

N4099X



NORTH STAR FLYERS FLYING CLUB

Anoka County/Blaine Airport (KANE)

**14708 Yancy Street NE
Ham Lake, MN 55304
(763) 458-2923**

**DO NOT REMOVE FROM
AIRCRAFT**

Aero Commander Lark 100-180
N4099X s/n 5199

EMERGENCY CONTACT NUMBERS

Milton Gilpin	(cell)	651-343-1455
Mike Miller	(cell)	763-267-8729
Cheryl Daml	(cell)	(612) 272-9717
Jack Shelton	(cell)	(763) 458-2923

AIRPLANE-SPECIFIC NOTES

Tire Pressures: Nose and Main - 28 PSI

Fuel: 20 gallons (each tank)

Ensure 12/14V when charging battery (in cowling).

Fill oil in full quart increments only.

Transponder should remain on ALT at all times. Ensure 1200 after flight to prevent problems for the next pilot.

Nav lights must remain on at all times for ADS-B OUT.

Do not leave towbar attached to nose wheel unattended.

Refuel with fuel selector on right tank for maximum fuel load. Recheck caps after refueling with 1/4 turn and tug on them to ensure they are secure.

Park with fuel selector on left or right tank to preclude crossflow and external venting.

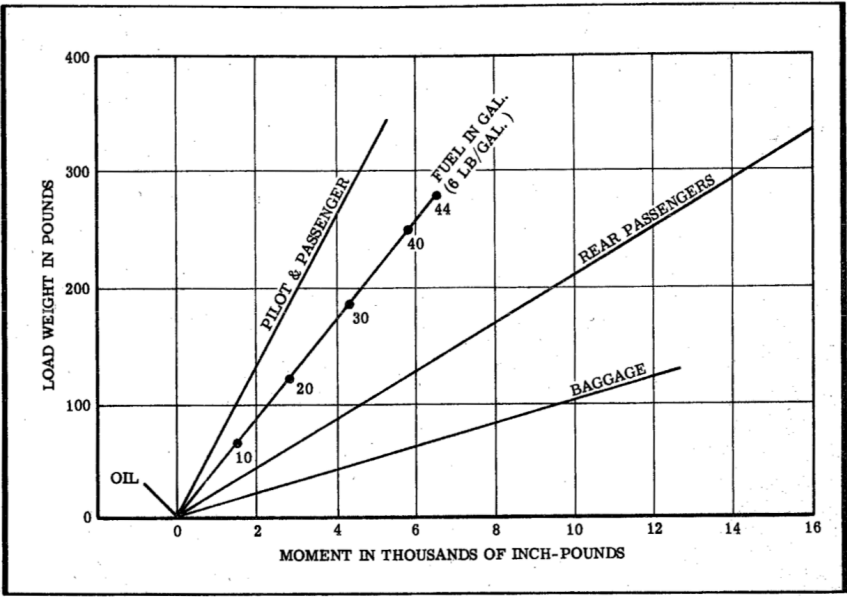
Loosening shoulder harness straps is necessary to reach flap handle. Retighten before takeoff/landing.

Fuel selector arrowhead, not handle, shows tank position.

AIRSPEEDS FOR SAFE OPERATION (KIAS/MPH)

V_{SO}		52/60
V_{S1}		55/63
V_R		58/65
V_X		NP
V_Y		69/80
V_F		91/105
V_A (MGW)		100/116
V_{NO}		121/140
V_{NE}		153/176
V_{ref}	(flaps down)	65/75
V_G		NP (use 69/80)
Max demonstrated crosswind		NP

