RIGGING

Riggers are characters who have special cyberware, known as vehicle control rigs, surgically implanted into their bodies. The control rig allows a rigger to command vehicles via neural link through a datajack. When jacked into a vehicle modified to interface with a vehicle control rig, riggers can make their vehicles perform exceptional feats that normal characters, driving through steering wheels and other manual controls, cannot.

Riggers can also jack into remote control decks, which allow them to command multiple drones simultaneously. When working together under a rigger's control, drones allow him or her to exert influence over a large area, as well as significantly increasing the rigger's combat power. Few things are more frightening than an army of drones bearing down on an unfortunate soul.

SENSORS

All vehicles possess some rudimentary sensors that a driver may access through heads-up-display (HUD) or vidscreens, and a rigger can access through his cybernetic link. The ratings and senses of sensors are listed below. For each level of sensors (other than Rating 0), the sensors have Telescopic Perception: All +2 and Enhanced Perception: All +1. For more information on Sensors, see the section on equipment below.

Rating 0 Sensors: Detect Range, Sense, Ranged, Discriminatory; Ultrasonic Perception; Spatial Awareness
Rating 1 Sensors: As above plus Normal Sight; Normal Hearing, Radar; Ultraviolet Perception
Rating 2-4 Sensors: As above plus Infrared Perception
Rating 5+ Sensors: As above plus Flash Defense: Sight Group +1 (per rating above 4)

USING DRONES

Riggers can control unmanned vehicles (known as drones) via remote-control networks. This section provides rules for using drones and remote-control networks.

Nearly any kind of vehicle may serve as drones: matchbox-sized cars, dwarf-sized rotorcraft, ground patrol vehicles the size of a large dog, and even modified sports cars.

The key difference that sets drones apart from ordinary vehicles is their Pilot Computer system. All drones have a Pilot Computer system, which enables the drone to act independently of its controller to a limited degree.

A drone must be adapted for rigger control (though it need not be fitted with a datajack system unless the rigger intends to jack directly into the vehicle). All drones that are incapable of carrying passengers are usually pre-adapted automatically for rigger control. Passenger vehicles or larger passenger drones are not usually pre-adapted, but the manufacturer, a mechanic or even a rigger character can adapt most vehicles and drones quickly.

OPERATIVE MODES
All affiliated drones operate under *Primary* or *Secondary* mode. A rigger may only operate a single drone in his network in Primary mode. This mode enables the rigger to control the drone as if he were directly jacked into it. The rigger may use his own skills and skill levels when making tests for the drone. He controls the vehicle as if it were an extension of his body.

A drone operating in Secondary mode uses the drone's Pilot Computer skills for any tests or combat. If a rigger is in Primary mode on one drone, he can only casually observe through the sensors of drones in his network that are in Secondary mode. To observe through a drone in Secondary mode, the rigger must spend a Full Phase action to do so. Additionally, Computer Programming rolls to comprehend commands made by drones in Secondary mode are made at −4 modifier.

CAPTAIN'S CHAIR MODE
Instead of controlling a single drone, a rigger can supervise all the drones in his network via the remote-control deck's master control. Riggers call this practice "sitting in the captain's chair".

When operating drones in the captain's chair mode, all vehicles use their Pilot Computer skills for tests or combat. Captain's chair mode is the only drone control method available to characters that do not possess vehicle control rig cyberware.

REMOTE CONTROL NETWORKS

A remote control network consists of two fundamental elements: a remote-control deck and drones. The remote-control deck is the central control station from which the rigger monitors and directs the movements of drones connected to the network. The remote-control deck also maintains the electronic integrity of the network by ensuring stable data flow and employing active countermeasures to keep out unwanted intruders.

Because of the vast amount of data being transmitted over the airwaves, remote control networks use three separate radio channels to command and control drones: the command, simsense, and system channels. The command channel relays messages that direct the movements and actions of the drones, as well as situational information and intelligence between drones and the remote-control deck. The simsense channel routs audio, visual and simsense data between drones, remote-control deck and the rigger. The system channel carries data that ensures network integrity and monitors drone status.

SUBSCRIBER LISTS
A remote-control deck's subscriber list is a file that enables the deck to identify all the drones under its control. Only drones listed on a remote-control deck's subscriber list can connect with the deck. This helps protect the network from unwanted intruders who may attempt to intercept network communications and feed the network false information, or even seize control of the system.

A subscriber can contain a number of drones equal to twice the remote-control deck's rating, though the deck can only actively control a number of drones equal to its rating.

All network drones operate under *affiliated* and *non-affiliated* status. Any drone that is under the direct control of a remote-control deck is affiliated with that deck. Affiliated drones can receive commands from the remote control deck and transmit data to it and to other affiliated drones. A non-affiliated drone is operating independently of the remote-control deck. Consequently, a rigger controlling a network can neither see through nor control the non-affiliated drone. Additionally, the non-affiliated drone cannot communicate with any other drones in the network.

Affiliating or disaffiliating a drone requires a ½ Phase action. Substituting one drone for another in affiliation requires a Full Phase action. A drone may not act during the Combat Turn in which it is being affiliated.

DUMP SHOCK
Because vehicle control rig jacks are connected to the riggers' middle brains, the effects of dump shock on riggers can be considerably more serious than the effects of dump shock on a decker. Any time a rigger is dumped from a remote control network, the following things occur:
- The rigger is disoriented for 1 combat turn where all skills, tests, and rolls are made at −2 (i.e. −2 CV, -2 to all skill and characteristic rolls)
- The rigger also takes damage in the form of an Ego Attack doing 2d6 damage per rating of the remote-control deck.
If involuntarily jacked out of a vehicle (other than from vehicle destruction), the rigger takes 2d6 Ego Attack damage and be disoriented as above.

ISSUING COMMANDS

When riggers are jacked into remote-control decks, they may issue commands to drones at the same time that they take their own actions. Issuing a command to a drone takes a Full Phase action.

A rigger can issue only one command to a single drone, regardless of how many drones his remote-control deck is managing at that time. A rigger can, however, issue all of his drones the exact same command at the same time as a Full Phase action.

If a rigger is in Primary mode in a drone, he controls it as if he were driving it personally. He does not have to spend a Full Phase action to command the drone, but he *does* have to use a Full Phase action to issue a command to another drone.

A rigger can issue a drone one-sentence commands such as "circle this area", "shoot anyone who comes through this door", "follow that car", and other similar commands. The more specific and detailed the command, the greater the chance the drone's Pilot Computer will become confused. The GM should rate the command's complexity, assign a modifier to the Pilot Computer's Intelligence Roll, and then give the rigger the option to downgrade the complexity before issuing the command.

The player then rolls the Computer Programming Roll for the drone, and the greater the drone makes the roll, the more leeway it has in "interpreting" the command to the rigger's benefit.

When making skill tests or in combat, drones not directly controlled by the rigger use their Pilot Computers to determine their skills and abilities.

All drones in a remote-control network act at the same speed as the rigger or the drone speed, whichever is less.

REMOTE CONTROL EQUIPMENT

AUDIO/VISUAL SCREEN DISPLAY

With the shift to full cybernetic controls, screen displays are necessary for displaying footage to other people. The audio/visual screen displays use the latest in miniaturized multimedia technology to convey video feeds as well as real-time sound recordings of events being observed by drones.

These 11-inch LCD screen attachments display the rigger's point of view from the remote-control network. A rigger can also connect multiple screens to a remote-control deck so that each screen simultaneously displays a different drone's point of view. The screens also enable a rigger to communicate with viewers, either by voice or by typing text. Viewers cannot talk back unless the remote-control deck is equipped with an intercom.

Type	Cost
Audio/Visual Screen Display	100

HITCHER JACKS

Similar to cyberterminal hitcher jacks, these accessories enable a second individual to plug into a rigger's remote-control deck, providing a second set of eyes to watch the operation and increase awareness of the remote-control operation

Hitcher jacks for remote-control decks work the same way as they do for cyberterminals. They allow other characters to perceive everthing the rigger does. If the rigger is in captain's chair mode, so is the observer; if the rigger is directly controlling a drone, the observer perceives on the signals from that drone. Hitcher jacks also allow an observer to communicate with the rigger. However, hitcher jacks do not provide the observer with any control over the network or drones.

Type	Cost
Hitcher Jacks	250

INTERCOM SYSTEM

An often-overlooked accessory to any remote-control network is a two-way intercom. This minor yet important device facilitates communication between the rigger and onlookers. Additionally, the speaker has a port that enables any voice radio to be connected to the intercom.

