

# **Enclosure 6**

(Ref. Technical Letter F500-L14-004)



**Center for Advanced  
Aviation System Development**

## **Project Data Preparation and Computerized Database Loading**

**Prepared for**

**Aeropuertos y Servicios Auxiliares**

**November 2013**

## 1. Introduction

This document deals with two different subjects. The first one relates to MITRE's initial activities concerning preparatory computer work. The second one concerns data collection requests by MITRE throughout the project now starting. This second subject is of particular importance as some of the information provided in this document will be relevant throughout the duration of the entire project; specifically, this document describes the way data should be collected (i.e., format) and sent (i.e., recipient at MITRE). Subsequent data requests may not contain a specific description on format, recipient, and the like. Therefore, please keep this "master" document handy.

Concerning the first subject mentioned above, as part of MITRE's support to Aeropuertos y Servicios Auxiliares (ASA), MITRE is planning to utilize sophisticated computer software programs and models to accomplish its analytical work. MITRE's Air Traffic Management (ATM) laboratory visualization and simulation tools will also be used to examine airport and airspace concepts. In preparation for upcoming analyses, a large multi-disciplinary team of experts have been working on the development of relevant computer software programs and basemaps. Due to its nature, this work cannot be mailed. However, Section 2 of this document describes and illustrates some of MITRE's computer program and basemap preparation efforts. MITRE will continue to develop its computer programs, basemaps, and other tools as the project progresses and additional, more detailed data are obtained.

Concerning the second subject, MITRE will require a significant amount of data throughout the project. As indicated above, this document (see Section 3) should serve as a guide to ASA in collecting and sending data to MITRE. An initial request is included.

## 2. Computer Software Program Preparation

A team of MITRE engineers have been developing computerized software programs, basemaps, as well as visualization and simulation tools to support many project tasks. The basemaps provide a three-dimensional (3D) work environment within which MITRE can analyze a wide variety of important aeronautical matters. Preparation of basemaps and other software tools is very labor-intensive, requiring careful planning and coordination. Nevertheless, their preparation is an essential effort that once completed enables better control, usage, and manipulation of data. As a result, more efficient and accurate analyses can be conducted and extensive visualization capabilities provided.

The basemaps not only serve as the repository for project data, but as the operational environment from which MITRE will conduct many of its aeronautical analyses. The basemaps include important aeronautical information and terrain data. Once completed, MITRE will utilize the basemaps and other tools to assess obstacle limitation surfaces, perform aeronautical analyses, site new runways, evaluate instrument approach and departure procedures, and examine airspace issues and conduct noise exposure analyses.