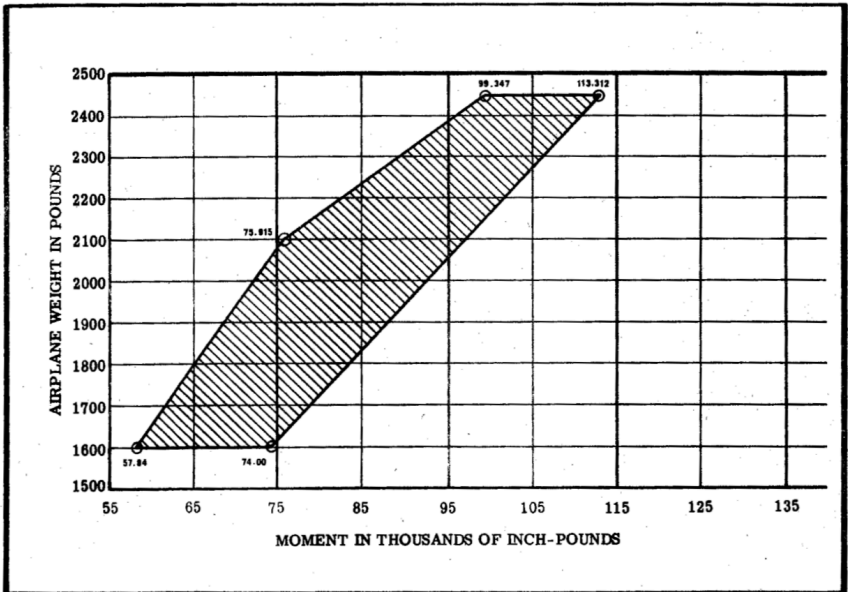
* NP = not published



LOADING CHART

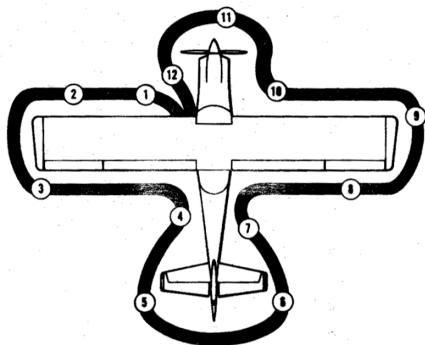
	<u>Weight</u>	<u>Arm</u>	<u>Moment</u>
Empty Weight	1633.19	39.26	64126.7
Front Seats	_____	41	_____
Rear Seats	_____	75	_____
Baggage	_____	112	_____
Fuel	_____	50	_____
TOTAL	_____	_____	_____

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PREFLIGHT INSPECTION



COCKPIT

Control Lock.....REMOVED
Electrical SwitchesOFF
MagnetosOFF
Carburetor HeatOFF
ThrottleCLOSED
Mixture.....FULL LEAN
Circuit BreakersCHECK
Trim TabT/O RANGE
Fuel Selector.....BOTH
Master SwitchON
Electric Fuel Pump...TEST, OFF
Fuel Gauges.....CHECK
Lights.....CHECK
Stall WarningCHECK
Master Switch.....OFF
Flaps.....EXTEND

LEFT WING

FuelCHECK, CAP SECURE
Tiedown, ChocksREMOVE
Pitot TubeCHECK
Wing Tip and Light.....CHECK
AileronCHECK
FlapCHECK
Tire and Brake.....CHECK

LEFT FUSELAGE

Fuel Vent Line.....CHECK
Baggage DoorSECURE
AntennasCHECK
Rotating BeaconCHECK

EMPENNAGE

Control Surfaces.....CHECK
AntennasCHECK
Lights.....CHECK
TiedownREMOVED

RIGHT FUSELAGE

ConditionCHECK

RIGHT WING

Tire and Brake.....CHECK
FlapCHECK
AileronCHECK
Wing Tip and Light.....CHECK
Tiedown, ChocksREMOVE
FuelCHECK, CAP SECURE

NOSE

CowlingCHECK
Induction Air IntakeCHECK
Air Filter.....CHECK
AlternatorCHECK
Fuel StrainerDRAIN
Propeller.....CHECK
Tire and StrutCHECK
Oil.....CHECK (6 qt min)
Static Pressure PortsCLEAR
Chocks.....REMOVED

PREFLIGHT PROCEDURES

BEFORE STARTING ENGINE

Towbar, ChocksSTOWED
Seats, HarnessesADJUST
(Loosen to allow flap operation)
BrakesTEST AND SET
FlapsUP
Fuel SelectorBOTH
Carburetor HeatOFF
MixtureRICH
Propeller Area.....CLEAR
Master SwitchON
BeaconON
StrobeON

