conservative. We had plenty of runway. I did not want to make another orbit and delay landing any further. This was a sound decision. The call from the flight attendants and my technique of completing the entire ECAM action procedure (down to the status page) prevented me from getting to the QRH follow-up on the initial green system failure. In retrospect, I would still answer the call from the FAs because they provide a window to airplane status that could be vital information to the flight deck crew. But had I accomplished the QRH follow-up for the green system failure prior to reviewing the status page, it would have advised that because the PTU had activated to power the green hydraulic system from the operating yellow hydraulic system, it might overheat. It directs to ignore the overheating yellow system and the associated dual failure procedures and to turn off the PTU and keep the yellow engine pump on. This would have prevented the perceived dual system G+Y failure. Airbus should change the ECAM procedure and incorporate the follow ups into the ECAM page so that the crew can get to them sooner. The PTU overheated the yellow hydraulic system after approximately x minutes. As rapidly as the yellow system failure occurred, I recommend making the very simple and very short QRH follow up procedures part of the ECAM procedure to prevent the second failure. Alternatively, recommend making it standard to review the status page in window 4 after completing QRH follow-ups rather than an option. Getting to the follow up procedure sooner (after window 3) in our case might have prevented the second (yellow system) failure from occurring.

## Narrative: 2

I was Pilot flying (PF) on Aircraft X, ZZZ1-ZZZ2. Climbing on the ZZZZ1 out of ZZZ1 at approximately 15,000 feet approaching ZZZZ we received a brief master caution that initially went away but very quickly came back. The master caution was HYD G ENG 1 PUMP LO PR. The Captain (CA) assigned me to continue flying and work the radios. We ran through all ECAM actions, systems, and status page. Continuing our climb above 20,000 feet we received a call from the Flight Attendants (FAs). After the brief call the CA reported they were hearing a grinding noise. As the CA told me that we received a master warning and 5 new ECAM messages. A red AUTO FLT AP OFF, red HYD G+Y SYS LO PR, amber HYD Y RSVR OVHT, amber HYD Y SYS LO PR, and an amber F/CTL ALTN LAW, as well as a red LAND ASAP in the upper right window. The CA immediately told me to continue flying, [request priority handling], and divert us to ZZZ on their longest runway. We ran through the ECAM actions again and the CA decided that they were going to hold off on turning on the Y ELEC PUMP. The plane was flying just fine and since we were in ALTN LAW and the status page said maneuver with care I elected to not use speed brakes and initially let us down slow and smooth. ATC offered us XXR at ZZZ which was perfect and I started setting up the FMS for the approach. The CA was running all of our required performance and landing distance data as well as coordinating with Dispatch, the FAs, and

ops in ZZZ as we entered the low teens I brought back to their attention that we were still holding off on the Y ELEC PUMP. They reevaluated the ECAM and system page and decided that we would turn on the pump. We got the yellow system back and returned to normal law. I continued hand flying, deciding that one, the plane was flying great to that point, and two, if this was a more extensive leak rather than just a pump failure I'd have the aircraft in my hand in the event we lost the yellow system again. At this point ZZZ Approach had us ready to turn on final. I had them give us another vector to give us time. The CA elected not to restart the entire ECAM procedure and non-normal calculations given where we were lower to the ground and closer to the airport. Worst case scenario with the dual failure calculated we still had plenty of runway and that was the more conservative option and I agreed. As directed by the status page the CA gravity extended the gear and landed flaps 3 per our original calculations. The approach and landing were without surprises and we landed on XXR and stopped on center line. I set the parking brake with a little difficulty due to the manual extension handle being deployed. Crash Fire Rescue (CFR) responded and checked the aircraft. We started the APU and shut down both engines so the team could get a closer look. They reported a hydraulic leak in the right main well and asked us to turn off all hydraulic pumps still running. The CA made sure the plane was chocked and we made sure all pumps were off. Having the option to either do the follow up procedures after the ECAM page or after the completion of all ECAM procedures through the status page led to us being delayed in getting to the follow up that could have mitigated the second failure we had. Then once we had the second failure that leads us away from the follow up to the first failure which could have helped or provided insight. If the follow up procedure could somehow be integrated into the status page for a given ECAM action. Or making it standard to review all follow ups prior to reviewing the status page. This might be an isolated instance but getting to the follow up sooner might have mitigated the second failure down the road that we experienced that muddied the waters.

## Synopsis

A319 Flight Crew reported a HYD G ENG 1 PUMP LO PR message annunciated during climb out, followed by multiple other associated warnings. The Flight Crew completed a diversion and landing.

## Time / Day

Date : 202303

Local Time Of Day : 0001-0600

## Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Altitude.AGL.Single Value : 0

## Environment

Weather Elements / Visibility.Other

## Aircraft

Reference : X

ATC / Advisory.Ramp : ZZZ

Aircraft Operator : Air Carrier

Make Model Name : Commercial Fixed Wing

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Taxi

## 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 : 1987914

Human Factors : Confusion

Human Factors : Time Pressure

Human Factors : Training / Qualification

Human Factors : Workload

Human Factors : Communication Breakdown

Communication Breakdown.Party1 : Flight Crew

Communication Breakdown.Party2 : Ground Personnel

## Events

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

Anomaly.Ground Event / Encounter : Ground Equipment Issue

Detector.Person : Flight Crew

Were Passengers Involved In Event : Y

When Detected : Aircraft In Service At Gate

Result.General : Flight Cancelled / Delayed

## Assessments

Contributing Factors / Situations : Company Policy  
Contributing Factors / Situations : Equipment / Tooling  
Contributing Factors / Situations : Human Factors  
Contributing Factors / Situations : Procedure  
Primary Problem : Procedure

## Narrative: 1

I was performing Captain duties along with my crew, the First Officer (FO) and Flight Attendant. Additionally, we had a pilot in the jump seat. The flight was successful and without incident prior to reaching the gate. Upon pulling short of the gate, the ground crew slowly got into position to direct us in. The Marshaller was just standing in position with no action. After a few minutes without marshalling signals and shrugs from the wing walkers as if they were gesturing "what's going on" I slightly increased power while holding brakes as an audible we are ready to come into the gate. At this time the Marshaller began gesturing what the FO, jump seater and I ascertained to be come forward. As it seems to be standard practice, particularly at ZZZ, the marshalling was non-standard to any FAA, ICAO or military signals any of us where aware of. First Officer commented that it looks like the Marshaller was using a skiing motion with the Marshaller's hands next to his hips. The jump seater also commented something similar to the effect of how horrible and unacceptable this was. I continued to taxi at the slowest and safest rate possible aligning myself on the centerline despite the Marshaller's nonstandard directions. Within a few seconds the Marshaller gave us what we interpreted a turn to our left that resembled a "dabbing" motion followed quickly with a no notice stop motion. I stopped as quickly as possible considering the passengers and situation. However, this was a distance past where the nose wheel is indicated on the ramp for the CRJ to stop, but in no means a location that would cause damage to the aircraft or harm to the passengers. The Marshaller clearly at this time said "For [expletive] sakes" and made an aggressive throwing his hands down motion. I set the parking brake and First Officer released the passengers with the seat belt sign. After a moment, the Marshaller indicated the chocks were in and at that time I released the jump seater and called for the shutdown check. Within seconds, the Marshaller came into the cockpit where he began to berate us for not following his instructions, in-front of the full cabin of shocked passengers, the flight attendant and the jump seater. I stated in my most professional way that I cannot stop the aircraft that quickly and he needed to use correct signals. He continued to want to escalate the situation, but I let him know if we needed to be pushed back, then we will. I then made an announcement to the passengers apologizing, and asked them to return to their seats, fasten their seat belts and stow their bags. Immediately after he left the cockpit the First Officer and myself ran appropriate checklists and while waiting for the pushback discussed how inappropriate this was and that we should make a report. We decided in the moments we had until pushback to make a quick call to Operations about the issue and they informed us they would be letting the Ramp Lead know. While being reconnected to the tug, the standard phraseology and hand gestures were used to capture the aircraft just prior to us pushing back. The Marshaller in question then through the headsets said "I can hear you guys" to which a reply was made, "It's no secret mate, I don't mind if you hear, we'll be filing a report and speaking with your supervisor". The Marshaller kept muttering through the headsets about us not following the Marshaller's instructions and that he can hear us talking, etc. To which I replied with "Okay, just stop, you need to push us back so we can get these passengers off the airplane and stop arguing, we will talk about it later". This whole interaction cost passengers approximately X minutes of delay on deboarding the aircraft. Looking back at the incident we should have communicated with Operations earlier about the lack of initially moving into the gate and



the non-standard marshalling signals we were receiving. Issues: SAFETY. ZZZ marshalling is atrocious. It is nonstandard and I recommend a complete retraining of all ground personal on proper techniques found within the AIM. While this issue is not isolated to ZZZ, it is the most egregious place concerning this matter. It is becoming dangerous. Marshallsers at ZZZ continually marshal with hands in front of body rather than overhead and clearly seen. At night it is lucky if marshallsers and wing walkers have 1 lit wand. It has become far too common for the ground crews to expect to not conduct aircraft movement with operable headsets. This is extremely dangerous when at night, in the weather and multiple pushback instructions are given. Professionalism. It looks bad for Company A and Company B when this type of incident occurs. There is a time and place for crews and ramp personnel or others to have conversations and a way to have them, this did not happen. Suggestions. Conduct training on proper ground ops signals. Obtain and use operable headsets. If ZZZ can budget to get radar like ZZZ1. Lessons learned/ to pass on - Stop aircraft and coordinate with Operations with any issues immediately. I feel as a crew, the First Officer and Flight Attendant and myself acted in a safe and professional manner. We communicated and apologized to the passengers. We debriefed and wrote these reports and we continued with our duties for the day isolating the incident to not distract from safety or CRM on future flights.

## Synopsis

Air Carrier Captain reported the Marshaller did not use their headset to communicate and used non standard hand movements resulting in confusion and a delay parking the aircraft.

## Time / Day

Date : 202303

Local Time Of Day : 1801-2400

## Place

Locale Reference.ATC Facility : ZZZ.Tower

State Reference : US

Altitude.AGL.Single Value : 200

## Environment

Flight Conditions : VMC

Light : Night

## Aircraft

Reference : X

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 : Takeoff / Launch

Route In Use : Vectors

## Component

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 Not Flying

Function.Flight Crew : First Officer

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Multiengine

Experience.Flight Crew.Total : 364

Experience.Flight Crew.Last 90 Days : 97

Experience.Flight Crew.Type : 205

ASRS Report Number.Accession Number : 1987625

Human Factors : Troubleshooting

Human Factors : Communication Breakdown

Communication Breakdown.Party1 : Flight Crew

Communication Breakdown.Party2 : Ground Personnel

## Person : 2

Location Of Person.Aircraft : X  
Location In Aircraft : Flight Deck  
Reporter Organization : Air Carrier  
Function.Flight Crew : Pilot Not Flying  
Function.Flight Crew : First Officer  
Qualification.Flight Crew : Multiengine  
Qualification.Flight Crew : Instrument  
Qualification.Flight Crew : Air Transport Pilot (ATP)  
Experience.Flight Crew.Total : 1213  
Experience.Flight Crew.Last 90 Days : 192  
Experience.Flight Crew.Type : 518  
ASRS Report Number.Accession Number : 1987631  
Human Factors : Communication Breakdown  
Communication Breakdown.Party1 : Flight Crew  
Communication Breakdown.Party2 : Ground Personnel

### Person : 3

Location Of Person.Aircraft : X  
Location In Aircraft : Flight Deck  
Reporter Organization : Air Carrier  
Function.Flight Crew : Pilot Flying  
Function.Flight Crew : Captain  
Qualification.Flight Crew : Multiengine  
Qualification.Flight Crew : Instrument  
Qualification.Flight Crew : Air Transport Pilot (ATP)  
Experience.Flight Crew.Total : 10466  
Experience.Flight Crew.Last 90 Days : 151  
Experience.Flight Crew.Type : 6333  
ASRS Report Number.Accession Number : 1987643  
Human Factors : Communication Breakdown  
Human Factors : Troubleshooting  
Communication Breakdown.Party1 : Flight Crew  
Communication Breakdown.Party2 : Ground Personnel

### Events

Anomaly.Aircraft Equipment Problem : Critical  
Anomaly.Flight Deck / Cabin / Aircraft Event : Smoke / Fire / Fumes / Odor  
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy  
Anomaly.Deviation / Discrepancy - Procedural : Weight And Balance  
Detector.Person : Observer  
Detector.Person : Flight Crew  
When Detected : In-flight  
Result.General : Maintenance Action  
Result.General : Flight Cancelled / Delayed  
Result.Flight Crew : Inflight Shutdown  
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  
Contributing Factors / Situations : Human Factors  
Primary Problem : Aircraft

#### Narrative: 1

On initial take-off, just after movement of the gear handle for retraction around V2+10 speed, a loud bang/grinding noise was heard accompanied by an electrical power transfer as the aircraft yawed left and engine failure indications of the left engine were observed. Aircraft control was maintained by the Captain by tracking runway center line with good rudder and rudder trim application. Based on fire trailing the aircraft, severe damage indications and rising EGT, the left engine was secured by applying the engine fire QRC and remaining checklist. Excellent CRM throughout the aircraft occurred to handle the inflight situation and land the aircraft by visual approach to ZZZ XXL, 14 minutes later. There was a communication breakdown once on the ground where we did not have direct communication with the Fire Crew on the frequency. Tower directed us to a delay of applying Airport Rescue and Firefighting (ARFF) specifically to our overheated brakes. Once communication was established, they were able to cool the brakes over the next hour in order to return to the gate under tow and egress the aircraft normally.

#### Narrative: 2

Just after take-off from Runway XXL with a positive rate call, the gear was retracted, when a loud bang was heard. No yaw, so the first thought was maybe a blown tire. The Relief Pilot immediately called out engine failure. The aircraft that was holding in position reported they saw fire coming from our number 1 engine. Memory items were executed instinctively by the Captain, the Pilot flying (PF). I helped bug them to the center line, along with memory items, then reported to ATC the nature of the situation and [requested priority handling] with intent to immediate return. No fire indications on the fire handle, but EGT was rising fast. With the other aircraft and ATC confirmation of fire. The crew's decision was to execute the fire portion of the checklist too. The crew decision was to make an overweight landing to Runway XXL. It was the longest of all runways available. We continued with flaps 20 uneventful landing and met by Airport Rescue and Firefighting (ARFF). Flight time was 14 minutes. After the aircraft came to a stop, the brakes were all in the warning area, and the fire department sprayed all the gear to cool. After approximately 1 hour and brakes back within limits, maintenance cleared the aircraft to be towed back to the gate. I felt the entire crew, pilots and Flight Attendants (FAs), did an outstanding job, and maintained professionalism throughout.

#### Narrative: 3

I can not speak to how and why the event occurred, I can only speak to what happened and how we responded to it. We received a mechanically sound and fit aircraft to fly to ZZZZ the night of Day 0. After addressing several cabin-related maintenance issues during the late boarding phase, we were finally able to get the aircraft closed up and ready for departure. Push back, taxi out was non-eventful. Approaching the hold short for Runway XXL we were cleared to line up and wait. Subsequently, before entering the runway, we were then cleared for take-off Runway XXL. We verified the runway, cleared left and right, noted the fuel on board, took the runway, while still rolling proceeded with the take-off profile. Momentarily checked the engines at 1.1 Engine Pressure Ratio (EPR) (or slightly higher), other performance indicators all looked good, called for auto throttles, set take-off thrust, and began our take-off roll. While rolling down the runway, after the 100 kts. call and prior to V1, I thought I heard something that sounded like something had fallen to the floor. A momentary glance at the engine gauges then eyes back outside. V1, rotate, positive rate, gear up (gear up), boom! As if the engine failure was connected to the gear

handle itself. I stated engine failure. Another pilot echoed me (not certain who), then we commenced with the engine failure procedures. I imagine the engine failed climbing through approximately 200 ft. AGL. We proceeded to climb out tracking the runway centerline, [requested priority handling] with the Tower and began coordination with ZZZ Tower for an air turn back and to have Crash Fire Rescue (CFR) on scene for our arrival. Also had them notify the company of what had just happened. A series of right turns to position us for Runway XXL approach (longest runway of runways available. For future note, no instrument approach to XXL, and therefore no instrument runway approach lights. Heavy, overweight, single-engine, (and not absolutely certain of status of left main landing gear) night, VFR, clear and a million we stayed with XXL. I continued to fly the plane, the First Officer (FO) and Relief Pilot ran the QRC/QRH. Vectors from departure. Levelled off at 2500 ft. for the remainder of the event. Communicated/coordinated with Flight Attendants (FA) in the cabin. Explained to the passengers what happened and we were returning to ZZZ. Completed checklist and performance items. Positioned aircraft for landing Runway XXL, flaps 20. Finally picked up the VASI and flew them down to touchdown. Long rollout to a stop then began to coordinate with the crash-fire-rescue to address our hot brakes. More coordination/communication with the FA crew and passengers. We kept them seated (seatbelt sign on) throughout the entire brake cooling event. Approximately 83 minutes from stopping on the runway, addressing/fighting the hot brakes scenario, to getting to the gate to deplane our passengers. Everything worked rather smoothly from start to finish. Good job from all the services and organizations involved in our recovery. Good job from the entire flight crew (pilots and Flight Attendants). No further damage or injury to aircraft nor personnel.

## Synopsis

B767 Flight Crew reported #1 Engine failure at landing gear retraction after take-off. The Flight Crew performed an inflight shut down of the engine and returned to land at departure airport.

## Time / Day

Date : 202303

## Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Altitude.AGL.Single Value : 0

## Aircraft

Reference : X

Aircraft Operator : Air Carrier

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

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Parked

## Person

Location Of Person.Aircraft : X

Location In Aircraft : General Seating Area

Cabin Activity : Boarding

Reporter Organization : Air Carrier

Function.Flight Attendant : Flight Attendant (On Duty)

Qualification.Flight Attendant : Current

ASRS Report Number.Accession Number : 1986835

Human Factors : Communication Breakdown

Human Factors : Troubleshooting

Human Factors : Workload

Human Factors : Training / Qualification

Communication Breakdown.Party1 : Flight Attendant

Communication Breakdown.Party2 : Ground Personnel

## Events

Anomaly.Flight Deck / Cabin / Aircraft Event : Illness / Injury

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

Anomaly.Deviation / Discrepancy - Procedural : FAR

Anomaly.Deviation / Discrepancy - Procedural : Hazardous Material Violation

Detector.Person : Flight Crew

Detector.Person : Flight Attendant

When Detected : Aircraft In Service At Gate

Result.General : Flight Cancelled / Delayed

## Assessments

Contributing Factors / Situations : Human Factors

Contributing Factors / Situations : Procedure

Primary Problem : Procedure

## Narrative: 1

During the safety demo a PAX passed out and started aggressively throwing up all over themselves, the seat, seat back pocket, tray table, floor, aisle, purses, backpacks, and other belongings of surrounding pax. The bodily fluids got on the passenger sitting in front of them. We immediately stopped the demo. We grabbed gloves and protective gear from the kit. Once PAX finished vomiting, PAX regained consciousness. We notified the CA (Captain) immediately because we were still at the gate. We also called for medical assistance. We were told to disarm doors and wait for ground medical crew. The passenger in distress went into the front Lav to attempt to clean themselves. Medical personnel arrived and escorted the PAX off the plane. The PAX travel companion decided to get off as well. However, there was no ground personnel anywhere in sight. We told the travel companion to be patient and a ground crew would be right up to escort them to the PAX. Since the ground crew was not around (and the FWD L1 door was open) the flight attendants started to clean up the vomit. Even with 2 kits there were not enough materials to soak up the vomit, a bio hazardous material. The CA called again for ground crew to come and clean. Eventually a person came up with ONLY paper towels and one white trash bag. The flight attendants requested sanitizing products, new seat belts, vacuum, and red disposable hazmat bag because of the vomit and it being considered a bio hazardous fluid. Vomit can carry hazardous pathogens that can rapidly contaminate surfaces and the air. We had already filled four white trash bags with the vomit from just the aisle. The two FWD flight attendants have been taking trainings on bio hazardous bodily fluids for over 8~Years and we know that if vomit is not cleaned up properly then there are risks for the potential spread of diseases such as Salmonella, Norovirus, Hepatitis A & B, Typhoid, and Varicella. This was very concerning to us because the GM (general manager) had no idea how to handle this situation. The GM kept telling us that "we don't do that" whenever we asked for things to be cleaned and sanitized. It was a very serious safety issue and we felt we weren't being heard on what was needed to clean up this extreme amount of vomit. This was a safety issue for us as a crew and also the passengers. Safety is our #1 priority. In the notes it states that the Captain did not want to deplane. This is incorrect. The ground crew didn't want to deplane, so we moved the affected first X rows of passengers to the back of the plane. The ground person initially dropped off the cleaning supplies (paper towels/wipes) to the FWD galley and stood there expecting the flight attendants to clean the vomit. The flight attendants cleaned up most of it already, but we still needed industrial use sanitizer, spray, deodorizer spray for the smell, and a wet vacuum. During this time there was never a gate agent assigned to our plane. The [ground crew] person left the aircraft and we sat there not having any information, no cleaning supplies or ground cleaners. The CA called ops again for ground crew to come back and finish the clean up. At this point it had been 75 minutes and we started a pour service. The GM for ground crew company came on board and was confused about what he needed to do and continued to ask the FAs. The lead explained the medical situation and what the pilots and flight attendants had requested. He argued profusely with the flight attendants and stated that "we don't do that". He then said the ground crew doesn't clean the aircraft on turns, just on RON. We told him that's not the situation and we just need the plane cleaned from this medical. The GM asked us repeatedly what exactly we needed, but never brought it to us and kept saying, "we don't do that." Our crew was frustrated for the lack of training the company had received for hazmat and first aid. It seemed like they had no idea what precautions to take or the necessary supplies needed to clean up bodily fluid. It seemed like they wanted us to handle it all, but without any access to supplies. The GM was recording videos of the affected area with his phone after he supposedly cleaned the area. During flight several passengers said they didn't want to delay the flight any longer, but there was still a big mess of vomit on the side of the seats and especially the seat in XX. The GM seemed satisfied that the area had been cleaned. However, the seatbelt needed to be replaced and the GM said he doesn't do that either. We told him we needed one and asked who does that? We explained that we cleaned the bathroom to help out since no

one had come to our aircraft to assist. He continued to argue with us in-front of passengers claiming they don't clean the bathrooms. At this point it's embarrassing because the GM is verbally attacking us in front of pax. We were only trying to communicate that the vomit needed to be cleaned and cleaned correctly with disinfecting products. Because the GM was being loud with flight attendants in the FWD galley, passengers started to get out their phones and record. We were embarrassed and frustrated because our training tells us how to handle first aid and hazmat situations differently. The CA heard the GM and came out of the flight deck to speak with the GM. He took him onto the ramp and they exchanged words. We never got the cleaning supplies we needed after multiple attempts of telling the ground crew what we needed to clean up the vomit. The surrounding passengers complained about the smell and left over chunks on the floor. When GM came back, he asked the lead what exactly he needed to do. She explained for the second time what we needed and he left to go get it (We then found out that he went to call our supervisor). The pour service was completed by the time they came back with the necessary cleaning supplies. The GM himself cleaned whatever vomit was remaining using a microfiber towel, which only potential spread contaminates. It wasn't doing the job and again we requested a wet vacuum. The GM eventually went to get the vacuum after the CA walked out to speak with him for a second time. The GM made several unnecessary comments to the flight attendants (in front of passengers) about the seat. MX was called and they showed up to replace the seatbelt. We requested cups, trash bags, paper towels and water for passengers since we used it all for cleaning up the vomit and pour service. After reviewing the delay notes, it states that "the pilot refused to board until mess area was cleaned again." This is incorrect. As stated above, we were fully boarded and the passengers never deplaned. We only moved the first 5 rows to the back of the plane so we could clean up the affected area. The crew resource management was poorly executed by the ground company side of the operation. There needs to be consistency between flight attendants and ground crew on cleaning up bodily fluids on the aircraft so we are both on the same page. This is very serious to me since it is a bio hazard and I don't feel confident in the proper cleanliness of the aircraft after an incident of a bio hazard has occurred. We take tests every year to stay informed of the severity of health concerns and the way this incident was handled was very unsettling. The GM of the airport didn't even know his job or seemed concerned about cleaning up the mess. It could be blood, stool, urine, vomit, or drool that needs to follow OSHA standards on making sure we are not spreading potential diseases. A ground crew worker should not approach an aircraft with a roll of paper towels and a white trash bag when they are informed that a seat needs to be cleaned or a bathroom needs to be cleaned because of bodily fluids.

