# The Opron Insurgency Book 5 of the Alliance Conflict 

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## Chapter 6

Lorano was staring at the large, overhead view-screen located in the common area of the special quarters that he shared with Clowy, Carank, and Lexxi. The Solarians Crista and Victor Bullpeep also lived there, but they were away on a special assignment at the moment.

Their quarters were located in the ambassadorial wing of the former Altian space station that the Humans had stolen rescued from Waylon six months earlier. The Humans had renamed the station Space Station Liberty and had parked it in geosynchronous orbit over Akron, Ohio.

Lorano had repeatedly chided them over the station's unoriginal name, but he was secretly thrilled that they hadn't simply named the dumb thing Space Station or a multitude of other even less original names. He had personally lobbied for keeping the original Altian name for the Space Station, but the name Yo Mar Fe Maw La Yol really didn't resonate with anyone on Earth.

He even lobbied for the Alliance Basic translation of YoMama, but no one liked that name very much either.

The aforementioned overhead monitor was programmed to show background pictures of the solar system. It scrolled through pictures of the planets, the sun, the moon, Space Station Liberty, the mining drill and control station, and the new cruiser assembly line.

Carank entered the common area and approached Lorano. He noted that the silver skinned, bald Altian was silently crying. Carank knew from diversity training that Altians typically cried for no reason; or at least for no reason that a non-Altian could readily detect. Altians had even managed to develop emoting into a form of non-verbal communication.

Carank stood next to Lorano and watched him cry for several long moments. Lorano was crying longer and harder than he had ever seen before. Carank patiently waited for the waterworks to stop.

Lorano eventually stopped crying and noticed that Carank had been carefully pretending not to stare at him. Lorano didn't acknowledge his emotional outburst. Neither did Carank for that matter. Lorano waited until the overhead monitor showed the drilling station and processing center and told the monitor to stop scrolling.

They watched as a giant laser beam tore through an asteroid and pulverized everything it touched. It vaporized the useless rock material. The remaining useful minerals were sucked into a large collection bin and transferred via a tube to the processing station.

The processing station separated the space dust into iron, copper, and whole host of other base metals and minerals. The station then collected each metal and compressed it into a transportable cube of raw material. The second part of the station took the raw materials and converted then into various grades of steel.

Carank looked at the monitor. The Humans were running the laser drill at a high setting. They were literally destroying their solar system to produce raw materials. He wondered if that was what was bothering Lorano. Perhaps the Altian was a preservationist.

Carank tried an indirect question. He said, "The Humans are certainly making creative use of the mining drill."

Lorano turned to Carank and said, "The Humans have turned the mining drill to nearly its maximum setting. The drill is intended to slowly scrape along the surface of an object and carefully pull the resources out of the ground. That way the rock can be recycled and the planetary body can remain essentially as it was. This, this..."

Carank filled the pause, "True, they are destroying the entire asteroid belt. However, they are mining at an unprecedented rate. We initially stated that they had the mining capacity to produce 12 ships a year. At this speed they have enough to build 60 ships a year and still have enough left over for fighters and defensive forts."

Lorano replied, "Yes. But in a little over a year the entire asteroid belt will be gone. Look at the four largest asteroids that comprise half the mass of the entire belt. They have already disintegrated Ceres and Vesta and are now working on Pallas. In four months they will switch to Hygiea."

Carank said, "On the plus side, removing the asteroid belt will make navigation through the system a little easier."

Lorano waved dismissively. He said, "Let them destroy it. After all, they named the thing the Asteroid Belt. Maybe it should be disintegrated. At least I will no longer have to refer to it by such an unoriginal name."

Lorano told the overhead monitor to begin scrolling again. He waited until it showed the cruiser assembly line again and told it to stop scrolling again.

He then added, "Computer, begin scrolling through different views of the assembly line; maintain the current scroll rate."
...Scrolling through the new views now...
Lorano looked over at Carank and said, "Seven months ago the humans had nothing, absolutely nothing. No technology, no manufacturing, no infrastructure, nothing. Now look."

Carank tried to guess what Lorano was thinking based on his relatively random statement. On one appendage, something about the new Human assembly line may be bothering him and he was crying because he was upset or frustrated. Conversely, he may be proud of their accomplishments over the last seven months and was crying for joy. Or, he may just be upset about how ugly their final ship design looked.

Carank tried to take a middle ground approach. He responded, "It is amazing how far the Humans have come in only seven months. Unbelievable progress really. The new assembly line is up and running now."

