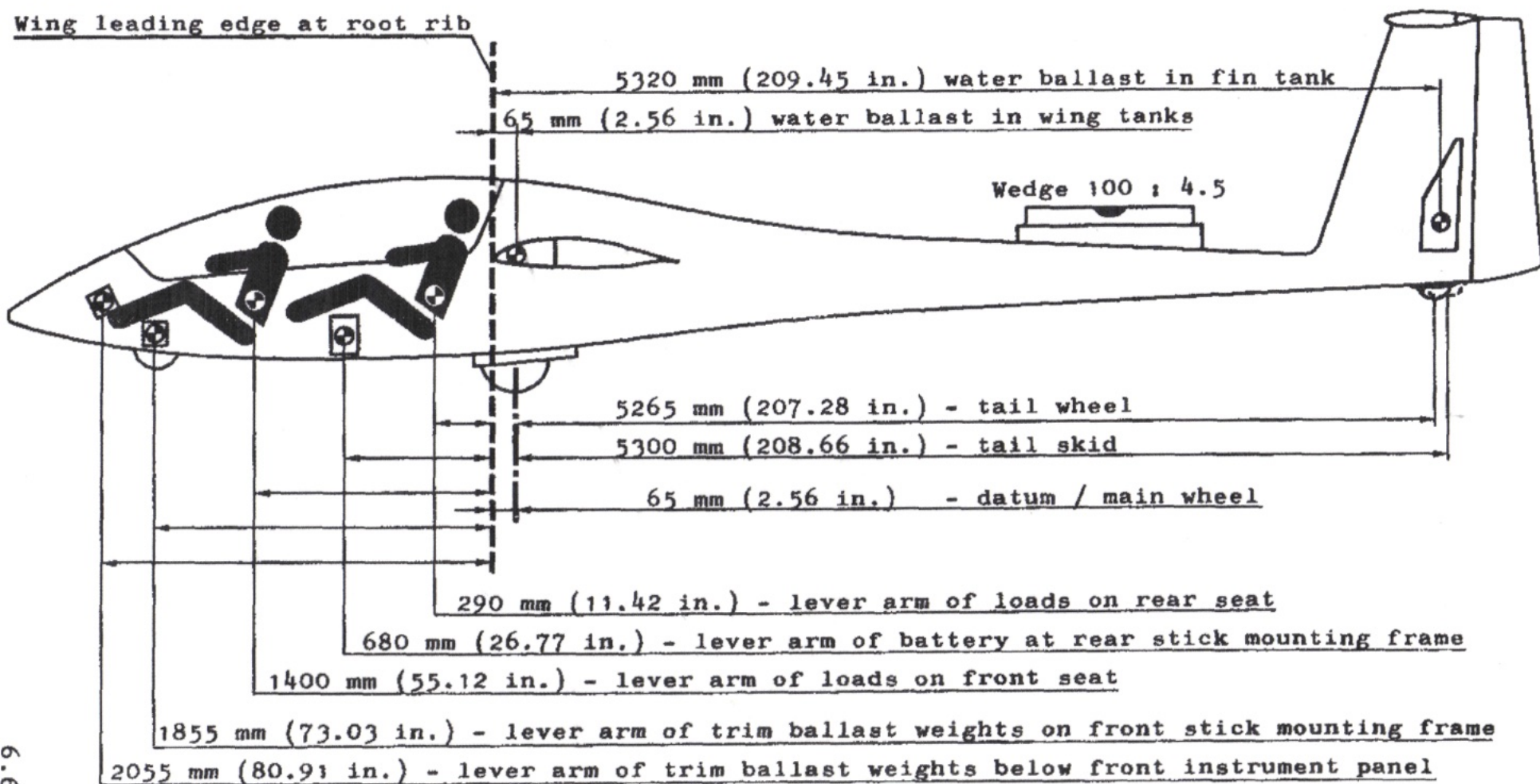


Arm of Front Panel = -72 inches

Arm of Rear Panel = -26 inches

Datum:

Wing leading edge at root rib



WEIGHT & BALANCE

Duo Discus

s/n: 217

N-57CG

Date: July 28, 1998

Datum: Leading Edge Of Wing At Fuselage
Location Of Front Instrument Panel: -72 inches
Location Of Rear Instrument Panel: -26 inches

