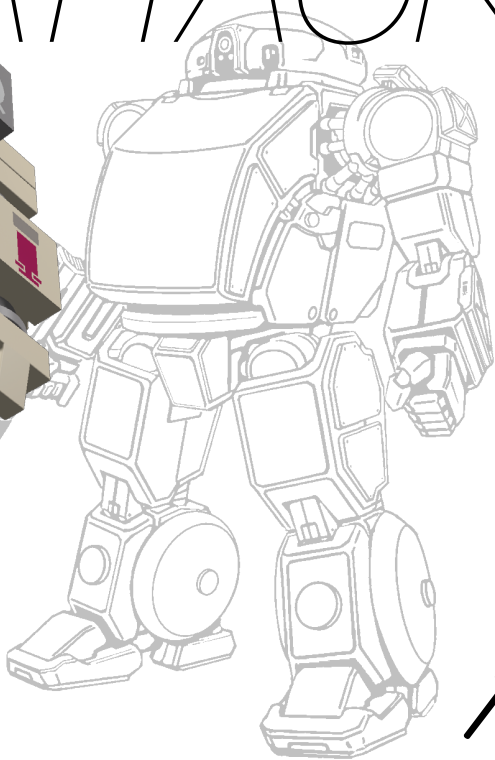
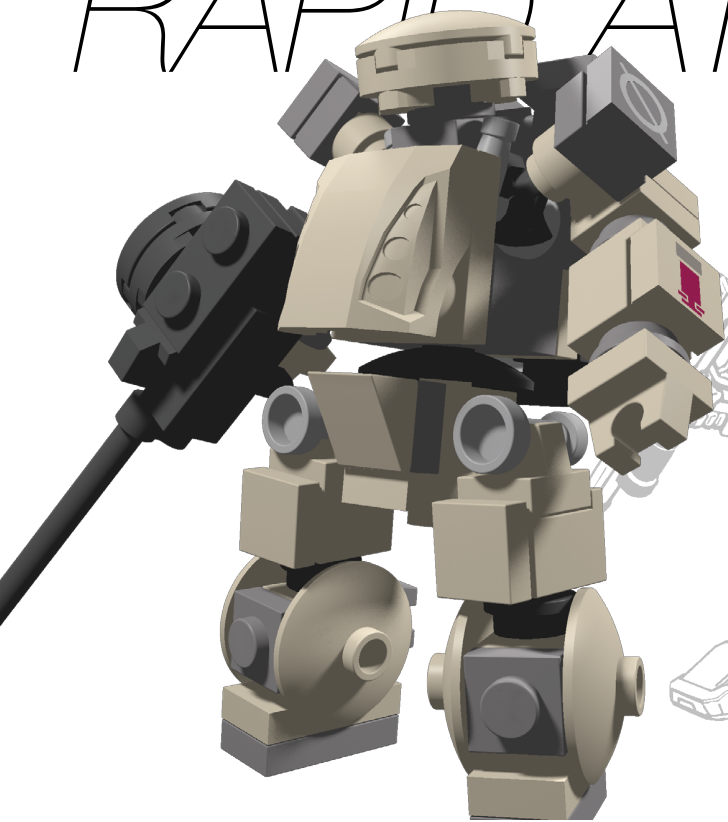


RAPID ATTACK



Vincent Baker & Joshua A.C. Newman
with Soren Roberts and Sebastian Baker



001

ZEROO

MOBILE FRAME

MOBILE FRAME

ZERO

RAPID ATTACK

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CONTENTS

ENNIOT CITY, BOUSSHT, SC 0245	1	About the Solar Union: Earth, Mars, Venus, Jupiter & satellites	23
		Earth	23
		Mars	24
		Venus	25
		Jupiter	26
THE GALAXY IN SC 0245	13	The Solar Union Militaries	28
Invention of the Labor Frame	14	Terran Transit Marines	28
Solar Union Expansion	15	Terran Expeditionary Marines	29
A Divided Mars	16	The United Mars Foreign Legion	30
Celiel and First Contact with the Ijad	17	The Terran Transit Authority	31
Spread of the Ijad and the Founding of the United Mars Foreign Legion	20	Labor and Mobile Frames	31
Birth of the Free Colonies	21	Transit Gates	36
The Current Day	23	One-way Transit	36

Transit Within the Network	37	OBJECT & OVERVIEW	57
Interstellar Communication	38	You'll need	57
Transit Gate Constituency	38	TIMELINE	58
The Ijad	40		
Mythology	41		
Archaeological and Biological history of the Ijad	45	CREATING YOUR COMPANY	59
Villages and City-Farms	47	Company Size	59
Assimilation of Human Technologies	48	For a Skirmish	60
A Primer for the Ijad Language	50	For a Battle	60
Au-Ah Ijadihé	52	Stations	61
The Colony of Gursk	53	Mobile Frames	62
Forces	54	The dice	62
Special notes	56	There are six types of systems:	63
		Sprinting	64
		Single-Shot Rockets	65
		The "Soldier" Configuration	65

COMPARING COMPANIES

Asset Value	69
Starting Score	71
Tactical Position, Offense & Defense	71
Example Scores per Asset	72
Example Tactical Positions	73

SETTING UP THE BATTLEFIELD

Terrain	75
The Ruler, Ranges, and Cover	76

FIELDING COMPANIES

Initial Defense	79
Initial Offense	80
Continuing Offense	81
Final Defense	81
DOOMSDAY	86

69 STRATEGY

If you're attacking:	87
If you're defending:	88

ROUNDS

In a Round	89
Tactical Order	90
Combat Order	91
Seizing Stations	91
Running Score	93
Counting Down To Doomsday	94

79

A MOBILE FRAME'S TURN

When you attack:	95
Special cases:	100
Principled Judgment calls	101
Example Round	103
	105

RESOLVING ATTACKS

Does the Attack Strike Home?

How Much Damage?

Damage chart 1:

hand to hand attacks

Damage chart 2:

ranged attack, no cover

Damage chart 3:

ranged attack, normal cover

Damage chart 4:

ranged attack, covered by a frame

Damage chart 5:

attacks against terrain

When Terrain Takes Damage

When a mobile frame takes damage:

When one of your mobile frames
is destroyed:

Example Attack

117	SLOGANS, SOUND EFFECTS, & TRASH TALK	127
118		
119	SPECIAL CASES AND ADVANCED RULE OPTIONS	129
119	Ties for Defense	129
120	Ties for Offense	130
	Contested Stations	130
121	Aborting An Attack	131
	Split-range Weapons	132
122	Single-Shot Rockets	134
122	Climbing, Elevation and Falling	134
123	Exotic Terrain and Environmental Systems	135
	Per-unit Turn Order	136
123		
124		

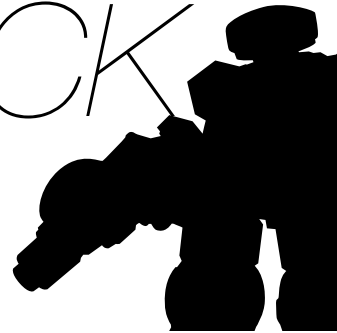
CREATING YOUR OWN SETTINGS & RULE HACKS	137	COMMON MOBILE FRAMES	151
With your friends, answer these aesthetic questions:	137	DESIGNING MOBILE FRAMES	199
With your friends, answer these rules questions:	139	Basics	200
A Few Non-Obvious Effects of Changing Effectiveness	142	Jointing	202
Defense	142	Design	203
Spotting	143	Basic Design	203
Attacking	143	The 3-1-1 Rule	204
Moving	144	Notable Design Problems in LEGO	206
Cover	145	BUYING PARTS	207
Try it!	145	How to buy, and how not to buy parts	207
Some rules you'll be tempted by but are hereby advised to avoid:	145	Good sets for parts	208
BASIC CAMPAIGN RULES	147	Parts Draft	208
Some fun things to do with the special objective	150	Pick-a-brick	209
If you're thinking about making rules for how to settle a longer campaign, here's some advice.	150	Bricklink	210
		CREATING NEW MATERIALS	215
		Creative Commons	215
		Using the Trademark	216
		THANKS	219

MICRO CONSTRUCT TACTICS NOVA

MOBILE FRAME

ZERO

RAPID ATTACK





ENNIOT CITY, BOUSSHT SC 0245

A cloud of concrete dust rained down

on the sealed canopy of Captain Estar's crouching mobile frame, a treble melody against the thunk-thunk-thunk bass of bullets drumming on the disintegrating wall that was her rapidly crumbling cover. She ventured a peek, focusing the sensor lens at the front of the canopy through

the punctured wall over her shoulder. Her goggles filled with data, showing the synthesized outline of her new friend through his own fragment of wall.

She saw a labor frame, a common Colonist design, probably originally outfitted as a loader. In its right hand, it carried a Terran

Expeditionary Marine assault rifle and had a single rocket tube bolted onto its back over a pair of prominent sensor domes. She'd seen, before it ducked behind its own wall, its chunky gray urban camouflage, still showing industrial yellow where the hastily-applied paint had chipped. Most ominously, it carried a riot shield, no doubt the one Estar had dropped last week. The frame's normally glassed-in canopy was covered with sheet metal, with only a cut slot for the pilot to see through. No doubt its pilot was looking back at her with the same intensity through the sensor domes.

She spoke into her microphone: "Mokrani, hit these coordinates. This chabbing grasher's a hutching pain in my butt."

Estar heard a rocket whoosh somewhere else in the town.

Mokrani responded "Yes, Ma'am, I — " and static filled the line.

She heard the explosion. She grimaced.

Mokrani and Soumer both, their squad's crack sniper team, were down now. They'd promised Soumer they'd get his body back off this planet. Mokrani had been reduced to using Soumer's frame as a rest for his sniper rifle, lying his ST-07 Chub in the



sand. He'd hooked the frame's sensor eye by a thin cable to the scope on top of his artillery, a practiced motion, but Estar could see his frame's massive hands shake as he did so. Estar had heard the rifle's KCHOOM twice in the battle so far. This time it didn't come.

The radio popped. "Captain, Kader here. Antenna's five by four. Our ride will be here soon. Oh, I've got company—" and he cut off abruptly. Estar heard his grenade launcher thump twice before a series of explosions.

She took a deep breath, preparing to rush across the street, and ventured a look. The

frame across the street was loading a new magazine into its weapon. She shifted in her seat and the frame's muscle cylinders made a "shushush" sound, raising her to one knee. She wouldn't be able to make it to cover again before the guy got a good shot off. She took a deep breath, checked her weapon, and swallowed.

At that moment, a burst of four thunderbolts hit across the street with a "CHOCK-CHOCK-CHOCK-CHOCK." The first two bolts struck the colonist's labor frame across its back, bursting its sensor pod in a splash of blue plasma. As the frame pilot ducked in panic, they raised their riot shield over their head, holding off the last two

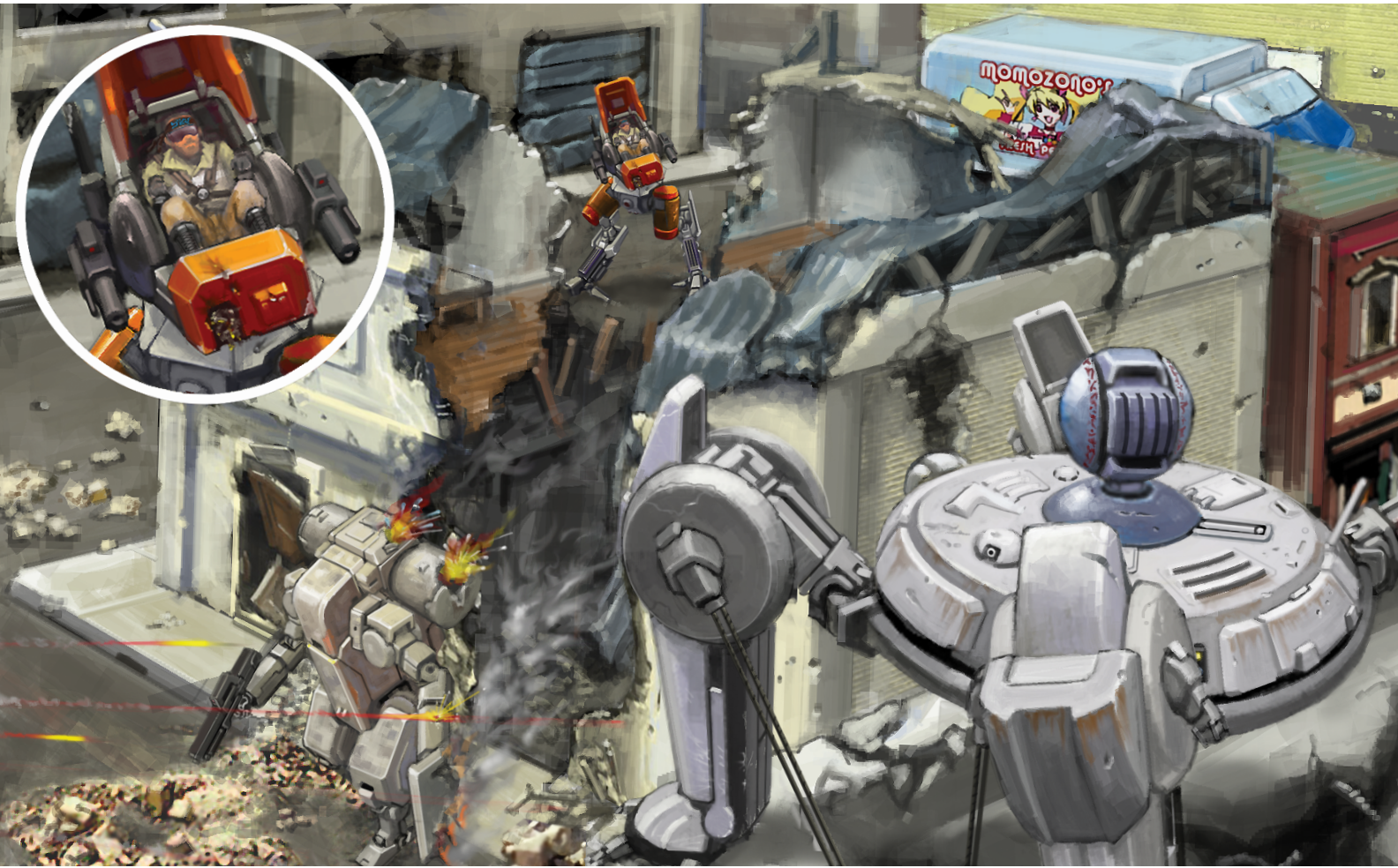
pulses with the shield as it liquified. The pilot scrambled to get the now-burning, molten shield off the frame's arm. The frame kicked at the ground, trying to slide into cover. There was none.

Estar looked up, raising her rifle but willing herself to not fire. She followed the path of the pulse with her eyes. One of the alien Scrambler walkers stood atop a wall ten meters away, holding on with all four of its feet to the failing structure, its spherical pulse emitter's unblinking gaze staring at the flailing Free Colony frame below.

The viewplate of the Scrambler looked down at Estar and Estar looked back.

Both of their faces were unreadable behind layers of armor and sensors, but beneath, sweat dripped down Estar's face and her breath was forced. The Scrambler's sensor plate nodded curtly. After a breath, Estar acknowledged with a nod, then turned and raised her rifle at the punk across the street.





Adaj's position on top of the wall gave him a perspective on the town. Down to his left was the Terran in its red and brown armor. They could settle their differences later. Right now, they both had to deal with the scout hidden in the remains of the buildings across the street to the right. Two buildings away, he saw a Colonist's Hi-Leg leap over one wall to land behind another, out of sight of the Legionnaire. Adaj checked his sensors and recharged his emitter.

He didn't know why the Terrans had turned on each other, but Legionnaires were here today for the same reason Adaj was with his fellow acolytes: to crush these little thieves

who had come here to oppress the Ijad, to send their artwork and muscle cylinder fluid back to the Sol System. If they could cooperate with these Legionnaires for long enough, they'd be able to negotiate with them using the products of the factory where this battle had started.

While the Legionnaire stood and vaulted into a crashing charge at the Colonist scout, the Hi-Leg Colonist's frame crouched in the dirt, armed with a pair of lasers and taking cover from the Legionnaire, apparently unaware of Adaj. As Adaj focused his stingbeam for another shot, he noticed the open canopy and the sweating pilot within. Across the

human pilot's forehead was written the holy word, "Bhadal" — "Self-determination".

The Legionnaire rushed across the street, its heavy feet crushing meter-long footprints into the asphalt. Adaj saw it shatter the Colonial labor frame to the beat of the mechanical pop-clank sound of its rifle. The scout frame dropped awkwardly, the pilot's hand reaching through the hatch, now still. Adaj stopped, his foot hovering over the trigger pedal.

The Colonials had risen up against rule from afar.

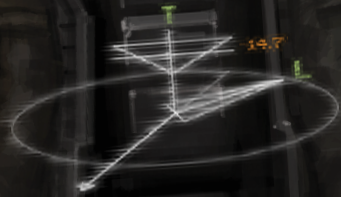
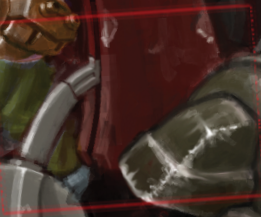
Deep inside his armor, the Ghanat that Adaj rode bristled its quills. These Colonials were

holy warriors. Holy warriors who fought for their cooperative self-determination — bhadal — against a distant empire.

He said into his communicator, "Brothers! We're making a mistake!"

While he explained, bristles raised in shame, he turned and looked down at the Legionnaire, who had spotted the Hi-Leg. Adaj swung his stingbeam to face the Legionnaire's back.





- HATCH OPEN
- MN CAM OFFLINE
- LSR RNG OFFLINE

B °C

Haski's Hi-Leg had taken a hit, an unseen impact blasting the sensor grid off the front with a KCHOOM sound that came a moment after the impact. He'd been hopping across the town, canopy open, looking for opportunities to act where he was needed. When Nouri's frame had wound up too far forward, he'd rushed to help. He heard her scream over the radio and had tried to give Nouri strength. "Hold on, grasher! I'm on my way!"

Only too late did he see the ljad frame perched on top of the wall, saw the burned concrete around Nouri's motionless labor frame, the guttering remains of a melted riot shield in a formless heap beside it, its

armor plating dented and pierced by a flurry of Legionnaire bullets. A Legionnaire stood over Nouri's frame for a moment before dropping to one knee in surprise, the frame smoothly raising its weapon toward Haski.

The moment hung in the air as Haski and the ljad looked at each other, the Legionnaire's rifle still rising toward Haski with his hatch wide open, the unyielding eye of the ljad pulse laser looking into his freezing heart. Nouri's motionless hand reaching out of the canopy of her Commissar.

In that split instant that was taking so long, he saw something change in the posture of

the Ijad. The eye turned to the Legionnaire he had just helped. In its inscrutable alien way, it had made some decision to turn on the ally it had just made. The pulse laser swiveled its cold gaze toward the Legionnaire.

The Legionnaire sensed something was wrong and threw himself forward to the ground, rolling to avoid the Ijad, but the eyelike laser chattered its four bolts again, vaporizing the Legionnaire's armored skirt and com pack in a flash. The Legionnaire fired back and Haski added his jets' roar to the straining "shoosh" of the muscle cylinders as he hurled his frame into the air, landing with the Legionnaire in plain sight.

He lit both lasers and the Legionnaire's rifle fell away, cut in two, firing randomly and hitting nothing. The other laser hit the Legionnaire's frames's head, drawing a bright, glowing line of molten metal right into the sensor eye, which exploded as the Legionnaire fell backward.

Haski heard the sound of howling jets overhead. Though he couldn't see straight up without getting out of the Hi-Leg, he recognized the sound. The Legionnaires' evacuation was here. They were running. Haski saw two flares go up in the town and the transport wheeled about on its vertical jets to extract the remains of the team.

The Legionnaire on the ground opened up the canopy and looked at Haski. It was a woman with dark hair and exhausted eyes. She had a square jaw and a bloody nose. She raised her hands slowly through the hatch, palms open, looking first at Haski, then longingly at the transport. There was no hope on her face, just the acknowledgment of defeat.

Haski cautiously stuck the top his body past the edge of his opaque canopy and looked at the Ijad. It was stalking away on its four long legs, mimicking the motion of the furry quadruped that the Ijad inside rode. It had other business elsewhere.

He looked down at the Legionnaire's heavily modified ST-07 frame, quickly evaluating it for salvage.

"Go," he said to the Legionnaire. "Leave the frame. We need the parts."

Surprise crossed the Legionnaire's face. She hesitated, then said "Thank you," as she pulled herself from the prone machine and scrambled away toward the hovering transport, flare in hand. Her body was lean but strong. He could tell from the way she moved that she'd been in her frame for a long time, forcing her stiff knees to run.

He crawled down from his Hi-Leg, hopping down to the rubble.

Haski's Free Colonials had not won the day. The Ijad had truly won, holding their muscle cylinder factory and protecting the human civilians who had wound up behind them in the fighting. The Ijad taken the Legionnaires' last cache of power cells, which Haski's squad had hoped to capture. Haski and his fellow Free Colonials would have to demonstrate their usefulness to the Ijad in power here, show that they weren't interested in sending the fruits of their labor away to Earth any more, that they wanted to be free to benefit from their own work and worship as they pleased.

And the Ijad would have to believe them.



THE GALAXY IN SC 0245

245 years ago, the nations, corporations, independent planets, and satellites of the Sol system signed their Declaration of Union, officially beginning the era of the Solar Union. After centuries of war over diminishing resources, their rulers, boards, democracies, and collectives finally agreed

to a network of trade that would benefit them all.

To commemorate the dawning of this unified age and its promise of 10,000 years of prosperity, the organization established the **Solar Calendar** to unite all the worlds, beginning in the year 0000.



The Great Seal of the Solar Union, showing Venus, Earth, Mars, and the Jovian Accord united over Terran green for 10,000 years of prosperity.

No amount of mining, harvesting, or winning wars could gain any party more resources than the Sol system already had. In order to find more of the materials and energy the Sol system needed, those resources would have to come from outside. But, while engineers had designed a method of interstellar travel (incidentally spinning off a method of using energy to dissipate gravity) through Lorentz wormholes,

no one nation or corporation had the economic power to develop the theory into a technology. The monied powers of the Sol System combined their greatest efforts in the greatest project ever attempted: the foundation of the **Terran Transit Authority** and its network of transit gates.

Invention of the Labor Frame

In SC 0054, the TTA began sending out small groups of colonists to planets that their surveys had deemed potentially productive. Interstellar travel was (and remains) expensive, requiring energy

proportionate to the square of the mass of objects being sent. To minimize costs, the TTA kept the number of colonists to a minimum by sending them along with “labor frames” — machines that make it possible for one colonist to do the work of six. In exchange for the travel expenses and equipment, the colonists agreed by contract to repay the Solar Union by sending back shipments of valuable chemicals, local biota, and the occasional improvement to frame design.

Those machines now form the basis of most colonial activity, used by farmers, miners, manufacturers, hot rodders, and police alike.

Solar Union Expansion

By SC 0100, the Solar Union was entering a period of rapid expansion, with its Terran Transit Authority authorizing the opening of new transit gates constantly across the galaxy. The Sol system itself had two: one orbiting Earth, another orbiting Mars, and two others under construction in orbit of Jupiter and Venus. Those resulting four remain to this day, a lynchpin of the Solar Union’s success.

As the TTA’s galactic survey proceeded, they refined their process to find ever more productive planets. The price of

the goods from those planets went down with their abundance and the earlier waves of colonists found themselves on impoverished colonies with no way to pay their return. When the Solar Union found itself with no reason to invest in those colonies further, those colonies found themselves abandoned.

A Divided Mars

Exacerbating the issue was a growing disagreement on Mars. Divided into two states — the Northern Republic, a Terran trade stopover on the way to the Jovian satellites, and Southport, a smaller but

wealthier nation backed directly with Jovian hydrogen — Mars was rent by disagreements about the terraforming of the planet. The Northern Republic had its much larger population, reliable value to Earth, and low altitude, and so was directly threatened by the plan and objected with the approval of its Terran friends. Southport's smaller and wealthier population, on the other hand, stood to gain much from an independent Mars with its own ecosystem. When the Republic's armies attacked terraforming stations dropped by Jovian orbiters, they found themselves at war with the forces of nature and those wielding them; once the

terraforming process had begun, they had no way to stop it.

The Northern Republic flooded in SC 0175, drowning both of its major cities under glacial water. Much of the region's population became vagrant, taking to the shrinking equatorial deserts in caravans as the planet's atmosphere thickened. Those who didn't, found themselves working for anyone who would pay.

Celiel and First Contact with the Ijad

In SC 0198 the Solar Union ran into its first major challenge. It discovered a planet called Celiel, rich in biological and chemical resources. The celebration of the incoming colonists was cut short when those rich biological resources turned out to include not only an aggressive parasite, but an aggressive and **intelligent** parasite.

The parasites, calling themselves "Ijad" (the Ijad word for "people"), lived on many of the local lifeforms, becoming full symbiotes when they found the right individual. The

Ijad's moral and social life revolved around a religion, one of the central tenets of which was that no individual should command the actions of another they can't touch. Over time, this had become a taboo against any sort of rule from afar, keeping the scale of Ijad societies small and tribal in scale.

When humans, answering to a ruler thousands of light years away, arrived and began sending the Ijad's food and materials (and in one badly-received misunderstanding, families) across the galaxy, they found the situation offensive, immoral, and blasphemous.

At first, the humans were unattractive hosts. They acted immorally, were clumsy and ignorant, and were dangerously greedy. The Ijad began to resist their presence, sabotaging their equipment and riding the humans' livestock to freedom.

But when prices dropped in SC 0212 upon the discovery of another new and more productive colony, and poverty began to overcome the colony. Many Ijad found the humans increasingly willing to listen. Several began to see the wisdom of the Ijad way of life, joining their tribes and becoming citizens in their towns. Some met Ijad and eventually bonded with them, while others never became close enough to an Ijad to

join. All, though, according to the Ijad, are now people; they act according to their will and in accordance with those in their community and so act according to the instructions of God.

When one such tribe of colonists and Ijad tried to begin selling on its own terms through the local transit gate, the local Transit Police arrived prepared for violence. The act of force was countered by an act of force, with the colonists fighting back with the labor frames with which they'd used to bring their produce and materials to market. The colonists and Ijad lost that battle, often called the Market Massacre, with a dozen killed and twenty imprisoned

for interrogation. Within months, though, the survivors had adapted the labor frame technologies for Ijad of all species into highly mobile units capable of evening the odds.

By the time the Solar Union's Terran Trade Marines arrived through the transit gate, they discovered it completely controlled by local interests. They fought a hard retreat to get their transport back through the transit gate, returning to Solar territory bearing intelligence of an alien invasion.

Spread of the Ijad and the Founding of the United Mars Foreign Legion

Over the next ten years, Ijad used their captured transit gate to spread their religion to other abandoned colonies and their transit gates. As it spread, fear grew in the halls of the Solar Union for their ability to hold other colonies. Because of the high cost of sending soldiers through transit gates, they opted for the less expensive option: recruiting from local colonies.



The UMFL insignia, showing the red circle of Mars over the crossed scimitars of Southport. Some say the white circle in the center is the North's ancestral polar cap, set to take the center again, though no UMFL officer would ever tolerate such insurrection in their ranks against the United Mars.

In SC 0216, the United Mars Foreign Legion was formed to build self-sustaining militaries of mobile frame units on troublesome colonies. Answering to, trained, and paid by the Solar Union, the UMFL is nonetheless drawn from local populations. They are equipped with mobile frames that can be built and rebuilt from common parts. They use their “standing tanks” to great effect in their efforts to protect the lifeblood of the ever more-desperate Solar Union.

Birth of the Free Colonies

The founding of the UMFL did not sit well with the Ijad-indoctrinated local populations under their control. In SC 0240, a UMFL company arrested the popular mayor of the town of Peloto in the colony of Quall for refusing to sell their exports at the TTA market price. The subsequent riot ended abruptly when eight mobile frames, built from labor frame parts and painted in matching orange colors, engaged the unprepared Legionnaires in a high-speed, running battle through the

Leoni Haski was a firefighter in Enniot City before losing patience the destruction of his city wrought by Ijad fundamentalists and SU Legionnaires. He has gotten close to Nouri, his company’s mechanic, but is concerned that her revolutionary fervor may one day be her demise.





streets of Peloto. Despite the loss of two of the colonists' frames, the Legionnaires present were all killed or imprisoned in the town jail.

The Battle of Quall is now considered the first appearance of the Free Colonies movement.

News of this uprising has spread quickly. With or without Ijad influence, more and more colonies are using the last of their resources to equip and train cells of Free Colonists, many of whom have captured or otherwise gained control of transit gates, using them primarily for communication between the

colonies. In the last year, many members of the Free Colonies have been calling that communication system "The Federated Free Colonial Network", using it to take votes, spread news, and communicate evolving frame designs and tactics.

Seeing the Free Colonies' success (and its discussions of federation under a central government) as further expansion of their enemies, many Ijad now see no distinction between the Free Colonies and the Solar Union. Those in agreement now seek to counter, using the now well-understood technologies of the transit gate and mobile frame to begin their own expansion, forcing back those who would rule them from afar.

Nouri Eski is a new member of Haski's company, but her mechanical abilities far exceed those one would expect for one so young. Her hatred for the SU and the Ijad pushes her to take extraordinary risks to the consternation of her friend, Leoni.

The Current Day

The year is now SC 0245. The Free Colonies are a force to be reckoned with, working out of cells, the largely leaderless movement uses gates captured from the TTA to spread its ideas and, most recently, military force. The Ijad push out, expanding tribe-by-tribe across the galaxy in the hopes of pushing the humans and their greed-god away. The Solar Union is expanding more slowly than its needs are increasing. It desperately needs new and bigger colonies.

About the Solar Union: Earth, Mars, Venus, Jupiter & satellites

The Solar Union consists of four major political bodies and several smaller ones.

Earth

Earth, often called Terra, of course, is the seat of humanity and the Solar Union. Far from the dreary and practical political capital of Nanking, its trade capital of Jakarta is home to the last remaining space elevator on the planet, called Sulam Yaakov:

an enormous, energy- and carbon-neutral city centered around the tower to the sky. Next to its center of mass in geostationary orbit floats the Terran Transit Authority itself, based at Earth's transit gate, Newport Station. The planet's many and shifting ethnic groups struggle together under a stressed ecosystem as they try to outpace the exhaustion of their planet's resources. Having suffered through every self-inflicted monstrosity imaginable, the people of Earth now huddle together, husbanding their resources and sending for help through their own solar system and out to the colonies.

Mars

Mars was Earth's first colony, the model for how future expansion would work when humanity someday reached as far as Jupiter or into the corrosive heat and acidity of Venus. The two most habitable areas, the north and south polar regions, remain to this day independent states represented in the Martian Congress, though the Northern Republic is now a legal fiction, drowned in the terraforming efforts of Southport. "Northerners" now largely live in Mars' diminishing equatorial deserts, wanderers and traders in the many new and strange lifeforms developed (and now evolving) for the new environment.

Northerners are bound by contract to provide the Solar Union with recruits for the United Mars Foreign Legion, so most Legionnaire companies now include at least one Martian. Wealthy Southport, supported by Jovian hydrogen, hydrocarbons, and raw energy, pays for their training and transit fees through the Martian transit gate of Huo Hsing, in circumpolar orbit around the planet. Tightly tied to both Jupiter and Southport, the Martian transit gate is more an extension of the nation than an independent entity.

Venus

Venus' vast chemical wealth puts it at once in a position of power and peril. Hidden from prying Terran eyes below its thick clouds, terraforming efforts have reduced the heavy sulfuric acid rain and stifling temperatures to exports of life-giving sulfur/ carbon compounds and energy, leaving the planet itself as a thick, oppressive jungle of genetically modified plants entangling towering, unpopulated cities of terraforming machinery. The sun never shines, instead casting a thick, ambient light during the day. Night, never lit by a moon, nonetheless shines with an unsteady light that the locals call "Keck". Above the clouds in the

planets' stratosphere are the four Aerostat Cities — Kush, Ekmer, Deku, and Poshet, each in easy contact with Solar Union trading craft in transit. Far above the clouds at the Lagrange point on the far side of Venus from Sol is the Venusian transit gate, Antomer. Hidden from the Solar Union's prying eyes under the thick, fluorescent atmosphere, Venusian society is centered around tribes of engineers who travel in caravans of labor frames, walking from terraformer to terraformer, maintaining and upgrading them, dispersing the planet's excess energy and carbon slowly while they turn the planet into a paradise, enacting their secret Millennium Plan. Since they

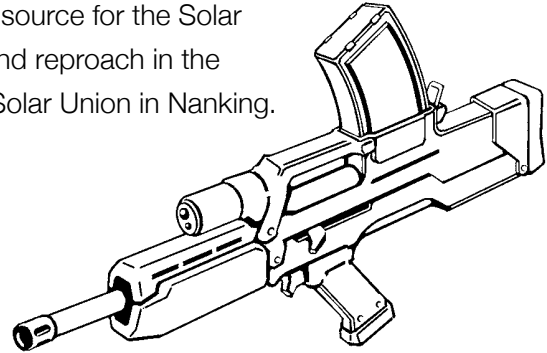
continue to send materials and energy Earthward without complaint at prices below those of Jupiter's, taking only what they need in response and requiring that the Union land nothing on the planet, the Solar Union considers Venus a beneficial mystery; anything could be happening under those clouds, but there are greater, more threatening mysteries to solve.

Jupiter

Jupiter's satellites of Europa, Callisto, and Io, along with the Jovian Transit Company's sole holding of Leda, are joined into the Jovian Accord. Each has its own vibrant social society with subtle

cultural differences between them. Europa's iceborne cities draw on the rich organic chemistry of the moon, dotting the surface with greenhouses that drift across the surface as the icy crust itself moves under the strain of Jupiter's enormous gravitational pull. Callisto is an industrial center, building and designing mobile and labor frames, spacecraft, and other industrial products. Io's energetic volcanoes provide its scientific and engineering minds with a wealth of information, constantly put to use by new colonies. Leda is the Federation's commercial capital, its transit gate umbilicus to the rest of the galaxy fabricated from the material of the natural satellite that was

once in that orbit. Through it flow out the riches of Jupiter, and its society thrives on the profits. With a small and stable population and friendly relations with Mars, Jupiter's Federation considers itself an invaluable resource for the Solar Union, beyond reproach in the halls of the Solar Union in Nanking.



