Cirrus Guide

0 Record of Amendments

Rev	Date	Amended By
1	Feb 2015	Simon Kelsey
2	Apr 2019	Simon Kelsey

0.1 Revision Highlights

0.1.1 Revision 2

Introduction

New content.

System Description

All new content to fully describe BAV's new integrated flight planning solution, Cirrus.

Operation

All new content to describe process for planning a flight using BAV Cirrus.

BA Standard Flight Plan Format

Basic OFP layout unchanged.

This section however has been totally reworked to provide much greater detail about each element of the Cirrus operational flight plan.

List of ICAO Equipment Codes

New section added for crew reference purposes.

Contents

0 Record of Amendments 2
0.1 Revision Highlights 2
1 Introduction 4
2 System Description 5
2.1 Simbrief 5
2.2 Fleet Database 6
2.3 Route Database 6
2.4 Alternates Database 6
2.5 Loadsheet Generator 6
3 Operation 7
3.1 Planning Setup 7
3.2 Briefing Page 11
4 BA Standard Flight Plan Format 13
4.1 Introduction 13
4.2 General 13
4.3 Fuel Data Page 14
4.4 ETOPS Information Page 20
4.5 Flight/Navigation Log Page 22
4.6 Destination Alternate Summary 26
4.7 Supplementary/FMS Data Page 27
4.8 ATS Flight Plan Page 30
5 List of ICAO Equipment Codes 33
5.1 ICAO Aircraft Designator 33
5.2 Wake Turbulence Category 33
5.3 Equipment 34
5.4 Surveillance (Transponder) Equipment 35
5.5 PBN Codes 36
5.6 List of FAA Aircraft Equipment Codes for US Domestic Flights 39
6 OFP Samples 40
6.1 Fuel Data Page 40
6.2 Flight/Navigation Log Page 41

1 Introduction

BAVirtual uses an integrated flight planning and dispatch system known as ‘Cirrus’. The Operational Flight Plan (OFP) document format provided is an almost exact replica of that generated by the real British Airways system, also known as ‘Cirrus’.

Whilst pilots remain free to use their own flight planning software to generate flight documents if they wish, use of the integrated system provides a number of significant improvements and benefits.

BAV Cirrus is designed to provide BAVirtual pilots with a quick and easy, yet highly realistic and customisable, means to plan their flights.

BAV Cirrus is also able to make direct use of routes stored in the BAV Route Database. These routes are updated by the Flight Operations team on a periodic basis and reflect the real routes used by British Airways on those flights.

BAV Cirrus is designed to allow the use a revised method of calculating contingency fuel, the aim being to provide crew with a better prediction of the actual fuel required according to the route rather than a simple percentage of trip fuel. This method is an option permitted under EU-OPS and is in use by a number of European airlines including BA in real life. More detail about statistical contingency fuel is included later in this manual.

Finally, BAV Cirrus contains a database including details of all mainline fleet aircraft such as weights, registrations, equipment details and other information.

The system allows for a high degree of customisation whilst providing extremely accurate flight planning data in a standardised, highly realistic format.

2 System Description

Cirrus is designed to replicate the British Airways computerised fuel and flight planning system. It makes use of the free Simbrief online flight planning system for its core flight plan generation functions, as well as custom in-house processes to generate ancillary documentation. It is under constant development by the Technical team and new features and refinements are added on a regular basis. There are several major components to the system:

2.1 Simbrief

Simbrief is a free flight simulator flight planning and dispatch website, found at http://www.simbrief.com. Cirrus makes use of an API to integrate the BAVirtual website with the Simbrief flight planning system.

In order to plan flights through Cirrus, therefore, it is necessary to first have a Simbrief account. This is free and should be acquired through the sign-up process on the main Simbrief website before attempting to plan a flight via Cirrus.

2.1.1 Navigation Database

The Simbrief navigation database contains details of radio navigation aids and reporting points identified by name and the latitude/longitude of their positions, linked together via their great circle tracks and distances to form segments of airways, Standard Instrument Departures (SID) and Standard Arrival Routes (STAR). The magnetic variation, minimum safe altitudes and Flight Information Region (FIR) data is also added, as are details of airfields including runway data and approach availability.

Simbrief makes the March 2018 navigation database (AIRAC cycle 1803) freely available to all members. Other cycles must be unlocked through a Navigraph subscription. The cycle used by Cirrus for flight planning will be whichever cycle you, as an individual user, have unlocked and activated in the main Simbrief site. For full details on unlocking database cycles see the Simbrief website and documentation.

2.1.2 Performance Database

Performance data for each aircraft is held within the Simbrief system. Data stored includes, amongst others:

- Speed schedules
- Performance parameters
- Fuel consumption figures

The Simbrief Performance Database is supplemented with data from the BAVirtual Fleet Database, described in detail in 2.2 Fleet Database.

2.1.3 Meteorological Data

Simbrief has an internal connection to world-wide real-time meteorological data including Upper Air Data (UAD) and airfield weather. Temperature, wind direction and velocity data forecasts are downloaded by Simbrief in a Thinned Grid Binary (THIN GRIB) format four times daily for specific levels based on 6 hour blocks within a 30 hour forecast span.

The flight plan will consider surface weather forecasts in determining the suitability of an airfield (e.g. for ETOPS alternates) and runway selection etc.

2.1.4 NOTAM

Simbrief is linked to the global NOTAM network and will provide a full NOTAM briefing for the route and time of flight within the briefing package. This briefing is known within BA as the 'Loreto'.

2.1.5 NAT and PACOT Tracks

Simbrief is linked to the North Atlantic and Pacific Oceanic track messages and will download, display and utilise the current tracks where applicable.

2.1.6 Simbrief Downloader Application

Optionally, pilots may wish to install the 'Simbrief Downloader' application on their Flight Simulator PC. This small application runs in the background and will automatically detect and download e.g. FMS route files for add-on aircraft when a plan is generated. For more details, see the Simbrief website.

2.2 Fleet Database

The fleet database is maintained by BAVirtual and stored on the BAVirtual servers. It contains information about each individual aircraft in the BA mainline fleet, including:

- Aircraft registration
- SELCAL
- Weight category and equipment codes
- Flight plan remarks
- Maximum passenger figures
- Minimum and maximum weights for takeoff, landing and zero fuel
- Dry operating weight figures for each airframe according to real-world BA fleet data

2.3 Route Database

The Route Database is maintained by the BAVirtual Flight Operations team and contains various pre-planned airways routes between airport pairs. These are generally real-world routes used by British Airways and are updated on a periodic basis, and passed in to Simbrief for planning where they are available.

2.4 Alternates Database

The Alternates Database is maintained by the BAVirtual Flight Operations team and automatically provides up to four alternates for each destination. These are based on real-world British Airways data.

2.5 Loadsheet Generator

For selected aircraft types the Cirrus system will automatically generate a provisional loadsheet in line with the real-world BA format alongside the flight plan.

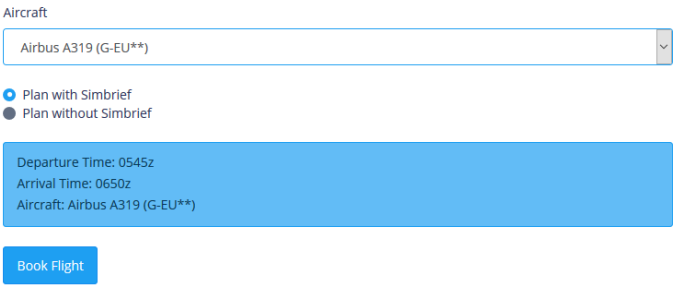
At present this feature is only available for the B744 fleet.

