



Hub and Gateway
Training Manual

Hub

- Hub is Data Base Products' CD Product which provides the Itinerary Level Detail of Domestic U.S. O&D travel and Domestic Portions of International O&D's (DPIJ's).
- Our O&DPlus CD Product is a summary by O&D from Hub

Hub is for all U.S. airports

- Hub can be used to discover midpoints between O&D airports
- A "Flow Over" query will discover the O&Ds which contain any selected U.S. airport as a midpoint
- Passenger counts in Hub are stated at 10% as is the passenger counts in O&DPlus

Hub is multiple disk set

- The amount of data limits us to publishing a maximum of four quarters plus one total year file per CD
- Subscription to this product gets data beginning with Q1 1990

Hub studies add insight

- Our HUB product can be used to breakdown the DPIJ's into those which are from international points and those which are feeding international connections
- An analyst can also discover the prorated fares for the DPIJ's
- Directional pricing by point of sale, Initiated Trips, can be analyzed
- Frequent flyer markets can be identified and studied
- Hub can be used to analyze the mix of One Ways versus Round Trips from the Base versus Round Trips from the Reference

Macro level Hub studies

- Because of the large amount of data, it is difficult to use HUB for high level time series studies
- High level time series studies should be performed using O&DPlus
- Subscription to HUB is only available to O&DPlus customers

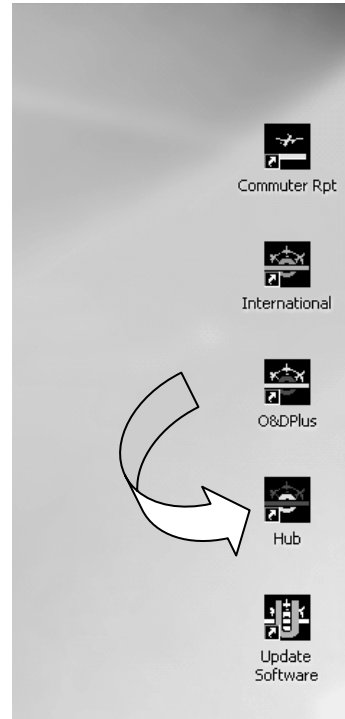
Hub Operations Overview

To start a Hub data query, find the CD that contains the data for the period to be studied and put it into your CDROM drive. If you have more than one CDROM drive, make sure you put it into the CDROM drive that you used during the installation of the software.

Generally, each year has one CD that contains the four quarterly files and an annual file which is the quarterly files summed.

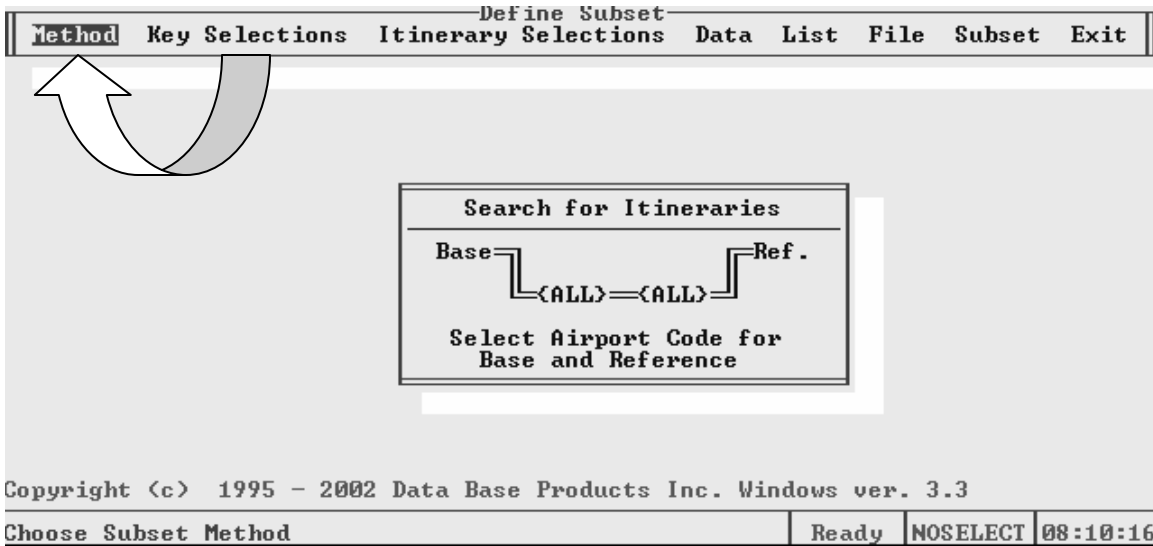
On your Desktop you should have a HUB icon.

Click the icon to access the software

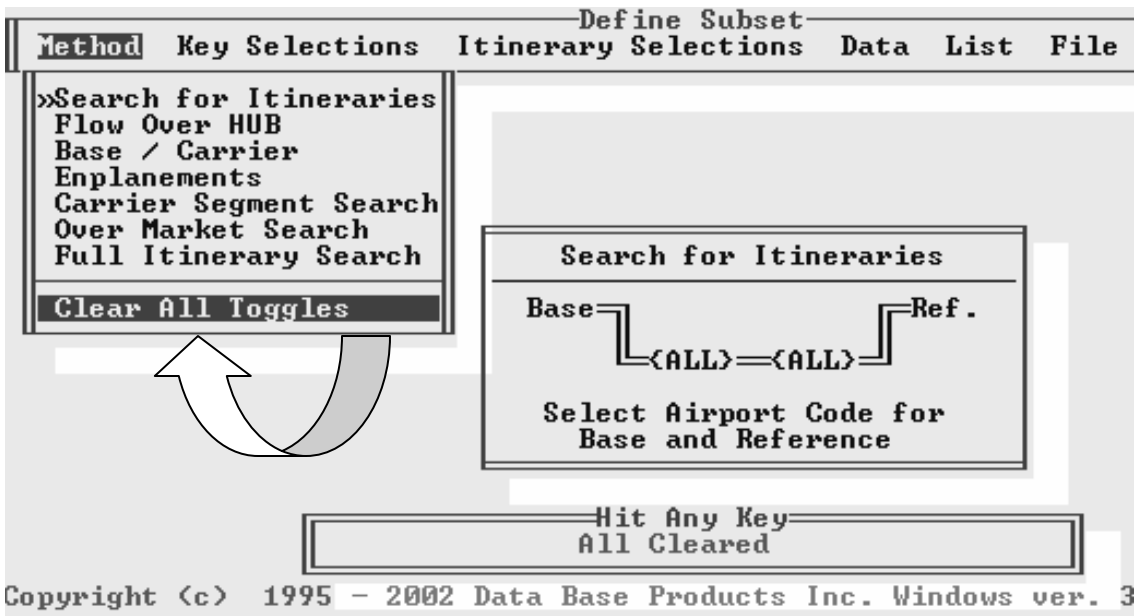


The operation of the HUB Main Menu is very similar to our O&DPLUS. The Selection Menus are at the top of each screen and the subsequent specific data refinement selections appear below the Menus.

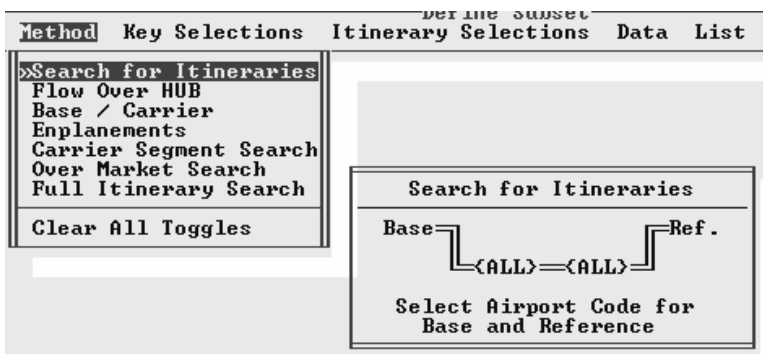
The first step in a HUB data pull is to define the data subset. Click on DEFINE SUBSET.



All data selection refinements are made using one of the Define Subset Menu items. Begin by clicking METHOD.



Like all our CD data products, the selections from the last data pull are retained. Any new selections would be added to the old ones and getting unexpected results. To clear all the old selections Click on CLEAR ALL TOGGLES and ensure ALL CLEARED is displayed.



Selecting the correct method is critical to obtaining the proper data orientation. To aid in visualizing the query, a schematic appears. The Search for Itineraries method is used when the O&D is known and the analyst wants to see routings between the O&D.

Method Selection

| Define Subset | | | | |
|------------------------|----------------|----------------------|------|------|
| Method | Key Selections | Itinerary Selections | Data | List |
| Search for Itineraries | | | | |
| »Flow Over HUB | | | | |
| Base / Carrier | | | | |
| Enplanements | | | | |
| Carrier Segment Search | | | | |
| Over Market Search | | | | |
| Full Itinerary Search | | | | |
| Clear All Toggles | | | | |

Flow Over HUB

$\langle \text{ALL} \rangle \begin{array}{c} \swarrow \\ \text{STP1} \end{array} \text{---} \begin{array}{c} \swarrow \\ \text{STP2} \end{array} \searrow \langle \text{ALL} \rangle$

Select if Airport Code is
Either STP1 or STP2

The Flow Over Hub method is employed when looking at the O&Ds associated with connections over an airport. Notice that the selected airport can be either Stop 1 or Stop 2 but **NOT** the Base or the Reference.

| Define Subset | | | | |
|------------------------|----------------|----------------------|------|------|
| Method | Key Selections | Itinerary Selections | Data | List |
| Search for Itineraries | | | | |
| Flow Over HUB | | | | |
| »Base / Carrier | | | | |
| Enplanements | | | | |
| Carrier Segment Search | | | | |
| Over Market Search | | | | |
| Full Itinerary Search | | | | |
| Clear All Toggles | | | | |

Base / Carrier

$\text{Base} \begin{array}{c} \swarrow \\ \langle \text{ALL} \rangle \end{array} \text{---} \begin{array}{c} \swarrow \\ \langle \text{ALL} \rangle \end{array} \searrow \langle \text{ALL} \rangle$

Select Base and Carrier

The Base/Carrier Method is used when one is investigating all the routings of passengers whose trips originated at an airport and who flew on a single carrier or a subset of carriers. The selected airport is the Base but not any of the stops or Reference.

| Define Subset | | | | |
|------------------------|----------------|----------------------|------|------|
| Method | Key Selections | Itinerary Selections | Data | List |
| Search for Itineraries | | | | |
| Flow Over HUB | | | | |
| Base / Carrier | | | | |
| »Enplanements | | | | |
| Carrier Segment Search | | | | |
| Over Market Search | | | | |
| Full Itinerary Search | | | | |
| Clear All Toggles | | | | |

Enplanements

$\text{Base} \begin{array}{c} \swarrow \\ \text{STP1} \end{array} \text{---} \begin{array}{c} \swarrow \\ \text{STP2} \end{array} \searrow \langle \text{ALL} \rangle$

Select if Airport Code is
Base, STP1, or STP2

The Enplanement Method is used to see the routings of passengers who enplane at a selected airport. Enplanements can be at the Base or any of the stops but not at the Reference.

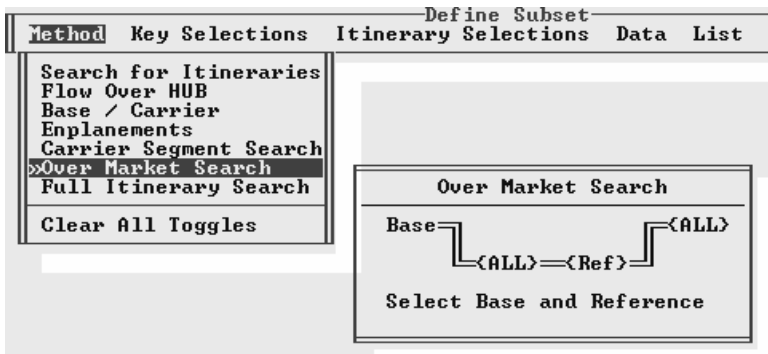
| Define Subset | | | | |
|-------------------------|----------------|----------------------|------|------|
| Method | Key Selections | Itinerary Selections | Data | List |
| Search for Itineraries | | | | |
| Flow Over HUB | | | | |
| Base / Carrier | | | | |
| Enplanements | | | | |
| »Carrier Segment Search | | | | |
| Over Market Search | | | | |
| Full Itinerary Search | | | | |
| Clear All Toggles | | | | |

Carrier Segment Search

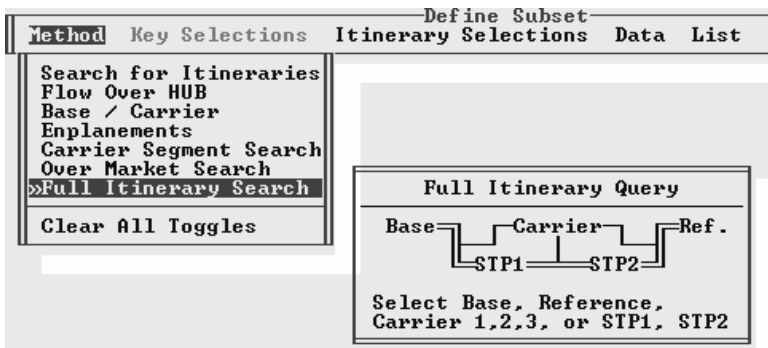
$\text{Base} \begin{array}{c} \swarrow \\ \langle \text{Ref} \rangle \end{array} \text{---} \begin{array}{c} \swarrow \\ \langle \text{ALL} \rangle \end{array} \searrow \langle \text{ALL} \rangle$

Select Base, Ref and Carrier

The Carrier Segment Search is used find a specific **COUPON** origin and destination in an itinerary. Because each coupon is checked for every itinerary, the time to pull the data for this query is longer than the previous.



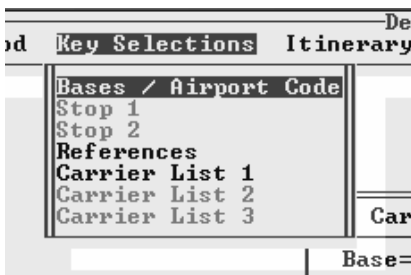
The Over Market Search is similar to the Carrier Segment Search except that in this method the selected airports need not be sequential but may appear anywhere in the routing. As you can imagine this query also takes longer to run than the first three methods.