Type	Cost
Audio/Visual Screen Display	25

REMOTE CONTROL BIOFEEDBACK FILTER

The remote-control biofeedback filter is an internal accessory that protects the rigger from harmful simsense peak level surges.

Power: Mental Defense; **Adv**: None; AP: 1 per Rating; **Lim**: Only against Dump Shock (-1); IIF (-.25); Independent (-2)

Type	MD	Cost
Remote Control Biofeedback Filter	+1-10	Rating x 10000

REMOTE-CONTROL ENCRYPTION MODULE (RCEM)

Though remote-control decks hop from frequency to frequency to maintain signal security, signals are still occasionally intercepted. To guard against this, the remote-control encryption module provides an added layer of security by encoding and decoding the digital signals in a secure routine. The RCEM encodes and decodes remote-control signal transmissions, making them indecipherable to intruders who intercept a remote-control channel. The RCEM provides skill levels for Cryptography to guard against intrusion of the network by other riggers. The maximum rating for the RCEM is 10.

Power: Cryptography Skill; **Adv**: None; AP: 2 per Rating; **Lim**: IIF (-.25); Independent (-2); Does not work in magnetic fields (-.25); Only to encrypt or decrypt radio transmissions (-1)

Type	SL	Cost
Remote Control Encryption Module	+1-10	Rating x 5000

RIGGER DECRYPTION MODULE

A diagnostic tool used by security riggers, the rigger decryption module's firmware cryptographic routines can be used to decrypt remote-control network signals encoded by an RCEM as well as encrypted security systems. The rigger decryption module provides skill levels for Cryptography to decrypt encrypted signals created by an RCEM. The maximum rating for the rigger decryption module is 10.

Power: Cryptography Skill; **Adv**: None; AP: 2 per Rating; **Lim**: IIF (-.25); Independent (-2); Does not work in magnetic fields (-.25); Only to decrypt radio transmissions (-1)

Type	SL	Cost
Remote Decryption Module	+1-10	Rating x 7500

RIGGER NETWORK SECURITY MODULE

The rigger network security module (RiNSeM) provides constant protocol checking and constant security updates to all parts of the network, and it makes infiltrating the network much more difficult. This piece provides skill levels for Systems Operation for use in the skill vs. skill test to determine if the character can successfully fend off an attempt to take over his remote-control network. The maximum rating for the rigger network security module is 10.

Power: Systems Operation Skill; **Adv**: None; AP: 2 per Rating; **Lim**: IIF (-.25); Independent (-2); Does not work in magnetic fields (-.25); Only to prevent infiltration of remote-control networks (-1)

Type	SL	Cost
Rigger Protocol Emulation Module	+1-10	Rating x 5000

RIGGER PROTOCOL EMULATION MODULE

The rigger protocol emulation module allows a rigger to emulate many of the various protocols used on contemporary rigged security systems and remote-control networks. This module is required for infiltrating remote-control network or accessing security systems. This piece provides skill levels for Systems Operation for use in the skill vs. skill test to determine if the character can take over a remote-control network or security system. A character cannot attempt to take control of networks or security systems without this module. The maximum rating for the rigger protocol emulation module is 10.

Power: Systems Operation Skill; **Adv**: None; AP: 2 per Rating; **Lim**: IIF (-.25); Independent (-2); Does not work in magnetic fields (-.25); Only to infiltrate remote-control networks or security systems (-1)

Type	SL	Cost
Rigger Protocol Emulation Module	+1-10	Rating x 5000

STORAGE MEMORY

Storage memory is just as important for remote-control decks as it is for cyberdecks. Storage memory allows a rigger to record the images, simsense and other data transmitted by drones and vehicles under his control. Storage memory also allows a rigger to store pre-programmed drone commands or falsified sensory input for intrusion electronic warfare attacks.

Type	Cost
Storage Memory	Mp x 6

BASIC VEHICLE DESIGN

This section details the rules used to create and determine the cost of vehicles in the Shadowpunk system.

Starting Vehicle Characteristics Table

Characteristic	Starting Value	Cost per +1
Strength	10	2500
Body	10	1000
Size	1 hex	15000 per Size Increase
Defense	3	7500
Motorcycles	3	5000
Dexterity	10	7500
Speed	1+(DEX/10)	5000
Movement	See Movement Table	See Movement Table

Vehicle Movement Table

Movement Mode	Starting Value	Cost per 1"
Ground Movement	6"	500
ACV	6"	500
Automobiles	6"	225
Motorcycles	6"	225
Flight	0"	1000
Airships	0"	500
Rotorcraft	0"	650
Jet Aircraft	0"	250
Supersonic Jet	0" (1"=1 km)	7500
Propeller Aircraft	0"	400
Thunderbirds	0"	650
Swimming	2"	1000
Gliding	0"	250
Leaping	0"	1000

Size: Each reduction in size for a vehicle results in ½ size, 1/8 mass, +2 DCV, -2 to all PER Rolls made to notice it, +3" Knockback, and –1 Body. Each size reduction costs 12 points. Vehicles may increase in size per the Vehicle Size Table on page 9 of The Ultimate Vehicle.

Cargo: Cargo space in vehicles typically takes up 1/8th the total amount of size of the vehicle. The rest of the vehicle is occupied by engine, seating, controls, etc. The amount of cargo space available in the vehicle may be increased up to 7/8th of the total vehicle size. Doing so on a vehicle not initially designed to costs 250 nuyen per hex designated for cargo.

AIR-CUSHION VEHICLES

These vehicles buy their Running with the Advantage: Sideways Maneuverability (+.25) and the Limitation: Only on Appropriate Terrain (Duct Fans; -.25). Air cushion vehicles also buy an equivalent amount of surface-only Swimming to their Running.

AIRSHIPS

These vehicles buy their Flight with the Limitations: Side Effect (1d6 RKA to anyone who comes into contact with the propeller, automatically occurs when Flight is in use, only affects environment in front of the vehicle; -.25); Cannot Move Backwards (-.25); Limited Maneuverability (-.5)

AUTOMOBILES

These vehicles buy their Running with the Limitations: OAF: Tires (-1); and Only on Smooth Surfaces (-.25).

JET AIRCRAFT

These vehicles buy their Flight with the Limitations: Side Effect (2d6 RKA, Area of Effect: 7" Line behind engines, automatically occurs when Flight is in use, only affects environment around vehicle; -1.75); Stall Velocity: ¼ Vehicle Movement (-.25); Takeoff/Landing (-1)

Supersonic Jets buy secondary flight with the Advantage: Megascale (1"=1km, +.25) and also apply the Limitations: Side Effect (2d6 RKA, Area of Effect: 7" Line behind engines, automatically occurs when Flight is in use, only affects environment around vehicle; -1.75); Cannot takeoff or land at this speed (-0)

MOTORCYCLES

These vehicles buy their Running with the Limitations: OAF: Tires (-1) and Only on Smooth Surfaces (-.25).
These vehicles automatically take a Physical Limitation: Two-Wheeled (-5 Points) and has Defense that Does Not Protect Occupants (-.5).

PROPELLER AIRCRAFT

These vehicles buy their Flight with the Limitations: Side Effect (1d6 RKA to anyone who comes into contact with the propeller, automatically occurs when Flight is in use, only affects environment in front of the vehicle; -.25); Stall Velocity: ¼ Vehicle Movement (-.25); Takeoff/Landing (-1)

ROTORCRAFT

These vehicles buy their flight with the Advantages: No Turn Mode (+.25) and Sideways Maneuverability (+.5) and the Limitations: Side Effects (2d6 RKA; Area of Effect: 6" Radius around the vehicle, automatically occurs when Flight is in use, only affects environment around the vehicle; -1.75)

SURFACE WATERCRAFT

These vehicles buy their Swimming with the following Limitations: Surface Only (-1); Side Effects (1d6 RKA to anyone who comes into contact with the bottom stern of the vehicle, automatically occurs when Swimming is in use, only affects environment around the vehicle; -.25). They also typically sell their Running to 0".

THUNDERBIRDS

These vehicles buy their flight with the Advantages: No Turn Mode (+.25) and Sideways Maneuverability (+.5) and the Limitations: Side Effect (2d6 RKA, Area of Effect: 7" line behind engines (which face downward when the vehicle is hovering), automatically occurs when Flight is in use, only affects environment around vehicle; -1.75).

