FLYING FRIES

QUASAR

USER MANUAL

Version 1.1.0

A WORD FROM LORD FRITES

Here it is. The Quasar! Although it looks like a toy, it requires a subtle touch and extreme care to fly and land properly. So, if you bought this expecting an arcade flight model, you might be surprised!

But don't worry…

Interactive checklists, decals all around the cockpit to remind you of the important information, as well as plenty of caution and warning messages and indicators. Even the switches have a screen that shows you if something is wrong. It's modern and futuristic, and the Quasar (with the voice of K.A.R.A.) is here to help you operate it safely!

—

I've been thinking about this project since 2023. Its design and features have changed over time, but it's so much better now than I could have hoped for.

With the Quasar, we're pushing the limits of this incredible simulator. Many aspects were real challenges, and the simple doubt, *"is this even possible?"* lingered throughout much of the development process.

—

As always, I've been helped by the incredible *Steiny* for the flight model and aerodynamics. And this time, more than ever, it felt like it wasn't just the two of us during development. *CaptainKenobi* and *Pseud* were really involved, even redefining key features and improving my workflow with new tools and much better code. I'm so grateful! I hope they stick around, since the next aircraft will probably bring its own challenges.

I have also received invaluable help from other add-on developers, and I want to thank them: 270inc and GotGravel from Got Friends, Tyler/Shadow from Echo19, and Yaniv from LivToAir. You saved me from a lot of frustration and guesswork by sharing your experience and knowledge. You are my heroes!

Finally, a word to my trusted testers, who provided valuable suggestions and feedback that helped me improve some core systems and aspects of the Quasar for a better end user experience: *Chrisdu22, Gawé, Pascal Martin, 1L2P, Newtonius, Maximus, Mominon, Draakje, VisualDarkness, MasterKey, Baracus, Akula, Humizon* and *Apotelyt*.

—

Thank you for trusting Flying Fries and purchasing this incredible machine. It will definitely make you smile when you see how small the Earth is from the edge of space, at Mach 7.8.

INDEX

REVISION TABLE

2025-12-19 — Fixed checklists + added Honeycomb Bravo known bug.

2025-11-03 — Initial version of the user manual.

PHILOSOPHY OF THE QUASAR

Definition

Quasar: An extremely luminous *Active Galactic Nucleus* (AGN). In simple terms, they are the brightest, heaviest, and craziest entities in the universe — yes, the UNIVERSE. Quasars form around supermassive black holes, and **a single quasar can be up to several thousand times brighter than a galaxy.**

Credit: ESO/M. Kornmesser

Not an actual photo of a Quasar, but it's from the Wikipedia article so it must be an accurate-ish artistic representation. Although it could also be AI generated… How could we tell, right?

Our Quasar

In a few "*F words*", the idea behind this fictional airplane is to fly ***FAST***, ***FAR*** and have a maximum of ***FUN***.

As simmers, we missed the Pelican (especially with our freeware mod that unlocked its full potential). We also missed the Darkstar, even though the visibility in this aircraft was extremely limited and the system depth was close to "*none*".

It was time for someone to bring something that could fill the void and, at the same time, offer a canopy with great visibility, interesting avionics, complex fuel and electrical systems, and get creative about it! And who is better than Flying Fries for this job?

It was critical that: this would not be a "*magical aircraft*". The design had to be plausible, and the technologies involved had to be realistic. All of this had to be approached as seriously as any add-on based on a real airplane.

Fictional: Yes.

Fantasy: Absolutely not!

Then we packed this creation with cool content: Custom pilots with their own backstory, on-board computer which talks a lot, infinite possibilities of epic cargo missions, etc.

TECHNOLOGIES

Even though if it looks and behaves like a spaceship and even though if the performance numbers are completely insane (you can chase and overtake the sun), **let's talk about the very realistic technologies involved in this Quasar**, such as…

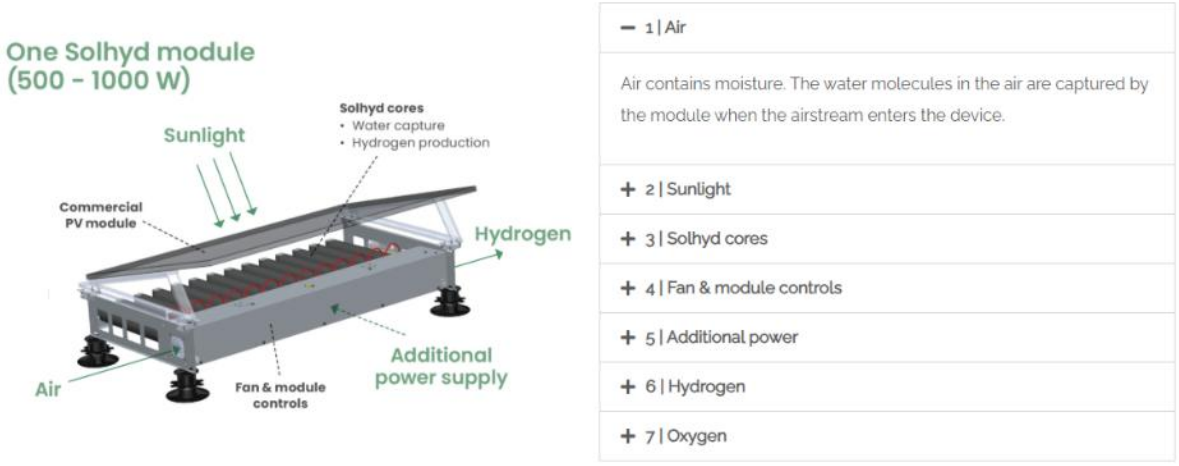
Liquid Hydrogen

This is the fuel for your aircraft's jet engines. They don't run on AVGAS or JET A-1, but on pure hydrogen, stored in tanks at cryogenic temperatures, to keep it liquid. It's worth noting that liquid hydrogen has actually been used as a very efficient rocket fuel since the Apollo missions in the 1960s.

Electrolyzers

Yes, these devices exist. They require a lot of electrical power to harvest one type of molecule and extract its subcomponents. In our application, the device captures air, keeps the moisture from it (you know, water: H_2O) and splits it into oxygen and hydrogen.

A few companies have started such projects in real life. Some companies are connecting their electrolyzers to solar panels. It works and it's "*green*", but the volume of hydrogen produced is obviously very low:



https://solhyd.eu/en/technology/

Anyway, we have another source of energy for our electrolyzers…

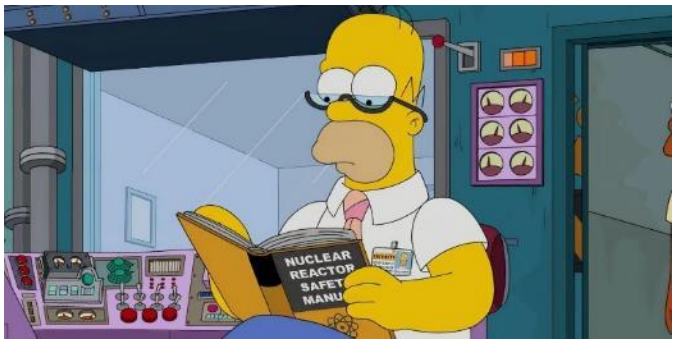
Nuclear Reactor

This is a common technology nowadays. Since 1955, portable nuclear reactors have been installed in the most advanced and autonomous submarines. So why not in aviation? *Actually, I have a few guesses as to why we wouldn't want a nuclear/hydrogen machine flying above our heads.* But anyway. They work and can produce decarbonated electricity for years.

