



ICAO

International Civil Aviation Organization  
North American, Central American and Caribbean Office

WORKING PAPER

FPL/AD/MON — WP/18  
23/02/15

**FPL Ad hoc Group Missing/duplicated/erroneous Filed flight plan /Flight plan (FPL) evaluation meeting (FPL/AD/MON)**

Mexico City, Mexico, 24-26 February 2015

**Agenda Item 5                      Review of airlines' FPL processing capabilities**

**AIRLINES FPL PROCESSING CAPABILITIES**

(Presented by IATA)

<b>EXECUTIVE SUMMARY</b>	
This working paper present an introduction on the airlines capabilities to process the ATS messages FPL, CHG, CNL, and DLA.	
<b>Action:</b>	The recommended action could be found on part 6.
<i>Strategic Objectives:</i>	<ul style="list-style-type: none"><li>• Safety</li></ul>
<i>References:</i>	<ul style="list-style-type: none"><li>• Doc 4444</li></ul>

**1.                      Introduction**

1.1                      The current software capabilities and access to the AFTN, has lead several airlines to implement automatic flight planning systems that are interfaced with the weight and balance information, weather, AIS, OpSpec, etc. in order to create a seamless environment during the planning phase and when creating/transmitting the FPL as well as the relates ATS messages.

1.2.                      This automated environment helped the users to:

- Reduce the human error when creating and transmitting the FPL.
- Reduce human errors when gathering information from different sources.
- Increase the efficiency on the information transmission.
- Centralize all the FPL messages transmission.
- Etc.

1.3.                      Nowadays, many commercial software are available on the market that allows the users, to use and transmit and receive the best available information. The following pictures are providing a quick look into the capabilities that the airlines are having to ensure a seamless environment and the basic procedures that are followed to transmit the FPL and relates ATS messages.

## 2. Plan the flight

2.1 According to the flight the dispatcher will compare and estimate the most efficient route, the shortest flying time, air navigation services cost, payload, Wx, operations restrictions (NOTAMs, AIC, etc.), MEL, OpSpec, etc.

Example 1

The screenshot displays the 'qlhtap - Metaframe Presentation Server Client' interface. The main window is titled 'Analysis' and contains a menu bar (File, Edit, Frame, Graphic, Map, Weather, Help) and a toolbar. The flight details are as follows:

- AL Flight-No. OS: TA 210 I
- Date: 05MAR11
- DEP: MGGT
- STD: 051610
- STA: 051815
- DEST: MMMX
- Init. Time: 042001
- Scenario No. 1
- Prognosis: actual
- Non ETOPS: [checked]
- Route Display: ATS

The 'Operational Case' section shows:

- Standard ST: [dropdown]
- Set to Def.:
- 01 | 051610 | 051815 | 23L
- Graphic: OFF
- Zoom: [dropdown]
- Mem: [dropdown]
- Map: [dropdown]
- ALTN: 1

On the left side, there are three main sections: 'Climb', 'Cruise', and 'Descent', each with sub-sections for Procedure, MN, and IAS, and Speed settings (0.780 and 280). There are also buttons for 'Restriction view', 'Route Survey ...', 'Route Options ...', 'ALTN Survey ...', 'Inflight ...', 'DD/DP ...', 'Tankering ...', 'ETOPS ...', 'Reclearance ...', 'Restriction ...', 'Analysis', 'Opt Param ...', and 'In background'.

The central table displays flight analysis data for four routes (UAHEX41, UAHEX43, UAHEX45, UAHEX46):