VEHICLE MODIFICATIONS

NITROUS OXIDE INJECTOR

This modification injects nitrous oxide into the engine, providing a short boost to power output. This option is not available for motorcycles.
Power: x2 Noncombat Movement; **Adv**: 20 Charges (+.25); Noncombat Acceleration/Deceleration (+1); AP: 13; **Lim**: OIF, Bulky (-1); Charges never recover (-2)

Type	Cost
Nitrous Oxide Injector	5000

TURBOCHARGING/SUPERCONDUCTIVE DRIVE

Turbocharging improves the speed and acceleration of a vehicle by using a turbine to compress and force more air into the chamber, thereby providing more boost and power. A similar modification, called a superconductive drive, provides electric engines with the same performance boost. Turbochargers require a high rpm for them to provide their boost, and it takes a short time to build the appropriate boost to the engine. Superconductive drives require some time to build up their charge from the batteries, but provide the same boost to the engine. This option is not available for motorcycles.

Type	Running	Cost
Stage 1 Turbo/Superconductive Drive	+10%	2000
Stage 2 Turbo/Superconductive Drive	+20%	5000
Stage 3 Turbo/Superconductive Drive	+30%	15000
Stage 4 Turbo/Superconductive Drive	+40%	40000

CONTROL MODIFICATION

AUTONAV COMPUTER
These computers are able to drive a vehicle on their own and perform basic control functions. These systems are available for most vehicles except for motorcycles, unless the motorcycle is equipped with gyroscopic stabilization.

AutoNav Computer Rating 1

Val	Char	Cost	Roll	Notes
8	INT	-2	11-	PER Roll 11-
10	DEX	0	11-	OCV/DCV: 3/3
2	SPD	0		Phases: 6, 12

Cost	Skills
3	Navigation 11-
3	Systems Operation 11-
3	Combat Driving or Combat Piloting 11-
2	AK: Local Area 11-
2	KS: Traffic Rules or KS: Flight Protocols 11-

Cost	Programs
1	Drive Vehicle
1	Follow Driver Commands

AutoNav Computer Rating 2

Val	Char	Cost	Roll	Notes
8	INT	-2	11-	PER Roll 11-
13	DEX	9	12-	OCV/DCV: 4/4
3	SPD	7		Phases: 4, 8, 12

Cost	Skills
5	Navigation 12-
5	Systems Operation 12-
5	Combat Driving or Combat Piloting 12-
3	AK: Local Area 12-
3	KS: Traffic Rules or KS: Flight Protocols 12-

Cost	Programs
1	Drive Vehicle
1	Follow Driver Commands
1	Suggest Alternate Routes

AutoNav Computer Rating 3

Val	Char	Cost	Roll	Notes
8	INT	-2	12-	PER Roll 11-
15	DEX	15	12-	OCV/DCV: 5/5
3	SPD	5		Phases: 4, 8, 12

Cost	Skills
7	Navigation 13-
7	Systems Operation 13-
7	Combat Driving or Combat Piloting 13-
4	AK: Local Area 13-
4	KS: Traffic Rules or KS: Flight Protocols 13-

Cost	Programs
1	Drive Vehicle
1	Follow Driver Commands
1	Suggest Alternate Routes

AutoNav Computer Rating 4

Val	Char	Cost	Roll	Notes
8	INT	-2	12-	PER Roll 12-
18	DEX	24	12-	OCV/DCV: 6/6
4	SPD	12		Phases: 3, 6, 9, 12

Cost	Skills
9	Navigation 14-
9	Systems Operation 14-
9	Combat Driving or Combat Piloting 14-
5	AK: Local Area 14-
5	KS: Traffic Rules or KS: Flight Protocols 14-

Cost	Programs
1	Drive Vehicle
1	Follow Driver Commands
1	Plan Routes
1	Suggest Alternate Routes

Type	Cost
AutoNav Computer Rating 1	500
AutoNav Computer Rating 2	1000
AutoNav Computer Rating 3	5000
AutoNav Computer Rating 4	15000

DATAJACK PORT
A datajack port provides a rigger with direct control of a vehicle and also enables any individual equipped with a datajack to plug into the vehicle and control it through the virtual dashboard with rudimentary cybernetic commands. Vehicle-control rig cyberware cannot properly interface with a simple datajack port; a full vehicle-control rig is required for the rigger to receive the full benefits of his cyberware. This option is unnecessary if the vehicle already has the rigger adaptation option, as that already includes a datajack port.
Power: Combat Driving Skill *or* Combat Piloting Skill +1; Lightning Reflexes +2; **Adv**: None; AP: 6; **Lim**: Does not work with vehicle control rigs (-.5); Only when Mindlinked with vehicle (-1)

Type	Cost
Datajack Port	2500

DRIVE-BY-WIRE SYSTEM
Drive-by-wire systems substitute advanced computer-controlled maneuvering systems for standard mechanical or basic electronic steering controls. It also includes an advanced tuning of the engine to allow the vehicle to move at incredible rates and resulting in an almost supernaturally responsive vehicle.
Power: SPD; **Adv**: None; AP: 10 per rating; **Lim**: None

Type	SPD	Cost
Drive-By-Wire	+1	Rating x BODY x 2000

IMPROVED HANDLING
Improved Handling improve the rudder and other control surfaces of watercraft, the aerodynamics and control surfaces of aircraft, or the suspension of wheeled vehicles to give the vehicle better handling.
Power: DEX; **Adv**: None; AP: 3 per rating; **Lim**: None

Type	DEX	Cost
Improved Handling	+1-10	Rating x BODY x 500

MOTORBIKE GYRO-STABILIZATION GEAR
This package of gyroscopic balancing systems allows a motorbike to balance itself, so that it may be remotely driven or even piloted by an AutoNav computer.

Type	Cost
Motorbike Gyro-Stabilization Gear	5000

OFF-ROAD SUSPENSION
This modification improves off-road handling of wheeled ground vehicles.
Power: Penalty Skill Levels: Off-Road Driving Penalties; **Adv**: None; AP: 6; **Lim**: None

Type	SL	Cost
Off-Road Suspension	+3	BODY x 750

PILOT COMPUTER
The advanced Drone Pilot Computer option if the character desires a more powerful computer than Rating 1 (which is standard in all vehicles equipped with a remote control interface).

Pilot Computer Rating 1

Val	Char	Cost	Roll	Notes
8	INT	-2	11-	PER Roll 11-
13	DEX	9	12-	OCV/DCV: 4/4
3	SPD	7		Phases: 4, 8, 12

Cost	Skills
10	User-defined skills among Combat Skill Levels, Autofire Skills, Stealth, or Concealment
3	Computer Programming 11-
3	Navigation 11-
3	Systems Operation 11-

3	Combat Driving or Combat Piloting 12-		
3	Tactics 11-		
2	AK: Local Area 11-		

Cost	Programs
1	Pilot Drone
1	Follow Rigger Commands

Pilot Computer Rating 2

Val	Char	Cost	Roll	Notes
8	INT	-2	11-	PER Roll 11-
15	DEX	15	12-	OCV/DCV: 5/5
4	SPD	15		Phases: 3, 6, 9, 12

Cost	Skills
20	User-defined skills among Combat Skill Levels, Autofire Skills, Stealth, or Concealment
5	Computer Programming 12-
5	Navigation 12-
5	Systems Operation 12-
5	Combat Driving or Combat Piloting 14-
5	Tactics 12-
3	AK: Local Area 12-

Cost	Programs
1	Pilot Drone
1	Follow Rigger Commands

Pilot Computer Rating 3

Val	Char	Cost	Roll	Notes
8	INT	-2	11-	PER Roll 11-
18	DEX	24	13-	OCV/DCV: 6/6
5	SPD	22		Phases: 3, 5, 8, 10, 12

Cost	Skills
30	User-defined skills among Combat Skill Levels, Autofire Skills, Stealth, or Concealment
7	Computer Programming 13-
7	Navigation 13-
7	Systems Operation 13-
7	Combat Driving or Combat Piloting 16-
7	Tactics 13-
4	AK: Local Area 13-

Cost	Programs
1	Pilot Drone
1	Follow Rigger Commands

Pilot Computer Rating 4

Val	Char	Cost	Roll	Notes
8	INT	-2	11-	PER Roll 11-
21	DEX	33	13-	OCV/DCV: 7/7
6	SPD	27		Phases: 2, 4, 6, 8, 10, 12

