Constraints (25)

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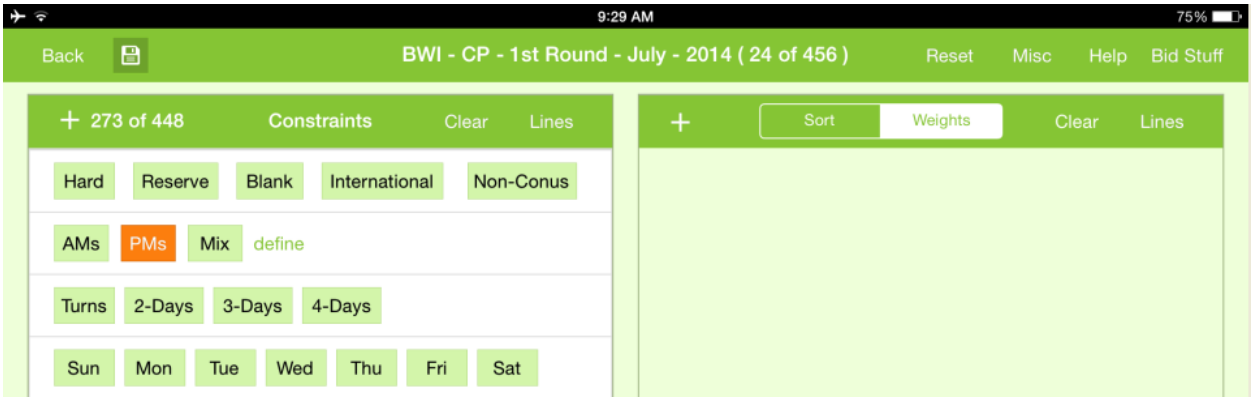
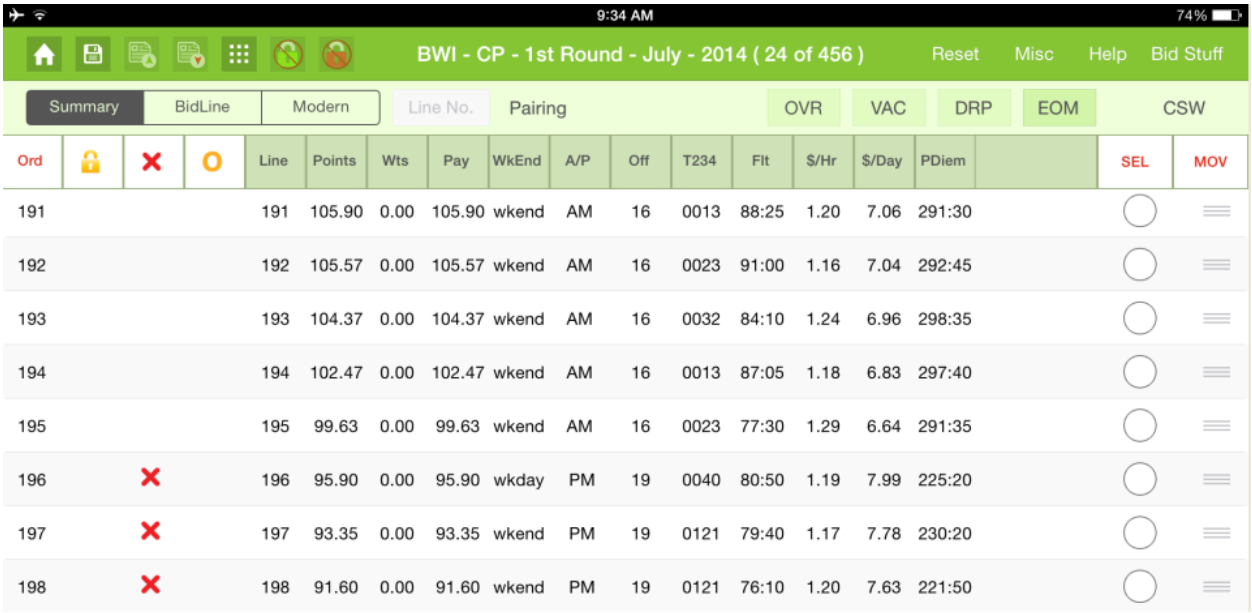
What are Constraints?