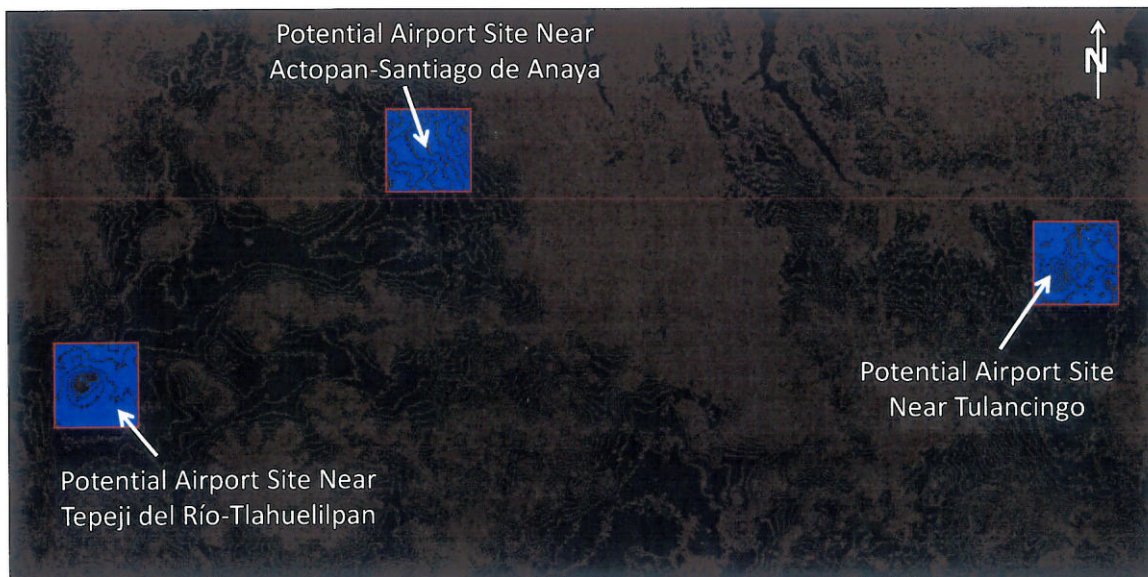


The MITRE team has also begun to prepare its 3D Out-the-Window (OTW) computer simulation and visualization model of the potential airport sites in the State of Hidalgo, preliminarily located near the towns of Tepeji del Río-Tlahuelilpan, Actopan-Santiago de Anaya, and Tulancingo. For example, MITRE's ATM laboratory engineers have generated terrain data and superimposed publically available imagery over that data to create a realistic view of the above-mentioned areas. As the project progresses, a detailed model of the preferred new airport site in the State of Hidalgo and its surroundings, as well as information generated by other MITRE models (e.g., noise contours) and photogrammetric surveys will be incorporated.

Figure 1 shows an initial AutoCAD (a computer aided design platform) basemap consisting of digital terrain contour line data that MITRE is in the process of creating for the areas being considered for a new airport in the State of Hidalgo. These data will be used to conduct obstacle assessments.

Figure 2 shows a portion of the Hidalgo basemap being created for use in MITRE's Terminal Air Route Generation, Evaluation and Traffic Simulation (TARGETS) tool. This tool will be used to examine the development of advanced navigation procedures, such as Area Navigation (RNAV) and Required Navigation Performance (RNP), as well as to investigate airspace issues.

Figures 3 and 4 show computer generated pictures of the Hidalgo OTW model currently being produced at MITRE's ATM Laboratory. The black lines forming triangles in Figure 3 represent vector-based surface terrain being created. Note that the small-format images required for this document cannot show the enhanced level of detail that can be observed within MITRE's ATM Laboratory.



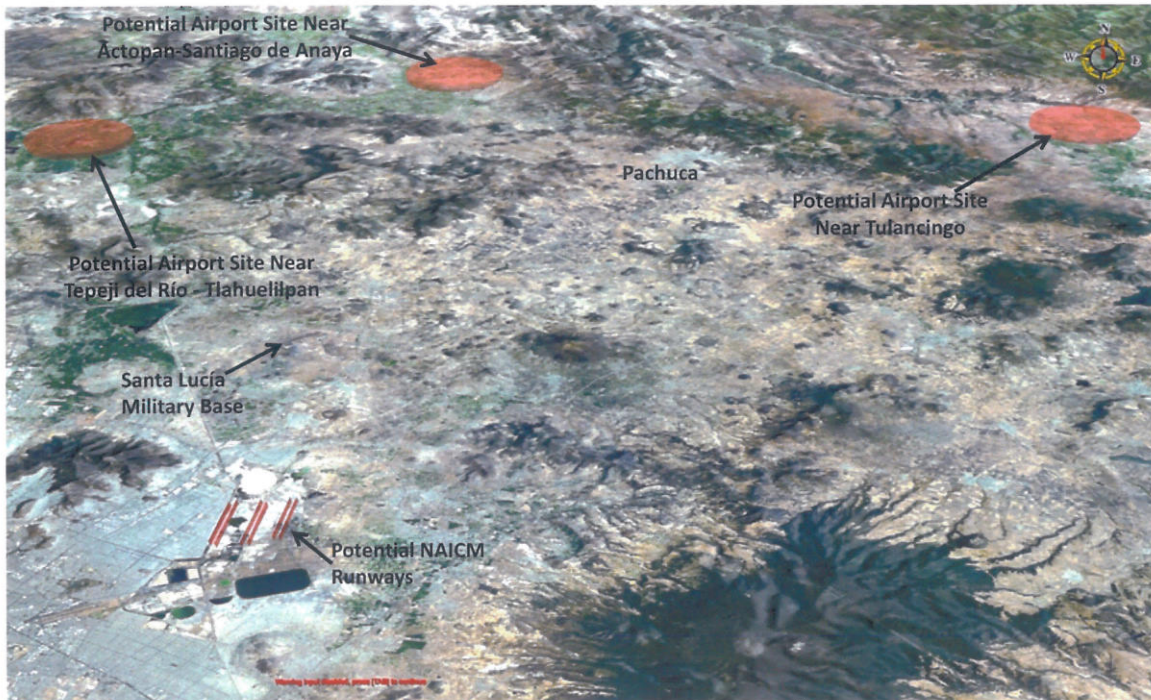
**Figure 1. Hidalgo AutoCAD Basemap Preparation**