3 Operation

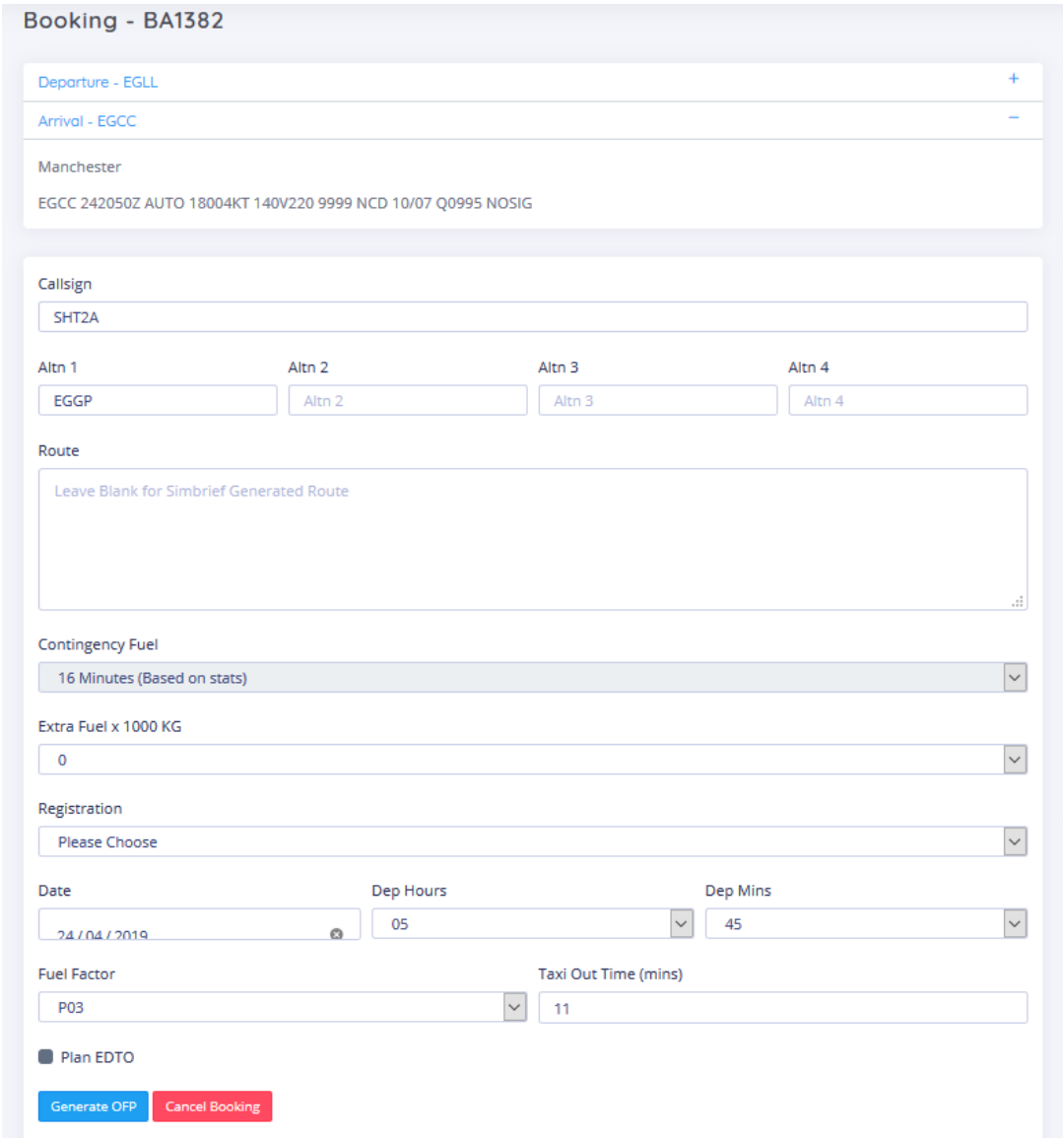
3.1 Planning Setup

3.1.1 Flight Booking

To use the Cirrus system, select your aircraft type on the booking page and ensure the 'Plan with Simbrief' radio button is selected before clicking **Book Flight**:



This will display the planning screen:



3.1.2 Departure and Arrival Airfields

Clicking on the departure or arrival airfield will show the METAR.

3.1.3 Callsign

The ATC callsign is pre-filled based on the real callsign used by BA for that particular flight, but may be edited if desired.

3.1.4 Alternates

Up to four alternates can be specified. The boxes will be pre-filled from the Alternates Database as applicable (e.g. if two possible alternates are in the Alternates Database, Altn 1 and Altn 2 will be pre-filled).

The alternates are normally provided from the database in order of commercial preference. Altn 1 will always be used for fuel calculation purposes and filed on the ATC flight plan, so if weather at destination is forecast to be below minima (i.e. a diversion is likely) pilots should consider arranging the alternate selection such that the commercially preferred alternate with suitable weather conditions is in the Altn 1 field.

3.1.5 Route

A route string (in the usual ATC format – e.g. UMLAT T418 WELIN T420 TNT) may be entered/pasted here if desired.

If the route field is left blank, Cirrus will search for a route in the BAV route database and use this for planning. If no route is available in the database, it will use the first route available from Simbrief itself.

3.1.6 Contingency Fuel

The Cirrus system is capable of making use of statistical data to determine an appropriate amount of contingency fuel for any given flight. This is a new and unique development for BAVirtual which is a very close replica of the way in which real British Airways flights are planned and should provide crews with a much more accurate final fuel figure than has previously been available.

There are two possible entries for contingency fuel that will be seen in this field:

5% OR 05 MINUTES

This will be displayed when insufficient statistical data is available to generate a statistical contingency figure. This will often be the case for new routes until a sufficient number of flights between the two airfields have been logged to enable a more accurate statistical contingency figure to be used.

If 5% OR 05 MINUTES is displayed then the contingency fuel value will be 5% of the trip fuel or 5 minutes flying time, whichever is greater.

XX MINUTES (BASED ON STATS)

Once a sufficient number of flights have been logged between an airport pair, a statistical contingency fuel figure will be generated and used in place of the simple percentage figure detailed above. This method is used by a number of European airlines in real life, including British Airways.

The statistical contingency fuel figure is determined as follows:

For each flight planned through the Cirrus system, the estimated airborne time (takeoff to touchdown) is recorded.

This figure is compared with the actual airborne time (takeoff to touchdown) recorded for the flight by the Merlin ACARS system when the Pirep is submitted

A database of actual vs estimated airborne times (and thus the amount of airborne delay experienced) is maintained for each airport pair. At each new flight plan generation, the system then determines the 90th, 95th and 99th percentile time differences from this database. The 95th percentile time (i.e. 95% of previous flights experienced less than this amount of delay) is used for the contingency fuel figure, whilst the 90th and 99th percentile figures are displayed on the Operational Flight Plan (OFP) for reference.

In the example above, the value provided of 16 minutes means that at the time of this plan being generated 95% of previous BAVirtual flights from Heathrow to Manchester experienced less than 16 minutes airborne delay.

It is easy to see how this figure provides a much more accurate estimate of the actual fuel required for a sector compared to a simple percentage, which for a short sector like LHR-MAN would equate to a very small figure (under the 5% or 5 minute rule, a mere 5 minutes extra would be loaded whereas the statistics-based approach results in a much more realistic figure of 16 minutes).

Conversely, large fuel savings may be seen on long-haul flights where 5% of the trip fuel may be equivalent to as much as 45-50 minutes extra fuel which is highly unlikely to be required – again, the statistical approach provides a much more reasonable and realistic figure which may be more or less than the figure that would have been provided under the old percentage-based rules.

It is important to note that only flights planned through Cirrus and flown with Merlin are counted in the statistical contingency database, so the more flights that are planned with Cirrus the better and more comprehensive the statistics will be!

The calculation uses flights recorded in the last 12 months so should always be reflective of current trends.

3.1.7 Extra Fuel

If as Commander of the flight you deem it necessary to take additional fuel above the minimum figure above, for example if bad weather or exceptionally high traffic levels are expected at your destination, the required amount (in tonnes) may be specified from the drop-down menu here.

3.1.8 Registration

The aircraft registration should be selected from this drop-down menu. It is important to always select a specific registration as this allows information from the BAVirtual Fleet Database such as cabin configuration, minimum and maximum weights and airframe-specific dry operating weight to be passed to Simbrief.

Failing to select a specific registration here will still allow the plan to be generated but a generic Simbrief aircraft model and registration will be used.

3.1.9 Date

The date of the planned flight. Defaults to today's date.

3.1.10 Dep Hours & Mins

The scheduled departure (pushback/off-blocks) time in UTC. Defaults to the departure time specified in the schedule.

3.1.11 Fuel Factor

Selecting a factor other than the default P00 in here will cause Simbrief to increase or decrease the fuel consumption figures by the specified percentage when calculating the plan. For example, a figure of P03 (as shown in the example) will increase the fuel consumption by 3% over the default Simbrief fuel consumption profile.

This may be useful to account for variations in fuel consumption rate between a particular add-on and the Simbrief performance database (for example, P03 is widely considered a suitable value for the FSLabs IAE Airbuses).

3.1.12 Taxi Out Time

The taxi-out time in minutes. This field is pre-filled with the average taxi-out time (off-blocks to takeoff) for the departure airport recorded by BAVirtual flights using Merlin over a rolling 12 month period but may be overridden by manual entry if desired.

3.1.13 Plan EDTO

This box should be ticked for ETOPS/EDTO (Extended Operations/Extended Diversion Time Operations) flights and will force Simbrief to identify and provide calculations for suitable ETOPS diversions airfields.

A full discussion of ETOPS planning is beyond the scope of this manual.