Constraints are like filters. Or you can think of it as a limitation or restriction. The simplest example is setting a Constraint for PM, as I've done in the screenshot below (when a button is orange, it is on).



On the left hand side of the "Constraints" view, you can see 273 of 448. What this means is that 273 lines are NOT constrained. Which also means that (448 – 273) 175 lines were constrained. 175 lines are PM lines and they did not pass through your Constraints setting.

A constrained line will have a red X on the selected view:



If you find your constrained lines are mixed in with other non-constrained lines, then it likely means you have your Sort method set to "Line Number". When you select any other Sort method, the constrained lines will move to the bottom (unless you have locked a constrained line to the top).

[Return to Constraints Index]

Expanded Information

AMPM Definitions

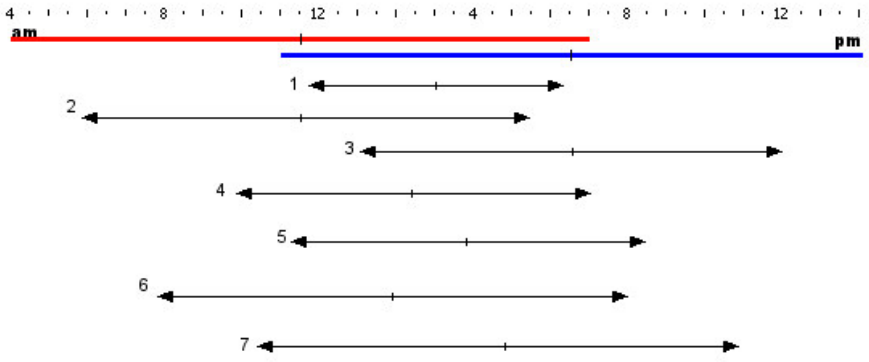
WBid provides three definitions for AM/PM:

A. AM-Terminate/PM-Arrival

B. AM/PM Push and Terminate

C. Banded Centroid

Example illustration:



The black lines represent different duty periods.
AM band is illustrated in red; PM band in blue.
The different rules:

A. AM's terminate before 19:00, PM's push after 11:00
B. AM' push after 04:00 and terminate before 19:00. PM's push after 11:00 and terminate before 02:00
C. AM 'band' is from 04:00 to 19:00 (center is at 11:30). PM 'band' is from 11:00 to 02:00 (center is at 18:30).

	A.	B.	C.
1. 11:30 – 18:30	None*	**AM** & **PM**	None*
2. 05:30 – 17:30	**AM**	**AM**	**AM**
3. 13:00 – 23:45	**PM**	**PM**	**PM**
4. 09:30 – 18:45	**AM**	**AM**	**AM**
5. 11:15 – 20:30	**PM**	**PM**	**PM**
6. 08:00 – 20:00	None	None	**AM** – center of duty period is closer to the center of the AM band.
7. 10:00 – 23:00	None	None	**PM** – center of the duty period is closer to the center of the PM band.

* - special short duty day exception

AM-Terminate/PM-Arrival

A duty period that terminates **before** the AM time is an AM.
A duty period that pushes **after** the PM time is a PM.
Therefore, each duty period can be one or more of AM, PM, or NTE.

A special exception is made for short duty periods where the first push of the day is after the PM start time AND the last arrival is before the AM terminate time. This day is neither an AM nor PM day. The result is the short duty day does not have an impact on whether a line is an AM or a PM.

Return to AM/PM Definitions

AM/PM Push and Terminate

Each of the AM, PM, and NTE (night) have "bands" of time.

A duty period that pushes after the AM push time and arrives before the AM terminate time is an AM duty period.

A duty period that pushes after the PM push time and arrives before the PM terminate time is an PM duty period.

