A sourcebook for HERO SYSTEM FIFTH EDITION

HERO SYSTEM VEHICLE SOURCEBOOK

Steven S. Long

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The HERO System Vehicle Sourcebook

A Collection Of Vehicles For *HERO System* Games

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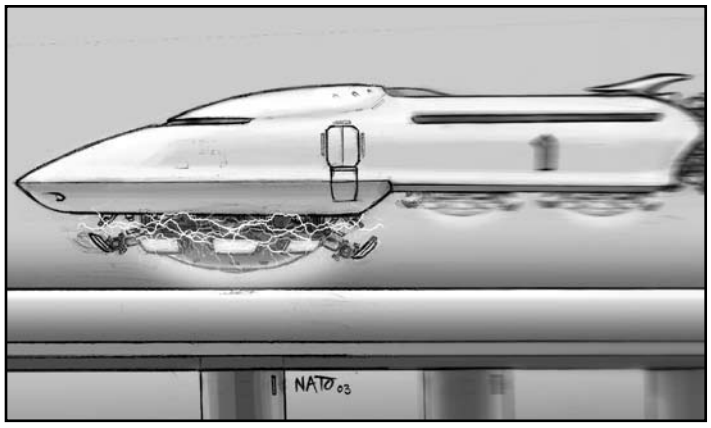
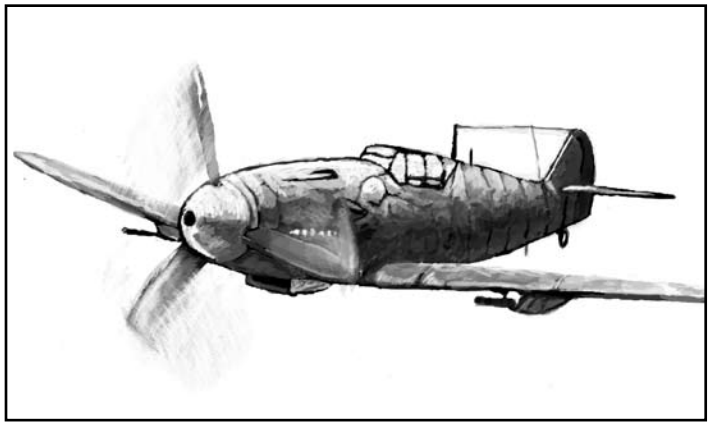
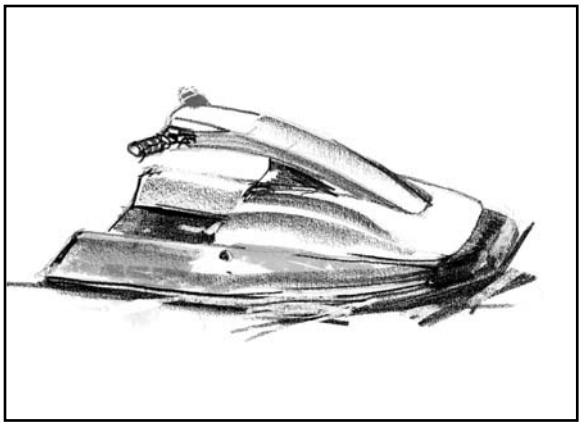
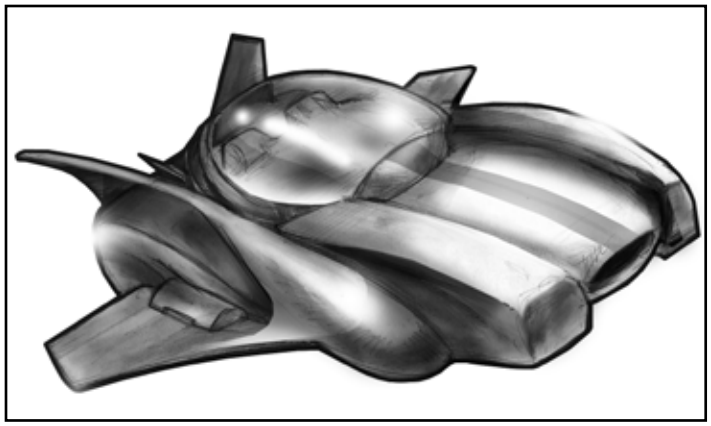




A WORD OR TWO OF APPRECIATION

Special Thanks: We'd like to thank the *Digital Hero* playtesters and testreaders who reviewed the HSVS manuscript. Special thanks also to Jason Walters for assistance and advice on the motorcycle writeups.





Printed in the U.S.A. First printing January 2004
Produced and distributed by DOJ, Inc. d/b/a Hero Games.
Stock Number: DOJHERO105 • ISBN Number: 1-58366-024-0
http://www.herogames.com

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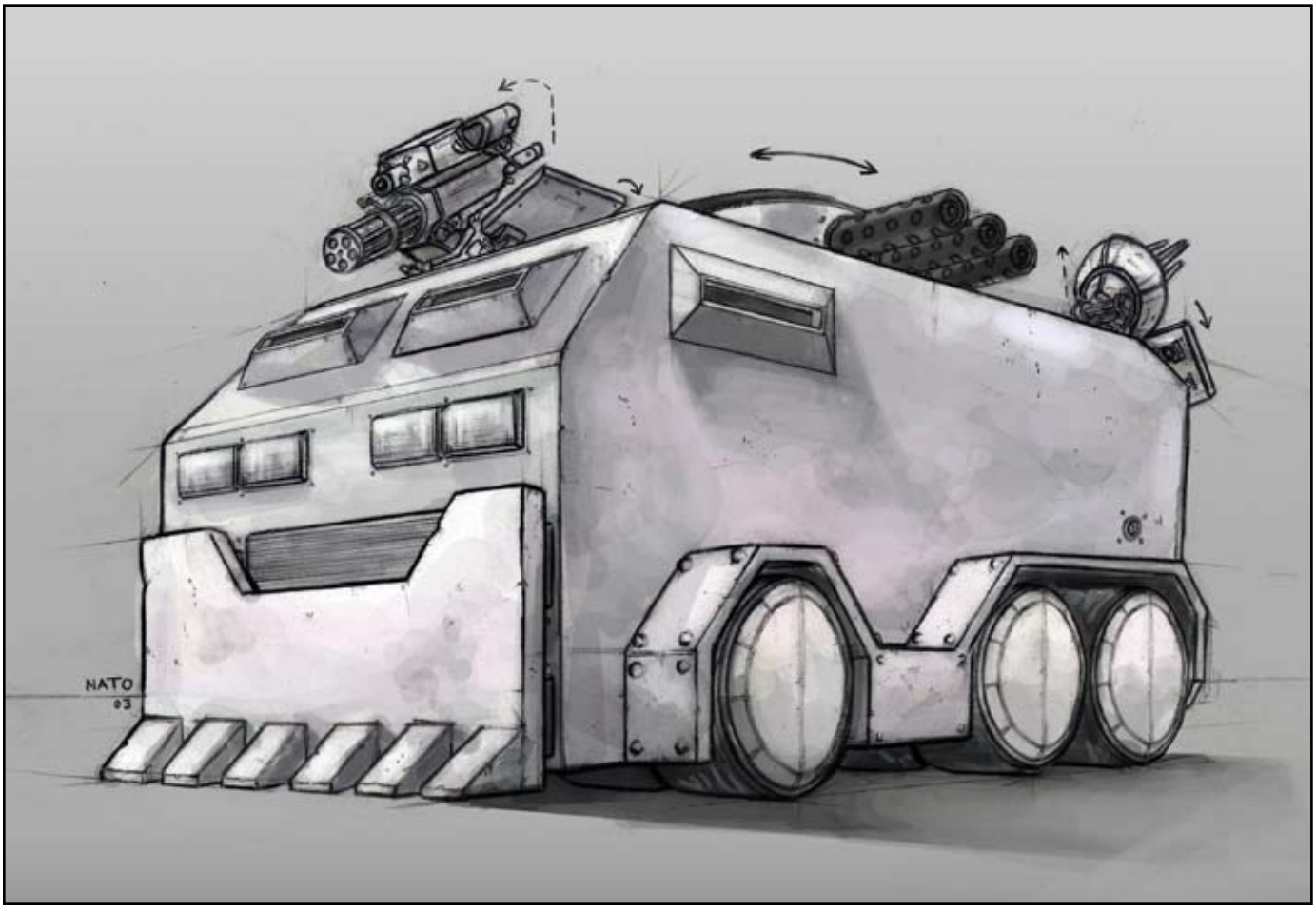


INTRODUCTION

VEHICULAR COMPUTERS

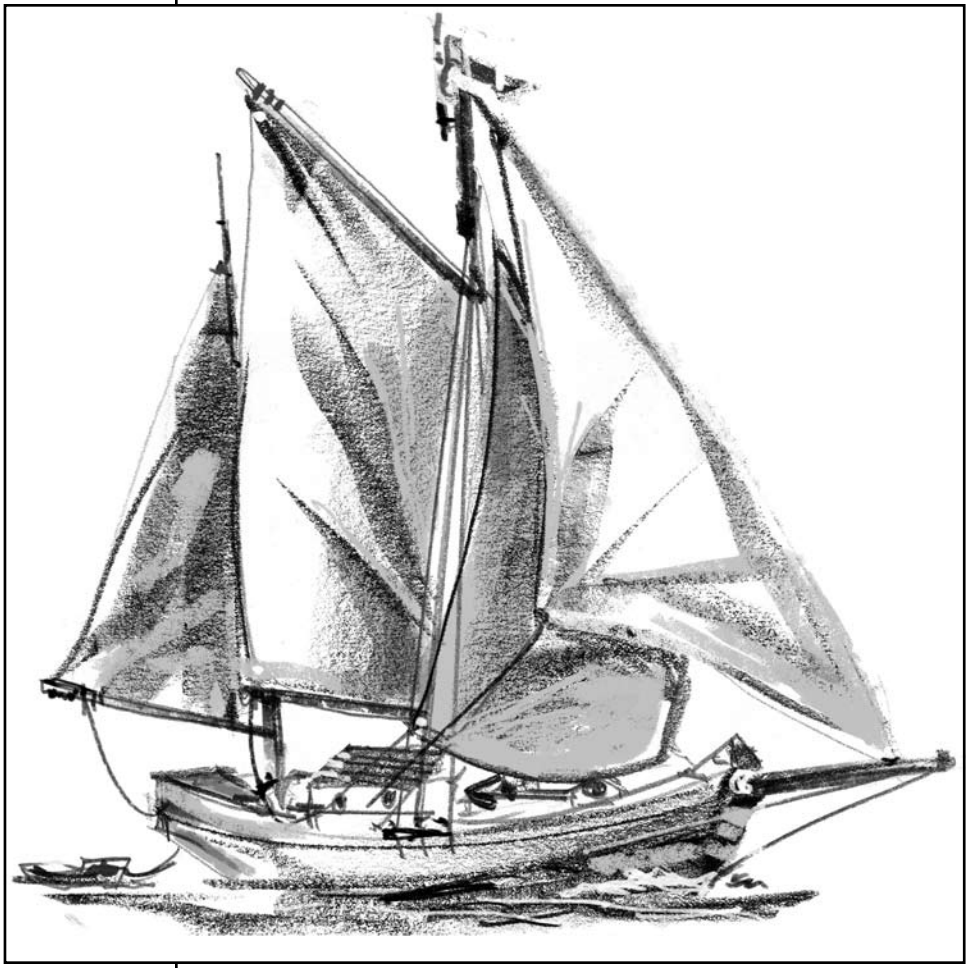
It would be perfectly appropriate for many of the vehicles in this book, particular advanced military planes and watercraft, to have vehicular computers, such as the ones on pages 161-62 of *The Ultimate Vehicle*. However, for space reasons no such computers are listed with the vehicles in this book.

In virtually all gaming campaigns, characters have to travel — sometimes every game, sometimes just to reach the scene of the action in a particular adventure. And that usually means they need vehicles. Even in *Champions* campaigns, where many characters have the ability to move at high velocity on their own, teams of PCs use vehicles to get from one place to another as a group. And even if the PCs don't need vehicles, their enemies probably do....

The HERO System Vehicle Sourcebook is a collection of over 140 vehicles of all types from many different time periods. While the emphasis is on modern-day vehicles (since many gaming campaigns take place in the twentieth and twenty-first centuries and the production of different types of vehicles expanded greatly during that time), there are also many vehicles suitable for earlier periods and lower levels of technological advancement (such as those depicted in many *Fantasy Hero* campaigns). (Except for the Space Shuttle, this book doesn't include starships or space vehicles; *Star Hero* and the products supporting it already contain dozens of starships suitable for your games.)

The *Vehicle Sourcebook* is organized into four chapters. The first chapter covers ground vehicles — everything from everyday automobiles, to sportcars, to tanks and other military vehicles. Chapter Two focuses on air vehicles, with planes and helicopters ranging from the most advanced jetfighters to one-man small civilian craft. Chapter Three features water vehicles: boats, submarines, and sailing ships from the Age of Sail to the Cold War.

While the first three chapters include only real-world vehicles that actually existed (or which will exist) at some point, Chapter Four departs from the realms of "reality" for those of fiction. It features Fantasy and superheroic vehicles like the ones you might read about in novels or comic books. Whether you need an enchanted ship to sail through the clouds or a mole machine to tunnel to the center of the earth, you'll find it here.

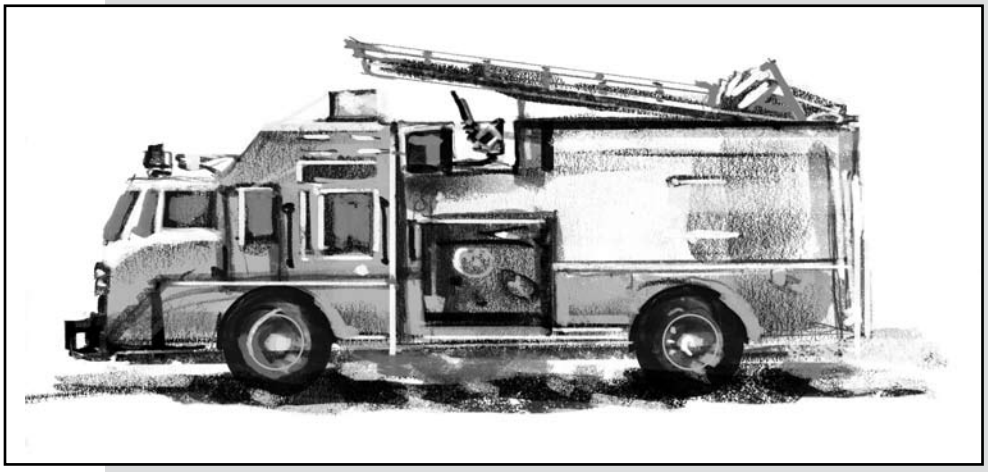


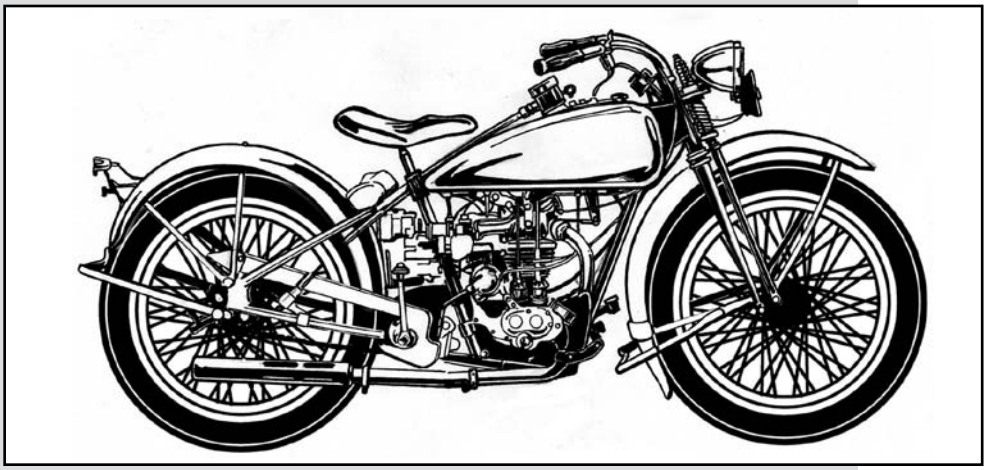
The Ultimate Vehicle

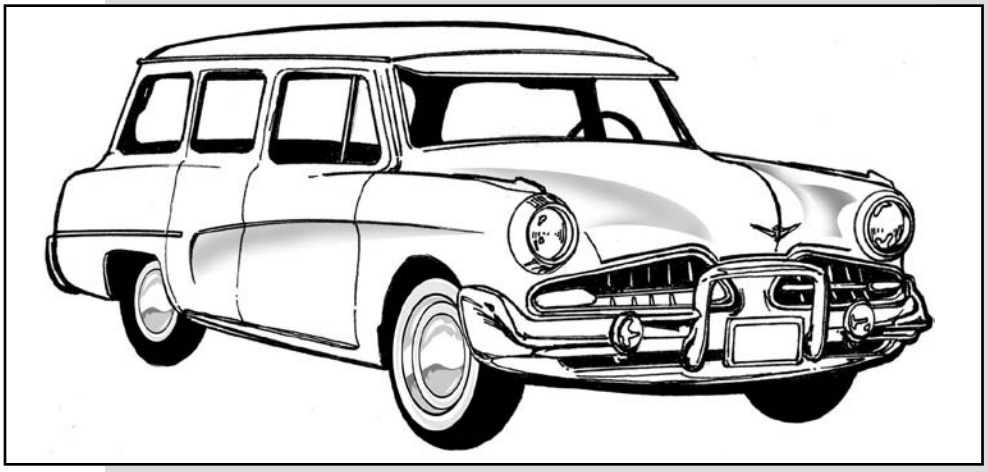
The HERO System Vehicle Sourcebook does not include rules for building vehicles, using vehicles, or creating vehicular equipment. You can find that material in *The Ultimate Vehicle,* Hero Games's book about vehicle construction and use. Many of the vehicles in this book were built using "TUV's" rules, so you should refer to it if you see a Power Modifier or other rule that doesn't seem familiar to you from the *HERO System 5th Edition, Revised* rulebook.

Additionally, TUV itself has approximately 50 sample vehicles. Those vehicles are not reprinted in this book, but each of the chapters lists the relevant vehicles from TUV to help you find what you're looking for.

chapter one:







GROUND VEHICLES

CIVILIAN VEHICLES

Most of the vehicles characters encounter during most campaigns are going to be civilian ones — the ordinary cars, trucks, and similar conveyances driven by everyday people. Chapter Two of *The Ultimate Vehicle* has more information on how they work and how to create them in *HERO System* terms.

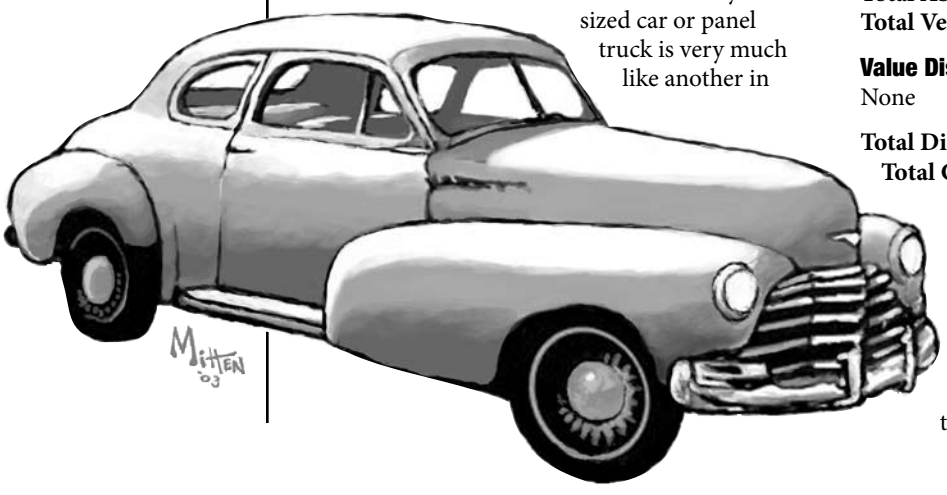
OTHER GROUND VEHICLES

In addition to the vehicles described here, you can find several ground vehicles in *The Ultimate Vehicle:*

- Armored Car (page 48)
- Chariot (page 43)
- Cybertank (page 53)
- Harley-Davidson VRSCA V-Rod (page 52)
- Hovercraft (page 52)
- Lotus Esprit Turbo (page 45)
- M1A1 Abrams Main Battle Tank (page 51)
- M2 Bradley Infantry Fighting Vehicle (page 50)
- School Bus (page 48)
- Sports Utility Vehicle (page 46)
- Stagecoach (page 44)
- Steam Locomotive (page 49)
- Supercar (page 46)
- Ten Speed Bicycle (page 43)
- Tractor-Trailer Truck (page 47)
- Two- or Four-Door Automobile (page 45)

GENERAL CIVILIAN VEHICLES

This section covers a range of typical civilian vehicles. Some of them are written up "generically," since one modern-day mid-sized car or panel truck is very much like another in game terms. Others, such as sportscars and motorcycles, add more to the game if characters can drive or encounter specific models.



Pulp-Era Cars

Pulp Hero games and various games set in the World War II era (be they *Golden Age Champions* games or something different) need cars, too. Here are a few examples of civilian vehicles found on the roads of the 1920s, '30s, and '40s. Despite being technologically primitive compared to modern cars, they could often attain high speeds due to their large engines.

CHEVROLET COUPE

Val	Char	Cost	Notes
4	Size	20	2.5" x 1.25"; -4 KB; -2 DCV
30	STR	0	Lift 1,600 kg; 6d6 HTH [0]
14	DEX	12	OCV: 5/DCV: 5
16	BODY	2	
3	DEF	2	Limited Coverage (not on windshield/windows; -¼)
3	SPD	6	Phases: 4, 8, 12
			Total Characteristic Cost: 42

Movement: Ground: 25"/100"
Swimming: 0"/0"

Abilities & Equipment

Cost	Power	END
16	*Motorized Wheeled Vehicle:* Ground Movement +19" (25" total), x4 Non-combat; OAF (standard tires; -1½), Only On Appropriate Terrain (-¼), 1 Continuing Fuel Charge (easily-obtained fuel; 6 Hours; -0)	[1cc]
-2	*Ground Vehicle:* Swimming -2" (0" total)	

Total Abilities & Equipment Cost: 14
Total Vehicle Cost: 56

Value Disadvantages
None

Total Disadvantage Points: 0
Total Cost: 56/5 = 11

Description: During the mid-to-late 1930s, Chevrolet made a name for itself manufacturing simple yet rugged automobiles that everyday people could afford — and which often appealled to "hot rodders" because they could easily modify them. This particular coupe was first manufactured in 1938.

DUESENBERG SJ

Val	Char	Cost	Notes
5	Size	25	3.2" x 1.6"; -5 KB; -3 DCV
35	STR	0	Lift 3,200 kg; 7d6 HTH [0]
15	DEX	15	OCV: 5/DCV: 5
17	BODY	2	
3	DEF	2	Limited Coverage (not on windshield/windows; -¼)
3	SPD	5	Phases: 4, 8, 12
			Total Characteristic Cost: 49

Movement: Ground: 29"/116"
Swimming: 0"/0"

Abilities & Equipment

Cost	Power	END
18	*Motorized Wheeled Vehicle:* Ground Movement +23" (29" total), x4 Noncombat; OAF (standard tires; -1½), Only On Appropriate Terrain (-¼), 1 Continuing Fuel Charge (easily-obtained fuel; 6 Hours; -0)	[1cc]
-2	*Ground Vehicle:* Swimming -2" (0" total)	

Total Abilities & Equipment Cost: 16
Total Vehicle Cost: 65

Value Disadvantages

None

Total Disadvantage Points: 0
Total Cost: 65/5 = 13

OPTIONAL EQUIPMENT

Cost	Equipment
-2	*Duesenberg J:* Decrease to Ground Movement +20"
-8	*Cord L-29:* Decrease to Ground Movement +11"

Description: Stylish and sophisticated, the 20-foot-long Duesenberg SJ debuted in 1932. A total of less than 500 of the J/SJ models were manufactured before the Cord Corporation (owners of the Duesenberg line) collapsed in 1937. With minor changes, you can also use this character sheet for similar models, such as the Duesenberg J (which debuted in 1928), the Cord L-29 (debuted 1929), or later variations on the SJ itself.

The SJ — the name comes from "supercharged J" — could attain speeds as high as 130 miles an hour with what was, at the time, the world's most powerful production engine. One racer attained a top speed of 150-160 miles per hour with a supercharged engine during the 24-hour Bonneville run in 1935.

The SJ actually came as a rolling chassis; the customer would add his choice of body. Aluminum, a relatively rare and expensive substance at the time, was used in the construction as much as possible to reduce the vehicle's weight.

Editor's Note: The Duesenberg illustration is on page 156.

FORD MODEL A

Val	Char	Cost	Notes
3	Size	15	2" x 1"; -3 KB; -2 DCV
25	STR	0	Lift 800 kg; 5d6 HTH [0]
12	DEX	6	OCV: 4/DCV: 4
13	BODY	0	
3	DEF	2	Limited Coverage (not on windshield/windows; -¼)
3	SPD	8	Phases: 4, 8, 12
			Total Characteristic Cost: 31

Movement: Ground: 14"/56"
Swimming: 0"/0"

Abilities & Equipment

Cost	Power	END
8	*Motorized Wheeled Vehicle:* Ground Movement +8" (14" total), x4 Noncombat; OAF (standard tires; -1½), Only On Appropriate Terrain (-¼), 1 Continuing Fuel Charge (easily-obtained fuel; 6 Hours; -0)	[1cc]
-2	*Ground Vehicle:* Swimming -2" (0" total)	

Total Abilities & Equipment Cost: 6
Total Vehicle Cost: 37

Value Disadvantages

None

Total Disadvantage Points: 0
Total Cost: 37/5 = 7

OPTIONAL EQUIPMENT

Cost	Equipment
+3	*Pickup:* Add +3 STR

Description: Debuting in 1927 as a successor to the Model T (page 8), the Model A incorporated 25 years' worth of technological advancements and innovations (including the use of an electric starter so that hand-cranking the engine was no longer necessary). The A's engine is twice as powerful as the T's, allowing the vehicle to achieve speeds of up to 65 miles per hour.

Between 1927 and 1929, Ford manufactured two million Model As, but the Great Depression and competition from other manufacturers led to a drop in sales thereafter. Nevertheless it remained a popular automobile, and saw use in many places through World War II. Several variations — including a "Phaeton" four-door sedan, the Fordor (the top of the line model), a Pickup (and other commercial models), and a Sport Coupe with a rumble seat — were produced.

FORD MODEL T

Val	Char	Cost	Notes
3	Size	15	2" x 1"; -3 KB; -2 DCV
25	STR	0	Lift 800 kg; 5d6 HTH [0]
10	DEX	0	OCV: 3/DCV: 3
10	BODY	-3	
3	DEF	2	Limited Coverage (not on windshield/windows; -¼)
3	SPD	10	Phases: 4, 8, 12
			Total Characteristic Cost: 24

Movement: Ground: 9"/36"
Swimming: 0"/0"

Abilities & Equipment

Cost	Power	END
3	*Motorized Wheeled Vehicle:* Ground Movement +3" (9" total), x4 Noncombat; OAF (standard tires; -1½), Extra Time (1 Turn to activate; -¾), Only On Appropriate Terrain (-¼), 1 Continuing Fuel Charge (easily-obtained fuel; 6 Hours; -0)	[1cc]
-2	*Ground Vehicle:* Swimming -2" (0" total)	

Total Abilities & Equipment Cost: 1
Total Vehicle Cost: 25

Value Disadvantages

None

Total Disadvantage Points: 0
Total Cost: 25/5 = 5

OPTIONAL EQUIPMENT

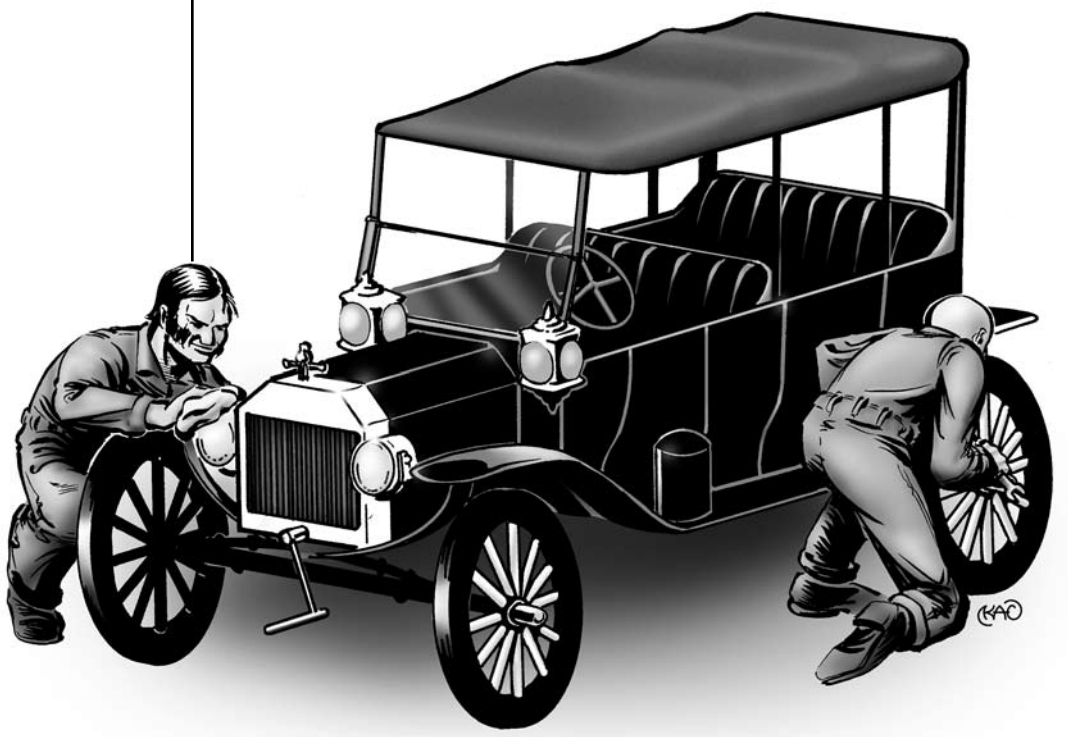
Cost	Equipment
+13	*Hotrod:* Increase to Ground Movement +19" and remove Extra Time (-¾)

Description: Henry Ford founded the Ford Motor Company in 1903. Five years later, in 1908, he produced the Model T — the world's first mass-produced car, often referred to as the "Tin Lizzie." It sold for approximately $850 that year, but in later years the price began to go down (reaching $360 in 1916, and a low of about $260 in the 1920s). Early models were available in red, grey, and green. But in 1913, Ford introduced a windlass-driven assembly line in his factories, making it possible to produce a finished Model T in as little as 93 minutes (compared to the multiple days most other manufacturers needed to complete a car). The only paint that would dry fast enough for this process was black, so with a few exceptions, virtually all Model Ts produced thereafter were black — prompting Henry Ford to say: "They can have it in any color they want, as long as it's black."

The Model T weighed about 550-650 kg (1,200-1,450 pounds) and could attain speeds of forty miles per hour. To start it, the driver had to put the ignition switch in the right position, then get out and hand-crank the engine using a starting handle fitted into a hole in the front of the car under the engine. If the ignition switch wasn't in the right position, the starting handle would spring back when the engine started, possibly breaking the cranker's hand or arms.

The Model T was produced with virtually no changes until 1927, when it was finally replaced with the much better Model A. During that time over 15 million were manufactured, making the Model T the best-selling car in history except for the Volkswagen Beetle.

Beginning in the 1930s, auto enthusiasts took Model T bodies and attached powerful engines to them to create hot rods, including the so-called "T bucket" of the 1960s. These cars could reach speeds of about 115 miles per hour.



Modern Civilian Vehicles

These are the types of vehicles that a character from the late twentieth or early twenty-first century might see on the streets of just about any city or town.

COMPACT CAR

Val	Char	Cost	Notes
3	Size	15	2" x 1"; -3 KB; -2 DCV
25	STR	0	Lift 800 kg; 5d6 HTH [0]
15	DEX	15	OCV: 5/DCV: 5
13	BODY	0	
3	DEF	2	Limited Coverage (not on windshield/windows; -¼)
3	SPD	5	Phases: 4, 8, 12
			Total Characteristic Cost: 37

Movement: Ground: 18"/72"
Swimming: 0"/0"

Abilities & Equipment

Cost	Power	END
10	*Motorized Wheeled Vehicle:* Ground Movement +12" (18" total), x4 Noncombat; OAF (standard tires; -1½), Only On Appropriate Terrain (-¼), 1 Continuing Fuel Charge (easily-obtained fuel; 6 Hours; -0)	[1cc]
-2	*Ground Vehicle:* Swimming -2" (0" total)	

Total Abilities & Equipment Cost: 8
Total Vehicle Cost: 45

Value Disadvantages

None

Total Disadvantage Points: 0
Total Cost: 45/5 = 9

Description: The "compact car" character sheet represents numerous small automobiles — anything up to about 13 feet in length. This would include the ubiquitous Volkswagen Beetle, the Austin Mini (and many other popular European consumer cars), and the like. They can typically reach a maximum speed of around 75-90 miles per hour.

MID-SIZE AUTOMOBILE

Val	Char	Cost	Notes
4	Size	20	2.5" x 1.25"; -4 KB; -2 DCV
30	STR	0	Lift 1,600 kg; 6d6 HTH [0]
15	DEX	15	OCV: 5/DCV: 5
14	BODY	0	
3	DEF	2	Limited Coverage (not on windshield/windows; -¼)
3	SPD	5	Phases: 4, 8, 12
			Total Characteristic Cost: 42

Movement: Ground: 25"/100"
Swimming: 0"/0"

Abilities & Equipment

Cost	Power	END
16	*Motorized Wheeled Vehicle:* Ground Movement +19" (25" total), x4 Noncombat; OAF (standard tires; -1½), Only On Appropriate Terrain (-¼), 1 Continuing Fuel Charge (easily-obtained fuel; 6 Hours; -0)	[1cc]
-2	*Ground Vehicle:* Swimming -2" (0" total)	

Total Abilities & Equipment Cost: 14
Total Vehicle Cost: 56

Value Disadvantages

None

Total Disadvantage Points: 0
Total Cost: 56/5 = 11

OPTIONAL EQUIPMENT

Cost	Equipment
3	*Police Car:* Add the following:

Cost	Power
10	*Emergency Lights And Siren:* Sight and Hearing Group Images, +4 to PER Rolls, 1" radius, Reduced Endurance (0 END; +½); OAF Bulky (-1½), No Range (-½), Set Effect (-1)
5	*Public Address System:* Hearing Group Images, +3 to PER Rolls, 1" radius, Reduced Endurance (0 END; +½); OAF Bulky (-1½), No Range (-½), Set Effect (only amplifies what's said into it; -1)
1	*Improved Speed:* Increase to Ground Movement +21"
5	*Police Radio:* Radio Perception/Transmission (Radio Group); OIF Bulky (-1), Affected As Hearing Group As Well As Radio Group (-¼)

2	*Improved Handling And Suspension:* +1 with Ground Movement	
-20	Distinctive Features: Police Car (Not Concealable; Causes Major Reaction)	
4	*Taxicab* (based on the Checker A11): Add the following:	

Cost Power

-3	*Slow:* Decrease to Ground Movement +16"
5	*But Strong...:* Increase to STR 35
2	*...And Sturdy:* Increase to BODY 16

Description: This character sheet represents a typical two- or four-door American automobile during the late twentieth and early twenty-first centuries. It has a top speed of about 110 miles per hour. It can carry three passengers comfortably (up to five if you cram them in), with room for their luggage in the trunk.

By adding a little equipment and some Distinctive Features, you can turn this vehicle into a Police Car. A distinctive coat of paint makes it a taxicab (this doesn't qualify as a Disadvantage because it doesn't hinder the vehicle in any way). Cosmetic changes and a plush interior convert it into a small luxury sedan.

FULL-SIZE AUTOMOBILE

Val	Char	Cost	Notes
4	Size	20	2.5" x 1.25"; -4 KB; -2 DCV
30	STR	0	Lift 1,600 kg; 6d6 HTH [0]
14	DEX	12	OCV: 5/DCV: 5
16	BODY	2	
3	DEF	2	Limited Coverage (not on windshield/windows; -¼)
3	SPD	6	Phases: 4, 8, 12
			Total Characteristic Cost: 42

Movement: Ground: 24"/96"
Swimming: 0"/0"

Abilities & Equipment

Cost	Power	END
15	*Motorized Wheeled Vehicle:* Ground Movement +18" (24" total), x4 Noncombat; OAF (standard tires; -1½), Only On Appropriate Terrain (-¼), 1 Continuing Fuel Charge (easily-obtained fuel; 6 Hours; -0)	[1cc]
-2	*Ground Vehicle:* Swimming -2" (0" total)	

Total Abilities & Equipment Cost: 13
Total Vehicle Cost: 55

Value Disadvantages
None

Total Disadvantage Points: 0
Total Cost: 55/5 = 11

Description: The full-size automobile is not very different from the mid-size. It's somewhat larger (though not large enough to qualify as Size 5 for game purposes) and can carry more passengers comfortably; it's also a little slower and less maneuverable. Full-size cars are more likely to be luxury models; many Cadillacs and Lincolns fall into this category. Otherwise the two are pretty much the same.

STATION WAGON

Val	Char	Cost	Notes
5	Size	25	3.2" x 1.6"; -5 KB; -3 DCV
35	STR	0	Lift 3,200 kg; 7d6 HTH [0]
12	DEX	6	OCV: 4/DCV: 4
17	BODY	2	
3	DEF	2	Limited Coverage (not on windshield/windows; -¼)
3	SPD	8	Phases: 4, 8, 12
			Total Characteristic Cost: 43

Movement: Ground: 22"/88"
Swimming: 0"/0"

Abilities & Equipment

Cost	Power	END
13	*Motorized Wheeled Vehicle:* Ground Movement +16" (22" total), x4 Noncombat; OAF (standard tires; -1½), Only On Appropriate Terrain (-¼), 1 Continuing Fuel Charge (easily-obtained fuel; 6 Hours; -0)	[1cc]
-2	*Ground Vehicle:* Swimming -2" (0" total)	

Total Abilities & Equipment Cost: 11
Total Vehicle Cost: 54

Value Disadvantages
None

Total Disadvantage Points: 0
Total Cost: 54/5 = 11

Description: While it's long since been replaced by the minivan (page 11), during the 1970s the station wagon was the vehicle of choice for many families with children. The wide back section could carry an entire vacation's worth of tents, food, sporting equipment, and other gear... or a week's worth of groceries... or two kids and all their toys.

PICKUP TRUCK

Val	Char	Cost	Notes
5	Size	25	3.2" x 1.6"; -5 KB; -3 DCV
40	STR	5	Lift 6,400 kg; 8d6 HTH [0]
15	DEX	15	OCV: 5/DCV: 5
18	BODY	3	
3	DEF	2	Limited Coverage (not on windshield/windows; -¼)
3	SPD	5	Phases: 4, 8, 12
			Total Characteristic Cost: 55

Movement: Ground: 24"/96"
Swimming: 0"/0"

Abilities & Equipment

Cost	Power	END
15	*Motorized Wheeled Vehicle:* Ground Movement +18" (24" total), x4 Noncombat; OAF (standard tires; -1½), Only On Appropriate Terrain (-¼), 1 Continuing Fuel Charge (easily-obtained fuel; 6 Hours; -0)	[1cc]
-2	*Ground Vehicle:* Swimming -2" (0" total)	
	Skills	
6	*Offroad Suspension:* +3 Penalty Skill Levels To Counteract Offroad Driving Penalties with Ground Movement	

Total Abilities & Equipment Cost: 19
Total Vehicle Cost: 74

Value Disadvantages
None

Total Disadvantage Points: 0
Total Cost: 74/5 = 15

OPTIONAL EQUIPMENT

Cost	Equipment
-5	*Smaller Truck:* Reduce Size to 4
+10	*Monster Truck:* Increase Size to 6 and add Heavy tires with an additional +3 BODY

Description: The pickup truck is a workhorse vehicle designed to carry cargo and equipment in an exposed flatbed area behind the cab (some pickup trucks have "camper shells" that fit over the flatbed to protect carried objects from the elements). Strong, tough, and sturdy, they're designed for rugged work both on and off the road.

This character sheet represents a large pickup, such as one of the larger Ford F-150 models. For smaller versions, choose the "Smaller Pickup" option; this would be appropriate for many of the smaller pickups popular in the early twenty-first century. The "Monster Truck" option is for the big-tired, jacked-up novelty vehicles featured at many car-oriented sporting events. The extra Size in this case represents height and enormous wheels; most monster trucks are large enough (and have large enough tires) to drive right over normal-sized cars.

MINIVAN

Val	Char	Cost	Notes
5	Size	25	3.2" x 1.6"; -5 KB; -3 DCV
35	STR	0	Lift 3,200 kg; 7d6 HTH [0]
14	DEX	12	OCV: 5/DCV: 5
17	BODY	2	
3	DEF	2	Limited Coverage (not on windshield/windows; -¼)
3	SPD	6	Phases: 4, 8, 12
			Total Characteristic Cost: 47

Movement: Ground: 24"/96"
Swimming: 0"/0"

Abilities & Equipment

Cost	Power	END
15	*Motorized Wheeled Vehicle:* Ground Movement +18" (24" total), x4 Noncombat; OAF (standard tires; -1½), Only On Appropriate Terrain (-¼), 1 Continuing Fuel Charge (easily-obtained fuel; 6 Hours; -0)	[1cc]
-2	*Ground Vehicle:* Swimming -2" (0" total)	

Total Abilities & Equipment Cost: 13
Total Vehicle Cost: 60

Value Disadvantages
None

Total Disadvantage Points: 0
Total Cost: 60/5 = 12

Description: The minivan is the modern car manufacturer's answer to the station wagon. Reasonably stylish but able to carry a lot of kids and cargo, it's the perfect family vehicle.

VAN

Val	Char	Cost	Notes
5	Size	25	3.2" x 1.6"; -5 KB; -3 DCV
40	STR	5	Lift 6,400 kg; 8d6 HTH [0]
12	DEX	6	OCV: 4/DCV: 4
18	BODY	3	
3	DEF	2	Limited Coverage (not on windshield/windows; -¼)
3	SPD	8	Phases: 4, 8, 12
			Total Characteristic Cost: 49

Movement: Ground: 23"/92"
Swimming: 0"/0"

Abilities & Equipment

Cost	Power	END
14	*Motorized Wheeled Vehicle:* Ground Movement +17" (23" total), x4 Noncombat; OAF (standard tires; -1½), Only On Appropriate Terrain (-¼), 1 Continuing Fuel Charge (easily-obtained fuel; 6 Hours; -0)	[1cc]
-2	*Ground Vehicle:* Swimming -2" (0" total)	

Total Abilities & Equipment Cost: 12
Total Vehicle Cost: 61

Value Disadvantages
None

Total Disadvantage Points: 0
Total Cost: 61/5 = 12

Description: Vans are primarily commercial vehicles used to deliver goods, carry equipment, and the like — though family models suitable for the consumer are available. Vans are larger than minivans (though not large enough to qualify as Size 6) and able to carry heavier loads.

LIMOUSINE

Val	Char	Cost	Notes
5	Size	25	3.2" x 1.6"; -5 KB; -3 DCV
35	STR	0	Lift 3,200 kg; 7d6 HTH [0]
12	DEX	6	OCV: 4/DCV: 4
15	BODY	0	
3	DEF	2	Limited Coverage (not on windshield/windows; -¼)
3	SPD	8	Phases: 4, 8, 12
			Total Characteristic Cost: 41

Movement: Ground: 24"/96"
Swimming: 0"/0"

Abilities & Equipment

Cost	Power	END
15	*Motorized Wheeled Vehicle:* Ground Movement +18" (24" total), x4 Noncombat; OAF (standard tires; -1½), Only On Appropriate Terrain (-¼), 1 Continuing Fuel Charge (easily-obtained fuel; 6 Hours; -0)	[1cc]
-2	*Ground Vehicle:* Swimming -2" (0" total)	

Total Abilities & Equipment Cost: 13
Total Vehicle Cost: 54

Value Disadvantages

None

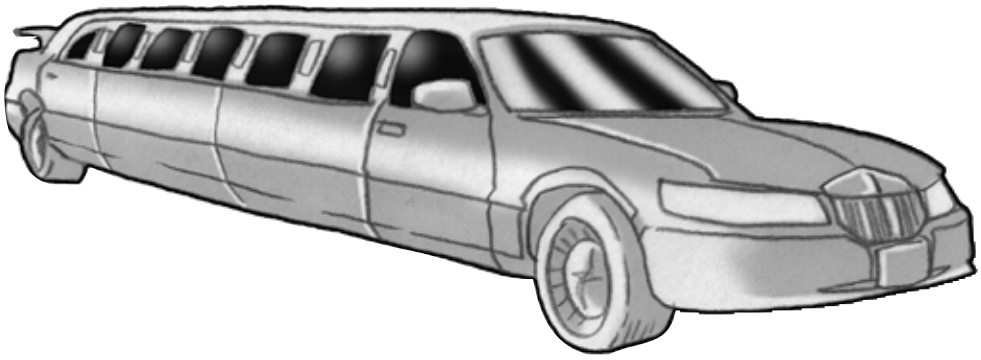
Total Disadvantage Points: 0
Total Cost: 54/5 = 11

OPTIONAL EQUIPMENT

Cost	Equipment
+5	*Stretch Limo:* Increase Size to 6 (or more)
+26	*Armored Limo:* Remove Limited Coverage (-¼), increase DEF to 8, and add Reinforced Self-Inflating Tires (TUV, page 41)
	Armored Limo Optional Systems: Add any or all of the following:
4	*Armored Fuel Tank:* +4 DEF; Only Protects Hit Location 18 (fuel tank; -2)
37	*Smokescreen Generator:* Darkness to Sight Group 12" radius (24" long and 2" wide Line; +¼); OIF Bulky (-1), No Range (-½), Limited Arc Of Fire (0 Degrees behind Armored Limousine, only on same horizontal level; -1), 4 Charges lasting 1 Turn each (-½)
7	*Bomb Detector:* Detect Explosives 16- (Smell/Taste Group), Discriminatory; OIF Bulky (-1), No Range (can only detect explosives in or on self; -½)
3	*Remote Starting System:* Telekinesis (4 STR), Usable As Attack (vehicle "gives" this power to the person holding the RSS activator [it's usually built into the keychain]; +1); OIF Bulky (-1), Only To Turn On Vehicle At A Distance (-2)
5	*Communications System:* HRRP (Radio Group); OIF Bulky (-1), Affected As Sight And Hearing Group As Well As Radio Group (-½)

Description: Limousines are long vehicles used to transport one or more persons in style. The passengers ride in a large, well-appointed area in back, while a chauffeur or other driver sits in front; a lowerable glass partition separates the two areas. "Stretch" limos are even larger. Amenities for limos include wet bars, hot tubs, televisions, and more — it's all a matter of what the owner (or renter) is willing to spend.

Some companies design limos (or retrofit existing limos) with security in mind. These limos have bulletproof glass, armored bodies (sometimes with special armoring around potentially vulnerable areas like the fuel tank), gun ports in the doors, and reinforced self-inflating tires. Some even have advanced communications systems, bomb detectors, remote-start systems, smoke generators, and other such systems.



PANEL TRUCK

Val	Char	Cost	Notes
6	Size	30	4" x 2"; -6 KB; -4 DCV
45	STR	5	Lift 12.5 tons; 9d6 HTH [0]
10	DEX	0	OCV: 3/DCV: 3
19	BODY	3	
3	DEF	2	Limited Coverage (not on windshield/windows; -¼)
3	SPD	10	Phases: 4, 8, 12
			Total Characteristic Cost: 50

Movement: Ground: 21"/84"
Swimming: 0"/0"

Abilities & Equipment

Cost	Power	END
12	*Motorized Wheeled Vehicle:* Ground Movement +15" (21" total), x4 Noncombat; OAF (standard tires; -1½), Limited Maneuverability (-¼), Only On Appropriate Terrain (-¼), 1 Continuing Fuel Charge (easily-obtained fuel; 6 Hours; -0)	[1cc]
-2	*Ground Vehicle:* Swimming -2" (0" total)	

Total Abilities & Equipment Cost: 10
Total Vehicle Cost: 60

Value Disadvantages

None

Total Disadvantage Points: 0
Total Cost: 60/5 = 12

Description: Larger and tougher than a van, a "panel truck" is the sort of small commercial truck used throughout the world to make deliveries, haul loads too big for personal vehicles, and the like. While not particularly maneuverable or fast, they do their job well.

AMBULANCE

Val	Char	Cost	Notes
5	Size	25	3.2" x 1.6"; -5 KB; -3 DCV
35	STR	0	Lift 3,200 kg; 7d6 HTH [0]
15	DEX	15	OCV: 5/DCV: 5
15	BODY	0	
3	DEF	2	Limited Coverage (not on windshield/windows; -¼)
3	SPD	5	Phases: 4, 8, 12
			Total Characteristic Cost: 47

Movement: Ground: 24"/96"
Swimming: 0"/0"

Abilities & Equipment

Cost	Power	END
14	*Motorized Wheeled Vehicle:* Ground Movement +18" (24" total), x4 Non-combat; OAF (standard tires; -1½), Limited Maneuverability (-¼), Only On Appropriate Terrain (-¼), 1 Continuing Fuel Charge (easily-obtained fuel; 6 Hours; -0)	[1cc]
-2	*Ground Vehicle:* Swimming -2" (0" total)	
4	*Radio:* Radio Perception/Transmission (Radio Group); OAF Bulky (-1½), Affected As Hearing Group As Well As Radio Group (-¼)	0
10	*Emergency Lights And Siren:* Sight and Hearing Group Images, +4 to PER Rolls, 1" radius, Reduced Endurance (0 END; +½); OAF Bulky (-1½), No Range (-½), Set Effect (-1)	0
	Skills/Laboratories	
13	Paramedics 14-	

Total Abilities & Equipment Cost: 39
Total Vehicle Cost: 86

Value Disadvantages

None

Total Disadvantage Points: 0
Total Cost: 86/5 = 17

Description: Ambulances are emergency services vehicles designed to respond to situations where people need medical assistance, provide in-field medical care if necessary and possible, and rush anyone in need of more advanced medical care to the nearest hospital. An ambulance typically has a crew of two, both with emergency medical training. The back of the ambulance contains room for one stretcher, seats for ambulatory patients and/or people who want to ride along with an injured person, and medical supplies. Modern ambulances even include such advanced medical equipment as defibrillators (and a special battery compartment to provide the power to run these devices).

FIREHOSES

Diameter: 5 inches
Dice Of Effect: Dispel 11d6/EB 7d6
Rate: Up to 1,000 gallons per minute

Diameter: 2.5 inches
Dice Of Effect: Dispel 9d6/EB 5d6
Rate: Up to 250 gallons per minute

Diameter: 1.5 inches
Dice Of Effect: Dispel 7d6/EB 3d6
Rate: Up to 95 gallons per minute

FIRE ENGINE

Val	Char	Cost	Notes
7	Size	35	5" x 2.5"; -7 KB; -4 DCV
45	STR	0	Lift 12.5 tons; 9d6 HTH [0]
12	DEX	6	OCV: 4/DCV: 4
20	BODY	3	
4	DEF	5	Limited Coverage (not on windshield/windows; -¼)
3	SPD	8	Phases: 4, 8, 12
			Total Characteristic Cost: 57

Movement: Ground: 22"/88"
Swimming: 0"/0"

Abilities & Equipment

Cost	Power	END
12	*Motorized Wheeled Vehicle:* Ground Movement +16" (22" total), x4 Noncombat; OAF (standard tires; -1½), Limited Maneuverability (-¼), Only On Appropriate Terrain (-¼), 1 Continuing Fuel Charge (easily-obtained fuel; 6 Hours; -0) [1cc]	
-2	*Ground Vehicle:* Swimming -2" (0" total)	
4	*Heavy Tires* (3 DEF, 3 BODY; see TUV, page 41)	0
2	*Automatic Tire Chains:* Make tires equivalent of Snow Tires as well (TUV, page 41)	0
114	*Firehoses:* Extra Limbs (number varies, based on type of fire engine); Only To Use Water Lines (-1), Limited Manipulation (-¼) **plus** Stretching 30", Reduced Endurance (0 END; +½); Limited Body Parts (Extra Limbs only; -¼), No Noncombat Stretching (-¼), Cannot Do Damage (can only spray Water Lines; -½)	0
40	*Water Lines:* Multipower, 99-point reserve; all OAF Bulky (-1½)	
4u	1) *Water Lines For Extinguishing Fires:* Dispel Fire Powers 11d6 (see text), all Fire Powers simultaneously (+2); OAF Bulky (-1½)	10
3u	2) *Water Lines As Weapons:* Energy Blast 7d6 (physical; see text), Area Of Effect (14" Line; +1), Double Knockback (+¾); OAF Bulky (-1½), Reduced Penetration (-¼)	10
12	*Water Tank (2,000 Gallons):* Endurance Reserve (300 END, 0 REC); OAF Bulky (-1½)	0
2	*Water Tank:* 5 REC for Endurance Reserve; Limited Recovery (must be refilled with water; -2)	0
9	*Hydrant-Connecting Water Lines:* 30 REC for Endurance Reserve; OAF Bulky (-1½), Extra Time (takes 1 Turn to hook hose up to hydrant; -¾)	0
10	*Hydrant-Connecting Water Lines:* 3 more sets of lines (total of 4)	
8	*Air Packs:* Life Support (Self-Contained Breathing), Usable Simultaneously (up to four people at once, engine never "gives" an Air Pack to itself; +¾); OAF (-1), 1 Continuing Fuel Charge lasting 30 Minutes (easy to refuel at fire station; -0) [1cc]	
15	*The Jaws Of Life:* Telekinesis (30 STR), Reduced Endurance (0 END; +½); OAF Bulky (-1½), Only For Tearing/Prying Things Apart To Free Trapped Victims (-2)	0
4	*Radio:* Radio Perception/Transmission (Radio Group); OAF Bulky (-1½), Affected As Hearing Group As Well As Radio Group (-¼)	0
10	*Emergency Lights And Siren:* Sight and Hearing Group Images, +4 to PER Rolls, 1" radius, Reduced Endurance (0 END; +½); OAF Bulky (-1½), No Range (-½), Set Effect (-1)	0

Skills/Laboratories

7 Paramedics 11-
7 PS: Fight Fires 16-

Total Abilities & Equipment Cost: 261
Total Vehicle Cost: 318

Value Disadvantages

None

Total Disadvantage Points: 0
Total Cost: 318/5 = 64

OPTIONAL EQUIPMENT

Cost	Equipment
55	*Ladder/Skylift:* Extra Limb (1); Only To Lift And Move A Person And Firehose (-1), Limited Manipulation (-¼) **plus** Stretching 16", Reduced Endurance (0 END; +½); Limited Body Parts (Extra Limb only; -¼), Always Direct (-¼), No Noncombat Stretching (-¼), Cannot Do Damage (-½)
28	*Fireaxes:* Four axes, use game writeup for the Francisca (*HERO System 5th Edition, Revised,* page 481)
-6	*Water Tank (1,000 Gallons):* Change to Endurance Reserve (150 END, 0 REC); OAF Bulky (-1½)
-9	*Water Tank (500 Gallons):* Change to Endurance Reserve (75 END, 0 REC); OAF Bulky (-1½)

Description: Well-known to even the smallest schoolchildren because of their distinctive bright red (or sometimes yellow) color and unique equipment, fire engines are large vehicles designed to help firefighters put out fires and perform related tasks. In addition to the equipment described below, fire engines have medical kits and equipment (though not nearly as much as an ambulance), tools for ripping apart sheet rock and the like, the Jaws Of Life for prying car crash victims out of mangled autos, and many other tools. (Except for the Jaws Of Life and possibly fireaxes, which require their own write-ups, these tools are all represented with the *PS: Fight Fires* Skill, which is Complementary to the same Skill possessed by firefighters.)

Fire engines' main equipment are the hoses it uses to spray water on fires. The length and size of the hoses varies. The *Water Lines* power on the character sheet represents a *deluge gun,* the largest sort of water-sprayer a fire engine comes equipped with. It can pump out 1,000 gallons of water per minute or more, and is usually supplied from a built-in water tank holding 2,000 gallons of water. (Some engines have smaller tanks.) The tank is represented as an Endurance Reserve for the Water Lines.

An engine may also have other hoses, represented as Extra Limbs (with Stretching) that can only use the Water Lines power. The number of dice of Dispel or Energy Blast a given hose can use depends on its diameter in inches, as indicated by the accompanying table.

If an engine wants to use multiple hoses on a given fire, the GM can consider the fire as "one target" and adjudicate the "attack" as a Sweep.

Engines also have separate lengths of hose which firefighters can connect to fire hydrants. These still require pressure from the fire engine's pump, so they're bought as a way to provide REC for the truck's Endurance Reserve.

Some fire engines also carry fire-retarding foam, which they spray on areas where they've doused a fire to prevent the fire from starting again. This has no particular game effect; it's just part of the use of the *PS: Fight Fires* Skill.

Some fire engines are *ladder trucks,* meaning they have a large, extendable arm (a "skylift") or ladder for getting a firefighter (and possibly a hose) to the top floors of a building to rescue trapped inhabitants or attack the fire from a different angle. You can represent this as a separate Extra Limb with Stretching, if necessary.

A fire engine typically carries 6-10 firefighters (including the one who drives the engine).

SPORTSCARS AND MUSCLE CARS

While mid-size cars and minivans may be what the average person drives, heroes often need more speed and style. For them, nothing less than a top-of-the-line sportscar or muscle car will do the trick. Here are character sheets for several popular models; you can easily adapt these to represent others not described.

