TRINIDAD TB21 GT



PILOT OWNERS

MANUAL

BUILD MSFS 4.6.0

MSFS FLIGHT SIMULATOR EDITION





INTRODUCTION

Introduction:

The Trinidad TB series was originally designed in the 1970's, with it and other TB series aircraft getting their names from Carribean Islands. TB stands for the town where these were manufactured, Tarbes in the South of France. These planes were later updated in 2000 and renamed to the GT series, meaning Generation These had new improvements done throughout the aircraft including the windows being more shaped for the fuselage. Some versions of the Trinidad were given Turbochargers which enabled them to cruise at altitudes up to 24,000 feet. One of the most loved features of the Trinidad by their owners is the roominess of the cabin. Looking something like an automobile, the interior features many nice appointments including leather seats, arm rests, and a unique center tunnel. The TB21GT was slightly heavier then its competition but with the 250 HP engine and added Turbocharger, they more then made up for their heavy airframe. Another nice feature with the GT series was the roomy baggage area which also featured a newer larger cargo door.

This Flight Simulator models features the SOCATA TB-21 Trinidad TC - 250hp (186-kW) Turbocharged variant with a Lycoming TI054D engine.











TRINIDAD TB21GT PILOT OWNERS MANUAL









SPECIFICATIONS

Specifications:

Powerplant Manufacturer : Lycoming Type: TIO-540-ABLAD Turbocharged Power Rating : 250 HP at 2,575 RPM Recommended TBO: 2,000 hours

Propeller Manufacturer : Hartzell

Diameter : 80 in 2.03 m

Type : Constant speed 3 bladed prop

Fuel type : 100 LL

Total tank capacity : 88.8 US gal 336 1 Usable fuel capacity : 86.2 US gal 326 1

Oil Total oil capacity : 13.3 US quarts 12.6 1

Weights

Operating empty weight : 2,011 lbs 911 kg

Max· take off weight (MTOW) : 3,080 lbs 1,400 kg

Max. landing weight: 3,080 lbs 1,400 kg

Max. useful load: 1,226 lbs 556 kg

Max. luggage capacity in storage : 143 lbs 65 kg

Max. wing loading : 24 lbs/sq.ft 117.6 kg/m2

Performances

Rate of climb (sea level - max weight) : 1,126 ft/mn

Max. cruis. speed 25,000 ft at 75% : 190 KTAS

Best eco.cruis.spd 25,000 ft at 65% : 169 KTAS

Demonstrated crosswind : 25 kt

Maximum range : 1,000 Nm

Certified ceiling : 25,000 ft

Dimensions

Wing span : 32.71 ft 9.97 m Length : 25.43 ft 7.75 m Height: 9.35 ft 2.85 m













NEW 4.6.0 BUILD FEATURES



These are the newest updates, modifications and repairs carried out on the Trinidad TB21 GT by Lionheart Creations;

- * Manifold Pressure and Fuel Flow instrument recalibrated
- * Engine tunes carried out for high realism in various altitudes
- * Recalibration of several engine related instruments that were slightly off
- * Tuning to Al Autopilot system
- * Addition of tuneable ASI Speed Strip disc in ASI to calculate TAS speeds at high altitude
- * Clickable hidden TAS digital mini readout, top left of instrument cluster
- * Tuning of Effects for new version of MSFS Effects management
- * Manifold Press and TACH moved to middle for easier visibility
- * Functioning HOBBS Engine Time Meter installed in Tach instrument
- * Belly Landing Functionality for practicing emergency gear up landings
- * Pilots position assignment flipped to work better with Pets addon



TRINIDAD TB21GT PILOT OWNERS MANUAL

NEW 4.6.0 UPDATE HIGH ALTITUDE ENGINE PERFORMANCE UPDATE 2 INSTRUMENTATION RECALIBRATION & ENGINE PERFORMANCE RETUNE



NEW... TAS DIGITAL READOUT Click to turn on

NEW... ADJUSTABLE SPEED STRIP DISC FUNCTIONALITY Adjust speed over TEMP section to See speed adjustment, similar to TAS readout Used in high altitude flight