A duty period that pushes after the NTE push time and arrives before the AM terminate time is an NTE duty period.

Therefore, each duty period can be one or more of AM, PM, or NTE.

Return to AM/PM Definitions

Banded Centroid

Each of the AM, PM, and NTE (night) have "bands" of time.

A duty period that pushes after the AM push time and arrives before the AM terminate time is an AM duty period, etc. Similar bands exist for PM and NTE times.

However, with this definition a duty period can only be an AM, a PM, or a NTE. The middle, or centroid, of the duty period is used to make the final determination. If the center of the duty period is closer to the center of the AM band then the duty period is an AM.

A special exception is made for short duty periods where the first push of the day is after the start of the PM band AND the last arrival is before the end of the AM band. This day is neither an AM nor PM day. The result is the short duty day does not have an impact on whether a line is an AM or a PM.

Return to AM/PM Definitions

AM/PM Define

You can access the AM/PM Definition popover by touching the “define” link in the AM-PM-Mix fixed constraints area as shown below.

After touching the “define” link, the following popover will appear and allow you to edit the AM/PM definition IAW will the information presented in the previous two pages.

With the above settings, you can have a maximum of 3 AM days on a PM line, and the line will be still considered a PM. Also, you can have a maximum of 3 PM days on an AM line, and the line will still be considered an AM.

Touching the “Reset” link will set the AM/PM Definition back to the standard WBid settings shown above.

[Return to AM/PM Definitions]

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Aircraft Changes

This constraint will constrain lines that have “more than” or “less than” the number of changes selected for the line. You can select between 0 and 20. If you set “more than” and set 0, any line with an aircraft change would be constrained.

Commonly Used

In the above example, any line with more than 4 aircraft changes will be constrained.

Not Used Very Often

In the above example, any line with less than 4 aircraft changes will be constrained. You will find that “less than” for this constraint is not used very often.

This constraint is not available for Flight Attendant bid data. (How is this available in Crew Bid?)

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Blocks of Days Off

This constraint will constrain lines that have “more than”, “less than” or “equal to” the maximum number of consecutive days off (Block of days off). You can select between 3 and 31 as the maximum number of days off. If you set “less than” and set 7, any line that had less than 7 consecutive days off would be constrained.

Commonly Used

In the above example, any line that does not have at least one block of 9 days off or **less** will be constrained.

Not Used Very Often

In the above example, any line that has at least one block of **more** than 9 days off will be constrained.

Seldom Used

In the above example, any line that has at least one block off of exactly 9 days will be constrained.

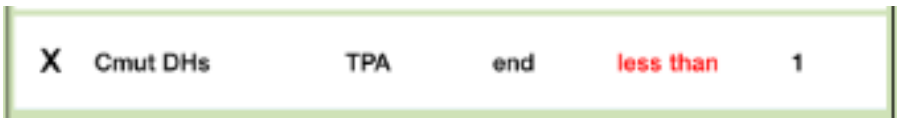
Return to Constraints Index

Cmut DHs

This constraint allows you to select the desired city, “begin” for the beginning of the trip or “end” for the end of the trip or “both” for both the beginning and end of the trip. If I you set “AUS”, and then set “begin”, and then set “less than” and then set 1, any line that did not have at least 1 trips that started with a DH to AUS would be constrained.

Commonly Used

In the above example, any line that has less than 1 deadhead at the beginning of the trip that deadheads from domicile to TPA will be constrained.



Not Used Very Often

In the above example, any line that has less than 1 deadhead at the end of any trip that deadheads from TPA to domicile will be constrained.

In the above example, any line that has less than 1 deadhead at the beginning or end of any trip that deadheads from domicile to TPA or deadheads from TPA to domicile, will be constrained.

Seldom Used

In the above example, any line that has less than 1 deadhead at the beginning and end of any trip that deadheads from domicile to TPA and deadheads from TPA to domicile, will be constrained.

The above examples can also use “more than” as a qualifier in the constraint. There are very few times you would want to constrain a line that had “more than” a certain amount of deadheads, but the option is available for those rare instances where you are trying to find a specific line.

