

POWER

COMM

FLIGHT . GROUND

RADR

# <u>Pilot's Guide</u>

LETTER

# Sorieinal,

#### Why recreate reality?

When we first began on the long journey to develop what would eventually be known as *Arena Commander*, it was a question I was forced to consider myself. Why move away from the fantastic people and places we brought to life in *ULTIMATE* to focus on creating the most realistic and visceral flight simulator possible? Don't people play games to escape the confines of the universe around them? I would say escape is only a small part of what games offer. Their true value lays in how they can help us attain a greater understanding of ourselves and the way we see reality.

I, Charlie Bass and Henry Garrity were aboard a chartered flight back to Terra after attending a convention on Jalan to promote *Times of Myth.* Deep in a heated discussion about what direction we should take O.S. next, a siren suddenly blared through the cruiser. Rushing to the cockpit (which in hindsight might not have been the safest decision) to see what the trouble was, we discovered that a navy squadron had intercepted a Vanduul swarm directly on our traffic lane. What struck me in those intense moments that followed wasn't the aerial combat that was taking place outside, but rather the actions of our own pilot (sadly, she has asked to remain anonymous despite my many requests to feature her in *Arena Commander*). Without so much as a panicked glance or a frantic movement, she gracefully guided our ship out of harm's way as the battle raged around our suddenly frailseeming ship. It is no exaggeration to say that she saved our lives.

When the proximity alarms finally subsided, a collective breath was released. I'm not ashamed to admit that I collapsed to the floor as my adrenaline drained away. What surprised me however was when I looked over to see our brave pilot violently retching up the remains of her inflight meal. If she had been affected by the danger just as much as I had, why had my fear led to near paralysis, whereas hers had led to swift, level-headed action? A few moments later, over a muchneeded cup of tea, I got my answer.

She had been flying for over 35 years, and, while she had only had one violent encounter before (a pirate attack her third year out), piloting a ship had moved past the realm of conscious effort. When we walk, we don't calculate the angle of each footfall, or how much to bend our knees. Likewise, she no longer saw flying as a series of complicated and separate actions, she just flew. When we were in danger, it would have taken more thought for her to run out of the cockpit screaming than it had to do what was second nature to her and hang on to the controls. Nodding at this explanation, Henry commented that he had actually seen something like this before with high-level players in *UL-TIMATE*. Ask them how they defeated that 100-person Tarkor raiding party and more often than not, they would shrug and say, "I just did it."

So while on the surface *Arena Commander* is about fast-paced dogfighting and blowing up Vanduul, it is also about the amazing capacity of the Human mind to grow and adapt. As you play, I challenge you to reflect on how one day something that seems like a long complicated list of separate tasks and instructions, can change into one simple word — flying.

See you in the black,

Tristan Blair

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# **GETTING STARTED**

- 1. Launch Star Citizen.
- 2. Take the Helmet off the pedestal, with the 'Use' key (F).

**GETTING STARTED** 

- 3. Enter your ship.
- 4. Once inside the ship, with the helmet on, the HUD will display the *Arena Commander* logo, followed by the 'Arena Commander Main Menu.'

Arena Commander will **only** initiate if you are wearing a **helmet**.

#### ARENA COMMANDER MAIN MENU



#### SPECTRUM MATCH

This is leads to the Multi-Player matchmaking. Simulation modes are:

- Battle Royale
- Squadron Battle
- Capture the Core

#### DRONE SIM

This leads to the Single-Player modes. These are:

- Vanduul Swarm
- Free Flight

#### EXIT SIM

This exits you from Arena Commander.



# Become Line of the store store





#### PUBLIC MATCH



From here, you can select which *mode* and *map* you wish to play. You can also set the *Time Limit* and *Target Score* using the sliders. Hitting **Launch** will begin a search for a game matching the chosen criteria.

Once a match is found, the game will automatically launch.

#### **PRIVATE MATCH**



#### Private Match: Create



From here, you can select which *mode* and *map* you wish to play. You can also set the *Time Limit* and *Target Score* using the sliders. Hitting **Launch** will begin the game.

#### Private Match: Join



From here, you can enter a code for a private game with your friends.

#### DRONE SIM



From here, you can select which *mode* and *map* you wish to play. Hitting **Launch** will begin the game.

# GAME MODES

GAME MODES

#### **INTRODUCTION**

*"You can't be prepared for everything, so today, we're gonna practice being surprised."* 

- Cadet Wing Commander Greg 'Freehand' Luoma , UEES Ardent

A pilot can expect to encounter a whole universe of problems when they step behind the helm of a ship. The modes listed below were selected and designed to simulate a wide range of true-to-life experiences. Don't get comfortable perfecting just one. Having a versatile skillset can often be more valuable than even the most expensive components.

#### **BATTLE ROYALE**



*"Know your enemy ... even if that enemy happens to be a friend."* – Mary-Louise Outenstratten, Guild Bounty Hunter

Battle Royale is the classic deathmatch free-for-all scenario. Pilots are pitted against one another with the soul objective of raining destruction down on each other. Points are awarded for every successful kill — there can be only one victor.

- Timed Battle. Can be scaled before the match.
- **Score Limit.** Can be scaled before the match.
- Game type. Free for All up to 8 players.\*
- Ammo. Replenishes upon respawn.
- **Respawn Limit.** Infinite until score limit is reached.

#### SQUADRON BATTLE



"Your best weapon in any dogfight are your buddies. Keep 'em close and cover their asses."

- Lt Commander Lucas 'Gilly' Bramasco, UEES Constitution

Squadron Battle is a team deathmatch simulation where cooperation between wingmen is paramount. Again, points are awarded for every kill until one team has scored enough points to achieve victory.

