ALERT BULLETIN

AB 2022:30/3-21
12/2/2022
1931084, 1927681, 1921319

TO: FAA (AVP-200, AFS-200)

INFO: FAA (AVP-1, AFS-900, AFS-260, AFS-100, AIR-720, AIR -780, AIR-360, SEA-AEG, AQS-230), A4A, ALPA, AMFA, ASAP, ATSG, CAPA, IAM, IBT, ICAO, ICASS, IFALPA, IPA, NTSB, PAMA, RAA, SWAPA, TWU

FROM: Becky L. Hooey, Director
NASA Aviation Safety Reporting System

SUBJ: Single Pack Aircraft Operation Issues

We recently received ASRS reports describing a safety concern that may involve your area of operational responsibility. We do not have sufficient details to assess either the factual accuracy or possible gravity of the report. It is our policy to relay the reported information to the appropriate authority for evaluation and any necessary follow-up. We feel you should be aware of the following:

ASRS has received several reports describing issues associated with single pack aircraft operations, including cabin pressurization and temperature control issues, resulting from failure of the remaining pack.

(ACN 1931084) CRJ-200 flight crew reported the Right Pack failed at the gate prior to pushback. The flight crew deferred the Pack and elected to continue the flight with Main Cabin Pack already deferred. During departure climb the Left Pack failed, resulting in a loss of pressurization and excessive cabin temperatures which contributed to passenger illness. The flight crew performed an air turn back and landing at departure airport.

(ACN 1927681) B737-800 Captain reported refusing an aircraft after the previous Captain had also refused the aircraft. The aircraft had a deferred air conditioning pack and required repair. Ground temperatures were very high.

(ACN 1921319) CRJ-200 flight crew reported a PACK INOP Caution Message on takeoff. After running the checklists and QRH, the bleeds were configured to the engines, which generated a Left PACK high press caution message. The flight crew elected to perform an air turn back and precautionary landing at departure airport.

To properly assess the usefulness of our alert message service, we would appreciate it if you would take the time to give us your feedback on the value of the information that we have provided. Please contact Dr. Becky Hooey at (408) 541-2854 or email at becky.l.hooey@nasa.gov.

Aviation Safety Reporting System
P.O. Box 189 | Moffett Field, CA | 94035-0189

ACN 1931084	
DATE / TIME	
Date of Occurrence	202209
Local Time Of Day	1201 to 1800
PLACE	
Locale	ZZZ.TRACON
State	US
AIRCRAFT / EQUIPMENT X	
ATC / Advisory - TRACON	ZZZ
Make Model Name	Regional Jet 200 ER/LR (CRJ200)
Operating Under FAR Part	121
COMPONENT 1	
Aircraft Component	Air Conditioning and Pressurization Pack
PERSON 1	
Function - Flight Crew	First Officer
Function - Flight Crew	Pilot Not Flying
ASRS Report Number	1931084
PERSON 2	
Function - Flight Crew	Captain
Function - Flight Crew	Pilot Flying
ASRS Report Number	1931086
EVENTS	
Anomaly	Aircraft Equipment Problem - Critical
Anomaly	Flight Deck / Cabin / Aircraft Event - Illness / Injury
Anomaly	Deviation - Speed - All Types
Anomaly	Deviation / Discrepancy - Procedural - Published Material / Policy
Detector - Person	Flight Crew
Result - General	Flight Cancelled / Delayed
Result - Flight Crew	Landed in Emergency Condition
Result - Flight Crew	Requested ATC Assistance / Clarification
Result - Flight Crew	Returned To Departure Airport
Result - Air Traffic Control	Provided Assistance
NARRATIVE 1	

On climbout from 10,000 to 15,000 we lost pressurization due to a Air Conditioning Pack failure. At this time the cabin temperatures were around 35 Celsius due to the main cabin air conditioner Pack being deferred. We requested to descend to 10,000 ft in order to address the pressurization issue. Simultaneously the flight attendant notified the flight deck of a sick passenger. After assessment and a second report of the passenger's condition we decided to [request priority handling] and return to ZZZ.

Numerous threats factored into this event but Single Air Conditioning Pack during summer time operations should not be allowed.

