4/3/2024 **FOR YOUR INFORMATION** 2024-63/8-4

2087065

To: Airport Manager, Denver Int'l Airport (DEN), CO, FAA (AJV-A, ATM D01 TRACON), Mitsubishi Heavy Industries

Info: FAA (AVP-1, AVP-200, AFS-260, AFS-200, ANM-600, Director of Air Traffic Operations CSA, Runway Safety Team), A4A, ALPA, AMFA, APA, ASAP, ATSG, CAPA, IAM, IATA, ICASS, IFALPA, IPA, NTSB, PAMA, SWAPA, TWU

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

Re: DEN RNAV GPS Y 16R Approach Anomalies

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 enclosed deidentified report.

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 2087065	
DATE / TIME	
Date of Occurrence	202402
Local Time Of Day	1201 to 1800
PLACE	
Locale	D01.TRACON
State	CO
ENVIRONMENT	
Flight Conditions	VMC
AIRCRAFT / EQUIPMENT X	
ATC / Advisory - TRACON	D01
Make Model Name	Regional Jet CL65, Undifferentiated or Other Model
Operating Under FAR Part	121
COMPONENT 1	
Aircraft Component	Navigational Equipment and Processing
COMPONENT 2	
Aircraft Component	Autopilot
PERSON 1	
Function - Flight Crew	First Officer
Function - Flight Crew	Pilot Flying
ASRS Report Number	2087065
EVENTS	
Anomaly	Aircraft Equipment Problem - Less Severe
Anomaly	Deviation - Track / Heading - All Types
Anomaly	Deviation / Discrepancy - Procedural - Clearance
Anomaly	Deviation / Discrepancy - Procedural - Published Material / Policy
Detector - Person	Flight Crew
Result - Flight Crew	FLC Overrode Automation

NARRATIVE 1

We were being vectored onto the recently published RNAV (GPS) Y 16R for the visual approach. On a previous occasion while flying the same approach, the CA and I had seen the autopilot initiate a left bank toward the approach course after the lateral mode captured, rather than maintaining the intercept heading and then gradually banking right to intercept the inbound course. This required disconnecting the autopilot to avoid triggering TCAS alerts due to traffic on approach to the parallel runway. As part of tonight's approach briefing, I reviewed this threat, hypothesizing it may occur if ATC vectored us to intercept close to the FAF as that is how it had happened on the previous occasion, and I stated I would disconnect and hand-fly if the same situation occurred. This time we were vectored to intercept somewhat further out (don't recall exact distance), and with a fairly shallow intercept angle (again, don't recall exact angle), and we watched closely as the FMS lateral mode jumped the fence. For a moment it seemed like the autopilot was going to behave normally and do a gradual right bank to intercept the course, but then it began the left bank. I immediately disconnected the autopilot and hand flew the rest of the visual approach, so as to avoid any traffic alerts.

From my understanding, the RNAV (GPS) Y 16R procedure with the offset course was recently developed to mitigate TCAS alerts due to aircraft approaching the parallel 16L runway. It seems that the behavior of automation in the CRJ aircraft may be counteracting those intentions. I'm not sure if the problem is occurring when the GPS is switching from TERM sensitivity to GPS approach, thus making the autopilot become more aggressive to establish course after this transition occurs, or if there's something else going on.

I think the company and/or the FAA need to take a look at this IAP so that procedures can be modified to avoid this unexpected banking action that can be confusing and that can trigger TCAS alerts.

SYNOPSIS

CRJ First Officer reported concerns with lateral capture logic of final approach course of the RNAV GPS Y 16R approach at DEN. First Officer reported that autopilot/autoflight system commands an abrupt turn toward the parallel adjacent runway rather than intercepting the course from the current heading.