**Figure 3. Hidalgo OTW Model Vector-Based Surface Terrain Preparation**





Sources: Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

**Figure 4. 3D Visualization of a Broad-Area OTW Model, Showing Potential Airport Sites**

### 3. Initial Data Request

This section lists and, if necessary, describes the initial data required by MITRE to conduct some of the early project tasks. The list should not be construed as being all-inclusive, as additional information will be requested throughout the project.

Figures, tables, and information of a mainly numerical nature can be sent to MITRE in Spanish. Other data, particularly lengthy textual material, are required in English. If in doubt, or if such information is lengthy please consult MITRE before spending time in translating the information.

To the extent possible, the information should be sent in electronic format (e.g., Excel, Word, AutoCAD, etc.). While paper format is acceptable, it should be a last resort. In the case of AutoCAD, where appropriate, 3D values (that is, z-values) should be provided (e.g., building elevations). In the case of elevations, these should be provided in meters above Mean Sea Level (MSL). All maps, boundaries, runway thresholds, and in general, all coordinates that are to be provided to MITRE should be based on the Universal Transverse Mercator (UTM)/World Geodetic System 1984 (WGS 84) coordinate system. If for any reason any data sent to MITRE does not use WGS 84, ASA should clearly specify the coordinate system being used. In the absence of such annotation, MITRE will assume that the coordinate system is WGS 84.

It is important to note that MITRE plans to use as a primary source of information the most recent version of Mexico's Aeronautical Information Publication (AIP). This is the official, publicly available civil aviation authority publication of Mexico regarding principal aeronautical data. Therefore, MITRE cannot take responsibility for errors, discrepancies, or inconsistencies thereof.

ALL THE INFORMATION REQUESTED THROUGHOUT THE REST OF THIS DOCUMENT, AND THE PROJECT IN GENERAL, SHOULD TAKE INTO ACCOUNT THE CONSIDERATIONS MENTIONED ABOVE.

**The data is requested as follows:**

**Section 3.1 -- Friday 15 January 2014**

**Section 3.2 -- Friday 28 February 2014, and**

**Section 3.3 -- To be decided. Still, it is important that this section is examined carefully as soon as possible, as this information may be required on short notice.**

**Please contact Ing. Robert W. Kleinhans, International Assistant Director and Project Technical Coordinator, no later than Friday 20 December 2013, if there are any issues or concerns with providing the requested data on time as this could result in MITRE needing to reallocate staff. Furthermore, note that many tasks are interrelated and, therefore, delays to one task may create a cumulative effect that could impact other tasks. Electronic data transmission is preferred and should be sent via e-mail to [rkleinha@mitre.org](mailto:rkleinha@mitre.org) by the deadline mentioned above.**

Please include with the delivery of any data a Table of Contents that references in a clear manner the various parts of a request. Likewise, please describe in detail any differences, if any, between the request and what is being delivered, as well as the original source of each item. If mail is preferred, the information should be shipped via FedEx to the following address:

Ing. Robert W. Kleinhans  
The MITRE Corporation  
7515 Colshire Drive  
McLean, VA 22102  
U.S.A.