## Synopsis

Air Carrier Flight Attendant reported a passenger passed out and vomited around the surrounding seating area during pre-flight. After an extensive discussion ensued regarding the Hazmat cleanup responsibility without a safe resolution, the aircraft departed in an unsuitable condition.



## Time / Day

Date : 202303

Local Time Of Day : 1201-1800

## Place

Locale Reference.ATC Facility : LAX.Tower

State Reference : CA

Altitude.MSL.Single Value : 1000

## Aircraft

Reference : X

ATC / Advisory.Tower : LAX

Aircraft Operator : Air Carrier

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

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Final Approach

Airspace.Class B : LAX

## Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : First Officer

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Multiengine

ASRS Report Number.Accession Number : 1986757

Human Factors : Situational Awareness

Human Factors : Distraction

## Events

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

Anomaly.Inflight Event / Encounter : Unstabilized Approach

Detector.Person : Flight Crew

When Detected : In-flight

Result.General : None Reported / Taken

## Assessments

Contributing Factors / Situations : Human Factors

Contributing Factors / Situations : Weather

Primary Problem : Human Factors

## Narrative: 1

On ILS [Runway] 24R into LAX right at 1000 ft., we put flap 5 in instead of before 1000 ft. We were stabilized on the localizer and glideslopes. I was following a heavy for [Runway] 24R. I configured early up into the final approach fix. After the final approach fix, it got a little turbulent so my mind shifted to the possibility of flying above the glide slope for wake turbulence. Due to this, I was distracted. Right at 1000 ft. the Captain put flap 5 in. I'm not sure if it was right before or right after. I asked if we should go around; he said we were fine. Being unsure, I probably should have just called for the go around. I decided to write this safety report in recognition of possible pilot error. Suggestions include more focused CRM. We both missed it early.

## Synopsis

ERJ-175 First Officer reported extending final flaps below 1000 ft. on approach into LAX after a distraction related to turbulence.

## 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 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 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.

## Time / Day

Date : 202303

## Place

Locale Reference.Airport : ZZZZ.Airport  
State Reference : FO

## Environment

Flight Conditions : VMC  
Light : Daylight

## Aircraft

Reference : X  
ATC / Advisory.TRACON : ZZZZ  
Aircraft Operator : Air Carrier  
Make Model Name : Large Transport, Low Wing, 2 Turbojet Eng  
Crew Size.Number Of Crew : 2  
Operating Under FAR Part : Part 121  
Flight Plan : IFR  
Mission : Passenger  
Flight Phase : Initial Approach  
Flight Phase : Final Approach  
Flight Phase : Descent

## Component

Aircraft Component : Radio Altimeter  
Aircraft Reference : X  
Problem : Failed

## Person

Location Of Person.Aircraft : X  
Location In Aircraft : Flight Deck  
Reporter Organization : Air Carrier  
Function.Flight Crew : First Officer  
Function.Flight Crew : Pilot Flying  
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 : 1979603  
Human Factors : Confusion  
Human Factors : Distraction  
Human Factors : Human-Machine Interface  
Human Factors : Time Pressure  
Human Factors : Workload  
Human Factors : Communication Breakdown  
Communication Breakdown.Party1 : Flight Crew  
Communication Breakdown.Party2 : Flight Crew



## Events

Anomaly.Aircraft Equipment Problem : Less Severe  
Anomaly.Flight Deck / Cabin / Aircraft Event : Other / Unknown  
Anomaly.Deviation - Altitude : Overshoot  
Anomaly.Deviation - Track / Heading : All Types  
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy  
Anomaly.Deviation / Discrepancy - Procedural : Clearance  
Anomaly.Deviation / Discrepancy - Procedural : Weight And Balance  
Anomaly.Inflight Event / Encounter : CFTT / CFIT  
Anomaly.Inflight Event / Encounter : Weather / Turbulence  
Detector.Person : Air Traffic Control  
Detector.Person : Flight Crew  
Result.Flight Crew : Became Reoriented

## Assessments

Contributing Factors / Situations : Aircraft  
Contributing Factors / Situations : Airspace Structure  
Contributing Factors / Situations : Environment - Non Weather Related  
Contributing Factors / Situations : Software and Automation  
Contributing Factors / Situations : Procedure  
Contributing Factors / Situations : Human Factors  
Primary Problem : Human Factors

## Narrative: 1

I was a SIC on a series of flights that departed ZZZ, with legs in ZZZ1, ZZZ2 and ZZZ3 with a return to ZZZ. I was flying with a CA (Captain) I had yet to fly with out of the ZZZ base. I arrived early as usual, and proceeded to do a walk around, and then started on duties to prepare the aircraft for the flight. The CA arrived on time, and began a series of his duties. The CA noticed the Radar Altimeter was not working, and alerted [maintenance] to the issue. [Maintenance] was able to get the RA working, and we departed ZZZ for ZZZ1. Upon passing through 10,000 ft', I asked the CA if he would like me to turn the APU on. He replied "No, we will turn it on during short final." I thought I misheard him. During short final, while the CA was flying, he reached up and turned on the APU, without announcing or asking me to do so. I told him I could do that, and he said it was fine. The landing was unremarkable. We departed ZZZ1 for ZZZ2. Winds were gusty but nothing out of limits. During descent through landing checks, the CA failed to use a checklist and instead called out items from memory. I asked about it and didn't get a response. I was unsure if he understood me, as it seems as though communication was difficult. The CA has a very heavy accent, and I had difficulty understanding a few things he said and had to ask him to repeat himself. Once again, the CA turns the APU on during short final, although this time I was flying. Landing was normal. We taxi to parking and shut down. The next stop is ZZZ3. The CA looks at the winds, which were gusting to 31 at 150, with landings being conducted to RWY XX; and tells me they are almost at max crosswind. I disagree, but he shows me the METAR and once again says 35 knots is the max crosswind limitation. I did not explain how the calculation worked, and decided not to since we would be legal even under his interpretation of max crosswind. During preflight on the leg back to ZZZ, I had done a weight and balance and asked the CA if he wanted to use it. I am not sure if he heard me as he began doing his own, and input it into the FMS. I did not discover until after landing, when the CA sent me his movement report to show times, that he did not include 6 passengers on the weight and balance calculations. On all legs, the CA turned on the APU during short final. I was SIC; operating from ZZZ to ZZZ4. I was the PM (Pilot Monitoring) ; the CA was the pilot flying. The flight was uneventful until

arrival into ZZZ4. The CA had set the inbound course on both sides of the MCP (Mode Control Panel) and tuned both VHF NAV radios to the frequency for the localizer on RWY XY in preparation for the approach into ZZZ4. ATC had assigned a heading of 110 as we approached the airport. We ran an approach checklist around 7,000 ft and concluded the checklist. The CA had then tuned VHF #1 to tower, ahead of the approach as I was talking to approach and preparing for landing. Weather was VFR, winds were unremarkable. The aircraft we were on had HSI switches, and once closer both were set to VOR/ILS to prepare for the approach. ATC told us to remain at 3,000 ft until established and cleared us for the ILS into RWY XY. Upon being cleared, the CA armed the approach on the MCP. However; during a scan I noticed our course deflection bars were wildly different. I immediately announced this. Mine was saying we needed to turn right, the CA side was saying to turn slightly left. The route in the FMC had the ILS for runway XY. My VHF nav frequency was tuned correctly, but upon looking down the CAs was no longer correct. Without speculating too much, the only thing I could come up with is that this may have been inadvertently off tuned after the approach checklist, when the CA tuned the VHF radio to tower as the pilot flying, because the knobs for the VHF 1 radio and VHF nav radio are the exact same, and one is right above the other. When correcting the mistake the wrong frequency may have been input. It was about the time that I announced a second time the HSIs were different that ATC called and said "[callsign], what are you doing?" And told us to make an immediate turn to 170 as it looked as though the aircraft was heading towards runway XZ, which was closed. The CA was attempting to tell [maintenance] something was wrong with the plane after I read back the instructions. I was telling the CA we needed to turn to 170 immediately, as he continued flying the wrong heading. The CA kept trying to press heading mode on the MCP, but it would not work as we were captured on the wrong glideslope and localizer. The CA then lost his FD (Flight Director) guidance. I told him nothing he was telling [maintenance] was important as he continued flying on the wrong heading. I raised my voice when my concerns weren't heard and said we needed to turn to 170 IMMEDIATELY and to disengage the autopilot and turn, and I would work on the inside. The A/P ended up disengaging on its own, due to a radar altimeter that was inop (this explanation according to maintenance; the radar altimeter was MEL'd, but there are no VHF nav restrictions on said MEL, only RNAV and RNP restrictions.) The CA then decided to engage my A/P (B side) and selected heading mode as I had tuned his VHF nav to the correct frequency. He still had no FD guidance, and I did not believe that, in VFR conditions and being that close to the runway, that running the QRH and transferring instrument switches to guidance on my side was appropriate. Once we were on the heading assigned, ATC asked if we had the airport in sight. The field was seen and we were cleared for the visual into runway XY. The CA used heading to turn us towards the runway. Once we were lined up, the CA disengaged the autopilot, and began descending. My guidance for the ILS was still working, but the CA had no FD guidance on his side. I announced we were getting too low approaching buildings on the south east side of the airport. The CA said "visual visual." I once again announced we were too low and likely to receive a terrain warning from the GPWS as we descended below 1,000 ft (980 ft when the CA pulled up) outside of the FAF (at 1,600 ft) with full scale glideslope deflection on my side. I announced the glideslope was well above us as I had guidance. The CA pulled aft on the yoke and advanced the power levers into a climb getting the aircraft into a flight profile where the PAPI was showing two white and two red when I looked up again. The landing was unremarkable. The flight back into ZZZ was my leg. During the landing roll almost immediately upon touchdown, tower started calling while I was still getting the aircraft under control (100+ knots.) I key the mic and tell them to standby. The CA keys the mic and reads instructions back, to a high speed taxiway we ended up not making as I was unable to slow the aircraft in time. After exiting, the CA begins to taxi, and turns off every light on his panel and the engine instruments, making it to where they were unreadable. Poor CRM, poor decision making by the CA, unsafe actions during flight and

taxi, lack of understanding of crosswind calculations; lack of prioritizing immediate actions during flight with a pilot error that needed to be fixed. I did everything in my power to attempt to tell the CA the deviations during all legs of flights. I have decided I will attempt to avoid flying with this CA in the future.

## Synopsis

Air Carrier First Officer reported a Captain that displayed poor decision making skills, a lack of understanding of basic tasks, and inadequate CRM during multiple legs of a trip.

## 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.

## Time / Day

Date : 202301

Local Time Of Day : 1801-2400

## Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Altitude.MSL.Single Value : 2300

## Environment

Weather Elements / Visibility : Turbulence

Light : Night

## Aircraft

Reference : X

Aircraft Operator : Air Carrier

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

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Landing

## Person : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Captain

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Air Transport Pilot (ATP)

ASRS Report Number.Accession Number : 1966915

Human Factors : Troubleshooting

Human Factors : Workload

Human Factors : Fatigue

Human Factors : Time Pressure

## Person : 2

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Pilot Not Flying

Function.Flight Crew : First Officer

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Air Transport Pilot (ATP)

ASRS Report Number.Accession Number : 1966922

Human Factors : Time Pressure

Human Factors : Fatigue  
Human Factors : Workload

## Events

Anomaly.Deviation - Altitude : Overshoot  
Anomaly.Deviation - Altitude : Excursion From Assigned Altitude  
Anomaly.Deviation - Speed : All Types  
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy  
Anomaly.Deviation / Discrepancy - Procedural : Clearance  
Anomaly.Inflight Event / Encounter : Loss Of Aircraft Control  
Anomaly.Inflight Event / Encounter : Weather / Turbulence  
Anomaly.Inflight Event / Encounter : Unstabilized Approach  
Anomaly.Inflight Event / Encounter : CFTT / CFIT  
Detector.Person : Flight Crew  
When Detected : In-flight  
Result.General : Maintenance Action  
Result.Flight Crew : Took Evasive Action  
Result.Flight Crew : Overcame Equipment Problem  
Result.Flight Crew : Became Reoriented

## Assessments

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

## Narrative: 1

During my approach on the ILS X into ZZZ, I initiated a go-around just passed or around ZZZZZ FAF due to what I believe was a wind-shear downdraft. The ZZZ1 area was covered with moderate turbulence and thunderstorms were moving through the sector. Prior to the approach I briefed the PM on a possible wind-shear escape maneuver should the possibility arise. The ATIS was not reporting wind-shear and it seemed the other traffic ahead of us were getting into ZZZ just fine. We had just flown in on the ZZZZZ1 arrival with very strong moderate turbulence all the way in. As we were cleared for the approach I selected flaps and gear down on normal schedule and complied with the speed restrictions given to us by ATC. As we turned final I could see an ominous looking cloud that appeared to be moving across the path to the runway at the FAF ZZZZZ. In a break in the cloud I could visually see the runway lights off and on. I prepared for the possibility that the cloud would emanate some turbulence. As we passed through it on the backside of it I felt the airplane get rolled to the right and I felt the plane being pushed down. We did not receive any wind-shear warnings or cautions aurally. I counteracted as it was being forced down and then I felt the airspeed dropping rapidly. I felt as if a downdraft was causing us to be pushed down at an uncontrollable rate. At that point I knew we needed to apply power and climbout of it. I initiated a go-around thinking it was wind-shear pushing us down. I also heard a 'caution obstacle' message. Initially, as I added power it seemed like we were not able to climb immediately. The go around was not perfect but we quickly became busy as I felt we had a terrain issue along with the wind shear. Then we cleared the wind shear and we started climbing rapidly and our speed quickly became very high and we were very close to our go around altitude of 2000 already. The PM informed the Tower that we were going around for wind shear in which they provided a heading and altitude of 2000. I knew we were about to blow through that altitude so I had him ask for a higher altitude. We over flew the altitude by around 300 ft. The Tower did not want to give us higher as they "did not control that airspace". Eventually we went over to Approach and they provided us



4000 ft. I received a high speed message during the event, as the flaps were still extended and in transition and sometime during all this I asked for the gear to be retracted and then flaps 2 which was out of order. I also called for FL 210 but the cockpit became very busy quickly and we did not get it set right away as the aural high speed message was going off along with trying to listen to ATC. I became concerned with the high speed and trying to comply with the ATC altitude. We eventually cleaned up the plane and reengaged automation. The event certainly shook both of us up; however after we had the aircraft under normal flying conditions we briefed the passengers of what happened, loaded another approach, and returned for a second and successful landing. I should have done better with my call outs and procedures. I should have at least called TOGA, and once clear of the shear: flaps 2, (positive rate) gear up, and FLCH 210. Adding the amount of power I did felt right as we seemed to be rolling and descending in the wrong direction and I felt we needed to climb immediately. However, I was also distracted trying to keep us from climbing too far above our target altitude and got behind on the recovery.

## Narrative: 2

I do want to preface this account by saying my memory of the events is not very clear, and after the moment we began the go-around, the exact timing and what happened became a blur of events. I was PM on Aircraft X from ZZZZ to ZZZ. We had started our day at XA: 30pm and dealt with delays getting in to ZZZZ due to thunderstorms. Both our flights from ZZZ to ZZZZ and from ZZZZ to ZZZ were filled with multiple areas of convective activity and associated turbulence. As we approached ZZZ, the field had some thunderstorms in the area but the latest ATIS was showing a good prognosis with winds dying down to something like 160 at 7 kts or so. Approach had vectored us around at 4,000 or so and the entire time at that altitude we were dealing with moderate turbulence. The Captain (CA) had to override the auto throttles during this time to keep the speed under control. I do recall the CA briefed the wind shear escape maneuver before we set up for the approach as well. Eventually we got vectored southwest and then set up on final for the ILS X. We were told to slow to 160 kts till ZZZZZ and cleared for the approach. Shortly before the FAF, the CA had given me the proper commands to fully configure the plane and we were stabilized at about 1,700 feet. I'm not really sure when the CA switched to green needles, or when the Autopilot (AP) was kicked off as the approach does require it (I believe it was right before we passed the FAF). As we neared ZZZZZ, we could see the runway and lights below several scattered cloud layers. There was an almost a U shaped thin cloud in front of us that rose a couple hundred feet on both sides of the aircraft. We passed right through the middle of this cloud and it was about this time that the approach completely fell apart. I recall seeing the speed start to bleed off pretty quickly, almost 10 kts past our speed. The CA responded by moving the throttles forward quite aggressively and the speed started to come back. However it felt like we were dropping aggressively and the plane had started a slight roll (10 degrees or so) to the right. I don't recall if this happened before or after the CA told me we were going around; but we got an obstacle alert. The CA told me we were going around but didn't state the correct phrase (Go-Around, TOGA, Flaps 2). He did hit the TOGA button though and we began to get speed and altitude back. I remember trying to look at the EICAS and verify TOGA set but the screen was really dark and I couldn't verify it immediately. I do recall seeing something resembling "obstacle proximity" on my Primary Flight Display (PFD) in red, and I think we got 1 aural "OBSTACLE" alert, but the whole moment happened very quickly. I do remember that I eventually stated TOGA set after I was able to verify despite it being so dark. The last thing I remember about looking at the glide slope was that we were about a 1/2 to 3/4 dot low during the time the speed bled off abruptly. I was completely unsure as to what we were dealing with since we didn't get a single wind shear alert, and Tower had not told us about any wind shear reports. The glide slope alert never went off either. Either way the go around was done incorrectly. As the CA hit TOGA and I tried to

verify TOGA set, we neglected to move flaps to position 2 right away. I recall telling Tower we were going around and they told us to climb to 2,000 feet and fly heading 040. I think I missed a call, but with the alerts going off, it was extremely hard to focus on one thing at a time. The Captain asked for FLCH 210 and it was really hard to verify the correct button in the dark cockpit but I think I hit it and had 210 dialed in. At this point, the airplane was rocketing upwards and the speed was the only thing I remember going up a lot. The Captain told me gear up and I didn't even think to verify the flaps were at 2 before doing that. As a result we had the landing gear aural alert going off. Then CA told me to bring flaps to 2 and I did. Around this time the airspeed had climbed significantly and the last number I remember was 240 and we started getting high speed (not sure if this was before or after flaps moved to 2). After I had verified the instructions from ATC, the CA told me we needed higher and I told ATC that. They told me they can't do that as they don't control that airspace. The CA also told me we needed to turn to the left to get out of whatever we were dealing with. I don't think I was able to pass that on as Tower was giving us a new frequency and asking if it was wind shear. We did blow through 2,000 and leveled at 2,200 I believe and then got cleared up to 3,000. Before switching I heard the Tower Controller tell the plane behind us that they were getting wind shear alerts for Runway X gain of 20 kts and another plane called up and said they gained 20 (not sure if it was arrival or departure). Eventually the CA called flaps up, and then said incrementally but I had mistakenly moved them up all the way. I then moved them back to position 1 and then up. Either way it was clear we had over-spiced them. We cleaned up, switched over to Approach and got vectored around. We then shot the second attempt on the same approach with no issue. Once we landed the CA called Maintenance to inform them of the over speed event and write up the plane which had finished for the night. Overall we were completely caught off guard by this event as it was not expected and the weather conditions had been improving in the area as well. Both me and the CA were pretty shaken up by the event as the obstacle alert is something that neither of us ever expected to see, even with a wind shear event. It is also important to note that I don't believe ATC ever gave us a warning or talking to for exceeding our altitude of 2,000 feet on the go-around. While it's hard to remember the correct details, I think we responded appropriately by a go-around. However we should have done a wind shear escape procedure even though it was never annunciation. Secondly, even though we elected to do a go-around, we didn't use the correct callouts and as a result of that, ATC calls during the event, the obstacle alert, and other distractions; we caused the flap over speed. The go-around was also abnormal to me since we weren't below 1,000 feet and were pretty limited with the altitude available to climb. I think better CRM would have resulted in a correct go-around procedure or wind shear escape procedure as the whole event could be characterized with "tunnel vision" on my part as well. I also should have corrected the Captain from the moment we elected to go-around by taking control of the situation and configuring the airplane even if the Captain was distracted and didn't verbally tell me. ATC didn't help the situation as they did not immediately clear us to 3,000 feet and I was concerned with the 200 feet above assigned altitude that we had deviated from. This distracted me as well with helping to configure the aircraft. Overall, my lack of following the SOP in regards to callouts and actions exaggerated an already difficult situation.

