

Load Control

Weight and Balance

Introduction

The Travsys Weight and Balance (W&B) application is intended for load controllers to plan and load aircrafts.

The W&B application is getting its data from the Semi-Permanent database, the Flights database, IATA type-b messages, and finally by the operator input.

The Semi-Permanent database contains the information of each aircraft which is going to be managed by the W&B application. This data is extracted from the AHM50 or AHM560 document as provided by the aircraft manufacturer and aircraft owner.

The user can not make changes to the Semi-Permanent database. This database is managed by Travsys.

The Flights database contains the details of actual flights to be managed. Flights can be created by the operator or automatically by incoming messages.

After the loading of the aircraft is completed, the W&B application will generate the Load-sheet and other documents as well as the Load message to be send to the airline head office or to the next airport on the route of this flight.

The W&B application can send and receive IATA type-b messages via the T-MEC messaging server.

Semi Permanent Database

This is a read only database. All data is taken from the AHM50 manual of the aircraft.

Flight database

Flights can be created either manual by the operator or automatic by incoming messages.

Manual flight management

Select from the File menu, "New flight". The flight information has to be provided in terms of the airline, flight number, route, aircraft owner if different from operating carrier, aircraft configuration and registration. After these details have been provided a new flight record will be generated.

Automatic flight management

If an LDM message has been received previously, the flight record will be created automatically when the LDM has been imported into the W&B application.

The screenshot displays the Travsys Load and Balance Application interface for flight KL200/02JUN/2006. The interface is divided into several sections:

- Flight Section:** Contains fields for Operating Carrier (KL), Flight number (200), Flight date (02JUN/2006), and Charter status. It also includes STD (8:00:00 PM) and ETD (10:00:00 PM) times. A Control panel shows Flight Status as 'Open' and a Flight Control dropdown set to 'Close Flight'.
- Route Section:** A table showing the flight path from AMS to BGY, BLQ, and BRI. It also lists the captain for each destination: Anton van Zuyl, Anton van Zuyle, and Capt Johnson.
- Aircraft definition Section:** A table identifying the aircraft as a B777-200 (Registration: PHBQK, Cargo Config: 26/GC, Pax Config: A).
- Weight and Index Table:** A detailed table on the right side of the window listing various weight components and their corresponding indices. Key values include:

Item	Weight	Index
Basic Op.	0	0.0000
Crew	0	0.0000
Crew bags	0	0.0000
Pantrys	0	0.0000
Init Dry Op.	143000	30.0000
Crew Adjust	0	0.0000
Manual Adjust		
Dry Op.	143000	30.0000
Pax	1275	-0.2210
Pax cabin ba	340	-1.2971
Cargo	11872	14.2830
Zero fuel	156487	42.7649
Ramp fuel	100000	-9.0322
Ramp water	0	0.0000
Ramp	256487	33.7327
Taxi fuel	700	-0.3912
Take Off	255787	34.1239
Trip Fuel	90000	-8.3614
Landing	165787	42.4853
MAC ZFW		26.6618
MAC TOW		25.5248
MAC LAW		26.7269
STAB TO		0.0000

Loading

During the loading of the aircraft, the weight and Balance information is permanently updated in graphic as well as in numbers. Any number colored red is out of the specification.

Passengers

Depending on how the requirement of the airline are set, passengers can be loaded either per compartment or by seat row. By seat row is typical when passenger data is provided from the Departure control system.

Travsys Load and Balance Application - [Flight KL200/02JUN/2006 -- Regn:PHBQK Type:B777-200/26/GCA*]