ENGINE START

ThrottleCLOSED
Prime4-5 STROKES (COLD)
Electric Fuel PumpON
Starter.....ENGAGE

ENGINE START (FLOODED)

ThrottleFULL OPEN
MixtureIDLE CUT-OFF
Electric Fuel Pump.....OFF
Starter.....ENGAGE
Mixture.....ADVANCE AS
ENGINE FIRES
Throttle.....IDLE

BEFORE TAXI

Oil PressureCHECK
Electric Fuel Pump.....OFF
Radio Master SwitchON
Mixture.....LEAN FOR TAXI
Directional Gyro.....SET
JPISET TO SCAN
Landing Light ...AS REQUIRED
BrakesTEST

ENGINE RUN-UP

Flight Controls.....CORRECT
InstrumentsCHECK, SET
MixtureRICH
Throttle.....2200 RPM
Magnetos.....CHECK (125/50)
Carburetor HeatCHECK
MixtureLEAN CHECK
Engine Instruments.....CHECK
AmmeterCHECK
Throttle.....IDLE

BEFORE TAKEOFF

Doors and WindowCLOSED
Seats, HarnessesSECURE
FlapsUP
TrimNEUTRAL
Fuel Selector.....BOTH
MixtureRICH
Carburetor HeatOFF
Electric Fuel PumpON
Radios, TransponderSET
Landing LightON
BrakesRELEASE

Notes:

1. Nav lights must be on at all times for ADS-B OUT
2. Leave tail strobe and belly beacon on at all times when engine is in operation
3. Loosen shoulder harnesses to operate flaps and fuel selector; ensure tight for takeoff and landing

FLIGHT PROCEDURES

TAKEOFF

ThrottleFULL OPEN
Engine Instruments.....CHECK
Rotate.....58 KIAS/65 MPH
Climb69 KIAS/80 MPH (Vy)

CLIMB (1000 FT CHECKS)

Airspeed70-80 KIAS/
80-90 MPH
Landing Light ...AS REQUIRED

CAUTION:

**Leave fuel boost pump on during
climb**

CRUISE

Power.....AS REQUIRED
Electric Fuel Pump.....OFF
Landing LightAS REQUIRED
Mixture.....LEAN (100° ROP)

DESCENT

Altimeter.....SET
Carburetor HeatAS REQ'D
Power.....AS REQUIRED
MixtureENRICH AS REQ'D

BEFORE LANDING

Fuel Selector.....BOTH
Electric Fuel PumpON
MixtureRICH
Carburetor HeatAS REQ'D
Seats, BeltsSECURED
BrakesRELEASED
Landing LightAS REQUIRED

NORMAL LANDING

FlapsDOWN (WHITE ARC)
Airspeed.....65 KIAS/75 MPH

BALKED LANDING

PowerFULL THROTTLE
Carburetor HeatOFF
Airspeed65 KIAS/74 MPH,
then Vy
FlapsUP

AFTER LANDING

FlapsUP
Carburetor HeatOFF
Transponder1200
Landing LightAS REQUIRED
Electric Fuel Pump.....OFF
Mixture.....LEAN FOR TAXI

SECURING AIRCRAFT

Electrical/Radio Switches..OFF
Landing LightOFF
MagnetoGROUND CHECK
MixtureIDLE CUT-OFF
MagnetoOFF
Master Switch.....OFF
Control LockAS REQUIRED
Flaps (if outside) .30 DEGREES
Oil HeaterAS REQUIRED

**Note aircraft tach and Hobbs
times and fuel/oil in aircraft
book and electronic chit form.**

**Note any squawks on
electronic chit form.**

EMERGENCY PROCEDURES

ENGINE FIRE DURING ENGINE START

Cranking.....CONTINUE

If engine starts:

Power.....1700 RPM

Engine.....SHUT DOWN

If engine fails to start:

Throttle.....FULL OPEN

Mixture.....IDLE CUT-OFF

Cranking.....CONTINUE

Extinguisher.....OBTAIN

Engine.....SECURE

Master switch - OFF

Ignition switch - OFF

Fuel selector valve - OFF

Fire.....EXTINGUISH

ENGINE FIRE IN FLIGHT

Mixture.....IDLE CUT-OFF

Fuel Selector.....OFF

Master Switch.....OFF

Cabin Heat and Air.....OFF

Airspeed....100 KIAS/115 MPH

Battery/Alt Switches.....OFF

Magneto/Start Switch.....OFF

Do not attempt engine restart

Execute Forced Landing

ELECTRICAL/CABIN FIRE

Master Switch.....OFF

Avionics Master Switch.....OFF

Electrical Switches.....OFF

Vents/Heat.....CLOSED

Fire.....EXTINGUISH

If fire is extinguished:

Circuit Breakers.....CHECK

Master Switch.....ON

Radio Master Switch.....ON

Electrical Switches.....ON

Vents.....OPEN

Cabin Heat.....AS REQUIRED

WING FIRE

Navigation Lights.....OFF

Sideslip to keep flames away

from fuel tank and cabin

Land as soon as possible

PRECAUTIONARY LANDING

Flaps.....FULL

Airspeed.....58 KIAS/65 MPH

Radio Master Switch.....OFF

Electrical Switches.....OFF

Doors.....UNLATCH

When landing assured:

Mixture.....IDLE CUT-OFF

Ignition Switch.....OFF

Brakes.....APPLY

EMERGENCY PROCEDURES

ENGINE FAILURE: TAKEOFF

Throttle.....IDLE
Brakes.....MAXIMUM

ENGINE FAILURE: CLIMB

Airspeed.....69 KIAS/80 MPH
MixtureIDLE CUT-OFF
Fuel Selector ValveOFF
Ignition SwitchOFF
FlapsAS REQUIRED
Master Switch.....OFF

ENGINE FAILURE: CRUISE

Airspeed.....69 KIAS/80 MPH
Carburetor Heat.....ON
Fuel Selector ValveBOTH
MixtureRICH
Ignition SwitchBOTH
PrimerIN AND LOCKED

EMERGENCY POWER-OFF LANDING

Airspeed.....69 KIAS/80 MPH
MixtureIDLE CUT-OFF
Fuel Selector ValveOFF
Ignition SwitchOFF
ELT.....ACTIVATE
Master Switch.....OFF
FlapsAS REQUIRED
Doors.....UNLATCH
TouchdownTAIL LOW
BrakesAPPLY

ALTERNATOR FAILURE

Circuit BreakersCHECK
Alternator SwitchCYCLE

If condition persists/recurs:

Alternator SwitchOFF
Nonessential ElectricsOFF
Land as soon as practical.

OVER-VOLTAGE LIGHT

Avionics Master Switch.....OFF
Master Switch.....OFF, then ON
Over-Voltage LightOFF
Avionics Master SwitchON

**Land as soon as possible if
over-voltage light illuminates
again.**

LANDING WITH FLAT TIRE

Normal approach
Land good tire first
Hold flat tire off

SPIN RECOVERY

FlapsRETRACT
Throttle.....IDLE

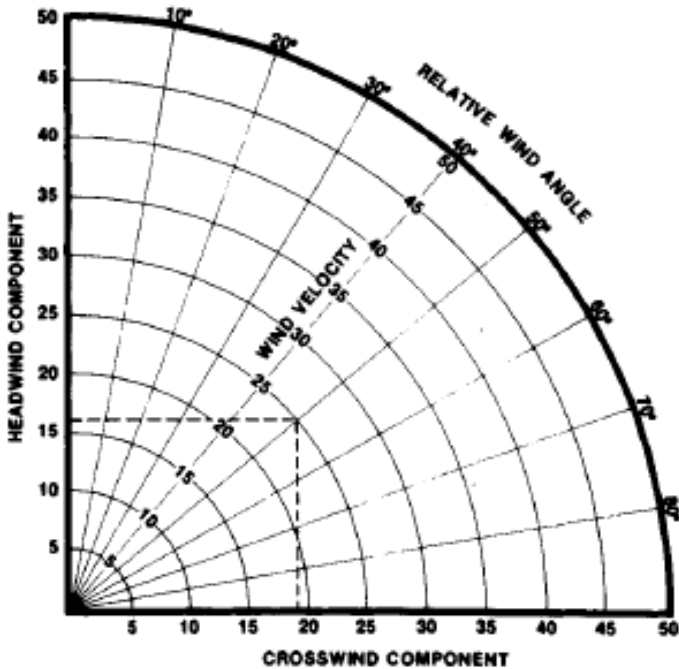
**Per POH, “execute standard
NACA recovery techniques”
(PARE)**