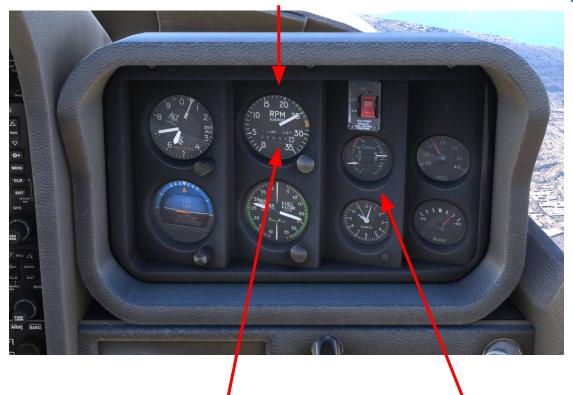
Recalibration of Engine Instrumentation
Retune of Engine Performance
Retune of Flaps performance with new version of Asobo flaps aero
dynamics technology and 'new' flaps handling inputs coding that was
just introduced recently.





NEW 4.6.0 UPDATE HIGH ALTITUDE ENGINE PERFORMANCE UPDATE

NEW... RPM & MP/FUEL FLOW moved to Center for better visibility



NEW... HOBBS ENG Timer Readout, rotating digits

NEW... Full tune on Engine Performance, Fuel flow, and recalibration to engine instruments readouts; TEMP, EGT, etc.



TRINIDAD TB21 GT PILOT OWNERS MANUAL

NEW 4.6.0 UPDATE BELLY LANDING CAPABILITY

It is now possible to belly land your Trinidad. This is good practice for training for emergency situations when you have a full power loss with a gear up condition. Great for practicing your emergency gliding ability and setting up for quickly finding and landing on a nearby location.







TRINIDAD TB21 GT



NEW 4.6.0 UPDATE TACH and MP/Fuel Flow Row Moved to Right

The Tach and also Manifold Pressure/Fuel Flow instruments row was moved over one notch to enable the pilot to see it plainly, unhidden by the center console structure. Ron found that some Trinidads had these instruments in this row.

This is a hidden TAS digital speed readout. Click and it turns on.







BUILD 4.6 NEW CHANGES IN HANDLING AND CLIMB SPEEDS THAT ARE AFFECTED

This new update brings realism to the engine and turbo performance in both climbout and also high altitude performance. Note that this is for a 4 passenger loadout, 60 pounds of cargo in the back, and fuel up to the 'limit' that will put you at 2980 LBS total weight. If you are only half loadout, these figures will not work, you will be 'lite'.

You have proper readouts now for Manifold Pressure and Fuel Flow for those who fly by numbers as like a real world pilot would do. This will mean, you will need to really watch your speeds and climb factors when fully laden going up to ceiling; 25,000 feet. It will get slow during the last few thousand feet, just like Concord. You can calculate your speeds now on the speed strip disc in the ASI. I have included a cheater digital TAS speed indicator in the top left of the instrument pod. Try to use the instrument ASI speed adjuster for realism, but you can learn to use it by comparing it with the TAS digital readout.

A massive amount of work and testing went into the engine tune and instruments. I hope you enjoy it. This is going to be great for the 'Realist' pilots. This also means slower climbs and when you drop flaps on approach, you will feel the buffeting and bouncing 'more' with the new Asobo aerodynamics coding. She will handle different with her engine tunes and flaps tunes and she will not climb like she used to. She will be more realistic now, closer to the real Trinidad. Calculate your weights and speed. Key....



TRINIDAD TB21GT PILOT OWNERS MANUAL



















EXTERIOR FEATURES

This flight simulator model features:

- * High Detail aircraft model created in 3DS Max
- * High detail cabin with extreme attention to detail
- * Animated doors and cargo door
- * Animated retracting foot steps that raise when the landing gear is retracted

- * 22 high detail paint schemes with both clean and dirty variants mixed in
- * Two military trainer/Liason planes
- * 4096 pixel high resolution fuselage texture
- * Some paint schemes feature bug spattered, oil
- stained, dust coated and paint chipped wear
- * Some paint schemes feature dark tinting Plexiglass and some have dusty more clear Plexi versions