### **3.1 General Data**

This section provides a listing of general information that MITRE requires.

- A current version of Mexico's AIP, including all aeronautical charts. A subscription for MITRE, on behalf of Ing. Kleinhans and to the address above. Amendments to the AIP for as long a period of time as possible (but no less than one year) should also be provided.



- Known plans for:
  - Changes to the existing navigational aid (NAVAID) infrastructure within a 100 NM radius of existing Mexico City International Airport (AICM). For example, the decommissioning of Very High Frequency (VHF) Omni-directional Range (VOR) or Distance Measuring Equipment (DME) facilities.
  - Changes to the existing enroute airways structure of Mexico.
- MITRE is assuming, unless specifically told otherwise by relevant Mexican authorities, that the existing MEX VOR/DME (located at existing AICM) and the SLM VOR/DME (located at existing Santa Lucía Air Base) will continue to operate after the opening of Nuevo Aeropuerto Internacional de la Ciudad de México (NAICM) and the consequent closure of those airports facilities. If this changes, MITRE needs to be informed as this could affect the results of some of MITRE's aeronautical analyses.

Note that due to the importance of the above-mentioned items to MITRE's work, this information should be provided to MITRE as soon as possible. Also, note that MITRE has already made a request for the AIP via e-mail, starting in October 2013.

### 3.2 AICM and NAICM Data

This section provides a listing of data that MITRE requires in order to conduct tasks pertaining to NAICM-related work, as follows:

- Plans showing the official and legally definitive boundaries, including coordinates, which MITRE may consider for the location of NAICM runways with their associated safety areas in the NAICM project area (assuming only federal land is utilized).

MITRE has received information regarding the possible boundaries from ASA, but it has been informed that the boundaries have not been legally confirmed.

- The location of any proposed developments or any other plans in the vicinity of the NAICM project area that could potentially impact aircraft operations or the siting of runways at NAICM (power lines, buildings, reservoirs, canals, highways, etc.).

MITRE has been informed that a high-tension power line may be installed very close to the NAICM project area. MITRE has requested a geo-registered drawing showing the precise location and height of the power line. This information is needed as soon as possible.

- Any plans being developed by other stakeholders pertaining to the NAICM project including information, such as Master Plans, terminal buildings, auto parking, non-aviation support facilities, land-use plans, etc.

- Existing aerial and/or satellite imagery, if available (as current as possible) of the NAICM project area and its surroundings. The images should preferably be in color and should be geo-registered (e.g., Geo-TIFF files) for insertion into AutoCAD.
- Operational information (excluding helicopters) of AICM, Toluca, Puebla, Querétaro, and Cuernavaca, including Santa Lucía Military Base.
  - Total number of annual operations (“movements”) for 2012 and 2013.
  - Total number of monthly operations for 2012 and 2013.
  - Total number of daily operations (arrivals and departures separately) for the two peak-traffic months of 2013.
  - Hourly operations (arrivals and departures separately) for the peak-day of the peak-traffic month of 2013 (this is essentially one 24-line table). Confirm whether the times are local or Coordinated Universal Time (UTC). If in local time, indicate the time difference from UTC that applied on that day. Ensure that the selected day was not a high-volume day due to unusual circumstances (e.g., a very high traffic day due to a major political event).
  - Seven continuous days of detailed daily operations data for AICM for any week considered by ASA as a relatively high-volume peak week (Sunday through Saturday) in 2013. Please choose a week during which both directions of the runways (Runway 05 and Runway 23) were being used. For a sample of what is expected, see Figure A-1 in Appendix A of this document.

The information being requested should include:

- Date
- Scheduled departure (STD) or arrival (STA) time. Indicate whether the time is local or UTC.
- Actual arrival or departure time. Indicate whether the time is local or UTC.
- Operator name (airline). If not a commercial operation, indicate whether it is General Aviation, military, or governmental.
- Operator flight number.
- Aircraft type (model and sub-model, for example, Boeing 777-200).
- Tail (or registration) number.
- Type of operation (arrival or departure).
- Origin airport (for arrivals) or destination airport (for departures).