	UAHEX41	UAHEX43	UAHEX45	UAHEX46
ROUTE	UAHEX41	UAHEX43	UAHEX45	UAHEX46
OFF NO	1	3	5	6
REG	N479TA	N479TA	N479TA	N479TA
FLT TIME	01:45	01:48	01:44	01:46
ETA	18:11	18:14	18:10	18:12
CRUISE	CI40	CI40	CI40	CI40
SAVINGS				
COSTS	6125	6309	6090	6204
BURN OFF	4000	4132	3974	4054
ALTN	MHAA	MHAA	MHAA	MHAA
ALTNFUEL	1479	1479	1479	1479
RESERVE				
CONT	400	413	397	405
ADD FUEL				
T/O FUEL	6928	7073	6899	6987
EXTRA				
TTL FUEL	7088	7233	7059	7147
LOAD	6727	6727	6727	6727
MALTOW	75500	75500	75500	75500
PLNTOW	55481	55626	55452	55540
MALLW	62500	62500	62500	62500
PLNLW	51481	51494	51478	51486
MAXZFW	58500	58500	58500	58500
PLNZFW	48553	48553	48553	48553
ESTZFW	48553	48553	48553	48553
DIST	694	723	691	709
AVG WC	H022	H020	H020	H019
MAX FL				

On the right side, there is a vertical toolbar with buttons: 'Remove OFF', 'OFF ...', 'More Info ...', 'Recheck', 'SELECT', 'FLT LIST', 'PLAN PARAM', 'RTE DEF', 'OFF TRANS', 'WXNOTAM', 'A/C DEV', 'COSTS', 'REMARK', 'CLEAR', 'REFRESH', 'PRINT', 'HELP', and 'CLOSE'.

Example 2

The screenshot shows the Flight Planner interface for flight 0901 ATL-SJO. Key sections include:

- Flight Summary:** Flight number 0901, origin KATL, destination SJO, departure time 0901/19, and aircraft type 699.
- Fuel Section:** Shows fuel requirements for taxi, contingency, tanker, block, and TGAF. Total fuel required is 41077.
- Weights Section:** Shows structural limits and planned weights for zero fuel, ramp, takeoff, driftdown, and landing.
- Payload Section:** Shows passenger (184), child (3), bag (166), and cargo (541) counts.
- Performance Data:** Lists MTOW based on MSLW (223671) and MSTOW (240000), and other performance metrics.

2.2 Destination alternate aerodrome

2.2.1 Please note that on these automated systems, if the alternate aerodrome is required by the ANSP, then the fuel is automatically calculated and it affects directly into the weight and balance estimation. If a “ZZZZ” is required on this field to avoid the ATM system filter, that have this field as mandatory, then the dispatcher must introduce a manual change increasing the chances of human error that could affect the flight.

The Alternates section shows 'Dest Altn 1' set to 'MNMNG'. Below it is a table of fuel requirements for various alternate aerodromes:

<input type="checkbox"/> BURN OFF	4000	4132	3974	4054
<input type="checkbox"/> ALTN	MNMG	MNMG	MNMG	MNMG
<input type="checkbox"/> ALTNFUEL	1479	1479	1479	1479
<input type="checkbox"/> RESERVE				
<input type="checkbox"/> CONT	400	413	397	405
<input type="checkbox"/> ADD FUEL				
<input type="checkbox"/> T/O FUEL	6928	7073	6899	6987
<input type="checkbox"/> EXTRA				
<input type="checkbox"/> TTL FUEL	7088	7233	7059	7147

**3. Transmit the appropriate ATS message**

3.1. On this stage the dispatcher will review the information already pulled from the database. The information stored on a database by the systems are: airways, SIDs, STARs, ship/register (aircraft type and avionics and equipment are automatically pulled from the ship/register information on the database), AFTN addresses (FIRs, ATS units, others as specified on the AIP or official communication from the ANSP/State), etc.

*Example 1*

The screenshot displays the 'FPL / OFP - Transmission' window. At the top, there is a menu bar with 'File', 'Edit', 'Frame', and 'Help'. Below the title bar, the window title is 'FPL / OFP - Transmission'. The interface is divided into several sections:

- Flight Details:** A table with columns: AL, Flt-No., OS, Date, DEP, STD, STA, DEST. Values: AV, 962, 17FEB15, SPIM, 171504, 172048, KMIA. Below this is an 'Initialization Time' field with a dropdown menu showing '15', '171504', '172048', and '09'.
- Off-Flight Details:** A table with columns: OFF No., RCL No., ETOPS No. Values: 0, 0, 0. A yellow 'Load OFF' button is located below.
- Registration and Status:** A table with columns: REG, Status, Status Time, OFF No., RCL No., ETOPS No. Values: N280AV, Filed+Sent, 171201, 3, 0, 1.
- Message List:** A list of messages with checkboxes. The first message is checked and contains: 'EDDFTAIX'. The second message is checked and contains: 'SPIMZQZX SEGUZFX SEQUYFYX SEFGZQZX SKEDZQZX MPZLQZX MPPCICPX'. Below the list is a field for '171201 EDDFTAIX' and an 'ECAC' checkbox.
- Flight Plan Details:** A section titled '( FPL 07 ) TPU962 08 IS' containing several lines of flight plan data:
  - 09 A332 / H 10 SDE2E3FGHIRW/S
  - 13 SPIM 1504
  - 15 N0472F380 ATOG01F ATOGO UM674 TBG UL465 GCM UG448 TADPO G448 MTH DVALL1
  - 16 KMIA 0510 MMUN
  - 18 PBN/A1B1D1 REG/N280AV EET/SEFG0113 SKED0150 MPZL0225 MKJK0336 MUFH0415 KZMA0445 SEL/ADHL PER/C RALT/SPIM SEGU SKCL MROC MKJP KMIA
  - 19
- Control Panel (Right Side):** A vertical stack of buttons and indicators:
  - Briefing Status:** A traffic light indicator showing green.
  - File ATS
  - Send OFF
  - Send OFF
  - CNL
  - File ATS
  - DLA
  - Withdraw Documents
  - CHG
  - Dispatch Info
  - Additional Info
  - OFF Remarks
  - Show Detailed Package
  - Message Transmission
  - Transmission via DLK
  - Amend Release
- Summary Table (Bottom):** A table with columns: OFF/RCL-No., Status, Status Time. Values: 3/0/1, Filed+Sent, 171201.

Example 2

Warnings

Enter Address

KZTLZQZX  
ATLLCDL  
ATLLIDL  
MUFHZQZX  
MUFHZRZQ  
MKJKZQZX  
MHTGZQZX  
MHCC7QZX

▲
☰
▼

▲
☰
▼

Domestic Filing Addresses:

KZTLZQZX

▲
☰
▼

Other Addresses:

ATLLCDL  
ATLLIDL  
MUFHZQZX  
MUFHZRZQ  
MKJKZQZX  
MHTGZQZX

▲
☰
▼

Add to Dom Filing Adrs

Add to Other Addresses

<- Remove Address

Add to Dom Filing Adrs

Add To Other Addresses

Original ICAO Strip

(FPL-DAL901-IS  
-B752/M-SDE2E3FGHIRWZ/S  
-KATL2254  
-N0450F370 BRAVS8 WALET DCT OTK J89 HITTR J75 KRNEL/N0457F360  
J75 RSW/N0459F370 DCT MTH G448 VRGAS/N0469F340 G448 TADPO  
UG448 UVA/N0471F330 UG448 GCM UB767 RADON DCT  
-MROC0317 MNMG  
-PBN/A1B1C1D1O1S1T1 NAV/RNVD1E2A1 REG/N699DL  
EET/KZJX0019 KZMA0047 MUFH0118 MKJK0148 MHTG0210