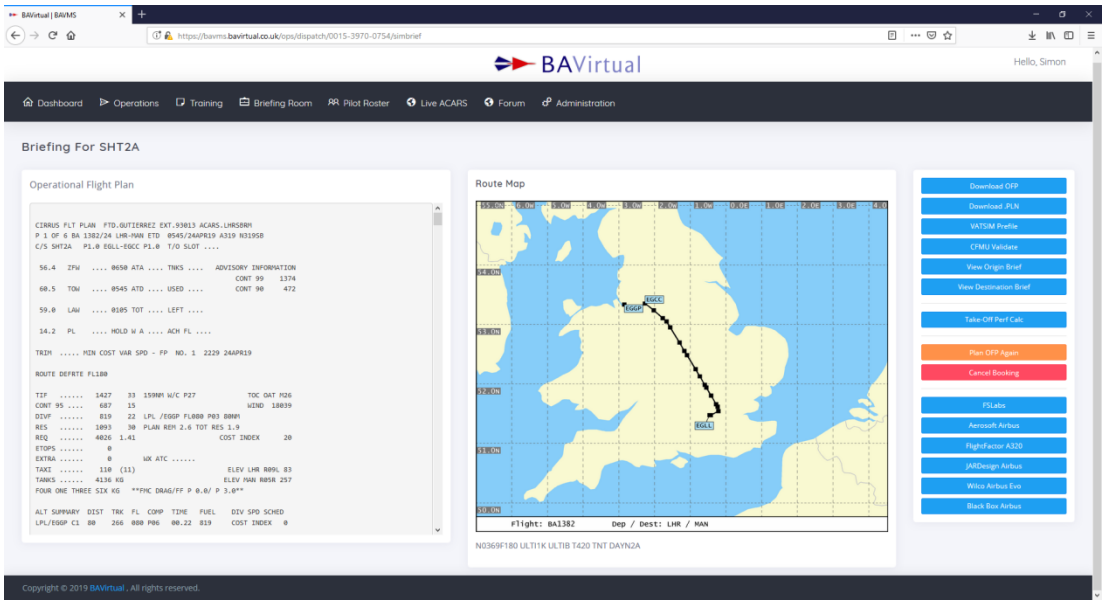
3.1.14 Generate OFP

Clicking this button will submit the data specified above to Simbrief and commence the flight plan generation process.

Please ensure that you have allowed pop-ups from bavirtual.co.uk in your browser. You may be asked to enter your Simbrief login details in a pop-up window. After a short period you will be redirected to the Briefing page.

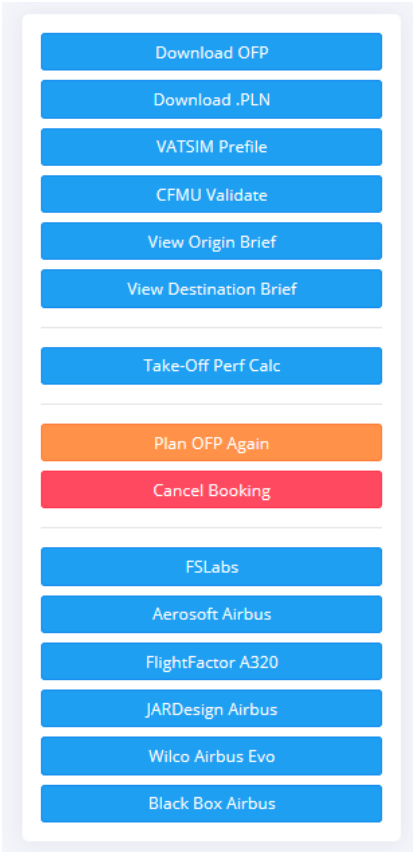
3.2 Briefing Page

3.2.1 Overview



The Briefing Page will display once all required data has been calculated. It shows a preview of the Operational Flight Plan on the left, a map showing the planned route and the route itself in ATC text format in the centre, and on the right are options to download the flight plan in various formats.

3.2.2 Download Links



3.2.2.1 Download OFP

Downloads a PDF copy of the Operational Flight Plan for printing and/or reference.

3.2.2.2 Download .PLN

Downloads the route in FSX/P3D .PLN format.

3.2.2.3 VATSIM Prefile

Opens the VATSIM Flight Plan Prefile form and pre-fills the fields with all appropriate data.

3.2.2.4 CFMU Validate

Opens the Eurocontrol CFMU Route validator to check the planned route.

3.2.2.5 View Origin Brief

If a BAVirtual/Simfest Route Information Manual entry for the departure airfield is available, clicking this link will download the relevant pages in PDF format.

Only displayed if a brief is available.

3.2.2.6 View Destination Brief

If a BAVirtual/Simfest Route Information Manual entry for the destination airfield is available, clicking this link will download the relevant pages in PDF format.

Only displayed if a brief is available.

3.2.2.7 Take-Off Perf Calc

For Airbus fleet, opens the Wabpro online takeoff performance calculator in a new tab. No pre-filling of data is possible.

For B744 fleet, opens the Simfest CARD online B744 performance calculator and pre-fills fields.

3.2.2.8 Plan OFP Again

Return to the Planning page to make any required adjustments and re-plan the flight.

3.2.2.9 Cancel Booking

Cancels the booking altogether, removes the plan and removes the booking from Merlin.

3.2.2.10 FSLabs, Aerosoft Airbus, FlightFactor A320 etc

Clicking on the relevant button will download the flight plan in the FMS format for the specified add-on. The buttons displayed here are fleet-specific (i.e. for an Airbus flight only options for Airbus add-ons will be displayed, for a B744 flight only options for B747 add-ons will be displayed and so on).

4 BA Standard Flight Plan Format

4.1 Introduction

The Cirrus format is a standard framework within which specific facilities and options are provided to meet the individual needs of each fleet.

The plan has four basic components:

1. Page 1, the fuel data page.
2. The flight or navigation log page(s)
3. The supplementary or Flight Management System data page(s)
4. Statistical Contingency Fuel/ATS Flight Plan page.

4.1.1 ETOPS Flight Plans

Page 2 will provide ETOPS information for all ETOPS flight plans and possibly where Page 1 REMARKS go to a second page.

4.2 General

The philosophy for the Cirrus Flight Plan format was to reflect the original BA SWORD format as much as possible.

Here follows sample layout pages faced by textual explanation. Items marked with an asterisk * in the example text are optional.

4.3 Fuel Data Page

```
CIRRUS FLT PLAN  FTD.WALSH EXT.93008 ACARS.LHRSBRH
P 1 OF 8 BA 0116/24 JFK-LHR ETD  0010/24APR19 B744 G-BYGG
C/S BAW116   M4.0 KJFK-EGLL P1.0  T/O SLOT ....

223.2   ZFW   .... 0720 ATA .... TNKS ....   ADVISORY INFORMATION
                                                CONT 99    6493
290.8   TOW   .... 0010 ATD .... USED ....      CONT 90    2869

235.2   LAW   .... 0710 TOT .... LEFT ....

 40.2   PL    .... HOLD W A .... ACH FL ....

TRIM  ..... MIN COST VAR SPD - FP  NO. 1  1857 24APR19

ROUTE DEFRTE FL350 NICSO/FL370

TIF   ......  55575  6.08  3071NM W/C P41            TOC OAT M53
CONT 95 ....   4077    26                            WIND  29065
DIVF  ......   3673    28  LTN /EGGW FL080 P28 102NM
RES   ......   4235    30  PLAN REM 12.0 TOT RES 7.9
REQ   ......  67560  7.33                    COST INDEX      53
ETOPS ......      0
EXTRA ......      0        WX ATC ......
TAXI  ......    544  (12)                      ELEV JFK R31L 13
TANKS ......  68104 KG                         ELEV LHR R27R 83
SIX EIGHT ONE ZERO FOUR KG   **FMC DRAG/FF P 0.0/ P 0.0**

ALT SUMMARY  DIST  TRK  FL  COMP  TIME   FUEL    DIV SPD SCHED
LTN/EGGW C1  102   008  080 P09   00.28  3673    COST INDEX   0
LGW/EGKK C2  110   152  080 M11   00.35  4342
STN/EGSS C3  112   046  070 P09   00.34  4125
MAN/EGCC C4  175   330  180 P32   00.40  5618

WEIGHT CHANGE P/M 1000 KG FP  159/FM  167 KG TP  0  TRIP FUEL
SPEED  CHANGE CI   0 / M0.83     FM 52 KG  TP 0  TRIP FUEL

RMK/ NONE
```

4.3.1 P 1 OF 8

Page number and total number of pages.

4.3.2 BA 0116/24

IATA Flight Number and Date of Flight

4.3.3 JFK-LHR

Route in IATA code

4.3.4 ETD 0010/24APR19

Estimated Time of Departure/Date

4.3.5 B744

Aircraft type code.

4.3.6 G-BYGG

Aircraft registration

4.3.7 C/S BAW116

Flight Air Traffic Control callsign. May be numerical or alpha-numeric.

4.3.8 M4.0 KJFK-EGLL P1.0

Local time variation to UTC of DEPARTURE and DESTINATION airfields. The ICAO airfield codes are used.

4.3.9 T/O SLOT . . . .

Space to record UTC SLOT time.

4.3.10 223.2 ZFW . . . .

Planned Zero Fuel Weight and space for the actual figure.

4.3.11 290.8 TOW . . . .

Planned Take Off Weight and space for the actual figure.

4.3.12 235.2 LAW . . . .

Planned Landing Weight and space for the actual figure

4.3.13 40.2 PL . . . .