- Timed Battle. Can be scaled before the match.
- Score Limit. Can be scaled before the match.
- Game type. Team-based 4 vs. 4.\*
- **Ammo.** Replenishes upon respawn.
- Respawn Limit. Infinite until score limit is reached.

#### CAPTURE THE CORE



*"Remember the three C's: cooperation, coordination, carnage."* – Capt. Allison 'Dozer' Artuvo, UEES *Defiance* 

Capture the Core requires a squadron of pilots to seize and secure the enemy team's core whilst trying to defend their own. When the enemy core is returned to your base, your team scores a point. If they shoot you down before then? Bad luck, the core is returned to their base.

- Timed Battle. Can be scaled before the match.
- Score Limit. Can be scaled before the match.
- Game type. Team-based Capture and Defense 4 vs. 4.\*
- Ammo. Replenishes upon respawn.
- Respawn Limit. Infinite until score limit is reached.

\* Later versions will allow more players.



*"A Scythe one-on-one ain't nothing to write home about. A pack of 'em? Well, now you've got yerself a party."* 

– Faisal Kuric, Pirate Captain, Nul System

In Vanduul Swarm you face off against the best of the Vanduul in a series of waves that will test your skills as a combat pilot. The Vanduul attack in waves and it's up to you and your teammates to stop them!

- Total Waves. Fifteen
- Elite Waves. Every third wave contains an Elite enemy pilot.
- **Teammates.** You have two A.I. teammates (Vixen and Warlord, p. 9) who respawn each time you defeat an Elite Wave.
- **Ammo.** Replenishes upon respawn. Ballistic ammunition is replenished after each wave. Missiles are replenished after each Elite wave.
- Respawn Limit. You only have three respawns.

#### THE VANDUUL

In 2681, Humanity found a true foe. Attacking out of the black, the Vanduul slaughtered a small town in Orion System without warning and without mercy. Almost three hundred years later, we haven't learned much more. There have been no diplomatic negotiations. No understanding of their culture. Just violence. Vanduul clans appear to act independently of each other, making it impossible to approach the species as a whole.

Over the years, UEE researchers have struggled to understand exactly how their clans are structured. Among Vanduul pilots, they have managed to discern a hierarchy. While the criteria for these divisions seems to be unique to each clan (and the names are purely a Human invention), they tend to exist in some form or another among all clans so far encountered.



**F7C** 

# YOU'VE DOMINATED THE VANDUUL SWARM IN ONE.

NOW FLY IT FOR REAL.

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#### GAME MODES

#### **CLAN SCAVENGER**

The Vanduul Scavenger is the workhorse of the clan. Generally, these young Vanduul are eager to prove themselves to their clan, but tend to be rash and inexperienced. While a lone scavenger doesn't present much of a challenge, pilots should be careful, when one goes down there always seem to be two more.

#### **CLAN HUNTER**

Hunter is the second level of status within Vanduul raiders. The clans will look to the Hunters as candidates for their elite fighters. They will be trained, attempting to replace impulse with cold detachment in combat. Hunters generally prefer to fight from longer range at high speeds. Many pilots have made the mistake of focusing too hard on one hunter; they nearly always have friends nearby.

#### **CLAN ALPHAS**

Alphas are far more seasoned than hunters. These Vanduul have elevated themselves through combat, achieving a vicious balance of efficiency and brutality. They are hardened, deadly and spoiling for a fight. Expect these Vanduul to be fast, clever and significantly more dangerous than hunters.

#### **CLAN PRIMES**

Over the course of Humanity's long and bloody history with the Vanduul, hundreds of pilots on both sides have captured the public's imagination and fears. Composited from declassified flight logs, Original Systems has recreated some of the Vanduul's most feared and skilled pilots throughout history as the ultimate test of your flying prowess.

#### **ELITE VANDUUL ACES**

#### LITTLE KING

A resilient and brutal killer, Little King is a long-range fighter, often opening up well before it is in range, but with a deadly accuracy born from its experience in clan raids against multiple UEE systems. It has been known to lurk at the edges of a battle and pick off retreating pilots and civilian ships caught in the crossfire. Pilots bestowed its handle at the time of its death: it took two full flights of fighters to take it down and the combatants said it was like taking on a Kingship.

#### THE PRIEST

The only thing that eclipses the Priest's skill and finesse in the cockpit is its ferocity on the ground. During the Siege of Crion, Priest was not only instrumental in fracturing the defensive line in space, but also landed on the surface to seize a military stronghold. When it was in a Scythe, UEE pilots quickly learned to fear its brutal, close-range fighting style. What ultimately earned the Vanduul pilot its handle were the Naval officers who claimed that it would get close enough to hear final confession.

#### BLOODHOUND

First encountered during the Fall of Tiber, this feared Vanduul ace was personally responsible for the destruction of thirty-two UEE fighters. Combat analysis of the engagements showed an experienced pilot in both long- and short-range dogfighting techniques, it was a flawless combination of maneuvering technique and speed that led to its handle. Once Bloodhound had locked onto you, it was impossible to shake.

#### PAYDAY

First identified in 2683, Payday was one of the first Vanduul aces that the UEE ever faced. It quickly established itself as a brilliant and adaptive foe, and UEE pilots began to collect a pool for the Vanduul ace's death. Needless to say, the ace survived all of those early pilots. The collection continued to grow and the handle was born. Many UEE pilots have been taken in by Payday's apparently slow combat style but when it pulls the trigger every shot goes where it wants it to. Payday's handle eventually took on a different meaning, referring to the death benefits that the Messer Era would pay out to the pilots who misguidedly sought their fortune against him.

#### REAPER

Simply put, one of the most fearsome Vanduul Warriors ever encountered by UEE pilots. Credited to date with a hundred fifty-seven UEE Naval kills, Repear has wielded its Scythe with unprecedented lethality. The official Enemy Pilot Profile for Reaper suggests that pilots should expect an extreme level of proficiency in all aspects of dogfighting. It offers no weaknesses, no vulnerabilities. The most terrifying thing about Reaper? It's still out there. To date, no one has bested this devastating Vanduul ace.