CHEVROLET CAMARO

Val	Char	Cost	Notes
4	Size	20	2.5" x 1.25"; -4 KB; -2 DCV
30	STR	0	Lift 1,600 kg; 6d6 HTH [0]
16	DEX	18	OCV: 5/DCV: 5
14	BODY	0	
3	DEF	2	Limited Coverage (not on windshield/windows; -¼)
3	SPD	4	Phases: 4, 8, 12
			Total Characteristic Cost: 44

Movement: Ground: 28"/112"
Swimming: 0"/0"

Abilities & Equipment

Cost	Power	END
18	*Motorized Wheeled Vehicle:* Ground Movement +22" (28" total), x4 Noncombat; OAF (standard tires; -1½), Only On Appropriate Terrain (-¼), 1 Continuing Fuel Charge (easily-obtained fuel; 6 Hours; -0)	[1cc]
-2	*Ground Vehicle:* Swimming -2" (0" total)	
	Skills	
2	+1 with Ground Movement	

Total Abilities & Equipment Cost: 18
Total Vehicle Cost: 62

Value	Disadvantages
10	Distinctive Features: Sportscar (Concealable With Difficulty; Noticed And Recognizable)

Total Disadvantage Points: 10
Total Cost: 52/5 = 10

OPTIONAL EQUIPMENT

Cost	Equipment
-2	*V6 Engine:* Decrease to Ground Movement +20"

Description: Produced by Chevrolet beginning in 1966 as competition for the popular Ford Mustang (page 18), the two-door Camaro became one of the company's best-selling models and a familiar sight on American streets. During the late 1960s and early '70s, models such as the SS (Super Sport, a high-performance package) and RS (Rally Sport, a luxury package) came with either six- or eight-cylinder engines; this character sheet represents a V8 SS. The Camaro has remained in production through the modern day, though safety and pollution laws have led to numerous redesigns.

CHEVROLET CORVETTE STINGRAY

Val	Char	Cost	Notes
3	Size	15	2" x 1"; -3 KB; -2 DCV
25	STR	0	Lift 800 kg; 5d6 HTH [0]
18	DEX	24	OCV: 6/DCV: 6
13	BODY	0	
3	DEF	2	Limited Coverage (not on windshield/windows; -¼)
3	SPD	2	Phases: 4, 8, 12
			Total Characteristic Cost: 43

Movement: Ground: 33"/132"
Swimming: 0"/0"

Abilities & Equipment

Cost	Power	END
21	*Motorized Wheeled Vehicle:* Ground Movement +27" (33" total), x4 Noncombat; OAF (standard tires; -1½), Only On Appropriate Terrain (-¼), 1 Continuing Fuel Charge (easily-obtained fuel; 6 Hours; -0)	[1cc]
-2	*Ground Vehicle:* Swimming -2" (0" total)	
	Skills	
2	+1 with Ground Movement	

Total Abilities & Equipment Cost: 21
Total Vehicle Cost: 64

Value Disadvantages

10 Distinctive Features: Sportscar (Concealable With Difficulty; Noticed And Recognizable)

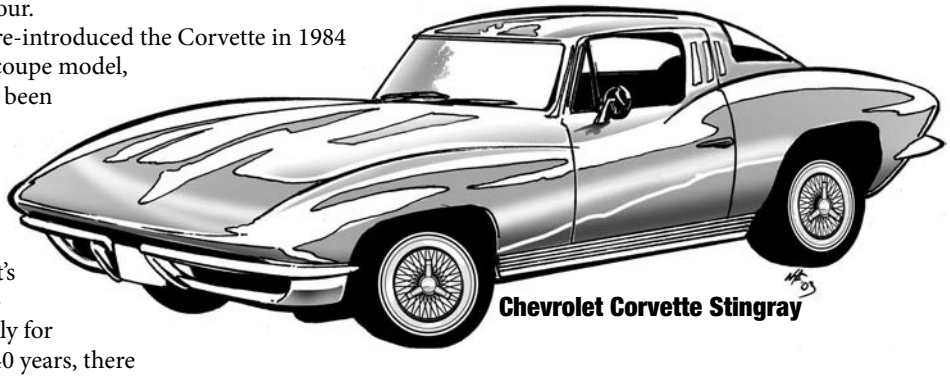
Total Disadvantage Points: 10
Total Cost: 54/5 = 11

OPTIONAL EQUIPMENT

Cost	Equipment
+5	*1984 Corvette:* Increase to Ground Movement +34"
+14	*Corvette ZR-1:* As 1984 Corvette, plus +3 DEX

Description: Regarded by many as the greatest sportscar manufactured in America — and for many years arguably the only true American sportscar — the Corvette was first produced in the mid-1950s. But it came into its own in the '60s with the Corvette Stingray, which Chevrolet manufactured from 1962-67. Featuring a V8 engine, optional fuel injection, and a distinctive "split" rear window, the Stingray could achieve speeds of about 150 miles per hour.

Chevrolet re-introduced the Corvette in 1984 in a hatchback coupe model, which has since been updated and refined several times to create such models as the ZR-1. Because it's been in production continuously for approximately 40 years, there are more Corvettes in existence than any other sportscar in the world.



Chevrolet Corvette Stingray

DELOREAN DMC-12

Val	Char	Cost	Notes
3	Size	15	2" x 1"; -3 KB; -2 DCV
25	STR	0	Lift 800 kg; 5d6 HTH [0]
15	DEX	15	OCV: 5/DCV: 5
13	BODY	0	
3	DEF	2	Limited Coverage (not on windshield/windows; -¼)
3	SPD	5	Phases: 4, 8, 12
			Total Characteristic Cost: 37

Movement: Ground: 25"/100"
Swimming: 0"/0"

Abilities & Equipment

Cost	Power	END
16	*Motorized Wheeled Vehicle:* Ground Movement +19" (25" total), x4 Noncombat; OAF (standard tires; -1½), Only On Appropriate Terrain (-¼), 1 Continuing Fuel Charge (easily-obtained fuel; 6 Hours; -0)	[1cc]
-2	*Ground Vehicle:* Swimming -2" (0" total)	

Total Abilities & Equipment Cost: 14
Total Vehicle Cost: 51

Value Disadvantages

10 Distinctive Features: Sportscar (Concealable With Difficulty; Noticed And Recognizable)

Total Disadvantage Points: 10
Total Cost: 41/5 = 8

Description: After a career with GM in the early 1970s, John Z. DeLorean conceived of a new two-seater sportscar. After convincing the British government to back him on the condition he build his factory in Northern Ireland, DeLorean hired Lotus to finalize the design with his input (which included his insistence on a rear-mounted engine). The end result, while aesthetically pleasing to many with its distinctive gullwing doors, did not live up to the initial hype; it was comparatively slow (maximum speed about 110 miles per hour), didn't handle well, and had a brushed stainless steel body that was difficult to maintain. The car was only sold in 1981-82, after which John DeLorean's personal problems, various charges of fraud, and problems with the car brought the company to its end. But the car remains something of a "cult classic" among afficionados.

DODGE VIPER

Val	Char	Cost	Notes
3	Size	15	2" x 1"; -3 KB; -2 DCV
25	STR	0	Lift 800 kg; 5d6 HTH [0]
20	DEX	30	OCV: 7/DCV: 7
13	BODY	0	
3	DEF	2	Limited Coverage (not on windshield/windows; -¼)
4	SPD	10	Phases: 3, 6, 9, 12
			Total Characteristic Cost: 57

Movement: Ground: 28"/112"
Swimming: 0"/0"

Abilities & Equipment

Cost	Power	END
18	*Motorized Wheeled Vehicle:* Ground Movement +22" (28" total), x4 Noncombat; OAF (standard tires; -1½), Only On Appropriate Terrain (-¼), 1 Continuing Fuel Charge (easily-obtained fuel; 6 Hours; -0)	[1cc]
-2	*Ground Vehicle:* Swimming -2" (0" total)	
	Skills	
4	+2 with Ground Movement	

Total Abilities & Equipment Cost: 20
Total Vehicle Cost: 77

Value Disadvantages

10	Distinctive Features: Sportscar (Concealable With Difficulty; Noticed And Recognizable)

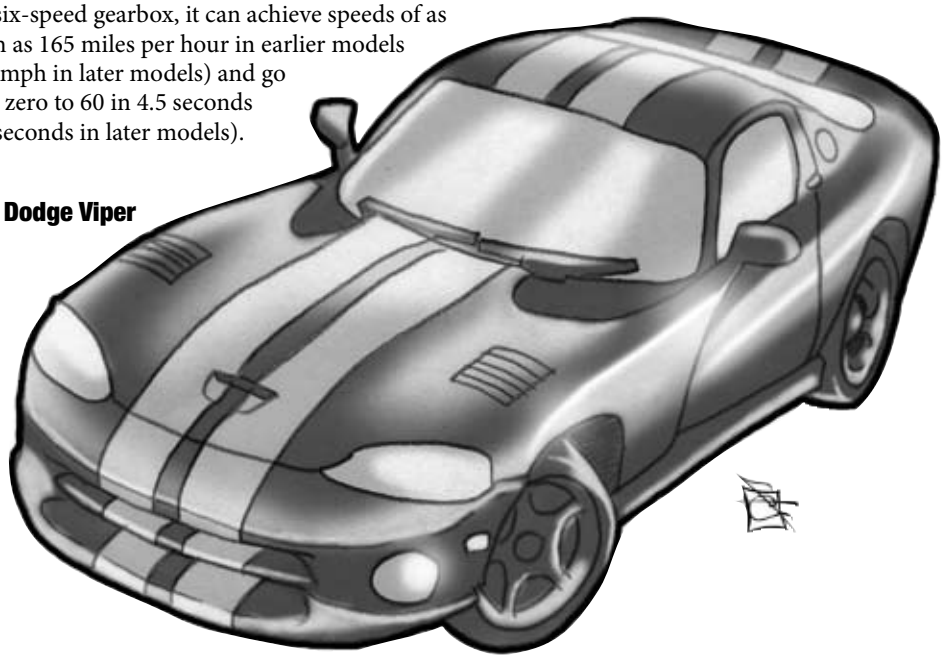
Total Disadvantage Points: 10
Total Cost: 67/5 = 13

OPTIONAL EQUIPMENT

Cost	Equipment
+3	*Later Models:* Increase to Ground Movement +26"

Description: Inspired and influenced by the legendary Shelby AC Cobra, the Dodge Viper was introduced onto the market in 1992 and remains in production as of 2003. With its eight-liter V10 engine and six-speed gearbox, it can achieve speeds of as much as 165 miles per hour in earlier models (190 mph in later models) and go from zero to 60 in 4.5 seconds (4.1 seconds in later models).

Dodge Viper



FERRARI TESTAROSSA

Val	Char	Cost	Notes
3	Size	15	2" x 1"; -3 KB; -2 DCV
25	STR	0	Lift 800 kg; 5d6 HTH [0]
23	DEX	39	OCV: 8/DCV: 8
13	BODY	0	
3	DEF	2	Limited Coverage (not on windshield/windows; -¼)
4	SPD	7	Phases: 3, 6, 9, 12
			Total Characteristic Cost: 63

Movement: Ground: 30"/120"
Swimming: 0"/0"

Abilities & Equipment

Cost	Power	END
19	*Motorized Wheeled Vehicle:* Ground Movement +24" (30" total), x4 Noncombat; OAF (standard tires; -1½), Only On Appropriate Terrain (-¼), 1 Continuing Fuel Charge (easily-obtained fuel; 6 Hours; -0)	[1cc]
-2	*Ground Vehicle:* Swimming -2" (0" total)	
	Skills	
4	+2 with Ground Movement	

Total Abilities & Equipment Cost: 21
Total Vehicle Cost: 84

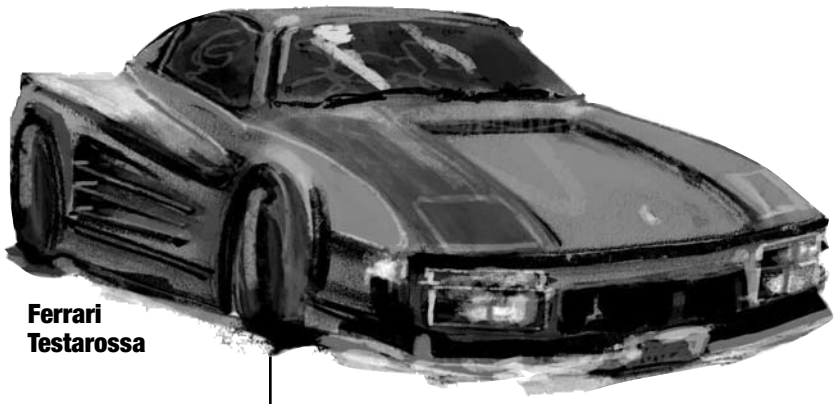
Value Disadvantages

10	Distinctive Features: Sportscar (Concealable With Difficulty; Noticed And Recognizable)

Total Disadvantage Points: 10
Total Cost: 74/5 = 15

OPTIONAL EQUIPMENT

Cost	Equipment
+1	*Ferrari 348/F355 (1989-present):* Increase to Ground Movement +25"
+1	*Ferrari 360 Modena (1999-present):* Increase to Ground Movement +25"
+2	*Ferrari 512 TR/M (1992-96):* Increase to Ground Movement +27"



Ferrari Testarossa

+2 *Ferrari 550 Maranello (1996-present):* Increase to Ground Movement +27"
+2 *Ferrari Berlinetta Boxer (1973-84):* Increase to Ground Movement +26"
+4 *Ferrari F40 (1988-92) or F50 (1995-97):* Increase to Ground Movement +28" and add +1 with Ground Movement; OAF Bulky (-1½), Only At Speeds Above 40 MPH (-1)

Description: Produced from 1984 to 1992, the Ferrari Testarossa ("Redhead") is one of the most powerful and beautiful of the many Ferrari models (see options for a partial list). Its rear-biased weight distribution makes for distinct handling; even inexperienced drivers should have little trouble getting it up to about 150 miles per hour, but pushing it beyond that requires experience and skill. Its rear-mounted cooling system led to the creation of straked side-mounted cooling ducts that give the Testarossa a distinctive appearance.

After 1992 the Testarossa was renamed the 512 TR and 512 M when improvements to its systems raised its top speed to 200 miles per hour. But at that it's still slower than the F40 and F50, special models made to commemorate Ferrari's fortieth and fiftieth anniversaries.

FORD MUSTANG GT

Val	Char	Cost	Notes
3	Size	15	2" x 1"; -3 KB; -2 DCV
25	STR	0	Lift 800 kg; 5d6 HTH [0]
16	DEX	18	OCV: 5/DCV: 5
14	BODY	1	
3	DEF	2	Limited Coverage (not on windshield/windows; -¼)
3	SPD	4	Phases: 4, 8, 12
			Total Characteristic Cost: 40

Movement: Ground: 27"/108"
Swimming: 0"/0"

Abilities & Equipment

Cost	Power	END
17	*Motorized Wheeled Vehicle:* Ground Movement +21" (27" total), x4 Noncombat; OAF (standard tires; -1½), Only On Appropriate Terrain (-¼), 1 Continuing Fuel Charge (easily-obtained fuel; 6 Hours; -0)	[1cc]
-2	*Ground Vehicle:* Swimming -2" (0" total)	

Skills

2 +1 with Ground Movement

Total Abilities & Equipment Cost: 17
Total Vehicle Cost: 57

Value Disadvantages

10 Distinctive Features: Sportscar (Concealable With Difficulty; Noticed And Recognizable)

Total Disadvantage Points: 10
Total Cost: 47/5 = 9

OPTIONAL EQUIPMENT

Cost	Equipment
-2	*V6 Engine:* Decrease to Ground Movement +18"
+3	*1980s-90s Mustang GT Models:* Increase to Ground Movement +25"

Description: The most "classic" of the classic American muscle cars, the Ford Mustang was first produced in 1964 and quickly earned immense popularity for its style and performance. It came with either a six- or eight-cylinder engine, with the most powerful of these allowing for top speeds of about 120 miles per hour. Redesigns in the 1970s and after have generally made the Mustang a less powerful and simpler automobile; this character sheet represents the 1960s-era Mustang GT.

INDY RACECAR

Val	Char	Cost	Notes
3	Size	15	2" x 1"; -3 KB; -2 DCV
25	STR	0	Lift 800 kg; 5d6 HTH [0]
21	DEX	33	OCV: 7/DCV: 7
13	BODY	0	
3	DEF	2	Limited Coverage (not on windshield/windows; -¼)
4	SPD	9	Phases: 3, 6, 9, 12
			Total Characteristic Cost: 59

Movement: Ground: 40"/160"
Swimming: 0"/0"

Abilities & Equipment

Cost	Power	END
26	*Motorized Wheeled Vehicle:* Ground Movement +34" (40" total), x4 Non-combat; OAF (standard tires; -1½), Only On Appropriate Terrain (-¼), 1 Continuing Fuel Charge (easily-obtained fuel; 6 Hours; -0)	[1cc]
-2	*Ground Vehicle:* Swimming -2" (0" total)	
1	*Driver Safety Features:* +6 PD (adds to standard seatbelt's base +4 PD); OIF Bulky (-1), Only To Protect Driver Against Damage From Collisions (-2)	0
	Skills	
4	+2 with Ground Movement	
2	*Airfoils:* +2 with Ground Movement; OAF Bulky (-1½), Only At Speeds Above 40 MPH (-1)	

Total Abilities & Equipment Cost: 31
Total Vehicle Cost: 90

Value Disadvantages

None

Total Disadvantage Points: 0
Total Cost: 90/5 = 18

OPTIONAL EQUIPMENT

Cost	Equipment
-6	*Formula 1 Racecar:* Decrease to Ground Movement +28"; reduce DEX to 20

Description: Used for high-speed automobile races such as the Indianapolis 500, the Indy Racecar is designed with only one consideration in mind: speed. Its supercharged engine and distinctive aerodynamic shape (which includes front and rear airfoils and treadless tires to help keep the car firmly in contact with the track) allow it to reach a maximum speed of approximately 240 miles per hour. Liquid crystal displays in the steering wheel allow the driver to monitor engine functions.

Similar to the Indy Racecar is the Formula 1 car, used for races of the same name. It's a little slower than the Indy car, and lacks other features banned in Formula 1 racing.

LAMBORGHINI DIABLO

Val	Char	Cost	Notes
3	Size	15	2" x 1"; -3 KB; -2 DCV
25	STR	0	Lift 800 kg; 5d6 HTH [0]
23	DEX	39	OCV: 8/DCV: 8
13	BODY	0	
3	DEF	2	Limited Coverage (not on windshield/windows; -¼)
4	SPD	7	Phases: 3, 6, 9, 12
			Total Characteristic Cost: 63

Movement: Ground: 35"/140"
Swimming: 0"/0"

Abilities & Equipment

Cost	Power	END
23	*Motorized Wheeled Vehicle:* Ground Movement +29" (35" total), x4 Non-combat; OAF (standard tires; -1½), Only On Appropriate Terrain (-¼), 1 Continuing Fuel Charge (easily-obtained fuel; 6 Hours; -0)	[1cc]
-2	*Ground Vehicle:* Swimming -2" (0" total)	
	Skills	
6	+3 with Ground Movement	

Total Abilities & Equipment Cost: 27
Total Vehicle Cost: 90

Value Disadvantages

10	Distinctive Features: Sportscar (Concealable With Difficulty; Noticed And Recognizable)

Total Disadvantage Points: 10
Total Cost: 80/5 = 16

OPTIONAL EQUIPMENT

Cost	Equipment
-2	*Lamborghini Countach (1974-91):* Decrease to Ground Movement +27"
-2	*Lamborghini Gallardo (2003-present):* Decrease to Ground Movement +26"
-5	*Lamborghini Miura (1966-74):* Decrease to Ground Movement +23"

Description: Manufactured beginning in 1990, the Lamborghini Diablo is one of the fastest, sleekest, and most expensive sportscars in existence. Its V12 engine allows it to exceed 200 miles per hour (and to reach 100 mph in second gear), and its other features keep it stable at such speeds and take advantage of this power. Its doors swing outward and upward in a distinctive fashion vaguely reminiscent of the gullwing DeLorean.

The Diablo is successor to the Countach, a nearly as fast and equally successful Lamborghini model of the '70s and '80s, which itself succeeded the 1960s-era Miura. The latest in the Lamborghini line is the Gallardo, which has a V10 engine.

PORSCHE 911

Val	Char	Cost	Notes
3	Size	15	2" x 1"; -3 KB; -2 DCV
25	STR	0	Lift 800 kg; 5d6 HTH [0]
23	DEX	39	OCV: 8/DCV: 8
14	BODY	1	
3	DEF	2	Limited Coverage (not on windshield/windows; -¼)
4	SPD	7	Phases: 3, 6, 9, 12
			Total Characteristic Cost: 64

Movement: Ground: 31"/124"
Swimming: 0"/0"

Abilities & Equipment

Cost	Power	END
20	*Motorized Wheeled Vehicle:* Ground Movement +25" (31" total), x4 Noncombat; OAF (standard tires; -1½), Only On Appropriate Terrain (-¼), 1 Continuing Fuel Charge (easily-obtained fuel; 6 Hours; -0)	[1cc]
-2	*Ground Vehicle:* Swimming -2" (0" total)	
	Skills	
4	+2 with Ground Movement	
1	*Whale-Tail Spoiler:* +1 with Ground Movement; OAF Bulky (-1½), Only At Speeds Above 40 MPH (-1)	

Total Abilities & Equipment Cost: 23
Total Vehicle Cost: 87

Value	Disadvantages
10	Distinctive Features: Sportscar (Concealable With Difficulty; Noticed And Recognizable)

Total Disadvantage Points: 10
Total Cost: 77/5 = 15

OPTIONAL EQUIPMENT

Cost	Equipment
-10	*Porsche 356 (1948-65):* Decrease to Ground Movement +15" and +1 with Ground Movement, and remove Spoiler
+2	*Porsche 921 Carrera 4:* Add +1 with Ground Movement
-4	*Porsche 924/944 (1975-93) and Boxster (1996-present):* Decrease to Ground Movement +20"
-2	*Porsche 928 (1977-95):* Decrease to Ground Movement +23"
+1	*Porsche 959 (1987-88):* Increase to Ground Movement +27"

Description: Manufactured from 1963 to 1999, the Porsche 911 is one of the world's most popular sportscars — and with its distinctive "whale-tail" or "ducktail" spoiler, it's easy to distinguish from other cars. This character sheet represents a later model in the 911 family (for example, the 911 Turbo, or the 911 Turbo Cabriolet introduced in 2003).

MOTORCYCLES

Pulp-Era Motorcycles

HARLEY-DAVIDSON BA "PEASHOOTER"

Val	Char	Cost	Notes
1	Size	5	1.25" x .64"; -1 KB; -0 DCV
15	STR	0	Lift 200 kg; 3d6 HTH [0]
17	DEX	21	OCV: 6/DCV: 6
13	BODY	2	
4	DEF	4	Does Not Protect Occupant (-½)
3	SPD	3	Phases: 4, 8, 12
			Total Characteristic Cost: 35

Movement: Ground: 13"/42"
Swimming: 0"/0"

Abilities & Equipment

Cost	Power	END
7	*Motorized Two-Wheeled Vehicle:* Ground Movement +7" (13" total), x4 Noncombat; OAF (standard tires; -1½), Only On Appropriate Terrain (-¼), 1 Continuing Fuel Charge (easily-obtained fuel; 6 Hours; -0)	[1cc]
-2	*Ground Vehicle:* Swimming -2" (0" total)	

Total Abilities & Equipment Cost: 5
Total Vehicle Cost: 40

Value	Disadvantages
10	Distinctive Features: Valuable Motorcycle (Concealable With Difficulty; Noticed And Recognizable)
5	Physical Limitation: Two-Wheeled (Infrequently, Slightly Impairing)

Total Disadvantage Points: 15
Total Cost: 25/5 = 5

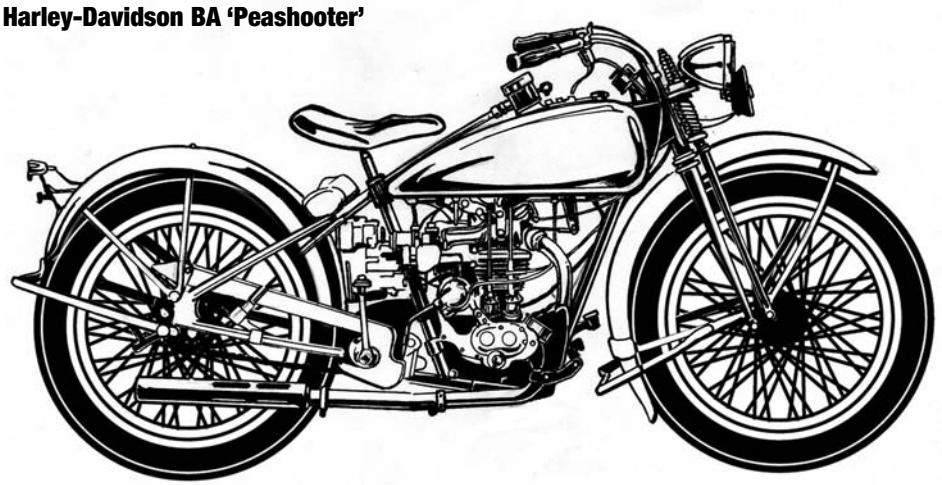
OPTIONAL EQUIPMENT

Cost	Equipment
+6	*Harley-Davidson 61E "Knucklehead" (1936):* Increase to Ground Movement +16"
+3	*Harley-Davidson WL "Forty-Five" (1941):* Increase to Ground Movement +12"
+5	*Harley-Davidson WLA Military Motorcycle (1942-45):* Increase to Ground Movement +8", BODY 15, and STR 17

Description: Harley-Davidson built its first V-twin motorcycle in 1909. Of the many models that followed, one likely to be encountered by pulp- and World War II-era characters is the BA "Peashooter" (so called because of the sound made by its engine). The company manufactured the BA from 1926 until 1934. It led to the creation of the WLD in 1941, which increased the BA's maximum speed of 60 miles per hour to 80 due to the much larger 45 cubic inch engine. During World War II, the WLD was adapted for use by the Army as the WLA; over 90,000 of these sturdy (but slower) bikes were produced for the Allies.

Another classic Harley produced during this time was the 61E, which had a top speed of 100

Harley-Davidson BA 'Peashooter'



miles per hour. A radical departure from past Harleys both in terms of engineering and style, it got its nickname — Knucklehead — because its engine resembled a clenched fist. Many of the technical innovations it introduced are still a part of Harley-Davidson motorcycles today.

MEGOLA

Val	Char	Cost	Notes
1	Size	5	1.25" x .64"; -1 KB; -0 DCV
15	STR	0	Lift 200 kg; 3d6 HTH [0]
22	DEX	36	OCV: 7/DCV: 7
13	BODY	2	
4	DEF	4	Does Not Protect Occupant (-½)
4	SPD	8	Phases: 3, 6, 9, 12
			Total Characteristic Cost: 55

Movement: Ground: 15"/60"
Swimming: 0"/0"

Abilities & Equipment

Cost	Power	END
8	*Motorized Two-Wheeled Vehicle:* Ground Movement +9" (15" total), x4 Noncombat; OAF (standard tires; -1½), Only On Appropriate Terrain (-¼), 1 Continuing Fuel Charge (easily-obtained fuel; 6 Hours; -0)	[1cc]
-2	*Ground Vehicle:* Swimming -2" (0" total)	

Skills

4	*Superb Handling:* +2 with Ground Movement	

Total Abilities & Equipment Cost: 10
Total Vehicle Cost: 65

Value Disadvantages

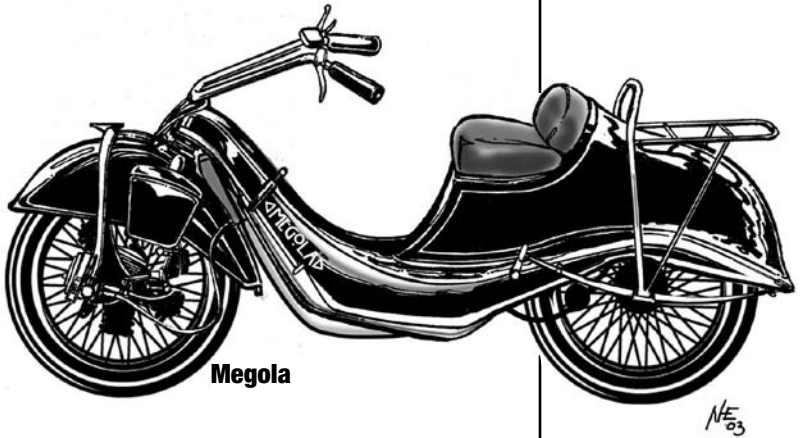
10	Distinctive Features: Valuable Motorcycle (Concealable With Difficulty; Noticed And Recognizable)
5	Physical Limitation: Two-Wheeled (Infrequently, Slightly Impairing)

Total Disadvantage Points: 15
Total Cost: 50/5 = 10

Description: In 1922, German aircraft engine designer Fritz Gockerell approached investors with a radical new idea: to create and sell a competitive sport motorcycle in which the engine would be contained within the front wheel. His remarkable creation, the Megola (a name derived from the names of himself and his partners) was both exotic and beautiful, with extensive sweeping metal body work covering much of its frame.

The Megola became a great racing success. The bike's low center of gravity and front-wheel drive gave it fantastic handling coupled with a high degree of stability. It won many races with an average speed in the high 80s in miles per hour. Unfortunately, the manufacturer couldn't survive the rampant inflation and economic instability of post-war Germany, and the Megola factory closed its doors in 1926. Only about 2,000 Megolas were ever produced, of which only ten are known to still exist.

The Megola's good looks and speed make it an ideal motorcycle for hard-driving, two-fisted pulp heroes. Its combination of style, design originality, rarity, and functionality have made it perhaps the most collectable motorcycle in the world today.



Megola

Modern-Day Motorcycles

BIMOTA DB3 MANTRA

Val	Char	Cost	Notes
1	Size	5	1.25" x .64"; -1 KB; -0 DCV
15	STR	0	Lift 200 kg; 3d6 HTH [0]
20	DEX	30	OCV: 7/DCV: 7
11	BODY	0	
4	DEF	4	Does Not Protect Occupant (-½)
4	SPD	10	Phases: 3, 6, 9, 12
			Total Characteristic Cost: 49

Movement: Ground: 21"/84"
Swimming: 0"/0"

Abilities & Equipment

Cost	Power	END
13	*Motorized Two-Wheeled Vehicle:* Ground Movement +15" (21" total), x4 Noncombat; OAF (standard tires; -1½), Only On Appropriate Terrain (-¼), 1 Continuing Fuel Charge (easily-obtained fuel; 6 Hours; -0)	[1cc]
-2	*Ground Vehicle:* Swimming -2" (0" total)	
	Skills	
2	*Excellent Handling:* +1 with Ground Movement	

Total Abilities & Equipment Cost: 13
Total Vehicle Cost: 62

Value Disadvantages

10	Distinctive Features: Valuable Motorcycle (Concealable With Difficulty; Noticed And Recognizable)
5	Physical Limitation: Two-Wheeled (Infrequently, Slightly Impairing)

Total Disadvantage Points: 15
Total Cost: 47/5 = 9

OPTIONAL EQUIPMENT

Cost	Equipment
+1	*DB4 Mantra:* Increase to Ground Movement +17"

Description: The DB3 Mantra is a powerful but unusual-looking motorcycle produced by the Italian manufacturer Bimota. Its Ducati 904cc 90-degree V-twin engine allows it to achieve 85.7 horsepower at 7,000 rpm for maximum speeds of over 120 miles per hour (a related bike, the DB4, is even faster). But the DB3 is perhaps most notable for its unusual appearance. Some commentators have suggested that its widened body and oddly-shaped headlight make it look like a manta ray or a "fish-rocket."

BMW R 1200 C

Val	Char	Cost	Notes
1	Size	5	1.25" x .64"; -1 KB; -0 DCV
15	STR	0	Lift 200 kg; 3d6 HTH [0]
20	DEX	30	OCV: 7/DCV: 7
11	BODY	0	
4	DEF	4	Does Not Protect Occupant (-½)
4	SPD	10	Phases: 3, 6, 9, 12
			Total Characteristic Cost: 49

Movement: Ground: 17"/68"
Swimming: 0"/0"

Abilities & Equipment

Cost	Power	END
10	*Motorized Two-Wheeled Vehicle:* Ground Movement +11" (17" total), x4 Noncombat; OAF (standard tires; -1½), Only On Appropriate Terrain (-¼), 1 Continuing Fuel Charge (easily-obtained fuel; 6 Hours; -0)	[1cc]
-2	*Ground Vehicle:* Swimming -2" (0" total)	
	Skills	
4	*Superb Handling:* +2 with Ground Movement	

Total Abilities & Equipment Cost: 12
Total Vehicle Cost: 61

Value Disadvantages

10	Distinctive Features: Valuable Motorcycle (Concealable With Difficulty; Noticed And Recognizable)
5	Physical Limitation: Two-Wheeled (Infrequently, Slightly Impairing)

Total Disadvantage Points: 15
Total Cost: 46/5 = 9

OPTIONAL EQUIPMENT

Cost	Equipment
+3	*BMW R 1100 RT:* Increase to Ground Movement +16"
+2	*BMW K 1200 LT:* Increase to Ground Movement +14"

Description: BMW successfully entered the lucrative luxury cruiser market with the release of its R 1200 C. Considered by some to be the only important statement made in the otherwise purposely stagnant cruiser market since the release of the 1953 Indian Chief, the R 1200 C became well known as James Bond's motorcycle of choice in the 1997 film *Tomorrow Never Dies*. Designed for both power and comfort, its features include a passenger seat that folds up to form a backrest for the driver when he's riding by himself.

SUZUKI HAYABUSA GSX1300R

Val	Char	Cost	Notes
1	Size	5	1.25" x .64"; -1 KB; -0 DCV
15	STR	0	Lift 200 kg; 3d6 HTH [0]
23	DEX	39	OCV: 8/DCV: 8
11	BODY	0	
4	DEF	4	Does Not Protect Occupant (-½)
4	SPD	7	Phases: 3, 6, 9, 12
			Total Characteristic Cost: 55

Movement: Ground: 33"/132"
Swimming: 0"/0"

Abilities & Equipment

Cost	Power	END
21	*Motorized Two-Wheeled Vehicle:* Ground Movement +27" (33" total), x4 Noncombat; OAF (standard tires; -1½), Only On Appropriate Terrain (-¼), 1 Continuing Fuel Charge (easily-obtained fuel; 6 Hours; -0)	[1cc]
-2	*Ground Vehicle:* Swimming -2" (0" total)	
	Skills	
6	*Superb Handling:* +3 with Ground Movement	

Total Abilities & Equipment Cost: 25
Total Vehicle Cost: 80

Value Disadvantages

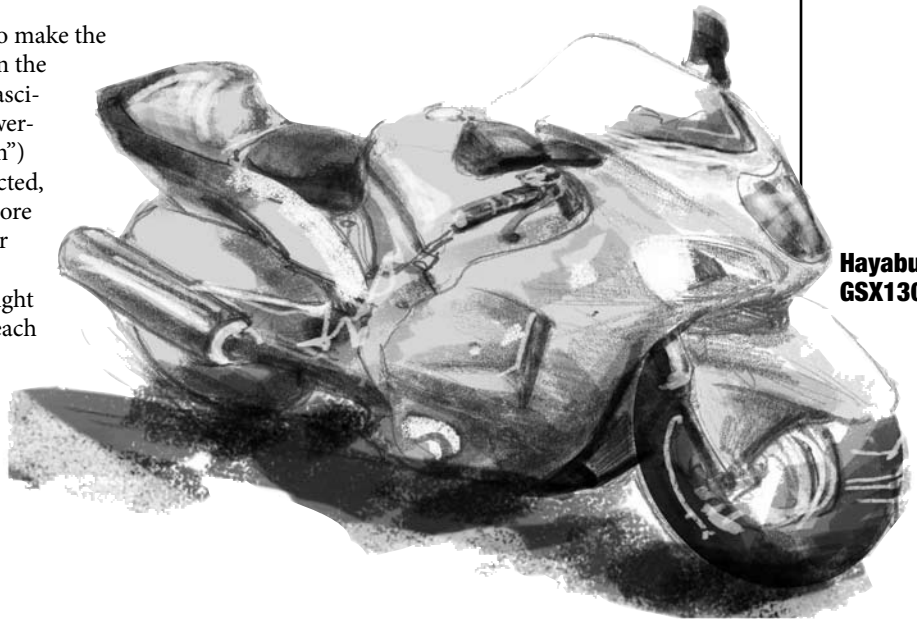
10 Distinctive Features: Valuable Motorcycle (Concealable With Difficulty; Noticed And Recognizable)
5 Physical Limitation: Two-Wheeled (Infrequently, Slightly Impairing)

Total Disadvantage Points: 15
Total Cost: 65/5 = 13

OPTIONAL EQUIPMENT

Cost	Equipment
-0	*Kawasaki ZX12R Ninja:* Decrease to Ground Movement +26"

Description: Suzuki continues to make the fastest production motorcycle in the world as demonstrated by the fascinating-looking yet insanely powerful Hayabusa ("Peregrine Falcon") GSX1300R. Its 1300cc fuel-injected, four-cylinder motor puts out more than 155 rear-wheel horsepower — 16 hp more than any other stock sportsbike in existence. Right off the showroom floor it can reach speeds of nearly 200 miles per hour. The Hayabusa, an immediate best-seller in the United States when first released in 1999, is so powerful that pinning the throttle in first gear results in an insane Mad Max wheel spin or, with enough traction, a wheel spin followed by a very out-of-control wheelie.



Hayabusa GSX1300R

YAMAHA V-MAX

Val	Char	Cost	Notes
1	Size	5	1.25" x .64"; -1 KB; -0 DCV
20	STR	5	Lift 400 kg; 4d6 HTH [0]
18	DEX	24	OCV: 6/DCV: 6
13	BODY	2	
4	DEF	4	Does Not Protect Occupant (-½)
4	SPD	12	Phases: 3, 6, 9, 12
			Total Characteristic Cost: 52

Movement: Ground: 25"/100"
Swimming: 0"/0"

Abilities & Equipment

Cost	Power	END
16	*Motorized Two-Wheeled Vehicle:* Ground Movement +19" (25" total), x4 Noncombat; OAF (standard tires; -1½), Only On Appropriate Terrain (-¼), 1 Continuing Fuel Charge (easily-obtained fuel; 6 Hours; -0)	[1cc]
-2	*Ground Vehicle:* Swimming -2" (0" total)	

Total Abilities & Equipment Cost: 14
Total Vehicle Cost: 66

Value Disadvantages

10 Distinctive Features: Valuable Motorcycle (Concealable With Difficulty; Noticed And Recognizable)
5 Physical Limitation: Two-Wheeled (Infrequently, Slightly Impairing)

Total Disadvantage Points: 15
Total Cost: 51/5 = 10

OPTIONAL EQUIPMENT

Cost	Equipment
+0	*Yamaha FJR1300:* Increase to Ground Movement +20"
+0	*Kawasaki ZZR1200:* Increase to Ground Movement +20"

+12 *Police Motorcycle:* To the V-Max, add the following (and increase Distinctive Features to 20 points):

Cost Power

10 *Emergency Lights And Siren:* Sight and Hearing Group Images, +4 to PER Rolls, 1" radius, Reduced Endurance (0 END; +½); OAF Bulky (-1½), No Range (-½), Set Effect (-1)

2 *Improved Handling And Suspension:* +1 with Ground Movement

Description: Since its introduction in 1985, the Yamaha V-Max has become known as the world's best "musclebike." At the heart of this mechanical beast is a 1200cc V-four engine that puts out more than 140 horsepower at the crank. Even though it's a heavy bike at over 600 lbs wet, the V-Max is the king of off-the-line velocity, with a 0-60 time of 3.1 seconds and a top speed of around 150 miles per hour. This amazing acceleration is largely due to a high-tech carburetion feature known as "V-Boost" — basically a computer-controlled butterfly valve which changes the engine at 6,000 rpm from a four-cylinder fed by two constant-velocity carburetors into a four-cylinder fed by four constant-velocity carburetors. The bike's extra-long wheelbase helps keep the front wheel on the road during this mind-numbing acceleration, but may make it difficult to turn.

TRAINS

AMERICAN TYPE 4-4-0 STEAM LOCOMOTIVE

Val	Char	Cost	Notes
9	Size	45	8" x 4"; -9 KB; -6 DCV
55	STR	0	Lift 50 tons; 11d6 HTH [0]
10	DEX	0	OCV: 3/DCV: 3
20	BODY	1	
5	DEF	7	Limited Coverage (not on parts of cab; -¼)
2	SPD	0	Phases: 6, 12
			Total Characteristic Cost: 53

Movement: Ground: 20"/80"
Swimming: 0"/0"

Abilities & Equipment

Cost Power **END**

6 *Steam-Powered Wheeled Vehicle:* Ground Movement +14" (20" total), x4 Noncombat; OAF Bulky (spoked metal wheels; -1½), Extra Time (1 Minute to activate; -¾), Restricted Path (-1), Limited Maneuverability (-1), 1 Continuing Fuel Charge (easily-obtained fuel; 3 Hours; -0) [1cc]

4 *Spoked Metal Wheels* (6 DEF, 5 BODY; see TUV, page 41) 0

4 *Eight Wheels:* +4 wheels (total of 8) 0

8 *Strong Tower:* +25 STR; Only To Tow Passenger/Freight Cars (-2) 0

-2 *Ground Vehicle:* Swimming -2" (0" total)

Total Abilities & Equipment Cost: 20
Total Vehicle Cost: 73

Value Disadvantages

10 Susceptibility: to speeds above 40 miles per hour (42" per Phase), may take 1d6 damage per Phase (see text; Uncommon)

Total Disadvantage Points: 10
Total Cost: 63/5 = 13

OPTIONAL EQUIPMENT

Cost Equipment

+9 *Tender:* Add +1 Size and +8 wheels

+0 *Rolling Stock:* To convert this self-propelled locomotive into a towed train car, do the following, making the Total Cost of the vehicle 13 points:

Cost Power

-2 *Towed Vehicle:* Change movement to Gliding 20", x4 Noncombat; OAF (spoked metal wheels; -1½), Extra Time (1 Minute to activate; -¾), Restricted Path (-1), Limited Maneuverability (-1), Towed (-½)

-8 Remove Strong Tower

+10 Remove Susceptibility

Description: First built in the 1830s, the American 4-4-0 (the designation refers to the locomotive's wheel arrangement) was widely used throughout the United States, including the "Wild West." About 25,000 "American Standards" were manufactured in the latter half of the 1800s, making it the most common locomotive in the United States — by 1870, it accounted for about 85% of the locomotives in America. Many manufacturers offered this model, making it easy to buy one by simply filling out a form listing the options desired. The last surviving American in America left service in the 1950s, but some remote or impoverished countries still use this type of locomotive today.

An American is a little over fifty feet long and about ten feet wide. Its typical maximum speed was around 40 miles per hour on good, level track, but in most places it could only average about 25 miles per hour. There is at least one instance of an American sustaining speeds of 60 miles per hour — a famous Civil War incident in which several Union soldiers stole the Confederate locomotive *General,* precipitating a chase by another American driven by Confederates who eventually captured and shot the hijackers — but this is the exception, not the rule (and the heat generated by such speeds melted all of the *General*'s brass parts!). Furthermore, at that rate of speed, the locomotive's full load of two cords of wood only lasts for about 50 miles. In game terms, this is represented by a special Susceptibility. If characters drive an American at speeds above 40 miles per hour, the GM should roll 3d6 each Phase. If he rolls 11 or less, he should roll the 1d6 Susceptibility damage and make note of how much STUN damage he rolls. For every "10 STUN" rolled, the vehicle suffers 1 BODY damage. (The value of the Susceptibility has been reduced by 5 Character Points to account for the 11- roll.)

This character sheet represents just the 4-4-0 locomotive. The options for it include adding the tender (the fuel car often attached immediately behind it) and converting the sheet to use it for the rolling stock (passenger and freight cars it pulls).

BULLET TRAIN

Val	Char	Cost	Notes
10	Size	50	10" x 5"; -10 KB; -6 DCV
60	STR	0	Lift 100 tons; 12d6 HTH [0]
10	DEX	0	OCV: 3/DCV: 3
23	BODY	3	
5	DEF	7	Limited Coverage (not on windshield or windows; -¼)
4	SPD	20	Phases: 3, 6, 9, 12
			Total Characteristic Cost: 80

Movement: Ground: 27"/108"
Swimming: 0"/0"

Abilities & Equipment

Cost	Power	END
10	*Electric-Powered Wheeled Vehicle:* Ground Movement +21" (27" total), x4 Noncombat; OAF Bulky (solid metal wheels; -1½), Restricted Path (-1), Limited Maneuverability (-1)	0
4	*Solid Metal Wheels* (6 DEF, 6 BODY; see TUV, page 41)	0
4	*Eight Wheels:* +4 wheels (total of 8)	0
8	*Strong Tower:* +25 STR; Only To Tow Passenger/Freight Cars (-2)	0
-2	*Ground Vehicle:* Swimming -2" (0" total)	

Total Abilities & Equipment Cost: 24
Total Vehicle Cost: 104

Value Disadvantages

None

Total Disadvantage Points: 0
Total Cost: 104/5 = 21

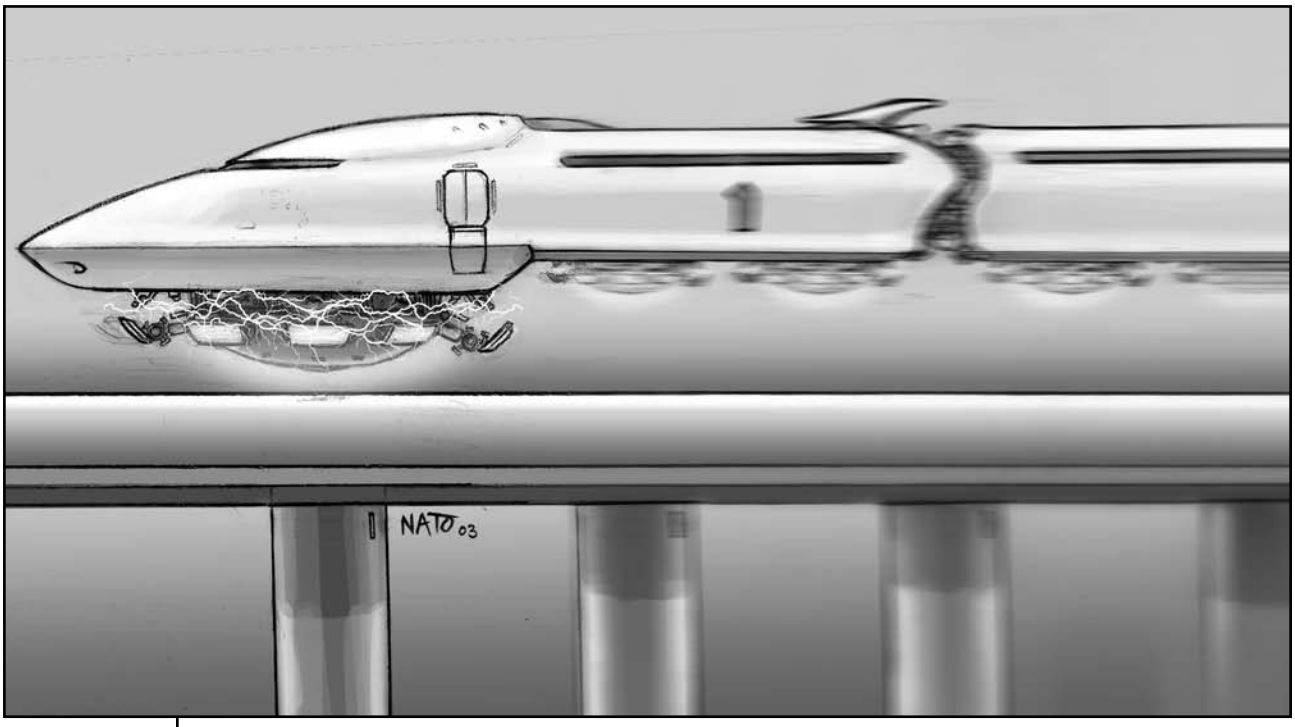
OPTIONAL EQUIPMENT

Cost	Equipment
+12	*TGV Atlantique:* Increase to Ground Movement +48" (54" total)
-5	*Le Shuttle:* Decrease to Ground Movement +9" (15" total, or about 90 miles per hour)
-12	*Rolling Stock:* To convert this self-propelled locomotive into a towed train car, do the following, making the Total Cost of the vehicle 19 points:

Cost	Power
-4	*Towed Vehicle:* Change movement to Gliding 26", x4 Noncombat; OAF (solid metal wheels; -1½), Restricted Path (-1), Limited Maneuverability (-1), Towed (-½)
-8	Remove Strong Tower

Description: "Bullet train" is a general term for modern high-speed electrically-powered trains, first adopted for trains such as the Shin-Kansen 16-car train of Japan (which began operation in the 1960s). Most have at least 16 cars (including the engine), but they may have more.

The engine and cars in a bullet train tend to be about 70-80 feet long and about ten feet wide. This example, like the Shin-Kansen, can achieve speeds of about 160 miles per hour. The options list two others: the "Le Shuttle" that ferries passengers and freight from England to France via the Channel



Tunnel; and the TGV Atlantique, a French train that holds the world speed record (as of late 2003) of 320 miles per hour.

MAGLEV TRAIN (2050)

Val	Char	Cost	Notes
9	Size	45	8" x 4"; -9 KB; -6 DCV
55	STR	0	Lift 50 tons; 11d6 HTH [0]
10	DEX	0	OCV: 3/DCV: 3
20	BODY	1	
5	DEF	7	Limited Coverage (not on windshield or windows; -¼)
4	SPD	20	Phases: 3, 6, 9, 12
			Total Characteristic Cost: 73

Movement: Ground: 42"/336"
Swimming: 0"/0"

Abilities & Equipment

Cost	Power	END
18	*Electric-Powered Wheeled Vehicle:* Ground Movement +36" (42" total), x8 Noncombat; OAF Bulky (solid metal wheels; -1½), Restricted Path (-1), Limited Maneuverability (-1)	0
4	*Solid Metal Wheels* (6 DEF, 6 BODY; see TUV, page 41)	0
4	*Eight Wheels:* +4 wheels (total of 8)	0
5	*Strong Tower:* +15 STR; Only To Tow Passenger Cars (-2)	0
-2	*Ground Vehicle:* Swimming -2" (0" total)	

Total Abilities & Equipment Cost: 29
Total Vehicle Cost: 102

Value Disadvantages
None

Total Disadvantage Points: 0
Total Cost: 102/5 = 20

OPTIONAL EQUIPMENT

Cost	Equipment
-6	*Maglev Train (2003):* Decrease to Ground Movement +22" (28" total)
-13	*Passenger Car:* To convert this self-propelled locomotive into a towed train car, do the following, making the Total Cost of the vehicle 18 points:

Cost	Power
-8	*Towed Vehicle:* Change movement to Gliding 42", x8 Noncombat; OAF (solid metal wheels; -1½), Restricted Path (-1), Limited Maneuverability (-1), Towed (-½)
-5	Remove Strong Tower

Description: This character sheet represents a maglev (magnetic levitation) train car as such trains are expected to function in the mid-twenty-first century. They'll be able to reach velocities of approximately 500 miles per hour by using magnetic levitation and propulsion, which minimizes friction and allows for a smoother, quieter, safer ride. Modern maglevs, such as the MLX01 between Otsuki and Tsuru, Japan, can only achieve speeds of about 340 miles per hour; they're mostly experimental or used for limited purposes.

THE ORIENT-EXPRESS

Val	Char	Cost	Notes
9	Size	45	8" x 4"; -9 KB; -6 DCV
55	STR	0	Lift 50 tons; 11d6 HTH [0]
10	DEX	0	OCV: 3/DCV: 3
21	BODY	2	
5	DEF	7	Limited Coverage (not on windshield or windows; -¼)
3	SPD	10	Phases: 4, 8, 12
			Total Characteristic Cost: 64

Movement: Ground: 12"/48"
Swimming: 0"/0"

Abilities & Equipment

Cost	Power	END
3	*Steam-Powered Wheeled Vehicle:* Ground Movement +6" (12" total), x4 Noncombat; OAF Bulky (solid metal wheels; -1½), Extra Time (1 Minute to activate; -¾), Restricted Path (-1), Limited Maneuverability (-1), 1 Continuing Fuel Charge (easily-obtained fuel; 4 Hours; -0)	[1cc]
4	*Solid Metal Wheels* (6 DEF, 6 BODY; see TUV, page 41)	0
12	*Fourteen Wheels:* +10 wheels (total of 14)	0
8	*Strong Tower:* +25 STR; Only To Tow Passenger/Freight Cars (-2)	0
-2	*Ground Vehicle:* Swimming -2" (0" total)	

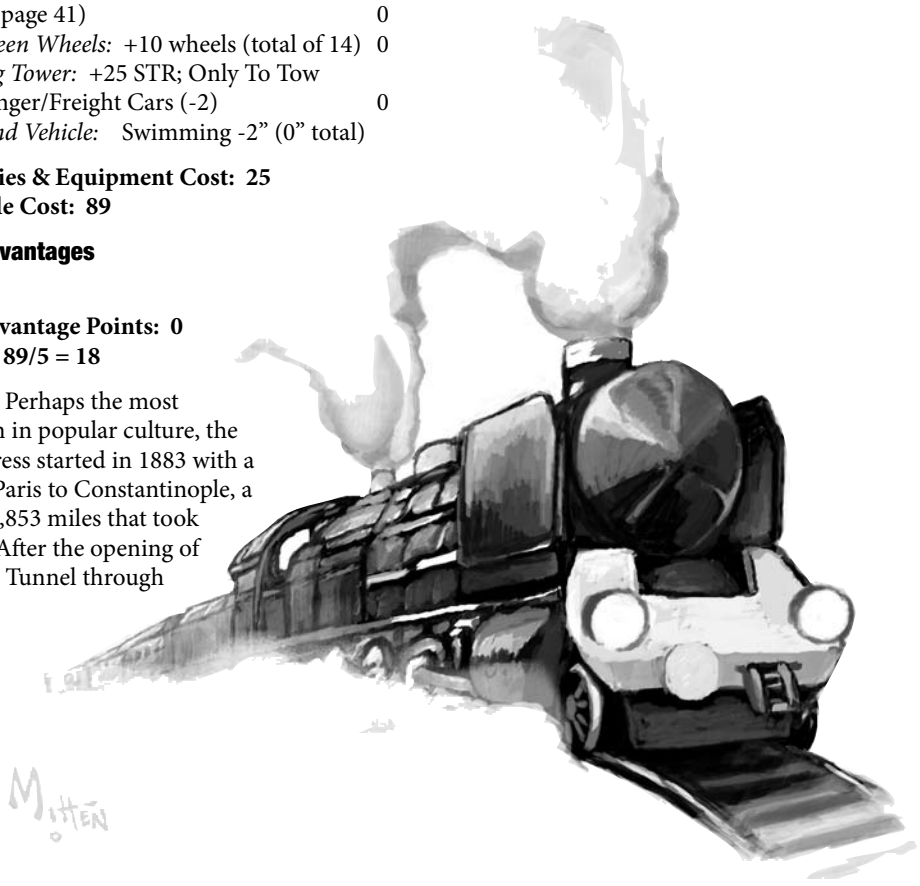
Total Abilities & Equipment Cost: 25
Total Vehicle Cost: 89

Value Disadvantages
None

Total Disadvantage Points: 0
Total Cost: 89/5 = 18

Description: Perhaps the most famous train in popular culture, the Orient-Express started in 1883 with a route from Paris to Constantinople, a journey of 1,853 miles that took 67.5 hours. After the opening of the Simplon Tunnel through the Alps, it was re-launched in 1919 as the Simplon Orient-Express with a starting point in Calais and endpoints in Athens, Istanbul, and Bucharest. A 1930 link with the Taurus Express allowed passengers to reach Cairo, though this required a journey through much of train track-less Palestine on a bus. By 1932, Orient-Express service also ran from Vienna, Prague, Berlin, Ostend, and Amsterdam. World War II brought the Express to a halt, but it resumed after the war with diesel-electric locomotives. The Orient-Express ended in 1977, but was relaunched in 1982 with restored carriages and today runs between Paris and Vienna.

Featuring luxurious European versions of the famed Pullman cars of America, the Orient-Express included 38-seat dining cars that served food picked up from four-star hotels along the route, sleeping cars with fold-up beds so passengers could convert their cabins into small sitting rooms, and many other amenities. In 1930, a journey from London to Cairo — involving a ferry across the English Channel and the aforementioned bus through Palestine — took five days.



SUBWAY CAR

Val	Char	Cost	Notes
9	Size	45	8" x 4"; -9 KB; -6 DCV
55	STR	0	Lift 50 tons; 11d6 HTH [0]
10	DEX	0	OCV: 3/DCV: 3
22	BODY	3	
5	DEF	7	Limited Coverage (not on windshield or windows; -¼)
4	SPD	20	Phases: 3, 6, 9, 12
			Total Characteristic Cost: 75

Movement: Ground: 10"/40"
Swimming: 0"/0"

Abilities & Equipment

Cost	Power	END
3	*Electric-Powered Wheeled Vehicle:* Ground Movement +4" (10" total), x4 Noncombat; OAF Bulky (solid metal wheels; -1½), Restricted Path (-1), Limited Maneuverability (-1)	0
4	*Solid Metal Wheels* (6 DEF, 6 BODY; see TUV, page 41)	0
4	*Eight Wheels:* +4 wheels (total of 8)	0
5	*Strong Tower:* +15 STR; Only To Tow Passenger Cars (-2)	0
-2	*Ground Vehicle:* Swimming -2" (0" total)	

Total Abilities & Equipment Cost: 14
Total Vehicle Cost: 89

Value Disadvantages

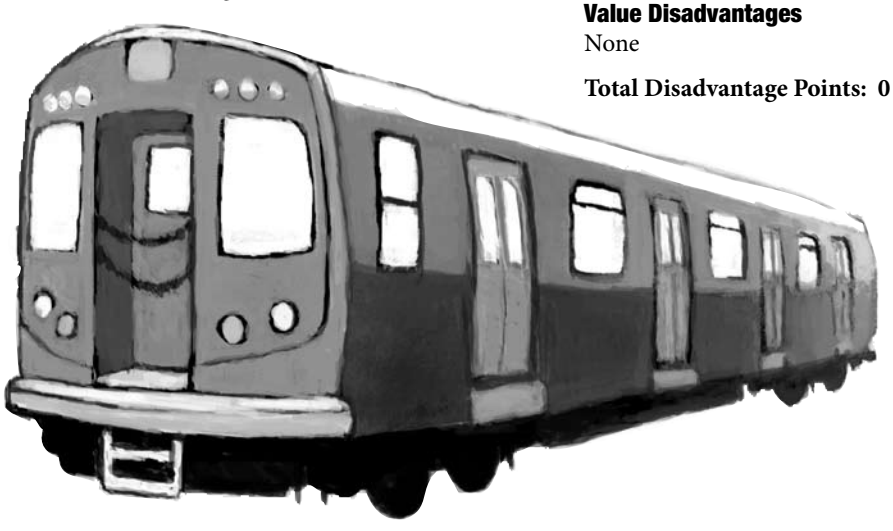
None

Total Disadvantage Points: 0
Total Cost: 89/5 = 18

OPTIONAL EQUIPMENT

Cost	Equipment
-5	*Passenger Car:* To convert this self-propelled locomotive into a towed train car, do the following, making the Total Cost of the vehicle 17 points:

Cost	Power
-0	*Towed Vehicle:* Change movement to Gliding 10", x4 Noncombat; OAF (solid metal wheels; -1½), Restricted Path (-1), Limited Maneuverability (-1), Towed (-½)
-5	Remove Strong Tower



Description: This character sheet represents a typical subway car such as might be found on the New York subway, the London Underground, the Paris Metro, or the Washington, D.C. Metro. This is the type of car at the head of the train, with the driver's compartment; the options describe a standard car. Most subway trains have about eight cars total, each approximately 52 feet long and 8.66 feet wide. Using electric power obtained through a "third rail," it can reach speeds of about 60 miles per hour. The operation of the train, including accelerating, decelerating, and braking, is almost entirely automatic, but a driver is present in the event of emergencies and the like.

