

SUPPLEMENT 1
TO THE AIRPLANE FLIGHT MANUAL (AFM)
DA42 L360

NOSE FWD BULKHEAD BALLAST INSTALLATION

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Date of Approval



This Flight Manual Supplement 1 has been verified by the Transport Canada Civil Aviation (TCCA) Authority as primary certification authority in accordance with the valid certification procedures and is approved.

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0.1 RECORD OF REVISIONS

Revisions to this Supplement are recorded in the following table.

New or amended text will be indicated by a bold black vertical line in the left hand margin of a revised page. The Revision No. and Date will be shown on the footer of the page.

Revision No.	Affected Pages	Approved	
		Date	Name
Revision 0	All	02-Dec-09	Thomas Gretton Chief, Flight Test For, Director, Aircraft Certification Transport Canada
Revision 1	S1-3 to S1-28.		

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0.2 LIST OF EFFECTIVE PAGES

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2	DOT-approved	9-S1-11	23-May-12
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3	DOT-approved	9-S1-13	23-May-12
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CHAPTER 9

SUPPLEMENT 1

NOSE FWD BULKHEAD BALLAST INSTALLATION

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1. GENERAL

This Supplement 1 supplies the information necessary for the efficient operation of the DA42 L360 airplane when the Nose Fwd Bulkhead Ballast System is installed as an optional system. The information contained within this Supplement 1 is to be used in conjunction with the complete AFM.

This Supplement 1 to the AFM is provided to acquaint the pilot with the normal operating procedures and the weight and balance characteristics with the Nose Fwd Bulkhead Ballast System installed.

This Supplement 1 is a permanent part of this Manual and must remain in this Manual as long as the Nose Fwd Bulkhead Ballast System is installed.

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2. OPERATING LIMITATIONS

2.1 MASS WEIGHT

Only Diamond Aircraft part number C61-2550-106-001 can be installed in the nose ballast locations. Each cylindrical ballast is limited to 5.08 kg (11.2 lbs).

Ballast Cylinders may only be carried in the nose baggage area installed in the ballast locations or in the ballast case part number C61-2550-109-001 in the rear baggage compartment with the baggage net installed.

2.2 LIMITATION PLACARDS

The placard related to the Nose Fwd Bulkhead Ballast System is shown below. A list of all placards is included in the Aircraft Maintenance Manual (D42L-AMM-001), Chapter 11 or in the Airplane Maintenance Manual (Doc. No. 7.02.01), Chapter 11.

NOTE

Aircraft Maintenance Manual (D42L-AMM-001) supplements the Airplane Maintenance Manual (Doc. No. 7.02.01).

On each cylindrical ballast: The placard comes with the cylindrical ballast.

<p>Ballast</p> <p>Mass=5.08 kg (11.2 lbs)</p>

On each nose baggage door, above the baggage weight limit placard.

<p>Max. Ballast Mass:</p> <p>6 x 5.08 kg = 30.5 kg [67.2 lb]</p> <p>C61-1133-102-001</p>

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3. EMERGENCY PROCEDURES

No Change.

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4A. NORMAL OPERATING PROCEDURES

4A.1 CHECKLISTS FOR NORMAL OPERATING PROCEDURES

4A.1.1 PRE-FLIGHT INSPECTION

- (a) Front fuselage and nose landing gear:
- (1) Make sure that the cylindrical ballasts are secure and all of the ballast clamps are closed.
- (b) Installation of the cylindrical ballasts:

CAUTION

THE PILOT IS RESPONSIBLE FOR LOADING OF THE CYLINDRICAL BALLASTS, TO MAKE SURE THAT THE CENTER OF GRAVITY REMAINS WITHIN THE DEFINED LIMITS THROUGH ALL FLIGHT PHASES AND MAXIMUM LOADING IS NOT EXCEEDED.

- (1) Open the nose baggage compartment doors.
- (2) Open the applicable cylindrical ballast clamp.

NOTE

If both ballast mounting bracket assemblies are installed and loaded, it is recommended that the cylindrical ballasts be loaded symmetrically starting from the center of the aircraft.