The MR-112 "Alaskan" mobile frame rifle was put into service in the SC 0220 and continues to be modified and refined throughout the Solar Union sphere of contact. Its sensor scope allows it great range while its rugged construction makes it a satisfactory roomsweeping weapon.
(1Ra, 3Rd)



The Solar Union Militaries

The foreign policies of the Solar Union are enforced by the three branches of its military:

Terran Transit Marines

The Terran Transit Marines are stationed at transit gates. Answering to the corporation that runs a particular transit gate, their mandate is to maintain the safety of the corporation, its gate, its staff, and the population of the gate station, in that order. Because transit gates are so

well-defended and damage to them could completely isolate a system, they rarely see action.

Each company has its own unique, brightly striped colors in which they take extraordinary pride. A company's beret is its badge of honor, earning a Marine both honor and jealousy from within the transit gate community.

Commander Abacan Foss of the Terran Transit Marines. Based in Keshher's Gate, Foss and his company, the Red Knights, live a comfortable and dynamic life, uninterested in the foreign policy that they enforce.

Terran Expeditionary Marines

The Terran Expeditionary Marines are the Solar Union's long right arm. When the Solar Union fights a war in earnest, it votes to send a company of TEMs to make first contact with the enemy.

Their mission is to take but not to hold — once they've passed through an arena of conflict, the UMFL will be put in place behind them to maintain order. Once TEMs complete a mission, they are ordered to the local transit gate to re-equip, repair, train, and await their next one.

In general, Expeditionary Marines don't get along with the Terran Transit Marines with whom they periodically share accommodations; when asked, the TEMs will say that such station-hugging, comfortable, indulged dandies have no right to the title, "Marine".

Zora Mennit's company, The Invetable 8th, has been deployed constantly for the last five years. Zora was granted an honorable discharge for her lost eye but returned to the company to lead her comrades.





The United Mars Foreign Legion

The United Mars Foreign Legion operates within existing colonies, acting as a police force defending the well-being of Solar Union interests. Legionnaires are paid in Solar Wulongs, which they use to clothe, feed, house, and equip themselves. During peacetime, this means they're often the wealthiest group in town. As their equipment takes damage or the Solar Union

headquarters mobilizes them, though, more prodigal Legionnaires find themselves rapidly impoverished and often relying on scavenging for parts and food.

Captain Estar of the United Mars Foreign Legion. Originally from Gursk, Estar's Anvil has been sent across the region to police and protect Solar Union colonies.



The Terran Transit Authority

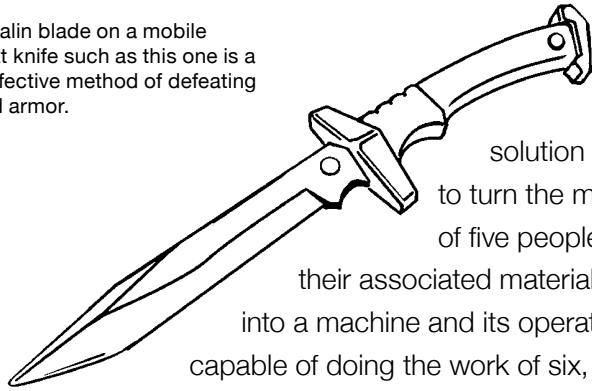
The TTA is one part
government body,
one part trade group.

Founded in SC 0003 to “Guarantee access to fair trade and market flexibility”, it is often accused of being the tail that wags the dog. Heavily subsidized by the Solar Union, its oligopoly on the mechanisms of trade gives it great power in the halls of Nanking.

Labor and Mobile Frames

When the Solar Union first formed, it began immediately resolving the challenges of interstellar commerce. While its transit gate system began to take shape, Solar Union engineers began devising ways to address its most obvious limitations: the exponential cost of sending increasing mass through the gate. Each human sent required enormous startup costs — food and shelter, in many cases air, and the comforts necessary for maintaining high morale.

The 1.5m duralin blade on a mobile frame combat knife such as this one is a simple but effective method of defeating sophisticated armor. (2Rh)



Their solution was to turn the mass of five people and their associated materials into a machine and its operator capable of doing the work of six, decreasing the effective mass by 17%. The machines they developed were called **labor frames** and were designed to be simple, repairable, adaptable, and easy to use for long periods of time. To this day, LF-1 and LF-2 labor frames can still be found on farms, in mines, and working in factories. Their muscle cylinders may have been replaced, their joints rebuilt, their cockpits

adapted to changing environmental conditions, but the original basic design has remained fundamentally unchanged for the last two centuries.

The key to their effectiveness is **muscle cylinder** technology. Developed in those early years, it uses a controlled, piezoelectric phase shift to reduce in volume along its longest axis under an electric current. In this way, it acts like a muscle, contracting linearly to move a limb.

Muscle cylinders operate in the opposite direction as well: When put under compression, it also generates a current. By arraying a network of wires across the frame, these **muscle cylinders can be**

“trained” to work in unison, reacting to and almost anticipating the control inputs of its operator.

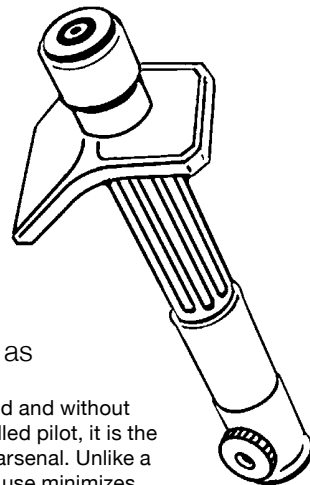
This feedback system works both ways: the small cylinders attached to the frame’s controls not only send signal to the limbs to move, but also receive force feedback, giving a pilot a detailed and proportionate sense of the external environment.

To enhance the cylinder training effect, professional frame pilots put a new frame through a series of motions designed to synch the actions of the frame with the intentions of its operator. The most skilled can instill a frame with reactions of its own

— keeping its balance, rolling and ducking, drawing weapons, throwing objects, all in response to immediate stimuli. The Terran Expeditionary Marines have distilled this to a doctrine called **Sokokunst**, a martial art form now used and adapted throughout the colonial volume.

That martial art often includes the use of knives, batons, and **fusion edges**. Originally created as a cutting and welding tool, fusion edges are often used as

A fusion edge, here shown extinguished and without its amplifier pack. In the hands of a skilled pilot, it is the deadliest weapon in the mobile frame arsenal. Unlike a projectile or beam weapon, its precise use minimizes threat to friendlies, civilians, or infrastructure. (2Rh, or 2R &d8 w/ amplifier)



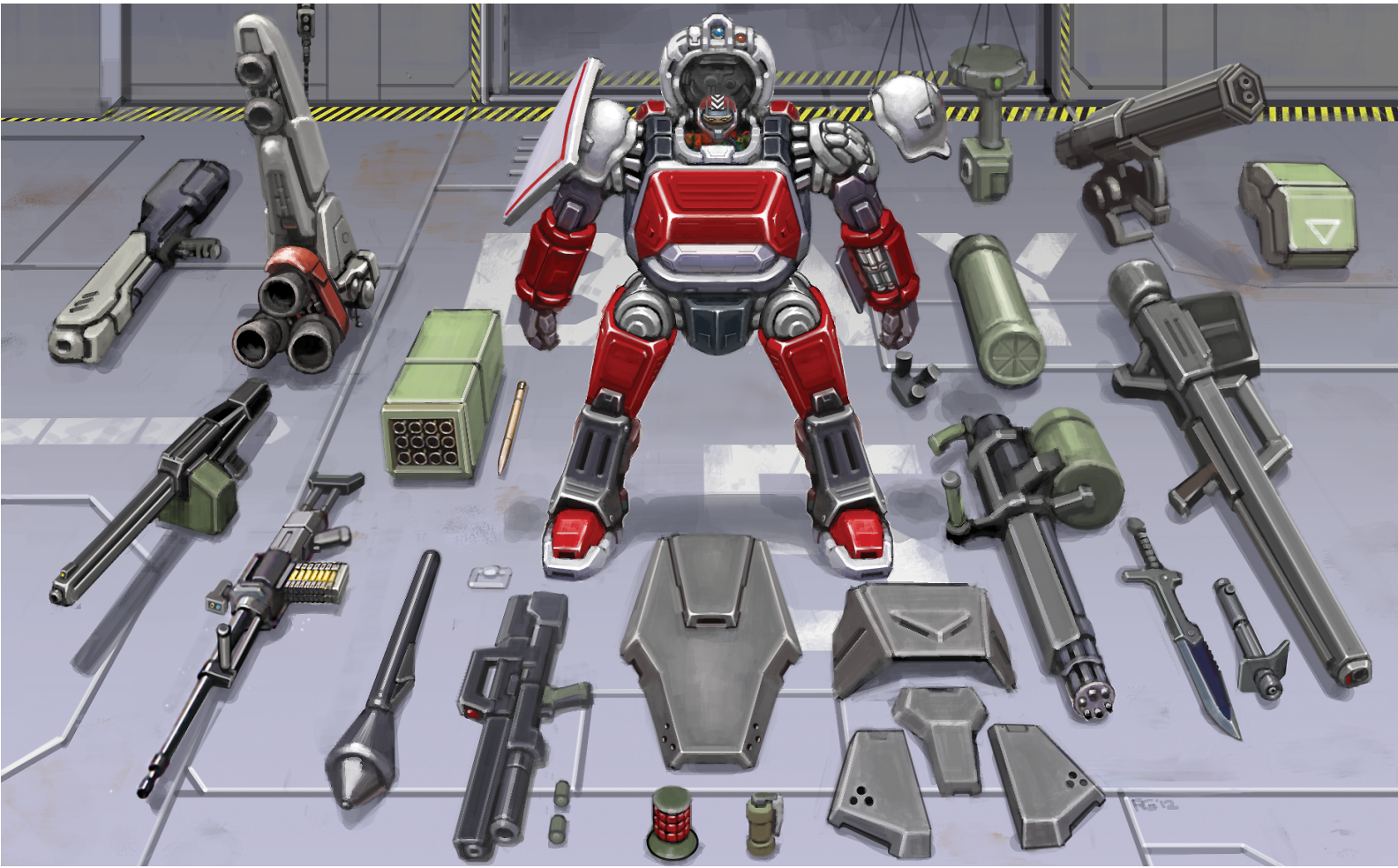
weapons on frames with abundant power supply.

The design principle of labor frames is so effective that colonists on smaller colonies use frames to traverse difficult terrain rather than building expensive-to-maintain roads through or around it. The result has been an explosion of locally created types of labor frame, from rugged farm and construction machinery to hot rods and racing machines.

Since those early days, mobile military and police units have used the same principle, sending small numbers of frames — called **mobile frames** in this context — to do the work that it would take six times as many humans to do.

With parts readily available, the ability to use any fuel to generate electricity, and the high degree of adaptability of the form, frame technology has shaped the colonial volume in the Solar Centuries more than any other, making possible even the interstellar leaps of the transit gate system.

Commander Foss's customized ST-10 "Osprey" mobile frame with its array of ground-based and zero-G systems, arrayed on the repair deck of the Keshes's Gate Terran Trade Marine base.



Transit Gates

The Terran Transit Authority has (until recently) held the Solar Union and its colonies together with its network of transit gates. There are now thousands of gates throughout this volume of the galaxy, most still under TTA control. Floating in space orbiting the colony, each node is a city of hundreds of engineers, their families, and the infrastructure they need to live. At the center of that city is a machine capable of forming an Einstein-Rosen bridge to another point in space and passing matter or information through instantaneously.

One-way Transit

While it's theoretically possible to send to any point in space, it is an extremely risky, and therefore expensive, process. Even the wealthy Sol system must come to consensus on the expenditure and time before beginning such an expedition.

Because of the inherent imprecision of one-way transit, an expedition must start off fueled and equipped to make a journey through regular space from anywhere within the stellar system to the intended target. A small but noticeable number of such expeditions are never heard from again.

Transit Within the Network

On the other hand, it is merely costly and not risky to transit to a receiving gate. With a transit gate reaching toward the beacon of another through the folds of space, the transmitter can contact the receiver and make the transit once the two have locked onto each other, making the transit more precise by orders of magnitude. This process of locking can take as little as a few days through clear space to as much as a few weeks when bypassing a black hole or other major hyperspatial phenomenon. Once the lock is made, the transiting spacecraft arrive together in approximately the same formation as the one they left in,

unraveling the connection between the two gates in the process.

Transit gates act as a hyperspatial beacon simply by virtue of their existence. When a transit gate shuts down, it can take weeks or months to bring it back up again, an unpredictable process reliant on the hyperspatial “weather” in their local area. While shut down, a gate cannot even communicate between the stars; it is genuinely isolated from the interstellar community. For this reason, a transit gate will not refuse an incoming transit under most circumstances — though traffic control can do so in emergencies, taking the entire colony offline in the process.

Interstellar Communication

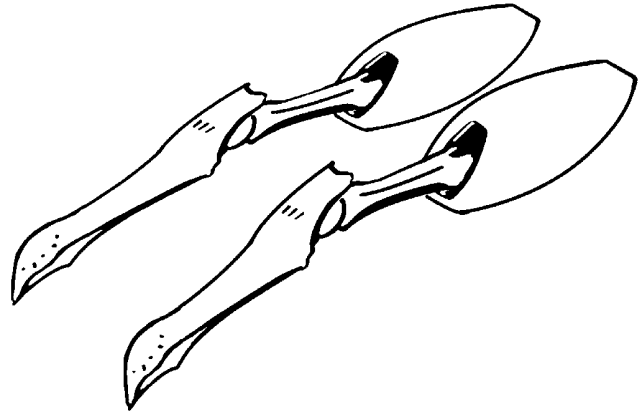
Communication through nodes is relatively simple and inexpensive compared to transiting spacecraft because the amount of energy it takes to form a transit tunnel is proportional to the square of the mass of the objects being transferred. Most transit gates charge a small fee to send a message, though the size of the fee and security of the message vary greatly from gate to gate, depending on its leanings.

Transit Gate Constituency

Transit gates contain entire small, rotating space cities — local offices of the TTA, greenhouses that filter and replenish the air more completely than any machine could, the market to deal in trade between the colony below and the TTA, the barracks of the local company of Terran Trade Marines, a UMFL headquarters, the people who operate these jobs, their families, and the amenities that make such a city their home. Gate populations run from the thousands to tens of thousands, entire port towns with all that implies.

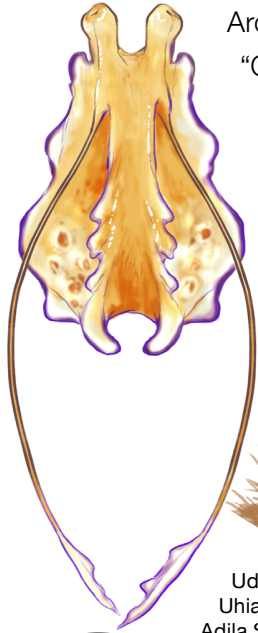
Most gates are run as a corporatocracy, with the board making executive decisions either locally or from their offices and communicating by missive. Free Colony-owned transit gates are run as democracies, coöperatives, anarchies, meritocracies, plutocracies, or by other forms of locally-determined government. Ijad transit gates provide their culture with a constant challenge: many require a population larger than the largest of Ijad towns. Some run on a technocratic neighborhood model, where transit engineers, environmental engineers, merchants, farmers all know each other well and make sure to know

a variety of individuals with distinct skills so they can advise each other without breaking taboo. Still, it strains the limits of their culture.



Ijad “Eshaku Ghanatehé” claws mimic the fighting weapons of the ghanat, allowing the ghanat inside the Scrambler to react with its natural instincts in a fight — talent most Ijad lack.
(2Rh)

The Ijad



Around the brown dwarf Ahu (literally, “God-Place”) orbits the world of Shebehu (“Swampland”, describing the areas best fitted to the Ijad way of life), called Celiel by the Solar Union. It is home to the Ijad people.



Udhalih Uhiawatué, the mayor of Uhiawatu, poses here for his partner, Adila Safa, a Human artist and frame pilot. They administer the town together. Udhalih’s term will end this year, but Adila joined with Udhalih partway through the

Ijad have brightly individually patterned boneless bodies 10 cm long that vary greatly from individual to individual. They do not have sexual gender but reproduce sexually, with one or both individuals carrying the eggs of the next generation. Extending from their back are two long antennae, the ends of which contain their organs for peripheral sensing, eating, and communicating.

term. With Adila’s powerful but terrestrial family connections, the town is concerned that Adila is answering to them instead of the townsfolk. Many religious leaders have joined together in protest, even threatening violence.

Mythology

» (From the Chember Wast's First Translation ca. SC 0238. Note that Wast has chosen the pronoun "he" following archaic Human tradition.)

Once Ahu ("God-Place", etymologically "Breath/Word Place" — note the use of "Ahih", indicating that Ahu is a person when it takes action.) had rolled the world from a ball of clay, it became worried at the world's ugliness. Ahih reached down from the sky and populated its swamps with beautiful creatures. He painted the sky with flying animals and dripped swimming animals throughout its lakes. He sowed animals into

Ehmetih Chehuwhé and Brilla Sanovar met at a meeting of Brilla's Free Colony cell. She and Ehmetih found themselves agreeing politically and religiously, bonding in SC 0241, moving into

the tallest of tangles and spread them even to the hilltops where the air is coldest.

They were beautiful, but Ahih was still lonely. He would play with them, making them do what it wanted, but Ahu was as wise as he was playful and knew just what they would do or say. They had no will and carried no surprises to delight him.

So Ahih placed the Ijad people into their swampland to bring foresight and intelligence to the world. When you, Ijadih, ride

the Hujeteh Ijad tribe in Enniot City. Together, they make the best frame pilot Adajih Ghoaoé has ever commanded, relying on their extraordinary tenacity, bravery, and skill at every turn.



an animal, you do it to make the world beautiful. You do not waste an animal, nor do you make it hurt itself. Take to it-person foresight and speech and it is an animal-person.

...

The many tribes of Shebehu were satisfied in the green swamplands. They raised many-amtuhehteh to swim them through the lakes as many-amtuhetih; many-hueteh and many-mehshteh to fly them through the air as many-huetih and many-mehshih;

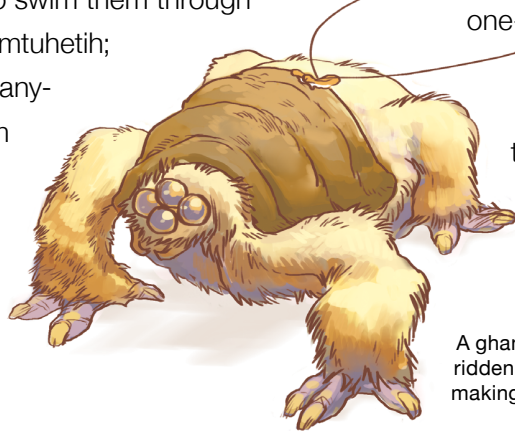
many-apahteh to leapt across the land as many-apatehah.

Etehuthi mated ghanateh with ghanateh until they birthed the one-ghanateh. It was large but fast, fat but sleek, calm but strong. He rode as one-ghanatih high into the hills, farther than even the four-mehshih rangers had gone. The air was dry, but the one-

ghanat's fat fed them with water. The

one-ghanateh's shell protected them from the wind. The one-ghanat's fur protected them from the cold. When

Etehuthi returned from the hills, he was in a new land. The tribe there feared



A ghanat being ridden by an Ijad, making it a person.

his appearance from the north and pursued him. He led them past the hills, where they could not follow, and the ghanatih ate the tiny animals that lived there until it was fat again.

When he returned, the tribe again chased him and he fought. He struck down their animals but left the ljad living. He brought them back to the village and there he stayed, breeding the one-ghanat with the wild ghanateh to teach the village.

With their many-one-ghanateh, they converged on swamplands from the high hills. Again and again, they struck a town, taking what was good there and breeding

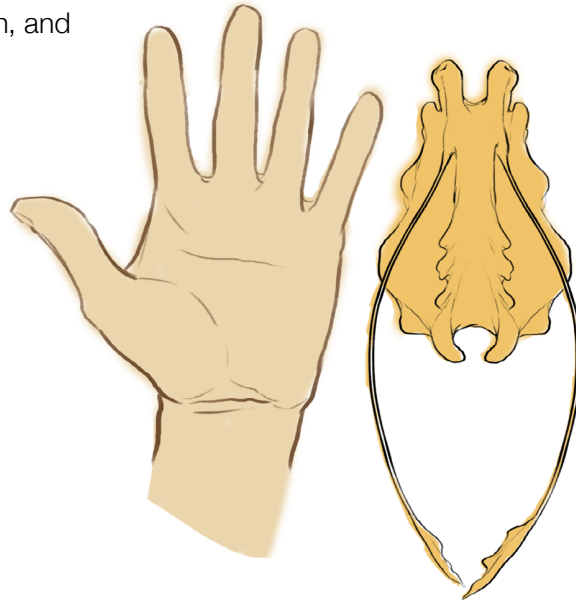
many-one-ghanat when the battle had ended.

When the swamps of the north, Etehuthi strode south as his many-one-ghanatih. All herds answered his question by many-mehshtih messenger and all riches flowed to him by many-apaetehih.

Ahu watched this progress and saw that it was ugly; foresight and communcation made the world rot. In his sleep, with no one to witness, Ahih struck Etehuthi with illness and he died on the back of one-ghanateh.

To warn all who came after, Ahu made Etehuthi into Etehotu, his corpse a reminder in the sky for all generations to defy the

rule of one from afar. When you look up to this day, you can see him stretched over its surface, warning you to never give or receive from those you cannot touch, and never touch those you do not know.



An ljad with a human for scale. The ljad antennae can extend to many times their original length, allowing them to smell, feel, and eat beyond the edges of their slow-moving bodies.

Archaeological and Biological history of the Ijad

» The following is a paraphrasing of Ijad scientific texts, published over the last several centuries. No Terran archaeological expedition has ever done a meaningful survey of Celiel.

The proximate animal ancestors of the Ijad (“Ijadteh”) have existed for more than ten million years. They parasitized the many complex species of the planet, hormonally controlling the animals’ behavior to their benefit. When such hosts were abundant, they would use them up and move to another; when they were scarce, they’d stay with one for months or years, carefully

maintaining the host’s metabolism. As they evolved, though, one species developed the planet’s only notable intelligence, the first Ijadih. In this symbiotic form, they presented a great benefit to many species, which evolved nervous systems particularly hospitable to their Ijad parasites. The Ijad granted to such species the advantages of foresight, communication, and tool use while the species granted the Ijad the powers of speed, strength, endurance, and other natural advantages.

As Ijad cultures developed over the last hundreds of thousands of years, so grew their technologies. While their distributed form of society encouraged

them to develop robust communication systems, their intimate understanding of the physiology of their hosts gave them the ability to domesticate and breed animals. Such breeding led to the creation of enormous city-farms. Next came their engineering feats, which led to a scientific process of understanding the universe.

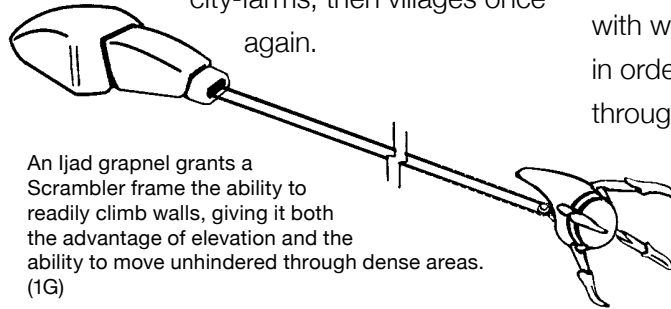
The ability to ride flying animals gave the Ijadih the ability to quickly spread over much of the temperate, hospitable swampland of their planet. It took the Ijad less than a thousand years from the founding of the first city-farm to completely spread Ijad culture throughout the planet's equator-spanning wetland zone.

Bounded as they were by the dryer, colder areas of the planet, city-farms began the process of starvation and warfare equally common among humans. Alliances came and went, but one Ijadih, mythologically known as Etehutih (probably apocryphally — many regions claim to be the birthplace of Etehutih) used his understanding of breeding of the ghanateh — a large and adaptable animal from the northern steppe — to build the civilization's first empire. The empire fell with his death, its scraps fought over by his generals and children for generations.

The era of Etehutih's reign was short but impactful. His conquest by force of the city-

farms left untold thousands dead, shattering families and putting all agriculture, mining, and craft in service to the larger empire — specifically the glorification of Etehuthih. When he was struck down, not by a mighty foe but by a common disease to which local Ijad had an immunity, many took it as a sign. As his former vassals fought over the pieces of his former empire, they divided and subdivided it into kingdoms, then

city-farms, then villages once again.



An Ijad grapnel grants a Scrambler frame the ability to readily climb walls, giving it both the advantage of elevation and the ability to move unhindered through dense areas. (1G)

Villages and City-Farms

Today, few city-farms exist, though those that do — Bunesshu and Amhuetu most notably — are thriving cultural centers, divided into distinct subcultural neighborhoods. Each neighborhood is a structure of families, business partners, coöperative farmers, and craftspeople. Neighborhoods each have “friends” — members of other neighborhoods — with whom they cultivate close relationships in order to develop and propagate decisions through the city-farm. It is this model that

Ijad use in their transit gates, with different specialties forming the neighborhoods of the station.

Most Ijad, however, still live in villages of no more than a few hundred individuals, all connected by family or other immediate interest.

Assimilation of Human Technologies

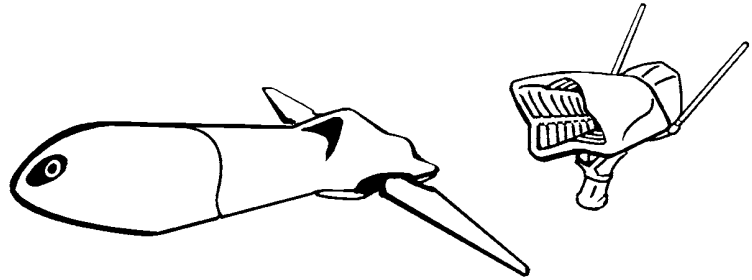
With such a distributed form of decision-making, the Ijad have had few opportunities to band together to make the great, coöperative leaps that have pushed humanity to the stars. Until the arrival of the Solar Union, outer space was only visible to the Ijad through telescopes and radios. With the arrival of Solar Union

spacecraft, however, they began their rapid assimilation of human technologies, from spacecraft and transit gates to labor and mobile frames, distributing the knowledge throughout their societies laterally.

The first such adapted technology was the labor frame. The very first were simple copies (or often, actual specimens) of humanoid frames, adjusted to equip a human-Ijad pair in defense of the Ijad-occupied transit gate of Celiel Station against Terran Expeditionary Marines. Ijad, though, can ride many different animals, and more recent models are designed by Ijad engineers to adapt to different forms of their livestock, from migratory utechteh to

the tiny, stalking, predatory puketeh. With the advent of gravity repulsion in recent years, Ijad engineers have even been experimenting with using flying animals as models for frames.

The most typical fighting models like the Ghanat (aka “Scrambler”), however, are based on the ghanateh form: quadrupedal, sure-footed, and broad-backed to allow the mounting of equipment where an Ijad would rest. An aggressive, territorial herbivore, ghanateh have been the traditional war mounts of all Ijad since the time of Etehutih.



The Ijad Auchiejh (lit., “Dagger”) drone (known to the SU as a “Swerve”) flies around an arena of conflict at high speed, using its sharpened, winglike blades to cut between plates of armor of mobile frames. (1Rd, 1Ra)

A Primer for the Ijad Language

All transliterations here are based on the sounds a human makes when learning from an Ijad symbiont. When speaking through a different species (or with their own, limited speaking apparatus), they use sounds that their mounts are capable of making.

Based as it is on a base-four numerical system, Ijad language has **four numerical declensions**: double, triple, quadruple, and multiple. They are used before a noun to show its number.

1	(undeclined)
2	(he)
3	(bhu)
4	(ge)
Many	(au)

Ijad language has **four genders**: person, place, animal, and thing. They are used after a noun to show its type.

person ih

place u

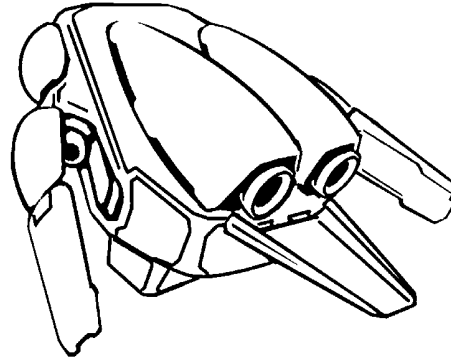
animal teh

thing (undeclined)

Therefore, a squad of three occupied Scrambler mobile frames is “Bhu-Ghanatih”

A company of five or more unoccupied frames is “Au-Ghanat”

Possession or other preposition is shown with the suffix “é”, so “Behsshu’s Scrambler” is “Ghanat Behsshuhihé”



Though its use is energy-intensive, the Huet antigravity thruster is designed to allow an ST-03-compatible mobile frame to leap high into the air or sprint from cover to cover. (1G)

Au-Ah Ijadihé

Ijad names have meanings only distantly remembered by linguists. Many are taken from local mythology and the history of a village and show the peculiarities of a local dialect. They are here listed without the “ih” suffix for speakers of human languages who would find it redundant. We apologize for any unintentional slight.

Adaj	Abemet	Amut	Anehm
Behsshu	Besh	Bhau	Bhadal
Dhiu	Doaj	Dheche	Durhach
Ehent	Esh	Ekauech	Etu
Ghal	Gehmet	Goa	Ganmu
Hassh	Hemet	Heth	Harenih
Idar	Imadeh	Ibanet	Ilamen
Jehte	Jomun	Judheh	Joam
Lodej	Ladhal	Lujman	Lom
Mehdel	Mohiam	Mojal	Mehesh
Pehudj	Puleh	Pauam	Pehma
Shadhi	Shejal	Shemet	Shesshe
Tumeh	Tanrehtu	Tahrib	Tuej
Ubeh	Ujedej	Usul	Utheb

The Colony of Gursk

Gursk is a typical Solar Union colony two transits from the Sol system. It is surrounded by an atmosphere thick with pollen and spores of its prodigious ecosystem. When it was founded in SC 0217, it held tremendous hope in its golden prairies and network of rivers. The native grain that grew there, wholecorn, was plentiful, while the planet's unusual solar radiation and atmospheric chemistry made it an uncommonly nutrient-dense food capable of dramatically increasing the survivability of colonists.

For years, the Gemmel Trading Company, orbiting the planet in its transit gate, sterilized outgoing grain and scrambled its DNA, hoping to prevent "piracy" of their great natural resource.

The atmosphere of the planet carries a complex mass of symbiotic organisms and their zygotes, many of which are poisonous or infectious to humans. Locals must wear respirator masks and seal all frames against contamination by these lifeforms. When, in 0220, the Gemmel Holding Company contracted with the Ransoll Corporation for the manufacture of these filter systems, it inadvertently created a tension: Ransoll wanted to sell the greatest number of filter

systems it could to its captive audience, but Gemmell's CEO, Oran Chesh, had offered filters as a payment system to farmers and workers and so required that the supply be limited.

Such a limited supply has created a vibrant black market. For years now, right under Gemmell's nose, Ransoll itself has been overproducing filters and selling them off the books. No one knows how many such filters are being sold on the black market or how many are stockpiled in barns and silos around the planet.

In SC 0229 a smuggler managed to sneak out a single, crushed kernel on the outside

of her spacecraft, causing a crash in the value of wholecorn as colonists replicated and reaped the crop on other worlds.

No other colony has quite replicated the uniquely fertile circumstances of Gursk, however, and true Gursk wholecorn is a prized commodity among the gourmets of the Solar Union.

Forces

Such high-end attention has not brought the wealth to Gursk that some had hoped, though. In order to preserve trade in this valuable commodity, the Gemmel Holdings Company maintains a tight grip

on all breeds of wholecorn, enforcing its established prices through its Terran Transit Marine company, Theiger's Thunderhead.

For years now, the peace on the ground has been held by the UMFL company, Estar's Anvil, led by Gursk native Captain Cahide Estar. The Anvil has quenched many a battle through Estar's decisive but tempered approach. The company has been so effective that Southport has contacted Estar herself to begin a mobilization to another system, transitioning Gursk's security into the hands of Ennoman Fev's company, the Hoplites. The brutality of the company in its first forays in an attempt to meet Fev's strict standards has

induced both terror in the populace and dissent within the Hoplites' ranks; several of Fev's Legionnaires have defected into Free Colonies cells in revulsion at the acts they have been asked to commit. Rumors abound that Fev has contacted the dreaded Crimson Phalanx for reserve frame pilots.

Rising in opposition to Gemmel's hold are the loose collection of rebels, frame gangs, desperate farmers, and UMFL deserters, calling themselves collectively the Will of Gursk. Despite fundamental disagreements and even two intrafaction skirmishes, (one over the destruction of a dam, the other over the building of a road between the cities of Billu and Chansur), they've formally

allied themselves with the Free Colonies movement, sharing news and frame designs on the Federation Network.

The city of Cansur is a small but well-known city-farm built in the Ijad mode. With a sizeable biological Ijad population and a majority Ijad religion, it is home to both a Will of Gursk company called the Famous Four (after a remarkable defense of the town by its four founding members) and its closely-allied and numerous Ijad allies, the Seeing Hand. In the Ijad way, the Seeing Hand is cautious about broader alliance with the Will of Gursk, but are keenly aware that their friendship with the Famous Four company is critical to their survival as a

functioning town. Both organizations have representatives in the city-farm's council, responsible both for ensuring the fair distribution of food and coordinating battle plans between the Famous Four and the Seeing Hand.

Special notes

- » For outdoor operations, frames may install a filter system.
- » For zero-gravity operations in orbit or near the transit gates, frames may install a thruster system.

OBJECT & OVERVIEW

The object of the game is to have the highest score at doomsday. To win, you'll need to **destroy** your opponents' mobile frames and **seize** their stations while preserving your own.