THE TWENTIETH CENTURY LIMITED

Val	Char	Cost	Notes
9	Size	45	8" x 4"; -9 KB; -6 DCV
55	STR	0	Lift 50 tons; 11d6 HTH [0]
10	DEX	0	OCV: 3/DCV: 3
20	BODY	1	
5	DEF	7	Limited Coverage (not on windshield or windows; -¼)
3	SPD	10	Phases: 4, 8, 12
			Total Characteristic Cost: 63

Movement: Ground: 11"/44"
Swimming: 0"/0"

Abilities & Equipment

Cost	Power	END
3	*Steam- and Electric-Powered Wheeled Vehicle:* Ground Movement +5" (11" total), x4 Noncombat; OAF Bulky (solid metal wheels; -1½), Extra Time (1 Minute to activate; -¾), Restricted Path (-1), Limited Maneuverability (-1), 1 Continuing Fuel Charge (easily-obtained fuel; 4 Hours; -0)	[1cc]
4	*Solid Metal Wheels* (6 DEF, 6 BODY; see TUV, page 41)	0
12	*Fourteen Wheels:* +10 wheels (total of 14)	0
8	*Strong Tower:* +25 STR; Only To Tow Passenger/Freight Cars (-2)	0
-2	*Ground Vehicle:* Swimming -2" (0" total)	

Total Abilities & Equipment Cost: 25
Total Vehicle Cost: 88

Value Disadvantages

None

Total Disadvantage Points: 0

Total Cost: 88/5 = 18

OPTIONAL EQUIPMENT

Cost	Equipment
-1	*1902 Speed:* Decrease to Ground Movement +3" (9" total)
+0	*1932 Upgrades:* Increase to Ground Movement +6" (12" total)
+4	*1938 Upgrades:* Increase to Ground Movement +16" (22" total)
+5	*Diesel-Electric Train (1924 and after):* Increase to Ground Movement +16" (22" total) and remove the Extra Time (-¾)
+6	*World Steam Locomotive Speed Record:* Increase to Ground Movement +22" (28" total)

Description: The *Twentieth Century Limited* was the New York Central Railroad's train for its 955-mile New York to Chicago route. It used electric power for the early part of the journey, but was picked up by a powerful 4-6-4 steam locomotive for most of the trip.

By the late 1920s — the train depicted by this character sheet — the Twentieth Century Limited could make the journey in 20 hours (an average speed of about 47 miles per hour). It was improved to an average of 53 miles per hour in 1932, and 60 miles per hour in 1938. (In fact, the 1938 addition of the Hudson J-3a 4-6-4 streamlined locomotive actually gave the train a theoretical top speed of 100 miles per hour, but it still took 16 hours for the trip.) After World War II until the service was stopped in 1967, the Limited became a diesel-electric train.

This train is a good example of a train that pulp-era characters might ride on. The Diesel-Electric option, which represents a train that drives itself via electric power generated by an onboard diesel motor, is also developed for common use in the early pulp era (*i.e.,* in 1924 and afterwards in the United States). It starts quickly, requires less frequent refueling, and needs less maintenance than a steam engine. The No. 1 B_o-B_o, manufactured by the American Locomotive Company (Alco) and others, is an example of this type of train. The options also list the world's record for a steam locomotive, 126 mile per hour, established by the *Dominion Of New Zealand* in 1938.

MISCELLANEOUS CIVILIAN VEHICLES

BULLDOZER

Val	Char	Cost	Notes
7	Size	35	5" x 2.5"; -7 KB; -4 DCV
55	STR	10	Lift 50 tons; 11d6 HTH [0]
5	DEX	-15	OCV: 2/DCV: 2
25	BODY	8	
5	DEF	7	Limited Coverage (only protects the driver from some angles; -¼)
2	SPD	5	Phases: 6, 12
			Total Characteristic Cost: 50

Movement: Ground: 7"/7"
Swimming: 0"/0"

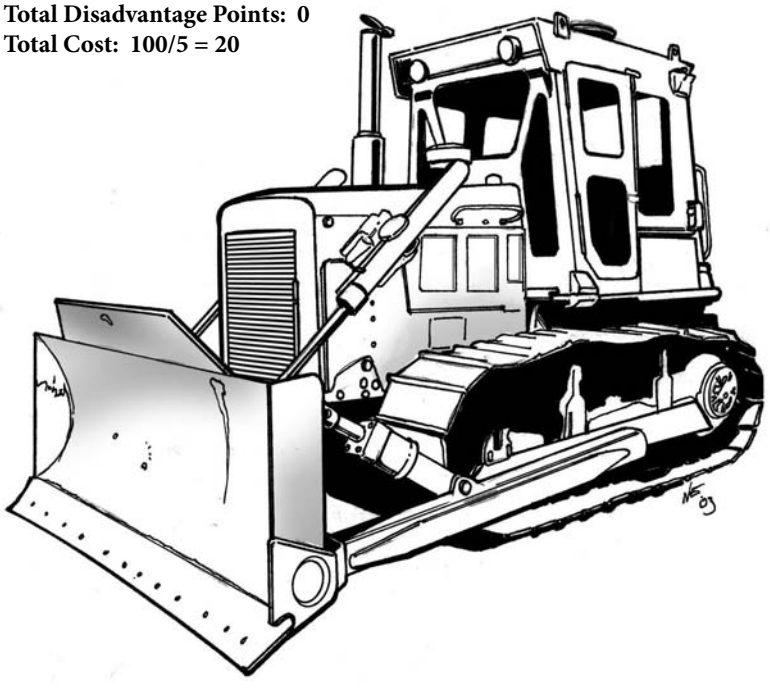
Abilities & Equipment

Cost	Power	END
1	*Tracked Vehicle:* Ground Movement +1" (7" total); No Noncombat Movement (-¼), Only On Appropriate Terrain (-¼), Limited Maneuverability (-¼), Side Effect (damages surfaces it rides over, always occurs; -¼), 1 Continuing Fuel Charge (easily-obtained fuel; 6 Hours; -0)	[1cc]
-2	*Ground Vehicle:* Swimming -2" (0" total)	
20	*Blade:* Area Of Effect (One Hex; +½) for 55 STR, Reduced Endurance (0 END; +½); Only To Push Things From The Front (-1)	0
11	*Ripper:* RKA 2d6 (4d6 with STR), Reduced Endurance (0 END; +½); Extra Time (1 Turn; -1¼), Only Works Against Targets Lying On The Ground And/Or Below The Bulldozer (-2)	0
20	*Heavy And Bulky:* Knockback Resistance -10"	0

Total Abilities & Equipment Cost: 50
Total Vehicle Cost: 100

Value Disadvantages
None

Total Disadvantage Points: 0
Total Cost: 100/5 = 20



OPTIONAL EQUIPMENT

Cost	Equipment
-8	*Backhoe:* Add Extra Limb (1, Limited Manipulation [-¼], Only For Digging And Picking Things Up [-1]) and decrease STR to 45
+25	*DEUCE:* Change to DEX 8, SPD 3, and Ground Movement +7" (13" total); Only On Appropriate Terrain (-¼), Limited Maneuverability (-¼), 1 Continuing Fuel Charge (easily-obtained fuel; 6 Hours; -0)

Description: This character sheet represents a typical bulldozer used at modern construction sites. About 30 feet long and weighing over 100,000 pounds, it has a maximum speed of approximately 6 miles per hour. It has two attached tools. The first is its blade, a large concave metal plate attached to arms on the front that helps it push large amounts of earth and debris. The blade can raise and lower; in some circumstances the driver may be able to raise it so that the vehicle's DEF shields him from attacks made by people standing in front of the 'dozer. The second is its ripper, a large claw-like device mounted in back that can tear up asphalt, packed earth, trees, and so forth.

The Bulldozer includes two options, each describing slightly different vehicles. The first is a *backhoe,* a vehicle similar to a bulldozer in many respects but mainly used for digging trenches and moving debris. The front blade becomes a scoop used to pick up large amounts of dirt and the like, and the ripper becomes an extendable hydraulic arm with a small scoop on the end.

The second listed option is for DEUCE (DEployable Universal Combat Earthmover), the U.S. Army's new bulldozer that looks like a truck as much as a traditional bulldozer. It has rubber treads, allowing it to move along normal roads at speeds of approximately 30 miles per hour without damaging the road surface.

SLED

Val	Char	Cost	Notes
3	Size	15	2" x 1"; -3 KB; -2 DCV
25	STR	0	Lift 800 kg; 5d6 HTH [0]
13	DEX	9	OCV: 4/DCV: 4
13	BODY	0	
3	DEF	2	Does Not Protect Occupant (-½)
3	SPD	7	Phases: 4, 8, 12
			Total Characteristic Cost: 33

Movement: Ground: 0"/0"
Gliding (Towed): 10"/20"
Swimming: 0"/0"

Abilities & Equipment

Cost	Power	END
2	*Towed Runner Vehicle:* Gliding 10"; OAF Bulky (-1½), Towed (-½), Costs Endurance (towing creature's END; -½), Only On Appropriate Terrain (snow and ice; -1)	1
-12	*Not Self-Mobile:* Ground Movement -6" (0" total)	
-2	*Ground Vehicle:* Swimming -2" (0" total)	

Total Abilities & Equipment Cost: -12
Total Vehicle Cost: 21

Value Disadvantages

None

Total Disadvantage Points: 0
Total Cost: 21/5 = 4

OPTIONAL EQUIPMENT

Cost	Equipment
-15	*Dogsled:* Decrease to Size 0
+5	*Sleigh:* Increase to Size 4 (or larger)

Description: This character sheet represents a typical sled — the type pulled through the snow by horses or other animals. The options include the larger sleigh and smaller dogsled.

SNOWMOBILE

Val	Char	Cost	Notes
0	Size	0	1" x .5"; -0 KB; -0 DCV
20	STR	10	Lift 400 kg; 4d6 HTH [0]
15	DEX	15	OCV: 5/DCV: 5
10	BODY	0	
3	DEF	2	Does Not Protect Occupant (-½)
3	SPD	5	Phases: 4, 8, 12
			Total Characteristic Cost: 32

Movement: Ground: 18"/72"
Swimming: 0"/0"

Abilities & Equipment

Cost	Power	END
8	*Tracked- And Runner-Driven Vehicle:* Ground Movement +12" (18" total), x4 Noncombat; OAF Bulky (rubber tracks; -1½), Only On Appropriate Terrain (snow/ice; -1), 1 Continuing Fuel Charge (easily-obtained fuel; 4 Hours; -0)	[1cc]
-2	*Ground Vehicle:* Swimming -2" (0" total)	

Total Abilities & Equipment Cost: 6
Total Vehicle Cost: 38

Value Disadvantages

None

Total Disadvantage Points: 0
Total Cost: 38/5 = 8

OPTIONAL EQUIPMENT

Cost	Equipment
+5	*Performance Snowmobile:* Increase Ground Movement to +21" (27" total)

Description: This character sheet represents a typical modern-day snowmobile. It can maintain speeds in the 80 miles per hour range without much difficulty; "performance" models may get as high as 120 miles per hour. You can create earlier or less efficient models by decreasing the inches of movement.

VESPA SCOOTER

Val	Char	Cost	Notes
0	Size	0	1" x .5"; -0 KB; -0 DCV
15	STR	5	Lift 200 kg; 3d6 HTH [0]
15	DEX	15	OCV: 5/DCV: 5
10	BODY	0	
3	DEF	2	Does Not Protect Occupant (-½)
3	SPD	5	Phases: 4, 8, 12
			Total Characteristic Cost: 27

Movement: Ground: 9"/36"
Swimming: 0"/0"

Abilities & Equipment

Cost	Power	END
4	*Motorized Two-Wheeled Vehicle:* Ground Movement +3" (9" total), x4 Noncombat; OAF (standard tires; -1½), Only On Appropriate Terrain (-¼), 1 Continuing Fuel Charge (easily-obtained fuel; 6 Hours; -0)	[1cc]
-2	*Ground Vehicle:* Swimming -2" (0" total)	

Total Abilities & Equipment Cost: 2
Total Vehicle Cost: 29

Value Disadvantages

5	Physical Limitation: Two-Wheeled (Infrequently, Slightly Impairing)

Total Disadvantage Points: 5
Total Cost: 24/5 = 5

Description: First produced in 1946 in Italy by Enrico Piaggio, the Vespa ("wasp") motor scooter has gone on to become one of the most popular vehicles in the world — more than 15 million Vespas have been sold since the vehicle's debut, mostly in Europe. Available in a wide variety of colors, this one-person scooter is perfect for getting around in congested urban environments. It has a maximum speed of about 40 miles per hour.

MILITARY GROUND VEHICLES

This section includes ground vehicles used primarily by the military. Some of them (such as the Jeep and the Humvee) are available for civilian purchase and use in some form.

TANKS

M3 "GENERAL GRANT/LEE" MEDIUM TANK

Val	Char	Cost	Notes
4	Size	20	2.5" x 1.25"; -4 KB; -2 DCV
40	STR	10	Lift 6,400 kg; 8d6 HTH [0]
12	DEX	6	OCV: 4/DCV: 4
20	BODY	6	
13	DEF	33	
3	SPD	8	Phases: 4, 8, 12
			Total Characteristic Cost: 83

Movement: Ground: 12"/24"
Swimming: 0"/0"

Abilities & Equipment

Cost	Power	END
	Propulsion Systems	
10	*Motorized Tracked Military Vehicle:* Ground Movement +6" (12" total); Only On Appropriate Terrain (-¼), 1 Continuing Fuel Charge (easily-obtained fuel; 6 Hours; -0)	[1cc]
-2	*Ground Vehicle:* Swimming -2" (0" total)	
	Tactical Systems	
70	*75mm Main Gun:* RKA 7d6, Indirect (can be arced over some intervening obstacles; +¼), +1 Increased STUN Multiplier (+¼), 50 Charges (+½); OIF Bulky (-1), Limited Arc Of Fire (60 degrees forward, only on same horizontal level; -¾), Real Weapon (-¼)	[50]
83	*37mm Turret Gun:* RKA 5d6, Indirect (can be arced over some intervening obstacles; +¼), +1 Increased STUN Multiplier (+¼), 178 Charges (+1); OIF Bulky (-1), Real Weapon (-¼)	[178]
43	*M1919A4 7.62mm Machine Gun (Turret-Mounted):* RKA 2d6+1, Autofire (5 shots; +½), +1 Increased STUN Multiplier (+¼), 2,300 Charges (+1); OIF Bulky (-1), Real Weapon (-¼)	[2,300]
32	*M1919A4 7.62mm Machine Guns (Forward- and Cupola-Mounted):* RKA 2d6+1, Autofire (5 shots; +½), +1 Increased STUN Multiplier (+¼), 2,300 Charges (+1); OIF Bulky (-1), Limited Arc Of Fire (60 degrees; only on same horizontal level; -¾), Real Weapon (-¼)	[2,300]
10	*M1919A4 7.62mm Machine Guns (Forward-Mounted):* Two more 7.62mm Machine Gun (total of three)	[2,300]
8	*Heavy:* Knockback Resistance +-4"	0
	Operations Systems	
4	*Radio:* Radio Perception/Transmission (Radio Group); OAF Bulky (-1½), Affected As Hearing Group As Well As Radio Group (-¼)	0

Total Abilities & Equipment Cost: 258
Total Vehicle Cost: 341

Value Disadvantages

25	Distinctive Features: US Army Tank (Not Concealable; Causes Extreme Reaction [fear])

Total Disadvantage Points: 25
Total Cost: 316/5 = 63

OPTIONAL EQUIPMENT

Cost	Equipment
-5	*M3 General Grant I:* Remove one 7.62mm machine gun (commander's cupola)
+3	*M3A3 General Lee IV:* Increase to DEF 14
+1	*M3A4 General Lee V:* Increase to Ground Movement +7"

Description: Developed by the United States early in World War II based on analysis of armored battles in France in 1940, the M3 medium tank was first shipped to the British, who referred to it as the "General Grant" and used it to great effect against the Afrika Korps in North Africa. The version later deployed by the Americans, essentially the same but with a few minor changes, was known as the "General Lee." It proved to be a hardworking, reliable tank popular with Allied tank crews, whose only complaint was that its main gun had a limited arc of fire. After the war the M3 was exported to many countries. Over 6,000 were manufactured before production ended in December 1942.

In addition to the forward-mounted 75mm gun, the M3 has a turret-mounted 37mm gun and four 7.62mm machine guns (one in the commander's cupola [omitted in the "General Grant" version], one next to the 37mm gun, and two in the left front hull). It can achieve a maximum road speed of 26 miles per hour, ford up to 3 feet (.5") of water, and overcome vertical obstacles two feet high or trenches approximately six feet (1") deep. It has a crew of six.

M4A2 "SHERMAN" MEDIUM TANK

Val	Char	Cost	Notes
5	Size	25	3.2" x 1.6"; -5 KB; -3 DCV
45	STR	10	Lift 12.5 tons; 9d6 HTH [0]
12	DEX	6	OCV: 4/DCV: 4
20	BODY	5	
14	DEF	36	
3	SPD	8	Phases: 4, 8, 12
			Total Characteristic Cost: 90

Movement: Ground: 13"/26"
Swimming: 0"/0"

Abilities & Equipment

Cost	Power	END
	Propulsion Systems	
11	*Motorized Tracked Military Vehicle:* Ground Movement +7" (13" total); Only On Appropriate Terrain (-¼), 1 Continuing Fuel Charge (easily-obtained fuel; 6 Hours; -0) [1cc]	
-2	*Ground Vehicle:* Swimming -2" (0" total)	
	Tactical Systems	
79	*75mm Main Gun:* RKA 7d6, Indirect (can be arced over some intervening obstacles; +¼), +1 Increased STUN Multiplier (+¼), 97 Charges (+¾); OIF Bulky (-1), Limited Arc Of Fire (60 degrees forward, only on same horizontal level; -¾), Real Weapon (-¼) [97]	
55	*12.7mm Antiaircraft Gun (Turret-Mounted):* RKA 3d6, Autofire (5 shots; +½), Indirect (can be arced over some intervening obstacles; +¼), 300 Charges (+1); OIF Bulky (-1), Real Weapon (-¼) [300]	
43	*M1919A4 7.62mm Machine Gun (Turret-Mounted):* RKA 2d6+1, Autofire (5 shots; +½), +1 Increased STUN Multiplier (+¼), 2,375 Charges (+1); OIF Bulky (-1), Real Weapon (-¼) [2,375]	
32	*M1919A4 7.62mm Machine Guns (Forward-Mounted):* RKA 2d6+1, Autofire (5 shots; +½), +1 Increased STUN Multiplier (+¼), 2,375 Charges (+1); OIF Bulky (-1), Limited Arc Of Fire (60 degrees; only on same horizontal level; -¾), Real Weapon (-¼) [2,375]	
6	*Heavy:* Knockback Resistance +-3"	0
	Operations Systems	
4	*Radio:* Radio Perception/Transmission (Radio Group); OAF Bulky (-1½), Affected As Hearing Group As Well As Radio Group (-¼)	0
	Skills	
3	*Gyro-Stabilizer:* +2 Penalty Skill Levels to counteract terrain modifiers (TUV, page 171) with 75mm Main Gun; Requires A DEX Roll (assumes DEX Roll of 12- or 13-; -¾)	

Total Abilities & Equipment Cost: 231
Total Vehicle Cost: 321

Value Disadvantages

25	Distinctive Features: US Army Tank (Not Concealable; Causes Extreme Reaction [fear])
5	Physical Limitation: all turret weapons must point in same direction (Infrequently, Slightly Impairing)

Total Disadvantage Points: 30
Total Cost: 291/5 = 58

OPTIONAL EQUIPMENT

Cost	Equipment
+7	*M4 Howitzer:* Increase 75mm gun to RKA 7½d6 and decrease to 66 Charges (+¾)
-62	*M4A3:* Add +1 DEF, remove 12.7mm gun and turret-mounted 7.62mm gun, and add *M3 Smoke Mortar:* Darkness to Sight Group 5" radius, 12 Continuing Charges lasting 1 Minute each (+½); OIF Bulky (-1), Real Weapon (-¼)
-60	*M4A4:* As M4A3, but increase to Ground Movement +8"
-29	*Sherman Crab:* Remove forward machine gun and add *Mine-Clearing Flail:* Stretching 2", Reduced Endurance (0 END; +½); OIF Bulky (-1), Always Direct (-¼), No Velocity Damage (-¼), No Noncombat Stretching (-¼), Only To Impact The Ground 2" In Front Of Tank (-2)
+2	*Sherman DD:* Change to Swimming 2"
+3	*Sandshields:* Add +1 DEF
35	*Rocket Launcher:* RKA 3d6, Explosion (+½), 20 Charges (+¼); OIF Bulky (-1), Real Weapon (-¼)

Description: American tank designers soon went beyond the limitations of the M3 Lee. By using the same basic hull and suspension, but moving the main gun to a turret, they created the M4 "Sherman" tank. During the war over 53,000 Shermans were produced, and thanks to the tank's durability it remained in use by some Third World countries throughout the twentieth century.

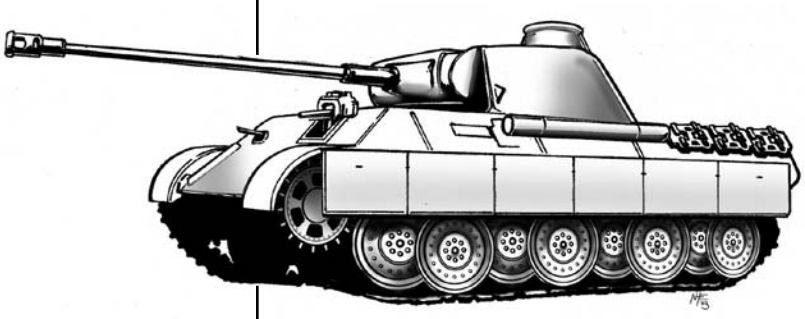
Although considered not as powerful as a Panzer one-on-one, and underarmored compared to German tanks, the Sherman could outmaneuver the foe, and frequently made up for its lack of power through sheer numbers. It was produced in numerous variants, including: the M4A3 (fewer but more powerful guns, stronger armor); the Sherman Crab mineclearer (which uses chains mounted on a rotating drum on a boom forward of the tank to safely detonate mines); and the Sherman DD (Duplex Drive), which used a flotation screen and rear-mounted propellers to move through the water. The enormous number of variants sometimes caused logistical problems (poor availability of spare parts, lack of part interchangeability, and the like).

Early Shermans had a poor reputation for "brewing up" — having their ammunition catch on fire and explode — when hit. To counteract this, engineers developed "wet storage" boxes that surrounded the ammo with a layer of water. This has no particular game effect (since the *HERO System*

doesn't have rules for igniting ammunition by damaging a vehicle), but GMs should keep it in mind during tank battles.

The M4A2 carries a turret-mounted 75mm gun (or in some models, the M4 105mm howitzer), a coaxial 7.62mm machine gun (and another mounted forward), and a turret-mounted 12.7mm antiaircraft gun. The tank has a special gyro-stabilizer that keeps the main gun level and aimed at the target regardless of the terrain the tank's moving over, but it's so complicated to use that many gunners don't bother to turn it on. Other versions of the Sherman had a 76mm gun, an M3 smoke mortar, or a rocket launcher firing 7.2 inch rockets. Some Shermans added sandbag-filled metal frames around the outside of the tank to enhance the armor.

The M4A2 (and most other Sherman variants) can achieve a maximum road speed of 29 miles per hour, ford up to 3 feet (.5") of water, and overcome vertical obstacles two feet high or trenches approximately seven feet (1") deep. It has a crew of five.



Panzerkampfwagen V Panther

PANZERKAMPFWAGEN V PANTHER

Val	Char	Cost	Notes
5	Size	25	3.2" x 1.6"; -5 KB; -3 DCV
45	STR	10	Lift 12.5 tons; 9d6 HTH [0]
10	DEX	0	OCV: 3/DCV: 3
23	BODY	8	
16	DEF	42	
3	SPD	10	Phases: 4, 8, 12
			Total Characteristic Cost: 95

Movement: Ground: 13"/26"
Swimming: 0"/0"

Abilities & Equipment

Cost	Power	END
	Propulsion Systems	
11	*Motorized Tracked Military Vehicle:* Ground Movement +7" (13" total); Only On Appropriate Terrain (-¼), 1 Continuing Fuel Charge (easily-obtained fuel; 6 Hours; -0)	[1cc]
-2	*Ground Vehicle:* Swimming -2" (0" total)	
	Tactical Systems	
105	*75mm KwK 42L/70 Main Gun:* RKA 7d6, Indirect (can be arced over some intervening obstacles; +¼), +1 Increased STUN Multiplier (+¼), 79 Charges (+¾); OIF Bulky (-1), Real Weapon (-¼)	[79]
49	*7.92mm Machine Gun (Pintle-Mounted):* RKA 2½d6, Autofire (5 shots; +½), +1 Increased STUN Multiplier (+¼), 1,368 Charges (+1); OIF Bulky (-1), Real Weapon (-¼)	[1,368]
49	*7.92mm Machine Gun (Turret-Mounted):* RKA 2½d6, Autofire (5 shots; +½), +1 Increased STUN Multiplier (+¼), 1,368 Charges (+1); OIF Bulky (-1), Real Weapon (-¼)	[1,368]
37	*7.92mm Machine Gun (Forward-Mounted):* RKA 2½d6, Autofire (5 shots; +½), +1 Increased STUN Multiplier (+¼), 1,368 Charges (+1); OIF Bulky (-1), Limited Arc Of Fire (60 degrees; only on same horizontal level; -¾), Real Weapon (-¼)	[1,368]
3	*Front Defense:* +2 DEF; Limited Coverage (front 60 degrees; -1)	0
8	*Heavy:* Knockback Resistance +-4"	0
	Operations Systems	
4	*Radio:* Radio Perception/Transmission (Radio Group); OAF Bulky (-1½), Affected As Hearing Group As Well As Radio Group (-¼)	0
	Skills	
4	+2 OCV with 75mm Main Gun	

Total Abilities & Equipment Cost: 268
Total Vehicle Cost: 363

Value Disadvantages

25	Distinctive Features: Nazi Tank (Not Concealable; Causes Extreme Reaction [fear])
5	Physical Limitation: all turret weapons must point in same direction (Infrequently, Slightly Impairing)

Total Disadvantage Points: 30
Total Cost: 333/5 = 67

OPTIONAL EQUIPMENT

Cost	Equipment
+0	*Ausf G:* Increase to 82 Charges for 75mm Main Gun and 1,400 Charges per machine gun
-215	*PzKpfw I (1933-41):* Decrease to Size 3, DEF 10, and Ground Movement +4", and replace all armaments with turret-mounted twin 7.92mm machine guns (RKA 2½d6, Autofire (10 shots; +1), +1 Increased STUN Multiplier (+¼), 1,525 Charges (+1); OIF Bulky (-1), Real Weapon (-¼))
-145	*PzKpfw II (1936-43):* Decrease to Size 4 and DEF 12, increase to Ground Movement +9", and replace all armaments with a turret-mounted 20mm cannon (RKA 4d6, +1 Increased STUN Multiplier (+¼), 180 Charges (+1); OIF Bulky (-1), Real Weapon (-¼)) and a turret-mounted 7.92mm machine gun (1,425 Charges)
-73	*PzKpfw III Ausf M (1943-45):* Decrease to DEF 13 and Ground Movement +5", reduce Main Gun's Charges to 64 (+½), and remove pintle-mounted machine gun
-58	*PzKpfw IV (1934-44):* As PzKpfw III Ausf M, but decrease to DEF 14 and keep Main Gun's ammunition at 79 Charges
-42	*PzKpfw VI Tiger I/II (1942-45/1944-45):* Increase to Size 6; decrease to Ground Movement +5"; change main gun to 88mm KwK (RKA 7d6+1 with 84 Charges); and remove pintle-mounted machine gun

Description: Many people consider the PzKpfw V "Panther" the best German tank of World War II, and perhaps the best tank period in a one-on-one comparison. First produced and deployed in 1942, it suffered from some initial problems due to lack of thorough testing, but once these were corrected it proved highly effective on all fronts. Over 4,500 were produced (its complexity and cost prevented it from being manufactured more quickly), and it saw continued service with some non-German militaries after the war ended.

The Panther mounted a 75mm main gun plus three 7.92mm machine guns (one coaxial, one on an antiaircraft pintle, one front; some variants omitted some guns or carried different ammunition loads). Its armor was heavier than that of the Sherman. The greater range of the Panther's main gun allowed it to stand off and attack Allied tanks without coming under counterfire; the U.S. Army once estimated that it took five Shermans to destroy a Panther.

The PzKpfw V can achieve a maximum road speed of 29 miles per hour, ford up to 3 feet (.5") of water, and overcome vertical obstacles two feet high or trenches approximately seven feet (1") deep. It has a crew of five.

The Panther was just one in a long series of tanks created by the Nazi military, beginning with the PzKpfw I in 1933. The options list the changes to make for each type of "Panzer."

STINGRAY LIGHT TANK

Val	Char	Cost	Notes
6	Size	30	4" x 2"; -6 KB; -4 DCV
50	STR	10	Lift 25 tons; 10d6 HTH [0]
12	DEX	6	OCV: 4/DCV: 4
23	BODY	7	
17	DEF	58	Hardened (+¼)
3	SPD	8	Phases: 4, 8, 12
			Total Characteristic Cost: 119

Movement: Ground: 19"/38"
Swimming: 0"/0"

Abilities & Equipment

Cost	Power	END
	Propulsion Systems	
21	*Motorized Tracked Military Vehicle:* Ground Movement +13" (19" total); Only On Appropriate Terrain (-¼), 1 Continuing Fuel Charge (easily-obtained fuel; 6 Hours; -0)	[1cc]
-2	*Ground Vehicle:* Swimming -2" (0" total)	
	Tactical Systems	
89	*105mm Main Gun:* RKA 7½d6, Indirect (can be arced over some intervening obstacles; +¼), +1 Increased STUN Multiplier (+¼), 32 Charges (+¼); OIF Bulky (-1), Real Weapon (-¼)	[32]
43	*7.62mm Machine Gun (Turret-Mounted):* RKA 2d6+1, Autofire (5 shots; +½), +1 Increased STUN Multiplier (+¼), 2,400 Charges (+1); OIF Bulky (-1), Real Weapon (-¼)	[2,400]
65	*12.7mm Antiaircraft Machine Gun:* RKA 3d6, Autofire (10 shots; +1), +1 Increased STUN Multiplier (+¼), 1,100 Charges (+1); OIF Bulky (-1), Real Weapon (-¼)	[1,100]
14	*Smoke Grenade Launchers:* Darkness to Sight Group 4" radius; OIF Bulky (-1), Real Weapon (-¼), 4 Continuing Charges lasting 1 Turn each (-½)	[4cc]
5	*Smoke Grenade Launchers:* Total of two Smoke Grenade Launchers	[4cc]
4	*Heavy:* Knockback Resistance +-2"	0
	Operations Systems	
4	*Radio:* Radio Perception/Transmission (Radio Group); OAF Bulky (-1½), Affected As Hearing Group As Well As Radio Group (-¼)	0
	Talents	
3	*Laser Rangefinder:* Absolute Range Sense	
	Skills	
10	*Gun Control And Stabilization System:* +2 with Ranged Combat	

Total Abilities & Equipment Cost: 256
Total Vehicle Cost: 375

Value Disadvantages

25	Distinctive Features: Tank (Not Concealable; Causes Extreme Reaction [fear])
5	Physical Limitation: all weapons except for antiaircraft machine guns must point in same direction (Infrequently, Slightly Impairing)

Stingray Light Tank

Total Disadvantage Points: 30
Total Cost: 345/5 = 69

OPTIONAL EQUIPMENT

Cost	Equipment
+6	*Enhanced Armor Package:* Add +2 DEF
16	*Reactive Armor Package:* Add +8 DEF; Ablative (-½)
22	*NBC Protection:* Life Support (Safe Environment: High Radiation; Immunity to chemical and biological warfare agents; Self-Contained Breathing)
2	*Nightvision:* Infrared Perception (Sight Group); OIF Bulky (-1)
2	*Nightvision:* Ultraviolet Perception (Sight Group); OIF Bulky (-1)
72	*Fire Suppression System:* Dispel Fire Powers 12d6, all Fire powers simultaneously (+2); 8 Charges (-½)

Description: First produced in 1984 by Cadillac Gage, the Stingray light tank is currently in service with Thailand; it's an attractive purchase to some agencies due to its relatively low cost and heavy firepower. It's a good general example of a modern light tank. Its main gun is a 105mm turret-mounted cannon, but it also has a coaxial 7.62mm machine gun in the turret and a pintle-mounted 12.7mm antiaircraft gun and two smoke grenade dischargers.

The Stingray can achieve a maximum road speed of 43 miles per hour, ford up to 4 feet (.66") of water, and overcome vertical obstacles 2.5 feet high or trenches approximately six feet (1") deep. It has a crew of four.

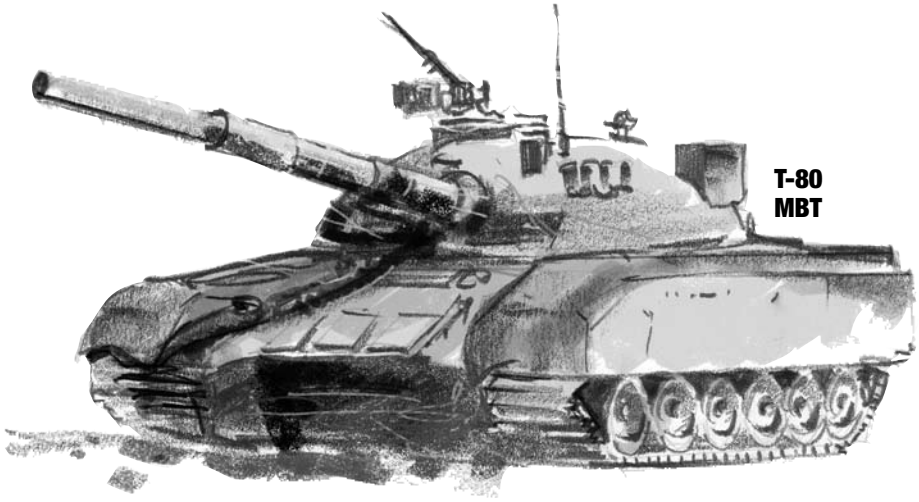
T-80 MAIN BATTLE TANK

Val	Char	Cost	Notes
6	Size	30	4" x 2"; -6 KB; -4 DCV
55	STR	15	Lift 50 tons; 11d6 HTH [0]
10	DEX	0	OCV: 3/DCV: 3
25	BODY	9	
19	DEF	65	Hardened (+¼)
3	SPD	10	Phases: 4, 8, 12
			Total Characteristic Cost: 129

Movement: Ground: 20"/40"
Swimming: 2"/4"

Abilities & Equipment

Cost	Power	END
	Propulsion Systems	
22	*Motorized Tracked Military Vehicle:* Ground Movement +14" (20" total); Only On Appropriate Terrain (-¼), 1 Continuing Fuel Charge (easily-obtained fuel; 6 Hours; -0) [1cc]	
	Tactical Systems	
120	*2A46 125mm Smoothbore Cannon:* RKA 8d6, Indirect (can be arced over some intervening obstacles; +¼), +1 Increased STUN Multiplier (+¼), Increased Maximum Range (2,000"; +¼), 36 Charges (+½); OIF Bulky (-1), Real Weapon (-¼) [36]	
146	*AT-8 Songster ATGW:* RKA 9d6, Armor Piercing (x2; +1), +1 Increased STUN Multiplier (+¼), Increased Maximum Range (5,200", or about 6.4 miles; +½), No Range Modifier (+½); OIF Bulky (-1), Real Weapon (-¼), 5 Charges (-¾) [5]	
43	*PKT 7.62mm Machine Gun (Turret-Mounted):* RKA 2d6+1, Autofire (5 shots; +½), +1 Increased STUN Multiplier (+¼), 1,250 Charges (+1); OIF Bulky (-1), Real Weapon (-¼) [1,250]	
65	*NSVT 12.7mm Antiaircraft Machine Gun:* RKA 3d6, Autofire (10 shots; +1), +1 Increased STUN Multiplier (+¼), 500 Charges (+1); OIF Bulky (-1), Real Weapon (-¼) [500]	
14	*Smoke Grenade Launchers:* Darkness to Sight Group 4" radius; OIF Bulky (-1), Real Weapon (-¼), 4 Continuing Charges lasting 1 Turn each (-½) [4cc]	



T-80 MBT

5 *Smoke Grenade Launchers:* Total of two Smoke Grenade Launchers [4cc]
15 *Front Defense:* +8 DEF, Hardened (+¼); Limited Coverage (front 60 degrees; -1) 0
22 *NBC Protection:* Life Support (Safe Environment: High Radiation; Immunity to chemical and iological warfare agents; Self-Contained Breathing)
6 *Heavy:* Knockback Resistance +-3" 0

Operations Systems

4 *Radio:* Radio Perception/Transmission (Radio Group); OAF Bulky (-1½), Affected As Hearing Group As Well As Radio Group (-¼) 0
2 *Nightvision:* Infrared Perception (Sight Group); OIF Bulky (-1) 0
2 *Nightvision:* Ultraviolet Perception (Sight Group); OIF Bulky (-1) 0

Talents

3 *Laser Rangefinder:* Absolute Range Sense

Skills

10 *Target Acquisition And Tracking:* +2 with Ranged Combat

Total Abilities & Equipment Cost: 479
Total Vehicle Cost: 608

Value Disadvantages

25 Distinctive Features: Tank (Not Concealable; Causes Extreme Reaction [fear])
5 Physical Limitation: all weapons except for antiaircraft machine guns must point in same direction (Infrequently, Slightly Impairing)

Total Disadvantage Points: 30
Total Cost: 578/5 = 116

OPTIONAL EQUIPMENT

Cost Equipment

-20 *T-72 MBT (1971-1984):* Increase to Ground Movement +16"; decrease to DEF 18; remove Smoke Grenade Launchers; change to 45 Charges for Smoothbore Cannon, 2,000 Charges for 7.62mm machine gun, and 300 Charges for 12.7mm gun
12 *T-72AV:* Add +6 DEF; Ablative (-½)
16 *T-80BV:* Add +8 DEF; Ablative (-½)
3 *T-80U (SMT M1989):* Add +2 DEF; Limited Coverage (turret only; -1)
+14 *T-90 MBT (1994-present):* Decrease to Ground Movement +11", increase Smoke Grenade Launchers to 6 Continuing Charges lasting 1 Turn each (-¼), and add T-80BV explosive reactive armor package; change to 43 Charges for Smoothbore Cannon, 2,000 Charges for 7.62mm machine gun, and 300 Charges for 12.7mm gun
72 *Fire Suppression System:* Dispel Fire Powers 12d6, all Fire powers simultaneously (+2); 8 Charges (-½)

Description: A Soviet tank first deployed in 1984 after a development process beginning in the late 1970s, the T-80 evolved from the T-72 tank of the '70s. It remains currently in production (an estimated 20,000 have been manufactured) and in use by Russia, Pakistan, the Ukraine, South Korea, and other nations.

The T-80's main weapon is a 120mm smoothbore cannon able to fire a wide range of modern ammunition, including the AT-8 Songster ATGW (anti-tank guided weapon, which after being fired follows a laser beam to home in on its target). It also has a 12.7mm antiaircraft gun, a 7.62mm machine gun, and smoke dischargers.

The T-80 can achieve a maximum road speed of 44 miles per hour, ford up to 16 feet (2.5") of water, and overcome vertical obstacles three feet high or trenches approximately nine feet (1.5") deep. It has a crew of four.

The options describe some variants of the T-80, as well as predecessor and descendant designs (including the T-72, of which thousands of units have been fielded by dozens of nations since 1971).

OTHER MILITARY VEHICLES

AAV7A1 (LVTP7) AAAV

Val	Char	Cost	Notes
6	Size	30	4" x 2"; -6 KB; -4 DCV
45	STR	5	Lift 12. tons; 10d6 HTH [0]
12	DEX	6	OCV: 4/DCV: 4
20	BODY	4	
12	DEF	30	
3	SPD	8	Phases: 4, 8, 12
			Total Characteristic Cost: 83

Movement: Ground: 18"/36"
Swimming: 4"/8"

Abilities & Equipment

Cost Power END

Propulsion Systems

19 *Motorized Tracked Military Vehicle:* Ground Movement +12" (18" total); Only On Appropriate Terrain (-¼), 1 Continuing Fuel Charge (easily-obtained fuel; 6 Hours; -0) [1cc]
1 *Amphibious Vehicle:* Swimming +2" (4" total); Surface Only (-1) 0

Tactical Systems

55 *12.7mm Machine Gun (Turret-Mounted):* RKA 3d6, Autofire (5 shots; +½), +1 Increased STUN Multiplier (+¼), 1,000 Charges (+1); OIF Bulky (-1), Real Weapon (-¼) [1,000]
35 *Mk. 19 40mm Grenade Launcher:* RKA 2½d6, Explosion (+½), 48 Charges (+½); OIF Bulky (-1), Real Weapon (-¼) [48]
22 *Engine Smokescreen Generator:* Darkness to Sight Group 5" radius; No Range (-½), Real Weapon (-¼), 4 Charges lasting 1 Turn each (-½) [4cc]

Operations Systems

4 *Radio:* Radio Perception/Transmission (Radio Group); OAF Bulky (-1½), Affected As Hearing Group As Well As Radio Group (-¼) 0

2 *Nightvision:* Infrared Perception (Sight Group); OIF Bulky (-1) 0
2 *Nightvision:* Ultraviolet Perception (Sight Group); OIF Bulky (-1) 0

Total Abilities & Equipment Cost: 140
Total Vehicle Cost: 223

Value Disadvantages

25 Distinctive Features: US military vehicle (Not Concealable; Causes Extreme Reaction [fear])
5 Physical Limitation: all turreted weapons must point in same direction (Infrequently, Slightly Impairing)

Total Disadvantage Points: 30
Total Cost: 193/5 = 39

OPTIONAL EQUIPMENT

Cost	Equipment
-35	*Pre-1986 Versions:* Remove Grenade Launcher
+9	*Enhanced Applique Armor Package:* Add +3 DEF

Description: Beginning in 1971, the United States military fielded the LVTP7 (Landing Vehicle, Tracked, Personnel) AAAV (armored amphibious assault vehicle). Able to achieve road speeds of 40 miles per hour with its tracked drive and a maximum water speed of about 8.5 miles per hour, it can carry a crew of three and up to 25 additional personnel and their gear. Enhanced, upgraded, and rebuilt several times (including the addition of a 40mm grenade launcher in 1986/87), it has been redesignated the AAV7A1 by the U.S. Marine Corps. It's also in service with many other nations.

The AAV7A1 has been described as the only truly amphibious vehicle in the United States arsenal. A ship can drop a fully loaded AAV7A1 into the water 30 miles from shore and the AAV7A1 can make its way to land. After it makes landfall it serves as an infantry support weapon. Passengers typically exit through a bottom-hinged rear hatch, but can also use roof hatches (which also allow them to peer out and/or fire their weapons when aboard).

HMMWV "HUMVEE"

Val	Char	Cost	Notes
4	Size	20	2.5" x 1.25"; -4 KB; -2 DCV
30	STR	0	Lift 1,600 kg; 6d6 HTH [0]
16	DEX	18	OCV: 5/DCV: 5
17	BODY	3	
4	DEF	5	Limited Coverage (not on windshield/windows; -¼)
3	SPD	4	Phases: 4, 8, 12
			Total Characteristic Cost: 50

Movement: Ground: 15"/60"
Swimming: 0"/0"

Abilities & Equipment

Cost	Power	END
	Propulsion Systems	
8	*Motorized Wheeled Vehicle:* Ground Movement +9" (15" total), x4 Noncombat; OAF (standard tires; -1½), Only On Appropriate Terrain (-¼), 1 Continuing Fuel Charge (easily-obtained fuel; 6 Hours; -0)	[1cc]
-2	*Ground Vehicle:* Swimming -2" (0" total)	
	Operations Systems	
4	*Radio:* Radio Perception/Transmission (Radio Group); OAF Bulky (-1½), Affected As Hearing Group As Well As Radio Group (-¼)	0
	Skills	
6	*Offroad Suspension:* +3 Penalty Skill Levels To Counteract Offroad Driving Penalties with Ground Movement	

Total Abilities & Equipment Cost: 16
Total Vehicle Cost: 66

Value Disadvantages

15 Distinctive Features: US military vehicle (Not Concealable; Noticed And Recognizable)

Total Disadvantage Points: 15
Total Cost: 51/5 = 10

OPTIONAL EQUIPMENT

Cost	Equipment
43	*M1919A4 7.62mm Machine Gun (Pintle-Mounted):* RKA 2d6+1, Autofire (5 shots; +½), +1 Increased STUN Multiplier (+¼), 500 Charges (+1); OIF Bulky (-1), Real Weapon (-¼)
55	*12.7mm Machine Gun (Pintle-Mounted):* RKA 3d6, Autofire (5 shots; +½), +1 Increased STUN Multiplier (+¼), 500 Charges (+1); OIF Bulky (-1), Real Weapon (-¼)
35	*Mk. 19 40mm Grenade Launcher:* RKA 2½d6, Explosion (+½), 50 Charges (+½); OIF Bulky (-1), Real Weapon (-¼)
40	*Missile Launcher:* Humvee comes equipped with a launcher with four missiles (use AIM-7 Sparrow, TUV page 131) bought as additional vehicles
11	*Mobile Hospital:* Add Paramedics 13-

+5 *Expanded Capacity:* Add +5 STR
43 *M1038 (M998 with Winch):* Stretching 20", Reduced Endurance (0 END; +½); OAF Bulky (-1½), Always Direct (-¼), No Non-combat Stretching (-¼), Cannot Do Damage (-½)
+4 *Civilian Humvee:* Increase to Ground Movement +14"

Description: In 1980, when the U.S. military decided it was time to replace the venerable Jeep, it upgraded to the M998 High Mobility Multipurpose Wheeled Vehicle — HMMWV, or "Humvee," for short. Since then well over 60,000 have been manufactured, in approximately 20 primary variations. All variants use the same chassis, engine, and transmission, making it easy to find replacement parts. A civilian version was made available to the public in the early 1990s.

A Humvee can carry one driver and three passengers, or various loads of cargo, and attain speeds of as much as 65 miles per hour with a range of about 350 miles on a single tank of gas. It can be fitted with a vast array of equipment: machine guns; missile launchers; mobile medical units; and more.

HMMWV

WILLYS JEEP

Val	Char	Cost	Notes
3	Size	15	2" x 1"; -3 KB; -2 DCV
30	STR	5	Lift 1,600 kg; 6d6 HTH [0]
15	DEX	15	OCV: 5/DCV: 5
16	BODY	3	
4	DEF	5	Limited Coverage (not on windshield/windows; -¼)
3	SPD	5	Phases: 4, 8, 12
			Total Characteristic Cost: 48

Movement: Ground: 15"/60"
Swimming: 0"/0"

Abilities & Equipment

Cost Power **END**

8 *Motorized Wheeled Vehicle:* Ground Movement +9" (15" total), x4 Non-combat; OAF (standard tires; -1½), Only On Appropriate Terrain (-¼), 1 Continuing Fuel Charge (easily-obtained fuel; 6 Hours; -0) [1cc]
-2 *Ground Vehicle:* Swimming -2" (0" total)

Skills

6 *Offroad Suspension:* +3 Penalty Skill Levels To Counteract Offroad Driving Penalties with Ground Movement

Total Abilities & Equipment Cost: 12
Total Vehicle Cost: 60

Value Disadvantages

15 Distinctive Features: US military vehicle (Not Concealable; Noticed And Recognizable)

Total Disadvantage Points: 15
Total Cost: 45/5 = 9

OPTIONAL EQUIPMENT

Cost Equipment

43 *M1919A4 7.62mm Machine Gun (Pintle-Mounted):* RKA 2d6+1, Autofire (5 shots; +½), +1 Increased STUN Multiplier (+¼), 500 Charges (+1); OIF Bulky (-1), Real Weapon (-¼)
+3 *Flanged Wheels:* Put Ground Movement in a Multipower with the same amount of Ground Movement that also has the Limitation *Restricted Path* (-1) instead of Only On Appropriate Terrain
+4 *Civilian Jeep:* Increase to Ground Movement +14"

Description: In the early stages of World War II, U.S. military authorities put out a call for a vehicle that could climb a 45-degree slope (or descend a 35-degree one), ford water, and endure rugged combat conditions. Furthermore, it had to be cheap to build and easy to maintain and repair. What they got was the Jeep, called by some "America's greatest contribution to modern warfare." Several companies, including Willys and Ford, manufactured the Jeep; over 650,000 were produced during the war, and after the war it eventually entered the civilian market in a variety of guises.

The sturdy but not particularly comfortable Jeep can achieve speeds of about 65 miles per hour and ford about 1.5 feet (.25") of water. With its four-wheel drive and strong engine, it can go just about anywhere and get back out. Military engineers adapted it for a wide variety of purposes — mobile gun platform, refueling truck, phone line-laying vehicle, patient transport, and many more. With special flanged wheels, a Jeep could even drive along railroad tracks.

M109A2 SELF-PROPELLED HOWITZER

Val	Char	Cost	Notes
5	Size	25	3.2" x 1.6"; -5 KB; -3 DCV
35	STR	0	Lift 3,200 kg; 7d6 HTH [0]
10	DEX	0	OCV: 3/DCV: 3
20	BODY	5	
14	DEF	36	
3	SPD	10	Phases: 4, 8, 12
			Total Characteristic Cost: 76

Movement: Ground: 16"/32"
Swimming: 0"/0"

Abilities & Equipment

Cost	Power	END
	Propulsion Systems	
16	*Motorized Tracked Military Vehicle:* Ground Movement +10" (16" total); Only On Appropriate Terrain (-¼), 1 Continuing Fuel Charge (easily-obtained fuel; 6 Hours; -0)	[1cc]
-2	*Ground Vehicle:* Swimming -2" (0" total)	
	Tactical Systems	
165	*155mm Howitzer:* RKA 9d6, Indirect (can be arced over some intervening obstacles; +¼), +1 Increased STUN Multiplier (+¼), Increased Maximum Range (9,000", or about 11 miles; +½), No Range Modifier (+½), 36 Charges (+¼); OIF Bulky (-1), Real Weapon (-¼)	[36]
55	*12.7mm Machine Gun (Pintle-Mounted):* RKA 3d6, Autofire (5 shots; +½), +1 Increased STUN Multiplier (+¼), 500 Charges (+1); OIF Bulky (-1), Real Weapon (-¼)	[500]
22	*NBC Protection:* Life Support (Safe Environment: High Radiation; Immunity to chemical and iological warfare agents; Self-Contained Breathing)	
6	*Heavy:* Knockback Resistance +-3"	0
	Operations Systems	
4	*Radio:* Radio Perception/Transmission (Radio Group); OAF Bulky (-1½), Affected As Hearing Group As Well As Radio Group (-¼)	0
2	*Nightvision:* Infrared Perception (Sight Group); OIF Bulky (-1)	0
2	*Nightvision:* Ultraviolet Perception (Sight Group); OIF Bulky (-1)	0
	Skills	
2	+1 OCV with 155mm Howitzer	

Total Abilities & Equipment Cost: 272
Total Vehicle Cost: 348

Value Disadvantages

25	Distinctive Features: US Army Tank (Not Concealable; Causes Extreme Reaction [fear])

Total Disadvantage Points: 25
Total Cost: 323/5 = 65

OPTIONAL EQUIPMENT

Cost	Equipment
-2	*M109 (1962):* Remove +1 OCV with 155mm Howitzer
+8	*M109A6 Paladin:* Add +2 DEF and +1 with 155mm Howitzer
+2	*Amphibious Kit:* Restore Swimming 2"

Description: The M109 series, a self-propelled howitzer, began development in the 1950s and was first fielded in 1962. Production continues today, with over 4,000 M109s manufactured; the vehicle is in service not only with the United States but about two dozen other countries, making it the world's most widely-used self-propelled howitzer. The latest version, the M109A6 "Paladin," entered Army service in 1992; it features additional armor and other improvements.

The M109A2 can achieve a maximum road speed of approximately 35 miles per hour, ford up to 3.5 feet (.5") of water, and overcome vertical obstacles almost two feet high or trenches approximately six feet (1") deep. It has a crew of six.

M113A2 ARMORED PERSONNEL CARRIER

Val	Char	Cost	Notes
4	Size	20	2.5" x 1.25"; -4 KB; -2 DCV
35	STR	5	Lift 3,200 kg; 7d6 HTH [0]
14	DEX	12	OCV: 5/DCV: 5
18	BODY	4	
10	DEF	24	
3	SPD	6	Phases: 4, 8, 12
			Total Characteristic Cost: 71

Movement: Ground: 19"/38"
Swimming: 2"/4"

Abilities & Equipment

Cost	Power	END
	Propulsion Systems	
21	*Motorized Wheeled Vehicle:* Ground Movement +13" (19" total); Only On Appropriate Terrain (-¼), 1 Continuing Fuel Charge (easily-obtained fuel; 6 Hours; -0)	[1cc]
	Tactical Systems	
55	*12.7mm Machine Gun (Pintle-Mounted):* RKA 3d6, Autofire (5 shots; +½), +1 Increased STUN Multiplier (+¼), 2,000 Charges (+1); OIF Bulky (-1), Real Weapon (-¼)	[2,000]
6	*Heavy:* Knockback Resistance +-3"	0
	Operations Systems	
4	*Radio:* Radio Perception/Transmission (Radio Group); OAF Bulky (-1½), Affected As Hearing Group As Well As Radio Group (-¼)	0
2	*Nightvision:* Infrared Perception (Sight Group); OIF Bulky (-1)	0
2	*Nightvision:* Ultraviolet Perception (Sight Group); OIF Bulky (-1)	0

Total Abilities & Equipment Cost: 90
Total Vehicle Cost: 161

Value Disadvantages

15	Distinctive Features: US military vehicle (Not Concealable; Noticed And Recognizable)

Total Disadvantage Points: 15
Total Cost: 146/5 = 29

OPTIONAL EQUIPMENT

Cost	Equipment
+1	*M113A3 (1987-present):* Increase to Ground Movement +14" (and also buy Enhanced Applique Armor Package)
+32	*M163 Vulcan Air Defense System:* Change to crew of 4 and replace 12.7mm machine gun with: RKA 4d6, Autofire (10 shots; +1), +1 Increased STUN Multiplier (+¼), 2,100 Charges (+1); OIF Bulky (-1), Real Weapon (-¼)
-50	*M548 Tracked Cargo Carrier:* Remove 12.7mm machine gun and add +5 STR
-55	*M577 Command Post Vehicle:* Remove 12.7mm machine gun
+35	*M901 Improved TOW Vehicle:* M113 comes equipped with a launcher with two TOW missiles (use AIM-7 Sparrow, TUV page 131) bought as additional vehicles
+9	*Enhanced Applique Armor Package:* Add +3 DEF
12	*Bulldozer Blade:* Area Of Effect (One Hex; +½) for 35 STR, Reduced Endurance (0 END; +½); Only To Push Things From The Front (-1)
22	*M1059 Smoke Generating System:* Darkness to Sight Group 5" radius; No Range (-½), Real Weapon (-¼), 4 Charges lasting 1 Turn each (-½)
+6	*Israeli Version:* Add +2 DEF
+19	*German Version (two Smoke Grenade Launchers):* Add two of the following: Darkness to Sight Group 4" radius; OIF Bulky (-1), Real Weapon (-¼), 4 Continuing Charges lasting 1 Turn each (-½)
+18	*20mm Cannon:* Replace 12.7mm machine gun with: RKA 4d6, Autofire (5 shots; +½), +1 Increased STUN Multiplier (+¼), 2,100 Charges (+1); OIF Bulky (-1), Real Weapon (-¼)

Description: Introduced into the United States arsenal in 1960, the M113 family of tracked APCs (armored personnel carriers) is the most popular APC in the world. Over 76,000 of them, in more than 40 major variants, have been manufactured, and it's used by dozens of countries around the world in addition to the U.S. Easy to use, easy to maintain, and light enough (about 24,000 pounds empty) to be carried in a C-130 transport and even parachute-dropped, it's likely to remain in service around the world for years, if not decades, to come.

The fully-amphibious M113A2 can propel itself through the water with its tracks. Before it enters deep water, the crew must install trim vanes and turn on the bilge pumps; this takes 1 Minute. It can move through the water at a maximum speed of about 3.5 miles per hour

The M113 has been criticized because it has light armor — not necessarily even enough to stop a powerful non-armor piercing rifle round. Some variants add armor, as do some nations (such as Israel). Other variants, such as the M163 Vulcan Air Defense System or M901 TOW missile launcher, incorporate additional or other weapons.