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Commutable Lines

Purpose: Constrain any Line with pairings that are not commutable. WBid distinguishes between 4 types of commutable pairings:

Type 1: Those pairings that **are not** commutable on the front end (including back to back pairings) are constrained.

Type 2: Those pairings that **are not** commutable on the back end (including back to back pairings) are constrained.

Type 3: Those pairings that **are not** commutable on **both ends**. Back to back pairings are not considered.

Type 4: Those pairings that **are not** commutable on **both ends** and have no back to back pairings.

The "**Any Night in Dom**" choice will constrain any Line that requires one or more nights to be spent in Domicile. This is very restrictive and normally results in very few, if any, unconstrained Lines. It is also a way to constrain any Line that is not "purely" commutable. If you select the “Any Night in Dom” button, WBid will constrain all lines that are **type 1, 2, or 3** discussed above.

The "**RON Both ends**" choices will constrain only those pairings that would require an overnight stay before and after a pairing (two overnights in domicile for one block of work days). This is less restrictive than the "Any Night in Domicile" setting. This button (RON Both ends) **will** constrain all **Type 3** lines as discussed above. BTW, if you wonder what **RON** means, it means Remain Overnight.

You may also limit the constraint to only consider “**Commute to Home**” at the end of a pairing or “**Commute to Work**” at the beginning of a pairing. In this case the "**RON Both ends**" constraint is moot and becomes non-selectable

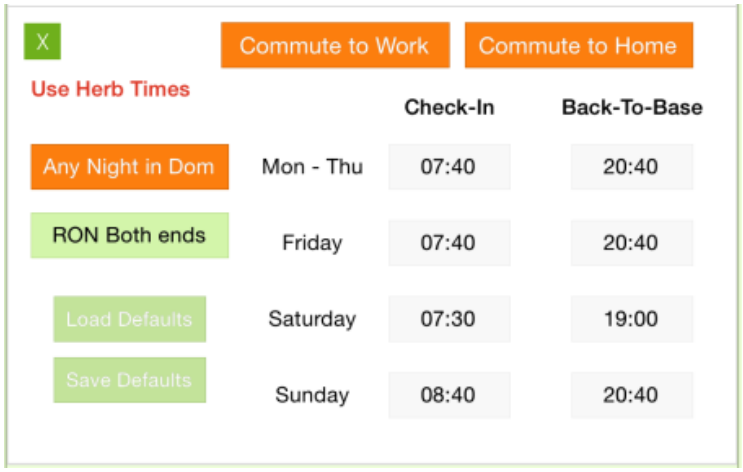
The times must be entered in military format (9:30pm = 21:30) and should be the same time zone as the bid package (CST/CDT or "Herb" time).

See Commutable Times for more information on times.

Note: WBid assumes that overnights between back-to-back pairings (i.e. a turnaround followed by a three-day trip) will not be commutable. These lines will be constrained if the "**Any Night in Dom**" constraint is selected. The "RON Both ends" constraint will only apply if both the beginning and the end of the block of work days is not commutable.

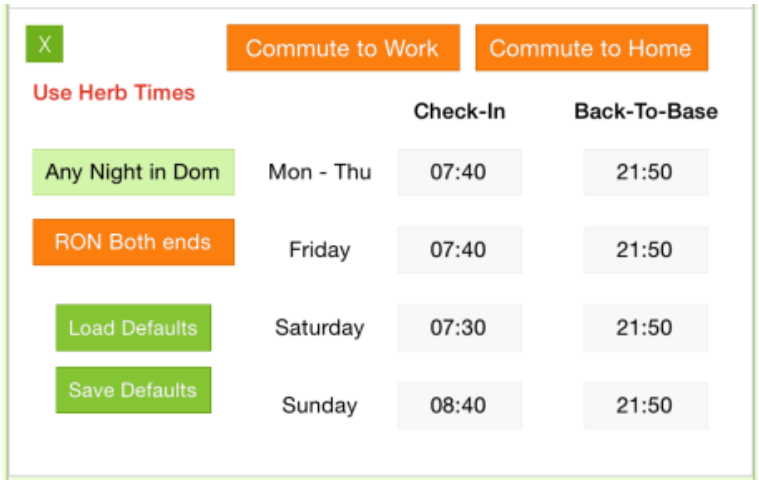
Any Night in Dom

The settings to the below are for a pilot who lives in MHT. As you can see, any line that has all trips start after 07:30 and end before 19:00 are commutable on both ends (Type3).



