

# virtualCondor

## Operations Manual “Route”

### *Boeing 757/767*



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## 1. Route Planning & Evaluation

### 1.1 Performance Calculation

virtualCondor fliegt ebenfalls wie das reale Vorbild anhand von wirtschaftlichen Rahmenbedingungen. Der Cost Index ist ein Ve

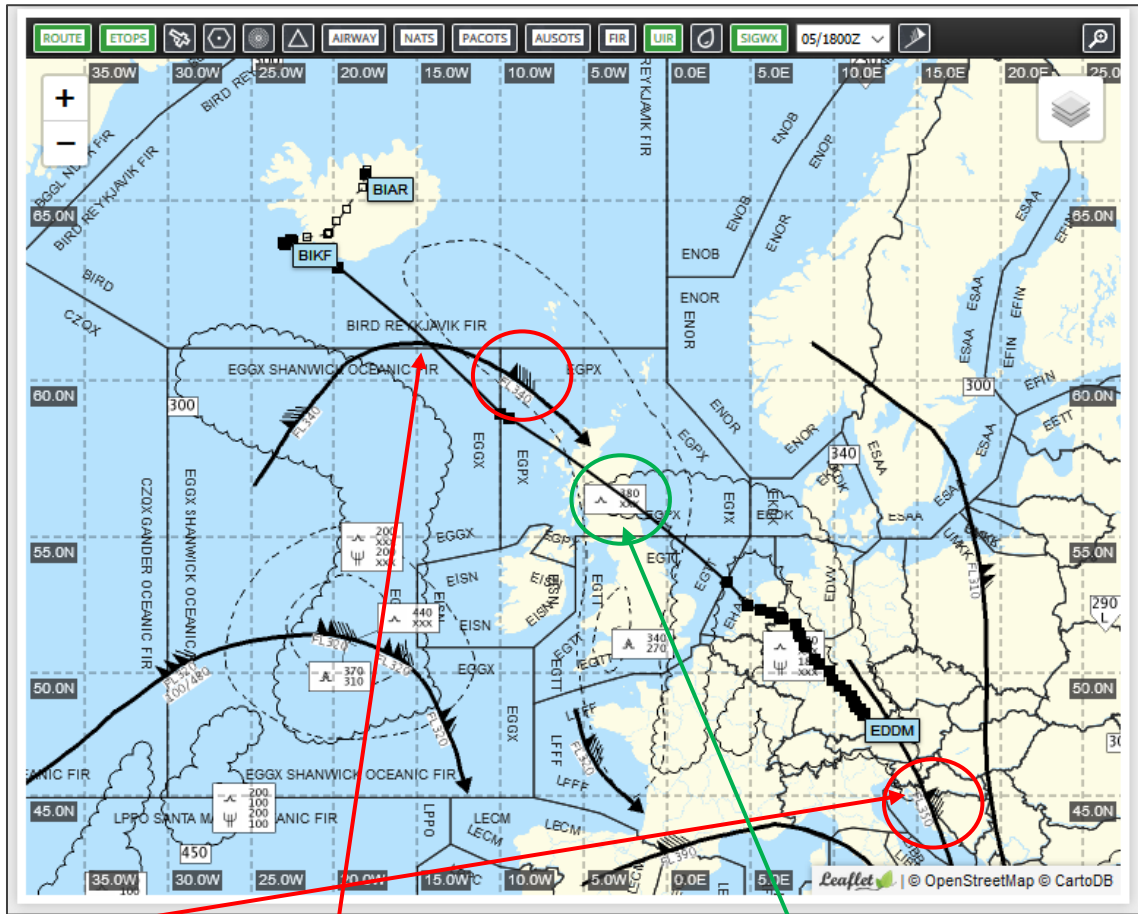
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## 1.2 Route Planning and Weather Analysis

Ensure that **Route**, **ETOPS** and **SIGWX** is shown and selected.