▲
☰
▼

Edit ICAO Strip Reset ICAO Strip

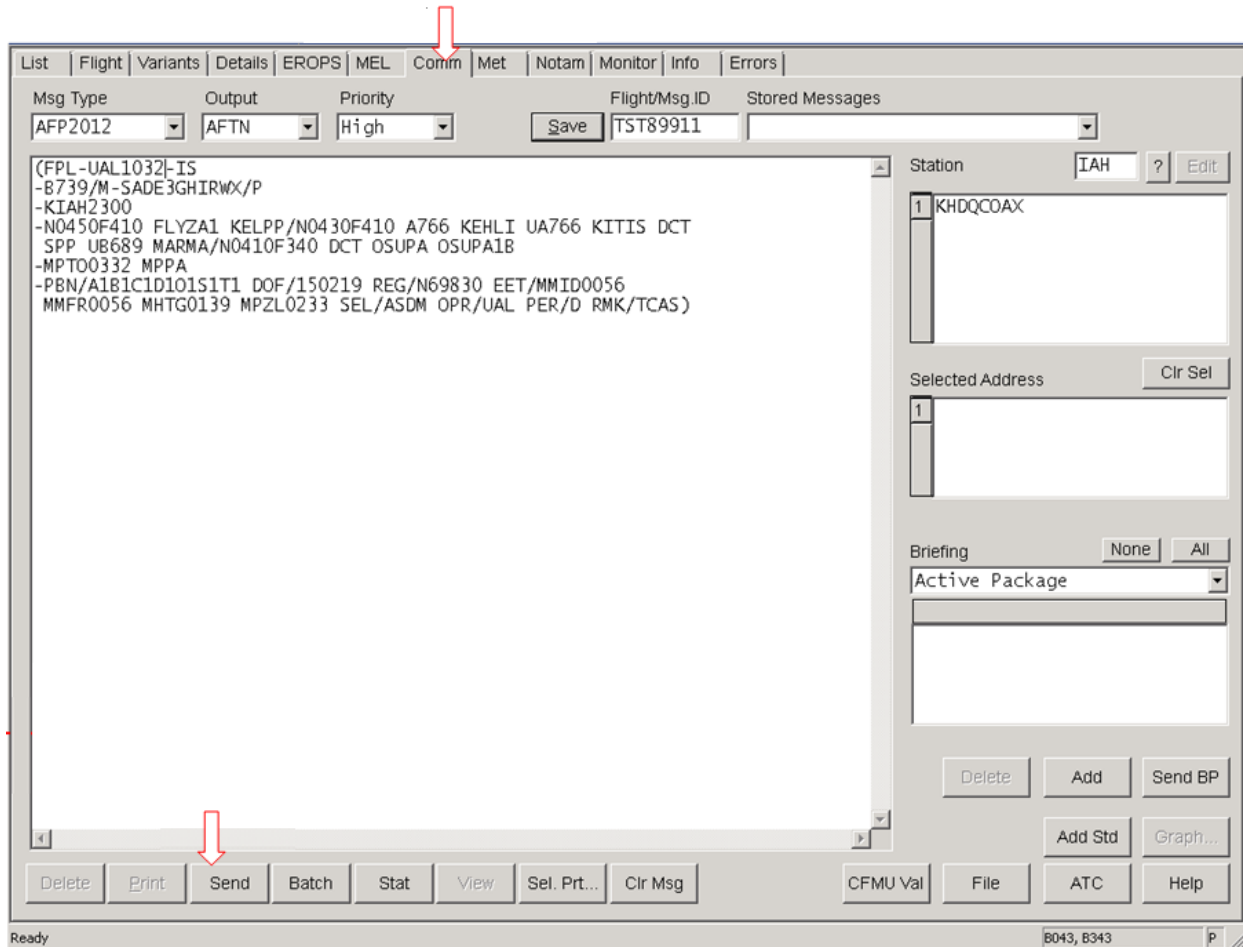
(FPL-DAL901-IS  
-B752/M-SDE2E3FGHIRWZ/S  
-KATL2254  
-N0450F370 BRAVS8 WALET DCT OTK J89 HITTR J75 KRNEL/N0457F360  
J75 RSW/N0459F370 DCT MTH G448 VRGAS/N0469F340 G448 TADPO  
UG448 UVA/N0471F330 UG448 GCM UB767 RADON DCT  
-MROC0317 MNMG  
-PBN/A1B1C1D1O1S1T1 NAV/RNVD1E2A1 REG/N699DL  
EET/KZJX0019 KZMA0047 MUFH0118 MKJK0148 MHTG0210