- (3) Align the holes in the cylindrical ballast with the dowel pins on the ballast mounting bracket.
- (4) Carefully slide the cylindrical ballast fully forward to fit into the dowel pins.

CAUTION

DO NOT BEND THE BALLAST CLAMP MORE THAN NECESSARY WHEN THE CYLINDRICAL BALLAST IS PUT INTO PLACE ON THE BASEPLATE. THE CLAMP COULD BE DAMAGED IF IT IS BENT TOO MUCH.

- (5) Close the ballast clamp. Make sure that the cylindrical ballast is correctly attached.
 - (6) Close the nose baggage compartment doors.
- (c) Removal and storage of the cylindrical ballasts:
- (1) Open the nose baggage compartment doors.

CAUTION

DO NOT LET THE CYLINDRICAL BALLAST FALL OR HIT THE SURROUNDING STRUCTURE. THE CYLINDRICAL BALLAST IS HEAVY AND COULD DAMAGE THE AIRCRAFT STRUCTURE.

- (2) Open the applicable cylindrical ballast clamp.
- (3) Carefully remove the cylindrical ballast.
- (4) Put the cylindrical ballast in the padded case provided with the aircraft.
- (5) Close the cylindrical ballast clamp.
- (6) Close the nose baggage compartment doors.

4B. ABNORMAL OPERATING PROCEDURES

No Change.

5. PERFORMANCE

No Change.