Infinite range, zero CO^2 emission?

If we put all of this together, yes. That's what the Quasar promises.

Regarding "*zero emissions*", the Quasar burns hydrogen, which only produces water vapor after combustion. And the nuclear reactor doesn't output anything other than heat (all the radiations are contained, no need to worry).



As for the "*infinite range*": You can generate your own fuel while flying (and we will detail this topic later). And, if you fly carefully, you can absolutely produce more hydrogen than you burn.

PERFORMANCE

Now, this is getting serious…

Cruise altitude	**115,000 ft**
Cruise speed	**Mach 7.8**
Max altitude	**FS2020: 275,000 ft** **FS2024: "*no?*"**. We stopped testing at 5M ft.
Max range	**Unlimited**
Max endurance	**"*You*"** (unlimited)
Empty weight	**286,600 lbs** (130 tons)
Max weight	**330,700 lbs** (150 tons)
Number of seats	**1** (the pilot: you)
Flaps	**None**
Aerodynamic type	**Brick!**

Yes, it's a heavy one. This is due to the technologies involved: a nuclear reactor with enough shielding to keep it safe-ish, industrial-sized electrolyzers, the airplane's structure that must withstand hypersonic flights without falling apart, and the pressurized and robust fuel tanks because we wouldn't want another *Hindenburg* disaster!

Fun facts:

- **The empty weight of the Quasar is almost equivalent to that of an Airbus A330-900 or A350-900 or a Boeing 787-10**.

- The International Space Station (ISS) is floating around 1.34 million feet above Earth's surface. **During testing, we climbed more than 3.7 times higher than the ISS!**

Power

The Quasar is powered by four hydrogen-fueled jet engines, each of which can deliver 207,000 pounds of thrust without the use of afterburners. When the afterburners are engaged, each engine can produce up to 570,000 pounds of thrust. **This brings the total maximum thrust to almost 2.3 million pounds.**

And that's how you turn a brick into a hypersonic aircraft!

Afterburners

They bring a lot of extra power, but it also means they burn a delirious amount of fuel in a very short time. **Your 3,500 gallons of hydrogen could be burnt in less than a minute when afterburners are set.**

That's why **afterburners are NOT automatically activated** when you push the throttle forward. And also, why they must be used with extreme care and in specific situations, such as:

- Takeoff from a "short" runway.
- Recover before a stall.
- Quickly burn excess fuel before landing.

Speed

Speeds below are given in knots (KIAS):

Best handling	**400-800**
Takeoff	**350-380**
Landing gear extended (V_{LE})	**700**
Pattern	**300-360**
Turn to final	**280-300**
Final	**240-260**
Touchdown safe	**220**
Touchdown daredevil	**200**
Stall	**190**

Max speed (in Mach) at various altitudes (can vary with barometric pressure and AOA). Above these speeds, the dynamic pressure on the fuselage will turn the Quasar into a shaker and the on-board computer will have something to say about it!

5,000 ft	**Mach 2.5 / 2.6**
10,000 ft	**Mach 3**
22,000 ft	**Mach 3.6**
40,000 ft	**Mach 5.3**
60,000 ft	**Mach 5**

Runways

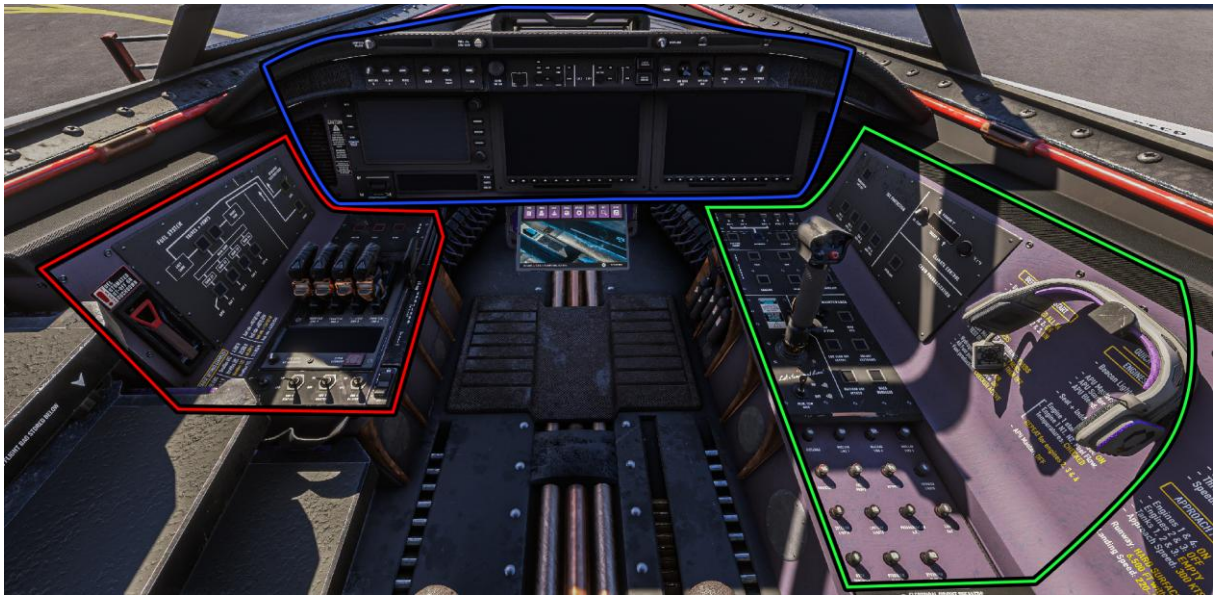
The Quasar is only intended for takeoff and landing on hard surface runways (asphalt or concrete).

The following table shows the minimum runway lengths for various situations with the appropriate fuel reserves, at sea level, without wind or specific weather conditions:

Takeoff — full throttle, no afterburners	**4,000 ft (absolute min: 3,600 ft)**
Takeoff — afterburners	**3,000 ft (absolute min: 2,600 ft)**
Landing — normal procedure	**8,000 ft**
Landing — F.A.C.T. procedure	**6,000 ft (absolute min: 4,500 ft)**

COCKPIT OVERVIEW

The cockpit overview will be split into three sections: "**Left**", "**Front**" and "**Right**".



There are also items and interactions to find behind the seat, but they are not essential, so I'll let you discover them on your own.

