

ALERT BULLETIN

AB 2024:4/8-2
2/8/2024
2048511, 2047145

TO: Airport Manager, Phoenix Sky Harbor International (PHX) AZ, FAA (AAS-1, ATM P50 TRACON)

INFO: FAA (AFS-200, AVP-1, AVP-200, AAS-300, AJV-A, AWP-600, AFS-260, AFS-400, AJI-144, Director of Air Traffic Operations WSA, Runway Safety Team), ATSG, AFA, ALPA, IFALPA, APA, APFA, ASAP, A4A, IATA, CAPA, ICAO, ICASS, IPA, NTSB, RAA, SWAPA

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

SUBJ: PHX BRUSR1 STAR

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 recently received reports from air carrier flight crews describing issues associated with the PHX airport BRUSR1 STAR resulting in energy management challenges.

(ACN 2048511) Air carrier flight crew reported while using VNAV on the BRUSR1 STAR into PHX published crossing altitudes resulted in energy management challenges.

The crew suggested a hard crossing altitude of 4,000 ft at JAMIL would mitigate these issues. ATC informed other crews have encountered similar challenges.

The crew stated this requires a high descent rate in order to meet the criteria for a stabilized approach. ATC informed them this has been the case for other carriers.

(ACN 2047145) Air carrier Captain reported during arrival on PHX BRUSR 1 STAR they were given a confusing clearance for a visual approach for Runway 8.

Flight crew was using RNAV Runway 8 approach which reportedly does not share a common fix with BRUSR 1 STAR to provide continuity, but the ILS Runway approach 8 does. The Captain stated the approaches are so similar, the inbound fixes should be the same.

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 Hooley at (408) 541-2854 or email at becky.l.hooley@nasa.gov.



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



ACN 2048511

DATE / TIME

Date of Occurrence	202310
Local Time Of Day	No Local Time Of Day Stated

PLACE

Locale	PHX.Airport
State	AZ
Altitude - MSL	6000

AIRCRAFT / EQUIPMENT X

ATC / Advisory - TRACON	P50
Make Model Name	Commercial Fixed Wing
Operating Under FAR Part	121

PERSON 1

Function - Flight Crew	Captain
Function - Flight Crew	Pilot Not Flying
ASRS Report Number	2048511

PERSON 2

Function - Flight Crew	First Officer
Function - Flight Crew	Pilot Flying
ASRS Report Number	2048520

EVENTS

Anomaly	ATC Issue - All Types
Anomaly	Inflight Event / Encounter - Unstabilized Approach
Anomaly	No Specific Anomaly Occurred - Unwanted Situation
Detector - Person	Flight Crew
Result - Flight Crew	FLC Complied w / Automation / Advisory
Result - Air Traffic Control	Provided Assistance

NARRATIVE 1

VNAV calculates Top of Descent from 6000 ft. at TLMAN waypoint on the BRUSR1 RNAV Arrival, based on overflying JAMIL waypoint (at or above 4000 ft.) to a vector to final, rather than intercepting the final approach course at JAMIL for the ILS to Runway 8. This left the aircraft very high on approach when ATC issues a turn to final and the clearance for (usually) a visual approach. There was plenty of distance to return to the correct glidepath after aggressively slowing and configuring the aircraft. (This descent problem would also happen on the Runway 7L and 7R transitions.) Approach Control told us that many aircraft turn final at the same excessive height, and that ATC had been trying to change the STAR to put aircraft at a better altitude for intercepting the final approach course and glidepath.

VNAV descent profile did not match ATC expectation.

Change JAMIL crossing restriction to "At 4,000 ft.," on the BRUSR1 rather than "At or above 4,000 ft.," as currently published, or eliminate the vector after JAMIL and allow the FMS discontinuity with the ILS 8 to close, as it does on the HYDRR Arrival. (Also correct the Runway 7L and 7R transitions on the BRUSR Arrival.) In the mean time, publish a company note directing the the Crew to manually intervene in the descent profile

after TLMAN to cross JAMIL at 4,000 ft. to establish a normal glidepath after intercepting final, or set the STAR's JAMIL crossing altitude to a "Hard" 4,000 ft. to accomplish the same goal."

NARRATIVE 2

On the BRUSR1 Arrival to Runway 8 VNAV kept us at 6,000 ft., until way too late to make a normal descent. JAMIL was depicted as above 4,000 ft. on the STAR and VNAV kept the descent point out of 6,000 ft. just before JAMIL. The ILS 8 did not automatically tie into the STAR at JAMIL. When we got the Approach Clearance and connected the arrival to the approach, all of a sudden we were way above VNAV glidepath. We had to fully configure level and come down at a high rate of descent in order to meet stabilized approach criteria. The Approach Controller stated that crews consistently find themselves very high at that point, and that the local Controllers have been requesting a change for years.