As seen in the related map below, the routing is calculated as follows:

GIVMI Y101 TALAL T159 PETIX Z744 WUR UL126 OSBIT Y101 TEKTU Z850 HMM UL602 SPY DCT TOPPA DCT NINEX UP59  
BALIX/M076F360 DCT VM DCT ASRUN



- (1) Jetstream with 90kts (2) Jetstream turning south of Keflavik [BIKF] (3) SIGWX XXX/380

### Analysis:

**Winds** (1) We will encounter heavy headwinds up to 100kts when joining our cruising flightlevel over Germany until we will leave the *Scottish FIR (EGPX)* (2) and enter *Reykjavik FIR (BIRD)*, where we will leave the Jetstream towards North-East and Keflavik.

**SIGWX** (3) Europe, as well as the whole routing above *Scottish FIR (EGPX)* is covered in a significant weather (SIGWX) area. In the whole area, moderate turbulence should be expected.

Moderate turbulence	Rain shower
Severe turbulence	Snow Shower
Moderate icing	Thunderstorm
Severe icing	Freezing rain
Rain	Tropical storm
Snow	Hurricane (Typhoon)
Drizzle	

(OPS)

## 1.3 Fuel Calculation

Fuel calculation is performed in accordance to EASA EU OPS 1 1.255 Fuel Policy).

For ETOPS flights, another column is added named **ETOPS/ETP**.

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Essential for fuel planning is the calculated routing (see above) and the related wind components / flight levels which are expected during the flight. For this flight, *Simbrief* calculated the following targets:

PLANNED FUEL			
FUEL	ARPT	FUEL	TIME
TRIP	KEF	12273	0404
CONT 5%		614	0012
ALTN	AEY	2162	0046
FINRES		2023	0045
MINIMUM T/OFF FUEL		17072	0548
EXTRA		700	0014
T/OFF FUEL		17772	0602
TAXI	MUC	238	0015
BLOCK FUEL	MUC	18010	
PIC EXTRA		.....	
TOTAL FUEL		.....	
REASON FOR PIC EXTRA		.....	

<b>TRIP</b>	<i>MUC-KEF</i>	EU OPS 1.255 (ii) (B)
<b>CONT 5%</b>	5% of the <b>TRIP</b>	EU OPS 1.255 (ii) (C) 1
<b>ALTN</b>	Additional fuel for <i>KEF-AEY</i>	EU OPS 1.255 (ii) (D)
<b>FINRES</b>	Reserve fuel for <i>45 minutes</i>	EU OPS 1.255 (ii) (C) 2
<b>MINIMUM T/O FUEL</b>	Should not be exceeded <u>prior departure</u>	
<b>EXTRA</b>	Extra Fuel on PIC discretion ( <i>Weather</i> )	EU OPS 1.255 (ii) (E)
<b>TAXI</b>	Fuel consumption <u>prior departure</u>	EU OPS 1.255 (ii) (A)
<b>BLOCK FUEL</b>	Summarization of all above mentioned items	

*Block fuel should be ordered + additional fuel for APU consumption prior taxi.  
Every additional fuel above 1000kg has to be noticed and explained in Remarks.*

## 1.4 Weight and Balance

To convert kilogram [kg] to pounds [lbs]: multiply [kg] by 2,205.

Example:

Grossweight [GW] 83.000kg \*2,205 = ~ 183000 lbs

	WEIGHTS -----			
	EST	MAX	ACTUAL	
PAX	147		.....	
CARGO	1.8		.....	
PAYLOAD	17.1		.....	
ZFW	77.3	83.5	.....	
FUEL	18.0	25.1	.....	POSS EXTRA 7.1
TOW	95.0	102.1	LDG.....	
STAB TRIM			.....	
LAW	82.8	89.8	.....	

<b>EST PAX</b>	Actual amount of boarded <i>passengers</i> (147)	
<b>EST CARGO</b>	Actual weight of <i>cargo</i> in tons	(1800kg)
<b>EST PAYLOAD</b>	Actual weight of <i>Pax + cargo</i> in tons	(18900kg)
<b>EST ZFW</b>	Actual aircraft weight without fuel	(77300kg)
<b>EST TOW</b>	Actual Take-Off Weight	(95000kg)

## 1.5 Enroute Alternates and Alternate Aerodromes

## 2. Flight Operation

### 2.1 Flight Management System (FMS) Setup

This chapter describes, in relation to the information given above, how to set-up the flight management system (FMS).