Planned Payload and space for the actual figure.

4.3.14 0720 ATA . . . .
0010 ATD . . . .
0710 TOT . . . .

Scheduled arrival, departure and sector times in UTC, followed by spaces to record ACTUAL times.

4.3.15 HOLD W A . . . .

Space to record time in minutes when holding due to weather or ATC; circle W or A as appropriate.

4.3.16 TNKS . . . .

Space to record initial fuel

4.3.17 USED . . . .

Space to record fuel used

4.3.18 LEFT . . . .

Space to record fuel remaining.

4.3.19 ACH FL . . . .

Achieved Flight Level. Record here if the achieved flight level is different from the planned level.

4.3.20 *ADVISORY INFORMATION
CONT 99 6493
CONT 90 2869

This is advisory information specific to STATISTICAL CONTINGENCY FUEL. More details can be found in 3.1.6 Contingency Fuel. The line “NO STATS AVAILABLE” appears if there is insufficient data for statistical contingency fuel calculation. In all cases the absolute minimum contingency fuel is 5 minutes holding fuel at 1500 feet clean at the Planned Landing Weight at destination.

4.3.21 TRIM . . . .

Space for STABLILISER TRIM details.

4.3.22 *MIN COST – VAR SPD –

Criteria used for flight plan calculation. Variations for this field define the basis of fuel calculation at a planned speed

They are:

MIN COST: flight is planned for minimum cost.

MIN FUEL: flight is planned for min fuel.

MIN TIME: flight is planned for min time

MIN DIST: flight is planned for min distance

Aircraft speed may be planned at:

VAR SPD: flight planned for variable speed.

SPEED 320/0.80: flight planned for a fixed IAS/MACH No.

Other options for this field are:

LONG RANGE CRUISE: flight planned as stated.

MAX ENDURANCE: flight planned as stated.

MAX RANGE option shows as **VAR SPEED** but with **COST INDEX 0**.

A BLANK COST INDEX field links PLANNED speed to an FMC MANUAL speed input. See **COST INDEX**.

4.3.23 FP NO. 1 1857 24APR19

Plan status, time and date of release.

4.3.24 *ROUTE DEFRTE

Route has been set up by the dispatcher. There are various other options which may be seen in real life but are not currently simulated.

4.3.25 *FL350 NICSO/FL370

FLIGHT LEVEL(S). When more than one, the climb/descent points are shown. This may also include any altitude restriction on SIDs and STARs.

4.3.26 TIF 55575 6.08

Planned trip fuel/time from start of takeoff roll to touchdown at planned destination.

4.3.27 3071NM

Route distance calculated from PLANNED DEPARTURE RUNWAY to PLANNED ARRIVAL RUNWAY based on latest available information.

4.3.28 W/C P41

Average wind component in knots for the route. P41 indicates an average tailwind component of 41 Knots. M indicates an average headwind component.

4.3.29 TOC OAT M53

The forecast temp. in degrees Celsius at Top of Climb (TOC). The first TOC point is taken so if there is an altitude restriction on the SID the temperature will be taken from that point.

4.3.30 *CONT 95 .... 4077 26

Contingency fuel calculated in accordance with BA fuel policy. This example shows 95th percentile statistical contingency fuel; the other variations which may be seen are CONT 5% where 5% trip fuel is used and MIN CONT where the 5% figure is less than 5 mins and thus the minimum of 5 mins has been used.

4.3.31 WIND 29065

The forecast spot wind at TOC.

It is a compacted wind display, e.g.:

27112: Wind from 270 degrees at 112 knots.

29065: Wind from 290 degrees at 065 knots.

The first TOC point is taken so if there is an altitude restriction on the SID the spot wind will be taken from that point.

4.3.32 DIVF 3673 28

Diversion fuel/time from go-round to the selected alternate airfield planned at the forecast landing weight. F denotes FUEL ALTERNATE. COMMERCIAL ALTERNATES are suffixed by C with a NUMBER to indicate its commercial preferential status eg: C1, C4, C2 etc.

4.3.33 LTN /EGGW FL080 P28 102NM

Alternate airfield IATA and ICAO codes, the planned flight level, wind component and distance.

4.3.34 RES 4235 30

Reserve fuel of 30 mins holding at 1500ft based on the average holding weight at the alternate airfield.

4.3.35 PLAN REM 12.0

Planned fuel remaining at touchdown. This equals the sum of **CONT + DIV + RES + ETOPS + EXTRA** for this case (in tonnes, rounded up). In ALL cases the only PLANNED fuel USAGE is **TIF + TAXI**.

4.3.36 TOT RES 7.9

Total reserve fuel. The total to include diversion plus reserve fuel (in tonnes, rounded up).

4.3.37 REQ 67560 7.33

Minimum planned fuel with total time.

4.3.38 COST INDEX 53

Either the calculated or standard default planned cost index, used by the aircraft FMS to set performance parameters, for the flight. A BLANK field indicates that a MANUAL speed input is required in FMS.

4.3.39 *ETOPS 0

Addtional fuel required to cover the ETOPS CRITICAL FUEL scenario. Shown for ETOPS flights even if **0 kgs** required.

4.3.40 EXTRA 0

Planned uplift of extra fuel as required by the Commander. Output always shown even if **EXTRA** is **0**.

4.3.41 WX ATC .....

Reason for uplifting extra fuel: WX or ATC.

4.3.42 TAXI 544 (12)

Taxi/APU fuel and time. This will vary for each station. The statistical time is derived from historical records of BAV departures based on a rolling 12 month cycle.

4.3.43 TANKS ..... 68104 KG

Total planned fuel in tanks.

4.3.44 ELEV JFK R31L 13
ELEV LHR R27R 83

The threshold elevations of the PLANNED DEPARTURE RUNWAY at the PLANNED departure airfield and the PLANNED LANDING RUNWAY at the PLANNED destination airfield.

4.3.45 SIX EIGHT ONE ZERO FOUR KG

TANKS fuel in words.

4.3.46 **FMC DRAG/FF P 0.0/ P 0.0**

Adjustments to fuel flow (from entered Simbrief Fuel Factor) to account for airframe deterioration, differences in consumption between a particular add-on and the Simbrief performance profile etc.

4.3.47 ALT SUMMARY DIST TRK FL COMP TIME FUEL

Selected ALTERNATES SUMMARY title line. The alternates listed will be designated C1 to C4 based on the order in which they are entered in the Simbrief Alternate fields.

The C1 alternate will appear in the DIV field.

4.3.48 LTN/EGGW C1 102 008 080 P09 00.28 3673

Alternate airfield IATA/ICAO identification code, commercial priority designator, distance, track, planned flight level, wind component, time and required fuel.

4.3.49 WEIGHT CHANGE P/M 1000 KG FP 159/FM 167 KG TP 0 TRIP FUEL

For a TOW increase /decrease of 1000kg: Trip fuel increases by 159kg, or decreases by 167kg. Trip time is unchanged (P = plus) / (M = minus).

4.3.50 SPEED CHANGE CI 0 / M0.83 FM 52 KG TP 0 TRIP FUEL

If the flight is operated with a Cost Index of 0 / Mach No 0.83 it would save 52kg of trip fuel and flight time would be unchanged. In this case it is based on TRIP FUEL.

4.3.51 RMK/ NONE

Lines of remarks may be placed here. When there are no remarks, the output RMK/NONE is output. When the amount of information on page one exceeds the page length a second page of remarks will be shown on page two. The output will be RMK/SEE NEXT PAGE In this case page two will be headed FUEL PAGE RMK/. (For ETOPS plans the ETOPS INFO will also be on page two after the Fuel Page RMK).

For ETOPS flight plans the ETOPS enroute alternates used for validation are output. Other examples of remarks that may be placed here are DDM or MEL items and /or free text by FTD (Flight Technical Dispatch).

4.4 ETOPS Information Page

```
CIRRUS FLT PLAN
PAGE 2 OF 12 BA 2036/24 - PLAN  1 1054 24APR19
                  ETOPS 138 ERA LPAZ EINN

ETOPS INFO                            ETOPS      MET
ERA      RWY    START    FINISH     WX/MIN     FC WX        XWC
LPAZ      36     1913     2154     600/3219   3500/9999   13KTS
EINN      06     1954     2154     600/3219   9999/9999   14KTS

WYPT         LAT/LONG     PREV WYPT    PLUS  EET    FOB   CRITF
ENTRY(CYYT) N4753W04146                      04.33  25284  17670
LPAZ/EINN   N4906W02501  49N030W      0.22 05.47  18402  13353
EXIT(EINN)  N4901W01856                      06.15  15826  9562
```

4.4.1 ETOPS INFO

ERA RWY
LPAZ 36
EINN 06

ETOPS en-route alternate information. Airfield ICAO designator, runway designator of the runway selected in the Cirrus ETOPS WX/NOTAM check.

4.4.2 START FINISH

1913 2154
1954 2154

The start and finish times (UTC) for the period throughout which the selected ETOPS en-route alternate(s) are suitable for use.