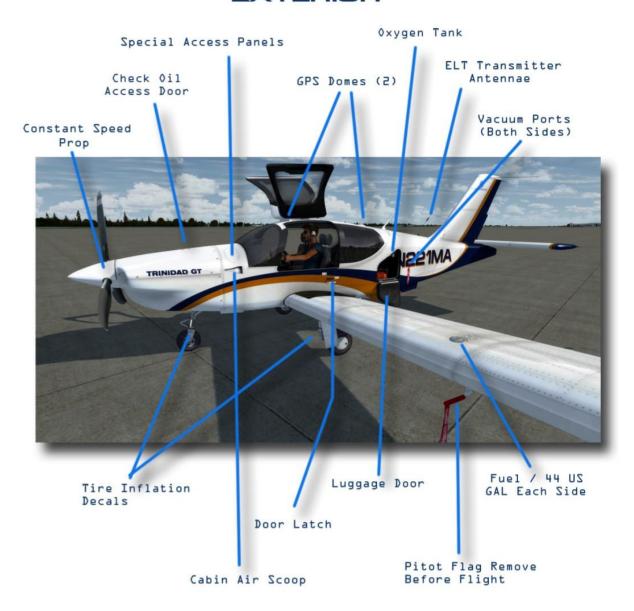








EXTERIOR





RINIDAD TB21 GT PILOT OWNERS MANUA



INTERIOR FEATURES

The interior of this model features:

- * High detail cabin with extreme attention to detail * Incredible instrument panel modelling which include the radius edges, indentioned instrument openings,
- various knobs and handles modelled as precisely as possible. Seats even have 3D piping trim which can be alternately colored
- * 3 different cabin color schemes in gray, tan, and rich brown and blue suede
- * Night Illumination with Ambient light mode textures
- * Some interior textures are high resolution which show the famous leather like grain of the inner panels and leather seats
- * GPS instrumentation







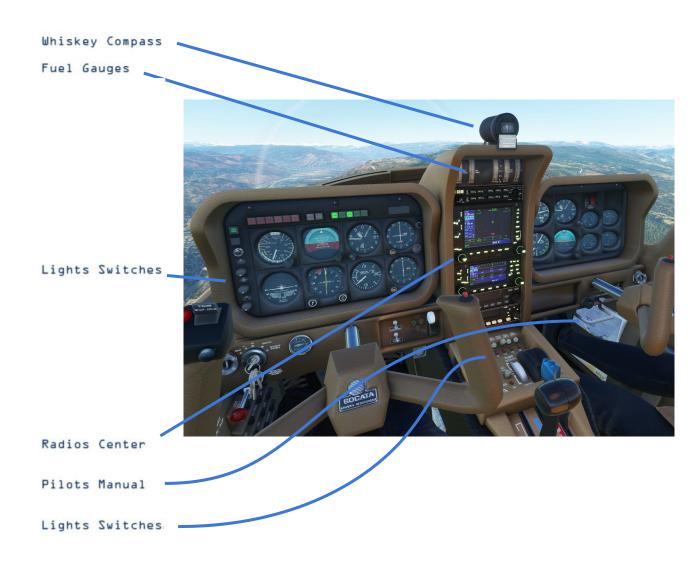








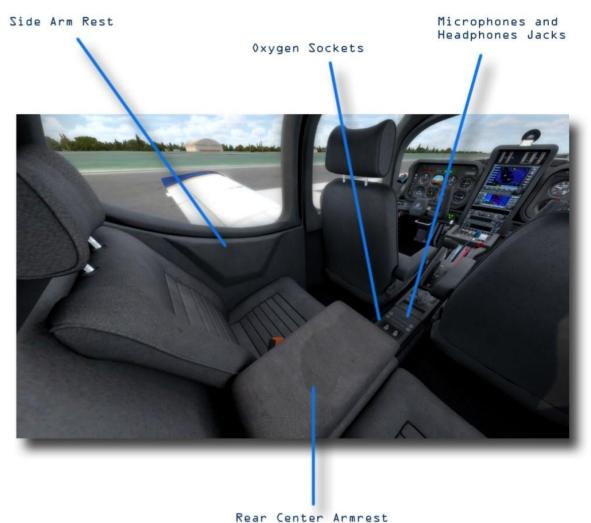
CABIN LAYOUT FRONT







CABIN LAYOUT REAR

















LEFT INSTRUMENTATION POD



Yoke Controls Non Fun-

Autopilot 'On' light

(Wheel Chocks and

Blue Glow Lights -

Park Mode Switch

Pitot Flags)

ctioning

Starter Switch

Rear Cargo Door Release (Aux Landing Gear on **Actual Trinidad Planes,** Repurposed)