Cost	Skills
40	User-defined skills among Combat Skill Levels, Autofire Skills, Stealth, or Concealment
9	Computer Programming 14-
9	Navigation 14-
9	Systems Operation 14-
9	Combat Driving or Combat Piloting 17-
9	Tactics 14-
5	AK: Local Area 14-

Cost	Programs
1	Pilot Drone
1	Follow Rigger Commands

Pilot Computer Rating 5

Val	Char	Cost	Roll	Notes
8	INT	-2	11-	PER Roll 11-
24	DEX	42	15-	OCV/DCV: 8/8
7	SPD	36		Phases: 2, 4, 6, 7, 9, 11, 12

Cost	Skills
50	User-defined skills among Combat Skill Levels, Autofire Skills, Stealth, or Concealment
11	Computer Programming 15-
11	Navigation 15-
11	Systems Operation 15-
11	Combat Driving or Combat Piloting 19-
11	Tactics 15-
6	AK: Local Area 15-

Cost	Programs
1	Pilot Drone
1	Follow Rigger Commands

Type	Cost
Pilot Computer Rating 1	0
Pilot Computer Rating 2	5000
Pilot Computer Rating 3	25000
Pilot Computer Rating 4	500000
Pilot Computer Rating 5	2500000

REMOTE CONTROL INTERFACE

The remote-control interface enables a vehicle to receive and transmit data from and to a remote-control network so that a rigger can control the vehicle via the network. The remote control interface also gives the vehicle a Pilot Computer Rating 1 that reflects the vehicle's level of semi-autonomy. A vehicle with a Remote Control Interface can have its Pilot Computer increased as normal. This modification is not needed for drones, as they are automatically equipped with remote-control gear. The vehicle must be equipped with at least Rating 1 Sensors so that the rigger controlling the vehicle can sense through it.

Type	Cost
Remote Control Interface	BODY x 1000

RIGGER ADAPTATION

This modification consists of a "black box" that translates machine code into neurological stimuli and vice versa. The rigger adaptation modification incorporates a datajack port. A character with a vehicle control rig has access to all of the cyberwares benefits when jacked into a vehicle with rigger adaptation.

Type	Cost
Rigger Adaptation	3000

SECONDARY CONTROLS

This modification duplicates the basic steering and speed control functions of the primary controls and is normally slaved to a vehicle's primary controls. The co-pilot controls common on many aircraft are examples of secondary controls. This modification is not available for motorcycles.

Type	Cost
Secondary Controls	400

PROTECTIVE SYSTEMS

Vehicles may not have a DEF higher than its BODY. Special Rules as to how DEF is applied to particular locations is noted on the Modified Reference Sheet under Vehicle Hit Location Charts:

x½ = Total DEF of vehicle is halved at this location
x¼ = Total DEF of vehicle is quartered at this location
3 = DEF at this location is 3
As Tire = DEF is equal to the type of tire equipped
As Rider = Consult the Hit Location Chart for characters and apply damage normally

ABLATIVE ARMOR

Ablative armor consists of dozens or hundreds of small, square, ceramic-metallic plates, roughly 10 centimeters long on each side. When a projectile or explosion strikes a vehicle, some of the ablative plates blow off the vehicle deflecting the attack. Ablative armor is automatically visible and stacks to a vehicle's other DEF. Any attack that does more than 4 BODY automatically triggers the Activation of the Ablative Armor. Ablative Armor is the only protective system that may take a vehicle's DEF above its BODY.

Power: Armor; **Adv**: None; AP: 3 per DEF; **Lim**: Ablative: Activation Roll (-.5); Visible (-.25)

Type	DEF	Cost
Ablative Armor	4	3000

ADVANCED PASSENGER PROTECTION SYSTEM

This system is installed on vehicles other than motorcycles to give those riding a better chance of surviving a crash unhurt. It consists of specially designed seat belts and harnesses, additional impact-activated air-bags in all passenger positions and special reinforcement of the body panels. The Advanced Passenger Protection Systems adds to the effects of a crash cage and roll bars.

Power: 25% Damage Reduction, Physical Resistant; **Adv**: None; AP: 15; **Lim**: Only against crash damage (-1); Only against damage to passengers (-.5)

Type	Cost
Advanced Passenger Protection System	3000

CONCEALED ARMOR

Even casual observers can easily discern standard armor on a vehicle. Concealed armor is hidden in a vehicle's interior spaces so that anyone attempting to detect it must actually search the vehicle. Concealed Armor, Vehicle Armor and Hardened Vehicle Armor, are not compatible. Concealed Armor has a maximum rating of 13, and a vehicle may still not have a DEF higher than its BODY.

Power: DEF; **Adv**: None; AP: 3 per +1 DEF; **Lim**: None

Type	Cost
Concealed Armor	2000 per +1 DEF

CRASH CAGE

A crash cage consists of a padded, hydraulically cushioned passenger cabin and seating that protects passengers in a crash. The crash cage adds to the effects of Advanced Passenger Protection Systems and roll bars.

Power: 25% Damage Reduction, Physical Resistant; **Adv**: None; AP: 15; **Lim**: Only against crash damage (-1); Only against damage to passengers (-.5)

Type	Cost
Crash Cage	3000

ENVIROSEAL SYSTEM

This system provides a vehicle with gas-tight (or watertight) seals unless a door or window is opened. Also any damage to the vehicle breaks the seal, so it is very fragile.

Power: Life-Support: Self-Contained Breathing; **Adv**: Usable by Others (varies); AP: 10; **Lim**: Only when vehicle is undamaged (-1); Only when vehicle is completely closed (-.5)

Type	Cost
EnviroSeal System	BODY x 500

HARDENED VEHICLE ARMOR

Standard vehicle armor consists of hardened ceramic and metallic panels that protect both the vehicle and passengers from attacks. Concealed Armor, Vehicle Armor and Hardened Vehicle Armor, are not compatible.

Power: DEF; **Adv**: Hardened (+.25); AP: 3.75 per +1 DEF; **Lim**: Visible (-.25)

Type	Cost
Vehicle Armor	3000 per +1 DEF

LIFE SUPPORT SYSTEM

Life-support systems provide oxygen and basic climate controls inside a sealed vehicle cabin or cockpit.

Power: Life-Support: Self-Contained Breathing, Safe in Low Pressure/Vacuum, High Pressure, Intense Cold, Intense Heat; **Adv**: Usable By Others (varies); AP: 17; **Lim**: Only when vehicle is undamaged (-1); Only when vehicle is completely closed (-.5)

Type	Cost
EnviroSeal System	BODY x 750

ROLL BARS

These add rigidity to vehicles and mitigate damage from crashes. The roll bars add to the effects of a crash cage and Advanced Passenger Protection Systems.

Power: 25% Damage Reduction, Physical Resistant; **Adv**: None; AP: 15; **Lim**: Only against crash damage (-1); Only against damage to passengers (-.5)

Type	Cost
Roll Bars	3000

PERSONAL ARMOR

This includes advanced ceramics and Kevlar body panels to fend off small arms fire to protect the passengers and driver from attacks directly specifically at them.

Power: Armor; **Adv**: Hardened (+.25); AP: 1.5 per +1 rPD; **Lim**: Only to protect passengers (-1)

Type	Cost
Personal Armor	375 per +1 rPD

VEHICLE ARMOR

Standard vehicle armor consists of ceramic and metallic panels that protect both the vehicle and passengers from attacks. Concealed Armor, Vehicle Armor and Hardened Vehicle Armor, are not compatible.

Power: DEF; **Adv**: None; AP: 3 per +1 DEF; **Lim**: Visible (-.25)

Type	Cost
Vehicle Armor	1500 per +1 DEF

SIGNATURE MODIFICATIONS

ACTIVE THERMAL MASKING

This is a high-powered coolant system that temporarily absorbs heat generated by the vehicle's power plant.

Power: Invisibility: Infrared Vision; **Adv**: Reduced END: 0 END (+.5); AP: 30; **Lim**: Side Effect (Drain 3d6 AP of Running, automatically occurs when power is in use, only affects the vehicle; -1)

Type	Cost
Active Thermal Masking	BODY x 1000

VEHICLE WEAPON SYSTEMS

Vehicles may mount weapons on any of the mountings below, but they follow the same rules as characters do in regards to strength minima and recoil.