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6. MASS AND BALANCE

6.1 CALCULATION OF LOADING CONDITION

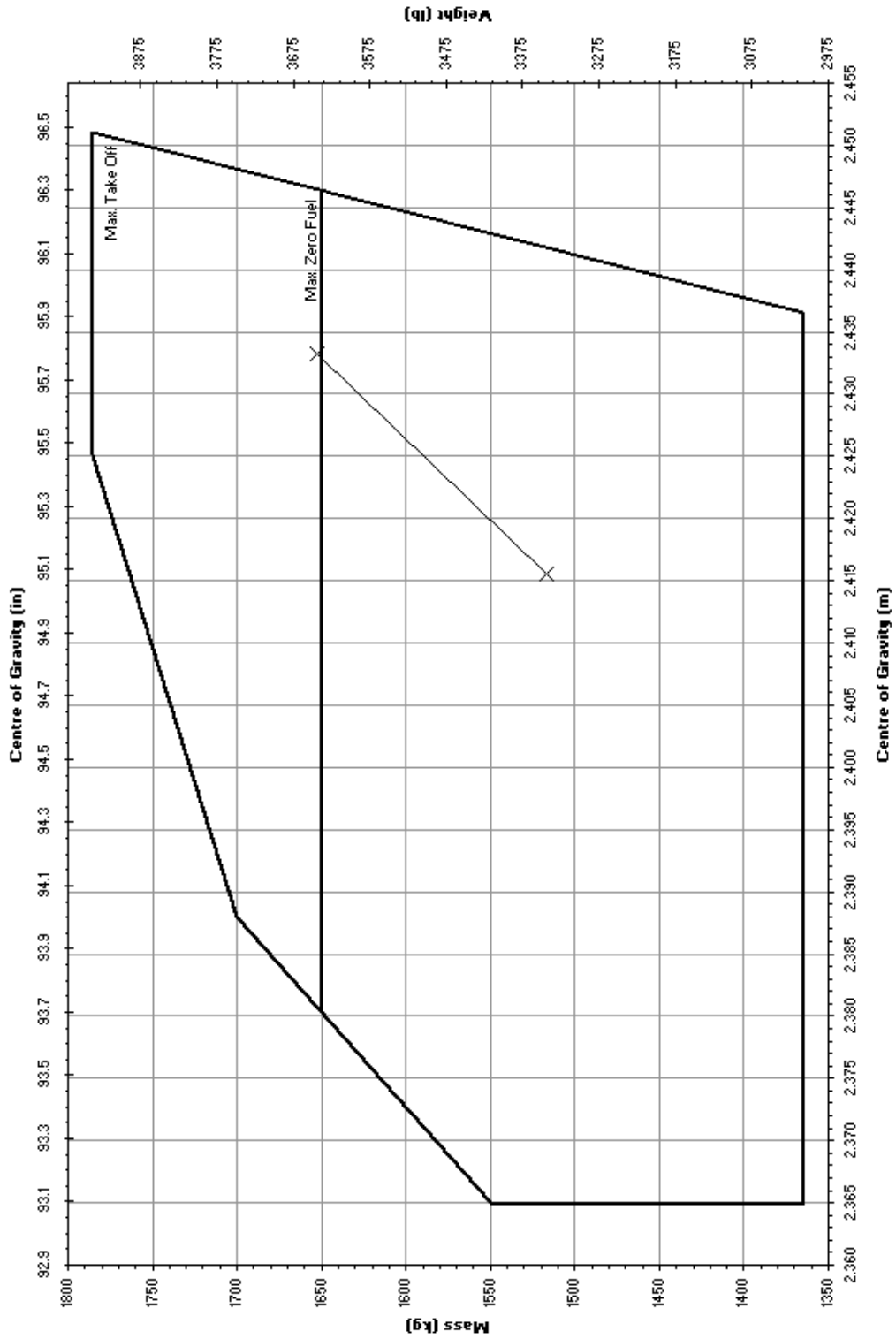
CALCULATION OF LOADING CONDITION	DA42 L360 (EXAMPLE)			Your DA42 L360		
	Mass (Weight)	CG	Moment	Mass (Weight)	CG	Moment
	(kg) (lb)	(m) (in)	(kg.m) (in.lb)/1000	(kg) (lb)	(m) (in)	(kg.m) (in.lb)/1000
1. Empty Mass (from Mass & Balance Report)	1252	2.408	3014			
	2760	94.78	262			
2. Front Seats	163	2.300	376		2.300	
	360	90.55	33		90.55	
3. Rear Seats	82	3.250	265		3.250	
	180	127.95	23		127.95	
4. Nose Baggage Compartment	15	0.600	9		0.600	
	33	23.62	1		23.62	
5. DA42L Cylindrical Ballast EACH - Adjustable	5	0.065	0		0.065	
	11	2.56	0		2.56	
6. Cockpit Baggage Compartment	0	3.890	0		3.890	
	0	153.15	0		153.15	
7. Baggage Extension	0	4.540	0		4.540	
	0	178.74	0		178.74	
8. De-icing Fluid (if installed) (1.1 kg/L) (9.2 lb/USG)	0	1.000	0		1.000	
	0	39.37	0		39.37	
9. Zero Fuel Mass (Weight) (Total of 1. through 8.)	1517	2.416	3664			
	3344	95.10	318			

CALCULATION OF LOADING CONDITION	DA42 L360 (EXAMPLE)			Your DA42 L360		
	Mass (Weight)	CG	Moment	Mass (Weight)	CG	Moment
	(kg) (lb)	(m) (in)	(kg.m) (in.lb)/1000	(kg) (lb)	(m) (in)	(kg.m) (in.lb)/1000
10. Usable Fuel Main Tanks (0.72 kg/L) (6.02 lb/USG)	1364	2.630	358		2.630	
AVGAS 100 (0.70 kg/L) (5.84 lb/USG)	300	103.54	31		103.54	
11. Usable Fuel Auxiliary Tanks (0.72 kg/L) (6.02 lb/USG)	0	3.200	0		3.200	
AVGAS 100 (0.70 kg/L) (5.84 lb/USG)	0	125.98	0		125.98	
12. Ramp Weight Total of 9. through 11.)	1653	2.433	4022			
	3644	95.80	349			

6.2 PERMISSABLE CENTER OF GRAVITY RANGE

The Centre of Gravities shown in the diagram on the next page are those from the example in the Table “CALCULATION OF LOADING CONDITION”, rows 9 and 12.

The flight Centre of Gravity (CG) position must be within the limits stated in Chapter 2.



6.3 EQUIPMENT LIST AND EQUIPMENT INVENTORY

All equipment that is approved for installation of the Nose Fwd Bulkhead Ballast in the DA42 L360 is shown in the Equipment List that follows.