#### GAME MODES

#### VANDUUL SWARM TEAMMATES

#### VIXEN

Ada 'Vixen' McDonough graduated from the UEE flight school in record time. An exceptional student throughout her youth, her abilities in the field won her early recognition from her superiors and a fast-track to the pilot's seat. During her training a dummy round accidentally shattered a nearby asteroid, pelting her ship with dust and debris. She took shards of rock through the shoulder, abdomen and thigh but miraculously survived. Doctors told her she wouldn't fly again. However, through a combination of cybernetics and sheer pig-headedness, today she holds the distinction of being one of the finest in the UEE fleet.

#### WARLORD

Dao 'Warlord' Wynn has been a stalwart of the UEE fighting force for years. He has passed up countless promotions in order to stay in his cockpit, leading some to speculate that he's not worth their time. However, all naysayers fall silent when they see him fly. Quick, precise and brutal when needed, Warlord has all the qualifications of the UEE Elite... he just likes to stay out of the limelight.

**Explorer** 

2944 Scout

#### FREE FLIGHT

Free Flight

*"I couldn't cope with open space for the longest time — the scale, the beauty … now I can't get enough. I just spend hours staring out of the window at the colours and shapes in the silence . . ."* 

– Dr. Verity Longbridge, Terra Astrographic Institute

Free-Flight mode allows you to simply drop in and explore the wonders of space. Many pilots use this simulation to get familiar with their chosen ship.

• No rules, just freedom.

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YOUR COCKPIT

#### **UI COMPONENTS OVERVIEW**



There are several key components that exist in the overall cockpit user interface:

#### COMBAT VISOR INTERFACE (CVI)

Optimized for strategic military combat, the CVI provides the advantage of being able to track hostile targets in any direction and through the hull of the ship by augmenting information and markers onto the surrounding environment. The CVI displays information and warnings critical to the pilot's survival front and center – such as the current state of the ship, weapons and targets. The CVI also features a modular context window system that can be populated with various management screens by interfacing directly with the ship and interpreting the systems installed within (e.g., shield, power and weapon systems).

The CVI is a helmet-mounted display that is operated by receiving brain impulses as input instructions sent to the visor software. These in turn are the inputs necessary to facilitate general interaction and context window navigation, as well as systems and target management within the CVI.

#### FIXED HEADS-UP DISPLAY (HUD)

The HUD sits in a fixed position front and center to the ship and is holographically projected. Information relevant with respect to the current orientation of the ship, general flight information and IFCS modes/indicators reside within this display.

#### INTERCHANGEABLE STATUS DISPLAYS (ISDS)

The peripheral ISDs sit further away from the pilot's center line of sight and are integrated into the cockpit instrumentation dashboard. The purpose of the ISD is to convey second priority information not needed immediately in the center line of sight. Examples include current TDAS configuration, thruster output & monitoring and current power configuration.

Each ISD is designed to be able to cycle between various display modes. This allows the pilot to configure what and where to display a particular set of information, hence the term "interchangeable." Display modes can also be duplicated across multiple screens if desired.<sup>1</sup>

#### TRANSDIRECTIONAL AWARENESS SYSTEM (TDAS)

The TDAS is a multifunctional radar which is capable of processing information on surrounding signals and displaying distance and relative position of external contacts in 3D space. The TDAS is able to interface with the ship's targeting computer in order to overlay additional targeting-specific markers and indicators within the TDAS Holosphere. The TDAS is also designed to switch between various modes of scanning such as omnidirectional and focused, depending on the desired fidelity and range of signal detection.<sup>2</sup>

<sup>1</sup> Interchangeability not implemented in current revision (0.8).

<sup>2</sup> Only omnidirectional mode is available in current revision (0.8).



### COMBAT VISOR INTERFACE (CVI)

YOUR COCKPIT

The brunt of the CVI is separated functionally into two distinct "panes" that reside on either side of the visor workspace (main area between top and bottom):



#### **OWN-SHIP PANE**

On the left side of the CVI is the own-ship pane. This area of the CVI workspace is associated with all elements pertaining to the ship itself.

**Navigation Menu.** Using the navigation menu at the top of the pane, the current context window can be switched in order to manage various subsystems of the ship such as weapons, power, shields, etc. The current active context is indicated by the illuminated navigation item.

**Ship Status Display.** Residing just below the navigation menu is the ship status display, which is a holographic 3D representation of the ship shown in a top-down configuration. Damage and general status of various ship components are conveyed through color variation and iconography on the specific ship components.

If a specific component becomes damaged, the component will switch to one of two color spaces: Moderate (if the component has sustained damage but is still able to operate) or Critical (if the component has sustained enough damage to render it inoperable). In the event that a ship component becomes completely detached from the ship, the component part will be removed from the hologram. For information pertaining to the default color configuration, see the section on Color Spaces in the miscellaneous section of this document.



The ship status display is designed to provide you with intuitive, at-aglance feedback on the state of the ship at any given moment, so that you can take the appropriate action and maneuvers.

#### **OWN-SHIP CONTEXT WINDOWS**

The default own-ship and targeting context is always the **Overview** window. In *Arena Commander*, there are three additional own-ship context windows available by default: **Weapons Management**, **Power Distribution** and **Shield Distribution**. These context windows are detailed below:

#### **OVERVIEW CONTEXT**

The overview context window is the most crucial context to have open when engaged in heated combat. It primarily consists of what is known as the "Docking Slot Manager":

**Docking Slot Manager (DSM).** The DSM houses an array of what are known as "docking slots." These act as generic containers in which items of any type pertaining to the ship can be "docked" within these slots in order for the pilot to have quick access to a particular item's functionality and/or information. Examples of items that can be "docked" in the DSM include individual weapons, turret mounts, missile racks, subsystem preset configurations, and wingman information. The DSM allows you to configure what particular items should be displayed in the overview context according to your preference.<sup>3</sup>

<sup>3</sup> As of the current revision (0.8), only weapons may be docked to the DSM.

