

# *"The Straight Word"*

## **Cessna 337 Super Skymaster**

*337G & T337G Series, and corresponding Reims Aviation models*

### **I. FLIGHT PROCEDURES:**

#### ***COCKPIT PREPARATION***

Heading Bug	Set QFU
OBS Indicator	Set Course
Altimeters	Set QNH
Trims	Set for Takeoff
Parking Brake	Apply

#### ***ENGINE START***

The front engine should always be started first as the battery-to-starter cable is shorter.

The only difference between a hot and cold start is the amount of priming necessary. For a cold start, the prime button shall be held on until the fuel flow peaks, while for a hot start it only needs to be held until the first needle rise is read on the fuel flow meter.

Master Switch	On, Unless GPU Used
Anti-Collision Light	On
Avionic Master	Off
Fuel Tanks	Front Left, Rear Right
Cowl Flaps	Open
Mixture Levers	Full Rich
Propeller Levers	High RPM
Prime	Lo to FF Peak (Cold) Lo to FF Rise (Hot)
Throttles	Half Inch
Magnetos	On
Starter	Engage

#### ***AFTER START***

Master Switch	On
Alternators	On
Vent Fan	As Required
Flaps	1/3

Taxi Light	On
Avionic Master	On

**TAXIING**

Taxiing on soft surfaces shall be made with the rear engine as blade clearance is greater;

Parking Brake	Release
Flight Instruments	Check
Brakes	Test
Flight Controls	Check

**RUN-UP**

The run-up shall be made before the first flight of the day.

Throttle Levers	1800 RPM (337G)
Feather	Check
Magnetos	Check Drop
Vacuum	Check
Alternators	Check
Throttle Levers	Idle Check

**BEFORE TAKE-OFF**

Directional Gyros	Set
Strobe Lights	On
Landing Lights	On
Transponder	Alt

**AFTER TAKE-OFF**

The normal takeoff power setting is 29,9 in MAP (337G) or 36 in MAP (T337G) and 2800 RPM. Rotation occurs at 80 MPH. Once positive rate of climb is obtained:

Landing Gear	Up (not below 100 ft)
Landing Lights	Off

A speed above the V2 of 79 MPH must be maintained for the initial climb. Then, upon reaching the takeoff safety altitude (ASD):

Flaps	Up
Throttle Levers	24 in MAP (337G)
Propeller Levers	2650 RPM
Mixture Levers	150 pph (337G)
Altimeters	Set Standard

A climb speed of 120 MPH shall then be taken for normal climb.

## ***CRUISE***

Normal cruise power is 25 in MAP, 2500 RPM, and a fuel flow set for peak EGT - 50°C on the rich side (337G). CHT should be maintained around 380°C.

Cowl Flaps	Closed
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## ***DESCENT***

Altimeters	Set Standard
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## ***BEFORE LANDING***

The normal arrival technique calls for the following steps:

- Flaps 1/3.
- Landing Gear Down.
- Flaps 2/3.
- Flaps 3/3.
- Propellers High RPM.

A speed of 120 MPH shall be maintained in the approach environment. The required MAP to maintain a Vapp of 90 MPH normally stands around \_\_\_\_\_ in MAP.

Cowl Flaps	Closed
Landing & Taxi Lights	On
Flaps	Set
Landing Gear	Down
Mixture Levers	Full Rich
Propeller Levers	High RPM

## ***AFTER LANDING***

Cowl Flaps	Open
Strobe Lights	Off
Landing Lights	Off
Transponder	Standby
Flaps	Up

## ***ENGINE SHUTDOWN***

Avionic Master	Off
All Electrical Switches	Off
Alternators	Off
Mixture Levers	Idle Cut-Off
Magnetos	Off
Master Switch	Off

## **II. SYSTEMS DESCRIPTION:**

### ***FLIGHT CONTROLS***

Conventional surfaces, operated mechanically.  
Mechanical trims.

### ***ENGINES & PROPELLERS***

Two Lycoming IO-360G, 210 bhp each (337G).  
Two Lycoming TSIO-360D, 225 bhp each (T337G).

The rear engine is critical performance wise.

### ***FUEL SYSTEM***

(337G)

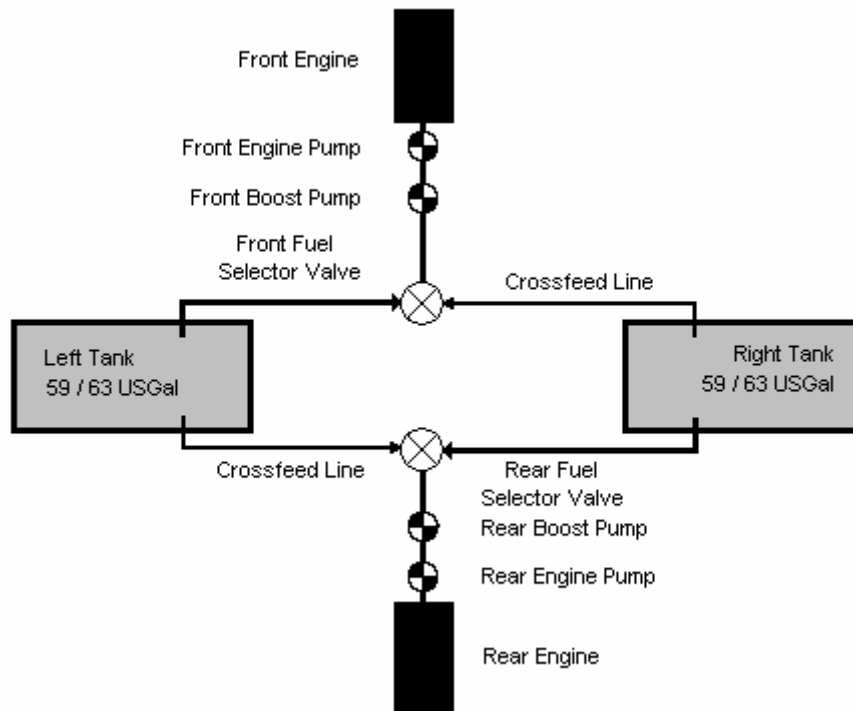
Two fuel tanks in the following useable configuration:

- Mains :	2 x 59 USGal	(2 x 354 lbs)
- Total :	118 USGal	( <u>708 lbs</u> )
	= 448 litres.	

(T337G)

Two fuel tanks in the following useable configuration:

- Mains :	2 x 63 USGal	(2 x 369 lbs)
- Total :	126 USGal	( <u>738 lbs</u> )
	= 478 litres.	



The electrical fuel pumps are named 'Front' and 'Rear' and correspond to each engine, no matter which tank they are feeding from. They have three positions:

- Off: Normal flight operations.
- Lo: Engine priming and starting.
- Hi: Emergency (engine-driven pump failure) or vapor lock.

## ***ELECTRICAL SYSTEM***

28 VDC system:

- One 24 V battery in front of the engine compartment.
- Two 28 V alternators.

The alternators are self-sustaining and will keep on running even if the battery is isolated from the circuit. However, they may stop under extreme load conditions. The Alt Restart Switch is designed to provide initial exciting current to restart an alternator.

The aeroplane is equipped with two voltage regulators, which can be selected alternatively to provide DC current.

The system comprises two buses: the Primary Bus and the Electronics Bus. They are powered by both alternators. The Electronics Bus is disconnected if:

- Either Start Switch is in the On position.
- Ground power is connected.

## ***LANDING GEAR & WING FLAPS***

Hydraulic landing gear, driven by an electrical pump.

A Landing Gear Warning Horn activates every time one of the throttle levers is pulled back. A squat switch on the nose wheel prevents retraction on the ground.

The emergency landing gear extension involves actuating a hand pump located between the two front seats. This pump feeds from a reservoir independent from the main system.

The electrical single-slot wing flaps have four positions: Up, 1/3, 2/3 and 3/3.

Full extension of wing flaps will make additional nose up trim available.

### **III. PERFORMANCE:**

The following performance figures are for the 337G only.

#### ***TAKEOFF***

Normal takeoff: 29.9 in MAP, 2800 RPM, flaps 1/3.

Use a VR of 80 MPH. For a paved field at 2000 ft elevation, ISA + 20°C, no wind and MTOW, expect a TODR of 600 metres.

#### ***CLIMB***

Normal climb: 24 in MAP, 2650 RPM, 150 pph FF.

Use a 120 MPH cruise climb speed, and expect a MTOW rate of climb of 400 fpm at MSL.

#### ***CRUISE***

Normal cruise: 25 in MAP, 2500 RPM, 110 pph FF.

Expect to cruise at 155 MPH around FL100.

Max endurance cruise: 18 in MAP, 2500 RPM, 85 pph FF.

Expect to cruise at 115 MPH around 1000 ft MSL.

#### ***LANDING***

Normal landing: flaps 3/3, full brakes on impact.

Use a Vapp of 90 MPH. For a paved field at 2000 ft elevation, ISA + 20°C, no wind and MLW, expect an LDR of 500 metres.

## ***N-1 PERFORMANCE***

Single-engine climb: 29.9 in MAP, 2800 RPM.

Use a 100 MPH climb speed, and expect a MTOW rate of climb of 100 fpm at MSL.

## **IV. WEIGHT & BALANCE:**

The following figures are for the 337G only.

### ***LIMITATIONS***

MTOW	2,100 kg
MLW	2,200 kg
Maximum Forward Cabin Compartment Load	166 kg
Maximum People Onboard	6

### ***USEFUL LOADS***

Empty Weight (std a/c, 1 crew)	1,390 kg
Maximum Fuel Load (118 USGal)	340 kg
Full Fuel Useful Load	370 kg

## **V. SPEEDS:**

V <sub>so</sub> =	___ MPH	V <sub>x</sub> =	82 MPH
V <sub>si</sub> =	___ MPH	V <sub>y</sub> =	113 MPH
		V <sub>xse</sub> =	90 MPH
V <sub>r</sub> =	80 MPH	V <sub>yse</sub> =	100 MPH
V <sub>fe/ 1/3</sub> =	150 MPH	V <sub>a</sub> =	___ MPH @ MTOW
V <sub>fe/2/3</sub> =	108 MPH	V <sub>app</sub> =	90 MPH