## Synopsis

EMB-170 Flight Crew reported a wind shear event during final approach in turbulent conditions. The Flight Crew executed a successful wind shear recovery procedure which caused momentary airspeed and altitude deviations.

## Time / Day

Date : 202301

Local Time Of Day : 0601-1200

## Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

## Environment

Flight Conditions : VMC

Weather Elements / Visibility.Other

Light : Night

## Aircraft

Reference : X

Aircraft Operator : Air Carrier

Make Model Name : Medium Transport, High Wing, 2 Turboprop Eng

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Nav In Use : FMS Or FMC

Nav In Use : GPS

Flight Phase : Landing

Airspace.Class C : ZZZ

## Person : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Pilot Not Flying

Function.Flight Crew : First Officer

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Commercial

Qualification.Flight Crew : Instrument

ASRS Report Number.Accession Number : 1966482

Human Factors : Workload

Human Factors : Time Pressure

Human Factors : Communication Breakdown

Human Factors : Situational Awareness

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 : Captain

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Multiengine  
Qualification.Flight Crew : Air Transport Pilot (ATP)  
Qualification.Flight Crew : Instrument  
ASRS Report Number.Accession Number : 1966483  
Human Factors : Workload  
Human Factors : Situational Awareness  
Human Factors : Communication Breakdown  
Human Factors : Time Pressure  
Communication Breakdown.Party1 : Flight Crew  
Communication Breakdown.Party2 : Flight Crew

## Events

Anomaly.Ground Excursion : Runway  
Anomaly.Ground Event / Encounter : Loss Of Aircraft Control  
Detector.Person : Flight Crew  
Were Passengers Involved In Event : N  
When Detected : In-flight  
Result.Flight Crew : Executed Go Around / Missed Approach  
Result.Flight Crew : Regained Aircraft Control

## Assessments

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

## Narrative: 1

I am a new First Officer (FO) and acted as Pilot Monitoring (PM) for the entire flight. The incident occurred upon touchdown Runway XL at ZZZ. Captain was in control of the aircraft and this approach to Runway XL was stabilized. The aircraft was crabbed left considerably into the wind and holding runway center line. It was my expectation that the Pilot Flying would apply right rudder and left aileron control moments before touchdown in order to align the aircraft with the runway center line. However, we landed with a side load and this is when loss of directional control began. Because we landed crabbed left we began traveling further left of center line. I called for right rudder and aileron into the wind. At this point we rapidly departed the left side of Runway XL into the safety area where pilot flying applied full power and began the go around from the safety area. In the go-around we remained in a VFR traffic pattern with gear down (gear was never cycled) and flaps 15 degrees. At this point my concentration was orientating and navigating us to the more favorable Runway YY. The Captain remained Pilot Flying throughout the event. We safely navigated to and landed on Runway YY. Before departing ZZZ1 the Captain expressed their intentions to use XL at ZZZ. I informed them the winds favor YY. The Captain seemed to agree, however, later after listening to the ATIS at ZZZ they decided XL. Again I asked them to take a look at the crosswinds and Runway YY as an option. The Captain kept their decision for XL. The winds were strong 270 at 19 gusts 28 in ATIS but not exceeding the max crosswind for the Aircraft X. I had never flown with the Captain but I knew they had been with the company since 2015 and seemed confident in their ability to safely land in the crosswind so I said no more regarding this runway choice. It is my suggestion we review crosswind landing techniques and how crew resource management could have helped us in this situation.

## Narrative: 2

Landing on Runway XL with gusty winds from 290/14G25 at some point during flare the airplane takes to the left abruptly I applied full right rudder in order to keep the airplane center line but then another push to the left occurs at that moment I decided to go-around, when I started the go-around the airplane keeps the tendency to the left, making the main gear touch the grass, for that reason I did not put the gear up and keep it down, I did the right downwind for Runway YY and landed. On the post flight I checked with the Mechanic if any damage occurred but everything looks normal, except for a small amount of grass in the left tire.

## Synopsis

Air carrier flight crew reported a loss of control and runway excursion during landing. There was a strong crosswind reported according to the pilots. The Captain made a go-around from the safe area off the runway. The second landing on a different runway was successful.

## Time / Day

Date : 202301  
Local Time Of Day : 1201-1800

## Place

Locale Reference.Airport : ZZZ.Airport  
State Reference : US  
Altitude.AGL.Single Value : 0

## Environment

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

## Aircraft

Reference : X  
ATC / Advisory.Tower : ZZZ  
Aircraft Operator : Corporate  
Make Model Name : Honda Jet  
Crew Size.Number Of Crew : 2  
Operating Under FAR Part : Part 91  
Flight Plan : IFR  
Mission : Ferry / Re-Positioning  
Flight Phase : Landing  
Route In Use : Visual Approach

## Component

Aircraft Component : Main Gear Tire  
Aircraft Reference : X  
Problem : Failed

## Person

Location Of Person.Aircraft : X  
Location In Aircraft : Flight Deck  
Reporter Organization : Corporate  
Function.Flight Crew : Pilot Flying  
Function.Flight Crew : Captain  
Qualification.Flight Crew : Instrument  
Qualification.Flight Crew : Air Transport Pilot (ATP)  
Qualification.Flight Crew : Multiengine  
Experience.Flight Crew.Total : 8530  
Experience.Flight Crew.Last 90 Days : 149  
Experience.Flight Crew.Type : 133  
ASRS Report Number.Accession Number : 1966378  
Human Factors : Workload  
Human Factors : Time Pressure

## Events

Anomaly.Aircraft Equipment Problem : Less Severe  
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy  
Anomaly.Ground Event / Encounter : Loss Of Aircraft Control  
Detector.Person : Flight Crew  
When Detected : In-flight  
Result.General : Flight Cancelled / Delayed  
Result.General : Maintenance Action  
Result.Flight Crew : Overcame Equipment Problem  
Result.Flight Crew : Regained Aircraft Control  
Result.Aircraft : Aircraft Damaged

## Assessments

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

## Narrative: 1

With Second in Command (SIC) flying the leg, the take-off from ZZZ1 and transit to ZZZ was normal and uneventful. During cruise with entry of landing data, crew discusses the landing. PIC suggested using Speed Brakes and braking to achieve the predicted landing performance of 3000 ft, in preparation for operational short field landings. A target stop point of taxiway x was suggested. It was emphasized by the PIC that this would not be a maximum effort landing. The intention was to achieve a 3000 ft landing, no more and no less. The approach was loaded and briefed. Descent and approach procedures were completed with RNAV XX vectors loaded as backup to the anticipated visual approach. ATC provided good vectors and altitude step down. With field reported in sight and cleared for a visual the SIC descended toward 1000 ft with approach armed. On base leg at about 4 miles, SIC slowed to less than 200 KIAS and began configuring. Landing checks were completed, and aircraft was on Vref (on top of donut) at approximately 800 ft. Airspeed, glide path and center line control were all good. Clear of obstacles, SIC announced and went below glide slope referencing PAPI and runway. SIC maintained speed and runway center line well. SIC maintained a slight crab to the right, countering the right crosswind. SIC went to IDLE at approximately 50 ft. (no system callout by this model of aircraft). As the SIC entered a flare, they de-crabbed the aircraft as expected. Touchdown was smooth, with good deceleration, just slightly right of center line (left main mount just left of center line) approximately 1000 ft. from the threshold. PIC announced and deployed the speed brake for the SIC. The aircraft initially tracked straight, just right of center line. SIC applied braking after approximately 3 seconds. The aircraft developed a strong drift to the right. PIC waited for correction, and then announced and took controls as the aircraft approached the side of the runway. SIC released and announced "you have controls". PIC applied initial and increasing control and brake input to arrest the drift. However, the aircraft response to PIC input was delayed, leading to more control and brake input. A swerve then developed to the left. PIC released some brake and attempted control with rudder/nose wheel steering. Pilot Induced Oscillation (PIO) developed with trajectory toward the left side of the runway. The PIC then applied maximum braking. The aircraft began to skid to the right. The aircraft came to a stop on the edge of the runway, past the intersection of y and the runway. PIC set the parking brake, and responded to a Tower query about condition of the aircraft and crew. PIC advised Tower of intentions, shut down both engines and performed an immediate inspection of the aircraft. The left main was blown, but still on the rim. The right main and nose were still inflated with no visible flat spots. PIC did an aircraft walk around looking for more damage, and found none. PIC called the Chief Pilot and gave a brief synopsis of what had happened and the condition of

the aircraft. With company concurrence and PIC observation, the aircraft was towed by Company B past the hold short line on Taxiway Y. The Safety Officer and a maintainer arrived and inspected the aircraft. Both Main Mounts were changed. The PIC and SIC taxied the aircraft to the FBO for further inspection. The crew was assessed by the Safety Officer and the Director of Training and released by the company for further flight. The aircraft was released safe for flight by company maintenance. The original crew flew the airplane back to ZZZ2 without further incident. All systems including brakes were found to be nominal on taxi, takeoff and landing. Landing rollout was nominal. Potential causal factors to this incident, as seen by the PIC: PIC recommended achieving landing performance predicted by the system and by pre-flight performance calculations. Those numbers are more for a short field landing, and may have prompted the SIC to use excessive brake and apply brake sooner than was necessary. The PIC and SIC had a good repour. The PIC had witnessed several very good landings from the SIC, and caught somewhat off guard by the deviation from centerline. The PIC waited too long to take control of the situation, leading to the need for more aggressive inputs. The Honda Jet is known to be susceptible to Pilot Induced Oscillations (PIO) during landing rollout. This was known to the PIC but the extent of which was not realized. PIC should have approached this landing by the SIC more conservatively due to the low hours that both pilots had in model. Were there other factors in this incident? Nothing significant. The crew was well rested and healthy. All events were well planned and briefed. PIC and SIC were strong on knowledge/procedures. The crew had good communication / CRM throughout their rotation together. Weather and runway condition was a minor factor, in that right crosswind may have contributed to the initial deviation from centerline. PIC takeaway: Approach the landing of the Honda Jet more conservatively. A 5000 ft. runway should be the shortest attempted without much more experience, or improvements made to the aircraft's systems reducing the PIO tendency. Brake application during landing rollout must be very careful in terms of how quickly and how much is applied. Directional control must be paramount over landing distance, and brakes released and centerline regained in the event of directional trouble. The PIC will certainly take this incident in account on future landings, and approach them with more caution.

## Synopsis

Honda Jet PIC reported a loss of directional control during landing rollout when attempting to correct a center line drift after taking controls from the SIC. Ultimately the aircraft stopped on runway with only a left blown tire.



## Time / Day

Date : 202301

Local Time Of Day : 0601-1200

## Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Altitude.MSL.Single Value : 25000

## Environment

Flight Conditions : VMC

Weather Elements / Visibility : Rain

Light : Daylight

## Aircraft

Reference : X

Aircraft Operator : Air Carrier

Make Model Name : B777-200

Crew Size.Number Of Crew : 3

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Takeoff / Launch

Flight Phase : Climb

## Component : 1

Aircraft Component : Air Conditioning and Pressurization Pack

Manufacturer : Left Pack

Aircraft Reference : X

Problem : Improperly Operated

## Component : 2

Aircraft Component : Air Conditioning and Pressurization Pack

Manufacturer : Right Pack

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

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Air Transport Pilot (ATP)

Experience.Flight Crew.Total : 7543

Experience.Flight Crew.Last 90 Days : 57

Experience.Flight Crew.Type : 0

ASRS Report Number.Accession Number : 1964588  
Human Factors : Communication Breakdown  
Human Factors : Human-Machine Interface  
Human Factors : Situational Awareness  
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 : First Officer  
Function.Flight Crew : Pilot Not Flying  
Qualification.Flight Crew : Air Transport Pilot (ATP)  
Qualification.Flight Crew : Multiengine  
Qualification.Flight Crew : Instrument  
Experience.Flight Crew.Total : 4132  
Experience.Flight Crew.Last 90 Days : 177  
Experience.Flight Crew.Type : 631  
ASRS Report Number.Accession Number : 1966202  
Human Factors : Situational Awareness  
Human Factors : Human-Machine Interface  
Human Factors : Distraction  
Human Factors : Communication Breakdown  
Human Factors : Confusion  
Communication Breakdown.Party1 : Flight Crew  
Communication Breakdown.Party2 : Flight Crew

## Events

Anomaly.Aircraft Equipment Problem : Less Severe  
Anomaly.Flight Deck / Cabin / Aircraft Event : Other / Unknown  
Anomaly.Deviation / Discrepancy - Procedural : MEL / CDL  
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy  
Detector.Automation : Aircraft Other Automation  
Detector.Person : Flight Crew  
Detector.Person : Observer  
When Detected : In-flight  
Result.Flight Crew : Overcame Equipment Problem  
Result.Aircraft : Equipment Problem Dissipated

## Assessments

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

## Narrative: 1

Pressurization, packs, non-normals, task saturation. I was jumpseating for personal travel. This event started with a late flight plan. The Captain reported a long call to Dispatch in order to reconcile the release with the deferred items and pilot actions, and came to the

aircraft with a list of threats to brief "" **foremost the weather and the deferred bleed** procedure. He made the decision that the departure time would be pushed until everything was properly briefed to mitigate the threats and everyone was on the same page. As I was in the observer's seat I was taking care of printouts, the Maintenance Release being relevant to this report. The right engine bleed was deferred and required pilot actions to configure prior to takeoff and after takeoff, as well as a packs off takeoff. There was discussion on the configuration, but all three of us read the pilot actions and came to agreement. During the pre-departure brief I caught two errors, including incorrect departure altitude set at 3,000 ft. instead of 23,000 ft., and preliminary takeoff data conditions. The Captain also noted the SID altitude on his takeoff brief. Taxi out went well with good CRM. Approaching the runway, the Captain called for the aircraft to be configured per the Maintenance Release. The FO (First Officer) started the configuration and asked if I concurred with what I saw in reference to the Maintenance Release pilot actions. I said that it appeared that the APU bleed valve was configured improperly, per what I was reading in the flight manual and Maintenance Release and that was corrected. The FO then pulled up the packs off non-normal checklist to configure for that. I noted the caution at the top noting that this was a highly unusual procedure and care should be taken. The FO completed page one, and then asked the Captain if he could override the checklist. I asked to see page two which had not been pulled up, but the checklist was overridden. Due to the low level windshear reported, the Captain called for a Vr max takeoff, and led a brief review of the callouts and conditions. On the takeoff roll we experienced a rapid performance increase, and the calls of 100, V1, Vr were made. At 147 kt., Vr max, the FO called rotate, and then appeared to have said something I couldn't hear. The Captain had started his rotation but looked over to query the FO. Due to a slow rotation and then an almost immediate 30-kt. performance increase from the gusty winds coming over the ridge, the aircraft came close to a flap overspeed reaching 194 kt. The Captain smartly and smoothly increased the pitch to arrest the speed increase, stopping at 20 degrees nose up. Departure was contacted and we began a turn to the east. On the ground there had been a decision to not start reconfiguring until after the flaps were up, which on this departure could not start until 3,000 ft. This altitude was reached very quickly due to the TOGA takeoff, subsequent delayed rotation and pitch attitude, with a VVI (Vertical Velocity Indicator) around 5,000 "" **7,000 ft. per minute as I recall. At 3,000** ft. the Captain started calling for flaps in sequence, and at 4,000 ft. the FO started reconfiguring the bleed valves per the Maintenance Release. I could feel the cabin pressure altitude rise and passing 6,000 ft., commented that the packs were still off. They were selected on at 7,000 ft. and I felt the pressure bump at 9,000 ft. Passing 25,000 ft., I initiated a conversation to talk about the positive crew communication and also asked the FO to pull up the packs off non-normal so that I could see page two. The FO pulled that up and on page two was a caution saying to select the packs on prior to 3,000 ft. to prevent a depressurized climb. Not stated was that delayed selection risked automatic mask deployment. The FO stated that he recalled turning them on at 4,000 ft., and noted that they were definitely on prior to 10,000 ft. When he closed out of the checklist he noted that it popped up in EICAS as an uncompleted non-normal, something that had not happened the first time as the checklist was overridden prior to completion. The crew was attempting to take their time and ensure that all procedures were practiced safely, but the omission of page two of the checklist likely set up the situation where packs were not selected on after wheels up, and at the latest promptly upon reaching acceleration altitude. This almost led to an undesired aircraft state and an additional startle and surprise event at the cabin pressurization alert altitude and subsequent mask deployment. This situation was compounded by the weather threat and the Vr max takeoff, combined with a non-standard verbalization after Vr.

Narrative: 2

Complex departure/jumpseater. Aircraft X was an unusual segment in many aspects for me at the very least because we departed using Runway XXR, which I had never done in my roughly seven years in base. To start the operation there was a gate change and a late flight plan, which of course is something I have seen many times. Workload management was an immediate concern for us. I remember during a debrief complimenting Person A on his demeanor when we first met. He was relaxed and in absolutely no rush, which set the tone for me. The threat level was high especially during taxi and climb-out due to a complex MEL, weather, unique departure, and terrain considerations. We specifically briefed the threats and emphasized Threat and Error Management with regard to accomplishing MEL tasks after our turn to the east so as to focus on the departure turn and agreed we would finish required procedures after turning eastbound on the departure. As a crew we trapped an error, switch position with regard to MEL, prior to takeoff and to our knowledge accomplished all required tasks during the takeoff and climb phases. Additionally I was reminded recently that we had a jumpseat rider Person B, a nice guy, and after chatting with Person A, we agreed he was a bit zealous as a jumpseater. The night before we flew he sent us each an email letting us know he would like to ride the jumpseat and use the bunk. He made himself known at the gate, followed me down to the airplane and sat in the observer seat chatting while I was trying to set up and catch up. I had to let him know this is what I was trying to focus on before the chat ceased. He was eager to help us which was great, so eager in fact, he was referencing the Maintenance Release/MEL. In addition, if I am not mistaken, he was referencing a 777 flight manual on his iPad "" **he informed us he was a 320 Captain "" as we taxied out. After the departure,** he commented about cabin pressure rising before the packs were turned back on normal post takeoff per procedure. Later in the climb, he asked me if I could pull up the supplementary checklist for the bleeds off takeoff which we had referenced. This led me to believe he thought we did something incorrectly. We were not aware of nor was there any indication we did anything incorrectly. At the time I thought this was peculiar but had no issue doing it. He seemed to be verifying we complied with the procedure. As the trip progressed, Person A and I recounted our experience with Person B on the jumpseat and thought at times he was a bit wound up and hence distracting. Again, a very nice guy but would be reluctant to want to have him ride on the jumpseat again.

## Synopsis

B777 Flight Crew reported confusion with the departure and after takeoff procedures due to a deferred engine bleed system. The cabin altitude reached a higher than desired level until the air conditioning packs were turned back on. The weather, nonstandard verbalization during takeoff, and the jumpseater may have also been additional factors.

## Time / Day

Date : 202301

Local Time Of Day : 1801-2400

## Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Altitude.AGL.Single Value : 0

## Environment

Flight Conditions : VMC

Light : Night

## Aircraft

Reference : X

Aircraft Operator : Air Carrier

Make Model Name : EMB ERJ 145 ER/LR

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Taxi

## 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

ASRS Report Number.Accession Number : 1963777

Human Factors : Communication Breakdown

Human Factors : Situational Awareness

Communication Breakdown.Party1 : Flight Crew

Communication Breakdown.Party2 : ATC

## Events

Anomaly.Ground Event / Encounter : Weather / Turbulence

Anomaly.Ground Event / Encounter : Object

Anomaly.Ground Event / Encounter : Loss Of Aircraft Control

Detector.Person : Ground Personnel

Detector.Person : Flight Crew

Were Passengers Involved In Event : N

When Detected : Taxi

Result.General : Maintenance Action

Result.General : Flight Cancelled / Delayed

Result.Flight Crew : Requested ATC Assistance / Clarification

Result.Flight Crew : Returned To Gate  
Result.Air Traffic Control : Provided Assistance

## Assessments

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

## Narrative: 1

On Date, on Aircraft X, ZZZ to ZZZ1, we boarded the plane and a Passenger broke an Overhead Bin with his bag that required maintenance and a delay. After the maintenance issue was resolved we received a reroute from ATC that had us landing overweight from the previous fuel load which required deplaning two passengers. After those situations were resolved we proceeded to push back from Gate XX and Ramp instructed us to taxi to XY which required us to taxi over slush that spanned the entire length of the ramp. Other aircraft were taxiing over the snow fine and there were no NOTAMs for the ramp conditions. Ramp was currently clearing other aircraft to taxi over the slush before we crossed and even after we got stuck they continued to clear aircraft over the slush. When taxiing in from the previous flight the slush was fine to taxi through however when departing for the flight to ZZZ1 the temperature dropped which I believe caused the snow to freeze again forming a ridge. We briefed and executed a two engine taxi out for the slippery conditions. It was dark and we could not find any area of the ramp that did not have this line of slush on it. I determined that a perpendicular course over the slush would have been the shortest and safest course to cross over. I chose a spot that had tire marks in it which made me believe that other aircraft succeeded in crossing there. I believe these tire marks had froze creating the ridge that caused the main gear to get stuck. When taxiing over the slush felt harder than previously and the main gear then got stuck on the ridge. I alerted the Ramp that and the Crew that we were stuck and would need a tug to get us free. Knowing this would be a long process and we had initially started both engines for a two engine taxi we decided to shut down engine 1 to conserve fuel. The super tug was unable to free us from the ice because it was slipping on the ice as well. I made sure to have Passengers seated and secured during this event. After three attempts from Ground Personnel to free the aircraft I decided along with Dispatch that we needed to return to the gate for a long tarmac delay. I had the Flight Attendant service the Passengers to keep them comfortable and I kept the Passengers informed of the situation every step of the way. When finally freed we were tugged to the gate and the Gate Agent told me that there was another flight leaving for ZZZ1 that the Passengers could attempt to get on. Dispatch messaged me previously that there may be a plane swap for us so I told the Gate Agent that if he thinks that is a good decision to send Passengers to the other flight then he should do it now since I didn't know what the future of our flight was. Maintenance still had our log book and gear pins installed in the aircraft and they had left the area so I couldn't determine how long we would be delayed further. After the event and deplaning we shutdown and secured the aircraft. There was a NOTAM issued for the ramp after this event but not prior. We as a Crew and the Ramp Personnel demonstrated excellent CRM to ensure the safety of the Crew, Ground Personnel, and the Passengers so that no further incident occurred. My suggestion is that the ramp should have been NOTAMed for ice conditions. I learned that I should not have accepted the taxi clearance and should have asked for an alternate route however seeing other aircraft taxi over it fine cause me to think that the slush was safe to cross. In the future I plan to be more diligent in this regard.