- Runway used (e.g., Runway 05R).
  - Route name (Standard Instrument Departure [SID], instrument approach procedure or departure/entry fix) utilized for that specific departure or arrival.
- Provide radar data for the same seven days mentioned above with sufficient information to be able to cross-reference aircraft identification with a particular radar track. The radar data should include information on operations at AICM and all other key airports in the Mexico City basin (i.e., Toluca, Puebla, Querétaro, and Cuernavaca), including Santa Lucía Military Base. The information should include:
    - Aircraft position data - format needs to include either:
      - Known origin (usually the radar antenna) in latitude/longitude and then displacement coordinates from the known origin, or
      - Latitude/longitude and altitude of each aircraft position.
    - Time data for each position to at least the nearest second.
  - Provide video maps that depict extended runway centerlines, airports, significant fixes, holding patterns, airspace boundaries, sector boundaries, etc. of AICM and all other key airports in the Mexico City basin (i.e., Toluca, Puebla, Querétaro, and Cuernavaca), including Santa Lucía Military Base
  - Provide information regarding the future fleet mix expected to operate at NAICM once it opens.
  - Arrival Runway Occupancy Time (AROT) and Departure Runway Occupancy Time (DROT) for AICM. These data will be used to assist MITRE in determining the appropriate location and type of runway exits for new runways at NAICM by providing comparative baseline data. Please consult MITRE before this information is gathered.

### 3.3 Hidalgo Data

The intent of this section is to request information required to conduct analyses pertaining to identifying a feasible site for the development of a new one-runway airport in the State of Hidalgo. This request is being provided before a proposed visit to MITRE by Hidalgo stakeholders takes place. It is afterwards that the data will be needed. This is just information sent ahead of time to assist ASA regarding what MITRE plans to request in upcoming months.

Three potential locations within the State of Hidalgo near the towns of Tepeji del Río-Tlahuelilpan, Actopan-Santiago de Anaya, and Tulancingo are being preliminarily considered as candidate sites that MITRE is currently focusing on to examine the feasibility of a one-runway airport.

The following information will be required:

- Existing survey information for the three potential airport areas, including such information as roads, buildings, canals, water holding basins, and contour lines.

The information expected will be considered as preliminary as new surveys (under the responsibility of MITRE) will be conducted of the three potential airport areas once they are better defined in order for MITRE to site new runways, evaluate instrument approach and departure procedures, and support other tasks, such as the analysis of noise impact.

- List of all issues regarding potential impediments to airport construction within the three potential airport areas. Examples of potential impediments include soil/subsoil composition, flooding, existing infrastructure, environmental and archeological concerns, and any other potentially disruptive conditions. ASA should also examine, directly or indirectly, and inform MITRE on whether the three potential airport areas are appropriate from a social, political, ownership, environmental point of view.
- Existing weather information for the three potential airport areas.

Reliable weather information is important to the project. In accordance with the contract, MITRE requires that an Automated Weather Observing System (AWOS) be installed at the three potential airport areas once they are better defined. MITRE has prepared, under separate cover (reference the enclosure to MITRE Technical Letter F500-L14-003), a document entitled "Specifications for Automated Weather Observing Systems (for three potential airport sites in the State of Hidalgo)" in order to assist ASA in obtaining such a system.

In the meantime, please provide any reliable historical weather data (for as long a period as possible) for the three potential airport areas from appropriate sources (e.g., local weather stations and/or equipment) that could help MITRE in better understanding weather characteristics. Historical data from the existing airport located in the southern part of the city of Pachuca (Aeropuerto Ing. Juan Guillermo Villasana) would also be of some assistance.

The historical weather data requested above should include information on wind direction and speed (including gusts), ceiling, visibility, and temperature in a manner as specific as possible regarding frequency of occurrences. The units of measurement must be provided and data should be delivered electronically in Microsoft Excel.

- Preliminary length of runways for the Hidalgo airport to be constructed. ASA's recommendations may be provided on the basis of feedback from air carriers and/or cargo companies that are envisioned to operate at the new airport.



