TRINIDAD TB21 GT

PILOT OWNERS MANUAL

BUILD MSFS 4.0.0

MSFS FLIGHT SIMULATOR EDITION

Lionheart Creations Ltd.

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 Two. 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 TIO540 engine.

TRINIDAD TB21 GT
PILOT OWNERS MANUAL

SPECIFICATIONS

Specifications:

Powerplant Manufacturer : Lycoming
Type : TIO-540-AB1AD 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 l
Usable fuel capacity : 86.2 US gal 326 l
Oil Total oil capacity : 13.3 US quarts 12,6 l

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 4.0 BUILD FEATURES

TRINIDAD TB21 GT
PILOT OWNERS MANUAL

NEW 4.0 BUILD FEATURE
3D INSTRUMENTATION!

Due to high requests, the instruments were rebuilt in 3D objects and animated using Asobo code methods to increase frame rates.

NEW 4.0 BUILD FEATURE REFINED WEATHERED LOOK ON VH-BXE

Wrapping technology from Substance Painter enabled me to redo the weathered look on the 'Oz-Stralia' dusty version VH-BXE livery with a more uniform look. And more dust added, but not as 'orange' as before, more generalized. ;)

NEW 4.0 BUILD FEATURE
INSTRUMENTS FACE PANELS 'GRAPHICS' AND MESH REVAMPED FOR TRUER REALISM

The face panels of the instrument pods were redone to show a more crisp edge to the instrument cutouts as featured in the actual Trinidad aircraft. Also, some of the 'tan' interiors now feature either black (not gray) and also dark brown face panels.

NEW 4.0 BUILD FEATURE
3D INSTRUMENTS, DIMMABLE PANEL LIGHTS AND REVAMPED INSTRUMENTATION KNOBS NOW FEATURED!

3D Instruments! Layered and recessed, fully animated and with Asobo MSFS coding. They also feature direct 3D lighting and use a dimmer knob to tune them down. On/Off knob, far top left, and dimmer knob, far top right.