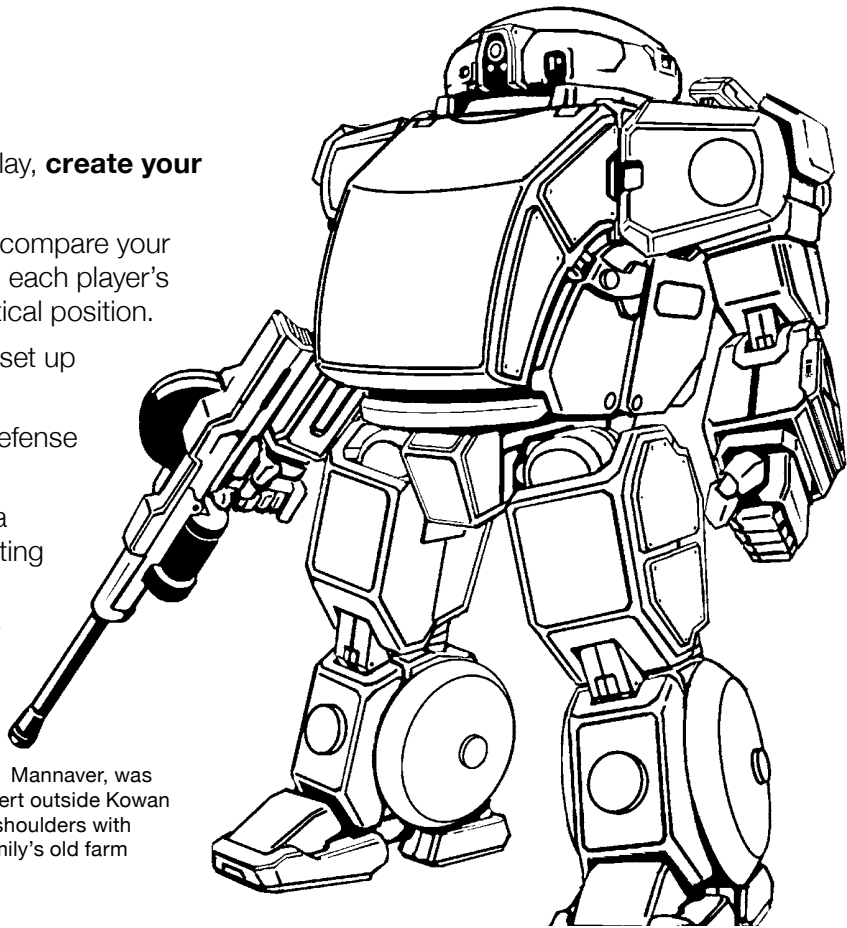
You'll need:

- » Companies of mobile frames.
- » Terrain.
- » A ruler.
- » Many 6-sided dice, in white, blue, red, yellow and green.
- » A few 8-sided dice, in red and green.
- » A distinctive 12- or 20-sided die.

TIMELINE

1. In the days before you play, **create your company.**
2. When you meet to play, compare your companies to determine each player's score per asset and tactical position.
3. When you meet to play, set up the battlefield.
4. Field your companies: defense to offense to defense.
5. Play the battle out over a number of rounds, counting down to doomsday.
6. At doomsday, the player with the highest score wins.

Brutus, the Chub piloted by Yoshi Mannaver, was found almost complete in the desert outside Kowan Keep. He's replaced the missing shoulders with shoulders scavenged from his family's old farm machinery.



CREATING YOUR COMPANY

In the days before you play, create your company.

Company Size

Your company is made of two kinds of units: **stations** and **mobile frames**. The minimum and maximum number of units in your company depends on the number of players and whether you're playing a **skirmish** or **battle**.

A line art illustration of a futuristic vehicle and a handheld weapon. The vehicle is on the left, and the weapon is in the center. The number '60' is visible in the bottom left corner.

For a **Skirmish**

If you've got **2 players**, your company must have 3 stations and 4-6 mobile frames.

If you've got **3 players**, your company must have 2 stations and 3-5 mobile frames.

If you've got **4 players**, your company must have 2 stations and 3-4 mobile frames.

If you've got **5 players**, your company must have 1 station and 3-4 mobile frames.

Your company must also carry **3 single-shot rockets**.

For a **Battle**

If you've got **2 players**, your company must have 3 stations and 5-8 mobile frames.

If you've got **3 players**, your company must have 2 stations and 4-7 mobile frames.

If you've got **4 players**, your company must have 2 stations and 4-6 mobile frames.

If you've got **5 players**, your company must have 1 station and 3-5 mobile frames.

Your company must also carry **3 single-shot rockets**.

When you bring your company to the field, you'll compare it with your fellow players'.

The player with the smallest, weakest

company gets the score advantage and starts the battle on the defensive. **The player with the largest, most powerful company** gets a score penalty and starts the battle on the offensive.

You'll have to second-guess your opponents while you're designing your company to get the position you hope for.

The most advantageous companies are:

- » very slightly smaller and weaker than your opponent's, so that you seize the point advantage at little tactical cost; or
- » much larger and stronger than your opponent's, so that you cede the point advantage but with a great tactical advantage.

Stations

A station must:

- » be **stationary**, hence the name
- » be **distinct** from the local terrain, so nobody will get confused about what is and what isn't
- » have a place to clip on a little flag
- » be **no bigger than 4x4 on the table**. If you want to use something larger, designate the part that is a station; the rest is regular cover.

For your stations, you can build anything that's stationary and valuable to defend or seize. The door panel on a drop ship, a cache of medical supplies, a civilian scientist and her family, a research facility's data storage drives, a truck with a flat tire and a load of fresh peaches. Whatever.

Mobile Frames

A mobile frame consists of a **frame** and a variety of **systems**. A frame can carry at most a **total of 4 systems**. **No more than 2 systems can be any given type**, but frames are otherwise allowed to carry any mix of systems you want.

Absent systems, a mobile frame can do four things:

1. Defend itself
2. Move, navigating around cover
3. Spot a target who is within direct fire range and not in cover
4. Attack a target at hand-to-hand range

The dice:

Each mobile frame provides **2 white dice**. Additionally, you may add dice for each system.

- » **Red dice** are for **attacking**.
- » **Green dice** are for **moving**.
- » **Blue dice** are for **defending**.
- » **Yellow dice** are for **spotting** targets for other mobile frames to attack.
- » **White dice** are **wild**; use them for any of the above.

There are six types of systems:

A mobile frame can carry 0-2 **defensive systems**: armor, a shield, camouflage, stealth composite surfacing, ECM. The first defensive system adds 1 blue die. The second defensive system adds a second blue die and allows the mobile frame to act as cover to other mobile frames without risking damage itself.

A mobile frame can carry 0-2 **movement systems**: jumpjets, wings, wheels. Each movement system adds 1 green die. Using any movement system at all allows

the mobile frame to move through cover; otherwise, it has to go around it.

A mobile frame can carry 0-2 **surveillance/communications systems**: a radio, a targeting laser, spotlights, a rifle scope. Each comms system adds 1 yellow die. Without any comms systems, the mobile frame can spot targets only within direct fire range and out of cover. With one comms system, the mobile frame can spot targets within direct fire range, but in cover. With two comms systems, the mobile frame can spot targets anywhere on the battlefield.

A mobile frame can carry 0-2 **hand-to-hand weapon systems**: a shock baton, a

combat knife, a repurposed jackhammer. The first adds 2 red dice at hand-to-hand range. The second adds 1 red 8-sided die at hand-to-hand range.

A mobile frame can carry 0-2 **direct fire weapon systems**: an assault rifle, a grenade launcher, a flamethrower, a beam weapon. The first adds 2 red dice at direct fire range. The second adds 1 red 8-sided die at direct fire range.

A mobile frame can carry 0-2 **artillery range weapon** systems: a mortar, a sniper rifle, a railgun. The first adds 2 red dice at artillery range. The second adds 1 red 8-sided die at artillery range.

Weapon ranges are exclusive. You can't attack with a direct fire weapon when you're in hand-to-hand range, and you can't attack with an artillery range weapon when you're within direct fire range.

Sprinting

A mobile frame can carry **at most four systems**.

A mobile frame with neither direct fire nor artillery range weapons systems gets 1 green 8-sided die as well. This doesn't count as a system and can't be destroyed.

Single-Shot Rockets

In addition to its frame and systems, **a mobile frame can also carry up to 3 single-shot rockets.**

A single-shot rocket provides **1 red d8 at direct fire range**, once only. Discard it after you use it.

Your company must carry exactly 3 single-shot rockets.

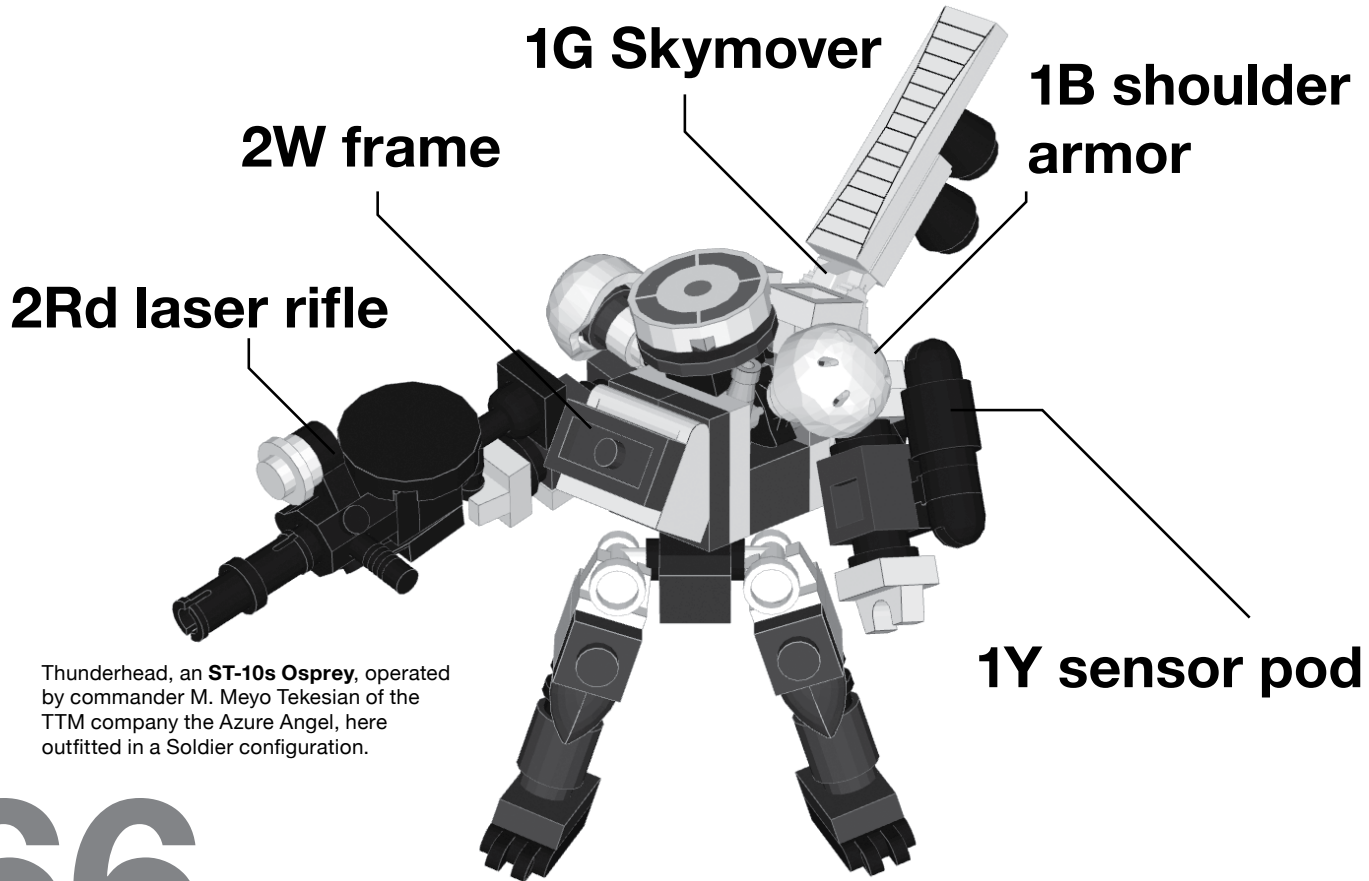
Die configuration notation:

Each system's dice are noted as the number of dice (**1, 2, or 3**), the color of die (**R, Y, G, or B**), the range at which that die takes effect (**h, d, and a** for hand-to-hand, direct, and artillery), and if it gives a bonus attack **d8** for either acting as a second weapon at a range or a bonus movement d8 for a frame unencumbered with ranged weapons at all.

e.g. **2Rd** is a direct-range weapon, where **2Ra & d8** is a double-barreled artillery piece or perhaps a rifle with a scope mounted. **1G** is a movement system such as a jetpack or tracked feet, **1Y** is a sensor/comms system like a radio or night scope while **1B** is a defensive system like armor or stealth cladding. **Gd8** is a bonus green d8 for a frame with no ranged weapons. **1Rd & 1Rh** is a carbine with a bayonette, with one die at both direct and hand-to-hand range.

The "Soldier" Configuration

A soldier-configured frame carries one defensive system, one movement system, one comms system, and one direct fire weapon system. Every other mobile frame is a specialist of some sort. When you're creating your frames, an easy way to start is to make a soldier configuration and then swap systems in and out to specialize as needed.



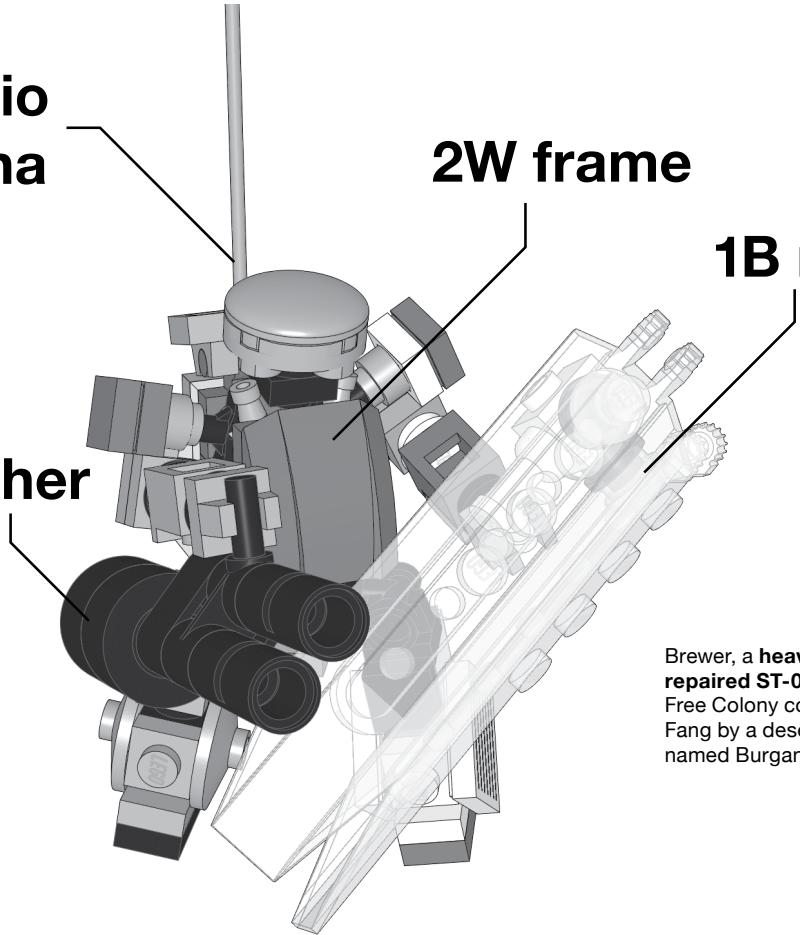
Thunderhead, an **ST-10s Osprey**, operated by commander M. Meyo Tekesian of the TTM company the Azure Angel, here outfitted in a Soldier configuration.

1Y radio antenna

2W frame

1B riot shield

**2Rd & d8Rd
grenade launcher**



Brewer, a **heavily modified and repaired ST-07 Chub**, is piloted for a Free Colony company called the Sun's Fang by a deserted UMF Legionnaire named Burgan.

1Rd8 single-shot rocket

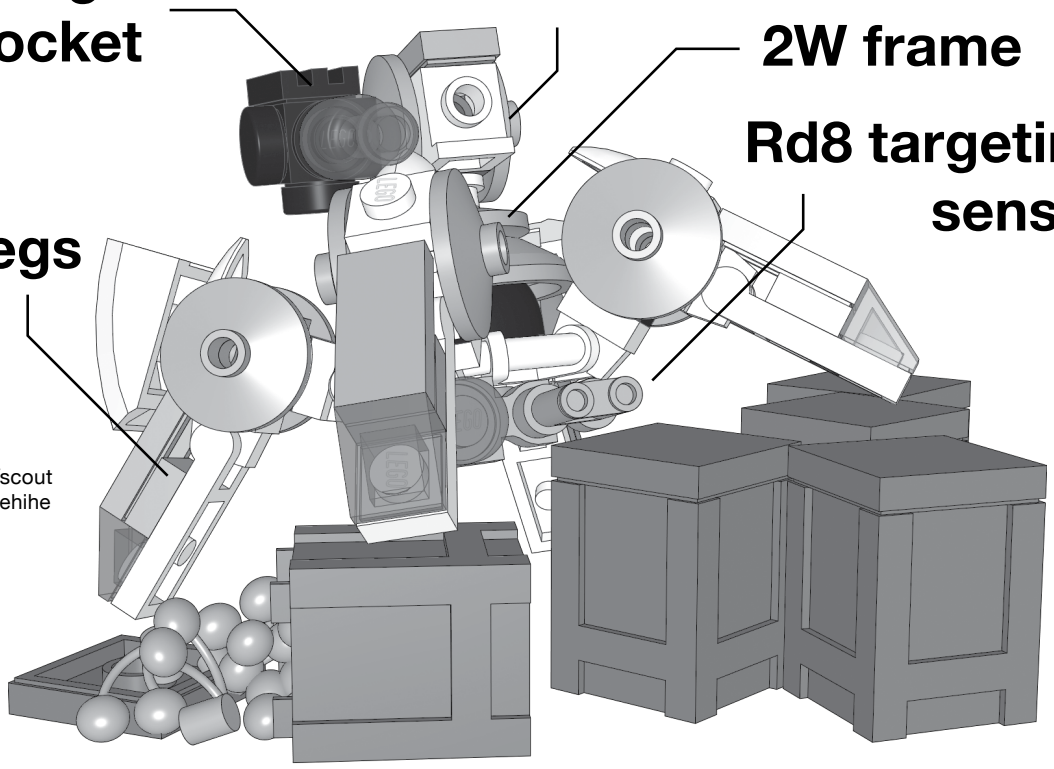
2Rd Stingbeam

2W frame

Rd8 targeting sensor

1G four legs

A Scrambler, **Ghanat Ekauechihé**, piloted by Ekauechih of the advance/scout company Bhu-Ghanatih Mehihe



COMPARING COMPANIES

When you meet to play, **compare your companies** to determine each player's score per asset and tactical position.

Asset Value

Your **assets** are **your own functional mobile frames**, plus the **stations you control** (your own or seized from your

enemies). Each asset you hold is worth a certain number of points to you; this number is called your **score per asset**. Your score per asset depends upon the relative size and strength of the company you've brought to the field.

Set your score per asset by comparing your company with your opponents' before play.

Count up:

1. the total number of mobile frames in your company
2. the total number of systems they're carrying

Then calculate:

1. Your score per asset starts at **5**.
2. **Company size:** Does your company have **the most Mobile Frames**? Subtract 1 from your score per asset. Does your company have the **fewest**

Mobile Frames? Add 1 to your score per asset.

3. **Systems carried:** Does your company have the **most systems**? Subtract 1 from your score per asset. Does your company have the **fewest systems**? Add 1 to your score per asset.

In case of ties, both players adjust their scores per asset.

Calculate your score per asset only at the beginning of play. As you play, you'll lose mobile frames, and stations will change hands. **This changes how many assets you hold, not your score per asset.**

Starting Score

**Your score =
(Number of Assets) x
(Score per Asset)**

Before play starts, the assets you hold are **your own mobile frames** and **your own stations**. Each one is worth a number of points equal to your **score per asset**.

The sum is your starting score.

Your score per asset does not change in the course of the game.

Tactical Position, Offense & Defense

The player with the highest starting score starts play on the defensive.

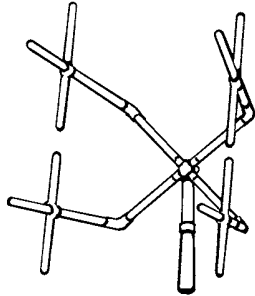
You can win by holding on to what you have.

All the other players start play on the offensive.

The player with the **lowest starting score** starts play **on point offense**. To win, you have the most to accomplish.

Compare starting scores and note your tactical position, whether you're playing

defense, offense, or point. Battlefield setup follows your tactical positions, defense to offense to defense: the defensive player starts, the offensive players alternate turns, starting with the player on point, and the defensive player finishes.



Radar is a common and simple variety of sensor system that can be built by anyone with basic know-how, giving pilots a way to see other frames in the dark and even through walls.
(1Y)

Example Scores per Asset

- » **Estar's Anvil**, fielded by Joshua, is a UMFL company of 5 **mobile frames**, all fully outfitted, carrying a total of **20 systems**.
- » The **Sun's Fang**, fielded by Vincent, is a Free Colony company of 4 **mobile frames**, all fully outfitted, carrying a total of **16 systems**.
- » The **Piercing Eye**, fielded by Sebastian, is an Ijad company of 4 **mobile frames**, not quite all fully outfitted, carrying a total of **15 systems**.

All three companies' scores per asset start at 5.

Estar's Anvil has the most mobile frames, so its score per asset **goes down to 4**. The other two companies **both have the fewest mobile frames**, so their scores per asset both **go up to 6**.

Estar's Anvil carries the most systems, so its score per asset **goes down to 3**. The **Piercing Eye carries the fewest**, so its score per asset **goes up to 7**.

Scores per asset:

- » Estar's Anvil: **3**
- » The Sun's Fang: **6**
- » The Piercing Eye: **7**

Example Tactical Positions

Joshua's company **Estar's Anvil holds 7 assets** — 5 mobile frames, 2 stations — each worth **3 points**, for a starting score of **21**. This is **the lowest starting score**, so J starts play on **point offense**.

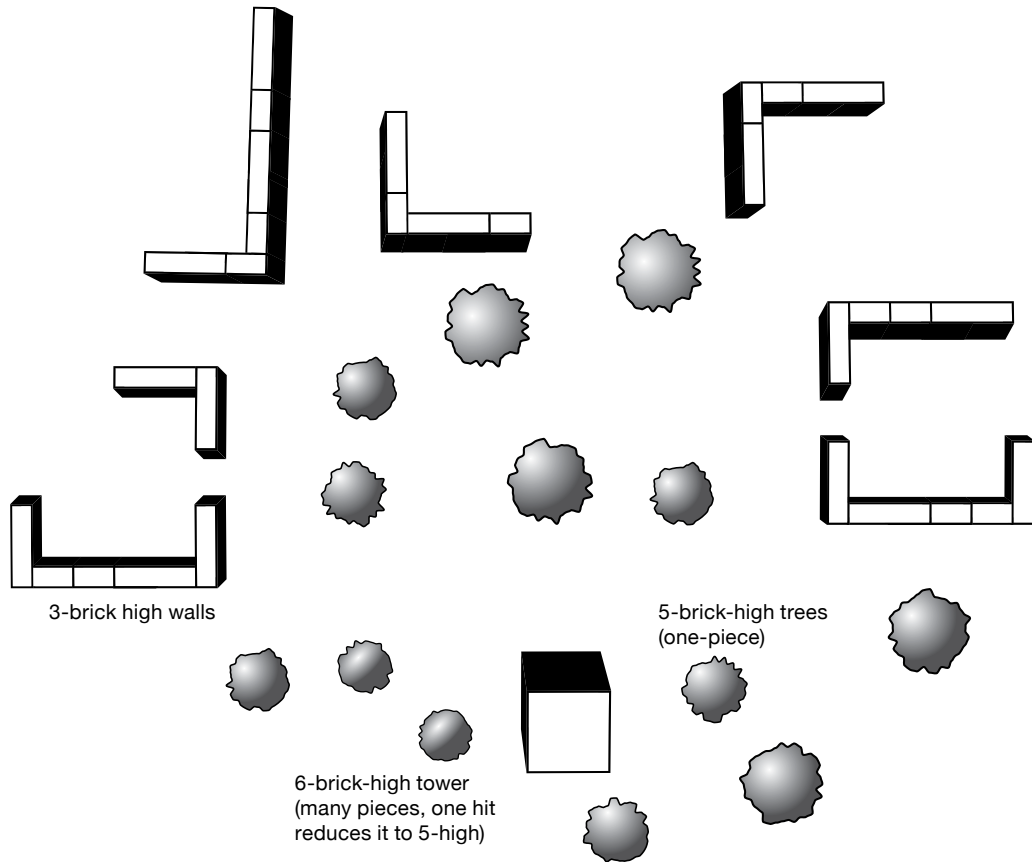
Vincent's company **the Sun's Fang holds 6 assets** — 4 mobile frames, 2 stations — each worth **6 points**, for a starting score of **36**. V starts play on **offense**.

Sebastian's company **Piercing Eye holds 6 assets** — 4 mobile frames, 2 stations — each worth **7 points**, for a starting score of **42**. This is **the highest starting score**, so S starts play on **defense**.

Direct Range

Battlefield setup:

The ruins of Alluel, a biomining ghost town with a secret valuable to Solar Union, Free Colonies, and Ijad alike.



SETTING UP THE BATTLEFIELD

When you meet to play, set up the battlefield. Build terrain of LEGO® bricks, recalling that any object 3 bricks high or taller is cover.

Terrain

Cover your table with terrain. Give it a good assortment of cover, with some

wide avenues, some snipers' nests, some culs-de-sac, some killing grounds, and no-man's-lands.

Every player has to approve the layout of the battlefield before you begin fielding your companies. Any player can adjust the battlefield layout until all are satisfied with it.

The Ruler, Ranges, and Cover

By default, for typical dining room tables, play with **a ruler 8 units long**, with each unit being 5 studs, 5cm, or 2".

Your table should measure 4-6 rulers' lengths diagonally and circular or square. If it's bigger or smaller, adjust accordingly:

If your table is bigger, increase each unit to 6 or 7cm, 6 or 7studs, or 3", or else tape off the edges or corners of your table.

If your table is much smaller, decrease the ruler to 6 units long.

- » **Hand to hand range** is 1 ruler unit or closer.
- » **Direct fire range** is outside of hand to hand range, out to the length of the ruler (8 units, usually).
- » **Artillery range** is any distance outside the length of the ruler.

Ranges are exclusive. You can't use a direct fire weapons system at hand to hand range (that is, at a distance of only 1 ruler unit), nor an artillery weapon system at hand to hand or direct fire range (that is, at any distance within the length of the ruler).

Measure the physical space between the mobile frames at their closest. If the ruler

can touch both mobile frames, it's direct fire range; if it can't, it's artillery range.

Any structure on the battlefield is cover if it's 3 bricks or more high, except stations. All standing mobile frames count as cover.

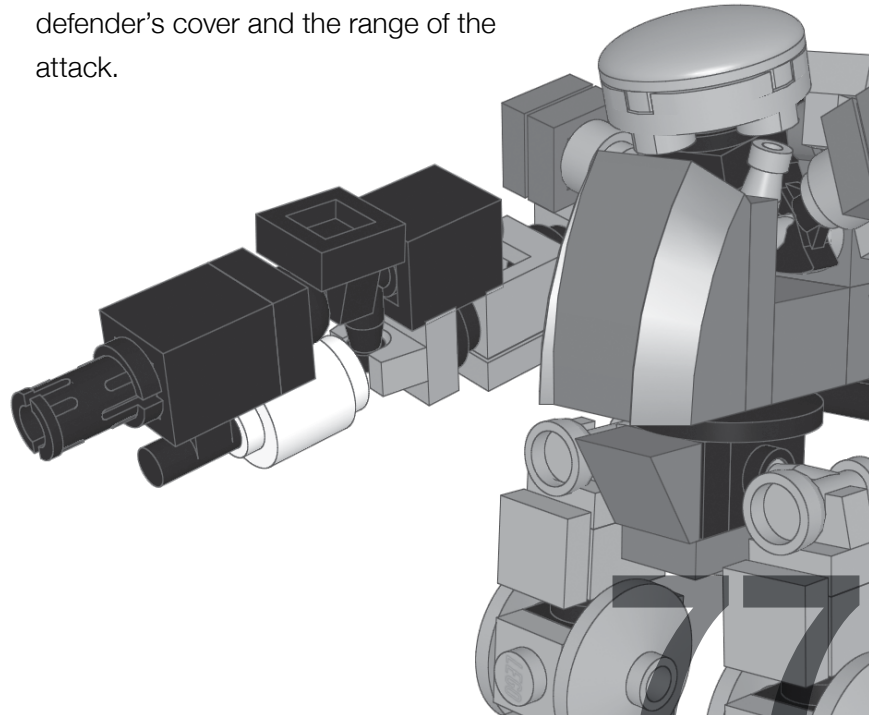
A mobile frame is in cover against an attacker if:

- » it is **within hand to hand range of cover**
- » the cover is **between it and its attacker**, in whole or in part

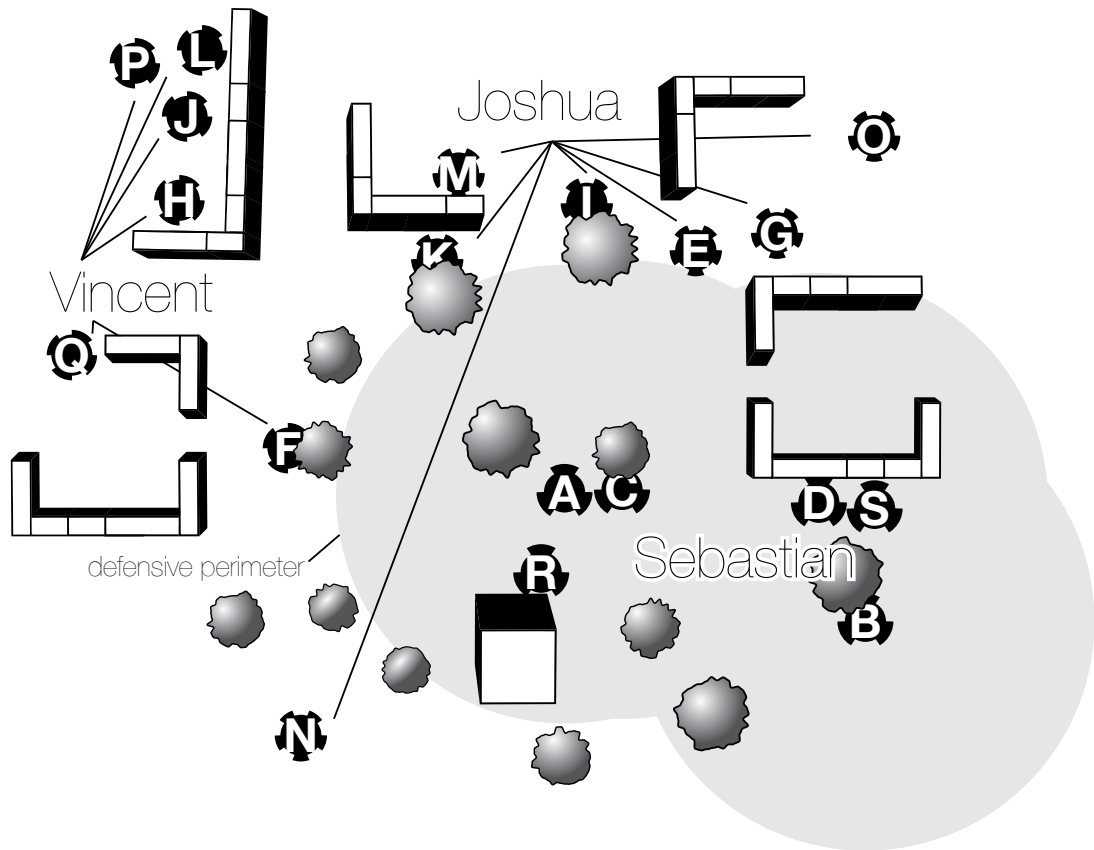
The only cover that matters is cover within arm's reach of the defender. If there's cover anywhere else between the

attacker and defender, but not within hand to hand range of the defender, ignore it.

Don't consider line of sight, only the defender's cover and the range of the attack.



Direct Range



Starting positions for the upcoming skirmish

78

FIELDING COMPANIES

Field your companies:
defense to **offense** to **defense**.

Initial Defense

The player with the highest starting score places their stations. In this example, that's Sebastian.

If you're the initial defender, place your stations wherever you want, but **within direct fire range of one another.**

If you're fielding three stations, the third must be within direct fire range of either of the first two, it doesn't have to be within direct fire range of both.

You have a **defensive perimeter**: only you can place your mobile frames within direct fire range of any of your stations.

Place two of your mobile frames. Place them within your perimeter, but otherwise, wherever you like.

It's probably to your advantage to place them at the advance edge of your perimeter.

On some battlefields, under some circumstances, it might be possible for you to arrange your initial setup in such a way that the offensive players can't legally field their own forces. If you find that you've done this, go back and change your mobile

frames' positions so the game can go forward.

Initial Offense

The point offensive player — the player with the lowest starting score — **goes second**. In this example, that's Joshua.

If you're the initial offence, place one of your mobile frames:

- » **outside** the defensive player's perimeter
- » **at the limit of — but within — direct fire range** of one of the defensive player's mobile frames
- » out of cover

This is the **point mobile frame**.

Continuing Offense

All offensive players alternate, mobile frame by mobile frame, until all the offensive players' mobile frames are on the field.

On each of your turns, place one of your mobile frames. Place it:

- » outside the defensive player's perimeter
- » outside direct fire range of any of the defensive player's mobile frames
- » otherwise, wherever you like

Once all the offensive players' mobile frames are on the field, alternate again, placing your stations.