As you can see from line 178, every pairing starts after 07:30 but none of the pairings end before 1900. But if we look at our settings, we can see a commutable line only needs to end before 20:40 on Thursdays. All of the pairing end before 20:40 on Thursday, so this line is fully commutable (Type 4) on both ends.

RON Both ends



With "RON Both ends" button selected and both "Commute to Work" and "Commute to Home", this constraint checks to see that all the pairing in the line are commutable on either the front or back of the trip. We can see that line 214 above is commutable on the front end of the trip for all pairings and also on the back end for all pairings. Note however, that a night would be spend in domicile on the 7th (back to back pairing). But since "Any Night in Dom" is NOT selected, this line would NOT be constrained.

Commute to Work

If the "Commute to Work" button and "Any Night in Dom" is selected, Line 247 above would be constrained since it has a night in domicile on the 7th.

Commute to Home

If the "Commute to Home" button and "Any Night in Dom" is selected, Line 247 above would be constrained since it has a night in domicile on the 7th.

Note: if only the "Commute to Work" or "Commute to Home" are selected, then the "RON Both Ends" button is **NOT** selectable.

Selecting both "Commute to Work" and "Commute to Home" buttons

If both buttons are selected, then "Any Night in DOM" will can also be selected or deselected. With both "Commute to Work" and "Commute to Home" selected, and "Any Night in Dom" selected, you will find all the fully commutable lines and will also constrain lines with back to back pairings.

With both "Commute to Work" and "Commute to Home" selected, and "Any Night in Dom" NOT selected, you will find all the fully commutable lines and work blocks with back to back pairings will NOT be constrained (i.e. 2day commutable on front and back to back with a 2day commutable on the back).

Control States for Commutable Lines Constraint

There are 4 buttons for the Commutable Lines Constraint and they can be selected in the following 7 states:

Control State	Any Night in Dom	RON Both Ends	Commute to Work	Commute to Home
1	on	n/a	on	off
2	on	n/a	off	on
3	off	on	on	on
4	on	off	on	on

Control State 1 will constrain lines not commutable on the front, including back to back pairings.

Control State 2 will constrain lines not commutable on the back, including back to back pairings.

Control State 3 will constrain lines that are not commutable on both ends. Back to back pairings have no effect with this setting.

Control State 4 will constrain lines that are not commutable on both the front or back and has any night in domicile (back to back pairings).

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Days of the Week

Purpose: Constrain Lines that work undesired days of the week.

You can constrain lines that work certain days of the week, a certain number of times.

Commonly Used

X	Days of the Week	tue	more than	1

All lines that work more than 1 Tuesday will be constrained. Note: if you want to contrain lines that work more than 0 Tuesdays, then do so on the fixed days constraints in row 4 of the Constraints view.

Not Used Very Often

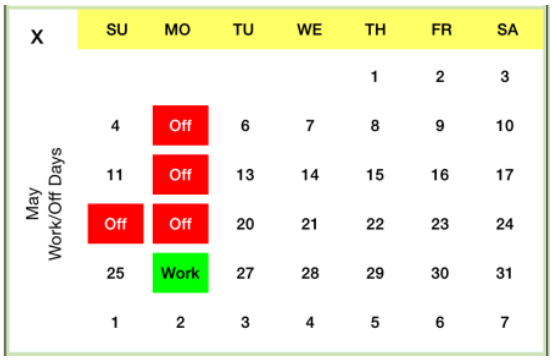
X	Days of the Week	mon	less than	2

All lines that work less than 2 Mondays will be constrained. Line 258 works only 1 Monday. Line 258 will be constrained.

