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PBS Top-Down Logic

Your Delta MEC PBS Committee regularly receives questions from pilots such as, “*Why did a junior pilot receive a trip I specifically requested?*” or “*What does ‘Could not complete line with pairing’ mean on my Reasons Report?*”

The purpose of this *PBS Notepad* is to provide a review of the top down logic that PBS uses to award regular lines through various examples demonstrating why a pilot might not be eligible to be awarded a pairing that was otherwise available at his seniority.

Regular Line Award Logic

PBS, at its core, is a top down, line-by-line program. When PBS looks at the most senior bidder in a category, it considers all the pairings in the bid package. As PBS moves down the list of pilots in category, in seniority order, pairings bid by pilots are removed from the available pairings pool. Once PBS reaches your seniority it goes through your preferences sequentially, using Prefer Off and Avoid Pairings statements to remove pairings from consideration. PBS uses Award Pairings statements to put pairings onto your line from those pairings remaining in the pool. If you do not put in enough Award preferences to build a line, a system generated (un-numbered) Award Pairings at the end of every Pairings bid group will award pairings until your line is built.

If you are too restrictive with your Prefer Off or Avoid Pairings preferences, PBS may not be able to complete your line. PBS will always work systematically from the top down and attempt to use your Prefer Off or Avoid Pairings preferences, denying those that your seniority is unable to hold, until it is able to create a regular line. This process is known as denial mode, and it will occur unless you command PBS to do otherwise.

You have the option of using a “Clear Schedule and Start Next Bid Group” or “Else Start Next Bid Group” command to prevent PBS from going into denial mode. An “Else Start Next Bid Group” added to a Prefer Off, Avoid Pairings or Set Condition bid preference will cause PBS to jump to the next bid group if it cannot fully honor that bid line.

A “Clear Schedule and Start Next Bid Group” command will cause PBS to move to the next bid group if it has not awarded you a complete line using *only* the specific Award Pairings statements you have provided without denying any Prefer Off, Avoid Pairings or Set Condition preferences. It will not use the system generated Award Pairings, at the end of the bid group, to add any pairings to your line. ***Importantly, “Clear Schedule and Start Next Bid Group” command does not mandate the use of any particular Award Pairing statement, it only mandates that PBS cannot award trips that are not included in any of the bidder’s Award Pairings preferences.***

Pairings Bid Group Logic Summary

1. PBS first validates that there is enough time remaining in the available bid package to build any regular line. If there is enough time available, PBS will process the Pairing Bid Group.
2. PBS will then assign coverage pairings, if this is necessary, using the preferences from the bid group in a top down, line-by-line logic.
3. PBS will then process the bid group preferences in an attempt to complete a line with all of the pairings not awarded to senior bidders in a top down, line-by-line manner. It is always validating, line-by-line, whether by honoring a preference, be it an Award, or a restriction such as Avoid/Prefer Off/Set Condition, it can build a complete line, given the higher preferences it has already honored.
4. PBS uses Avoid and Prefer Off statements to remove trips from the remaining pairings and Set Condition statements to restrict the potential structure for your eventual line award. PBS uses Award statements to find trips that are

available at your seniority, while considering higher up restrictions PBS has been able to honor, that will fit on your line.

5. Once PBS reaches the threshold, it will no longer process any further preferences in the bid group, and your line will be complete.
6. If PBS reaches a "Clear Schedule and Start Next Bid Group" command prior to reaching a value inside the LCW or must deny a preference that has an "Else Start Next Bid Group" instruction attached, it will abandon the process and jump to the next bid group.

Could Not Build Complete Line with Pairing

There are times when PBS determines that, even though a preferred pairing is available at a pilot's seniority, it cannot be awarded on the pilot's line because that pairing, combined with the other pairings previously awarded on the pilot's line and/or still available, would not provide enough total credit to get the pilot inside the LCW. In those instances, the pairing will either be awarded to a junior pilot or will remain in open time. The Reasons Report will state, under the Award Pairing line, "Could Not Build Complete Line with Pairing."

There are many examples of how this can happen, but they all fall into two basic categories:

1. Such a pairing won't fit with any other pairing available at the pilot's seniority, regardless of how the pilot has bid
2. Due to the pilot's bidding strategy, the pairing won't fit on the pilot's line.

Example 1: (Pairing won't fit with any other pairing available at pilot's seniority)

1. Start Pairings
2. Award Pairing if Pairing Number XXXX (Where Pairing XXXX is worth 69:00)
Award Pairings

Assumptions: LCW 70:00-85:00

Pairing XXXX is available

No pairings, In-Period or Carry-Out, worth between 1:00-16:00 In-Period, are available at the pilot's seniority

'Awarding Pairing If Pairing Number XXXX' would require a pairing, In-Period or Carry-Out, with in-period credit between 1:00-16:00 in order to build a complete line. Even though pairing number XXXX is available at this pilot's seniority, PBS cannot find any more pairings that fit on the pilot's line. The pairing will remain in the pool for junior pilots to bid upon. The Reasons Report will state "Could Not Build Complete Line with Pairing: 1" after line 2.