Destinations expected to be served in the future as well as the future critical aircraft should be considered. The recommended runway length should also account for the requirements of the Fuerza Aérea Mexicana (FAM). Note that it may be necessary to provide a range of runway lengths (i.e., maximum and minimum) in order to allow for flexibility in runway siting.

- Any previous studies regarding the development of a new airport in the State of Hidalgo, including conceptual airport layouts.
- Existing information on birds or wildlife attractants in the vicinity of the three potential airport areas that could pose a hazard to aircraft operations. For example, a large lake is located near the Tepeji del Río-Tlahuelilpan and Tulancingo areas. Any existing bird survey data that could give MITRE a better understanding of bird activity in those areas would be helpful.
- Existing land-use maps (residential, commercial, environmental, transmission lines, etc.) of the three potential airport areas.
- Location of areas that MITRE should consider as noise sensitive near the three potential airport areas.
- Existing aerial and/or satellite imagery, if available (as current as possible) of the three potential airport areas and their surroundings. The images should preferably be in color and should be geo-registered (e.g., Geo-TIFF files) for insertion into AutoCAD.
- Readily available Geographic Information System (GIS) data for the three potential airport areas. These data should encompass an area within a 40-km radius around the three potential airport areas. Information on the coordinates and elevation of terrain and other obstacles (e.g., buildings, towers, antennas, etc.), residential, commercial and industrial areas, highways and roads, lakes, rivers, canals, and other land use items should be included. The preferred format is ESRI Shape.
- Readily available information on obstacles (e.g., buildings, towers, antennas, etc.) within a 40-km radius around the three potential airport areas. Information on the coordinates and elevation of the obstacles should be included. These data may be available as a result of recent surveys, engineering drawings, or other development projects recently conducted near the areas.

Look for obvious tall structures using binoculars and mark their approximate location on a map (e.g., road atlas) or accurately identify the structure using a hand-held Global Positioning System (GPS) device. This information will help MITRE locate runways and conduct procedure design work early on in the project, prior to receiving more detailed photogrammetric and obstacle survey data.

- Operational information of Aeropuerto Ing. Juan Guillermo Villasana located near the city of Pachuca.

- Current number and type of aircraft based at the airport.
- Types of transient aircraft that operate on a regular basis.
- Annual operations (“movements”) in 2012 and 2013. Earlier data, if available, would also be helpful.
- Monthly operational statistics for 2013 (earlier data, if available, would also be helpful).
- Daily aircraft operations for the peak traffic month of 2013.
- Hourly aircraft operations (arrivals and departures separately) for the peak-day of the peak-traffic month of 2013 (this is essentially one 24-line table).
- Diagrams showing the current approach and departure procedures available for each runway. This should include diagrams of instrument approach procedures (if any), Visual Flight Rules (VFR) procedures, traffic corridors, traffic patterns, etc. that are related to flight operations both to and from the airport. Approach and departure minima should also be provided, if applicable.
- Information on special events or training exercises (e.g., air shows, fly-ins, exercises, etc.) involving a significant increase in the volume of aircraft operations compared to normal volumes of traffic.



## Appendix A

Figure A-1 below shows a sample of the operations data MITRE requires. (Note that the data sample comes from a 2001 survey of AICM operations.) These data should be provided electronically in Microsoft Excel.