The items of equipment installed in your particular airplane are indicated in the appropriate column. The set of items marked as 'installed' constitutes the Equipment Inventory.

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Airplane Serial No.:	Registration:		Date:	Mass		Lever Arm	
Description	Type	Manufacturer	Installed	lb	kg	in	m
NOSE FWD BULKHEAD BALLAST SYSTEM		Diamond Aircraft					
DA42L Ballast System – LH Fixed Provisions		Diamond Aircraft		3.86	+1.75	2.56	+0.065
DA42L Ballast System – RH Fixed Provisions		Diamond Aircraft		3.86	+1.75	2.56	+0.065
DA42L Cylindrical Ballast EACH - Adjustable		Diamond Aircraft		11.20	+5.08	2.56	+0.065

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7. DESCRIPTION OF THE AIRPLANE AND SYSTEMS

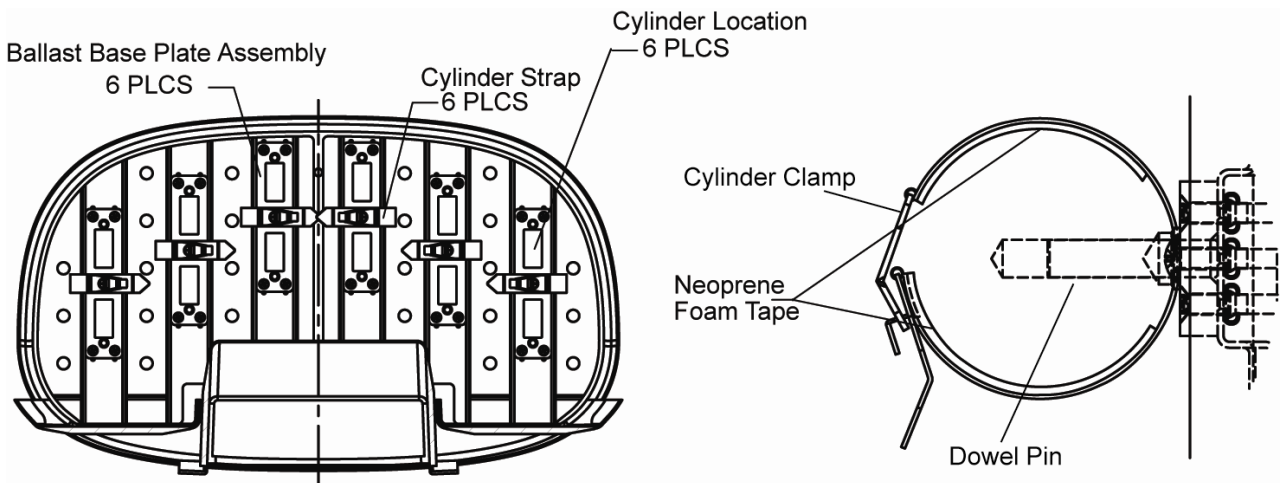
7.1 BAGGAGE COMPARTMENT

7.1.1 BALLAST INSTALLATION

A ballast assembly has been installed within the nose baggage bay area of the aircraft for identified loading configurations in order to maintain the specified aircraft centre of gravity envelope. The ballast assembly installed can be comprised of one ballast mounting bracket, installed on only the left hand side of the aircraft or two ballast mounting brackets, installed on the left hand side and the right hand side of the aircraft.

Each ballast mounting bracket weighs 1.81 kg (3.90 lbs) and can be loaded with up to three cylindrical ballasts. The cylindrical ballasts each weigh 5.08 kg (11.20 lbs). Both ballast mounting brackets loaded with three cylindrical ballasts will give a total weight of 34.10 kgs (75.00 lbs).

The ballast assembly permits the pilot to maintain the weight limits and C of G for the DA42 L360 at all payload configurations. The necessity to install, remove or relocate cylindrical ballasts on the mounting bracket(s) will be determined by weight and balance calculations before flight.



Ballast Mounting Brackets and Cylindrical Ballast Clamps

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8. **AIRPLANE HANDLING, CARE AND MAINTENANCE**

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