Ammo Storage varies by the type of weapon installed. Extra ammunition storage can be purchased and installed as listed below. For dual-weapon mounts, divide the maximum of each weapon by total by the number of weapons installed into the mount. See the Ammo column of the Vehicle Weapons section below for the base amount of storage

FIXED MOUNTS

A fixed mount is a hardpoint with a weapon permanently affixed to it. Fixed mounts fire in a fixed arc, so a driver typically has to aim the weapon by moving the vehicle. Single fixed mounts are usually placed along the vehicle's center line, while twin mounts may sit either side-by-side along the center line, or may be placed on the left and right fairings of the vehicle.

Fixed mounts may be mounted externally or internally. External mounts are easily seen by casual observers and are not protected by the vehicle's armor. Internal mounts are normally concealed from outside viewers, but require a Full Phase action to deploy. While deployed, the weapon is not protected by the vehicle's armor.

Fixed Mounts provide Strength +10 to the vehicle, only for weapon STR Minimum requirements.

Power: STR +10; **Adv**: None; AP: 10; **Lim**: Only to offset STR Minimum (-1); (External Only: Visible -.25)

Type	Cost
External Fixed Mount	BODY x 100
Internal Fixed Mount	BODY x 150
Extra Ammo Storage	BODY x 50
(Maximum is x5 standard)	

MISSILE AND ROCKET MOUNTS

Missiles and rockets require special mounts on vehicles separate from other weapon mountings.

For ground vehicles, externally mounted missiles and rockets sit on roof-rack mounts. Civilian vehicles armed in this way must also have roll bars for stability. A vehicle may carry a number of missiles or rockets equal to its BODY divided by 3.

Aircraft and helicopters generally carry rockets and missiles on pinions under their wings, fairings, or fuselages. An aircraft may carry a number of missile or rocket mounts equal to its BODY divided by 3.

Internal rocket and missile mounts work much the same as internal fixed mounts, requiring a Full Phase action to deploy.

Drones must be at least Size 0 (.5 x .5) to mount full size missiles. Smaller drones must fire micro-missiles.

Type	Cost
External Missile/Rocket Mount	1500
Internal Missile/Rocket Mount	5000

PINTLE MOUNTS
These are the simplest mounts available, consisting of simple reinforced holes and swivels mounted into the side of a vehicle. Pintle mounts fire in a fixed 60 degree arc. Mounting or dismounting a weapon from a pintle mount requires a Full-Phase action. These weapons cannot be fired remotely; they must be manned to fire. Pintle Mounts provide Strength +5 to the vehicle, only to offset STR Minimums.
Power: STR +5; **Adv**: None; AP: 5; **Lim**: Only to offset STR Minimum (-1)

Type	Cost
Pintle Mount	BODY x 50
Extra Ammo Storage	BODY x 10
(Maximum is x5 standard)	

RING MOUNTS
These are a step up from the basic pintle mount. It consists of a freely rotating ring set on the top of a vehicle, with a tripod assembly attached to the ring; the gunner stands in the middle of the ring to fire the weapon. The ring rotates in a full circle, giving full 360 degree arc of fire. Mount or dismounting a weapon from a ring mount requires a Full Phase action. Weapons on ring mounts may not be fired remotedly, they must be manned. Ring Mounts provide Strength +10 to the vehicle, only to offset STR Minimums.
Power: STR +10; **Adv**: None; AP: 10; **Lim**: Only to offset STR Minimum (-1)

Type	Cost
Ring Mount	BODY x 150
Extra Ammo Storage	BODY x 50
(Maximum is x5 standard)	

SMARTLINK INTEGRATION KIT
The smartlink integration kit is an interface that connects smartgun-equipped weapons mounted in fixed mounts and turrets with gunners who are equipped with smartlink cyberware. Without the integration kit, smartgun-equipped weapons mounted in fixed mounts or turrets do not gain the benefit of the smartlink. Characters who do not have smartlink cyberware firing smartlink-equipped vehicle weapons are treated like they are using Smart Goggles instead.

The gunner need not be jacked into the vehicle to take advantage of the smartlink system. The smartlink integration kit contains palm-induction links or interface jacks for weapon controls. Smartlink integration is not necessary for weapons mounted on pintle or ring mounts.

Type	Cost
Smartlink Integration Kit	1000

TARGETING SYSTEM
These are computerized targeting systems that account for distance, wind, and other factors that can affect the firing of a weapon. It is similar to the targeting computer cyberware, but accounts for many things that only occur on vehicles, so the two systems will integrate perfectly. The maximum rating for this system is 6.
Power: Combat Skill Levels: All Ranged; **Adv**: None; AP: 5 per rating; **Lim**: Only to offset any penalties (-.5)

Type	CSL	Cost
Targeting System	+1-6	Rat. x 10000

TURRETS
Turrets are motorized, armored ring mounts. Turrets come in two different types: Standard and Pop-Up. Both types of turrets may be fired from within the turret itself or from a remote position inside the vehicle

via sensors. Turrets provide Strength +20 to the vehicle, only to offset STR Minimums. Pop-up turrets are normally concealed from outside viewers, but require a Full Phase action to deploy. Weapons mounted on any turret are always protected by the vehicle's armor.
Power: STR +20; **Adv**: None; AP: 20; **Lim**: Only to offset STR Minimum (-1)

Type	Cost
Standard Turret	BODY x 1000
Pop-Up Turret	BODY x 1500
Extra Ammo Storage	BODY x 500
(Maximum is x3 standard)	

VEHICLE GYROSCOPIC STABILIZERS
Vehicle gyroscopic stabilizers are available for weapons mounted in fixed mounts and turrets. Vehicle gyroscopic stabilizers provide Strength +10 to the vehicle, only to offset STR Minimums.
Power: STR +10; **Adv**: None; AP: 10; **Lim**: Only to offset STR Minimum (-1)

Type	Cost
Vehicle Gyroscopic Stabilizer	BODY x 250

ELECTRONIC SYSTEMS

ELECTRONIC COUNTERMEASURES (ECM)
Electronic countermeasures include active devices such as barrage radio jammers, infrared jammers, chaff and flare dispensers, and wave harmonic disrupters that confound sensor systems and jam the communications of opposing remote-control operations.

The ECM cause penalties to Systems Operation Skill rolls and all rolls involved with remote-control networks. An ECM booster is an add-on that increases the area affected by ECM. The maximum rating for either system is 10.
Power: Change Environment: Penalties to Systems Operation and Remote-Control skills x1024 Area (1024" Radius); **Adv**: Reduced END: 0 END (+.5), Personal Immunity (+.25); AP: 96 +4.5 per Rating, +7.5 per x2 Range; **Lim**: OIF, Bulky (-1); Does not work in magnetic fields (-.25); Only for radio-based communications (-.5)

Type	Pen.	Range	Cost
Electronic Countermeasures	-1	1024"	Rat. x 10000
ECM Booster	--	x2	Rat. x 10000

ELECTRONIC COUNTER-COUNTERMEASURES (ECCM)
Electronic counter-countermeasures include signal amplifiers and noise filters that nullify the effects of ECM.

ECCM provide skill levels to all remote-control network based skills, only to offset penalties created by ECM. The maximum rating for ECCM is 10.
Power: Penalty Skill Levels: All remote-control network skills affected by ECM; **Adv**: None; AP: 3 per Rating; **Lim**: OIF, Bulky (-1); Does not work in magnetic fields (-.25)

Type	SL	Cost
Electronic Counter-Countermeasures	+1	Rat. x 10000

REMOTE –CONTROL ENCRYPTION MODULE
This device works just like the encryption module for the remote-control decks, allowing remotely-controlled drones to decrypt encrypted signals from the rigger and scramble their own transmissions to protect against signal interception. If a vehicle or drone is part of a remote-control network using and encryption module to scramble its signals, then the vehicle/drone must have a module to communicate with the network. The RCEM provides skill levels for Cryptography to guard against intrusion of the network by other riggers. The maximum rating for the RCEM is 10.
Power: Cryptography Skill; **Adv**: None; AP: 3 per Rating; **Lim**: IIF (-.25); Independent (-2); Does not work in magnetic fields (-.25); Only to encrypt or decrypt radio transmissions (-1)

Type	SL	Cost
Remote Control Encryption Module	+1-10	Rating x 5000

SENSORS

Sensor systems include standard and enhanced audio/video sensors, thermal and radar sensors, and ultrasound sensors, as well as identification, recognition and tracking software.