NARRATIVE 2

After block out in ZZZ, going to ZZZ1 we had the Right Hand (RH) Pack go up to 120 Celsius output temp and auto shutdown. We went through a crew deferral and proceeded to pushback. By the time we reached the runway we were at 33 C. We followed the procedure for transferring the 10th stage source from APU to engines at around 3-4000 ft. Climbing through 15,000 [ft] we heard a small boom and received Left Hand (LH) Pack Hi Temp and immediately felt the loss of the last remaining pack in our ears. I was PF, So I selected the ALT button on the FCP and told the First Officer to request 10,000 for loss of pressurization. Once leveling off at 10,000 we ran the QRH for LH Pack Hi Temp. We got the pack back on-line and supplying airflow. During this checklist I received a call from the FA that there was no airflow and that now a passenger in [seat] XX was experiencing heat exhaustion and was about to throw up and family was tending to the passenger and wants them to have medical attention. I told Dispatch about the pressurization and the medical [priority] and told them I want to return to ZZZ.

They re-cleared me to ZZZ all while I had the FO [request priority handling] and request [Runway] XXL back into ZZZ. I was told by Dispatch that there would be [company personnel] and was told to go to [gate] XXX. I briefed the FA and the customers about our [situation]. I exceeded 250kts below 10,000 when we accomplished all the briefings and checklists necessary for the air return. We did not land overweight. We landed and there was confusion in the ramp tower on what gate we had and then there were no wing walkers and no [company personnel]. We waited for the wing walkers but I told the FA to open the door as soon as we shut down so that the EMTs could enter and the passenger could exit. [Company personnel] eventually came and we deplaned and took another aircraft to ZZZ1. I was in touch with Dispatch, Maintenance Control, and the Duty Pilot after the flight.

We took a nearly fully loaded aircraft with one operative pack on a flight where the OAT was 30+C and where the cabin temperatures are hovering right at the safe limits of healthy adults. The last pack failure occurred under high demand and as a result of the lack of airflow and high ambient cabin temp, the medical [situation] took place.

Do not allow a CRJ 200 aircraft to operate single pack when the OAT exceeds 27 C.

SYNOPSIS

CRJ-200 flight crew reported the Right Pack failed at the gate prior to pushback. The flight crew deferred the Pack and elected to continue the flight with Main Cabin Pack already deferred. During departure climb the Left Pack failed, resulting in a loss of pressurization and excessive cabin temperatures which contributed to passenger illness. The flight crew performed an air turn back and landing at departure airport.

ACN 1927681	
DATE / TIME	
Date of Occurrence	202208
Local Time Of Day	1201 to 1800
PLACE	
Locale	ZZZ.Airport
State	US
Altitude - AGL	0
ENVIRONMENT	
Flight Conditions	VMC
AIRCRAFT / EQUIPMENT X	
Make Model Name	B737-800
Operating Under FAR Part	121
COMPONENT 1	
Aircraft Component	Air Conditioning and Pressurization Pack
PERSON 1	
Function - Flight Crew	Captain
Function - Flight Crew	Pilot Flying
ASRS Report Number	1927681
EVENTS	
Anomaly	Aircraft Equipment Problem - Critical
Anomaly	Flight Deck / Cabin / Aircraft Event - Other / Unknown
Anomaly	Deviation / Discrepancy - Procedural - Maintenance
Anomaly	Deviation / Discrepancy - Procedural - MEL / CDL
Anomaly	Deviation / Discrepancy - Procedural - Published Material / Policy
Anomaly	Ground Event / Encounter - Ground Equipment Issue
Detector - Automation	Aircraft Other Automation
Detector - Person	Flight Crew
Detector - Person	Maintenance
Result - General	Release Refused / Aircraft Not Accepted

NARRATIVE 1

Refused aircraft. Just prior to push back, Dispatch notified me that my aircraft was needed for a different flight because the Captain had refused the plane, which was parked a few gates from me. I called dispatch to ask to discuss and was told the plane had an inoperative pack that had been written up previously, and the Captain couldn't cool the plane. I walked over to check the plane. The Captain was still there. I discussed the situation with him. The same pack had repeat write ups and had been MELed for the same problem previously. Neither the APU nor external air cooled the plane where it could be boarded or operated in ZZZ summertime heat. The cabin was about 85 F in front and about 92 F in the back and never cooled beyond that. I was informed that maintenance could not repair the pack at ZZZ. In interest of the safety and health of passengers and crew, I elected to refuse the plane. Too hot to board passengers or for cabin crew to work. Once the doors close, it's worse. It's ZZZ in summertime. The inoperative pack is a category X repair, so it can be flown 10 days before it's fixed. This pack had been written up more than once. In the summertime, especially, this isn't reasonable.