Lorano waved his hand dismissively again. He said, "Yes, yes. We are staring at the longest assembly line in the galaxy. It is probably the longest one in the universe too for all we know."

Carank replied, "I really didn't believe chief engineer Colin O'Neal when he told me what they were going to do. It just seemed too extreme at the time. Now look. There they are, building cruisers at an unimaginable rate."
"Yes," Lorano said. "I remember. We stated in our initial assessment that because there were only three internal bays on Space Station Liberty that the Humans would only be able to build twelve ships a year."

Carank pointed to the overhead monitor and said, "We were wrong."
Lorano snorted in response. A moment later he responded, "No other race in the galaxy thinks like the Humans. No other race is willing to take such extraordinary and extremely risky measures to accomplish their goals. They..."

Carank interrupted, "Yes, they are unique problem solvers. Take the final exam in the flight simulator as an example. Every other race was told how to pass so they followed those instructions exactly. The Humans were simply given the video game with no instructions or preconceived notions. Eventually, they found a way to not only pass the test, but to actually destroy the enemy cruiser and complete the simulation. I personally think it is an endearing trait."

Lorano now pointed to the monitor and asked, "And do you think this, this, this ... monstrosity is endearing?"

Carank said, "The Humans were presented with a problem. Specifically, since they only had 3 internal bays, they could only build 3 ships at a time. They simply refused to be bound by traditional convention and found a better solution."

Lorano said, "Yes. I remember patiently explaining to Colin O'Neal how the Altians build ships. First, weld the main horizontal and vertical beams in place. Then, install the primary and secondary generators. Next install the ion cannon. After that install the plasma reactor and thrust modules. Finally, weld all of the inner and outer plates onto the structure."

Lorano paused for a moment. He realized that he had one more step to mention, but had said the word finally. He covered his mental mistake by saying, "Now that the primary structure has been completed and the ship could hold an atmosphere, it could then be transferred to an external bay where the interior would be installed."

Carank said, "Yes. That is how the Advranki, and every other race in the galaxy for that matter, builds ships. However, as I stated earlier, the Humans clearly thought of different solution."

Carank paused momentarily to consider his next statement. He knew that it might upset Lorano, but he continued anyway, "And possibly a better solution."

Lorano did not respond. Instead, he turned back and watched the assembly line. Carank did the same.

The assembly line started at Space Station Liberty and stretched away into outer space for 10 kilometers ( 6.25 miles). There was an assembly station every 500 meters. So, every kilometer contained 2 ships and the entire assembly line contained 20 ships.

The line produced a completed ship once every six days, meaning that Earth could build 60 ships a year. Lorano had estimated that the Hiriculans could build 120 ships a year if they chose to do so. The difference in build rate was still huge at 2 to 1 margin, but it was certainly much better than before.

Colin employed a small army of industrial engineers to design and build the assembly line. They had taken Lorano's relatively simplistic ship design and broken it down into individual steps. It was similar to taking a car apart piece by piece and trying to figure out how to put it back together again while floating in outer space.

The process started similar to that employed by the other races. In one of the space station's three internal bays the main horizontal and vertical beams of the cruiser were welded together. Next, the plasma reactor, primary generator, thrust module, and the main electrical trunk wires were installed. These steps took eighteen days to complete; thus allowing the station to feed one ship to the assembly line every six days.

The rest of the ship was built in deep space. Unlike the method used by the other races, the entire ship was constructed from the inside out. In the first station the ion cannon was bolted into place and then wired to the main electrical line. The ion cannon ran about half the length of the ship.

The ion cannon was undersized and underpowered by exactly half compared to an (former) Alliance warship. However, despite its diminutive size, it was still more than powerful enough to blast a hole in a shielded ship. The key benefit was that the smaller ion cannon freed up enough room to mount an additional flight deck.

In the second station of the assembly line, workers installed three habitation units. Each habitation unit consisted of a bathroom, a kitchenette, three multi-purpose entertainment rooms, and five bedrooms with four sets of bunkbeds each. The habitation modules were designed to house 20 crew members during eventual ship operation. Two habitation units were placed in the middle of the ship for the two fighter pilot wings. One unit was placed near the back to house maintenance and engineering.

A fourth unit was placed in the front to house the marines and bridge personnel. This unit was slightly different as it contained one bedroom for the five marines, one spare bedroom, and individual rooms for the officers.

The habitation modules were self-contained and had blast doors that could seal in the event of sudden depressurization. Further, they were capable of holding an atmosphere and an artificial gravity, even in deep space.