▲
☰
▼

Send

Cancel

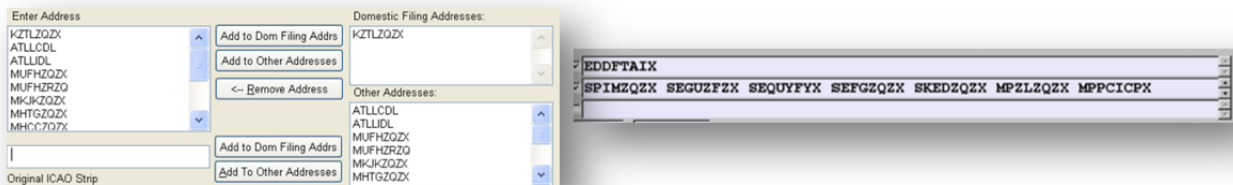
*Example 3*



3.2 *Missing FPLs and AFTN addressing errors*

3.2.1 Please note that because the AFTN addresses are also pulled from a database, the chances to fix the case of FPL constantly missing on certain ATS unit, could be easily solved. Once this case is notified to the involved airline, they will update their database in order to correct this deficiency. Afterwards no matter which of the dispatcher is using the system, this error should not happen again.

3.2.2 If required the dispatchers are able to add manually AFTN addresses, nevertheless one of the automation benefits could be affected by unintentional human error. The goal should be filing the FPLs the same way using pre-formatted information every day, automatically and error free per the actual route filed.



3.3 *Item 19*

3.3.1 Please note that the ITEM 19 is not considered and/or configured under the ICAO format for FPLs, because all the vendors and FPL software providers are compliant with the Doc.4444.

3.3.2 If a SPL is required by a specific ANPS (according to the Annex 11, 5.2.2.1), then a different process is used by the airlines that are transmitting their FPLs via the AFTN in order to comply with the request.

4. **CHG, DLA, CNL messages**

4.1 If the dispatcher required to send an update using their automated system, they select the same flight and the pre-formatted message (ICAO compliant) will show up.

*Example 1*

The screenshot displays the 'FPL / OFP - Transmission' software interface. At the top, there are input fields for flight details: AL (AV), Flt-No. (962), OS (17FEB15), DEP (SPIM), STD (171504), STA (172048), and DEST (KMIA). A 'Messages' dialog box is open, showing a pre-formatted message: '(DLA-TPU962-SPIM1524-KMIA-DOF/00000)'. Below the message list, several buttons are visible: 'CNL', 'DLA', and 'CHG', each circled in red. The main interface also shows a list of flight items (09-19) with details like 'A332/H 10 SDE2E3FGHIRW/S' and 'N0472F380 ATOGO1F ATOGO UM674 TBG UL465 GCM UG448 TADPO G448 MTH DVALL1'. At the bottom, a table shows the status of the message as 'Filed+Sent'.