Rating 0 Sensors: Detect Range, Sense, Ranged, Discriminatory; Ultrasonic Perception; Spatial Awareness

Rating 1 Sensors: Detect Range, Sense, Ranged, Discriminatory; Ultrasonic Perception; Spatial Awareness, Normal Sight; Normal Hearing, Radar; Ultraviolet Perception, Telescopic: All +2, Enhanced Senses: All +1

Rating 2 Sensors: Detect Range, Sense, Ranged, Discriminatory; Ultrasonic Perception; Spatial Awareness, Normal Sight; Normal Hearing, Radar; Ultraviolet Perception, Infrared Perception, Telescopic: All +4, Enhanced Senses: All +2

Rating 3 Sensors: Detect Range, Sense, Ranged, Discriminatory; Ultrasonic Perception; Spatial Awareness, Normal Sight; Normal Hearing, Radar; Ultraviolet Perception, Infrared Perception, Telescopic: All +6, Enhanced Senses: All +3

Rating 4 Sensors: Detect Range, Sense, Ranged, Discriminatory; Ultrasonic Perception; Spatial Awareness, Normal Sight; Normal Hearing, Radar; Ultraviolet Perception, Infrared Perception, Telescopic: All +8, Enhanced Senses: All +4

Rating 5 Sensors: Detect Range, Sense, Ranged, Discriminatory; Ultrasonic Perception; Spatial Awareness, Normal Sight; Normal Hearing, Radar; Ultraviolet Perception, Infrared Perception, Telescopic: All +10, Enhanced Senses: All +5, Flash Defense: Sight Group +2

Rating 6 Sensors: Detect Range, Sense, Ranged, Discriminatory; Ultrasonic Perception; Spatial Awareness, Normal Sight; Normal Hearing, Radar; Ultraviolet Perception, Infrared Perception, Telescopic: All +12, Enhanced Senses: All +6, Flash Defense: Sight Group +4

Rating 7 Sensors: Detect Range, Sense, Ranged, Discriminatory; Ultrasonic Perception; Spatial Awareness, Normal Sight; Normal Hearing, Radar; Ultraviolet Perception, Infrared Perception, Telescopic: All +14, Enhanced Senses: All +7, Flash Defense: Sight Group +6

Rating 8 Sensors: Detect Range, Sense, Ranged, Discriminatory; Ultrasonic Perception; Spatial Awareness, Normal Sight; Normal Hearing, Radar; Ultraviolet Perception, Infrared Perception, Telescopic: All +16, Enhanced Senses: All +8, Flash Defense: Sight Group +8

Rating 9 Sensors: Detect Range, Sense, Ranged, Discriminatory; Ultrasonic Perception; Spatial Awareness, Normal Sight; Normal Hearing, Radar; Ultraviolet Perception, Infrared Perception, Telescopic: All +18, Enhanced Senses: All +9, Flash Defense: Sight Group +10

Rating 10 Sensors: Detect Range, Sense, Ranged, Discriminatory; Ultrasonic Perception; Spatial Awareness, Normal Sight; Normal Hearing, Radar; Ultraviolet Perception, Infrared Perception, Telescopic: All +20, Enhanced Senses: All +10, Flash Defense: Sight Group +12

Type	Cost
Rating 1 Sensors	5000
Rating 2 Sensors	7500
Rating 3 Sensors	10000
Rating 4 Sensors	12500
Rating 5 Sensors	15000
Rating 6 Sensors	20000
Rating 7 Sensors	30000
Rating 8 Sensors	50000
Rating 9 Sensors	100000
Rating 10 Sensors	500000

VEHICLE ACCESSORIES

AMPHIBIOUS OPERATION PACKAGE

This is used to modify ground vehicles for amphibious operations. If the vehicle has watertight seals and life-support, it can be used for underwater operations. This option requires EnviroSeal and Life-Support. A ground vehicle may have no more than ½ its Running movement in Swimming. This option is obvious to anyone looking upon the vehicle.

Power: Swimming; **Adv**: None; AP: 1 per 1"; **Lim**: None

Type	Swim	Cost
Amphibious Operation Package	+1"	2500 per +1

ANTI-THEFT SYSTEMS

Every vehicle comes equipped with maglocks on its entry points and on its control systems. Default vehicle maglocks are rated at 2, and are equipped with either a keypad, cardreader or fingerprint scanner (purchaser's choice). These maglocks can be defeated, allowing access to and control over the vehicle. The system can be programmed with a variety of responses to a triggered alarm. It may be set to emit a loud, attention-grabbing alarm, automatically call a pre-programmed number via the onboard cell-phone, or alert a controlling rigger. More secure anti-theft systems can be purchased, improving the quality of the maglocks and adding other security features.

Improved Security: Anti-theft systems can be improved to ratings 3 to 10 with this modification. The improved rating is used for all of the vehicle's maglocks and other features.

Electric Shock: An electrical current ripples through the outer shell of the vehicle, giving a nasty shock to the would-be thief. The voltage level does the same damage as a taser (6d6 NND: Electricity).

Explosion: Those who really hate vehicle thieves can set up their anti-theft systems to blow up the vehicle with plastic explosives. As a general rule, vehicles must be packed with enough plastic explosives to do enough BODY on average to destroy the vehicle. The explosion destroys the vehicle and inflicts its damage on the would-be intruder—as well as passengers, cargo, and anyone passing by.

Proximity Alert: A vehicle with this system uses its sensors to scan any people who approach within a prescribed distance. If the approaching person is not carrying a proper identifier (usually a minor radio beacon, magnetized passcard, etc.) the vehicle audibly warns the interloper to back off. If the person continues to approach the vehicle, it issues an alarm and/or triggers a linked system (such as the electric shock system). Only vehicles with sensors of 1 or more may take this modification.

Type	Cost
Improved Security	
Rating 3-6	Rat. x 400
Rating 7-9	Rat. x 1000
Rating 10+	Rat. x 5000
Electric Shock System	+2000
Proximity Alert	+250

EJECTION BUCKET SEATS

The ejection bucket seat is a standard or armored bucket seat fitted with a small solid-fuel rocket and rudimentary stabilization systems. Ejection-activation controls may be included on or near the seat at the time of installation. The seat includes a parasail that deploys on ejection and brings the chair and occupant safely down to the ground, assuming the occupant was securely strapped in. Reinforced ejection seats are also available for large orks, trolls, etc.

Power: STR; **Adv**: Reduced END: 0 END; AP: 30/40; **Lim**: Only to throw an occupant straight up (-2)

Power: Gliding 6"; **Adv**: None; AP: 6; **Lim**: OAF (-1); Limited Movement (character cannot gain altitude and must move down 12" for every 1" forward; -.5); 1 recoverable charge (lasts until the character hits the ground or the parachute is fouled; -.75)

Type	Cost
Ejection Bucket Seat	3000
Reinforced Ejection Bucket Seat	6000

CONVERTIBLE TOP

"Rag-top" conversions are available for vehicles that normally come with hard tops and do not have gull-wing or canopy access. The conversion replaces the hard-top roof with a folding canopy that can be extended or retracted on command. Rag-tops do not provide protection to passengers from side, rear, or top attacks.

Type	Cost
Convertible Top	10% base vehicle

CRANE

A crane is a hydraulically powered mechanical boom capable of lifting heavy loads. To use a crane, the vehicle must be stationary and immobilized with the supplied chocks.

Power: Telekinesis; **Adv**: Reduced END: 0 END (+.5); AP: 4.5 per 2 points of TK STR; **Lim**: Affects whole object (-.25); Only works out to 3 x vehicle length (-.25)

Type	Cost
Crane	STR x 250

DRONE RACK

Drone racks are used to launch airborne drones from moving vehicles. The rack is a hardware cradle that holds the drone, moves it into launch position and then releases it. Drone racks can also be used to recover launched drones while a vehicle is moving. For every multiple of maximum BODY held equal to the mounting vehicle's BODY, the Drone Rack takes up 1 Hex of the vehicle's available space.

Type	Cost
Drone Rack	Total BODY of Drones Carried x 500

MECHANICAL ARMS

Articulated mechanical arms are not as strong as cranes, but they possess superior dexterity. In fact, a mechanical arm can do the same things that a metahuman arm can and then some.

Power: Telekinesis with Fine Manipulation; **Adv**: Reduced END: 0 END (+.5); AP: 10 + 4.5 per 2 points of TK STR; **Lim**: Only works out to 3 x vehicle length (-.25)

Type	Cost
Mechanical Arms	STR x 1500

MEDICAL CLINIC

A mobile medical clinic is a complete assortment of medical gear including emergency diagnostic electronics and biomonitors, pressurized oxygen tanks and breathing masks, a stabilization unit and an assortment of controlled drugs and compounds. A vehicle medical clinic is the equivalent of a medical shop. Ambulances and other emergency medical vehicles primarily use vehicle medical clinics.

