

LAKE AIRCRAFT DIVISION
CONSOLIDATED AERONAUTICS INC.
AIRPLANE FLIGHT MANUAL
MODEL LA-4-200

FAA Approved

for James R. Musachio
for JACK A. SAIN, Chief, Eng.
& Mfg. Branch, ANE-210

Date July 11, 1960

Reissued December 28, 1973

Revised May 9, 1975

LAKE AIRCRAFT DIVISION
CONSOLIDATED AERONAUTICS, INC.

MODEL LA-4-200
LOG OF REVISIONS TO
AIRPLANE FLIGHT MANUAL

The issue dated December 28, 1973, includes Revision 1 through 10 to the original issue which pertain to the LA-4-200 only.

<u>NO.</u>	<u>PAGES</u>	<u>DESCRIPTION</u>	<u>DATE</u>	<u>FAA APPROVED</u>
11	1,2,3,4	Revision to Supplement 4; Addition of Supplement 5; Editorial change to fuel grade		<i>Louis R. Musacchio</i> LOUIS R. MUSACCHIO Chief, Engineering and Manufacturing Branch, ANE-210

FAA APPROVED

Date December 28, 1973

Revised May 9, 1975

LAKE AIRCRAFT DIVISION
 CONSOLIDATED AERONAUTICS, INC.

MODEL LA-4-200

LOG OF SUPPLEMENTS TO
AIRPLANE FLIGHT MANUAL

<u>NO.</u>	<u>PAGES</u>	<u>TITLE</u>	<u>DATE</u>	<u>FAA APPROVED</u>
1	1	Differential Gear Installation	Dec. 28, 1973	JACK A. SAIN Chief, Engineering and Manufacturing Branch, ANE-210
2	1	Janitrol Heater Installation		
3	1	Bilge Pump Installation		
4	2	Auxiliary Fuel System	Dec. 28, 1973 Revised: May 9, 1975 July 18, '75 July 26, '76	EUGENE L. TURNER for Chief, Engineer- ing and Manufacturing Branch, ANE-210
5	1	Stewart-Warner Heater Instal- lation	Feb. 27, 1975 Revised: Oct. 21, '76	<i>for Eugene L. Turner</i> LOUIS R. MUSACCHIO Chief, Engineering and Manufacturing Branch, ANE-210

FAA Approved

Date December 28, 1973

Revised October 21, 1976

LAKE AIRCRAFT DIVISION
CONSOLIDATED AERONAUTICS, INC.
MODEL LA-4-200
AIRPLANE FLIGHT MANUAL

THIS DOCUMENT MUST BE KEPT IN AIRPLANE AT ALL TIMES

AIRPLANE SERIAL NO. 829

FAA IDENT. NO. N6176K

I. LIMITATIONS

The following limitations must be observed in the operation of this airplane.

Engine: Lycoming IO-360-A1B, 200 HP, 2700 RPM full throttle.

Fuel: 100/130 octane aviation gasoline.

Propeller: Hartzell hub/blade HC-C2YK-1BL/L7666-2 or L7666A-2 or
HC-C2YK-1BLF/FL7666A-2

Diameter 74" maximum, 72" minimum
Pitch 14° minimum low pitch, 27° to 31° high pitch.
Pitch range measured at 30" blade station.

Note: Avoid continuous operation between 2100 and 2300
RPM

Maximum Weight: 2600 Lbs.

C.G. Range:	Weight Pounds	Forward Limit Aft of Datum	Aft Limit Aft of Datum
	2600	102.5	106.0
	1950	102.5	108.0

Straight line variation between points given. See attached loading schedule. Datum is Station 0, which is 90.75 inches forward of the wing leading edge at the side of the hull.

Note: It is the responsibility of the airplane owner and pilot to insure that the airplane is properly loaded.

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Power Instruments: Green Arc - Normal Operating Range
Yellow Arc - Caution Range
Red Line - Maximum or minimum

- (a) Oil temperature: Red line at 245°F
- (b) Oil Pressure: Green Arc 60 to 100 PSI
Yellow Arc 25 to 60 PSI
Red Line 25 PSI min, 100 PSI max.
- (c) Fuel Pressure: Green Arc 14 to 30 PSI
Red Line, 14 PSI min, 30 PSI max.
- (d) Tachometer: Green Arc 500 to 2700 RPM
Yellow Arc 2100 to 2300 RPM
("avoid" range)
Red Line 2700 RPM

Airspeed: Never Exceed -----146 MPH CAS
Max. Structural Cruising-----122 MPH CAS
Maneuvering-----121 MPH CAS
Gear & Flap Extension-----125 MPH CAS

Instrument Markings:

Red Line: Maximum safe airspeed
Yellow Arc: Range of speed in which operation should be conducted with caution in smooth air.
Green Arc: Normal operating speed range
White Arc: Range in which flap and gear may be safely lowered.

Note: Maneuvers involving approach to stalling angle or full application of control surfaces should be confined to speeds below maneuvering speed.