## Synopsis

EMB-145 Captain reported a gate return after being unable to taxi the aircraft over a ridge of frozen slush on the ramp. Use of a super tug to tow the aircraft over the frozen slush was ineffective.

## Time / Day

Date : 202212

Local Time Of Day : 1801-2400

## Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Altitude.MSL.Single Value : 12000

## Environment

Flight Conditions : VMC

Light : Night

## Aircraft

Reference : X

ATC / Advisory.TRACON : ZZZ

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 : Climb

Route In Use : Vectors

Airspace.Class E : ZZZ

## Component : 1

Aircraft Component : Electrical Distribution Relay

Aircraft Reference : X

Problem : Malfunctioning

## Component : 2

Aircraft Component : APU Electrical

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 : First Officer

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Air Transport Pilot (ATP)

Experience.Flight Crew.Total : 2236

Experience.Flight Crew.Last 90 Days : 113

Experience.Flight Crew.Type : 833



ASRS Report Number.Accession Number : 1960091  
Human Factors : Communication Breakdown  
Human Factors : Situational Awareness  
Human Factors : Troubleshooting  
Human Factors : Confusion  
Communication Breakdown.Party1 : Flight Crew  
Communication Breakdown.Party2 : Maintenance

## Events

Anomaly.Aircraft Equipment Problem : Critical  
Anomaly.Deviation / Discrepancy - Procedural : Maintenance  
Anomaly.Deviation / Discrepancy - Procedural : Weight And Balance  
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy  
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 : Returned To Departure Airport  
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

Prior to flight, we noticed a write up in the Log History portion of the flight package about the R GEN falling offline and a R BUS Tie Fail during climb out the previous day, which necessitated a return to the airport. Maintenance noted no anomalies with the IDG or any electrical system components, wrote that Tech Operations Checked Good on the ground, and released the aircraft for flight, which essentially dumped the problem in our laps. After takeoff in beautiful day VMC conditions, I was hand-flying during the climb with the Captain performing PM (Pilot Monitoring) duties (of note, we just happened to have a 756 qualified FO (First Officer) riding on our jump seat, who had his company iPad in his bag). Passing 12,000 ft., several things happened simultaneously: We heard multiple clicks (like electrical contactors opening/closing), we had a Master Caution Light with multiple EICAS messages, and our ADI, EICAS and HSI screens blanked off and on. Immediately afterwards, we noticed that the secondary EICAS and FO HSI displays remained blank. Not unexpectedly, all FD guidance and FMA modes disappeared. Later on, we were briefly able to regain use of the FD and AP on the Captain's side, but only for about 15 seconds before everything clicked off again. I continued flying the aircraft and handled ATC communications as we began to diagnose what the problem was. We noticed that we had a R AC BUS OFF EICAS message with subsequent secondary messages associated with losing components from the R AC BUS. The Captain and Jump Seater did a phenomenal job of running all checklists and keeping everyone in the loop. After running the AC BUS OFF - R, UTIL BUS OFF - L AND R, and BUS ISOLATED checklists, we were able to regain our normal systems, minus the R BUS TIE which remained isolated. After a good

discussion/mini-debrief about what we had just resolved and what the next course of action should be, we elected to continue our flight and continue a climb to our initial cruise altitude of FL 310. Maybe three minutes after we had experienced our first AC Bus failure, we experienced the exact same thing again. Priority handling was requested, checklists were once again accomplished, and a decision was made to return back to ZZZ. We started the APU, but it failed to pick up any load on the right side or otherwise have any effect on improving our situation. The return to ZZZ was uneventful, and the Overweight Landing checklist was completed for an uneventful overweight landing performed by the Captain. The Captain and Jump Seater did a phenomenal job, and made this event easier than it could otherwise have been. CRM was off the charts, and all inputs considered prior to any final decisions. Even though I was hand flying climbs, descents, turns, etc., I was able to remain in the loop throughout. ZZZ ATC was superb: Patient, flexible, accommodating. Checklist design It is VERY deceiving, after one attempt to reset, to stop after the note that says to Attempt only one reset. It would be helpful for folks in the heat of the moment to have Step XX as a reminder in there. I love and appreciate all the hard work our Maintainers do to keep the fleet flying. I despise the CULTURE that drives Maintenance to avoid taking delays. More complex problems, especially those requiring an air return, need to be explored a bit more than just seeing who can find the yellow sticker book the quickest so as to avoid taking a delay. As a matter of fact, once we returned to the gate, I watched Maintenance Operations check the problem inside of two minutes and they could not see any problem with the electrical system. Heck, they probably were within their rights to sign it off AGAIN and dump this problem into the next crew's lap. It was not until we told Maintenance we were not going to take the aircraft again that they expressed an interest at looking deeper into the problem. Even then, it was mentioned that they could just defer it and press on. I was speechless. Put the safety of our passengers and crew in jeopardy so that no one takes a delay. Is this really our culture??? I understand there are Maintenance items that are deferrable and that have little impact on operations - this was not one of those. Someone should have taken a harder look into this before we got to the airplane because this was not just a burned out taxi light.

## Synopsis

B757 First Officer reported master Caution light with multiple EICAS messages, and both ADI, EICAS and HSI screens blanked off and on. Immediately afterwards, noticed that the secondary EICAS and FO HSI displays remained blank. The Flight Crew started the APU, but no systems were recovered. The flight crew requested priority handling and performed an air turn back and precautionary landing at departure airport.

## Time / Day

Date : 202212  
Local Time Of Day : 1201-1800

## Place

Locale Reference.ATC Facility : ZZZ.Tower  
State Reference : US  
Altitude.MSL.Single Value : 3500

## Environment

Flight Conditions : VMC  
Weather Elements / Visibility.Visibility : 10  
Light : Daylight  
Ceiling.Single Value : 10000

## Aircraft

Reference : X  
ATC / Advisory.Center : ZZZ  
Aircraft Operator : Personal  
Make Model Name : PA-28R Cherokee Arrow All Series  
Crew Size.Number Of Crew : 2  
Operating Under FAR Part : Part 91  
Flight Plan : None  
Mission : Training  
Flight Phase : Initial Approach  
Route In Use : Direct  
Airspace.Class E : ZZZ

## Component

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

## Person

Location Of Person.Aircraft : X  
Location In Aircraft : Flight Deck  
Reporter Organization : Personal  
Function.Flight Crew : Pilot Flying  
Qualification.Flight Crew : Instrument  
Qualification.Flight Crew : Private  
Experience.Flight Crew.Total : 177  
Experience.Flight Crew.Last 90 Days : 15  
Experience.Flight Crew.Type : 2  
ASRS Report Number.Accession Number : 1958425  
Human Factors : Communication Breakdown  
Human Factors : Confusion  
Human Factors : Troubleshooting  
Human Factors : Human-Machine Interface

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  
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 : Took Evasive Action  
Result.Air Traffic Control : Provided Assistance

## Assessments

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

## Narrative: 1

I went on a complex airplane training lesson with my instructor. Earlier in the day, the manger texted us and told us that the plane was in Maintenance and we would be the first flight after Maintenance was complete. When we got to the flight line, I performed preflight and run up, systems appeared normal. The Garmin G5 configured as DG was INOP and known to Maintenance, not required for our day VFR flight. However the amp gauge was at zero, we saw a small tick up when we clicked the pitot heat on and took that as, the gauge is reading and detecting positive charge. I took off and flew to the practice area without incident, I performed slow flight, power off, power on stalls, and steep turns. I turned back towards the airport ~15-20 miles, and planned to perform 3 touch and goes. On the way back the Garmin G5 AI threw an exclamation mark warning but I were in the middle of cleaning up the airplane and disregarded it thinking it was a message alert from the 650 GPS to switch tanks. Several minutes after, the Garmin 650 GPS threw several failed systems warnings, the transponder failed, and the instructor side comms failed. The student side comms was working but intermittent. While I was flying towards the airport, my instructor attempted to power cycle the masters, avionics, & turn off the lights to reduce the load. It helped slightly and we were able to contact ZZZ Tower and tell them we were having electrical malfunction and heading towards the airport. We attempted to squat 7600 but the transponder died as we were setting it up. My instructor took the flight controls and I attempted to contact Tower. They cleared us XXL and we had several garbled transmissions to Tower afterwards. Eventually, the G5 AI powered down, we confirmed the alternator was not charging and the aircraft was running on battery only. We shortly after had a battery failure and total loss of electrical. At a 5 mile final, we attempted to lower the gear and realized that we would not get gear down indication. We attempted to contact the Tower for a low pass but was not able to confirm they received the message since the comms went out. We set up for a 1 mi final on XXL, IFR runway, received the light gun green indication, but saw a jet was setup for takeoff on XXL and sidestepped to XXR. My instructor performed a low pass, and entered the pattern for XXR. I found the emergency checklist and we verified that we performed the loss of power gear

down checklist, Gear position down, actuate the emergency gear handle. On the second pass to XXR, my instructor elected to land, no flaps. We received the light gun green and processed to land. There was fire trucks waiting for our arrival. We taxied with flashing green light gun and parked without further incident. What I could do better: Aviate, navigate, communicate. The startle of the failure sent us into troubleshoot mode right away. I started running through troubleshooting right away but didn't take a moment to assess the situation and work checklists. It took me, a long time to pull the checklist and start working through items. Poor checklist discipline was there but I eventually found what I needed. Poor CRM, there were several times we both went heads down, clear pilot flying, pilot troubleshooting would have been better. Better systems knowledge, I often approach these plane, and gauges with skepticism if they are really working or not. The zero amp reading could have been a real error we discounted or leaned into confirmation bias to continue the flight. There was also an indication of low power on the G5 Attitude indicator but I discounted it as I thought it was a message indication from the regular tank switch messages. What others could do better: Maintenance: no post maintenance flight was performed. After we landed we learned the nature of the repair was electrical but there must have been something missed. Tower: The runway and approach was not cleared for us on entry. We crossed the active IFR jet route to the smaller training runway. A jet was cleared for takeoff on the runway we were approaching even with the green light gun. On our second approach, they continued IFR arrivals while we were NORDDO in the pattern.

## Synopsis

Piper Arrow Pilot with Instructor reported an alternator failure during flight. After determining only battery power was available, the decision was made to return to the departure airport where light gun signals were required due to loss of comms.

## Time / Day

Date : 202209  
Local Time Of Day : 1801-2400

## Place

Locale Reference.Airport : ZZZ.Airport  
State Reference : US  
Relative Position.Angle.Radial : 180  
Relative Position.Distance.Nautical Miles : 2  
Altitude.MSL.Single Value : 12600

## Environment

Light : Daylight

## Aircraft

Reference : X  
ATC / Advisory.TRACON : ZZZ  
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  
Nav In Use : FMS Or FMC  
Nav In Use : GPS  
Nav In Use.Localizer/Glideslope/ILS : RNAV  
Flight Phase : Initial Approach  
Route In Use : Direct  
Airspace.Class C : ZZZ

## 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 : Instrument  
Qualification.Flight Crew : Multiengine  
Qualification.Flight Crew : Air Transport Pilot (ATP)  
Experience.Flight Crew.Last 90 Days : 180  
Experience.Flight Crew.Type : 7863  
ASRS Report Number.Accession Number : 1934551  
Human Factors : Communication Breakdown  
Human Factors : Situational Awareness  
Human Factors : Time Pressure  
Human Factors : Other / Unknown  
Human Factors : Human-Machine Interface  
Communication Breakdown.Party1 : Flight Crew  
Communication Breakdown.Party2 : Flight Crew

## Events

Anomaly.Deviation - Altitude : Excursion From Assigned Altitude  
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy  
Anomaly.Deviation / Discrepancy - Procedural : Clearance  
Anomaly.Inflight Event / Encounter : CFTT / CFIT  
Detector.Automation : Air Traffic Control  
Detector.Person : Flight Crew  
Detector.Person : Air Traffic Control  
Were Passengers Involved In Event : N  
When Detected : In-flight  
Result.Flight Crew : Became Reoriented

## Assessments

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

## Narrative: 1

Approach into ZZZ - Landing XX. After reviewing company documentation, we decided to brief and request the RNAV XX Approach even though it was day VMC. ATC offered the visual approach. We thought the best way to manage risk and plan the descent was to fly the RNAV approach in visual conditions. We were cleared direct ZZZZZ. Then cleared to cross ZZZZZ at 13000 ft. and cleared for the approach. As the Pilot Flying (PF), I set 5700 ft. in the ALT window and verified and called LNAV/VNAV PATH. When checking the FMC, I was sure that I was looking at 13000 ft. because that is what I expected to see. However, I realized later that I actually saw 11300 ft. for the segment between ZZZZZ and ZZZZZ1. ATC called when we went below 13000 ft. just prior to ZZZZZ with an Altitude Alert. We climbed back up to 13000 ft. and continued the approach. We were above the path at that point. We always had the terrain in sight and did not receive a GPWS caution. We continued the RNAV approach in visual conditions and landed without incident. First of all, this could have been prevented by more deliberate CRM. The First Officer (F/O) and I both thought we saw 13000 ft. in the FMC. 11300 ft. is similar. However, it should have been caught with CRM. In addition, it is rare to change or program an altitude on an RNAV (RNP) Approach that was loaded from the FMC. Besides the similarity of the numbers, it more common to get an RNAV approach clearance in which the first crossing altitude is already codified in the FMC. It is the norm. I should have caught this error. However, those two factors (different than the norm and similar numbers) lead to the expectation bias. Beginning descent below the ATC assigned altitude at the IAF on RNAV approach.

## Synopsis

B737-700 Captain reported receiving a 'TOO LOW' altitude alert from ATC. The Captain then realized the wrong altitude was set in the FMC. The Captain states CRM should have caught the error.

## Time / Day

Date : 202207

Local Time Of Day : 1201-1800

## Place

Locale Reference.ATC Facility : ZZZ.ARTCC

State Reference : US

Altitude.MSL.Single Value : 20000

## Environment

Flight Conditions : VMC

Weather Elements / Visibility.Visibility : 10

Light : Daylight

Ceiling.Single Value : 30000

RVR.Single Value : 9999

## Aircraft

Reference : X

ATC / Advisory.Center : ZZZ

Aircraft Operator : Fractional

Make Model Name : B737-300

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Ferry / Re-Positioning

Flight Phase : Climb

Route In Use : Vectors

Airspace.Class A : ZZZ

## Component

Aircraft Component : Pressurization Control System

Aircraft Reference : X

Problem : Malfunctioning

Problem : Improperly Operated

## Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Fractional

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 : 1927874

Human Factors : Confusion

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 : FAR  
Anomaly.Deviation / Discrepancy - Procedural : Clearance  
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy  
Detector.Automation : Aircraft Other Automation  
Detector.Person : Flight Crew  
Miss Distance.Horizontal : 0  
Miss Distance.Vertical : 5000  
Were Passengers Involved In Event : N  
When Detected : In-flight  
Result.General : Flight Cancelled / Delayed  
Result.General : Maintenance Action  
Result.Flight Crew : Took Evasive Action

## Assessments

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

## Narrative: 1

Due to the auto side of the pressurization being inoperative on Aircraft X, the pressurization was being controlled in MAN DC by myself for all flights, including on my legs. During the flight from ZZZ to ZZZ1 approximately 35 minutes into the flight, the Captain elected to climb at Max Rate starting at approximately 12,000 feet, in which the aircraft was climbing at a rate of approximately 3,000 feet a minute. However, the manual pressurization was only climbing at 1,000 feet minute, which in turn the cabin altitude started to rise from 8,000 feet. I suggested to the Captain two times to lower the vertical speed due to the cabin altitude climbing. As it approached 9,000 feet in cabin altitude, approximately at 18,000 feet, I was directive on notifying the Captain for the third time that the cabin altitude was leaving 9,000 feet and we needed to slow down our vertical speed before we get a Cabin Altitude Warning light. Approximately at 20,000 feet we received the Cabin Altitude Warning light. I notified the Captain at that time the cabin altitude was approaching 11,000 feet and climbing, and suggested we descend as soon as possible using the QRH. The attitude from the Captain towards the event was a carefree attitude. He notified Center, and descended at 2,000 feet a minute. I initiated the QRH, donned on my oxygen mask and started going through the QRH. The Captain elected to not put on his oxygen mask, and also elected to not have the Passenger Oxygen initiated with flight attendants on board. It took approximately 5 minutes to get at or below 10,000 feet. An attendance call was made, in which a Flight Attendant replied they were okay in the back. We continued to ZZZ1, however after landing, one Flight Attendant recalled having symptoms of hypoxia (light headedness, dizziness, fatigue, and dehydration). My recommendation to my company due to my experience with working on pressurization on aircraft in the military, was to make sure the Flight Attendants and rest of the aircrew were okay, the aircraft pressurization to be fixed, and lastly to not fly with the Captain. I do believe this situation could have been avoided and/or mitigated in a better manner. Due to the lack of care and attitude of the situation which resulted in a CRM breakdown, and the lack of care of the rest of the Aircrew's well being which put their lives at risk.

## Synopsis

First Officer reported a breakdown in Crew Resource Management led to a cabin altitude exceedance and an immediate descent to minimize the possible affects of hypoxia on the crew.

## Time / Day

Date : 202208

Local Time Of Day : 1801-2400

## Place

Locale Reference.Airport : DEN.Airport

State Reference : CO

Altitude.AGL.Single Value : 500

## Environment

Flight Conditions : VMC

Weather Elements / Visibility : Turbulence

## Aircraft

Reference : X

ATC / Advisory.Tower : DEN

Aircraft Operator : Air Carrier

Make Model Name : Commercial Fixed Wing

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Final Approach

Airspace.Class B : DEN

## 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

Experience.Flight Crew.Last 90 Days : 125

Experience.Flight Crew.Type : 929

ASRS Report Number.Accession Number : 1923198

Human Factors : Training / Qualification

## Events

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

Anomaly.Inflight Event / Encounter : Weather / Turbulence

Anomaly.Inflight Event / Encounter : Unstabilized Approach

Detector.Person : Flight Crew

When Detected : In-flight

Result.Flight Crew : Executed Go Around / Missed Approach

## Assessments

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

## Narrative: 1

The First Officer was the Pilot Flying who had not flown in over a month. There were tail winds on the approach. We were on a visual approach to Runway 35R. During the first go-around the aircraft was unstable to make a normal landing. We executed a normal go-around. We returned for a second approach we had the same outcome the First Officer was behind the aircraft with coaching. I took control of the aircraft when I realized he was not going to be configured in time to make a normal landing. In trying to get the aircraft stable for the approach the first officer missed the 500 ft. call. When I realized it I executed a go-around. We went around I made a normal approach and landing. During taxi in the First Officer set the flaps to 1 per flight manual guidance when outside temperature is greater than 30 degrees and completed all after landing flows.

## Synopsis

Air Carrier Captain reported FO, who had not flown in over a month, experienced tailwind that resulted in an unstable approach with two go-arounds and failed CRM procedures.

## Time / Day

Date : 202207

Local Time Of Day : 0001-0600

## Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Altitude.AGL.Single Value : 0

## Aircraft

Reference : X

ATC / Advisory.Ramp : ZZZ

Aircraft Operator : Air Carrier

Make Model Name : A319

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase.Other

## 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 : Instrument

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Air Transport Pilot (ATP)

Experience.Flight Crew.Total : 7347

Experience.Flight Crew.Last 90 Days : 48

Experience.Flight Crew.Type : 2901

ASRS Report Number.Accession Number : 1918449

Human Factors : Communication Breakdown

Human Factors : Situational Awareness

Human Factors : Workload

Human Factors : Confusion

Communication Breakdown.Party1 : Flight Crew

Communication Breakdown.Party2 : Ground Personnel

## Events

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

Anomaly.Ground Event / Encounter : Other / Unknown

Anomaly.Inflight Event / Encounter : Loss Of Aircraft Control

Detector.Person : Flight Crew

Were Passengers Involved In Event : N

When Detected.Other

Result.Flight Crew : Took Evasive Action

## Assessments

Contributing Factors / Situations : Human Factors

Primary Problem : Human Factors

### Narrative: 1

During pushback from gate X, ground told air carrier X that "normally our company stops the push much shorter." Air carrier X was parked behind us and off our right wing, a shorter push would have allowed them space to get by us. Ground then called and asked if we had communication access to our push crew, to which I answered yes. At this point the push crew had us stopped at the point they intended to end the push. Shortly after ground asked us to push deeper, and I relayed to the Captain who relayed to the push crew. In piecing this together after the fact (since I was on ramp and the captain on intercom with the push crew) we believe right before the request to continue the push deeper from captain to ground crew, the ground crew said "set brakes." The Captain did not give "brakes set pressure normal" verbal to the push crew rather asked them to continue the push deeper. They pushed us a few more feet and then ground called me and said to just stay where we were, which I passed along to the Captain and he passed along to the ground crew. At some point after, the captain said to start both engines - I started the first and before going in to the second start our attention was diverted to air carrier X squeezing through a tight spot off our right wing. The Captain released the crew to disconnect, we received a salute, and the 2nd engine was started. Towards the end of the start, the aircraft started rolling forward, perhaps a few feet at most. We noticed the movement and the Captain immediately brought us to a stop and set the parking brake. The Ground Crew was well clear of the aircraft during movement.