Docking items within the DSM can save critical steps in certain UI flows. Functionality and display of information for a docked item is contextual depending on the type of item. For example, a docked missile rack will display its equipped missiles, current armed missile, and the type of target tracking each missile uses. A docked gun item would contain a different set of information, such as its ammo count and indicators for damage, power and heat levels.

It is common among pilots to utilize the DSM to create shortcuts that activate ship subsystem configurations, or a group of configurations on the fly, without the need to navigate to other context windows.

Items docked in the DSM have three potential display states:

*Collapsed.* The collapsed state of a docked item is essentially a "decluttered" state and shows no information other than the item's dock number. In the collapsed state, items are set to automatically transition to the "Idle" state in the event that a critical alert or warning in the item needs to be conveyed to the pilot, such as when the item's heat level become too high, or ammunition is running low (if the item is a weapon).<sup>4</sup> To collapse a docked item, press numpad-left or Left while the item is highlighted. To expand the item to the Idle state, press numpad-right or Right.



EXAMPLE SHOWING DOCKED ITEMS 2 AND 3 IN THE COLLAPSED STATE. DOCKED ITEMS I AND 4 HAVE THE IDLE STATE.

*Idle.* The idle state of a docked item only displays the necessary information when that item is not currently open. This usually includes the dock number and name of the item. For weapon items, ammo count(s) will also be displayed in addition to damage, power and heat indicators.

<sup>4</sup> As of the current revision (0.8), dock items will remain in the collapsed state until expanded manually.

*Open / Active.* When a docked item is opened, it is considered the "active" item in the DSM. The open state of an item displays a 3D hologram if the item type is a physical entity, and acts in the same manner as the ship status display. This is particularly useful for visualizing the damage state of an item on an individual and more focused basis. It is also possible for an item to contain subparts that can be damaged independently, in which case their color spaces can change to represent their damaged state.

The open state also displays all interactive icons associated with the item. Common icons include "power on/off" and "mark for repair." Some item types, such as preset configurations, may not require an open state (it only needs to be "activated").

When no longer active, the docked item will automatically transition back to the idle state.

To activate or open a docked item, press numpad 5 or Enter while the item is highlighted. To shortcut to a docked item, hold numpad 0, then press numpad x, where "x" is the item dock number to activate.



DOCKED ITEM SHOWN IN THE OPEN STATE

In *Arena Commander*, only weapon types are populated by default in the DSM. These docked items, with the exception of missile racks, feature a "D P H A" warning indicator:

D Damage State P Power Draw H Heat Level A Ammo count

Each letter will switch color spaces (moderate and critical), depending on the severity of the warning.<sup>5</sup>



<sup>5</sup> A redesign of the docked item warning indicators for easier readability is currently scheduled for a future revision.



EXAMPLE OF THE MISSILE RACK OPEN STATE

If a particular docked item is a physical entity and is destroyed, it will subsequently be removed from the DSM as well as from the ship status hologram.

*G-Force Indicator.* Also residing in the overview context is the current G-Force indicator. The G-Force indicator conveys the current amount of Gs being pulled for each axis. If too many Gs are being pulled in any given direction (so as to potentially cause a blackout or redout in the pilot), the meter and readout for that axis will switch to the critical color space. The G-Force indicator is a crucial tool in avoiding undesired blackouts and redouts, especially when operating in an unimpeded flight control mode. The very tip of each axis represents the 10g mark.



THE G-FORCE INDICATOR

*Weapon Management Context.* The weapon management context displays all weapons attached to the ship and the weapon groups they reside in. Weapon functionality and weapon group assignment can be managed within this context window. This context window can be accessed quickly by pressing F2 on the keyboard, or by cycling context windows using the [] and [] keys.



Upon entering the weapon management context, the CVI will automatically focus in on the first attached weapon. To cycle to the next weapon item, press numpad  $\bigcirc$  or  $\bigcirc$ . To cycle back to the previous weapon item, press numpad  $\bigcirc$  or  $\bigcirc$ . The selectors overlaid on the ship hologram will also illuminate, indicating the weapon has focus. Manage the weapon by pressing either numpad (5), (Enter), numpad  $\bigcirc$ , or  $\bigcirc$ .

When a weapon is added to a weapon group, the corresponding number on the selected item will illuminate to the positive color space, indicating the group is active. The weapon's hologram will also be appended to the corresponding weapon group list below. Likewise, when a weapon is removed from a weapon group, the group number will dim, and the hologram will be removed from the weapon group list.

If a weapon is damaged, the weapon hologram will display in the appropriate damage color space in both the selection window and in the weapon group list.

*Power Management Context.* The power management context allows the pilot to prioritize power distribution among all of the ship's various components and subsystems that require power to operate. Power is distributed among three generic groups (or "axes") using the high-level distribution triangle. Components are not strictly bound to a particular group however, and can be rearranged into other groups if desired, providing an extra layer of flexibility in the pilot's preferences for power distribution among the ship's components.<sup>6</sup>

By default, ship components are grouped in the following manner:

- G1 (Group 1): Weapon Components
- G2 (Group 2): Avionics & Subsystems

#### G3 (Group 3): Shields

Individual components can also be powered on/off by navigating down to the power groups and cycling through the components. To toggle power on a component, ensure that the component is highlighted, then press numpad 5 or Enter). If the component has been turned off, an "OFF" indication will appear below the weapon hologram.

<sup>6</sup> Rearranging of components is not yet supported in the current revision (0.8).