Flight Load Factors: Max. positive-----3.8
Max. negative-----No inverted maneuvers approved
No acrobatic maneuvers are approved for Normal Category operations.

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AIRPLANE FLIGHT MANUAL

Trim Tab System: Two interconnected hydraulically operated trim tabs operate independently of the elevator. A green arc on the trim indicator denotes the trim range to be used for takeoff.

CAUTION

Do not use full nose up trim for takeoff in the most aft C.G. reduced weight condition, since engine failure would result in the inability to pitch the nose down when the gear flaps are retracted.

II. PROCEDURES

- Hydraulic System:
1. In normal operation, hydraulic pressure is maintained by an electric pump when the pump switch is in the ON position.
 2. For emergency operation, hydraulic pressure may be maintained by use of the emergency hand pump.
 3. The handle of the emergency pump should be approximately parallel to the floor when not in use.

MAX 1500
RELIEF VALVE
1300

PRESS SWITCH
900 - 1200

Fuel System: Boost pump may be required to maintain fuel pressure above 11000 feet.

III. PERFORMANCE

Climb: Best rate of climb speeds:
Gear & Flaps Down 65 MPH, TIAS
Gear & Flaps Up 85 MPH, TIAS

Flaps: Use full flap for takeoff and landing.

Stalls: Stall speeds:
Gear & Flaps up, power on 52 MPH, TIAS
power off 52 MPH, TIAS
Gear & Flaps down, power on 45 MPH, TIAS
power off 45 MPH, TIAS

A power off stall may cause a 250 foot loss of altitude.

Trim: Trim change with power change in this airplane is unconventional in that the nose will tend to pitch DOWN with application of power, and UP with reduction of power.

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MODEL LA-4-200

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Water Operation: Maximum demonstrated wave height for water operations is 12 inches (trough to crest). This figure does not necessarily represent the limiting value for the aircraft.

Operation into waves of any height depends on the judgement of the pilot concerning aircraft loading, wind conditions, wave height and form, and his own level of skill.

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LAKE AIRCRAFT DIV.
CONSOLIDATED AERONAUTICS, INC.

Page 1 of 3

EQUIPMENT LIST

Airplane Serial No. 829 Registration No. N6176V Date 4-22-77

MODEL LA-4-200

		Weight (lbs)	Arm (Inches)
<u>Propeller Accessories</u>			
1.	<u>V</u> (a) Hartzell F-2 hydraulic governor	6	+109
	___(b) Woodward C210105 hydraulic governor	3	+109
<u>Engine Accessories-Fuel and Oil Systems</u>			
101.	<u>V</u> (a) Starter, Prestolite MZ-4206 or MZ-4218 12V	17	+130
102.	<u>V</u> (a) Fuel pump, engine driven, AC No. 6440296, type JT	3	+112
103.	<u>V</u> (a) Fuel pump, electric, Dukes Aeronautics 4140-00-19A	2	+109
104.	___(a) Oil cooler, Harrison 8523517	2.1	+118
	___(b) Oil cooler, Harrison 8526250	1.8	+118
	<u>V</u> (c) Oil Cooler, Stewart Warner 8406J	2.2	+118
105.	<u>V</u> (a) Vacuum pump, dry air, Airborne Mechanisms 211CC	1.8	+109
	___(b) Vacuum pump, dry air, Airborne Mechanisms 200CC	4	+109
	___(c) Vacuum pump, dry air, Airborne Mechanisms 113A5	4	+109
<u>Landing Gear</u>			
201.	___(a) Main wheel, Goodyear Model PD932-1. Wheel Assembly 9532111 and Brake Assembly 9532181.	20	+122
	___(b) Main wheel, Goodyear Model PD932-2. Wheel Assembly 9532522 and Brake Assembly 9532181.	20	+122
	___(c) Main wheel, Goodyear Model PD932-4. Wheel Assembly 9532673 and Brake Assembly 9532181.	20	+122
	___(d) Main wheel, Cleveland Aircraft Products, Wheel Assembly 40-74 and Brake Assembly 30-51.	22	+122
	<u>V</u> (e) Main wheel, Gerdes Products, Assy. #1960, A-1780 Wheel Assembly & A-1870-4 Brake Assembly	21	+122
202.	<u>V</u> (a) Tire, main wheel, 6.00-6 4 ply rating type III, with tube or tubeless.	8	+122

Revised 4-12-76
" 6-21-76

EQUIPMENT LIST

LA-4-200
Page 2 of 3

Airplane Serial No. 829 Registration No. N6176V Date 4-22-77

		Weight (lbs)	Arm (Inches)
205:	(a) Nose wheel, Goodrich Model 463A, Assembly No. D-3-1-163A (5.00-4)	4	+18
	(b) Nose wheel, Aerofab 2-4417-1 (5.00-4)	4	+18
	(c) Nose wheel, Aerofab 2-4421-1 (5.00-5)	8	+18
	<u>V</u> (d) Nose wheel, Gerdes Products All400 (5.00-5)	4	+18
206.	(a) Tire, nose wheel, 5.00-4, 4 ply rating, type III, with tube	6	+18
	<u>V</u> (b) Tire, nose wheel, 5.00-5, 4 ply rating, type III, with tube	6	+18