Left

Notice, in the curve between top and bottom panels: a table listing some ideal speed/altitude/throttle settings for positive fuel rate.

Top panel

Fwd to Aft:

- **Fuel system** OLED switches, as explained in the following section “Fuel System”. This panel offers you a synthetic view of your fuel tanks, and overall circuit, including the two buttons with the yellow trim, which operate your hydrogen electrolyzers to produce fuel as you fly.
- The **F.A.C.T.** system to help you with “short” landings. It will be described later in this documentation.

Bottom panel

Fwd to Aft:

- **APU** OLED buttons (with the red trim): Master, Start and Bleed.
- **Throttles** for your four engines. Each throttle includes the engine's cut-off fuel valve + indicators for these valves and for the afterburners state.
- **Speed brakes/Spoilers** handle.
- Custom **display which shows each engine state:** N1, N2, combustion, afterburner, starter, etc.
- Screen luminosity setting knob.
- **Afterburners** toggle switch behind a red cover.
- Individual **engines' starters.**
- **Elevator trim** commands.

Front

Upper part

Purple: Your Head-Up Display + its Knob that allows you to fold or extend it as well as set its brightness.

Blue: K.A.R.A. (on-board computer) voice volume control, **fuel rate display** mode and visualization, **global displays brightness knob** and a **timer** with start/stop + reset buttons.

Red: All your **interior light zones and intensity.** Split in left, front and right sections + additional toggle controls for your landing gear maintenance bay lights and nuclear reactor bay lights. You can also find a "**Quick Interior Lights**" push button which will automatically set all your interior lights and cycle through 4 presets: *Dim*, *Mid*, *Bright*, and *Off*.

Orange: Master warning and master caution acknowledge buttons.

Green: Garmin GMC 507 autopilot controller.

Lower/Main part

Blue: Buttons to switch your left display between **Garmin GTC** or custom **engines**, **fuel** and **Crew Alerting System** (C.A.S.) pages.

Green: Main displays (GTC with controls or other left screens + Garmin G3000 PDF and MFD.

Purple: Landing gear lever.

Orange: Multi page status display which can show your **TRIM status, CRUISE indications** with real and accurate altitude and speed values and **RANGE indications** (distance/time) depending on your fuel burn/production rate.

Right

Top panel

Fwd to Aft:

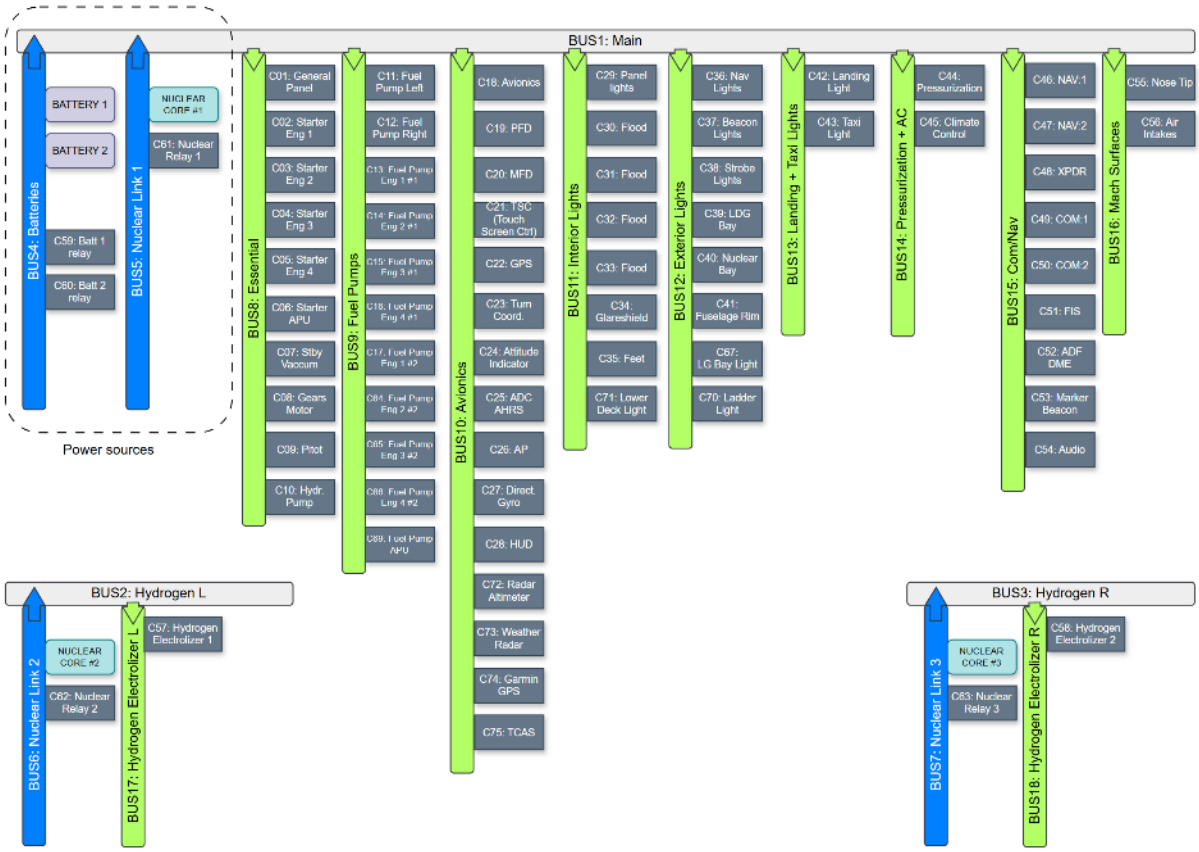
- **Ice protection** (windshield and engines anti-ice) + **cockpit climate control** and **pressurization** command.
- **Custom headphone simulation**, that you can activate/deactivate by clicking on the headphone stand.
- Behind the headphones are some **quick checklists** for checking procedures or speeds during critical phases. Of course, the interactive in-game checklists with highlights and custom cameras are also available!

Lower panel

Fwd to Aft:

- Batteries and Nuclear Links **power switches.**
- **Parking brake, avionics, canopy** and **seat + ladder** extend/retract OLED buttons.
- **Exterior lights** OLED buttons.
- **Flight stick** (visibility can be toggled by clicking on its brass base ring).
- **Various test buttons** + maintenance bay and nuclear reactor access controls.
- **Auto Ailerons Trim ON/OFF** command.
- **All the circuit breakers**. **Open/Close the panel by clicking on the copper edge.**

ELECTRICAL SYSTEM



I'm not going to lie; the electrical system is as complex as it can be. **18 buses, 74 circuits, 2 lithium batteries, and a nuclear generator with 3 outputs.**

Yes, all of this is simulated! The gray buses are the "*spines*" of the electrical circuits for:

- The aircraft itself (*bus 1*)
- The left hydrogen electrolyzer (*bus 2*)
- The right hydrogen electrolyzer (*bus 3*)

Blue buses have **components delivering current** to their main (gray) bus.