Return to Constraints Index

Days of the Month

Purpose: Constrain Lines that work undesired days of the month (bid period).



This feature is expanded from WBidMax. You can touch a day in the calendar and that day will turn to red "OFF". If you touch the day again, it will turn to green "Work". If you touch the day again, it will revert back to neither OFF or WORK.

With this calendar, you are telling WBidMax for iPad which days you want off and or what days you want to work.

This constraint will then constrain all the lines that do not meet your OFF and WORK requirements.

This above constraint constrains all lines that are **OFF** on the 26th and **WORK** on the 5th, 12th, 18th and 19th.

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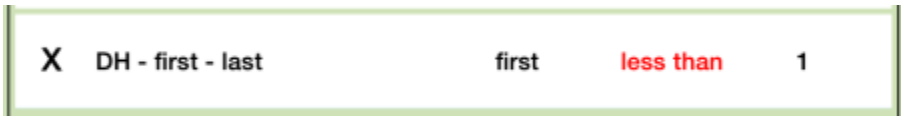
DH-first-Last

Purpose: Constrain lines that do not start with a DH and/or finish with a DH. You can also set a minimum number of DH's for which to constrain. For example, if I set "first", and "less than", and 2, all lines that did not have at least 2 DH's at the beginning of the trip would be constrained.

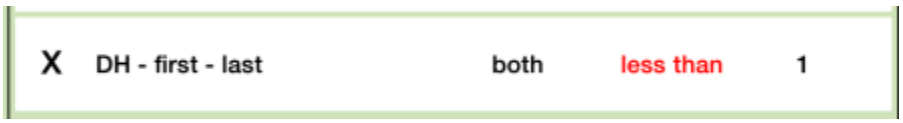
Note: if you are concerned about DHs to a particular city, then use the CMUT Dh constraint.

Commonly Used



This constraint will constrain all lines that less than 1 deadhead at the beginning (**first**) of any trip in the line.

This constraint will constrain all lines that have less than 1 deadhead at the end of the trip (**last**).



This constrain will constrain all lines that have less than 1 deadhead at the beginning and end of any pairing (**both**).

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Duty Period

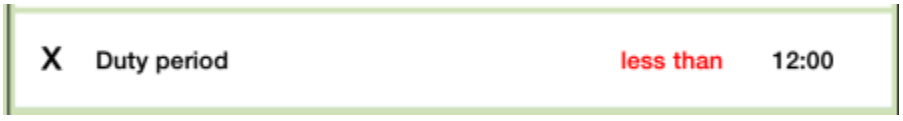
Purpose: Constrain Lines based on the Duty Period.

Select a duty period length in hours:minutes format (e.g. 09:00). You can constrain lines for any line "more than" or "less than" the selected duty period length.

Commonly Used

This constraint will constrain all lines that contain any duty period longer than 09:30

Not Used Very Often



The constraint will constrain all lines that contain any duty period less than 12:00

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Equip Type

Purpose: Constrain Lines with undesired aircraft types. The constraint is based on legs and equipment type. If you set 500 and "more than" and 3, then any line with 4 or more legs in a 500 would be constrained.

Commonly Used

This constraint will constrain all lines that have **more than** 0 legs in a 500.

Not Used Very Often

This constraint will constrain all lines that have **less than** 3 legs in a 500

Note: you can set multiple constraints of Equip Type.

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Flight Time

Purpose: Constrain Lines with Flight Time exceeding a breakpoint value.

The Flight Time Limit can be selected in 1 hour increments. Any line with more than the Flight Time breakpoint will be constrained.

Commonly Used

This constraint will constrain all lines that have **more than** 67:00 Block Hours (Flight Time).

Not Used Very Often

This constraint will constrain all lines that have less than 80:00 Block Hours (Flight Time)

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Ground Time

Purpose: Minimize ground time between legs.