Parking Brake Knob, Turns

Hide Yoke Switch (White Handle)

Alternate Air Knob

Non Functioning Switches





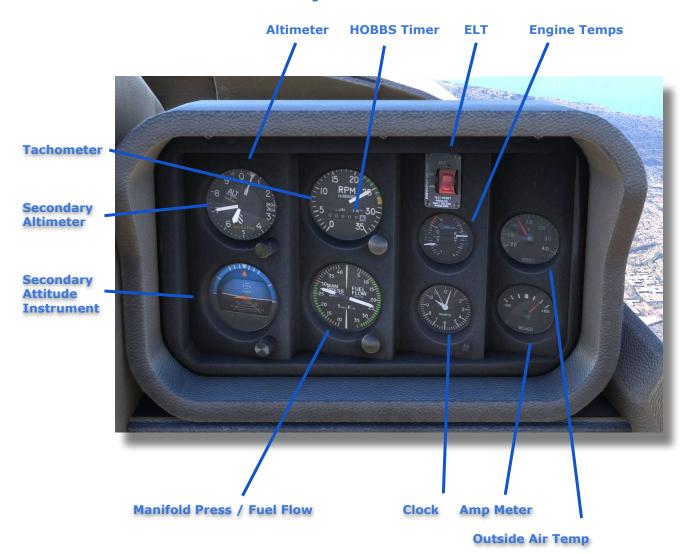






RIGHT INSTRUMENTATION POD

New Build 4.6 Modified Instruments Arrangement Shown







SWITCHES CENTER



MAIN SWITCH: Battery ALT FIELD: Alternator

AVIONICS: Turns Radios and GPS units on/off

TURN COORDINATOR: Dummy Switch, not supported







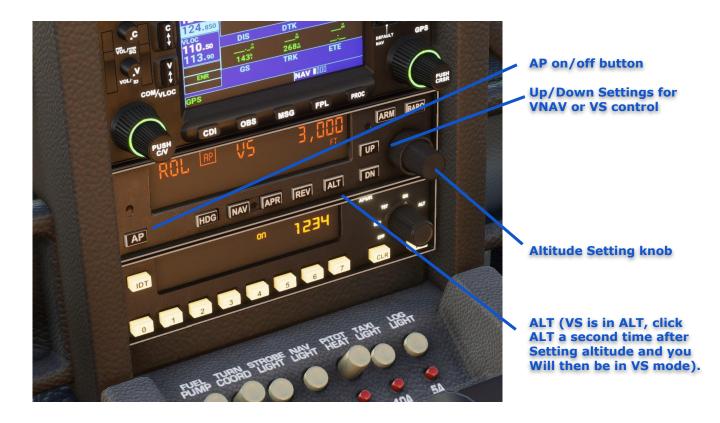




ASOBO AUTOPILOT VERTICAL SPEED SETTING

To properly set your Altitude and then setup VS (Vertical Speed or VNAV); do the following;

- 1. Turn on AP button
- 2. Turn on ALT button
- 3. Rotate dials on right of unit to desired Altitude setting
- 4. Click UP/DN buttons and VS will appear. Adjust UP/DN
- 5. Tap Up/Down buttons to desired climb/descent rate you wish. The selected Altitude will return to visible where VS speed was at. Tapping on the up/down buttons will restore (temporarily) your view of your VS setting.





TRINIDAD TB21 GT



CABIN AND PANEL ILLUMINATION

There are 3 variations of cockpit lighting. These are accessed by 3 knob switches at the left pilots panel. These are not dimmer switches, they are on/off switches.

- 1. Panel Lights; illuminate the Instruments
- 2. Middle knob is 'Blue Glow' setting without using Instrument lights
- 3. Bottom knob is your cabin dome spot lights







TRINIDAD TB21 GT



INTERIOR LIGHTING SYSTEM PAGE 2

There are 3 forms of cockpit lighting.