*Shield Management Context.* The shield management context provides the ability to prioritize shield level distribution between all of the ship's various shield segments, with the number of segments dependent on the shield system currently installed in the ship.



THE SHIELD MANAGEMENT CONTEXT WINDOW

In the event a shield face takes fire, the shield level will decrease. If the level decreases below 20% of capacity, the shield face will switch to the critical color space. If the shield face is actively recharging, the recharging indicator will become visible and spin until the face is fully charged.

#### TARGETING PANE

Opposite the own-ship pane is the targeting management pane. Elements in this area pertain to objects and contacts outside of your ship that are being targeted/locked onto. The types of objects that can be targeted and locked include enemy fighters, large capital ships, subcomponents of capital ships, wingmen, and even inanimate objects such as asteroids, etc.



Elements in this area behave in much the same way as the own-ship pane does. Depending on the capability of the ship's installed targeting system, the focus target hologram could potentially convey per-component damage states and hit impulses, allowing the pilot to track current weak-spots present on the target ship. The targeting pane also features a targeting-specific DSM, in which docked targets have functionality and information contextual to the type of target.

The larger hologram area represents the current focused (or "selected") target. Having a target focused allows the ship's ITTS (explained further down) to properly offset based on the focus target's speed, distance and relative direction of travel. Targets can be selected in a variety of ways: by using the TDAS Holosphere, directly looking at the object and making a selection, or through the targeting DSM.

**Scanning Procedure.** Upon selection of an unidentified contact, your targeting computer will attempt to scan that contact to acquire information as to its pilot, name of vessel and general allegiance. Once the scan has completed, your target selection and hologram will switch to the appropriate color space to indicate the target's allegiance, if detectable.

Depending on the performance of the targeting computer and other general factors, the scan may take longer or shorter to complete. Once completed, the targeting DSM may be used to "dock" the target for multi-tracking.

**Using the Targeting DSM.** The targeting DSM can be used to track multiple targets simultaneously. The number of targets that can be tracked at once is dependent on the performance of the installed targeting computer. Targets docked in the DSM will display their relative distance and velocity, as well as a smaller holographic representation of the target that shows current damage states. Targets docked on the DSM are considered to be "locked" targets.

To "lock" a target to the DSM, first ensure that a focus target has been selected and scanned, then press G on the keyboard. Press G again while the target is selected to detach the target from the DSM.

Once a target has been locked, a reference number will be assigned to that target that will correspond to its position within the DSM. The reference number will then display beside the augmented targeting reticle so that locked targets can be properly differentiated.

To quickly make a locked target the focus target, press numpad . + (x), where "x" is the DSM reference number.

#### AUGMENTED HUD

One of the primary functions of the CVI is to augment the pilot's vision with targeting reticles and other auxiliary indicators. The CVI's augmented markers allow the pilot to look in any direction and still be able to track extraneous targets as well as retain visibility on the ship's total velocity vector when pulling strenuous maneuvers.

**Targeting.** Extraneous contacts can be in various states. A special reticle is designated to represent each state a contact may be in.



UNSCANNED CONTACT

SCANNED CONTACT

An *unscanned contact* is an object that has not been scanned for additional information and is essentially an unknown contact. The reticle marker is shaped as a cut-through hexagon and is fairly translucent.

A *scanned contact* refers to a target that has been previously scanned, but is not the current focus target nor locked. The shape is simplistic and features a protruding marker pointing in the target's relative direction of travel.

**Focused Target & Acquisition.** The focus target, as described above, is essentially the primary "selected" target. The focus target reticle is always indicated by a four segmented circle surrounding the target, displaying the distance and name beside it.



FOCUSED TARGET SELECTION

The initiation of a target scan is indicated by a series of 3D segments that begin to tumble and fly in from the edges of the CVI to form a 3D puzzle-like reticle around the focus target, with the progress of the scan being indicated by how many 3D segments have composed the "puzzle" reticle. When the scan is complete, all pieces will have locked into place to form the 3D reticle, which will then orient itself with respect to the target's longitudinal axis, indicating its relative direction of travel. The color of the reticle will also switch to the appropriate color space to indicate allegiance if detectable (Friendly or Hostile). If the scan takes a longer amount of time, a greater number of 3D segments may be needed to complete the reticle.

**Locked Target.** A target that has been locked will retain the completed 3D scan reticle when the primary focus is given to other targets. The DSM reference number is indicated below the reticle.



THE LOCKED TARGET RETICLE (WITH FOCUS SELECTION)

**Missile Locking.** Acquiring a missile lock uses the same concept as the target scanning reticle, whereby a series of segments will fly in to form a special 3D "missile-lock" reticle that floats on top of the scan reticle. The completion of the missile lock is correlated to the completion of the reticle, with longer lock times generally requiring more segments to complete. The missile locking reticle is the same color as the critical marker.

**Line-of-Sight (LOS) Marker.** The line-of-sight marker indicates the precise point in space where the pilot is looking. If the ship has gimbaled weapons, their direction will try to align to the pilot's LOS marker, with the projectile convergence based on the weapon maximum range.

If one or more gimbaled weapons are not currently aligned to the LOS, whether due to a limit on the rotation of the gimbal, or if the weapon is still actively aligning, a dot representing each misaligned weapon will be shown extending out from the LOS to indicate the distance and angle the weapon needs to adjust in order to align to the LOS. Once the misaligned weapon has aligned to the LOS, the dot will disappear.





THE LOS MARKER

EXAMPLE OF A GIMBALED WEAPON NOT YET PROPERLY ALIGNED TO THE LOS MARKER

#### Intelligent Target Tracking System (ITTS) for gimbaled weapons.

If there is an active focus target, the ship's ITTS will work to offset the gimbaled weapons' pointed direction based on the target's velocity, distance and relative direction of travel, such that the projectiles of each weapon will fall where the LOS marker is pointed, converging at the target ship's distance. The LOS marker essentially becomes what it referred to as the "firing solution" — the desired point of interception.