File Details Load Reports Window Help

Arrival Departure

1: FLF 2: FLA

11P-PL (1090)M 12P
BRI:1000
120:1000

13R
13L (1000)
BLQ:1000
21:1000

21R-LD3 (5) 22R 23R 24R 25R
BRI:500
5:500.R

21L 22L-LD3 (6) 23L 24L 25L
BRI:600
6:600

Center of Gravity Limits:
Standard Conditions

	Weight	Index
Basic Op.	0	0.0000
Crew	0	0.0000
Crew bags	0	0.0000
Pantries	0	0.0000
Init Dry Op.	143000	30.0000
Crew Adjust	0	0.0000
Manual Adjust		
Dry Op.	143000	30.0000
Pax	1275	-0.2210
Pax cabin ba	340	-1.2971
Cargo	11872	14.2830
Zero fuel	156487	42.7649
Ramp fuel	100000	-9.0322
Ramp water	0	0.0000
Ramp	256487	33.7327
Taxi fuel	700	-0.3912
Take Off	255787	34.1239
Trip Fuel	90000	-8.3614
Landing	165787	42.4853
MAC ZFW		26.6618
MAC TOW		25.5248
MAC LAW		26.7269
STAB TD		0.0000

From	Dest	Type	Pax Se	Description	Seat R	A	C	I	Load Code	Compt	ULD	Qty	Weight	Pax I	Bags
BGY	BRI	D	0A	Cabin 0A	1	2			SOC						-0.6
BGY	BRI	D	0A	Cabin 0A	2	4									-1.2
BGY	BRI	D	0A	Cabin 0A	2	2			SOC						-0.6
BGY	BRI	D	0B	Cabin 0B	10	5									-0.7
BGY	BLQ	D	0E	Cabin 0E	44	6									1.82

Inbound errors
Outbound or Transit errors

05 Apr 2006 10:58:47 AM KL200/02JUN/2006 No 'drop' directory configured Import

Fuel

Based on the Captain's input fuel data is added to the aircraft weight

Travsys Load and Balance Application - [Flight KL200/02JUN/2006 -- Regn:PHBQK Type:B777-200/26/GCA*]

File Details Load Reports Window Help

Arrival Departure

1: FLF		2: FLA					
11P-PL 11090:M BRI:1000 120:1000	12P	13R	21R-LD3 I5 BRI:500 5:500:R	22R	23R	24R	25R
		13L - (1000) BLQ:1000 21:1000	21L	22L-LD3 I6 BRI:600 6:600	23L	24L	25L

Info

Center of Gravity Limits:

Standard Conditions		
	Weight	Index
Basic Op.	0	0.0000
Crew	0	0.0000
Crew bags	0	0.0000
Pantrys	0	0.0000
Init Dry Op.	143000	30.0000
Crew Adjust	0	0.0000
Manual Adjust		
Dry Op.	143000	30.0000
Pax	1275	-0.2210
Pax cabin ba	340	-1.2971
Cargo	11872	14.2830
Zero fuel	156487	42.7649
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Landing	165787	42.4853
MAC ZFW		26.6618
MAC TOW		25.5248
MAC LAW		26.7269
STAB TD		0.0000

Cargo Pax Fuel Crew and Parity Manual Adjust Show Outbound Load

	Average Fuel Density
Fuel Density	
Ramp Fuel	100000
Est. Taxi Fuel	700
Est. Trip Fuel	90000
Est. Take-Off Fuel	99300
Est. Landing Fuel	9300
Ramp Fuel Index	-9.0321959871111
Est. Taxi Fuel Index	-0.391216051555606
Est. Trip Fuel Index	-8.36138839786889
Est. Take-Off Fuel Index	-8.64097993555549
Est. Landing Fuel Index	-0.279591537686601

Inbound errors
Outbound or Transit errors

05 Apr 2006 10:59:10 AM KL200/02JUN/2006 No 'drop' directory configured Import!

Manual correction

For some instances, the operator has to have the possibility to correct the calculated data. Or to limit certain parameters of the aircraft due to weather conditions.

The screenshot displays the Travsys Load and Balance Application interface for flight KL200/02JUN/2006. The main window is titled "Travsys Load and Balance Application - [Flight KL200/02JUN/2006 -- Regn:PHBQK Type:B777-200/GCA*]".

