

T-Craft Data Sheet

N943KS Checkout

Pilot Name (Please Print)

Date Completed

Aircraft N #

N943KS

Serial #

172-70273

MFR Year

1978

Model #

C172N

ENGINE & FUEL INFORMATION

Engine Make

Engine Model

OIL INFORMATION

Preferred Oil (T-Craft)

Oil Quantity (Max)

Oil Quantity (Min)

Oil Pressure (Max)

Oil Pressure (Min)

Oil Temperature (Max)

Oil Temperature (Min)

FUEL INFORMATION

Fuel Type(s) and Colors

Max Fuel (Mains Only)

Usable Fuel (Mains Only)

Max Fuel (Aux Only)

Usable Fuel (Aux Only)

Total Fuel (All Tanks)

Usable Fuel (All Tanks)

Basic Fuel Burn Performance Calculations (Use AirPlains STC fuel burn data)

Est. Fuel Burn (gal/hr) / TAS @ 76% BHP

Range (Hours) at 75% BHP without Reserves

Range (NM) @8,000' @ Maximumn Continous RPM (No Reserves)

Battery (Volt / Capacity)

Tire Pressure (Mains)

Tire Pressure (Nose)

Alternator (Amps)

Max Mag Drop (RPM) - use EIS Figure

Fuel System

Explain the procedure for transferring fuel from the aux tanks to main tanks

T-Craft Data Sheet

N943KS Checkout

Airspeeds (Indicated)

Knots or MPH?

	V_{NE}	Never Exceed Speed (Red Line)
	V_{NO}	Max Structural Cruising Speed
	V_R	Rotation Speed (Indicated)
	V_Y	Best Rate of Climb (Sea Level)
	V_Y	Best Rate of Climb (10,000' MSL)
	V_X	Best Angle of Climb (Sea Level)
	V_X	Best Angle of Climb (10,000' MSL)
	V_{CC}	Cruise Climb

	Max X-wind Component
	V_{REF} (1.3 x V _{SO})

	V_{SO}	Stall Speed (Landing Config)
	V_{S1}	Stall Speed (Specified Config)
	V_A	Maneuvering Speed (Max Gross)
	V_A	Maneuvering Speed (Med Weight)
	V_A	Maneuvering Speed (Min Weight)
	V_{FE}	Max Flap Extension Speed at 10°
	V_{FE}	Max Flap Extension Speed > 10°
	V_G	Best Glide (@ Max Gross Weight)
		White Arc (Range)
		Green Arc (Range)
		Yellow Arc (Range)
		Red Line (V _{NE})

Takeoff

IAS

Flap Setting

Normal
Short Field
Soft Field

Landing

IAS

Flap Setting

Normal
Short Field
Soft Field

WEIGHT & BALANCE INFORMATION

Aircraft Empty Weight

Aircraft Max Gross Wt

Useful Load

Remaining Useful Load (Passengers / Baggage) with full fuel (67 gal)

**** Calculate Weight and Balance with your weight, a right seat passenger of 200 pounds, 40 gallons of fuel, 50 pounds of baggage in the rear seat, and 10 pounds of baggage in the baggage area**

			WEIGHT	ARM	MOMENT
Empty Weight				38.9	
Fuel (6#/Gal)				46	
Oil	6	qts	10.8	-14	-151.2
Pilot / Front Passenger				37	
Rear Passengers				73	
Baggage				108	
TOTAL					
Gross Weight					
Over / Under Weight					
Center of Gravity?					

WEIGHT & BALANCE INFORMATION (continued)

**** Calculate Weight and Balance a pilot weight of 240 pounds, a right seat passenger of 140 pounds, rear seat passengers totaling 340 pounds, and 50 pounds of baggage in the baggage area**

			WEIGHT	ARM	MOMENT
Empty Weight				38.913	
Fuel (6#/Gal)				46	
Oil	6	qts	10.8	-14	-151.2
Pilot / Front Passenger				37	
Rear Passengers				73	
Baggage				108	
TOTAL					
Gross Weight					
Over / Under Weight					
Center of Gravity?					

Is this within weight and CG limits?

How much fuel could be removed (if needed) to bring the plane within limits?

What is the new weight at engine start?

Updated CG?

What is the est. range (hours) with this fuel amount given fuel burn at 8,000' MSL?