Green buses have **components consuming current** from their main (gray) bus.

Each **blue** and **green** bus has a dedicated working circuit breaker in the aircraft that produces exactly the expected effect on the global electrical circuit when pulled/pushed.

Note:

- The nuclear reactor has three links/buses, and they are not attached to the same parts of the electrical circuit.
- **These nuclear links offer INFINITE sources of electrical power to the systems they are attached to.**
- The nuclear link #1 (*bus 5*) can also recharge the 2 lithium batteries (*bus 4*).
- The hydrogen electrolyzers (*buses 17 and 18*) draw so much current that they are only powered by the nuclear reactor through their own dedicated links (*buses 6 and 7*).
- The circuit 68 is not displayed on the diagram: it's a fake circuit for the afterburners light effect, so there really are 74 simulated circuits, even if you can see that TCAS is number 75. Good job if you noticed that!

FUEL SYSTEM

Nothing fancy here: **7 tanks, 11 pumps, 11 valves, 4 engines and one APU.**

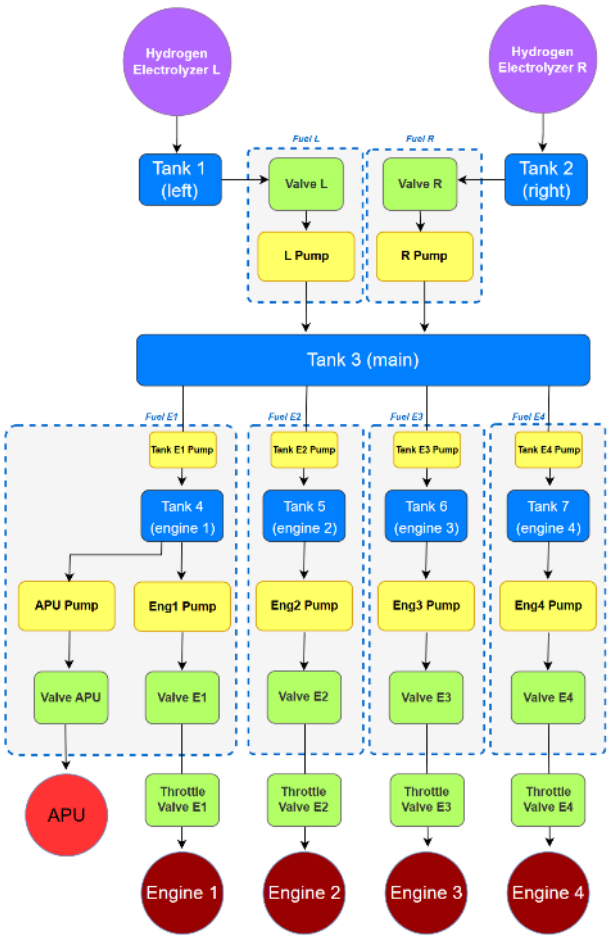
Rudimentary, right?

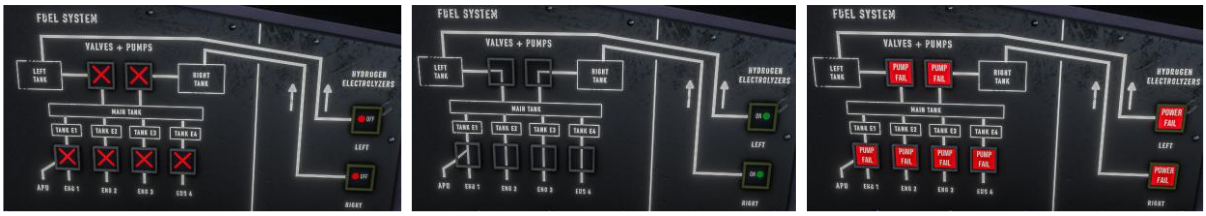
More seriously, you will see gray boxes with dashed blue borders on this diagram. These represent the 6 buttons that operate all these **pumps** and most of these **valves**.

First, note that the fuel is generated by your **Hydrogen Electrolyzers** and flows from **Tank 1** and **Tank 2** to **Tank 3**. From there, it is distributed to the buffer T**anks (4 to 7)** of each engine.

The **APU** is fed by **Tank 4**, which is linked to **Engine 1**. The APU and Engine 1 have their own **pumps** and **valves**, but they are controlled by a common button.

Additionally, there are **cut-off valves on your throttles**. You can use these valves to manually turn off any engine at any time or to automatically shut down all engines on touchdown with the *F.A.C.T. system* (described later).





Isn't it cool that all these buttons are actually small displays which can show symbols, diagrams and error messages?

Capacity

Capacity is indicated in U.S. Gallons.

Tank 1 (left electrolyzer buffer)	**500**
Tank 2 (right electrolyzer buffer)	**500**
Tank 3 (main tank)	**1,500**
Tank 4 (engine 1 + APU buffer)	**250**
Tank 5 (engine 2 buffer)	**250**
Tank 6 (engine 3 buffer)	**250**
Tank 7 (engine 4 buffer)	**250**

Total capacity: 3,500 US Gallons.

There is no unusable fuel: since tanks are pressurized, not a single droplet of hydrogen can be left at the bottom of any tank.

Alerts

Almost every tank (except 1 and 2) generates messages in your Crew Alerting System (C.A.S.) when the remaining fuel quantity drops to:

- 25% ➔ caution
- 15% ➔ warning

The on-board computer (K.A.R.A.) will notify you with a "*Fuel Low*" audio message when the overall fuel level reaches 25%, and a "*Fuel Critical*" when it reaches 15%.

You can refuel at any time from the custom EFB.

OTHER SYSTEMS/FEATURES

Garmin G3000 + Autopilot

The Quasar is equipped with a modern **Garming G3000 dual screen glass cockpit** (PDF and MFD). It also has a **GTC 580** Touch Screen Controller and **GMC 507 Autopilot controller**.

These avionics are found, in real life as well as in MS Flight Simulator, in some private jets (*Cessna CJ3+*) and high-end private turboprops (*TBM 930*).

We are using **the default Asobo instruments, enhanced by Working Title. These instruments are native to Flight Simulator 2020 and 2024, on PC and console.** They operate in a standard way, and there are many good videos and tutorials online. For example, *P Gatcomb* has published **a two-part tutorial on this Garmin suite** for FS2024, which is also applicable to FS2020:

- "Garmin G3000 Tutorial Part 1 – Basics"
- "Garmin G3000 Tutorial Part 2 – Full Flight and AP"

Important: The Quasar can fly faster and higher than the average private jet Therefore, do not trust or use the G3000 speed/altitude indicator or any autopilot function above 50,000 feet or Mach 2.

Head-Up Display

The HUD included in the Quasar is based on a fork from Asobo's F/A-18E instrument. With a few additional and custom information. You can deploy/retract it and set its luminosity with a single knob shown in the previous section: ***Cockpit overview/Front/Upper part***.