Furthermore, when a pilot refuses a plane, it's not appropriate to assign the plane to another flight in hopes that a different pilot will accept it.

SYNOPSIS

B737-800 Captain reported refusing an aircraft after the previous Captain had also refused the aircraft. The aircraft had a deferred air conditioning pack and required repair. Ground temperatures were very high.

ACN 1921319	
DATE / TIME	
Date of Occurrence	202207
Local Time Of Day	0601 to 1200
PLACE	
Locale	ZZZ.Airport
State	US
Altitude - AGL	0
ENVIRONMENT	
Flight Conditions	VMC
AIRCRAFT / EQUIPMENT X	
Make Model Name	Regional Jet 200 ER/LR (CRJ200)
Operating Under FAR Part	121
COMPONENT 1	
Aircraft Component	Pneumatic Valve/Bleed Valve
COMPONENT 2	
Aircraft Component	Air Conditioning and Pressurization Pack
PERSON 1	
Function - Flight Crew	First Officer
ASRS Report Number	1921319
PERSON 2	
Function - Flight Crew	Captain
ASRS Report Number	1921320
EVENTS	
Anomaly	Aircraft Equipment Problem - Critical
Anomaly	Deviation / Discrepancy - Procedural - Clearance
Anomaly	Deviation / Discrepancy - Procedural - FAR
Anomaly	Deviation / Discrepancy - Procedural - Maintenance
Anomaly	Deviation / Discrepancy - Procedural - MEL / CDL
Anomaly	Deviation / Discrepancy - Procedural - Published Material / Policy
Detector - Automation	Aircraft Other Automation
Result - General	Flight Cancelled / Delayed
Result - General	Maintenance Action
Result - Flight Crew	Requested ATC Assistance / Clarification
Result - Flight Crew	Returned To Departure Airport
Result - Air Traffic Control	Provided Assistance

NARRATIVE 1

We had a PACK INOP on take off out of ZZZ on Aircraft X. We transferred the bleeds from the APU to the engines when we got a Left PACK High Press Caution Message. We ran the QRH at 3,000 ft. and the Caution Message continued. We then proceeded to the unpressurized flight QRH and completed that. At that time cabin temp was 32 Degrees C, and we were close to reserve fuel landing in ZZZ1. We deemed the safest option was to go back to ZZZ.

Cause: Complex single pack operations.

QRH was vague in stating that if the High pressure caution message continues that the Pilot should then proceed to the unpressurized flight QRH.

NARRATIVE 2

The right pack was deferred. We reviewed the MEL for the right pack INOP. After takeoff we transferred the bleeds to the engine and got a L Pack HI Press Caution Message. We leveled off at 3,000 ft. and informed ATC. We ran the QRH items for the L Pack HI press caution and Unpressurized Takeoff neither of which resolved the issue. As we were finishing the QRH, Dispatch asked if we were vectoring and if we were going to air return? At that moment we had not decided to return. We finished the QRH items and the decision was made to return to ZZZ. At the decision point, we were 500 lbs. from landing weight and the cabin temp was approaching 32 degrees C, (I did not think we could cool the cabin at 10,000 ft. with 44 passengers). While ZZZ1 was reporting good forecasted weather the airports around ZZZ1 had been reporting low ceilings, we had no alternate, we had used up the 15 minutes of extra fuel we had, and I was not sure we could still leave the area and arrive at ZZZ1 before reaching reserve fuel. Given all factors we felt a return to ZZZ was the safer option. We communicated to the FA (Flight Attendant) and Passengers, ATC and Dispatch what was going on throughout. We completed the checklists and setup for the approach to ZZZ and landed without further incident.

Cause: Complex single pack procedures after takeoff.

SYNOPSIS

CRJ-200 flight crew reported a PACK INOP Caution Message on takeoff. After running the checklists and QRH, the bleeds were configured to the engines, which generated a Left PACK high press caution message. The flight crew elected to perform an air turn back and precautionary landing at departure airport.