SIMPLIFIED EXAMPLE OF HOW THE GIMBALED WEAPON ITTS WORKS. WHITE X'S SHOWN DO NOT ACTUALLY APPEAR IN THE CVI.

When ITTS is active, gimbaled weapons do not actually aim to point at the LOS marker directly, but rather point to an offset based on the individual weapon's projectile speed, as well as the target's speed and distance. When this is the case, the weapon misalign indicator (a dot that extends from LOS) refers to how far off the weapon is from achieving the firing solution.

When the firing solution has been painted over the focus target, the firing solution will switch to a diamond shape and the color space will switch to positive (seen in the image above).

**Total Velocity Indicator (TVI).** A velocity vector indicator is displayed in the CVI, and is indicated by a small ring with an arrow pointing inward through the ring's cutout (indicating forward direction). The TVI shows where the ship is currently heading, even though the front of the ship may be pointed elsewhere. The TVI is useful for determining the exact flight path vector of the ship, especially when drifting between and around other objects.





TOTAL VELOCITY INDICATOR

ANTI TOTAL VELOCITY INDICATOR

**Anti-TVI.** An anti-TVI is also displayed in the CVI, which indicates where the ship is currently heading away from. The anti-TVI is displayed as a ring with an arrow pointing away from it. The anti-TVI is useful to visualize when the ship is flying in a decoupled flight control mode, where the front of the ship is rotated opposite of its forward vector.

#### FIXED HEADS-UP DISPLAY

The fixed HUD sits front and center to your point of view and is used to communicate information relevant with respect to the current orientation of the ship, general flight information, and flight control modes / indicators.

**Velocity Ladder.** The velocity ladder measures your current velocity heading toward the forward TVI.

**Thrust Force.** Thrust force, displayed in kilonewtons, represents the force being applied to the forward axis of the ship.

**Main Engine Throttle.** The main engine throttle displays the current power level being delivered to the main engine thruster.

**Gun Cross.** If the ship is equipped with non-gimbaled fixed forward-facing weapons, the gun cross represents the pointed direction of those weapons — which is also the position of your ship's longitudinal axis.



FIXED HUD LAYOUT

**Fixed Weapon ITTS.** If fixed guns are equipped and there is currently an active focus target, the fixed weapon ITTS will activate and display an interception pipper lagging behind the gun cross, with lead length and angle based on the focus target's speed, distance, and relative direction of travel.

The interception pipper indicates where projectiles of the fixed weapons will land at the focus target's distance. To ensure projectile interception with the target, the interception pipper should be painted over the focus target when firing.



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**Intelligent Flight Control System (IFCS).** Flight control indicators are displayed in the lower right-hand side of the HUD. A flight control that has become disengaged will be more translucent with an "X" through it.

*Coupled / Decoupled Mode.* There are two flight control modes, coupled and decoupled. In coupled mode, flight is always nose-forward, like an atmospheric jet. When turning, the ship continues to move at a set velocity in the direction the nose is pointing.

When coupled flight is disengaged (decoupled mode), the direction and speed the ship is moving at is essentially "decoupled" from the nose direction, allowing the ship to rotate freely without changing the direction of flight. When in decoupled mode, the ship is allowed to strafe forward and backward, side-to-side, and upward and downward. When coupled mode is re-engaged again, the ship will begin moving at the current speed but in the new nose-forward direction.

This mode is indicated by the "COUPLED" indicator on the HUD.

IFCS Safety Modes. There are two IFCS safety modes:

*G-Safe.* The first is the G-force safety mode that attempts to limit your exposure to head-to-toe G-forces to keep you from blacking/redding out. If this mode is enabled and you attempt to move the ship in a way that would generate greater than two head-to-toe Gs, the IFCS will limit that movement. If you are turning, the IFCS will slow the ship to keep the turning acceleration from being greater than the safety threshold. If you are strafing, the IFCS will limit upward / downward acceleration to within the safe range.

G-Safety mode is indicated by the "G-SAFE" indicator on the HUD.

*Command-Level Stability (COMSTAB).* The second safety mode is the turn control system (TCS, sometimes called Command-Level Stability or Comstab). Often, when the ship is turned when moving at a high velocity, it will slide in the original direction before eventually settling into the new direction. Comstab will limit this sliding behavior by slowing the ship's velocity during extreme maneuvers. It is similar to the traction control system of ground-based vehicles.

Command-Level Stability is indicated by the "**COMSTAB**" indicator on the HUD.

#### INTERCHANGEABLE STATUS DISPLAYS

There are two functional ISDs available:

**Thruster Output Display.** The thruster output ISD displays perthruster output levels from the ship's main engine as well as maneuvering thrusters.



THRUSTER OUTPUT ISD

**Throttle & Boost Display.** The throttle & boost ISD displays the current power level being delivered by the main engine (which is duplicated on the HUD), as well as an afterburner capacity indicator.



As the afterburner expends more fuel, the boost meter will decrease and flash indicating the afterburner is currently engaged. When the boost meter decreases below 50%, the meter will then switch to the critical color space to warn that the boost capacity is low. As the boost meter recharges, it will fade in and out until full or until the afterburner is engaged again.

#### TRANSDIRECTIONAL AWARENESS SYSTEM

The TDAS is a spherical radar used to inform the positions of contacts in three dimensions.



THE TDAS HOLOSPHERE WITH NO SCANNED TARGETS

The TDAS displays the galactic plane as a standard reference for your ship's orientation in space. An unscanned target is marked with a small sphere that has no relative distance indicator.



