



Product Description

PD-TS-020

Issue 2.2

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T-W&B - Aircraft Weigth and Balance application

Product Identity

Order code: 010200
Aircraft Weight and Balance application

Outline Description

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

The T-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 T-W&B application. This data is extracted from the AHM50 or AHM560 document as provided by the aircraft manufacturer and aircraft owner.

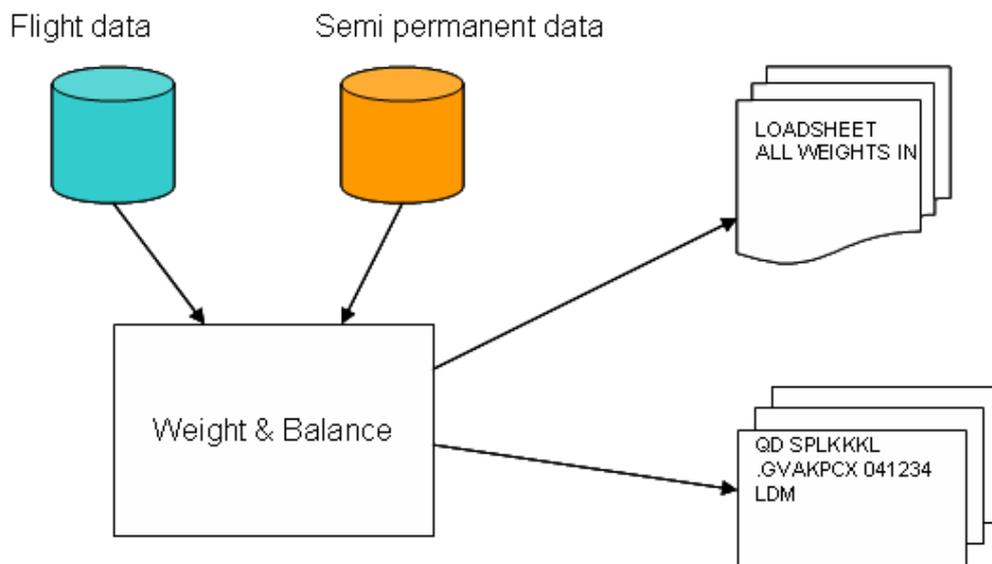
The user can not make changes to the Semi-Permanent database. This database is managed by Travsys.

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 T-W&B application will generate the Loadsheet 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.

Weight & Balance



General

Semi Permanent Database

This is a read only database. All data is taken from the AHM50 manual of the aircraft. The Semi Permanent Database contains data like: BOW, DOW, CG-Limits, and the effect of various loads on the balance 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 KL 200/02 JUN/2006. The interface is divided into several sections:

- Flight Information:** Operating Carrier (KL), Flight number (200), Flight date (02JUN/2006). Control panel shows Flight Status as "Open" and Flight Control as "Close Flight".
- Route:** A table showing the flight path from AMS to BGY, BLD, and BRI.
- Aircraft definition:** Aircraft Owner (KL), Aircraft Type (B777-200), Registration Number (PHBOK), Cargo Configuration (26/AC), and Pass Configuration (A).
- Weight and Index Table:** A table listing various load components and their corresponding weights and indices.

Center of Gravity Limits		
Standard Conditions		
	Weight	Index
Basic Op.	0	0.0000
Crew	0	0.0000
Crew bags	0	0.0000
Passes	0	0.0000
Inf. Bag Op.	143000	30.0000
Crew Adults	0	0.0000
Manual Adjust		
Dry Op.	143000	30.0000
Pax	1275	-0.2210
Pax cabin bag	340	-1.2971
Cargo	11872	-14.2830
Zero fuel	156487	42.7649
Ramp fuel	100000	-9.0322
Ramp water	0	0.0000
Ramp	156487	42.7649
Taxi fuel	700	-0.3912
Take Off	255787	34.1239
Trip Fuel	30000	-8.3614
Landing	165787	42.4853
MAC 20%		25.6618
MAC 70%		25.5248
MAC LAW		25.7269
STAR TO		0.0000

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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.

The initial load of the aircraft can be done with “Zero Fuel” to prepare the flight.

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:P9BQK Type:B777-200/26/GCA*]

Menu: File, Details, Load, Reports, Window, Help

Buttons: Arrival, Departure

Flight 1: FLF
 Flight 2: FLA

From	Dest	Type	Pax Se	Description	Seat R	A	C	I	Load Code	Const	ULD	Qty	Weight	Pax	Bagg
BGY	BRI	O	0A	Cabin 0A	1		2		50C					0.0	
BGY	BRI	O	0A	Cabin 0A	2		4							1.1	
BGY	BRI	O	0A	Cabin 0A	2		2		50C					0.6	
BGY	BRI	O	0B	Cabin 0B	10		5							0.7	
BGY	BLQ	O	0E	Cabin 0E	44		6							1.0	