### Synopsis

A319 First Officer reported that SOP's were not followed during gate push-back. Communication with the ground push-back crew was not clear, distraction from another aircraft passing near and CRM procedures not followed resulted in brakes not set during engine start and the aircraft moving several feet.

## Time / Day

Date : 202205

Local Time Of Day : 0601-1200

## Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Altitude.AGL.Single Value : 0

## Environment

Flight Conditions : VMC

Light : Daylight

## Aircraft

Reference : X

ATC / Advisory.Tower : ZZZ

Aircraft Operator : Air Carrier

Make Model Name : A330

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

## Component

Aircraft Component : Nose Gear

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 : Air Transport Pilot (ATP)

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Multiengine

ASRS Report Number.Accession Number : 1909755

Human Factors : Confusion

Human Factors : Human-Machine Interface

Human Factors : Situational Awareness

Human Factors : Training / Qualification

Human Factors : Communication Breakdown

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 : Captain  
Qualification.Flight Crew : Multiengine  
Qualification.Flight Crew : Instrument  
Qualification.Flight Crew : Air Transport Pilot (ATP)  
ASRS Report Number.Accession Number : 1911140  
Human Factors : Troubleshooting  
Human Factors : Training / Qualification  
Human Factors : Human-Machine Interface  
Human Factors : Confusion  
Human Factors : Communication Breakdown  
Human Factors : Situational Awareness  
Communication Breakdown.Party1 : Flight Crew  
Communication Breakdown.Party2 : Flight Crew

## Events

Anomaly.Aircraft Equipment Problem : Less Severe  
Anomaly.Deviation / Discrepancy - Procedural : MEL / CDL  
Anomaly.Deviation / Discrepancy - Procedural : Maintenance  
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy  
Anomaly.Deviation / Discrepancy - Procedural : FAR  
Detector.Person : Flight Crew  
Were Passengers Involved In Event : N  
When Detected : Aircraft In Service At Gate  
Result.Flight Crew : Rejected Takeoff

## Assessments

Contributing Factors / Situations : Aircraft  
Contributing Factors / Situations : Human Factors  
Contributing Factors / Situations : Incorrect / Not Installed / Unavailable Part  
Contributing Factors / Situations : MEL  
Contributing Factors / Situations : Procedure  
Primary Problem : MEL

## Narrative: 1

This was my first Take-Off (TO) as Second in Command (SIC) Pilot Flying (PF) for OE (Operating Experience). I set TO power and then took my hands off the thrust levers but [the Check Airmen] motioned for me to keep my hands on the thrust levers saying keep your hands on the thrust levers. A severe vibration developed at 80 kts. where upon I looked over to [the Check Airmen], but got no response. [The Check Airmen] did not respond by taking control of the thrust levers or side stick and did not say "I have control" which I expected him to do. He did not enunciate a Go or No Go decision. The severe vibration presented uncertainty as to aircraft suitability for flight and having my hands still on the thrust levers I closed the thrust levers and the TO was rejected. It seems that [the Check Airmen] experienced a startle effect rendering him momentarily incapacitated leaving me in the absence to make a timely decision. [Company] SOP calls for the Pilot in Command (PIC) to keep his hands on the thrust levers once power is set for every take-off. His directive for me to keep the thrust levers was a violation of SOP. This caused confusion and a breakdown of crew coordination due to his CRM failure while in command



which introduced a potential hazard. The cause of the vibration was determined to be a nose wheel shimmy by the check airman. He falsely accused me of having full side stick elevator down deflection claiming he saw this. If this were true then why didn't he say something sooner? I am still awaiting the data to see the actual side stick movements. The fact is that I had only applied slight down stick as Airbus recommends for the A-330. To continue a take-off while experiencing a severe vibration in the high speed regime could have introduced other potential emergencies such as if a nose wheel tire blew and flew off the nose gear? Then we would have had a real priority situation. What if that vibration didn't resolve and continued into the high speed regime? The take-off was rejected in the low speed regime at a safe speed. [The Check Airmen's] insistence on unusual procedures apart and in contravention to [company] A-330 procedures became a concern to me and seems to have the potential to introduce hazards. In addition and most concerning is his lack of crew coordination and lack of effective crew resource management skills. Later after the brakes had cooled for an hour [the Check Airmen] made the take-off. Upon block in to ZZZ1 two mechanics came forward to the cockpit to ask about the vibration and asked whether there was a write up in the log book. [The Check Airmen] was not in the cockpit so I referred them to him. When [the Check Airmen] returned to the cockpit, I mentioned the mechanics concerns and asked whether we needed a log book write up for the vibration and the reject but he did not respond with an answer. No log book write up was made and I do not know what was looked at other than the standard preflight checks. I have brought some of these concerns up to [another Captain] throughout OE as they were occurring. I have similar complaints from [four other people] who share the same experiences, verbal abuse and intimidation, non-standard procedures against SOP and nonstandard phraseology from [the Check Airmen]. All four of us have had the same or similar bad experiences in CRM and non-standard procedures enforced. All feel frustration from intimidation and very poor to nonexistent CRM. I sincerely suggest that all first officers mentioned be interviewed and surveyed concerning his check airman qualities, his verbal intimidation and abuse, his lack of responding to critical queries and teaching nonstandard procedures.

## Narrative: 2

[Narrative contained no additional information.]

## Synopsis

A330 Captain reported concerns over loss of crew coordination and situational awareness during a rejected take off event.

## Time / Day

Date : 202206

Local Time Of Day : 1201-1800

## Place

Altitude.MSL.Single Value : 31000

## Environment

Flight Conditions : VMC

Light : Daylight

## Aircraft

Reference : X

Aircraft Operator : Air Carrier

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

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Cruise

Route In Use : Vectors

## Component

Aircraft Component : Central Computer

Manufacturer : MAU2B

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 : Instrument

Qualification.Flight Crew : Multiengine

ASRS Report Number.Accession Number : 1909015

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 : Workload

Human Factors : Confusion

Communication Breakdown.Party1 : Flight Crew

Communication Breakdown.Party2 : ATC

## Events

Anomaly.Aircraft Equipment Problem : Critical  
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy  
Anomaly.Deviation / Discrepancy - Procedural : FAR  
Anomaly.Deviation / Discrepancy - Procedural : Clearance  
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.Air Traffic Control : Provided Assistance

## Assessments

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

## Narrative: 1

On flight from ZZZ1 to ZZZ, Aircraft X experienced an AVNX MAU (Master Avionics Unit) 2B failure approximately 250 miles from ZZZ. The aircraft was at FL310. Upon experiencing the failure, the Captain was the Pilot Flying and had me identify and cancel. I pulled out the QRH and went step by step through the procedure with the Captain. Upon completion of the checklist we determined that a [request for priority handling] was appropriate and to request Crash Fire Rescue. We notified dispatch, the Flight Attendants and the passengers of the situation. The failure of the MAU caused us to lose our inboard brakes, ground and terrain proximity warning and a number of other messages. Based on the loss of our inboard brakes and with an increased runway requirement we would need CFR on site. We also selected Runway XXR as winds were favorable and it was 10,006 ft. runway. This was adequate based on the QRH number assessment for landing. We ran the Landing Gear/ Brake Malfunction descent and landing checklist in accordance with the QRH. Upon landing we experienced decreased braking capability but sufficient enough to safely stop. While stopping I also had up the system page to additionally monitor brake temps. We safely landed without any deviations or damage. After clearing the runway, we were asked by ATC to quickly taxi across XXL. I told them we were unable and reminded the controller that we had to brakes that failed. I personally was not happy that the Controller lost situational awareness and asked us to do something that was potentially unsafe. He acknowledged and we waited for to clear XXL. Upon taxiing into the gate the aircraft got the Brake Overheat message. We once again identified and canceled and I read the QRH and we executed it. The Captain stopped the aircraft and we determined the best course of action was to have the aircraft tugged to the gate. We had Crash Fire Rescue Equipment inspect us multiple times upon landing to ensure there was no threat to our passengers or crews from the hot brakes. We subsequently were tugged into the gate and waited for maintenance to respond. Upon arrival to the gate, Maintenance wanted to have the aircraft shutdown and brought back on line to see if the fault would clear. At this point, I was frustrated and felt like a better assessment of the reliability of our systems needed to occur after the failure in flight. We already had MEL XX-XX-XX-X for the FADEC (Full Authority Digital Electronic Control) that required an alternate ignition operations procedure on it. In response to this, I could tell that stress had set in and I made the

decision not to continue flying for the rest of the day. After flying in the military for XX years, I call it the rule of three. When three things happen bad in the aircraft.... It's time for me to do a personal assessment of where I am at IAW (in accordance with) the personal assessment checklist. I also started to talk myself into continuing for the day which is a dangerous attitude to have. Upon recognizing that the event caused more stress than everyday operation, I informed the Duty Pilot and scheduling that I was not going to continue. I also talked to the Chief Pilot. I am glad I did this. Looking back at yesterdays events, we had a lot of additional complexities that we do not encounter on a normal day. These system failures were not our fault, but the QRH was well written enough to get us safely on the ground. We had good CRM throughout the [incidents]. I think our crew did a phenomenal job identifying and mitigating threats both in and after the flight, and that is why I am sharing this. I am also happy that there were both union and company personnel who supported my decision based on my self assessment. This is a positive cultural aspect that I would like to highlight. [I would suggest to] continue to train emergency and QRH usage. Continue to ask crews to do self assessments... we are not all built the same way. Learn from these failures and validate QRH procedures.

## Synopsis

EMB ERJ 170/175 First Officer reported the failure of MAU 2B in cruise. The Flight Crew made a precautionary landing at destination airport and the aircraft was towed to the gate.

## Time / Day

Date : 202206

Local Time Of Day : 1801-2400

## Place

Locale Reference.ATC Facility : ZZZZ.ARTCC

State Reference : FO

Altitude.MSL.Single Value : 33000

## Environment

Flight Conditions : VMC

Light : Night

## Aircraft

Reference : X

ATC / Advisory.Center : ZZZZ

Aircraft Operator : Air Carrier

Make Model Name : B747-400

Crew Size.Number Of Crew : 3

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Cargo / Freight / Delivery

Flight Phase : Cruise

Route In Use : Vectors

Maintenance Status.Maintenance Deferred : Y

Maintenance Status.Records Complete : Y

Maintenance Status.Released For Service : Y

Maintenance Status.Required / Correct Doc On Board : Y

Maintenance Status.Maintenance Type : Unscheduled Maintenance

Maintenance Status.Maintenance Items Involved : Testing

Maintenance Status.Maintenance Items Involved : Inspection

Maintenance Status.Maintenance Items Involved : Repair

## Component

Aircraft Component : Oil Distribution

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 : 1905846

Human Factors : Troubleshooting  
Human Factors : Time Pressure

## Events

Anomaly.Aircraft Equipment Problem : Critical  
Anomaly.Deviation / Discrepancy - Procedural : Clearance  
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy  
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 : Took Evasive Action  
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 : MEL  
Contributing Factors / Situations : Procedure  
Primary Problem : Aircraft

## Narrative: 1

Aircraft X came from ZZZZ1-ZZZZ. It had been in ZZZZ1 for a heavy check. I was Captain on the crew for Aircraft X, scheduled to operate ZZZZ-ZZZ. The plane was late arriving into ZZZZ and the inbound Captain briefed me on their issues. When they had started the engines, #2 oil quantity dropped from 19 before start to 10. They blocked back in and took a delay while Maintenance addressed the issue. Second time they started it dropped from 19 to 14 after start, but the other engines were all at 15-16 after start, so they continued. After takeoff it was at 10 and they got the status message for low engine oil quantity. There is no checklist for that. They called Dispatch and Maintenance and decision was to continue to ZZZZ. Oil quantity was at 7 by the time they got to ZZZZ. My crew and I were waiting when they arrived. Maintenance worked on the engine while we waited, including two engine runs. They capped a line and put it on a non MEL. With the logbook signed off and, theoretically, the issue fixed, we pushed back. The engine #2 oil quantity was at 19 when we started, 14 after start, and 10 after TO (Takeoff). At top of climb it was 9. After top of climb I sent Dispatch a message with all the info and received a "copy" reply. I discussed the situation with my FO (First Officer) (third pilot was already in the bunk), we reviewed the QRH for high oil temp and low oil quantity, reviewed the FOM guidance on an inflight engine failure or precautionary shutdown, and continued on. Over ZZZZ2 we receive a message from Dispatch, "Request return to ZZZZ for Maintenance, stby for reanalysis." I replied, "Confirm you want us to return to ZZZZ." Get the reply, "affirmative". So called ZZZZ3 on the VHF and requested change of destination from ZZZ to ZZZZ. Got a "standby". After a few minutes a different controller on the same frequency called and asked us to verify the change in destination and return to ZZZZ. Confirmed that request with them, then got another "standby". The next call was asking why the request to return. Told them company request for maintenance. They asked if we wanted to declare an emergency. I said no. They asked if we needed assistance. I said no. Then they issued a heading to initiate our return to ZZZZ. At this point the oil quantity was down to

7. We got an ACARS from Dispatch, "Maintenance Control requests you reduce power on engine #2 to idle." So we requested lower from ZZZZ2, got cleared from FL330 to FL240, which was well below our engine out drift down altitude, selected the engine out VNAV prompt, turned off the auto throttle and pulled #2 back to idle. We received a reroute from ZZZZ2 Control, plugged it into the FMC and updated Dispatch. We were estimating landing with 63,500 kg of fuel, which would have put us 19,600 kg over max landing weight (and that's if we flew the full arrival, which we never do in ZZZZ). We were burning approximately 15,000 kg/hr so were looking at holding for around 1:20 or dumping. At this point we were approaching the FIR with ZZZZ, so decided to wait until their airspace to request the hold or dump. The oil quantity had stabilized at 7 after pulling the engine back to idle, so we weren't immediately concerned with it going to zero and potentially causing severe damage and possibly seizing. Had another back and forth with ZZZZ about the reason for the divert, was it an emergency, did we need assistance, etc. We told them it wasn't an emergency but needed to either dump fuel or hold for 1:20. They asked how long we needed for dumping. We told them, approximately 25 minutes. They said, "fuel dumping approved, advise when complete." Started dumping at FL240 over the [ocean] and finished a couple minutes prior to the way point ZZZZ1 in the descent to FL180. Once we had the fuel dump going, had the FMC set for approach and arrival, and all the big stuff covered I woke up our third pilot, updated him on the situation and asked him to be a third set of eyes and make sure we didn't mess anything up. Got performance for a max weight landing, briefed everything, ran the descent checklist and from then it was just like a 3 engine approach in the sim. I was Pilot Monitoring on the leg and continued in that role, managing the situation while the FO (First Officer) flew the whole time. He did a great job staying focused on that. Approach and landing was uneventful. Landed at approximately 301,000 KGS (max is 302,092). Both the ZZZZ2 and ZZZZ ATC Controllers were excellent, the crew I was with did a great job, and our Dispatcher was fantastic. Low oil quantity indication on engine #2. History of that issue on previous flight with Maintenance having worked to solve the problem in both ZZZZ1 and ZZZZ. Decision by Maintenance Control and dispatch to do an air turn back and return to ZZZZ rather than continue to ZZZ. Crew was in agreement with this decision as it seemed a safe and prudent choice. Jettisoning fuel was a crew decision. We were able to complete the jettison during the return to ZZZZ without having to hold or delay the arrival. Jettisoning allowed us to make the landing below the max structural landing weight. I will be appreciative of any feedback regarding what I as the Captain and we as a crew could have done better. I appreciate that the issue was previously addressed by Maintenance in both ZZZZ1 and ZZZZ. When we left ZZZZ the issue had been addressed to the best of the Station Mechanics' ability and I am sure they, like we, thought it was fixed. That turned out not to be the case, but having watched the effort taken by Maintenance in ZZZZ, I am confident they did due diligence. I appreciate the briefing by the inbound crew. I appreciate the conservative decision by Dispatch and Maintenance Control to do an air turn back. I appreciate the coordination by both the ZZZZ2 and ZZZZ Air Traffic Controllers. I appreciate the excellent CRM and flying skills my First Officer who did an outstanding job as Pilot Flying throughout the incident, as well as the support from our third pilot in the observer's seat. Lastly, I would like to thank the Company training department. This event, while non-routine, was handled without stress or difficulty because of our engine inoperative training in the simulator and practicing diversions during RLOFT scenarios in the simulator as well. I am sure there are things I could have done better, but overall am satisfied with the decisions that were made and outcome of events.

## Synopsis

B747-400 Captain reported oil quantity was low and decreasing on #2 engine. The Flight Crew was advised to return to departure airport for additional maintenance. The Flight Crew conducted an air turn back and dumped fuel prior to landing.

## Time / Day

Date : 202205

Local Time Of Day : 1201-1800

## Place

Locale Reference.ATC Facility : ZZZ.TRACON

State Reference : US

## Environment

Flight Conditions : Mixed

Weather Elements / Visibility : Icing

Weather Elements / Visibility : Windshear

Light : Daylight

## Aircraft

Reference : X

ATC / Advisory. TRACON : ZZZ

Aircraft Operator : Air Carrier

Make Model Name : EMB ERJ 145 ER/LR

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Climb

Route In Use : Vectors

Airspace.Class E : ZZZ

## Component

Aircraft Component : Engine Air Pneumatic Ducting

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 : Air Transport Pilot (ATP)

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Multiengine

ASRS Report Number.Accession Number : 1905840

Human Factors : Confusion

Human Factors : Situational Awareness

Human Factors : Time Pressure

Human Factors : Troubleshooting

Human Factors : Workload

Human Factors : Communication Breakdown



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

## Events

Anomaly.Aircraft Equipment Problem : Critical  
Anomaly.Deviation / Discrepancy - Procedural : MEL / CDL  
Anomaly.Deviation / Discrepancy - Procedural : Maintenance  
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy  
Anomaly.Deviation / Discrepancy - Procedural : FAR  
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 : Took Evasive Action  
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 : Aircraft

## Narrative: 1

Eng 2 Bleed leak on initial climb out of ZZZ. Complications was a deferred PACK 1 and Icing conditions. Indication occurred around 16,000 feet and I made the decision that a likely return to ZZZ would be executed along with a [request for priority handling] up through 18,000 feet. Headed towards ZZZ1 where layering existed so that the decent could be done so as to mitigate ice accumulation for approach. Cabin reached 10,200 feet only momentarily as decent was ongoing. Event occurred as per training with briefings and checklists after the QRH (Quick Reference Handbook) was completed. The FO (Fist Officer) and FA (Flight Attendant) had great CRM during the event. ATC coordination and timing for the maneuvers was ideal. Previous to this flight the lock out tag out was installed. I wrote up the lock out tag out installed for no apparent reason and then made another write up for lock out tag out being installed. Hopefully this was not for an actual item which was failed to have been written up by maintenance or previous crew- it was signed off and removed. I think the company needs to literally (after the Training Bulletin released in Comply today) address the QRH once and for all explicitly with the bleed leak, there seems to still be confusion out there after the "Altitude, MEA OR 10,000 FT whichever is higher" then, some people will chose to end and some people will chose to continue the QRH with 'Associated Thrust Lever...etc". This cannot wait.

## Synopsis

EMB-145 Captain reported an engine #2 bleed air leak on climb out. The flight was operating in conditions of known icing with the #1 pack deferred when cabin pressure became uncontrollable. An air turn back and precautionary landing were made at departure airport.