The M113A2 can achieve a maximum road speed of approximately 42 miles per hour; the M113A3 variant moves slightly faster and accelerates over twice as fast. It can overcome vertical obstacles almost two feet high or trenches approximately 5.5 feet (1") deep. It has a crew of two and can carry eleven fully-equipped soldiers.

MULTIPLE LAUNCH ROCKET SYSTEM (MLRS)

Val	Char	Cost	Notes
5	Size	25	3.2" x 1.6"; -5 KB; -3 DCV
35	STR	0	Lift 3,200 kg; 7d6 HTH [0]
12	DEX	6	OCV: 4/DCV: 4
20	BODY	5	
14	DEF	36	
3	SPD	8	Phases: 4, 8, 12
			Total Characteristic Cost: 80

Movement: Ground: 18"/36"
Swimming: 0"/0"

Abilities & Equipment

Cost	Power	END
	Propulsion Systems	
19	*Motorized Tracked Military Vehicle:* Ground Movement +12" (18" total); Only On Appropriate Terrain (-¼), 1 Continuing Fuel Charge (easily-obtained fuel; 6 Hours; -0)	[1cc]
-2	*Ground Vehicle:* Swimming -2" (0" total)	
	Tactical Systems	
22	*NBC Protection:* Life Support (Safe Environment: High Radiation; Immunity to chemical and iological warfare agents; Self-Contained Breathing)	
8	*Heavy:* Knockback Resistance +-4"	0
	Operations Systems	
4	*Radio:* Radio Perception/Transmission (Radio Group); OAF Bulky (-1½), Affected As Hearing Group As Well As Radio Group (-¼)	0
2	*Nightvision:* Infrared Perception (Sight Group); OIF Bulky (-1)	0
2	*Nightvision:* Ultraviolet Perception (Sight Group); OIF Bulky (-1)	0

Total Abilities & Equipment Cost: 55
Total Vehicle Cost: 135

Value Disadvantages

5	Physical Limitation: takes 1 Turn to prepare for launch of missiles (Infrequently, Slightly Impairing)

Total Disadvantage Points: 5
Total Cost: 130/5 = 26

ADDITIONAL VEHICLES

Cost	Vehicle
30	*M26 Basic Tactical Rockets:* One rocket (use AIM-7 Sparrow, TUV page 131)
20	*M26 Basic Tactical Rockets:* 11 more rockets (total of 12)

OPTIONAL EQUIPMENT

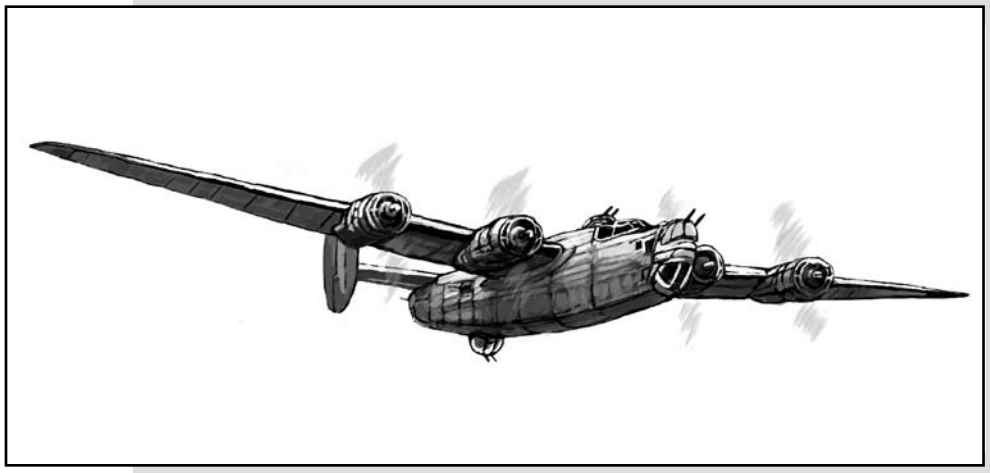
Cost	Equipment
-15	*HIMARS:* Change Ground Movement to wheels instead of tracks (*i.e.,* add OAF Bulky (-1½) and decrease to six rockets

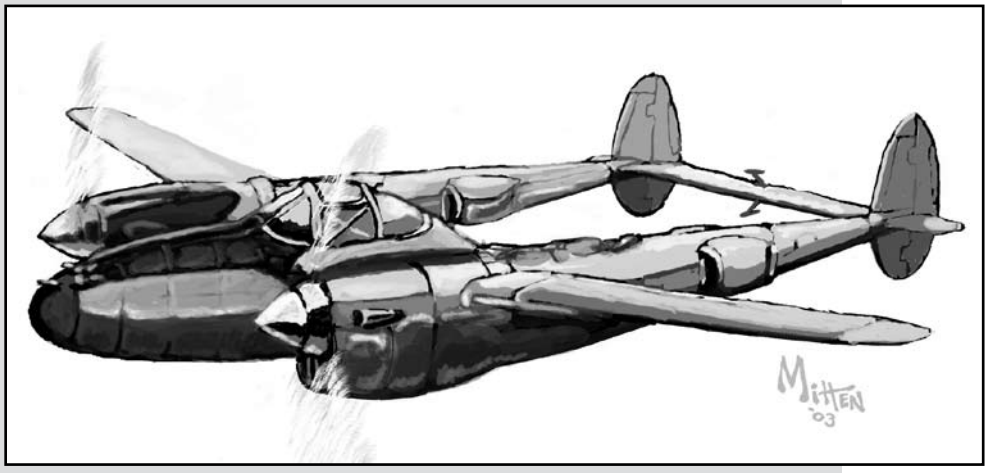
Description: Built using the chassis of the M2 Bradley IFV (TUV, page 50), the MLRS entered U.S. Army service in 1982 (other nations have purchased it as well). It carries two pods of six 8.94 inch rockets each. This version has ordinary explosive missiles, but it could also carry many other types. Its purpose is to complement cannon artillery by serving as additional, mobile, rocket fire support; without exiting the vehicle the crew can fire all twelve of the vehicle's rockets in about one minute. It's designed for mobility and quick reloading so that it can respond to changing battlefield conditions and attack time-sensitive targets as quickly as possible.

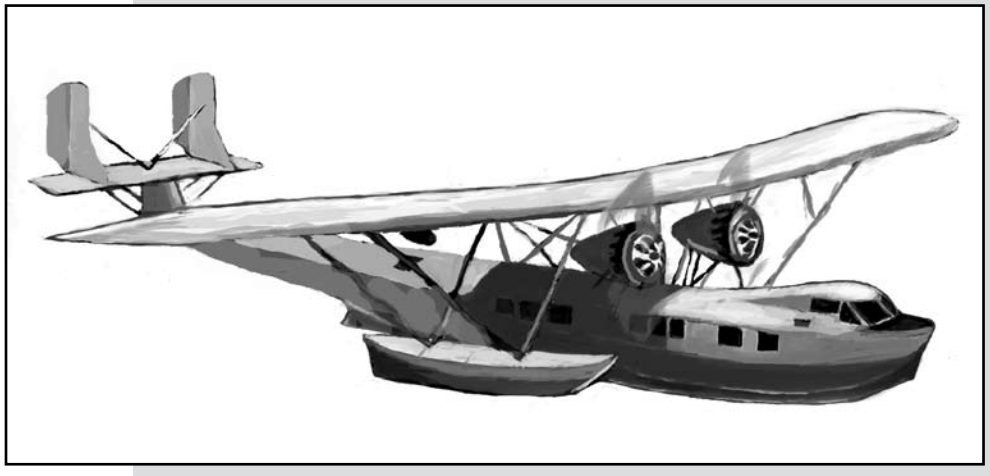
One drawback to the MLRS is that it's too heavy to be carried on a C-130 transport. To make up for this, the Army has developed the HIMARS (High Mobility Artillery Rocket System), a wheeled version of the MLRS that only has six rockets.

The MLRS can achieve a maximum road speed of approximately 40 miles per hour, ford up to 3.5 feet (.5") of water, and overcome vertical obstacles almost three feet high or trenches approximately seven feet (1") deep. It has a crew of three.

chapter two:







AIR VEHICLES

AIRPLANES

Most air vehicles fall into one of two categories: airplanes (fixed-wing aircraft that use propellers to generate thrust and shaped surfaces for lift and control) and helicopters (aircraft that use rotors). Chapter Four of *The Ultimate Vehicle* has more information on how they work and how to create them in *HERO System* terms.

OTHER AIR VEHICLES

In addition to the vehicles described here, you can find several planes and helicopters in *The Ultimate Vehicle:*

- AH-64 Apache Longbow Attack Helicopter (page 79)
- Airship (Zeppelin) (page 75)
- Boeing 747-400 (page 81)
- Flying Carpet (page 74)
- Learjet 31A (page 81)
- Lockheed C-130H Hercules (page 78)
- Lockheed F-117A Nighthawk Stealth Fighter (page 78)
- McDonnell-Douglas F/A-18C Hornet (page 76)
- Mitsubishi A6M2 "Zero" Fighter (page 76)
- Powered Armor Suit (page 83)
- Sopwith F.1 Camel (page 75)
- Superjet (page 82)

CIVILIAN AIRPLANES

Although military planes may factor into adventures more often, civilian planes are far more common throughout the world. When the PCs need to get somewhere in a hurry, or have to rescue a hijacked airliner, the details about various civilian planes become important.

This section covers a range of typical civilian aircraft. While a few are written up "generically," most represent specific models or makes. In most cases you can easily convert one vehicle into a similar vehicle with a few changes in rate of movement and other relevant abilities.

Pulp-Era Aircraft

The 1920s and '30s were a Golden Age for aviation. These were the days when air travel was a new and exciting thing, and when being a pilot often meant risking your life every time you climbed in the cockpit... but when the thrill of flying made all those risks worth taking. Many Pulp-era heroes were skilled "barnstormers," using planes like the ones described below (or leftover military airplanes from the World War I era; see page 55).

AUTOGYRO

Val	Char	Cost	Notes
5	Size	25	3.2" x 1.6"; -5 KB; -3 DCV
25	STR	-10	Lift 800 kg; 5d6 HTH [0]
14	DEX	12	OCV: 5/DCV: 5
15	BODY	0	
2	DEF	0	
3	SPD	6	Phases: 4, 8, 12
			Total Characteristic Cost: 33

Movement: Ground: 0"/0"
Swimming: 0"/0"
Flight: 25"/100"

Abilities & Equipment

Cost	Power	END
37	*Propeller- and Rotor-Driven Plane:* Flight 25", x4 Noncombat; 1 Continuing Fuel Charge (easily-obtained fuel; 2 Hours; -0), Side Effects (KA 1d6 to anyone who comes into contact with the propeller, automatically occurs when Flight is in use, only affects environment in front of vehicle; -¼), Stall Velocity (6"; -0), Takeoff/Landing (see text; -¼) [1cc]	
5	*Doesn't Stall And Plummet:* Gliding 10"; Only To Descend Gently To The Ground After Falling Below Stall Velocity (-1)	0
-12	*Can Only Fly:* Ground Movement -6" (0" total)	
-2	*Can Only Fly:* Swimming -2" (0" total)	

Total Abilities & Equipment Cost: 28
Total Vehicle Cost: 61

Value Disadvantages
None

Total Disadvantage Points: 0
Total Cost: 61/5 = 12

OPTIONAL EQUIPMENT

Cost	Equipment
-13	*Early Autogyro:* Add Extra Time (3 Turns to activate; -¾) to Flight
+1	*C.12 Autogyro Seaplane (1929):* Restore Swimming 2" for use on the surface only
+7	*Jump Takeoff:* Remove Takeoff/Landing (-¼) from Flight

Description: Also known as the gyroplane, autogiro, and gyrocopter, the autogyro is the first rotary-wing aircraft to fly (making it the ances-

tor of modern helicopters). It has a fuselage like a normal one-seater plane of the time, but with short, stubby wings and a helicopter-like set of rotors mounted on top. It has a propeller in front to provide propulsion, and the rotors (which are not powered) provide the lift — the forward motion of the plane pushes air against the rotors, which turns them, creating the lift. In early models, the rotors have to be spun up to a minimum speed for takeoff (either by hand or horses); later models used a "scorpion tail" tail that deflected the propeller's slipstream up into the rotors during a short takeoff run, or had a clutch that connected the rotor's drive shaft to the propeller engine. A few models even had tiny rockets on the tips of the rotors to impart spin.

Autogyros have two advantages compared to ordinary fixed-wing aircraft. First, an autogyro needs much less space to land and take off than an ordinary plane. It can take off with no more than 50 feet of runway and land in 20 feet! (For this reason, the value of the *Takeoff/Landing* Limitation has been greatly reduced.) In the 1930s and '40s, autogyros were used in some large cities to carry mail from post office rooftops to other cities.

Second, an autogyro can fly at much lower speeds than a standard airplane without stalling. In fact, they can fly at speeds as low as 15 miles per hour, slower than a man can run! (For this reason, the *Stall Velocity* Limitation for the autogyro has been reduced to -0.) Furthermore, if an autogyro slows down too much or the engine stops working, the rotors keep spinning, allowing it to descend gently rather than plummet (this is simulated with Gliding). On the downside, the rotors create more drag than a normal airplane's wings, making autogyros unsuitable for high-speed flight or long-distance flying.

The autogyro was first flown by a Spaniard, Juan de la Cierva, in 1923 after several failed attempts to get earlier models off the ground in the 1920-22 period. His success with his C.4 model brought subsidies from the Spanish government and commercial interest throughout the world, leading to a series of other models built by Cierva or his licensees. The character sheet above is based primarily on the popular C.30 model, of which more than 180 were manufactured in several countries beginning in 1933. Among other improvements, it gave the pilot the ability to tilt the rudders, allowing for greater control of the vehicle. It was also the first autogyro to successfully use "jump takeoff" — in other words, to create enough lift to get the vehicle off the ground just by spinning the rotors at a high enough speed (the Options allow for this feature).

Unfortunately, Cierva was killed in an air crash (not in an autogyro) in 1936. The loss of him as a "driving force" behind autogyro development, coupled with the successful tests of early helicopters in 1935, meant the death of the autogyro concept. The production of autogyros ceased in 1938.

The Cierva C.30 autogyro is approximately 20 feet long. It weighs 553 kg empty, and can take off with a maximum weight of 816 kg. It can sustain a maximum speed of about 110 miles per hour, and cruises at about 95 miles per hour at optimum altitude; its maximum altitude is 8,000 feet. It has a range of 285 miles on a single load of fuel.

CONSOLIDATED MODEL 16-1 COMMODORE

Val	Char	Cost	Notes
10	Size	50	10" x 5"; -10 KB; -6 DCV
35	STR	-25	Lift 3,200 kg; 7d6 HTH [0]
15	DEX	15	OCV: 5/DCV: 5
20	BODY	0	
3	DEF	3	
3	SPD	5	Phases: 4, 8, 12
			Total Characteristic Cost: 48

Movement: Ground: 0"/0"
Swimming: 2"/4"
Flight: 29"/116"

Abilities & Equipment

Cost	Power	END
	Propulsion Systems	
25	*Propeller-Driven Plane:* Flight 29", x4 Noncombat; 1 Continuing Fuel Charge (easily-obtained fuel; 2 Hours; -0), Side Effects (KA 1d6 to anyone who comes into contact with the propeller, automatically occurs when Flight is in use, only affects environment in front of vehicle; -¼), Stall Velocity (14"; -¼), Takeoff/Landing (see text; -1)	[1cc]
-12	*Can Only Fly:* Ground Movement -6" (0" total)	
	Operations Systems	
4	*Radio:* Radio Perception/Transmission (Radio Group); OAF Bulky (-1½), Affected As Hearing Group As Well As Radio Group (-¼)	0

Total Abilities & Equipment Cost: 17
Total Vehicle Cost: 65

Value Disadvantages

None

Total Disadvantage Points: 0
Total Cost: 65/5 = 13

Description: The Model 16-1 Commodore is a commercial transport plane operated by various North and South American airlines (including Pan American) from 1929 to 1949. It's a "flying boat," a plane that has to land on and take off from water. The basic Model 16 can carry up to 22 passengers and a small amount of freight (or no passengers and more freight); the slightly heavier Model 16-2 can carry 30 passengers.

The Commodore is a biplane-like aircraft with one set of wings projecting from the fuselage and the other a single unit above the plane and attached to the lower wings and fuselage by various struts and spars. The engine is mounted in the struts above the fuselage, creating a distinctive profile common to flying boats of the period.

The Model 16-1 Commodore is approximately 60 feet long. It weighs 4,785 kg empty, and can take off with a maximum weight of 7,983 kg. It can sustain a maximum speed of about 128 miles per hour, and cruises at about 108 miles per hour at optimum altitude; its maximum altitude is 11,250 feet. It has a range of 1,000 miles on a single load of fuel. It has a crew of three.

YTDOUGLAS DC-3

Val	Char	Cost	Notes
10	Size	50	10" x 5"; -10 KB; -6 DCV
36	STR	-24	Lift 3,840 kg; 7d6 HTH [0]
15	DEX	15	OCV: 5/DCV: 5
20	BODY	0	
3	DEF	3	
3	SPD	5	Phases: 4, 8, 12
			Total Characteristic Cost: 49

Movement: Ground: 0"/0"
Swimming: 0"/0"
Flight: 26"/208"

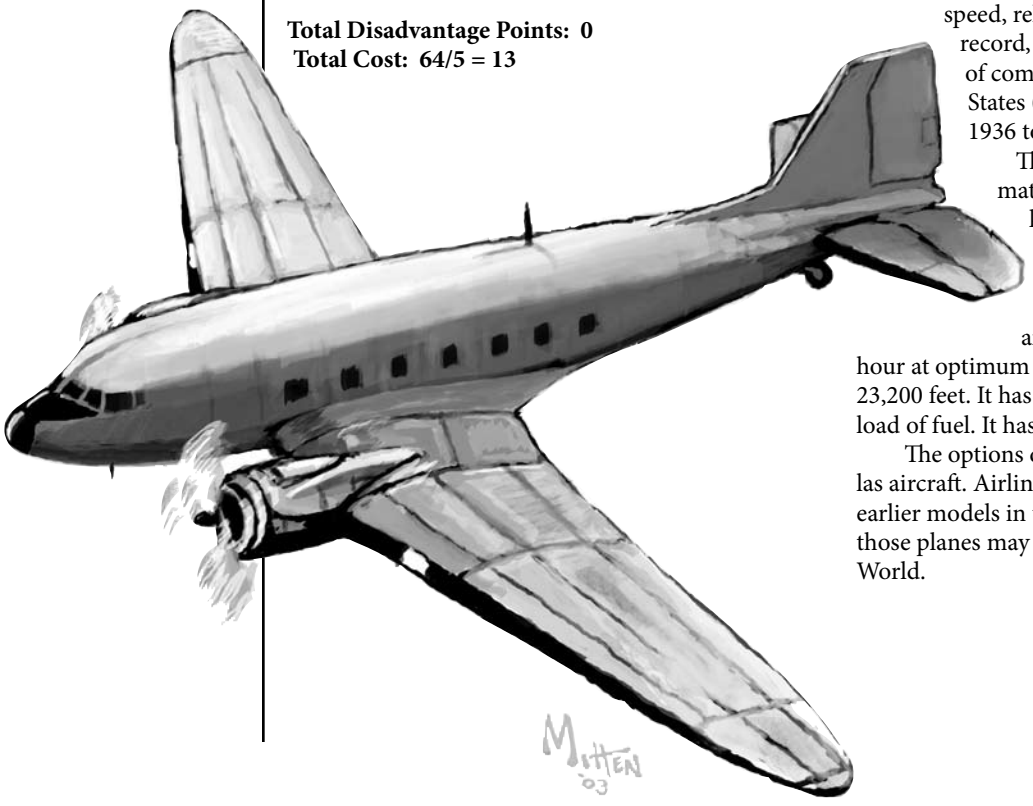
Abilities & Equipment

Cost	Power	END
	Propulsion Systems	
25	*Propeller-Driven Plane:* Flight 26", x8 Noncombat; 1 Continuing Fuel Charge (easily-obtained fuel; 9 Hours; -0), Side Effects (KA 1d6 to anyone who comes into contact with the propeller, automatically occurs when Flight is in use, only affects environment in front of vehicle; -¼), Stall Velocity (13"; -¼), Takeoff/Landing (-1)	[1cc]
-12	*Can Only Fly:* Ground Movement -6" (0" total)	
-2	*Can Only Fly:* Swimming -2" (0" total)	
	Operations Systems	
4	*Radio:* Radio Perception/Transmission (Radio Group); OAF Bulky (-1½), Affected As Hearing Group As Well As Radio Group (-¼)	0

Total Abilities & Equipment Cost: 15
Total Vehicle Cost: 64

Value Disadvantages
None

Total Disadvantage Points: 0
Total Cost: 64/5 = 13



OPTIONAL EQUIPMENT

Cost	Equipment
-3	*DC-2 (1934-45):* Decrease to Flight 23"
+9	*DC-4 (1942-present):* Increase to Size 11 and Flight 31"
+17	*DC-6 (1947-present):* Increase to Size 12 and Flight 35"
+25	*DC-7 (1953-present):* Increase to Size 12 and Flight 45"
+33	*DC-8 (1959-present):* Increase to Size 15 and Flight 34", x16 Noncombat
+21	*DC-9 (1965-present):* Increase to Size 13 and Flight 31", x16 Noncombat
+27	*DC-10 (1971-present):* Increase to Size 14 and Flight 32", x16 Noncombat
14	*Sealed Environment:* For later model planes, add Life Support (Self-Contained Breathing; Safe Environments: Intense Cold, Low Pressure/Vacuum)
11	*Radar:* For later model planes, add Radar (Radio Group), Increased Arc Of Perception (360 Degrees), Telescopic (+8 versus Range Modifier); OIF Bulky (-1), Affected As Sight Group As Well As Radio Group (-½)

Description: The Douglas DC-3 is one of the best-known and longest-lived passenger airplanes in the world, having been in service for over 65 years. It debuted in 1935 with sleeping berths for 14 passengers, but later versions able to carry 21-28 passengers are the most common in the Pulp Era. A total of 430 were built prior to World War II, approximately ten thousand more were built during the War (when the military adopted it for use as a troop transport, often as the DC-3 Dakota or C-47 Skytrain), and tens of thousands more have been built since then (including, in the former Soviet Union, as the Lisunov Li-2). Due to its numbers, speed, reliability, and excellent safety record, DC-3 was important in the rise of commercial air travel in the United States (which increased by 600% from 1936 to 1941).

The Douglas DC-3 is approximately 64 feet long. It weighs 7,650 kg empty, and can take off with a maximum weight of 11,431 kg. It can sustain a maximum speed of about 230 miles per hour, and cruises at about 207 miles per hour at optimum altitude; its maximum altitude is 23,200 feet. It has a range of 2,125 miles on a single load of fuel. It has a crew of two.

The options describe other commercial Douglas aircraft. Airlines no longer use many of the earlier models in the United States or Europe, but those planes may remain in service in the Third World.

MARTIN 130 CHINA CLIPPER

Val	Char	Cost	Notes
11	Size	55	12.5" x 6.4"; -11 KB; -7 DCV
45	STR	-20	Lift 12.5 tons; 9d6 HTH [0]
15	DEX	15	OCV: 5/DCV: 5
21	BODY	0	
3	DEF	3	
3	SPD	5	Phases: 4, 8, 12
			Total Characteristic Cost: 58

Movement: Ground: 0"/0"
Swimming: 2"/4"
Flight: 36"/144"

Abilities & Equipment

Cost	Power	END
	Propulsion Systems	
31	*Propeller-Driven Plane:* Flight 36", x4 Noncombat; 1 Continuing Fuel Charge (easily-obtained fuel; 21 Hours; -0), Side Effects (KA 1d6 to anyone who comes into contact with the propeller, automatically occurs when Flight is in use, only affects environment in front of vehicle; -¼), Stall Velocity (18"; -¼), Takeoff/Landing (see text; -1)	[1cc]
-12	*Can Only Fly:* Ground Movement -6" (0" total)	
	Operations Systems	
4	*Radio:* Radio Perception/Transmission (Radio Group); OAF Bulky (-1½), Affected As Hearing Group As Well As Radio Group (-¼)	0

Total Abilities & Equipment Cost: 23
Total Vehicle Cost: 81

Value Disadvantages

None

Total Disadvantage Points: 0
Total Cost: 81/5 = 16

OPTIONAL EQUIPMENT

Cost	Equipment
-4	*Boeing 314 Clipper:* Increase to Size 12 and Flight 22", x8 Noncombat
-5	*Sikorsky S-42:* Decrease to Size 10

Description: The Martin 130 is a flying boat designed for long-range transport of passengers and freight (primarily in the Pacific region). It first flew in 1934, and Pan American Airlines took possession of three in 1935 because the plane could cover its San Francisco to Manila route (2,500 miles) without having to refuel. One of the three, the *Hawaii Clipper,* was lost at sea in 1938; the other two, the eponymous *China Clipper* and the *Philippine Clipper,* were turned over to the U.S. Navy in 1942 for use as military transports.

The China Clipper is approximately 90 feet long. It can take off with a maximum weight of 23,700 kg. It can sustain a maximum speed of about 160 miles per hour, and cruises at about 150 miles per hour at optimum altitude; its maximum altitude is 17,000 feet. It has a range of 3,200 miles on a single load of fuel. It has a crew of four (a very similar plane, the Model 156, has a crew of five) and could carry up to 48 passengers.

The options describe two similar flying boats, the Sikorsky S-42 and the Boeing 314 Clipper. The S-42 debuted at about the same time as the Martin 130 and is largely similar for game purposes. The Boeing 314 is used for transatlantic (and transpacific) passenger service beginning June 21, 1939. A round-trip ticket cost about $400 (approximately $7,500 in 2003 dollars). It's larger and faster than the Martin 130, and has a range of 3,500 miles; it has a crew of 10 and can carry up to 74 passengers. Available amenities include five lounges, a bar, a recreation area, fine dining, and 40 fold-down beds.

Modern Airplanes

This section covers planes produced in the post-World War II period, ranging from the common to the rare and unusual.

AÉROSPATIALE CONCORDE

Val	Char	Cost	Notes
15	Size	75	32" x 16"; -15 KB; -10 DCV
60	STR	-25	Lift 100 tons; 12d6 HTH [0]
10	DEX	0	OCV: 3/DCV: 3
25	BODY	0	
5	DEF	9	
3	SPD	10	Phases: 4, 8, 12
			Total Characteristic Cost: 69

Movement: Ground: 6"/12"
Swimming: 0"/0"
Flight: 43"/1,376"

Abilities & Equipment

Cost	Power	END
	Propulsion Systems	
26	*Supersonic Transport:* Flight 43", x32 Noncombat; Side Effects (KA 2d6, 9" Line behind engines, automatically occurs when Flight is in use, only affects environment around vehicle; -1¾), Stall Velocity (21"; -¼), Takeoff/Landing (-1), 1 Continuing Fuel Charge (easily-obtained fuel; 12 Hours; -0)	[1cc]
-2	*Only Flies:* Swimming -2" (0" total)	
	Operations Systems	
11	*Radar:* Radar (Radio Group), Increased Arc Of Perception (360 Degrees), Telescopic (+8 versus Range Modifier); OIF Bulky (-1), Affected As Sight Group As Well As Radio Group (-½)	0
4	*Communications System:* Radio Perception/Transmission (Radio Group); OAF Bulky (-1½), Affected As Hearing Group As Well As Radio Group (-¼)	0
	Personnel Systems	
14	*Sealed Environment:* Life Support (Self-Contained Breathing; Safe Environments: Intense Cold, Low Pressure/Vacuum)	0

Total Abilities & Equipment Cost: 53
Total Vehicle Cost: 122

Value Disadvantages

None

Total Disadvantage Points: 0
Total Cost: 122/5 = 24

Description: The Concorde, a supersonic passenger transport (SST) with a distinctively-shaped nose and equally telltale wing profile, first flew in 1969 and entered service with British Airways and Air France in 1976. Able to attain speeds of Mach 2.04 and fly from London to Washington, D.C. in under four hours, it is the fastest passenger transport ever created. A total of 14 were built. Following a deadly crash in 2000 and the events of September 11, 2001, and in light of the expenses needed to upgrade the Concorde after 30 years of service, all remaining Concordes were permanently withdrawn from service, with the last flights being in October, 2003.

The Concorde is approximately 200 feet long. It weighs 78,698 kg empty, and can take off with a maximum weight of 185,066 kg. It can sustain a maximum speed of Mach 2.04 (approximately 1,530 miles per hour); its maximum altitude is 60,000 feet. It has a range of 4,090 miles on a single load of fuel. It can carry up to 144 passengers in comfort.

BOEING 707/720

Val	Char	Cost	Notes
14	Size	70	25" x 12.5"; -14 KB; -9 DCV
59	STR	-21	Lift 90 tons; 11½d6 HTH [0]
10	DEX	0	OCV: 3/DCV: 3
24	BODY	0	
5	DEF	9	
3	SPD	10	Phases: 4, 8, 12
			Total Characteristic Cost: 68

Movement: Ground: 6"/12"
Swimming: 0"/0"
Flight: 35"/560"

Abilities & Equipment

Cost	Power	END
	Propulsion Systems	
21	*Commercial Jetliner:* Flight 35", x16 Noncombat; Side Effects (KA 2d6, 6" Line behind engines, automatically occurs when Flight is in use, only affects environment around vehicle; -1¾), Stall Velocity (17"; -¼), Takeoff/Landing (-1), 1 Continuing Fuel Charge (easily-obtained fuel; 12 Hours; -0)	[1cc]
-2	*Only Flies:* Swimming -2" (0" total)	
	Operations Systems	
11	*Radar:* Radar (Radio Group), Increased Arc Of Perception (360 Degrees), Telescopic (+8 versus Range Modifier); OIF Bulky (-1), Affected As Sight Group As Well As Radio Group (-½)	0
4	*Communications System:* Radio Perception/Transmission (Radio Group); OAF Bulky (-1½), Affected As Hearing Group As Well As Radio Group (-¼)	0
	Personnel Systems	
14	*Sealed Environment:* Life Support (Self-Contained Breathing; Safe Environments: Intense Cold, Low Pressure/Vacuum)	0

Total Abilities & Equipment Cost: 48
Total Vehicle Cost: 116

Value Disadvantages

None

Total Disadvantage Points: 0
Total Cost: 116/5 = 23

OPTIONAL EQUIPMENT

Cost	Equipment
+1	*Model 707-300:* Increase to Flight 36", x16 Noncombat

Description: The Boeing 707 (and the virtually identical 720) is a commercial jetliner that first flew in 1954 and entered service with Pan American in 1958. Over a thousand of the two planes, both civilian and military models, have been manufactured; the 707 serves as the basis for the U.S. Air Force's E3 Sentry plane (page 69).

The 707 is approximately 150 feet long. It weighs 66,406 kg empty, and can take off with a maximum weight of 151,318 kg. It can sustain a maximum speed of about 627 miles per hour, and cruises at about 605 miles per hour at optimum altitude; its maximum altitude is 39,000 feet. It has a range of 5,755 miles on a single load of fuel. It can carry up to 189 passengers; there's also a 707-300C model designed solely for carrying cargo.

Production of the 707 ended in the early 1980s. As of 2003, most 707s still in service in the United States and Europe are used only for cargo; some Third World airlines still transport passengers in them.

CESSNA 750 CITATION X

Val	Char	Cost	Notes
10	Size	50	10" x 5"; -10 KB; -6 DCV
45	STR	-15	Lift 6,400 kg; 9d6 HTH [0]
15	DEX	15	OCV: 5/DCV: 5
20	BODY	0	
5	DEF	9	
3	SPD	5	Phases: 4, 8, 12
			Total Characteristic Cost: 64

Movement: Ground: 6"/12"
Swimming: 0"/0"
Flight: 16"/512"

Abilities & Equipment

Cost	Power	END
	Propulsion Systems	
17	*Commercial Jet:* Flight 16", x32 Non-combat; Side Effects (KA 1d6, 4" Line behind engines, automatically occurs when Flight is in use, only affects environment around vehicle; -¾), Stall Velocity (8"; -¼), Takeoff/Landing (-1), 1 Continuing Fuel Charge (easily-obtained fuel; 6 Hours; -0)	[1cc]
-2	*Only Flies:* Swimming -2" (0" total)	
	Operations Systems	
10	*Radar:* Radar (Radio Group), Increased Arc Of Perception (360 Degrees), Telescopic (+6 versus Range Modifier); OIF Bulky (-1), Affected As Sight Group As Well As Radio Group (-½)	0
4	*Communications System:* Radio Perception/Transmission (Radio Group); OIF Bulky (-1 , Affected As Hearing Group As Well As Radio Group (-¼)	0
	Personnel Systems	
14	*Sealed Environment:* Life Support (Self-Contained Breathing; Safe Environments: Intense Cold, Low Pressure/Vacuum)	0

Total Abilities & Equipment Cost: 43
Total Vehicle Cost: 107

Value Disadvantages

None

Total Disadvantage Points: 0
Total Cost: 107/5 = 21

OPTIONAL EQUIPMENT

Cost	Equipment
-12	*Cessna 500 Citation I (1979) or 525 Citation-Jet (1993):* Decrease to Size 8 and Flight 13"
-7	*Cessna 550 Citation II (1978) or 560 Citation V (1989):* Decrease to Size 9 and Flight 12"
-5	*Cessna 650 Citation III/VI/VII (1983):* Decrease to Size 9 and Flight 15"

Description: The Cessna 750 Citation X first flew in 1993 and was certified and delivered to customers in 1996. It's a smart-looking mid-size business jet, perfect for characters who own corporations. The options describe similar Cessna models; dates listed are those on which the aircraft entered service and/or were delivered to customers.

The Citation X is approximately 72 feet long. It weighs 9,730 kg empty, and can take off with a maximum weight of 16,194 kg. It can sustain a maximum speed of about 589 miles per hour; its maximum altitude is 51,000 feet. It has a range of 3,742 miles on a single load of fuel. It has a crew of two and can carry up to 12 passengers.

MOLLER M400 VOLANTOR (SKYCAR)

Val	Char	Cost	Notes
4	Size	20	2.5" x 1.25"; -4 KB; -2 DCV
30	STR	0	Lift 1,600 kg; 6d6 HTH [0]
15	DEX	15	OCV: 5/DCV: 5
12	BODY	-2	
3	DEF	3	
3	SPD	5	Phases: 4, 8, 12
			Total Characteristic Cost: 41

Movement: Ground: 6"/12"
Swimming: 0"/0"
Flight: 11"/352"
Gliding: 6"/12"

Abilities & Equipment

Cost	Power	END
	Propulsion Systems	
34	*Personal-Use Jet:* Flight 11", x32 Noncombat; Stall Velocity (5"; -¼), 1 Continuing Fuel Charge (easily-obtained fuel; 3 Hours; -0)	[1cc]
2	*Airframe Parachutes:* Gliding 6", Trigger (engine failure or the like; +¼); OAF Bulky (-1½), Limited Movement (character cannot gain altitude, and must move at least 12" downward for every 1" forward; -½), 1 Recoverable Continuing Charge (lasts until vehicle hits the ground or 'chute is fouled; -¾)	[1rc]
-2	*Only Flies:* Swimming -2" (0" total)	
	Operations Systems	
10	*Radar:* Radar (Radio Group), Increased Arc Of Perception (360 Degrees), Telescopic (+6 versus Range Modifier); OIF Bulky (-1), Affected As Sight Group As Well As Radio Group (-½)	0
4	*Communications System:* Radio Perception/Transmission (Radio Group); OIF Bulky (-1 , Affected As Hearing Group As Well As Radio Group (-¼)	0

Total Abilities & Equipment Cost: 48
Total Vehicle Cost: 89

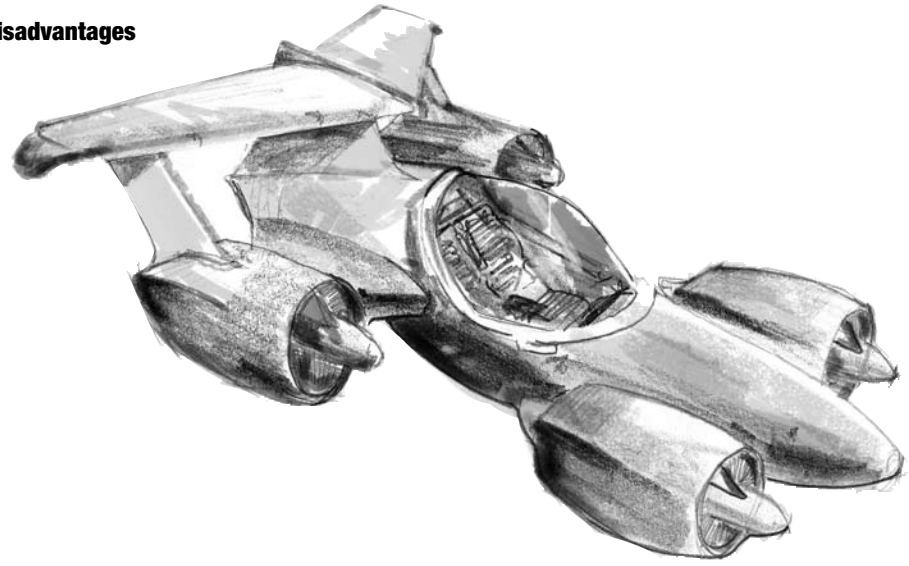
Value Disadvantages
None

Total Disadvantage Points: 0
Total Cost: 89/5 = 18

Description: The Moller M400 Volantor, or "Skycar," is a personal-use VTOL (vertical takeoff and landing) aircraft currently under development as of late 2003. The brainchild of Canadian engineer Paul Moller, it has the potential to revolutionize commercial transportation. It might make an excellent vehicle for use in Cyberpunk campaigns or the like.

The Volantor uses a patented "thrust deflection vane system" that directs the thrust to enable VTOL capability; it only needs a 35-foot diameter area to take off and land. In other words, it lands and takes off like a helicopter, but flies with the performance and range of a jet aircraft. Additionally, the vehicle has numerous safety features, including four pairs of engines, redundant stabilization systems, enclosed fans to reduce the risk of injury to bystanders, and two airframe parachutes. Anyone can fly the craft by moving the simple controls in the direction he wants to go; the Volantor's computers do the rest. The FAA is developing a special "powered lift pilot's license" for Volantor users.

As currently conceived and designed, the Moller M400 Volantor is approximately 19.5 feet long and weighs approximately 1,090 kg (in other words, it's small enough for the owner to store it in a standard garage and park it without much difficulty). It can sustain a maximum speed of about 380 miles per hour, and cruises at about 300 miles per hour at optimum altitude; its maximum altitude is 29,000 feet. It has a range of 900 miles on a single load of fuel; it uses ordinary gasoline and gets about 28 miles per gallon. It can carry up to four people (the driver and three passengers); other planned models include the M600 (six people) and M100 (one person). The price per unit is currently estimated at about one million U.S. dollars, but sufficiently high production could eventually bring that down to $60,000 or so.



PIPER PA-28 CHEROKEE

Val	Char	Cost	Notes
6	Size	30	4" x 2"; -6 KB; -4 DCV
22	STR	-18	Lift 560 kg; 4d6 HTH [0]
16	DEX	18	OCV: 5/DCV: 5
16	BODY	0	
4	DEF	6	
3	SPD	4	Phases: 4, 8, 12
			Total Characteristic Cost: 40

Movement: Ground: 6"/12"
Swimming: 0"/0"
Flight: 17"/136"

Abilities & Equipment

Cost	Power	END
	Propulsion Systems	
18	*Propeller-Driven Plane:* Flight 17", x8 Noncombat; 1 Continuing Fuel Charge (easily-obtained fuel; 7 Hours; -0), Side Effects (KA 1d6 to anyone who comes into contact with the propeller, automatically occurs when Flight is in use, only affects environment in front of vehicle; -¼), Stall Velocity (8"; -¼), Takeoff/Landing (-1)	[1cc]
-2	*Only Flies:* Swimming -2" (0" total)	
	Operations Systems	
4	*Radio:* Radio Perception/Transmission (Radio Group); OAF Bulky (-1½), Affected As Hearing Group As Well As Radio Group (-¼)	0
	Personnel Systems	
14	*Sealed Environment:* Life Support (Self-Contained Breathing; Safe Environments: Intense Cold, Low Pressure/Vacuum)	0

Total Abilities & Equipment Cost: 34
Total Vehicle Cost: 74

Value Disadvantages

None

Total Disadvantage Points: 0
Total Cost: 74/5 = 15

OPTIONAL EQUIPMENT

Cost	Equipment
-1	*Piper J3 Cub (1938):* Decrease to Flight 19", x4 Noncombat
+0	*Piper PA-23 Apache/Aztec (1954):* No changes
+8	*Piper PA-24T-260 Turbo Comanche (1973):* Increase to Flight 27"
+0	*Piper PA-28R Cherokee Arrow (1967):* Increase to Flight 18"
+4	*Piper PA-28RT Cherokee Turbo Arrow (1979):* Increase to Flight 23"
+6	*Piper PA-44-180T Turbo Seminole (1980):* Increase to Flight 25"
10	*Radar:* Radar (Radio Group), Increased Arc Of Perception (360 Degrees), Telescopic (+6 versus Range Modifier); OIF Bulky (-1), Affected As Sight Group As Well As Radio Group (-½)

Description: The Cherokee PA-28 first flew in 1960 and entered service in 1961. Over 30,000 of this small passenger plane have been manufactured since then, with numerous variant models. The options describe some of these, as well as similar models; these can represent a wide variety of personal-use planes, small passenger craft, crop-dusting and -spraying planes, and so forth. Listed dates indicate the date the plane entered service.

The Cherokee PA-28 is approximately 24 feet long. It weighs 767 kg empty, and can take off with a maximum weight of 1,315 kg. It can sustain a maximum speed of about 155 miles per hour; its maximum altitude is 20,000 feet. It has a range of 1,035 miles on a single load of fuel. It can carry up to four people (the pilot and three passengers).

ULTRALIGHT

Val	Char	Cost	Notes
4	Size	20	2.5" x 1.25"; -4 KB; -2 DCV
15	STR	-15	Lift 150 kg; 3d6 HTH [0]
13	DEX	9	OCV: 4/DCV: 4
10	BODY	-4	
2	DEF	0	
3	SPD	7	Phases: 4, 8, 12
			Total Characteristic Cost: 21

Movement: Ground: 6"/12"
Swimming: 0"/0"
Flight: 14"/56"

Abilities & Equipment

Cost	Power	END
13	*Propeller-Driven Plane:* Flight 14", x4 Noncombat; 1 Continuing Fuel Charge (easily-obtained fuel; 2 Hours; -0), Side Effects (KA 1d6 to anyone who comes into contact with the propeller, automatically occurs when Flight is in use, only affects environment in front of vehicle; -¼), Stall Velocity (7"; -¼), Takeoff/Landing (-1)	[1cc]
-2	*Can Only Fly:* Swimming -2" (0" total)	

Total Abilities & Equipment Cost: 11
Total Vehicle Cost: 32

Value Disadvantages
None

Total Disadvantage Points: 0
Total Cost: 32/5 = 6

OPTIONAL EQUIPMENT

Cost	Equipment
-5	*Small Ultralight:* Decrease to Size 3
-10	*Really Small Ultralight:* Decrease to Size 2
-2	*Slow Ultralight:* Decrease to Flight 11"
+3	*Illegally Fast Ultralight:* Increase to Flight 17"
+7	*Really Illegally Fast Ultralight:* Increase to Flight 22"
4	*Radio:* Radio Perception/Transmission (Radio Group); OAF Bulky (-1½), Affected As Hearing Group As Well As Radio Group (-¼)
	0

Description: As defined by United States law, an ultralight, also known as a "microlight," is a single-seater airplane weighing less than 254 pounds, with a top speed of 63 miles per hour, which stalls at 28 miles per hour or less and carries no more than five gallons of fuel. (The law grants some exemptions for training craft.) They range from about 18-20 feet long to about 7-8 feet long. Most ultralights have operation ceilings of 10,000 feet, though the record is 23,000 feet. They need about 100-150 feet to take off and land.

Air regulations specify that ultralights cannot carry passengers, fly over urban or inhabited areas, fly at night, fly near airports, or engage in any commercial operations. They must also yield the right of way to any other aircraft.

Ultralights are popular with aviation hobbyists because they're cheap. A kit to build one costs about $6,000, and premade ones cost anywhere from two to fifteen thousand dollars.

MILITARY AIRPLANES

This section includes bombers, fighters, reconnaissance craft, and other airplanes used by the militaries of the world.

Pre-World War II Airplanes

The planes in this section were all flown during World War I or after, but before World War II. They'd be appropriate for Pulp-era characters as civilian vehicles if you remove the weapons.

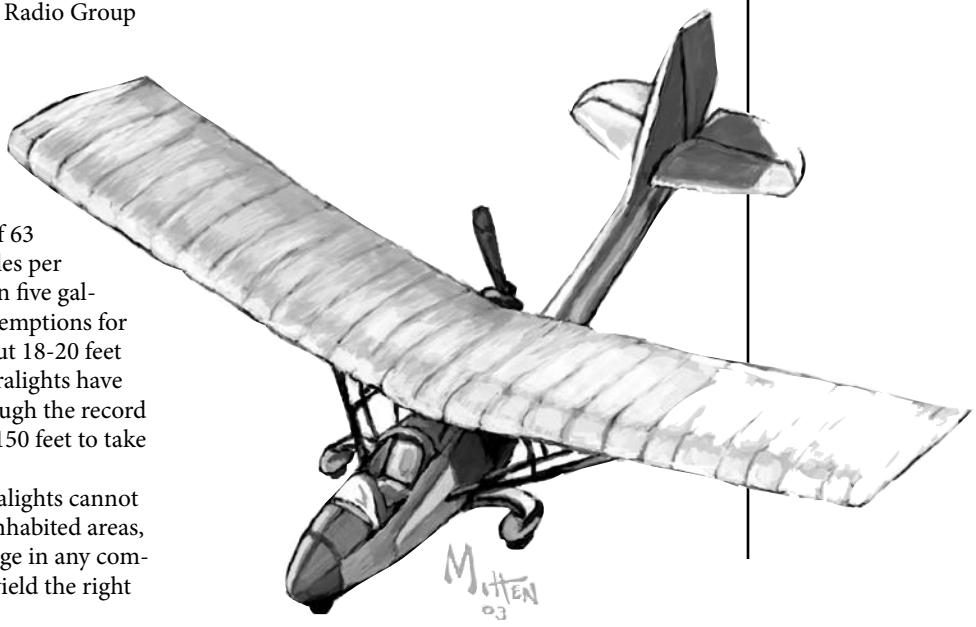
FOKKER D VII

Val	Char	Cost	Notes
5	Size	25	3.2" x 1.6"; -5 KB; -3 DCV
15	STR	-20	Lift 200 kg; 3d6 HTH [0]
15	DEX	15	OCV: 5/DCV: 5
15	BODY	0	
2	DEF	0	
3	SPD	5	Phases: 4, 8, 12
			Total Characteristic Cost: 25

Movement: Ground: 0"/0"
Swimming: 0"/0"
Flight: 28"/112"

Abilities & Equipment

Cost	Power	END
	Propulsion Systems	
24	*Propeller-Driven Biplane:* Flight 28", x4 Noncombat; 1 Continuing Fuel Charge (easily-obtained fuel; 2 Hours; -0), Side Effects (KA 1d6 to anyone who comes into contact with the propeller, automatically occurs when Flight is in use, only affects environment in front of vehicle; -¼), Stall Velocity (14"; -¼), Takeoff/Landing (-1)	



[1cc]

-12 *Can Only Fly:* Ground Movement -6" (0" total)

-2 *Can Only Fly:* Swimming -2" (0" total)

Tactical Systems

34 *Twin 7.92mm LMG 08/15 Machine Guns (Forward-Mounted):* RKA 2½d6, Autofire (5 shots; +½), +1 Increased STUN Multiplier (+¼), 500 Charges (+1); OIF Bulky (-1), Limited Arc Of Fire (0 degrees forward; only on same horizontal level; -1), Real Weapon (-¼) [500]

Skills

2 *Highly Maneuverable:* +1 with Flight

Total Abilities & Equipment Cost: 46
Total Vehicle Cost: 71

Value Disadvantages

25 Distinctive Features: German Warplane (Not Concealable; Causes Extreme Reaction [fear])

Total Disadvantage Points: 25
Total Cost: 46/5 = 9

OPTIONAL EQUIPMENT

Cost Equipment

+1 *Fokker Dr-1 Dreidecker (Triplane):* Decrease to Flight 26" and increase to +2 with Flight

Description: Also known as the Fokker V.11 and V.18, the D VII saw operational use by Germany in 1918; Hermann Göring was one of the first to fly it. A total of 877 were built before the end of World War I (making it the most-produced German plane in the war). It so impressed the Allies that after the war ended, the Germans were required to turn over all remaining D VIIs to the Allied Control Commission — an order given only for this plane and the Zeppelin. However, Fokker smuggled some of the fighters and components into the Netherlands and went on manufacturing the plane after the war; other companies also manufactured it under license.

The option describes the Fokker Dr-1, a slightly slower triplane considered by many the most agile German plane of the Great War. It entered service in October, 1917; 320 were manufactured before it was phased out in June 1918. Many German aces, including the "Red Baron," Manfred von Richtofen, flew the Dr-1. Allied pilots were amazed by the plane's maneuverability.

The Fokker D VII is approximately 24 feet long. It weighs 684 kg empty, and can take off with a maximum weight of 910 kg. It can sustain a maximum speed of about 124 miles per hour; its maximum altitude is 21,325 feet. It carries just the pilot.

FOKKER E II/III EINDECKER

Val	Char	Cost	Notes
5	Size	25	3.2" x 1.6"; -5 KB; -3 DCV
15	STR	-20	Lift 200 kg; 3d6 HTH [0]
14	DEX	12	OCV: 5/DCV: 5
15	BODY	0	
2	DEF	0	
3	SPD	6	Phases: 4, 8, 12
			Total Characteristic Cost: 23

Movement: Ground: 0"/0"
Swimming: 0"/0"
Flight: 19"/76"

Abilities & Equipment

Cost Power **END**

Propulsion Systems

17 *Propeller-Driven Plane:* Flight 19", x4 Noncombat; 1 Continuing Fuel Charge (easily-obtained fuel; 1 Hour; -0), Side Effects (KA 1d6 to anyone who comes into contact with the propeller, automatically occurs when Flight is in use, only affects environment in front of vehicle; -¼), Stall Velocity (9"; -¼), Takeoff/Landing (-1) [1cc]

-12 *Can Only Fly:* Ground Movement -6" (0" total)

-2 *Can Only Fly:* Swimming -2" (0" total)

Tactical Systems

34 *Twin 7.92mm LMG 08/15 Machine Guns (Forward-Mounted):* RKA 2½d6, Autofire (5 shots; +½), +1 Increased STUN Multiplier (+¼), 500 Charges (+1); OIF Bulky (-1), Limited Arc Of Fire (0 degrees forward; only on same horizontal level; -1), Real Weapon (-¼) [500]

Total Abilities & Equipment Cost: 37
Total Vehicle Cost: 60

Value Disadvantages

25 Distinctive Features: German Warplane (Not Concealable; Causes Extreme Reaction [fear])

Total Disadvantage Points: 25
Total Cost: 35/5 = 7

OPTIONAL EQUIPMENT

Cost Equipment

-3 *Fokker E I:* Change Twin Machine Guns to one Machine gun and decrease Autofire on to 3 shots (+¼)

Description: The Fokker E III Eindecker (*i.e.,* one-wing plane, rather than a biplane or triplane), along with the similar E II, was produced in 1915-16. It was controlled in part by wing-warping, meaning it needed muscular pilots. While not particularly maneuverable or fast, it's noteworthy because it was the first plane to have a reliable gun synchronization system that allowed it to mount forward weapons that fired "through" the propeller without damaging it. (The Germans got the idea from a French pilot they downed who'd modified his propeller with steel plates to deflect bullets fired by his

gun.) A total of about 300 Fokker E-series planes were produced.

The Fokker E III is approximately 24 feet long. It weighs 399 kg empty, and can take off with a maximum weight of 610 kg. It can sustain a maximum speed of about 87 miles per hour; its maximum altitude is 11,480 feet. It carries just the pilot.

SOPWITH TRIPLANE

Val	Char	Cost	Notes
4	Size	20	2.5" x 1.25"; -4 KB; -2 DCV
15	STR	-15	Lift 200 kg; 3d6 HTH [0]
16	DEX	18	OCV: 5/DCV: 5
14	BODY	0	
2	DEF	0	
3	SPD	4	Phases: 4, 8, 12
			Total Characteristic Cost: 27

Movement: Ground: 0"/0"
Swimming: 0"/0"
Flight: 26"/104"

Abilities & Equipment

Cost Power **END**

Propulsion Systems

23 *Propeller-Driven Triplane:* Flight 26", x4 Noncombat; 1 Continuing Fuel Charge (easily-obtained fuel; 3 Hours; -0), Side Effects (KA 1d6 to anyone who comes into contact with the propeller, automatically occurs when Flight is in use, only affects environment in front of vehicle; -¼), Stall Velocity (13"; -¼), Takeoff/Landing (-1) [1cc]

-12 *Can Only Fly:* Ground Movement -6" (0" total)

-2 *Can Only Fly:* Swimming -2" (0" total)

Tactical Systems

29 *Twin Vickers 7.7mm Machine Guns (Forward-Mounted):* RKA 2d6+1, Autofire (5 shots; +½), +1 Increased STUN Multiplier (+¼), 400 Charges (+1); OIF Bulky (-1), Limited Arc Of Fire (0 degrees forward; only on same horizontal level; -1), Real Weapon (-¼) [400]

Skills

2 *Highly Maneuverable:* +1 with Flight

Total Abilities & Equipment Cost: 40
Total Vehicle Cost: 67

Value Disadvantages

25 Distinctive Features: British Warplane (Not Concealable; Causes Extreme Reaction [fear])

Total Disadvantage Points: 25
Total Cost: 42/5 = 8

OPTIONAL EQUIPMENT

Cost Equipment

-2 *One Gun:* Decrease to Autofire (3 shots; +¼)

+4 *Sopwith Pup:* Increase to Size 5 and decrease to Flight 25"

Description: The Sopwith Triplane entered service in February, 1917 and quickly established dominance on the aerial battlefield. Derived from the design of the Sopwith Pup, it in turn inspired the design of the Fokker Dr-1. Both the Triplane and the Pup had the advantages of being able to climb more quickly than other planes and to make hard level turns at or near their performance ceiling. About 140 Triplanes were built before the Sopwith Camel (TUV, page 75) superseded it.

The Sopwith Triplane is approximately 18 feet long. It weighs 499 kg empty, and can take off with a maximum weight of 699 kg. It can sustain a maximum speed of about 117 miles per hour; its maximum altitude is 20,500 feet. It carries just the pilot.

SPAD S.VII

Val	Char	Cost	Notes
5	Size	25	3.2" x 1.6"; -5 KB; -3 DCV
16	STR	-19	Lift 240 kg; 3d6 HTH [0]
14	DEX	12	OCV: 5/DCV: 5
15	BODY	0	
2	DEF	0	
3	SPD	6	Phases: 4, 8, 12
			Total Characteristic Cost: 24

Movement: Ground: 0"/0"
Swimming: 0"/0"
Flight: 26"/104"

Abilities & Equipment

Cost	Power	END
	Propulsion Systems	
23	*Propeller-Driven Biplane:* Flight 26", x4 Noncombat; 1 Continuing Fuel Charge (easily-obtained fuel; 2 Hours; -0), Side Effects (KA 1d6 to anyone who comes into contact with the propeller, automatically occurs when Flight is in use, only affects environment in front of vehicle; -¼), Stall Velocity (13"; -¼), Takeoff/Landing (-1) [1cc]	
-12	*Can Only Fly:* Ground Movement -6" (0" total)	
-2	*Can Only Fly:* Swimming -2" (0" total)	
	Tactical Systems	
27	*Vickers 7.7mm Machine (Forward-Mounted):* RKA 2d6+1, Autofire (3 shots; +¼), +1 Increased STUN Multiplier (+¼), 400 Charges (+1); OIF Bulky (-1), Limited Arc Of Fire (0 degrees forward; only on same horizontal level; -1), Real Weapon (-¼)	[400]

Total Abilities & Equipment Cost: 36
Total Vehicle Cost: 60

Value Disadvantages

25	Distinctive Features: French Warplane (Not Concealable; Causes Extreme Reaction [fear])

Total Disadvantage Points: 25
Total Cost: 35/5 = 7

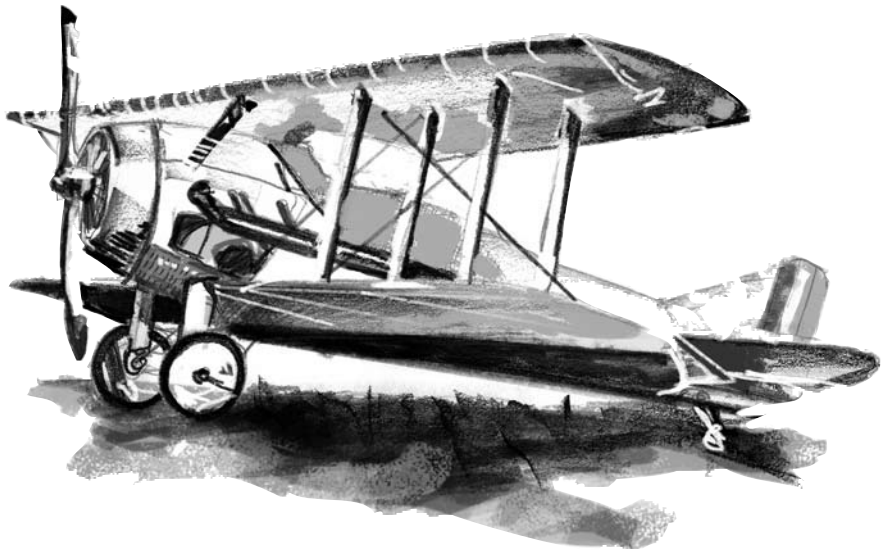
OPTIONAL EQUIPMENT

Cost	Equipment
+1	*Improved Engine:* Increase to Flight 28"
+19	*SPAD S.XII:* Add the following: *37mm Puteaux cannon:* RKA 5d6, +1 Increased STUN Multiplier (+¼); OIF Bulky (-1), Limited Arc Of Fire (0 degrees forward; only on same horizontal level; -1), Real Weapon (-¼), Side Effects (-2 to pilot's Sight Group PER Rolls for ½d6 Segments, always occurs; -½), 4 clips of 1 Charge each (-1¼)

Description: This French biplane first entered service in 1916; over 6,000 of them were produced during World War I. Some initial problems with slow climbing speed were resolved by installing an improved engine in the plane beginning in early 1917, but the plane's sluggishness at low speeds was never resolved. After the War it saw extensive civilian use as a training aircraft.

