



NATIONAL TRANSPORTATION SAFETY BOARD

Office of Aviation Safety
Washington, D.C. 20594

September 24, 2018

Attachment 26 – Honeywell Email on the FMS Bridge Visual

OPERATIONAL FACTORS/HUMAN PERFORMANCE

DCA17IA148

Etcher Shawn

From: Eller, Jay [REDACTED]
Sent: Thursday, July 19, 2018 3:25 PM
To: Etcher Shawn; Lovell John
Cc: Studtmann, David
Subject: RE: [External] FW: AC5 Database FMS Bridge Visual, why ILS aren't coded with Bridge Visual [G]

Honeywell Internal

Air Canada provides to Honeywell their "version" of the database. The version/format they provide is not something that Honeywell's FMS can read directly. Honeywell compiles what we receive from Air Canada into an "FMS database" which can be loaded on the FMS and read by the FMS (so now it is in the correct software configuration/format). The format we get from Air Canada has this particular custom approach already defined. We just turn the entire thing into something our FMS can read.

So, in essence, the answer to your questions are yes and yes. Air Canada provides an update to Honeywell and Honeywell produces a version back to Air Canada that can be loaded into the FMS.

Or said differently we give back to them what they gave us except it has been converted into something the FMS can read.

Jay Eller

Product Integrity / Air Safety Investigator
Honeywell | Aerospace

[REDACTED]

[REDACTED]

From: Etcher Shawn [REDACTED]
Sent: Thursday, July 19, 2018 1:06 PM
To: Eller, Jay <[REDACTED]> Lovell John [REDACTED]
Cc: Studtmann, David [REDACTED]
Subject: Re: [External] FW: AC5 Database FMS Bridge Visual, why ILS aren't coded with Bridge Visual [G]

Jay

When Air Canada does an FMS update do they receive the update from Honeywell or is it an update they generate themselves?

Shawn

From: Eller, Jay [REDACTED]
Sent: Thursday, July 19, 2018 12:48:58 PM
To: Lovell John

Cc: Studtmann, David; Etcher Shawn

Subject: RE: [External] FW: AC5 Database FMS Bridge Visual, why ILS aren't coded with Bridge Visual [G]

Honeywell Internal

To be clear, we believe that Air Canada's database started "life" from the United database. And we believe this particular procedure was brought over, unchanged, from United's version. So it is likely that the Air Canada database is just that.....Air Canada's database custom for them.....but we believe this particular approach was brought over from United's and was not changed.

Jay Eller

Product Integrity / Air Safety Investigator

Honeywell | Aerospace

[REDACTED]

[REDACTED]

From: Lovell John [REDACTED]
Sent: Thursday, July 19, 2018 10:45 AM
To: Eller, Jay [REDACTED]
Cc: Studtmann, David [REDACTED]; Etcher Shawn [REDACTED]
Subject: RE: [External] FW: AC5 Database FMS Bridge Visual, why ILS aren't coded with Bridge Visual [G]

Jay,

Thank you for your excellent and very timely explanation. I will get with the team and see how we move forward from here and if we want to pursue an answer from United.

Thanks a bunch.
John

From: Eller, Jay [REDACTED] >
Sent: Thursday, July 19, 2018 1:41 PM
To: Lovell John [REDACTED]
Cc: Studtmann, David [REDACTED]; Etcher Shawn [REDACTED]
Subject: RE: [External] FW: AC5 Database FMS Bridge Visual, why ILS aren't coded with Bridge Visual [G]

Honeywell Internal

John,

There still seems to be some confusion in this area as I had a number of exchanges with Shawn on the topic back in April of this year. I will see if I can clarify it now.

The FMS bridge visual approach was created by United Airlines and is a custom entry into the database (Air Canada uses the United database for their operations). Honeywell has no part of its creation. For whatever reason, United opted to take an ILS approach (which would normally have been auto tuned as an identifier/frequency would have been input for it) and made it an RNAV approach with no specified identifier/frequency. Therefore, there is nothing for the FMS to auto tune to as there is no frequency specified in the database.