Will that fuel amount and range require adding fuel to the auxiliary tanks? (Qty?)

Performance Calculations

Assume 85°F Temperature at 5,000' MSL and Max Gross Weight

Takeoff Distance (Feet)

Rate of Climb at V_y?

Takeoff Distance over 50' Obstacle?

Landing Distance

Landing Distance over 50' Obstacle

Has thoroughly reviewed STC / 337 package in logbooks, including 180HP upgrade, Extended fuel / Aux Tank operation / Electronic Ignition Usage

Has reviewed Emergency Procedures

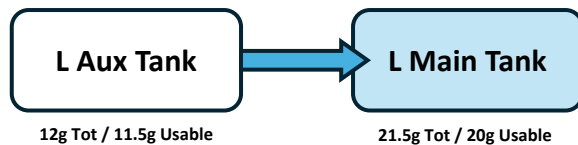
Has reviewed spin recovery procedure (PAVE)

Approved by CFI (Name / Certificate #)

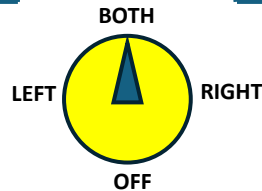
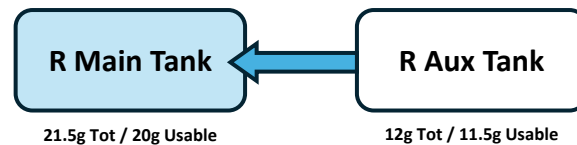
CFI Review / Approval Date

T-Craft // N943KS - Fuel System

Left Aux Tank Feeds Only Left Main Tank



Right Aux Tank Feeds Only Right Main Tank

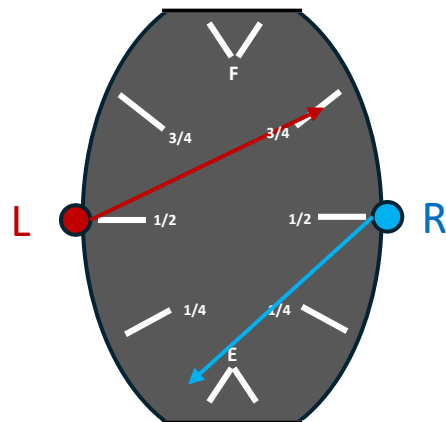


Total System Fuel Capacity:

43g Main + 24g Aux = **67 gallons total**

Total system USABLE Fuel Capacity:

40g Main + 23g Aux = **63 gallons usable**



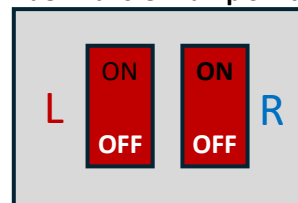
Aux Fuel Tank Fuel Gauge:

The *origin* of the needle points to the capacity on the opposite side of the gauge. **Follow the needle from its origin (left or right) to the VALUE indicated on the opposite side of the window to read the amount!**

In this example, the Left tank is indicating 3/4 full and the Right tank is indicating near empty

Aux tanks on either side *cannot feed opposite wing main tank* (L Aux cannot feed R Main / R Aux cannot feed L Main)

Fuel Transfer Pump Switches:



Left and Right rocker switches correspond to the auxiliary pump (in the auxiliary fuel tanks!) to turn on and off.

The auxiliary pumps are

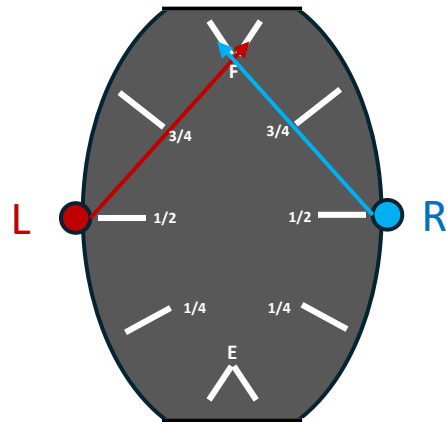
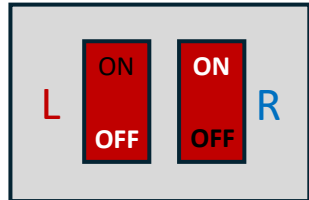
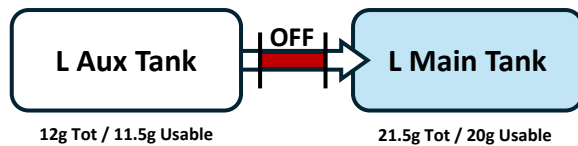
cooled by the fuel in the tank! If you do not carefully monitor the fuel transfer operation and forget to turn the pump OFF after the transfer is complete, **the pump may overheat and fail – which is a very expensive repair (opening the wing and auxiliary tank).**