Electrical Equipment

301.	(a) Battery, Exide AC60MV, or AC78MV, 12V	27	+112
	(b) Battery, Sonotone CA-24, 12V	27	+112
	<u>V</u> (c) Battery, Prestolite Rebat R-35M	27	+112
302.	<u>V</u> (a) Alternator, Prestolite ALY-8403, or ALY 8420 12V, 60A, with voltage regulator VSF 7202 or VSF 7203.	13	+133
303.	<u>V</u> (a) Landing or Taxi light, GE 4509	1	+96
304.	(a) Anti-collision light, Grimes D7080	2	+262
	(b) Anti-collision light, Plitelite FL-12	1	+262
	(c) Rotating beacon, Whelen WRML-12	1.8	+262
	(d) Rotating Beacon, Grimes 40-0200-5	1	+262
	<u>V</u> (e) Strobe Light, Whelen A430-D w/A490, T-14 Power Supply	1.4	+262

Interior Equipment

401.	<u>V</u> (a) FAA approved Airplane Flight Manual, with loading instructions, dated 12-28-73.	--	
	(b) FAA approved Supplement No. 1, Differential Gear Installation, dated 12-28-73.	--	
	(c) FAA approved Supplement No. 2, Heater Installation, dated 12-28-73.	--	
	(d) FAA approved Supplement No. 3, Auxiliary Fuel System, dated 12-28-73.	--	
	(e) FAA approved Supplement No. 4, Bilge Pump Installation, dated 12-28-73.	--	
	(f) FAA Approved Supplement No. 5, Heater installation, dated 2-27-75.	--	

EQUIPMENT LIST

Airplane Serial No. 829 Registration No. N6176V Date 4-22-77

	Weight (lbs)	Arm (Inches)
<u>Miscellaneous</u>		
601. <u>V</u> (a) Stall warning indicator	--	
602. ___ (b) Hydraulic accumulator, Aerofab 180005	5	+31
<u>V</u> (c) Hydraulic accumulator, Gerdes A-1570 or A-1570M	4	+31
603. <u>V</u> (a) Hydraulic hand pump, Aerofab 2-7860-1	2	+40
604. <u>V</u> (a) Hydraulic electric pump, Aerofab 2-7861	11	+32
605. ___ (a) Hydraulic pressure switch, Meletron 302-65E	--	+38
<u>V</u> (b) Hydraulic pressure switch, Barksdale BLS-F32	--	+38
___ (c) Hydraulic pressure switch, Meletron 1512-12-105	--	+38
___ (d) Aerofab, Inc. 180015-1 Pressure Switch	1	+38
___ (e) Hydraulic pressure switch, Consolidated Controls 211C243-16	--	+38
608. <u>V</u> (a) Pitot head, heated, Aerofab 170025	1	+120
<u>Optional Equipment</u>		
701. ___ (a) Differential landing gear operating installation per drawing 2-7810 (Item 401 (b) required)	4	+44
702. ___ (a) Heater installation, Janitrol B-1500 per drawing 2-7604. (Item 401 (c) required)	30	+90
___ (b) Heater Installation, Stewart Warner Model 940J12 per Dwg. 2-7601	36	+90

4-25-75

EQUIPMENT LIST - OPTIONAL EQUIPMENT

AIRPLANE FLIGHT MANUAL

Airplane Serial No. 829 Registration No. N6176V Date 4-22-77

Item No.	Item	Weight	Arm Aft of Datum
707 <u>4-22-77</u>	Omni Antenna	2.0	260
709 <u>4-22-77</u>	Speaker	.5	72
714 <u>4-22-77</u>	Vacuum Instruments	6.0	43
727 <u>4-22-77</u>	Electric Turn & Bank	1.7	44
728 <u>4-22-77</u>	Clock	.4	44
729 <u>4-22-77</u>	Outside Air Temperature Gage	.2	67
732 <u>4-22-77</u>	Cylinder Head Temperature Gage	1.4	44
737 _____	Bilge Pump Installation to Lake Dwg. L-0250	5.0	103
742 _____	VHF Comm Antenna	1.0	73
746 _____	Auxiliary Fuel System (STC No. SA876 EA)	22	118
747 _____	Dual Brake Pedal Installation	3	33
748 <u>4-22-77</u>	VHF Comm. Antenna	1.0	204