The interface is divided into several sections:

- Arrival/Departure:** Shows flight details for two legs: 1: FLF and 2: FLA. It includes aircraft registration (BRI:1000, BRI:500, BRI:600), block numbers (120:1000, 21:1000, 6:600), and various status indicators (e.g., 11P-PL 11090:M, 112P, 113R, 21R-LD3 I5, 22R, 23R, 24R, 25R).
- Map:** A small map showing the flight path with waypoints LITOW (34.12,255787), LLAW (45.48,165287), and DOI (30.00,45000).
- Info Panel:** Displays "Center of Gravity Limits: Standard Conditions" and a table of weight and index values.
- Weight and Index Table:** A table with columns for "Weight" and "Index".
- Manual Adjust Section:** Includes tabs for "Cargo", "Pax", "Fuel", "Crew and Pantry", and "Manual Adjust". It shows "Changes to DOW" and "Changes to DOI".
- Errors Section:** Includes "Inbound errors" and "Outbound or Transit errors".
- Summary Table:** A table at the bottom right showing MAC ZFW, MAC TOW, MAC LAW, and STAB TD values.

	Weight	Index
Basic Op.	0	0.0000
Crew	0	0.0000
Crew bags	0	0.0000
Pantrys	0	0.0000
Init Dry Op.	143000	30.0000
Crew Adjust	0	0.0000
Manual Adjust		
Dry Op.	143000	30.0000
Pax	1275	-0.2210
Pax cabin ba	340	-1.2971
Cargo	11872	14.2830
Zero fuel	156487	42.7649
Ramp fuel	100000	-9.0322
Ramp water	0	0.0000
Ramp	256487	33.7327
Taxi fuel	700	-0.3912
Take Off	255787	34.1239
Trip Fuel	90000	-8.3614
Landing	165787	42.4853
MAC ZFW		26.6618
MAC TOW		25.5248
MAC LAW		26.7269
STAB TD		0.0000

At the bottom of the window, the status bar shows: 05 Apr 2006 10:59:35 AM KL200/02JUN/2006 No 'drop' directory configured Import!

Reports

Loadsheet

L O A D S H E E T		PREPARED BY		A P P R O V E D		EDNO
ALL WEIGHTS IN KILOGRAM		Renze Tilma		Anton van Zuylen		1
FROM / TO	FLIGHT	A/C REG	VERSION	CREW	DATE	TIME
BGY BLQ	KLM 200 /02	PHBQK	26/GCA	2/ 12	05Apr06	11:01
		WEIGHT	DISTRIBUTION			
LOAD IN COMPARTMENTS		11872	1/2090 5/1000	2/1240	3/910	4/6632
PASSENGER/CABIN BAG		1615	15/0/0	TTL 15	CAB	340
TOTAL TRAFFIC LOAD		13487	F/CY/M BLKD	0/4/0/11	SOC	0/4/0/0
DRY OPERATING WEIGHT		143000				
ZERO FUEL WEIGHT	ACTUAL	166487	MAX	200487	ADJ	
TAKE OFF FUEL		99300				
TAKE OFF WEIGHT	ACTUAL	255787	MAX	297556	L ADJ	
TRIP FUEL		90000				
LANDING WEIGHT	ACTUAL	165787	MAX	213188	ADJ	

BALANCE AND SEATING CONDITIONS
0A 4. 0B 5. 0C 0. 0D 0. 0E 6

LAST MINUTE CHANGES

DOI		30.00	DEST	SPEC	CL/CPT	+-WEIGHT
LIZFW	42.76	MACZFW	26.66			
LITOW	34.12	MACTOW	25.52			
STABTO	0.00					

UNDERLOAD BEFORE LMC **41769**

LMC TOTAL+-

CAPTAINS INFORMATION/NOTES

CG LIMITS	LITOW FWD	10.54	AFT	92.11
	LILAW FWD	25.07	AFT	64.53

CHECKED BY: _____

DELIVERY TIME: _____

LOADMESSAGE BEFORE LMC

LDM

KL200/02.PHBQK.26/GCA.2/12
 -BLQ.6/0/0.T5486.13L/1000.32R/170.41R/1658.42R/1658.5/1000
 .PAX/0/0/0/6.RCM/32R.RGX/41R
 -BRI.9/0/0.T6386.11P/1090.21R/570.22L/670.32L/270.33L/470
 .43L/1658.43R/1658.PAX/0/4/0/5.SOC/0/4/0/0.AVI/43R.RCX/32L
 .RSB/33L400.RXG/21R
 SI