THE TDAS WITH A FOCUS SELECTION TARGET

The focus target displays a relative distance indicator (ring and stalk) that is designed to communicate the distance to the target both horizontally and vertically. If the target is still being scanned, a diamond will take the place of the focus target. Once the scan completes, the focus target then switches to be displayed as a 3D representation of the target object. The color of the relative distance indicator and 3D hologram changes to indicate allegiance if detectable.





UNSLECTED SCANNED TARGETS

Unselected targets that have been scanned will show a more faded relative distance indicator, with the target represented by a hollow triangle that points upward or downward depending on whether the target is above or below.

#### TDAS ZOOM LEVEL

The TDAS supports cycling through various levels of zoom. To cycle through the zoom levels, press (, ) (the comma key).

#### **UI COLOR SPACES**

All elements in the HUD user-interface are registered to a specific color space upon creation (but can be switched by the pilot). Color spaces are essentially "color groups" that contain elements of similar states, conveying similar information through color. The power of color spaces is that they can be redefined to suit your visual needs and preferences, and changes will be reflected in all of the various UI components in the cockpit. The following list outlines the available color spaces and their functional purposes:

**HUDNEUTRAL.** This space is used for all HUD elements if they don't strictly pertain to a specific function in conveying information through color. It also serves as the neutral / "okay" state if it is a part that can sustain damage.

**POSITIVE.** This color space is used to indicate positive feedback — completion messages and highlighted / selected elements.

**MODERATE.** Used to indicate second priority severity, whether it is a "notice" message or a moderately damaged subpart. This is the color used to indicate the intermediate state between "okay" and "critical."

**CRITICAL.** This color space indicates a negative or critical element that needs utmost attention — first priority severity. This is used to indicate severely or completely damaged parts on your ship — critical warning messages, etc.

**UNKNOWN.** Unknown or neutral allegiance.

FRIENDLY. Friendly allegiance

**HOSTILE.** Hostile allegiance

The default color palette and color-space mapping can be seen in the image below:



DEFAULT COLOR SPACE DEFINITIONS



## JOYSTICK

## CONTROLLER





#### CONTROL MAPS

# HOTAS x52



# HOTAS X55



Instructions for how to map your X55 HOTAS or HOTAS Warthog: 1. While in your hangar or in the *Arena Commander* game, bring up the

CONSOLE command window (). 2. Type pp\_rebindKeys followed by the path to the XML file:

StarCitizen\CitizenClient\Data\Controls\Mappings\ layout\_hotas\_x55.xml or

StarCitizen\CitizenClient\Data\Controls\Mappings\ layout\_hotas\_warthog.xml

3. Press Enter to execute the command and there should be a success message. The layout change is stored in your profile and it will persist between game sessions.

Custom key bindings can be reset by using pp\_rebindKeys on its own.

# THRUSTMASTER HOTAS WARTHOG

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# 300i

Origin's 300 series favor speed and agility over power. The Scalpel<sup>™</sup> Precision Maneuvering thrusters, originally designed for Murray Cup contenders, have become standard for the 300i, making it as maneuverable as the Scythe. That nimbleness comes at a cost. The 300i lacks the armor and shield complement that a Hornet has, requiring the pilot to be more surgical in his attacks. Pilots will often opt for hit-and-run tactics to compensate, choosing the angle and place of the dogfight rather than engaging in battles of attrition.





Race	Human
Role	Touring
Manufacturer	Origin Jumpworks
Length (m)	24.0
Beam (m)	16.0
Height (m)	7.0
Mass (kg)	20,085
Max Crew	1
Max Power Plant	3
Factory Power Plant	ACOM StarHeart III (2)
Max Engine (Primary Thruster)	1x TR4
Factory Engine	Hammer Propulsion HE 5.3 (TR3)
Maneuvering Thrusters	12x TR1
Factory Maneuvering Thrusters	10x Origin Scalpel Precisior 2x Origin Omni Precision
Max Shield	3
Factory Shield	Gorgon Defender AllStop
Cooling System	(none)
	4 1/1 0 M/1 05 005
Class 2 Hardpoints	1x Klaus & Werner CF-007 Bulldog Repeater 2x A&R Omnisky VI Laser Cannon
Class 3 Hardpoints	2x Behring Marksman HS Missile Platforms (2x2 Beh- ring Marksman HS Missiles
Class 4 Hardnoints	(none)

2x Origin Countermeasure

Launchers

Countermeasures

# Aurora MR

RSI's Aurora has enjoyed success as an affordable, multirole civilian ship and can be found in most corners of the UEE. Its range of options and general versatility make it an ideal starter ship for new pilots as well as aspiring haulers and local law enforcement. While all Aurora have a smaller target profile [than the 300i and Hornet], the offensive and defensive capabilities will vary based on the model and operator's choice in loadout. In short, the discerning combatant would be wise to not discount the small modular ship as a threat until he knows exactly what he's dealing with.









Race	Human
Role	Interdiction
Manufacturer	RSI
Length (m)	18.5
Beam (m)	8.3
Height (m)	4.1
Mass (kg)	7,550
Max Crew	1
Max Power Plant	2
Factory Power Plant	Alliance Startech KS-9 Enhanced (1)
Max Engine (Primary Thruster)	1x TR3
Factory Engine	Dragon STC Red (TR3)
Maneuvering Thrusters	6x TR1
Factory Maneuvering Thrusters	6x KDK TM-4 Slider (TR1)
Max Shield	2
Factory Shield	Seal INK-1 (S1)
Cooling System	J-Span Omni-Cool Reduction Bar

#### LOADOUT

Class 1 Hardpoints	2x Behring M3A Laser Cannons
Class 2 Hardpoints	(none)
Class 3 Hardpoints	1x Behring Marksman HS Missile Platform (1x4 Beh- ring Marksman HS Missiles)
Class 4 Hardpoints	(none)
Countermeasures	2x RSI Countermeasure Launchers

# Hornet F7C

In the 28th century, Anvil Aerospace unveiled their prototype Hornet as a replacement for the carrier-based fighters in the UEE Navy. Over the next two hundred years, the Hornet and its variants have effortlessly handled a myriad of operational duties from assault/interdiction to defense to recon, making it one of the most versatile ships in active service. Some have criticized the military Hornet for their inability to perform long-range missions, but Anvil has repeatedly claimed that redesigning the ship to accommodate that role would compromise its immediate applications. Regardless, the UEE High Command have entrusted the Hornet as their frontline attack dogfighter and they seem unlikely to change their mind anytime soon.