A similar model, the SPAD S.XII, was developed to allow for the inclusion of another powerful weapon — a 37mm cannon — to ensure one-hit-one-kill capability. Mounted along the engine and firing through a hollow propeller shaft, it filled the cockpit with smoke and had to be reloaded after each shot.

The SPAD VII is approximately 20 feet long. It weighs 510 kg empty, and can take off with a maximum weight of 740 kg. It can sustain a maximum speed of about 118 miles per hour; its maximum altitude is 18,000 feet. It carries just the pilot.



SPAD S.XIII

Val	Char	Cost	Notes
5	Size	25	3.2" x 1.6"; -5 KB; -3 DCV
16	STR	-19	Lift 240 kg; 3d6 HTH [0]
15	DEX	15	OCV: 5/DCV: 5
16	BODY	1	
2	DEF	0	
3	SPD	5	Phases: 4, 8, 12
			Total Characteristic Cost: 27

Movement: Ground: 0"/0"
Swimming: 0"/0"
Flight: 31"/124"

Abilities & Equipment

Cost	Power	END
	Propulsion Systems	
27	*Propeller-Driven Biplane:* Flight 31", x4 Noncombat; 1 Continuing Fuel Charge (easily-obtained fuel; 2 Hours; -0), Side Effects (KA 1d6 to anyone who comes into contact with the propeller, automatically occurs when Flight is in use, only affects environment in front of vehicle; -¼), Stall Velocity (15"; -¼), Takeoff/Landing (-1) [1cc]	
-12	*Can Only Fly:* Ground Movement -6" (0" total)	
-2	*Can Only Fly:* Swimming -2" (0" total)	
	Tactical Systems	
29	*Twin Vickers 7.7mm Machine Guns (Forward-Mounted):* RKA 2d6+1, Autofire (5 shots; +½), +1 Increased STUN Multiplier (+¼), 800 Charges (+1); OIF Bulky (-1), Limited Arc Of Fire (0 degrees forward; only on same horizontal level; -1), Real Weapon (-¼) [800]	
	Skills	
2	*Excellent Stability:* +1 OCV with Twin Vickers	

Total Abilities & Equipment Cost: 44
Total Vehicle Cost: 71

Value Disadvantages

25	Distinctive Features: French Warplane (Not Concealable; Causes Extreme Reaction [fear])

Total Disadvantage Points: 25
Total Cost: 46/5 = 9

OPTIONAL EQUIPMENT

Cost	Equipment
-1	*SPAD S.XVII:* Increase to Flight 33"; decrease Machine Guns to one Machine Gun (Autofire [3 shots; +¼]) with 400 Charges

Description: Slightly larger, sturdier, and more maneuverable than the SPAD S.VII, the SPAD S.XIII entered service in May, 1917; over 7,300 were produced, and it was used by many countries, including the United States. (After the war it was exported to several other nations.) The plane's excellent stability and twin machine guns make it highly accurate. French ace René Fonck scored 73 of his 75 victories in the SPAD S.XIII, including several instances of triple kills taking place within mere seconds of each other.

The SPAD XIII is approximately 20 feet long. It weighs 601 kg empty, and can take off with a maximum weight of 845 kg. It can sustain a maximum speed of about 139 miles per hour; its maximum altitude is 21,815 feet. It carries just the pilot.

World War II Airplanes

The planes in this section were all flown during World War II. After the war some were converted to civilian uses through removal of the weapons and other military systems; others remained in service, either with their original nation or other nations.

Many combat aircraft of this period have side-or turret-mounted guns fired by a gunner. Since these are on pintle mounts or the like, the user's OCV is typically more important than the Vehicle's OCV, so the GM should consider adding the optional *Uses Character OCV Not Vehicle's OCV* Power Modifier from page 181 of *The Ultimate Vehicle*.

BELL P-39N AIRACOBRA

Val	Char	Cost	Notes
7	Size	35	5" x 2.5"; -7 KB; -4 DCV
35	STR	-10	Lift 3,200 kg; 7d6 HTH [0]
15	DEX	15	OCV: 5/DCV: 5
17	BODY	0	
4	DEF	6	
3	SPD	5	Phases: 4, 8, 12
			Total Characteristic Cost: 51

Movement: Ground: 6"/12"
Swimming: 0"/0"
Flight: 42"/336"

Abilities & Equipment

Cost	Power	END
	Propulsion Systems	
38	*Propeller-Driven Plane:* Flight 42", x8 Noncombat; 1 Continuing Fuel Charge (easily-obtained fuel; 3 Hours; -0), Side Effects (KA 1d6 to anyone who comes into contact with the propeller, automatically occurs when Flight is in use, only affects environment in front of vehicle; -¼), Stall Velocity (21"; -¼), Takeoff/Landing (-1) [1cc]	
-2	*Can Only Fly:* Swimming -2" (0" total)	
	Tactical Systems	
29	*37mm Cannon (Nose-Mounted):* RKA 5d6, +1 Increased STUN Multiplier (+¼); OIF Bulky (-1), Limited Arc Of Fire (0 degrees forward; only on same horizontal level; -1), Real Weapon (-¼), 15 Charges (-0) [15]	
38	*Twin 12.7mm Machine Guns (Nose-Mounted):* RKA 3d6, Autofire (5 shots; +½), +1 Increased STUN Multiplier (+¼), 200 Charges (+1); OIF Bulky (-1), Limited Arc Of Fire (0 degrees forward; only on same horizontal level; -1), Real Weapon (-¼) [200]	

29 *7.62mm Machine Guns (Wing-Mounted):* RKA 2d6+1, Autofire (5 shots; +½), +1 Increased STUN Multiplier (+¼), 250 Charges (+1); OIF Bulky (-1), Limited Arc Of Fire (0 degrees forward; only on same horizontal level; -1), Real Weapon (-¼) [250]

10 *7.62mm Machine Guns (Wing-Mounted):* 3 more 7.62mm Machine Guns (total of 4) [250]

13 *500-Pound Bomb:* RKA 3d6, Explosion (+½); OAF Bulky (externally-mounted bomb; -1½), Dropped (-½), Real Weapon (-¼), 1 Charge (-2) [1]

Operations Systems

4 *Radio:* Radio Perception/Transmission (Radio Group); OAF Bulky (-1½), Affected As Hearing Group As Well As Radio Group (-¼) 0

Personnel Systems

14 *Sealed Environment:* Life Support (Self-Contained Breathing; Safe Environments: Intense Cold, Low Pressure/Vacuum) 0

Total Abilities & Equipment Cost: 173
Total Vehicle Cost: 224

Value Disadvantages

25 Distinctive Features: U.S. warplane (Not Concealable; Causes Extreme Reaction [fear])

Total Disadvantage Points: 25
Total Cost: 199/5 = 40

OPTIONAL EQUIPMENT

Cost Equipment

-4 *Bell P-39D-1:* Decrease to Flight 40", and change 37mm cannon to: *20mm Cannon (Nose-Mounted:* RKA 4d6, +1 Increased STUN Multiplier (+¼), 60 Charges (+½); OIF Bulky (-1), Limited Arc Of Fire (0 degrees forward; only on same horizontal level; -1), Real Weapon (-¼)

+0 *7.7mm Machine Guns (Wing-Mounted):* Change to RKA 2d6+1, Autofire (5 shots; +½), +1 Increased STUN Multiplier (+¼), 2,300 Charges (+1); OIF Bulky (-1), Limited Arc Of Fire (0 degrees forward; only on same horizontal level; -1), Real Weapon (-¼)

+0 *Bell P-39L:* Increase to Flight 43"

-23 *Bell P-63 Kingcobra:* Increase to DEF 5 and Flight 45", remove 12.7mm machine guns, change wing-mounted machine guns from 7.62mm (RKA 2d6+1) to 12.7mm (RKA 3d6), and increase Charges on the 500-Pound Bomb to 3

Description: Also known as the Model 11, the Bell P-39 Airacobra fighter-bomber first flew in 1938 and entered U.S. Army service in 1939. This character sheet represents the N model, a later version produced partly for Lend-Lease to the Soviet Union; about 10,000 of them were manufactured. The options list some other models, including the Kingcobra which replaced it.

The Airacobra's main armament is a 37mm nose-mounted cannon (replaced in some later models with a 20mm cannon); it's flanked by two 12.7mm machine guns. Each wing has two forward-mounted 7.62mm machine guns (replaced in some later models with 7.7mm machine guns). It also carries an externally-mounted 500-pound bomb.

The Airacobra's lack of a turbocharger means it's not a match for a pure fighter in terms of speed, but it has some ground-attack versatility a pure fighter lacks. The P-39N is a little faster than most other P-39 models, but it achieves this by mounting less armor and having smaller fuel tanks.

The P-39N is approximately 30 feet long. It weighs 2,903 kg empty, and can take off with a maximum weight of 3,992 kg. It can sustain a maximum speed of about 376 miles per hour, and cruises at about 200 miles per hour at optimum altitude; its maximum altitude is 38,720 feet. It has a range of 975 miles on a single load of fuel. It carries just the pilot.

BOEING B-17G FLYING FORTRESS

Val	Char	Cost	Notes
11	Size	55	12.5" x 6.4"; -11 KB; -7 DCV
45	STR	-20	Lift 12.5 tons; 9d6 HTH [0]
12	DEX	6	OCV: 4/DCV: 4
23	BODY	2	
5	DEF	9	
3	SPD	8	Phases: 4, 8, 12
			Total Characteristic Cost: 60

Movement: Ground: 6"/12"
Swimming: 0"/0"
Flight: 32"/256"

Abilities & Equipment

Cost	Power	END
	Propulsion Systems	
30	*Propeller-Driven Plane:* Flight 32", x8 Noncombat; 1 Continuing Fuel Charge (easily-obtained fuel; 6 Hours; -0), Side Effects (KA 1d6 to anyone who comes into contact with the propeller, automatically occurs when Flight is in use, only affects environment in front of vehicle; -¼), Stall Velocity (16"; -¼), Takeoff/Landing (-1)	[1cc]
-2	*Can Only Fly:* Swimming -2" (0" total)	
	Tactical Systems	
54	*Twin 12.7mm Machine Guns (Turret-Mounted):* RKA 3d6, Autofire (8 shots; +1), 850 Charges (+1); OIF Bulky (-1), Limited Arc Of Fire (180 degrees in one direction; -¼), Real Weapon (-¼)	[850]
10	*Twin 12.7mm Machine Guns (Turret-Mounted):* Three more Twin Machine Guns (total of 4)	[850]
45	*Single 12.7mm Machine Guns (Turret-Mounted):* RKA 3d6, Autofire (5 shots; +½), 850 Charges (+1); OIF Bulky (-1), Limited Arc Of Fire (180 degrees in one direction; -¼), Real Weapon (-¼)	[850]
15	*Single 12.7mm Machine Guns (Turret-Mounted):* Four more Machine Guns (total of 5)	[850]
44	*1,000-Pound Bombs:* RKA 4d6, Explosion (-1 DC/2"; +¾), 17 Charges (+¼); OIF Bulky (bomb launcher; -1), Real Weapon (-¼), Dropped (-½)	[17]
	Operations Systems	
4	*Radio:* Radio Perception/Transmission (Radio Group); OAF Bulky (-1½), Affected As Hearing Group As Well As Radio Group (-¼)	0
	Personnel Systems	
14	*Sealed Environment:* Life Support (Self-Contained Breathing; Safe Environments: Intense Cold, Low Pressure/Vacuum)	0

Total Abilities & Equipment Cost: 214
Total Vehicle Cost: 274

Value Disadvantages

25	Distinctive Features: U.S. warplane (Not Concealable; Causes Extreme Reaction [fear])

Total Disadvantage Points: 25
Total Cost: 249/5 = 50

OPTIONAL EQUIPMENT

Cost	Equipment
+8	*Norden Bombsight:* +4 OCV with Bombs (see sidebar)

Description: The Boeing Model 299, later designated the B-17 and better known as the "Flying Fortress," first flew in 1935 and entered service in 1939. Early models proved to have too little defensive armament and too low operational ceilings, leaving them vulnerable to counterattack by fighters or anti-aircraft guns. The B-17G attempted to correct some of these deficiencies, in part by adding a chin turret. Nearly 13,000 B-17s, almost 9,000 of them B-17Gs, were produced during the war; it proved useful not only for bombing Germany but for maritime patrol in the Pacific Theater.

In addition to its load of up to 17,600 pounds of bombs (defined on this character sheet as 17 thousand-pound bombs, although the normal load was more like 6,000 pounds of bombs), the B-17 has a total of 13 turret-mounted 12.7mm machine guns. Eight are in pairs in turrets on the chin, dorsal, ventral, and tail; the other five are singles in two waist turrets, two cheek turrets, and a dorsal turret. The plane carries 11,135 rounds of ammunition (about 850 per gun), but can increase this to 17,265 if it carries less fuel. It has a crew of nine or ten to handle all this weaponry.

The B-17G Flying Fortress is approximately 74 feet long. It weighs 16,391 kg empty, and can take off with a maximum weight of 29,710 kg. It can sustain a maximum speed of about 287 miles per hour, and cruises at about 182 miles per hour at optimum altitude; its maximum altitude is 35,800 feet. It has a range of 2,000 miles on a single load of fuel and a full bombload.

THE NORDEN BOMBSIGHT

To improve the accuracy of bombing runs, the U.S. Army Air Corps developed the Norden Bombsight. This device linked with the autopilot to obtain heading, altitude, and velocity data, then used that data to move the crosshairs so they were precisely over where the bomb would fall when the bombardier pressed the drop button.

The Norden was so new and revolutionary that it was highly classified technology; not every bomber had one. Often just the lead bomber in a formation has a Norden, and the planes following it drop bombs when it does.

CONSOLIDATED B-24H/J LIBERATOR

Val	Char	Cost	Notes
10	Size	50	10" x 5"; -10 KB; -6 DCV
46	STR	-14	Lift 14 tons; 9d6 HTH [0]
13	DEX	9	OCV: 4/DCV: 4
21	BODY	1	
5	DEF	9	
3	SPD	7	Phases: 4, 8, 12
			Total Characteristic Cost: 62

Movement: Ground: 6"/12"
Swimming: 0"/0"
Flight: 32"/256"

Abilities & Equipment

Cost	Power	END
	Propulsion Systems	
30	*Propeller-Driven Plane:* Flight 32", x8 Noncombat; 1 Continuing Fuel Charge (easily-obtained fuel; 6 Hours; -0), Side Effects (KA 1d6 to anyone who comes into contact with the propeller, automatically occurs when Flight is in use, only affects environment in front of vehicle; -¼), Stall Velocity (16"; -¼), Takeoff/ Landing (-1)	[1cc]
-2	*Can Only Fly:* Swimming -2" (0" total)	
	Tactical Systems	
54	*Twin 12.7mm Machine Guns (Turret-Mounted):* RKA 3d6, Autofire (8 shots; +1), 520 Charges (+1); OIF Bulky (-1), Limited Arc Of Fire (180 degrees in one direction; -¼), Real Weapon (-¼)	[520]
10	*Twin 12.7mm Machine Guns (Turret-Mounted):* Three more Twin Machine Guns (total of 4)	[520]
45	*Single 12.7mm Machine Guns (Turret-Mounted):* RKA 3d6, Autofire (5 shots; +½), 520 Charges (+1); OIF Bulky (-1), Limited Arc Of Fire (180 degrees in one direction; -¼), Real Weapon (-¼)	[520]
5	*Single 12.7mm Machine Guns (Turret-Mounted):* One more Machine Gun (total of 2)	[520]
35	*1,000-Pound Bombs:* RKA 4d6, Explosion (-1 DC/2"; +¾); OIF Bulky (bomb launcher; -1), Real Weapon (-¼), Dropped (-½), 12 Charges (-¼)	[12]
	Operations Systems	
4	*Radio:* Radio Perception/Transmission (Radio Group); OAF Bulky (-1½), Affected As Hearing Group As Well As Radio Group (-¼)	0
	Personnel Systems	
14	*Sealed Environment:* Life Support (Self-Contained Breathing; Safe Environments: Intense Cold, Low Pressure/Vacuum)	0

Total Abilities & Equipment Cost: 195
Total Vehicle Cost: 257

Value Disadvantages

25	Distinctive Features: U.S. warplane (Not Concealable; Causes Extreme Reaction [fear])

Total Disadvantage Points: 25
Total Cost: 232/5 = 46

OPTIONAL EQUIPMENT

Cost	Equipment
-5	*C-87*: Remove nose and tail guns (two of the Twin Machine Guns)
+8	*Norden Bombsight:* +4 OCV with Bombs (see sidebar, page 61)

Description: The Consolidated Model 32, better known to history as the B-24 Liberator, first flew in 1939 and entered service in 1940 with both the Americans and the French. Although overshadowed by the B-17 Flying Fortress, more Liberators were built than B-17s — or, for that matter, any other World War II-era American warplane. Counting all the variants and manufacturers, over 18,000 were produced.

In addition to 12,800 pounds of bombs, the Liberator comes equipped with twin 12.7mm machine guns in nose, dorsal, tail, and ventral turrents, and single machine guns mounted at the waist. A total of 5,200 rounds of ammunition are carried.

The B-24H/J Liberator is approximately 67 feet long. It weighs 16,556 kg empty, and can take off with a maximum weight of 32,296 kg. It can sustain a maximum speed of about 290 miles per hour, and cruises at about 215 miles per hour at optimum altitude; its maximum altitude is 28,000 feet. It has a range of 2,100 miles on a single load of fuel and a full bombload. It carries a crew of ten.

LOCKHEED P-38L LIGHTNING

Val	Char	Cost	Notes
7	Size	35	5" x 2.5"; -7 KB; -4 DCV
36	STR	-9	Lift 3,840 kg; 7d6 HTH [0]
16	DEX	18	OCV: 5/DCV: 5
18	BODY	1	
5	DEF	9	
3	SPD	4	Phases: 4, 8, 12
			Total Characteristic Cost: 58

Movement: Ground: 6"/12"
Swimming: 0"/0"
Flight: 46"/368"

Abilities & Equipment

Cost	Power	END
	Propulsion Systems	
41	*Propeller-Driven Plane:* Flight 46", x8 Noncombat; 1 Continuing Fuel Charge (easily-obtained fuel; 12 Hours; -0), Side Effects (KA 1d6 to anyone who comes into contact with the propeller, automatically occurs when Flight is in use, only affects environment in front of vehicle; -¼), Stall Velocity (23"; -¼), Takeoff/Landing (-1)	[1cc]
-2	*Can Only Fly:* Swimming -2" (0" total)	
	Tactical Systems	
41	*20mm Cannon (Nose-Mounted):* RKA 4d6, +1 Increased STUN Multiplier (+¼), 150 Charges (+1); OIF Bulky (-1), Limited Arc Of Fire (0 degrees forward; only on same horizontal level; -1), Real Weapon (-¼)	[150]
34	*Twin 12.7mm Machine Guns (Nose-Mounted):* RKA 3d6, Autofire (5 shots; +½), 1,000 Charges (+1); OIF Bulky (-1), Limited Arc Of Fire (0 degrees forward; only on same horizontal level; -1), Real Weapon (-¼)	[1,000]
5	*Twin 12.7mm Machine Guns (Nose-Mounted):* Another set of Twin Machine Guns (total of two)	[200]
17	*500-Pound Bombs:* RKA 3d6, Explosion (+½); OAF Bulky (externally-mounted bomb; -1½), Dropped (-½), Real Weapon (-¼), 6 Charges (-¾)	[6]
	Operations Systems	
4	*Radio:* Radio Perception/Transmission (Radio Group); OAF Bulky (-1½), Affected As Hearing Group As Well As Radio Group (-¼)	0
	Personnel Systems	
14	*Sealed Environment:* Life Support (Self-Contained Breathing; Safe Environments: Intense Cold, Low Pressure/Vacuum)	0

Total Abilities & Equipment Cost: 154
Total Vehicle Cost: 212

Value Disadvantages

25	Distinctive Features: U.S. warplane (Not Concealable; Causes Extreme Reaction [fear])

Total Disadvantage Points: 25
Total Cost: 187/5 = 37

OPTIONAL EQUIPMENT

Cost	Equipment
+8	*Norden Bombsight:* +4 OCV with Bombs (see sidebar, page 61)
13	*P-38J:* Add M10 Rocket Launcher: RKA 2d6, Armor Piercing (+½), Explosion (+½), Increased Maximum Range (1,500"; +¼); OAF Bulky (-1½), Limited Arc Of Fire (0 degrees forward; only on same horizontal level; -1), Real Weapon (-¼), 3 Charges (-1¼)
7	*P-38M:* Add the following: Radar (Radio Group), Increased Arc Of Perception (360 Degrees); OAF Bulky (-1½), Affected As Sight Group As Well As Radio Group (-½) 0

Description: The Lockheed 22, designated the P-38 Lightning by the U.S. military, first flew in 1939 and entered service in 1941. Known for its distinctive twin-boom configuration (designed to allow for the dual turbo-supercharged engines needed to meet the specified performance characteristics for the craft), it was originally conceived as a high-performance fighter and high-altitude interceptor. It filled those roles, but as the P-38L it became more of a fighter-bomber. Over 10,000 P-38s were built, and they saw combat in every theater of the war. In the Pacific, Lightnings destroyed more Japanese planes than any other USAAC aircraft, including the one carrying Admiral Yamamoto. After the war it fell out of service by 1949.

Although not a poor handler, the Lightning doesn't handle extremely well, either; it has a unique yoke-type control column and various gauges that require constant monitoring. Typically a Lightning pilot uses the plane's high operational ceiling to approach the opposition from high above, then dives to the attack.

The Lightning comes equipped with four 12.7mm machine guns and a 20mm cannon, all mounted in the nose. It can also carry up to 3,200 pounds of bombs (represented here by six 500-pound bombs). One variant, the P-38J, also has a three-tube M10 rocket launcher mounted front ventral.

The P-38 Lightning is approximately 38 feet long. It weighs 5,806 kg empty, and can take off with a maximum weight of 9,798 kg. It can sustain a maximum speed of about 414 miles per hour; its maximum altitude is 44,000 feet. It has a range of 2,260 miles on a single load of fuel and a full bombload. It carries just the pilot (though one variant, the P-38M, was a two-seat night fighter with a nose-mounted radar).

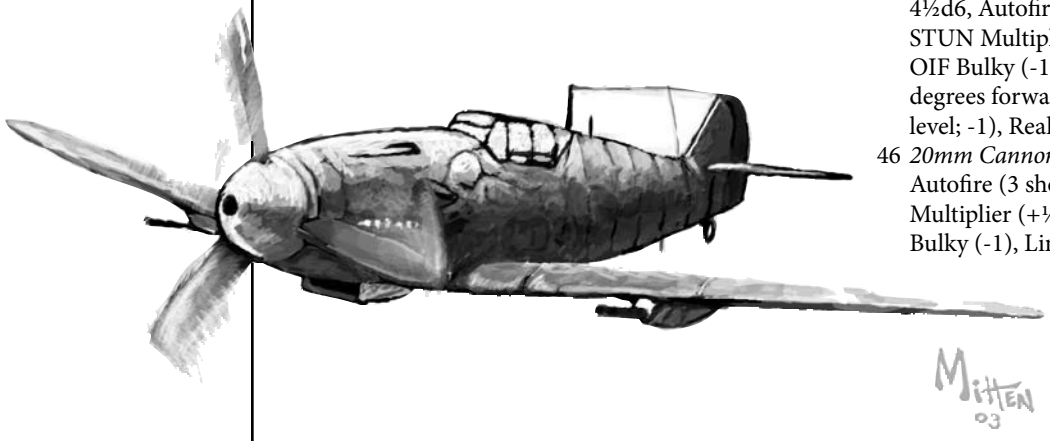
MESSERSCHMITT BF 109G-6

Val	Char	Cost	Notes
6	Size	30	4" x 2"; -6 KB; -4 DCV
21	STR	-19	Lift 480 kg; 4d6 HTH [0]
15	DEX	15	OCV: 5/DCV: 5
16	BODY	0	
5	DEF	9	
3	SPD	5	Phases: 4, 8, 12
			Total Characteristic Cost: 40

Movement: Ground: 6"/12"
Swimming: 0"/0"
Flight: 43"/344"

Abilities & Equipment

Cost	Power	END
	Propulsion Systems	
38	*Propeller-Driven Plane:* Flight 43", x8 Noncombat; 1 Continuing Fuel Charge (easily-obtained fuel; 2 Hours; -0), Side Effects (KA 1d6 to anyone who comes into contact with the propeller, automatically occurs when Flight is in use, only affects environment in front of vehicle; -¼), Stall Velocity (21"; -¼), Takeoff/Landing (-1)	[1cc]
-2	*Only Flies:* Swimming -2" (0" total)	
	Tactical Systems	
46	*20mm Cannons (Wing-Mounted):* RKA 4d6, Autofire (3 shots; +¼), +1 Increased STUN Multiplier (+¼), 150 Charges (+1); OIF Bulky (-1), Limited Arc Of Fire (0 degrees forward; only on same horizontal level; -1), Real Weapon (-¼)	[150]
5	*20mm Cannons (Wing-Mounted):* Another 20mm Cannon (total of two)	[150]
34	*Twin 13mm Machine Guns (Nose-Mounted):* RKA 3d6, Autofire (5 shots; +½), 600 Charges (+1); OIF Bulky (-1), Limited Arc Of Fire (0 degrees forward; only on same horizontal level; -1), Real Weapon (-¼)	[600]
	Operations Systems	
4	*Radio:* Radio Perception/Transmission (Radio Group); OAF Bulky (-1½), Affected As Hearing Group As Well As Radio Group (-¼)	0



Total Abilities & Equipment Cost: 125
Total Vehicle Cost: 165

Value Disadvantages

25	Distinctive Features: Nazi warplane (Not Concealable; Causes Extreme Reaction [fear])

Total Disadvantage Points: 25
Total Cost: 140/5 = 28

OPTIONAL EQUIPMENT

Cost	Equipment
-54	*Bf 109B:* Decrease to Flight 33" and change armament to three 7.9mm Machine Guns (RKA 2d6+1, Autofire (5 shots; +½), +1 Increased STUN Multiplier (+¼), 2,000 Charges (+1); OIF Bulky (-1), Limited Arc Of Fire (0 degrees forward; only on same horizontal level; -1), Real Weapon (-¼))
+5	*Bf 109E3:* Decrease to Flight 39", change Twin 13mm Machine Guns to Twin 7.9mm Machine Guns (RKA 2d6+1, Autofire (5 shots; +½), +1 Increased STUN Multiplier (+¼), 2,000 Charges (+1); OIF Bulky (-1), Limited Arc Of Fire (0 degrees forward; only on same horizontal level; -1), Real Weapon (-¼)), and add one 500-pound bomb (RKA 3d6, Explosion (+½); OAF Bulky (externally-mounted bomb; -1½), Dropped (-½), Real Weapon (-¼), 1 Charge (-2))
9	*Bf 109G-2:* Add Life Support (Self-Contained Breathing; Safe Environments: Intense Cold, Low Pressure/Vacuum) and change Twin 13mm Machine Guns to Twin 7.9mm Machine Guns (RKA 2d6+1, Autofire (5 shots; +½), +1 Increased STUN Multiplier (+¼), 1,000 Charges (+1); OIF Bulky (-1), Limited Arc Of Fire (0 degrees forward; only on same horizontal level; -1), Real Weapon (-¼))
+49	*Bf 109K:* Increase to Flight 50" and add 30mm Cannon (described below; cost is included here)
+53	*Bf 110G:* Increase to Size 7, decrease to Flight 38", and change weapons to:

Cost	Power
48	*30mm Cannon (Engine-Mounted):* RKA 4½d6, Autofire (5 shots; +½), +1 Increased STUN Multiplier (+¼), 60 Charges (+½); OIF Bulky (-1), Limited Arc Of Fire (0 degrees forward; only on same horizontal level; -1), Real Weapon (-¼)
46	*20mm Cannons (Nose-Mounted):* RKA 4d6, Autofire (3 shots; +¼), +1 Increased STUN Multiplier (+¼), 150 Charges (+1); OIF Bulky (-1), Limited Arc Of Fire (0 degrees

forward; only on same horizontal level; -1), Real Weapon (-¼)

5 *20mm Cannons (Nose-Mounted):* Another 20mm Cannon (total of two)

38 *Twin 7.9mm Machine Guns:* RKA 2d6+1, Autofire (5 shots; +½), +1 Increased STUN Multiplier (+¼), 1,000 Charges (+1); OIF Bulky (-1), Limited Arc Of Fire (180 degrees aft; -¼), Real Weapon (-¼)

43 *30mm Cannon (Engine-Mounted):* RKA 4½d6, Autofire (3 shots; +¼), +1 Increased STUN Multiplier (+¼), 60 Charges (+½); OIF Bulky (-1), Limited Arc Of Fire (0 degrees forward; only on same horizontal level; -1), Real Weapon (-¼)

26 *WGr 21cm Mortar-Rockets (2):* RKA 4d6, Explosion (+½); OIF Bulky (-1), Real Weapon (-¼), 1 Charge (-2)

11 *250-Pound Bomb:* RKA 3d6-1, Explosion (+½); OAF Bulky (externally-mounted bomb; -1½), Dropped (-½), Real Weapon (-¼), 1 Charge (-2)

Description: The Messerschmitt Bf 109 first flew in 1935 and had its combat debut in 1937 in Spain. By the start of World War II, the Luftwaffe had more than 1,000 Bf 109s in its fleet. Despite Allied bombing campaigns, it's estimated that Nazi Germany built approximately 35,000 Bf 109s throughout the War, making it the most-produced fighter design in history. Despite its unremarkable, even poor, handling by the end of the War, it remained a favorite of the German aces.

The main weapons of the Bf 109G-6 are wing-mounted 20mm cannons and nose-mounted 13mm machine guns. Some models also have an engine-mounted 30mm cannon, and/or two underwing 21cm mortar-rockets as an anti-bomber weapon. Some carry a single 250-pound bomb.

The Bf 109G-6 lacks full cabin pressurization. Some earlier Bf 109G models did not, as indicated in the options.

The Bf 109G-6 is approximately 30 feet long. It weighs 2,673 kg empty, and can take off with a maximum weight of 3,150 kg. It can sustain a maximum speed of about 386 miles per hour; its maximum altitude is 38,550 feet. It has a range of 451 miles on a single load of fuel. It carries just the pilot.

NORTH AMERICAN P-51D MUSTANG

Val	Char	Cost	Notes
6	Size	30	4" x 2"; -6 KB; -4 DCV
32	STR	-8	Lift 2,240 kg; 6d6 HTH [0]
16	DEX	18	OCV: 5/DCV: 5
16	BODY	0	
5	DEF	9	
3	SPD	4	Phases: 4, 8, 12
			Total Characteristic Cost: 53

Movement: Ground: 6"/12"
Swimming: 0"/0"
Flight: 49"/392"

Abilities & Equipment

Cost	Power	END
	Propulsion Systems	
43	*Propeller-Driven Plane:* Flight 49", x8 Noncombat; 1 Continuing Fuel Charge (easily-obtained fuel; 2 Hours; -0), Side Effects (KA 1d6 to anyone who comes into contact with the propeller, automatically occurs when Flight is in use, only affects environment in front of vehicle; -¼), Stall Velocity (24"; -¼), Takeoff/Landing (-1)	[1cc]
-2	*Only Flies:* Swimming -2" (0" total)	
	Tactical Systems	
41	*Triple 12.7mm Machine Guns (Wing-Mounted):* RKA 3d6, Autofire (8 shots; +1), 940 Charges (+1); OIF Bulky (-1), Limited Arc Of Fire (0 degrees forward; only on same horizontal level; -1), Real Weapon (-¼)	[940]
5	*Triple 12.7mm Machine Guns (Wing-Mounted):* One more sets of Triple Machine Guns (total of two)	[940]
22	*1,000-Pound Bombs:* RKA 4d6, Explosion (-1 DC/2"; +¾); OAF Bulky (-1½), Dropped (-½), Real Weapon (-¼), 2 Charges (-1½)	[2]
	Operations Systems	
4	*Radio:* Radio Perception/Transmission (Radio Group); OAF Bulky (-1½), Affected As Hearing Group As Well As Radio Group (-¼)	0
	Personnel Systems	
14	*Sealed Environment:* Life Support (Self-Contained Breathing; Safe Environments: Intense Cold, Low Pressure/Vacuum)	0

Total Abilities & Equipment Cost: 127
Total Vehicle Cost: 180

Value Disadvantages

25 Distinctive Features: U.S. warplane (Not Concealable; Causes Extreme Reaction [fear])

Total Disadvantage Points: 25
Total Cost: 155/5 = 31

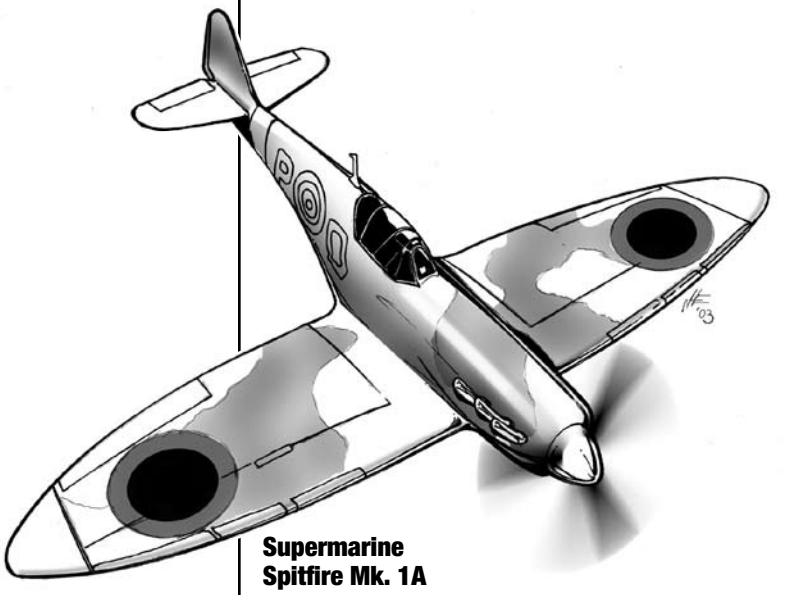
OPTIONAL EQUIPMENT

Cost	Equipment
-4	*P-51B:* Decrease to Flight 48" and change guns to two banks of twin 12.7mm machine guns (Autofire (5 shots))
+4	*P-51H:* Increase to Flight 54"
-7	*5-Inch Rockets:* Replace 1,000-Pound Bombs with: RKA 2d6, Armor Piercing (+½), Explosion (+½), Increased Maximum Range (1,500"; +¼); OAF Bulky (-1½), Limited Arc Of Fire (0 degrees forward; only on same horizontal level; -1), Real Weapon (-¼), 6 Charges (-¾)

Description: Considered one of the best fighters of World War II, the P-51 Mustang first flew in 1940; it entered service with the British in 1942 and the United States in 1943. Over 15,000 were produced in all variants (including the P-51H, the fastest propeller-driven fighter of the War). The Mustang was retained for use after the War; it saw action in the Korean War and was sold to several other countries. El Salvador even used it in the "World Cup War" of 1969.

The 51-D is armed with three 12.7mm machine guns on each wing; the inner one on each wing has 400 rounds, and the outer two 270 rounds each (for game purposes this becomes 940 rounds per set of triple guns). It can also carry two thousand-pound bombs; some models replace the bombs with a six-shot rocket launcher.

The Mustang is approximately 32 feet long. It weighs 3,232 kg empty, and can take off with a maximum weight of 5,488 kg. It can sustain a maximum speed of about 437 miles per hour; its maximum altitude is 41,900 feet. It has a range of 2,080 miles on a single load of fuel. It carries just the pilot.



Supermarine Spitfire Mk. 1A

SUPERMARINE SPITFIRE MK. IA

Val	Char	Cost	Notes
6	Size	30	4" x 2"; -6 KB; -4 DCV
25	STR	-15	Lift 800 kg; 5d6 HTH [0]
15	DEX	15	OCV: 5/DCV: 5
16	BODY	0	
5	DEF	9	
3	SPD	5	Phases: 4, 8, 12
			Total Characteristic Cost: 44

Movement:		
	Ground:	6"/12"
	Swimming:	0"/0"
	Flight:	39"/312"

Abilities & Equipment

Cost	Power	END
	Propulsion Systems	
35	*Propeller-Driven Plane:* Flight 39", x8 Noncombat; 1 Continuing Fuel Charge (easily-obtained fuel; 2 Hours; -0), Side Effects (KA 1d6 to anyone who comes into contact with the propeller, automatically occurs when Flight is in use, only affects environment in front of vehicle; -¼), Stall Velocity (19"; -¼), Takeoff/Landing (-1)	[1cc]
-2	*Only Flies:* Swimming -2" (0" total)	
	Tactical Systems	
27	*Twin 7.7mm Machine Guns (Wing-Mounted):* RKA 2d6+1, Autofire (5 shots; +½), 600 Charges (+1); OIF Bulky (-1), Limited Arc Of Fire (0 degrees forward; only on same horizontal level; -1), Real Weapon (-¼)	[600]
10	*Twin 7.7mm Machine Guns (Wing-Mounted):* Three more Twin Machine Guns (total of four)	[600]
	Operations Systems	
4	*Radio:* Radio Perception/Transmission (Radio Group); OAF Bulky (-1½), Affected As Hearing Group As Well As Radio Group (-¼)	0
	Personnel Systems	
14	*Sealed Environment:* Life Support (Self-Contained Breathing; Safe Environments: Intense Cold, Low Pressure/Vacuum)	0
	Skills	
2	*Highly Maneuverable:* +1 with Flight	

Total Abilities & Equipment Cost: 90
Total Vehicle Cost: 134

Value Disadvantages

25	Distinctive Features: British warplane (Not Concealable; Causes Extreme Reaction [fear])

Total Disadvantage Points: 25
Total Cost: 109/5 = 22

OPTIONAL EQUIPMENT

Cost	Equipment
+3	*Spitfire Mark II:* Increase to DEF 6
+4	*Spitfire Mark VA:* Increase to Flight 41" and BODY 18
+7	*Spitfire Mark VIII or IX:* Increase to Flight 45" and BODY 18
+11	*Spitfire Mark XIV:* Increase to Flight 50" and BODY 18
+41	*20mm Cannons (Wing-Mounted):* Change armament to two sets of twin 7.7mm machine guns (-5 points) and two 20mm cannons: RKA 4d6, Autofire (3 shots; +¼), +1 Increased STUN Multiplier (+¼), 120 Charges (+¾); OIF Bulky (-1), Limited Arc Of Fire (0 degrees forward; only on same horizontal level; -1), Real Weapon (-¼) (+46 points)
+34	*12.7mm Machine Guns (Wing-Mounted):* Change armament to two sets of twin 7.7mm machine guns (-5 points) and two 12.7mm machine guns: RKA 3d6, Autofire (3 shots; +¼), +1 Increased STUN Multiplier (+¼), 150 Charges (+1); OIF Bulky (-1), Limited Arc Of Fire (0 degrees forward; only on same horizontal level; -1), Real Weapon (-¼) (+39 points)
14	*500-Pound Bombs:* RKA 3d6, Explosion (+½); OAF Bulky (externally-mounted bomb; -1½), Dropped (-½), Real Weapon (-¼), 2 Charges (-1½)

Description: The Supermarine Spitfire was first flown by the British in 1936 and entered service in 1939. Multiple variants were produced throughout the War, with a total of nearly 20,000 being manufactured.

The Spitfire Mark IA mounts four 7.7mm machine guns on each wing, each with 300 rounds of ammunition. In game terms, these are grouped into two twin pairs per wing, even though the guns are more widely spaced than the twin guns on most planes. Some variants replace the two inner machine guns on each wing with a 20mm cannon, or the two outer machine guns with a 12.7mm machine gun.

The Supermarine Spitfire Mark IA is approximately 30 feet long. It weighs 2,049 kg empty, and can take off with a maximum weight of 2,911 kg. It can sustain a maximum speed of about 346 miles per hour; its maximum altitude is 30,500 feet. It has a range of 415 miles on a single load of fuel. It carries just the pilot.

Post-World War II Airplanes

These planes were all built and flown during the latter half of the twentieth century, or after. A few are only now entering service, or are projected to in the coming decades.

BOEING B-52H STRATOFORTRESS

Val	Char	Cost	Notes
14	Size	70	25" x 12.5"; -14 KB; -9 DCV
80	STR	0	Lift 1.6 ktons; 16d6 HTH [0]
10	DEX	0	OCV: 3/DCV: 3
30	BODY	6	
6	DEF	12	
3	SPD	10	Phases: 4, 8, 12
			Total Characteristic Cost: 98

Movement:		
	Ground:	6"/12"
	Swimming:	0"/0"
	Flight:	33"/528"

Abilities & Equipment

Cost	Power	END
	Propulsion Systems	
20	*Military Bomber Jet:* Flight 33", x16 Noncombat; Side Effects (KA 2d6, 6" Line behind engines, automatically occurs when Flight is in use, only affects environment around vehicle; -1¾), Stall Velocity (16"; -¼), Takeoff/Landing (-1), 1 Continuing Fuel Charge (easily-obtained fuel; 17 Hours; -0)	[1cc]
-2	*Only Flies:* Swimming -2" (0" total)	
	Tactical Systems	
78	*M61A1 Vulcan 20mm Cannon (Tail-Mounted):* RKA 4d6, Autofire (10 shots; +1), +1 Increased STUN Multiplier (+¼), 1,242 Charges (+1); OIF Bulky (-1), Limited Arc Of Fire (180 degrees; -¼), Real Weapon (-¼)	[1,242]
46	*1,000-Pound Bombs:* RKA 4d6, Explosion (-1 DC/2"; +¾), 70 Charges (+¾); OAF Bulky (-1½), Dropped (-½), Real Weapon (-¼)	[70]
44	*ECM Systems:* Suppress Electronic Warfare 8d6, any Power one at a time (+¼), Increased Maximum Range (6,250", or about 7.5 miles; +½), No Range Modifier (+½), Reduced Endurance (0 END; +½); OAF Bulky (-1½)	0
10	*ECM Systems:* Radio Group Flash Defense (10 points)	0
8	*ECM Systems:* Power Defense (10 points); Only Works Against Limited Type Of Attack (electronic warfare attacks; -¼)	0
	Operations Systems	
5	*Communications Systems:* HRRP (Radio Group); OIF Bulky (-1), Affected As Sight And Hearing Group As Well As Radio Group (-½)	0
10	*Radar:* Radar (Radio Group), Increased Arc Of Perception (360 Degrees), Telescopic (+6 versus Range Modifier); OIF Bulky (-1), Affected As Sight Group As Well As Radio Group (-½)	0

2 *Forward-Looking IR:* Infrared Perception (Sight Group); OIF Bulky (-1) 0

2 *Low-Light Television Cameras:* Ultraviolet Perception (Sight Group); OIF Bulky (-1) 0

Personnel Systems

14 *Sealed Environment:* Life Support (Self-Contained Breathing; Safe Environments: Intense Cold, Low Pressure/Vacuum) 0

Skills

20 *Targeting Systems:* +4 with Ranged Combat

Total Abilities & Equipment Cost: 257
Total Vehicle Cost: 355

Value Disadvantages

25 Distinctive Features: U.S. warplane (Not Concealable; Causes Extreme Reaction [fear])

Total Disadvantage Points: 25
Total Cost: 330/5 = 66

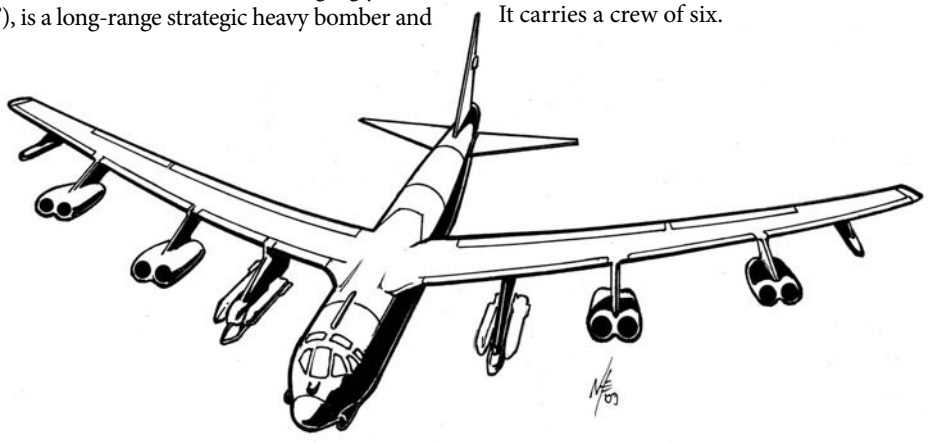
OPTIONAL EQUIPMENT

Cost	Equipment
+2	*Upgraded Engines:* Increase to Flight 36"
-78	*No Tail Gun:* Remove M61A1 Vulcan
-32	*B-52D/G:* Change M61A1 Vulcan to four 12.7mm machine guns with 2,000 rounds of ammunition (in game terms, reduce the damage to RKA 2d6+1)

Description: The Boeing Model 464, better known as the B-52 Stratofortress (or the BUFF, "Big Ugly Fat Fellow"), is a long-range strategic heavy bomber and a linchpin of the modern United States arsenal. First flown in 1952, it entered service in 1955. Only the B-52H, built in 1960-61, remains in service as of 2003. During Operation Desert Storm, B-52s delivered 40% of the ordnance dropped by Coalition forces; one B-52 performed a 35-hour round-trip bombing mission from Louisiana to Iraq, the longest aerial strike mission ever performed. Current engineering analyses estimate that the plane's lifespan could extend beyond the year 2045.

The B-52 can carry approximately 70,000 pounds of mixed ordnance (see TUV 123-25, 130-33 for examples). Common loads include: AGM-86B, -86C, or -129 cruise missiles; B61 or B63 dropped nuclear bombs; conventional bombs of 750 pounds or more; precision-guided missiles (PGMs); and Harpoon anti-ship missiles. (The one depicted in this character sheet has 70 1,000-pound bombs.) It also mounts a six-barrelled 20mm Vulcan cannon in the tail (though some models have had this removed). With the advent and success of the Rockwell B-1B Lancer, the B-52H has assumed less of a nuclear role and more of a force projection role.

The B-52H Stratofortress is approximately 160 feet long. It weighs 83,250 kg empty, and can take off with a maximum weight of 229,088 kg. It can sustain a maximum speed of about 595 miles per hour, and cruises at about 509 miles per hour at optimum altitude; its maximum altitude is 55,000 feet. It has a range of 10,000 miles on a single load of fuel, and can refuel in-flight for longer missions. It carries a crew of six.



BOEING E-3 SENTRY AWACS

Val	Char	Cost	Notes
14	Size	70	25" x 12.5"; -14 KB; -9 DCV
57	STR	-23	Lift 70 tons; 11d6 HTH [0]
12	DEX	6	OCV: 4/DCV: 4
24	BODY	0	
5	DEF	9	
3	SPD	8	Phases: 4, 8, 12
			Total Characteristic Cost: 70

Movement: Ground: 6"/12"
Swimming: 0"/0"
Flight: 30"/480"

Abilities & Equipment

Cost	Power	END
	Propulsion Systems	
19	*Military Jet:* Flight 30", x16 Noncombat; Side Effects (KA 2d6, 6" Line behind engines, automatically occurs when Flight is in use, only affects environment around vehicle; -1¾), Stall Velocity (15"; -¼), Takeoff/Landing (-1), 1 Continuing Fuel Charge (easily-obtained fuel; 12 Hours; -0)	[1cc]
-2	*Only Flies:* Swimming -2" (0" total)	
	Tactical Systems	
66	*ECM Systems:* Suppress Electronic Warfare 12d6, any Power one at a time (+¼), Increased Maximum Range (16,875", or about 21 miles; +½), No Range Modifier (+½), Reduced Endurance (0 END; +½); OAF Bulky (-1½)	0
55	*ECM Systems:* Suppress Radar 10d6, Area Of Effect (9" Radius; +1), Mega-Area (1" = 1 km; +¼), Reduced Endurance (0 END; +½); OIF Bulky (-1), No Range (-½)	0
31	*ECM Systems:* Radio Group Flash Defense (25 points), Hardened (+¼)	0
25	*ECM Systems:* Power Defense (25 points), Hardened (+¼); Only Works Against Limited Type Of Attack (electronic warfare attacks; -¼)	0
	Operations Systems	
9	*Communications Systems:* HRRP (Radio Group), Discriminatory, Analyze; OIF Bulky (-1), Affected As Sight And Hearing Group As Well As Radio Group (-½)	0
22	*Radar:* Radar (Radio Group), Increased Arc Of Perception (360 Degrees), Telescopic (+36 versus Range Modifier); OIF Bulky (-1), Affected As Sight Group As Well As Radio Group (-½)	0
5	*Radar Warning Receiver:* Detect Detection By Radar 16- (Radio Group); OIF Bulky (-1)	0
5	*IR Search-And-Track Sensors:* Infrared Perception (Sight Group), Tracking; OIF Bulky (-1)	0
	Personnel Systems	
14	*Sealed Environment:* Life Support (Self-Contained Breathing; Safe Environments: Intense Cold, Low Pressure/Vacuum)	0
	Talents	
3	*Laser Rangefinder:* Absolute Range Sense	

Total Abilities & Equipment Cost: 252
Total Vehicle Cost: 322

Value Disadvantages

25	Distinctive Features: U.S. warplane (Not Concealable; Causes Extreme Reaction [fear])

Total Disadvantage Points: 25
Total Cost: 297/5 = 59

ADDITIONAL VEHICLES

Cost	Vehicle
40	*AIM Sparrowhawk Missiles:* Four missiles (see TUV page 131)

Description: The Boeing E-3 is an airborne early warning and command post aircraft. Equipped with the AWACS (Airborne Warning And Control System), as indicated by the large, disk-shaped radome mounted dorsally, it is a jamming-resistant mobile radar station and command, communications, and control center. It has been in service since 1977; models created or upgraded after the original 34 have more display consoles and other features. It has been sold to NATO, Great Britain, France, Saudi Arabia, and (in E-767 form) to Japan.

The AWACS radome and related systems provide the United States military with all-weather identification and tracking over the ocean and all types of terrain. It covers from the Earth's surface up into the stratosphere, to a range of 250 miles from the plane for low-flying objects and much further for higher-altitude objects. The built-in Identify Friend Or Foe (IFF) subsystem, other sensors, and computer equipment allows the crew to perform multiple monitoring and battle management tasks in real time and pass on all information to the U.S. military high command.

The Sentry carries only four AIM missiles as weaponry, but it's not as vulnerable as it looks. Its sensors allow it to detect threats from far enough away that it can engage in evasive maneuvers or call for help long before it's in real danger.

The E3 is approximately 152 feet long. It weighs 77,996 kg empty, and can take off with a maximum weight of 147,418 kg. It can sustain a maximum speed of about 530 miles per hour; its maximum altitude is 29,000 feet. It has a range of 1,002 miles on a single load of fuel. It has a crew of 17-21.

You can also use this character sheet for the Boeing E-767 AWACS, which has similar features but uses the 767 body instead of the Boeing 707.

BOEING E-4B NEACP

Val	Char	Cost	Notes
15	Size	75	32" x 16"; -15 KB; -10 DCV
65	STR	-20	Lift 200 tons; 13d6 HTH [0]
10	DEX	0	OCV: 3/DCV: 3
25	BODY	0	
5	DEF	9	
3	SPD	10	Phases: 4, 8, 12
			Total Characteristic Cost: 74

Movement: Ground: 6"/12"
Swimming: 0"/0"
Flight: 34"/544"

Abilities & Equipment

Cost	Power	END
	Propulsion Systems	
21	*Military Jet:* Flight 34", x16 Noncombat; Side Effects (KA 2d6, 12" Line behind engines, automatically occurs when Flight is in use, only affects environment around vehicle; -1¾), Stall Velocity (17"; -¼), Takeoff/Landing (-1), 1 Continuing Fuel Charge (easily-obtained fuel; 12 Hours; -0)	[1cc]
-2	*Only Flies:* Swimming -2" (0" total)	
	Tactical Systems	
66	*ECM Systems:* Suppress Electronic Warfare 12d6, any Power one at a time (+¼), Increased Maximum Range (16,875", or about 21 miles; +½), No Range Modifier (+½), Reduced Endurance (0 END; +½); OAF Bulky (-1½)	0
55	*ECM Systems:* Suppress Radar 10d6, Area Of Effect (9" Radius; +1), Mega-Area (1" = 1 km; +¼), Reduced Endurance (0 END; +½); OIF Bulky (-1), No Range (-½)	0
50	*ECM Systems:* Radio Group Flash Defense (40 points), Hardened (+¼)	0
75	*ECM Systems:* Power Defense (75 points), Hardened (+¼); Only Works Against Limited Type Of Attack (electronic warfare attacks; -¼)	0
	Operations Systems	
9	*Communications Systems:* HRRP (Radio Group), Discriminatory, Analyze; OIF Bulky (-1), Affected As Sight And Hearing Group As Well As Radio Group (-½)	0
20	*Radar:* Radar (Radio Group), Increased Arc Of Perception (360 Degrees), Telescopic (+30 versus Range Modifier); OIF Bulky (-1), Affected As Sight Group As Well As Radio Group (-½)	0
5	*Radar Warning Receiver:* Detect Detection By Radar 16- (Radio Group); OIF Bulky (-1)	0
	Personnel Systems	
14	*Sealed Environment:* Life Support (Self-Contained Breathing; Safe Environments: Intense Cold, Low Pressure/Vacuum)	0
	Skills	
25	Systems Operation 20-	

Total Abilities & Equipment Cost: 338
Total Vehicle Cost: 412

Value Disadvantages

25	Distinctive Features: U.S. warplane (Not Concealable; Causes Extreme Reaction [fear])

Total Disadvantage Points: 25
Total Cost: 387/5 = 77

Description: The Boeing E-4B is the NEACP — National Emergency Airborne Command Post — for the United States government. In the event of a major national emergency, the destruction of ground command facilities, or the like, the E-4B provides the United States with a fully-functional mobile command center. It was most recently employed on September 11, 2001, when President George W. Bush used it to remain safe and in command during the attacks on the World Trade Center and Pentagon and their aftermath. The NEACP is also tasked with flying a FEMA emergency response team to the sites of national disasters, such as a major earthquake.

The E-4B has the most advanced communications equipment available and shielding against outside interference, including the EMP of a nuclear blast. While on the NEACP, the President could, for example, break into ongoing broadcasts to speak live to the world on television and radio.

The United States has four E-4Bs based at Offut Air Force Base in Nebraska, but at least one is always in a high state of readiness so it's available on short notice.

The E-4B is approximately 152 feet long. It weighs 171,000 kg empty, and can take off with a maximum weight of 360,000 kg. It can sustain a maximum speed of about 602 miles per hour; its maximum altitude is 30,000 feet. It has a range of 7,730 miles on a single load of fuel. It has a crew of approximately 110-20.

BOEING (MCDONNELL DOUGLAS) F-15E EAGLE

Val	Char	Cost	Notes
10	Size	50	10" x 5"; -10 KB; -6 DCV
50	STR	-10	Lift 25 tons; 10d6 HTH [0]
23	DEX	39	OCV: 8/DCV: 8
20	BODY	0	
6	DEF	12	
5	SPD	17	Phases: 3, 5, 8, 10, 12
			Total Characteristic Cost: 108

Movement:	Ground:	6"/12"
	Swimming:	0"/0"
	Flight:	38"/304"
	MegaFlight:	2"

Abilities & Equipment

Cost	Power	END
	Propulsion Systems	
31	*Jet Fighter:* Multipower, 86-point reserve; all Side Effects (-1¾), 1 Continuing Fuel Charge (easily-obtained fuel; 3 Hours; -0) for entire Multipower	[1cc]
2u	1) *Standard Flight:* Flight 38", x8 Noncombat; Side Effects (KA 2d6, 7" Line behind engines, automatically occurs when Flight is in use, only affects environment around vehicle; -1¾), Stall Velocity (19"; -¼), Takeoff/Landing (-1)	
1u	2) *Mach Speed Flight:* Flight 2", MegaScale (1" = 1 km; +¼); Side Effects (KA 2d6, 7" Line behind engines, automatically occurs when Flight is in use, only affects environment around vehicle; -1¾), Cannot Take Off Or Land At This Speed (-0)	
-2	*Cannot Swim:* Swimming -2" (0" total)	
	Tactical Systems	
60	*20mm M61A Cannon (Wing Root-Mounted):* RKA 4d6, Autofire (10 shots; +1), +1 Increased STUN Multiplier (+¼), 940 Charges (+1); OIF Bulky (-1), Real Weapon (-¼), Limited Arc Of Fire (0 degrees forward, same horizontal level; -1)	[940]
37	*1,000-Pound Bombs:* RKA 4d6, Explosion (-1 DC/2"; +¾), 24 Charges (+¼); OAF Bulky (-1½), Dropped (-½), Real Weapon (-¼)	[24]
36	*Electronic Countermeasures:* Suppress Radar 6d6, Area Of Effect (10" Radius; +1¼), MegaArea (1" = 1 km; +¼), Reduced Endurance (0 END; +½); OIF Bulky (-1), No Range (-½)	0
44	*Electronic Counter-Countermeasures:* Suppress Electronic Warfare 8d6, any Power one at a time (+¼), Increased Maximum Range (6,250", or about 7.5 miles; +½), No Range Modifier (+½), Reduced Endurance (0 END; +½); OAF Bulky (-1½)	0
12	*ECM Systems:* Radio Group Flash Defense (12 points)	0
16	*ECM Systems:* Power Defense (20 points); Only Works Against Limited Type Of Attack (electronic warfare attacks; -¼)	0
	Operations Systems	
20	*Raytheon APG-70 Radar:* Radar (Radio Group), Discriminatory, Increased Arc Of Perception (360 Degrees), Telescopic (+24 versus Range Modifier); OIF Bulky (-1), Affected As Sight Group As Well As Radio Group (-½)	0
5	*Forward-Looking Infrared System:* Infrared Perception (Sight Group)	0
5	*Radar Warning Receiver:* Detect Detection By Radar 16- (Radio Group); OIF Bulky (-1)	0
4	*Communications System:* Radio Perception/Transmission (Radio Group); OIF Bulky (-1), Affected As Hearing Group As Well As Radio Group (-¼)	0
	Personnel Systems	
6	*Ejection Seats:* Telekinesis (26 STR); OIF Bulky (-1), Affects Whole Object (-¼), No Range (-½), Only To Throw Target Straight Up (-2), 1 Recoverable Charge (-1¼)	[1rc]
5	*Ejection Seats:* Another Ejection Seat (total of two)	[1rc]
14	*Sealed Environment:* Life Support (Self-Contained Breathing; Safe Environments: Intense Cold, Low Pressure/Vacuum)	0
	Skills	
6	*Highly Maneuverable:* +3 with Flight	
15	*Targeting Systems:* +3 with Ranged Combat	

Total Abilities & Equipment Cost: 317
Total Vehicle Cost: 425

Value Disadvantages

25	Distinctive Features: US Air Force Fighter (Not Concealable; Causes Extreme Reaction [fear])

Total Disadvantage Points: 25
Total Cost: 400/5 = 80

ADDITIONAL VEHICLES

Cost	Vehicle
30	*AIM-7 Sparrow and AIM-9 Sidewinder Missiles:* 1 missile (use AIM-7 Sparrow; TUV, page 131)
15	*AIM-7 Sparrow and AIM-9 Sidewinder Missiles:* Seven more missiles (total of 8)

OPTIONAL EQUIPMENT

Cost	Equipment
-10	*Earlier F15s:* Reduce to +1 with Ranged Combat

Description: The F-15E Eagle, manufactured by McDonnell-Douglas (now part of Boeing), was first flown in 1972, and entered service in 1976. It was designed in part in response to the MiG-25 Foxbat. It's a versatile fighter that can fly in all types of weather and engage in both air-to-air and air-to-ground combat (the F-15E, or "Strike Eagle," vari-

ant is particularly well-suited to attacking ground-based targets). Through the end of 2001, American, Israeli, and Saudi pilots flying Eagles had scored 102.5 air combat victories and no losses.