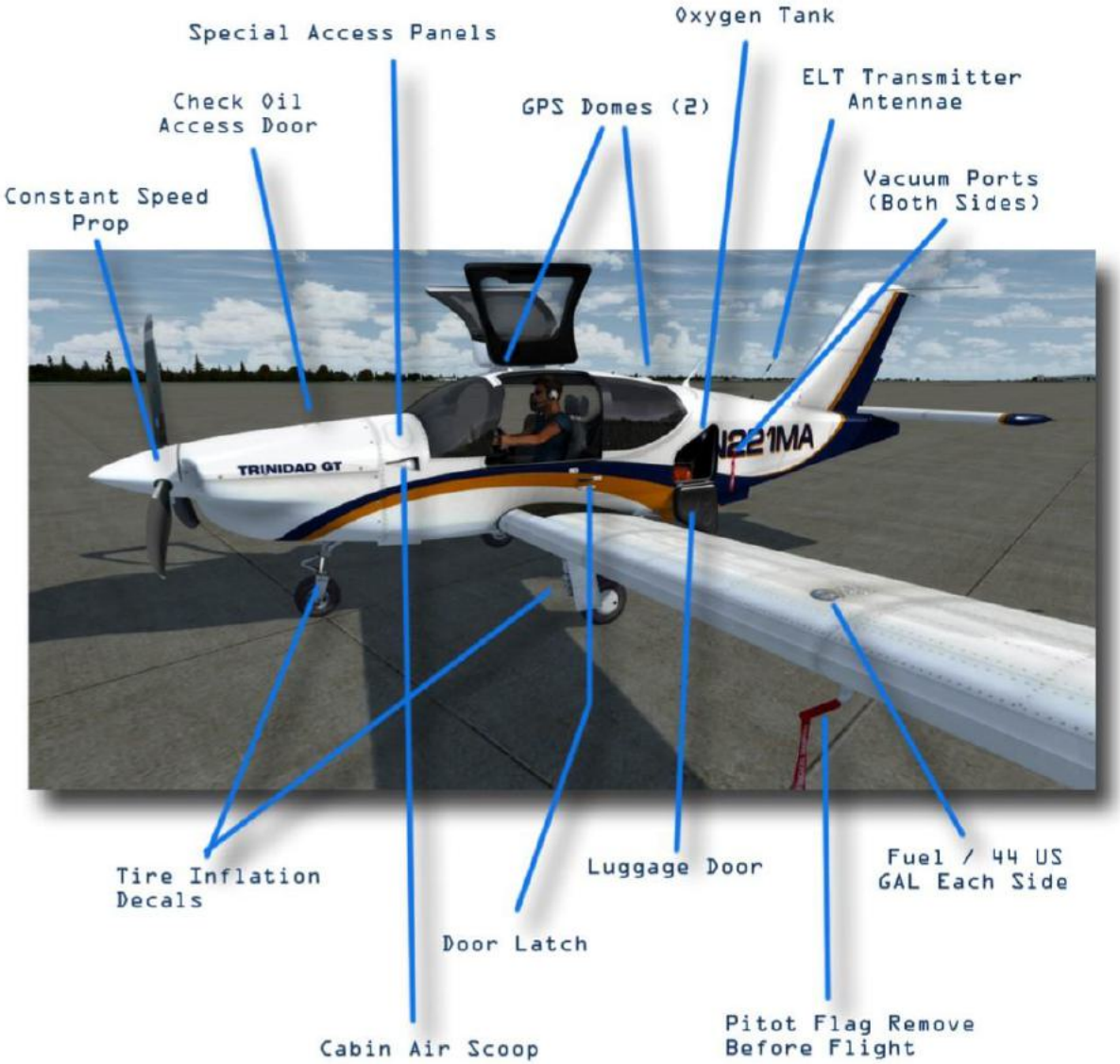
EXTERIOR FEATURES

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



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

Whiskey Compass

Fuel Gauges

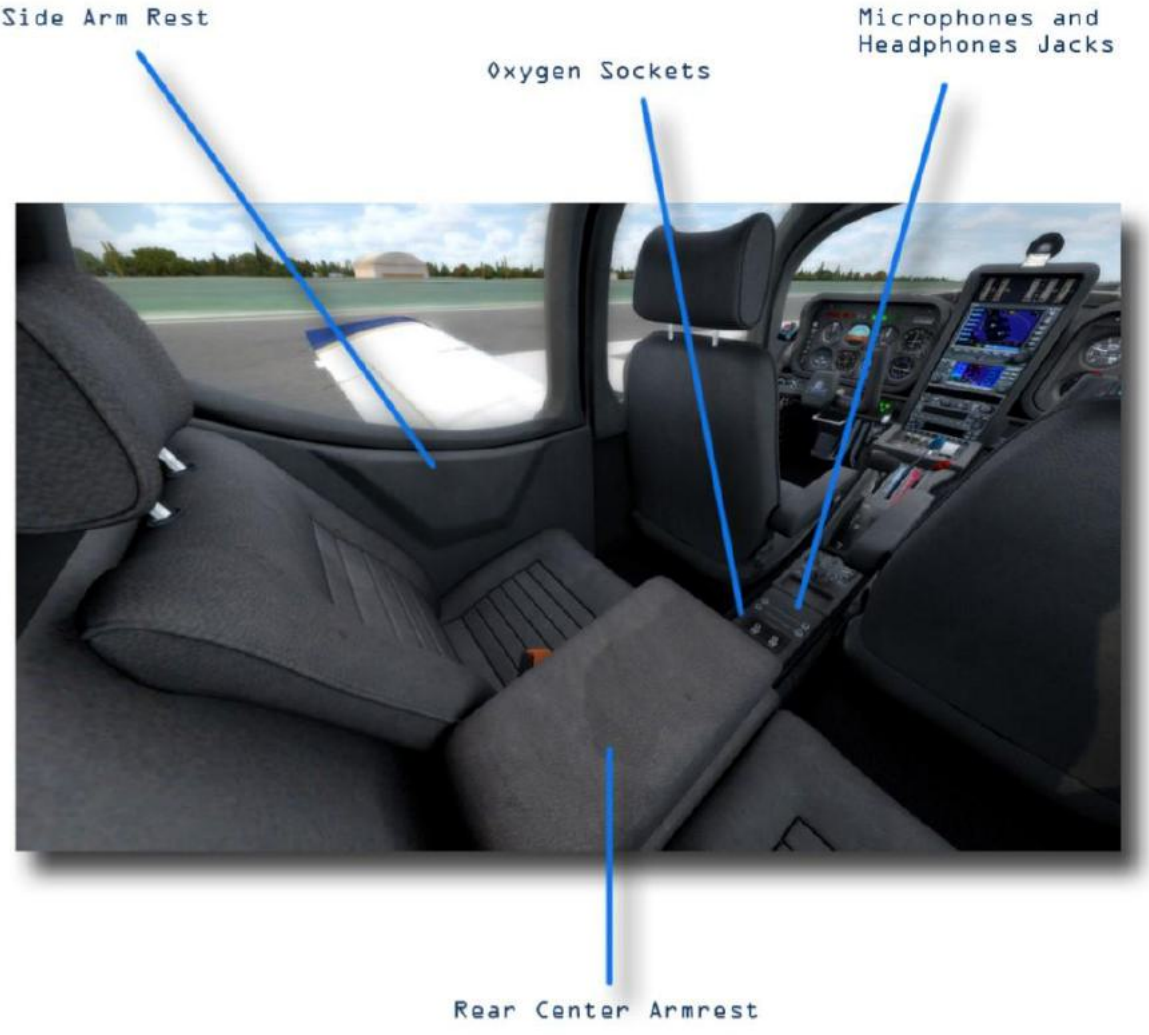
Lights Switches

Radios Center

Pilots Manual

Lights Switches

CABIN LAYOUT REAR



TRINIDAD TB21 GT
PILOT OWNERS MANUAL

INSTRUMENT PANEL

LEFT INSTRUMENTATION POD

INSTRUMENT PANEL

LEFT INSTRUMENTATION POD

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.

NOTE: There might presently be a bug in the autopilot that might cause the plane to

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
4. Instruments 'Dimmer' Knob now featured to control Brilliance of Instruments lights.

INTERIOR LIGHTING SYSTEM

There are 4 forms of cockpit lighting.
1. Instruments only
2. Panel Facia Lights
3. Blue Glow Panel Lights