GUIDELINES FOR SAFE FUEL TRANSFER OPERATIONS

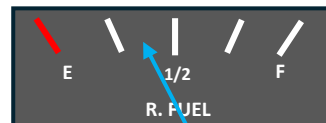
- DO NOT** fuel the auxiliary tanks unless planning a long cross country during which you will require the additional fuel
- Transfer fuel in **LEVEL FLIGHT** only
- Avoid any steep turns or maneuvers with fuel in auxiliary tanks**
- Only transfer fuel to a main tank once the main tank indicates it is **BELOW 1/2 full** (transferring above that amount is both illegal and dangerous)
- Set the fuel selector to the opposite main tank than that which will be fueled by the transfer operation
- Always set a timer and reminder to monitor the fuel transfer process to avoid damage to transfer pumps
- Always use fuel in auxiliary tanks during flight (return at or near empty)
- The auxiliary fuel tanks are outboard in each wing – this can add complexity to takeoff and landing operations when full

T-Craft // N943KS - Fuel System Transfer Scenario

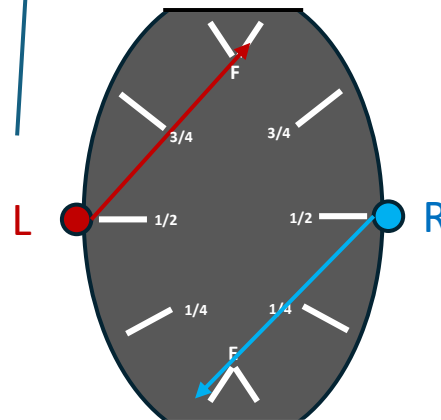
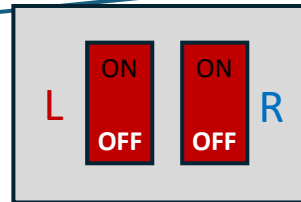
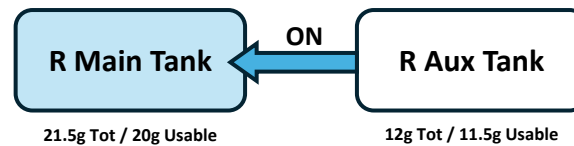
Left Aux Tank Feeds Only Left Main Tank



At the start of this scenario, the Right Main Tank is indicating well below $\frac{1}{2}$ full and both auxiliary tanks are indicating FULL. The fuel selector has been set to the left tank the Right Fuel Transfer Pump has been switched ON, the Left Fuel Transfer Pump is OFF.



Right Aux Tank Feeds Only Right Main Tank



At the end of this scenario, the Right Main tank is indicating Full, the Right auxiliary tank is indicating near empty, the fuel transfer pumps have been switched to OFF, the fuel selector has been returned to BOTH, and the left Aux Tank is still indicating near full.



Scenario: Right Aux Tank Transfer to Right Main Tank

1. Right Main Tank is below $\frac{1}{2}$ full (do not transfer at or above $\frac{1}{2}$ full capacity)
2. Confirm left main tank capacity sufficient for 30 -45 minutes of sustained flight
3. Switch fuel selector to LEFT tank (full left) – wait 60 seconds to ensure engine function on left tank
4. Engage Right Aux Tank Transfer Switch (ON) and Start Timer. Note: expect transfer rate of 1 gallon per 2 minutes – up to 24 minutes for full transfer
5. **START TIMER** and monitor transfer rate – the Right Aux Tank Fuel Gauge should go DOWN while the Right Main Tank Fuel Gauge should indicate increasing fuel level When Right Aux Tank Gauge indicates near empty (or Right Main Tank Fuel Gauge indicates near full), turn Transfer pump switch to OFF – Note fuel transfer has stopped (monitor gauges)
7. Set fuel selector to “BOTH” and monitor for 60-90 seconds to confirm engine continues to function normally – if any issues, return to Left tank and evaluate