The below is a screen capture from the database created by United and used by Air Canada. The RNAV custom approach created by United is highlighted with a red box. You will see that under the column called "Nav" there is no identifier listed for the RNV28R (which is the Bridge approach for KSFO). As such, the FMS does not have a facility/frequency to tune. "IGWQ" in the below, for example, indicates a facility for tuning and, as such, a frequency is available. Without the identifier, a frequency cannot be determined.

Again, this was a procedure custom created by United for their custom database and is used by Air Canada and is not a procedure created by Honeywell. You would need to ask United as to why they decided to not specify an identifier for this RNAV approach (which is a modification of an already existing ILS approach).

Apt	Ident	R	C	Via	Rwy	TrAlt	Fix	Type	T	PT	M	O	Cs/Hd	Alt1	Alt2	Dist	Rad
Filter	Filter	Filter	Filter	Filter	Filter	Filter	Filter	Filter	Filter	Filter	Filter	Filter	Filter	Filter	Filter	Filter	Filter
KSFO	ARCHI	B		APPTRN	28R	18000	ARCHI	WPT		IF				8000			
KSFO	ARCHI	B		APPTRN	28R	18000	ZILED	WPT		TF				6000A			
KSFO	ARCHI	B		APPTRN	28R	18000	GIRRR	WPT		TF				5000A			
KSFO	ARCHI	B		APPTRN	28R	18000	DUMBA	WPT		TF				4000A			
KSFO	ARCHI	B		APPTRN	28R	18000	CEPIN	WPT		CF			283.97	3000A		4.20	
KSFO	DUMBA	B		APPTRN	28R	18000	DUMBA	WPT		IF							
KSFO	DUMBA	B		APPTRN	28R	18000	CEPIN	WPT		CF			283.97	3000A		4.20	
KSFO	MENLO	B		APPTRN	28R	18000	MENLO	WPT		IF				4000			
KSFO	MENLO	B		APPTRN	28R	18000	CEPIN	WPT		CF			331.00	3000A		4.40	
KSFO	RNV28R	B		APP	28R	18000	ARCHI	WPT		IF				8000			
KSFO	RNV28R	B		APP	28R	18000	TRDOW	WPT		TF				6000A			
KSFO	RNV28R	B		APP	28R	18000	GAROW	WPT		TF				4000A			
KSFO	RNV28R	B		APP	28R	18000	JANYY	WPT		TF				2500A			
KSFO	RNV28R	B		APP	28R	18000	SAMUL	WPT		TF				1500A			
KSFO	RNV28R	B		APP	28R	18000	F101D	WPT		TF				1200A			
KSFO	RNV28R	B		APP	28R	18000	RW28R	RWY		TF	Y	Y		60			
KSFO	RNV28R	B		APP	28R	18000	RW28R	RWY		FM			309.99	3000A			

Jay Eller

Product Integrity / Air Safety Investigator
Honeywell | Aerospace

[REDACTED]

[REDACTED]

From: Lovell John [REDACTED]
[REDACTED] July 19, 2018 8:20 AM

To: Eller, Jay [REDACTED]

Subject: [External] FW: AC5 Database FMS Bridge Visual, why ILS aren't coded with Bridge Visual [G]

Jay,

As you know, I am the IIC taking this case before the Board in a formal Board meeting.

Can you look at the email thread below and reply to the question of why Honeywell set up the FMS Bridge visual approach to require manual tuning of the ILS.

Can you please assist? We are at the point of completing a director's draft copy of the report and am trying to plug holes in the report before it goes forward to the next stage, and also to anticipate questions the Board members are likely to ask.

FYI, The technical specialist assisting me in the operations area is Shawn Etcher and he may have additional questions., so please include him in any follow-up questions or comments. I am also copying David in case you are unavailable since I need a formal answer as soon as possible.

Thank you very much.

John.