<u>Item</u>	<u>WT (lbs)</u>	<u>Arm (inches)</u>	<u>Mom (lb-in)</u>
Empty Weight - Factory	898.0	+20.69	+18578.70
Remove Front Flt Test Panel	-7.7	-72.0	+ 554.40
Remove Rear Flt Test Panel	-3.3	-26.0	+ 85.80
Remove Flt Test Batteries	-10.6	-26.77	+ 283.76
<u>ADD TO FRONT COCKPIT</u>			
Front Panel	1.0	-72.0	- 72.00
Altimeter	1.4	-73.3	- 102.62
Airspeed Indicator	.5	-73.0	- 36.50
Compass	.3	-74.0	- 22.20
Winter Vario	.35	-72.8	- 25.48
CAI L-Nav Master Unit	1.5	-75.9	- 113.85
L-Nav Vario Display	.6	-72.8	- 43.68
CAI GPS Display	.2	-72.0	- 14.40
Microair Radio	1.1	-74.6	- 82.06
Microair Boom Mike	.35	-47.0	- 16.45
Terra Transponder	1.8	-76.8	- 138.24
Altitude Encoder	.4	-97.0	- 38.80
Transponder Antenna	.2	-82.0	- 16.40
<u>ADD TO REAR COCKPIT</u>			
Rear Panel	1.0	-26.0	- 26.00
Altimeter	1.4	-27.3	- 38.22
Airspeed Indicator	.5	-27.0	- 13.50
Winter Vario	.35	-26.8	- 9.38
CAI L-Nav Repeater	.5	-26.6	- 3.30
L-Nav Vario Display	.6	-26.8	- 16.08
CAI GPS-Nav Recorder	.8	-27.9	- 22.32
CAI GPS Display	.2	-26.0	- 5.20
Microair Boom Mike	.35	- 1.0	- .35
Gear Warning	.1	-30.0	- 3.00
<u>MISCELENEOUS ADDITIONS</u>			
Radio Speaker	Included in A/C Empty Wt	-30.0	
Battery #1	5.8	-26.8	- 155.44
Battery #2	5.8	-26.8	- 155.44
Vario Flask, .45 lt	.35	+39.0	+ 13.65
Vario Flask, .45 lt	.35	+39.0	+ 13.65
Vario Flask, .45 lt	.35	+39.0	+ 13.65
=====			
TOTALS	904.55		+18372.70

18372.70

Empty Wt CG = $\frac{18372.70}{904.6}$ = 20.3 inches aft of datum

904.6

At an empty weight of 904.6 pounds and an empty weight CG of 20.3 inches aft of the datum, the flight CG will be within limits when using the placarded minimum and maximum front seat weights of 154 pounds and 243 pounds as shown on page 6.4.3 of the Maintenance Manual.

The flight CG will also be within limits if the maximum weight on the tailskid does not exceed 78.3 pounds with the minimum cockpit load of 154 pounds as shown on page 6.4.2 of the Maintenance Manual.

The minimum cockpit load of 154 pounds may be reduced by 11 pounds for each of three 8.2 pound trim ballast weights installed at the nose trim ballast weight location.

- Maximum Permitted Weight (No Water Ballast): 1455 pounds
- Maximum Permitted Weight (With Water Ballast): 1543 pounds
- Maximum Permitted Weight Of Non-Lifting Parts: 970 pounds
- Weight Of Wings: 442 pounds
- Maximum Payload: 528 pounds

The Maximum Permitted Weight Of Non-Lifting Parts will not be exceeded if the total weight of payload (including trim ballast, tail ballast, and baggage) is less than 528 pounds.

- Forward Flight CG Limit: + 1.77 inches aft of the datum
- Aft Flight CG Limit: + 9.84 inches aft of the datum

Minimum Cockpit Weight (Solo) for flight CG On Aft CG Limit (for information only)

$$\text{Minimum Cockpit Weight} = \frac{904.6(9.84 - 20.3)}{(-55.12 - 9.84)} = 145.7 \text{ pounds}$$

- Location Of Front Seat: -55.12 inches
- Location Of Wing Ballast: + 2.56 inches
- Location Of Rear Seat: -11.42 inches
- Location Of Tail Ballast: + 209.45 inches

To Determine Flight CG With Water Ballast Use The Following Equation:

$$CG_{\text{WATER}} = \frac{(18372.7) + (WT_{\text{WING BAL}} * 2.56) + (WT_{\text{TAIL BAL}} * 209.45) - (WT_{\text{PILOT 1}} * 55.12) - (WT_{\text{PILOT 2}} * 11.42)}{(904.6 + WT_{\text{WING BAL}} + WT_{\text{TAIL BAL}} + WT_{\text{PILOT 1}} + WT_{\text{PILOT 2}})}$$

Calculations by: Duane Eisenbeiss

Approved by: _____ A&P No: _____

Signature: _____ Date: _____

EQUIPMENT LIST

Duo Discus

s/n: 217

N-57CG

Date: July 28, 1999

The following items are in addition to the items shown on the Equipment List supplied by the manufacturer (dated June 23, 1999) which are included in the empty weight as determined by the manufacturer before export.

<u>INSTRUMENT</u>	<u>WEIGHT - lbs</u>	<u>LOCATION - inches</u>
<u>FRONT PANEL</u>		
Altimeter	1.4	-73.3
Airspeed Indicator	.5	-73.0
Compass	.3	-74.0
Winter Vario	.35	-72.8
CAI L-Nav Master Unit	1.5	-75.9
L-Nav Vario Display	.6	-72.8
CAI GPS Display	.2	-72.0
Microair Radio	1.1	-74.6
Microair Boom Mike	.35	-47.0
Terra Transponder	1.8	-76.8
Encoder	.4	-97.0
Transponder Antenna,	.2	-82.0
<u>REAR PANEL</u>		
Altimeter	1.4	-27.3
Airspeed Indicator	.5	-27.0
Winter Vario	.35	-26.8
CAI L-Nav Repeater	.5	-26.6
L-Nav Vario Display	.6	-26.8
CAI GPS-Nav Recorder	.8	-27.9
CAI GPS Display	.2	-26.0
Microair Boom Mike	.35	- 1.0
Gear Warning	.1	-30.0
<u>MISCELENEOUS</u>		
Radio Speaker	Included in A/C Empty Wt	-30.0
Battery #1	5.8	-26.8
Battery #2	5.8	-26.8
Vario Flask, .45 lt	.35	+39.0
Vario Flask, .45 lt	.35	+39.0
Vario Flask, .45 lt	.35	+39.0