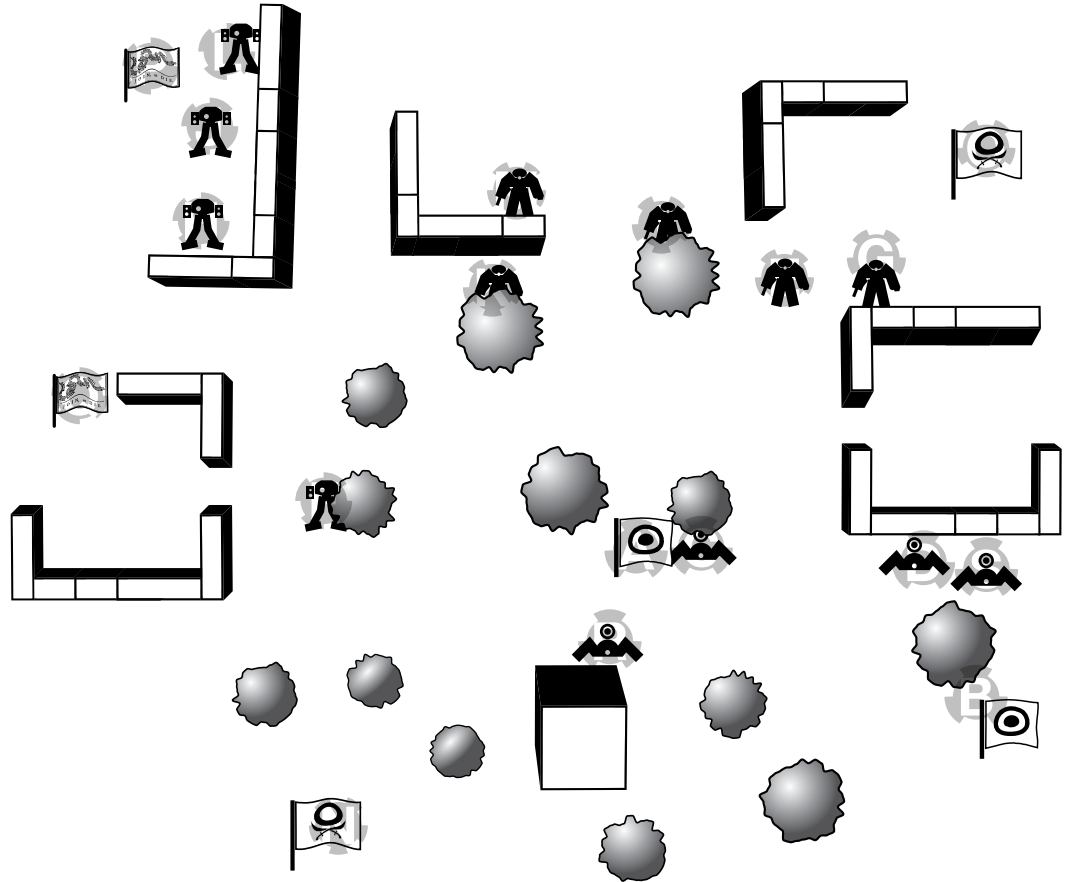
On each of your turns, place one of your stations. (Try not to place it within direct fire range of any opponents' mobile frames, but this might not always be possible.)

Final Defense

The player with the highest starting score finishes. In this case, that's Sebastian.

If you're the initial defender, place your remaining mobile frames on the battlefield. **Place them wherever you want**, but if you place them outside of your perimeter, place them in cover.

Direct Range



The Free Colonies, Ijad, and Solar Union forces in place

The battle starts now, at the moment the point mobile frame exposed itself to fire.

Sebastian, fielding the Piercing Eye, has the highest starting score, 42, so he starts play on defense. He starts by fielding both his stations and 2 of his mobile frames.

His strategy will be to **abandon one station to Joshua and retreat** into position around the other, to mount a counterattack later in the game when Joshua and Vincent have softened each other up for him. Accordingly, **he places one station in a relatively exposed position, at A, and the other in a more**

secure position, at B. He establishes his perimeter by placing his first **two mobile frames at C and D, in cover near A in a place that will make for an easy retreat when the time comes.**

Joshua, fielding Estar's Anvil, has the lowest starting score, 21, so he starts on point offense. He fields the point mobile frame. It has to be out of cover and within direct fire range of one of Sebastian's mobile frames at C or D.

Estar's Anvil is an unstoppable machine, but not quick on its feet, so Joshua decides to **deploy them in a crushing wall along the line**, as best he can manage, created

by Sebv's two stations. That way he can hope to seize one and continue on without breaking stride to assault the other. **He places his point mobile frame at E.**

Now Vincent and Joshua alternate placing frames. Vincent's starting score, 36, is quite strong. If Joshua seizes one of Sebastian's stations, that'll put Vincent in the lead, so **his strategy is to deploy defensively** in the expectation that this will happen.

Ultimately he places his four mobile frames in a nice defensive line at F, H, J and L.

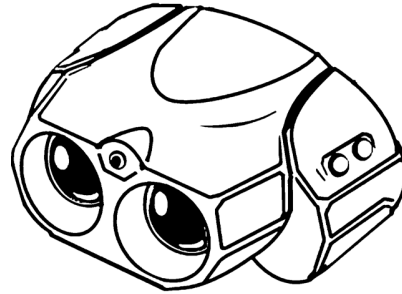
Joshua places his remaining four mobile frames at G, I, K, and M, completing his anvil.

Now Joshua and Vincent place their stations, Joshua first. He knows that he can't make the hard, direct assault he needs to while also defending his stations, but also that his stations won't be high-priority targets, so **he places them in out of the way spots, N and O,** and wishes them good luck.

Vincent, on the other hand, expects to have to fight to defend his stations, and so **he's left room for them behind his company. He places them at P and Q.**

Finally, **Sebastian places his last two mobile frames**. He considers placing them in ambush — in cover outside of his perimeter — but decides instead to stick to his plan. **He places them in harrying retreat positions at R and S.**

The battle starts now!



The RD-214 “Nocs” sighting system attaches easily to the head of most frames, enhancing the accuracy of the frame’s weapon systems for the range at which the sensors are calibrated.
(d8 at the range of one other weapon)

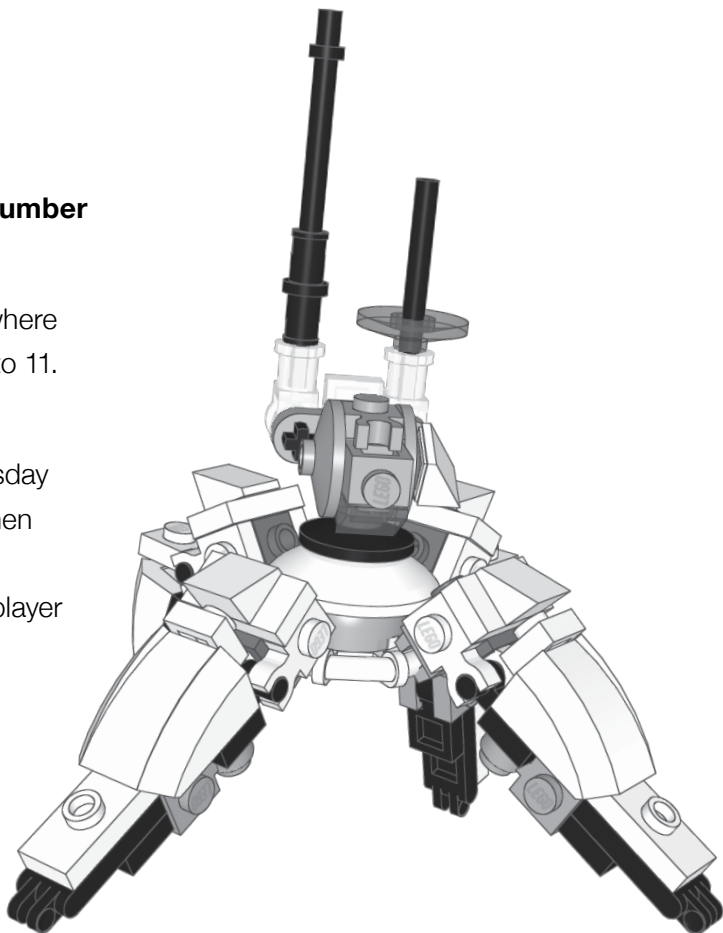
DOOMSDAY

The battle ends after a variable number of rounds.

Place a distinctive d12 or d20 somewhere safe, where everyone can see it, set to 11. This is the doomsday clock.

At the end of every round, the doomsday clock counts down by 1 (or more, when a player wants). When it reaches 0, doomsday, the battle ends, and the player with the highest score wins. Ties are possible, but unlikely.

The Ijad **Suzerain** frame is designed to lead from the front.



STRATEGY

If you're attacking:

To win, you'll have to **destroy your enemies' mobile frames** and **seize their stations** without losing many or any of your own. **Attack immediately, hard, and follow through as strongly as you are able.**

Pay close attention to everyone's current scores. Odds are that the

player with the highest score will change midbattle. Be prepared.

If you take the highest score, you'll need to play defense now, because you'll be the big target on the battlefield. If you see it

coming, you can **try to consolidate your position beforehand.**

If an erstwhile ally takes the highest score, that player takes the defense and you'll need to **switch your attack** to that player's company. **Continuing the fight against your old enemy will only help your new enemy to win.** If you see it coming, you can **try to conserve your momentum by setting up your new assault beforehand.**

If you're defending:

To win, you won't strictly have to hold onto everything you have, you'll only have to **inflict losses as great as you suffer.**

It might be to your advantage to give a station away earlier in the game, shifting the high score and the defense to another player. **Consider making an early sacrifice** to preserve your strength for a comeback.

When you lose the high score and the defense shifts to another player, announce it to the table! Get those attackers off your back.



ROUNDS

Play the battle out over a number of **rounds**, counting down to **doomsday**.

In a Round

Each Mobile Frame gets one turn.

During the round, you'll **switch back and forth between tactical order and**

combat order. The round ends when the last mobile frame's taken its turn.

As you destroy each others' mobile frames and seize each others' stations, keep a running score:

Score =
Number Of Assets
x Score Per Asset.



As your scores change, the player with the highest score always takes the defense. After each Mobile Frame has taken its turn, end the round by picking up remaining dice and counting down to doomsday.

Tactical Order

The round begins in tactical order.

In tactical order, always start with the player with the highest score.

When you have the highest score, you can either:

- » **choose one** of your available mobile frames and take its turn

- » **pass** to the player with the next-highest score. **That player then has the same choice**, and potentially the next player too, down to the player with the lowest score.

However:

- » **if all of your mobile frames have already taken their turns this round**, you have to pass
- » **if there are no mobile frames left to go after you**, you have to take a turn.

When a mobile frame takes its turn, resolve it — this may include switching to combat order — **and then return to tactical order**, beginning again with the player with the current highest score.

Combat Order

When one mobile frame attacks a mobile frame that hasn't taken its turn yet, **switch to combat order**.

In combat order, the attacking and defending mobile frames' turns overlap.

- 1.** The **attacker takes the first part** of its turn, pausing to find the defender's defense value
- 2.** The **defender rolls** and chooses a defense value
- 3.** The **attacker finishes its turn**
- 4.** Then the **defender finishes its turn**, including any movement and attacks of its own.

This counts as the defending mobile frame's turn for this round, naturally.

As defenders in turn attack targets of their own, combat order can cascade through a series of mobile frames' turns.

Once the cascade is done, return to tactical order to continue the round.

Seizing Stations

At the beginning of play, you control all your own stations. They remain yours even if you don't have any mobile frames anywhere near them, unless or until another player seizes them.

To seize a station from another player, you have to get one or more of your mobile frames within hand to hand range of the station while no other player has a mobile frame of their own within hand to hand range of it. This can happen during any mobile frame's turn:

- » On your own mobile frame's turn, when your opponent has left the station unguarded, and you move one of your mobile frames into hand to hand range of it
- » On your opponent's mobile frame's turn, when you and your opponent both have a mobile frame in hand to hand range of the station, and your opponent's frame moves away, abandoning the station to you.

- » On any mobile frame's turn, when you and your opponent both have a mobile frame in hand to hand range of the station, and your opponent's frame gets destroyed by incoming attacks

Once you've seized a station, it remains yours until someone else seizes it from you. You don't have to keep any mobile frames near it to keep ownership of it.

Running Score

The moment that **any mobile frame is destroyed**, recount that player's score.

The moment that **any mobile frame seizes a station**, recount both players' score.

**Score =
Number of Assets
x Score Per Asset.**

Your assets are your undestroyed Mobile Frames and the stations you control.

Destroying someone else's mobile frame costs them points equal to their score per asset.

Seizing their station costs them points equal to their score per asset and gains you points equal to your own score per asset.

In tactical order, always start with the player with the current highest score.
As your scores change, your tactical order changes too, right then.

Tidying the Battlefield

During the round, you'll be placing defense dice and spot dice next to the mobile frames. **At the end of the round, pull them all off the field.**

Leave the debris and carnage, though.

Counting Down To Doomsday

At the end of the round, count the doomsday clock down 1.

Then call on each player in tactical order, **from highest current score to lowest**: Each player has the option to **count the doomsday clock down by 1**, or to pass.

If you're winning — or think you'll be winning soon — you can speed the battle toward its end.

If you're losing, it's not to your advantage to do so.

A MOBILE FRAME'S TURN

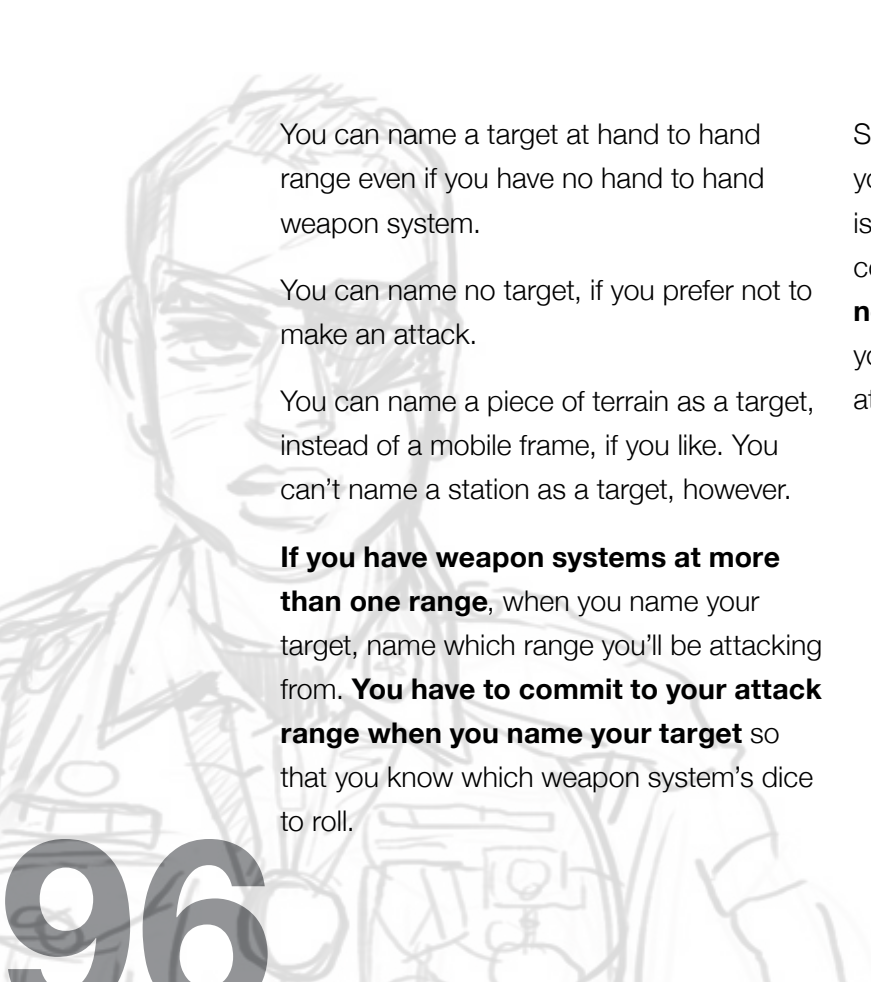
- 1. Name** your target.
- 2. Gather and Roll** your dice.
- 3. Defend.**
- 4. Assign** your dice.
- 5. Move** then **attack** or **attack** then **move**.
- 6. Spot.**

1. Naming Your Target

Name one mobile frame to be the target of your attack.

If you have an artillery weapon system, you can name a target at artillery range.

If you have a direct fire weapon system, or you're firing single-shot rockets, you can name a target at direct fire range.



You can name a target at hand to hand range even if you have no hand to hand weapon system.

You can name no target, if you prefer not to make an attack.

You can name a piece of terrain as a target, instead of a mobile frame, if you like. You can't name a station as a target, however.

If you have weapon systems at more than one range, when you name your target, name which range you'll be attacking from. **You have to commit to your attack range when you name your target** so that you know which weapon system's dice to roll.

Since you'll have the option to move before you attack, you can name a target that is currently out of range. When the time comes, **if you manage to cross the necessary distance, you may attack**. If you fail to cross the distance, you forgo the attack.

2. Gathering and Rolling Your Dice

Recall that:

- » **Your mobile frame** gives you 2 white dice.
- » Each **defensive system** adds 1 **blue** die.
- » Each **movement system** adds 1 **green** die.
- » Each **surveillance/communications system** adds 1 **yellow** die.
- » One **weapon system at the appropriate range** adds **2 red** dice.
- » A **second weapon system at the appropriate range** adds 1 **red 8-sided** die.
- » Each **single-shot rocket you're firing** adds 1 **red 8-sided** die.

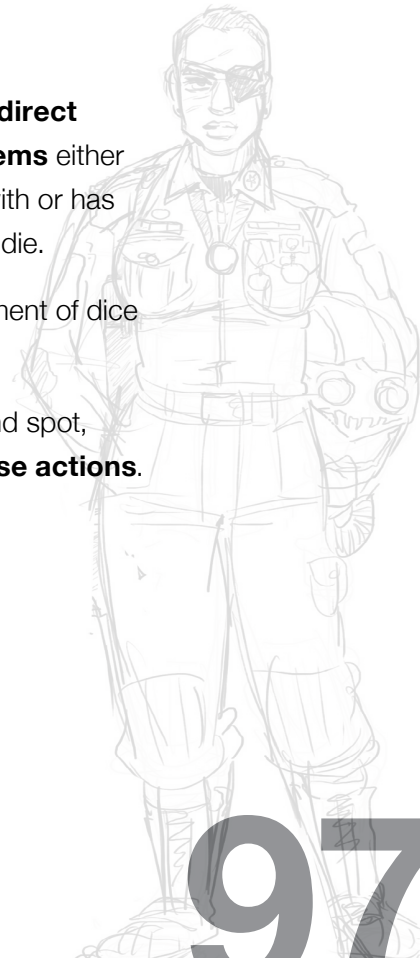
If your mobile frame has no direct fire or artillery weapon systems either because it had none to begin with or has lost them, add 1 green 8-sided die.

Pick up the appropriate assortment of dice and **roll them all at once**.

As you defend, move, attack and spot, you'll **assign your dice to those actions**.

The principle is this:

- » **blue** to **defend**
- » **green** to **move**
- » **red** to **attack**
- » **yellow** to **spot**
- » **white** are **wild**.



You get to **roll up front**, look at the numbers you've rolled, and decide where you'll swap in your white dice.

When you assign a die, you've used it up, you can't assign it again to another action. Once you've taken all four actions, discard all your leftover dice.

3. Defending Yourself

Assign a blue die or a white die to your defense. If you don't have any defensive systems, you didn't roll any blue dice, so choose a white die or forgo your defense.

Place a blue die on the battlefield next to the mobile frame, either the blue you rolled or a white die turned to your defense value. **This is this mobile frame's defense for the entire round;** you won't change it until next round.

If you assigned no die to defense, your defense is 0.

If you rolled your frame's dice because you have an attack outstanding against you, resolve the attack now. Wait for your attacker to finish its turn before you continue yours.

4. Moving Then Attacking, or Attacking Then Moving

You choose whether to attack before you move or move before you attack.

When you move:

Assign a green die or a white die to your movement. If you didn't roll any green dice, choose a white die or forgo movement.

Move a number of ruler units equal to the result of your movement die or less.

If you assigned no die to movement, you can't move.

If you have any movement systems or if you rolled the green 8-sided die for carrying no ranged weapons, you can pass through cover as though it weren't there. Otherwise, you have to go around it.

Recall that any structure on the battlefield at least 3 bricks high counts as cover, including mobile frames but excluding stations.

When you attack:

Is your target within the range you declared? If so, proceed with your attack. Otherwise, forgo your attack.

Assign a red die or a white die to your attack. If you don't have any weapon systems at the appropriate range, you didn't roll any red dice, so if your target is at hand-to-hand range, choose a white die or forgo your attack. **You can voluntarily abort your attack by choosing to assign no die to it.**

If it is within range, resolve your attack now against its standing defense and continue with your turn.

E COLONIAL
(NOUKI)

V II

100

If it doesn't have a defense number, switch now to combat order. Put your turn on hold until your target has its defense die. Once it does, resolve your attack and continue with your turn.

Special cases:

If you assigned no die to your attack, you don't make one.

If you are attacking a piece of cover, its defense is 0 and it is not in cover (even if there is cover available to it).

5. Finally, Spot

Assign a yellow die or a white die to your spot. If don't have any surveillance/comms systems, you didn't roll any yellow dice, so choose a white die or forgo your spot.

Declare the mobile frame you're spotting.

If you have no surveillance/comms systems, it must be:

- » within direct fire or hand to hand range
- » out of cover



101

If you have one surveillance/comms system, it must be **within direct fire or hand-to-hand range**, but it **can** be in cover.

If you have two surveillance/comms systems, it can be any mobile frame on the field.

(Recall that a mobile frame is in cover against an attacker if it is within hand to hand range of terrain or a structure on the battlefield, and the cover is between it and its attacker, in whole or in part.)

Place a yellow die next to your spotting target, turned to the value of your spot die.

If another frame has already spotted your target this round, it already has a yellow die next to it. **The high spot always stands.** Replace the existing spot only if your spot is higher.

Always **spot after you've made and resolved your attack.** You cannot spot first and follow it up with your own attack.

You can't spot terrain or stations.

Principled Judgment calls

Defending: If it's a close call, then yes, consider the defender to be in cover.

Moving: If it's a close call, then yes, allow the mobile frame to move to that position.

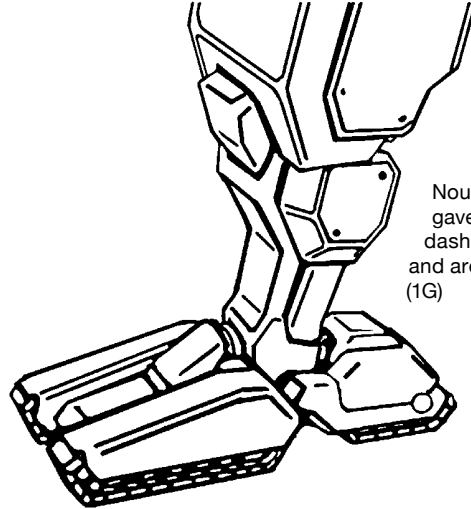
Attacking & Spotting: If it's a close call, then yes, consider the target to be in the attacker's preferred range.

Measuring: Anyone can measure anything on the table whenever they want. No gotchas.

If this mobile frame is the only mobile frame within hand to hand range of

a station, it seizes it. Mark it as yours.

The opponent you seized it from loses points for it, and you gain points for it, so both of you recalculate your tactical turn order now.



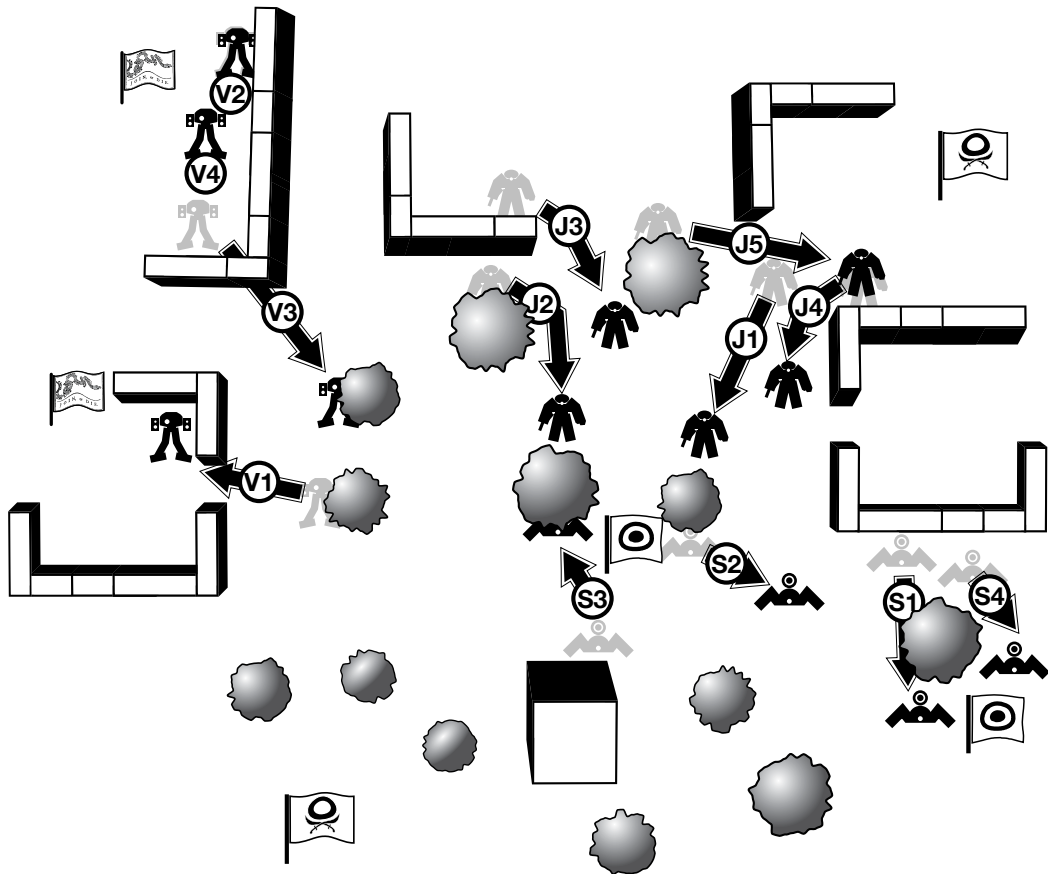
Nouri Eski's "Dust Skates" gave her frame the ability to dash quickly between buildings and around corners.
(1G)

Direct Range

The end of Doomsday -11. Sebastian's defensive plan is to cede his central station to Joshua, then let Joshua and Vincent fight for the lead while he moves to take one of Joshua's stations back.

Joshua intends to press on Sebastian until Sebastian has to turn to face Vincent, then take Sebastian's last station while he's facing Vincent.

Vincent slyly intends to let Joshua take Sebastian, giving Vincent the lead. He hopes that Sebastian and Joshua will damage each other enough to pose less of a threat and be unable to catch up to him after Doomsday -5.

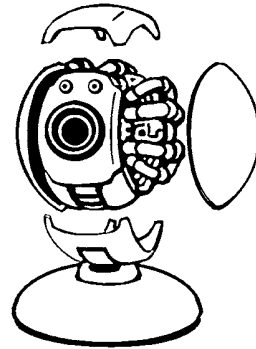


Example Round

It's the first round of the battle between the UMFL company **Estar's Anvil**, fielded by **Joshua**, the Free Colony company **Sun's Fang**, fielded by **Vincent**, and the Ijad company **Piercing Eye**, fielded by **Sebastian**.

The round begins in tactical order, as always. Sebastian has the highest score, **so he has the tactical initiative**. His choice is to take one of his mobile frames' turns or to pass to Vincent, who has the second highest score.

He chooses one of his forward mobile frames to take its turn.



The Ijad "stingbeam" pulse laser makes use of Ijad optical technologies to deliver four pulses of light 30% more powerful per joule than any SU laser technology. Because this allows them to be small for their output, Ijad engineers usually mount them to a swivel on top of Scrambler frames, giving them a wide field of attack. (2Rd)

Turn:

Sebastian's mobile frame #1

- » Sebastian's **Target:**
Joshua's point mobile frame #1
- » Sebastian's **Dice:** 2W 2Rd 1G 2Y
- » Sebastian's **Roll:**
W6 W2 R5 R1 G5 Y3 Y5
- » Sebastian's **Defense: W6**
- » Sebastian's **Attack: R5**

Stop! To resolve the attack, we need to know Joshua's mobile frame's defense, so we **switch to combat order.**

Turn:

Joshua's mobile frame #1

- » Joshua's **Target:** return fire at Sebastian's mobile frame #1
- » Joshua's **Dice:** 2W 2Rd 2B 1Y
- » Joshua's **Roll:** W5 W1 R2 R6 B4 B5 Y4
- » Joshua's Defense: **B5**

Stop! That's all we need from Joshua's mobile frame to resolve Sebastian's attack.

Turn: Sebastian's mobile frame #1, resuming

- » Sebastian's **Attack: R5** vs Defense **B5**: no hit, no damage
- » Sebastian's **Move: G5** (falling back toward the station at B)
- » Sebastian's **Spot: Y5** (spotting Joshua's point mobile frame #1)

End of Sebastian's turn.

We're in combat order **with a mobile frame's turn still outstanding**, so we resume it.

Turn: Joshua's point mobile frame #1, resuming

- » Joshua's **Move: W5** (advancing to maintain range with its target)
- » Sebastian's mobile frame #1 **already has a defense number**, so we can **resolve the attack uninterrupted**.
- » Joshua's **Attack: R6** vs Defense **W6**: no hit, no damage
- » Joshua's **Spot: Y4** (spotting Sebastian's mobile frame #1)

End of Joshua's turn.

There are no mobile frames whose moves are still underway, so combat order ends and we **return to tactical order**. Sebastian still has the high score, so he's up. The last exchange drew Joshua's mobile frame #1 well forward, and put a tasty Y5 spot on it, so he chooses one of his harrying mobile frames.

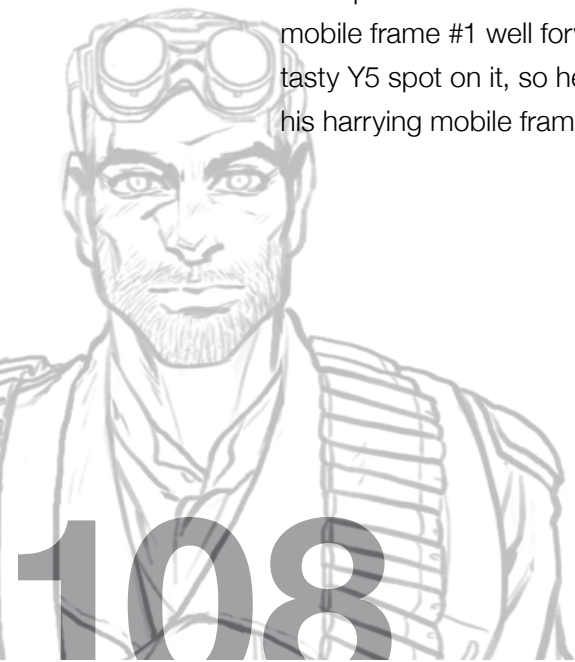
Turn: Sebastian's frame #2

- » Sebastian's **Target**: Joshua's mobile frame #1
- » Sebastian's **Dice**: 2W 2Rd 1G 1Y
- » Sebastian's **Roll**: W2 W4 R3 R3 G2 Y1
- » Sebastian's **Defense**: **W4**

Joshua's mobile frame #1 **already has a defense number**, so we can **resolve the attack** uninterrupted.

- » Sebastian's **Attack**: **R3+Y5** vs **B5**: hit for **3 damage dice!**
- » Sebastian's **Move**: **G2** (falling back slightly)
- » Sebastian's **Spot**: **Y1** (spotting Joshua's mobile frame #1 again)

End of Sebastian's turn.

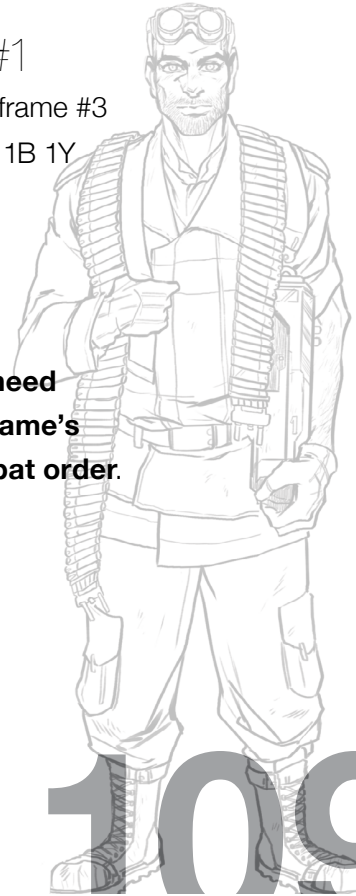


We're still in tactical order and Sebastian's still up. He considers pressing the attack on Joshua's single exposed mobile frame but decides that it'll still be there later if he still wants it. Instead of taking his third mobile frame's turn, **he passes. Vincent has the second highest score, so now it's his choice:** choose a mobile frame to take its turn, or pass too? He chooses to have one of his rear heavy artillery mobile frames go.

Turn: Vincent's frame #1

- » Vincent's **Target:** Sebastian's frame #3
- » Vincent's **Dice:** 2W 2Ra d8Ra 1B 1Y
- » Vincent's **Roll:**
W4 W6 R1 R2 d8R5 B4 Y5
- » Vincent's **Defense: B4**
- » Vincent's **Attack: W6**

Stop! To resolve the attack, **we need to know Sebastian's mobile frame's defense**, so we **switch to combat order**.



Turn: Sebastian's frame #3

- » Sebastian's **Target:** Joshua's frame #2
- » Sebastian's **Dice:** 2W 2Rd 1G 2Y
- » Sebastian's **Roll:**
W5 W2 R2 R6 G4 Y6 Y5
- » Sebastian's **Defense:** W5

Stop! That's all we need from Sebastian's mobile frame to resolve Vincent's attack.

Turn: Vincent's frame #1,
resuming

- » Vincent's **Attack:** W6 vs W5: hit for **1 damage die!**
- » Vincent's **Move:** W4 (backing up 1 to slightly better cover)
- » Vincent's **Spot:** Y5 (but there's no enemy mobile frame within range, so the spot's wasted)

End of Vincent's turn.

We're in combat order with **a mobile frame's turn still outstanding**, so we resume it.

Turn: Sebastian's frame #3,
resuming

- » Sebastian's **Move: G4** (advancing into range with Joshua's mobile frame #2, despite his plan to fall back)
- » Sebastian's **Attack: R6**

Stop! To resolve the attack, **we need to know Joshua's mobile frame's defense,** so we switch to its turn.

Turn: Joshua's frame #2

- » Joshua's **Target:** Sebastian's frame #3
- » Joshua's **Dice:** 2W 2Rd 1B 1G 1Y
- » Joshua's **Roll:** W5 W4 R6 R3 B2 G6 Y5
- » Joshua's **Defense: W5**

Stop! That's all we need from Joshua's mobile frame to resolve Sebastian's attack.