Custom HTML displays

The Quasar features many custom systems and displays. They have all been designed to be easy to read and operate. Here is a brief overview of these HTML gauges, except for the EFB which will have its own section in this document.

Information on engines N1 and N2, combustion, cut-off valves state, afterburner, starter and APU bleed are displayed in a condensed, easy-to-read format.

Additional engine health indications: fuel flow, oil pressure, I.T.T., E.G.T. and throttle/jet thrust information.

This page is **accessible via the "*ENG*" button** on the left-hand front display.

Fuel indicators: Displays a diagram of your seven fuel tanks and their individual information, including the number of gallons and the percentage of remaining hydrogen in each tank, as well as the total number of gallons and the total percentage.

This page is **accessible via the "*FUEL*" button** on the left-hand front display.

The Crew Alerting System (CAS) display has plenty of space for showing lots of information at once.

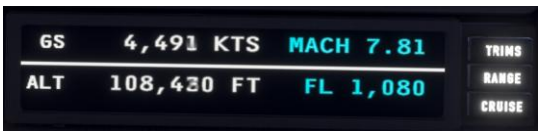
Messages that have not been acknowledged using the master buttons will flash.

This page is **accessible via the "*CAS*" button** on the left-hand front display.

You can also enable/disable the "*Auto switch to CAS page*" which, when enabled, will change your left display to this page each time a warning or caution event is triggered.

Trim Indicators. Accessible via the "*TRIMS*" button under the left-hand front display.

Remaining range estimation. Calculated live, and based on your speed, fuel burn and fuel production rate. **Accessible via the "*RANGE*" button** under the left-hand front display.



Cruise information. Accurate altitude and speed readings, displayed in various formats. **Accessible via the "*CRUISE*" button** under the left-hand front display.

In addition to these gauges, **each OLED button is a dedicated HTML component that can display diagrams, symbols, animations and text information in 64 x 64 pixels grid.** These elements are formatted according to the state of the system and its underlying electrical circuit.

The Quasar is equipped with 32 OLED buttons.

There are other dedicated displays: for the Fuel production/burn rate display (we will discuss it later), for the keypad code, the cockpit temperature target and current values, K.A.R.A's volume control and test, a stopwatch, and the nuclear reactor health and electrical state.

K.A.R.A.

The Quasar features a charismatic **on-board computer with over 200 audio recordings**.

This "*AI*" assistant is named ***K.A.R.A.***, short for *Kinematic Aeronautical Responsive Assistant*.

She will comment on your landings and speed, tell you when you are stressing the airframe, and say "*hi*" and "*bye*" in many different ways. So no two flight sessions will ever feel or sound the same!

Sometimes, a masculine voice can be heard. It's just "SAM". *He* is quite friendly, but unfortunately KARA doesn't let him talk too often!

F.A.C.T.

According to the landing procedure, you need to shut down engines 2 and 3 during the approach. If you don't, the thrust from the idle engines will make your life very difficult!

However, **even at idle, two engines will still produce 20,000 pounds of thrust.** So, we added a *Fuel Automated Cut-off on Touchdown (F.A.C.T.)* system. This ensures that **all your engines will be shut down as soon as your main landing gear touches the ground.**

With zero thrust, the braking distance will be much shorter (see the "*Performance/Runways*" section of this document).

Downsides:

- Once you have stopped on the runway, you will need to restart your APU and engines 1 and 4 in order to taxi.
- **You will have no Go-Around possibility once you touch the ground.**

To arm the system, simply pull the handle located on your left.

If you do this while on the ground, the system will only be armed after take-off.

When the system is armed, a yellow light will pulse, and a "*F.A.C.T. Armed*" caution event will be triggered in the CAS display.

THE F.A.C.T. will only activate itself at 500 ft above ground, or higher.

You can bind the F.A.C.T. handle to "FLAPS DOWN" (arm system) and "FLAPS UP" (disarm system) Flight Simulator commands.

Static/Remove Before Flight items

You can remove your static covers/chocks and "*Remove Before Flight"* items by moving your camera outside of your seat and clicking on each item (in FS2020 and FS2024).

Since this is a Flight Simulator 2020 native build for now, the interactive walkaround mode of Flight Simulator 2024 is not yet supported.

You can also **add/remove any of these items with the EFB**, from the comfort or your seat:

Finally, if you don't remove these covers, chocks and hard roof, they will be removed automatically once you release the parking brake and start to taxi.

Fuel Generation

As described at the beginning of the document, massive hydrogen electrolyzers convert ambient air into fuel, which is then injected into tanks 1 and 2 while your engines burn fuel from tanks 4 to 7.

Fuel info live display

The glareshield has a dedicated display that can be turned off or provide brief information about your current "fuel situation" (the sum of your production and burn rates) in gallons per minute + percentage of throttle, engine combustion state, and percentage of remaining fuel:

⇨ In this example, it's not ideal: I'm burning more than I produce. My total rate is -47 gallons per minute, and a red dot on the left indicates that I'm in a negative situation. I can also notice that my engines 2 & 3 are not running, my tanks 1 & 2 are critical or empty, and my tank 3 is low.

By turning the "*Fuel -/+ Live view*" knob right, you can access the graphical view of burn vs production rates:

⇨ I'm actually burning 282 gallons per minute while producing 234 gallons at the same time. That's not bad production, but it's not good enough; that's why my total is at -47. The red dot is also displayed in this view.

Fuel production performance table

Your fuel production depends on speed and altitude. Here is the efficiency matrix:

	under 50 KTAS	under 100 KTAS	under 150 KTAS	under 300 KTAS	under 500 KTAS	under Mach 1	under Mach 5	above Mach 5
below 8,000 ft	**70%**	**70%**	**73%**	**79%**	**85%**	**91%**	**100%**	**85%**
below 25,000 ft	**49%**	**49%**	**52%**	**58%**	**64%**	**70%**	**79%**	**64%**
below 150,000 ft	**35%**	**35%**	**38%**	**44%**	**50%**	**56%**	**65%**	**50%**
above 150,000 ft	**14%**	**14%**	**17%**	**23%**	**29%**	**35%**	**44%**	**29%**

Remember, you can see a few "ideal" configurations printed as a decal in the cockpit, under the F.A.C.T. handle on your left.

Auto-Ailerons Trim

The Quasar is not a fly-by-wire aircraft. Due to the power of the engines, the weight of the aircraft, and its aerodynamic features, we have likely reached the limits of the simulation, and we couldn't get a convincing F.B.W. system.

Instead, we opted for traditional trimmable controls. Surprisingly, this flying nacho offers a great and safe stability, so the flight model remains comfortable… until you reach high speeds and altitudes. At that point, the dynamic pressure starts to output crazy numbers, depending on whether you're flying in a very thin atmosphere and/or at extreme speeds.

That's where GotGravel suggested a fantastic idea: **a custom auto ailerons trim system** to cover all the flight envelope of this beast.

- At **low altitudes and high speeds, this system increases your roll rate** to compensate for the high air density.
- At **very high altitudes, the system shifts to a counteracting behavior**, to prevent you from rolling too easily.