Each habitation unit was identical to every other unit. There was no variation or customization allowed. The units, like most of the other systems, were sub-assembled on either on Earth or Space Station Liberty and transported to the appropriate spot on the line.

During construction the habitation module served two critical functions. First, the atmosphere and an artificial gravity made it an excellent place to sub-assemble smaller components prior to installation. Second, the module provided the construction crews with a place to eat and sleep.

Next, the floors of the cruiser were riveted into place, followed by the walls, more wiring, the bridge, more wiring, engineering, the dual fighter bay, the missile launchers, the inner hull, the shield generators, and finally the outer hull.

Missiles were stored next to the missile launchers. There was no centralized storage or handling system. The missiles were loaded onto the cruiser through the fighter bay and manually carted down the main hallway to the appropriate missile launcher.

Again, the key difference with the Human line was that the majority of the ship was constructed in outer space. Men and women dressed in smart suits crawled over the ship day and night - running power and air lines, welding, and installing equipment.

Lorano pointed to the monitor and said, "It's too dangerous to build ships like that. I told Colin that, but he ignored me."
"Yes," Carank readily responded, "I understand that three people have died so far. One impaled himself on a cross-member and two got tangled and floated off into space."
"They don't listen to us like they used to." Lorano lamented.
"Well, if they did things the way we did, they would wind up with the same outcome. I think the Humans know they have to innovate in order to have any chance of success in the upcoming territorial dispute."
"Is that what we are calling it now?" Lorano asked. "A dispute?"
Lorano continued unabated, "If the Hiriculans find Earth they will enslave it like they did Neto. Conversely, if the Humans can build enough ships they will attack with reckless abandon and destroy the galaxy."
"Yes," Carank answered. "The term dispute is technically correct in this case and I think it sums up the issue rather nicely."

Lorano waved his hand dismissively and stared at the screen again. Carank still hadn't determined exactly what was bothering Lorano, so he tried a more direct approach. However, he didn't want to be rude, so he started with a gentle misdirection that should eventually wind up where he wanted the conversation to go.

Carank waited a minute and said, "The new Earth ships are certainly something, aren't they. I think we can both be proud of how well the new cruiser design turned out."

Lorano snorted in response. He looked over at the green-skinned Advranki and realized that Carank was waiting for an actual response.

He said, "Computer, replace the scrolling view of the assembly line with the schematic of the Earth cruiser."
...Now being displayed...
Lorano said, "Jim Donovan and Colin O'Neal certainly have high expectations for this .. ship." He paused long enough between the words this and ship to silently express his true opinion of the thing that they had designed.

Lorano continued, "They insisted that we incorporate every modification and so called improvement that they made to the Sunflower into this design."

Lorano reviewed the schematic. They had certainly been challenged by Jim Donovan's demands. And in Lorano's humble opinion they had delivered an incredibly powerful ship for its class, or for any class for that matter.

The ship was an absolute victory in pragmatic warship design efficiency. The overall length was still the same, but the width and height were significantly smaller than their Alliance and/or Hiriculan counterparts. The volume reduction was significant at over $40 \%$.
(Specifically, an Alliance cruiser was 100 meters long, 25 meters wide, and 10 meters tall ( $330 \times 80 \times 30$ feet) with a volume of 25,000 cubic meters. The Human cruiser was $100 \times 18 \times 8$ meters with a volume of 14,400 cubic meters.)

This volume reduction saved a considerable amount of steel and other raw materials. It also made the cruiser accelerate faster, have a higher top speed, and fly much more efficiently through hyperspace.

The biggest change though was that the standard complement of fighters had been increased from 20 to 40 . Fighters, or technically the Human's uncanny ability to pilot them was easily humanity's biggest advantage and the new cruiser was designed to maximize that advantage.

Each fighter squadron was housed in its own fighter bay. The two bays were situated side-by-side and had been moved from the front of the ship to near the back. The bays were located in the space freed up by the smaller ion cannon - just in front of engineering and just behind the ion cannon. The fighter bays were $25 \%$ wider than the Alliance version.

Further, the fighter storage elevator had been redesigned. Now, two rows of five fighters were stored in an elevator above the hangar bay and two rows of five fighters were stored in an elevator below the hangar.

This modification to the storage elevator made it significantly faster to launch an entire squadron of fighters. Now, they could launch fighters 5 -wide instead of 4 -wide and each elevator only had to index once versus twice.

With the new configuration, an Earth cruiser could consistently launch 40 fighters in the span of 30 seconds. There was no equal in the galaxy.