4.4.3 ETOPS

WX/MIN
600/3219
600/3219

ETOPS planning minima selected for the approach. **The units are feet/metres. Statute miles are shown as the equivalent in metres.**

4.4.4 MET

FC WX
3500/9999
9999/9999

The worst weather conditions in the forecast for the period within the output **START/FINISH** times. Where **99999/9999** is output this is the equivalent of CAVOK. Again the units are feet/metres.

4.4.5 XWC

13KTS
14KTS

Crosswind component within the output **START/FINISH** times.

4.4.6 WYPT LAT/LONG
ENTRY (CYYT) N4753W04146
LPAZ/EINN N4906W02501
EXIT (EINN) N4901W01856

The co-ordinates of either the ETP(s) or the **ENTRY/EXIT** points. Cirrus calculates the **ENTRY** and **EXIT** points to identify the ETOPS portion of the flight.

4.4.7 PREV WYPT PLUS

49N030W 0.22

The position of the ETP is **22** minutes beyond **N49W030**.

4.4.8 EET
04.33
05.47
06.15

Estimated **E**lapsed **T**ime from takeoff to the ETOPS **ENTRY** point i.e. **4** hours **33** minutes.

EET to ETOPS ETC for the quoted airport pair i.e. **LPAZ/EINN 5** hours **47** minutes.

EET to the ETOPS **EXIT** point i.e. **6** hours **15** minutes.

4.4.9 FOB
25284
18402
15826

Planned **F**uel **O**n **B**oard at the listed points.

4.4.10 CRITF
17670
13353
9562

ETOPS fuel requirement at the ETP (based on the appropriate critical fuel scenario for the aircraft type used). **CRIT**ICAL **F**UEL at ETOPS Entry, ETOPS ETP and ETOPS Exit points.

4.5 Flight/Navigation Log Page

```
CIRRUS FLT PLAN
PAGE 3 OF 12 BA 2036/24 - PLAN  1 1054 24APR19
WAYPOINT COUNT   8 CWC   8 (NOT TOC/TOD)           TOT RES   5.3
POSITION   ID/FREQ               ETA/RTA ATA TTLT GDTG REM  REQ
  MSA   AWY  /ITT/   -TRM-  DIS    TIM         FL  COMP MACH G/S

ORLANDO INTL MCOY2               .../... ... 0.00 3965     47.0
  2.1 MCOY2  /348/   -VAR-    7    01          ...  M002

ORLANDO     ORL112.20            .../... ... 0.01 3958     46.7
  2.1 MCOY2  /355/   -002-   34    06          ...  M019

GUANO                            .../... ... 0.07 3924     45.3
  2.1 DCT    /359/   -006-   63    12          ...  M036

TOC                              .../... ... 0.19 3861     42.5
  2.0 DCT    /359/   -007-   19    02          350  M035 .822/441

FEMON                            .../... ... 0.21 3842     42.2
  2.0 Q87    /357/   -004-   48    07          ...  M035 .822/441

VIYAP                            .../... ... 0.28 3794     41.6
  2.0 Q87    /024/   -032-   49    06          ...  M002 .821/474

TAALN                            .../... ... 0.34 3745     40.9
  2.0 Q87    /025/   -033-   47    06          ...  P000 .820/474

JROSS                            .../... ... 0.40 3698     40.3
  2.2 DCT    /045/   -053-  138    17          ...  P020 .819/493

BARTL                            .../... ... 0.57 3560     38.6
  2.2 J121   /039/   -049-   84    10          ...  P013 .819/485
```

4.5.1 Header

It should be noted that in all cases the heading will be repeated on each page.

4.5.1.1 PAGE 3 OF 12 BA2036/24

Page number and total number of pages in the flight plan.

4.5.1.2 PLAN 1 1054 24APR19

Plan status, date and time of production.

4.5.1.3 WAYPOINT COUNT 8 CWC 8 (NOT TOC/TOD)

This page lists 11 waypoints, the cumulative total (**C**umulative **W**aypoint **C**ount) is 8. This total does not include TOC/TOD (top of climb, top of descent) points. This section is included as a guide to page content and as a mechanism to identify data lost or garbled in transmission.

4.5.1.4 TOT RES 5.3

Total Reserves (Diversion plus Reserve)

4.5.1.5 POSITION (WAYPOINT)

Departure station, TOC/TOD, waypoint or destination. The prefix of a hyphen indicates that the waypoint is 'On request' for ATC purposes. If the route used has altitude restrictions on departure a TOC point will be displayed at the top of the initial climb from the airport and also at the top of climb to the initial cruise altitude. Likewise if there are altitude restrictions on arrival to an airport multiple TOD/BOD points may be displayed if required.

4.5.1.6 ID/FREQ

Identification and frequency of the navigation aid. Note: If the identification is first, the navigation aid is the position. If the frequency comes first, the navigation aid defines the position by magnetic bearing (the radial) and/or distance.

4.5.1.7 ETA

Estimated Time of Arrival

4.5.1.8 RTA

Revised ETA

4.5.1.9 ATA

Actual Time of Arrival.

4.5.1.10 TTLT

Total flight time from the start of the flight.

4.5.1.11 GDTG

Ground distance to go to the destination.

4.5.1.12 REM

Space to record actual fuel remaining.

4.5.1.13 REQ

Planned fuel to touchdown at the destination (rounded).

```
CIRRUS FLT PLAN
PAGE 4 OF 12 BA 2036/24 - PLAN  1 1054 24APR19
WAYPOINT COUNT   9 CWC  17 (NOT TOC/TOD)           TOT RES   5.3
POSITION   ID/FREQ                ETA/RTA ATA TTLT GDTG REM  REQ
  MSA   AWY  /ITT/   -TRM-  DIS    TIM         FL  COMP MACH G/S

KINSTON     ISO109.60             .../... ... 1.07 3476     37.6
  2.1 J121   /035/   -045-   36    04          ...  P011 .818/483

WEAVR                             .../... ... 1.11 3440     37.1
  2.1 J121   /035/   -046-   77    10          ...  P013 .818/484

NORFOLK     ORF116.90             .../... ... 1.21 3363     36.2
  2.1 J174   /022/   -034-   42    05          ...  P001 .818/472

SAWED                             .../... ... 1.26 3321     35.6
  2.1 J174   /030/   -042-   22    03          ...  P009 .818/480

KALDA                             .../... ... 1.29 3299     35.3
  2.0 J174   /030/   -042-    3                ...  P009 .817/479

DUNFE                             .../... ... 1.29 3296     35.3
  2.0 J174   /030/   -042-   12    02          ...  P007 .817/477

SNOW HILL   SWL112.40             .../... ... 1.31 3284     35.2
  2.1 J174   /039/   -051-   54    07          ...  P023 .817/493

WARNN                             .../... ... 1.38 3230     34.5
  2.0 J174   /039/   -052-   15    01          ...  P022 .817/492

ZIZZI                             .../... ... 1.39 3215     34.3
  2.0 J174   /039/   -052-   37    05          ...  P024 .816/494
```

4.5.1.14 MSA

Segment **M**inimum **S**afe **A**ltitude (x1000 feet)

4.5.1.15 AWY

Airway name. The SID or STAR name is shown where used, e.g. **CPT3G**.

4.5.1.16 ITT

Initial True Track shown to the nearest whole degree.

4.5.1.17 TRM

Mean magnetic track. When variable tracks are used as in the terminal area or for unnamed SID or STAR procedures, VAR will be shown.

4.5.1.18 DIS

Segment (individual leg) distance.

4.5.1.19 TIM

Segment time.

4.5.1.20 FL

Flight Level. This field has two different forms:

1. ". . ." is output to provide a space to record the cleared/actual FL
2. The "new" flight level calculated by the system is shown at the first point after the climb. Otherwise ". . ." is printed.

4.5.2 Wind Display

4.5.2.1 COMP

Segment wind component in knots shown with sign **P** or **M**.

4.5.3 MACH

Planned cruise Mach number for the segment.

4.5.4 G/S

Average ground speed in knots for the segment.

4.6 Destination Alternate Summary

```
CIRRUS FLT PLAN
PAGE 9 OF 12 BA 2036/24 - PLAN  1 1054 24APR19

DESTINATION ALTERNATE SUMMARY

      ALTN         MSA    VIA
      EGLL/09L     2.3    BIG2Z BIG OCK1G
 INFO/EGSS/04      2.4    DCT DET DET1A
 INFO/EGCC/05R     3.5    LAM5P LAM N57 WELIN T420 TNT DAYNE2A
 INFO/EGBB/15      2.5    LAM5P LAM L10 BUZAD GROVE1C
```

4.6.1 General

This list is output to satisfy the requirements of EU-OPS. It therefore shows the selected alternates by ICAO designator with applicable route text. The alternate at the top of the list is that selected for the calculation of **TANKS** fuel figure. The remaining lines provide INFO based on the remaining alternates selected.