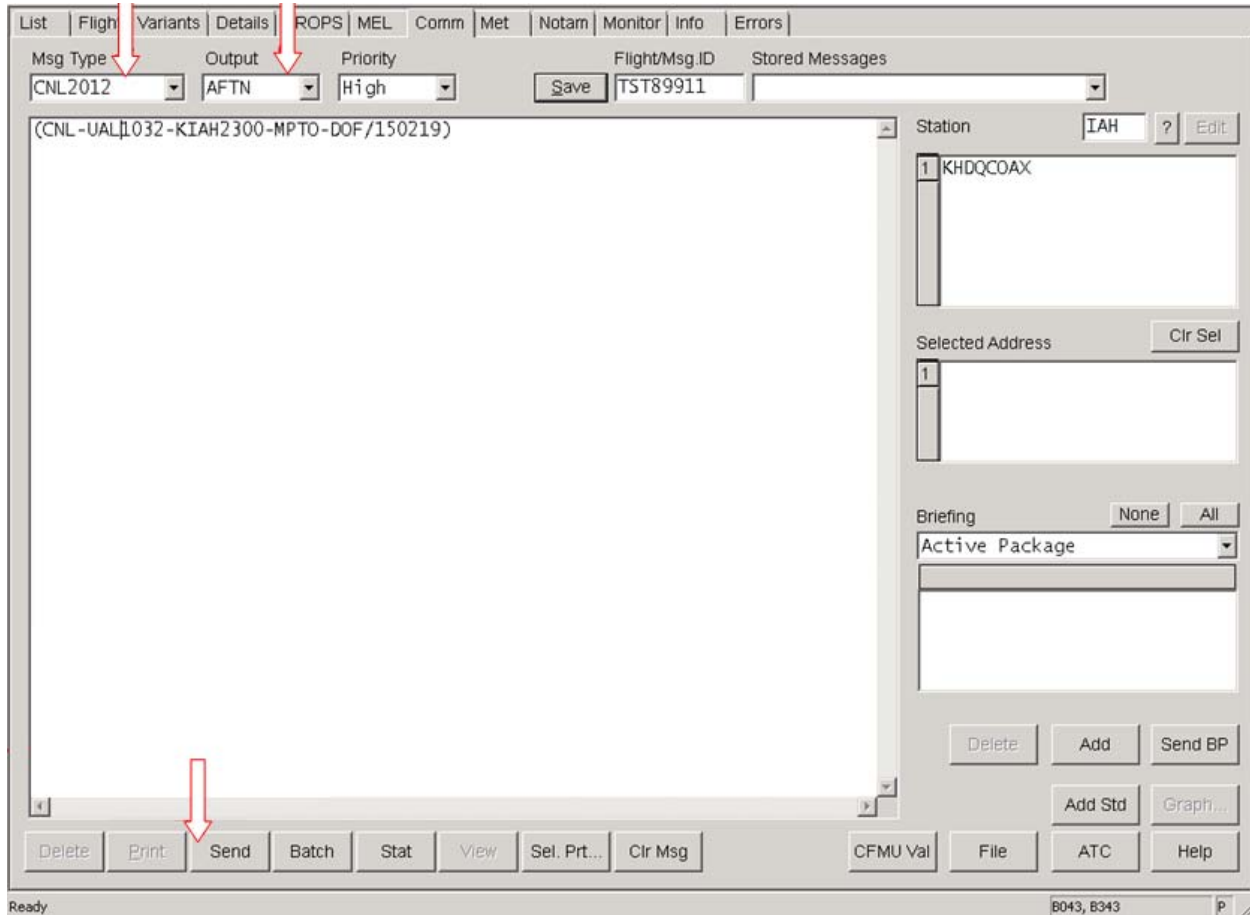
OFF/RCL-No.	3/0/1	3/0/1			
Status		Filed+Sent			
Status Time		171201			

Example 2

The screenshot displays a flight operations software interface with three main sections:

- Duty Roster (Top):** A table listing flight assignments with columns for IND, Flight, Ship, Day, Dpt, D., Dptr, Latt, Crew Block, Crew Duty, Status, SCE, Block, Hold, TGAF, Pr..., Se..., Plan Payload, and Payload. A red circle highlights a flight entry with a status of 'PRE ACTIVE'.
- Flight Details (Middle):** A detailed view of a flight (Flight 903) with columns for IND, PP, Flight, Ship, Orig, Dest, Day, FPE, Dpt., Arr Ti..., Arr Var, SCE, Crew Block, Crew Duty, Disp ID, Block, Hold, TGAF, Pri..., Sec..., WDR, and Status. A context menu is open over this flight, with 'Cancel' and 'Delay' options circled in red.
- Events Log (Bottom):** A list of events with columns for Event Time, FAM/FDM, and event descriptions. The log shows various events such as 'Flight Release Event', 'Estimated Payload Event', and 'Ship Change Event'.



*Example 3***5. Conclusions**

- 5.1. No automated system is perfect because it requires the human update or input.
- 5.2. Not all the FPLs software perform the same way. Some of them requires more steps to get to the final message and the HMIs are different, but the results are the same by reducing the manual inputs, therefore the unintentional human error.
- 5.3. Few trials are the best way to confirm and gain trust that a new procedure using the available technology today could help maintaining the quality of the information running on the ATS system.

**6. Suggested Action:**

The meeting is invited to review the information provided that shows how the airline's automated systems and processes to handle the FPL, could help improve the quality of the information delivered to the ANSPs in the region.