Date 2-13-74
 Revised 2-21-74
 Revised 12-12-74

EQUIPMENT LIST

<u>N A R C O</u>		<u>W E I G H T</u>		<u>A R M</u>
		(KG)	(LBS)	(INCHES)
_____	CP-125/126/127 AUDIO CONTROL PANEL	.68	1.5	+ 42
_____	COM 11A TRANSCEIVER	1.59	3.5	+ 40
<u>V</u>	COM 11B TRANSCEIVER	1.74	3.87	+ 40
_____	COM 111 TRANSCEIVER	1.74	3.87	+ 40
_____	COM 111B TRANSCEIVER	1.74	3.87	+ 40
_____	COM 10A TRANSCEIVER	1.64	3.63	+ 40
_____	COM 110 TRANSCEIVER	1.60	3.53	+ 40
<u>V</u>	NAV 11 VOR/ILS	1.13	2.5	+ 41
_____	NAV 111 VOR/ILS	1.13	2.5	+ 41
_____	NAV 10 VOR/ILS	.77	1.7	+ 41
_____	NAV 110 VOR/ILS	.77	1.7	+ 41
_____	NAV 12 VOR/ILS/GS	1.47	3.25	+ 41
_____	NAV 112 VOR/ILS/GS-DME	1.49	3.3	+ 41
_____	NAV 14 NAV RECEIVER	1.13	2.5	+ 40
_____	NAV 114 NAV RECEIVER	1.13	2.5	+ 40
_____	DGO - 9/9A DIR GYRO/VOR/ILS	1.09	2.4	+ 41
_____	DGO - 10 OMNI CONVERTER AND MOUND	.45	1.0	+ 32
_____	DGO - 10 DIR GYRO/VOR/ILS/GS	2.16	4.7	+ 40
_____	UGR2A/3 GS RECEIVER	1.04	2.3	+ 28
<u>V</u>	AT - 50A TRANSPONDER	1.36	3.0	+ 40
_____	ADF - 140 RECEIVER	2.72	6.0	+ 60
_____	ESCORT 110 TRANSCEIVER/VOR	2.13	4.7	+ 39
_____	MBT-12R MARKER BEACON RECEIVER	.45	1.0	+ 35

EQUIPMENT LISTN A R C O (continued)

			<u>W E I G H T</u>		<u>A R M</u>
			(KG)	(LBS)	(INCHES)
_____	MBT - 12	MARKER BEACON RECEIVER	.45	1.0	+ 42
_____	AR - 500	ALTITUDE REPORTER	.45	1.0	+ 32
_____	DME - 190		3.15	7.0	+ 40
_____	DME - 195	INTERROGATOR/RECEIVER	3.52	7.75	+138
_____	DME - 195	INDICATOR	.32	.9	+ 42

M I K E S

<u> </u>	V	TELEX	TEL66TRA	.23	0.5	40
_____		NARCO	M-700	.23	0.5	40

A N T E N N A

_____	CI - 102	MARKER BEACON	.45	1.0	+ 81
_____	CI - 119	VHF COMM BROAD BAND	.45	1.0	+168
_____	CI - 1102	DUPLEXER ANTENNA COUPLER	-	-	+ 32
_____	CI - 1105	TRIPLEXER ANTENNA G/S COUPLER	-	-	+ 32
_____	CI - 1107	ONE NAV/ONE G/S ANTENNA COUPLER	-	-	+ 32
_____	ANTENNA	ADF SENSE	.45	1.0	+108

EQUIPMENT LIST

	<u>K I N G</u>		<u>W E I G H T</u>		<u>A R M</u>
			(KG)	(LBS)	(INCHES)
_____	KX-170B	720 CH. TRANSCEIVER	3.2	7.0	+ 40
_____	KX-175B	720 CH. TRANSCEIVER	3.2	7.0	+ 40
_____	KX-145	NAV/COMM TRANSCEIVER	1.41	3.1	+ 41
_____	KT-76	TRANSPONDER TSO CLASS I	1.36	3.0	+ 40
_____	KT-78	TRANSPONDER TSO CLASS II	1.36	3.0	+ 40
_____	KR-21	MKR BCN/ISOLATION AMP.	.25	.56	+ 42
_____	KR-85	ADF W/KI-225 & KA-42A LOOP	3.92	8.7	+ 65
_____	KR-85	ADF W/KI-225 & KA-42B LOOP	4.32	9.6	+ 71
_____	KR-86	ADF W/KA-42A LOOP & CABLE	3.33	7.4	+ 69
_____	KR-86	ADF W/KA-42B LOOP & CABLE	3.74	8.3	+ 75
_____	KN-61	DME	3.56	7.9	+138
_____	KN-65	DME	3.99	8.8	+138
_____	KMA-20	AUDIO PANEL	1.04	2.3	+ 43
_____	KI-201C	VOR/LOC INDICATOR	1.27	2.8	+ 43
_____	KI-205	VOR/LOC INDICATOR	.32	.7	+ 43
_____	KI-213	VOR/GS/OBS INDICATOR	1.14	2.5	+ 43
_____	KI-214	ILS/VOR/GS INDICATOR	1.37	3.0	+ 42
_____	KI-261	DME INDICATOR NM OR KTS	.23	.5	+ 43
_____	KI-265	DME INDICATOR NM & MIN/KTS	.45	1.0	+ 43
_____	KI-266	DME INDICATOR NM & MIN/KTS	.45	1.0	+ 42
_____	KFS-562	DME CHANNEL SELECTOR	.27	.6	+ 44
_____	KA-121/122	DME ADAPTOR	.18	.4	+138