VNAV put us very high on the arrival.

Make JAMIL a mandatory 4,000 ft. point on the BRUSR Arrival so that VNAV commands a descent out of 6,000 ft. and keeps the aircraft on a normal glideslope. Add a note to the company information recommending Crews make JAMIL a hard altitude on the BRUSR until the chart can be changed. FOWLE and BALTE probably have the same issue.

SYNOPSIS

Air carrier flight crew reported while using VNAV on the BRUSR1 STAR into PHX published crossing altitudes resulted in energy management challenges. The crew suggested a hard crossing altitude of 4,000 ft at JAMIL would mitigate these issues. ATC informed other crews have encountered similar challenges.

ACN 2047145

DATE / TIME

Date of Occurrence	202310
Local Time Of Day	0601 to 1200

PLACE

Locale	PHX.Airport
State	AZ

AIRCRAFT / EQUIPMENT X

ATC / Advisory - TRACON	P50
Make Model Name	Commercial Fixed Wing
Operating Under FAR Part	121

PERSON 1

Function - Flight Crew	Captain
Function - Flight Crew	Pilot Not Flying
ASRS Report Number	2047145

EVENTS

Anomaly	ATC Issue - All Types
Anomaly	Deviation / Discrepancy - Procedural - Published Material / Policy
Anomaly	No Specific Anomaly Occurred - Unwanted Situation
Detector - Person	Flight Crew
Result - Flight Crew	Became Reoriented

NARRATIVE 1

PHX WX (Weather) day VFR CAVU, on east flow. Aircraft on BRUSR 1 RNAV STAR for Runway 08. ILS [Runway] 8 NOTAMd OTS (Out of Service). Crew loaded, briefed, and planned RNAV GPS Y Runway 8 prior to TOD (Top of Descent), as backup for visual approach, expecting vectors to final as standard between TLMAN and JAMIL. Instead controller, gave an unfamiliar sounding clearance to (paraphrased) "remain on the BRUSR, cleared for the visual approach Runway 8." Both the First Officer as PF (Pilot Flying) and myself as Captain/PM (Pilot Flying) remarked to each other that that was an unusual sounding clearance in general, that there was no proximate traffic ahead to delay vectoring us towards the runway, and because this STAR and IAP share no common fix. The more commonly used ILS 8 does share JAMIL with the BRUSR however, yet even then vectors are always given in our experience. As we had already called the field in sight and were at the point where a standard rate turn from base to final was required, we just accepted the visual approach clearance, joined the FAC (Final Approach Course) normally without overshoot, and landed normally without any difficulty or ATC query.

A less familiar crew, both of us being based at PHX, perhaps with night, WX, etc., might have fared differently. It is especially confusing because JAMIL sits right on the FAC as displayed on the Aircraft navigation display, but it is most assuredly NOT part of the RNAV 8 IAP. Had we done as a crew is trained to do, arm the approach mode and monitor for FAC interception, we would have blown right through the FAC, with a potential loss of separation for [Runway] 7R traffic, of which there was none for us, but commonly are there.

Poor design of RNAV GPS Y Runway 8 IAP, in that it shares no common fix with the RNAV STAR, coupled with the controller's unusual clearance, rather than the typical vectors to final. Recommend the RNAV (GPS) 8 be redesigned to use the same fixes as the ILS 8, both for commonality/familiarity, and to link both to the STAR to prevent an overshoot. As it is structured now, now it is an accident waiting to happen.

The RNAV GPS Y Runway 8 should be reconfigured to use the same waypoints of JAMIL and WAZUP as the ILS 8, both for commonality and so that the RNAV STAR can link to the RNAV IAP. Until then, controllers must issue vectors to final. Airports such as LAX are now issuing blanket approach clearances to given runways, because whether ILS, RNP, or RNAV, they all use the same fixes and FACs.

SYNOPSIS

Air carrier Captain reported during arrival on PHX BRUSR 1 STAR they were given a confusing clearance for a visual approach for Runway 8. Flight crew was using RNAV Runway 8 approach which reportedly does not share a common fix with BRUSR 1 STAR to provide continuity, but the ILS Runway approach 8 does. The Captain stated the approaches are so similar, the inbound fixes should be the same.