The pilot's line will be built from the System Generated Award Pairings line after line 2.

Example 2: (Pairing won't fit due to pilot's bidding strategy)

1. Start Pairings
2. Award Pairing if Pairing Number XXXX (Where Pairing XXXX is worth 69:00)
3. Award Pairing if Pairing Number YYYY (Where Pairing YYYY is worth 10:30 and In-Period)
4. Avoid Pairing Length <3
5. Avoid Pairing if Carry-Out >0
6. Award Pairing if Pairing Length >5
7. Clear Schedule and Start Next Bid Group
Award Pairings

Assumptions: LCW 70:00-85:00

Pairing XXXX is available

Pairing YYYY went to a senior bidder

Nothing but a 1-2 day In-Period or Carry-Out pairing will fit along with Pairing XXXX

6 day and longer pairings are available throughout the month

This example adds in additional bid preferences and, importantly, the use of "Clear Schedule and Start Next Bid Group" command on line 7. The use of this command mandates that lines 4 and 5 cannot be denied, as they are negative bid preferences. The command also mandates that the system generated Award Pairings line cannot be used. ***It does not, however, mandate the use of any particular Award Pairings line.***

'Awarding Pairing If Pairing Number XXXX' would require a pairing worth between 1:00-16:00 In-Period credit to build a complete line. This would require the use of either line 3 or 1-2 days more of In-Period or Carry-Out pairings. As the pairing on line 3 is not available, and since the "Clear Schedule and Start Next Bid Group" command prevents PBS from denying lines 4 and 5, PBS will not award pairing XXXX, even though it is available. Instead, PBS will honor lines 4 and 5 and fill the pilot with 6 day and longer In-Period pairings.

The Reasons Report will state "Could Not Build Complete Line with Pairing: 1" after line 2. Pairing XXXX will remain in the pool for junior pilots to bid upon.

Example 3: (Pairing will be awarded, but other, less important preferences, will be denied)

1. Start Pairings
2. Award Pairing if Pairing Number XXXX (Where Pairing XXXX is worth 69:00)
3. Award Pairing if Pairing Number YYYYY (Where Pairing YYYYY is worth 10:30 and In-Period)
4. Avoid Pairing Length < 3
5. Avoid Pairing if Carry-Out > 0
6. Award Pairing if Pairing Length > 5
Award Pairings

Assumptions: LCW 70:00-85:00

Pairing XXXX is available

Pairing YYYYY went to a senior bidder

Nothing but a 1-2 day In-Period or Carry-Out trip will fit along with Pairing XXXX

1-2 day trips are available at this pilot's seniority

Carry-Out trips range from 2-day to 9-day trips

Since Pairing XXXX is available, PBS will validate that there are pairings between 1:00-16:00 in the pool and will therefore determine that the pilot can hold Pairing XXXX.

Line 3 went to a senior bidder, so PBS will need to find another pairing to go along with line 2.

PBS will honor Line 4 and remove all 1-2 day pairings, In Period and Carry-Out, because it sees longer Carry-Out pairings with no more than 16:00 of in-period credit available in the pool. At this point, all that remains to go with Pairing XXXX is a Carry-Out pairing greater than a total of 2 days in length.

Line 5 will be denied because it would remove all remaining pairings that go with Pairing XXXX. Line 6 will award a carry-out pairing greater than 5 days in length with between 1:00-16:00 of in-period credit.

If the bidder **requires** that Pairing XXXX be awarded for the Bid Group to be successful, then the bidder must allow only enough other flying in his Award preferences to force PBS to use Pairing XXXX, along with other specified preferences, in order to complete the Bid Group. This next example demonstrates this:

Example 4: (Pairing is available but can't be awarded due to bidding strategy)

1. Start Pairings
2. Award Pairing if Pairing Number XXXX (Where Pairing XXXX is worth 69:00)
3. Award Pairing if Pairing Number YYYYY (Where Pairing YYYYY is worth 10:30 and In-Period)
4. Award Pairing if Pairing Length= 2 days, Limit 1
5. Clear Schedule and Start Next Bid Group
Award Pairings

Assumptions: LCW 70:00-85:00

Pairing XXXX is available

Pairing YYYYY went to a senior bidder

2 Day pairings (line 4) are not available at this bidder's seniority

In this example, the bidder is essentially mandating the use of Line 2 along with either lines 3 or 4 by use of the “Clear Schedule and Start Next Bid Group” command. In this example PBS cannot honor line 2 as it requires the use of lines 3 or 4, and pairings that match those preferences are not available in the pool at this pilot’s seniority.

According to our assumptions, the “Clear Schedule and Start Next Bid Group” on line 5 would be honored and PBS will proceed to the next bid group.

The Reasons Report will state “Impossible to reach Credit Window” after the “Clear Schedule and Start Next Bid Group” on line 5. On the other hand, if there were 2-day pairings available in the pool at this pilot’s seniority, Pairing XXXX would be awarded along with a 2-day pairing.

As always, feel free to email the PBS Committee with any questions or comments at DALPBS@alpa.org.

This is a product of the Delta MEC PBS Committee