EQUIPMENT LIST

C O L L I N S

W E I G H T
(KG) (LBS) A R M
(INCHES)

_____	ARM - 350/350H	AUDIO/MARKER PANEL	.81	1.8	+ 44
_____	AUD - 250/250H	AUDIO PANEL	.68	1.5	+ 43
_____	VHF - 250	VHF - COMM TRANSCEIVER	1.67	3.7	+ 39
_____	VHF - 251	VHF - COMM TRANSCEIVER	1.63	3.6	+ 39
_____	VIR - 350	VHF - NAV RECEIVER	1.31	2.9	+ 40
_____	VIR - 351	VHF - NAV RECEIVER	1.4	3.1	+ 40
_____	IND - 350	VOR/LOC INDICATOR	.45	1.0	+ 43
_____	IND - 351	VOR/LOC/GS INDICATOR	.59	1.3	+ 42
_____	IND - 351C	VOR/LOC/GS INDICATOR w/COARSE DATUM	.68	1.5	+ 42
_____	GLS - 350	GLIDE SLOPE RECEIVER	.91	2.0	+ 30
_____	MKR - 350	MARKER RECEIVER	.27	.6	+ 43
_____	MKL - 350	MARKER LIGHTS REMOTE	.11	.3	+ 45
_____	RCR - 650	w/IND - 650 & ANT - 650	2.30	5.1	+ 70
_____	TDR - 950	TRANSPONDER	.90	2.0	+ 42

B E N D I X

_____	T12 C/D	ADF MODEL 201 C/D	3.49	7.7	+ 60
_____	T12 C/D	ADF MODEL 201 F	3.67	8.1	+ 57

Airplane Flight Manual - Supplement No. 1

Weight & Balance

Sheet 1

Lake LA-4-200 2600 lb. Gross Weight (STC No. SA822 EA)

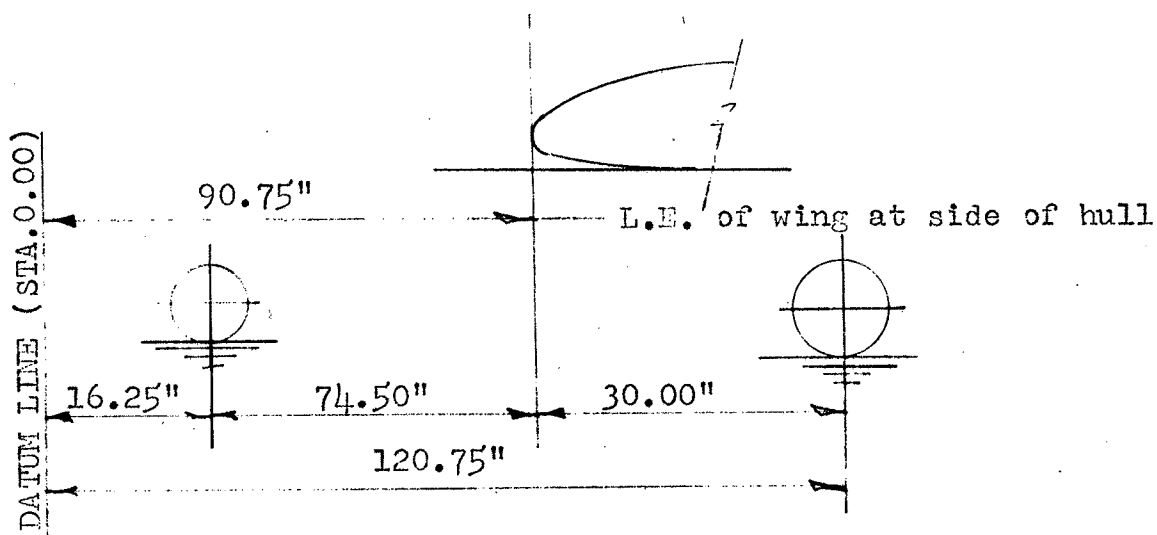
FAA Identification No. N6176V

Airplane Serial No. 829

Weighing Instructions:

Date 4-22-77

Weighing must be done in still air, preferably in a closed area. Airplane must be leveled longitudinally and laterally, using the top of the longerons below the rear windows as the leveling surfaces. The nose gear oleo strut must be fully extended, and the main gear struts extended 3".



Actual weight, including 5 gals. fuel & 8 qts. oil.