The Full Itinerary Search is the least used of all the methods. The Base, Stops, References, and Carriers must be selected and ONLY the records that exactly match that combination are extracted. Because seldom does an analyst know exactly the itineraries of interest and because this

method takes a long time to run, we usually suggest, you use one of the other methods to extract a larger subset of data and then in that output get the specific full itinerary.

Key Selections

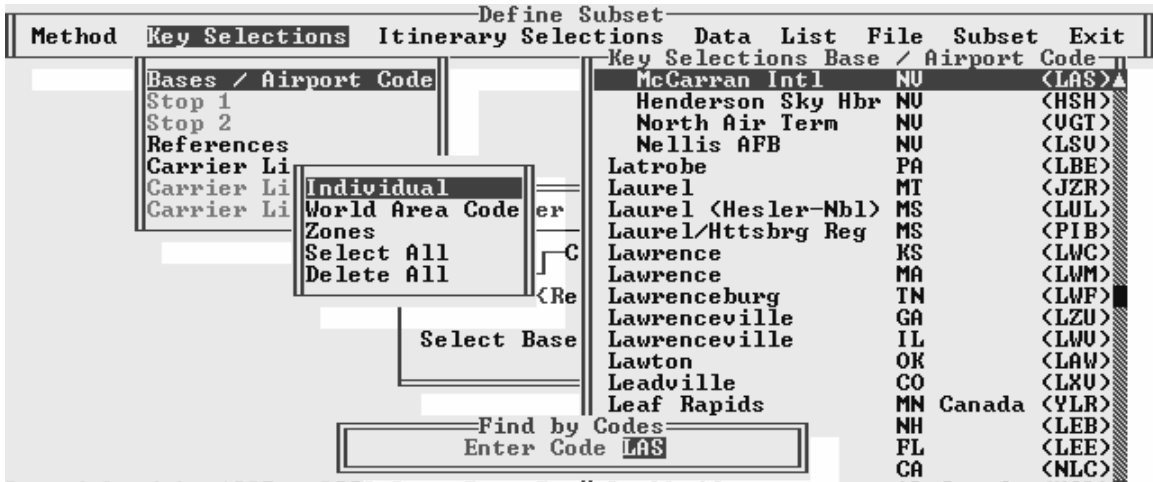


After selecting the search method, go to the Key Selections menu item. Each search Method has its own set of Key Selections in a drop down box so refer to the Method schematic as you make your Key Selections.

The items that MUST be selected will be in bright white while those items not required for the query method will be a dull blue.



Clicking on Bases, Stops, or Reference will bring up another selection box. Individual allows the selection of airports by scrolling through a complete list of Airport and City Codes used by the HUB software. If the airport is not in the list, the airport cannot be used in the query nor will any data be available.

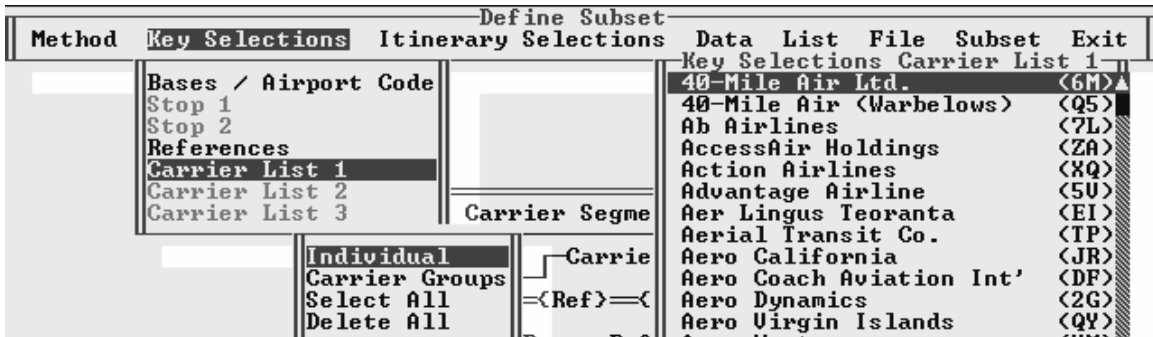


Pressing the F6 Key brings up a box to enter airport or city codes. The F6 Key does not select the airport. It only displays it. To select the airport once it is displayed, press the Space Bar and a chevron appears before the airport name. To deselect the airport, press the Space Bar again.



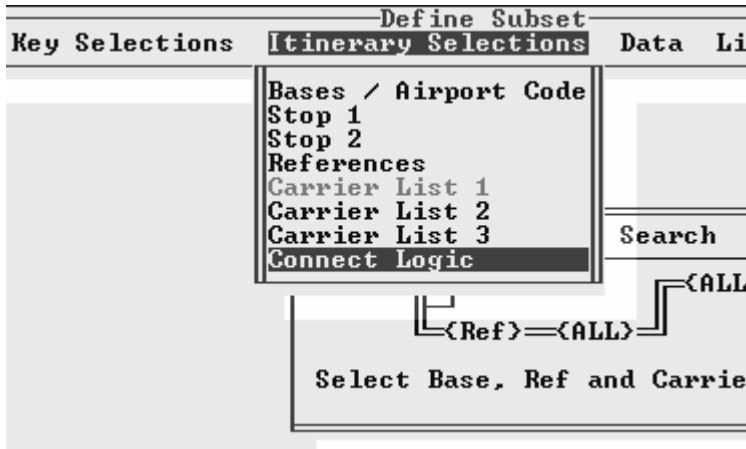
Pressing the F9 Key allows the user to enter airport codes and have them selected and displayed. You cannot deselect an airport while using this F9 Key option.

If many airports are to be selected other options are used. If all airports are needed, click on the Select All option below Individual. If all airports in a state or territory are needed, Click on World Area Code and a menuing system similar to the airport codes will lead you through the selection process. If you want to select all the airports within large geographic areas, check the Zones option.

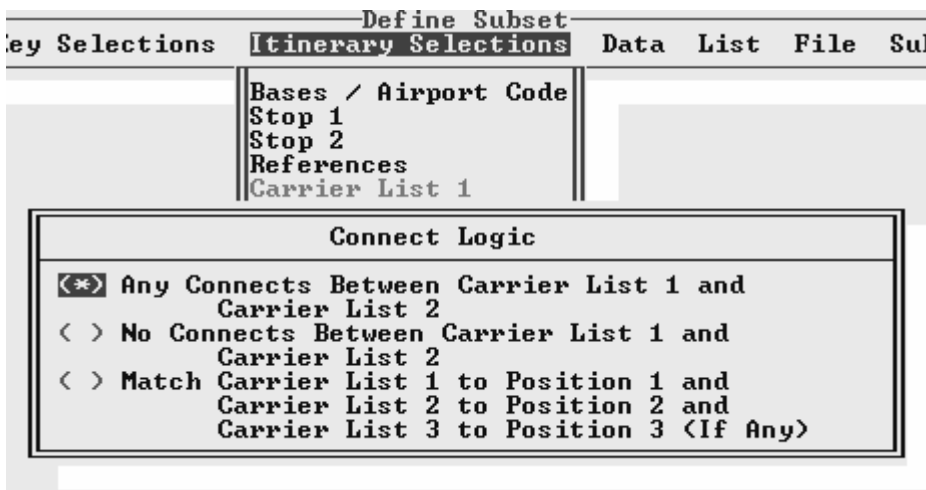


Carrier List Selections operate like those for the airport codes. Cursor, F6 Key and F9 Key operations are identical. Carrier Groups - Major, National, Regional, and Other - can be selected as a group.

Itinerary Selections



The Itinerary Selections are used to refine your data query but are not required. If a Search for Itinerary Method was employed with a Base of DFW and a Reference of SEA and no Itinerary Selections were set, all O&Ds would be included. If DEN was entered as Stop 1, only DFW-DEN-SEA records would be included.



The drop down box looks and operates like the Key Selections except for the Connect Logic option. The power of this option is that you can create lists of carriers and either include or exclude interline connections amongst these lists. Further you can specify where in the itinerary certain

carriers appear.

A few words of caution – if you want all items of an Itinerary selection, as in All Carriers or All Airports for Stops, do NOTHING. If Search for Itinerary Method is selected and no Stops are chosen then single coupon itineraries with no stops are included in the pull as well as all multiple stops. If Stop 1 and Select All are selected, then all single coupon itineraries are excluded because they do not have a Stop 1 value. If Stop 2 and Select All are selected, all single and two coupon itineraries are excluded.

Data Window

| Define Subset | | | |
|---|----------------|---|----------------------------|
| Method | Key Selections | Itinerary Selections | Data List File Subset Exit |
| Record Type | | Leg Types | |
| <input checked="" type="checkbox"/> Domestic Records | | <input type="checkbox"/> One Way | |
| <input checked="" type="checkbox"/> International Portion | | <input type="checkbox"/> Round Trip From Base | |
| Connections | | <input type="checkbox"/> Round Trip From Reference | |
| <input type="checkbox"/> Online Base to Reference | | <input type="checkbox"/> Open Jaw (All Others) | |
| <input checked="" type="checkbox"/> Offline Connect | | <input type="checkbox"/> International Thru Base | |
| Ticket Type | | Coupons / Carrier Change | |
| <input checked="" type="checkbox"/> Non-Zero Fare Ticket | | <input type="checkbox"/> Total Coupons >= 0 < 21 | |
| <input checked="" type="checkbox"/> Zero Fare Ticket | | <input type="checkbox"/> 1st Carrier Change >= 0 < 21 | |
| Market Rank / Distance | | | |
| <input type="checkbox"/> Market Rank >= | 0 < 32000 | <input type="checkbox"/> Dist 1st Coup >= | 0 < 9999 |
| <input type="checkbox"/> Dist Non/Stop >= | 0 < 9999 | <input type="checkbox"/> Dist 2nd Coup >= | 0 < 9999 |
| <input type="checkbox"/> Itinerary Dist >= | 0 < 9999 | <input type="checkbox"/> Dist Stp2/Ref >= | 0 < 9999 |

The HUB Product allows the user to more customize the query than the O&DPlus Product. To include or exclude itineraries meeting certain criterion, the user makes selections in the Data Menu.

Above is the "Data" screen used to select

Domestic and/or International Portions(Domestic portion of International itineraries)

Local (on-line locals and on-line connecting) and/or Connect (off-line connecting)

Leg Types for Domestic record

- One Way = A
- Round Trips from Base = B
- Round Trips from Reference = R
- Open Jaw = V

Leg Types for International record Leg

- Through the Base = T
- International portion is Beyond the Reference = Y
- Purely Domestic Leg of an International Journey = D

Although not selected here, you can see that this is also the screen which you would use to set filters for the total number of Coupons for inclusion, the Carrier Change position (for connecting passengers), Distance filters of various types, and the Market Rank filter.

Subset Window

| Define Subset | | | | | | | |
|--|----------------|---|------|------|------|--------|------|
| Method | Key Selections | Itinerary Selections | Data | List | File | Subset | Exit |
| Input | | Selection Summary | | | | | |
| Year: 2003 Quarter: 4 Or File: | | Search Method: Base / Reference Bases Selected: MIA Ref. Selected: SEA Domestic and International Data Local + Connect Traffic Fared And Zero Fared Tickets No Coupon Filter No Carrier Change Filter No Rank Filter No Distance Filter Filters: Stop 1: 3 Stop 2: 0 Cr1: 2 Cr2: 0 Cr3: 0 Any Connects Between Carrier List 1 and List 2 | | | | | |
| Output Format | | | | | | | |
| <input type="checkbox"/> Lotus Format <input checked="" type="checkbox"/> ASCII Format <input type="checkbox"/> CSU Format <input type="checkbox"/> Pre HUB File <input checked="" type="checkbox"/> Totals Only | | | | | | | |
| Output File | | | | | | | |
| Name: ASCII <input checked="" type="checkbox"/> Overwrite/Create <input type="checkbox"/> Append/Create | | <input type="button" value="GO"/> <input type="button" value="CANCEL"/> | | | | | |

Co F2 to Start Data Pull

All the selections prior to this was to establish Hub data to be extracted. The actual data subset is performed in this window. A good idea is to start by confirming the query in the Selection Summary Section. Is your method correct? What about the Base and Reference and the other items in the Window?

If all is correct, input the year and quarter. When the fourth quarter Hub is released, it includes an annual summary Hub database. Enter quarter 0 to access this data. Select the Output Format and Output File Name. Notice that the Totals Only tab was not selected. Then either chose to overwrite or append to an existing file or create a new one. To run the Subset, either press the F2 Key or click on GO.

The following is the output.