The official Alliance record for the fastest fighter squadron launch in Alliance Navy history was 4 minutes and 18 seconds. The pilots were intentionally trying to set the record that day. However, the average fighter launch was 9 minutes and 42 seconds.

The unofficial record for the fastest fighter squadron launch in Alliance Navy history was 52 seconds. That record was set by First Squadron during the battle of Hepitila. The record was unofficial because the Sunflower's computer had deemed it impossible to launch a squadron of fighters that quickly and had refused to log it in the database of records.
(Hepitila was the battle where the human pilots aboard the Sunflower blew up two destroyers that were hiding behind an enormous steel plate. The Sunflower was then chased by a Hiriculan battleship. That battle led then Captain Solear to formulate the Earth conundrum.)

Two other significant features had been incorporated into the new cruiser design. The first was energy production. The secondary power generator had been upgraded to a primary generator. This made it easier to build since only one generator design was needed.

The primary generators were wired in parallel to the energy reservoir capacitors. This meant that the ship could recharge its batteries in roughly forty percent of the time of a normal Alliance cruiser.

Further, the number of capacitors and hence the amount of stored energy, stayed the same as the Alliance design. Since the ion cannon was half the size, it only needed half the power to fire. Therefore, a human cruiser could either fire its ion cannon twice or fire it once and still be able to jump into hyperspace.

The final modification was the missile launchers. The number of launchers remained the same at ten, but the storage area and automated delivery system had been removed. The missiles were simply pushed down the main corridor to each launcher and stored beside it.

Lorano switched the view back to the assembly line and checked the countdown clock. It showed 14 minutes until the very first Human cruiser would exit the assembly line. Lorano then had the monitor focus on the ship.

Lorano zoomed in until only the front quarter of the new cruiser was in view. He traced one of the outer hull plates of the ship with his fingertip. The plates on the outer hull were 6 meters high and three meters wide ( $20^{\prime}$ by $10^{\prime}$ ). He finished the rectangle and zoomed the view back out until it displayed the entire ship.

From this angle, he could see the two prominent, horizontal weld seams running the entire length of the ship. He could also see the thirty-three vertical weld seams spaced evenly three meters apart.

Carank noted the gesture and said, "At least the weld lines are orderly. They are doublebraced and as strong, if not stronger, than the hull of an Alliance warship. Plus, these seams are much faster to weld and the welding can be performed in outer space."

Lorano didn't answer so Carank added, "As an added bonus, these ships can be repaired during a battle. There will now be little fear of getting trapped in the system if your enemy is able to blow a small hole in your hull. In general, this is a superior hull design for a warship."

Lorano still didn't answer despite the inflammatory comment.
Carank was a little worried about his friend. Usually, he could bait him into an ugly comment. He waited a minute and said, "Do you think we should have attended the christening? We were invited and asked to give speeches."

Lorano finally responded, "I didn't think it was appropriate. Let the Humans have their day. Besides..."

Lorano hesitated so Carank filled in the blank, "You really don't want to be associated with this ship, do you?"

Lorano chuckled and his sour mood seemed to disappear with it. He said, "On the plus side, this is the best ship I have designed this year. However, on the minus side this is also the worst ship that I have designed this year."

Carank chuckled as well. He said, "This is a good ship. I think this cruiser is a great first effort for this backwa..." Carank immediately stopped himself and continued, "Young race. I think the ship is fast and powerful and easily repairable. Every component including the power generators can be swapped out and replaced with little difficulty.
"True," Lorano added.
Carank continued, "The Humans have built a true warship."
"What are the odds?" Lorano asked, "That the most violent race in the galaxy would build a naval vessel designed solely and specifically for war."
"Okay," Carank answered. "How would you sum up this ship?
"Ugly." Lorano answered.
It was almost time for the ship to launch. Lorano said, "Computer, display the ceremony and turn up the volume."

Jim Donovan, Fleet Admiral of the United Earth Navy, was standing beside Colin O’Neal on a temporary platform beside the new cruiser. They were dressed in smart suits with helmets and were safely tethered to the platform. There was a television crew stationed next to them.

Jim felt that the amount of pomp and circumstance was over the top, but he realized that it was necessary. The planet needed some good news and this launch represented very, very good news. In fact, it was cause for an international celebration.

The event planners had even wanted to put a 20-person band on the platform to play a few anthems, but Jim reminded them that they would be performing in outer space in space suits and would have a difficult time playing their instruments.

The planners were undeterred, so Jim had to remind them that there is no sound in outer space. Finally, a compromise was reached and the band was allowed to perform in the hangar bay of the new United Earth cruiser.