There are many settings, and the system transitions smoothly between them. Below is the auto-trim gain table based on altitude and speed:

Altitude (x 1000 ft)	0 to 10	10 to 25	25 to 50	50 to 90	90 to 100	100 to 105
Gain	**80% - 60%**	**60 to 40%**	**40% to 20%**	**20% to 0%**	**0%**	**0 to -50%**
	Smoothly modulated by KIAS: 0% below 600, up to 100% above 800 knots					

The system is enabled by default, but you can activate/deactivate it with a toggle placed between your stick and the breakers panel, on your right.

Custom E.F.B.

A custom EFB equips the Quasar. **By default, it is deployed in front of you, but you can stow it under the left steps by clicking on the power button or its left edge.**

This EFB allows you to:

- Set fuel into your tanks, through 4 different presets.
- Change your custom pilot character.
- Operate a dynamically generated cargo mission.
- Change some aircraft options.
- Check some key speeds if you are usure.
- Access to a quick tips web page + this PDF download link through QR codes (to scan with your smartphone).
- Play music during your flight, with the soundtrack included (more details later).

MISSIONS

This aircraft comes with a cargo mission generator tool, directly integrated into our custom EFB.

From any place in the world, if you are stationary, on the ground, with the canopy open, you can activate a cargo mission:

- Select your desired mission range.

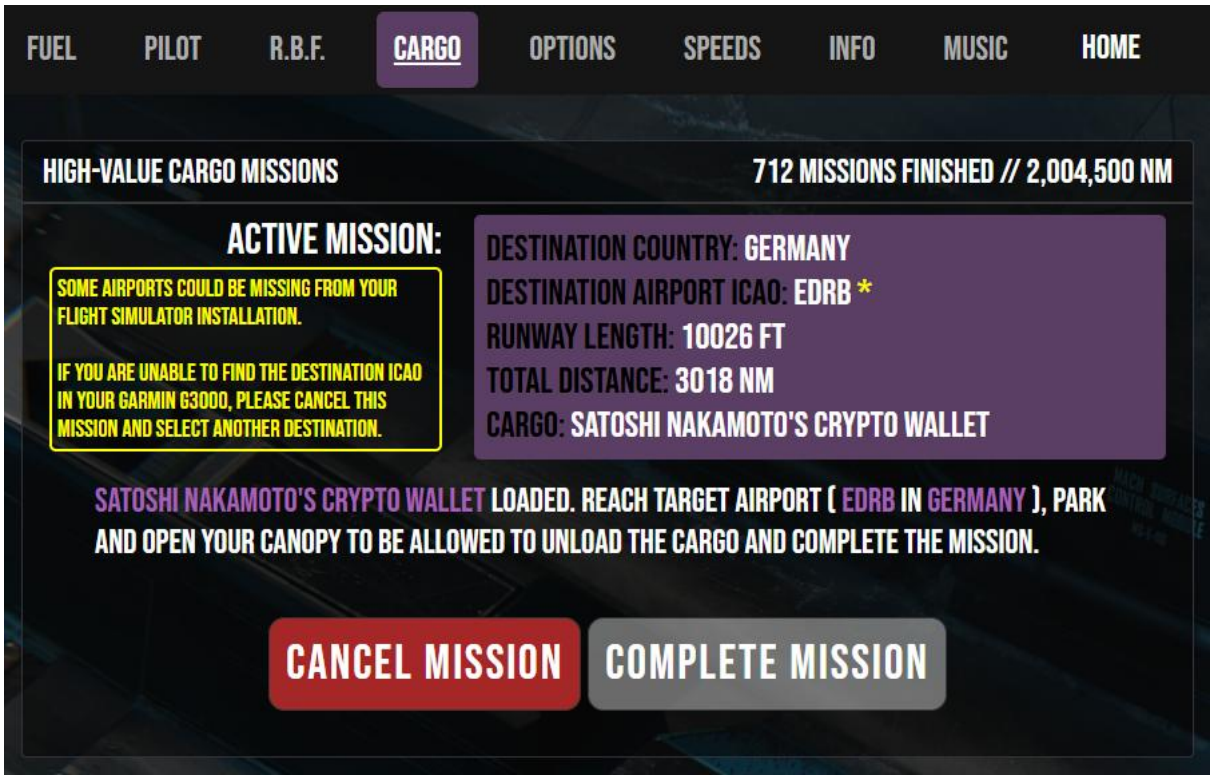
- Choose from a list of automatically generated and calculated cargos and destinations, **sorted and filtered by distance from your current location**.
- Fly there (use your G3000 to create your route to the destination ICAO).
- Park, open the canopy and hear K.A.R.A. congratulate you!

Our cargo mission tool contains a database of 2,732 viable runways around the world that are longer than 8,000 ft. This means you can land safely there without using the F.A.C.T. system.

The cargo types are also extremely varied, with **155 highly valuable items currently available**, including:

- *Tiberium Ore*
- *The Allspark*
- *Skynet CPU chips*
- *Xenomorph's Eggs*
- *The Eye of Sauron*
- Etc.

Also, all your validated missions will be counted, and the total mileage will be displayed in the top right corner of the page:



2 million NM flown in cargo missions... Not a bad start!

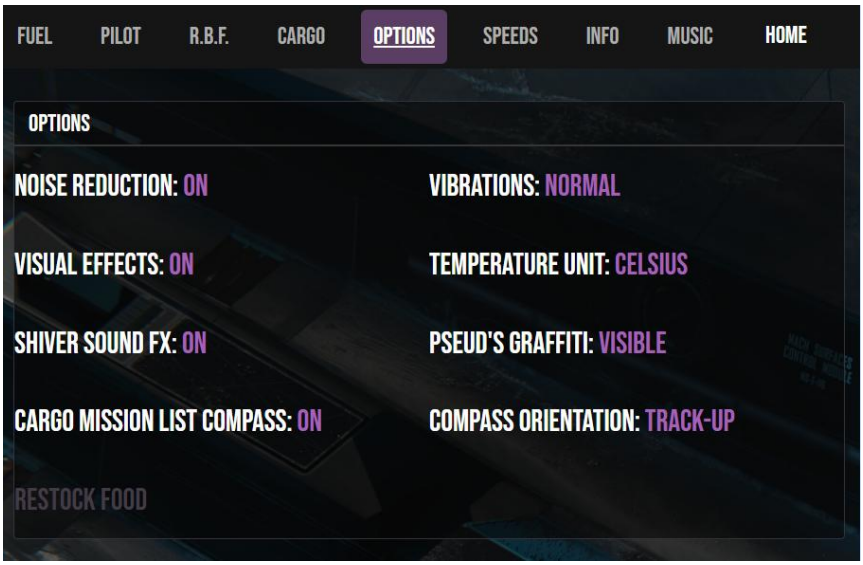
SOUND PACK

Custom sound pack

We have created an original sound pack in-house, incorporating **various recordings and high-quality, licensed sound effects.**

We worked more than ever on the ambient sounds, adding layers of buzzing and clicking and even several layers of wind, depending on various factors. The engines intakes sounds are dynamic, too, and react to your maneuvers in the sky.