Enter the desired longest turn time, “more/less” and allowed occurrences per Line. If I set 0:45, “more than” and 2, then all lines having more than 2 turns greater than 0:45 would be constrained.

Commonly Used

X	Ground Time	more than	01:00

This constraint will constrain all lines that have any ground times greater than 01:00 (1 hour).

Not Used Very Often

X	Ground Time	less than	01:15

This constraint will constrain all lines that have any ground times less than 01:15

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Intl-NonConus

Purpose: Constrain Lines that pass through any International or NonConus city. Note if you just want to constrain overnights, then do so with the Overnights constraint.

Commonly Used

X	Intl – NonConus	NonConus	SJU

This constraint will constrain any line that passed through SJU (this includes overnights)

X	Intl – NonConus	NonConus	SJU
X	Intl – NonConus	Intl	MEX
X	Intl – NonConus	Intl	PUJ

This constraint will constrain any line that passes through SJU, MEX, or PUJ. Note you can set multiple Intl-NonConus constraints.

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Legs Per Duty Period

Purpose: Constrain Lines with any duty period that exceeds the selected maximum number of legs. If I select “more than” and 4, then any line with more than 4 flights in any duty period will be constrained.

Commonly Used

This constraint will constrain all lines that have any duty period with more than 4 legs.

Not Used Very Often

This constraint will constrain all lines that do not have any duty period with less than 3 legs

Return to Constraints Index

Legs Per Pairing

Purpose: Constrain Lines including one, or more, pairings with many legs.

Enter the desired maximum number of legs per pairing in the ‘Legs" box.(e.g. 14)

All Lines that include a pairing with more than ‘Legs’ flight segments will be constrained.

Commonly Used

This constraint will constrain all lines that have more than 8 legs per pairing

Not Used Very Often

This constrain will constrain all lines that do not have at least one pairing that has 16 legs or more.

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Number of Days Off

Purpose: Constrain Lines having too few days free from duty.

Commonly Used

This constraint will constrain all Lines that have less than 18 days off.

Not Used Very Often

This constrain will constrain all Line that have more than 19 days off.

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Overnight Cities

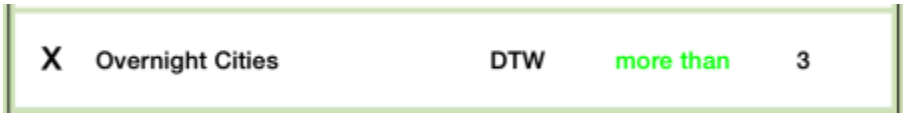
Purpose: Constrain Lines that overnight in undesired cities.

Select the city in the city popover list, select “more than / less than”, and select the number of days. If you selected HRL, and set “more than”, and set 1, all lines having more than 1 overnight in HRL would be constrained.

Commonly Used

This constrain will constrain all lines that have less than 1 overnight in AUS

Not Used Very Often



This constraint will constrain all lines that have more than 3 overnights in DTW

Return to Constraints Index

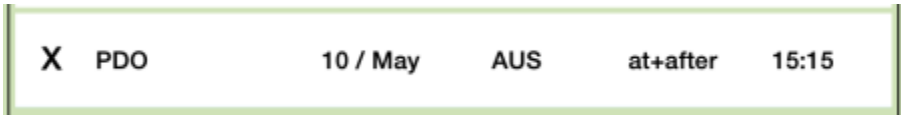
PDO

Purpose: Constrain Lines that do NOT meet the selected partial day off criteria.

You can select to have a partial day off in a city other than your domicile.

You can choose up to 5 partial days off.

Commonly Used



The above constraint will constrain all lines that do NOT have an overnight in AUS on the 10th and is off at or after 15:15

Note: a day free from all duty satisfies the partial day off criteria and will not force the partial day off constraint. However, days free from all duty occur only in your domicile, so the line will only be unconstrained if your domicile is selected.

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Start Day of Week

Purpose: Constrain Lines that start on undesired days of the week.

Select the start day of the week you do not want to work, based upon the selected number of occurrences.