**NOTE: Intentional spins are
prohibited**

AIRSPEED CORRECTION TABLE

INDICATED AIRSPEED	60	70	80	90	100	110	120	130	140
WING FLAPS UP CAS	62	72	81	90	100	109	119	128	138
WING FLAPS DOWN CAS	63	73	82	91	100	---	---	---	---

Crosswind Component Chart



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TAKEOFF PERFORMANCE

LEVEL HARD SURFACE RUNWAY - GROSS WT 2450 LBS - FLAPS UP - NO WIND

IAS-MPH at 50-FT HEIGHT	Sea Level and 59°F		2500 Ft and 50°F		5000 Ft and 41°F	
	Ground Run	Distance To Clear 50-Ft Obs.	Ground Run	Distance To Clear 50-Ft Obs.	Ground Run	Distance To Clear 50-Ft Obs.
74	1050	1650	1230	2015	1430	2520

NOTE: Increase distance 10% for each 25°F above standard temperature
for altitudes shown.

LANDING PERFORMANCE

IDLE POWER - LEVEL HARD SURFACE RUNWAY - GROSS WT 2450 LBS - FLAPS 30° - NO WIND

APPROACH IAS MPH	Sea Level and 59°F		2500 Ft and 50°F		5000 Ft and 41°F	
	Ground Roll	Distance To Clear 50-Ft Obs.	Ground Roll	Distance To Clear 50-Ft Obs.	Ground Roll	Distance To Clear 50-Ft Obs.
75	840	1280	900	1350	970	1420

MAXIMUM RATE-OF-CLIMB DATA

GROSS WEIGHT 2450 LBS - IAS 83 MPH

Sea Level and 59°F	2500' and 50°F	5000' and 41°F	7500' and 32°F	10,000' and 23°F	11,100' and 19°F
Rate-of-Climb 718 FPM	Rate-of-Climb 550 FPM	Rate-of-Climb 410 FPM	Rate-of-Climb 275 FPM	Rate-of-Climb 157 FPM	Rate-of-Climb 100 FPM

STALLING SPEEDS

GROSS WT 2450 LBS - POWER OFF - MPH-CAS

	ANGLE OF BANK		
WING FLAP POSITION	0°	20°	40°
FLAPS UP	63	65	72
FLAPS 30°	60	61	68
			60°
			89
			84

CRUISE AND RANGE PERFORMANCE

		Gross Weight - 2450 LBS Standard Temperature Zero Wind		Maximum Power Mixture 40 Gal Usable Fuel (No Reserve)		
ALT	RPM	% BHP	TAS MPH	GAL/ HOUR	ENDR. HOURS	RANGE MILES
0	2675	100	138	16.3	2.5	340
	2600	95	134	14.5	2.8	370
	2500	86	128	12.6	3.2	405
	2400	77	122	11.0	3.6	445
	2200	63	109	8.6	4.7	510
	2000	50	93	7.1	5.7	525
2500	2625	93	135	14.3	2.8	380
	2600	91	134	13.7	2.9	390
	2500	82	127	11.8	3.4	430
	2400	74	121	10.3	3.9	470
	2200	60	108	8.4	4.7	515
	2000	48	92	7.0	5.7	525
5000	2600	85	132	13.0	3.1	405
	2500	77	126	11.4	3.5	440
	2400	69	119	10.1	4.0	470
	2300	63	112	9.0	4.4	500
	2100	51	96	7.4	5.4	520
	7500	2540	77	126	11.0	3.6
2500		74	124	10.5	3.8	470
2400		67	117	9.5	4.2	490
2300		61	109	8.6	4.6	505
2200		56	101	7.9	5.1	510
10,000		2490	70	121	10.0	4.0
	2400	64	114	9.0	4.4	500
	2300	59	105	8.3	4.8	505
	2200	54	95	7.7	5.2	495

NOTE: For Definition of Maximum Power Mixture, See O-360 Owner's Manual

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