Date: \_\_\_\_\_

Operational Data - Sample Only Wind Speed and Direction: \_\_\_\_\_

No.	Date	STD/STA (hour:minute)	Actual Time of Arrival/Departure (hour:minute:second)	Operator	Flight Number	Aircraft Type	Tail Number	Type of Operation	Origin/Destination	Runway	Route Name
1	10-Aug-01	23:45	000145	KLM	685	B744	PHBFE	LLEGADA	EHAM	5 R	
2	10-Aug-01	23:20	000350	AMX	229	MD82	XASXJ	LLEGADA	MMGL	5 R	CISNE-MATEO6
3	10-Aug-01	23:20	000551	MXA	626	F100	XASGF	LLEGADA	MMVR	5 R	
4	10-Aug-01	23:40	001255	SER	706	DC9	XARRY	SALIDA	MMDO	5 L	ARCOS1
5	10-Aug-01	3:45	002146	TAO	317	AT43	XATLN	LLEGADA	MMPA	5 R	
6	10-Aug-01	23:50	002328	AMX	160	DC93	N1003P	SALIDA	MMGL	5 L	LEONA1
7	10-Aug-01	0:15	002518	AFR	438	B772	FGSPL	LLEGADA	LFPG	5 R	
8	10-Aug-01	23:05	003525	AMX	6365	DC9	XAAMC	SALIDA	MMZH	5 L	LEONA1
9	10-Aug-01	21:40	003405	AMX	2	B762	XATNS	LLEGADA	LEMD	5 R	
10	10-Aug-01	22:00	003645	AMX	935	MD82	N945AS	LLEGADA	MMMY	5 R	
11	10-Aug-01	0:05	002725	TAO	148	AT500	XATAI	SALIDA	MMDO	5 R	ARCOS1
12	10-Aug-01	1:05	004959	AMX	495	B752	N802AM	LLEGADA	KLAX	5 R	CISNE-MATEO6
13	10-Aug-01	1:00	005200	MXA	901	A320	N405MX	LLEGADA	KLAX	5 R	CISNE-MATEO6
14	10-Aug-01	22:50	004359	SER	404	DC9	XALAC	SALIDA	MMAS	5 L	ARCOS1
15	10-Aug-01	1:40	010419	CHP	232	DC9	XATIM	LLEGADA	MMTP	5 R	PAVON-MATEO6
16	10-Aug-01	23:20	010203	AMX	936	MD82	N583MD	SALIDA	MMMY	5 L	ARCOS1
17	10-Aug-01	22:30	010357	MXA	522	A320	FOHMI	LLEGADA	MMAA	5 R	PAVON-MATEO6
18	10-Aug-01	1:35	011723	COA	1840	B737	N77303	SALIDA	KIAH	5 L	VISOS1
19	10-Aug-01	1:30	012021	UPS	6095	B752	N407UP	SALIDA	KEFD	5 L	VISOS1
20	10-Aug-01	1:20	012951	MXA	887	A320	N291MX	LLEGADA	CYYZ	5 R	TEPAS-MATEO6
21	10-Aug-01	1:05	013510	MXA	745	B722	XAMEJ	LLEGADA	MMTM	5 R	TEPAS-MATEO6
22	10-Aug-01	0:40	014615	MXA	542	A320	N369MX	LLEGADA	MMZH	5 R	PAVON-MATEO6
23	10-Aug-01	1:00	014121	CHP	315	DC9	XATJS	SALIDA	MMVA	5 L	APAN2
24	10-Aug-01	1:50	014738	SER	900	DC9	XAADK	SALIDA	MMCV	5 L	VISOS1
25	10-Aug-01	2:50	021523	AMX	592	DC9	XADEL	LLEGADA	MMUN	5 R	PAVON-MATEO6
26	10-Aug-01	20:40	021758	AMX	509	DC93	XAAMD	SALIDA	MMVA	5 L	APAN2
27	10-Aug-01	22:00	020903	MXA	346	A320	N361DA	LLEGADA	MMUN	5 R	PAVON-MATEO6
28	10-Aug-01	2:15	022432	MXA	19	B722	XAMXD	SALIDA	MMMY	5 L	ARCOS1
29	10-Aug-01	2:50	023601	MXA	908	B752	N764MX	SALIDA	KLAX	5 R	ARCOS1