- 1. Instruments
- 2. Blue Glow Panel Lights
- 3. Main Overhead Dome Lights



PANEL LIGHTS MODE Instruments Only, Dimmable



BLUE GLOW PANEL LIGHT MODE Blue Glow, no Instrument Lights



OVERHEAD DOME LIGHTS: Not Shown, bright dome lights using interior Overhead spotlights.



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TRINIDAD TB21GT



INTERIOR CAMERA VIEWS



CONTROL-1 PANEL CLOSE UP



CONTROL-2 AVIONICS VIEW



CONTROL-3 ENGINE CENTER



CONTROL-4 LIGHTS AND POWER



CONTROL-5 CENTER CONSOLE



CONTROL-6 RH QUARTER VIEW



CONTROL-7 APPROACH VIEW



CONTROL-8 RIGHT WING VIEW

TRINIDAD TB21 GT PILOT OWNERS MANUAL

EXTERIOR CAMERA VIEWS



CONTROL-SHIFT-1 RUDDER VIEW



CONTROL-SHIFT-2



CONTROL-SHIFT-3 RIGHT WING VIEW



CONTROL-SHIFT-4 BELLY VIEW



CONTROL-SHIFT-5 FRONT RIGHT VIEW



CONTROL-SHIFT-6 TOP FUSELAGE VIEW



CONTROL-SHIFT-7 RIGHT VIEW



CONTROL-SHIFT-8 DOOR REARWARD VIEW



DOORS AND PARK MODE



Doors open via 'handle latches' inside. The doors will not operate off of Keyboard Shortcuts.

Pitot flags and wheel chocks are visible when clicking the black dial in the top left corner of the pilots instrument pod; Park Mode.





INSTRUMENT PANEL

CENTER TUNNEL PART 2

Throttle

Trim Wheel

Trim Indicator Window / Needle

Ash Tray for change only no ashes

Rudder Trim Knob

Fuel Selector

Trinket Pocket





Lionhoart Creations





It is not recommended to use the 'Take-Off' setting on Rudder Trim as the simulator has a more stronger effect with rudder trim then with the actual aircraft. I left the 'Take-Off' graphic for visual realism.





OVERHEAD CONSOLE

Overhead Placcards



Overhead Front Speaker

Oxygen Control InOp

Rear Speaker

Rear Dome Light







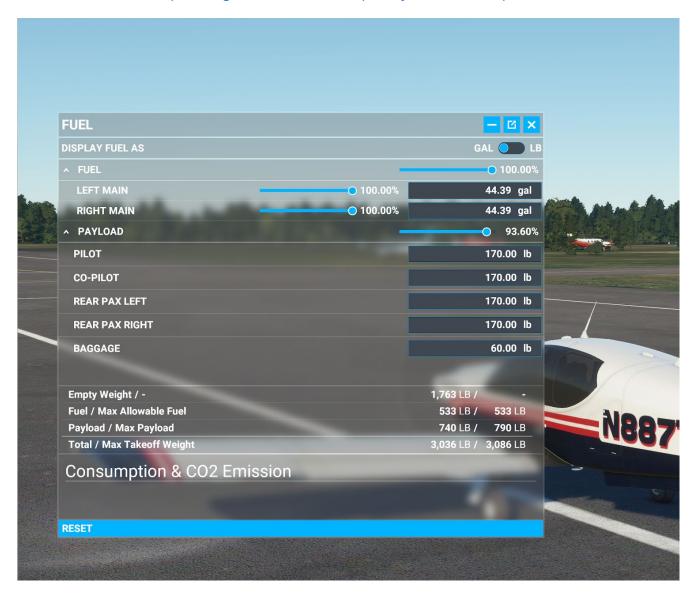






FUEL AND WEIGHT LOADOUTS

It is possible to loadout the Trinidad to maximum weights. Here you can see it is loaded with full fuel and 4 passengers at 170 US LBS each and 60 lbs of cargo in the boot. However, back seat passengers will not show up, only the front couple.





TRINIDAD TB21GT PILOT OWNERS MANUAL







TRINIDAD TB21GT



FLIGHT

The Trinidad TB2L GT is equipped with a powerful 250 HP engine and fitted with a turbocharger. This gives the Trinidad an excellent power rating and provides for a steep LLOO FPM climbout capability even when fully laden.