They are thus prefixed by **INFO** / e.g. **INFO/EGSS/04 DCT DET DET1A**

4.6.1.1 DESTINATION ALTERNATE SUMMARY

As stated and required by EU-OPS.

4.6.1.2 ALTN MSA VIA

Alternate summary title line.

4.6.1.3 EGLL/09L 2.3 BIG2Z BIG OCK1G

Planned airfield selected for the **DIV** field with planned landing runway, MSA and route.

4.6.1.4 INFO/EGSS/04 2.4 DCT DET DET1A

Details of other selected alternate with planned arrival runway, MSA and route.

4.7 Supplementary/FMS Data Page

```
CIRRUS FLT PLAN
PAGE 5 OF 6 BA 0393/25 - PLAN  1 0857 25APR19

LAT    LONG    WAYPT  ITT   DIS FL  TMP      SECTOR W/V

                                          100   200   310   350
N5054.1E00429.1 EBBR  296    26
N5057.1E00419.4 BR016 315     7     M10 18040 19046 20071 20049
N5102.1E00411.4 BR017 314    17     M20 18040 19046 20071 20049
N5114.1E00352.2 HELEN 289     5     M34 18040 19046 20071 20049
                                          200   220   240   260
N5120.9E00321.3 COA   290    10 240 M36 19063 18068 18074 19076
N5124.4E00306.4 KEGIT 290    24 240 M36 19063 18068 18074 19076
N5132.9E00230.0 SASKI 290     6 240 M36 18057 18063 18068 18071
N5134.8E00221.5 INLOD 290    10 240 M38 18056 18065 18074 18073
N5138.2E00206.5 SUMUM 289    20 240 M38 18056 18065 18074 18073
N5144.9E00136.7 LOGAN 264    17 240 M38 18056 18065 18075 18074
                                          100   200   310   350
N5142.8E00105.0 TRIPO 263     5     M37 16031 17048 18053 17041
N5142.2E00057.0 SABER 263    10     M32 16031 17048 18053 17041
N5141.1E00041.0 BRASO 263     8     M23 16031 17048 18053 17041
N5140.2E00028.2 D083L 263    12     M16 17030 17044 17045 17038
N5138.8E00009.1 TAWNY 246    26     M07 17030 17044 17045 17038
DESC                                 FL  100   150   200   310
WIND                                    18028 17032 17041 18044

N5128.7W00027.7 EGLL

TOW 59393 KG  ZFW 54899 KG  PL  14393 KG   LAW 57689 KG
```

4.7.1 General

4.7.1.1 PAGE 5 OF 6

Page number and total number of pages.

4.7.1.2 BA 0393/25

Flight number and date.

4.7.1.3 PLAN 1 0857 25APR19

Plan status, time (GMT) and date of production.

4.7.1.4 LAT LONG

Waypoint LAT/LONG co-ordinates.

4.7.1.5 WAYPT

Waypoint name in 5 character (ARINC 424) format as input in FMC.

4.7.1.6 ITT

Initial **T**rue **T**rack shown to the nearest whole degree.

4.7.1.7 DIS

Segment distance in NM

4.7.1.8 FL

Planned flight level. This will reflect any PLANNED changes to the cruising level. In this case **FL240**.

4.7.1.9 TMP

Forecast temperature at the planned level in degrees Celsius. **M** denotes minus, **P** plus.

4.7.2 Route Wind Data

4.7.2.1 General

The route winds are required by crews for use with the aircraft Flight Management Computer systems. The route winds are shown on the supplementary page in a format appropriate to the aircraft type and fleet preference. The information presented will be as follows:

1. A set of four levels relative to the planned cruise level(s) based on individual aircraft type performance. These are corrected for the overall direction of flight giving an Eastbound and a Westbound set.

2. Normally the four levels shown will coincide with "two below" and "one above" the planned level. A level above the maximum operating level for that type of aircraft will not be shown. In this case, an extra lower level will be output i.e. “three below”

3. AIRSPACE: The wind data for the levels supplied are usually separated in blocks of 4000 ft to reflect ICAO cruise levels. In RVSM AIRSPACE the wind data will reflect the reduced separation.

4. Any planned change in cruise level will change the wind details. The winds now output will be in relation to the new planned cruise level.

5. METRIC FLIGHT LEVELS: If a flight is planned to cruise in airspace where METRIC FLIGHT LEVELS are used the following applies:
   - The level shown will be the equivalent of the metric level.
   - The units used will be feet.

The wind data will be output as follows:

4.7.2.2 SECTOR W/V

The forecast wind directions and velocities for the sectors shown. The output is a compacted wind display, e.g.:

- 19063 = wind from **19**0 degrees at **063** knots
- 22105 = wind from **22**0 degrees at **105** knots

4.7.2.3 DESC WIND

FL 100 150 200 310
18028 17032 17041 18044

The wind directions and velocities for the descent. Again the output is a compacted wind display. They are based on the average wind from the last waypoint to the reference position of the destination airfield. The levels quoted are fixed.

4.7.2.4 N5128.7W00027.7 EGLL

Reference position of the PLANNED destination airfield.

4.7.2.5 TOW 59393 KG ZFW 54899 KG PL 14393 KG LAW 57689 KG

Repeat of those parameters from **FUEL DATA PAGE**.

4.8 ATS Flight Plan Page

```
CIRRUS FLT PLAN
PAGE 9 OF 9 BA 0179/24 - PLAN  1 1408 24APR19
FF EGTTZQZX EISNZQZX EGGXZQZX CZQXZQZX CZQMZQZX KZBWZQZX KZNYZQZX
       EGLLBASB
(FPL-BAW179-IS
-B772/H-SDE1E3FGHIJ3J5J6M1M2RWXY/LB1D1
-EGLL1705
-N0486F380 CPT3F CPT UL9 KENET UN14 BAKUR DCT DOGAL/M083F380 NATG
 RIKAL/N0482F400 N436A ALLEX DCT PLYMM PARCH2
-KJFK0651 KEWR
-PBN/A1B1D1L1O1S2 NAV/RNVD1E2A1 SUR/TCAS DOF/190424 REG/GZZZA
 EET/EISN0025 EGGX0107 CZQX0211 CZQM0504 KZBW0548 KZNY0645 SEL/GJBS
 OPR/BAW RVR/075 RMK/TCAS LAHSO NOT AUTHORISED)
```

4.8.1 PAGE 9 OF 9

Page number and total number of pages.

4.8.2 BA 0179/24

Flight number and date.

4.8.3 PLAN 1 1408 24APR19

Plan status, time and date of production.

4.8.4 *FF EGTTZQZX EISNZQZX EGGXZQZX CZQXZQZX CZQMZQZX KZBWZQZX KZNYZQZX

The AFTN priority (**FF**) followed by the AFTN (Aeronautical Fixted Telegraph Network) address(es) of the ATC centres at which the flight plan has been filed.

4.8.5 EGLLBASB

AFTN address of the Cirrus plan originator.

4.8.6 (FPL-BAW179-IS

Flight plan for flight BAW179, flight rules **I** for instrument flight rules and type of flight **S** for scheduled.

4.8.7 -B772/H-SDE1E3FGHIJ3J5J6M1M2RWXY/LB1D1

Aircraft type ICAO indicator and wake turbulence category, comm/nav code and transponder standard.

See 5 List of ICAO Equipment Codes for more information.

4.8.8 -EGLL1705

Departure station ICAO code and ETD in UTC.

4.8.9 -N0486F380

Initial cruising speed and flight level. This is followed by any planned changes of speed and level.

4.8.10 CPT3F CPT UL9 KENET UN14 BAKUR DCT DOGAL/M083F380 NATG

SID and description of the first portion of the route.

4.8.11 DOGAL/M083F380

This indicates that a change of speed and step climb is PLANNED to commence at DOGAL. The speed is now reported in **M**ach number as this portion of the flight is in Fixed Mach Airspace.

4.8.12 NATG

NAT Track in use for the flight plan.

4.8.13 RIKAL/N0482F400 N436A

1. Change of speed and step climb PLANNED to commence at RIKAL. Speed is now reported as TAS in knots.
2. East Coast North American Route (NAR) is named: **N436A**

4.8.14 ALLEX DCT PLYMM PARCH2

Final waypoints and STAR name

4.8.15 -KJFK0651

Planned destination in ICAO code and the planned flight time (minus ten minutes)

4.8.16 KEWR

Diversion airfield. This is the airfield selected for the **DIV** field.

4.8.17 -PBN/A1B1D1L1O1S2 NAV/RNVD1E2A1

Performance Based Navigation and RNP capabilities of the aircraft. For more details see 5.5 PBN Codes.

4.8.18 SUR/TCAS

The aircraft is equipped with **T**raffic **C**ollision **A**voidance **S**ystem (**TCAS**).

4.8.19 DOF/190424

Date **O**f **F**light: the order used is year, month, date (YY/MM/DD).

4.8.20 REG/GZZZA

The **REG**ISTRATION of the aircraft.