Type	Cost
Medical Clinic	300000

PHOTOVOLTAIC CHAMELEON PAINT

Photovoltaic chameleon pain allows the pigmentation and pattern of a vehicle's paint to be altered. Unmarked security and police vehicles use chameleon paint to switch between a mundane appearance and official security/police markings. Likewise, shadowrunners use chameleon paint to lose tails and prevent their vehicles from being identified at crime scenes. Chameleon paint is also popular among members of certain social classes who like to show off their vehicles with specialized schemes or display certain messages to passersby.

Chameleon paint requires more than a simple paint job. First, a monofilament mesh must be secured to the vehicle's surface with insulating resin. The mesh is then wired to the vehicle's onboard computer. The photovoltaic paint is then applied over the mesh. The paint scheme is controlled via a program loaded onto the onboard computer, allowing the user to select a particular color and pattern for each segment of the mesh grid.

Changing a vehicle's color takes a minimum of a Full Phase action and may take longer depending on the complexity of the paint scheme.

Chameleon paint does not allow a vehicle to blend into surrounding environment, as do ruthenium polymers. In fact, chameleon paint is incompatible with ruthenium, as well as ablative armor.

Power: Shapeshift: Sight Group; **Adv**: Reduced END: 0 END (+.5); Persistent (+.5); AP: 10; **Lim**: IIF (-.25); Does not work in magnetic fields (-.25); Only to change the vehicle's paint scheme (-1)

Type	Cost
Photovoltaic Chameleon Paint	BODY x 500

SEATS

Seats come in two types: bench and bucket. Both types of seats have additional options available: armoring and reinforcement.

Bench Seats: These are popular in compact vehicles or other vehicles in which space is at a premium. A single bench seat can accommodate two human-sized passengers. Folding bench seats are common in vehicles such as limousines, to provide extra seating for lackeys and the like when needed, or also in station wagons.

Bucket Seats: These hold a single person in greater comfort than a standard bench seat. Folding bucket seats are common in SUVs and minivans, and alloy greater storage when necessary.

Armored Seats: Any type of seat may be armored to protect against incoming fire that penetrates the vehicle. Armored seats provide 2 DEF against attacks from the rear.

Reinforced Seats: These are designed to support the weight of larger orks, trolls, and other large metahumans. If an oversized metahuman attempts to sit in a standard seat, he will crush the seat and mangle its padding. Other effects may apply from discomfort.

Metahuman Adjustment Package Deal: All of the vehicles listed in the Vehicles document are also available in metahuman-adjusted variants, which replace all standard seats with reinforced seating. This package deal also includes size adjustment of manual controls.

Type	Cost
Bench Seat	750
Folding Bench Seat	750
Reinforced Bench Seat	1500
Standard Bucket Seat	700
Folding Bucket Seats	700
Reinforced Bucket Seat	1500
Armored Seats	+1500

SIDECAR

Motorcycle sidecars are built by increasing the size of the vehicle by 1 level and can either be used to carry passengers or other gear. It's possible to install weapon mounts into a sidecar as well. Hitching or unhitching a sidecar requires 15 minutes.

Type	Cost
Sidecar	2000

SPOTLIGHT

A spotlight projects a concentrated beam of light. In addition to standard white-light spotlights, they are also available in medium-range infrared or ultraviolet. They may be controlled manually or operated remotely from inside the vehicle.

Power: Images: Normal Sight 2" Radius; **Adv**: Reduced END: 0 END (+.5); AP: 15; **Lim**: OAF (-.5); Only to create light (-1)

Type	Cost
Spotlight	600

TIRES

A number of different tire types are available. All vehicles are fitted with appropriate tires at the time of manufacture for no cost. Characters need only pay tire cost if they request special tires or replace or add tires later.

Standard Tires: These are regular, run-of-the-mill tires.

Performance Tires: These tires provide +1 to Combat Driving rolls when on paved roads due to improved handling but are Susceptible to being driven on anything but roads. They take 1 BODY per hour of operation off-road, or 2 BODY in really rocky off-road conditions.

Off-Road Tires: These tires provide +1 to Combat Driving rolls due to improved handling but lack the finesse of paved road tires. All Combat Driving rolls on paved roads are at -1.

Puncture-Resistant: These tires are inner sealed with Kevlar and puncture resistant fibers, allowing them to resist damage better than standard tires.

Snow Tires: These are standard tires that provide +1 to Combat Driving rolls to maintain control on snow and ice.

Type	DEF	BODY	Cost
Standard	2	2	BODY x 10
Performance	3	3	BODY x 15
Off-Road	3	3	BODY x 25
Puncture-Resistant	4	4	BODY x 40
Snow	3	3	BODY x 15

WINCHES

Winches are attached to the bumpers of ground vehicles and can pull or tow heavy loads. A winch can also be used to pull the vehicle across normally impassable terrain, such as up a vertical cliff face.

Power: Telekinesis; **Adv**: Reduced END: 0 END (+.5); AP: 4.5 per 2 TK STR; **Lim**: Only to pull or drag objects (-1); Affects whole object (-.25)

Power: Flight 1"; **Adv**: Reduced END: 0 END (+.5); AP: 3; **Lim**: Only to where the winch is secured (-1);

Type	Cost
Winch	100 + STR x 10

VEHICLE EQUIPMENT

MORPHING LICENSE PLATE

A morphing license plate is composed of smart materials that bend and deform according to set patterns when charged with electricity. This allows the plate to be programmed to depict certain embossed letters or numbers. The plate is also colored with photovoltaic paint, so that its color scheme may also change according to the electric charge, allowing the plate to mimic license plates from any state or country.

Power: Shapeshift: Sight Group, Touch; **Adv**: Reduced END: 0 END (+.5); Persistent (+.5); AP: 26; **Lim**: IIF (-.25); Independent (-2); Does not work in magnetic fields (-.25); Only to change the license plate (-2)

Type	Cost
Morphing License Plate	5000

OIL SLICK SPRAYER

Though clichéd, this device is still effective. An oil-slick sprayer consists of an electric hydraulic cylinder, an oil reservoir tank and a multi-nozzle sprayer. Usually mounted under the rear bumper, this device sprays a sheet of Teflon-powdered oil onto the street, a tactic designed to induce the crashes of pursuing ground vehicles.

Power: Change Environment: 4" Radius, -5 to Combat Driving; **Adv**: 10 Continuing charge lasting 20 minutes (+1); AP: 60; **Lim**: IIF (-.25); Independent (-2); 2" Range (-.25); Only behind the vehicle (-.5)

Type	Cost
Oil Slick Sprayer	600
Oil Tank Refills	50

VEHICLE SMOKE PROJECTOR

Smoke projection canisters are designed to be externally mounted on a vehicle. When triggered, smoke projectors spew massive amounts of smoke, providing fast cover. Infrared smoke may also be used to obscure thermographic vision and sensors.

Power: Change Environment: 16" Radius, -5 to Normal Sight Perception Rolls, Infrared Perception Rolls; **Adv**: 12 Continuing charge lasting 5 minutes (+.75); AP: 70/88; **Lim**: IIF (-.25); Independent (-2); No Range (-.5)

Type	Cost
Vehicle Smoke Projector	1000
Infrared Smoke	1200

SPIKE STRIP

Spike strips are long, thing strips embedded with a multitude of sharp, penetrating spikes. When unrolled and stretched across a roadway, the spikes of the strip are designed to puncture and deflate rubber tires that pass over the strip. Spike strips are commonly used by law enforcement personnel to end vehicle chases or to close off a street from vehicle access. The area affected is difficult to determine and GMs may allow drivers a PER Roll to determine if they see the spike strip.