The Trinidad is great for long flights with Max range at 1000 NM at 75% power. Her best speed, high cruise, is 190 Knots. She is a fast bird. With being turbocharged and having an onboard oxygen system, the Trinidad is able to go to 25,000 feet! Up there, you can find calm winds and watch heavy airliners pass by. Note that this Edition of Trinidad does not have de-icing equipment on the wings and control surfaces, so beware of ice buildup.

Because the Trinidad can fly at higher speeds, but also fly at slow 'traffic' airspeeds of 120 Knots, you will need to trim the Trinidad considerably to compensate the speed to lift changes. The large, airliner like trim wheel next to you is close and easy to crank. A trim dial is on the top next to the wheel to see where your trim setting is at. When slowing down from fast cruise to airport traffic speed of 120 knots, you will be trimming quite a bit.

Rotation for take off speed on the Trinidad is about 65 to 70 knots with one notch of Flaps (required). When on approach, try to keep your speed at 85+ Knots for safety sake as she might drop. When alone, you can easily do performance climbouts well over 1100 FPM as you'll be low in weight.











CHECKLIST..... STARTUP

ENGINE STARTING

Main switch ON
Parking brake light "PARK" Illuminated
Anticollision lights (if installed) ON

NORMAL PROCEDURE

Propeller FULL FORWARD
Throttle 1/4 OPEN
Mixture IDLE CUT-OFF
Fuel pump ON

Mixture FULL RICH until fuel flow is displayed

(3 to 5 sec.) then IDLE CUT-OFF

Fuel pump

Area

Clear

Magneto/start selector

START (10 sec. maxi)

Magneto/start selector START (10 sec. maxi)

When the engine starts:

Magneto selector BOTH
Mixture FULL RICH
Oil pressure Check,

if no pressure within 30 sec.,

shut down engine

Engine 1000 to 1200 RPM during heating











CHECKLIST..... TakeOff

TAKE-OFF

Lined up on

runway Check heading indicator

Check emergency compass

Smoothly apply full power

Engine parameters Check

Airspeeds See Section 5

"Take-off performance"

STANDARD AIRSPEEDS:

Rotation 68 KIAS

Initial climb 75 KIAS

WHEN SAFELY AIRBORNE:

Brakes Apply

Landing gear RETRACT

AT 300 ft:

Flaps RETRACT

AT 1000 ft:

Fuel pump OFF

External lights As required

Air conditioning switch

(if installed) AIR COND

if air conditioning required











CHECKLIST.....Climb

CLIMB

Mixture FULL RICH

Throttle FULL POWER

Propeller FULL FORWARD (2575 RPM)

Maximum exhaust gas

temperature (TIT) 1650°F

Maximum manifold pressure 38 in.Hg up to

17000 ft (automatic regulation).

Beyond adjust manifold pressure

in accordance with limitation curve

- see Figure 4.2

Optimum climb speed

95 KIAS

Fuel pump: during climbs carried out by hot weather it may be necessary to operate the pump to eliminate and / or prevent from vapors coming out. Above 15000 ft, it is recommended to set fuel pump "ON".

NOTE:

Climb can also be carried out at higher speeds and lower power ratings (better visibility towards front, better engine cooling, lower noise level)







TRINIDAD TB21GT















CHECKLIST.....Cruise

CRUISE

Cruise 75 % and holding, see engine data in "Performance" section.

NOTE:

By hot weather and at high altitude, fuel vapors may cause flowmeter variations (fuel flow).

In this case:

Fuel pump ON Mixture SET

Above 15000 ft, it is recommended to leave the pump "ON".

In practice, it is recommended to change tank every half-hour and not to exceed a fuel imbalance of 20 U.S Gallons (75 Litres).

Flight into known icing conditions is PROHIBITED

Unintentional icing conditions: see Section 3 "Emergency procedures", Paragraph "Icing".

Leave icing conditions as soon as possible.

Remember to push in the "Alternate Air" control (if installed) after leaving the icing area and when you are sure there is no ice on the airframe.