File: d:\hub1034

H U B REPORT

Page# 1

| D | L | F | Coup Leg | | | | | | | | | | Qtr | Distances | | | | | OutBound | | | InBound | |
|-----|---|---|----------|-----|-----|-----|----|----|----|----|------|------|------|-----------|------|------|------|------|----------|------|--------|---------|--------|
| Bse | I | C | Z | Ref | St1 | St2 | C1 | C2 | C3 | CP | Year | Dst1 | Dst2 | Dst3 | Itin | O&D | Pax | Fare | Pax | Fare | | | |
| MIA | D | C | F | SEA | DFW | SAN | AA | AA | AS | 3 | B | 0 | 2003 | 4 | 1121 | 1171 | 1050 | 3342 | 2724 | 1 | 527.79 | 0 | 0.00 |
| MIA | D | C | F | SEA | DFW | SEA | AA | AA | AS | 4 | R | 0 | 2003 | 4 | 1121 | 1660 | 206 | 2987 | 2724 | 0 | 0.00 | 1 | 380.39 |
| MIA | D | C | F | SEA | DFW | SJC | AA | AA | AS | 3 | B | 0 | 2003 | 4 | 1121 | 1438 | 697 | 3256 | 2724 | 1 | 210.95 | 0 | 0.00 |
| MIA | D | C | F | SEA | DFW | SNA | AA | AA | AS | 3 | B | 0 | 2003 | 4 | 1121 | 1205 | 978 | 3302 | 2724 | 1 | 537.08 | 0 | 0.00 |
| MIA | D | C | Z | SEA | ORD | MKE | AA | AA | -- | 4 | R | 0 | 2003 | 4 | 1197 | 67 | 1788 | 2985 | 2724 | 1 | 0.00 | 0 | 0.00 |
| MIA | D | L | F | SEA | DFW | | AA | AA | | 2 | A | 0 | 2003 | 4 | 1121 | 1660 | 0 | 2780 | 2724 | 16 | 322.56 | 15 | 271.88 |
| MIA | D | L | F | SEA | DFW | | AA | AA | | 2 | B | 0 | 2003 | 4 | 1121 | 1660 | 0 | 2780 | 2724 | 30 | 200.47 | 75 | 140.13 |
| MIA | D | L | F | SEA | DFW | | AA | AA | | 2 | R | 0 | 2003 | 4 | 1121 | 1660 | 0 | 2780 | 2724 | 81 | 144.31 | 29 | 241.11 |
| MIA | D | L | F | SEA | DFW | | AA | AA | | 2 | V | 0 | 2003 | 4 | 1121 | 1660 | 0 | 2780 | 2724 | 3 | 400.42 | 1 | 709.04 |
| MIA | D | L | F | SEA | DFW | LIT | AA | AA | AA | 4 | B | 0 | 2003 | 4 | 1121 | 304 | 2006 | 3431 | 2724 | 0 | 0.00 | 1 | 268.98 |
| MIA | D | L | F | SEA | ORD | | AA | AA | | 2 | A | 0 | 2003 | 4 | 1197 | 1721 | 0 | 2918 | 2724 | 5 | 214.18 | 1 | 124.00 |
| MIA | D | L | F | SEA | ORD | | AA | AA | | 2 | B | 0 | 2003 | 4 | 1197 | 1721 | 0 | 2918 | 2724 | 14 | 215.63 | 25 | 143.51 |
| MIA | D | L | F | SEA | ORD | | AA | AA | | 2 | R | 0 | 2003 | 4 | 1197 | 1721 | 0 | 2917 | 2724 | 24 | 127.14 | 14 | 158.61 |
| MIA | D | L | F | SEA | ORD | RIC | AA | AA | AA | 4 | R | 0 | 2003 | 4 | 1197 | 642 | 2425 | 4264 | 2724 | 0 | 0.00 | 1 | 251.78 |

Although the detail above is useful in many cases, you want a summary or an overview because this level detail can become cumbersome. If we had selected Totals Only, we would get the summary report on the next page. These Totals Only reports can be created in either text or spreadsheet formats.

| | -----OutBound----- | | | | | -----InBound----- | | | | |
|------------------------|--------------------|----------|---------------|----------|-------|-------------------|----------|---------------|----------|-------|
| | Fared Pax | Zero Pax | Total Revenue | Avg Fare | Yield | Fared Pax | Zero Pax | Total Revenue | Avg Fare | Yield |
| Domestic OneWay: | 28 | 6 | 9103 | 267.74 | 9.45 | 21 | 0 | 10418 | 496.10 | 17.82 |
| First Leg Round Trip: | 57 | 10 | 12372 | 184.66 | 6.48 | 171 | 41 | 27331 | 128.92 | 4.58 |
| Return Leg Round Trp: | 161 | 43 | 24820 | 121.67 | 4.31 | 58 | 10 | 12371 | 181.93 | 6.35 |
| Open Jaw: | 3 | 0 | 1201 | 400.42 | 14.40 | 1 | 0 | 709 | 709.04 | 25.51 |
| ===== | | | | | | | | | | |
| Total Domestic: | 249 | 59 | 47497 | 154.21 | 5.45 | 251 | 51 | 50829 | 168.31 | 5.96 |
| Total Fared Domestic: | 249 | 0 | 47497 | 190.75 | 6.74 | 251 | 0 | 50829 | 202.51 | 7.18 |
| ===== | | | | | | | | | | |
| Intl. Thru the Base: | 180 | 33 | 49588 | 232.81 | 8.29 | 170 | 34 | 46071 | 225.84 | 8.05 |
| Intl. Beyond the Ref.: | 5 | 2 | 2830 | 404.33 | 14.48 | 2 | 1 | 277 | 92.41 | 3.31 |
| Intl. Purely Domestic: | 2 | 1 | 1378 | 459.24 | 16.25 | 4 | 0 | 1538 | 384.51 | 13.72 |
| ===== | | | | | | | | | | |
| Total International: | 187 | 36 | 53796 | 241.24 | 8.59 | 176 | 35 | 47887 | 226.95 | 8.09 |
| Total Fared Intl.: | 187 | 0 | 53796 | 287.68 | 10.25 | 176 | 0 | 47887 | 272.08 | 9.71 |

Search Method: Base / Reference
 Bases Selected: 1 Ref. Selected: 1
 Bases: MIA
 References: SEA
 Domestic and International Data
 Local + Connect Traffic
 Fared and Zero Fared Tickets
 No Coupon Filter
 No Carrier Change Filter
 No Rank Filter
 No Distance Filters
 Any Connects Between Carrier List 1 and List 2
 Filters: Stop 1: 3 Stop 2: 0
 Carrier 1: 2 Carrier 2: ALL Carrier 3: ALL
 Stop 1: DEN DFW ORD
 Carrier 1: AA UA

Hub Reports

| Method | Key Selections | Itinera |
|----------------------|------------------|--|
| Input | | |
| Year: 2003 | Quarter: 4 | Sea Bas Dom Loc Far No No No Fil Cri Any |
| File: | Or | |
| Output Format | | |
| < > | Lotus Format | No |
| < > | ASCII Format | No |
| < > | CSU Format | No |
| < * > | Pre HUB File | Fil |
| < > | Totals Only | Cri |
| Output File | | |
| Name: | PREHUB | Any |
| < * > | Overwrite/Create | |
| < > | Append/Create | |

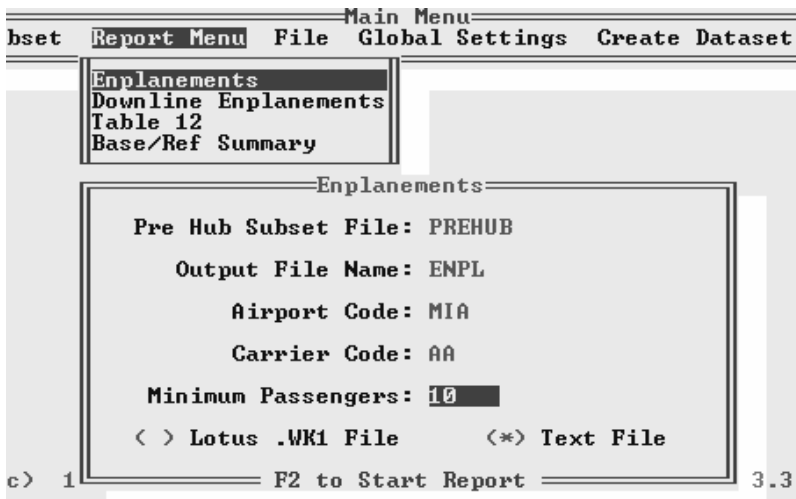
We have also provided the user of the Hub Product with as series of "canned" reports.

To use these reports, select the Pre HUB File Output Format. Give the Output File an up to eight alphanumeric character name. Press the F2 Key or click on GO.



Return to the Main Menu and select the Report Menu. From this drop down box, four reports are available

Click on Enplanements



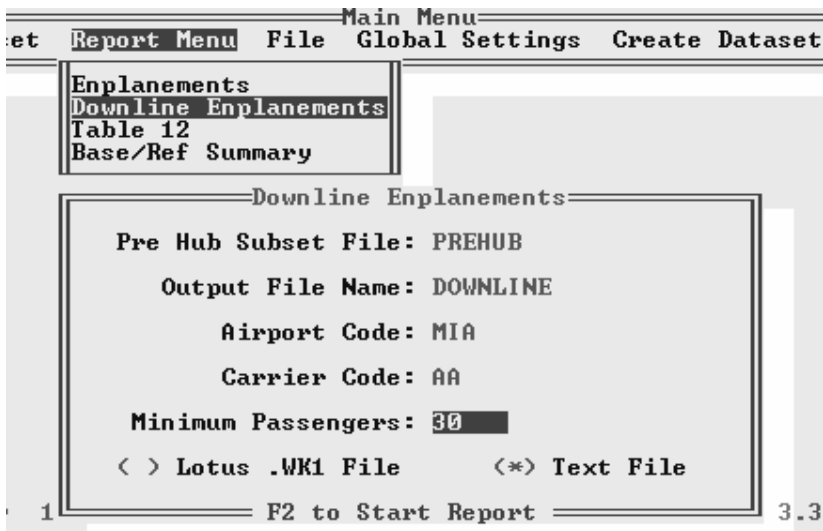
The Enplanements report requires that you specify an Airport Code and a Carrier Code as well as the name of the previously created Pre Hub Subset File. The report will search the subset for the airport/carrier combination specified and summarize the "Coupon Destinations" for each coupon that matches.

Note that in the reports you may filter out the infrequently used itineraries by summing them into a Misc. category. The Minimum Passenger selection item is provided for this purpose and is very useful in producing compact reports because numerous small volume itineraries tend to clutter reports.

ENPLANEMENTS REPORT FOR FILE PREHUB.hub
 Airport MIA, Carrier AA, MinPax = 10

| EnplApt | Car | DeplApt | OutDomP | OutIntlP | TotPax | OutDomR | OutIntlR | TotRev |
|---------|-----|---------|---------|----------|--------|---------|----------|--------|
| MIA | AA | DFW | 3193 | 2374 | 5567 | 310352 | 283295 | 593647 |
| MIA | AA | ORD | 1398 | 1102 | 2500 | 144105 | 156729 | 300834 |
| MIA | AA | DEN | 37 | 28 | 65 | 4233 | 8149 | 12382 |
| ===== | === | ===== | ===== | ===== | ===== | ===== | ===== | ===== |
| MIA | AA | Tot | 4628 | 3504 | 8132 | 458690 | 448173 | 906863 |

This Enplanement Report was a product of a Search for Itineraries Subset with MIA as the Base and All References.

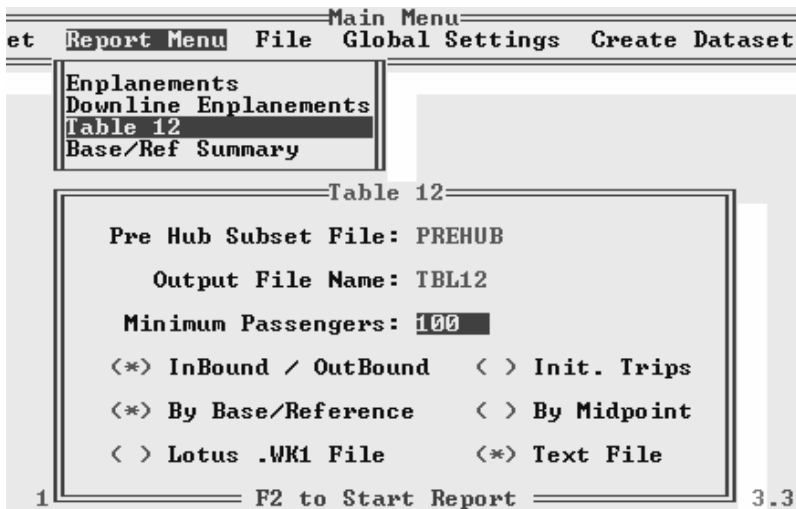


The Downline Enplanements report is similar to the Enplanements report but uses Domestic records only and goes literally one step further. It reports not only the destinations for the matching coupons but also, for the top five, it reveals the destinations of the subsequent coupon (i.e. the next Downline Segment).

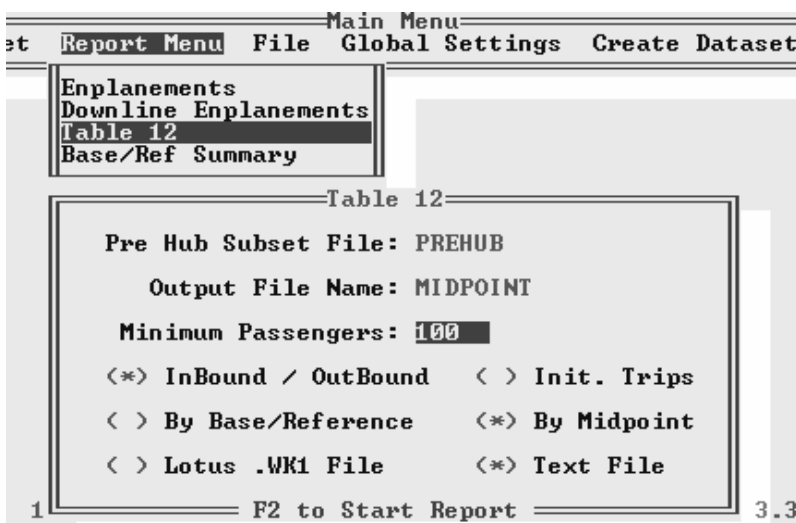
DOWNLINE ENPLANEMENT REPORT
 Minimum Passenger Count Listed = 30
 Carrier = AA

| ----- Second Coupon Flow Over Top 5 Markets ----- | | | | | | | | | | | |
|---|-----------|-----------|-----------|-----------|-----|----------|-----|----------|-----|--------------|------|
| MIA over | | MIA over | | MIA over | | MIA over | | MIA over | | MIA to | |
| ---DFW--- | ---ORD--- | ---DEN--- | ---MCI--- | ---SAT--- | DFW | DFW | DFW | DFW | DFW | First Coupon | |
| ABQ | 89 | MSP | 63 | LAX | 31 | DFW | 0 | DFW | 0 | DFW | 3193 |
| DEN | 79 | CID | 39 | | | | | | | DEN | 37 |
| PHX | 258 | CLE | 39 | | | | | | | ORD | 1398 |
| SEA | 161 | CMH | 37 | | | | | | | AMA | 0 |
| AUS | 136 | IND | 74 | | | | | | | DEN | 0 |
| SJC | 105 | GRR | 33 | | | | | | | PHX | 0 |
| SLC | 85 | SEA | 54 | | | | | | | SEA | 0 |
| ICT | 90 | MCI | 56 | | | | | | | AUS | 0 |
| OKC | 87 | MKE | 85 | | | | | | | BDL | 0 |
| COS | 41 | MSN | 52 | | | | | | | BHM | 0 |
| TUL | 72 | STL | 35 | | | | | | | BNA | 0 |
| MFE | 49 | PIA | 36 | | | | | | | SJC | 0 |
| MCI | 159 | TOL | 58 | | | | | | | SLC | 0 |
| SAT | 145 | GRB | 0 | | | | | | | BOS | 0 |
| TUS | 78 | IND | 0 | | | | | | | RIC | 0 |
| DSM | 35 | SDF | 0 | | | | | | | STL | 0 |
| EGE | 34 | DSM | 0 | | | | | | | BTR | 0 |
| ELP | 78 | EVV | 0 | | | | | | | BUR | 0 |
| LAX | 78 | EWR | 0 | | | | | | | ICT | 0 |
| LAS | 44 | FSD | 0 | | | | | | | OKC | 0 |
| SAN | 180 | FWA | 0 | | | | | | | CID | 0 |
| OMA | 32 | GRR | 0 | | | | | | | CLE | 0 |
| OAK | 37 | HDN | 0 | | | | | | | CLL | 0 |
| ONT | 45 | SEA | 0 | | | | | | | CMH | 0 |
| PDX | 131 | SJC | 0 | | | | | | | COS | 0 |
| RNO | 39 | SAN | 0 | | | | | | | CRP | 0 |
| SNA | 94 | LAX | 0 | | | | | | | CVG | 0 |
| SMF | 86 | MCI | 0 | | | | | | | DAY | 0 |
| Msc | 643 | Msc | 722 | Msc | 0 | Msc | 0 | Msc | 0 | Msc | 0 |
| Tot | 3190 | Tot | 1383 | Tot | 31 | Tot | 0 | Tot | 0 | Tot | 4628 |