Like most American jetfighters, the Eagle is quick and maneuverable. Its advanced avionics include a terrain-following radar that allows it to engage in automatic terrain-following flight, and sophisticated targeting sensors. (Some earlier models that haven't yet been upgraded must make do with less advanced targeting systems.) It was also the first fighter to have HOTAS (Hands On Throttle And Stick), an arrangement of systems that keeps the pilot's hands on the throttle and stick at all times.

In addition to its Vulcan 20mm cannon (mounted at the starboard wing root), the Eagle has a wide variety of bombs, missiles, and similar ordnance — up to 11,000 kg worth. It also carries a load of AIM and AMRAAM missiles. The Eagle depicted in this character sheet has 24 thousand-pound bombs and four AIM-7 and four AIM-9 missiles.

The F-15E is approximately 64 feet long. It weighs 14,379 kg empty, and can take off with a maximum weight of 36,741 kg. It can sustain a maximum speed of about Mach 2.5 (about 1,875 miles per hour) at high altitudes, or 1,650 miles per hour at lower altitudes. Its maximum altitude is 60,000 feet, and it can climb at the rate of 50,000 feet per minute. It has a range of 790 miles on a single load of fuel and a full payload. It carries a crew of two, a pilot and a WSO (weapon systems operator).

BOEING X-45A UCAV

Val	Char	Cost	Notes
6	Size	30	4" x 2"; -6 KB; -4 DCV
30	STR	-10	Lift 1,600 kg; 6d6 HTH [0]
27	DEX	51	OCV: 9/DCV: 9
18	BODY	2	
7	DEF	15	
5	SPD	13	Phases: 3, 5, 8, 10, 12
			Total Characteristic Cost: 101

Movement:		
	Ground:	6"/12"
	Swimming:	0"/0"
	Flight:	55"/440"
	MegaFlight:	4"

Abilities & Equipment

Cost	Power	END
	Propulsion Systems	
44	*Jet UCAV:* Multipower, 120-point reserve; all Side Effects (-1¾), 1 Continuing Fuel Charge (easily-obtained fuel; 6 Hours; -0) for entire Multipower [1cc]	
3u	1) *Standard Flight:* Flight 55", x8 Noncombat; Side Effects (KA 2d6, 7" Line behind engines, automatically occurs when Flight is in use, only affects environment around vehicle; -1¾), Stall Velocity (27"; -¼), Takeoff/Landing (-1)	
1u	2) *Mach Speed Flight:* Flight 4", Mega-Scale (1" = 1 km; +¼); Side Effects (KA 2d6, 7" Line behind engines, automatically occurs when Flight is in use, only affects environment around vehicle; -1¾), Cannot Take Off Or Land At This Speed (-0)	
-2	*Cannot Swim:* Swimming -2" (0" total)	
	Tactical Systems	
26	*1,000-Pound Bombs:* RKA 4d6, Explosion (-1 DC/2"; +¾); OAF Bulky (-1½), Dropped (-½), Real Weapon (-¼), 6 Charges (-¾) [6]	
29	*Radar-Absorbing Shape/Coating:* Change Environment 4" radius, -8 to Radio Group Perception Rolls, Reduced Endurance (0 END; +½), Persistent (+½); Easily Removed (see sidebar; -½), No Range (-½), Self Only (-½)	0
17	*Infrared-Reducing Exhausts:* Change Environment 4" radius, -4 to Infrared Perception Rolls, Reduced Endurance (0 END; +½), Persistent (+½); Easily Removed (see sidebar; -½), No Range (-½), Self Only (-½)	0
15	*ECM Systems:* Radio Group Flash Defense (15 points)	0
20	*ECM Systems:* Power Defense (25 points); Only Works Against Limited Type Of Attack (electronic warfare attacks; -¼)	0
	Operations Systems	
17	*Radar:* Radar (Radio Group), Discriminatory, Increased Arc Of Perception (360 Degrees), Telescopic (+18 versus Range Modifier); OIF Bulky (-1), Affected As Sight Group As Well As Radio Group (-½)	0
5	*Forward-Looking Infrared System:* Infrared	

	Perception (Sight Group)	0
5	*Radar Warning Receiver:* Detect Detection By Radar 16- (Radio Group); OIF Bulky (-1)	0
6	*Communications Systems:* HRRP (Radio Group); OIF Bulky (-1)	0

Total Abilities & Equipment Cost: 186
Total Vehicle Cost: 287

Value Disadvantages

25	Distinctive Features: US Air Force UCAV (Not Concealable; Causes Extreme Reaction [fear])	

Total Disadvantage Points: 25
Total Cost: 262/5 = 52

Description: The X-45A is a UCAV — unmanned aerial combat vehicle — currently being designed by Boeing and projected for delivery in the 2010-2015 period. It's intended to carry a payload of up to three tons to a target as far as 1,000 miles away. The controller can either program a "mission script" for the UCAV to follow without assistance (though the controller still has final "go/no go" authorization), or can operate it remotely. Because it's unmanned, it can achieve speeds and tolerate G-forces no human pilot could, and enter areas where radiation, chemical weapons, or the like make it impossible for a human pilot to survive.

Because much of the data about the UCAV program remains classified, some of the abilities indicated on this character sheet are estimates. You can also use the sheet for the Northrop Grumman X-47 Pegasus, a similar but differently-shaped UCAV designed to land and take off from aircraft carriers.

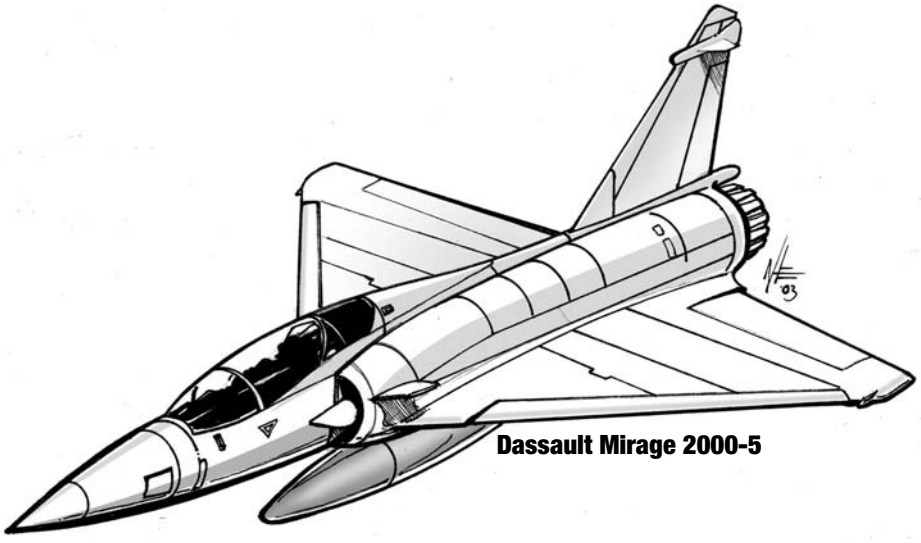
DASSAULT MIRAGE 2000-5

Val	Char	Cost	Notes
8	Size	40	6.4" x 3.2"; -8 KB; -5 DCV
41	STR	-9	Lift 7,680 kg.; 10d6 HTH [0]
22	DEX	36	OCV: 7/DCV: 7
18	BODY	0	
6	DEF	12	
5	SPD	18	Phases: 3, 5, 8, 10, 12
			Total Characteristic Cost: 97

Movement:	Ground:	6"/12"
	Swimming:	0"/0"
	Flight:	36"/288"
	MegaFlight:	2"

Abilities & Equipment

Cost	Power	END
	Propulsion Systems	
30	*Jet Fighter:* Multipower, 82-point reserve; all Side Effects (-1¾), 1 Continuing Fuel Charge (easily-obtained fuel; 6 Hours; -0) for entire Multipower [1cc]	
2u	1) *Standard Flight:* Flight 36", x8 Non-combat; Side Effects (KA 2d6, 7" Line behind engines, automatically occurs when Flight is in use, only affects environment around vehicle; -1¾), Stall Velocity (18"; -¼), Takeoff/Landing (-1)	
1u	2) *Mach Speed Flight:* Flight 2", MegaScale (1" = 1 km; +¼); Side Effects (KA 2d6, 7" Line behind engines, automatically occurs when Flight is in use, only affects environment around vehicle; -1¾), Cannot Take Off Or Land At This Speed (-0)	
-2	*Cannot Swim:* Swimming -2" (0" total)	
	Tactical Systems	
70	*Twin 30mm DEFA 554 Cannons (Forward-Mounted):* RKA 4½d6, Autofire (10 shots; +1), +1 Increased STUN Multiplier (+¼), 250 Charges (+1); OIF Bulky (-1), Real Weapon (-¼), Limited Arc Of Fire (0 degrees forward, same horizontal level; -1) [250]	



Dassault Mirage 2000-5

EASILY REMOVED (-½)

The stealth systems used for aircraft (and some watercraft) have a -½ Limitation, *Easily Removed.* Normally, these systems should be considered "Always On," because they're inherent to the structure or operation of the vehicle and the operator has neither the reason nor the desire to "turn them off." However, circumstances can easily spoil or reduce the stealth effect. Even a single point of BODY damage to the exterior of the vehicle (or the specific system in question), a change in or damage to the engine whose emissions the system dampens or shrouds, not sealing a hatch properly, leaving something dangling outside the vehicle, or similar problems may "de-activate" the power and prevent the vehicle from using it again until the condition is corrected. In some cases foul weather or improved sensor technology may also negate or diminish the effectiveness of a stealth system.

The GM determines if this Limitation applies in a given situation, and if so what effect it has.

36 *Electronic Countermeasures:* Suppress Radar 6d6, Area Of Effect (10" Radius; +1¼), MegaArea (1" = 1 km; +¼), Reduced Endurance (0 END; +½); OIF Bulky (-1), No Range (-½) 0

38 *Electronic Counter-Countermeasures:* Suppress Electronic Warfare 7d6, any Power one at a time (+¼), Increased Maximum Range (5,000", or about 6 miles; +½), No Range Modifier (+½), Reduced Endurance (0 END; +½); OAF Bulky (-1½) 0

10 *ECM Systems:* Radio Group Flash Defense (10 points) 0

13 *ECM Systems:* Power Defense (16 points); Only Works Against Limited Type Of Attack (electronic warfare attacks; -¼) 0

Operations Systems

20 *Thomson-CSF RDM Radar:* Radar (Radio Group), Discriminatory, Increased Arc Of Perception (360 Degrees), Telescopic (+26 versus Range Modifier); OIF Bulky (-1), Affected As Sight Group As Well As Radio Group (-½) 0

5 *Forward-Looking Infrared System:* Infrared Perception (Sight Group) 0

5 *Radar Warning Receiver:* Detect Detection By Radar 16- (Radio Group); OIF Bulky (-1) 0

9 *Communications Systems:* HRRP (Radio Group), Discriminatory, Analyze; OIF Bulky (-1), Affected As Sight And Hearing Group As Well As Radio Group (-½) 0

Personnel Systems

6 *Ejection Seat:* Telekinesis (26 STR); OIF Bulky (-1), Affects Whole Object (-¼), No Range (-½), Only To Throw Target Straight Up (-2), 1 Recoverable Charge (-1¼) [1rc]

14 *Sealed Environment:* Life Support (Self-Contained Breathing; Safe Environments: Intense Cold, Low Pressure/Vacuum) 0

Talents

3 *Laser Rangefinder:* Absolute Range Sense

Skills

6 *Fly-By-Wire Control System:* +3 with Flight

15 *Targeting Systems:* +3 with Ranged Combat

Total Abilities & Equipment Cost: 281
Total Vehicle Cost: 378

Value Disadvantages

25 Distinctive Features: French fighter (Not Concealable; Causes Extreme Reaction [fear])

Total Disadvantage Points: 25
Total Cost: 353/5 = 71

ADDITIONAL VEHICLES

Cost	Vehicle
30	*Missiles:* One missile (typically Super 530 missiles, R550 Magic short-range AAMs, and the like; use AIM-7 Sparrow, TUV page 131)
20	*Missiles:* 8 more missiles (total of 9)

OPTIONAL EQUIPMENT

Cost	Equipment
-6	*Mirage 5/50/IIIE (1961-present):* Increase to Size 9, reduce Radar to +8 versus Range Modifier, and reduce to +1 with Flight; additionally for 5 and 50 models, decrease to seven hardpoints for ordnance (and thus seven missiles [-5 to cost of additional vehicles])
+13	*Mirage IVP (1980s-present):* Increase to Size 11, decrease to +2 with Flight
+5	*Mirage F1C (1974-present):* Increase to Size 9, increase to 270 Charges for 30mm Cannons, and decrease to five hardpoints for ordnance and add two wing-tip missile rails (and thus seven missiles [-5 to cost of additional vehicles])
+5	*Mirage 2000N:* Add one additional Ejection Seat; reduce number of missiles to seven and add two nuclear missiles (use Nuclear Space Missile, TUV 132; the missile changes result in a +70 point cost for additional vehicles)
30	*Bombs:* Replace Missiles (remove those points from the final cost of the plane) with: *1,000-Pound Bombs:* RKA 4d6, Explosion (-1 DC/2"; +¾); OAF Bulky (-1½), Dropped (-½), Real Weapon (-¼), 9 Charges (-¼)

Description: The Mirage 2000-5 is one of the latest in a long line of quality fighters produced by Dassault of France. The basic Mirage 2000 first flew in 1979 and entered service in 1984; it was originally conceived as a match for the F-15 Eagle, but this proved untenable. The 2000-5 is an upgraded version of the production-standard 2000C created in the 1994-97 period. The French have sold the Mirage, in its various forms, to many other countries, largely because the skill with which Israeli pilots used the Mirage IIIC in the Six Day War and other conflicts provided excellent "advertising."

The Mirage 2000 uses a delta-wing configuration (similar to that of many of its predecessors) and fly-by-wire system to attain a high degree of maneuverability. It mounts two DEFA 30mm cannons in the nose, and can carry nearly 14,000 pounds of bombs, missiles, and other ordnance on five underfuselage and four underwing hardpoints. (The plane depicted in this character sheet has nine missiles; one variant, the 2000N, is a two-seater that carries nuclear weapons.)

The Mirage 2000 is approximately 47 feet long. It weighs 7,500 kg empty, and can take off with a maximum weight of 15,000 kg. It can sustain a maximum speed of about Mach 2.2 (about 1,650 miles per hour) at high altitudes, or 1,451 miles per hour at lower altitudes. Its maximum altitude is 54,000 feet, and it can climb at the rate of 56,000 feet per minute. It has a range of as much as 2,071 miles when using drop tanks of extra fuel. It carries just the pilot.

GENERAL DYNAMICS F-111F AARDVARK

Val	Char	Cost	Notes
10	Size	50	10" x 5"; -10 KB; -6 DCV
61	STR	1	Lift 120 tons; 12d6 HTH [0]
20	DEX	30	OCV: 7/DCV: 7
20	BODY	0	
6	DEF	12	
5	SPD	20	Phases: 3, 5, 8, 10, 12
			Total Characteristic Cost: 113

Movement: Ground: 6"/12"
Swimming: 0"/0"
Flight: 38"/304"
MegaFlight: 2"

Abilities & Equipment

Cost Power **END**

Propulsion Systems

31 *Jet Fighter:* Multipower, 86-point reserve; all Side Effects (-1¾), 1 Continuing Fuel Charge (easily-obtained fuel; 6 Hours; -0) for entire Multipower [1cc]

2u 1) *Standard Flight:* Flight 38", x8 Noncombat; Side Effects (KA 2d6, 7" Line behind engines, automatically occurs when Flight is in use, only affects environment around vehicle; -1¾), Stall Velocity (19"; -¼), Takeoff/Landing (-1)

1u 2) *Mach Speed Flight:* Flight 2", MegaScale (1" = 1 km; +¼); Side Effects (KA 2d6, 7" Line behind engines, automatically occurs when Flight is in use, only affects environment around vehicle; -1¾), Cannot Take Off Or Land At This Speed (-0)

-2 *Cannot Swim:* Swimming -2" (0" total)

Tactical Systems

32 *1,000-Pound Bombs:* RKA 4d6, Explosion (-1 DC/2"; +¾); OAF Bulky (-1½), Dropped (-½), Real Weapon (-¼), 14 Charges (-0) [14]

36 *Electronic Countermeasures:* Suppress Radar 6d6, Area Of Effect (8" Radius; +1¼), MegaArea (1" = 1 km; +¼), Reduced Endurance (0 END; +½); OIF Bulky (-1), No Range (-½) 0

44 *Electronic Counter-Countermeasures:* Suppress Electronic Warfare 8d6, any Power one at a time (+¼), Increased Maximum Range (6,250", or about 7.5 miles; +½), No Range Modifier (+½), Reduced Endurance (0 END; +½); OAF Bulky (-1½) 0

12 *ECM Systems:* Radio Group Flash Defense (12 points) 0

10 *ECM Systems:* Power Defense (12 points); Only Works Against Limited Type Of Attack (electronic warfare attacks; -¼) 0

Operations Systems

20 *Radar:* Radar (Radio Group), Discriminatory, Increased Arc Of Perception (360 Degrees), Telescopic (+24 versus Range Modifier); OIF Bulky (-1), Affected As Sight Group As Well As Radio Group (-½) 0

5 *AVQ-26 Pave Tack Pod:* Infrared Perception (Sight Group) 0

4 *Radar Warning Receiver:* Detect Detection By Radar 14- (Radio Group); OIF Bulky (-1) 0

4 *Communications System:* Radio Perception/Transmission (Radio Group); OIF Bulky (-1), Affected As Hearing Group As Well As Radio Group (-¼) 0

Personnel Systems

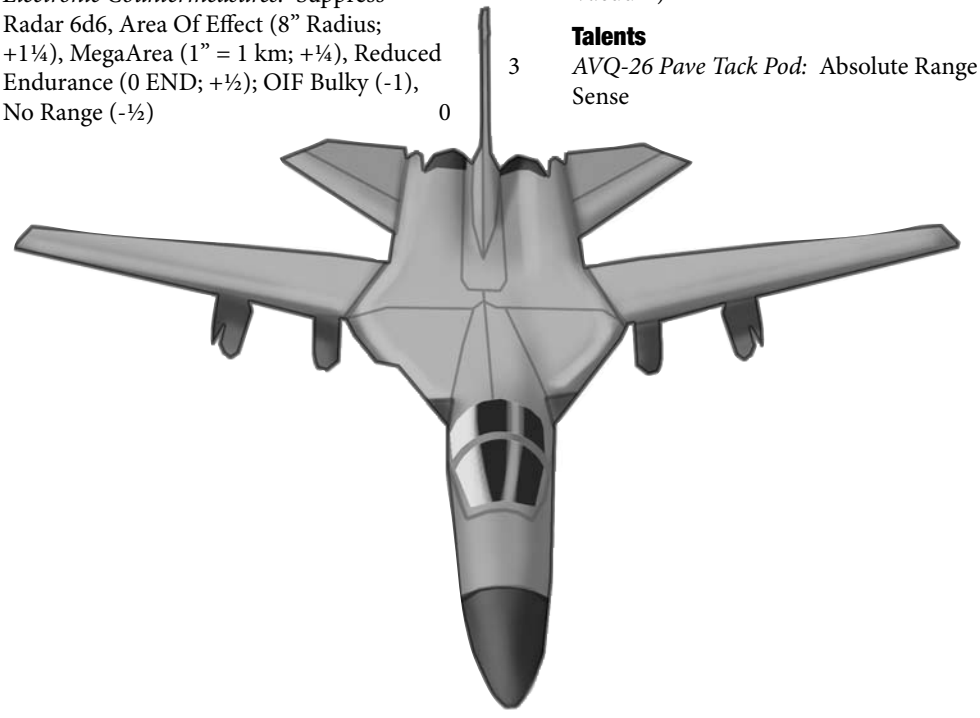
6 *Ejection Seats:* Telekinesis (26 STR); OIF Bulky (-1), Affects Whole Object (-¼), No Range (-½), Only To Throw Target Straight Up (-2), 1 Recoverable Charge (-1¼) [1rc]

5 *Ejection Seats:* Another Ejection Seat (total of two) [1rc]

14 *Sealed Environment:* Life Support (Self-Contained Breathing; Safe Environments: Intense Cold, Low Pressure/Vacuum) 0

Talents

3 *AVQ-26 Pave Tack Pod:* Absolute Range Sense



Skills

4 *Highly Maneuverable:* +2 with Flight
10 *Targeting Systems:* +2 with Ranged Combat

Total Abilities & Equipment Cost: 241
Total Vehicle Cost: 354

Value Disadvantages

25 Distinctive Features: US Warplane (Not Concealable; Causes Extreme Reaction [fear])

Total Disadvantage Points: 25
Total Cost: 329/5 = 66

OPTIONAL EQUIPMENT

Cost	Equipment
60	*20mm M61A Cannon (Nose-Mounted):* RKA 4d6, Autofire (10 shots; +1), +1 Increased STUN Multiplier (+¼), 940 Charges (+1); OIF Bulky (-1), Real Weapon (-¼), Limited Arc Of Fire (0 degrees forward, same horizontal level; -1) [940]
+5	*Communications Systems Upgrade:* Change to: HRRP (Radio Group), Discriminatory, Analyze; OIF Bulky (-1), Affected As Sight And Hearing Group As Well As Radio Group (-½)

Description: The F-111, nicknamed "Aardvark," was the first variable geometry-winged aircraft to enter military service. It was also the world's first attack craft able to attain supersonic speeds and to come equipped with avionics powerful enough to allow for blind first-pass attacks. It first flew in 1964 and entered service as the F-111A in 1967. After a somewhat lackluster early career, over 4,000 combat sorties were flown with Aardvarks in Vietnam with very few losses. The last planes of the series were retired in 1998, but the plane remains in service with the Royal Australian Air Force.

The Aardvark's variable geometry wings allow it to change the angle of its wings to improve performance at various speeds. They also make it possible to take off and land in relatively short distances with heavy loads. The wings even fold fully back for easier parking/storage of the aircraft.

The F-111F, which was in operational use up to 1996, has the space to carry a nose-mounted 20mm cannon, though these were never installed. It also has an internal weapons bay and six underwing hardpoints. It can carry over 14,000 kg of ordnance (including, if necessary, nuclear weaponry); the one depicted in this character sheet has 14 thousand-pound bombs. Its avionics include the AVQ-26 Pave Tack pod, which extends from the ventral side of the craft and includes a forward-looking infrared sensor and a laser rangefinder/designator (for use with laser-guided bombs).

The F-111F is approximately 73 feet long. It weighs 21,537 kg empty, and can take off with a maximum weight of 145,360 kg. It can sustain a maximum speed of about Mach 2.5 (about 1,875 miles per hour) at high altitudes, and has a cruising speed of about 571 miles per hour at lower altitudes. Its maximum altitude is 60,000 feet. It has a range of 2,925 miles on a single load of fuel and a full payload. It carries a crew of two.

GRUMMAN F-14A TOMCAT

Val	Char	Cost	Notes
10	Size	50	10" x 5"; -10 KB; -6 DCV
45	STR	-15	Lift 12.5 tons; 9d6 HTH [0]
21	DEX	33	OCV: 7/DCV: 7
20	BODY	0	
6	DEF	12	
5	SPD	19	Phases: 3, 5, 8, 10, 12
			Total Characteristic Cost: 99

Movement:		
	Ground:	6"/12"
	Swimming:	0"/0"
	Flight:	36"/144"
	MegaFlight:	1"

Abilities & Equipment

Cost	Power	END
	Propulsion Systems	
30	*Jet Fighter:* Multipower, 82-point reserve; all Side Effects (-1¾), 1 Continuing Fuel Charge (easily-obtained fuel; 6 Hours; -0) for entire Multipower [1cc]	
2u	1) *Standard Flight:* Flight 36", x8 Noncombat; Side Effects (KA 2d6, 7" Line behind engines, automatically occurs when Flight is in use, only affects environment around vehicle; -1¾), Stall Velocity (18"; -¼), Takeoff/Landing (-1)	
1u	2) *Mach Speed Flight:* Flight 1", MegaScale (1" = 1 km; +¼); Side Effects (KA 2d6, 7" Line behind engines, automatically occurs when Flight is in use, only affects environment around vehicle; -1¾), Cannot Take Off Or Land At This Speed (-0)	
-2	*Cannot Swim:* Swimming -2" (0" total)	
	Tactical Systems	
60	*20mm M61A Cannon (Nose-Mounted):* RKA 4d6, Autofire (10 shots; +1), +1 Increased STUN Multiplier (+¼), 675 Charges (+1); OIF Bulky (-1), Real Weapon (-¼), Limited Arc Of Fire (0 degrees forward, same horizontal level; -1) [675]	
36	*Electronic Countermeasures:* Suppress Radar 6d6, Area Of Effect (10" Radius; +1¼), MegaArea (1" = 1 km; +¼), Reduced Endurance (0 END; +½); OIF Bulky (-1), No Range (-½)	0
44	*Electronic Counter-Countermeasures:* Suppress Electronic Warfare 8d6, any Power one at a time (+¼), Increased Maximum Range (6,250", or about 7.5 miles; +½), No Range Modifier (+½), Reduced Endurance (0 END; +½); OAF Bulky (-1½)	0
12	*ECM Systems:* Radio Group Flash Defense (12 points)	0
14	*ECM Systems:* Power Defense (18 points); Only Works Against Limited Type Of Attack (electronic warfare attacks; -¼)	0
	Operations Systems	
29	*Hughes AWG-9 Radar:* Radar (Radio Group), Discriminatory, Increased Arc Of	

Perception (360 Degrees), Telescopic (+48 versus Range Modifier); OIF Bulky (-1), Affected As Sight Group As Well As Radio Group (-½) 0
5 *Forward-Looking Infrared:* Infrared Perception (Sight Group) 0
5 *Radar Warning Receiver:* Detect Detection By Radar 16- (Radio Group); OIF Bulky (-1) 0
9 *Communications Systems:* HRRP (Radio Group), Discriminatory, Analyze; OIF Bulky (-1), Affected As Sight And Hearing Group As Well As Radio Group (-½)

Personnel Systems

6 *Ejection Seats:* Telekinesis (26 STR); OIF Bulky (-1), Affects Whole Object (-¼), No Range (-½), Only To Throw Target Straight Up (-2), 1 Recoverable Charge (-1¼) [1rc]
5 *Ejection Seats:* Another Ejection Seat (total of two) [1rc]
14 *Sealed Environment:* Life Support (Self-Contained Breathing; Safe Environments: Intense Cold, Low Pressure/Vacuum) 0

Talents

3 *Laser Rangefinder:* Absolute Range Sense

Skills

4 *Highly Maneuverable:* +2 with Flight
1 *Most Maneuverable At Low Speeds:* +1 with Flight; Only When Using Combat Movement (-½)
10 *Targeting Systems:* +2 with Ranged Combat

Total Abilities & Equipment Cost: 288
Total Vehicle Cost: 387

Value Disadvantages

25 Distinctive Features: US Warplane (Not Concealable; Causes Extreme Reaction [fear])

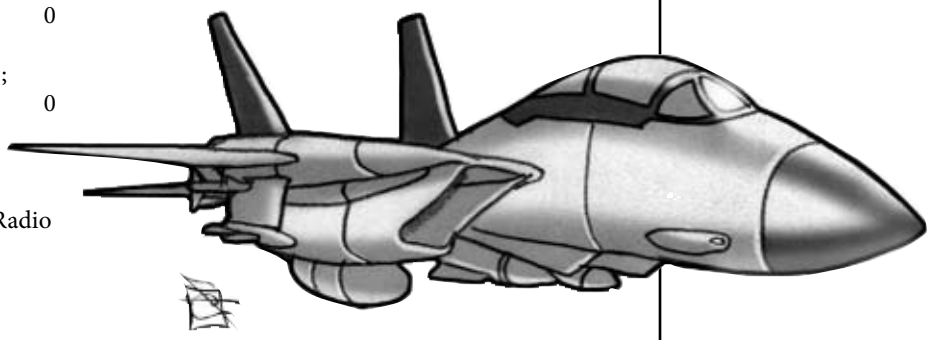
Total Disadvantage Points: 25
Total Cost: 362/5 = 72

ADDITIONAL VEHICLES

Cost	Vehicle
30	*Missiles:* 1 missile — either AIM-7 Sparrow, AIM-9 Sidewinder, or AIM-54C Phoenix missiles (use AIM-7 Sparrow; TUV page 131)
15	*Missiles:* 5 more missiles (total of six)

OPTIONAL EQUIPMENT

Cost	Equipment
22	*1,000-Pound Bombs:* Remove two missiles (-5 to the cost of the additional vehicles) and replace with two bombs: RKA 4d6, Explosion (-1 DC/2"; +¾); OAF Bulky (-1½), Dropped (-½), Real Weapon (-¼), 2 Charges (-1½)
+5	*F-14D:* Increase to Flight 37" and +3 with Ranged Combat



Description: The Grumman Model G-303, better known to the Navy as the F-14 Tomcat, first flew in 1970 and entered service in 1972. It has variable geometry wings like the Aardvark (page 75). It's primarily intended to engage enemy planes at extreme range to protect carrier groups, and continues to serve admirably in this role despite its age (though it's slowly being phased out through 2008, replaced by the F/A-18E/F Super Hornet). With its Hughes AGW-9 radar, it can track and engage opponents up to 100 miles away and control up to six missiles at once. (The F-14D has the APG-71 radar and can track up to 24 targets simultaneously.) Its configuration makes it especially maneuverable at lower speeds (*i.e.,* when using Combat Movement).

The F-14A carries a variety of missiles, depending on the expected mission profile: Phoenixes for long-range attacks; Sparrows for medium-range attacks; and Sidewinders for short-range fighting. It also has a six-barrelled 20mm Vulcan machine gun in the nose. In some cases, it can replace two of the missiles (typically Phoenixes carried on wing-tip racks) with dropped bombs.

The F-14A is approximately 62 feet long. It weighs 18,191 kg empty, and can take off with a maximum weight of 32,098 kg. It can sustain a maximum speed of about Mach 2.0 (about 1,500 miles per hour) at high altitudes, and it can climb at the rate of 30,000 feet per minute. Its maximum altitude is 50,000 feet. It has a combat air patrol radius of 766 miles. It carries a crew of two.

The F-14 is also in service with Iran, though only a few may remain capable of flying and their Phoenix missiles are inoperable.

LOCKHEED MARTIN F-16C FIGHTING FALCON

Val	Char	Cost	Notes
9	Size	45	8" x 4"; -9 KB; -6 DCV
36	STR	-19	Lift 3,840 kg; 7d6 HTH [0]
23	DEX	39	OCV: 8/DCV: 8
21	BODY	2	
6	DEF	12	
5	SPD	17	Phases: 3, 5, 8, 10, 12
			Total Characteristic Cost: 96

Movement: Ground: 6"/12"
Swimming: 0"/0"
Flight: 39"/312"
MegaFlight: 1"

Abilities & Equipment

Cost	Power	END
	Propulsion Systems	
32	*Jet Fighter:* Multipower, 88-point reserve; all Side Effects (-1¾), 1 Continuing Fuel Charge (easily-obtained fuel; 6 Hours; -0) for entire Multipower	[1cc]
2u	1) *Standard Flight:* Flight 39", x8 Noncombat; Side Effects (KA 2d6, 7" Line behind engines, automatically occurs when Flight is in use, only affects environment around vehicle; -1¾), Stall Velocity (19"; -¼), Takeoff/Landing (-1)	
1u	2) *Mach Speed Flight:* Flight 1", MegaScale (1" = 1 km; +¼); Side Effects (KA 2d6, 7" Line behind engines, automatically occurs when Flight is in use, only affects environment around vehicle; -1¾), Cannot Take Off Or Land At This Speed (-0)	
-2	*Cannot Swim:* Swimming -2" (0" total)	
	Tactical Systems	
60	*20mm M61A Cannon (Nose-Mounted):* RKA 4d6, Autofire (10 shots; +1), +1 Increased STUN Multiplier (+¼), 511 Charges (+1); OIF Bulky (-1), Real Weapon (-¼), Limited Arc Of Fire (0 degrees forward, same horizontal level; -1)	[511]
22	*1,000-Pound Bombs:* RKA 4d6, Explosion (-1 DC/2"; +¾); OAF Bulky (-1½), Dropped (-½), Real Weapon (-¼), 2 Charges (-1½)	[2]
36	*Electronic Countermeasures:* Suppress Radar 6d6, Area Of Effect (10" Radius; +1¼), MegaArea (1" = 1 km; +¼), Reduced Endurance (0 END; +½); OIF Bulky (-1), No Range (-½)	0
44	*Electronic Counter-Countermeasures:* Suppress Electronic Warfare 8d6, any Power one at a time (+¼), Increased Maximum Range (6,250", or about 7.5 miles; +½), No Range Modifier (+½), Reduced Endurance (0 END; +½); OAF Bulky (-1½)	0
12	*ECM Systems:* Radio Group Flash Defense (12 points)	0
14	*ECM Systems:* Power Defense (18 points); Only Works Against Limited Type Of Attack (electronic warfare attacks; -¼)	0
	Operations Systems	
23	*APG-68(V)5 Multi-Mode Radar:* Radar (Radio Group), Discriminatory, Increased Arc Of Perception (360 Degrees), Telescopic (+32 versus Range Modifier); OIF Bulky (-1), Affected As Sight Group As Well As Radio Group (-½)	0
5	*Forward-Looking Infrared:* Infrared Perception (Sight Group)	0
5	*Radar Warning Receiver:* Detect Detection By Radar 16- (Radio Group); OIF Bulky (-1)	0
9	*Communications Systems:* HRRP (Radio Group), Discriminatory, Analyze; OIF Bulky (-1), Affected As Sight And Hearing Group As Well As Radio Group (-½)	
	Personnel Systems	
6	*Ejection Seat:* Telekinesis (26 STR); OIF Bulky (-1), Affects Whole Object (-¼), No Range (-½), Only To Throw Target Straight Up (-2), 1 Recoverable Charge (-1¼)	[1rc]
14	*Sealed Environment:* Life Support (Self-Contained Breathing; Safe Environments: Intense Cold, Low Pressure/Vacuum)	0
	Talents	
3	*Laser Rangefinder:* Absolute Range Sense	
	Skills	
6	*Fly-By-Wire Control System:* +3 with Flight	
10	*Targeting Systems:* +2 with Ranged Combat	

Total Abilities & Equipment Cost: 302
Total Vehicle Cost: 398

Value Disadvantages

25	Distinctive Features: US Warplane (Not Concealable; Causes Extreme Reaction [fear])

Total Disadvantage Points: 25
Total Cost: 373/5 = 75

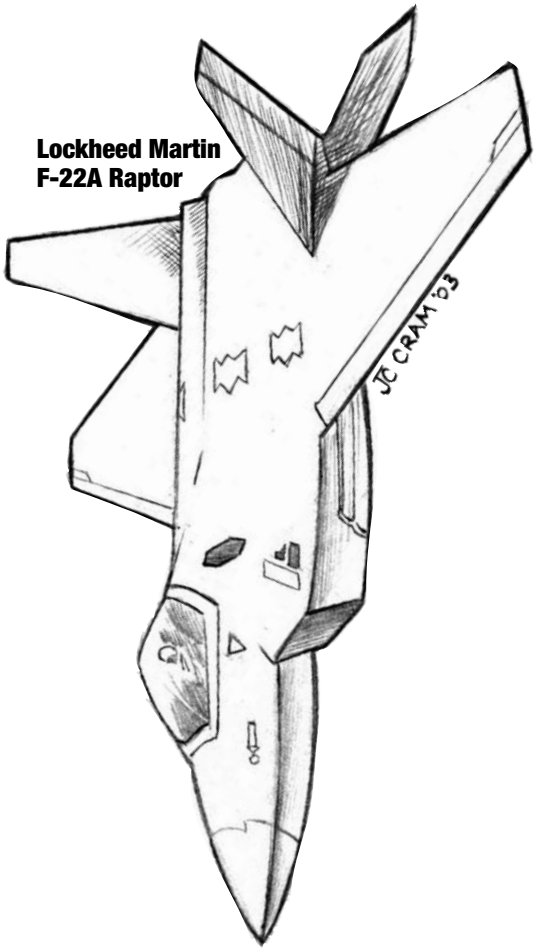
ADDITIONAL VEHICLES

Cost	Vehicle
30	*Missiles:* One AGM-65D Maverick missiles (use AIM-7 Sparrow [TUV, page 131])
15	*Missiles:* Six more AGM-65D Maverick missiles (total of seven)

Description: The Lockheed Martin F-16 (originally manufactured by General Dynamics) first flew in 1974 and entered service in 1979. In addition to the U.S. Air Force and Navy, over 20 nations use it. Originally designed as a lightweight air combat fighter, it gradually grew into more of a multi-role airplane. The Fighting Falcon (also known as the "Viper" or the "Electric Jet") proved so suitable for attacks that air combat has become a secondary role for it. Over 4,000 have been manufactured.

The F-16C features a one-piece frameless canopy that gives the pilot a superb view, a wide-angle heads-up display, hands on throttle and stick (HOTAS) controls, and the APG-68(V)5 multi-mode radar. Its avionics allow it to acquire targets in all weather conditions. In addition to a nose-mounted 20mm Vulcan cannon, it can carry nearly 16,000 pounds of missiles, bombs, and other ordnance on nine hardpoints (one underfuselage, six underwing, and two wingtip). The plane described in this character sheet has two 1,000-pound bombs and seven missiles.

The F-16C is approximately 49 feet long. It weighs 8,581 kg empty, and can take off with a maximum weight of 12,292 kg. It can sustain a maximum speed of about Mach 2.0 (about 1,500 miles per hour) at high altitudes, and it can climb at the rate of 50,000 feet per minute. Its maximum altitude is about 50,000 feet. It has a combat air patrol radius of 923 miles. It carries just a pilot.



Lockheed Martin F-22A Raptor

LOCKHEED MARTIN F-22A RAPTOR

Val	Char	Cost	Notes
10	Size	50	10" x 5"; -10 KB; -6 DCV
45	STR	-15	Lift 12.5 tons; 9d6 HTH [0]
24	DEX	42	OCV: 8/DCV: 8
21	BODY	1	
6	DEF	12	
5	SPD	16	Phases: 3, 5, 8, 10, 12
			Total Characteristic Cost: 106

Movement:		
	Ground:	6"/12"
	Swimming:	0"/0"
	Flight:	43"/344"
	MegaFlight:	2"

Abilities & Equipment

Cost	Power	END
	Propulsion Systems	
35	*Jet Fighter:* Multipower, 96-point reserve; all Side Effects (-1¾), 1 Continuing Fuel Charge (easily-obtained fuel; 6 Hours; -0) for entire Multipower	[1cc]
3u	1) *Standard Flight:* Flight 43", x8 Noncombat; Side Effects (KA 2d6, 7" Line behind engines, automatically occurs when Flight is in use, only affects environment around vehicle; -1¾), Takeoff/Landing (see text; -½)	
1u	2) *Mach Speed Flight:* Flight 2", Mega-Scale (1" = 1 km; +¼); Side Effects (KA 2d6, 7" Line behind engines, automatically occurs when Flight is in use, only affects environment around vehicle; -1¾), Cannot Take Off Or Land At This Speed (-0)	
-2	*Cannot Swim:* Swimming -2" (0" total)	
	Tactical Systems	
60	*20mm M61A Cannon (Nose-Mounted):* RKA 4d6, Autofire (10 shots; +1), +1 Increased STUN Multiplier (+¼), 460 Charges (+1); OIF Bulky (-1), Real Weapon (-¼), Limited Arc Of Fire (0 degrees forward, same horizontal level; -1)	[460]
32	*Radar-Absorbing Shape/Coating:* Change Environment 10" radius, -6 to Radio Group Perception Rolls, Reduced Endurance (0 END; +½), Persistent (+½); Easily Removed (see page 73; -½), No Range (-½), Self Only (-½)	0
23	*Infrared-Reducing Exhausts:* Change Environment 10" radius, -3 to Infrared Perception Rolls, Reduced Endurance (0 END; +½), Persistent (+½); Easily Removed (see page 73; -½), No Range (-½), Self Only (-½)	0
15	*ECM Systems:* Radio Group Flash Defense (15 points)	0
17	*ECM Systems:* Power Defense (21 points); Only Works Against Limited Type Of Attack (electronic warfare attacks; -¼)	0
	Operations Systems	
27	*APG-77 Multi-Mode Radar:* Radar (Radio Group), Discriminatory, Concealed (-3 to PER Rolls to detect	

LOCKHEED MARTIN F-35 JOINT STRIKE FIGHTER

With a few changes, you can also use this character sheet for the Lockheed F-35 Joint Strike Fighter, chosen in 2001 as an eventual replacement for the F-15, F-16, F-18, F-117, A-10, and other aircraft. The manufacturer will produce slightly different versions for the Air Force, Navy, and Marines, though all three planes are largely the same.

	radar pulses), Increased Arc Of Perception (360 Degrees), Telescopic (+40 versus Range Modifier); OIF Bulky (-1), Affected As Sight Group As Well As Radio Group (-½)	0
5	*Infrared Search-And-Track System:* Infrared Perception (Sight Group), Tracking; OIF Bulky (-1)	0
5	*Radar Warning Receiver:* Detect Detection By Radar 16- (Radio Group); OIF Bulky (-1)	0
9	*Communications Systems:* HRRP (Radio Group), Discriminatory, Analyze; OIF Bulky (-1), Affected As Sight And Hearing Group As Well As Radio Group (-½)	

Personnel Systems

6	*ACES II Ejection Seat:* Telekinesis (26 STR); OIF Bulky (-1), Affects Whole Object (-¼), No Range (-½), Only To Throw Target Straight Up (-2), 1 Recoverable Charge (-1¼)	[1rc]
14	*Sealed Environment:* Life Support (Self-Contained Breathing; Safe Environments: Intense Cold, Low Pressure/ Vacuum)	0

Talents

3	*Laser Rangefinder:* Absolute Range Sense

Skills

8	*Fly-By-Wire Control System And Maneuvering Systems:* +4 with Flight
20	*"AI" Targeting Systems:* +4 with Ranged Combat

Total Abilities & Equipment Cost: 281
Total Vehicle Cost: 387

Value Disadvantages

25	Distinctive Features: US Warplane (Not Concealable; Causes Extreme Reaction [fear])
5	Physical Limitation: installation/use of external hardpoints cancels out Radar-Absorbing Shape/Coating (Infrequently, Slightly Impairing)

Total Disadvantage Points: 30
Total Cost: 357/5 = 71

ADDITIONAL VEHICLES

Cost	Vehicle
30	*Missiles:* 1 missile — either an AMRAAM or an AIM-9 Sidewinder (use AIM-7 Sparrow [TUV, page 131])
15	*Missiles:* 5 more missiles (total of six)

OPTIONAL EQUIPMENT

Cost	Equipment
-20	*Lockheed Martin F-35 Joint Strike Fighter (Navy, Marine Version):* Decrease to Size 7 and four missiles
-21	*Lockheed Martin F-35 Joint Strike Fighter (Air Force Version):* As Navy, Marine Version, but increase Takeoff/Landing from (-½) to (-1) and add Stall Velocity (-¼)

Description: The F-22A is the final result of the U.S. Air Force's program to design a new Advanced Tactical Fighter to replace the F-15. It first flew in 1990-91; a small number of initial F-22s has been approved by the U.S. Congress for delivery in 2005.

The specifications for the F-22 called for numerous advanced fighter systems. These include: a "stealth" structure to hide the plane from detection by radar or other conventional means; a triplex fly-by-wire system; a high degree of maneuverability due to multiple control flaps and vectorable turbofan engines; short takeoff and landing (STOL) capability (thus reducing the length of the runway needed to take off and land); and a sophisticated attack system that uses "artificial intelligence factors" to minimize the pilot's workload in combat and enhance his ability to destroy the enemy. The plane's advanced avionics include the APG-77 multi-mode radar with AESA (Active Electronically Scanned Array), which allows it to conduct air-to-air searches and track multiple targets. The Pilot's Associate computer system has three times as much memory and sixteen times the speed of the computer in the F-15, and includes not only voice recognition features but the capacity to offer tactical warnings to the pilot.

The Raptor has three internal weapon bays, as well as four external hardpoints that can carry up to 20,000 pounds of ordnance when stealth is not required (the external weapons cause the plane to show up on radar). This character sheet shows the three internal bays filled with AMRAAMs and AIM-9 Sidewinders, but many other missiles could be carried instead. The plane also has a 20mm Vulcan gun in the nose. The F-22A doesn't have as many electronic warfare systems as most other fighters, since the active emissions created by the use of such systems would ruin its stealth effect.

The F-22 is approximately 62 feet long. It weighs 14,365 kg empty, and can take off with a maximum weight of 27,216 kg. It can sustain a maximum speed of about Mach 2.0 (about 1,500 miles per hour) at high altitudes, and it can "supercruise" (fly at supersonic speeds without activating its afterburner) at about Mach 1.58 (about 1,185 miles per hour). Its maximum altitude is at least 50,000 feet. It has a combat air patrol radius of 766 miles. It carries just a pilot (a two-seat F-22B was planned, but later cancelled).

Because the F-22A is as yet incomplete, and because much information about it remains classified, the character sheet above represents the best currently available information and estimates regarding the plane's capabilities as of late 2003.

LOCKHEED SR-71A BLACKBIRD

Val	Char	Cost	Notes
12	Size	60	16" x 8"; -12 KB; -8 DCV
55	STR	-15	Lift 50 tons; 11d6 HTH [0]
20	DEX	30	OCV: 7/DCV: 7
20	BODY	-2	
5	DEF	9	
6	SPD	30	Phases: 2, 4, 6, 8, 10, 12
			Total Characteristic Cost: 112

Movement:	Ground:	6"/12"
	Swimming:	0"/0"
	Flight:	50"/400"
	MegaFlight:	3"

Abilities & Equipment

Cost	Power	END
	Propulsion Systems	
40	*Jet Reconnaissance Plane:* Multipower, 110-point reserve; all Side Effects (-1¾), 1 Continuing Fuel Charge (easily-obtained fuel; 6 Hours; -0) for entire Multipower [1cc]	
3u	1) *Standard Flight:* Flight 50", x8 Noncombat; Side Effects (KA 2d6, 7" Line behind engines, automatically occurs when Flight is in use, only affects environment around vehicle; -1¾), Stall Velocity (25"; -¼), Takeoff/Landing (-1)	
1u	2) *Mach Speed Flight:* Flight 3", MegaScale (1" = 1 km; +¼); Side Effects (KA 2d6, 7" Line behind engines, automatically occurs when Flight is in use, only affects environment around vehicle; -1¾), Cannot Take Off Or Land At This Speed (-0)	
-2	*Cannot Swim:* Swimming -2" (0" total)	
	Tactical Systems	
25	*Radar-Absorbing Shape/Coating:* Change Environment 16" radius, -3 to Radio Group Perception Rolls, Reduced Endurance (0 END; +½), Persistent (+½); Easily Removed (see page 73; -½), No Range (-½), Self Only (-½)	0
10	*ECM Systems:* Radio Group Flash Defense (10 points)	0
8	*ECM Systems:* Power Defense (10 points); Only Works Against Limited Type Of Attack (electronic warfare attacks; -¼)	0
	Operations Systems	
25	*Radar:* Radar (Radio Group), Discriminatory, Increased Arc Of Perception (360 Degrees), Telescopic (+38 versus Range Modifier); OIF Bulky (-1), Affected As Sight Group As Well As Radio Group (-½)	0
15	*Infrared Systems:* Infrared Perception (Sight Group), Discriminatory, Analyze	0
5	*Radar Warning Receiver:* Detect Detection By Radar 16- (Radio Group); OIF Bulky (-1)	0
9	*Communications System:* HRRP (Radio Group), Discriminatory, Analyze; OIF Bulky (-1), Affected As Sight And Hearing Group As Well As Radio Group (-½)	0
	Personnel Systems	
6	*Ejection Seat:* Telekinesis (26 STR); OIF Bulky (-1), Affects Whole Object (-¼), No Range (-½), Only To Throw Target Straight Up (-2), 1 Recoverable Charge (-1¼) [1rc]	
14	*Sealed Environment:* Life Support (Self-Contained Breathing; Safe Environments: Intense Cold, Low Pressure/Vacuum)	0

Total Abilities & Equipment Cost: 159
Total Vehicle Cost: 271

Value Disadvantages

25 Distinctive Features: US spyplane (Not Concealable; Causes Extreme Reaction [fear])

Total Disadvantage Points: 25
Total Cost: 246/5 = 49

Description: When it entered service in 1966, the SR-71A "Blackbird" was the fastest plane in the world... and it remains so today, nearly 40 years later. In 1990, for example, a Blackbird flew from Washington, D.C. to Los Angeles in a mere 67 minutes! By 1990 the Blackbirds had been retired, though an attempt to resurrect the program was made later in the '90s and NASA continues to use some of them.

The SR-71's purpose is high-speed, high-altitude reconnaissance of enemy territory, a task it's admirably suited for. Based in at least three primary locations — Beale Air Force Base in California; Kadena, Okinawa; and Mildenhall, UK — the Blackbird fleet flew missions all over the world, gathering enormous amounts of valuable intelligence data. It can survey from 60,000 to 80,000 square miles of territory per hour.

The Blackbird, which first flew in 1964 test runs, takes its nickname from its distinctive blue-black heat-resistant coating. The paint contains tiny iron balls that help to defuse enemy radar. It normally carries no weapons, but can mount a bomb in place of the centerline reconnaissance pod if necessary.

The SR-71 is approximately 108 feet long. It weighs 30,617 kg empty, and can take off with a maximum weight of 78,017 kg. It can sustain a maximum speed of about Mach 3.35 (about 2,500 miles per hour) at high altitudes, and has a sustained cruising speed of about Mach 3.2 (about 2,400 miles per hour). It attains these speeds by burning a special jet fuel, JP-7, which can only be lit with a special chemical reaction. Its maximum altitude is 80,000 feet (it flies so high, and at such speeds, that the crew has to don pressure suits like those astronauts wear). At Mach 3 its operational range on a single load of fuel is 2,250 miles. It has a crew of two, a pilot and an RSO (Reconnaissance Systems Officer).

LOCKHEED U-2R

Val	Char	Cost	Notes
10	Size	50	10" x 5"; -10 KB; -6 DCV
49	STR	-11	Lift 11,280 kg; 9½d6 HTH [0]
15	DEX	15	OCV: 5/DCV: 5
20	BODY	0	
5	DEF	9	
4	SPD	15	Phases: 3, 6, 9, 12
			Total Characteristic Cost: 78

Movement:		
	Ground:	6"/12"
	Swimming:	0"/0"
	Flight:	36"/288"
	Gliding:	20"/40"

Abilities & Equipment

Cost	Power	END
	Propulsion Systems	
20	*Jet Reconnaissance Plane:* Flight 36", x8 Noncombat; Side Effects (KA 2d6, 7" Line behind engines, automatically occurs when Flight is in use, only affects environment around vehicle; -1¾), Stall Velocity (18"; -¼), Takeoff/Landing (-1), 1 Continuing Fuel Charge (easily-obtained fuel; 12 Hours; -0)	[1cc]
20	*Glider Mode:* Gliding 20"	0
-2	*Cannot Swim:* Swimming -2" (0" total)	
	Tactical Systems	
8	*ECM Systems:* Radio Group Flash Defense (8 points)	0
6	*ECM Systems:* Power Defense (8 points); Only Works Against Limited Type Of Attack (electronic warfare attacks; -¼)	0
	Operations Systems	
17	*Radar:* Radar (Radio Group), Discriminatory, Increased Arc Of Perception (360 Degrees), Telescopic (+18 versus Range Modifier); OIF Bulky (-1), Affected As Sight Group As Well As Radio Group (-½)	0
15	*Infrared Systems:* Infrared Perception (Sight Group), Discriminatory, Analyze	0
9	*Communications System:* HRRP (Radio Group), Discriminatory, Analyze; OIF Bulky (-1), Affected As Sight And Hearing Group As Well As Radio Group (-½)	0
	Personnel Systems	
6	*Ejection Seat:* Telekinesis (26 STR); OIF Bulky (-1), Affects Whole Object (-¼), No Range (-½), Only To Throw Target Straight Up (-2), 1 Recoverable Charge (-1¼)	[1rc]
14	*Sealed Environment:* Life Support (Self-Contained Breathing; Safe Environments: Intense Cold, Low Pressure/Vacuum)	0

Total Abilities & Equipment Cost: 113
Total Vehicle Cost: 191

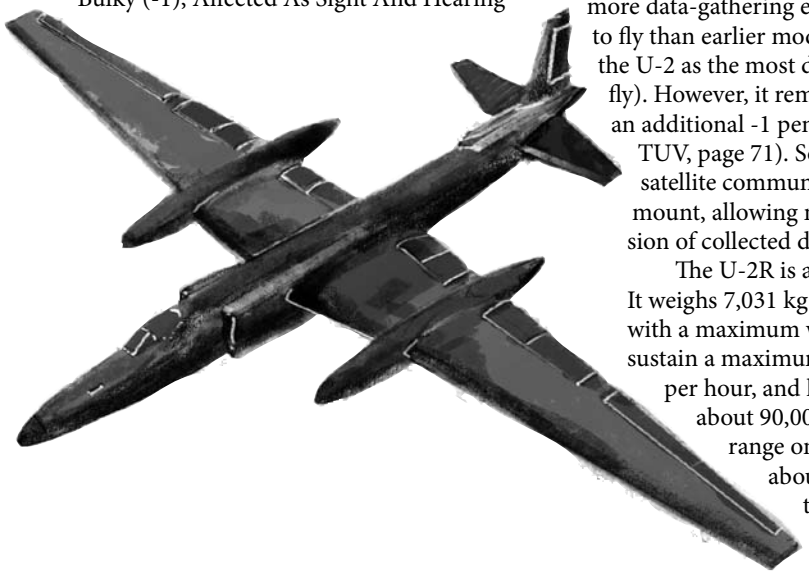
Value Disadvantages

25	Distinctive Features: US spyplane (Not Concealable; Causes Extreme Reaction [fear])
5	Physical Limitation: -1 on all Combat Piloting or other piloting rolls (Infrequently, Slightly Impairing)

Total Disadvantage Points: 30
Total Cost: 161/5 = 32

OPTIONAL EQUIPMENT

Cost	Equipment
-12	*Earlier U-2s:* Decrease to Flight 34" and DEX 12; also, increase Physical Limitation to -3 penalty (Infrequently, Greatly Impairing [-10])



Description: First flown in 1955, the remarkable U-2 spyplane entered service shortly thereafter. Featuring large, glider-like wings that give it the capacity to glide for long distances while the engine is shut off to conserve fuel, and able to fly at extremely high altitudes, it was tailor-made for gathering data about the Soviet Union and other nations. Unfortunately it was not immune to detection, as the Francis "Gary" Powers incident of 1960 demonstrated, but the U-2 still played an enormously important role during the Cold War. Among other accomplishments, it was a U-2 that discovered ballistic missile sites in Cuba, precipitating the Cuban Missile Crisis.

The U-2R depicted by this character sheet is a later version of the plane. Larger and packed with more data-gathering equipment, it's also easier to fly than earlier models (some have described the U-2 as the most difficult modern aircraft to fly). However, it remains difficult to land (add an additional -1 penalty to the roll to land; see TUV, page 71). Some carry the Senior Span satellite communications antenna in a dorsal mount, allowing near-instantaneous transmission of collected data on a global range.

The U-2R is approximately 62 feet long. It weighs 7,031 kg empty, and can take off with a maximum weight of 18,733 kg. It can sustain a maximum speed of about 430 miles per hour, and has a maximum altitude of about 90,000 feet. It has an operational range on a single load of fuel of about 6,250 miles. It carries just the pilot.