TRINIDAD TB21GT PILOT OWNERS MANUAL









CHECKLIST.....Descent Approach

DESCENT

Power setting as required for descent.

Every 1500 ft, apply engine power to prevent excess engine cooling and spark plugs fouling. Avoid too long descents with manifold pressure lower than 14 in.Hg.

Seats, seat belts,

shoulder harnesses ADJUSTED and SECURE

APPROACH - LANDING

FINAL:

Airspeed 86/92 KIAS

Flaps TAKE-OFF below 129 KIAS

Landing gear lever DOWN
Fuel pump ON

Fuel pump ON Mixture FULL RICH

Propeller FULL FORWARD

Brakes Checked

Seats, seat belts,

shoulder harnesses ADJUSTED and SECURE

Landing lights ON

SHORT FINAL:

Flaps LANDING below 103 KIAS

Airspeed See Section 5

"Landing Performance"

Standard airspeed 73 KIAS

Air conditioning switch (if installed) OFF













CHECKLIST.....Go Around

GO-AROUND

Smoothly apply full power

Airspeed 76/81 KIAS

When climb rate is positive :

Landing gear lever UP

Flaps TAKE-OFF
Airspeed 90 KIAS
Flaps RETRACTED
Climb at 95 KIAS







CHECKLIST.....Cross Winds

FLIGHT WITH CROSSWIND

TAKE-OFF:

Apply full power before brake release.

Aileron control moved into wind.

Keep the airplane on runway centerline using the rudder.

Maintain nose-wheel on ground up to 65 KIAS.

Lift-off cleanly in order to avoid subsequent touch-down.

LANDING:

When landing in a strong crosswind, use the landing flap setting.

Although the crab or combination method of drift correction may be used, the wing low method gives the best control. Maximum bank angle close to the ground is 15°.

After touch-down, keep the nose-wheel on the ground, hold a straight course using rudder pedals.





























CHECKLIST.....ShutDown

AFTER LANDING

Fuel pump	OFF
Flaps	RETRACTED
Landing light	OFF
Taxi light	As required
Trims	TAKE-OFF
Radio equipment	As required
Pitot heating (if installed)	OFF
Air conditioning (if installed)	As required

SHUT-DOWN / SECURING AIRPLANE

Parking brake	Set
Turn and bank indicator (if installed)	OFF
Anticollision lights (if installed)	OFF
Taxi light	OFF
Lights	OFF
Radio master switch (if installed)	OFF
Air conditioning switch (if installed)	OFF
Throttle	Reduce













Typical full load and half fuel climbout, speeds and altitudes, MP and FF settings

(4 people	half fu	el Full	Power)					
ALT(000)		RPM	TAS	РОН	GPH	AoA	Climb AoA/set rate/MP/KIAS	
The state of the s	(must be 105 to 95) Full PWR Max MP 38/2575 TAS/POH chart pg 106							
25	23.7	, 2500	190	186	23	3	4/500/30/115 Full Power	
-> 211/??? no chart data								
25	20.1	2400	171	169	13	4		
23	23.9	2500	191	184	17	2	3/600/33/127 Full power	
23	20.5	2400	169	167	13	4		
21	24.1	2500	190	181	18	3	3/700/32/121	
20000	->	2	18/200					
21	23.2	2200	176	166	13	4		
19	24.3	2500	183	177	17	2	4/900/33/103	
221/198								
19	21.5	2200	163	155	13	4		
17	24.5	2500	182	175	17	2	4/900/33/108	
214/195								
17	20.1	2200	151	147	13	4		
15	24.6	2500	177	172	17	2	4/900/33/110	
210/191								
15	20.3	2200	148	143	13	3		
13	24.7	2500	174	169	17	2	4/1100/32/100	
205/188								
13	20.6	2200	149	142	13	3		
11	24.8	2500	172	167	17	2	4/1000/32/108	
199/185								
11	20.8	2200	146	141	12	4		
09	25.0	2500	169	164	17	2	4/1000/32/105	
196/181								
09	21.1	2200	145	139	12			
07	25.3	2500	166	161	17	2	x/1100/xx/113	
192/178								
07	21.5	2200	144	137	12	3		
05	25.5	2500	167	158	17	2	x/1100/xx/111	
188/175								
05	21.8	2200	142	135	13	3		
03	25.7	2500	157	155	17	2	x/1300/xx/108	
185/171								
03	22.2	2200	143	134	12	3	(4222)	
01	26.0	2500	156	153	17	2	x/1300/xx/108	
182/169	22.5	2222	244	120	4.3	_		
01	22.6	2200	144	132	13	2		