4. Main Overhead Dome Lights

PANEL LIGHTS MODE
Instruments Only

These can be dimmed Via the small dimmer Knob, top right on Pilots Instrument Pod.

BLUE GLOW PANEL LIGHT MODE
Blue Glow, no Instrument Lights

OVERHEAD DOME LIGHTS: Not Shown, bright dome lights using interio Overhead spot lights.

TRINIDAD TB21 GT
PILOT OWNERS MANUAL

Lionheart Creations Ltd.

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

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

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

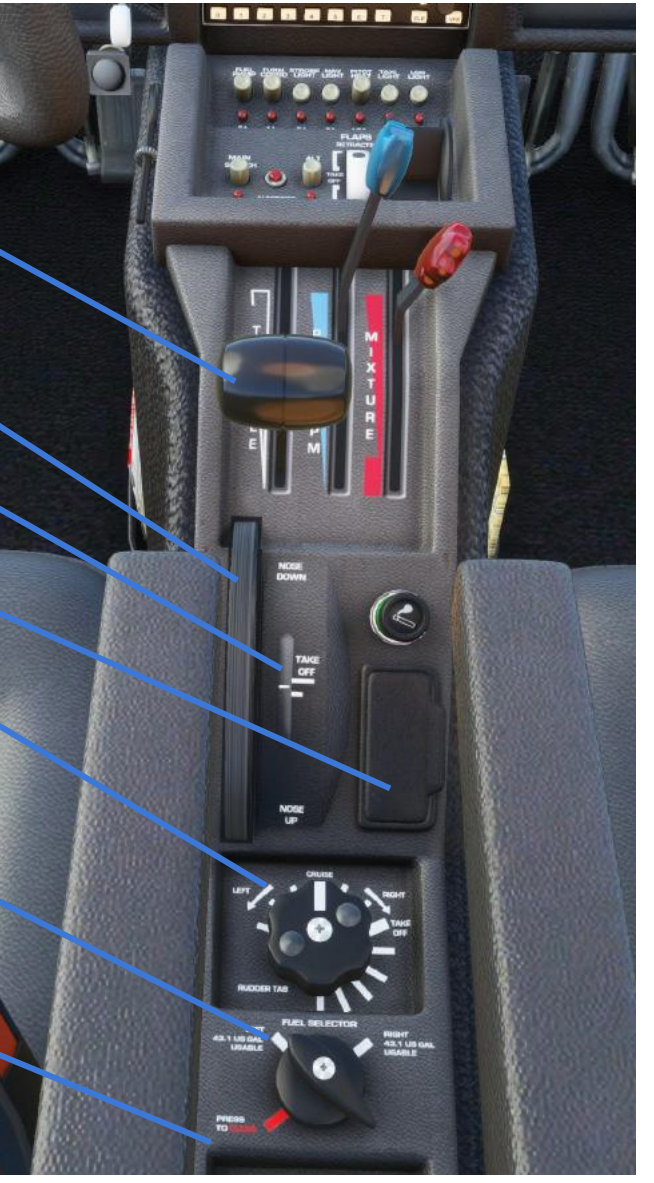
Trim Indicator Window / Needle

Ash Tray for change only, no ashes

Rudder Trim Knob

Fuel Selector

Trinket Pocket



OVERHEAD CONSOLE

Overhead Placcards

THIS AIRPLANE MUST BE OPERATED AS A NORMAL CATEGORY AIRPLANE IN COMPLIANCE WITH THE OPERATING LIMITATIONS STATED IN FOR OF PLACARDS, MARKINGS AND FLIGHT MANUAL