Commonly Used

This constraint will constrain all lines that have more than two trip starts on Sunday.

Not Used Very Much

This constraint will constrain all lines that have less than 3 Thursday trip starts in the line.

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Rest

Purpose: Constrain Lines with short rest periods.

Enter a rest period **length** in hours:minutes format (e.g. 14:00)

All

All rest periods, including those between back to back pairings, will be checked. Any rest period shorter than 'Length' will be constrained.

InDom (In Domicile)

Only rest periods between adjacent back to back trips are considered for constraining

AwayDom (Away from Domicile)

All rest periods between adjacent back to back trips are ignored.

Commonly Used

This constraint will constrain all lines that have less than 14 hours rest within each trip and between back to back pairings.

This constrain will constrain all lines that have more than 20 hours rest within each trip and between back to back pairings.

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Time-Away-From-Base

Purpose: Constrain Lines with Per Diem exceeding a breakpoint value. Since Per Diem is based on Time-Away-From-Base, this is equivalent to putting a ceiling on how much time you wish to be away from domicile.

The Per Diem Limit is selected in HH:MM format with 1 hour increments. Any line with more than the Per Diem breakpoint will be constrained.

Commonly Used

This constraint will constrain all lines that have more TAFB than 200 hours.

Not Used Very Much

This constraint will constrain all lines that have less than 210 hours of TAFB.

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Trip Length

Purpose: Constrain Lines with undesired Trip Lengths (pairing or sequence length). You can also set a breakpoint.

If you selected “4Day” and “more than”, and 2, any line that had more than two 4Day trips would be constrained.

Commonly Used

This constraint will constrain any line that has more than 1 4Day trip.

Not Used Very Much

This constraint will constrain any line that has less than four 4Day trips.

Note: back to back pairings are considered only on their own merit. If you want to constrain a set of 2 day back to backs as a 4Day, then use the Work Block constraint.

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Work Blk Length

Purpose: Constrain Lines with undesired Work Block Lengths (pairing or sequence length). You can also set a breakpoint.

If you selected “4Day” and “more than”, and 2, any line that had more than 2 4Day work blocks it would be constrained.

Commonly Used

This constraint will constrain all lines that have more than zero 4Day work blocks (1Day+3Day or 2Day+2Day).

Not Used Very Much

This constraint will constrain all lines with less than four 4Day work blocks (1Day+3Day or 2Day+2Day).

Note: 2Day back to backs are considered a 4Day work block.

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Work Days

Purpose: constrain lines that work “more than” or “less than” the number of break point work days.

Commonly Used

This constraint will constrain all lines that have more than 11 work days.

Not Used Very Much

This constraint will constrain all lines that have less than 13 work days.

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Min Pay

Purpose: Constrain Lines that pay less than a user-defined minimum.

Commonly Used

This constraint will constrain all lines that have pay less than 100 tfp.

Not Used Very Much

This constraint will constrain all lines that have pay more than 105 tfp.

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3-on-3-off

Purpose: Constrain Lines that include 3-On/3-Off pairing sequences.

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Overlap Days

Purpose: Constrain Lines that are affected by Overlap corrections. The lines are depicted by the “O” flag in the 4th column.

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Expanded Information

Commutable Times

Times should be entered in HH:MM format or in military time (e.g. 8:00 pm = 22:00).

Put the earliest desired Domicile Report time in the "Check-In" box. Any pairing that Reports before this time will be considered not commutable.

Put the latest desired return to Domicile time in the "Back To Base" box. Any pairing that has an arrival after this time will be considered not commutable.

For example:

If your commuter flight arrives in Domicile at 7:25 am and you think 30 minutes is enough time to pad the arrival, put 0755 in the "Check-In" window, and WBid will look for pairings that have a Report time at or after 7:55. If the last commuter flight home departs the Domicile at 10:15 pm and you think 15 minutes is enough time to pad the departure, put 22:00 in the "Back To Base" window and WBid will look for pairings that return to Domicile at or before 10:00 pm.

Return to Commutable LInes