111

Turn: Sebastian's frame #3,
resuming

- » Sebastian's **Attack: R6** vs **W5**: hit for **1 damage die!**
- » Sebastian's **Spot: Y6** (spotting Joshua's mobile frame #1, replacing the standing **Y1** with the new **Y6**)

End of Sebastian's turn.

We're in combat order **with a mobile frame's turn still outstanding**, so we resume it.

Turn: Joshua's frame #2,
resuming

- » Joshua's **Attack: R6** vs Sebastian's **W5**: a hit for **1 damage die!**
- » Joshua's **Move: G6** (advancing into cover with his mobile frame #1)
- » Joshua's **Spot: Y5** (spotting Sebastian's mobile frame #2, now in range)

End of Joshua's turn.

There are no mobile frames with turns underway so combat order ends and we return to tactical order. Sebastian still has the high score so he's up. He chooses to activate his fourth and last mobile frame.

Sebastian's mobile frame #4 attacks Joshua's mobile frame #1. Since it already has a defense number, we don't switch to combat order. Sebastian's mobile frame hits it hard for 4 damage dice, falls back slightly, and ends its turn.

We're still in tactical order, but all of Sebastian's mobile frames have taken their turns, so Vincent's up. He chooses his mobile frame #2 to attack Joshua's mobile frame #3. We need to know its defense in order to resolve the attack, so we switch to combat order.

Joshua's hands are a bit tied. Vincent keeps attacking him, but he needs to

concentrate fire on Sebastian or let Sebastian win. He names Sebastian's mobile frame #3 as his target and rolls his dice.

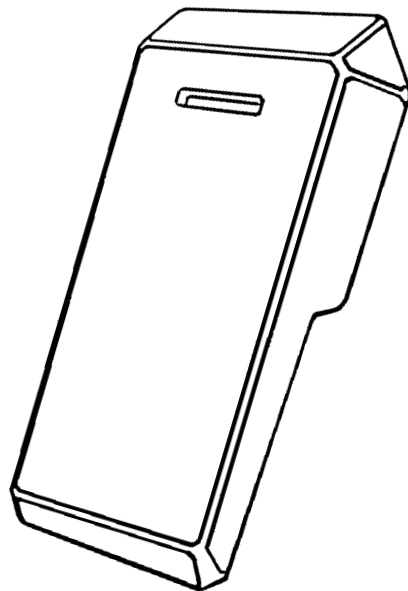
As soon as we know his defense number we switch back to Vincent's mobile frame #2's turn to resolve its attack. It doesn't hit, and again holds its position. Its turn ends.

We resume Joshua's mobile frame #3's turn. Sebastian's mobile frame #3, its target, already has a defense number, so we resolve that attack now, a hit for 1 damage die and a hit that destroys the tree it's taking cover from. Joshua's mobile frame

#3 advances into the open, lights it up with a bright Y6, and its turn ends.

There are no turns underway so we return to tactical order. Sebastian's mobile frames have all had their turns, so Vincent's up. He chooses his mobile frame #3 and **names Sebastian's mobile frame #3, beautifully illuminated by Joshua's spot**, as his target. He rolls his dice, advances into range, and hits it for a potentially devastating 5 damage dice. He spots it in turn with a Y4 and his turn ends.

We're still in tactical order. **Vincent has one frame left, but he chooses to pass.**



A standard-issue United Mars Foreign Legion CS-14 riot shield gives simpler but effective protection from rioters. (1B)

Joshua's up, and **since there are no frames to go after his, he can't pass.**

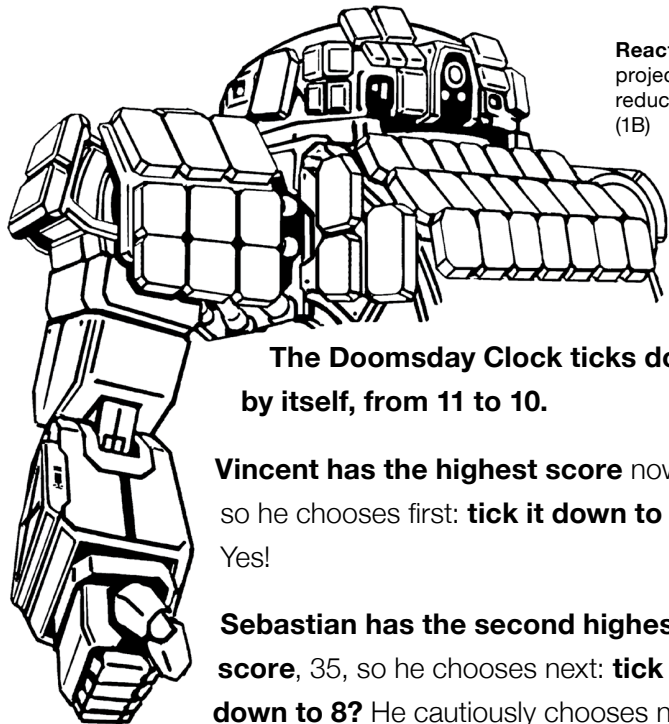
He chooses his mobile frame #4 and names Sebastian's wounded, exposed mobile frame #3 as his target. He rolls his dice, advances, and delivers the death blow in the form of a 3 damage die hit that came up 5 5 6. Sebastian's mobile frame #3 is destroyed, so we **take a quick pause to recalculate his score.** Now he holds 5 assets, each worth 7, for 35 points — he's lost the lead to Vincent's 36! He promises himself never, ever again to advance when his plan is to fall back.

That done, Joshua's mobile frame #4 drops a weak spot on Vincent's mobile frame #3 and its turn ends.

We're still in tactical order. Vincent chooses to take his last mobile frame's turn, naming Joshua's mobile frame #5 as his target. His roll won't let him advance into range, though, so he loses his attack, instead advancing slightly into better cover.

Joshua's mobile frame #5 is the only one left. Joshua names Vincent's mobile frame #3 as his target, advances, and with the spot manages to hit for 1 damage die.

All the mobile frames have had their turns, so the round ends.



Reactive armor on an ST-07 destroys incoming projectiles and diffracts incoming energy beams, reducing their impact on the frame.
(1B)

The Doomsday Clock ticks down 1 by itself, from 11 to 10.

Vincent has the highest score now, 36, so he chooses first: **tick it down to 9?**
Yes!

Sebastian has the second highest score, 35, so he chooses next: **tick it down to 8?** He cautiously chooses not to.

Joshua has the third highest score, 21, so he chooses next: **tick it down to 8?** No!

We **tidy the field**, pulling off all the blue defense dice and unused yellow spot dice, and it's time for round 2. **Round 2 starts, as always, in tactical order.** Vincent has **the highest score, so he's up first...**

RESOLVING ATTACKS

Does the Attack Strike Home?

If there is a spot on your target, you may choose to **add its value directly to your attack**. Remove that spot die from the field. **It doesn't matter who placed the spot.** You can use anybody's spot, and anybody can use yours.

Compare your attack die to your target's defense die.

If your target's defense equals or beats your attack, the attack misses. It's resolved; continue with your turn.

If your attack (including spot) beats your target's defense, the attack hits.

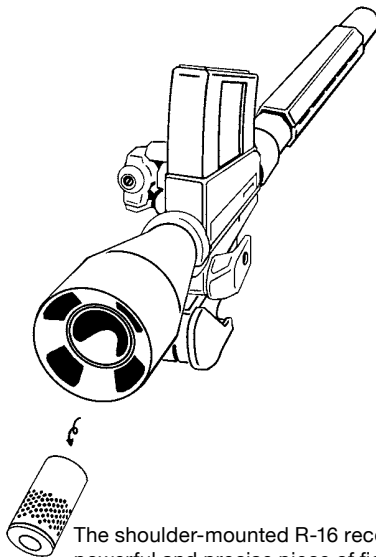
How Much Damage?

Roll a number of damage dice equal to your attack value (including spot) minus your target's defense value. For damage dice, color doesn't matter.

Each die you roll might inflict damage.

Choose the appropriate damage chart based on weapon range and cover.

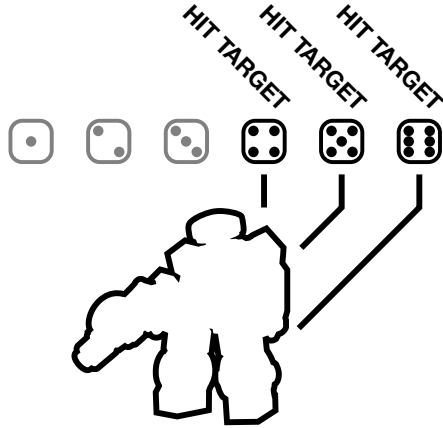
Recall that a mobile frame is in cover against an attacker if it is within hand to hand range of terrain or a structure on the battlefield that is between it and its attacker, in whole or in part.



The shoulder-mounted R-16 recoilless rifle is a powerful and precise piece of field artillery used or copied by many of the forces in SC 0245. (2Ra & d8)

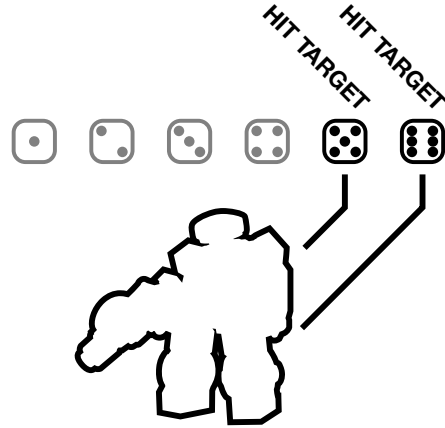
Damage chart 1:
hand to hand attacks

Hand to hand attacks ignore cover.



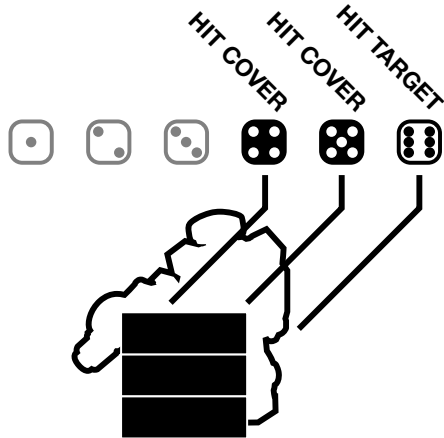
Damage chart 2:
ranged attack, no cover

For direct fire or artillery attacks,
target not in cover



Damage chart 3: ranged attack, normal cover

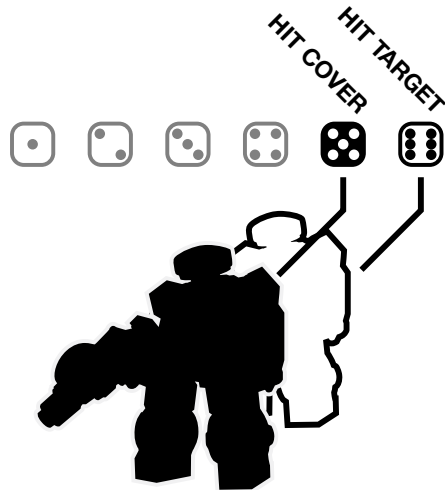
For direct fire or artillery attacks,
target in cover



Apply damage to the cover first: 4s and 5s before 6s. If the cover's destroyed mid-process, switch to **damage chart 2**. Any 5s left blow through the destroyed cover to hit the target mobile frame.

Damage chart 4: ranged attack, covered by a mobile frame

For direct fire or artillery attacks, when a
mobile frame covers the target



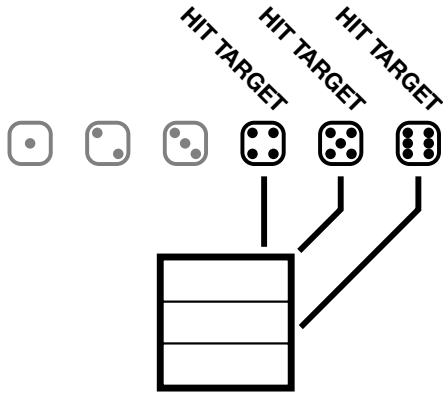
**Apply damage to the covering mobile
frame first:** 5s before 6s. If the covering
frame is destroyed mid-process, switch
up to **damage chart 2**. Any 5s left blow
through the destroyed frame to hit the
target mobile frame.

**If the covering mobile frame has two
defensive systems, it takes no damage.**

A second defensive system allows a mobile
frame to provide cover without risking
damage.

Damage chart 5: attacks against terrain

For any attack in which the target is not a mobile frame



When Terrain Takes Damage

For each damage it takes, it loses 6 pieces. The attacker chooses which pieces. Recall that structures fewer than 3 bricks high do not count as cover.

When a mobile frame takes damage:

For each damage it takes, it loses one of its systems. Its **owner** chooses which system it loses. Pop it off the frame and drop it on the field. Since that system's gone, it doesn't provide its die or dice in any future turns.

If it has no systems left, it loses one of its white dice.

If it loses both its white dice, it's destroyed.

If it is within hand to hand range of a station, its owner can choose to have it ignore one damage and instead abandon its position, moving the mobile frame 1 ruler unit further away from the station.

Taking damage doesn't affect the dice you've already rolled unless the frame is destroyed. They're yours to use until the end of this mobile frame's turn.

When one of your mobile frames is destroyed:

You lose points for it, so **recalculate your score now.**

The attack's resolved!
Continue with your turn.

123

Example Attack

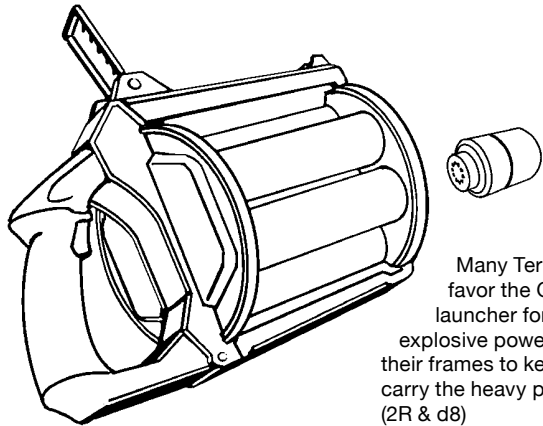
- » **Joshua's playing point offense**, and his point mobile frame, an ST-10 Osprey operated by Captain Kader, is coming under attack. **It's already been spotted** by the first of Sebastian's mobile frames, the scrambler Ghanat Doajihé, and now **the second of Sebastian's mobile frames, the scrambler Ghanat Ekauechihé, is following through.**
- » Joshua's defense: B5
- » Sebastian's attack: R3
- » The spot: Y5
- » $R3 + Y5 - B5 = 3$ **damage dice**
- » Joshua's mobile frame is in cover behind a ragged wall, so he rolls his 3 damage dice on damage chart 3.
- » Roll: **1, 4, 5**
- » The 1 counts for nothing; **the 4 and the 5 are hits.**
- » **First the 4 hits the cover.** When terrain takes damage, each hit lets the attacker break off 6 bricks. As it happens, this is enough to blow a hole in the wall big enough to ruin it for cover. **The 5 blows through the ruined cover and hits the target behind it**, inflicting 1 damage to Joshua's mobile frame. This means that Joshua has to destroy one of its systems: its grenade launcher (2Rd), its sensor pod (1Y), its body armor (1B), or its shield (1B). He pops off its shield and leaves it among the scattered bricks of the smashed wall.

Can the attacker make the attack, even though it's a close judgment call?

Yes! When it comes to whether an attack is legitimate, be generous to the attacker.

Is the defender in cover, even though it's a close judgment call?

Yes! When it comes to whether something counts as cover, be generous to the defender.

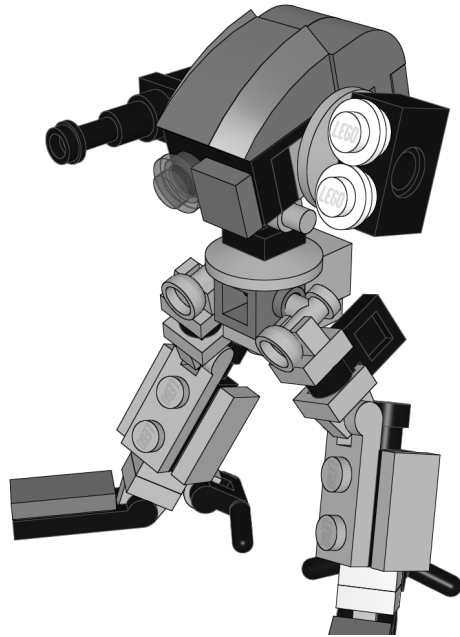


Many Terran Expeditionary Marines favor the GL-122 "Tickler" grenade launcher for its ease of reloading and explosive power. Some even strip armor off their frames to keep their weight low enough to carry the heavy piece of equipment.
(2R & d8)

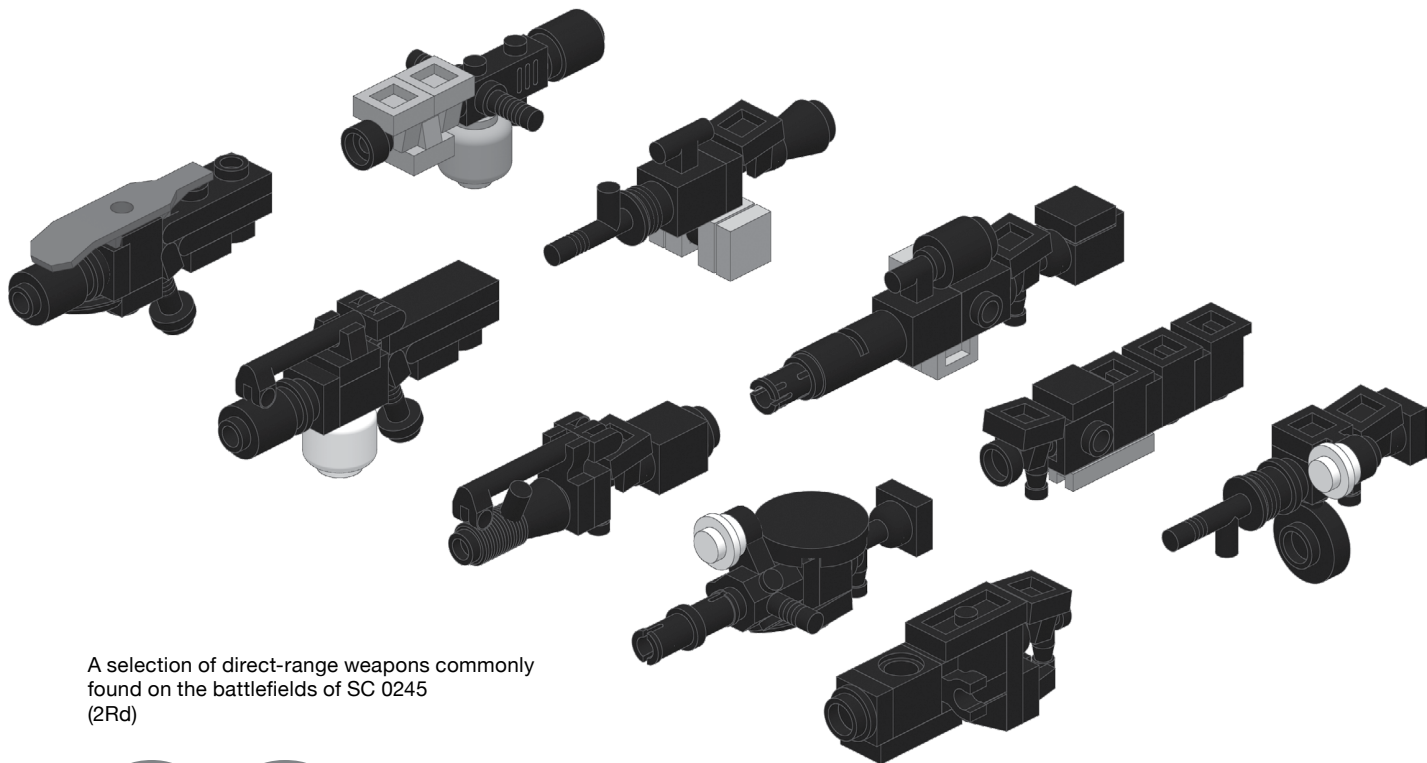
SLOGANS, SOUND EFFECTS, & TRASH TALK

You know it.

**I DO TO YOU NOW THE ENORMOUS
HURT! SPAKITA SPAKITA KABOOM!
YOU'RE JUST A HURDY GURDY MAN!**



127



A selection of direct-range weapons commonly found on the battlefields of SC 0245 (2Rd)

SPECIAL CASES AND ADVANCED RULE OPTIONS

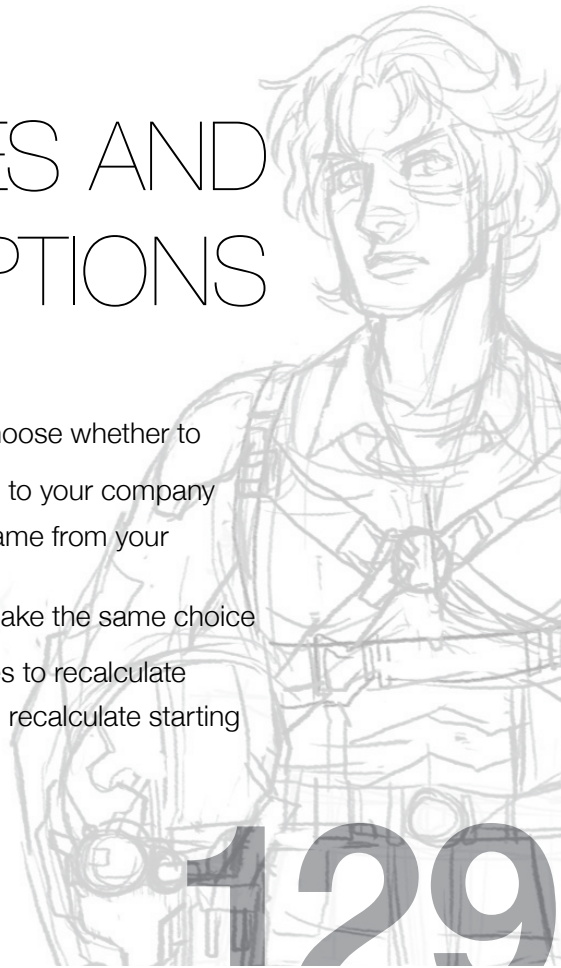
Ties for Defense

When you compare your companies during setup, you might **tie for the highest** starting score. When this happens, call odds-evens and roll a die.

If you're the winner, choose whether to

- » add a mobile frame to your company
- » remove a mobile frame from your company
- » force the loser to make the same choice

Recompare companies to recalculate scores per asset, then recalculate starting scores. Proceed.



If you think you might tie, be sure to bring a spare mobile frame to the game with you!

Ties for Offense

When you compare your companies during setup, you might **tie for the lowest** starting score. When this happens, call odds-evens and roll a die.

If you're the loser:

- » you have to place the point mobile frame.
- » you go last in tactical order, until your scores change so there's no longer a tie.

Proceed.

Contested Stations

In a game with three or more players, it's possible to lose one of your stations without any opponent getting to seize it under one circumstance:

- 01.** You have a mobile frame within hand to hand range of a station you own;
- 02.** Two or more of your opponents have also moved mobile frames into hand to hand range of the station;
- 03.** Your mobile frame departs, either by moving away to abandon the station or by getting destroyed.

When this happens, your opponents both have mobile frames who could seize the station, but neither can seize it because the other's contesting it. You lose the station, but neither of them get it until they resolve their standoff.

Recalculate your own score now to reflect the loss of your station. Don't recalculate your opponent's score until it's resolved.

Aborting An Attack

When you've declared an attack on a target, after you've rolled your dice, you can choose not to make the attack after all. You might choose to do this if, looking at the numbers, you don't think your attack will be effective enough and you'd rather not switch to combat order and give the target frame its turn just yet.

Once you've chosen an attack number and told it to your target, it's too late to take it back.

An attack of 0 is the same as no attack. You don't need to know your target's defense

in order to resolve it, so don't switch to combat order. An attack of 1 does count as an attack, because of the (sometimes merely technical) possibility that your target will have a defense of 0.

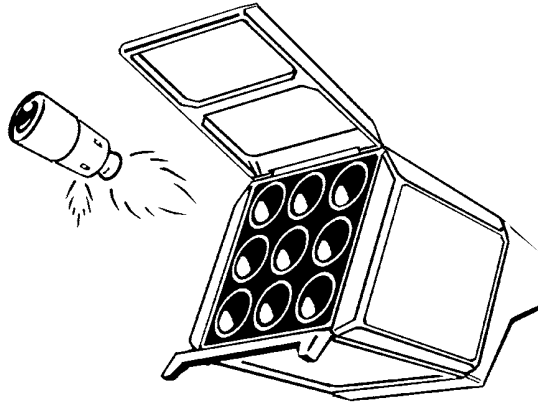
Split-range Weapons

With everyone's approval, you can declare your weapon systems to be **split-range**. A split-range pistol, for instance, might add 1 red die at direct fire and 1 red die at hand to hand, instead of 2 red dice at either. A split-range assault rifle with a scope might add 1 red die at direct fire range and 1 red die at artillery range.

You sacrifice maximum effect for flexibility.

For purposes of building your frames, a split weapon counts as two half-systems, one of each type. A split hand to hand/direct weapon counts as half a hand to

hand weapon system and half a direct fire weapon system, for instance. You still aren't allowed to have more than 2 systems of each type.



Simple and effective, the “Eggbox” rocket launcher mounts readily on the shoulder of many frames, delivering damage at a variety of ranges. (1Rd, 1Ra)

Single-Shot Rockets

Every company must carry the same number of single-shot rockets. By default, every company must carry 3.

Before you create your companies, you can agree as a group to some other number. Fewer, down to 0, will make the battle closer and harder-fought, with the attacker at the disadvantage. More, up to say 6 or 8, will make the battle bloodier and more uncertain, with the attacker at the advantage.

Climbing, Elevation and Falling

Before you field your companies, you can agree as a group to allow climbing.

Mobile frames can gain benefit from climbing onto structures if they're at least 6 bricks high and at least 4 studs in area.

When a mobile frame moves, climbing up or down 6 bricks' height counts the same as moving one ruler unit horizontally. To climb, a mobile frame has to have at least one appropriate movement system. A mobile frame with no movement systems can

climb stairs or a ladder, if it's built into the structure.

A higher mobile frame is in cover to all lower mobile frames. A lower mobile frame is out of cover to any higher mobile frames, unless it's under a roof. Mobile frames at the same elevation determine cover normally.

Don't consider elevation differences of less than 6 bricks' height.

If a mobile frame falls — if, for instance, the structure it's standing on is destroyed underneath it — it can take damage. Roll 1 damage die for every 3 bricks' height it's fallen, and use damage chart 1: hand to hand attacks.

Exotic Terrain and Environmental Systems

Before you create your companies, you can agree as a group to include hostile terrain — deep water, tangleweed, the vacuum of orbit — in your upcoming battlefield.

When you build your mobile frames, you can give them the appropriate environmental system. It counts against your limit of 4 systems per mobile frame.

In order to function effectively in hostile terrain, a mobile frame needs the appropriate environmental system. Without it, when you roll dice, set one of your white dice aside unrolled.

Per-unit Turn Order

As a group, you can decide to play with per-unit order instead of tactical order.

At the beginning of the round, roll 20-sided dice for your mobile frames' turn order.

A fully-fitted mobile frame — one with 4 systems — gets 1 20-sided die for turn order.

An underfitted mobile frame — one designed with 3 or fewer systems — gets 2 20-sided dice for turn order.

Roll the dice in order and place them out on the battlefield next to their mobile frames.

The round starts at turn order 1 and counts up to 20. A mobile frame takes its turn when its turn order comes (or in combat order, as always).

A mobile frame with 2 score dice gets its turn at whichever you prefer, case by case, as they come. It still gets only one turn in the round.

Per-unit turn order adds significant time to the game, but also adds interesting tactical constraints.

CREATING YOUR OWN SETTINGS & RULE HACKS

When you create a setting or new rules for a Micro Construct Tactics Nova game like Mobile Frame Zero, you need to come to agreement with your friends so **you're all playing the same game with the same expectations.**

With your friends,
answer these

aesthetic questions:

- » Are there any **unusual features** you want? Maybe the battles are fought with tanks and infantry rather than robots? Maybe they're giant monsters? Autonomous robots? Tree-men and

goblins? Spearmen, slingers, archers, and elephants?

- » What is the **range of the conflict**? A city-state? A kingdom? A nation, planet, solar system, galaxy?
- » **When does this take place?** Does it take place in an alternate timeline of the Solar Calendar? Is it in a fantastic, historical place? Is it in some other future?
- » **How big is a human?** A single stud? A stud on a brick? Two bricks? A stud on two bricks? A Minifig?
- » **What do you expect a weapon system to look like?** What's a single hand-to-hand attachment look like? What about direct? What about artillery? When you double them, what might they be? How big are they?

» **What counts as a yellow (communication) system?** A battle flag? A war horn? A sensor dome? Be flexible with each other and encourage creativity within the parameters of your setting.

» **What counts as a green (movement) system?** A jet pack? Skis? Extra legs? Be flexible with each other and encourage creativity within the parameters of your setting.

» **What counts as a blue (defense) die?** A shield? Stealth cladding? Be flexible with each other and encourage creativity within the parameters of your setting.

With your friends,
answer these **rules**
questions:

» **How far is direct fire range?**

Remember that most frames can move a maximum of 6 units and some can move up to 7 or 8 a quarter of the time. If you make direct fire range more units, it will make both artillery and hand-to-hand less useful because there will be less area covered by artillery, and frames armed with hand-to-hand weapons will have a harder time traversing the distance of direct fire range without getting shot twice.

» **How far is hand-to-hand range?**

If it's greater than 1, it will reduce the

value of direct range weapons while making hand-to-hand easier to use.

» **How big is a unit of measurement?**

If you make units bigger while keeping the same scale of table, frame, and cover, it means that artillery will become less important because it will lose area off the edge of the table as direct range gets longer. Hand-to-hand will also become more important because the area within 1 unit of a frame gets bigger proportionate to the square of the radius. It will also mean that it will be easier to move across open area, so you might consider putting your cover farther apart.

» **Are there a different number of ranges?**

More ranges will mean that there will be fewer opportunities to do damage, encouraging players to design frames that specialize at a range. Fewer

ranges mean that it will be easier to do damage without making choices to do it.

- » **When cover takes a hit, how many pieces do you remove?** If you remove more than six, players will have to move their frames constantly to stay in cover and will take more damage at direct and artillery range, making it harder to capture objectives. If you remove fewer, cover will be safer, which will make it easier to rely on as you plan a battle, but might encourage players to hold their frames in place.
- » **Do frames without ranged weapons move faster?** If they get a green d8 (as by the basic rules), they'll be easier to keep in formation and will move forward faster than more heavily armed frames. If they don't get that bonus, they will take

more hits on the way to attack a target, making them a less viable type of frame.

- » **Do hand-to-hand weapons do more damage than ranged weapons?** If they work like they do in the basic rules (hitting on a 4, 5, or 6), the extra damage they inflict makes it worth traversing the dangerous distance to the target. If you make them do the same damage as ranged weapons, more of a fight will take place at range, with the capture of objectives only taking place when it's safe for an attacker to advance.
- » **Can all units spot?** If units with no yellow dice can spot through cover, they will spot more often, though usually with a 1 or 2. If they can't spot at all without a yellow die, the yellow dice in a company will become very valuable, making an interesting and hard choice for players.

Frames will tend to take less damage, making it safer to run out of cover.

- » **At what range can you spot?** If you spot at hand-to-hand range instead of direct, it will encourage players to dive into close combat more and will reduce the effectiveness of ranged attacks.
- » **Can a frame with two yellow dice instead spot two frames instead of spotting anywhere on the board?** This will put more yellow dice on the table in your favor but you'll need to get scouts to the front, rather than having a commander spot from a safe distance.
- » **Does a second blue die allow a frame to safely provide cover as in the basic rules?** If not, while it's valuable to have a second blue die, it will almost always be better to equip a

frame with a more active type of system — yellow, red, or green.

- » **Are there special design parameters?** E.g., must there be at least one yellow die in each company? Must every unit carry at least one hand-to-hand weapon? Are ranged weapons limited in number?
- » **Is there a maximum number of frames less than eight?** If the maximum is fewer, play will be faster and more tense, though there will be fewer strategic options.
- » **Does something give a frame extra dice?** What circumstances, exactly, can all players use to gain those dice? Are they something at design time or do those dice happen in play?

A Few Non-Obvious Effects of Changing Effectiveness

You might want to change the way the numbers work in your Micro Construct Tactics games. Here are some (but certainly not all) things to think about as you determine how you want the game to work.

You might want to implement such changes only circumstantially, giving a bonus or penalty according to a frame's position on the board or the doomsday clock, for instance.

Defense

Increasing the effectiveness of defense

will slow play; games will take much longer to play, but there will be fewer upsets because it will be more attractive to play defensively than aggressively. Ultimately, this will favor the defender. It also increases the need for yellow dice.

Decreasing the effectiveness of defense

will make games faster, but if taken too far, there will be more upsets, reducing the effect of strong tactical play. It will also reduce the necessity of yellow dice, favoring large weapons and requiring more blue dice or more hiding behind cover.

Spotting

Increasing the effectiveness of spotting will favor teamwork between frames. If you increase the range of spotting, players will simply use any spare dice to spot any time, decreasing the necessary teamwork. It will also reduce the “fog of war”, making the game more deterministic and reducing the opportunities to take risks.

Decreasing the effectiveness of spotting will make it hard to do damage to a frame. The risks of standing out of cover will be lower, favoring heedless charges into fire. It will increase the “fog of war”

effect, making attacks more random in effectiveness.

Attacking

Increasing the effectiveness of attacks enhances the need for cover. This will favor the player who needs to move least: the defender.

Decreasing the effectiveness of attacks makes it less risky to move forward, favoring the attackers. If decreased excessively, it will make it prohibitively difficult to play defense.

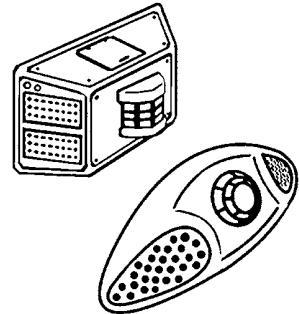
Moving

Making frames faster will make closing on opponents take fewer turns. It will be easier to take unguarded stations, as well, causing more upsets. Frames may be able to close faster than direct range, which means hand-to-hand may become more viable.