MICRO-AIR VEHICLE (MAV)

Val	Char	Cost	Roll	Notes
-10	STR	-20	9-	Lift 6.4 kg; 0d6 HTH [0]
18	DEX	24	13-	OCV: 6/DCV: 6
10	CON	0	11-	
4	BODY	-12	10-	
18	INT	8	13-	PER Roll 13-
0	EGO	0	—	ECV: N/A
0	PRE	-10	9-	PRE Attack: 0d6
10	COM	0	11-	
2	PD	6		Total: 2 PD (2 rPD)
2	ED	3		Total: 2 ED (2 rED)
3	SPD	2		Phases: 4, 8, 12
2	REC	0		
0	END	-10		
—	STUN	—	**Total Characteristics Cost:**	**-9**

Movement: Ground: 0"/0"
Swimming: 0"/0"
Flight: 10"/20"

Abilities & Equipment

Cost	Power	END
	Propulsion Systems	
20	*Reconnaissance Mini-Jet:* Flight 10", 1 Continuing Fuel Charge (easily-obtained fuel; 12 Hours; -0)	[1cc]
-12	*Only Flies:* Ground Movement -6" (0" total)	
-2	*Only Flies:* Swimming -2" (0" total)	
	Tactical Systems	
15	*Robot Plane Body:* Does Not Bleed	0
45	*Robot Plane Body:* Takes No STUN	0
6	*Robot Plane Body:* Damage Resistance (2 PD/2 ED)	0
45	*Robot Plane Body:* Life Support: Total	0
	Operations Systems	
21	*Radar:* Radar (Radio Group), Discriminatory, Increased Arc Of Perception (360 Degrees), Telescopic (+18 versus Range Modifier); OIF Bulky (-1)	0
15	*Infrared Systems:* Infrared Perception (Sight Group), Discriminatory, Analyze	0
15	*Ultraviolet Systems:* Ultraviolet Perception (Sight Group), Discriminatory, Analyze	0
18	*Visual Sensors:* +12 versus Range for Sight Group	0
5	*Radar Warning Receiver:* Detect Detection By Radar 16- (Radio Group); OIF Bulky (-1)	0
11	*Communications System:* HRRP (Radio Group), Discriminatory, Analyze; OIF Bulky (-1)	0
	Talents	
12	*Onboard Computer Systems:* Absolute Range Sense, Absolute Time Sense, Bump Of Direction, Lightning Calculator	
	Skills	
40	*Tiny Robotic Plane:* +8 DCV	
8	Navigation (Air) 16-	

Total Powers & Skills Cost: 262
Total Cost: 253

75+ Disadvantages

5	Physical Limitation: Affected By Cyberkinesis (has EGO 8 for purposes of cyberkinetic powers, and can be affected by cyberkinesis-based Presence Attacks) (Infrequently, Slightly Impairing)
15	Physical Limitation: Minuscule (.064" [about six inches] long) (Frequently, Greatly Impairing)
12	Physical Limitation: Reduced Leap, cannot leap (Infrequently, Slightly Impairing)
15	Physical Limitation: Very Limited Manipulation (Frequently, Greatly Impairing)
25	Psychological Limitation: Must Obey Programmer's/Owner's Commands (Very Common, Total)
106	Experience Points

Total Disadvantage Points: 253
Total Cost: 181/5 = 36 (or more; see text)

Description: This character sheet represents a project currently being considered and worked on by the U.S. military — a tiny flying device no larger than 6" in any dimension. It's intended for reconnaissance in numerous environments, such as urban areas; other possible missions include battle assessment, placing sensors, detecting biochemical weapons, serving as communications relays, or targeting. While it's likely to be decades before all the technological challenges are solved, MAVs could easily be in the field in the Cyberpunk era, if not sooner.

The designs being tested for MAVs vary. Some, like the one depicted by this character sheet, are like miniature jet planes; others might be minicopters, or have wings that flap like birds'. Some are as tiny as insects. Regardless of configuration, they'd probably fly at about 10 miles per hour or so, though speeds would rise as technology improved.

This Vehicle is built as an Automaton which the character can buy as a Follower (you should adjust the listed final cost based on the relationship between the MAV's and the purchasing character's point totals, of course).

MIG-23ML FLOGGER-G

Val	Char	Cost	Notes
8	Size	40	6.4" x 3.2"; -8 KB; -5 DCV
43	STR	-7	Lift 10,060 kg; 8½d6 HTH [0]
21	DEX	33	OCV: 7/DCV: 7
18	BODY	0	
6	DEF	12	
5	SPD	19	Phases: 3, 5, 8, 10, 12
			Total Characteristic Cost: 97

Movement: Ground: 6"/12"
Swimming: 0"/0"
Flight: 39"/312"
MegaFlight: 2"

Abilities & Equipment

Cost Power **END**

Propulsion Systems

32 *Jet Fighter:* Multipower, 88-point reserve; all Side Effects (-1¾), 1 Continuing Fuel Charge (easily-obtained fuel; 6 Hours; -0) for entire Multipower [1cc]

2u 1) *Standard Flight:* Flight 39", x8 Non-combat; Side Effects (KA 2d6, 7" Line behind engines, automatically occurs when Flight is in use, only affects environment around vehicle; -1¾), Stall Velocity (18"; -¼), Takeoff/Landing (-1)

1u 2) *Mach Speed Flight:* Flight 2", Mega-Scale (1" = 1 km; +¼); Side Effects (KA 2d6, 7" Line behind engines, automatically occurs when Flight is in use, only affects environment around vehicle; -1¾), Cannot Take Off Or Land At This Speed (-0)

-2 *Cannot Swim:* Swimming -2" (0" total)

Tactical Systems

55 *GSh-23L 23mm Cannon (Forward-Mounted):* RKA 4d6+1, Autofire (5 shots; +½), +1 Increased STUN Multiplier (+¼), 200 Charges (+1); OIF Bulky (-1), Real Weapon (-¼), Limited Arc Of Fire (0 degrees forward, same horizontal level; -1) [200]

26 *1,000-Pound Bombs:* RKA 4d6, Explosion (-1 DC/2"; +¾); OAF Bulky (-1½), Dropped (-½), Real Weapon (-¼), 6 Charges (-¾) [6]

36 *Electronic Countermeasures:* Suppress Radar 6d6, Area Of Effect (10" Radius; +1¼), MegaArea (1" = 1 km; +¼), Reduced Endurance (0 END; +½); OIF Bulky (-1), No Range (-½) 0

38 *Electronic Counter-Countermeasures:* Suppress Electronic Warfare 7d6, any Power one at a time (+¼), Increased Maximum Range (5,000", or about 10 miles; +½), No Range Modifier (+½), Reduced Endurance (0 END; +½); OAF Bulky (-1½) 0

10 *ECM Systems:* Radio Group Flash Defense (10 points) 0

12 *ECM Systems:* Power Defense (15 points); Only Works Against Limited Type Of Attack (electronic warfare attacks; -¼) 0

Operations Systems

20 *Sapfir-23L Radar:* Radar (Radio Group), Discriminatory, Increased Arc Of Perception (360 Degrees), Telescopic (+24 versus Range Modifier); OIF Bulky (-1), Affected As Sight Group As Well As Radio Group (-½) 0

5 *TP-23 Infrared Search-And-Track System:* Infrared Perception (Sight Group), Tracking; OIF Bulky (-1) 0

4 *Radar Warning Receiver:* Detect Detection By Radar 14- (Radio Group); OIF Bulky (-1) 0

4 *Communications System:* Radio Perception/Transmission (Radio Group); OIF Bulky (-1), Affected As Sight And Hearing Group As Well As Radio Group (-½) 0

Personnel Systems

6 *Ejection Seat:* Telekinesis (26 STR); OIF Bulky (-1), Affects Whole Object (-¼), No Range (-½), Only To Throw Target Straight Up (-2), 1 Recoverable Charge (-1¼) [1rc]

14 *Sealed Environment:* Life Support (Self-Contained Breathing; Safe Environments: Intense Cold, Low Pressure/Vacuum) 0

Talents

3 *Laser Rangefinder:* Absolute Range Sense

Skills

6 *Highly Maneuverable:* +3 with Flight

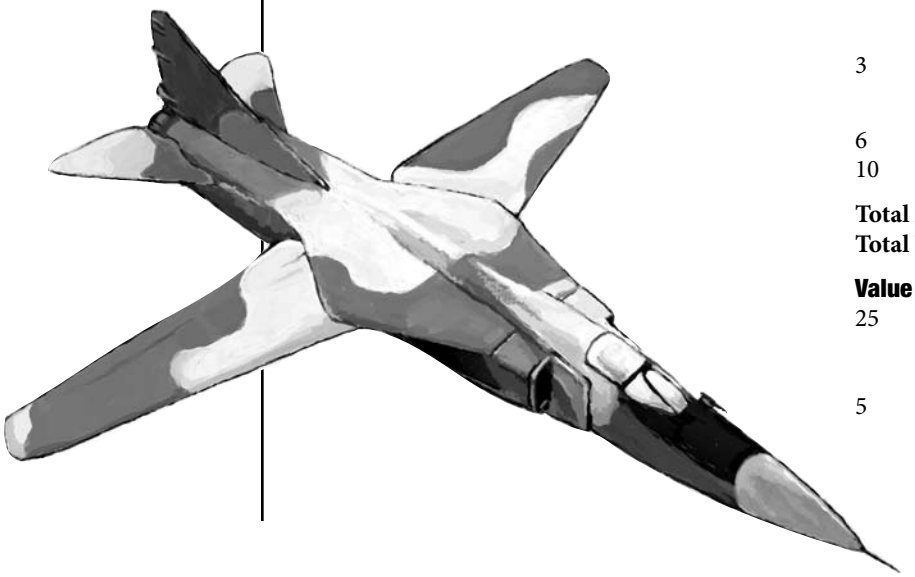
10 *Targeting Systems:* +2 with Ranged Combat

Total Abilities & Equipment Cost: 282
Total Vehicle Cost: 379

Value Disadvantages

25 Distinctive Features: Russian fighter (Not Concealable; Causes Extreme Reaction [fear])

5 Physical Limitation: pilot suffers -2 to Sight PER Group rolls through the cockpit canopy (Infrequently, Slightly Impairing)



Total Disadvantage Points: 30
Total Cost: 349/5 = 70

OPTIONAL EQUIPMENT

Cost	Equipment
-4	*Earlier MiG-23s:* Decrease to +2 with Flight, and decrease Radar to +20 versus Range Modifier
+2	*MiG-23MLD Flogger-K:* Increase to +4 with Flight
-2	*MiG-21 Fishbed:* Decrease to Flight 38" and decrease to 4 Charges for 1,000-Pound Bombs
+1	*MiG-25 Foxbat:* Increase to Flight 40" and choose the missiles option below (but four missiles only)
+14	*MiG-27 Flogger:* Decrease to Flight 38" and MegaFlight 1"; change GSh-23L to: GSh-6-30 30mm Cannon: RKA 4½d6, Autofire (8 shots; +1), +1 Increased STUN Multiplier (+¼), 200 Charges (+1); OIF Bulky (-1), Real Weapon (-¼), Limited Arc Of Fire (0 degrees forward, same horizontal level; -1)
+15	*MiG-29 Fulcrum:* Change main gun to GSh-6-30 30mm Cannon: RKA 4½d6, Autofire (8 shots; +1), +1 Increased STUN Multiplier (+¼), 200 Charges (+1); OIF Bulky (-1), Real Weapon (-¼), Limited Arc Of Fire (0 degrees forward, same horizontal level; -1)
-26	*Missiles:* Remove 1,000-Pound Bombs; buy as additional vehicles six missiles (use AIM-7 Sparrow [TUV, page 131], for a total cost of 45 points' worth of additional vehicles)

Description: The Mikoyan-Gurovich-23, better known simply as the MiG-23, first flew in 1967 and entered Soviet service in 1973. Designed to be larger, heavier, and more powerful than the MiG-21, it was given variable-geometry wings to improve its takeoff and maneuvering capabilities. It has been improved and upgraded over the years; one of the best versions, the 23ML Flogger-G depicted by this character sheet, has enhanced maneuverability and G-force tolerance and the improved Sapfir-23L radar. However, it suffers from the typical MiG problem of poor pilot visibility from the cockpit.

The MiG-23ML has a 23mm two-barreled GSh-23L cannon mounted forward ventral. It can also carry up to 6,614 pounds of missiles, bombs, and like ordnance on six hardpoints. The version depicted in this character sheet has six one thousand-pound bombs.

The MiG-23ML is approximately 55 feet long. It weighs 8,200 kg empty, and can take off with a maximum weight of 17,800 kg. It can sustain a maximum speed of about Mach 2.35 (about 1,760 miles per hour) at high altitudes; its maximum altitude is 60,695 feet. It has a range of as much as 1,212 miles on a single load of fuel. It carries just the pilot. The USSR exported it (or other MiG-27 models) to several nations, including Algeria, India, Iraq, North Korea, Syria, and Yemen. According to some sources, at least half of the remaining MiG-27s are inoperable for one reason or another.

MIG-31 FOXHOUND

Val	Char	Cost	Notes
10	Size	50	10" x 5"; -10 KB; -6 DCV
50	STR	-10	Lift 25 tons; 10d6 HTH [0]
24	DEX	42	OCV: 8/DCV: 8
22	BODY	2	
6	DEF	12	
5	SPD	16	Phases: 3, 5, 8, 10, 12
			Total Characteristic Cost: 112

Movement:		
	Ground:	6"/12"
	Swimming:	0"/0"
	Flight:	39"/312"
	MegaFlight:	2"

Abilities & Equipment

Cost	Power	END
	Propulsion Systems	
32	*Jet Fighter:* Multipower, 88-point reserve; all Side Effects (-1¾), 1 Continuing Fuel Charge (easily-obtained fuel; 6 Hours; -0) for entire Multipower	[1cc]
2u	1) *Standard Flight:* Flight 39", x8 Noncombat; Side Effects (KA 2d6, 7" Line behind engines, automatically occurs when Flight is in use, only affects environment around vehicle; -1¾), Stall Velocity (19"; -¼), Takeoff/Landing (-1)	
1u	2) *Mach Speed Flight:* Flight 2", MegaScale (1" = 1 km; +¼); Side Effects (KA 2d6, 7" Line behind engines, automatically occurs when Flight is in use, only affects environment around vehicle; -1¾), Cannot Take Off Or Land At This Speed (-0)	
-2	*Cannot Swim:* Swimming -2" (0" total)	
	Tactical Systems	
65	*GSh-23-6M 23mm Cannon (Forward-Mounted):* RKA 4d6+1, Autofire (8 shots; +1), +1 Increased STUN Multiplier (+¼), 260 Charges (+1); OIF Bulky (-1), Real Weapon (-¼), Limited Arc Of Fire (0 degrees forward, same horizontal level; -1)	[260]
36	*Electronic Countermeasures:* Suppress Radar 6d6, Area Of Effect (10" Radius; +1¼), MegaArea (1" = 1 km; +¼), Reduced Endurance (0 END; +½); OIF Bulky (-1), No Range (-½)	0
38	*Electronic Counter-Countermeasures:* Suppress Electronic Warfare 7d6, any Power one at a time (+¼), Increased Maximum Range (5,000", or about 10 miles; +½), No Range Modifier (+½), Reduced Endurance (0 END; +½); OAF Bulky (-1½)	0
10	*ECM Systems:* Radio Group Flash Defense (10 points)	0
8	*ECM Systems:* Power Defense (10 points); Only Works Against Limited Type Of Attack (electronic warfare attacks; -¼)	0
	Operations Systems	
25	*N-007 Zaslon "Flash Dance" Radar:* Radar (Radio Group), Discriminatory, Increased Arc Of Perception (360	

Degrees), Telescopic (+38 versus Range Modifier); OIF Bulky (-1), Affected As Sight Group As Well As Radio Group (-½) 0

5 *Infrared Search-And-Track System:* Infrared Perception (Sight Group), Tracking; OIF Bulky (-1) 0

5 *Radar Warning Receiver:* Detect Detection By Radar 16- (Radio Group); OIF Bulky (-1) 0

9 *Communications System:* HRRP (Radio Group), Discriminatory, Analyze; OIF Bulky (-1), Affected As Sight And Hearing Group As Well As Radio Group (-½) 0

Personnel Systems

6 *Ejection Seat:* Telekinesis (26 STR); OIF Bulky (-1), Affects Whole Object (-¼), No Range (-½), Only To Throw Target Straight Up (-2), 1 Recoverable Charge (-1¼) [1rc]

14 *Sealed Environment:* Life Support (Self-Contained Breathing; Safe Environments: Intense Cold, Low Pressure/Vacuum) 0

Talents

3 *Laser Rangefinder:* Absolute Range Sense

Skills

6 *Highly Maneuverable:* +3 with Flight

10 *Targeting Systems:* +2 with Ranged Combat

Total Abilities & Equipment Cost: 273
Total Vehicle Cost: 385

Value Disadvantages

25 Distinctive Features: Russian fighter (Not Concealable; Causes Extreme Reaction [fear])

5 Physical Limitation: pilot suffers -2 to Sight PER Group rolls through the cockpit canopy (Infrequently, Slightly Impairing)

Total Disadvantage Points: 30
Total Cost: 355/5 = 71

ADDITIONAL VEHICLES

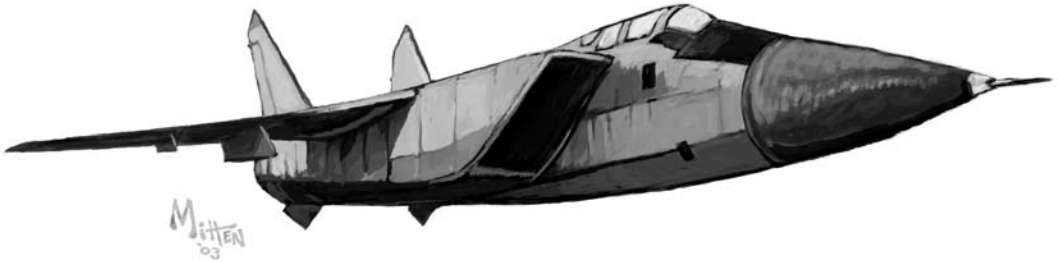
Cost	Vehicle
30	*Missiles:* 1 missile (use AIM-7 Sparrow [TUV, page 131])
20	*Missiles:* 9 more missiles (total of 10)

OPTIONAL EQUIPMENT

Cost	Equipment
+17	*MiG-31B:* Increase to Suppress Radar 7d6, Suppress Electronic Warfare 8d6, Radio Group Flash Defense (12 points), Power Defense (12 points), and +40 versus Range Modifier for Radar
-62	*MiG-31M:* Increase Radar to +46 versus Range Modifier and remove 23mm Cannon; also increase number of missiles to 12 (+0 to additional vehicles cost)

Description: The MiG-31 "Foxhound" first flew in 1975 and entered Soviet service in 1982. It's an interceptor designed to combat NATO low-level strike planes, cruise missiles, and the like. It comes with the advanced N-007 Zaslon radar that can link not only with ground networks but three other MiG-31s to cover an area 560 miles across. It has a 23mm six-barreled GSh-23-6M cannon mounted forward. It also carries ten anti-aircraft missiles.

The MiG-31 is approximately 74 feet long. It weighs 21,825 kg empty, and can take off with a maximum weight of 46,200 kg. It can sustain a maximum speed of about Mach 2.83 (about 2,100 miles per hour) at high altitudes; its maximum altitude is 67,585 feet. It has a range of as much as 2,050 miles with external fuel tanks, and a standard combat radius of 447 miles with the normal internal fuel load. It carries just the pilot.



NORTHROP GRUMMAN B-2A SPIRIT

Val	Char	Cost	Notes
10	Size	50	10" x 5"; -10 KB; -6 DCV
58	STR	-2	Lift 90 tons; 11½d6 HTH [0]
18	DEX	24	OCV: 6/DCV: 6
18	BODY	-2	
5	DEF	9	
4	SPD	12	Phases: 3, 6, 9, 12
			Total Characteristic Cost: 91

Movement: Ground: 6"/12"
Swimming: 0"/0"
Flight: 40"/320"

Abilities & Equipment

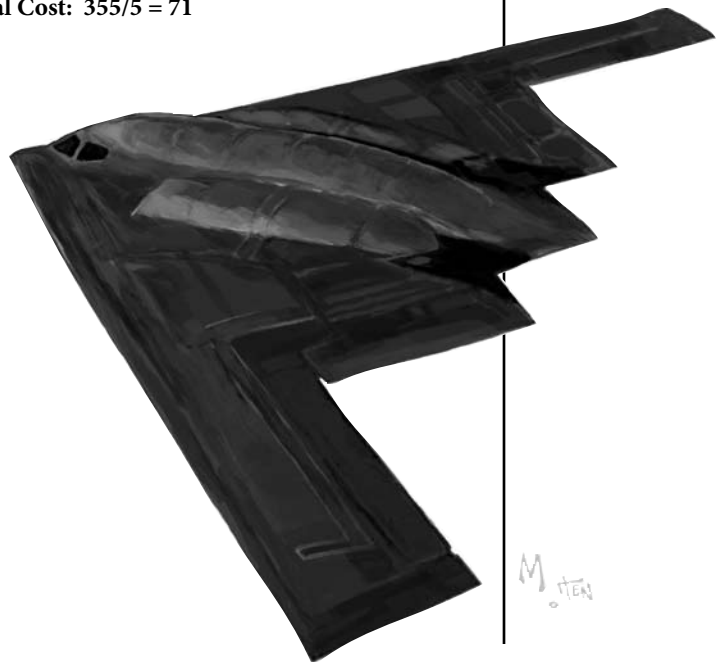
Cost	Power	END
	Propulsion Systems	
26	*Jet Bomber:* Flight 40", x8 Noncombat; Side Effects (KA 2d6, 7" Line behind engines, automatically occurs when Flight is in use, only affects environment around vehicle; -1¾), Stall Velocity (20"; -¼), Takeoff/Landing (-½), 1 Continuing Fuel Charge (easily-obtained fuel; 36 Hours; -0)	[1cc]
-2	*Cannot Swim:* Swimming -2" (0" total)	
	Tactical Systems	
32	*Radar-Absorbing Shape/Coating:* Change Environment 10" radius, -6 to Radio Group Perception Rolls, Reduced Endurance (0 END; +½), Persistent (+½); Easily Removed (see page 73; -½), No Range (-½), Self Only (-½)	0
23	*Infrared-Reducing Exhausts:* Change Environment 10" radius, -3 to Infrared Perception Rolls, Reduced Endurance (0 END; +½), Persistent (+½); Easily Removed (see page 73; -½), No Range (-½), Self Only (-½)	0
42	*Electronic Countermeasures:* Suppress Radar 7d6, Area Of Effect (12" Radius; +1¼), MegaArea (1" = 1 km; +¼), Reduced Endurance (0 END; +½); OIF Bulky (-1), No Range (-½)	0
44	*Electronic Counter-Countermeasures:* Suppress Electronic Warfare 8d6, any Power one at a time (+¼), Increased Maximum Range (5,000", or about 10 miles; +½), No Range Modifier (+½), Reduced Endurance (0 END; +½); OAF Bulky (-1½)	0
14	*ECM Systems:* Radio Group Flash Defense (14 points)	0
13	*ECM Systems:* Power Defense (16 points); Only Works Against Limited Type Of Attack (electronic warfare attacks; -¼)	0
	Operations Systems	
27	*APQ-81 Radar:* Radar (Radio Group), Discriminatory, Concealed (-3 to PER Rolls to detect radar pulses), Increased Arc Of Perception (360 Degrees), Telescopic (+40 versus Range Modifier); OIF Bulky (-1), Affected As Sight Group As Well As Radio Group (-½)	0
5	*Infrared Search-And-Track System:* Infrared Perception (Sight Group), Tracking; OIF Bulky (-1)	0
5	*Radar Warning Receiver:* Detect Detection By Radar 16- (Radio Group); OIF Bulky (-1)	0
9	*Communications System:* HRRP (Radio Group), Discriminatory, Analyze; OIF Bulky (-1), Affected As Sight And Hearing Group As Well As Radio Group (-½)	0
	Personnel Systems	
6	*ACES II Ejection Seat:* Telekinesis (26 STR); OIF Bulky (-1), Affects Whole Object (-¼), No Range (-½), Only To Throw Target Straight Up (-2), 1 Recoverable Charge (-1¼)	[1rc]
14	*Sealed Environment:* Life Support (Self-Contained Breathing; Safe Environments: Intense Cold, Low Pressure/Vacuum)	0
	Talents	
3	*Laser Rangefinder:* Absolute Range Sense	
	Skills	
8	*Quadruplex-Redundant Fly-By-Wire Control System:* +4 with Flight	
25	*GATS (GPS-Aided Targeting Systems):* +5 with Ranged Combat	

Total Abilities & Equipment Cost: 294
Total Vehicle Cost: 385

Value Disadvantages

25	Distinctive Features: US Warplane (Not Concealable; Causes Extreme Reaction [fear])
5	Physical Limitation: installation/use of external hardpoints cancels out Radar-Absorbing Shape/Coating (Infrequently, Slightly Impairing)

Total Disadvantage Points: 30
Total Cost: 355/5 = 71



ADDITIONAL VEHICLES

Cost	Vehicle
30	*Missiles:* 1 missile (either AMRAAM or AIM-9 Sidewinder; use AIM-7 Sparrow [TUV, page 131])
15	*Missiles:* Seven more missiles, for a total of eight (six AMRAAMs and two AIM-9 Sidewinders)

Description: One of the linchpins of America's current strategic policy, the B-2A "Stealth Bomber" first flew in 1989 and entered service in 1997; it made its combat debut over Kosovo in 1999. Only about 21 B-2As are currently in service, since it's the costliest warplane ever built at approximately $900 million apiece. Additionally, it's difficult to maintain because of its "stealth" coating and systems. Although intended mostly as a high-altitude bomber, it's capable of low-altitude terrain-following flights.

The B-2A can carry up to 40,000 pounds of ordnance in two underside weapon bays. Typical weapons include AGM-129 and -137 missiles, B83 nuclear free-fall bombs, various conventional bombs, JDAMs (Joint Direct Attack Munitions), and GBU-28 deep-penetration bombs. This particular one has a selection of AMRAAMs and AIM-9 Sidewinders, leaving room for the GM to add some more ordnance if desired.

The B-2A is approximately 69 feet long. It weighs 69,717 kg empty, and can take off with a maximum weight of 152,635 kg. It can sustain a maximum speed of about 475 miles per hour at high altitudes; its maximum altitude is about 50,000 feet. With a full load of ordnance it has a range of 7,595 miles and can remain aloft for up to 36 hours. It has a crew of two or three.

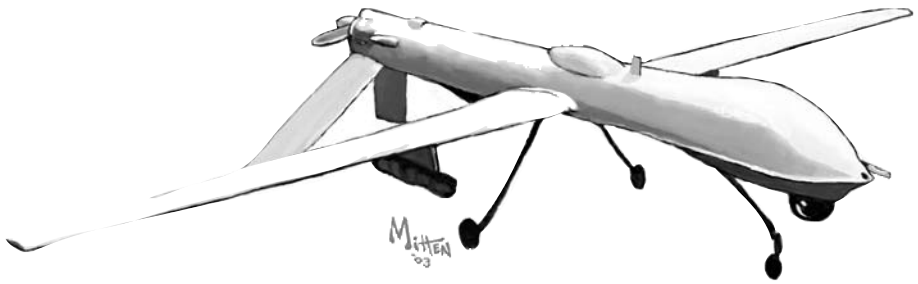
RQ-1 PREDATOR UAV

Val	Char	Cost	Roll	Notes
10	STR	0	11-	Lift 100 kg; 2d6 HTH [0]
14	DEX	12	12-	OCV: 5/DCV: 5
10	CON	0	11-	
8	BODY	-4	11-	
15	INT	5	12-	PER Roll 12-
0	EGO	0	—	ECV: N/A
10	PRE	0	11-	PRE Attack: 2d6
10	COM	0	11-	
4	PD	9		Total: 4 PD (4 rPD)
4	ED	9		Total: 4 ED (4 rED)
3	SPD	6		Phases: 4, 8, 12
4	REC	0		
0	END	-10		
—	STUN	—	**Total Characteristics Cost: 27**	

Movement: Ground: 0"/0"
Swimming: 0"/0"
Flight: 31"/124"

Abilities & Equipment

Cost	Power	END
	Propulsion Systems	
27	*Propeller-Driven Reconnaissance Drone:* Flight 31", x4 Noncombat; 1 Continuing Fuel Charge (easily-obtained fuel; 12 Hours; -0), Side Effects (KA 1d6 to anyone who comes into contact with the propeller, automatically occurs when Flight is in use, only affects environment in back of vehicle; -¼), Stall Velocity (15"; -¼), Takeoff/Landing (-1) [1cc]	
-12	*Only Flies:* Ground Movement -6" (0" total)	
-2	*Only Flies:* Swimming -2" (0" total)	
	Tactical Systems	
15	*Robot Plane Body:* Does Not Bleed	0
45	*Robot Plane Body:* Takes No STUN	0
5	*Battery:* Reduced Endurance (0 END; +½) on 10 STR	0
12	*Robot Plane Body:* Damage Resistance (4 PD/4 ED)	0
45	*Robot Plane Body:* Life Support: Total	0
	Operations Systems	
19	*Radar:* Radar (Radio Group), Discriminatory, Increased Arc Of Perception (360 Degrees), Telescopic (+14 versus Range Modifier); OIF Bulky (-1)	0
5	*Infrared Systems:* Infrared Perception (Sight Group)	0
5	*Ultraviolet Systems:* Ultraviolet Perception (Sight Group)	0
21	*Visual Sensors:* +14 versus Range for Sight Group	0
22	*Communications System:* HRRP (Radio Group), Discriminatory, Analyze	0
	Talents	
3	*Laser Rangefinder:* Absolute Range Sense	
9	*Onboard Computer Systems:* Absolute Time Sense, Bump Of Direction, Lightning Calculator	



Skills

10 *Robotic Plane:* +2 DCV

10 Navigation (Air) 16-

Total Powers & Skills Cost: 239
Total Cost: 266

75+ Disadvantages

5 Physical Limitation: Affected By Cyberkinesis (has EGO 15 for purposes of cyberkinetic powers, and can be affected by cyberkinesis-based Presence Attacks) (Infrequently, Slightly Impairing)
5 Physical Limitation: Large (4m; -2 DCV, +2 to PER Rolls to perceive) (Infrequently, Slightly Impairing)
12 Physical Limitation: Reduced Leap, cannot leap (Infrequently, Slightly Impairing)
15 Physical Limitation: Very Limited Manipulation (Frequently, Greatly Impairing)
25 Psychological Limitation: Must Obey Operator's Commands (Very Common, Total)
139 Experience Points

Total Disadvantage Points: 276
Total Cost: 204/5 = 41 (or more; see text)

OPTIONAL EQUIPMENT

Cost Equipment

43 *Hellfire Missiles:* RKA 4d6, Armor Piercing (x2; +1), Explosion (+½); OIF Bulky (-1), Real Weapon (-¼), Limited Arc Of Fire (0 degrees forward, same horizontal level; -1), 12 Charges (-¼)
-4 *RQ-2 Pioneer UAV:* Decrease to Flight 26"

Description: The Predator UAV — Unmanned Aerial Vehicle — is a four meter-long reconnaissance drone used by the United States Air Force in moderate-risk areas. They come in groups of four, all run from a ground control station (GCS) that uses a satellite communications suite to maintain contact with them (via the UAVs' and station's HRRP abilities). The drones themselves each have three cameras that transmit real-time, full-motion video back to the GCS. Four persons man the GCS, which can be transported in a C-130 cargo plane.

Although it's primarily a reconnaissance tool, the Predator can be outfitted with as many as twelve Hellfire missiles. When the operators of the GCS spot a target and get fire permission from their superiors, they can order the Predator to fire. This tactic has been used successfully in Afghanistan.

The Predator can fly at a top speed of 140 miles per hour, travel up to 454 miles from its GCS, and remain aloft for approximately 16 hours. Its maximum altitude is 25,000 feet, though the operators usually restrict it to 15,000 feet.

This Vehicle is built as an Automaton which the character can buy as a Follower (you should adjust the listed final cost based on the relationship between the UAV's and the purchasing character's point totals, of course).

HELICOPTERS

Helicopters are aircraft that use rotors to generate lift; they've been around since the late 1930s.

CIVILIAN HELICOPTERS

Although they lack the weapons and other high-tech systems possessed by military helicopters, civilian choppers are much more common. They're used to ferry executives and politicians around urban areas, to observe traffic so radio stations can make rush hour reports, and get people in need of serious medical assistance to the hospital as quickly as possible.

BELL 206B-3 III JETRANGER

Val	Char	Cost	Notes
7	Size	35	5" x 2.5"; -7 KB; -4 DCV
25	STR	-20	Lift 800 kg; 5d6 HTH [0]
18	DEX	24	OCV: 6/DCV: 6
17	BODY	0	
4	DEF	5	Limited Coverage (not on windshield/windows; -¼)
3	SPD	2	Phases: 4, 8, 12
			Total Characteristic Cost: 46

Movement: Ground: 0"/0"
Swimming: 0"/0"
Flight: 30"/120"

Abilities & Equipment

Cost	Power	END
	Propulsion Systems	
42	*Rotor-Based Flight:* Flight 30", x4 Non-combat, Increased Deceleration (6" per hex), No Turn Mode (+¼), Sideways Maneuverability (+½); 1 Continuing Fuel Charge (easily-obtained fuel; 3 Hours; -0), Side Effects (KA 2d6, Area Of Effect (5" Radius) around the vehicle, automatically occurs when Flight is in use, only affects environment around Vehicle; -1¾)	[1cc]
-12	*Only Flies:* Ground Movement -6" (0" total)	
-2	*Only Flies:* Swimming -2" (0" total)	
	Operations Systems	
16	*Radar:* Radar (Radio Group), Discriminatory, Increased Arc Of Perception (360 Degrees), Telescopic (+8 versus Range Modifier); OIF Bulky (-1)	0
4	*Radio:* Radio Perception/Transmission (Radio Group); OIF Bulky (-1), Affected As Hearing Group As Well As Radio Group (-¼)	0

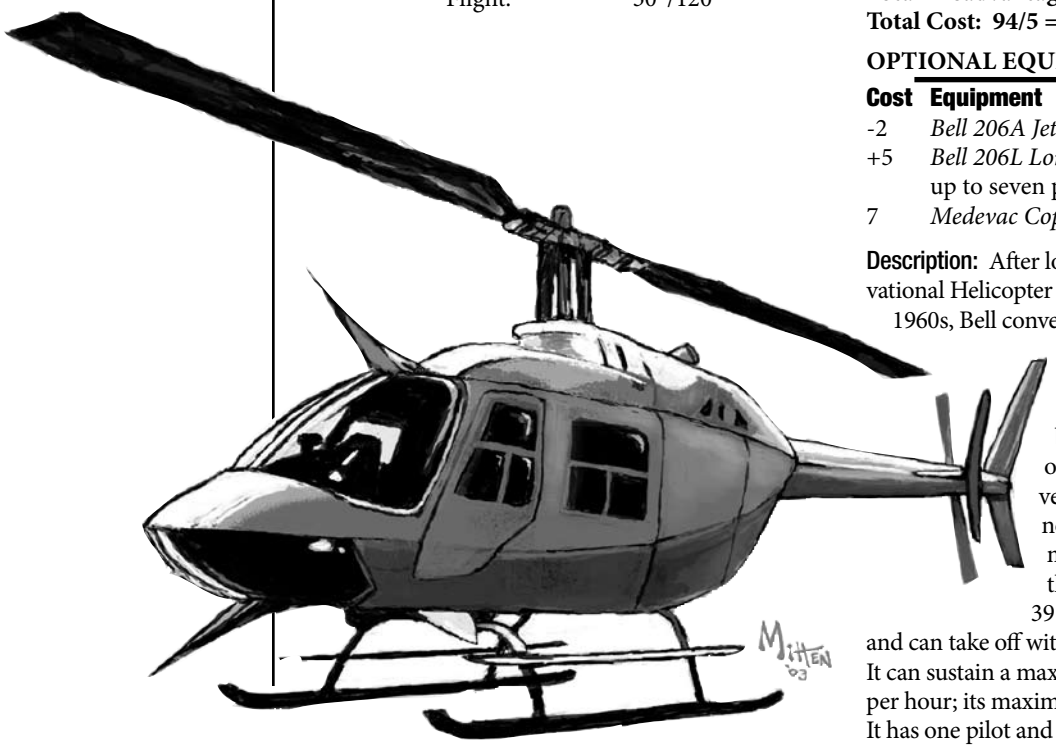
Total Abilities & Equipment Cost: 48
Total Vehicle Cost: 94

Value Disadvantages
None

Total Disadvantage Points: 0
Total Cost: 94/5 = 19

OPTIONAL EQUIPMENT

Cost	Equipment
-2	*Bell 206A Jetranger:* Decrease to Flight 28"
+5	*Bell 206L Longranger:* Increase to Size 8 (and up to seven passengers)
7	*Medevac Copter:* Add Paramedics 11-



Description: After losing the Army's Light Observational Helicopter (LOH) competition in the early 1960s, Bell converted its entrant into a civilian helicopter, the Jetranger. The first version was made available to the public in 1967, and by the late 1990s nearly 8,000 of its various models (including versions used by the military for non-combat purposes) had been manufactured. The latest version, the 206B-3 III, is approximately 39 feet long. It weighs 760 kg empty, and can take off with a maximum weight of 1,519 kg. It can sustain a maximum speed of about 133 miles per hour; its maximum altitude is about 13,500 feet. It has one pilot and can carry up to four passengers.

BELL 230 HELICOPTER

Val	Char	Cost	Notes
9	Size	45	8" x 4"; -9 KB; -6 DCV
30	STR	-25	Lift 1,600 kg; 6d6 HTH [0]
17	DEX	21	OCV: 6/DCV: 6
19	BODY	0	
4	DEF	5	Limited Coverage (not on windshield/windows; -¼)
3	SPD	3	Phases: 4, 8, 12
			Total Characteristic Cost: 49

Movement: Ground: 0"/0"
Swimming: 0"/0"
Flight: 36"/144"

Abilities & Equipment

Cost	Power	END
	Propulsion Systems	
50	*Rotor-Based Flight:* Flight 36", x4 Non-combat, Increased Deceleration (6" per hex), No Turn Mode (+¼), Sideways Maneuverability (+½); 1 Continuing Fuel Charge (easily-obtained fuel; 3 Hours; -0), Side Effects (KA 2d6, Area Of Effect (6" Radius) around the vehicle, automatically occurs when Flight is in use, only affects environment around Vehicle; -1¾)	[1cc]
-12	*Only Flies:* Ground Movement -6" (0" total)	
-2	*Only Flies:* Swimming -2" (0" total)	
	Operations Systems	
17	*Radar:* Radar (Radio Group), Discriminatory, Increased Arc Of Perception (360 Degrees), Telescopic (+10 versus Range Modifier); OIF Bulky (-1)	0
4	*Radio:* Radio Perception/Transmission (Radio Group); OIF Bulky (-1), Affected As Hearing Group As Well As Radio Group (-¼)	0
	Skills	
2	*Maneuverable:* +1 with Flight	

Total Abilities & Equipment Cost: 59
Total Vehicle Cost: 108

Value Disadvantages

None

Total Disadvantage Points: 0
Total Cost: 108/5 = 22

OPTIONAL EQUIPMENT

Cost	Equipment
+2	*Retractable Tricycle Landing Gear:* Change to Ground Movement -5" (1" total)
-12	*Bell 222:* Decrease to Size 7 and Flight 34"
7	*Bell 230 EMS Medevac Copter:* Add Paramedics 11-

Description: A successor to the popular Bell 222, the Bell 230 entered the market in 1992. It can carry up to nine passengers in addition to its pilot, though the six- and eight-passenger "executive" configurations are also popular.

The Bell 230 is approximately 50 feet long. It weighs 2,312 kg empty, and can take off with a maximum weight of 3,810 kg. It can sustain a maximum speed of about 162 miles per hour; its maximum altitude is about 12,400 feet.

SIKORSKY S-92 HELIBUS

Val	Char	Cost	Notes
10	Size	50	10" x 5"; -10 KB; -6 DCV
37	STR	-23	Lift 4,480 kg; 6d6 HTH [0]
17	DEX	21	OCV: 6/DCV: 6
20	BODY	0	
4	DEF	5	Limited Coverage (not on windshield/windows; -¼)
3	SPD	3	Phases: 4, 8, 12
			Total Characteristic Cost: 56

Movement: Ground: 1"/2"
Swimming: 0"/0"
Flight: 40"/160"

Abilities & Equipment

Cost	Power	END
	Propulsion Systems	
55	*Rotor-Based Flight:* Flight 40", x4 Noncombat, Increased Deceleration (6" per hex), No Turn Mode (+¼), Sideways Maneuverability (+½); 1 Continuing Fuel Charge (easily-obtained fuel; 3 Hours; -0), Side Effects (KA 2d6, Area Of Effect (9" Radius) around the vehicle, automatically occurs when Flight is in use, only affects environment around Vehicle; -1¾)	[1cc]
-10	*Retractable Tricycle Landing Gear:* Ground Movement -5" (1" total)	
-2	*Only Flies:* Swimming -2" (0" total)	
	Operations Systems	
17	*Radar:* Radar (Radio Group), Discriminatory, Increased Arc Of Perception (360 Degrees), Telescopic (+10 versus Range Modifier); OIF Bulky (-1)	0
4	*Radio:* Radio Perception/Transmission (Radio Group); OIF Bulky (-1), Affected As Hearing Group As Well As Radio Group (-¼)	0
	Skills	
2	*Maneuverable:* +1 with Flight	

Total Abilities & Equipment Cost: 66
Total Vehicle Cost: 122

Value Disadvantages
None

Total Disadvantage Points: 0
Total Cost: 122/5 = 24

Description: As its name "Helibus" indicates, this helicopter, which entered the market in 2002, is designed to carry passengers — up to 22, depending on its configuration. It makes extensive use of composite materials and has a modular airframe, thus minimizing both its weight and the number of parts used to construct it. Many of its design elements derive from the Sikorsky S-70A/UH-60 Black Hawk (page 103).

The Sikorsky S-92 is approximately 68 feet long. It weighs 7,031 kg empty, and can take off with a maximum weight of 11,430 kg. It can sustain a maximum speed of about 178 miles per hour; its maximum altitude is about 11,100 feet.

SIKORSKY VS-316

Val	Char	Cost	Notes
7	Size	35	5" x 2.5"; -7 KB; -4 DCV
20	STR	-25	Lift 400 kg; 4d6 HTH [0]
15	DEX	15	OCV: 5/DCV: 5
15	BODY	-2	
3	DEF	2	Limited Coverage (not on windshield/windows; -¼)
3	SPD	5	Phases: 4, 8, 12
			Total Characteristic Cost: 30

Movement: Ground: 0"/0"
Swimming: 0"/0"
Flight: 17"/68"

Abilities & Equipment

Cost	Power	END
	Propulsion Systems	
25	*Rotor-Based Flight:* Flight 17", x4 Noncombat, No Turn Mode (+¼), Sideways Maneuverability (+½); 1 Continuing Fuel Charge (easily-obtained fuel; 2 Hours; -0), Side Effects (KA 2d6, Area Of Effect (3" Radius) around the vehicle, automatically occurs when Flight is in use, only affects environment around Vehicle; -1¾)	[1cc]
-12	*Only Flies:* Ground Movement -6" (0" total)	
-2	*Only Flies:* Swimming -2" (0" total)	

Total Abilities & Equipment Cost: 11
Total Vehicle Cost: 41

Value Disadvantages
None

Total Disadvantage Points: 0
Total Cost: 41/5 = 8

OPTIONAL EQUIPMENT

Cost	Equipment
+5	*VS-316A:* Increase to Flight 21"
+9	*S-51 Dragonfly:* Increase to Flight 24"

Description: The Russian engineer Igor Sikorsky first attempted to fly a rotor-winged aircraft in 1909, but failed. In 1910 he created a craft that could barely lift itself into the air if it had no pilot. Realizing he needed to learn more about the subject of flight, he turned his talents to fixed-wing aircraft for a time.

After fleeing to the United States following the Bolshevik Revolution of 1917, Sikorsky continued his work on rotor craft. In 1938 he convinced the American government to fund his efforts, and in 1939 the world's first helicopter, his prototype VS-300, achieved tethered flight for a short period. By mid-1940 Sikorsky could keep a VS-300 in the air for 15 minutes; in May, 1941 he set an endurance record of just over 90 minutes of helicopter flight.

In 1942, the Vought-Sikorsky VS-316 made its service debut with the US Army Air Service Corps. Designated the R-4 Hoverfly (or, by the Navy, the HNS-1), it's approximately 33 feet long. It weighs 960 kg empty. It can sustain a maximum speed of about 75 miles per hour at high altitudes; its maximum altitude is about 8,000 feet. It has a range of

about 150 miles.

In October, 1943, the VS-316A (Hoverfly II) entered service. It's basically the same as the VS-316, but it's faster and has an operational ceiling of about 13,000 feet and a range of about 350 miles.

In February, 1946, Sikorsky introduced the S-51 Dragonfly to the commercial market. A refinement of his wartime R-5 design, it can achieve speeds of about 106 miles per hour.

MILITARY HELICOPTERS

Helicopters were first developed as military craft, and they continue to serve in that role through the present day. Their agility, hovering capacity, and ability to take off and land without a runway makes them ideal for many military missions... and "gunship" choppers can bring enormous amounts of firepower to bear against enemy targets.

Many combat helicopters have side-mounted guns fired by a gunner. Since these are on pintle mounts, the user's OCV is typically more important than the Vehicle's OCV, so the GM should consider adding the optional *Uses Character OCV Not Vehicle's OCV* Power Modifier from page 181 of *The Ultimate Vehicle.*

BELL AH-1W SUPERCOBRA

Val	Char	Cost	Notes
9	Size	45	8" x 4"; -9 KB; -6 DCV
30	STR	-25	Lift 1,600 kg; 6d6 HTH [0]
20	DEX	30	OCV: 7/DCV: 7
20	BODY	1	
10	DEF	19	Limited Coverage (not on windshield/windows; -¼)
4	SPD	10	Phases: 3, 6, 9, 12
			Total Characteristic Cost: 80

Movement: Ground: 0"/0"
Swimming: 0"/0"
Flight: 29"/116"

Abilities & Equipment

Cost	Power	END
	Propulsion Systems	
42	*Rotor-Based Flight:* Flight 29", x4 Noncombat, Increased Deceleration (7" per hex), No Turn Mode (+¼), Sideways Maneuverability (+½); 1 Continuing Fuel Charge (easily-obtained fuel; 3 Hours; -0), Side Effects (KA 2d6, Area Of Effect (4" Radius) around the vehicle, automatically occurs when Flight is in use, only affects environment around Vehicle; -1¾) [1cc]	
-12	*Only Flies:* Ground Movement -6" (0" total)	
-2	*Only Flies:* Swimming -2" (0" total)	
	Tactical Systems	
54	*M197 20mm Cannon (Forward-Mounted):* RKA 4d6, Autofire (3 shots; +¼), +1 Increased STUN Multiplier (+¼), 750 Charges (+1); OIF Bulky (-1), Limited Arc Of Fire (180 degrees forward; only on same horizontal level; -½), Real Weapon (-¼) [750]	
60	*AGM-114 Anti-Tank Missiles:* RKA 4d6, Armor Piercing (x2; +1), Explosion (+½), No Range Modifier (+½); OIF Bulky (-1), 4 Charges (-1) [4]	
5	*AGM-114 Anti-Tank Missiles:* 1 more pod of missiles (total of 2) [4]	
21	*Anti-Infrared Paint And Exhaust Suppression System:* Change Environment 8" radius, -4 to Infrared Perception Rolls, Reduced Endurance (0 END; +½), Persistent (+½); Easily Removed (see page 73; -½), No Range (-½), Self Only (-½)	0
	Operations Systems	
18	*Radar:* Radar (Radio Group), Discriminatory, Increased Arc Of Perception (360 Degrees), Telescopic (+10 versus Range Modifier), Difficult To Dispel (+¼); OIF Bulky (-1), Affected As Sight Group As Well As Radio Group (-½)	0
1	*Radar:* +2 PER with Radar, Difficult To Dispel (+¼); OIF Bulky (-1)	0
5	*Night Targeting System And FLIR:* Infrared Perception (Sight Group)	0
5	*Radar Warning Receiver:* Detect Detection By Radar 16- (Radio Group); OIF Bulky (-1)	0
5	*Communications System:* HRRP (Radio Group); OIF Bulky (-1), Affected As Sight And Hearing Group As Well As Radio Group (-½)	0
	Personnel Systems	
14	*Sealed Environment:* Life Support (Self-Contained Breathing; Safe Environments: Intense Cold, Low Pressure/Vacuum)	0
	Talents	
3	*Laser Rangefinder:* Absolute Range Sense	
	Skills	
4	*Highly Maneuverable:* +2 with Flight	
15	*Targeting Systems:* +3 with Ranged Combat	

Total Abilities & Equipment Cost: 238
Total Vehicle Cost: 318

Value Disadvantages

25	Distinctive Features: US military helicopter (Not Concealable; Causes Extreme Reaction [fear])

Total Disadvantage Points: 25
Total Cost: 293/5 = 59

OPTIONAL EQUIPMENT

Cost	Equipment
-11	*AH-1F HueyCobra:* Decrease to Flight 24" and +2 with Ranged Combat
-13	*AH-1G HueyCobra:* Decrease to Flight 22" and +2 with Ranged Combat; also choose M28 optional weapon
-119	*AH-1G "Snake" (U.S. Customs Service):* As AH-1G, plus replace M197 and AGM-114 with: *Nitesun Searchlight:* Sight Group Images, +4 to PER Rolls, Increased Size (4" radius; +½), Reduced Endurance (0 END;

+½); OIF Bulky (-1), Limited Range (50"; -¼), Only To Create Light (-1)

+15 *AH-1Z:* Increase to Flight 30" and 35 STR, and add: *Chaff Dispenser:* Darkness to Sight and Radio Groups 1" radius, MegaArea (1" = 100"; +¼); OIF Bulky (-1), Real Weapon (-¼), 12 Charges (-¼)

+11 *Enhanced Engine Package I:* Increase to Flight 37" (up to 219 miles per hour)

+18 *Enhanced Engine Package II:* Increase to Flight 43" (up to 255 miles per hour)

35 *M18 7.62mm Minigun:* RKA 2d6+1, Autofire (6 shots; +1), +1 Increased STUN Multiplier (+¼), 300 Charges (+1); OIF Bulky (-1), Limited Arc Of Fire (straight forward; only on same horizontal level; -1), Real Weapon (-¼)

31 *FFAR Rocket Pod:* RKA 3d6, Armor Piercing (+½), Explosion (+½), 19 Charges (+¼); OIF Bulky (-1), Real Weapon (-¼), Limited Arc Of Fire (0 degrees forward, same horizontal level; -1)

45 *AIM-9 Sidewinder Missiles:* Buy as Vehicles a total of eight missiles; use AIM-7 Sparrow (TUV, page 131)

-13 *M28 Tactical Armament Turret with Twin 7.62mm Guns:* Change M197 to RKA 2d6+1, Autofire (10 shots; +1), +1 Increased STUN Multiplier (+¼), 4,000 Charges (+1); OIF Bulky (-1), Limited Arc Of Fire (180 degrees forward; only on same horizontal level; -½), Real Weapon (-¼)

-18 *Twin M29 40mm Grenade Launchers:* Change M197 to RKA 2½d6, Explosion (+½), 300 Charges (+1); OIF Bulky (-1), Limited Arc Of Fire (180 degrees forward; only on same horizontal level; -½), Real Weapon (-¼)

Description: The Bell 209, better known as the AH-1 HueyCobra, was developed for the United States military in the 1960s. It proved a highly successful design and was adapted for many uses over the years. One of its variants is the AH-1W SuperCobra, which first flew in 1980. The SuperCobra's primary mission profiles include attack, close support, and antitank warfare.

The SuperCobra has several weapons. Its main gun is a three-barrelled M197 20mm cannon with 750 rounds of ammunition, but it can also carry up to 2,466 pounds of missiles, bombs, and like ordnance. Popular choices include BGM-71 or AGM-114 anti-tank missiles, Maverick ASMs and Sidewinder AAMs, TOWs, and the like. The character sheet version has AGM-114s; the options describe some other possibilities.

The US Marine Corps has plans to upgrade its AH-1Ws to the even better AH-1Z standard, which increases the craft's power and internal capacity. AH-1Zs will also have folding rotors for easier transport. As of late 2003, the first AH-1Z is scheduled to fly in 2005; its improvements will extend the copter's service life through 2020.

You can also use this character sheet for the AH-1S, the current version of the Bell 209 used by the U.S. Army, by choosing the "AIM-9 Sidewinder Missiles" option. For the so-called "up-gun AH-1S" version, also add two FFAR rocket pods.

The AH-1W SuperCobra is approximately 58 feet long. It weighs 4,627 kg empty, and can take off with a maximum weight of 6,691 kg. It can sustain a maximum speed of about 175 miles per hour; its maximum altitude is about 12,000 feet. It has a crew of two — one pilot, one gunner.

In addition to the United States, numerous countries, including Greece, Iran, Israel, Japan, Jordan, Pakistan, South Korea, Thailand, and Turkey, fly various versions of the AH-1. Some f these fleets (*e.g.,* Iran's) may largely no longer remain operational, due to lack of spare parts and the like.

BELL UH-1N IROQUOIS

Val	Char	Cost	Notes
9	Size	45	8" x 4"; -9 KB; -6 DCV
35	STR	-20	Lift 3,200 kg; 7d6 HTH [0]
18	DEX	24	OCV: 6/DCV: 6
21	BODY	2	
8	DEF	14	Limited Coverage (not on windshield/windows; -¼)
4	SPD	12	Phases: 3, 6, 9, 12
			Total Characteristic Cost: 77

Movement: Ground: 0"/0"
Swimming: 0"/0"
Flight: 27"/108"

Abilities & Equipment

Cost	Power	END
	Propulsion Systems	
39	*Rotor-Based Flight:* Flight 27", x4 Noncombat, Increased Deceleration (6" per hex), No Turn Mode (+¼), Sideways Maneuverability (+½); 1 Continuing Fuel Charge (easily-obtained fuel; 4 Hours; -0), Side Effects (KA 2d6, Area Of Effect (7" Radius) around the vehicle, automatically occurs when Flight is in use, only affects environment around Vehicle; -1¾)	[1cc]
-12	*Only Flies:* Ground Movement -6" (0" total)	
-2	*Only Flies:* Swimming -2" (0" total)	
	Tactical Systems	
46	*M134 7.62mm Minigun (Starboard):* RKA 2d6+1, Autofire (8 shots; +1), +1 Increased STUN Multiplier (+¼), 500 Charges (+1); OIF Bulky (-1), Limited Arc Of Fire (180 degrees starboard; -¼), Real Weapon (-¼)	[500]
5	*M134 7.62mm Minigun (Port):* 1 more Minigun (total of 2)	[500]
	Operations Systems	
13	*Radar:* Radar (Radio Group), Discriminatory, Increased Arc Of Perception (360 Degrees), Telescopic (+8 versus Range Modifier); OIF Bulky (-1), Affected As Sight Group As Well As Radio Group (-½)	0
4	*Radio:* Radio Perception/Transmission (Radio Group); OIF Bulky (-1), Affected As Hearing Group As Well As Radio Group (-¼)	0
	Skills	
2	*Maneuverable:* +1 with Flight	

Total Abilities & Equipment Cost: 95
Total Vehicle Cost: 172

Value Disadvantages

25	Distinctive Features: US military helicopter (Not Concealable; Causes Extreme Reaction [fear])

Total Disadvantage Points: 25
Total Cost: 147/5 = 29

OPTIONAL EQUIPMENT

Cost	Equipment
+5	*UH-1B:* Add two more Miniguns (one on each side)
-8	*UH-1H:* Decrease to Flight 21"
+1	*Huey 800 Upgrade Package:* Increase to Flight 28"
+22	*H1 4BN Upgrade Package:* Increase to Flight 28" and add Change Environment 8" radius, -4 to Infrared Perception Rolls, Reduced Endurance (0 END; +½), Persistent (+½); Easily Removed (see page 73; -½), No Range (-½), Self Only (-½)
-51	*Noncombatant Copter:* Remove Miniguns
5	*Night Targeting System And FLIR:* Infrared Perception (Sight Group)
5	*Night Targeting System And FLIR:* Nightvision 0
5	*Radar Warning Receiver:* Detect Detection By Radar 16- (Radio Group); OIF Bulky (-1) 0
+12	*12.7mm Machine Guns:* Change M134 miniguns to RKA 3d6, Autofire (8 shots; +1), +1 STUN Multiplier (+¼), 500 Charges (+1); OIF Bulky (-1), Limited Arc Of Fire (180 degrees starboard; -¼), Real Weapon (-¼)
+32	*20mm Machine Guns:* Change M134 miniguns to RKA 4d6, Autofire (8 shots; +1), +1 Increased STUN Multiplier (+¼), 500 Charges (+1); OIF Bulky (-1), Limited Arc Of Fire (180 degrees starboard; -¼), Real Weapon (-¼)
+45	*XM30 30mm Machine Guns:* Change M134 miniguns to RKA 4½d6, Autofire (8 shots; +1), +1 Increased STUN Multiplier (+¼), 500 Charges (+1); OIF Bulky (-1), Limited Arc Of Fire (180 degrees starboard; -¼), Real Weapon (-¼)
24	*Rocket Pod:* RKA 3d6, Armor Piercing (+½), Explosion (+½); OIF Bulky (-1), Real Weapon (-¼), Limited Arc Of Fire (0 degrees forward, same horizontal level; -1), 7 Charges (-½)
31	*M3 FFAR Rocket Pod:* RKA 3d6, Armor Piercing (+½), Explosion (+½), 24 Charges (+¼); OIF Bulky (-1), Real Weapon (-¼), Limited Arc Of Fire (0 degrees forward, same horizontal level; -1)
36	*Nose-Mounted 40mm Grenade Launcher:* RKA 2½d6, Explosion (+½), 300 Charges (+1); OIF Bulky (-1), Limited Arc Of Fire (180 degrees forward; only on same horizontal level; -½), Real Weapon (-¼)

Description: The UH-1 Iroquois, nicknamed the "Huey" and more formally known as the Bell 204/205 or 212, is one of the most successful military helicopters in existence. Bell has produced thousands of them, in dozens of variations, since it first entered service with the United States military in 1959; numerous other nations also use it, and it's available in civilian models as well. It saw extensive deployment in, among other conflicts, the Vietnam War.