From: Etcher Shawn [REDACTED]
Sent: Wednesday, July 18, 2018 5:23:45 PM
To: Marcel Comeau
Subject: RE: AC5 Database FMS Bridge Visual, why ILS aren't coded with Bridge Visual [G]

Marcel

Did Honeywell ever provide you with any clarification or an answer as to why it was not coded as a CF? This keeps coming up so we are attempting to get better clarification and to understand what they told you.

Shawn

From: Marcel Comeau [REDACTED]
Sent: Thursday, February 1, 2018 10:12 AM
To: Etcher Shawn [REDACTED]
Subject: AC5 Database FMS Bridge Visual, why ILS aren't coded with Bridge Visual [G]

Classification: **GENERAL BUSINESS/AFFAIRES GÉNÉRALES**

Good day Shawn, as requested see below for answer:

From Air Canada experts;

. I think the fact that the procedure is coded as TF legs (Track to Fix) and not CF (Course to Fix) which needs a navaid, it might be the reason...but let me check with Honeywell first.

From Honeywel:

See my answers in red below

Senior NavDB Engineer
Product Support Engineering – C&PS
Honeywell | Aerospace

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From:

Sent: Thursday, February 01, 2018 8:21 AM

Subject: KSFO - RNV28R (AC5-A320 191K)

Hi,

Questions...Regarding the KSFO FMS Bridge Visual Rwy 28R...the RNV28R is coded as TF legs therefore no frequency (IGWQ) attached to it. The frequency is available under the runway selection.

Does that mean that the ILS frequency won't be tuned automatically when the approach is selected? - correct

I guess there is only a frequency when it is coded as CF legs? - correct

I presume that most Airlines has it coded as TF legs? - correct

Thanks,

KSFO	RNV28R B	APP	28R	18000	ARCHI	WPT	IF				8000			
KSFO	RNV28R B	APP	28R	18000	TRDOW	WPT	TF				6000A			
KSFO	RNV28R B	APP	28R	18000	GAROW	WPT	TF				4000A			
KSFO	RNV28R B	APP	28R	18000	JANYY	WPT	TF				2500A			
KSFO	RNV28R B	APP	28R	18000	SAMUL	WPT	TF				1500A			
KSFO	RNV28R B	APP	28R	18000	F101D	WPT	TF				1200A			
KSFO	RNV28R B	APP	28R	18000	RW28R	RWY	TF	Y	Y		60			
KSFO	RNV28R B	APP	28R	18000	RW28R	RWY	FM			309.99	3000A			

☐ AC51708001.BIN-Runways by Airport Ident like 'ksfo' 

Apt	Rwy	R	MagBrg	Length	Latitude	Longitude	Elev	ThrDisp	ILS Cat	ILS L-Brg	ILS
Filter	Filter	Filter	Filter	Filter	Filter	Filter	Filter	Filter	Filter	Filter	Filter
KSFO	RW01L	B	13.80	7650	N37-36-34.07	W122-22-54.85	10	640			
KSFO	RW01R	B	13.80	8650	N37-36-27.65	W122-22-48.51	10	560			
KSFO	RW10L	B	103.70	11870	N37-37-43.43	W122-23-36.17	10				
KSFO	RW10R	B	103.70	11381	N37-37-34.63	W122-23-35.17	10				
KSFO	RW19L	B	193.80	8650	N37-37-38.41	W122-22-01.62	10		1	194.00	ISIA
KSFO	RW19R	B	193.80	7650	N37-37-35.32	W122-22-14.21	10				
KSFO	RW28	B	283.80	11870	N37-36-50.13	W122-21-29.02	10	300	1	281.00	IFNP
KSFO	RW28L	B	283.80	11381	N37-36-43.57	W122-21-33.35	10	300	2	284.00	ISFO
KSFO	RW28R	B	283.80	11870	N37-36-50.13	W122-21-29.02	10	300	3	284.00	IGWQ



Marcel Comeau

[Redacted signature block]