Jim and Colin stood at attention while the band played a rousing medley of several national anthems - specifically those of the counties that participated in the formation of the United Earth Navy.

They finished with the new United Earth anthem. Oddly enough, it sounded quite a bit like Madonna's hit song Borderline. There were even threats of a lawsuit.

Jim turned on his microphone and said, "Today we stand before the UES Indianapolis as it prepares to exit the assembly line. This is truly a momentous occasion and is a triumph for Humanity. We have overcome long odds and have succeeded in building a warship without equal in the galaxy..."

Jim waited a minute for the anticipated applause to die down. He continued, "The UES Indianapolis will become the first ship in the new United Earth fleet - an interstellar fleet and a force to be reckoned with. We will show the galaxy that Humanity deserves the basic, unequivocal rights afforded to all of the other enlightened races in the galaxy."

Jim had wanted to say "all beings" but couldn't because the Neto had been treated very badly by the Hiriculans. The Hiriculans had euthanized the old, weak, and genetically defective. They had performed selective breeding to produce smarter children and had amputated the entire race's second set of arms.

They planned to do the same thing to Humanity - well, minus the arm thing. That was the primary reason for fighting the Hiriculans. Win, lose, or draw Jim knew that they had to fight well enough to at least make the enemy treat them with respect.

The song ended and Jim produced a wine bottle. There had been a fair amount of controversy surrounding the breaking of a wine bottle to christen a new a ship. Traditionalists argued that it was an important tradition and must be carried out.

However, the safety administration pointed out that Jim was planning on breaking glass in outer space. After breaking, the glass could go in any direction and puncture someone's suit and kill them. Eventually, they came to an acceptable compromise.

Jim took the unbreakable, empty, aluminum wine bottle and slapped it against the bow of the ship. It didn't break. It didn't make a sound either. Fortunately, television producers were ready and provided a reassuring thud for the viewing audience.

The platform withdrew to a safe distance. The band entered a transport and left the cruiser. After that the UES Indianapolis slowly, almost cautiously moved off of the assembly line. It accelerated to 0.05 light and flew to Venus. It then turned around and flew back.

It turned again and flew out to the end of the gravity well. From there it disappeared into hyperspace. A television announcer voiced "The UES Indianapolis just jumped to New Earth as part of its maiden voyage. It will be on maneuvers there for a week and then return to Earth."

Lorano said, "Computer, end sound. Resume showing pictures of the solar system at the normal interval."
...Resuming the view of the interesting features of this solar system...
Lorano briefly considered telling the computer that there was nothing of interest here. He decided against it because he didn't have the mental stamina at the moment to attempt arguing with the computer. He instead let the computer display whatever it considered to be interesting.

Carank said, "Well, that was certainly a nice ceremony. I wonder why they gave the ship the designation UES Indianapolis."

Lorano replied, "Jim mentioned something about that during one of the staff meetings. I think it is Human tradition to name their naval vessels after people or places or places that people have gone."

Carank said, "Yes, I recall now. The first 50 ships will be named after the 50 state capitals in the United States. Then the next 4 will be named after the 4 capitals in the United Kingdom. Then it will switch to Canada I think."
"Not especially creative," Lorano lamented.
He had lobbied for naming the ships after popular movie or television villains. However, his initial suggestion of the UES Baltar had not been received very well. Better than his suggestion for the name of the space station, but still not very good.

Carank asked, "Why do you think they included the initials UES before the name of the ship?"

Lorano replied, "Well, it doesn't seem very complicated. UES stands for United Earth Ship."

Carank said, "But the cruiser is a naval ship. Shouldn't it be called the UEN Indianapolis or even the UENS Indianapolis instead the UES Indianapolis? Further, what would they call a transport or a freighter assigned to the Navy?"

Lorano started to answer, but stopped himself. Apparently, it was complicated. He shrugged and said, "Computer, what would the Humans theoretically call a freighter with the name Peanut that was assigned to the Navy?"
...It would be called a United Earth Naval Ship; technically the UENS Peanut...
Lorano said, "The Humans call a non-naval naval ship a naval ship, but they call a dedicated naval ship a non-naval ship. That seems backwards."

Carank said, "I think it is the other way around. If it is a dedicated naval ship then everyone already knows that it is a naval ship so the word naval is therefore redundant. Conversely, if a non-naval ship such as a freighter is put into service for the navy, it is designated with the word naval in its title for enhanced clarification."
"Well," Lorano said, "That certainly clears up that issue."