Making frame movement more reliable will make it easier for players to keep their frames in formation, encouraging that kind of company construction. If there are fewer ways to fall out of formation, it will reduce the “fog of war”

effect of the game, making the game more deterministic.

Decreasing the effectiveness of movement will make the game more decisive, as frames either get stuck in the open or simply can't make it far enough to change course on a standard-sized table. It may favor play on a smaller table! Perhaps it would be better to reduce the size of a measurement unit instead.



Early and late designs of Ijad chaff dispensers. The earlier model on the left uses adopted Solar Union manufacturing techniques where the newer one on the right uses native Ijad-engineered processes. Both scatter a sensor-confusing powder, making a target harder to hit.
(1B)

Cover

Increasing the durability of cover

will encourage players to keep frames in cover. If you place more of it, though, they'll still be able to run from cover to cover.

Increasing the effectiveness of cover

by, for instance, making it impossible to spot through will result in less damage at direct and artillery ranges and therefore more fights at hand-to-hand range.

Try it!

If you make changes like these, consider the rules they interact with, then try them out! Let us all know how it worked!

Some rules you'll be tempted by but are hereby advised to avoid:

- » Don't give anyone numerical modifiers. They're boring and hard to remember. Instead, give an extra colored die — a 6-sided die or an 8-sided die — as a modifier.
- » Don't increase the number of white dice. They make the design of frames less important, reducing the effect of the players' design choices.
- » Don't do anything that increases the effect of defense. It reduces the effect of the players' tactical choices and makes the game take longer while reducing the number of valid choices in that time. Rapid Attack!

- » Likewise, don't institute a repair system that takes place during a skirmish or battle. It reduces the effect of bold offensives, which means wise players will make fewer of them. It also encourages players to completely destroy frames because they can come back, invalidating the choice to let an enemy frame run.
- » Don't make yellow dice affect a frame's own attack. It's better to give bigger red dice to an attacker. Yellow dice are to connect frames to each other, benefitting players whose frames work together, whichever side they're on.
- » Don't use powers that require a frame to stand still, not acting for a turn. The cost is higher than it might appear and it slows the game substantially.

BASIC CAMPAIGN RULES

One battle doesn't
often settle an issue.

Sometimes a planet, system, transit gate,
or political ideology doesn't change hands
until after an extended conflict. Such a
conflict is composed of many battles, and
together those are called a campaign.

These rules will not help you resolve the
outcome of such a campaign, but they
will give you a way to establish continuity
between games.

If you're playing a campaign game, do the following:

Add a single “special objective” to the game. Name it. Is it a popular religious, industrial, or political leader that one side wants to hold responsible and another wants as a figurehead? A prototype mobile frame? A spaceport that is the last connection to the transit gate?

Place it by consensus after everyone has placed all their frames.

- » At the end of the game, at doomsday Zero, whoever has the special objective keeps its points, as normal.
- » Whether or not the player who owns that objective won the game, they can now determine characteristics for the next game.

When you find yourself in possession of the special objective at the end of the game, you can **do any two** of these things:

- » **Set an environmental constraint** to some or all of the table. Any frame in the special environment needs to have a special environment system in order to have both their white dice. Tell everyone before they've assembled their company for the game. For instance, if the battle is taking place at the edge of the ocean,

frames with an underwater system (air tanks or impeller thrusters) work normally in the water, where **frames that don't have that kind of system only get one white die** while they're in the ocean. If the battle is taking place in space, frames with rockets or a gyro system get a second white die while in space. If on an ice planet, only those with a heating system backpack get the second white die.

» **Determine a design constraint.**

You may determine that no one may use a certain kind of system, like communication. For example, there's a heavy, magnetic fog that makes it so no one can use yellow dice. Or perhaps all parties are out of ammunition and are fighting over a supply depot, so no one can use direct- or artillery-ranged

weapons. Or maybe acid rain has attacked all the frames' armor, meaning no one can have blue dice. You may also determine unilaterally the number of one-shot rockets each team may use.

» **Determine a reduced average number of systems per frame.**

For instance, if you determine that frames can mount an average of three systems, a company of four frames can have twelve systems, though that might mean that one frame has four systems and another has two.

» **Determine if the game will be a skirmish-scale game or a full-size battle.**

Some fun things to do with the special objective:

- » **Make it follow orders.** Whichever player owns the objective may move it 1 die in any direction once per round.
- » **Make it follow its owner.** When the owner moves, the special objective moves with them as long as they don't have to cross cover (including other frames) to do it. It can't leave the table unless the owning frame leaves with it.
- » **Make it afraid.** Once per round, everyone but the current owner can, on their initiative, move it by one in any direction.

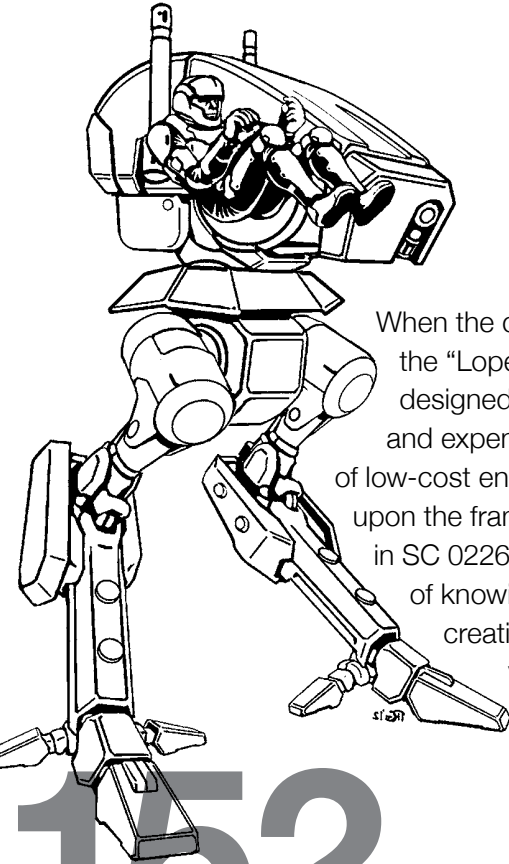
If you're thinking about making rules for how to settle a longer campaign, here's some advice:

- » Don't change a player's number of dice or frames overall as a consequence of a battle. **Winning a battle should not give a tactical advantage to any player in the next battle.**
- » If you're going to score the battles, **don't make scores rely on previous wins and losses.**

COMMON MOBILE FRAMES OF SC 0245

Mobile Frames are a common technology among the colonies of the Solar Union and are becoming increasingly common on Ijad planets as well. There are thousands of models, from garage-built combat racing machines to mass-produced military machines.

Here you will find two Free Colony frames, two Solar Union frames, and two Ijad frames. The first of each is a basic frame, designed to use commonly available LEGO parts and building techniques while the second is more advanced.

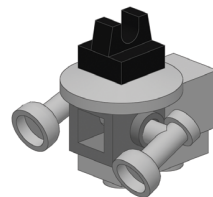
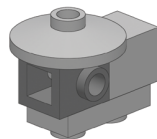
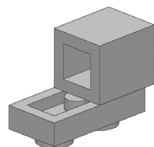
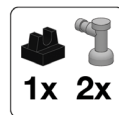
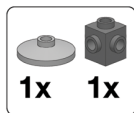
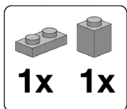


WT-04Fs Hi-Leg

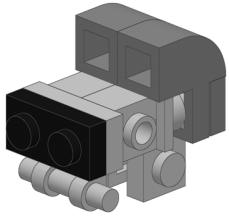
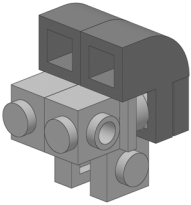
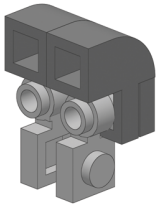
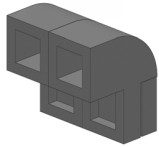
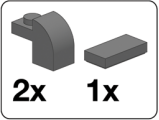
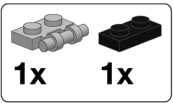
When the designers of the “Loper” labor frame designed their inexpensive and expendable masterwork of low-cost engineering to inflict upon the frame-purchasing public in SC 0226, they had no way of knowing the effect their creation would have on the very foundations of the Solar Union. All over the colonies,

mechanics have become so adept at repairing the machines that every one of them knows all of its failings and how to compensate for them.

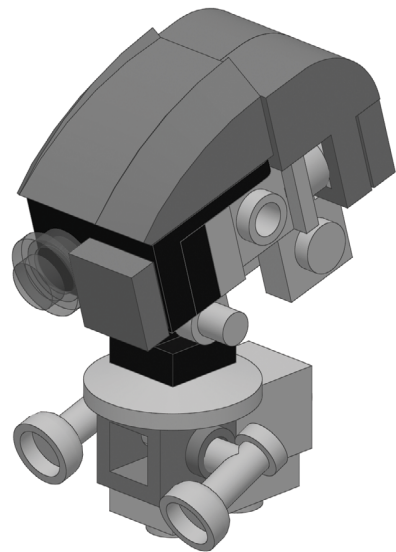
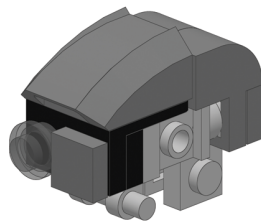
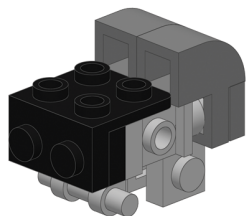
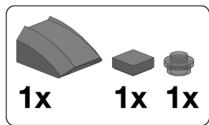
The Federation Network now rings with modifications of the design, most leaving its flawed arms off altogether and sometimes replacing them with other better or simpler systems.



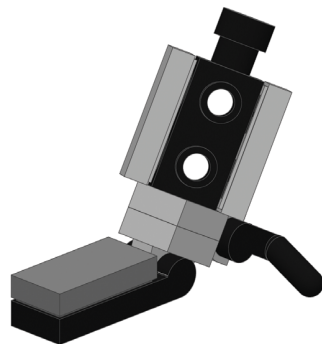
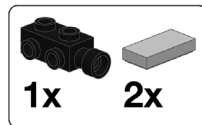
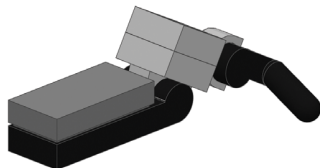
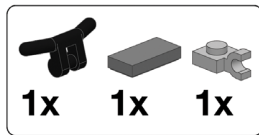
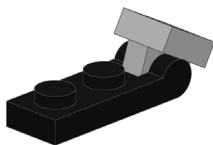
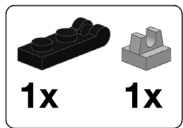
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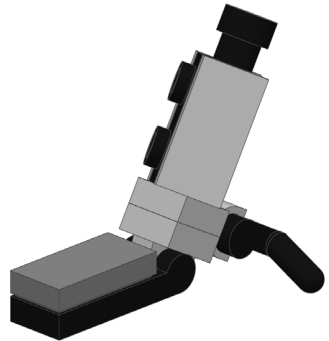
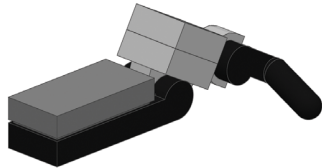
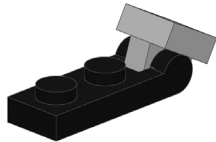
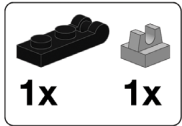
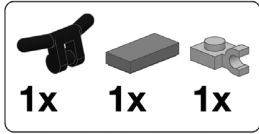
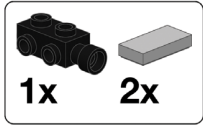
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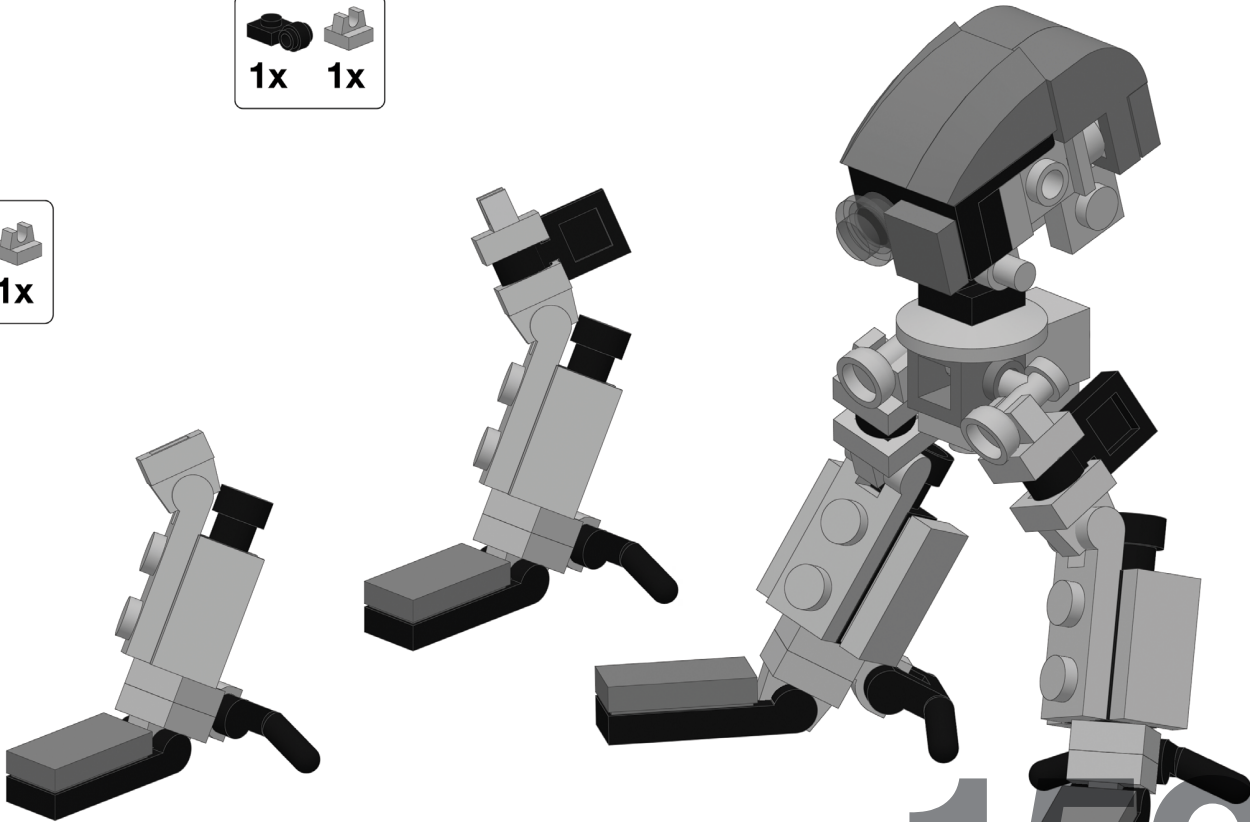
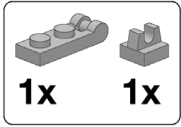
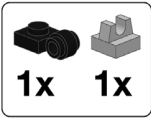
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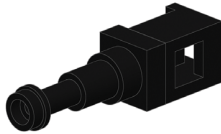
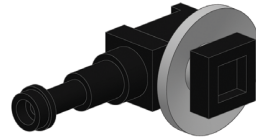
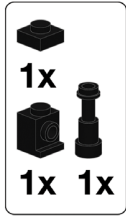
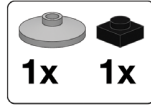


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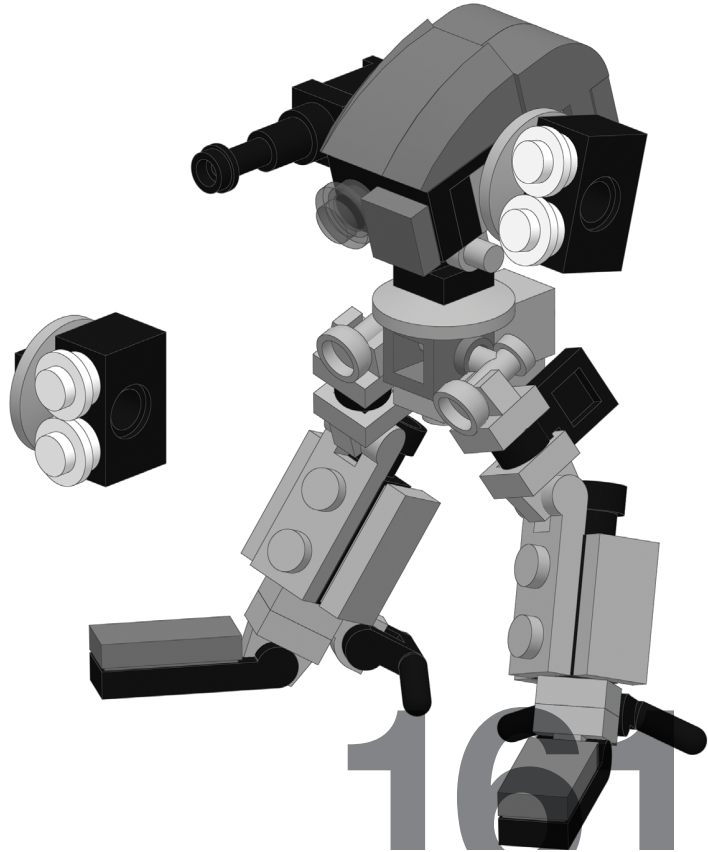
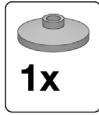
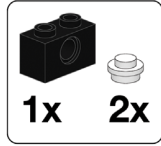


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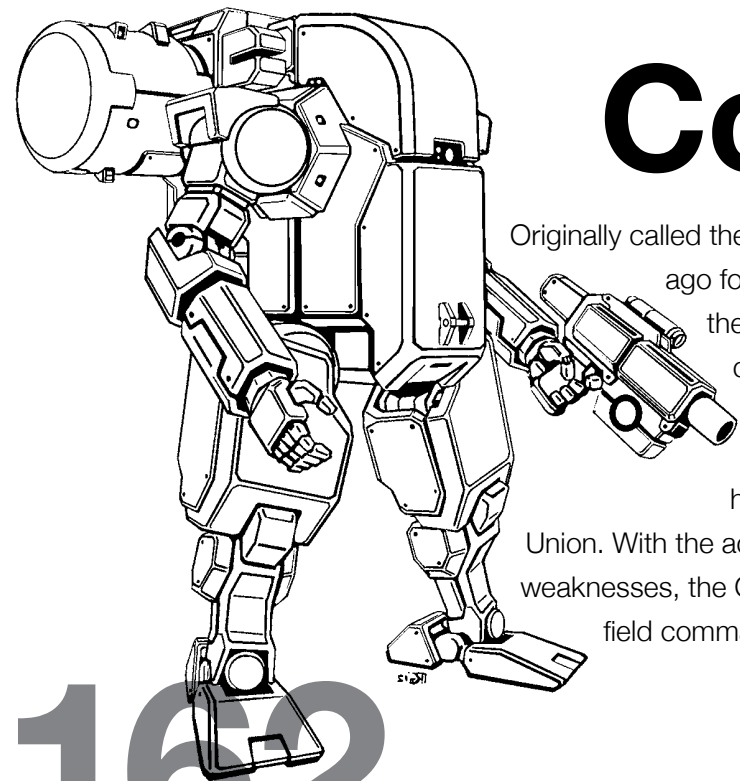


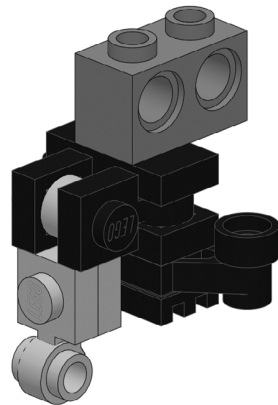
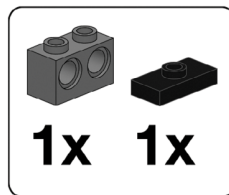
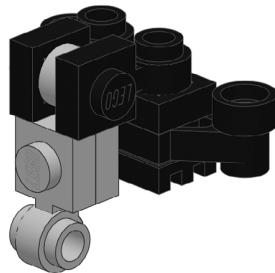
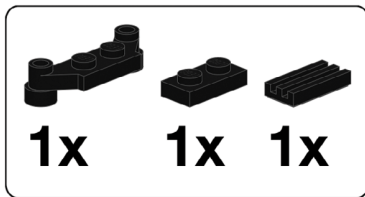
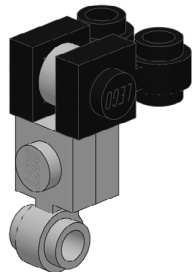
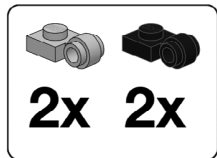
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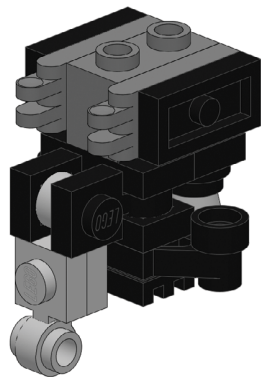
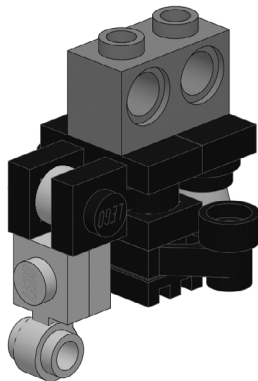
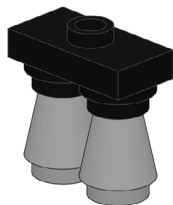
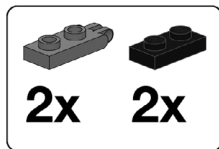
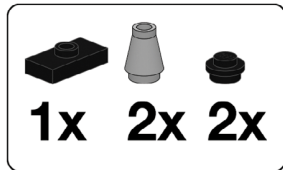
ST-02D Commissar

Originally called the Conscript, the ST-02 was designed decades ago for combat logistics. However, with the advent of the modern ST-03 standard, the incompatible 02 quickly fell out of favor. Repurposed as a labor frame to recover development costs, Oster Mobile has inadvertently been selling military hardware ever since to every colony in the Solar Union. With the addition of a sensor package making up for its weaknesses, the Commissar now performs valuable scouting and field command missions for many Free Colony cells.

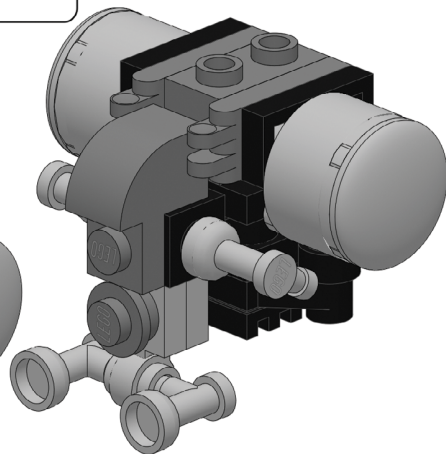
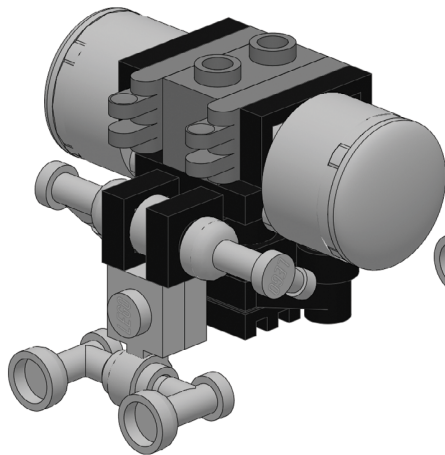
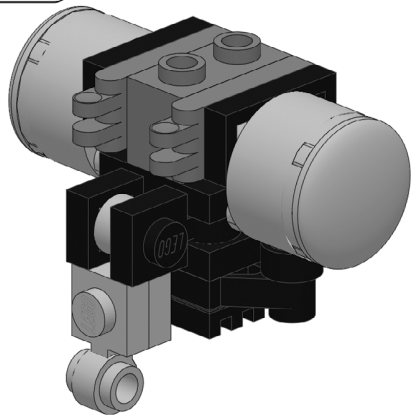
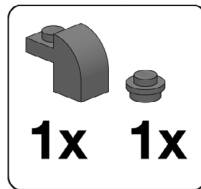
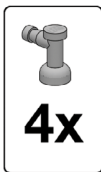
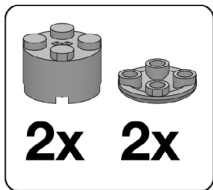




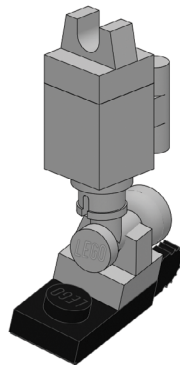
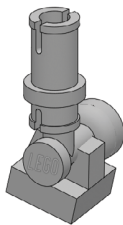
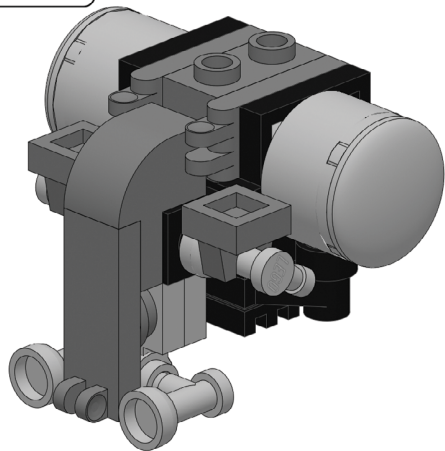
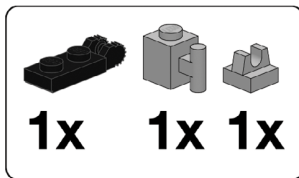
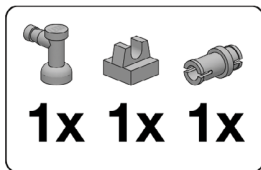
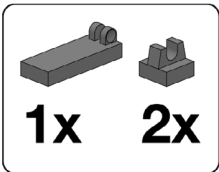
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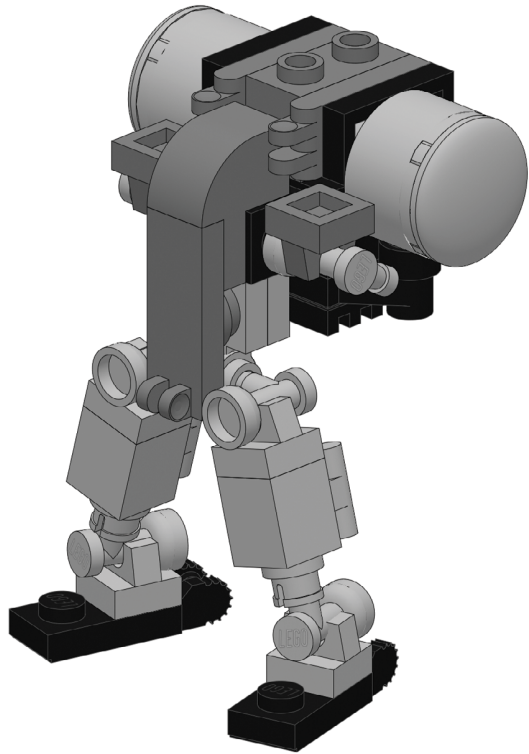
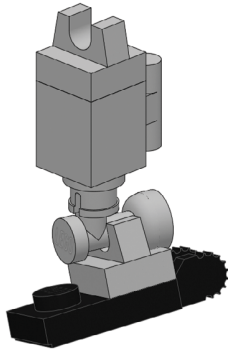
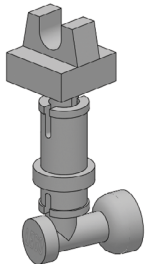
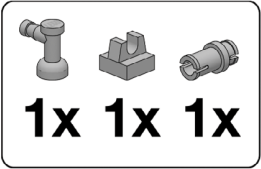
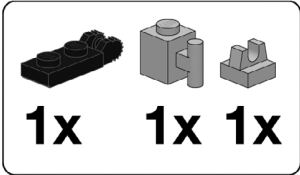
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165

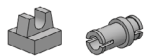


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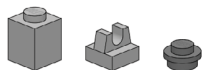


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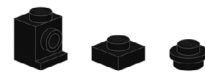
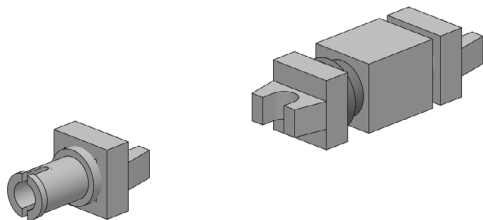
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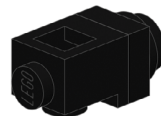
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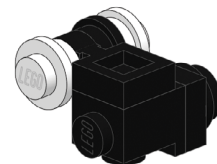
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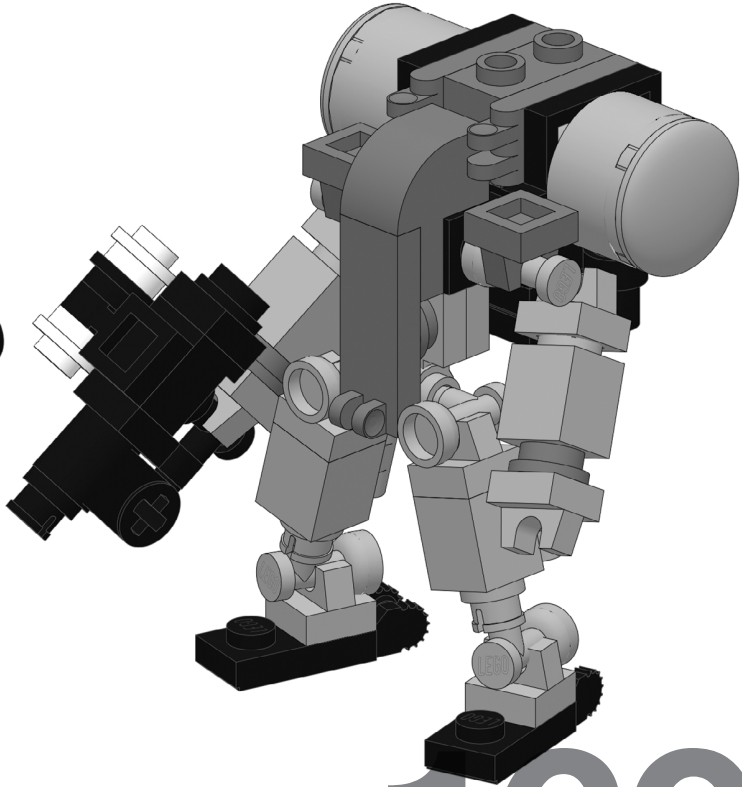
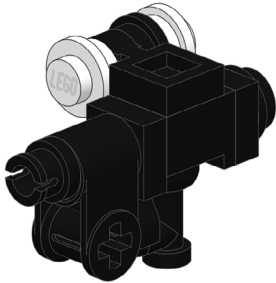
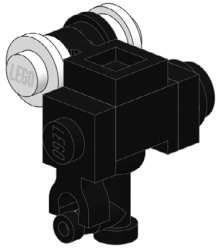
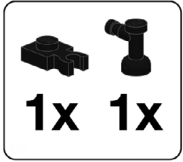
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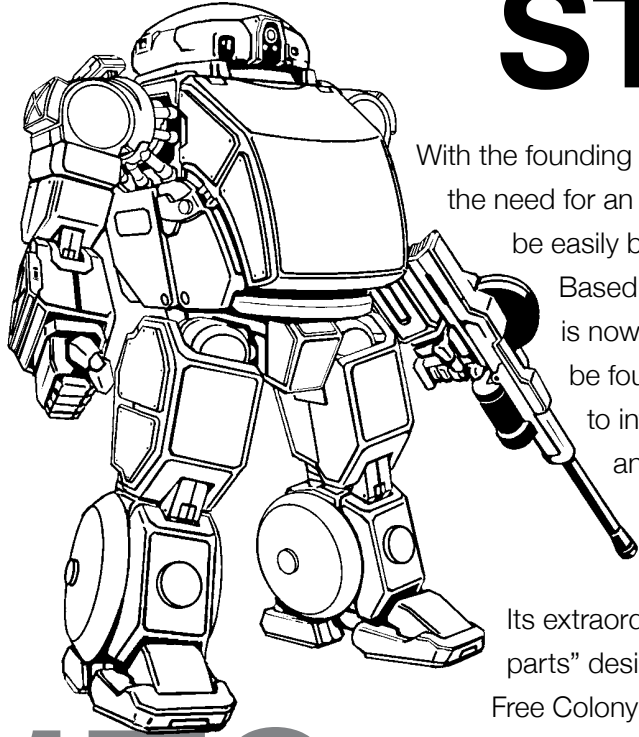
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168



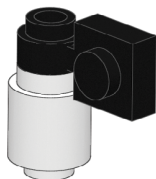
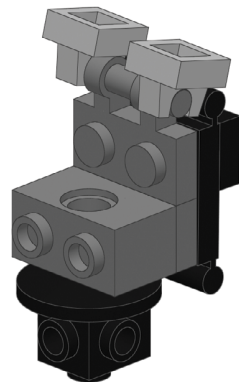
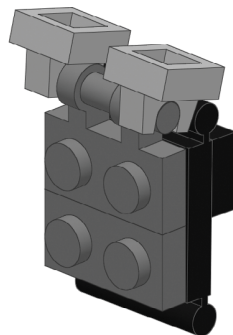
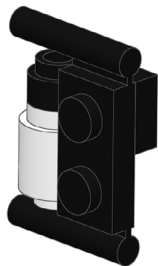
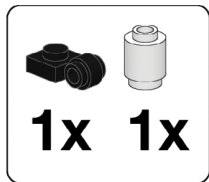
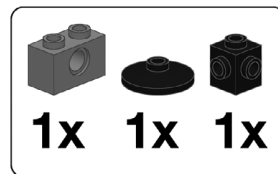
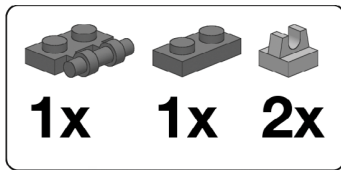
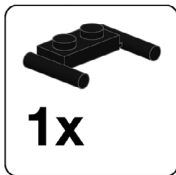
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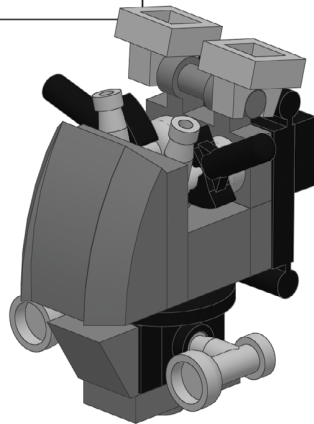
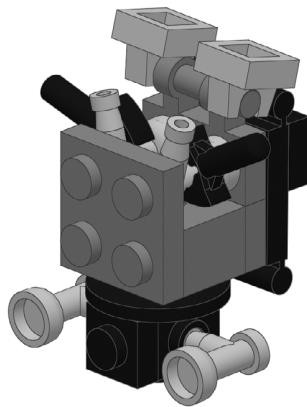
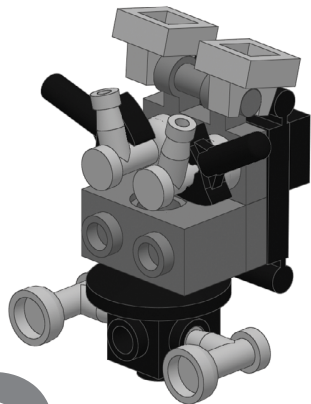
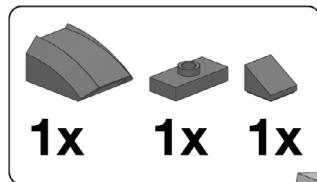
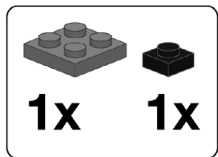
ST-07 Chub

With the founding of the United Mars Foreign Legion in SC 0212 came the need for an inexpensive and reliable mobile frame that could be easily built of local parts and modified to local conditions. Based on and expanding the ST-03 standard, the ST-07 is now used by almost all UMFL companies. Chubs can be found running on any power system, from power cells to internal combustion engines. Outfitted with sensors and communication gear and a wide assortment of weapons, most Legionnaires will swear by their Chub, though none ever call it elegant.