4.8.21 EET/EISN0025 EGGX0107 CZQX0211 CZQM0504 KZBW0548 KZNY0645

Estimated **E**lapsed flight **T**ime to FIR boundaries where required.

4.8.22 SEL/GJBS

The **SEL**CAL code for the aircraft.

4.8.23 OPR/BAW

Registered operator of the aircraft (BRITISH AIRWAYS)

4.8.24 RVR/075

Minimum RVR (in metres) the aircraft is certified for landing in.

4.8.25 RMK/TCAS LAHSO NOT AUTHORISED)

The aircraft is equipped with **T**raffic **C**ollision **A**voidance **S**ystem (**TCAS**) and participation in **L**and **A**nd **H**old **S**hort **O**perations (**LAHSO**) is not permitted (by BA policy).

5 List of ICAO Equipment Codes

These codes are used in ATS flight plans to provide information about the aircraft type, wake turbulence category, equipment list and navigation capability.

5.1 ICAO Aircraft Designator

The ICAO designator is the official code for an aircraft type and is published in ICAO DOC 8643. The code can range from two to four characters. The codes for each BA Mainline and BA CityFlyer aircraft type are detailed below:

Aircraft Type	ICAO Code
Airbus A318/A319/A320/A321 (ceo)	A318/A319/A320/A321
Airbus A320neo	A20N
Airbus A321neo	A21N
Airbus A380-800	A388
Boeing 747-400	B744
Boeing 777-200	B772
Boeing 777-300ER	B77W
Boeing 787-8	B788
Boeing 787-9	B789
Embraer 170	E170
Embraer 190	E190

5.2 Wake Turbulence Category

The wake turbulence category of the aircraft (1 character) is dependent on its maximum certificated takeoff weight.

J – Super For Airbus A380-800 aircraft with a maximum takeoff weight in the order of 560,000kg (1,234,500lb)

H – Heavy To indicate an aircraft type with a maximum takeoff weight of more than 136,000kg (300,000lb)

M – Medium To indicate an aircraft type with a maximum certificated takeoff weight of less than 136,000kg (300,000lb) but more than 7,000kg (15,500lb)

L – Light To indicate an aircraft type with a maximum certificated takeoff weight of 7,000kg (15,500lb) or less.

5.3 Equipment

The Radio Communication. Navigation and Approach Aid equipment. If standard COM/NAV/Approach aid equipment is carried the letter S is used. If this is not the case or the equipment is unserviceable N is used.(See note 1) Others are detailed if available and serviceable.

A	GBAS Landing system	**J4**	CPDLC FANS 1/A VDL Mode 2	**S**	Standard equipment (Note 1)
B	LPV (APV with SBAS)	**J5**	CPDLC FANS 1/A SATCOM (INMARSAT)	**T**	TACAN
C	LORAN C	**J6**	CPDLC FANS 1/A SATCOM (MTSAT)	**U**	UHF COM Radio
D	DME	**J7**	CPDLC FANS 1/A SATCOM (Iridium)	**V**	VHF COM Radio
E1	FMC WPR ACARS	**K**	MLS	**W**	RVSM Approved
E2	D-FIS ACARS	**L**	ILS	**X**	MNPS Approved
E3	PDC ACARS	**M1**	ATC Satvoice (Inmarsat)	**Y**	8.33 kHz radio band spacing
F	ADF	**M2**	ATC Satvoice (MTSAT)	**Z**	Other equipment carried or other capabilities.
G	GNSS	**M3**	ATC Satvoice (Iridium)		
H	HF Radio	**N**	No COM/NAV equipment for the route carried or is unserviceable		
I	INS	**O**	VOR		
J1	CPDLC ATN VDL Mode 2	**P1-P9**	Reserved for RCP		
J2	CPDLC FANS 1/A HFDL	**Q**	Not allocated		
J3	CPDLC FANS 1/A VDL Mode A/0	**R**	PBN Approved (Note 5)		

Note 1 -Standard equipment is considered to be VHF RTF, ADF, VOR, ILS, unless another combination is prescribed by the ATS authority.

Note 2 - If the letter Z is used, specify in Item 18 the other equipment carried, preceded by COM/... and/or NAV/... as appropriate.

Note 3 - If the letter J is used, specify in Item 18 the equipment carried, preceded by DAT/ followed by one or more letters as appropriate.

Note 4 - If any of the flight is to be in MNPS airspace and the flight is equipped for MNPS, include X after the first letter.

Note 5 – If R is used, the performance based navigation levels that can be met are specified in Item 18 following the indicator PBN/.

5.4 Surveillance (Transponder) Equipment

N	No surveillance equipment for the route is carried or the equipment is unserviceable	**L**	Transponder – Mode S, including aircraft identification, pressure-altitude, ADS-B, and enhanced surveillance capability	**U1**	ADS-B “out” capability using UAT
A	Transponder – Mode A (code only)	**P**	Transponder — Mode S, including pressure-altitude, but no aircraft identification capability	**U2**	ADS-B “out” and “in” capability using UAT
C	Transponder Mode A (code) and Mode C (altitude reporting)	**S**	Mode S, including both pressure altitude and aircraft identification capability	**V1**	ADS-B “out” capability using VDL Mode 4
E	Transponder – Mode S, including aircraft identification, pressure altitude and ADS-B capability	**X**	Mode S with neither aircraft identification nor pressure-altitude capability	**V2**	ADS-B “out” and “in” capability using VDL Mode 4
H	Transponder – Mode S including aircraft identification, pressure-altitude and enhanced surveillance capability	**B1**	ADS-B with dedicated 1090 MHz ADS-B “out” capability	**D1**	ADS-C with FANS 1/A capabilities
I	Transponder – Mode S, including aircraft identification, but no pressure-altitude capability	**B2**	ADS-B with dedicated 1090 MHz ADS-B “out” and “in” capability	**G1**	ADS-C with ATN capabilities

5.5 PBN Codes

Where the letter J or R has been filed in the equipment code, operators are required to provide details of their capabilities in the remarks field of the flight plan following the PBN/ designator.

Capability	PBN/code	Notes
Oceanic/Remote Continental Phase		
RNAV 10 (RNP 10)	A1	Oceanic and remote continental airspaces. Able to calculate position w/in 10 NM radius at least 95% of the time.
RNP 4	L1	Oceanic and remote continental airspaces. Able to calculate position w/in 4 NM radius at least 95% of the time.
Enroute Phase		
RNAV 5 All Sensors	B1	Area navigation using all available sensors. Able to calculate position w/in 5 NM radius at least 95% of the time.
RNAV 5 GNSS	B2	Area navigation using GNSS. Able to calculate position w/in 5 NM radius at least 95% of the time.
RNAV 5 DME/DME	B3	Area navigation using DME. Able to calculate position w/in 5 NM radius at least 95% of the time.
RNAV 5 VOR/DME	B4	Area navigation using VOR and DME. Able to calculate position w/in 5 NM radius at least 95% of the time.
RNAV 5 INS or IRS	B5	Area navigation using INS or IRS. Able to calculate position w/in 5 NM radius at least 95% of the time.
RNAV 5 LORAN C	B6	Area navigation using LORAN C. Able to calculate position w/in 5 NM radius at least 95% of the time.

Enroute & Terminal Phases		
RNAV 2 All sensons	C1	Area navigation using all available sensors. Able to calculate position w/in 2 NM radius at least 95% of the time.
RNAV 2 GNSS	C2	Area navigation using GNSS. Able to calculate position w/in 2 NM radius at least 95% of the time.
RNAV 2 DME/DME	C3	Area navigation using DME. Able to calculate position w/in 2 NM radius at least 95% of the time.
RNAV 2 DME/DME/IRU	C4	Area navigation using DME and IRU. Able to calculate position w/in 2 NM radius at least 95% of the time.
RNAV 1 All Sensors	D1	Area navigation using all available sensors. Able to calculate position w/in 1 NM radius at least 95% of the time.
RNAV 1 GNSS	D2	Area navigation using GNSS. Able to calculate position w/in 1 NM radius at least 95% of the time.
RNAV 1 DME/DME	D3	Area navigation using DME. Able to calculate position w/in 1 NM radius at least 95% of the time.
RNAV 1 DME/DME/IRU	D4	Area navigation using DME and IRU. Able to calculate position w/in 1 NM radius at least 95% of the time.

Terminal Phase		
RNP 1 All Sensors	O1	Area navigation using all available sensors. Able to calculate position w/in 2 NM radius at least 95% of the time. RNP adds to RNAV accuracy by requiring onboard navigation performance monitoring and alerting.
RNP 1 GNSS	O2	Area navigation using GNSS. Able to calculate position w/in 1 NM radius at least 95% of the time. RNP adds to RNAV accuracy by requiring onboard navigation performance monitoring and alerting.
RNP 1 DME/DME	O3	Area navigation using DME. Able to calculate position w/in 1 NM radius at least 95% of the time. RNP adds to RNAV accuracy by requiring onboard navigation performance monitoring and alerting.
RNP 1 DME/DME/IRU	O4	Area navigation using DME and IRU. Able to calculate position w/in 1 NM radius at least 95% of the time. RNP adds to RNAV accuracy by requiring onboard navigation performance monitoring and alerting.