TRINIDAD TB21GT



OTHER PLANES BY LIONHEART CREATIONS



Bucker Bu-131 Jungmann Swiss German Edition



Classic 1934 Pasped Skylark



Bellanca SV-30A Super Viking Type 300 A Turbo Edition



Q-200 Special Edition Quickie Homebuilt Sport Aircraft

LearAvia LearFan
Special 'Modern' Edition with
latest Avionics Suite



TEAM TRINIDAD

Bill OrtisTeam Leader, Model Mesh, Graphics, Manual, Website, Customer Service MSFS:
BeeJay (OzWookie)Preliminary MSFS
Conversion, Graphics, Air
Tables Conversions,
Animations Coding
Ron HMSFS Animations Coding, Engine
Coding, Flight Tuning
Otmar (Vitus)Graphics Settings, Blender Tools
Thomas ClaytonTest Pilot
RonHTest Pilot, Coding, and a million
Other professions and help
Jim GoldmanTest Pilot, Repainting
Greg MartinWorlds most amazing Screenshot
Artist and Test Pilot
ATTIST GITG TEST THE
FS2004 and FSX:
Scott ThomasInstrumentation
Dwight FurleighInstrumentation
Bill LeamingInstrumentation Tuning
Team AsoboTHE WORLDS BEST SIMULATOR!
And their assistance
Socata USAPermissions to recreate their fabulous
Trinidad and Tobago for Flight Simulator and for creating
The Trinidad; an amazing, sleek, fast, well made aircraft.



OTHER LHC AIRCRAFT LINES AVAILABLE



Quickie Q200



Blade Electric Sport







Piper Pacer Super Pack Diamond DA40



Quest Kodiak Mega Pack



Epic Victory Biz



ionhoart Croations







TRINIDAD TB21GT PILOT OWNERS MANUAL



SPIRITUAL MESSAGE

Jesus is Lond ...

LET US NEVER FORGET ALL THAT JESUS HAS DONE FOR US. HE CAME INTO OUR WORLD AND SACRIFICED HIMSELF THAT WE MIGHT BE SAVED. HE INDURED THE CROSS FOR US WHEN WE WERE STILL SINNERS....

he also outreached his hand to all the rest of the world. Where salvation was only for the Jewish people, Jesus and his Father, Abba God, broadened the gift of salvation to all who would believe in him.

Three days spent below in Sheol, a battle fought for those in the underworld below. Jesus crushed the head of the serpent and took the keys of Sheol, freeing the peoples souls that were trapped down there. Not only the living but the sleeping were also saved.

AND REMEMBER THIS! JESUS IS THE SAME YESTERDAY, TODAY, AND FOREVER! MIRACLES HAVE NOT STOPPED. KEEP PRAYING. KEEP THE FAITH. HE STILL HEALS HIS PEOPLE. REMEMBER THAT. READ THE BOOK OF ACTS AND YOU WILL SEE HOW THE CHURCH 'BEGAN' TO GROW AND IT NEVER SLOWED DOWN. IT IS MORE POWERFUL THEN EVER.

LET US NEVER FORGET him.

Pray, pray, pray, and keep the faith....

AMEN.









TRINIDAD TB21GT PILOT OWNERS MANUAL



Many thanks to my amazing customers. Thank you for your purchases and your following. Without you, I would not be in business and these planes would not occur. Thank you for your amazing support and patience, input and enthusiasm. I pray I am providing an awesome form of flight simulation of aircraft as near in realism as possible. It's always been my ambition to get all the details in there and to help people out that might be having issues.

Thanks also to fellow 'Neighbors' in the flight sim field. We all help each other out. Some INCREDIBLE and TALENTED people out there.

Have fun in your shiny new Trinidad. Treat her gently and break in the engine properly. She loves San Diego, Cape Cod, Nantucket, and Sedona. Make sure she gets to visit those locations now and then.