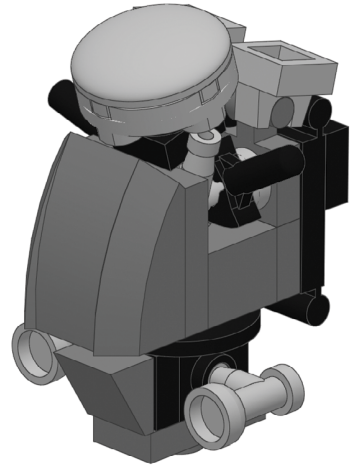
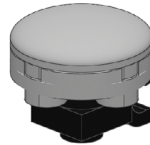
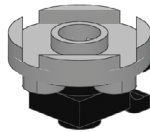
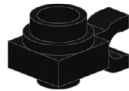
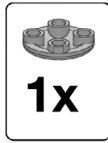
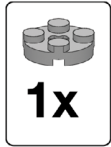
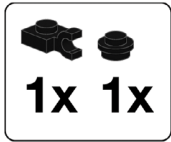
Its extraordinary reliability coupled with its “repair with local parts” design philosophy also makes stolen Chubs popular with Free Colony cells trying to obtain dedicated military hardware.



171

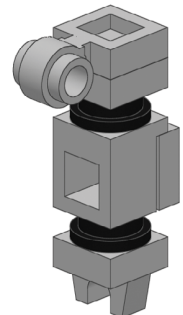
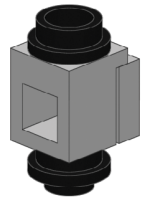
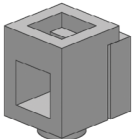
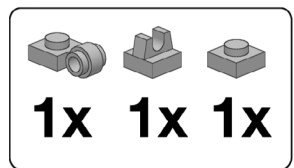
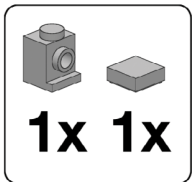


172

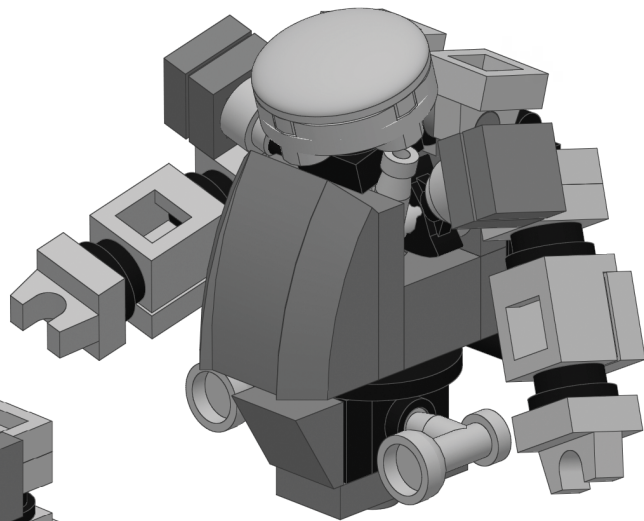
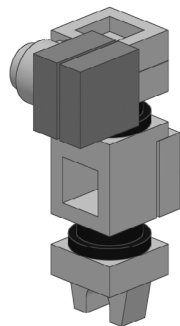
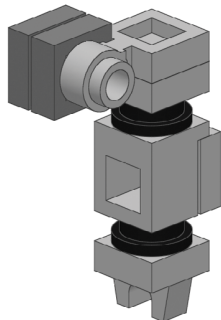
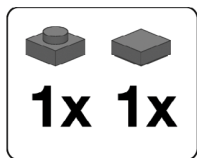
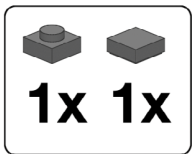


173

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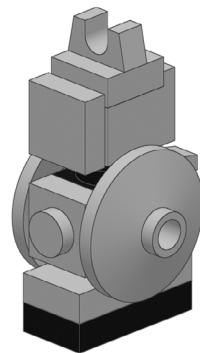
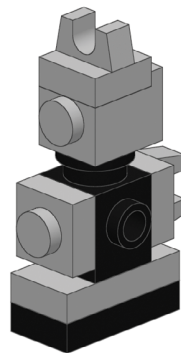
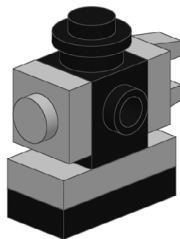
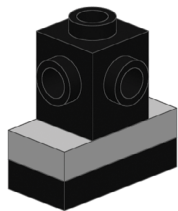
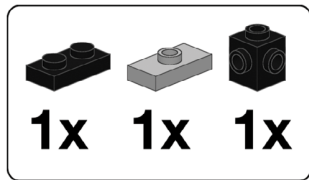
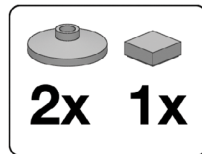
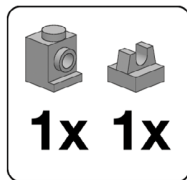
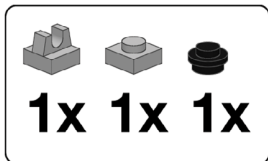


174

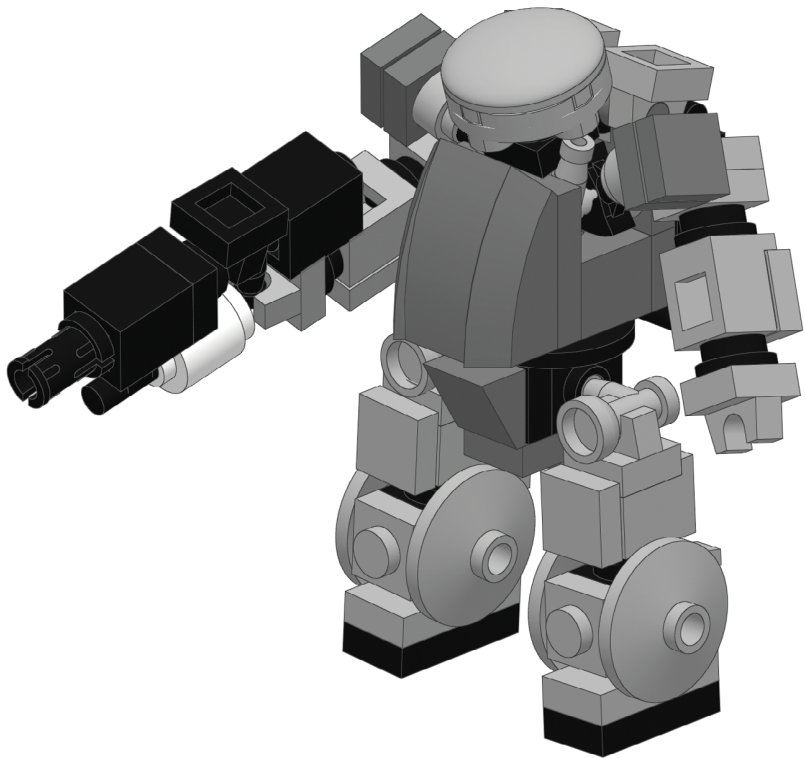
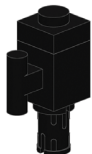
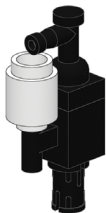
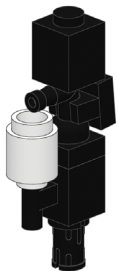
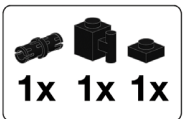
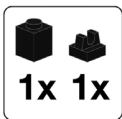


175

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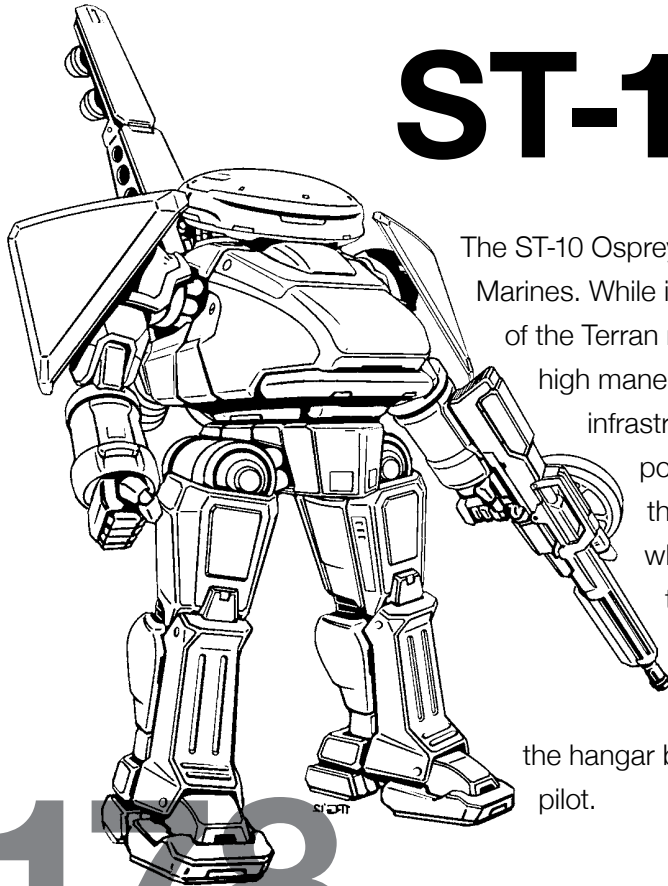


176



177

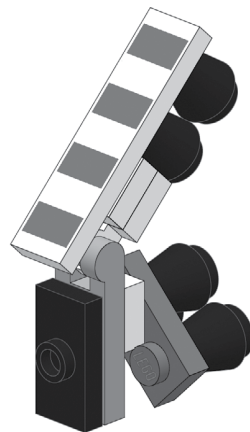
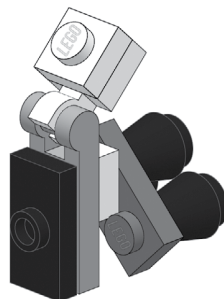
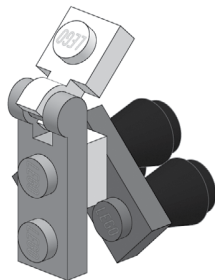
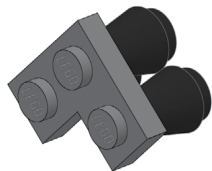
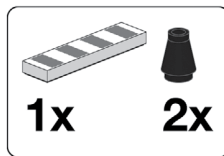
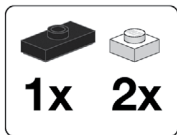
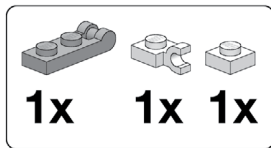
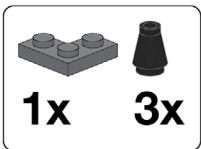
ST-10 Osprey

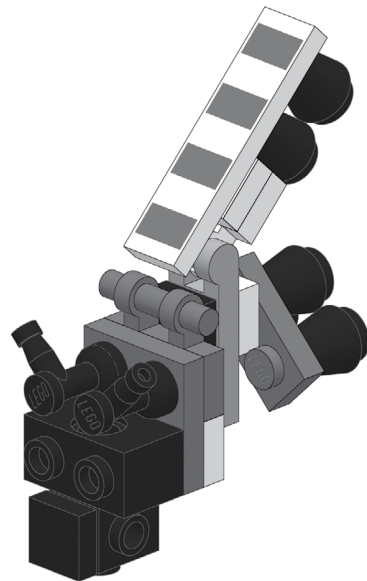
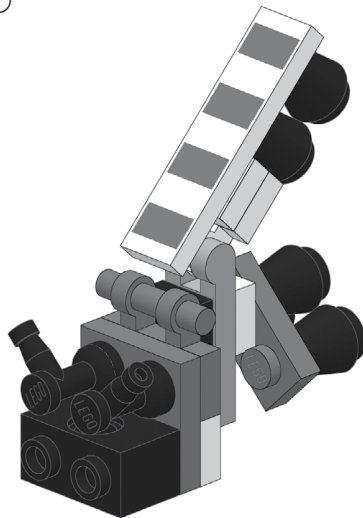
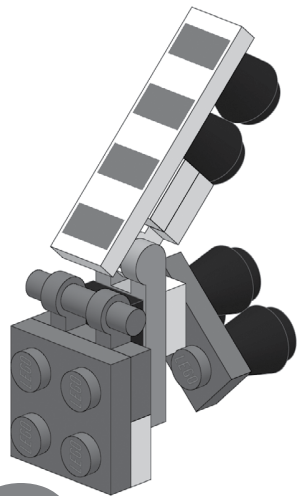
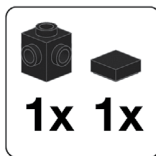
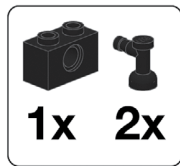
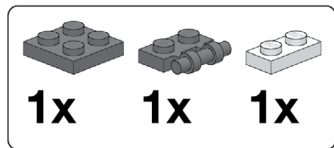


The ST-10 Osprey is the favored mobile frame of the Terran Trade Marines. While it's built around the same ST-3 standard as much of the Terran military, its design requirements are unique:

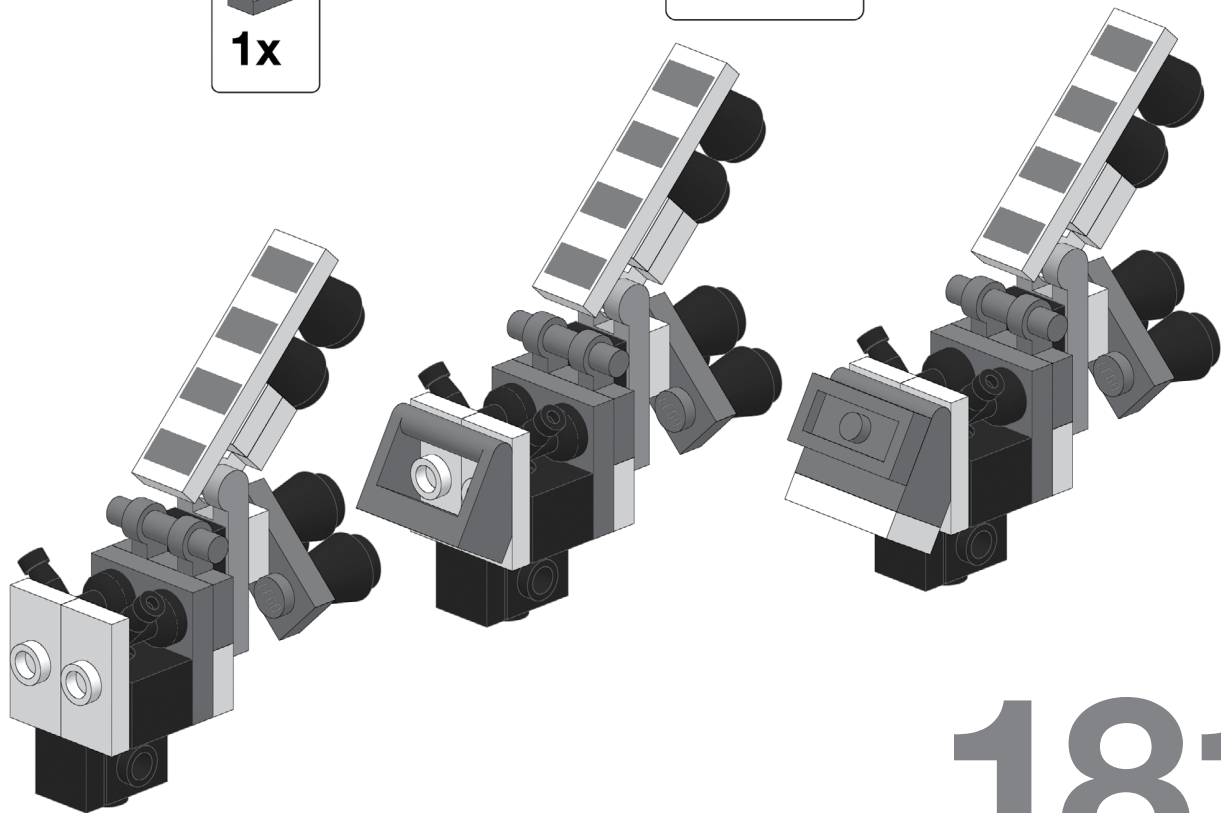
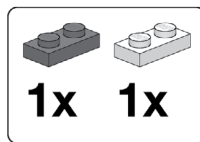
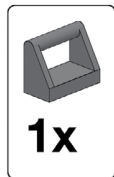
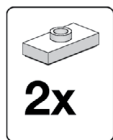
high maneuverability in a OG environment close to support infrastructure. The frame's chassis of low-density hydrated polycarbonates and foamed titanium makes it one of the lightest, most maneuverable of mobile frames, while power is provided by a set of supercapacitors that, while short-lived, allow a further mass reduction.

ST-10s typically are serviced upon each return to the hangar by a dedicated crew matched to each frame and pilot.



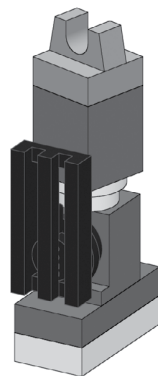
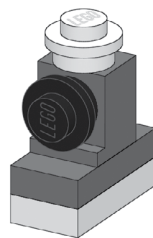
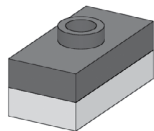
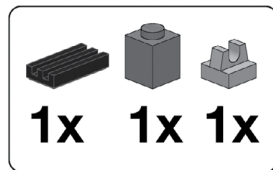
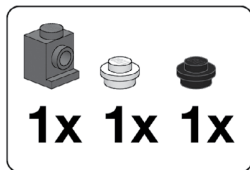
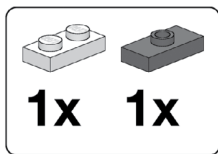


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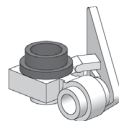
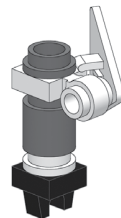
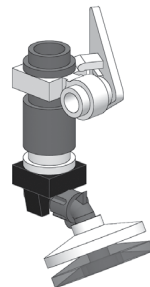
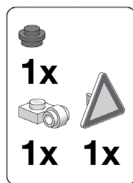
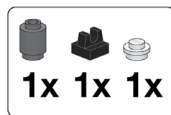
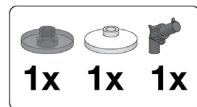
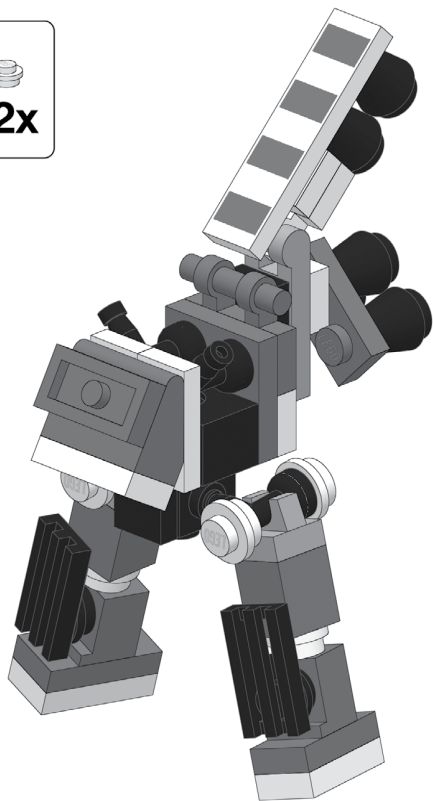


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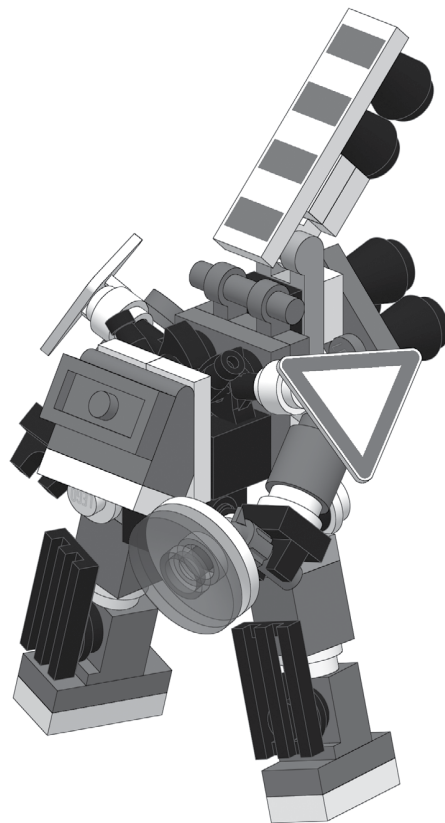
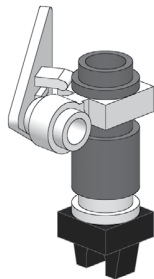
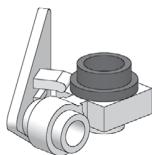
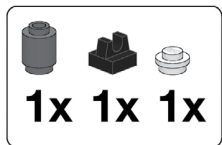
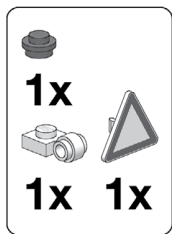
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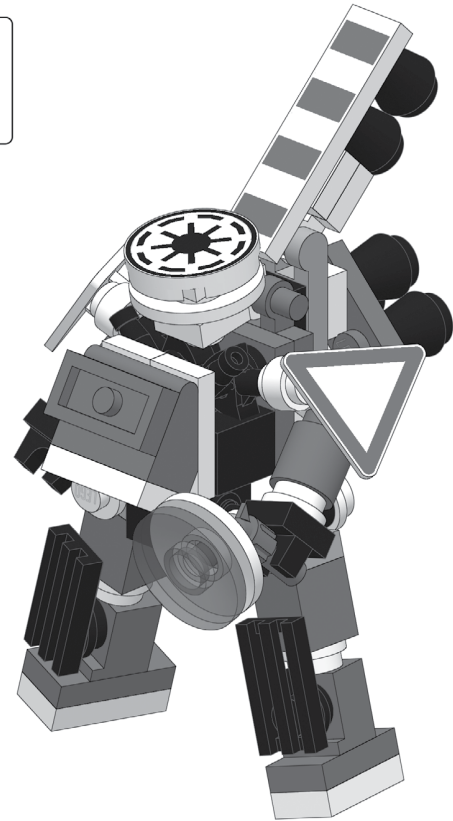
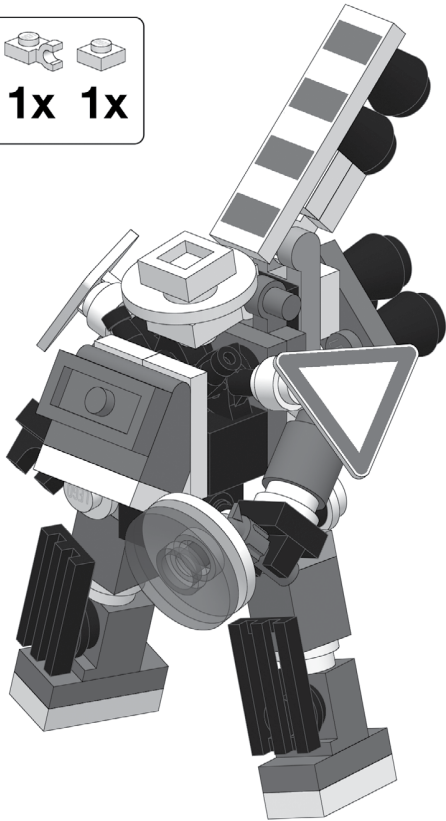
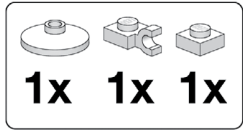
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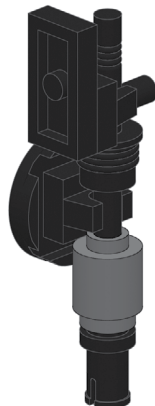
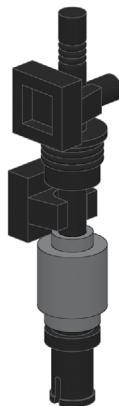
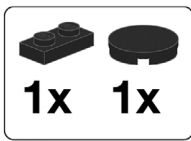
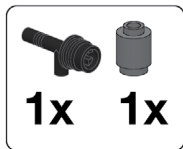
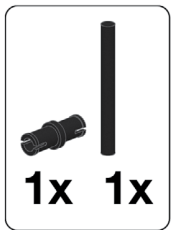
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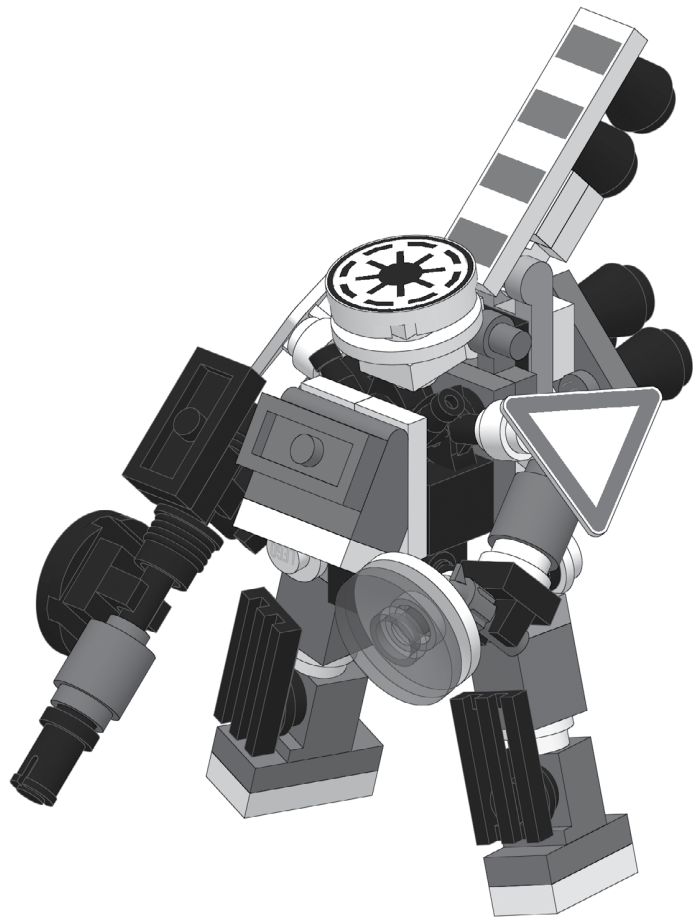
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185



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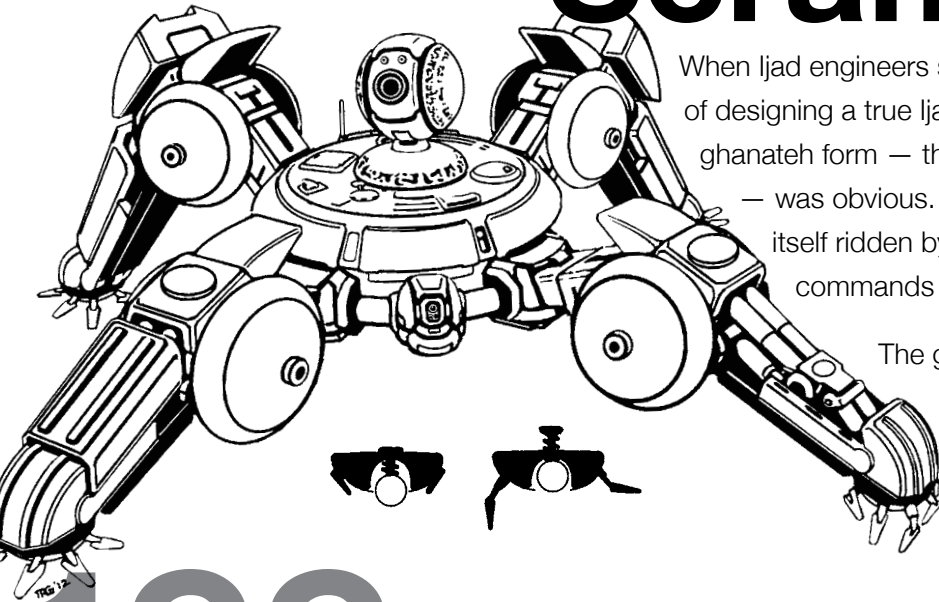


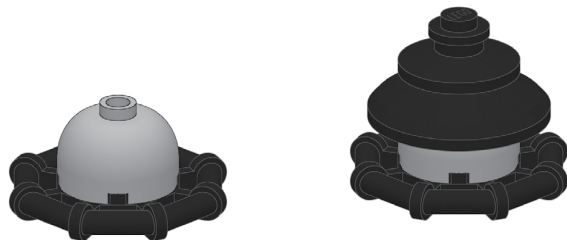
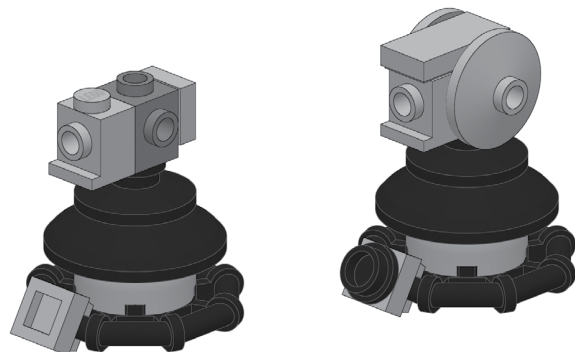
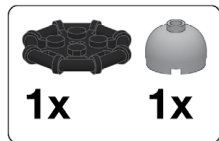
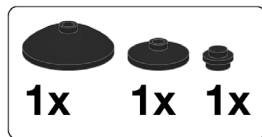
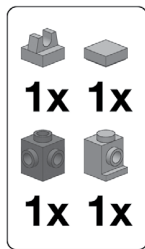
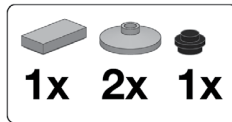
187

Ghanat, aka “Scrambler”

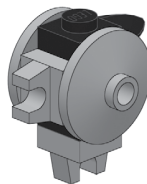
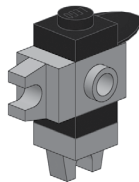
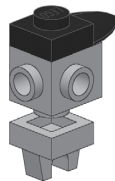
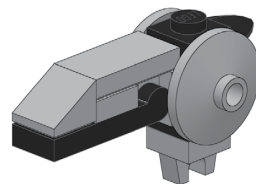
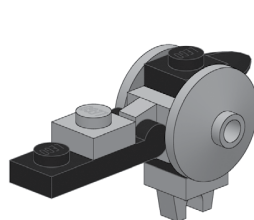
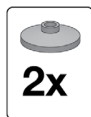
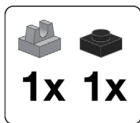
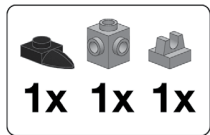
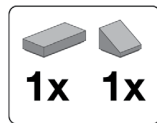
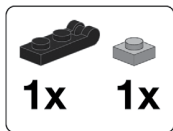
When Ijad engineers started to address the challenges of designing a true Ijad mobile frame, the choice of the ghanateh form — the animal traditionally raised for battle — was obvious. The machine houses a ghanatih, itself ridden by an Ijadih, who senses and gives commands through the ghanateh’s body.

The ghanateh’s top mount can carry the typical “stinger” pulse laser or any of a wide variety of equipment while the four limbs feature hard points at their tips.