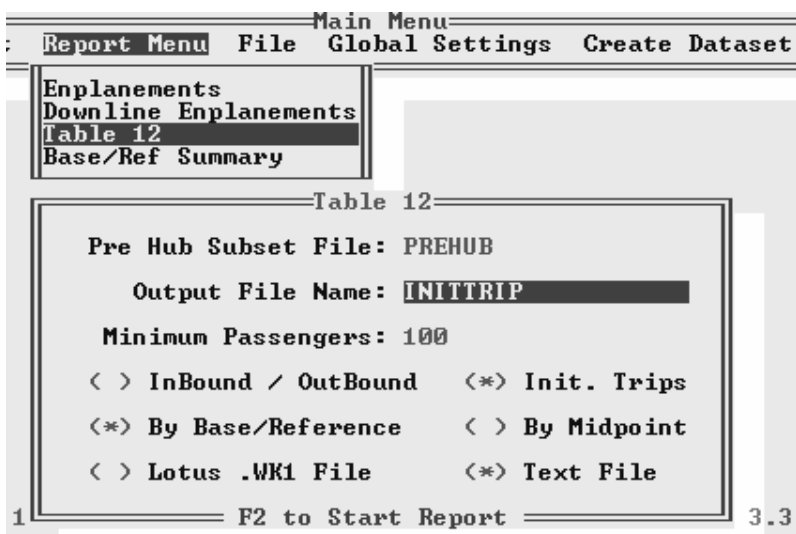
Total Coupons which Flow Over the Top 5 Markets = 4604
 Total Coupon O&D except Flow over Markets > Top 5) = 9232



The InBound/OutBound Table 12 report shows the routing of passenger to include the first two connecting airport and marketing carriers in those coupon markets. On the next page you can see the output of the report sorted By Base/Reference.



By changing the By Base/Reference orientation to By Midpoint, the report becomes easier to analyze the connecting points. Look on Page 15 for the report generated by this request.



The orientation of this Table 12 report is Initiated Trips instead of directional passengers. The report generated by this request can be found on page 16.

TABLE 12 REPORT - O&D's BY ROUTING
 Inbound and Outbound Passengers
 Sorted by Base / Reference

Msc. = Sum of Records where Out+InPax is less than 100

| Year | Qtr | D/I | L/C | Cp | Bse | C1 | St1 | C2 | St2 | C3 | Ref | OPax | OFare | IPax | IFare | TtlPax |
|------|-----|-----|-----|----|--------------|----|-----|----|-----|----|-----|-------|--------|-------|--------|--------|
| 2003 | 4 | D | L | 2 | MIA | AA | DFW | AA | | | ABQ | 88 | 160.00 | 88 | 158.00 | |
| 2003 | 4 | D | L | 2 | MIA | UA | DEN | UA | | | ASE | 93 | 230.00 | 96 | 263.00 | |
| 2003 | 4 | D | L | 2 | MIA | AA | DFW | AA | | | AUS | 134 | 182.00 | 128 | 188.00 | |
| 2003 | 4 | D | L | 2 | MIA | AA | DFW | AA | | | DEN | 77 | 156.00 | 33 | 168.00 | |
| 2003 | 4 | D | L | 2 | MIA | AA | DFW | AA | | | ELP | 77 | 188.00 | 75 | 189.00 | |
| 2003 | 4 | D | L | 2 | MIA | AA | DFW | AA | | | ICT | 89 | 110.00 | 90 | 107.00 | |
| 2003 | 4 | D | L | 2 | MIA | AA | ORD | AA | | | IND | 74 | 102.00 | 74 | 112.00 | |
| 2003 | 4 | D | L | 2 | MIA | AA | DFW | AA | | | LAX | 73 | 156.00 | 71 | 203.00 | |
| 2003 | 4 | D | L | 2 | MIA | AA | DFW | AA | | | MCI | 157 | 115.00 | 177 | 104.00 | |
| 2003 | 4 | D | L | 2 | MIA | AA | ORD | AA | | | MCI | 56 | 114.00 | 58 | 112.00 | |
| 2003 | 4 | D | L | 2 | MIA | AA | DFW | AA | | | MFE | 48 | 171.00 | 55 | 135.00 | |
| 2003 | 4 | D | L | 2 | MIA | AA | ORD | AA | | | MKE | 83 | 99.00 | 82 | 94.00 | |
| 2003 | 4 | D | L | 2 | MIA | AA | ORD | AA | | | MSN | 51 | 106.00 | 55 | 107.00 | |
| 2003 | 4 | D | L | 2 | MIA | AA | ORD | AA | | | MSP | 60 | 154.00 | 55 | 123.00 | |
| 2003 | 4 | D | L | 2 | MIA | AA | DFW | AA | | | OKC | 85 | 153.00 | 88 | 166.00 | |
| 2003 | 4 | D | L | 2 | MIA | AA | DFW | AA | | | PDX | 130 | 141.00 | 110 | 168.00 | |
| 2003 | 4 | D | L | 2 | MIA | UA | DEN | UA | | | PDX | 58 | 157.00 | 51 | 155.00 | |
| 2003 | 4 | D | L | 2 | MIA | AA | DFW | AA | | | PHX | 253 | 147.00 | 223 | 137.00 | |
| 2003 | 4 | D | L | 2 | MIA | AA | DFW | AA | | | SAN | 166 | 174.00 | 175 | 152.00 | |
| 2003 | 4 | D | L | 2 | MIA | AA | DFW | AA | | | SAT | 140 | 168.00 | 129 | 157.00 | |
| 2003 | 4 | D | L | 2 | MIA | AA | DFW | AA | | | SEA | 158 | 152.00 | 140 | 159.00 | |
| 2003 | 4 | D | L | 2 | MIA | AA | ORD | AA | | | SEA | 52 | 137.00 | 52 | 114.00 | |
| 2003 | 4 | D | L | 2 | MIA | AA | DFW | AA | | | SJC | 100 | 135.00 | 85 | 174.00 | |
| 2003 | 4 | D | L | 2 | MIA | AA | DFW | AA | | | SLC | 85 | 121.00 | 85 | 146.00 | |
| 2003 | 4 | D | L | 2 | MIA | AA | DFW | AA | | | SMF | 86 | 171.00 | 73 | 160.00 | |
| 2003 | 4 | D | L | 2 | MIA | AA | DFW | AA | | | SNA | 89 | 184.00 | 97 | 167.00 | |
| 2003 | 4 | D | L | 2 | MIA | AA | ORD | AA | | | TOL | 58 | 93.00 | 55 | 92.00 | |
| 2003 | 4 | D | L | 2 | MIA | AA | DFW | AA | | | TUL | 71 | 163.00 | 73 | 134.00 | |
| 2003 | 4 | D | L | 2 | MIA | AA | DFW | AA | | | TUS | 76 | 178.00 | 82 | 173.00 | |
| 2003 | 4 | D | L | | Msc | | | | | | | 3574 | 170.13 | 3417 | 176.80 | |
| 2003 | 4 | D | L | | Tot | | | | | | | 6341 | 161.73 | 6072 | 165.13 | 12413 |
| 2003 | 4 | D | C | | Msc | | | | | | | 85 | 260.18 | 146 | 232.44 | |
| 2003 | 4 | D | C | | Tot | | | | | | | 85 | 260.10 | 146 | 232.39 | 231 |
| 2003 | 4 | I | L | 2 | MIA | AA | DFW | AA | | | ABQ | 89 | 190.00 | 93 | 189.00 | |
| 2003 | 4 | I | L | 2 | MIA | AA | DFW | AA | | | AUS | 99 | 137.00 | 104 | 134.00 | |
| 2003 | 4 | I | L | 2 | MIA | AA | DFW | AA | | | ELP | 49 | 193.00 | 61 | 222.00 | |
| 2003 | 4 | I | L | 2 | MIA | AA | DFW | AA | | | ICT | 50 | 168.00 | 56 | 170.00 | |
| 2003 | 4 | I | L | 2 | MIA | AA | DFW | AA | | | MCI | 89 | 160.00 | 108 | 151.00 | |
| 2003 | 4 | I | L | 2 | MIA | AA | ORD | AA | | | MSP | 76 | 182.00 | 50 | 170.00 | |
| 2003 | 4 | I | L | 2 | MIA | AA | DFW | AA | | | OKC | 58 | 179.00 | 65 | 190.00 | |
| 2003 | 4 | I | L | 2 | MIA | AA | DFW | AA | | | PDX | 125 | 229.00 | 124 | 213.00 | |
| 2003 | 4 | I | L | 2 | MIA | AA | DFW | AA | | | PHX | 207 | 223.00 | 203 | 225.00 | |
| 2003 | 4 | I | L | 2 | MIA | AA | DFW | AA | | | SAN | 121 | 207.00 | 143 | 203.00 | |
| 2003 | 4 | I | L | 2 | MIA | AA | DFW | AA | | | SAT | 85 | 165.00 | 112 | 208.00 | |
| 2003 | 4 | I | L | 2 | MIA | AA | DFW | AA | | | SEA | 176 | 228.00 | 175 | 233.00 | |
| 2003 | 4 | I | L | 2 | MIA | AA | DFW | AA | | | SLC | 110 | 234.00 | 141 | 219.00 | |
| 2003 | 4 | I | L | 2 | MIA | AA | DFW | AA | | | SMF | 101 | 202.00 | 113 | 200.00 | |
| 2003 | 4 | I | L | 2 | MIA | AA | DFW | AA | | | TUL | 89 | 179.00 | 104 | 205.00 | |
| 2003 | 4 | I | L | 2 | MIA | AA | DFW | AA | | | TUS | 80 | 278.00 | 82 | 257.00 | |
| 2003 | 4 | I | L | | Msc | | | | | | | 2069 | 200.50 | 2063 | 206.89 | |
| 2003 | 4 | I | L | | Tot | | | | | | | 3673 | 201.42 | 3797 | 205.33 | 7470 |
| 2003 | 4 | I | C | | Msc | | | | | | | 73 | 343.15 | 56 | 325.71 | |
| 2003 | 4 | I | C | | Tot | | | | | | | 73 | 343.17 | 56 | 325.63 | 129 |
| 2003 | 4 | | | | Report Total | | | | | | | 10172 | 178.19 | 10071 | 182.16 | 20243 |

TABLE 12 REPORT - O&D's BY ROUTING
Inbound and Outbound Passengers
Sorted by Mid Point