## Time / Day

Date : 202205

Local Time Of Day : 1201-1800

## Place

Locale Reference.ATC Facility : ZZZ.Tower

State Reference : US

Altitude.MSL.Single Value : 1500

## Environment

Flight Conditions : IMC

Light : Night

## Aircraft

Reference : X

ATC / Advisory.Tower : ZZZ

Aircraft Operator : Air Carrier

Make Model Name : Regional Jet 200 ER/LR (CRJ200)

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Nav In Use : GPS

Nav In Use : FMS Or FMC

Nav In Use.Localizer/Glideslope/ILS : LOC

Flight Phase : Initial Approach

Flight Phase : Final Approach

Airspace.Class C : ZZZ

## 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 Not Flying

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Instrument

ASRS Report Number.Accession Number : 1903143

Human Factors : Communication Breakdown

Human Factors : Other / Unknown

Human Factors : Physiological - Other

Human Factors : Situational Awareness

Human Factors : Time Pressure

Human Factors : Workload

Human Factors : Distraction

Communication Breakdown.Party1 : Flight Crew

Communication Breakdown.Party2 : Flight Crew

## Person : 2

Location Of Person.Aircraft : X  
Location In Aircraft : Flight Deck  
Reporter Organization : Air Carrier  
Function.Flight Crew : Pilot Flying  
Function.Flight Crew : Captain  
Qualification.Flight Crew : Multiengine  
Qualification.Flight Crew : Instrument  
Qualification.Flight Crew : Air Transport Pilot (ATP)  
ASRS Report Number.Accession Number : 1903146  
Human Factors : Workload  
Human Factors : Time Pressure  
Human Factors : Physiological - Other  
Human Factors : Distraction  
Human Factors : Communication Breakdown  
Human Factors : Situational Awareness  
Communication Breakdown.Party1 : Flight Crew  
Communication Breakdown.Party2 : Flight Crew

## Events

Anomaly.Deviation - Speed : All Types  
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy  
Anomaly.Inflight Event / Encounter : Weather / Turbulence  
Anomaly.Inflight Event / Encounter : Unstabilized Approach  
Detector.Automation : Aircraft Other Automation  
Detector.Person : Flight Crew  
Were Passengers Involved In Event : N  
When Detected : In-flight  
Result.Flight Crew : FLC complied w / Automation / Advisory  
Result.Flight Crew : Became Reoriented

## Assessments

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

## Narrative: 1

While enroute to ZZZ, we received weather at ZZZ of few clouds 1,000 ft. and overcast clouds 1,500 ft. We expected a low ceiling, but we're still expecting VFR conditions. We set up for and we're cleared for the localizer Runway XX approach. The glide slope was OTS so the localizer was the next best. Passing through 1,000 ft. we were stable. A few hundred feet above minimums we still didn't have the runway in sight. As we were searching for the runway, speed decayed to approximately Vref -5. The PM (Pilot Monitoring) called "Speed" and PF (Pilot Flying) began correcting, however the stick shaker momentarily activated and the autopilot disconnected. The PF assumed manual control and corrected the deviation. We got the runway was in sight 100 ft. above minimums and the approach continued to landing. Both the PF and PM were expecting significantly better weather than what was forecasted and were anticipating a successful approach. As the approach progressed with no runway in sight, the PF transitioned focus outside to help in the search. While doing so, speed decayed. When the speed callout was made, it was too late to prevent the stick shaker. Expectation bias and distraction both played a role. We also had tried to get in to ZZZ earlier that afternoon and had gone missed twice before diverting to

ZZZ1. I think there was pressure felt to "make it work." Bottom line is a decision to execute a missed approach should have been made when speed was noticed to be below Vref. The approach was unstable at that point. We were outside the stabilized approach criteria and fell in to the trap of "making it work".

## Narrative: 2

Coming in from ZZZ1 to ZZZ, we were on LOC Runway XX approach. At 1,000 ft. we were stabilized. Weather was reporting to be OVC 1,500 ft. but as we descended down to around 300 ft. above the minimum we still didn't have the runway insight and I was looking out for the runway. I got distracted looking out and let the speed get low, as the FO (First Officer) called out "watch your speed" I realized we were slow. Before I corrected for it the stick shaker went on and autopilot was disconnected. Instead of going miss which we should've done I continued hand fly the aircraft and landed. The shake went on for only a brief sec, the FO (Pilot Monitoring) mentioned that the lowest airspeed he saw was about 5 it's below Vref, and I (Pilot Flying) saw airspeed was around 6 knots below Vref. The speed was corrected immediately, and we had the runway insight shortly after. We were both a little surprised the shaker was activated, nevertheless the proper action was to execute a miss approach since we were unstable below 1000' AFE. Earlier in the day we tried to get into ZZZ twice and went miss both times. On the third time going in I kind of felt the pressure to get in. Weather was worse than what's reporting so I got distracted looking out for the runway. Always be prepared to go miss. Do not get distracted and focus on flying the aircraft at all times.

## Synopsis

CRJ-200 Flight Crew reported letting the aircraft's speed get to Vref-5 on final approach producing a momentary stick shaker. The unstable approach was caused by inattention to detail during the approach, possible fatigue, and a drive to complete the mission after 2 failed attempts that day and poor CRM.

## Time / Day

Date : 202205

Local Time Of Day : 1201-1800

## Place

Locale Reference.Airport : ZZZZ.Airport

State Reference : FO

Altitude.AGL.Single Value : 0

## Environment

Flight Conditions : VMC

## Aircraft

Reference : X

ATC / Advisory.Tower : ZZZZ

Aircraft Operator : Air Carrier

Make Model Name : B737 Next Generation Undifferentiated

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Takeoff / Launch

## Person : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Function.Flight Crew : Pilot Not Flying

Function.Flight Crew : Captain

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Multiengine

Experience.Flight Crew.Last 90 Days : 81

Experience.Flight Crew.Type : 32

ASRS Report Number.Accession Number : 1902202

Human Factors : Situational Awareness

Human Factors : Time Pressure

Human Factors : Workload

Human Factors : Distraction

## Person : 2

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

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)

Experience.Flight Crew.Last 90 Days : 107

Experience.Flight Crew.Type : 238

ASRS Report Number.Accession Number : 1902204

Human Factors : Workload

Human Factors : Time Pressure

Human Factors : Distraction

Human Factors : Situational Awareness

## Events

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

Detector.Automation : Aircraft Other Automation

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.Air Traffic Control : Provided Assistance

## Assessments

Contributing Factors / Situations : Human Factors

Contributing Factors / Situations : Manuals

Contributing Factors / Situations : Software and Automation

Contributing Factors / Situations : Procedure

Primary Problem : Human Factors

## Narrative: 1

During departure roll from ZZZZ on Runway XXR at approximately 130 kts. the Takeoff Configuration Warning Horn activated simultaneously with the Red Takeoff Configuration Warning Annunciator Light necessitating a High Speed Rejected Takeoff. The aircraft was stopped on centerline on the runway and per Company SOP the Rejected Takeoff Checklist was called for and completed. After coordinating with the FAs (Flight Attendants) it was determined there was no need for an evacuation and the aircraft remained on the runway just short of Taxiway Bravo with engines running holding position with no brakes applied. Due to the high energy state at the initiation of the RTO, Crash/Fire/Rescue was requested to verify the condition of the exterior of the aircraft specifically the main landing gear tires and brakes. Meanwhile the Brake Cooling Chart was referenced and it was determined the aircraft should not be moved for approximately 90 minutes. It was requested CFR use their IR Temperature device to shoot the tires/wheels and after verifying there was no damage to the aircraft and the brake temperatures were at an acceptable level we exited the runway at Taxiway Bravo (between Runways XXL/XXR) and sat there to wait the required time for the brakes to cool. The after landing flow was completed shortly after we exited the runway. The CFR truck remained in fairly close proximity (across Runway XXL) but there was also a ground operations truck nearby to assist as required. We were originally using Tower Frequency for communication with CFR but was later told to switch to XXX.X and they then had us switch to a discrete frequency. Language barrier issues were a factor throughout the entire event but with patience on both sides safety was never compromised. We sat between the runways for approximately another 1+15 minutes waiting on the brake cooling and coordinated with Company ZZZZ Operations on how to accommodate the passengers. It was determined the best course of action was to leave the passengers on the airplane and be towed to Hardstand XX where they could then be deplaned by air stairs and bussed to the terminal. Trying to be helpful several Maintenance personnel showed up at the airplane (they plugged into the ships intercom system) wanting to put fans by the main landing gear trucks to assist in cooling but for safety reasons (possible fuse plug blowing) we rejected that request and wanted

everyone to remain clear of the main landing gear. While we were waiting on the brake cooling we shut both engines down and coordinated with Dispatch, Operations, the FAs, and kept the passengers informed as to what was happening. At approximately 90 minutes after the event we had CFR shoot the wheels and brakes again with their IR Temperature device to ensure the temperatures were acceptable before we moved the airplane. Once satisfied with the brake temperatures, we were towed across the runway to Hardstand XX and the passengers were deplaned. The Chief Pilot was notified, an ELB write-up was completed and Company ZZZZ Maintenance met us at the aircraft to debrief the event. Prior to exiting the aircraft we debriefed with the entire crew on what happened; what we could have done better and what we would do better next time. After being escorted back through ZZZZ Immigration we were then escorted to the ZZZZ Authorities where they made copies of our Licenses and FAA Medicals and had us fill out a form describing the event. There were no injuries to either passengers or crew and the aircraft was not damaged however brake and tire inspections will be required. Throughout this entire event the CRM was outstanding in my opinion. We talked about what we were thinking throughout each phase of the event, bounced ideas off of each other and solicited input from each other as each new problem presented its self and had to be solved. Name is an excellent FO (First Officer) and the training both of us received at the Training Center helped prepare us for this event.

## Narrative: 2

Taking off Runway XXR in ZZZZ. I was Pilot Flying, Captain was Pilot Monitoring. We ran before takeoff checklist in its entirety and we were directed to lineup and wait XXR. Lining up on the runway, we were cleared for takeoff and the Captain handed the controls over to me. All SOPs were followed and I advanced the thrust levers for a normal takeoff. Thrust was set, 100 kts., then at approximately 130 kts. (according to the Captain, all I know is V1 had not been called yet), the takeoff configuration warning horn started going off with associated light lighting up. The Captain said reject I have the aircraft and again, all SOPs were followed as the aircraft came to a stop and the rejected takeoff QRC was ran. Because of the high speed, we did request emergency vehicles to come out and inspect our brakes and tires. After referring to the brake cooling chart, checking with FAs (flight Attendants), and confirming with emergency vehicles, we made the decision to taxi off the runway and hold while we waited out the remainder of our brake cooling time. After 90 minutes had elapsed, we once again had emergency personnel check the brake temps with infrared temperature gun and visually inspect to make sure we had not blown any fuse plugs. When all was confirmed good, we coordinated a tug back to the handstand for passenger deplaning.

## Synopsis

B737 NG Flight Crew reported a high speed rejected takeoff due to a takeoff configuration warning.

## Time / Day

Date : 202205

Local Time Of Day : 1801-2400

## Place

Locale Reference.Airport : SBD.Airport

State Reference : CA

Altitude.MSL.Single Value : 3300

## Aircraft

Reference : X

ATC / Advisory.TRACON : SCT

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

Flight Phase : Initial Approach

Airspace.Class D : SBD

## Person : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Captain

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Air Transport Pilot (ATP)

ASRS Report Number.Accession Number : 1898853

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 : Air Transport Pilot (ATP)

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Instrument

ASRS Report Number.Accession Number : 1898854

Human Factors : Situational Awareness

Human Factors : Communication Breakdown

Human Factors : Distraction



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

## Events

Anomaly.Deviation - Altitude : Excursion From Assigned Altitude  
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy  
Anomaly.Deviation / Discrepancy - Procedural : Clearance  
Anomaly.Inflight Event / Encounter : CFTT / CFIT  
Detector.Automation : Air Traffic Control  
Detector.Person : Air Traffic Control  
When Detected : In-flight  
Result.Flight Crew : FLC complied w / Automation / Advisory  
Result.Air Traffic Control : Issued Advisory / Alert

## Assessments

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

## Narrative: 1

Flying as Aircraft X we were on the ZIGGY 7 arrival into SBD, SCT TRACON asked us with the winds they were landing SBD Runway 24 the winds were 280/11 we informed them that we would need Runway 6. SCT said we were number 2 due to an aircraft that was conducting the ILS 6 circle to land Runway 24 that we need to slow up and took us off the arrival and started vectoring us and assigning altitudes and started slowing us. SCT vectored us to a left downwind and descend to 4000 ft. SCT said turn left heading 140 descend to 3000 ft. PM (Pilot Monitoring) read back the instruction to SCT and pointed to 3000 ft. that I placed in altitude on the MCP. That heading would have put us inside SUDOC and I asked PM to extend me off of PETIS while descending SCT gave us a heading and cleared us for the approach. I selected approach and monitored our descent and our heading to join the localizer. SCT came back to us with an altitude alert to climb to 3400 ft. I turned off the autopilot and climbed back 3400 ft. SCT came back to us and said minimum vectoring in that area was 3400 ft. for terrain, we descended below 3400 ft. but I believe we were no lower than 3300 ft. The Controller said he gave us 3600 ft. but we read back 3000 ft. with no correction by SCT. Once we climbed to 3400, SCT recleared us for the approach and to maintain 3400 ft. till established on the glideslope. The flight continued with us flying the ILS 6 to a full stop landing with no further issues. The cause started back on the arrival when we were taken off ZIGGY 7 because you had a plan that you briefed now completely changed due to being vectored for the arrival and approach and situational awareness is not what you think you were going to get from being vectored. On the Ziggy 7 arrival I was expecting to fly south of the airport after overflying PETIS and then direct PDZ and vectors after PDZ to the ILS 6. On the segment from PETIS to PDZ I was expecting an altitude greater than 4700 due to minimum altitude for that segment. When SCT took us north of the airport for the left downwind for Runway 6 and descended us to 4000 ft. I didn't think to question the Controller about the altitude descent to 3000 ft. thinking it was coming in from a different direction and that 3000 ft. was the correct altitude to descend to. Also thinking I heard 3000 ft. and the PM read back of the Instruction to SCT without being corrected and PM pointing to the altitude I believed we were all on the same page. Next time I will be more alert of my situational awareness when things that you plan go totally different than planned and be more aware of altitude and heading being assigned by the Controller so that this problem would never happen again.

## Narrative: 2

The aircraft was turning base to final Runway 6 in SBD. SOCAL gave us a descend to 3600. The aircraft descended through 3600. As Pilot Monitoring I was looking outside for the Runway as it was VFR conditions. Then SOCAL told us to begin a climb to 3400 as there was a low altitude alert and that 3400 was the MVA in that area. The Pilot Flying turned off the Autopilot and began a climb by 3300 ft. and we preceded to immediately return to 3400 ft. During this there was a brief discussion on what altitude SOCAL had assigned. The altitude alerter had been set for 3000 and not 3600. The approach was continued and the aircraft landed without incident. The altitude alerter was set incorrectly on 3000 instead of 3600 and this caused the aircraft to descend below the 3600 ft. SBD with the high terrain and only one end of the Runway we are allowed to land on in our operations can prove difficult. That particular day we were close to our 10 kt. tailwind landing limitation. We were also taken off our original arrival and then given several vectors that compounded the complexity.

## Synopsis

Flight Crew reported an incorrect altitude read back and a CRM failure, resulted in a low altitude alert.

## Time / Day

Date : 202204

Local Time Of Day : 1201-1800

## Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

## Environment

Weather Elements / Visibility.Visibility : 12

Light : Daylight

Ceiling.Single Value : 25000

## Aircraft

Reference : X

ATC / Advisory.Tower : ZZZ

Aircraft Operator : Air Taxi

Make Model Name : Citation III, VI, VII (C650)

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 91

Flight Plan : IFR

Mission : Passenger

Flight Phase : Landing

Route In Use : Visual Approach

Airspace.Class D : ZZZ

## Component

Aircraft Component : Indicating and Warning - Landing Gear

Aircraft Reference : X

Problem : Malfunctioning

## Person : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Taxi

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.Total : 23062

Experience.Flight Crew.Last 90 Days : 188

Experience.Flight Crew.Type : 2522

ASRS Report Number.Accession Number : 1895453

Human Factors : Communication Breakdown

Human Factors : Situational Awareness

Human Factors : Time Pressure

Human Factors : Distraction

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

## Person : 2

Location Of Person.Aircraft : X  
Location In Aircraft : Flight Deck  
Reporter Organization : Air Taxi  
Function.Flight Crew : Captain  
Qualification.Flight Crew : Flight Instructor  
Qualification.Flight Crew : Air Transport Pilot (ATP)  
Qualification.Flight Crew : Multiengine  
Qualification.Flight Crew : Instrument  
Experience.Flight Crew.Total : 13900  
Experience.Flight Crew.Last 90 Days : 180  
Experience.Flight Crew.Type : 225  
ASRS Report Number.Accession Number : 1895685  
Human Factors : Time Pressure  
Human Factors : Situational Awareness  
Human Factors : Communication Breakdown  
Human Factors : Distraction  
Communication Breakdown.Party1 : Flight Crew  
Communication Breakdown.Party2 : Flight Crew

## Events

Anomaly.Aircraft Equipment Problem : Critical  
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy  
Anomaly.Deviation / Discrepancy - Procedural : FAR  
Anomaly.Ground Event / Encounter : Gear Up Landing  
Anomaly.Inflight Event / Encounter : Unstabilized Approach  
Detector.Person : Flight Crew  
Result.Flight Crew : Executed Go Around / Missed Approach  
Result.Aircraft : Aircraft Damaged

## Assessments

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

## Narrative: 1

During initial and final approach to landing, our attention had been directed by Approach Control and Tower and devoted by ourselves to the presence of a much slower, small Piper Cherokee just ahead of us. Approach Control requested us to slow early to 180 kts. which required us to select 7 degrees of flaps, which is an unusual setting for a normal approach. A normal approach would have us go right to a 20 degree flap setting and the command from the Pilot Flying would be "Below 210 kts., flaps 20, gear down." Then Tower requested us to slow to final approach speed, we selected 20 flaps and shortly after that, the normal command of "Below 170 kts., landing flaps full." We were very busy getting slowed to final landing speed to maintain the distance required to receive a clearance to land and avoid a go around. Even on very short final, the Piper took up an extended length of runway before turning off clear of the runway. Finally, we got our clearance to land from Tower, we were relieved that we didn't have to do a go around, and I, as Pilot Monitoring,

announced "Before Landing checklist complete." The Pilot Flying was in the process of making what seemed to me to be the smoothest landing he's ever made with me when we heard a scraping sound. We had already had 10-15 kts. extra speed due to gusty crosswind conditions, the PF (Pilot Flying) announced "Go Around", quickly added power and started a climb. We immediately realized that the gear had not been selected down, but we did not get a gear not down warning alert. Not sure of our intention or the aircraft's ability to fly, I selected gear down and got 3 green down and locked lights. We did a close in downwind leg and low pass to have the Tower see the condition of the gear/aircraft and they said everything appeared to be normal. We did a normal approach, landing and taxi to the ramp parking area. We had problems with the gear warning horn several months in the past, but the problem had been found, fixed and no further problems until this event. The causes of this incident are obvious: Distraction of a preceding slower aircraft, abnormal sequence of flaps selection, adrenaline rushing preparing for a go around, breakdown in proper Crew Resource Management, improper use of landing checklist and announcing (in error) that the Before Landing checklist was complete. It could have all been avoided with a proper Challenge and Response completion of the Before Landing checklist. Fortunately, there were no injuries, damage to the aircraft was minor and no significant damage to the airport runway or other property.

## Narrative: 2

Myself and [Pilot Monitoring] were flying an approach into ZZZ to Runway XXL. I was flying in the left seat of Aircraft X, upon starting the approach I called for 20 degree flaps, gear down, before landing check. My attention was diverted outside, watching a slower airplane landing on the same runway just ahead of us. I was slowing the aircraft to allow the aircraft ahead of us enough time to exit the runway. I then called for flaps to land, and landing check [Pilot Monitoring] called landing check complete. We were both focused on the smaller airplane exiting the runway what appeared to be XY. Upon touch down, I heard a scraping sound and immediately initiated a go around by advancing power to keep the aircraft off of the runway. Upon climb out we noticed that the gear was not extended. We then extended the gear on downwind, came around and did a fly-by the Tower and asked them to take look to verify that the gear was down. Upon confirmation that the gear was down we then went back around for our approach to the runway. We executed a normal approach to landing without further incident. There was a breakdown in CRM and this should have been caught early by the proper challenge and response. There was some outside distraction, but that's no excuse for not double checking the items on the check list on the before landing check and confirming the other pilots actions. We never heard an audible warning and I am still not sure why. I was told that the aircraft in the past has had a problem with this before. To what extreme I am not aware. I am very diligent about CRM and the challenge and response process and on this particular day that did not happen.

## Synopsis

Flight Crew flying CE-650 aircraft reported gear up landing which triggered a go around. Aircraft landed safely on second attempt.

## Time / Day

Date : 202204

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

ATC / Advisory. TRACON : ZZZ

Aircraft Operator : Air Carrier

Make Model Name : EMB ERJ 145 ER/LR

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Descent

Route In Use.STAR : ZZZZZ

Airspace.Class E : ZZZ

## Component

Aircraft Component : Hydraulic Main System

Aircraft Reference : X

Problem : Malfunctioning

## Person : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : First Officer

Function.Flight Crew : Pilot Not Flying

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Instrument

ASRS Report Number.Accession Number : 1894250

Human Factors : Confusion

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

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 : 1894251  
Human Factors : Confusion  
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.Deviation / Discrepancy - Procedural : FAR  
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy  
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 : Landed in Emergency Condition  
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 : Aircraft

## Narrative: 1

While on the arrival into ZZZ, passing through approximately 12,000 feet, we had an EICAS (Engine Indicating and Crew Alerting System) advisory message "HYD SYS 1 LO QTY" appear after ATC issued a runway change. The captain advised me to run the HYD SYS 1 LO QTY QRH. We noted that our hydraulic quantity on system 1 was in the amber range. I proceeded to run the applicable checklist while the captain took over the radios and maintained control of the aircraft. Before completing the "HYD SYS 1 LO QTY" quick reference handbook procedure, it included HYD SYS 1 FAIL procedure to be followed "as required" I should have noticed that if "HYD SYS FAIL" EICAS messages were displayed-- the procedure WOULD be required. I was thinking that because our hydraulic quantity was low, we might have a system degradation based on what I read in the HYD SYS 1 FAIL QRH, and that it was required. I subsequently followed the HYD SYS 1 FAIL QRH and did

not see the HYD SYS 1 FAIL EICAS messages that corresponded to the HYD SYS 1 FAIL QRH. I reviewed the entire HYD SYS 1 FAIL QRH procedure once verbally all the way through with minor interruptions, and proceeded to review it two more times verbally, only highlighting the gear extension and degradation information. In error, we then proceeded to execute the HYD SYS 1 FAIL QRH which resulted in a manual gear extension. We took all of the precautions per the QRH that some aircraft systems may be degraded and completed the HYD SYS 1 FAIL QRH and landed. After landing the Captain and I debriefed the event where we read back through both of the QRH procedures that we had followed and then we realized that we could likely have closely monitored the applicable hydraulic systems and dropped the landing gear early and that HYD 1 LO QTY was not a trigger for the HYD SYS 1 fail QRH. Overall I felt that communication was high, but I failed to confirm that the EICAS messages for the HYD SYS 1 FAIL QRH were displayed, which might have changed our course of action. I believe that had I compared the messages only for the HYD SYS 1 FAIL that were not present on our aircraft then, the "As required" statement in the HYD 1 LO QTY QRH would have been more apparent to me. CRM was used throughout the entire flight including the emergency, but I could have done a better job at highlighting that the EICAS messages for the HYD 1 SYS FAIL were not present. I made an assumption when reading the QRH that though we didn't have a hydraulic system 1 failure indication, our lack of hydraulic quantity could lead to a degradation in hydraulic systems and made the HYD SYS 1 FAIL QRH required. This was not the case, I will make more emphasis in verifying the EICAS messages for the applicable QRH in order to achieve a higher level of CRM.