NEGATIVE LOAT FACTOR.....PROHIBITED
AEROBATIC MANEUVERS.....PROHIBITED
INTENTIONAL SPINS.....PROHIBITED
ICING CONDITIONS.....PROHIBITED

MAXIMUM TAKEOFF AND LANDING WEIGHT.....2535 lbs

MANEUVERING SPEED Va.....122
NEVER EXCEED SPEED.....165
MAXIMUM FLAPS EXTENDED SPEED V.....95 KIAS

DESIGN LOAD FACTOR (MAXIMUM)

FLAPS UP.....-3.8 -1.5

FLAPS DOWN.....+2 -0

FLIGHT CONDITIONS: DAY AND NIGHT IFR AND VFR
ICING CONDITIONS NOT ALLOWED

CAUTION DURING ILS APPROACH
AVOID ENGINE RPM HIGHER THAN 2600.

WARNING
TURN OFF STROBE LIGHTS WHEN TAXIING IN VACINITY OF OTHER AIRCRAFT, OR DURING FLIGHT THROUGH CLOUD, FOG OR HAZE.

Overhead Console

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 TB21 GT
PILOT OWNERS MANUAL

FLIGHT

The Trinidad TB21 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 1100 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.

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	OFF
Area	Clear
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

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

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)

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 TB21 GT
PILOT OWNERS MANUAL

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
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

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

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.

TRINIDAD TB21 GT
PILOT OWNERS MANUAL

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

COLD AND DARK STARTS FOR BEGINNERS

Some people use a 'cold and dark' start point that they save in a plane, then try to use that save point as their 'default' flight. An issue can occur where that particular plane had a 'off' switch or lever that other planes might not have. This causes a complication where that person cannot start a 'new' plane because that plane might not have a switch that was featured in the 'original' plane that they created the 'Flight' file with.

To get around such a problem, start up in the original plane, get it fully running, then switch into the 'new' plane, and in that, shut everything down and save 'that' as a new Flight save point.

Another thing you can do is save as the new plane Flight (new name, etc), then hand edit the Flight file.

A flight file is in FLT format, kept on the hard drive somewhere where your FS files are kept. You can easily find them. But, what is unique with these is that you can go in and open them in Windows Notepad and edit them, changing 'off' switches to 'on'. In the FLT file, anything that is off is labeled 'false' and anything on is 'true'. So, if you wish to keep your original Default flight file and you want to use it with your new plane, you can go in and edit it in Notepad and find the switch or lever that is keeping your plane from starting, then save and exit.

TEAM CREDITS

Otmar/Vitus.....Asobo MSFS Coding
Scott Thomas.....Instrumentation
Dwight Furleigh.....Instrumentation
Bill Leaming.....Instrumentation
Tuning
BeeJay (OzWookie).....Preliminary MSFS Conversion, Graphics, Air Tables Conversions,
Animations Coding
Ron H.....MSFS Animations Coding, testing
Otmar (Vitus).....Graphics Settings, Blender Tools
Thomas Clayton.....Test Pilot
RonH.....Test Pilot and Diagnostics

Team Asobo.....THE WORLDS BEST SIMULATOR!
And their assistance

Socata .....Thank you Socata for permission to recreate your sleek Trinidad and Tobago for Flight Simulator and thank you for creating these beautiful aircraft; amazing, sleek, fast, and well made aircraft.

Bill Ortis.....Team Leader, Model Mesh, Graphics, Manual, Website, Customer Service

TEAM TRINIDAD

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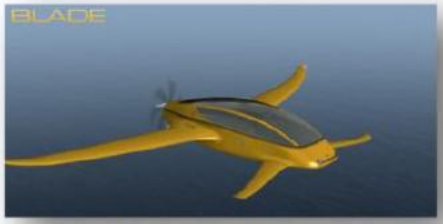
Manual, Website,
Customer Service
Scott Thomas……...Instrumentation
Dwight Furleigh……..……Instrumentation
Bill Leaming……..Instrumentation
Tuning
BeeJay (OzWookie).....Preliminary MSFS Conversion,
Graphics, Air Tables
Conversions,
Animations Coding
Ron H……MSFS Animations Coding
Otmar (Vitus).....Graphics Settings, Blender Tools
Thomas Clayton……Test Pilot
RonH……...Test Pilot

Team Asobo……...THE WORLDS BEST SIMULATOR!
And their assistance

Socata USA……Permissions 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

Learjet 24B

Fairchild 24 Series

Diamond DA40

Piper Pacer Super Pack

Quest Kodiak Mega Pack

Epic Victory Biz Jet

SPIRITUAL MESSAGE

Jesus is Lord...

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.

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.