Msc. = Sum of Records where Out+InPax is less than 100

| Year | Qtr | D/I | L/C | Cp | Bse | C1 | St1 | C2 | St2 | C3 | Ref | OPax | OFare | IPax | IFare | TtlPax |
|------|-----|-----|-----|----|--------------|----|-----|----|-----|----|-----|-------|--------|-------|--------|--------|
| 2003 | 4 | D | L | 2 | MIA | AA | DFW | AA | | | ABQ | 88 | 160.00 | 88 | 158.00 | |
| 2003 | 4 | D | L | 2 | MIA | AA | DFW | AA | | | AUS | 134 | 182.00 | 128 | 188.00 | |
| 2003 | 4 | D | L | 2 | MIA | AA | DFW | AA | | | DEN | 77 | 156.00 | 33 | 168.00 | |
| 2003 | 4 | D | L | 2 | MIA | AA | DFW | AA | | | ELP | 77 | 188.00 | 75 | 189.00 | |
| 2003 | 4 | D | L | 2 | MIA | AA | DFW | AA | | | ICT | 89 | 110.00 | 90 | 107.00 | |
| 2003 | 4 | D | L | 2 | MIA | AA | DFW | AA | | | LAX | 73 | 156.00 | 71 | 203.00 | |
| 2003 | 4 | D | L | 2 | MIA | AA | DFW | AA | | | MCI | 157 | 115.00 | 177 | 104.00 | |
| 2003 | 4 | D | L | 2 | MIA | AA | DFW | AA | | | MFE | 48 | 171.00 | 55 | 135.00 | |
| 2003 | 4 | D | L | 2 | MIA | AA | DFW | AA | | | OKC | 85 | 153.00 | 88 | 166.00 | |
| 2003 | 4 | D | L | 2 | MIA | AA | DFW | AA | | | PDX | 130 | 141.00 | 110 | 168.00 | |
| 2003 | 4 | D | L | 2 | MIA | AA | DFW | AA | | | PHX | 253 | 147.00 | 223 | 137.00 | |
| 2003 | 4 | D | L | 2 | MIA | AA | DFW | AA | | | SAN | 166 | 174.00 | 175 | 152.00 | |
| 2003 | 4 | D | L | 2 | MIA | AA | DFW | AA | | | SAT | 140 | 168.00 | 129 | 157.00 | |
| 2003 | 4 | D | L | 2 | MIA | AA | DFW | AA | | | SEA | 158 | 152.00 | 140 | 159.00 | |
| 2003 | 4 | D | L | 2 | MIA | AA | DFW | AA | | | SJC | 100 | 135.00 | 85 | 174.00 | |
| 2003 | 4 | D | L | 2 | MIA | AA | DFW | AA | | | SLC | 85 | 121.00 | 85 | 146.00 | |
| 2003 | 4 | D | L | 2 | MIA | AA | DFW | AA | | | SMF | 86 | 171.00 | 73 | 160.00 | |
| 2003 | 4 | D | L | 2 | MIA | AA | DFW | AA | | | SNA | 89 | 184.00 | 97 | 167.00 | |
| 2003 | 4 | D | L | 2 | MIA | AA | DFW | AA | | | TUL | 71 | 163.00 | 73 | 134.00 | |
| 2003 | 4 | D | L | 2 | MIA | AA | DFW | AA | | | TUS | 76 | 178.00 | 82 | 173.00 | |
| 2003 | 4 | D | L | 2 | MIA | AA | ORD | AA | | | IND | 74 | 102.00 | 74 | 112.00 | |
| 2003 | 4 | D | L | 2 | MIA | AA | ORD | AA | | | MCI | 56 | 114.00 | 58 | 112.00 | |
| 2003 | 4 | D | L | 2 | MIA | AA | ORD | AA | | | MKE | 83 | 99.00 | 82 | 94.00 | |
| 2003 | 4 | D | L | 2 | MIA | AA | ORD | AA | | | MSN | 51 | 106.00 | 55 | 107.00 | |
| 2003 | 4 | D | L | 2 | MIA | AA | ORD | AA | | | MSP | 60 | 154.00 | 55 | 123.00 | |
| 2003 | 4 | D | L | 2 | MIA | AA | ORD | AA | | | SEA | 52 | 137.00 | 52 | 114.00 | |
| 2003 | 4 | D | L | 2 | MIA | AA | ORD | AA | | | TOL | 58 | 93.00 | 55 | 92.00 | |
| 2003 | 4 | D | L | 2 | MIA | UA | DEN | UA | | | ASE | 93 | 230.00 | 96 | 263.00 | |
| 2003 | 4 | D | L | 2 | MIA | UA | DEN | UA | | | PDX | 58 | 157.00 | 51 | 155.00 | |
| 2003 | 4 | D | L | | Msc | | | | | | | 3574 | 170.13 | 3417 | 176.80 | |
| 2003 | 4 | D | L | | Tot | | | | | | | 6341 | 161.73 | 6072 | 165.13 | 12413 |
| 2003 | 4 | D | C | | Msc | | | | | | | 85 | 260.18 | 146 | 232.44 | |
| 2003 | 4 | D | C | | Tot | | | | | | | 85 | 260.10 | 146 | 232.39 | 231 |
| 2003 | 4 | I | L | 2 | MIA | AA | DFW | AA | | | ABQ | 89 | 190.00 | 93 | 189.00 | |
| 2003 | 4 | I | L | 2 | MIA | AA | DFW | AA | | | AUS | 99 | 137.00 | 104 | 134.00 | |
| 2003 | 4 | I | L | 2 | MIA | AA | DFW | AA | | | ELP | 49 | 193.00 | 61 | 222.00 | |
| 2003 | 4 | I | L | 2 | MIA | AA | DFW | AA | | | ICT | 50 | 168.00 | 56 | 170.00 | |
| 2003 | 4 | I | L | 2 | MIA | AA | DFW | AA | | | MCI | 89 | 160.00 | 108 | 151.00 | |
| 2003 | 4 | I | L | 2 | MIA | AA | DFW | AA | | | OKC | 58 | 179.00 | 65 | 190.00 | |
| 2003 | 4 | I | L | 2 | MIA | AA | DFW | AA | | | PDX | 125 | 229.00 | 124 | 213.00 | |
| 2003 | 4 | I | L | 2 | MIA | AA | DFW | AA | | | PHX | 207 | 223.00 | 203 | 225.00 | |
| 2003 | 4 | I | L | 2 | MIA | AA | DFW | AA | | | SAN | 121 | 207.00 | 143 | 203.00 | |
| 2003 | 4 | I | L | 2 | MIA | AA | DFW | AA | | | SAT | 85 | 165.00 | 112 | 208.00 | |
| 2003 | 4 | I | L | 2 | MIA | AA | DFW | AA | | | SEA | 176 | 228.00 | 175 | 233.00 | |
| 2003 | 4 | I | L | 2 | MIA | AA | DFW | AA | | | SLC | 110 | 234.00 | 141 | 219.00 | |
| 2003 | 4 | I | L | 2 | MIA | AA | DFW | AA | | | SMF | 101 | 202.00 | 113 | 200.00 | |
| 2003 | 4 | I | L | 2 | MIA | AA | DFW | AA | | | TUL | 89 | 179.00 | 104 | 205.00 | |
| 2003 | 4 | I | L | 2 | MIA | AA | DFW | AA | | | TUS | 80 | 278.00 | 82 | 257.00 | |
| 2003 | 4 | I | L | 2 | MIA | AA | ORD | AA | | | MSP | 76 | 182.00 | 50 | 170.00 | |
| 2003 | 4 | I | L | | Msc | | | | | | | 2069 | 200.50 | 2063 | 206.89 | |
| 2003 | 4 | I | L | | Tot | | | | | | | 3673 | 201.42 | 3797 | 205.33 | 7470 |
| 2003 | 4 | I | C | | Msc | | | | | | | 73 | 343.15 | 56 | 325.71 | |
| 2003 | 4 | I | C | | Tot | | | | | | | 73 | 343.17 | 56 | 325.63 | 129 |
| 2003 | 4 | | | | Report Total | | | | | | | 10172 | 178.19 | 10071 | 182.16 | 20243 |

TABLE 12 REPORT - O&D's BY ROUTING
Initiated Trips Base / Reference
Sorted by Base / Reference

Msc. = Sum of Records where Out+InPax is less than 100

| Qtr | L/C | | | | | | | | | | | | | | |
|------|-----|----|-----|----|--------------|----|-----|----|-----|-------|--------|------|--------|--------|--|
| Year | D/I | Cp | Bse | C1 | St1 | C2 | St2 | C3 | Ref | IBase | BFare | IRef | RFare | TtlPax | |
| 2003 | 4 | D | L | 2 | MIA | AA | DFW | AA | ABQ | 71 | 170.00 | 103 | 152.00 | | |
| 2003 | 4 | D | L | 2 | MIA | UA | DEN | UA | ASE | 139 | 254.00 | 48 | 236.00 | | |
| 2003 | 4 | D | L | 2 | MIA | AA | DFW | AA | AUS | 93 | 184.00 | 165 | 186.00 | | |
| 2003 | 4 | D | L | 2 | MIA | AA | DFW | AA | DEN | 65 | 157.00 | 44 | 162.00 | | |
| 2003 | 4 | D | L | 2 | MIA | AA | DFW | AA | ELP | 52 | 223.00 | 100 | 171.00 | | |
| 2003 | 4 | D | L | 2 | MIA | AA | DFW | AA | ICT | 35 | 129.00 | 143 | 103.00 | | |
| 2003 | 4 | D | L | 2 | MIA | AA | ORD | AA | IND | 35 | 107.00 | 112 | 108.00 | | |
| 2003 | 4 | D | L | 2 | MIA | AA | DFW | AA | LAX | 20 | 186.00 | 123 | 171.00 | | |
| 2003 | 4 | D | L | 2 | MIA | AA | DFW | AA | MCI | 89 | 114.00 | 240 | 107.00 | | |
| 2003 | 4 | D | L | 2 | MIA | AA | ORD | AA | MCI | 36 | 117.00 | 76 | 99.00 | | |
| 2003 | 4 | D | L | 2 | MIA | AA | DFW | AA | MFE | 38 | 195.00 | 64 | 127.00 | | |
| 2003 | 4 | D | L | 2 | MIA | AA | ORD | AA | MKE | 40 | 112.00 | 125 | 91.00 | | |
| 2003 | 4 | D | L | 2 | MIA | AA | ORD | AA | MSN | 26 | 99.00 | 80 | 109.00 | | |
| 2003 | 4 | D | L | 2 | MIA | AA | ORD | AA | MSP | 43 | 170.00 | 72 | 121.00 | | |
| 2003 | 4 | D | L | 2 | MIA | AA | DFW | AA | OKC | 39 | 153.00 | 134 | 162.00 | | |
| 2003 | 4 | D | L | 2 | MIA | AA | DFW | AA | PDX | 56 | 139.00 | 184 | 158.00 | | |
| 2003 | 4 | D | L | 2 | MIA | UA | DEN | UA | PDX | 19 | 192.00 | 90 | 149.00 | | |
| 2003 | 4 | D | L | 2 | MIA | AA | DFW | AA | PHX | 198 | 154.00 | 272 | 133.00 | | |
| 2003 | 4 | D | L | 2 | MIA | AA | DFW | AA | SAN | 136 | 178.00 | 202 | 154.00 | | |
| 2003 | 4 | D | L | 2 | MIA | AA | DFW | AA | SAT | 110 | 178.00 | 154 | 152.00 | | |
| 2003 | 4 | D | L | 2 | MIA | AA | DFW | AA | SEA | 87 | 209.00 | 207 | 127.00 | | |
| 2003 | 4 | D | L | 2 | MIA | AA | ORD | AA | SEA | 41 | 154.00 | 63 | 107.00 | | |
| 2003 | 4 | D | L | 2 | MIA | AA | DFW | AA | SJC | 46 | 142.00 | 136 | 159.00 | | |
| 2003 | 4 | D | L | 2 | MIA | AA | DFW | AA | SLC | 94 | 144.00 | 74 | 117.00 | | |
| 2003 | 4 | D | L | 2 | MIA | AA | DFW | AA | SMF | 32 | 187.00 | 125 | 160.00 | | |
| 2003 | 4 | D | L | 2 | MIA | AA | DFW | AA | SNA | 43 | 204.00 | 139 | 162.00 | | |
| 2003 | 4 | D | L | 2 | MIA | AA | ORD | AA | TOL | 22 | 102.00 | 90 | 91.00 | | |
| 2003 | 4 | D | L | 2 | MIA | AA | DFW | AA | TUL | 44 | 186.00 | 99 | 132.00 | | |
| 2003 | 4 | D | L | 2 | MIA | AA | DFW | AA | TUS | 71 | 176.00 | 85 | 177.00 | | |
| 2003 | 4 | D | L | | Msc | | | | | 2080 | 192.64 | 4825 | 164.21 | | |
| 2003 | 4 | D | L | | Tot | | | | | 3900 | 181.80 | 8374 | 153.91 | 12274 | |
| 2003 | 4 | D | C | | Msc | | | | | 82 | 275.85 | 147 | 223.25 | | |
| 2003 | 4 | D | C | | Tot | | | | | 82 | 275.78 | 147 | 223.23 | 229 | |
| 2003 | 4 | I | L | | Tot | | | | | 0 | 0.00 | 0 | 0.00 | 0 | |
| 2003 | 4 | I | C | | Tot | | | | | 0 | 0.00 | 0 | 0.00 | 0 | |
| 2003 | 4 | | | | Report Total | | | | | 3982 | 183.73 | 8521 | 155.10 | 12503 | |

One-Way trip

Let's look at an example of a single passenger on a 3 Coupon One-Way Trip beginning at LAX, transferring planes at DEN, transferring again at ORD and proceeding to a final destination of EWR.

This itinerary would produce the following data fields in HUB: Record Type= **A**, Coupons= **3**, Direction= **Outbound**, Base= **LAX**, Stop 1= **DEN**, Stop2= **ORD**, Reference= **EWR**.

In record extract format it would appear as:

| <u>BASE</u> | <u>REF</u> | <u>Stop1</u> | <u>Stop2</u> | <u>LegType</u> | <u>Coupons</u> | <u>OutPax</u> | <u>InPax</u> |
|-------------|------------|--------------|--------------|----------------|----------------|---------------|--------------|
| LAX | EWR | DEN | ORD | A | 3 | 1 | |

This Itinerary is Cross Posted to produce a symmetrical record in the opposite direction. This record would appear as:

| <u>BASE</u> | <u>REF</u> | <u>Stop1</u> | <u>Stop2</u> | <u>LegType</u> | <u>Coupons</u> | <u>OutPax</u> | <u>InPax</u> |
|-------------|------------|--------------|--------------|----------------|----------------|---------------|--------------|
| EWR | LAX | ORD | DEN | A | 3 | | 1 |

Notice that in this record the passenger is Inbound.

Now let's consider a group a five passengers traveling from EWR to LAX using the same routing.

This produces a record which would appear as follows:

| <u>BASE</u> | <u>REF</u> | <u>Stop1</u> | <u>Stop2</u> | <u>LegType</u> | <u>Coupons</u> | <u>OutPax</u> | <u>InPax</u> |
|-------------|------------|--------------|--------------|----------------|----------------|---------------|--------------|
| EWR | LAX | ORD | DEN | A | 3 | 5 | |

When this record is Cross Posted in the opposite direction it would appear as follows:

| <u>BASE</u> | <u>REF</u> | <u>Stop1</u> | <u>Stop2</u> | <u>LegType</u> | <u>Coupons</u> | <u>OutPax</u> | <u>InPax</u> |
|-------------|------------|--------------|--------------|----------------|----------------|---------------|--------------|
| LAX | EWR | DEN | ORD | A | 3 | | 5 |

After summing these two examples together on unique itineraries you would find the following two records:

| <u>BASE</u> | <u>REF</u> | <u>Stop1</u> | <u>Stop2</u> | <u>LegType</u> | <u>Coupons</u> | <u>OutPax</u> | <u>InPax</u> |
|-------------|------------|--------------|--------------|----------------|----------------|---------------|--------------|
| LAX | EWR | DEN | ORD | A | 3 | 1 | 5 |
| EWR | LAX | ORD | DEN | A | 3 | 5 | 1 |

The FIRST record alone tells us the whole story. It says that one passenger made a One Way Journey starting at LAX with a Destination of EWR and stopped twice along the way at DEN and ORD (the Outbound Passenger Count) while five people were taking One Way Journeys in the opposite direction over the same routing (the Inbound Passenger Count). The SECOND record gives us IDENTICAL information about the LAX/EWR market but is found when looking at the reverse market of EWR/LAX.