## Narrative: 2

On descent in the later part of the STAR into ZZZ the HYD 1 LOW QTY advisory was displayed on the EICAS (Engine Indicating and Crew Alerting System). The HYD 1 sys was in the amber. After handling a late runway change the QRH was executed for HYD 1 LOW QTY, which at the end says to execute the HYD 1 FAIL QRH procedure 'as required'. This was misinterpreted as being told to act as though we were having a HYD 1 SYS failure. In hind sight it became clear that the HYD 1 SYS failure X of the QRH should not have been executed due to the fact that the trigger of having the "HYD 1 FAIL" had not yet been explicitly displayed on the EICAS. Somehow in error this trigger was overlooked and a manual gear extension was conducted along with the assumption we would have several systems inop. In hind sight the most likely outcome had this not been overlooked would have been an attempt to lower the gear early and the system would simply be 'monitored' unless that failure EICAS was displayed in flight- as well as an emergency not being declared in that case (rather just heightened awareness of that situation and the implications). In hind sight I'm not sure how the HYD 1 FAIL requirement was overlooked. CRM was ideal overall and it may have come down to QRH assumptions or an interruption at that critical point of EICAS confirmation. As mentioned, it was interpreted in part as though the QRH was driving to act as though the system was failed or imminently going to be failed. Possibly to avoid this in the future extra emphasis should be on not only confirming the correct checklist but just as importantly the presence or the absence of the EICAS message triggers for QRH portions. Both crew in the debrief realized the QRH was incorrectly executed.

## Synopsis

Flight crew reported confusion during QRH procedures for a hydraulic system low quantity event. This led to an unnecessary manual extension of the landing gear, complicating the landing at destination airport.



## Time / Day

Date : 202204

Local Time Of Day : 1201-1800

## Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Relative Position.Angle.Radial : 120

Relative Position.Distance.Nautical Miles : 4

Altitude.MSL.Single Value : 4500

## Environment

Light : Daylight

## Aircraft

Reference : X

ATC / Advisory.TRACON : ZZZ

Aircraft Operator : Air Carrier

Make Model Name : Commercial Fixed Wing

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Mission : Passenger

Nav In Use : FMS Or FMC

Flight Phase : Initial Approach

Airspace.Class C : ZZZ

## Component

Aircraft Component : FMS/FMC

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 : 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.Last 90 Days : 200

Experience.Flight Crew.Type : 100

ASRS Report Number.Accession Number : 1893569

Human Factors : Communication Breakdown

Human Factors : Situational Awareness

Communication Breakdown.Party1 : Flight Crew

Communication Breakdown.Party2 : Flight Crew

## Person : 2

Location Of Person.Aircraft : X  
Location In Aircraft : Flight Deck  
Reporter Organization : Air Carrier  
Function.Flight Crew : First Officer  
Function.Flight Crew : Pilot Flying  
Qualification.Flight Crew : Multiengine  
Qualification.Flight Crew : Air Transport Pilot (ATP)  
Qualification.Flight Crew : Instrument  
ASRS Report Number.Accession Number : 1893577  
Human Factors : Communication Breakdown  
Human Factors : Situational Awareness  
Communication Breakdown.Party1 : Flight Crew  
Communication Breakdown.Party2 : Flight Crew

## Events

Anomaly.Aircraft Equipment Problem : Less Severe  
Anomaly.Deviation - Track / Heading : All Types  
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy  
Anomaly.Deviation / Discrepancy - Procedural : Clearance  
Detector.Person : Air Traffic Control  
When Detected : In-flight  
Result.Flight Crew : Returned To Clearance  
Result.Flight Crew : Overcame Equipment Problem  
Result.Air Traffic Control : Issued New Clearance

## Assessments

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

## Narrative: 1

We briefed and programmed the FMC for the ILS XX prior to being handed off to ZZZ1 Approach. After being handed off to Approach we were told to expect the RNAV XX. We didn't reprogram the FMC for the RNAV XX. We were then cleared for the approach. We closed the discontinuity. We missed the turn right turn for the arc on the RNAV approach. The Approach Controller asked if we were in the turn, that was when we discovered our error. We made the right turn and quickly corrected our error. There was never any conflict with any traffic and landed.

## Narrative: 2

Planned and briefed the visual approach backed up with the ILS to Runway XX in ZZZ. Approach cleared us for RNAV XX. I failed to correctly program the FMC for the new approach. After we missed the initial turn for the right arc on the RNAV approach, ATC asked us when we were going to turn. We quickly loaded the correct approach and recovered. Landed without incident or conflict.

## Synopsis

Flight Crew reported a course deviation due to a breakdown in CRM.

## Time / Day

Date : 202204

## Place

Locale Reference.Airport : TRM.Airport

State Reference : CA

Altitude.MSL.Single Value : 12000

## Environment

Flight Conditions : VMC

Light : Daylight

## Aircraft

Reference : X

ATC / Advisory.TRACON : SCT

Aircraft Operator : Air Taxi

Make Model Name : Dassault-Breguet Undifferentiated or Other Model

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 135

Flight Plan : IFR

Mission : Passenger

Flight Phase : Climb

Airspace.Class D : TRM

## Component

Aircraft Component : FMS/FMC

Aircraft Reference : X

Problem : Improperly Operated

## Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Corporate

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)

Experience.Flight Crew.Total : 27850

Experience.Flight Crew.Last 90 Days : 150

Experience.Flight Crew.Type : 220

ASRS Report Number.Accession Number : 1893503

Human Factors : Communication Breakdown

Human Factors : Fatigue

Human Factors : Time Pressure

Human Factors : Confusion

Communication Breakdown.Party1 : Flight Crew

Communication Breakdown.Party2 : Flight Crew

## Events

Anomaly.Aircraft Equipment Problem : Less Severe  
Anomaly.Conflict : Airborne Conflict  
Anomaly.Deviation - Altitude : Overshoot  
Anomaly.Deviation - Track / Heading : All Types  
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy  
Anomaly.Deviation / Discrepancy - Procedural : Clearance  
Anomaly.Inflight Event / Encounter : CFTT / CFIT  
Detector.Automation : Aircraft RA  
Detector.Person : Air Traffic Control  
When Detected : In-flight  
Result.Flight Crew : Became Reoriented  
Result.Flight Crew : Overcame Equipment Problem  
Result.Air Traffic Control : Issued New Clearance

## Assessments

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

## Narrative: 1

Departing TRM, long day after a series of heavy duty and early body clock getups. Short flight scheduled. We were an hour late. Received a clearance with a 3 minute void time. We were feeling pressure to get airborne. Due to this and our general fatigue, we failed as a crew to do a comprehensive briefing of our departure procedure. It was a first time operating out of TRM. All of these factors should have made us act with care, but I believe operating out of an uncontrolled airport, it's a more casual operation. We didn't brief the Departure procedure. The graphic showed a line between TRM VOR and PSP VOR, our first fix. It led me to simply think that was our routing after takeoff. The procedure actually requires a turn to the south and climb. ATC caught our error promptly and re cleared us to DEMEY intersection. Though the Captain loaded the fix, the FMC and autopilot directed a turn to a course toward terrain. ATC was alert and vectored us away from the terrain. I disconnected the autopilot to make the turn promptly. My head was swimming and I became task saturated trying to fly the plane and figure out the Navigation issues. My altitude control was poor which lead to a momentary TCAS alert for VFR traffic. Needless to say, it was ugly.

## Synopsis

First Officer reported fatigue, unfamiliar airport departure, time pressure, CRM breakdown, altitude overshoot with FMC error, resulted in ATC action for terrain avoidance and TCAS RA.

## Time / Day

Date : 202203

Local Time Of Day : 0601-1200

## Place

Locale Reference.ATC Facility : SCT.TRACON

State Reference : CA

## Environment

Flight Conditions : VMC

## Aircraft

Reference : X

ATC / Advisory.TRACON : SCT

Aircraft Operator : Air Carrier

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

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Initial Approach

Airspace.Class C : SNA

## Person : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

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 : 1887488

Human Factors : Confusion

Human Factors : Distraction

Human Factors : Situational Awareness

Human Factors : Time Pressure

Human Factors : Workload

## Person : 2

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : First Officer

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Air Transport Pilot (ATP)

ASRS Report Number.Accession Number : 1887511

Human Factors : Time Pressure

Human Factors : Situational Awareness

Human Factors : Distraction  
Human Factors : Confusion  
Human Factors : Workload

## Events

Anomaly.ATC Issue : All Types  
Anomaly.Deviation - Altitude : Excursion From Assigned Altitude  
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy  
Anomaly.Deviation / Discrepancy - Procedural : Clearance  
Detector.Person : Flight Crew  
Result.Flight Crew : Requested ATC Assistance / Clarification  
Result.Flight Crew : Became Reoriented  
Result.Air Traffic Control : Issued New Clearance

## Assessments

Contributing Factors / Situations : Chart Or Publication  
Contributing Factors / Situations : Human Factors  
Contributing Factors / Situations : Software and Automation  
Contributing Factors / Situations : Procedure  
Primary Problem : Procedure

## Narrative: 1

We were descending via the OHSEA 2 into SNA in VFR conditions. We were cleared for the RNAV Z approach for Runway 20R. We set the MCP to field elevation and were descending via VNAV. Prior to KLEVR, ATC canceled the RNAV approach and told us to expect the ILS and gave us a vector. We switched the approach to the ILS in the FMC and ran the change triangle checklist items. After our second vector we noticed that the ALT selector was still set to field elevation for the previously assigned RNAV approach. We asked ATC what altitude he wanted us at which he replied 3000 ft. (the altitude we were currently at) and that we were cleared the ILS approach. We flew the ILS approach and landed with no further incident. When we were given the approach change last minute, our task saturation increased dramatically. We did verify the MCP was set for the ILS, but initially missed the ALT selector. The lesson learned here was that when you are vectored off an RNAV approach, to make sure the new hard altitude is set and verified in the MCP. This was a good example of CRM that trapped and mitigated an error. In the future, I plan to "walk the panel" in its entirety anytime an approach change occurs.

## Narrative: 2

We were on the OHSEA 2 RNAV arrival, level at 5000. ATC cleared us for the RNAV Z 20R so we linked the arrival and the approach at KLEVR and set the field elevation in the MCP. Just prior to KLEVR ATC canceled our approach clearance and gave us a heading for vectors to the ILS 20R. After our second vector we realized we were descending towards the mountains, when we looked at the MCP and the field elevation was still set. We leveled off and called ATC to see what altitude we were cleared to which he replied, 3000ft. We had originally leveled off at 3200ft. so we continued down to 3000ft. The rest of the approach went well, but we were not sure if we were cleared originally from 5000 ft. on the arrival to 3000ft. This flight was the perfect example of how a crew can do everything right and still have issues work their way through the Swiss cheese. The big lesson learned was that when you are vectored off of an RNP approach you have to reset a hard altitude in the MCP. If it wasn't for the great CRM in the flight deck this flight could have ended much worse.

## Synopsis

Air Carrier Flight Crew reported when ATC canceled their RNAV approach and assigned a heading for an ILS Approach they failed to set a new hard altitude in the autopilot.

## Time / Day

Date : 202203

Local Time Of Day : 1801-2400

## Place

Locale Reference.ATC Facility : ZZZ.ARTCC

State Reference : US

Altitude.MSL.Single Value : 35000

## Environment

Flight Conditions : IMC

Light : Night

## 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 : Cruise

Route In Use : Vectors

Airspace.Class A : ZZZ

## Component

Aircraft Component : FMS/FMC

Aircraft Reference : X

Problem : Malfunctioning

## Person : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Pilot Flying

Function.Flight Crew : Captain

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Instrument

Experience.Flight Crew.Total : 16539

Experience.Flight Crew.Last 90 Days : 238

Experience.Flight Crew.Type : 9539

ASRS Report Number.Accession Number : 1880912

Human Factors : Troubleshooting

Human Factors : Human-Machine Interface

Human Factors : Situational Awareness

## 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 : Multiengine  
Qualification.Flight Crew : Air Transport Pilot (ATP)  
Qualification.Flight Crew : Instrument  
Experience.Flight Crew.Total : 966  
Experience.Flight Crew.Last 90 Days : 143  
Experience.Flight Crew.Type : 625  
ASRS Report Number.Accession Number : 1880919  
Human Factors : Situational Awareness  
Human Factors : Confusion  
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 : FAR  
Anomaly.Deviation / Discrepancy - Procedural : Maintenance  
Anomaly.Deviation / Discrepancy - Procedural : MEL / CDL  
Anomaly.Deviation / Discrepancy - Procedural : Clearance  
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 : 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 : MEL  
Contributing Factors / Situations : Procedure  
Primary Problem : Aircraft

## Narrative: 1

[Our flight] from ZZZ-ZZZ1 had a MEL for the right FMC. It was inoperative but not collared or required to be per the MEL. The flight was uneventful and normal until about 80 miles west of ZZZ2. The left FMC then failed, the auto-throttles failed, VNAV went to Altitude Hold, and the Autopilot went into CWS Roll mode. ATC was notified we had a dual FMC failure losing all long range NAV and we requested radar vectors until further notified. The ATC request was granted. First Officer was great at making suggestions for our situation and recommended we requested priority handling to see if the other FMC still worked. First Officer and I considered our options and we made a plan. Our workload was increased and we had lost our normal mode of navigation so we [requested priority handling]. We consulted the Quick Reference Handbook, but considered the fact that the

MEL effectively prevented us from potentially using the other FMC if it did work due to the restriction to not move the switch from the operative side for all "phases of flight". The Quick Reference Handbook also did not consider the fact we had a MEL. In light of our situation, and priority handling, I decided to use my Captains authority to see if the right FMC was working normally. The FMC source select switch was placed to normal and it was confirmed the right FMC worked normally and then the switch was placed to both on the right FMC. The rest of the flight was uneventful. The [priority landing] was continued all the way to the gate since we had to deviate from the MEL using [the] Captains authority. The passengers were never notified or made aware of the above issue. The Fire Rescue vehicles were requested to stay out of sight. The Flight Attendants were made aware of our situation in case the fire trucks did decide to converge on us, but were briefed that the flight was operating mostly normal.

## Narrative: 2

The airplane came into ZZZ with a write up for dual FMC fail on ground during taxi in. The left FMC was changed out earlier in the day for a different issue. Maintenance reset the FMCS in ZZZ and did some tests and thought the right FMC had failed so they deferred the right FMC. MEL was complied with and the FMC switch was placed in both on left position. Once in cruise, and near ZZZ2, we were presented with a FMC caution light and flags on the Navigation Display. The auto throttle disconnected. Captain was Pilot Flying. First Officer was monitoring. We both noticed the failure at the same time and had somewhat expected this to happen since there was history of this. Pilot Flying assumed control of the airplane in anticipation that the Autopilot would kick off. A heading was requested from ATC and the Autopilot remained on and a known power setting was set. We referenced the Quick Reference Handbook but the Quick Reference Handbook did not fully apply to the situation since we were already on both of left for the FMC. The Captain requested priority handling out of caution as our workload had increased and we and lost all long range NAV. Captain and First Officer both questioned the validity of the maintenance deferral and felt that it would be best to try the deferred right FMC. The Captain exercised authority to deviate from the MEL and while still in heading select, we positioned the FMC switch to both on right. Within 10 seconds the right FMC came up and appeared valid. We agreed that the best course forward was to continue to operate on FMC right. The crew exercised excellent CRM. The Captain showed excellent leadership effectiveness in handling the situation calmly and methodically. Both crew exercised excellent situational awareness as we both noticed the fault and were able to quickly react. We had great communication and the Captain welcomed all input from the First Officer. Monitor Crosscheck was good as we verified that the right FMC did indeed present valid data. Workload management was good as we split tasks and kept each other in the loop. Captain temporarily gave control of the airplane to the First Officer while he managed the situation with ATC, Dispatch, and Maintenance Crew. We used the highest level of automation available during each phase of the event. I honestly do not think I would handle the situation any differently next time except maybe query maintenance in ZZZ more thoroughly as I did not have a great gut feeling about the deferral. However, we knew that conventional NAV was available as well as help from ATC with many divert options available encountered as we were not over water.

## Synopsis

B737 Flight Crew reported a failure of an FMC with the other FMC already on MEL. The Captain exercised his authority to reactivate the MEL'd FMC and continued the flight to destination airport.

## Time / Day

Date : 202202

Local Time Of Day : 1201-1800

## Place

Locale Reference.ATC Facility : ZZZ.ARTCC

State Reference : US

Altitude.MSL.Single Value : 34000

## Environment

Flight Conditions : VMC

Light : Daylight

## Aircraft

Reference : X

ATC / Advisory.Center : ZZZ

Aircraft Operator : Air Carrier

Make Model Name : B737 MAX 8

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Cruise

Route In Use : Vectors

Airspace.Class A : ZZZ

## Component : 1

Aircraft Component : Oil Filter

Aircraft Reference : X

Problem : Malfunctioning

## Component : 2

Aircraft Component : Powerplant Lubrication System

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 : Air Transport Pilot (ATP)

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Multiengine

Experience.Flight Crew.Last 90 Days : 156

Experience.Flight Crew.Type : 14000

ASRS Report Number.Accession Number : 1877269

Human Factors : Communication Breakdown  
Human Factors : Human-Machine Interface  
Human Factors : Situational Awareness  
Human Factors : Troubleshooting  
Human Factors : Workload  
Human Factors : Confusion  
Communication Breakdown.Party1 : Flight Crew  
Communication Breakdown.Party2 : Flight Crew  
Analyst Callback : Completed

## Events

Anomaly.Aircraft Equipment Problem : Less Severe  
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 : Landed in Emergency Condition  
Result.Flight Crew : Requested ATC Assistance / Clarification  
Result.Flight Crew : Took Evasive Action  
Result.Flight Crew : Inflight Shutdown  
Result.Air Traffic Control : Provided Assistance

## Assessments

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

## Narrative: 1

Approximately 50 SSE of ZZZ1, FL340, we observed an Oil Filter Bypass caution light on the #2 engine. I elected to let the FO (First Officer) keep flying while I got out and read the QRH. The caution light was unusual in that it flashed as expected, then behaved erratically. It would momentarily come on and stay on, then flash, then go out, and then flash again. We discussed that it could be an indication problem since all other engine instruments read normally, but since we had the light we would run the checklist. The FO slowly retarded the #2 thrust lever, and when it reached idle, the light went out. I requested a lower altitude from ATC; they cleared us to FL240, and the FO brought up the engine out Cruise page, which indicated a max single engine cruising altitude of FL246. The FO started a -1000 VVI descent using Vertical Speed. We quickly both agreed that we should continue to ZZZ to land and anticipated a gradual descent all the way there. About that point one or two minutes had passed; the Oil Filter Bypass light came on again and stayed on. Before shutting down the engine as directed by the QRH, I called the FAs (Flight Attendants) and told them we were going to shut down the #2 engine, not to be alarmed, to follow normal procedures in securing the cabin, that we were going to land at ZZZ and taxi to the gate to deplane, and that I would make a PA to the Passengers. We continued running the checklist. I was surprised how much adrenaline I felt in my body, and knew I was in the Yellow thinking about what was being done and looking ahead at what had to be done and the various considerations in accomplishing all this. I commend the FO in helping maintain excellent CRM as he asked me to slow down the reading of the checklist so he could keep up and not rush things, and helped ensure we used proper

response-response methodology and proper guarding of all switches. After starting the APU, I was impatient in waiting for it to come online and read ahead to see the next steps. We started balancing the fuel, put the transponder in TA, and verified the isolation valve switch in auto. By that time I'd forgotten about the APU start sequence, and it wasn't until later in the descent as we crosschecked everything that I'd forgotten to connect the APU to the #2 side. When discovered, I reached up and connected the APU to #1 and #2. When the autopilot disconnected, I once again realized I was rushing a bit. The FO politely reminded me to not rush. We reconnected the #1 generator, and everything else looked accomplished properly. I [requested priority handling] with ATC and told them we planned to land at ZZZ and taxi to the gate. I gave TRACON the requested information. I sent a message to Dispatch informing them of the situation and our plan to land in ZZZ. They acknowledged. I then made a PA to the Passengers. Later, when debriefing the FAs, they appreciated the heads up call which made them a bit flustered due to never experiencing an engine shutdown before, but also gave them a clear understanding of the plan. They debriefed that I sounded extremely relaxed on the PA (which I'm glad for since I wasn't feeling relaxed), and that all the Passengers were very calm. There were no Passenger concerns noted throughout the event. After the PA I discussed with the FO everything we had done (I believe this is when we noticed the APU error), quickly reviewed everything and asked if there was anything we'd missed. We couldn't think of any. I ran the one engine inoperative landing checklist through the Approach Checklist. The FO verified brake cooling did not require any special procedures. I then took control of the aircraft for the final descent, approach, and landing. It was a nice VFR day with gusty winds. We were cleared the Visual to XXL. I'm grateful for our simulator training. Flying a single engine approach in the SIM is harder than the approach I flew. The MAX -800 is a stable, smooth aircraft. And, although it felt odd flying a single engine flap 15 visual approach, the aircraft flew nicely and handled it well. We landed and taxied uneventfully to the gate. We debriefed Maintenance on the event and put it in the logbook. I then had many phone calls with [company representatives], debriefing them of the events. It was concluded the safest course of action was to pull us from the trip and send us home. I agreed with that decision. I've had plenty of adrenaline flying moments (low visibility crosswind landing in spring blizzard), but the adrenaline always dissipated after 30-45 [minutes]. I was surprised how stressed my body felt. It wasn't until I was driving home over four hours later that I started relaxing. That was a first for me. I want to say, again, how well the FO did flying the aircraft and reinforcing excellent CRM as we worked our way through this event. Except for my mistake with rushing the checklist and jumping ahead with the APU, I think we worked very well together bringing this flight to a successful conclusion. I commend the professionalism of ATC, [airport] personnel, ZZZ Station Personnel, Operations Personnel, and (Union). Everything they did was appreciated.