Left Wheel	<u>759</u>	lbs. (X)
Right Wheel	<u>754</u>	lbs. (Y)
Nose Wheel	<u>130</u>	lbs. (Z)
Total	<u>1643</u>	(T)

Actual weight C.G. = $16.25 \times (Z) + 120.75 (X+Y) = \frac{184810}{1643}$
 = 112.5 inches aft of datum

	Weight	Arm	Moment
Actual Weight	1643	112.5	184810
Useful Load fuel	- 30	118.00	- 3540
Included oil	- 15	117.00	- 1755
Weight empty (includes items checked on equip-	(10 MAY 77) 1610.0 SUPERSEDED 9-19-89 -1598	111.87 -112.3	180124.0 -179515--

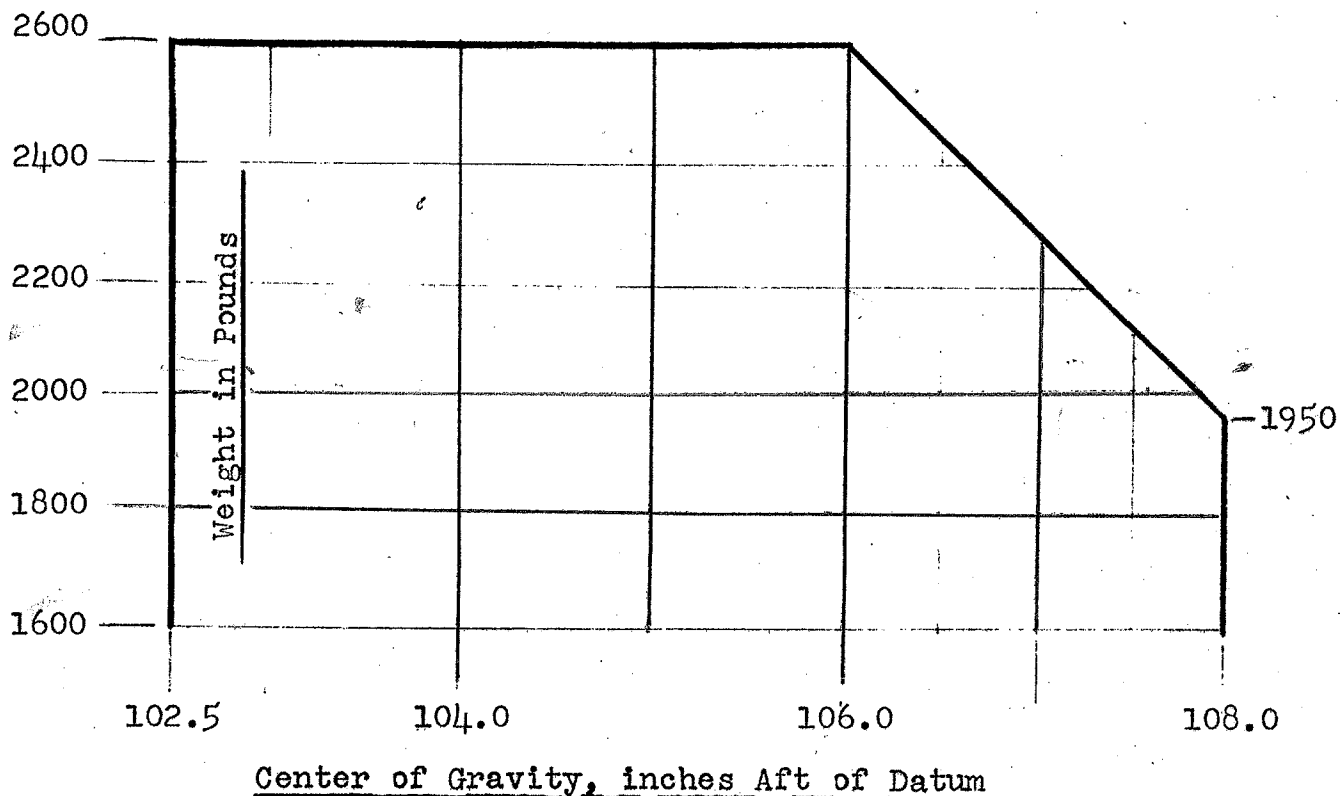
Weight & Balance

Lake LA-4-200 2600 lb. Gross Weight (STC No. SA822 EA)

Sheet 2

Issued to Airplane Serial No. 829

Approved Weight/C.G. Envelope



Useful Load Variables

<u>Item</u>	<u>Station</u>
Fuel (Minimum 15 gallons, maximum 40 gallons)	118.0
Oil (8 Quarts)	117.0
Pilot & Passenger (front seats)	61.0
Passengers (rear seats)	92.0
Baggage 200 lbs. maximum. (Center of Fwd. Portion)	118.0
(Concentrated loads must be limited to forward portion of compartment)	
Nose Ballast	25.0

NOTE

Weight & Balance

Lake LA-4-200 2600 lb. Gross Weight (STC No. SA822 EA)

Issued to Airplane Serial No. 829

Sheet 3

Loading Schedule:

Any normal loading falls within the approved range except as noted below.

With pilot alone in airplane, nose ballast must be added according to the table below.

Ballast Note:

Removable ballast, when required by Weight and Balance limitations, must be placed in the bow compartment either with or in place of the mooring line. Ballast should consist of metal sheets or flat bars, bagged shot or bagged sand. Since the compartment is not water tight, canvas bags are recommended.