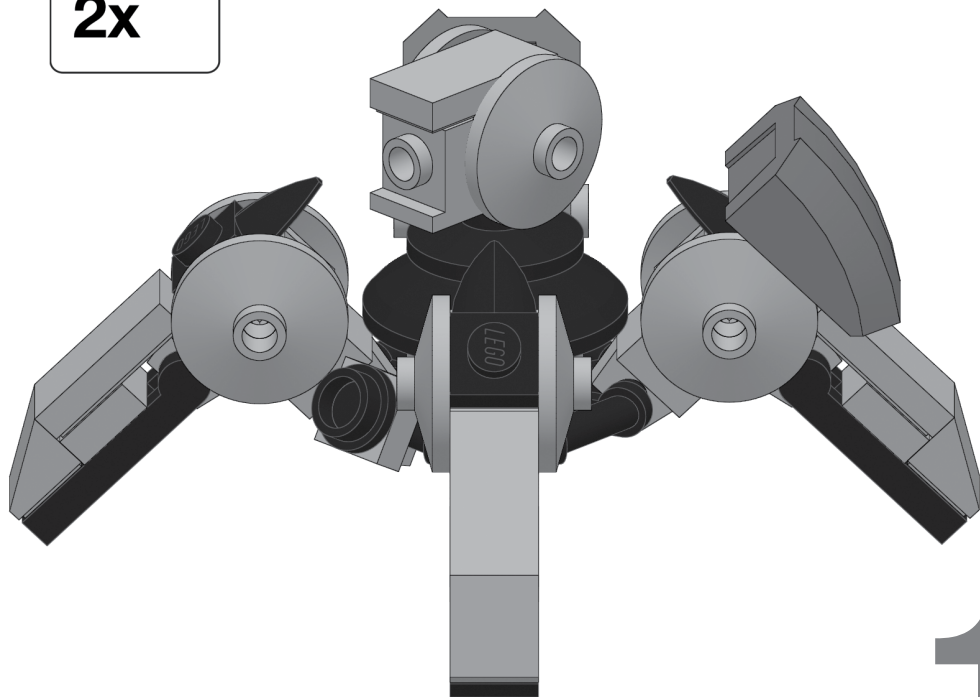
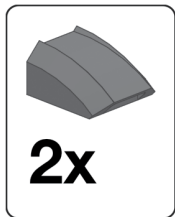




4X



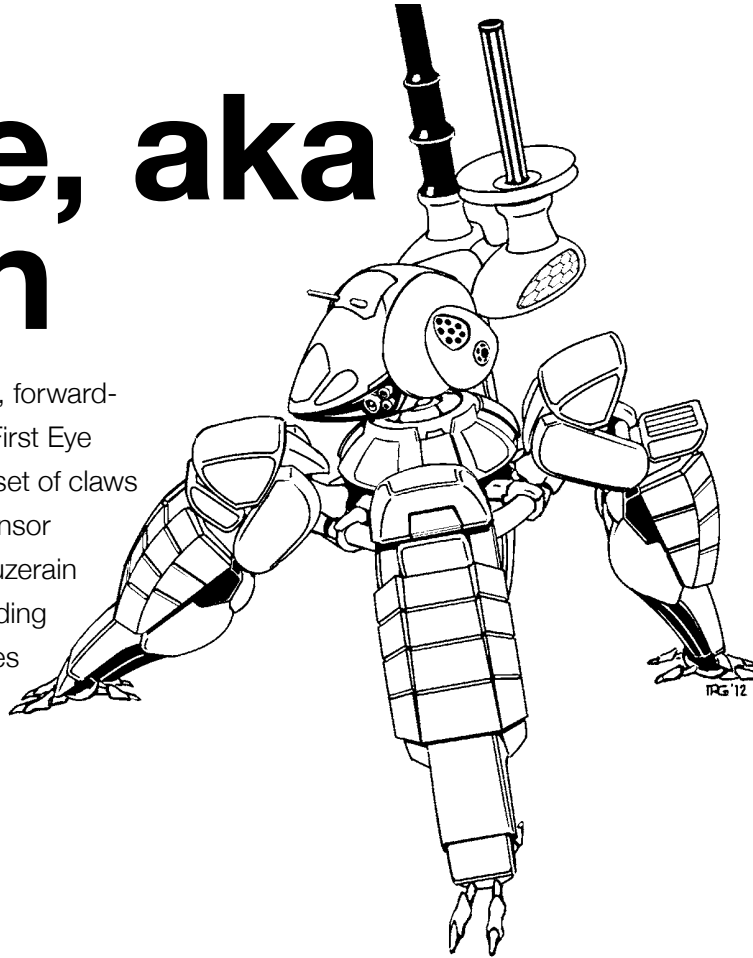
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191

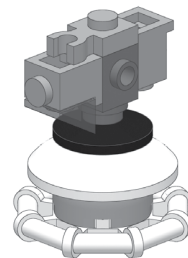
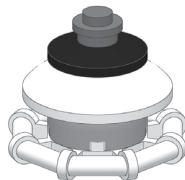
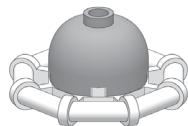
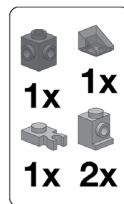
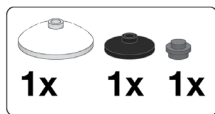
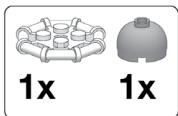
First Eye, aka Suzerain

Many Ijad commanders favor a sensor-heavy, forward-leading mobile frame, and have evolved the First Eye design to satisfy that need. Equipped with a set of claws for hand-to-hand combat, a sophisticated sensor head, and reactive armor over its legs, the Suzerain is light and fast, leaping over cover and providing its pilot with the ability to both support its allies and capture objectives while keeping a low combat profile.

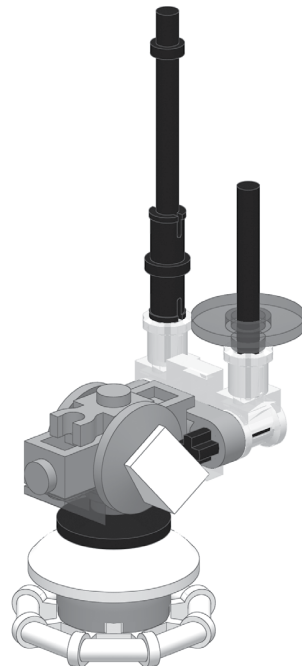
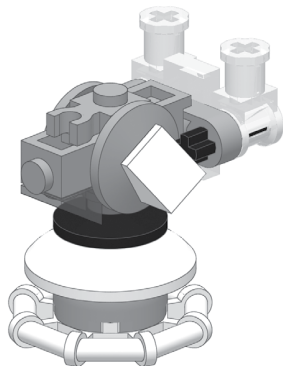
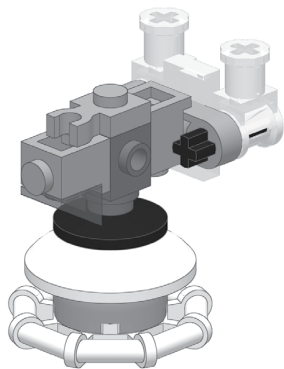
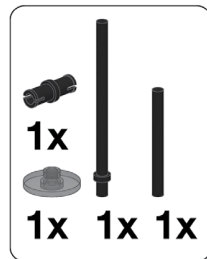
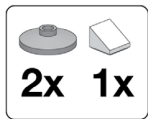
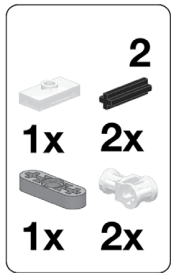


TRG 12

192

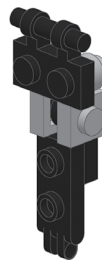
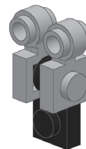
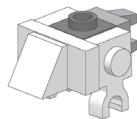
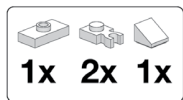
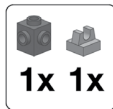
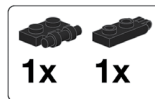


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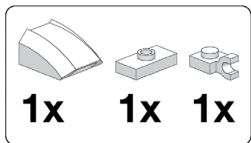


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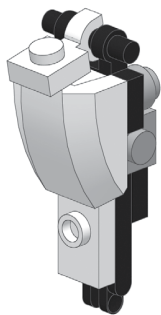
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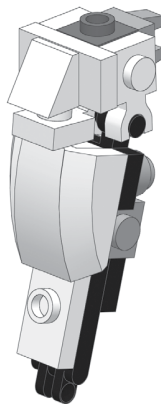
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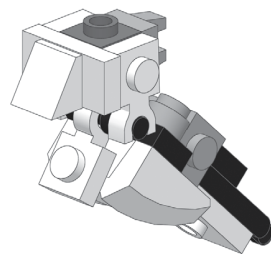
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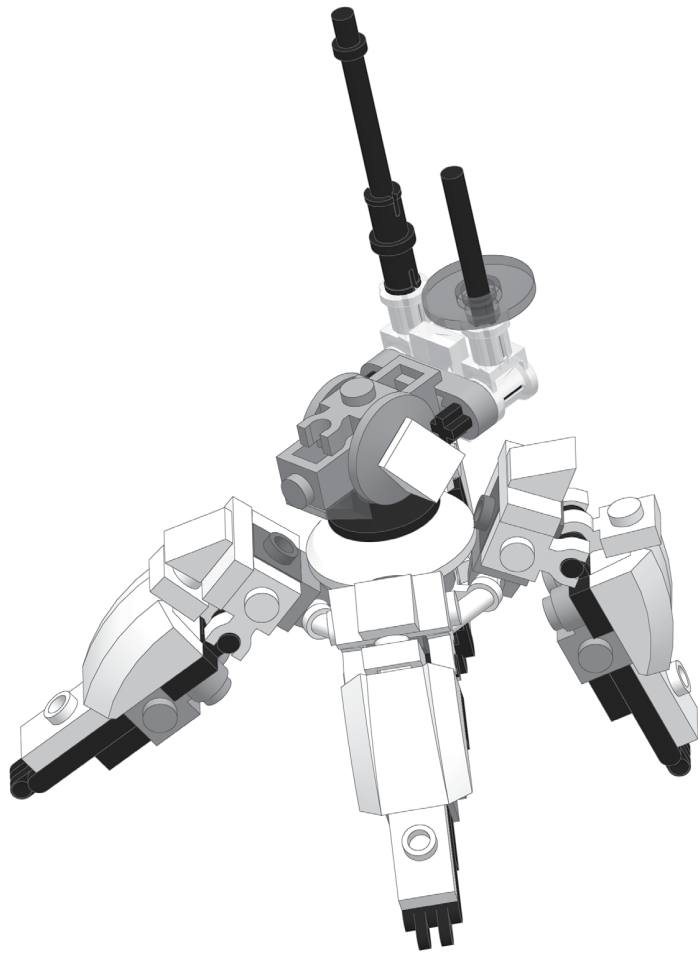
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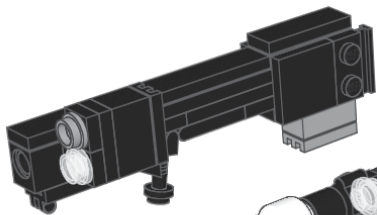
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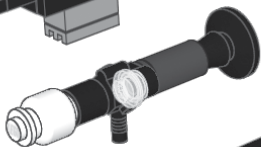
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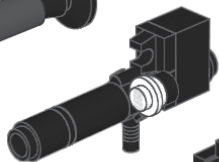
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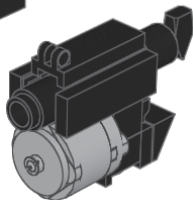
The hefty "Rainmaker" artillery piece
(2Ra & d8)



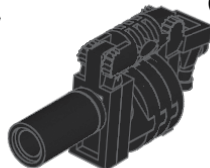
A commonly reproduced rocket-propelled grenade
(1Ra, 1Rd)



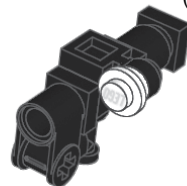
Sniper laser
(2Ra)



"Peach Chucker" grenade launcher
(1Ra, 3Rd)



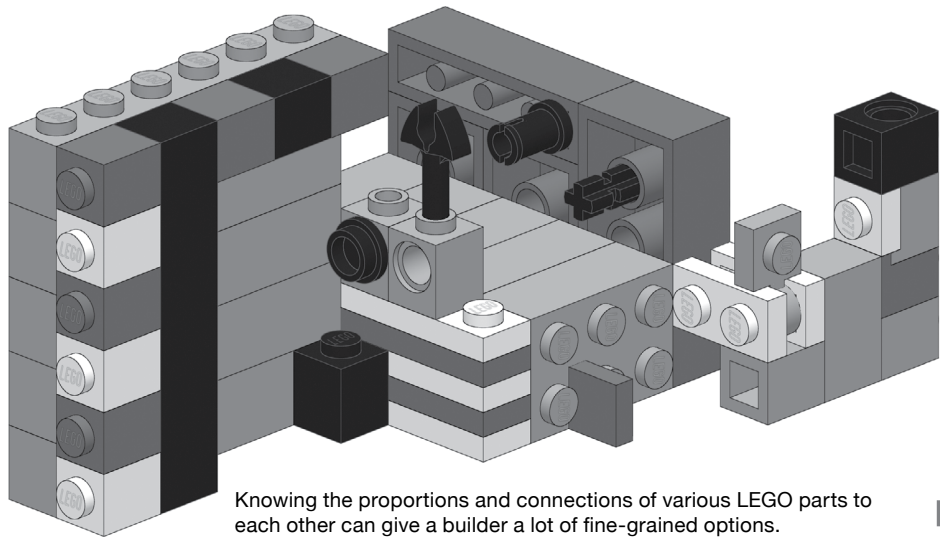
"Peashooter" grenade launcher
(3Ra, 1Rd)



Weaponized
industrial laser
(1Ra, 2Rd, 1Rh)

DESIGNING LEGO®

MOBILE FRAMES BY SOREN ROBERTS



Knowing the proportions and connections of various LEGO parts to each other can give a builder a lot of fine-grained options.

199

Basics

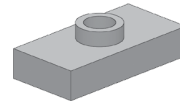
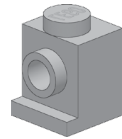
Note on units: Unless specified, when I talk about units high I'm talking about bricks — when I say 'one high', I mean one brick, or three plates. When I talk about units wide, I'm talking about studs.

Lego geometry is metric, but (confusingly) does not use round metric dimensions.

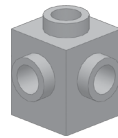
The practical upshot of this is that it takes a little bit of work to turn things at right angles or upside-down. A good rule of thumb to memorize is that **every five plates of height equal two studs of length**. Keep

that in mind when you're mounting things at right angles to one another.

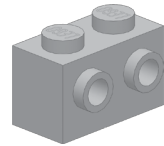
Some parts, like this headlight brick, allow you to offset parts by half a plate's height,



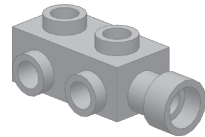
while this 1x2 'jumper' plate shifts parts by half a stud's width.



Others, like these 5-stud 1x1 bricks and 1x2 6-stud bricks can form a 'core' with parts



coming off in all directions.



At the size Mobile Frames are built, this is pretty easy to keep track of, so don't hesitate to use fistfuls of them. With the game's scale set so small, the ability to shift parts around by minute amounts is crucial to building aesthetically pleasing designs.

For the most part, you're going to be working with plates at this scale. In fact, I would advise you not to buy parts larger than 2x3 plates unless you can think of a specific use for them. Load up on 1x1 plates both round and square, headlight bricks, the 5-stud 1x, and other very small basic parts. It's always easier to make larger parts out of smaller ones, and to adjust a design by adding or removing a single

plate. The proportions and part types in the Mobile Frame Garage are a good starter guide to buying for tiny robots.

If you decide that you want to get deeper into the nuts and bolts, a copy of **The Unofficial Lego Builder's Guide** by Allan Bedford will go a long way.

Jointing

Because we're playing a game and not designing solely for aesthetics, I would recommend that you include the bare minimum number of joints in your designs.

On a humanoid design, elbows, knees, and ankles can be simulated with gaps and shifts in color, but hips and shoulders are essential.

When you build these joints, though, remember to include at least two axes of motion in order to establish a somewhat natural pose. Leg splay, either along the Z- or Y-axes, will make your designs more

stable and offer a greater variety of poses. Waist and neck rotation don't affect stability, and can give you more dynamic poses. Finally, some joints, like the ST-07's hip and knee, can be reassembled to allow for a different, albeit semi-fixed, pose.

If you can, get joint parts that can be assembled in several different configurations. It's always better to buy in bulk so multiple combinations of the same three or four parts will be extremely cost-effective.

Design

Basic Design

When you're getting into more advanced design, never be afraid to just pick up the parts and start building. Because Lego is so idiosyncratic about color and part types, it's nearly always more productive to work from what you have than it is to get attached to a design only to discover that it's very difficult, prohibitively expensive, or impossible to build.

If you want to do some preplanning, though, a Sharpie and an index card work just fine

for scribbling out a rough silhouette and establishing proportions. Make piles of parts in the colors you want and dive in — I recommend you try to hold the number of colors down, sticking to a palette with relatively few subtle gradations. Aim for bold, cartoonish looks, with broad detail that will be visible at a distance.

'Readability' in a model is a problem a lot of manufacturers of traditional wargaming stuff have dealt with (to varying degrees of success). Make weapons, shields, sensors, and other attachments visually distinct from one another — if two weapon designs are hard to tell apart, make them serve the same function — and err on the side of

making systems too large rather than too small. Not only will it be easier to tell what your units have, but you're less likely to lose attachments you've removed.

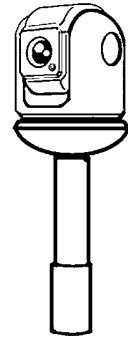
The 3-1-1 Rule

Most companies in MFZ fall somewhere in the range of 4-7 units. Within that range, 5 seems to be a good planning size — big enough for some variety, small enough that taking any one design out isn't crippling.

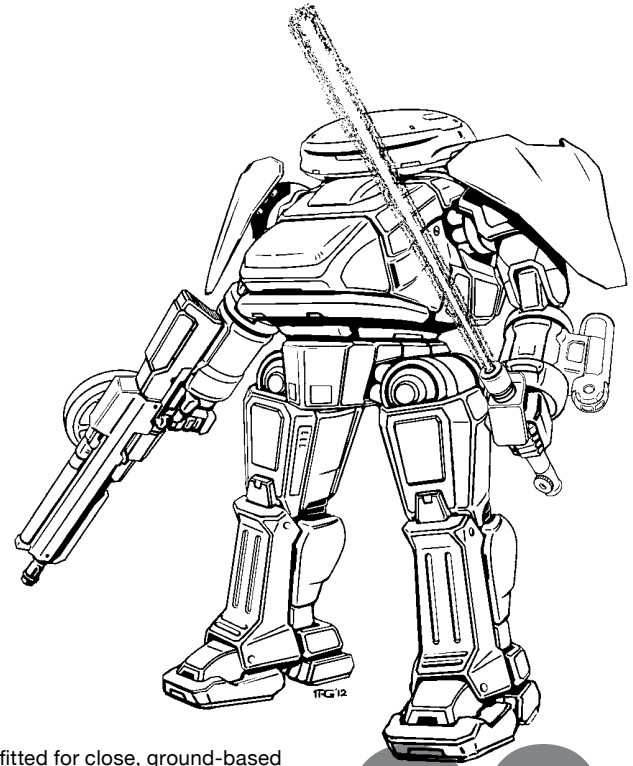
When designing a company, I start by figuring out what I want my 'grunt' to be. This is the robot that I expect to execute my core strategy with — if that means

capturing stations in Hand-to-Hand fighting, or gunning down enemy fast attackers at Direct range, I design these guys to do it. Visually and mechanically, I try to get three identical units. If I have to expand or reduce my army, I can add to or reduce the number of these guys without losing any essential functions. Their redundancy also makes them easier to risk in combat: losing any one of them isn't a big deal.

Sometimes, a piece of equipment as simple as a camera on a mast, capable of looking over walls or at a different frequency of light can give a mobile frame company the edge it needs.
(1Y)



The other two are my specialists. Scouts, dedicated artillery, heavily armored defenders — I try to make them visually distinct from the other three and from each other. Even more important than being distinct from the enemy, it helps if I can instantly tell them apart and note their functions. The pairing of scout/artillery, in particular, is extremely easy to track when using very small scouts and very large artillerists — I can see at a glance which unit is where.



An ST-10 Osprey outfitted for close, ground-based action with a fusion edge and arm-mounted amplifier. (2Rh &d8)

Notable Design Problems in LEGO

Eventually, you're going to run up against certain limitations.

Resolution: Lego, at small scales, is not especially fine-grained. It's very easy for a design that looks okay up close to turn into a confusing blob of color further away. Fine distinctions and subtle detail are mostly not an option.

Parts and Color: not all parts are available in all colors - and when they are, some colors are going to be vastly more expensive than others. Monochrome with

accents is often the most visually pleasing solution.

Fragility: A great many things that look excellent are not really durable enough for extensive handling. Robots with a lot of bar and clip connections can come apart in play or take a long time to adjust, or have trouble standing. You can ameliorate this somewhat by setting them on bases - 4x4 and 6x6 plates work well.

BUYING PARTS

BY SOREN
ROBERTS

Getting LEGO is the most involved part of Mobile Frame Zero: Rapid Attack. Fortunately, we can show you some ways to minimize the involvement and frustration.

How to buy, and
how not to buy parts

Buy in bulk. Organize so you know what you have and what you need. Don't plan around lots of rare or expensive parts or lots of parts you don't have.

2007

Good sets for parts

For small parts (the majority of what you'll need), it's always preferable to **buy multiple copies of a \$5 or \$10 set** rather than single \$20-\$60 sets. If you need a part that doesn't come in smaller sets, consider buying a bulk lot of it on Bricklink rather than the set it comes in. You may also want to connect with other people locally and set up a parts draft of a larger set.

Parts Draft

A parts draft is an exercise for dividing up multiple copies of a set into groups of the same part. It works like this:

01. Everybody buys one copy of a set.

(or two, or three — everybody bringing four of a \$5 set can get into stupid-huge quantities of single parts very quickly)

02. All the parts are poured into the middle and sorted into discrete piles — one for each color/part combination.

03. Everybody takes turns claiming one pile, until there are no more piles — you can then negotiate with your neighbors if you want a few of a piece.

This is excellent if you already have plenty of structural elements and you're buying sets mostly for the flashy decorative pieces.

The primary benefit to a parts draft is that you can amass bulk quantities of single parts, often rare or expensive ones, very quickly and relatively cheaply. If you only want parts of a single color, as well, it's a good way to split up a set with minute quantities of three different colors into medium-sized lots of each color.

Pick-a-brick

There are two varieties of Pick-A-Brick: the **physical, LEGO® Store version**, and the **online version on the LEGO website**.

If you have access to a **local LEGO Store**, I recommend you go there and spend the ten bucks to get a cup of sweet little parts. Even if all you can find is basic bricks, load up for terrain - it's so cheap you might as well.

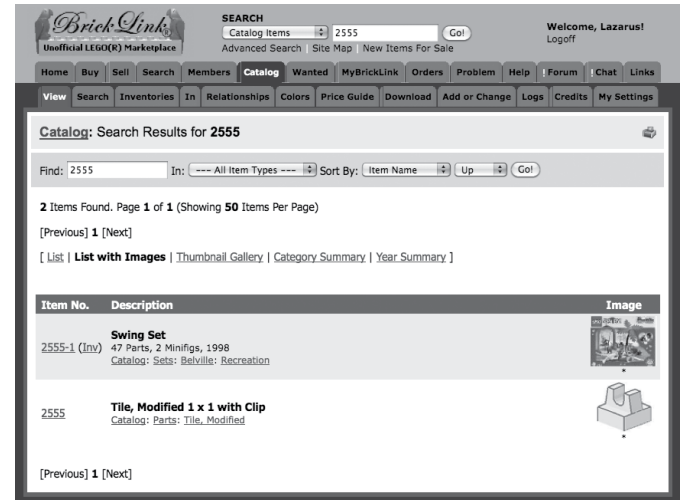
Online Pick-A-Brick is a little easier than Bricklink, but hamstrung by using wildly different part names. The contents of the Mobile Frame Garage set were determined

from this parts selection, though, so if all you want is to get started, you can use the part numbers in the Garage list to get started.

Bricklink

This is the most powerful way of getting hold of LEGO, but also the least intuitive. Bricklink's system is optimized for people who buy in bulk and know exactly what they want going in. It is not optimized for people buying small quantities, or who don't know part names and numbers. Therefore, you're going to need to do some fiddling. I would recommend against going to Bricklink

until you have at least a few sets or some goodies from Pick-a-Brick and a couple of frames you're proud of under your belt.



The screenshot shows the Bricklink website interface. At the top, there is a search bar with the text "Catalog Items" and the number "2555" entered. To the right of the search bar, it says "Welcome, Lazarus! Logoff". Below the search bar, there is a navigation menu with buttons for Home, Buy, Sell, Search, Members, Catalog, Wanted, MyBrickLink, Orders, Problem, Help, Forum, Chat, and Links. Below the navigation menu, there is a sub-menu with buttons for View, Search, Inventories, In, Relationships, Colors, Price Guide, Download, Add or Change, Logs, Credits, and My Settings. The main content area shows the search results for "2555". It includes a search bar with "Find: 2555", a dropdown menu for "In: --- All Item Types ---", and a dropdown menu for "Sort By: Item Name" with "Up" selected. Below the search bar, it says "2 Items Found. Page 1 of 1 (Showing 50 Items Per Page)". There are links for "[Previous] 1 [Next]" and "[List | List with Images | Thumbnail Gallery | Category Summary | Year Summary]". The results are displayed in a table with columns for "Item No.", "Description", and "Image". The first result is "2555-1 (Inv) Swing Set" with a description of "47 Parts, 2 Minifigs, 1998" and "Catalog: Sets: Belville: Recreation". The second result is "2555 Tile, Modified 1 x 1 with Clip" with a description of "Catalog: Parts: Tile, Modified". There is a small image of a brick with a clip attached to it. At the bottom of the results, there are links for "[Previous] 1 [Next]".

Search

The search functions on Bricklink are powerful, but the defaults aren't set up for our purposes. If you know exactly what you want (part name and color), you can use the Items For Sale setting to bring up a listing

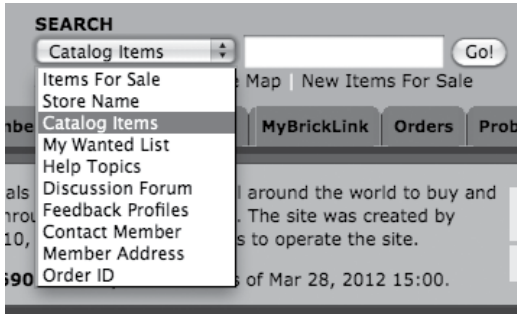
of lots for sale and sort it by quantity and price. If you aren't sure about names and numbers, or you want to browse a couple different colors, or just see what's available, you should use the pull-down to select Catalog Items. This will pull up catalog pages instead of for-sale listings.

The screenshot shows the Bricklink search interface. The search criteria are: "Items For Sale: Parts: Tile, Modified: 2555: in Black Color". The search results are sorted by "Highest Qty". The first listing is from "Serra Brick Depot (8)" with a quantity of 12 and a price of ~US \$0.01 (PLN 0.03). The second listing is from "Authentic Leg 1 (1873)" with a quantity of 10.

Image	Condition	Description	Available In
	Used	Black Tile, Modified 1 x 1 with Clip Items For Sale: Parts: Tile, Modified: 2555 Loc: Poland, Min Buy: None	Serra Brick Depot (8) Qty: 12 Each: ~US \$0.01 (PLN 0.03) Go Buy It
		Black Tile, Modified 1 x 1 with Clip	Authentic Leg 1 (1873) Qty: 10

The screenshot shows the same search criteria as the first image, but the search results are sorted by "Best Price". The first listing is from "Serra Brick Depot (8)" with a quantity of 12 and a price of ~US \$0.01 (PLN 0.03). The second listing is from "Authentic Leg 1 (1873)" with a quantity of 10 and a price of US \$0.01.

Image	Condition	Description	Available In
	Used	Black Tile, Modified 1 x 1 with Clip Items For Sale: Parts: Tile, Modified: 2555 Loc: Poland, Min Buy: None	Serra Brick Depot (8) Qty: 12 Each: ~US \$0.01 (PLN 0.03) Go Buy It
	Used	Black Tile, Modified 1 x 1 with Clip +++ a lot of nibbled and scratches +++ Items For Sale: Parts: Tile, Modified: 2555 Loc: France, Min Buy: None	Authentic Leg 1 (1873) Qty: 10 Each: US \$0.01 Go Buy It



Catalog: The Bricklink catalog is huge and confusing, but it's the best way to find what you want and need quickly. More importantly, **searching the catalog for partial matches, or browsing individual categories, can be faster than trying to refine a bad initial search.** Catalog pages for individual parts have a number

of advantages, like lists that display which parts are currently available in which colors, what colors and sets the part has come in, and a price guide. Below are some techniques for searching the catalog:

- » **If you know a part's dimensions, enter those.** You'll get a list of all the parts with those dimensions - but be aware that not all parts are measured in stud lengths.
- » **If you know which category a part is likely to be in, enter that.** You can browse through the category listing until you find the exact part you're looking for.
- » **If you know a part's number, you can enter that,** and be sent directly to the part's catalog page.

» **Color Guide:** If you don't know what parts you want yet, but you do know what colors you want to build with, you can use the color guide to give you a list of all the part types available in a given color.

The screenshot shows the BrickLink website interface. At the top, there is a search bar with the text 'SEARCH Catalog items' and a 'Go' button. Below the search bar is a navigation menu with links for Home, Buy, Sell, Search, Members, Catalog, Wanted, MyBrickLink, Orders, Problem, Help, Forum, and Chat Links. The main content area displays the product 'Tile, Modified 1 x 1 with Clip' with a small image of the part. To the right of the image, it says 'This Part Appears In: 837 Sets (View Them), 9 Parts (View Them), 19 Minifigs (View Them), 4 Bopps (View Them), 11 Gear (View Them)'. Below the image, there are fields for Item No: 2555, Year Released: 1989 - 2012, Color Shown: White, Weight (in grams): 0.22, and Dimensions (in studs): 1 x 1. At the bottom, there is an 'Item Availability' section with four columns: 'Lots For Sale', 'On Wanted Lists', 'Price Guide Info', and 'Known Colors'. Each column contains a list of items with checkboxes and their respective counts.

» **Sellers:** Bricklink sellers have feedback profiles. As a rule of thumb, you shouldn't buy from sellers with a lot of negative feedback, and you should look through the negative feedback to see if it was left in good faith or not. Generally, I err on the side of buying from sellers who've conducted at least a couple hundred transactions, preferably thousands.

No single method is going to get you all the parts you need or want cheaply.

I recommend first buying the list of Garage parts and supplementing it either with a bunch of tiny sets or with a couple of parts drafts, then moving on to Bricklink as you get a better idea of which parts you want. Piece-for-piece, Bricklink is usually cheaper than Pick-A-Brick, but slightly more expensive than buying sets.

CREATING NEW MATERIALS

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If you wish to commercially produce your creation, please contact **joshua@glyphpress.com** to discuss your proposal.

Using the Trademark

If you wish to associate your published copies or creations such as fan fiction, specialized rules, mobile frame designs, or campaign settings with the **Micro Construct Tactics Nova** or **Mobile Frame Zero** names, you must follow these three rules:

1. Copyright must rest with the creator.

If you have licensed the creation (for example, to publish an anthology of house rules or fiction), the license must be non-exclusive so the creator can republish, rework, or do anything they wish with their creation.

2. The work must either **fit the Solar Calendar** setting or you must **establish a new calendar or setting** in which your material takes place.

To fit the Solar Calendar setting, keep your creations inside the Real Robot genre. Frames are vehicle-sized machines, either mass-produced or handbuilt by mechanics and engineers. By definition, no technology can be better than mobile frames at the things mobile frames do.

3. Design your setting in such a way that the signature elements of feudal, authoritarian, totalitarian, communist, corporate/anarcho-capitalist, or democidal political structures **that are not true, workable, or morally acceptable in the real world are equally untrue, unworkable, and unacceptable in your setting.**

That is:

No one is destined for greatness or humility any more than any other, even if their circumstances are ennobling or humbling; their greatness or humility is the result of the actions of people — either their own or someone else's.

Strength itself is not a virtue, nor is weakness a failing.

Essential qualities like race, gender, sex, nation or religion of birth, or species **do not hold a moral value.**

Every faction must be capable of negotiation. They fight to satisfy finite, material needs. If satisfied, they will end the war.

Please note that **characters may, in fact, believe something contrary to the actual nature of the universe.** I encourage you to create characters and setting with complex relationship to the reality of their situation.

Because of the particular place that Nazism holds in recent memory and ongoing history, please do not publish in association with the Mobile Frame Zero brand, on the Web or otherwise, frames or setting elements named after WWII Nazi machinery or institutions.

I'm interested in making critical, thoughtful exceptions to this last clause. If you're concerned that your work might violate any of these principles and want to publish your creation, please email the publisher, **joshua@glyphpress.com** and I'll help you bring your work to specification.

THANKS

Earlier versions of this game were in publication, as

Mechaton: Giant Fighty Robots

from 2003-2012.

Special thanks to Glen Baker.

Vincent thanks Drew Baker, Elliot Baker, Esther Baker, Meguey Baker, Emily Care Boss, Scott DiBerardino, Larry Pieniazek, and the guy who beat Vincent's mech to death with a shovel back at Gen Con '03.

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Thanks to R. Talsorian Games for giving us the encouragement we needed to make this project everything we hoped it could be.

Thanks to The LEGO® Group who provide a medium for all sorts of collaborative creativity through their Fair Play policy.

Thank you MoFØs

This project has benefitted tremendously from the unflinching support of the “MoFØs” of the Mobile Frame Hangar forum at **mobileframehangar.com** who provide me and each other with constant creativity and enthusiasm. Please visit the forums if you're not already a registered pilot!

Joshua A.C. Newman

is the designer and publisher of several roleplaying games, including the literary science fiction games **Shock: Social Science Fiction** and **Human Contact**.

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Additionally, he has collaborated as a book designer with other game projects, like D. Vincent Baker's **Dogs in the Vineyard**, Timothy Kleinert's **Mountain Witch**, and Ben Lehman's **Bliss Stage**.

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D. Vincent Baker

is a creator and publisher of roleplaying games, including the critically acclaimed, award winning, and controversial **kill puppies for satan**, **Dogs in the Vineyard**, **Poison'd**, and **Apocalypse World**.

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You can see some of the things he's done on Flickr at [flickr.com/photos/bricklovinfreakboy](https://www.flickr.com/photos/bricklovinfreakboy/), and from time to time he scrawls on Twitter's bathroom wall as [@HarmfulMechanic](https://twitter.com/HarmfulMechanic).

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Richmont Gan

hails from one of those Southeast Asian island nations, where he manages a foundry and works on projects involving heavy machinery and engineering of the nuts-&-bolts variety.

During his copious free time, he enjoys visual media involving giant (and not-so-giant) robots and AFV's, among other things. He occasionally posts his doodlings on ryujindx.deviantart.com and a few other places.