Race	Human
Role	Civilian Close Support
Manufacturer	Anvil Aerospace
Length (m)	22.5
Beam (m)	21.8
Height (m)	5.3
Mass (kg)	21,949
Max Crew	1
Max Power Plant	3
Factory Power Plant	Lightning Powerbolt (2)
Max Engine (Primary Thruster)	1x TR4
Factory Engine	Hammer Propulsion HM 4.3 (TR3)
Maneuvering Thrusters	8 x TR2
Factory Maneuvering Thrusters	4x Anvil Flex MK2 4x Anvil Joint MK2
Max Shield	4
Factory Shield	Gorgon Defender AllStop FR
Cooling System	
LOADOUT	
Class 1 Hardpoints	(none)
Class 2 Hardpoints	2x Gallenson Tactical Mantis GT-220
Class 3 Hardpoints	2x Behring Marksman HS Missile Platforms (2x4 Behring Marksman HS Missiles)
Class 4 Hardpoints	1x B&R Hornet Ball Turre (2 Klaus & Werner CF-00 Bulldog Repeaters)
Countermeasures	2x Anvil Countermeasure Launchers

# Scythe

The face of the enemy. Vanduul Scythes are singularly focused in their design. There is not a single allowance for comfort, cargo or anything that would dilute the ship's function as a dedicated dogfighter. UEEN combat assessments classify the Scythe as an agile, resilient opponent with both light and heavy weapons. To many, it seems that the Vanduul built the ship with mostly strengths and few weaknesses, but the real discerning factor in defeating the Scythe lies with its pilot. A ship is, after all, simply a tool. It's the operator who dictates its level of effectiveness.



Race	Vanduul
Role	Combat
Manufacturer	Unknown (Clans)
Length (m)	30.8
Beam (m)	17.8
Height (m)	8.5
Mass (kg)	29,387
Max Crew	1
Max Power Plant	1
Factory Power Plant	Unknown (Clans)
Max Engine (Primary Thruster)	2x TR4 thrusters
Factory Engine	Unknown (Clans)
Maneuvering Thrusters	2x TR2 fixed retro thrusters 2x TR2 joint thrusters 8x TR1 joint thrusters 4x TR1 vector thrusters
Factory Maneuvering Thrusters	Unknown (Clans)
Max Shield	2
Factory Shield	2
Cooling System	2x spoilers on body structure
LOADOUT	
Class 1 Hardpoints	1x IM Neutron Cannon 1x IIG Heavy Plasma Cannon 2x Laser Cannon
Class 2 Hardpoints	(none)
Class 3 Hardpoints	1x Scythe Missile Platform R (1x4 Vanduul HS Missiles) 1x Scythe Missile Platform L (1x3 HS Missiles)
Class 4 Hardpoints	(none)
Countermeasures	2x Countermeasure Systems

#### Amon & Reese Omnisky VI Laser Cannon



Class 2

#### Damage: Medium

An upgraded version of their already impressive series V laser, the latest in Omnisky's line manages to charge quickly, impact a wide variety of energy fields and armor types, and hit "clean."

#### Broad & Rabiee Hornet Ball Turret



#### Class 4

Damage: per mounted weapons

With advanced hydraulics and an integrated targeting interface, the turret offers a wide arc of protection. Experienced pirates will plan their approach based on the turret's arc of fire.

#### Scythe Laser Cannon

Imperial Designation: WEAK



A capable weapon that appears to have been based on a very early Xi'an design. While not particularly noteworthy, it is not to be ignored.

#### Behring M3A Laser Cannon



#### Class 1

**Damage: Medium** 

One of the first Behring designs to be made widely available to the public, this laser has been depended on by generations of civil and military pilots for its consistent efficacy.

#### Gallenson Tactical Mantis GT-220



#### Class 2

#### **Damage: Low**

A hydraulically-driven hard ammo cannon, the 220 features an extremely high rate of fire that compensates for its reduced range.

#### Scythe IIG Heavy Plasma Cannon Imperial Designation: WRATH



Vanduul technology in the field of plasma weapons is significantly beyond what the UEE has been able to reverse engineer from captured ships. The plasma will stick to ship hulls and deliver devastating damage as it burns through armor and plating.

#### Behring Marksman HS Missile



Class 3

#### **Damage: High**

With the addition of Behring's signature thermo guidance system, the Marksman heatseeker has earned a reputation for its ability to track all but the lowest signatures.

#### Klaus & Werner CF-007 Bulldog Repeater



#### Class 2

#### **Damage: Low**

No one has engineered a laser that does the kind of damage that a neutron gun or a kinetic weapon can inflict, instead CF series of laser repeaters relies on an alternate solution: deliver as many hits to a wide area as quickly as possible.

#### Scythe IM Neutron Cannon

Imperial Designation: WAR



Neutron guns have greater damage potential than lasers, but reduced ranges; their slow projectile velocity making them difficult to effectively use against more nimble fighter craft.

# **COMING SOON FROM**







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There's more white-knuckle flying on the way with the first Arena Commander expansion, the **AVENGER MISSION PACK**. Get behind the stick of a fabled Aegis Avenger and experience firsthand why this 28th-century classic is still beloved by the Advocacy and criminals alike.



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