#### Callback: 1

Reporter stated they did not know what maintenance action had been taken nor what caused the Oil Filter Bypass light to illuminate.

#### Synopsis

B737 MAX 8 Captain reported an Oil Filter Bypass Light illuminated in flight. The flight crew shut down # 2 engine, continued to destination airport, and made a safe landing.

## Time / Day

Date : 202202

Local Time Of Day : 1801-2400

## Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

## Environment

Weather Elements / Visibility : Rain

## Aircraft

Reference : X

ATC / Advisory.Ground : ZZZ

Aircraft Operator : Air Carrier

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

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Taxi

## Person : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Captain

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Multiengine

Experience.Flight Crew.Total : 9500

Experience.Flight Crew.Last 90 Days : 137

Experience.Flight Crew.Type : 2833

ASRS Report Number.Accession Number : 1877053

Human Factors : Communication Breakdown

Human Factors : Situational Awareness

Human Factors : Training / Qualification

Human Factors : Workload

Human Factors : Distraction

Communication Breakdown.Party1 : Flight Crew

Communication Breakdown.Party2 : Flight Crew

## Person : 2

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : First Officer

Function.Flight Crew : Pilot Not Flying

Qualification.Flight Crew : Air Transport Pilot (ATP)  
Qualification.Flight Crew : Multiengine  
Qualification.Flight Crew : Instrument  
Experience.Flight Crew.Total : 6200  
Experience.Flight Crew.Last 90 Days : 85  
Experience.Flight Crew.Type : 85  
ASRS Report Number.Accession Number : 1877285  
Human Factors : Workload  
Human Factors : Time Pressure  
Human Factors : Situational Awareness  
Human Factors : Other / Unknown  
Human Factors : Confusion  
Human Factors : Communication Breakdown  
Human Factors : Distraction  
Communication Breakdown.Party1 : Flight Crew  
Communication Breakdown.Party2 : Flight Crew

### Person : 3

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 : Air Transport Pilot (ATP)  
Qualification.Flight Crew : Multiengine  
Qualification.Flight Crew : Instrument  
Experience.Flight Crew.Last 90 Days : 192  
ASRS Report Number.Accession Number : 1877442  
Human Factors : Workload  
Human Factors : Troubleshooting  
Human Factors : Time Pressure  
Human Factors : Situational Awareness  
Human Factors : Fatigue  
Human Factors : Distraction  
Human Factors : Confusion  
Human Factors : Communication Breakdown  
Human Factors : Other / Unknown  
Communication Breakdown.Party1 : Flight Crew  
Communication Breakdown.Party2 : Flight Crew

### Events

Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy  
Anomaly.Ground Excursion : Taxiway  
Anomaly.Ground Event / Encounter : Weather / Turbulence  
Anomaly.Ground Event / Encounter : Loss Of Aircraft Control  
Detector.Person : Flight Crew  
Were Passengers Involved In Event : N  
When Detected : Taxi  
Result.General : Maintenance Action  
Result.General : Flight Cancelled / Delayed

### Assessments

Contributing Factors / Situations : Airport  
Contributing Factors / Situations : Human Factors  
Contributing Factors / Situations : Weather  
Primary Problem : Ambiguous

#### Narrative: 1

Applied thrust to exit deice pad at ZZZ. Upon initiating turn onto Taxiway XX lost directional control and the left main slid off the prepared surface of the taxiway. Set the parking brake and made an announcement to the passengers that the aircraft was stuck and to remain seated until we could get towed out. Had the First Officer call Ground and inform them of our location and situation and to call Operations to inform them also of our situation. Started the APU and shut down the engines and informed the flight attendants that it could be a while. Operations showed up with a tug and towed us back to [the] gate where the passengers deplaned. Consulted with Maintenance and they wrote up an inspection of gear and aircraft no damage was found and aircraft cleared for service.

#### Narrative: 2

Captain applied thrust to exit deice bay in ZZZ. Upon initiating [a] right turn on Taxiway XX, the nose wheel lost traction and the aircraft began to skid towards the west edge of Taxiway XX. The Captain momentarily deployed thrust reversers to remove forward thrust in an attempt to mitigate taxiway excursion. The aircraft came to rest facing north with the number 1 main landing gear tire off the approved surface. Parking brake was set, and I contacted ZZZ Ground ATC to coordinate an inspection with ZZZ Operations vehicles. At this time, the Captain communicated with the flight attendants to check on passengers and also made a PA announcement. No disturbance or injuries were reported in the cabin. ZZZ Operations vehicles confirmed that the far left tire (#1 MLG tire) was off the approved surface (as well as no taxiway signs/lights contacted, no aircraft damage), and we then shut down both engines to prepare for tow in for further inspection. I contacted Company Operations, ATC, and ZZZ Operations vehicles to coordinate a tow in, as the Captain contacted Operations and the on duty Pilot Officer to obtain permission to tow back on to the approved surface (Per Flight Operations Manual). Maintenance personnel arrived with multiple tugs to oversee and facilitate the process. Upon successful tow onto the taxiway, the aircraft was towed to the gate and inspected. The final maintenance inspection showed no damage and was returned to service per maintenance logs.

#### Narrative: 3

I noted the crew had flown from ZZZ1-ZZZ previously and they de-iced in ZZZ1 as well. I prepared for possible mental fatigue due to de-icing for the second time as well as the stress of a line check, and a First Officer that was on line for 2 months. I arrived to the aircraft [at] around XA: 23 for a XA: 45 departure because my ZZZ2-ZZZ flight was late inbound. I had to finish up the previous crew's evaluation, get some administrative stuff done with [the] current crew and contact a future crew. I got done with my flight planning [at] around XA: 40 so I could be on the same wavelength with the crew. We had a delay due to inbound connection so that allowed a little bit of time to catch up and try to get ahead with what we were facing. I want to say the weather was hovering around a mile vis, snow (moderate), no perceptible mixed precipitation. Taxiway and ramp conditions [were] slippery I would say around 2.5 medium to poor. Notably a mostly unplowed surface as the snow crews were barely keeping the taxi lines remotely visible. Very good brief and plan for cold weather operations. Identified threats and executed the latest cold weather operation changes per the FM. Briefed timing of flap extension, engine run ups etc. The crew used good CRM and caution getting to the deice pad spot. Constantly clearing up any uncertainty if necessary. I had all passes on the grade scale so all was



going above expected performance. Deice procedure [was] routine. Type 1 and 4 applied. Type 4 started around XC:31. After de-icing [was] complete, First Officer recorded the deice info. Input the numbers into the HOT (Holdover Time) application and came up with a HOT time. First Officer then finished up the deice checklist. I believe they were close to calling for taxi and I think Ground mentioned [Runway] XXR will be the runway vs the planned XXL runway. I observed [the] First Officer get the numbers for [Runway] XXR and make the appropriate changes to the FMC. I briefly looked outside for aircraft traffic to [Runway] XXR to verify if our HOT time was going to come into play and also to set expectations for the remainder of the cold weather operations procedures/flap settings/before takeoff checklist. It was also at this time I observed that [the] Captain (although not mandatory) didn't independently verify HOT numbers to compare with [the] First Officer. As I mentioned earlier I was leery of mental fatigue with all that was going on so I went heads down and verified the numbers myself with the HOT application. I then shifted my attention to making sure the deice checklist was in fact complete. I was trying to get my bearings right on Flight Director (FD) to back up the crew for taxi. I just had regular LCA (Line Check Airman) stuff going on in my mind trying to get 3 steps ahead of the crew so I could properly evaluate and observe. During the time I was doing said things above (HOT app, deice checklist, and FD) the crew called for taxi. I heard the clearance [Runway] XXR [Taxiway] XX then [Taxiway] XY. Once I verified where we were I realized things could possibly go quickly so like I said earlier I was trying to get 3 steps ahead. This is where things went from good to bad. While I had my head down [the] Captain started to taxi the aircraft. What felt and initially sounded like the appropriate sound of the engines turned into a different feel and sound. As I was starting to look up to try to figure out what was going on at that time I felt the brakes fully release and the aircraft lurch forward. This is where things went in fast forward for me. As I was attempting to take action to try to stop it, [the] Captain pulled the thrust levers back, reapplied the brakes and applied what felt like a turn. (Not sure that's the right order or not). As it appeared we were approaching the taxiway edge lights [the] First Officer said something to the effect of reverse thrust to which [the] Captain applied. Somehow we came to a stop with apparently tire 1 (per Maintenance) off the taxiway. The crew went through the procedures to get the aircraft recovered and flight attendants/passengers notified. I think I was asked somewhere in all of that, what happened. I think I replied saying I don't know or you did a run up and I didn't know you were doing that. I think by the time I was asked I had put things together about what happened. It was determined later that I either missed the fact [that the] Captain mentioned doing a run-up or he didn't mention it or used non standard language that didn't catch my attention. Again being leery of mental fatigue that would have perked up my ears and I could have had the opportunity to prevent what appeared to be an engine run up in/near the deice pad. Again I didn't hear, fully comprehend [the] Captain's intentions. I debriefed [the] First Officer as well and apparently he missed [the] Captain mentioning a run-up. I'm actually still trying to piece all of what happened with communication or CRM together in that particular area. I don't know what thrust setting we got up to or speed at which we hit the turn or the speed we went off the taxiway.

## Synopsis

Air Carrier flight crew reported after starting to taxi from the deice pad the aircraft began to skid and left the taxiway pavement. The crew called Maintenance for help to tow the aircraft. The aircraft's landing gear, for safety, was inspected and the aircraft was returned to service. The Line Check Airman, who was giving a line check, was witness to the incident and is not sure if SOP's were followed while leaving the deice pad.

## Time / Day

Date : 202202

Local Time Of Day : 0601-1200

## Place

Locale Reference.ATC Facility : ZZZZ.ARTCC

State Reference : FO

Altitude.MSL.Single Value : 10000

## Environment

Flight Conditions : VMC

Light : Daylight

## Aircraft

Reference : X

ATC / Advisory.Center : ZZZZ

Aircraft Operator : Air Carrier

Make Model Name : B737-900

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Climb

## Component

Aircraft Component : Elevator Trim System

Aircraft Reference : X

Problem : Malfunctioning

## Person : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Pilot Not Flying

Function.Flight Crew : First Officer

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Instrument

Experience.Flight Crew.Last 90 Days : 174

Experience.Flight Crew.Type : 1289

ASRS Report Number.Accession Number : 1873732

Human Factors : Troubleshooting

## Person : 2

Location Of Person : Hangar / Base

Reporter Organization : Air Carrier

Function.Dispatch : Dispatcher

Qualification.Dispatch : Dispatcher

ASRS Report Number.Accession Number : 1873763  
Human Factors : Troubleshooting  
Human Factors : Situational Awareness  
Human Factors : Communication Breakdown  
Human Factors : Confusion  
Communication Breakdown.Party1 : Dispatch  
Communication Breakdown.Party2 : Maintenance

## Person : 3

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 : Instrument  
Qualification.Flight Crew : Air Transport Pilot (ATP)  
Experience.Flight Crew.Total : 11051  
Experience.Flight Crew.Last 90 Days : 227  
Experience.Flight Crew.Type : 4558  
ASRS Report Number.Accession Number : 1873734  
Human Factors : Communication Breakdown  
Communication Breakdown.Party1 : Flight Crew  
Communication Breakdown.Party2 : Dispatch

## Events

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

## Narrative: 1

After takeoff the electric trim no longer worked. We tried both PF (Pilot Flying) and PNF (Pilot not Flying) side to make sure. We followed the QRH and worked the problem with the QRH. CA (Captain) transferred controls to me while the CA got together with Dispatch, Flight Attendants and ATC for our return to ZZZZ. We could manually trim the airplane for

the return flight and uneventful landing back in ZZZZ. [Priority handling was requested]. The CRM between the whole crew and ATC was great.

#### Narrative: 2

I received an ACARS from the crew shortly after departure from ZZZZ1/ZZZZ. They informed me: "STAB TRIM NOT WORKING - WENT THROUGH QRH NQRH DID NOT FIX - MAY BE GOING BACK TO ZZZZ." I quickly asked if they want to troubleshoot with Maintenance Control - Answered with a "CALL ME" request - I sent them a Call ME via ACARS to dial up on XXX.X. Then I noticed they were at FL140 and sent the crew a message regarding that - we may have difficulty connecting below FL200. We were then connected via ZZZ ARINC. I quickly tried to get Maintenance Control on the line to try and trouble shoot the situation. I called Maintenance Control using the standard method - Maintenance Control/Maintenance button - 737 - Maintenance Control AIR FRAME 737. The system then dialed in and requested I punch in the nose number. After that, I told the system that it is an airframe issue. The phone started ringing and ringing, but no answer. After about a minute or so unanswered, I became frustrated and hung up to dial the Maintenance Control PRIORITY Button. There was no answer at this number either. In a panic now because I may have an inflight emergency and the crew are waiting on a radio, not knowing what is going on or whether or not I am still connected. After trying the Priority number once more and it ringing another 30 seconds, I finally get an answer. However, the Maintenance Control Controller that answered the phone was not a 737 Controller, it was a 767 Controller. He wanted to transfer me, but I told him that I may have an inflight emergency and that I needed immediate connection to someone that can trouble shoot with the crew, and that I previously called the 737 Air Frame desk to no answer. He then offered to connect to the crew. He informed the crew that he was a 767 Controller, and that he worked on 737 in the past. After a brief troubleshooting - we were all in agreement that crossing the [area] with this malfunction was not safe and we decided to divert back to ZZZZ1/ZZZZ. The crew then [requested priority handling]. I went through the normal diversion checklist and sent the crew landing data. We were landing heavy, but the crew stated they were flying a wider route to land just under MAX landing weight. The flight landed safely in ZZZZ1/ZZZZ - however the Maintenance Control response was unacceptable. Thankfully this time there was adequate time to troubleshoot, but precious minutes were unnecessarily wasted trying to connect Maintenance Control with the flight, and when we finally did get a connection, it was a Controller from a different fleet. Had this been a more time sensitive emergency, there may not have been adequate time to relay the necessary information to conclude with a safe operation. The response time may be because the Maintenance Control controllers are working from home - there is obviously decreased situational awareness as my call went unanswered in an emergency situation. This has happened several times in the past to other Dispatchers and in the name of safety needs to be addressed immediately. The Captain later called me to express his concern with the Maintenance Control response and we both thought it was in the best interest for the safety of this airline that we both file a safety report concerning the Maintenance Control response to this situation.

#### Narrative: 3

Trim failed while departing ZZZZ. Electric trim was initially working normally, but stopped trimming about 10,000 ft. Autopilot was engaged but still no auto trim. QRH action performed when Stab Trim light illuminated. We contacted ZZZ2 Dispatch and requested a phone patch with Maintenance Control. The phone patch and timely/reliable contact with Maintenance Control was problematic as it took longer than 5 minutes for Dispatch to get a Maintenance Control controller on the phone. When he did get a Maintenance Control Controller, it was not a qualified 737 Controller (it was a 767 Controller). Without reliable

Maintenance Control contact, we could not determine if there was any additional troubleshooting or history on this problem. We [requested priority handling] with ZZZZZ Control and returned to ZZZZ for an overweight landing. More communication issues identified after landing in ZZZZ. The [company] phone numbers used to contact the company did not work on the cellular network from ZZZZ. Only direct dial numbers could be used (and most of those are long longer advertised/published).

## Synopsis

Flight Crew and Dispatcher reported communications issues after the Flight Crew elected to perform an air turn back caused by trim failure.

## Time / Day

Date : 202201

Local Time Of Day : 1801-2400

## Place

Locale Reference.Airport : SJC.Airport

State Reference : CA

Relative Position.Angle.Radial : 306

Relative Position.Distance.Nautical Miles : 1

Altitude.AGL.Single Value : 1000

## Environment

Flight Conditions : VMC

Light : Night

## Aircraft

Reference : X

ATC / Advisory.TRACON : NCT

Aircraft Operator : Personal

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

Operating Under FAR Part : Part 91

Flight Plan : IFR

Mission : Personal

Flight Phase : Initial Climb

Route In Use.SID : SPTNS1.TECKY

Airspace.Class B : SJC

## Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Personal

Function.Flight Crew : Captain

Qualification.Flight Crew : Air Transport Pilot (ATP)

Experience.Flight Crew.Total : 9000

Experience.Flight Crew.Last 90 Days : 40

Experience.Flight Crew.Type : 28

ASRS Report Number.Accession Number : 1873528

Human Factors : Time Pressure

Human Factors : Situational Awareness

## Events

Anomaly.Deviation - Track / Heading : All Types

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

Anomaly.Deviation / Discrepancy - Procedural : Clearance

Anomaly.Inflight Event / Encounter : CFTT / CFIT

Detector.Person : Air Traffic Control

When Detected : In-flight

Result.Flight Crew : Took Evasive Action

Result.Flight Crew : Became Reoriented  
Result.Air Traffic Control : Issued Advisory / Alert

## Assessments

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

## Narrative: 1

Departure events from SJC. Weather: winds 310/3 CLR 13/4 3016 RW in use 30L and 30R. Aircraft configuration: Flaps 15. Take off trip. ATT. Using LNV for departure. Departure clearance: SPTNS1.TECKY VALREE. Climb by SID to 5000 ft. by ATC. Crew inputs on the FMS SID, flight plan and review at the ramp. Taxi Clearance: taxi G, W, hold short of 30L on B. Crew follow taxi instructions taxi to holding point B and RW 30L. Short after holding short clearance was issued to cross RW30L; back track RW30R full length for departure. Crew programs new assigned runway and SID on the FMS. Take off clearance given before reaching end of 30R. Take off runway confirm, aircraft configuration. Crew performs a normal take off. Initial Climb: Gear up at positive rate and confirmed LNV. Flaps up on speed 145 kts. FMS indicated right turn at 900 ft. (RA indicated 880). Crew follow flight director right turn south bound to SPTNS. Crew notice FMS did not sequence properly to over fly MLPTS before commanding right turn. Crew increases climb rate and shallows bank and changes frequency to Departure. ATC informs crew they received a "low altitude" warning and confirm early south turn. ATC advises crew to expedite climb to new altitude of 12,000 ft. Crew kept aircraft under full control to prevent CFIT or any terrain warnings. Crew have learned from this event not to rush. Not to accept a takeoff clearance without making sure all is in place and to always confirm FMS sequence properly. Furthermore I am enrolling on a CRM refreshment course and airport terminal area procedures to include STARS and SIDs.

## Synopsis

Light jet Captain reported they received a low altitude alert from ATC departing SJC.

## Time / Day

Date : 202111

Local Time Of Day : 1801-2400

## Place

Locale Reference.ATC Facility : ZZZ.TRACON

State Reference : US

Altitude.MSL.Single Value : 16000

## Environment

Flight Conditions : VMC

Light : Night

## Aircraft

Reference : X

ATC / Advisory.TRACON : ZZZ

Aircraft Operator : Air Carrier

Make Model Name : B737 Undifferentiated or Other Model

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Climb

Route In Use : Vectors

Airspace.Class B : 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 : First Officer

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Instrument

Experience.Flight Crew.Total : 4500

Experience.Flight Crew.Last 90 Days : 120

Experience.Flight Crew.Type : 330

ASRS Report Number.Accession Number : 1855230

Human Factors : Troubleshooting

## Events



Anomaly.Aircraft Equipment Problem : Critical  
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 : Requested ATC Assistance / Clarification  
Result.Flight Crew : Overcame Equipment Problem  
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

It was my leg to fly and everything was standard and uneventful through takeoff and departure, our fuel indicated 23.8k before departing. We had fuel in the center tank and both center pumps were on. On climbout, the Captain noticed a slight fuel imbalance, with the right tank lower, and shortly after that the 'fuel imbalance' annunciator light turned on. We were climbing through about 16000 ft. when we started troubleshooting the issue. It appeared by the totalizer and right tank quantity indicators that we were either burning fuel from the right tank or had a fuel leak from the right wing or engine. As we climbed the imbalance worsened as the totalizer also indicated higher fuel loss than expected. The imbalance worsened to about 1500 lbs, and we attempted to balance the tanks by transferring fuel from left to right. The increase in fuel imbalance was abated using this method, and it also started to reduce the imbalance. We ran the QRH checklist for a potential fuel leak, deciding not to shut down the right engine to expedite the divert and due to our heavy weight, suspecting that would be less safe than keeping it running. We requested priority handling and returned to ZZZ via vectors to a visual approach Runway XX, with the ILS used as a backup. It was night and the weather was VFR. Upon an uneventful landing I utilized the left engine thrust reverser and we stopped on the runway and shutdown the right engine as a precaution. Emergency vehicles met the airplane to inspect the right wing and engine, nothing noteworthy was discovered. We taxied to the gate and shutdown the left engine, non-normal complete. CRM between myself and the Captain was excellent throughout the flight. The Captain read all non-normal checklist aloud and asked if I had any inputs or questions when appropriate. The demeanor in the cockpit was professional, calm, and business-like at all times as we worked our way through solving the problem and executing a divert back to ZZZ. The decision not to shut down the right engine was discussed at length and we both concluded that due to cockpit indications and our heavyweight the best course of action was to land immediately and shut it down on the runway. In retrospect this proved to be the correct call after maintenance personnel discovered multiple faults with the fuel totalizer and both wing compensators causing major fuel system instrument irregularities, and in fact no fuel leak was present.

## Synopsis

B737 Captain reported an air turn back after a fuel imbalance was detected during climbout.