Power: 1d6 RKA (Spikes); **Adv**: Invisible Power Effects: All (+1); Armor Piercing (+.5); Area of Effect: 2" Line (+1); Reduced END: 0 END (+.5); Persistent (+.5); AP: 68; **Lim**: OAF (-1); Independent (-2); No Range (-.5); Only affect wheels that are in contact with the ground that cross the area (-1)

Type	Cost
Spike Strip	500

VEHICLE WEAPONS

Weapon	OCV	RMod	Damage	STUNx	STR Min.	Ammo	Range	Mode	Avail.	Legality	Nuyen
Pistols											
10mm Pistol	+1	0	1½d6	0	10	x 50	125	SA	-2/24 hrs	-2P-E	300
.357 Magnum Pistol	+1	0	2d6-1	+1	11	x 48	125	SA	-2/24 hrs	-2P-E	400
11mm Pistol	+1	0	2d6	0	11	x 46	150	SA	-2/24 hrs	-2P-E	400
.45 Cal Pistol	+1	0	2d6	0	11	x 46	150	SA	-3/36 hrs	-1P-E	400
.410 Magnum Pistol	+1	0	2d6	+1	13	x 44	150	SA	-2/24 hrs	-2P-E	500
12mm Pistol	+1	0	2d6+1	0	13	x 40	175	SA	-4/48 hrs	-1P-E	600
.44 Magnum Pistol	+1	0	2d6+1	+1	15	x 40	175	SA	-3/36 hrs	-1P-E	600
.454 Casull Pistol	+1	0	2d6+1	+1	15	x 40	175	SA	-4/48 hrs	-1P-E	600
14mm Pistol	+1	0	2½d6	+1	20	x 34	200	SA	-7/5 days	0P-E	800
.666 Cal Pistol	+1	0	3d6-1	+1	25	x 32	200	SA	-8/7 days	+1P-E	900
Submachine Guns											
10mm Submachine Gun	+1	0	1½d6	0	10	x 50	125	AF-10	-3/24 hrs	-2P-E	1000
.357 Magnum Submachine Gun	+1	0	2d6-1	+1	11	x 48	125	AF-10	-3/24 hrs	-2P-E	1100
11mm Submachine Gun	+1	0	2d6	0	11	x 46	150	AF-10	-3/24 hrs	-2P-E	1100
.45 Cal Submachine Gun	+1	0	2d6	0	11	x 46	150	AF-10	-3/36 hrs	-1P-E	1100
.410 Magnum Submachine Gun	+1	0	2d6	+1	13	x 44	150	AF-10	-3/24 hrs	-2P-E	1200
12mm Submachine Gun	+1	0	2d6+1	0	13	x 40	175	AF-10	-3/48 hrs	-1P-E	1300
.44 Magnum Submachine Gun	+1	0	2d6+1	+1	15	x 40	175	AF-10	-3/36 hrs	-1P-E	1300
.454 Casull Submachine Gun	+1	0	2d6+1	+1	15	x 40	175	AF-10	-4/48 hrs	-1P-E	1300
14mm Submachine Gun	+1	0	2½d6	+1	20	x 34	200	AF-10	-8/5 days	0P-E	1500
.666 Cal Submachine Gun	+1	0	3d6-1	+1	25	x 32	200	AF-10	-9/7 days	+1P-E	1600
Shotguns											
.410 Shotgun	0	0	2d6	+1	10	x 46	150	SA	-2/24 hrs	0-F	400
.410 Auto Shotgun	0	0	2d6	+1	10	x 46	150	AF-5	-3/36 hrs	+1-F	600
20 Gauge Shotgun	0	0	2d6+1	+1	12	x 42	175	SA	-2/24 hrs	0-F	500
20 Gauge Auto Shotgun	0	0	2d6+1	+1	12	x 42	175	AF-5	-3/36 hrs	+1-F	750
12 Gauge Shotgun	0	0	2½d6	+1	15	x 38	200	SA	-3/24 hrs	0-F	600
12 Gauge Auto Shotgun	0	0	2½d6	+1	15	x 38	200	AF-5	-4/36 hrs	+1-F	900
10 Gauge Shotgun	0	0	3d6-1	+1	18	x 32	225	SA	-3/36 hrs	+1-F	800
10 Gauge Auto Shotgun	0	0	3d6-1	+1	18	x 32	225	AF-5	-4/48 hrs	+2-F	1200
8 Gauge Shotgun	0	0	3d6	+1	20	x 30	250	SA	-4/48 hrs	+1-F	900
8 Gauge Auto Shotgun	0	0	3d6	+1	20	x 30	250	AF-5	-5/5 days	+2-F	1350
4 Gauge Shotgun	0	0	3d6+1	+1	23	x 28	275	SA	-5/7 days	+2-F	1000
4 Gauge Auto Shotgun	0	0	3d6+1	+1	23	x 28	275	AF-5	-6/10 days	+3-F	1500
Machine Guns											
5.56mm Machine Gun	+1	+2	2d6+1	0	10	x 40	875	AF-10	-2/4 days	+1-H	1200
7.62mm Machine Gun	+1	+2	2½d6	0	13	x 36	1000	AF-10	-3/5 days	+2-H	1300
.30 Cal Machine Gun	+1	+2	2½d6	+1	15	x 34	1000	AF-10	-3/5 days	+2-H	1400
.450 Cal Machine Gun	+1	+2	3d6-1	+1	18	x 32	1000	AF-10	-4/5 days	+2-H	1500
.50 Cal Machine Gun	+1	+2	3d6	+1	20	x 30	1125	AF-10	-4/7 days	+3-H	1600
13mm Machine Gun	+1	+2	3d6	+1	20	x 30	1125	AF-10	-5/14 days	+4-H	1700
14.5mm Machine Gun	+1	+2	3d6+1	+1	23	x 28	1250	AF-10	-6/21 days	+4-H	1800
Miniguns											
5.56mm Minigun	+0	+1	2d6+1	0	20	x 40	875	AF-20*	-3/4 days	+2-H	1400
7.62mm Minigun	+0	+1	2½d6	0	23	x 36	1000	AF-20*	-4/5 days	+3-K	1500
.30 Cal Machine Gun	+0	+1	2½d6	+1	25	x 34	1000	AF-20*	-4/5 days	+3-K	1600
.450 Cal Machine Gun	+0	+1	3d6-1	+1	28	x 32	1000	AF-20*	-5/5 days	+3-K	1700
.50 Cal Machine Gun	+0	+1	3d6	+1	30	x 30	1125	AF-20*	-5/7 days	+4-K	1800
14.5mm Machine Gun	+0	+1	3d6+1	+1	33	x 28	1250	AF-20*	-7/21 days	+5-K	2000
Cannons											
20mm Cannon	+1	+4	4d6+1	+1	27	x 24	1625	SA	-8/14 days	+2-H	5000
25mm Cannon	+1	+4	4½d6	+1	29	x 22	1750	SA	-8/15 days	+2-H	10000
30mm Cannon	+1	+4	5d6	+1	31	x 20	1875	SA	-9/16 days	+2-H	15000
75mm Cannon	+1	+4	6d6	+1	38	x 16	2250	SA	-10/21 days	+2-H	20000
90mm Cannon	+1	+4	6½d6	+1	42	x 14	2500	SS	-11/1 mo	+2-H	40000
105mm Cannon	+1	+4	7d6	+1	44	x 12	2625	SS	-12/2 mo	+2-H	50000
120mm Cannon	+1	+4	7½d6	+1	48	x 10	2875	SS	-13/6 mo	+2-H	60000
140mm Cannon	+1	+4	8d6	+1	50	x 8	3000	SS	-14/1 year	+2-H	75000
Railguns											
4mm Railgun	+2	+6	4d6 AP2	+1	45	x 34	1500	SS	-10/21 days	+4-H	20000
6mm Railgun	+2	+6	4d6+1 AP2	+1	49	x 32	1625	SS	-11/1 mo	+4-H	30000
8mm Railgun	+2	+6	4½d6 AP2	+1	53	x 30	1750	SS	-12/2 mo	+4-H	40000
1cm Railgun	+2	+6	5d6 AP2	+1	56	x 28	1875	SS	-13/6 mo	+4-H	50000
2cm Railgun	+2	+6	5½d6 AP2	+1	64	x 24	2000	SS	-14/1 year	+5-H	100000
3cm Railgun	+2	+6	6d6 AP2	+1	68	x 20	2125	SS	-15/1 year	+6-H	150000
4cm Railgun	+2	+6	6½d6 AP2	+1	75	x 16	2500	SS	-16/1 year	+7-H	200000

* Always fires on AF-20, STR Min takes into account AF-20 and ½ Recoil Penalties (Minigun Class weapon)

The Ammo Column represents the multiplier used to figure the standard Ammunition Capacity of a Weapon Mount. Take this multiplier by the Vehicle BODY and this is the number of rounds the standard mount carries. This can be increased by spending money to allocate more storage for ammunition.