Note: The Cross Posting logic which we have described above is not unique to HUB or to Data Base Products. It is the same logic which is used for the outbound and inbound data in the DOT published Tables including the Table 12 (the itinerary level data).

Note: A Passenger may in fact make more stops than is shown in the O&D Survey since thru plane service would not require the use of an additional coupon. In other words, the coupon information relates only to enplanements that is Originations and On-Line and Off-Line Connections.

Full Itineraries vs. HUB Data Structure

One limitation to discovering full itineraries with our HUB product is when a directional journey has more than three coupons. Since this effects less than one percent of all domestic tickets, we decided not to record the third, fourth or subsequent stops along an itinerary. We do keep the true origin, the true destination, and the first two stops for all tickets in the survey.

This abbreviation makes the data base smaller (i.e. shorter fixed length records) and allows us to index the various elements for rapid access and retrieval.

How does a record appear which involves more than 3 coupons in one direction (i.e. more than two stops)?

Example of a One Way 4 coupon itinerary:

LAX → DEN → ORD → ATL → EWR

Since we keep track of only the first two stops the record would appear as follows:

| <u>BASE</u> | <u>REF</u> | <u>Stop1</u> | <u>Stop2</u> | <u>LegType</u> | <u>Coupons</u> | <u>OutPax</u> | <u>InPax</u> |
|-------------|------------|--------------|--------------|----------------|----------------|---------------|--------------|
| LAX | EWR | DEN | ORD | A | 4 | 1 | |

You may note that this is the same as the first example except the total coupons is 4 instead of 3.

The Cross Posted record would appear as:

| <u>BASE</u> | <u>REF</u> | <u>Stop1</u> | <u>Stop2</u> | <u>LegType</u> | <u>Coupons</u> | <u>OutPax</u> | <u>InPax</u> |
|-------------|------------|--------------|--------------|----------------|----------------|---------------|--------------|
| EWR | LAX | ORD | ATL | A | 4 | | 1 |

This means that in looking at Journeys of 3 coupons or less:

- The airport designated in Stop1 for the Outbound count is literally the passenger's first stop (meaning connect point)
- The Inbound passenger Stop1 indicates the last airport at which the passenger connected prior to arrival at his destination "Base" airport.

For directional Journeys involving more than 3 coupons:

Using the four coupon example above

- The airport designated in Stop1 for the Outbound count is STILL literally the passenger's first stop (meaning connect point)
- The Inbound passenger count Stop1 indicates the SECOND to last airport at which the passenger connected prior to arrival at his destination "Base" airport. Likewise, for five coupon itineraries the airport designated as Stop1 for Inbound passenger counts would indicate the THIRD to last connect point, etc.

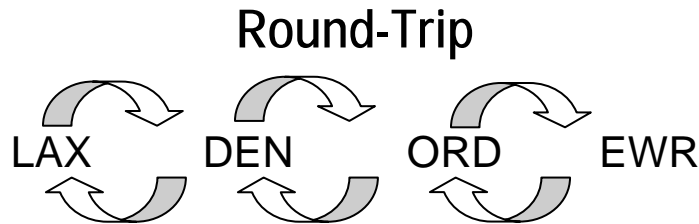
For Outbound passenger counts, the Stop1 and Stop2 airports designated will ALWAYS indicate the first two stops along their directional journey NO MATTER how many coupons are used.

What this means as a practical matter when using HUB data is that you can either

- Assume that all records are three coupons or less and treat them as full itineraries while accepting a small margin of error
 - Do separate queries using the coupon filter set at min > 0 and max < = 3 which will represent full itineraries and do another query with the coupon filter set at min > 3 max < = 24 which records can be interpreted separately according to the number of coupons.

How does a domestic round trip appear in Hub

First let's change our original example from one person making a One Way Trip to one making a symmetrical Round Trip.



Instead of an "A" leg type record (a One Way) it would be a "B" leg type record (a first leg of a round trip). The Outbound trip would appear as follows:

| <u>BASE</u> | <u>REF</u> | <u>Stop1</u> | <u>Stop2</u> | <u>LegType</u> | <u>Coupons</u> | <u>OutPax</u> | <u>InPax</u> |
|-------------|------------|--------------|--------------|----------------|----------------|---------------|--------------|
| LAX | EWR | DEN | ORD | B | 3 | 1 | |

You may note that this is the same as the first example except the leg type is "B" instead of "A"

His *Return trip* would appear as "R" leg type records (a return leg of a round trip):

| <u>BASE</u> | <u>REF</u> | <u>Stop1</u> | <u>Stop2</u> | <u>LegType</u> | <u>Coupons</u> | <u>OutPax</u> | <u>InPax</u> |
|-------------|------------|--------------|--------------|----------------|----------------|---------------|--------------|
| EWR | LAX | ORD | DEN | R | 3 | 1 | |

The *Cross Posted* records would appear as follows:

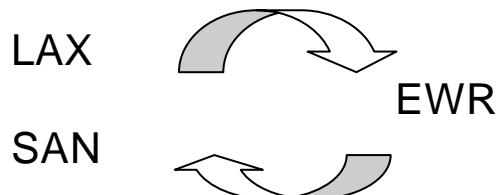
| <u>BASE</u> | <u>REF</u> | <u>Stop1</u> | <u>Stop2</u> | <u>LegType</u> | <u>Coupons</u> | <u>OutPax</u> | <u>InPax</u> |
|-------------|------------|--------------|--------------|----------------|----------------|---------------|--------------|
| EWR | LAX | ORD | DEN | B | 3 | | 1 |

and:

| <u>BASE</u> | <u>REF</u> | <u>Stop1</u> | <u>Stop2</u> | <u>LegType</u> | <u>Coupons</u> | <u>OutPax</u> | <u>InPax</u> |
|-------------|------------|--------------|--------------|----------------|----------------|---------------|--------------|
| LAX | EWR | DEN | ORD | R | 3 | | 1 |

Open Jaws

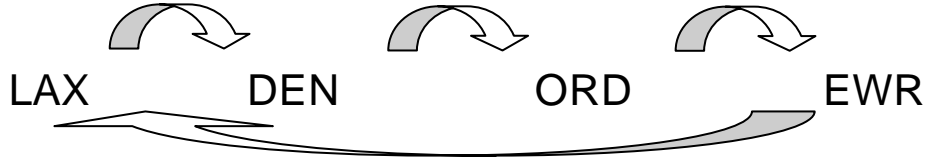
Now what about the Open Jaw trips? First of all, an open jaw trip is one which involves more than one directional journey, but does not return the passenger to his point of origin. Let's take the example: LAX to EWR to SAN.



We consider the first leg of this trip as a One Way ("A" leg type record). The second leg (and any subsequent leg) is considered a "V" leg type record.

Non-Symmetrical and Multi-Directional-Journey Round Trips

What about non-symmetrical round trips? All round-trip passengers will generate at least four passenger counts: One "B" type record on the first leg; One "R" type record on the return leg; and Two records in the cross-posted markets. For example:



The first leg will generate:

| <u>BASE</u> | <u>REF</u> | <u>Stop1</u> | <u>Stop2</u> | <u>LegType</u> | <u>Coupons</u> | <u>OutPax</u> | <u>InPax</u> |
|-------------|------------|--------------|--------------|----------------|----------------|---------------|--------------|
| LAX | EWR | DEN | ORD | B | 3 | 1 | |
| EWR | LAX | ORD | DEN | B | 3 | | 1 |

The return leg will generate:

| <u>BASE</u> | <u>REF</u> | <u>Stop1</u> | <u>Stop2</u> | <u>LegType</u> | <u>Coupons</u> | <u>OutPax</u> | <u>InPax</u> |
|-------------|------------|--------------|--------------|----------------|----------------|---------------|--------------|
| EWR | LAX | | | R | 1 | 1 | |
| LAX | EWR | | | R | 1 | | 1 |

What about a non-symmetrical round-trip involving more than two directional Journeys?

For example: LAX to MIA to EWR to LAX.

The first journey (LAX to MIA) and the return-to-base journey (EWR to LAX) are treated the same as any round-trip would be. However, the MIA to EWR journey would be a "V" type record

The HUB software keeps track of several different domestic leg types, as outlined below:

"A" leg type records include 1) One-Way Trips from Base to Reference and 2) the first directional journey of an Open Jaw.

"B" leg type records are the first directional journey of Round Trips.

"R" leg type records are the return directional journey.

"V" leg type records are miscellaneous directional journeys including 1) Open Jaw directional Journeys other than the first and 2) Round Trip directional journeys that are intermediate (other than the first leg or return leg).

Domestic Portion of International Journeys

To distinguish between pure Domestic records and Domestic Portions of International records, we assign a record type. Pure Domestic records have a Record Type "D" (and leg types "A, B, R or V"). Domestic Portions of International Journeys have a Record Type "I" Type "I" records may have three leg types:

"T" - leg type records are for 1) passengers who begin their journey at an International point and travel "T" through the Base airport listed (their first domestic airport) to the Reference domestic airport that is their destination and 2) passengers who begin their journey at an International base, transit the U.S. "T" through the base airport listed to the Reference airport listed (their last domestic point), then on to an International destination.

"Y" - leg type records are for persons beginning their directional journeys at a Domestic base airport and travel Be"Y"ond the Domestic reference airport to an international destination.

"D" - leg type records are directional journeys which do not contain an international point. In other words, the leg is a purely "D"omestic leg of an international ticket.

We do not keep track separately of One-Ways, Round Trips, Open Jaws, etc. for "I" type records.

Hub Extract Report Layout

| HUB Extract Record Layout | | | | |
|---------------------------|--------------------|---------------|---------------|---------------|
| <u>Example</u> | <u>Description</u> | <u>Beg at</u> | <u>End at</u> | <u>Length</u> |
| AUS, | Base, | 1 | 3 | 3 |
| D, | D or I Flag, | 5 | 5 | 1 |
| C, | C or L Flag, | 7 | 7 | 1 |
| F, | F or Z Flag, | 9 | 9 | 1 |
| BOS, | Dest, | 11 | 13 | 3 |
| ATL, | Stop 1, | 15 | 17 | 3 |
| PIT, | Stop 2, | 19 | 21 | 3 |
| AA, | Car 1, | 23 | 24 | 2 |
| US, | Car 2, | 26 | 27 | 2 |
| US, | Car 3, | 29 | 30 | 2 |
| 3, | Total Coupons, | 32 | 33 | 2 |
| A, | Leg Type, | 35 | 35 | 1 |
| 1, | Connect Point, | 37 | 38 | 2 |
| 2003, | Year, | 40 | 43 | 4 |
| 1, | Quarter, | 45 | 46 | 2 |
| 812, | Dist1, | 48 | 52 | 5 |
| 526, | Dist2, | 54 | 58 | 5 |
| 496, | Dist3, | 60 | 64 | 5 |
| 1834, | ItDist, | 66 | 70 | 5 |
| 1696, | ODDist, | 72 | 76 | 5 |
| 0, | Out Pax, | 78 | 82 | 5 |
| 0.00, | Out Fare, | 84 | 90 | 7 |
| 1, | In Pax, | 92 | 96 | 5 |
| 114.81, | In Fare, | 98 | 104 | 7 |
| CR LF | Carriage Lf | 105 | 106 | 2 |

Gateway

- Gateway contains the Itinerary Level Detail of International O&D's reported by U.S. Carriers in their 10% O&D Survey reported to the U.S. DOT.
- Our International O&D CD Product is a summary by O&D from Gateway. The adjusted passenger counts are often lower in the summary level data due to rounding back to the 10% level.

Gateway Queries

Our Gateway product is used primarily to discover:

- the U.S. to Foreign gateway airports used between O&D's
- O&D's which are flowing over a Gateway airport pair
- The flow overs summarized into those markets feeding the gateway, "Behinds" (or throughs), and those which are served beyond, "Beyonds".

More detail than HUB

- Because International travel frequently involves more connections than Domestic travel, we have structured the data to include six airports for each directional journey.
- We store the passenger's Origin, Destination, First Gateway Airport, Second Gateway Airport, and the Gateway Carrier in fixed fields along with the entire itinerary.

Reported and Adjusted Pax

Because the DOT in International Route cases use only "As Reported" data, we accumulate both the "As Reported" and "As Adjusted" passenger counts in Gateway.

Our International O&D CD contains "As Adjusted" passenger counts only.

Sort Orders and Summary Levels

- Due to the complexity of the data, we have provided extraction and reporting software which includes nearly all of the possible permutations of sort orders and summary levels of the data.
- We have also included the ability to export a report at any summary level to a spreadsheet format or "CSV" (ASCII, fixed field Comma Separated Values) format for use with DBMS's.

Passenger Counts are at 100%

Unlike our other three O&D products, Gateway reports Passenger Counts at a full 100% rather than 10%. We decided to make this exception due to the multitude of small unique International itineraries. If we rounded our adjusted passenger counts back to a 10% level, we would lose the effect of many of our adjustments.

Market Ranking in Gateway

Instead of ranking all International O&D Markets as a group, we have divided the markets into several different gateways.

- **A** - Atlantic - Europe (WAC 400's), Africa (WAC 500's), Middle East (WAC 600's) and Greenland (WAC 975)
- **C** - Latin Caribbean - Non-U.S. Caribbean (WAC 200's)
- **L** - Latin - Middle America (WAC 100's except 148) and South America (WAC 300's)
- **M** - Mexico - Mexico (WAC 148)
- **P** - Pacific - Far East (WAC 700's) and Australasia and Oceania (WAC 800's)
- **T** - Canada - Canada (WAC 900's except 975)

In Gateway, there are two special Gateway Codes.

- **X** – No Gateway (pure Domestic or pure International directional journeys).
- **Z** – Multiple Gateways on the same directional journey (passengers who transit the U.S. between their origin and destination).

Each set of gateway markets to/from the U.S. is ranked separately. We ranked the markets in this way because we felt an analyst is usually interested in only one set of gateway markets at a time and separate rankings are therefore more relevant.