You can also enable or disable optional "*shiver sound FX*" for your custom pilot from the EFB:

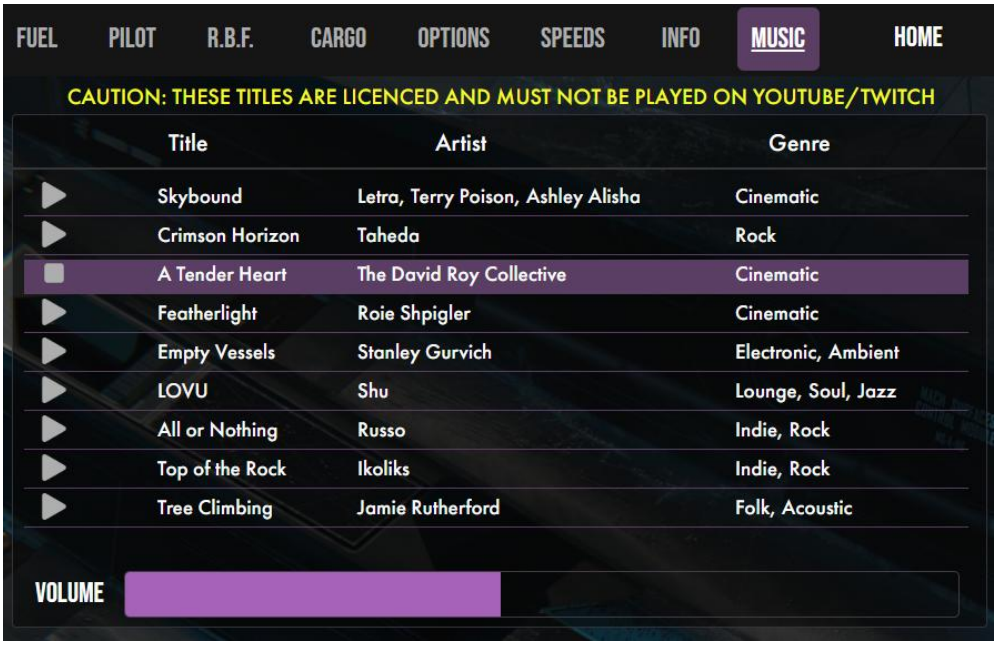


Headphone simulation

As with our previous products, we have implemented a custom, dynamic headphone simulation that you can toggle through the EFB option "*Noise reduction*" or by clicking on the 3D model of the headphone stand, on the right-hand side, as seen in the previous section: ***Cockpit overview/Right/Top panel***.

Soundtrack

The Quasar includes its own soundtrack, a compilation of nine pieces of atmospheric music from different genres with different instrumentations and BPMs. You can play any of these titles from the EFB and adjust the volume for optimal comfort.



These tracks are licensed from artlist.io, and our product is permitted to use them.

However, if you use these sounds in your own online content, *artlist.io* or the original owner of the title may issue a copyright claim against your content. (It won't be our fault!)

CHECKLISTS

Before start

Chocks and R.B.F. tags	**Remove**
Circuit breakers	**All IN**
Batteries 1 & 2	**On**
Navigation lights	**On**
Nuclear Links 1, 2 & 3	**On**
Avionics	**On**
Interior Lights	**As required**
K.A.R.A. volume	**As required**
FCS, Mach Surfaces, Thrust vectoring tests	**Run**
Oled buttons	**Test & Check**
Hydrogen electrolyzers L & R	**On**
Fuel valves	**All On**
Fuel display	**On-board fuel increasing**
Fuel rate display	**Positive fuel rate**
MFD	**Press "continue"**

Start-up

Beacon lights	**On**
APU Master	**On**
APU Starter	**On**
APU Bleed	**On**
Seat and ladder	**Secure**
Parking Brake	**Set**
Engine 1 Starter	**On**
Engine 1 Cut-Off valve	**Open**
Engine 1 Fuel Flow, ITT, EGT, Oil Pressure, etc.	**Check**
Engine 4	**Repeat same operations as Engine 1**
APU Master	**Off**
Fuselage light	**On**
Canopy	**Close**
C.A.S. messages	**Check**
Master Warning / Master Caution	**Acknowledge**

Taxi

Anti Ice systems	**As required**
Cabin pressurization	**Auto**
Climate control	**As required**
Auto Ailerons Trim	**On**
Head-Up Display	**As required**
Taxi light	**On**

Throttle	**Idle**
Parking Brake	**Release**
Ground Speed	**Below 20 KIAS**
Rudder Pedals	**Steer**
Taxi	**To hold position**
Strobe lights	**On**
Engine 2 Starter	**On**
Engine 2 Cut-Off valve	**Open**
Engine 2 Fuel Flow, ITT, EGT, Oil Pressure, etc.	**Check**
Engine 3	**Repeat same operations as Engine 2**
C.A.S. messages	**Check**
Master Warning / Master Caution	**Acknowledge**

Takeoff

Elevator trim	**Neutral**
Taxi	**Line up on runway**
Landing lights	**On**
Taxi light	**Off**
Throttle	**Full**
Aircraft control	**Pull up above 380 KIAS**
Landing gear	**Retract**
Throttle	**Airspeed between 400 and 800 KIAS**

Climb

Aircraft control	**Nose up 10 to 20 degrees**
Throttle	**Full**
Pitch control	**Use elevator trim at high speed & altitude**
Landing lights	**Off**
Altitude	**Climb to 110,000 – 120,000 ft**
Throttle	**Reduce to positive fuel rate at Mach 7.8**

Cruise

Pitch control	**Use elevator trim at high speed & altitude**
Cruise	**Enjoy infinite cruise!**

Descent

Throttle	**Idle**
Pitch control	**Elevator trim nose down**
Spoilers / Speedbrakes	**Fully extended**
Controlled descent	**At 60,000 ft, speed below Mach 5**

Approach

Hydrogen electrolyzers L & R	**Off**
Afterburners	**If required – to burn excess fuel**
Spoilers / Speedbrakes	**To reduce speed despite afterburners**
Throttle	**Airspeed between 400 and 800 KIAS**
Runway	**Line up with runway**
Engines 2 & 3 Cut-Off valves	**Close**
Landing lights	**On**
Landing gear	**Extend**
Throttle	**Slow down and hold 300 KIAS**

F.A.C.T. system	**If required**
C.A.S. messages	**Check**
Master Warning / Master Caution	**Acknowledge**

Landing

Touchdown	**Between 200 and 220 KIAS**
Throttle	**Idle**
Spoilers / Speedbrakes	**Fully extended**
Toe brakes	**Apply full brakes**
Aircraft control	**Pull back stick**
Speed	**Slow to 20 knots & taxi off runway**
Taxi hold short	**Stop clear of hold position marking**

Taxi to parking

If F.A.C.T. system used	**Run APU and start Engines 1 & 4**
Taxi light	**On**
Landing lights	**Off**
Strobe lights	**Off**
Throttle	**Idle**
Parking brake	**Release**
Ground Speed	**Below 20 KIAS**
Rudder Pedals	**Steer**
Taxi	**To parking**
Parking brake	**Set**
Taxi light	**Off**

Shutdown

Fuel valves	**Off**
Hydrogen electrolyzers L & R	**Off**
Anti Ice systems	**Off**
Beacon lights	**Off**
Fuselage light	**Off**
Canopy	**Open**
Seat & Ladder	**Release**
Avionics	**Off**
Nuclear links 1, 2 & 3	**Off**
Navigation lights	**Off**
Batteries 1 & 2	**Off**
Chocks and R.B.F. tags	**Apply**

EASTER EGGS

There are more Easter Eggs than ever, and they are of many different types. Let's quickly list them:

- The usual and mandatory fries!