#### 2.1.1 Payload and Fuel

- (1) Insert *Fuel* in [kg] into RSK R4 [18.0]
- (2) Insert *Payload* [kg] into RSK R3 [18.9] [Cargo Weight + Payload Weight]

#### 2.1.2 Perf Init

The *Performance Page* (PERF INIT) gives the basis for each Take-Off and Cruise Performance Calculation.

- (1) Insert *Zero Fuel Weight* (ZFW) in [kg] into LSK 3L [77.3]
- (2) Insert *Reserves* into LSK 4L (FINRES in Fuel Calculation) [2.0]
- (3) Insert *Cost Index* into RSK 2L [16]
- (4) Insert *CRZ ALT* into RSK 1L (see initial Flightlevel in OFP) [FL360]

#### 2.1.3 Takeoff Ref

Flaps should be set as required by *Take-Off Weight, Temperature, Pressure, Airfield Elevation* and *Take-Off Run Available (TORA)*. Usually we distinguish between **Flaps 5** and **Flaps 15**. Long-Range flights with aircraft reaching the **MTOW** require regularly Flaps 15, whereas European flights are mainly conducted with Flaps 5 – if the above-mentioned influences allow those operations.

## 2.2 Enroute Alternates

Flights from and to *Keflavik* (BIKF) require special attendance to **alternate airports**.

As those flight are mainly performed over the **North Atlantic**, there are not many suitable airports in case you must divert for any reason.

You will have to monitor your flightpath and alternates by inserting them into your Flight Management System (FMS).

To remain **non-ETOPS** you should not exceed a range of **400nm** of your Alternate.

## 2.2.1 **Europa** Alternates

LGW, LHR, MAN, GLA, FRA, MUC, TXL, HAM, AMS, BRU, ZRH

- Edinburgh (**EGPH**)                    **Primary Alternate**
- Aberdeen (**EGPD**)                    Enroute Alternate
- Stornoway (**EGPO**)                    Enroute Alternate

## 2.2.2 **Scandinavian** Alternates

ARN, OSL, HEL, CPH

- Bergen (**ENBR**)                        **Primary Alternate**

## 2.2.3 **North America (East Coast)** Alternates

EWR, IAD, JFK, BOS, MCO, TPA, BWI

- Gander (**CYQX**)                        **Primary Alternate**
- Goose Bay (**CYYR**)                    Enroute Alternate
- Halifax (**CYHZ**)                        Enroute Alternate

## 2.2.4 **North America (West Coast and Canada)** Alternates

SFO, SEA, YYZ, YVR, MSP

- Sondre Stromfjor (**BGSF**)            **Primary Alternate**
- Iquali (**CYFB**)                        **Primary Alternate**
- Churchill (**CYYQ**)                    **Primary Alternate**
- Edmonton (**CYEG**)                    Enroute Alternate
- Vancouver (**CYVR**)                   **Primary Alternate**

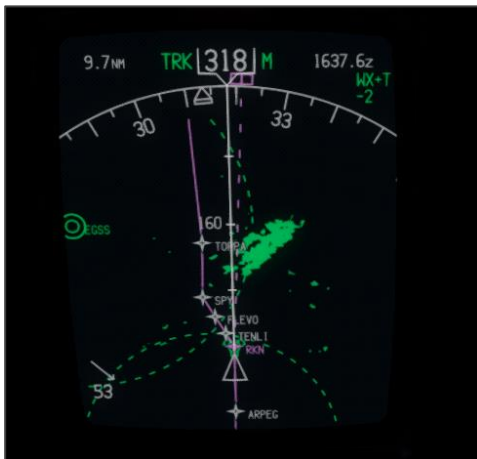
### 2.3 Enroute Alternate Inflight-Monitoring (FMS)



- (1) Select ICAO Code on LSK 1L (EGSS)
- (2) Insert “ /400 ” on LSK 2L to show a radius of 400nm on your EHSI

The *Electronic Horizontal Situation Indicator* (EHSI) should show the situation as follows. You should not exceed the predefined area of a maximum of 400nm of your alternates while maintaining **non-ETOPS**.

EHAM (Fix 1) and EGSS (Fix 2)



EGSS (Fix 1) and EGPD (Fix 2)



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