		FUEL (Gallons)			
		15	25	35	40
Pilot Weight (Pounds)	150	10	20	30	40
	170	0	10	20	30
	190	0	0	10	20
	210	0	0	0	10

NOSE BALLAST REQUIRED

120	25	35	45	
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ESTIMATED

Weight & Balance

Lake LA-4-200 2600 lb. Gross Weight (STC No. SA822 EA)

Sheet 4

Issued to Airplane Serial No. 829

Sample Loadings

A. Forward C.G. at maximum weight

<u>Item</u>	<u>Weight</u>	<u>Arm</u>	<u>Moment</u>
Empty Weight	1598 1611	112.3	179515 180152.3
Front Seat Occupants	340	61.0	20740
Rear Seat Occupants	340	92.0	31300-31280
Oil: 8 Quarts	15	117.0	1755
Fuel: 40 gallons	240	118.0	28320
Baggage	67	118.0	7910
Totals	<u>2600</u>	<u>103.7</u>	<u>269540</u> _{1/2}

B. Aft. C.G. at maximum weight

<u>Item</u>	<u>Weight</u>	<u>Arm</u>	<u>Moment</u>
Empty Weight	1598	112.3	179515
Front Seat Occupants	340	61.0	20740
Rear Seat Occupants	207	92.0	19040-19044
Oil 8 quarts	15	117.0	1755
Fuel: 40 gallons	240	118.0	28320
Baggage	200	118.0	23600
Totals	<u>2600</u>	<u>105.0</u>	<u>272970</u>

C. Aft. C.G. at reduced weight

<u>Item</u>	<u>Weight</u>	<u>Arm</u>	<u>Moment</u>
Empty Weight	1598	112.3	179515
Pilot	170	61.0	10370
Oil: 8 quarts	15	117.0	1755
Fuel: 15 gallons	90	118.0	10620
Ballast		25.0	
Totals	<u>1873</u>	<u>108.0</u>	<u>202260</u>

Weight & Balance Computed by:

Jack M. Tarbox

Jack M. Tarbox

AIRCRAFT WEIGHT & BALANCE COMPUTATION



ONICS INC.
7000 Perimeter Road South
Boeing Field
Seattle, Washington 98108

1 DESCRIPTION OF AIRCRAFT	MANUFACTURER Lake		MODEL LA-4
	SERIAL NO. 829		NATIONALITY AND REGISTRATION N6176V
2 OWNERSHIP	NAME (AS SHOWN ON REGISTRATION CERTIFICATE) Sallmon, Helga R.		ADDRESS (AS SHOWN ON REGISTRATION CERTIFICATE) P.O. Box 3063 Sand Point, ID 83864
3 WORK ORDER	NUMBER 1904	DATE 9/19/89	4 DATED SUPERSEDES WEIGHT OR COMPUTATION 5/10/77

5 PREVIOUS EMPTY WEIGHT DATA		EMPTY WEIGHT	CENTER OF GRAVITY	MOMENT
	6 DESCRIPTION OF CHANGE	± WEIGHT	± ARM	± MOMENT
REMOVED	INSTALLED			
X	Narco AR850 Encoder	+1.0	+28.5	+28.5
7	COMPUTED TOTAL WEIGHT CHANGE ±	LBS. +1.0	8 TOTAL MOMENT	180152.5
9	COMPUTED NEW EMPTY WEIGHT	LBS. 1611.0	= PRIOR EMPTY WEIGHT	= COMPUTED WT. CHANGE
10	COMPUTED NEW USEFUL LOAD	LBS. 990.0	= GROSS WEIGHT	- NEW EMPTY WEIGHT
COMPUTED NEW CENTER OF GRAVITY		INCHES AFT OF DATUM 111.83	= NEW TOTAL MOMENT	- NEW EMPTY WEIGHT
12	SIGNATURE AND DATE	COMPUTED BY <i>Michael W Baker</i>	COMPUTATION VERIFIED BY <i>Michael W Baker</i>	DATE 9/19/89

Weight and Balance
and Installed Equipment List

Name	Date	4/25/2005
Address		
City	Make	Lake
State	Model	LA 4
Zip Code	S/N	829
	Registration	N6176V

Previous Aircraft	<u>WEIGHT X</u>	<u>ARM</u>	<u>MOMENT</u>
	1609.40	111.90	180,084.10

Removed			
Narco Com 11B Transceiver	3.87	40.00	154.80

Installed			
ICOM A 200 Transceiver	2.40	40.00	96.00
Cig lighter Socket	0.10	44.00	4.40

Superseded 2-27-06
See Next Page

New Aircraft Data	1608.03	111.96	180029.7
New Empty Weight	1608.03		
New C.G.	111.96		
New Moment	180029.70		
Gross Weight	2600.00		
Useful Load	991.97		

David W. Hood
Western Avionics, Inc.