Pitfalls Using Gateway

Each record contains fields for a passenger's Origin, Destination and up to four connect points enroute between his Origin and Destination. The Gateway airport pair identifies the first coupon used to enter or exit the U.S. These Gateway Airports were selected by parsing the itinerary for coupons which contained both one domestic airport and one International airport. Along with the Gateway airport pair, we identified the Gateway Carrier and the geographic or political boundary which was traversed (i.e. Atlantic, Pacific, Canadian, Caribbean, Mexico, or Latin).

In the case of an itinerary which crossed more than one boundary we assigned it a Boundary code of "Z" which designates a Multiple gateway directional itinerary (e.g. Japan to Europe transiting the U.S.). A domestic origination and destination with a routing that includes an International midpoint is also a Multiple gateway.

In the case of a Multiple gateway itinerary, we choose the **FIRST** Gateway in the Outbound direction to be the information in the GATEWAY Airport and Carrier fields of the record. Due to the inclusion of "Multiple" Gateway itineraries in the data, the analyst must use caution in selecting the proper Search Method and Data filter to ensure that his query is correct and that he properly interprets the results.

It is strongly recommended that you deselect these records (i.e. remove the "X" from the "Multiple" boundary option by pressing the space bar) before creating your subset of gateway data unless you are searching for midpoints of O&D's such as using the "Search for Itineraries" method.

Gateway Record Type

Gateway Record Types are defined as:

- **D** - all coupons on the ticket contain only US Domestic (including US Territories and US Caribbean) Airports.
- **M** - tickets which contain a non-Domestic Airport and do contain a Domestic to Domestic coupon.
- **J** - tickets which contain a non-Domestic Airport and do not contain a Domestic to Domestic coupon.

These tests are applied for the entire ticket and not for each directional journey. It is therefore possible to have an "M" record type on a directional journey which is purely domestic because the other directional journey contained a non-Domestic Airport. It is likewise possible to have an "M" record type on a directional journey which contains no Domestic to Domestic coupons and appears to be a "J" type itinerary when in fact other directional journey contained a Domestic to Domestic coupon.

It is necessary for us to define records in this manner for our

- Fare Filter sensitivity
- Removal of Excise Tax
- DPIJ (Domestic Portion of International Journeys) tracking system.

Gateway Report Options

Carrier Coupon Type is used to determine if a record will be included in a query.

- **A** - U.S. Reporting carrier flying between two U.S. points.
- **B** - U.S. Reporting carrier flying between a U.S. point and a foreign point.
- **C** - U.S. Reporting carrier flying between two foreign points.
- **D** - U.S. Non-reporting carrier flying within North America or surface (--) traffic.
- **E** - Foreign carrier flying between two U.S. points (cabotage).
- **F** - Foreign carrier flying between a foreign point and a U.S. point.
- **G** - Non-reporting, Foreign or Unknown carrier flying between foreign points.
- **H** - U.S. Domestic Carrier Code Sharing with another U.S. Domestic Carrier

Passenger Orientation uses the standard Outbound/Inbound directional journey breaks and "Point of Sale" reorients the data by Point of Origin.

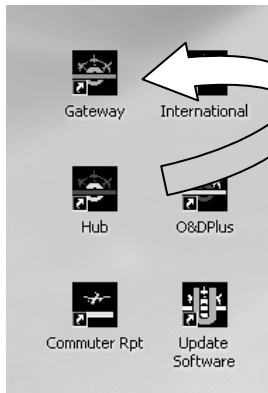
Passenger Counts for both As Reported and As Adjusted are contained in the subset.

Sum Quarters will sum a file for all time frames included in the subset. Note that you can create an annual subset by multiple queries of four quarterly databases using the "Append" option for the output file.

Minimum Passengers selects output records where the outbound plus inbound passenger totals are less than the value entered on to be accumulated into an "Other" line of the report.

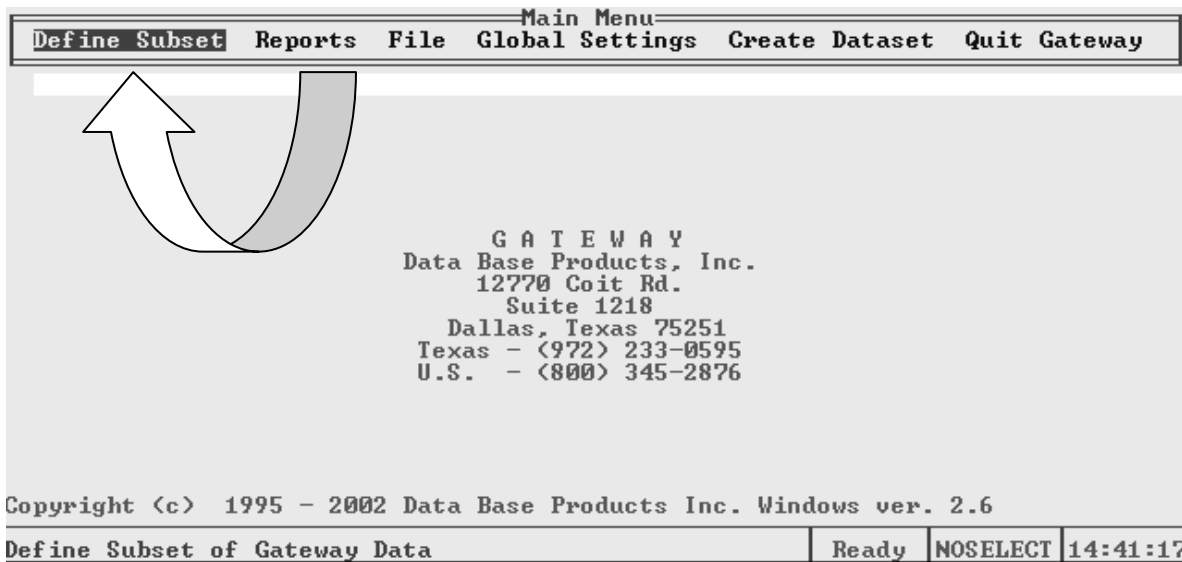
"Max Bndry City Pair Rank" looks at the ranking field in the data which has been assigned each quarter for all markets which use the same boundary. There are several number one ranked markets, for example. Rankings have been predetermined for each of the Atlantic, Canadian, Caribbean, Latin, Mexico and Pacific boundaries.

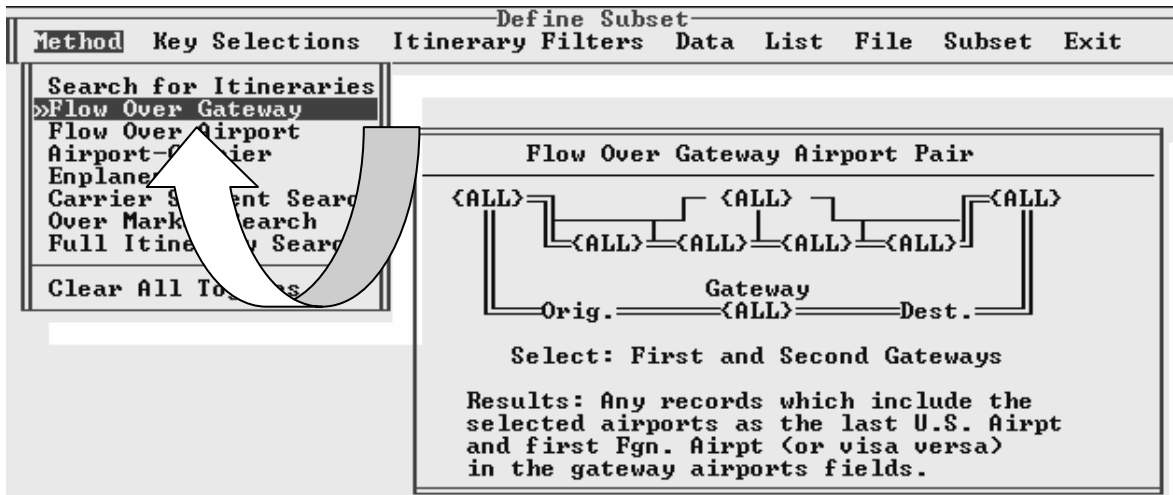
Gateway Operation



Gateway is started the same as all our other O&D products. Double click the Gateway icon on your desktop.

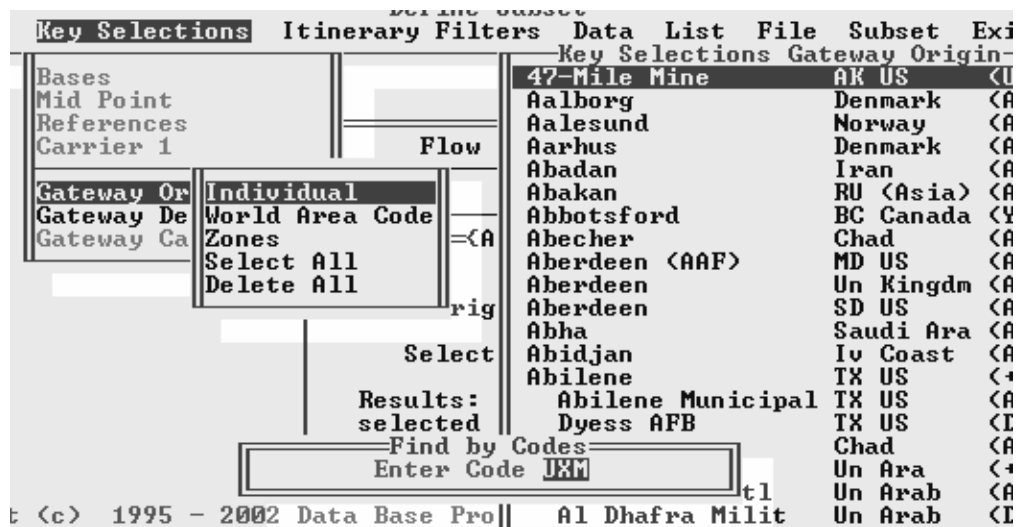
The Gateway product looks and functions much like the Hub product. Begin by selecting Define Subset.





Gateway has the same Method selections as Hub, but it has one that Hub does not - Flow Over Gateway.

Flow Over Gateway is used to discover O&D's serviced by a US/Foreign Gateway pair or selected pairs.



Select the necessary items from the Key Selections and Itinerary Filters drop down boxes. Then go to the Data Screen.

| Define Subset | | | | | | | |
|---------------|---|-------------------|---|--|------|--------|------|
| Method | Key Selections | Itinerary Filters | Data | List | File | Subset | Exit |
| B | <input checked="" type="checkbox"/> Atlantic | R | <input checked="" type="checkbox"/> Pure Domestic | Connections <input checked="" type="checkbox"/> Online Base to Reference <input checked="" type="checkbox"/> Offline Connect | | | |
| O | <input checked="" type="checkbox"/> Canadian | E | <input checked="" type="checkbox"/> Pure International | | | | |
| U | <input checked="" type="checkbox"/> Carribean | C | <input checked="" type="checkbox"/> Mixed Records | Reported / Adjusted Data < > Reported < * > Adjusted | | | |
| N | <input checked="" type="checkbox"/> Latin | L | <input checked="" type="checkbox"/> One Way | | | | |
| D | <input checked="" type="checkbox"/> None | E | <input checked="" type="checkbox"/> 1st Leg Round Trip | Coupons Filters | | | |
| A | <input checked="" type="checkbox"/> Mexico | G | <input checked="" type="checkbox"/> Return Leg Rnd Trip | | | | |
| R | <input checked="" type="checkbox"/> Multiple | S | <input checked="" type="checkbox"/> Open Jaw-All Others | Distance Filters | | | |
| Y | <input checked="" type="checkbox"/> Pacific | | | | | | |
| | | | | <input type="checkbox"/> Total Coupons >= 0 < 21 <input type="checkbox"/> Before Gateways >= 0 < 21 <input type="checkbox"/> After Gateways >= 0 < 21 <input type="checkbox"/> 1st Carrier Change >= 0 < 21 | | | |
| | | | | <input type="checkbox"/> Non Stop Distance >= 0 < 9,999 <input type="checkbox"/> Itinerary Distance >= 0 < 9,999 <input type="checkbox"/> Distance 1st Coup. >= 0 < 9,999 <input type="checkbox"/> Distance 2nd Coup. >= 0 < 9,999 <input type="checkbox"/> Distance 3rd Coup. >= 0 < 9,999 <input type="checkbox"/> Distance 4th Coup. >= 0 < 9,999 <input type="checkbox"/> Distance Stop4/Ref. >= 0 < 9,999 | | | |
| | | | | Market Rank by Boundary <input type="checkbox"/> Mkt Rank >= 0 < 32,000 | | | |

The Data selection screen begins with the Boundary selection.

Next is RECOrd Type. Yes there are Pure Domestic records in Gateway and the International products. These tend to be Domestic O&D remnants left from open jaw or complex multi leg routings.

And speaking of Leg Types, they are selected immediately below Record Type.

Connection and Passenger Types finish off the top row of this screen.

The Coupon Filters are used to further customize your query. If no X appears in the selection box, it is the same as selecting greater than or equal to 0 and less than 21.

The Mark Rank by Boundary is used to set the required range. Remember that each Boundary has its own rank so that Number 1 in the Atlantic is **NOT** the same as it is in the Pacific.

The Distance Filter allows you to choose O&D's by the Non Stop Distance between the Origin and Destination. You may also select by the total of the sum of the coupons – Itinerary Distance. Because Gateway has more detail than Hub, we had to allow you the opportunity to filter on each of the coupon's distance as well.

| Define Subset | |
|--|--|
| Method | Key Selections Itinerary Filters Data List File <u>Subset</u> Exit |
| Input -----Indexed File----- Year: 2003 Quarter: 4 | Selection Summary Search Method: Flow Over Gateway Orig. Gateway: ORD Dest. Gateway: FRA Domestic, International and Mixed Data Local + Connect Traffic Adjusted Passengers For Totals No Coupon Filters Boundaries: ATL CAN CAR LAT NONE MEX MULT PAC No Rank Filter No Distance Filter Selected: Base: MIA Ref.: 0 Stp1: 0 Stp2: 0 Stp3: 0 Stp4: 0 Car1: 2 Car2: 0 Car3: 0 Car4: 0 Car5: 0 Gtw0: ORD GtwD: FRA GtwC: 0 Any Connects Between Carrier List 1 and List 2 |
| Output Format () Lotus Format () ASCII Format () CSU Format (*) GTW Binary Subset Totals Only | |
| Output File Name: <u>ORDFRA</u> (*) Overwrite/Create () Append/Create | |
| <input type="button" value="GO"/> <input type="button" value="CANCEL"/> | |
| F2 to Start Data Pull | |

The Subset screen is nearly the same as Hub's. Probably the most important difference is that we have **NOT** presummarized a calendar year of Gateway data. You **CANNOT** type in Quarter 0. To get a year of data, you must append four quarters together into one GTW Binary Subset Output File. Annual Totals Only Output files are not available.