Info
 Center of Gravity Limits
 Standard Conditions

	Weight	Index
Basic Op.	0	0.0000
Crew	0	0.0000
Crew bags	0	0.0000
Parkys	0	0.0000
Infl Dty Op.	143000	30.0000
Crew Adult	0	0.0000
Manual Adjst		
Dty Op.	143000	30.0000
Pax	1279	-0.2210
Pax cabin ba	340	-1.2971
Cargo	11872	14.2830
Zero fuel	156487	42.7648
Plano fuel	100000	-9.0322
Plano water	0	0.0000
Plano	255787	34.1239
Tail fuel	700	-0.3912
Tail Dty	255787	34.1239
Trip Fuel	90000	-8.3614
Landing	165787	42.4853
MAC ZFW		25.6618
MAC TOW		25.5248
MAC LADW		26.7269
STAR TO		0.0000

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Cargo

Cargo is placed in the aircraft hold by the loader either in bulk or on pallets or in containers. Special loads are identified according the AHM510

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

File Details Load Reports Window Help

Arrival Departure

1-FLF		2-FLA			
11FB (10000M) 1201000	12R	21B (500R) 5500R	22R	23R	24R
13L (10000) 211000	21L	22L (500) 5500	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
Passage	0	0.0000
Inf Dtg Op	143000	30.0000
Crew Adjust	0	0.0000
Manual Adjust		
Dw Dtg	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		
Tail fuel	700	-0.3912
Tail oil	255787	34.1239
Trip Fuel	30000	-8.3614
Landing	165787	42.4853
MAC ZFW		25.6618
MAC TDW		25.5248
MAC LADW		25.7269
STAR TO		0.0000

Cargo	Pax	Fuel	Class and Parity	Manual Adjust	ULD	Type	Load Code	Qty	Weight	Index
BGY	BLQ	0	13L	area 2.2				21	1000	2.377
BGY	BLQ	0	32R	area 4.5	LD3		RCM	1	100	0.127
BGY	BRI	0	32L	area 4.1	LD3		RCM	2	200	0.275
BGY	BLQ	0	41R	area 5.1	LD3		RCM	3	1588	3.640
BGY	BRI	0	33L	area 4.5	LD3		RSB	4	400	0.692
AMS	BRI	0	21R	area 3.1	LD3		R0G	5	500	1.332
BGY	BRI	0	22L	area 3.1	LD3			6	600	1.422
BGY	BRI	0	43L	area 5.1	LD3			7	1588	4.530
BGY	BLQ	0	42R	area 5.1	LD3		VAL	8	1588	4.215
BGY	BRI	0	43R	area 5.1	LD3	C	AMI	1	1588	4.651
RCV	BRI	0	11P	area 3.2	R	M		170	1070	3.329

Inbound errors

Outbound or Transit errors

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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					
11FB-1000M BRI 1000 1201000	13R	21B-101R BRI 500 5500R	22R	23R	24R	25R	
13-10000 BLQ 1000 211000	21L	23-101R BRI 500 5500	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
Pantries	0	0.0000
Infl Dpt Op	143000	30.0000
Crew Adjust	0	0.0000
Manual Adjust		
DW Dpt	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	34.1239
Tail fuel	700	-0.3912
Tail Oil	255787	34.1239
Trip Fuel	30000	-8.3614
Landing	165787	42.4853
MAC OPW		26.6618
MAC TDW		25.5248
MAC LZW		26.7269
STAR TO		0.0000

Cargo Pax Fuel Dew and Parity Manual Adjust Show Outbound Load

	Average Fuel Density
Fuel Density	
Ramp Fuel	100000
Est. Tail Fuel	700
Est. Trip Fuel	90000
Est. Take Off Fuel	39300
Est. Landing Fuel	3000
Ramp Fuel Index	0.002189387111
Est. Tail Fuel Index	0.281216051096036
Est. Trip Fuel Index	-8.36138815786988
Est. Take Off Fuel Index	0.004097003527548
Est. Landing Fuel Index	0.27989451086601

Inbound errors
Outbound or Transit errors

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Reports

One of the main reports to be printed with the Weight and Balance application is the Load Sheet. Other documents are available and if country specific reports are needed, these can be developed on request.

Loadsheet

(Sample)

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	4/8632
PASSENGER/CABIN BAG		1615	15/0/0	TTL 15	CAB	340
TOTAL TRAFFIC LOAD		13487	F/C/Y/M BLKD	0/4/0/11	SOC	0/4/0/0
DRY OPERATING WEIGHT		143000				
ZERO FUEL WEIGHT	ACTUAL	156487	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			LAST MINUTE CHANGES			
0A 4. 0B 5. 0C 0. 0D 0. 0E 6						
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	CHECKED BY: _____	
	LILAW FWD	25.07	AFT	64.53	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/0/0/0/5.RCM/32R.RGX/41R						
-BRI.9/0/0.T6386.11P/1090.21R/670.22L/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						

Hardware and Software Prerequisites

- Standard PC with Windows 7 or later
- MS-SQL Server
- Connection to the T-MEC server for IATA type-b message exchange

Trademarks

- T-W&B is a trademarks of Travsys BV
- **Windows** is a registered trademark of Microsoft Corporation.
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