Prepared by:

F.F.A. R.S. #GG6R560N

Date: 2-27-06

5-20-2011

REVISION
WEIGHT AND BALANCE AND EQUIPMENT LIST

AIRCRAFT MAKE & MODEL

LA-4-200

REGISTRATION NUMBER

N6176V

SERIAL NUMBER

829

IN	OUT	ITEM	WEIGHT	ARM	MOMENT
		AIRCRAFT - OLD AS EQUIPPED:	1608.03	111.96	180029.7
X		STAbalizer Attach Brackets	2.0	258.0	+ 516.0
	X	Prestolite ALT	-13	133	-1729.0
	X	Prestolite STARTER	-17	130	-2210.0
X		B&C specialtic ALT	+8.5	133	+1136.5
X		B&C specialtic Starter	+10.2	130	+1326.0

GROSS WEIGHT _____
EMPTY WEIGHT _____
E.W. C.G. _____
MOMENT _____
USEFUL LOAD _____

2600.00
1598.73
112.0
179063.2
1001.27

NAME: _____
CERT. _____

John E. Whiff / ACP 1746766

Supceeded
Below ↓

ITEM	Weight	Arm	Moment
Aircraft as Equiped	1598.73	112.0	179063.2
BE AMERI-King AK-451 ELT	1.8	162.0	453.6

Gross Weight 2600 lbs
Empty Weight 1600.53
C.G. 112.1
Moment 179516.8
USEFUL LOAD _____

Alpine Aviation

13310 Nevada City Ave.
Grass Valley, CA 95945
tel: 530-477-7701
fax: 530-477-7764



Aircraft weight & balance report

REGISTRATION: N6176V DATE: November 10, 2016

MAKE & MODEL: Lake LA-4-200 SERIAL #: 829

Corrections to original Weight and Balance, dated April 22, 1977

Fuel:	5 gallons
Oil:	8 quarts
Seats:	4
Equipment:	Per equipment list

LOCATION	WEIGHT	ARM	MOMENT
Nose wheel	130.0	16.25	2112.50
Left main wheel	759.0	120.75	91649.25
Right main wheel	754.0	120.75	91045.50
Less fuel, 5 gallons as weighed	-30.0	118.00	-3540.00
Less 8 quarts engine oil	-15.0	117.00	-1755.00

Aircraft empty weight	1598.0		
Aircraft CG		112.34	
Aircraft moment			179512.25
Max takeoff weight	2600.0		
Useful load	1002.0		

Weight & Balance report computed by: Gordon Mills, A & P #3050937



AlpineAviation

13310 Nevada City Ave.
 Grass Valley, CA 95945
 tel: 530-477-7701
 fax: 530-477-7764



Aircraft Weight & Balance Report Corrected

REGISTRATION: N6176V DATE: November 10, 2016
 MAKE & MODEL: lake LA-4-200 SERIAL #: 829

Previous Weight & Balance record:			
Date:	Corrected from Original April 22, 1977		
EW:	1598.00	Max Takeoff Weight	
EWCG:	112.34	2600	lbs
EW Moment:	179512.25		
Useful load:	1002.00	With empty fuel and oil	

Changes to Weight and Balance		WEIGHT	ARM	MOMENT
5/10/1977	Installed Narco AR850 Encoder	1.00	28.50	28.50
4/25/2005	Removed Narco Com 11B	-3.87	40.00	-154.80
	Installed ICOM A 200 Transciever	2.40	40.00	96.00
	Installed lighter power supply	0.10	44.00	4.40
2/27/2006	Installed Stabilizer Attach Brackets	2.00	258.00	516.00
	Removed Prestolite Alternator	-13.00	133.00	-1729.00
	Removed Prestolite Starter	-17.00	130.00	-2210.00
	Installed B & C Alternator	8.50	133.00	1130.50
	Installed B & C Starter	10.20	130.00	1326.00
5/20/2011	Installed Ameri-King AK-451 ELT	1.80	162.00	291.60
11/10/2016	Removed ICOM A200 Transciever	-2.40	40.00	-96.00
	Installed VAL Comm 2000 Transciever	3.25	40.00	130.00

TOTAL	-7.02		-666.80
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Aircraft empty weight	1590.98		
Aircraft empty weight CG		112.41	
Aircraft moment			178845.45
Max takeoff weight	2600.00		
Useful load	1009.02		

Weight & Balance computed by:	Gordon Mills A & P #3050937
	

AlpineAviation

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 Grass Valley, CA 95945
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Aircraft Weight & Balance Report


REGISTRATION:	N6176V	DATE:	January 29, 2018
MAKE & MODEL:	LA-4-200	SERIAL #:	829
INVOICE #:	26100	TACH:	2427.7

Previous Weight & Balance record:	
Date:	November 10, 2016
EW:	1590.98
EWCG:	112.41
EW Moment:	178845.45
Useful load:	1009.02

Max Takeoff Weight	
2600	lbs

ITEM	WEIGHT	ARM	MOMENT
Removed:			
Narco AT50A Transponder	-2.40	40.00	-96.00
Ameriking AK 451 406 ELT	-1.80	162.00	-291.60
Installed:			
Appareo ESG Transponder	2.75	40.00	110.00
ACK E-04 406 ELT	1.60	162.00	259.20
TOTAL	0.15		-18.40

Aircraft empty weight	1591.13		
Aircraft empty weight CG		112.39	
Aircraft moment			178827.05
Max takeoff weight	2600.00		
Useful load	1008.87		

Weight & Balance computed by:

January 29, 2018