30	10-Aug-01	3:15	024731	TAO	351	AT43	XARXC	LLEGADA	MMSP	5 R	CISNE-MATEO6
31	10-Aug-01	0:25	031545	AAL	2115	B738	N926AN	LLEGADA	KMIA	5 R	TEPAS-MATEO6
32	10-Aug-01	2:30	033001	AAL	2148	A30B	N59081	SALIDA	KMIA	5 L	APAN2
33	10-Aug-01	3:25	040522	AMX	117	MD82	XASXJ	LLEGADA	MMGL	5 R	CISNE-MATEO6
34	10-Aug-01	3:50	041930	SER	421	DC9	XASYQ	LLEGADA	MMMY	5 R	TEPAS-MATEO6
35	10-Aug-01	4:20	042139	AMX	597	MD87	N205AM	SALIDA	MMUN	5 L	APAN2
36	10-Aug-01	4:25	042329	CHP	243	B722	XASJE	SALIDA	MMMD	5 L	APAN2
37	10-Aug-01	2:30	042701	AMX	151	DC93	XAJEC	LLEGADA	MMDO	5 R	CISNE-MATEO6
38	10-Aug-01	21:00	041320	MXA	712	F100	PHLXG	SALIDA	MMIO	5 L	ARCOS1
39	10-Aug-01	2:35	043156	TAO	760	AT43	XATIC	SALIDA	MMZC	5 R	ARCOS1
40	10-Aug-01	3:35	044017	CHP	214	B732	XASIX	LLEGADA	MMTB	5 R	PAVON-MATEO6
41	10-Aug-01	22:00	045345	TAO	42	AT43	XASYH	SALIDA	MMPB	5 R	APAN2
42	10-Aug-01	4:40	051615	MXA	401	B722	XAHOH	LLEGADA	MMGL	5 R	CISNE-MATEO6
43	10-Aug-01	5:50	052424	TAO	344	AT500	XATPR	SALIDA	MMSP	5 R	ARCOS1
44	10-Aug-01	5:30	053552	COA	1841	B733	N14384	LLEGADA	KIAH	5 R	TEPAS-MATEO6
45	10-Aug-01	7:10	054950	AMX	938	MD82	N168PL	SALIDA	MMMY	5 L	ARCOS1
46	10-Aug-01	6:25	060151	CHP	362	B732	XANAK	SALIDA	MMGL	5 L	LEONA1
47	10-Aug-01	7:10	062129	GMT	739	B732	XAMAC	SALIDA	MMBT	5 L	AUTLA1
48	10-Aug-01	8:20	064845	AMX	433	MD82	XATLH	LLEGADA	MMAA	5 R	PAVON-MATEO6
49	10-Aug-01	6:25	065709	AMX	438	MD82	XAAMU	SALIDA	MMGL	5 L	LEONA1
50	10-Aug-01	6:45	065621	AIN	221	B722	XATQT	LLEGADA	MMAS	5 R	CISNE-MATEO6
51	10-Aug-01	6:45	065713	AMX	682	MD82	EIBTX	LLEGADA	MMLO	5 R	CISNE-MATEO6
52	10-Aug-01	8:15	070311	MXA	2253	A320	FOHMH	SALIDA	MMBT	5 L	AUTLA1
53	10-Aug-01	6:35	065055	SER	711	DC9	XARKT	LLEGADA	MMTC	5 R	CISNE-MATEO6
54	10-Aug-01	6:45	070220	AMX	426	MD87	N753RA	SALIDA	KIAH	5 L	VISOS1
55	10-Aug-01	6:50	070035	MXA	433	B722	XAMEL	LLEGADA	MMGL	5 R	CISNE-MATEO6
56	10-Aug-01	7:50	071541	MXA	665	F100	XASHI	SALIDA	MMVA	5 L	APAN2
57	10-Aug-01	7:00	071629	MXA	384	F100	XASHJ	LLEGADA	MGGT	5 R	PAVON-MATEO6
58	10-Aug-01	7:15	070532	AMX	177	B752	N801AM	LLEGADA	MMTJ	5 R	CISNE-MATEO6
59	10-Aug-01	7:35	072119	MXA	686	F100	XATCG	LLEGADA	MMCE	5 R	PAVON-MATEO6
60	10-Aug-01	6:50	071032	AMX	163	MD82	XAAMP	LLEGADA	MMCL	5 R	CISNE-MATEO6

STD = scheduled time of departure  
STA = scheduled time of arrival

Figure A-1. Sample of Operations Data