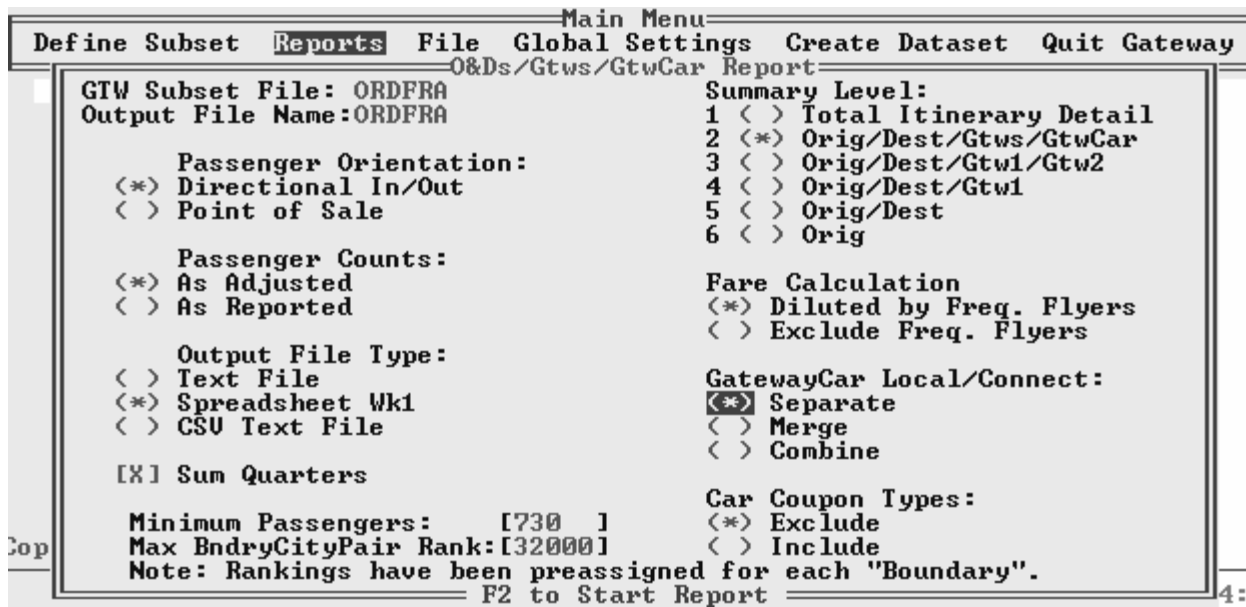
The Selection Summary section details the query's selections as it does in Hub and reflects the additional options that are available in Gateway.

| | |
|--------------------|--|
| Lotus Format | No Rank Filter |
| ASCII Format | No Distance Filter |
| CSU Format | Selected: Base: MIA Ref.: 0 |
| GTW Binary Subset | Stp1: 0 Stp2: 0 Stp3: 0 Stp4: 0 |
| Totals Only | Car1: 2 Car2: 0 Car3: 0 Car4: 0 |
| | Car5: 0 Gtw0: ORD GtwD: FRA GtwC: 0 |
| Output File | Any Connects Between Carrier List 1 and List |
| : ORDFRA | Number of Records Found |
| Overwrite | 54 |
| Append/Create | <input type="button" value="DEL"/> |

To use the pre formatted reports, create a GTW Binary Subset Output File. Gateway displays the number of records found when it finishes pulling the data. If it finds no records, review your selections for conflicting or inaccurate selections.

| Main Menu | |
|---|---|
| Define Subset | <u>Reports</u> File Global Settings Create Dataset Quit Gateway |
| 1. O&Ds/Gtws/GtwCar Sort Order | |
| 2. O&Ds/GtwCar/Gtws Sort Order | |
| 3. GtwCar/O&Ds/Gtws Sort Order | |
| 4. Gtws/O&Ds/GtwCar Sort Order | |
| 5. Gtws/GtwCar/O&Ds Sort Order | |
| 6. GtwCar/Gtws/O&Ds Sort Order | |
| G A T E W A Y Data Base Products, Inc. 12770 Coit Rd. Suite 1218 | |

To access the Reports section, return to the Main Menu and click on Reports. Choose which Sort Order best suits your needs.



Enter the GTW Subset File name exactly as you did on the Subset Screen. Notice that the Output File name can be the same as the GTW Subset File name. Each will have a different file extension.

The Summary Level option allows you to choose the level of detail for your report.

Passenger Orientation uses the standard Outbound/Inbound directional journey breaks and "Point of Sale" reorients the data by Point of Origin.

Passenger Counts for both As Reported and As Adjusted are contained in the subset.

Sum Quarters will sum a file for all records included in the subset by the selected key in Summary Level.

Minimum Passengers selects output records where the outbound plus inbound passenger totals are less than the value entered on to be accumulated into an "Other" line of the report. In this example if I had appended four quarters, summaries and those O&Ds that had less than one passenger per day each way (365 X 2) would be included in the "Other" line.

"Max Bndry City Pair Rank" looks at the ranking field in the data which has been assigned each quarter for all markets which use the same boundary. There are several number one ranked markets, for example. Rankings have been predetermined for each of the Atlantic, Canadian, Caribbean, Latin, Mexico and Pacific boundaries.

Choose whether you wish to have the frequent flyers diluting the average fare. The diluted average fare is reported as the fare in our other products. The Exclude Freq. Flyers option is comparable to Fared Fare in O&DPlus and International.

GatewayCar Local/Connect allows you to customize the output. Selecting Separate causes the Local (Online) records to be sorted together and subtotaled and list the Connect (Offline) separately with their own subtotal. Merge sorts all the records together by the Summary Level key but keeps the Local and Connect passenger records separate. Combine summarizes all the records by the Summary Level key.

The Car Coupon Types allows you access to the Coupon Type Flag in our records. This flag can be quite useful in identifying U.S. flag to U.S. flag codesharing. Remember Gateway reports only the marketing carrier for U.S. flag to U.S. flag codesharing. If the Carrier Coupon Type is an "H," someone other than the identified carrier actually operated the section. This flag is useful also in sorting U.S. flag from foreign flag carriers.

Hub and Gateway Supplemental

We offer our HUB Gateway CD Customers the opportunity to obtain the low level O&D Survey derived supplemental datasets. The data is similar to the data contained Gateway database except that it is unaggregated.

Access to the individual O&D Survey Record level detail allows the user to look at individual Fares by Fare Class.

Another benefit of the low level data is that we are publishing both the "Operating" and "Marketing" Carrier code on each coupon of the itinerary which will allow the user to perform Codeshare Studies.

The data is stored in "CSV" (Comma Separated Values) files so that it can be imported into database management systems such as Microsoft Access.

Because of the size of a quarterly file, the user cannot directly import this supplemental data in any spreadsheet format. We are provide a GUI software utility called "LLSubset.exe" which allows the use to create a subset "CSV" files. Subsets of 65,000 lines or less (approx. an 8 Meg. file) can be opened in Microsoft Excel simply by clicking on the file.

Copy "LLSubset.exe" from the SUP CD to a subdirectory on your computer. Run the extraction software either using the RUN prompt from the Windows START Box.

LLSubset

Input File: d:\LLint034.csv Browse...

Output Subset: c:\low_level\subset_data.csv Browse...

Note: You may use asterisks in items below to indicate "Any" (example: Origin: ***)

Origin: DFW Operating Carrier: **

Destination: DCA Marketing Carrier: AA

Connect Point: ***

Click Here to Begin Subset

QUIT

Select the Input File which usually will be on the CDROM and the name of the Output Subset file. The enter the criterion to limit the size of your subset. Only one airport or carrier may be input per item for each subset. Entering "***" for an airport will select all airports. "***" will select all carriers.

This software can be used to further subset a previous subset.

Supplemental Data Source

The raw data that we use for these products is from the U.S. DOT O&D Survey databank DB1B. The Survey is a ten percent sample of tickets used which are partially summarized and reported by U.S. Scheduled Passenger Carriers (“Large Air Carriers”) pursuant to regulations contained in the Code of Federal Regulations – Part 241.

D or I (Domestic or International)

We separate the O&D Survey data into those records which contain an International Airport and those which do not. The purely Domestic data is in the “HUB Sup” dataset and has a “D” in the “D or I” flag field. The International data is in the “GTW Sup” dataset and has an “I” in the “D or I” flag field. Note that the “GTW Sup” data can not be provided to any third party without expressed permission from the U.S. DOT since it is covered by the confidentiality agreement you have executed.

Directional Breaks

The Survey data reported by the carriers does not indicate the passengers’ destination. In most cases it is obvious from examining a passenger’s itinerary what his true destination was since most itineraries are symmetrical round trips. The U.S. DOT has created program logic which examines the itinerary and indicates the passenger’s probable destination based on the circuitry of his routing. We use this breakpoint to “break” the records into “Directional Journeys” or as some people refer to them “One Way Itineraries”.

Leg Types / Point-of-Sale

As we perform the operation of breaking the records into “Directional Journeys”, we keep track of which part of the entire itinerary is being represented. If there is no breakpoint on the survey record, we consider it a “One Way” itinerary and indicate that with an “A” in the “Leg Type” field. If the “Directional Journey” is the first leg of a round trip, we indicate that with a “B” in the “Leg Type” field. If the “Directional Journey” is the return leg of a round trip, we indicate that with an “R” in the “Leg Type” field. If it does not qualify as an “A”, “B” or “R” type journey we assign a “V” to the “Leg Type”. The “Leg Type” field can be used to accumulate data by “Point-of-Sale” if you assume that the point-of-sale is the same as the original point of origin (i.e. either 1) the origin of an “A” or “B” Leg Type or 2) the destination of an “R” Leg Type).

Passengers

The passenger numbers are “As Reported” in the O&D Survey multiplied by ten.

Fares

The Gross amount paid by the passenger is the ticket value reported by the carriers which includes Federal Excise Taxes, Security Fees, Passenger Facility Charges, Commissions, Fuel Surcharges etc. When we break the survey records into “Directional Journeys” we prorate the Gross Fare reported on the record by the ratio of the distance on each “Directional Journey” to the total itinerary distance traveled. (Note that this is different from all of our other data products in which we net out Federal Excise Taxes, Security Fees and PFC’s.)

Fare Type

There are some special fare types reported by the carriers to the U.S. DOT. If the carrier is unable to assign the exact amount that was charged for tickets and were sold at a “Bulk Fare”, they are instructed to report it using a ticket value in the Fare field. When this occurs, we zero out the Fare Amount and indicate that the amount of the “Bulk Fare” was unknown by placing a “K” in the “Fare Type” field. A Fare Type of “B” is assigned and a zero fare is given to “Bad” fares which do not pass our mileage-based fare filter. A Fare Type of “Z” indicating a “Frequent Flyer” ticket is assigned by us to fares which are either zero or less than \$26 if Domestic or less than \$51 if International. All other records are assigned a Fare Type of “F”.

LorC (Local or Connect)

This field indicates if there is a change of carrier (Marketing carrier) on the Directional Journey. The Connect flag “C” indicates that there is an offline connection. The Local flag “L” indicates that there is no change of carrier.

Code Share Flag

An “N” indicates that the Marketing and Operating carriers on each coupon are the same. A “Y” indicates that there is at least one coupon in the Directional Journey itinerary where the Marketing and Operating carrier codes are different.

Fare Class

The Fare Classes found in the data are:

“**F**” First Class - Unrestricted

“**G**” First Class - Restricted

“**C**” Business Class - Unrestricted

“**D**” Business Class - Restricted

“**Y**” Coach Class - Unrestricted

“**X**” Coach Class - Restricted

“**U**” Unknown

“ ” (blank) on Surface Transportation coupons (i.e. Carrier Code “--“)

We have found the Fare Class information as reported to the U.S. DOT to be inconsistent and potentially misleading and have attempted to make the data more meaningful by reclassifying the Fare Classes to be consistent with what we believe to be a common understanding of what they should represent. One anomaly which we were unable to resolve is why TW reported large amounts of “G” class (restricted First Class) data and small amounts of “Y” class (unrestricted Coach Class).

We caution the users against trying to draw too many inferences from the “Fare Class” classifications.

Itinerary Compression

A Survey record as reported may contain as many as 24 coupons. Making two connections to get to one’s destination is, however, about the limit that a passenger is asked to endure. In order to avoid publishing fields which are usually unpopulated, we have compressed the itineraries which have more than 5 coupons in one direction. This allows us to represent the full itinerary for passengers making as many as 4 connections on one directional journey. The number of coupons on each directional journey is found in the “Coupons” field. The “Destination” airport field contains the last airport in each directional journey. Any information regarding connect points in excess of 4 or carriers in excess of 5 are not represented in our record structure.

Disclaimer

Besides the changes to Fare Classes and reported fares as mentioned, we have made only a few other changes to the “As Reported” survey data. For example, we have reassigned city codes such as “NYC” to appropriate airports. We have attempted to provide you with the most useful information available but we can not accept responsibility for any errors contained in the data as reported by the carriers. We also must disclaim any liability for any inadvertent errors which we may have created in the process.

Reconciliation

We believe that this level of data will be most useful to our customers with the passenger counts being unadjusted and the fares being stated at gross amounts. All of our other O&D products have been enhanced for better use in other types of analysis. Among the most significant adjustments to the data in our other O&D products are: 1) adjusting the passenger counts using T100 data as benchmark data, 2) removing FET and PFC's from the fares to reflect the carrier's revenue and 3) adding "Unduplicated Commuter" data to the survey data. These will be reconciling items between the data which you may summarize from the "Low Level" data contained in "GTW Sup" and our other O&D data products. We hope that our customers will keep this in mind when they find differences between the "Low Level" data and the enhanced summarized datasets that we offer on our other O&D products.