- 20 audio comments from K.A.R.A when flying above specific locations around the world between 200 and 5,000 feet AGL.
- A few more specific K.A.R.A. comments depending on your activity.
- 8 individual and fun soft drinks.
- 1 Rubik's Cube.
- 10 hidden stickers.
- AND: **A hidden contest to win a Gabriel or XF-11 add-on for FS2020/FS2024. Only the 5 fastest will win!** The prize can only be claimed on PC. All the details are available at the contest hidden entry point (limited until December 31, 2026, at 11:59 p.m. CET).

LOCAL VARIABLES

Here is the list of the local variables defined/used by the Quasar, that you can address directly with SPAD.neXt, Axis And Ohs, etc.

Description	Name	Range	Persistent
Levers vibrations OFF/ON	**FRIES_Vibrations**	0-1	YES
Levers vibrations intensity	**FRIES_Vibrations_intensity**	1-2	YES
Custom VFX OFF/ON	**FRIES_VFX**	0-1	YES
Temperature unit (C°/F°)	**FRIES_TempUnit_Celsius**	0-1	YES
Fuel rate screen display mode	**QSR_FuelRatio_Display**	0-2	YES
Auto switch to CAS display	**QSR_Screen_Return_CAS**	0-1	YES
Custom pilot character	**QSR_Char_Selected**	0-2	YES
Sound effect for pilot shivering	**QSR_Shiver**	0-1	YES
Headphone simulation OFF/ON	**FRIES_Headphones**	0-1	NO
Left hydrogen electrolyzer state	**Hydrogen_1**	0-1	NO
Right hydrogen electrolyzer state	**Hydrogen_2**	0-1	NO
Access ladder and seat positions	**QSR_Ladder_Seat**	0-1	NO
Canopy open	**QSR_Canopy_Open**	0-1	NO
APU Master OFF/ON	**QSR_APU_Master**	0-1	NO
Ailerons auto trim OFF/ON	**QSR_Ailerons_Auto_Trim**	0-1	NO
Nuclear reactor bay CLOSED/OPEN	**QSR_Nuke_Bay**	0-1	NO
Landing gear bays CLOSED/OPEN	**QSR_LDG_Bay**	0-1	NO
Number of fries remaining	**QSR_Fries**	0-4	NO
EFB STOWED/DEPLOYED	**FRIES_EFB**	0-1	NO
K.A.R.A. volume (percent over 100)	**QSR_Computer_Vol**	0-1	NO
EFB Music volume (percent over 100)	**QSR_Music_Vol**	0-1	NO
EFB Music playing	**QSR_Music_Playing**	0-9	NO
Nose tip cover OFF/ON	**QSR_Nose_Cover**	0-1	NO
Roof hard cover OFF/ON	**QSR_Roof_Cover**	0-1	NO
Top intakes covers OFF/ON	**QSR_TopIntakes_Covers**	0-1	NO
Engines covers OFF/ON	**QSR_Engine_Covers**	0-1	NO
Wheel chocks OFF/ON	**QSR_Wheel_Chocks**	0-1	NO

KNOWN BUGS

Most, if not all the bugs/issues listed below are due to the simulator state itself or some configuration between Flight Simulator and various hardware.

Throttle Levers / FS2024

In Flight Simulator 20204, you need to bind Throttle 1, 2, 3 and 4 individually. Whether you do it on a single axis or 2 or 4 axes is up to you. **You MUST NOT use the main "*Throttle Axis*" bind.** Even in FS2024 SU3, this control doesn't work with jet powered aircraft.

Throttle visually moving but no power

This is a bug specific to Honeycomb bravo hardware. It can prevent you from applying power, even if the throttle levers are actually moving in the aircraft. To fix this, **check your AP mode knob selector and set it to anything but IAS.**

Flight plans import in G3000 / FS2024

You can import a flight plan in your aircraft, but **you must do it from the world map, BEFORE you enter the flight**. This is due to a limited Working Title avionics compatibility between FS2020 and FS2024.

Cargo missions: airport missing

The destinations of our cargo missions are based on real-life airport and runway databases.

Depending on your simulator version and edition (2020, 2024, standard, deluxe, or premium) and third-party airports installed, **it is possible that some of these ICAO codes are missing for you.**

Unfortunately, there is nothing we can do to prevent this from happening at this point. If you encounter this issue, simply **select a different mission to a different destination within the same distance.**

Persistent state toggle

Do not use any persistent state toggle switches on your controllers. Some aircraft systems can be activated or deactivated automatically depending on various factors. If your switch forces a system or light into a specific state, but the aircraft wants to put it into the opposite state, a loop of events will be created which will overload your simulator and greatly reduce your performance.

Black left column on MFD

To fill this void with any information, we would have had to multiply the workload by more than two: A native FS2024 and native FS2020 builds would have been necessary since the code in this area depends on the simulator. Maybe we will find a clever trick at some point, but for now there is this narrow empty space.

All the information supposed to be here (engine temperatures, CAS, trims) and much more are available on other, much larger and custom displays on the front panel: see section "*Other systems/features/Custom HTML displays*" of this document.

STAY IN TOUCH!

This Quasar is, by far, our most ambitious project yet. But we're not stopping there.

1/ We will bring updates over time! Expect new cool and unique features.

2/ The next project, which has been announced in June, will also be an interesting one:

It will be a Russian **Hind MI-24P attack/transport helicopter**. As with everything else we've done, **our plan is to make sure that every single switch works and that our systems and features are as complex as possible.**

Join us on Discord or Facebook to keep in touch, make suggestions and share your thoughts on the Quasar and other Flying Fries products. You can also fly with us when we're not snowed under with work!

Yes, it's AI-generated, but I think it conveys the idea quite well!

Join us on **Discord**: **https://discord.gg/VNdrSgTWYZ**
Follow us on **Facebook**: **https://facebook.com/flyingfries**
Follow us on **YouTube**: **https://www.youtube.com/@flyingfries1027**