Approach Phase		
RNP Approach	S1	GNSS (GPS) is the primary navigation system to support RNP APCH procedures. Allows approaches with vertical guidance using GPS.
RNP Approach with Baro VNAV	S2	GNSS (GPS) is the primary navigation system to support RNP APCH procedures. Allows approaches with vertical guidance using barometric, vertical navigation (Baro-VNAV).
RNP Approach with Radius to Fix (Authorisation Required)	T1	Special Authorization Required. GNSS (GPS) provides primary infrastructure. Allows reduced clearance, curved paths, and precise missed approach guidance.
RNP Approach without Radio to Fix (Authorisation Required)	T2	Special Authorization Required. GNSS (GPS) provides primary infrastructure.

5.6 List of FAA Aircraft Equipment Codes for US Domestic Flights

The FAA uses a different set of equipment codes to ICAO for US domestic flights, and unlike the ICAO format where multiple designators are transmitted, the FAA system uses a single code after the aircraft type (e.g. B744/L).

This code system is used for filing flight plans on the VATSIM network, therefore is reproduced here for reference.

/X	No DME, no transponder.	**/M**	TACAN only, no transponder.	**/L**	RNAV capability with GNSS including GPS or WAAS, Mode C transponder and RVSM
/T	No DME, Mode A transponder only.	**/N**	TACAN only, Mode A transponder only	**/G**	RNAV capability with GNSS and without RVSM, Mode C transponder
/U	No DME, transponder with Mode C	**/P**	TACAN only, transponder with Mode C	**/Z**	RNAV capability without GNSS and with RVSM, Mode C transponder
/D	DME, no transponder	**/Y**	LORAN, VOR/DME or INS, no transponder	**/I**	RNAV capability without GNSS and without RVSM, Mode C transponder
/B	DME, Mode A transponder only	**/C**	LORAN, VOR/DME or INS, Mode A transponder only	**/W**	RVSM (no RNAV capability implied)
/A	DME, transponder with Mode C	**/I**	LORAN, VOR/DME or INS, transponder with Mode C		

6 OFP Samples

This section provides some examples of completed Cirrus OFPs to provide some guidance as to how the OFP would normally be filled out in use.

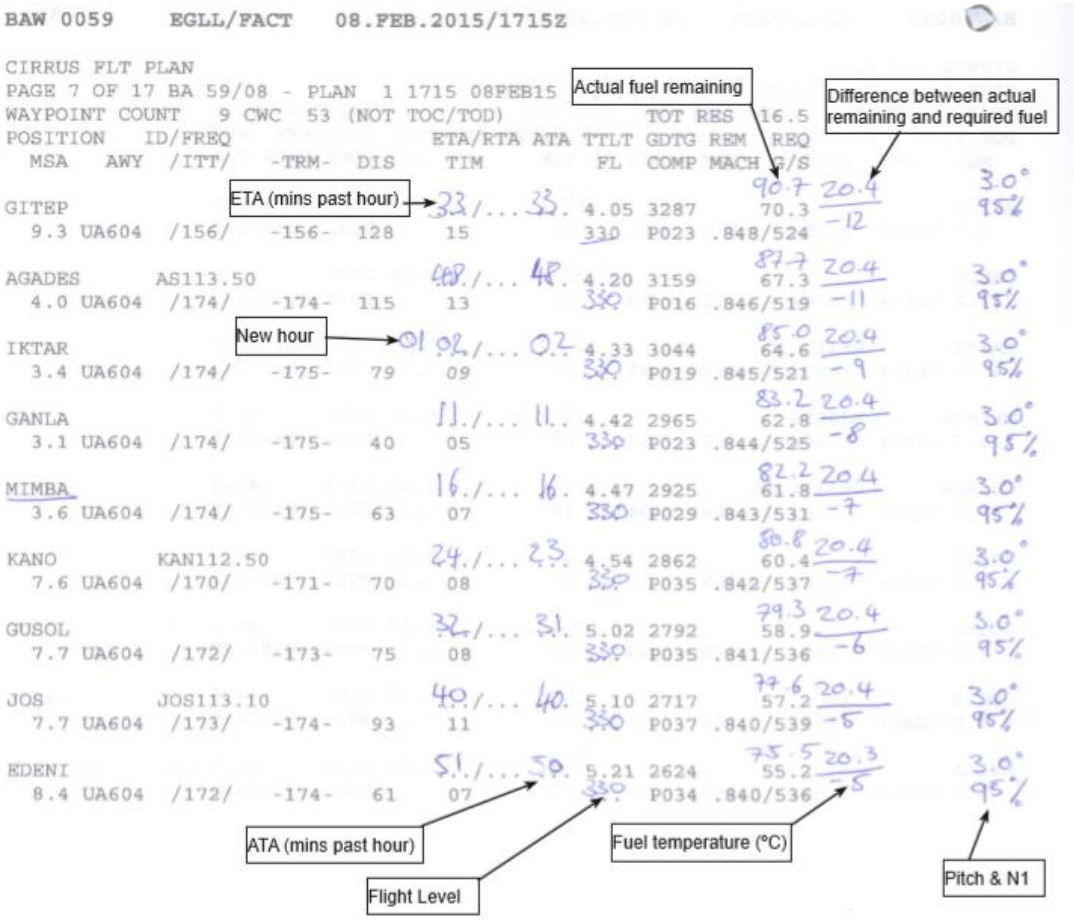
6.1 Fuel Data Page

```
BAW 0059     EGLL/FACT    08.FEB.2015/1715Z

CIRRUS FLT PLAN  FTD.FROST EXT.93002 ACARS.LHRSBRB
P 1 OF 17 BA 59/08 LHR-CPT ETD  2010/08FEB15 B744 G-CIVT
C/S BAW59   P0.0 EGLL-FACT P2.0  T/O SLOT ....

237.8   ZFW  237.8  0649 ATA 0722  TNKS 150.0   ADVISORY INFORMATION
                                                NO STATS AVAILABLE
386.6   TOW  386.6  2010 ATD 2010  USED 129.4   LMC MIN CONT 878

258.2   LAW  258.6  1039 TOT 1112  LEFT 20.6

 49.7   PL   49.7  HOLD W A .... ACH FL 370

TRIM  6.0  MIN COST VAR SPD - FP  NO. 1  1715 08FEB15

ROUTE DEFRTE FL290 NARAK/FL310 EREBO/FL330 IT/FL350 WHV/FL370

TIF    ..... 128473 10.39  5303NM W/C P12            TOC OAT M45
CONT  3%....   3854    21                            WIND  36049
DIVC1 .....   11337    58  UTN /FAUP FL410 M13 362NM
RES   .....    5180    30  PLAN REM 20.4 TOT RES 16.5
REQ   ..... 148844 12.30                  COST INDEX      90
ETOPS .....       0
EXTRA .....       0        WX ATC ......
TAXI  .....    1043  (23)                 ELEV LHR R27L 83
TANKS ..... 149887 KG                     ELEV CPT R34 151
ONE FOUR NINE EIGHT EIGHT SEVEN KG   **FMC DRAG/FF P 0.0/ P 8.0**

ALT SUMMARY  DIST  TRK  FL  COMP  TIME   FUEL    DIV SPD SCHED
UTN/FAUP C1  362   022  410 M13   00.58  11337   COST INDEX   0

WEIGHT CHANGE P/M 1000 KG FP  353/FM  126 KG TP  0  TRIP FUEL
SPEED  CHANGE CI   0 / M0.83     FM 310 KG  TP 5 TRIP FUEL

RMK/ CONT FUEL FOR ANY DELAYS
```

237.8
20.8
258.6

150.0
20.6
129.4

6.2 Flight/Navigation Log Page



6.2.1 Notes

Record all times in minutes past the hour, except where the hour changes. This should be noted as shown above.

ETAs should be filled out for all waypoints as early as practicable in the flight. This should be accomplished by recording the actual liftoff time and recursively adding the TIM figure to generate ETAs for each waypoint.

Revised ETAs should be entered in to the RTA column where the estimated time over a waypoint has changed by more than five minutes from the originally-calculated ETA.

Actual flight level over each waypoint should be inserted in the space provided.

Strike through any bypassed waypoints (e.g. when issued a direct routing by ATC).

Situational awareness may be enhanced by highlighting e.g. high MSAs, FIR changes etc.

Fuel awareness may be maintained by comparing the calculated difference between remaining and required fuel against PL REM and TOT RES figures. The difference between remaining & required fuel recorded in the margin indicates estimated fuel over destination, and should approximate PL REM.

For MNPS segments (e.g. NAT) tracks & distances should ticked once confirmed against FMC.

Recording pitch attitude & N1 setting is not a requirement, but some pilots consider it good practice in case of unreliable airspeed.