Although it most often functions as a troop transport, casualty evacuation chopper, command and control vehicle, resupply copter, and the like, and thus isn't necessarily armed, the Huey can mount one gun in each of the large doors on either side of the main body. Typically these are 7.62mm machine guns, but other types of guns are possible. Additional weapons, such as rocket pods or missiles, can be mounted on the sides to turn the helicopter into a gunship suitable for search-and-destroy or riverine patrol missions.

The "Huey" is approximately 50 feet long (some models are shorter, some a little longer). It weighs approximately 2,700 kg empty, and can take off with a maximum weight of 5,050 kg. It can sustain a maximum speed of about 161 miles per hour; its maximum altitude is about 14,200 feet. It has a crew of three (pilot, co-pilot, crewman/gunner) and can carry up to 14 passengers (or six stretchers for casualties) (the exact number depends on the model).

BELL BOEING V22 OSPREY

Val	Char	Cost	Notes
9	Size	45	8" x 4"; -9 KB; -6 DCV
45	STR	-10	Lift 12.5 tons; 9d6 HTH [0]
18	DEX	24	OCV: 6/DCV: 6
19	BODY	0	
10	DEF	24	Limited Coverage (not on windshield/windows; -¼), Hardened (+¼)
4	SPD	12	Phases: 3, 6, 9, 12
			Total Characteristic Cost: 95

Movement: Ground: 1"/2"
Swimming: 0"/0"
Flight: 30"/240"

Abilities & Equipment

Cost	Power	END
	Propulsion Systems	
25	*Proprotor-Based Flight:* Flight 30", x8 Noncombat; 1 Continuing Fuel Charge (easily-obtained fuel; 6 Hours; -0), Side Effects (KA 2d6, Area Of Effect (6" Radius) around [or sometimes in front of] the vehicle, automatically occurs when Flight is in use, only affects environment around Vehicle; -1¾)	[1cc]
-10	*Wheels:* Ground Movement -5" (1" total)	
-2	*Only Flies:* Swimming -2" (0" total)	
	Tactical Systems	
50	*GDAS Nose Turret-Mounted 12.7mm Machine Gun:* RKA 3d6, Autofire (5 shots; +½), +1 STUN Multiplier (+¼), 200 Charges (+1); OIF Bulky (-1), Limited Arc Of Fire (180 degrees forward; -¼), Real Weapon (-¼)	[200]
19	*Exhaust Suppression System:* Change Environment 8" radius, -3 to Infrared Perception Rolls, Reduced Endurance (0 END; +½), Persistent (+½); Easily Removed (see page 73; -½), No Range (-½), Self Only (-½)	0
8	*Chaff Dispenser:* Darkness to Sight and Radio Groups 1" radius, MegaArea (1" = 100"; +¼); OIF Bulky (-1), Real Weapon (-¼), 12 Charges (-¼)	[12]
	Operations Systems	
18	*Radar:* Radar (Radio Group), Discriminatory, Increased Arc Of Perception (360 Degrees), Telescopic (+10 versus Range Modifier), Difficult To Dispel (+¼); OIF Bulky (-1), Affected As Sight Group As Well As Radio Group (-½)	0
1	*Radar:* +2 PER with Radar, Difficult To Dispel (+¼); OIF Bulky (-1)	0
5	*Radar Warning Receiver:* Detect Detection By Radar 16- (Radio Group); OIF Bulky (-1)	0
5	*Pilot Nightvision System:* Infrared Perception (Sight Group)	0
5	*Communications System:* HRRP (Radio Group); OIF Bulky (-1), Affected As Sight And Hearing Group As Well As Radio Group (-½)	0

Bell Boeing V22 Osprey

Personnel Systems

14 *Sealed Environment:* Life Support (Self-Contained Breathing; Safe Environments: Intense Cold, Low Pressure/Vacuum) 0

Talents

3 *Laser Rangefinder:* Absolute Range Sense

Skills

4 *Highly Maneuverable:* +2 with Flight
15 *Targeting Systems:* +3 with Ranged Combat

Total Abilities & Equipment Cost: 160
Total Vehicle Cost: 255

Value Disadvantages

25 Distinctive Features: US military helicopter (Not Concealable; Causes Extreme Reaction [fear])
5 Physical Limitation: takes 1 Turn to change modes, and may not perform Vehicle Maneuvers during that time (see text) (Infrequent, Slightly Impairing)

Total Disadvantage Points: 30
Total Cost: 225/5 = 45

Description: The V22 Osprey, formally known as the Bell Boeing Model 901, is a unique craft developed for use by the U.S. military (primarily the Marines). It resembles a plane more than a helicopter, and its two rotors are mounted at the end of wing-like structures. The rotors can change orientation from upright (helicopter-style) to forward (airplane-style), thus giving the vehicle the ability to take off and land vertically (like a helicopter) while still achieving the high speeds of an airplane once in flight. Changing from "helicopter" to "airplane" mode requires 1 Turn while in flight; during this Turn the Osprey may not perform any Vehicle Maneuvers.

The Osprey is primarily intended as a troop transport. However, it does have one nose-mounted gun.

In recent years, several highly-publicized accidents involving Ospreys have cost the lives of dozens of American soldiers and cast the future of the V22 into some doubt. However, the U.S. military seems determined to stick with the vehicle, and is working to improve its safety record.

The V22 is approximately 57 feet long. It approximately 15,000 kg empty, and can take off with a maximum weight of 21,500 kg vertically or 27,000 kilograms using a runway. It can sustain a maximum speed of about 361 miles per hour at optimum altitude in "airplane" mode; its maximum speed in "helicopter" mode is about 115 miles per hour (Flight 19", x4 Noncombat). Its maximum altitude is about 26,000 feet. It has a crew of two to four, and can carry up to 24 fully-equipped troops or 12 litters.

BOEING CH-47D CHINOOK

Val	Char	Cost	Notes
9	Size	45	8" x 4"; -9 KB; -6 DCV
45	STR	-10	Lift 12.5 tons; 9d6 HTH [0]
15	DEX	15	OCV: 5/DCV: 5
22	BODY	3	
8	DEF	14	Limited Coverage (not on windshield/windows; -¼)
4	SPD	15	Phases: 3, 6, 9, 12
			Total Characteristic Cost: 82

Movement: Ground: 1"/2"
Swimming: 0"/0"
Flight: 31"/124"

Abilities & Equipment

Cost Power **END**

Propulsion Systems

36 *Rotor-Based Flight:* Flight 31", x4 Noncombat, Sideways Maneuverability (+½); 1 Continuing Fuel Charge (easily-obtained fuel; 3 Hours; -0), Side Effects (KA 2d6, Area Of Effect (9" Radius) around the vehicle, automatically occurs when Flight is in use, only affects environment around Vehicle; -1¾) [1cc]
-10 *Wheels:* Ground Movement -5" (1" total)
-2 *Only Flies:* Swimming -2" (0" total)

Tactical Systems

46 *M134 7.62mm Minigun (Starboard):* RKA 2d6+1, Autofire (8 shots; +1), +1 Increased STUN Multiplier (+¼), 8,000 Charges (+1); OIF Bulky (-1), Limited Arc Of Fire (180 degrees starboard; -¼), Real Weapon (-¼) [8,000]
5 *M134 7.62mm Minigun (Port):* 1 more Minigun (total of 2) [8,000]

Operations Systems

13 *Radar:* Radar (Radio Group), Discriminatory, Increased Arc Of Perception (360 Degrees), Telescopic (+8 versus Range Modifier); OIF Bulky (-1), Affected As Sight Group As Well As Radio Group (-½) 0
5 *Radar Warning Receiver:* Detect Detection By Radar 16- (Radio Group); OIF Bulky (-1)

4 *Radio:* Radio Perception/Transmission (Radio Group); OIF Bulky (-1), Affected As Hearing Group As Well As Radio Group (-¼) 0

Total Abilities & Equipment Cost: 97
Total Vehicle Cost: 179

Value Disadvantages

25 Distinctive Features: US military helicopter (Not Concealable; Causes Extreme Reaction [fear])

Total Disadvantage Points: 25
Total Cost: 154/5 = 31

OPTIONAL EQUIPMENT

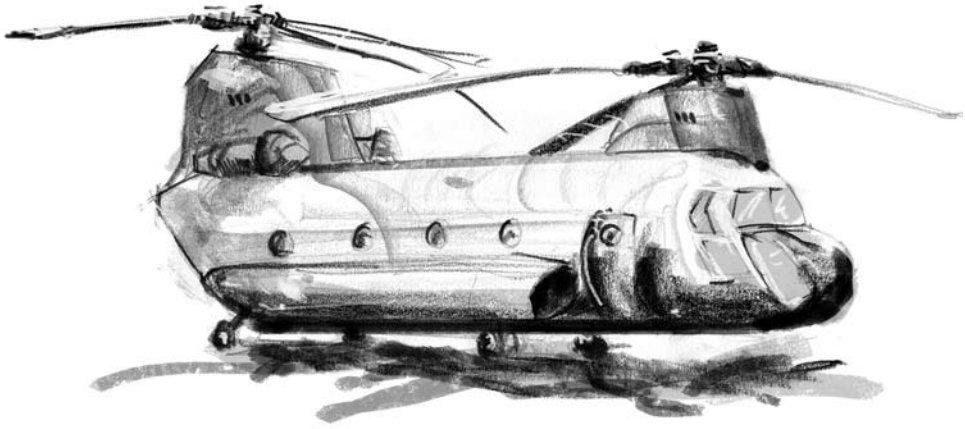
Cost	Equipment
-4	*CH-47A:* Decrease Flight to 27"
-3	*CH-47B:* Decrease Flight to 28"
-1	*CH-47C:* Decrease Flight to 30"
+1	*CH-47F ICH-Enhanced Chinook:* Increase to Flight 32"
-51	*Noncombatant Copter:* Remove Miniguns
5	*Nightvision-Compatible Flightdeck:* Infrared Perception (Sight Group)
5	*Nightvision-Compatible Flightdeck:* Nightvision
+12	*12.7mm Machine Guns:* Change M134 miniguns to RKA 3d6, Autofire (8 shots; +1), +1 STUN Multiplier (+¼), 8,000 Charges (+1); OIF Bulky (-1), Limited Arc Of Fire (180 degrees starboard; -¼), Real Weapon (-¼)
38	*MH-47E Rear M60 Machine Gun:* RKA 2d6+1, Autofire (5 shots; +½), +1 Increased STUN Multiplier (+¼), 8,000 Charges (+1); OIF Bulky (-1), Limited Arc Of Fire (180 degrees aft; -¼), Real Weapon (-¼) [8,000]
+1	*MH-47E Communications System:* Change Radio to HRRP (Radio Group); OIF Bulky (-1), Affected As Sight And Hearing Group As Well As Radio Group (-½)
+2	*MH-47E APQ-174 Radar:* Change Radar to have Telescopic (+12 versus Range Modifier)
8	*Chaff Dispenser:* Darkness to Sight and Radio Groups 1" radius, MegaArea (1" = 100"; +¼); OIF Bulky (-1), Real Weapon (-¼), 12 Charges (-¼)
43	*Winch:* Stretching 20", Reduced Endurance (0 END; +½); OAF Bulky (-1½), Always Direct (-¼), No Noncombat Stretching (-¼), Cannot Do Damage (-½)

Description: An enlarged and improved version of the Vertol CH-46, the Boeing CH-47 "Chinook" first flew in 1961; the model depicted by this sheet, the CH-47D, entered service in 1982. It has a distinctive appearance. Instead of a long tail with a small, vertically-oriented tail rotor, it has two large horizontal rotors, one forward and one aft.

Since the Chinook's debut, Boeing has manufactured more than a thousand of them, and it remains in frontline service with the U.S. military (and many other nations) as a troop and cargo transport. It saw extensive use in the Vietnam War, as well as conflicts and operations since then. For example, during the Bosnia peacekeeping mission, one company with 16 Chinooks flew for 2,200 operational hours and carried more than 3.2 million pounds of cargo. The Improved Cargo Helicopter Program (ICH) will extend the Chinook's lifespan through 2025-2030 and improve its performance in many ways.

Although not intended as a fighting helicopter, the Chinook can be equipped with machine guns. One variant, the MH-47, is built for more combat-intensive missions (such as overt or covert infiltration and exfiltration) and comes equipped with nightvision systems, improved avionics, and the like. Like other versions of the Chinook, the MH-47 is capable of in-flight refueling.

The Chinook is approximately 50 feet long (nearly 100 feet, counting the rotors). It weighs approximately 10,151 kg empty, and can take off with a maximum weight of 22,679 kg (it can carry cargo both internally and externally). It can sustain a maximum speed of about 186 miles per hour; its maximum altitude is about 10,800 feet. It has a crew of three (pilot, co-pilot, loadmaster) and can carry up to 55 passengers (or 24 litters).



BOEING-SIKORSKY RAH-66 COMANCHE

Val	Char	Cost	Notes
8	Size	40	6.4" x 3.2"; -8 KB; -5 DCV
30	STR	-20	Lift 1,600 kg; 6d6 HTH [0]
24	DEX	42	OCV: 8/DCV: 8
20	BODY	2	
12	DEF	30	
4	SPD	6	Phases: 3, 6, 9, 12
			Total Characteristic Cost: 100

Movement: Ground: 0"/0"
Swimming: 0"/0"
Flight: 34"/136"

Abilities & Equipment

Cost Power **END**

Propulsion Systems

50 *Rotor-Based Flight:* Flight 34", x4 Non-combat, Increased Deceleration (8" per hex), No Turn Mode (+¼), Sideways Maneuverability (+½); 1 Continuing Fuel Charge (easily-obtained fuel; 2.5 Hours; -0), Side Effects (KA 2d6, Area Of Effect (6" Radius) around the vehicle, automatically occurs when Flight is in use, only affects environment around Vehicle; -1¾) [1cc]
-12 *Only Flies:* Ground Movement -6" (0" total)
-2 *Only Flies:* Swimming -2" (0" total)

Tactical Systems

90 *XM-301 20mm Machine Gun:* RKA 4d6, Autofire (8 shots; +1), Armor Piercing (+½), +1 Increased STUN Multiplier (+¼), 500 Charges (+1); OIF Bulky (-1), Real Weapon (-¼), Limited Arc Of Fire (120 degrees forward; -¼) [500]
33 *Hellfire Missile Racks:* RKA 4d6, Armor Piercing (x2; +1), Explosion (+½); OIF Bulky (-1), Real Weapon (-¼), Limited Arc Of Fire (0 degrees forward, same horizontal level; -1), 3 Charges (-1¼) [3]
5 *Hellfire Missile Racks:* Another Hellfire rack (total of 2) [3]
2 *Armored Crash Seat:* +10 PD; OIF Bulky (-1), Only To Protect Occupants Against Damage From Crashes (-2) 0
2 *Armored Crash Seat:* Another Armored Crash Seat (total of 2) 0
24 *Infrared Suppression Systems:* Change Environment 8" radius, -6 to Infrared Perception Rolls, Reduced Endurance (0 END; +½), Persistent (+½); Easily Removed (see page 73; -½), No Range (-½), Self Only (-½) 0
28 *Stealth Configuration And Systems:* Change Environment 8" radius, -6 to Radio Group Perception Rolls, Reduced Endurance (0 END; +½), Persistent (+½); Easily Removed (see page 73; -½), No Range (-½), Self Only (-½) 0
21 *Anhedral-Tipped Rotors And Fan-In-Fin Tail Rotor:* Change Environment 8" radius, -3 to Hearing Group Perception Rolls, Reduced Endurance (0 END; +½), Persistent (+½); Easily Removed (see page 73; -½), No Range (-½), Self Only (-½) 0
8 *Chaff Dispenser:* Darkness to Sight and Radio Groups 1" radius, MegaArea (1" = 100"; +¼); OIF Bulky (-1), Real Weapon (-¼), 12 Charges (-¼) [12]

Operations Systems

18 *Millimeter-Wave Radar:* Radar (Radio Group), Discriminatory, Increased Arc Of Perception (360 Degrees), Telescopic (+12 versus Range Modifier), Difficult To Dispel (+¼); OIF Bulky (-1), Affected As Sight Group As Well As Radio Group (-½) 0
1 *Millimeter-Wave Radar:* +2 PER with Radar, Difficult To Dispel (+¼); OIF Bulky (-1) 0
5 *Infrared Systems:* Infrared Perception (Sight Group) 0
5 *Nightvision Systems:* Nightvision 0
5 *Radar Warning Receiver:* Detect Detection By Radar 16- (Radio Group); OIF Bulky (-1) 0
5 *Laser Warning Receiver:* Detect Detection By Laser 16- (Sight Group); OIF Bulky (-1) 0
5 *Communications System:* HRRP (Radio Group); OIF Bulky (-1), Affected As Sight And Hearing Group As Well As Radio Group (-½) 0

Personnel Systems

14 *Sealed Environment:* Life Support (Self-Contained Breathing; Safe Environments: Intense Cold, Low Pressure/Vacuum) 0

Talents

3 *Laser Rangefinder:* Absolute Range Sense

Skills

4 *Highly Maneuverable:* +2 with Flight
20 *Targeting Systems:* +4 with Ranged Combat

Total Abilities & Equipment Cost: 334
Total Vehicle Cost: 434

Value Disadvantages

25 Distinctive Features: US Army Attack Helicopter (Not Concealable; Causes Extreme Reaction [fear])

Total Disadvantage Points: 25
Total Cost: 409/5 = 82

OPTIONAL EQUIPMENT

Cost	Equipment
+0	*Air-To-Air Stinger (ATAS) Missiles:* Change Hellfires to RKA 4d6, Armor Piercing (+½), Explosion (+½), No Range Modifier (+½); OIF Bulky (-1), Real Weapon (-¼), Limited Arc Of Fire (0 degrees forward, same horizontal level; -1), 3 Charges (-1¼)
35	*Stub-Wings With Hellfire Missiles:* RKA 4d6, Armor Piercing (x2; +1), Explosion (+½); OIF Bulky (-1), Real Weapon (-¼), Limited Arc Of Fire (0 degrees forward, same horizontal level; -1), 4 Charges (-1)
5	*Stub-Wings With Hellfire Missiles:* Another Stub-Wing (total of 2)
-9	*M260 Hydra Air-To-Surface Rocket Pod:* Replace Hellfires with: RKA 3d6, Armor Piercing (+½), Explosion (+½); OIF Bulky (-1), Real Weapon (-¼), Limited Arc Of Fire (0 degrees forward, same horizontal level; -1), 7 Charges (-½)
+3	*Advanced Threat Infrared Countermeasures (ATIC):* Increase Infrared Suppression Systems to -8 to Infrared Perception

Description: Similar in size to the AH-64 Apache (TUV, page 79), the Comanche first flew in prototype in 1996, and operational capability is scheduled for 2006. The U.S. Army currently plans to purchase nearly 1,100 of them.

Like the Apache, the Comanche carries an impressive weapons load. It has a 20mm cannon in an undernose turret, and can carry 6 Hellfire missiles, 12 Stinger missiles, or other weapons in its two weapon bays (this character sheet has six Hellfires); up to eight more Hellfires or 16 more Stingers can be mounted on optional stub-wings. Additionally, the Comanche incorporates stealth technology, making it significantly harder to track via radar or IR than the Apache. And thanks to its five-bladed composite rotor system with anhedral tips and its shrouded "fan-in-fin" tail rotor, the Comanche is six times quieter than the Apache.

The military can easily get Comanches to a war zone. The upper tail folds down and the main rotor removes for storage so that a C-5 Galaxy transport can carry eight Comanches. After they're removed from the plane, restoring the Comanche to operational readiness takes only 20 minutes.

The Comanche is approximately 43 feet long. It weighs approximately 4,060 kg empty, and can take off with a maximum weight of 5,276 kg. It can sustain a maximum speed of about 204 miles per hour; it has a tactical radius of about 173 miles. It has a crew of two (pilot, co-pilot/gunner).

MIL MI-24/-25/-35 HIND-D

Val	Char	Cost	Notes
10	Size	50	10" x 5"; -10 KB; -6 DCV
36	STR	-24	Lift 3,840 kg; 7d6 HTH [0]
21	DEX	33	OCV: 7/DCV: 7
21	BODY	1	
12	DEF	30	
4	SPD	9	Phases: 3, 6, 9, 12
			Total Characteristic Cost: 99

Movement:		
	Ground:	1"/2"
	Swimming:	0"/0"
	Flight:	32"/128"

Abilities & Equipment

Cost	Power	END
	Propulsion Systems	
45	*Rotor-Based Flight:* Flight 32", x4 Non-combat, Increased Deceleration (6" per hex), No Turn Mode (+¼), Sideways Maneuverability (+½); 1 Continuing Fuel Charge (easily-obtained fuel; 4 Hours; -0), Side Effects (KA 2d6, Area Of Effect (8" Radius) around the vehicle, automatically occurs when Flight is in use, only affects environment around Vehicle; -1¾)	[1cc]
-10	*Wheels:* Ground Movement -5" (1" total)	
-2	*Only Flies:* Swimming -2" (0" total)	
	Tactical Systems	
58	*YakB 12.7mm Machine Gun (Nose-Mounted):* RKA 3d6, Autofire (8 shots; +1), +1 Increased STUN Multiplier (+¼), 750 Charges (+1); OIF Bulky (-1), Limited Arc Of Fire (180 degrees forward; -¼), Real Weapon (-¼)	[750]
29	*AT-2 ATGW Missiles:* RKA 4d6, Armor Piercing (x2; +1), Explosion (+½); OIF Bulky (-1), Real Weapon (-¼), Limited Arc Of Fire (0 degrees forward, same horizontal level; -1), 1 Charge (-2)	[1]
15	*AT-2 ATGW Missiles:* Five more AT-2s (total of six)	[1]
23	*Exhaust Suppression System:* Change Environment 10" radius, -3 to Infrared Perception Rolls, Reduced Endurance (0 END; +½), Persistent (+½); Easily Removed (see page 73; -½), No Range (-½), Self Only (-½)	0
	Operations Systems	
13	*Radar:* Radar (Radio Group), Discriminatory, Increased Arc Of Perception (360 Degrees), Telescopic (+8 versus Range Modifier); OIF Bulky (-1), Affected As Sight Group As Well As Radio Group (-½)	0
5	*All-Weather Targeting System And FLIR:* Infrared Perception (Sight Group)	0
5	*All-Weather Targeting System And FLIR:* Nightvision	0
5	*Radar Warning Receiver:* Detect Detection By Radar 16- (Radio Group); OIF Bulky (-1)	0

MIL Mi-24 HIND

5 *Communications System:* HRRP (Radio Group); OIF Bulky (-1), Affected As Sight And Hearing Group As Well As Radio Group (-½) 0

Skills

4 *Maneuverable:* +2 with Flight
20 *Pitot Aiming Arm:* +4 with Ranged Combat

Total Abilities & Equipment Cost: 215
Total Vehicle Cost: 314

Value Disadvantages

25 Distinctive Features: Soviet military helicopter (Not Concealable; Causes Extreme Reaction [fear])

Total Disadvantage Points: 25
Total Cost: 289/5 = 58

OPTIONAL EQUIPMENT

Cost	Equipment
-1	*Hind-A/B/C:* Change Communication System to Radio Perception/Transmission
var	*57mm Rocket Pod:* Replace any one AT-2 with RKA 2½d6, Armor Piercing (+½), Explosion (+½); OIF Bulky (-1), Real Weapon (-¼), Limited Arc Of Fire (0 degrees forward, same horizontal level; -1), 16 Charges (-0) (total cost: 25 points)
var	*23mm Gun Pod:* Replace any one AT-2 with RKA 4d6, Autofire (6 shots; +1), +1 Increased STUN Multiplier (+¼), 750 Charges (+1); OIF Bulky (-1), Limited Arc Of Fire (0 degrees forward, only on same horizontal level; -1), Real Weapon (-¼) (total cost: 60 points)
+12	*Mi-24P/-35P:* Change 12.7mm machine gun to 30mm Cannon mounted forward starboard: RKA 4½d6, Autofire (8 shots; +1), +1 Increased STUN Multiplier (+¼), 750 Charges (+1); OIF Bulky (-1), Limited Arc Of Fire (0 degrees forward, only on same horizontal level; -1), Real Weapon (-¼)
+27	*Mi-28 Havoc:* Decrease to Flight 31"; change 12.7mm machine gun to RKA 4½d6, Autofire (8 shots; +1), +1 Increased STUN Multiplier (+¼), 750 Charges (+1); OIF Bulky (-1), Limited Arc Of Fire (180 degrees forward; -¼), Real Weapon (-¼); and reduce AT-2s to a total of four

Description: The Mi-24 "Hind" entered service with the Soviet military in 1974. It was originally conceived as an armed and armored troop transport, but carrying troops diminished the copter's attack capability too much. Later variations reduced the troop-carrying capacity in favor of making the Hind a pure attack helicopter.

In addition to its nose-mounted 12.7mm machine gun, the Hind has two "wings," one on each side, with three hardpoints each. It can carry a variety of missiles, rocket pods, or other weapons on these wings; this character sheet has six AT-2 air-to-ground missiles. Some variants have more powerful machine guns as well.

The Hind is approximately 70 feet long. It weighs approximately 8,400 kg empty, and can take off with a maximum weight of 12,500 kg. It can sustain a maximum speed of about 192 miles per hour; its maximum altitude is about 14,765 feet. It has a crew of two to three, and can carry up to eight fully-equipped troops.

The Soviet Union, and later the CIS/Russian Federation, has exported various versions of the Hind to numerous nations around the world.

With the changes indicated in the options, you can convert this character sheet to the Mi-28 Havoc, a similar helicopter that has two hardpoints on each of its "wings."

SIKORSKY MH-53J/M PAVE LOW

Val	Char	Cost	Notes
10	Size	50	10" x 5"; -10 KB; -6 DCV
45	STR	-15	Lift 12.5 tons; 9d6 HTH [0]
20	DEX	30	OCV: 7/DCV: 7
23	BODY	3	
12	DEF	30	
4	SPD	10	Phases: 3, 6, 9, 12
			Total Characteristic Cost: 108

Movement: Ground: 1"/2"
Swimming: 0"/0"
Flight: 33"/132"

Abilities & Equipment

Cost	Power	END
	Propulsion Systems	
46	*Rotor-Based Flight:* Flight 33", x4 Non-combat, Increased Deceleration (6" per hex), No Turn Mode (+¼), Sideways Maneuverability (+½); 1 Continuing Fuel Charge (easily-obtained fuel; 4 Hours; -0), Side Effects (KA 2d6, Area Of Effect (10" Radius) around the vehicle, automatically occurs when Flight is in use, only affects environment around Vehicle; -1¾)	[1cc]
-10	*Wheels:* Ground Movement -5" (1" total)	
-2	*Only Flies:* Swimming -2" (0" total)	

Tactical Systems

46 *M134 7.62mm Minigun (Starboard):* RKA 2d6+1, Autofire (8 shots; +1), +1 Increased STUN Multiplier (+¼), 8,000 Charges (+1); OIF Bulky (-1), Limited Arc Of Fire (180 degrees starboard; -¼), Real Weapon (-¼) [8,000]

10 *M134 7.62mm Minigun (Port, Forward):* 2 more Miniguns (total of 3) [8,000]

Operations Systems

15 *Radar:* Radar (Radio Group), Discriminatory, Increased Arc Of Perception (360 Degrees), Telescopic (+12 versus Range Modifier); OIF Bulky (-1), Affected As Sight Group As Well As Radio Group (-½) 0

5 *Communications System:* HRRP (Radio Group); OIF Bulky (-1), Affected As Sight And Hearing Group As Well As Radio Group (-½) 0

5 *Night Targeting System And FLIR:* Infrared Perception (Sight Group) 0

5 *Night Targeting System And FLIR:* Nightvision 0

5 *Radar Warning Receiver:* Detect Detection By Radar 16- (Radio Group); OIF Bulky (-1)

Skills

2 *Maneuverable:* +1 with Flight

Total Abilities & Equipment Cost: 127
Total Vehicle Cost: 235

Value Disadvantages

25 Distinctive Features: US military helicopter (Not Concealable; Causes Extreme Reaction [fear])

Total Disadvantage Points: 25
Total Cost: 210/5 = 42

OPTIONAL EQUIPMENT

Cost	Equipment
+12	*.50 Miniguns:* Change M134 miniguns to RKA 3d6, Autofire (8 shots; +1), +1 Increased STUN Multiplier (+¼), 8,000 Charges (+1); OIF Bulky (-1), Limited Arc Of Fire (180 degrees starboard; -¼), Real Weapon (-¼)

Description: Developed from the HH-53 combat rescue helicopter of the Vietnam era, the "Pave Low" has been modified and upgraded since then to make it a versatile helicopter used by the Special Forces for long-range infiltration and exfiltration missions in any weather. It's flown in every major American military engagement or mission of the 1980s, '90s, and 2000s.

In addition to its advanced avionics and in-flight refueling system, the Pave Low carries three 7.62mm miniguns — one on each side and one forward. Some models substitute a .50 caliber machine gun instead.

The Pave Low is approximately 70 feet long. It weighs approximately 10,700 kg empty, and can take off with a maximum weight of 22,680 kg. It can sustain a maximum speed of about 196 miles per hour; its maximum altitude is about 20,400 feet, and its combat range about 1,000 miles. It has a crew of six (pilot, co-pilot, two gunners, two flight engineers) and can carry up to 38 passengers (or 14 litters).

SIKORSKY UH-60A BLACKHAWK

Val	Char	Cost	Notes
10	Size	50	10" x 5"; -10 KB; -6 DCV
35	STR	-25	Lift 3,200 kg; 7d6 HTH [0]
22	DEX	36	OCV: 7/DCV: 7
20	BODY	0	
12	DEF	30	
4	SPD	8	Phases: 3, 6, 9, 12
			Total Characteristic Cost: 99

Movement: Ground: 1"/2"
Swimming: 0"/0"
Flight: 24"/96"

Abilities & Equipment

Cost	Power	END
	Propulsion Systems	
36	*Rotor-Based Flight:* Flight 24", x4 Non-combat, Increased Deceleration (7" per hex), No Turn Mode (+¼), Sideways Maneuverability (+½); 1 Continuing Fuel Charge (easily-obtained fuel; 3 Hours; -0), Side Effects (KA 2d6, Area Of Effect (8" Radius) around the vehicle, automatically occurs when Flight is in use, only affects environment around Vehicle; -1¾)	[1cc]
-10	*Wheels:* Ground Movement -5" (1" total)	
-2	*Only Flies:* Swimming -2" (0" total)	
	Tactical Systems	
46	*M134 7.62mm Minigun (Starboard):* RKA 2d6+1, Autofire (8 shots; +1), +1 Increased STUN Multiplier (+¼), 8,000 Charges (+1); OIF Bulky (-1), Limited Arc Of Fire (180 degrees starboard; -¼), Real Weapon (-¼)	[8,000]
5	*M134 7.62mm Minigun (Port):* 1 more Miniguns (total of 2)	[8,000]
8	*Chaff Dispenser:* Darkness to Sight and Radio Groups 1" radius, MegaArea (1" = 100"; +¼); OIF Bulky (-1), Real Weapon (-¼), 12 Charges (-¼)	[12]
	Operations Systems	
15	*Radar:* Radar (Radio Group), Discriminatory, Increased Arc Of Perception (360 Degrees), Telescopic (+12 versus Range Modifier); OIF Bulky (-1), Affected As Sight Group As Well As Radio Group (-½)	0
5	*Radar Warning Receiver:* Detect Detection By Radar 16- (Radio Group); OIF Bulky (-1)	0
5	*Communications System:* HRRP (Radio Group); OIF Bulky (-1), Affected As Sight And Hearing Group As Well As Radio Group (-½)	0
5	*Night Targeting System And FLIR:* Infrared Perception (Sight Group)	0
5	*Night Targeting System And FLIR:* Nightvision	0
	Skills	
4	*Maneuverable:* +2 with Flight	
10	*Targeting Systems:* +2 with Ranged Combat	

Total Abilities & Equipment Cost: 132
Total Vehicle Cost: 231

Value Disadvantages

25	Distinctive Features: US military helicopter (Not Concealable; Causes Extreme Reaction [fear])

Total Disadvantage Points: 25
Total Cost: 206/5 = 41

OPTIONAL EQUIPMENT

Cost	Equipment
+24	*UH-60L:* Increase to Flight 25" and add *Exhaust Suppression System:* Change Environment 10" radius, -3 to Infrared Perception Rolls, Reduced Endurance (0 END; +½), Persistent (+½); Easily Removed (see page 73; -½), No Range (-½), Self Only (-½)
+26	*UH-60M:* As UH-60L, but increase to Flight 26"
7	*UH-60Q Medevac:* Add Paramedics 11- (can carry up to 6 litters)
102	*EH-60C:* Add Change Environment 64" radius, -6 to Radio Group and Infrared Perception Rolls, Multiple Combat Effects, Reduced Endurance (0 END; +½)
+9	*MH-60 Pave Hawk:* Increase to Flight 31"
-51	*SH-60B Seahawk/SH-60F Ocean Hawk:* Replace Miniguns with three Mark 50 torpedoes bought as additional vehicles (use Mark 48 ADCAP, TUV page 133; this costs +30 points)
13	*SH-60R Upgrade:* Add Active Sonar (Hearing Group), Discriminatory, Increased Arc Of Perception (360 Degrees), Telescopic (+8 versus Range Modifier); OIF Bulky (-1), Affected As Sight And Hearing Groups As Well As Radio Group (-½)
+12	*.50 Miniguns:* Change M134 minigun to RKA 3d6, Autofire (8 shots; +1), +1 Increased STUN Multiplier (+¼), 8,000 Charges (+1); OIF Bulky (-1), Limited Arc Of Fire (180 degrees starboard; -¼), Real Weapon (-¼) [8,000]
45	*External Stores Support System (ESSS), First Configuration (Hellfire Missiles):* RKA 4d6, Armor Piercing (x2; +1), Explosion (+½); OIF Bulky (-1), Real Weapon (-¼), Limited Arc Of Fire (0 degrees forward, same horizontal level; -1), 4 Charges (-1) **plus** another three racks of four Hellfires each
41	*External Stores Support System (ESSS), Second Configuration (FFAR):* RKA 3d6, Armor Piercing (+½), Explosion (+½), 19 Charges (+¼); OIF Bulky (-1), Real Weapon (-¼), Limited Arc Of Fire (0 degrees forward, same horizontal level; -1) **plus** another three pods of 19 missiles each
+0	*External Stores Support System (ESSS), Third Configuration (Extra Fuel):* Extra fuel tanks to extend operational range (change Continuing Fuel Charge for longer flying time; see text)
43	*Winch:* Stretching 20", Reduced Endurance (0 END; +½); OAF Bulky (-1½), Always

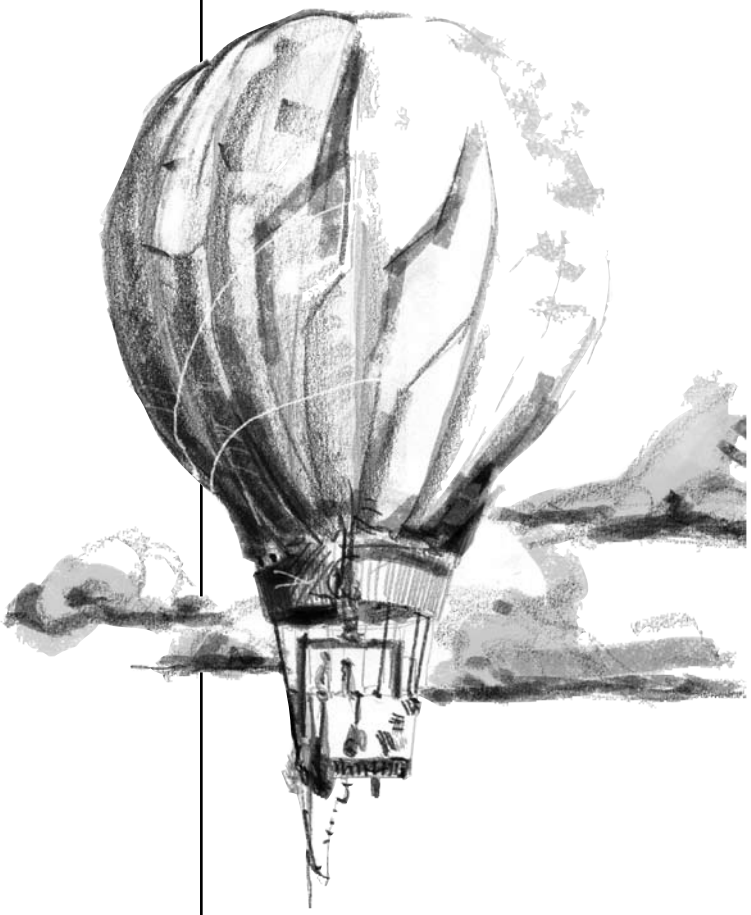
Direct (-¼), No Noncombat Stretching (-¼), Cannot Do Damage (-½)

Description: Formally designated the S-70, the Sikorsky UH-60 family of helicopters is one of the most successful ever created. Beginning with the UH-60A Blackhawk, which entered service with the U.S. military in 1979, it remains in steady production today. Sikorsky has created dozens of variants of it, and it's been widely exported in various forms.

In its numerous variants, the Blackhawk can perform many different missions. While it's perhaps best known as a combat patrol craft and an infiltration/exfiltration vehicle for Special Forces operations, it can be configured for combat search and rescue, medevac, electronic warfare, troop transport, Presidential transport, drug interdiction, and many other tasks. One of the most popular variants, the SH-60B Seahawk, is used by the Navy in anti-ship and anti-submarine warfare. The SH-60R Multi-Mission Helicopter Upgrade program is intended to harmonize the different versions of the S-70 used by the Navy and extend their lifespan for another 25 years.

The Blackhawk is approximately 65 feet long. It weighs approximately 6,191 kg empty, and can take off with a maximum weight of 9,182 kg. It can sustain a maximum speed of about 145 miles per hour. It has a combat range of about 57 miles with a three-hour loiter, or 173 miles for a one-hour loiter; with external fuel tanks it can extend its range to nearly 1,400 miles. It has a crew of three to four and can carry up to 11 troops.

MISCELLANEOUS AIR VEHICLES



HOT AIR BALLOON

Val	Char	Cost	Notes
10	Size	50	10" x 5"; -10 KB; -6 DCV
25	STR	-35	Lift 800 kg; 5d6 HTH [0]
5	DEX	-15	OCV: 1/DCV: 1
10	BODY	-10	
2	DEF	0	
1	SPD	0	Phases: 12
			Total Characteristic Cost: -10

Movement:	Ground:	0"/0"
	Swimming:	0"/0"
	Flight:	3"/3"

Abilities & Equipment

Cost	Power	END
	Propulsion Systems	
2	*Lighter Than Air:* Flight 3"; OAF (easily-damaged balloon; -1), Sailed (can only go straight up or down on its own; horizontal movement is at the mercy of the winds; -½), No Noncombat Movement (-¼), 1 Continuing Fuel Charge (easily-obtained fuel; 40 minutes per cylinder; -0)	[1cc]
-12	*Only Flies:* Ground Movement -6" (0" total)	
-2	*Only Flies:* Swimming -2" (0" total)	
48	*Fire Extinguisher:* Dispel 12d6, all Fire Powers simultaneously (+2); OAF (-1), 12 Charges (-¼)	[12]
4	*Pyrometer:* Detect Temperature Of Air In Balloon 17-; OAF Bulky (-1½)	0
4	*Altimeter:* Detect Height Above The Ground 17-; OAF Bulky (-1½)	0
4	*Variometer:* Detect Speed Of Ascent And Descent 17-; OAF Bulky (-1½)	0

Talents

1 *Compass:* Bump Of Direction; OAF Bulky (-1½)

Total Abilities & Equipment Cost: 49
Total Vehicle Cost: 39

Value Disadvantages

5 Physical Limitation: taking off requires 20 Minutes of heating the air in the balloon (Infrequent; Slightly Limiting)

Total Disadvantage Points: 5
Total Cost: 34/5 = 7

OPTIONAL EQUIPMENT

Cost	Equipment
14	*High-Altitude Balloon:* Add Life Support (Self-Contained Breathing; Safe Environments: Intense Cold, Low Pressure)

Description: This character sheet represents a typical modern hot air balloon. It's about twenty meters tall, and consists of several parts: the basket, or gondola (traditionally made of woven willow, even today), which can carry two to four people depending on size; the burner, which uses propane gas to heat the air in the balloon (the aluminum cylinders holding the propane contain enough fuel for about 40 minutes of flight each); and the balloon itself, which has a diameter of about 18 meters and is made of 1,300 square feet of nylon. Typically the balloon is roughly spherical, but in recent years balloonists have created balloons with many fanciful shapes.

To use a balloon, the pilot must pump hot air into the balloon using the burner. When he heats enough air to equal the weight of the basket and its occupants, the balloon reaches equilibrium. If he pumps more air in, the balloon becomes light enough to lift off. Thereafter he can control altitude by varying the amount of heated air in the balloon — by letting some air cool, he can make the balloon descend, by heating more he makes it rise. Typically maintaining altitude requires the pilot to turn on the burner for a few seconds every half minute (in game terms, for 1 Phase every two Turns). (A temperature sensor in the roof of the balloon keeps the pilot from making the air hotter than 120 degrees Celsius, the melting point of nylon.) He can only control the balloon's flight vertically; horizontally it moves as the wind dictates.

Ballooning began in France in 1783, when the Montgolfier brothers, papermakers by trade, built the first hot air balloon from paper and linen. Initially they only sent animals aloft, but later that year human passengers flew via balloon for 25 minutes. Another French balloonist, Jacques Alexandre Charles, in that same year created a balloon that was filed with hydrogen (generated by mixing iron filings into sulphuric acid) instead of hot air, creating the "Charliere" balloon. Balloon experiments were soon being conducted all over Europe, in America, and elsewhere.

In 1785, the English Channel was crossed in a Charliere balloon. Soon more and more distance records were set, and in 1859 John Wise sailed from St. Louis to New York state in a balloon, covering over 800 miles in just 20 hours. Balloons were employed for reconnaissance by both sides in the American Civil War, and saw similar use in wars both before and after that.

In the modern day, high-tech, high-altitude balloons have allowed adventurers like Steve Fossett to cross oceans and continents, and even circumnavigate the globe. The current altitude record for a balloon, set in 1961, is nearly 114,000 feet, but even in 1935 balloons with pressurized capsules could soar as high as 74,000 feet.

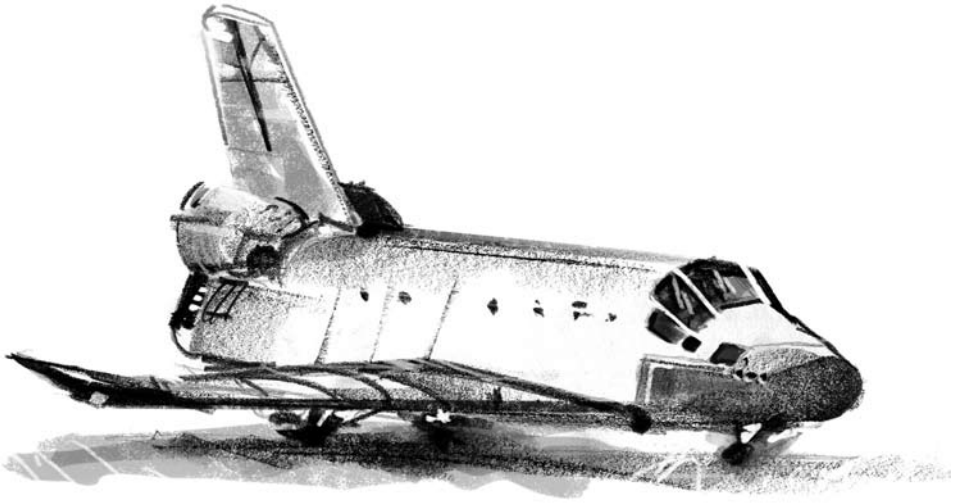
SPACE SHUTTLE

Val	Char	Cost	Notes
13	Size	65	20" x 10"; -13 KB; -8 DCV
51	STR	-24	Lift 30 tons; 10d6 HTH [0]
12	DEX	6	OCV: 4/DCV: 4
23	BODY	0	
8	DEF	18	
4	SPD	18	Phases: 3, 6, 9, 12
			Total Characteristic Cost: 83

Movement: Ground: 6"/12"
Swimming: 0"/0"
Flight: 35"/140"

Abilities & Equipment

Cost	Power	END
	Propulsion Systems	
21	*Basic Flight:* Flight 35", x4 Noncombat; Side Effects (KA 2d6, 7" Line behind engines, automatically occurs when Flight is in use, only affects environment around vehicle; -1¾), Stall Velocity (17"; -¼), Takeoff/Landing (see text; -½), 1 Continuing Fuel Charge (easily-obtained fuel; 6 Hours; -0)	[1cc]
31	*Booster Rocket-Assisted Flight:* Flight +12" and increase to x250 Noncombat, 172 Charges (enough for 8.5 minutes of assisted flight; +1); Side Effects (KA 2d6, 20" Line behind engines, automatically occurs when Flight is in use, only affects environment around vehicle; -1¾), Stall Velocity (increases to 23"; -¼), Takeoff/Landing (see text; -½)	[172]
6	*Braking Parachute:* Increased Deceleration +10" (can subtract 15" of Flight per hex); OIF Bulky (-1), 1 Recoverable Charge (-1¼)	[1rc]
-2	*Only Flies:* Swimming -2" (0" total)	
	Operations Systems	
16	*Heat Shielding:* +8 DEF; Only Works Against Limited Type Of Attack (fire/heat; -½)	0
5	*Navigational Systems:* Detect Exact Position On Earth 16- (Radio Group); OIF Bulky (-1)	0
9	*Navigational Systems:* Navigation (Air, Space) 17-; OIF Bulky (-1)	0
1	*Navigational Systems:* Bump Of Direction; OIF Bulky (-1)	0
19	*Remote Manipulation System (Canadarm):* Extra Limb (1); OIF Bulky (-1), Requires A PS: Use RMS	



Roll (-¼), Limited Manipulation (-¼) **plus** Stretching 7", Reduced Endurance (0 END; +½); OIF Bulky (-1), Cannot Do Damage (-½), Linked (-¼), No Noncombat Stretching (-¼) 0

Personnel Systems

8 *Sealed Environment:* Life Support (Safe Environments: High Radiation, Intense Cold, Intense Heat, Low Pressure/Vacuum) 0

13 *Life Support Systems:* Life Support (Self-Contained Breathing; Diminished Eating: no need to eat); 1 Continuing Fuel Charge (easily replaced from sources outside the ship; 2 Weeks; -0) [1cc]

Total Abilities & Equipment Cost: 127
Total Vehicle Cost: 210

Value Disadvantages
None

Total Disadvantage Points: 0
Total Cost: 210/5 = 42

Description: Developed by NASA and Rockwell, the Space Shuttle (or, more accurately, the Shuttle Orbiter) is a re-usable spacecraft — it can return from space, land in much the same way as a jetliner, and then launch into space again. It was first launched on April 12, 1981, and as of the year 2000 had flown over 100 missions. Unfortunately, those missions have not been without tragedy. The *Challenger* disaster in January, 1986 resulted in the loss of that craft and all six astronauts aboard; the *Columbia* explosion in February, 2003 likewise cost the lives of seven astronauts and destroyed another Shuttle. As of 2004, the Shuttle fleet includes the *Endeavour,* the *Discovery,* and the *Atlantis.* While the American government expects the Shuttle to remain in use through at least 2010, NASA has begun investigating designs for future re-usable spacecraft, such as the X-33 and VentureStar projects.

The Orbiter has three main engines directly aft. To build up the speed necessary to leave the atmosphere and orbit Earth, it uses two large booster rockets and an external fuel tank to power them. After about 8.5 minutes, the boosters use up that fuel and all three attachments fall away from the Orbiter.

The Shuttle possesses numerous avionics and operational systems that are among the most sophisticated on Earth. These include its advanced navigational systems, which it uses to pinpoint re-entry positions and make proper landings. Another system of note is the Remote Manipulation System (the Shuttle's 50 foot long "robot arm" for grasping and moving objects outside the craft).

The Shuttle itself (without booster rockets) is about 122 feet long (184 feet with booster rockets) and has a wingspan of about 79 feet. Its speed at booster tank separation, about 8.5 minutes post-launch, is 17,440 miles per hour, and its orbital speed is 17,321 (with a minimal orbital altitude of 115 miles and maximum of 500 miles). Its landing speed is about 212 miles per hour. The Shuttle with booster rockets weighs slightly over two million kilograms; its weight at landing is 104,326 kilograms. It can carry a total of eight persons (a commander and seven crewmembers) and a maximum payload of 28,000 kg (usually satellites, scientific equipment, and the like).

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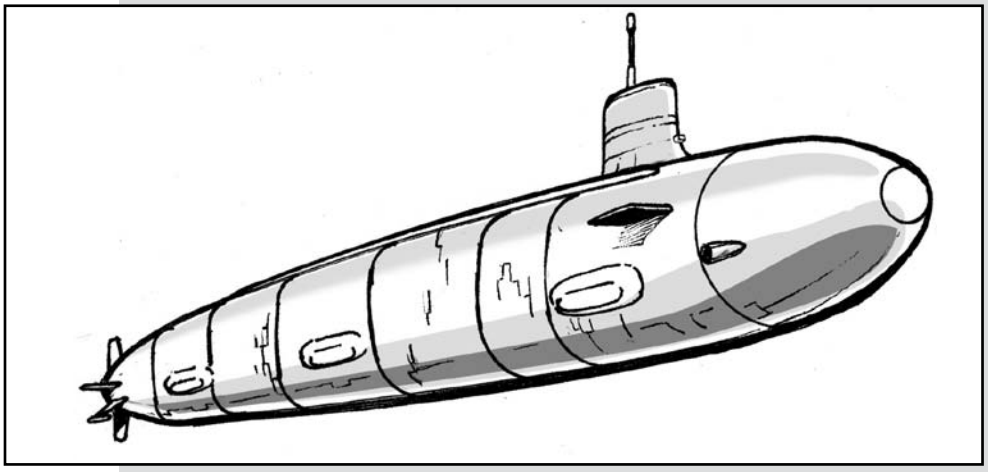
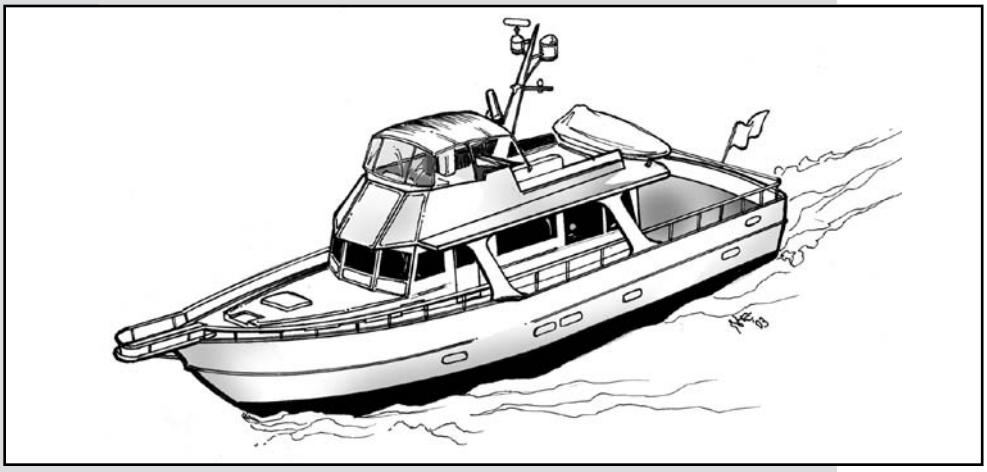
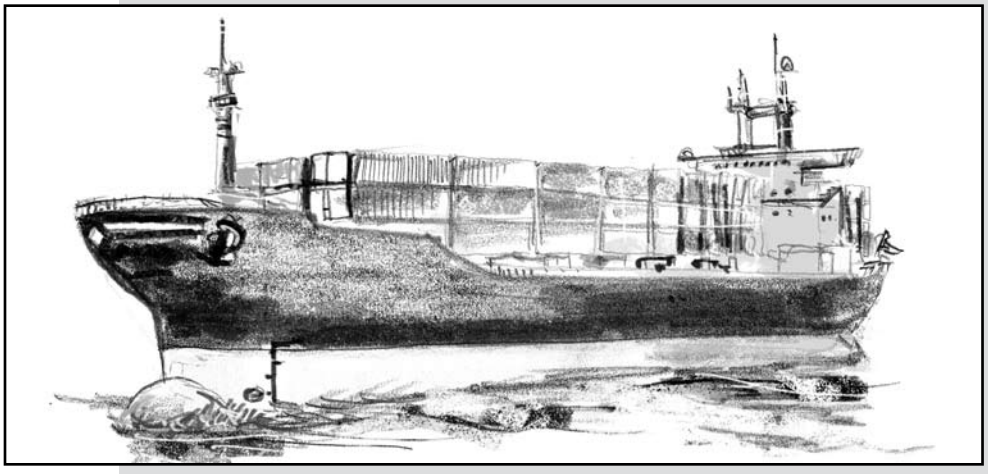






WATER VEHICLES

SAILING SHIPS

One of the earliest types of watercraft was the sailed boat or ship. Chapter Three of *The Ultimate Vehicle* has more information on how they work and how to create them in *HERO System* terms.

OTHER WATER VEHICLES

In addition to the vehicles described here, you can find several water vehicles in *The Ultimate Vehicle:*

- Canoe (page 61)
- Cruise Ship (page 65)
- Galleon (page 63)
- *Los Angeles*-Class Nuclear Submarine (page 68)
- *Nimitz*-Class Aircraft Carrrier (page 67)
- Speedboat (page 64)
- *Spruance*-Class Destroyer (page 66)
- Trireme (page 61)
- Viking Longship (page 62)
- Zodiac F-470 CRRC (page 64)

BRIG/BRIGANTINE

Val	Char	Cost	Notes
10	Size	50	10" x 5"; -10 KB; -6 DCV
50	STR	-10	Lift 25 tons; 10d6 HTH [0]
12	DEX	6	OCV: 4/DCV: 4
20	BODY	0	
4	DEF	5	Does Not Protect Some Occupants (-¼)
3	SPD	8	Phases: 4, 8, 12
			Total Characteristic Cost: 59

Movement: Ground: 0"/0"
Swimming: 6"/12"

Abilities & Equipment

Cost	Power	END
1	*Sailed Watercraft:* Swimming +4" (6" total); Surface Only (-1), Sailed (-1), OAF (sails; -1), Limited Maneuverability (-¼), Cannot Move Backwards (-¼)	0
5	*Two-Masted Ship:* Total of two masts	
-12	*Water Vehicle:* Ground Movement -6" (0" total)	
22	*Large Boat's Anchor:* 60 STR, Reduced Endurance (0 END; +½); OIF Bulky (-1), Partial Coverage (-2)	0

Total Abilities & Equipment Cost: 16
Total Vehicle Cost: 75

Value Disadvantages
None

Total Disadvantage Points: 0
Total Cost: 75/5 = 15

ADDITIONAL VEHICLES

Cost	Vehicle
2	*Lifeboats:* Two lifeboats (use Canoe, TUV page 61)

OPTIONAL EQUIPMENT

Cost	Equipment
+11	*Variant Brigantine:* Remove second mast and add:

Cost	Power
1	*Rowed Watercraft:* Swimming +2" (4" total); Surface Only (-1), OAF (oars; -1), Costs Endurance (rower's END; -½), Increased Endurance Cost (x3 END; -1), Limited Maneuverability (-¼)
15	*28 Oars:* x7 oars (total of 28)
9	*Eighteen-Pounder Cannons:* RKA 2d6, Increased Maximum Range (2,000"; +½); OIF Bulky (cannons; -1), Real Weapon (-¼), Extra Time (1 Turn to load and fire; -1¼), Limited Arc Of Fire (one hex row, same horizontal level; -1), 12 Charges (-¼)
20	*Eighteen-Pounder Cannons:* 13 more Eighteen-Pounders (total of 14) (some gun-brigs had even more cannons)

Description: The term "brig" has meant different things in various places and times around the world. Here it derives from the term "brigantine," generally meaning a two-masted ship with the foremast square-rigged and the mainmast fore-and-aft rigged (treat as fully fore-and-aft rigged for speed purposes). (Some authorities also use the term "brigantine" for a single-masted ship that was sometimes also rowed.) However, the brig differs from the brigantine in that both masts are square-rigged, but it has a fore-and-aft sail rigged on gaff. A similar type of ship, the *snow,* has a third small mast, the trysail mast, which hoists the gaff mainsail. All three types of ship were about 1,000 tonnes maximum.

During the 1600s and 1700s, brigs were commonly used as merchant ships in the North Sea and Mediterranean areas. Their size meant a small crew (about a dozen men) could handle the ship, but it was big enough to carry a lot of cargo. In some cases owners converted brigs into warships, in which configuration they were the favorite of some pirates.

CARAVEL

Val	Char	Cost	Notes
10	Size	50	10" x 5"; -10 KB; -6 DCV
55	STR	-5	Lift 50 tons; 11d6 HTH [0]
14	DEX	12	OCV: 5/DCV: 5
20	BODY	0	
4	DEF	5	Does Not Protect Some Occupants (-¼)
3	SPD	6	Phases: 4, 8, 12
			Total Characteristic Cost: 68

Movement: Ground: 0"/0"
Swimming: 7"/14"

Abilities & Equipment

Cost	Power	END
1	*Sailed Watercraft:* Swimming +5" (7" total); Surface Only (-1), Sailed (-1), OAF (sails; -1), Limited Maneuverability (-¼), Cannot Move Backwards (-¼)	0
10	*Three-Masted Ship:* Total of three masts	
-12	*Water Vehicle:* Ground Movement -6" (0" total)	
22	*Large Boat's Anchor:* 60 STR, Reduced Endurance (0 END; +½); OIF Bulky (-1), Partial Coverage (-2)	0

Total Abilities & Equipment Cost: 21
Total Vehicle Cost: 89

Value Disadvantages

None

Total Disadvantage Points: 0
Total Cost: 89/5 = 18

ADDITIONAL VEHICLES

Cost	Vehicle
4	*Lifeboats:* Four lifeboats (use Canoe, TUV page 61)

OPTIONAL EQUIPMENT

Cost	Equipment
+5	*Large Caravel:* Increase to Size 11
-5	*Caravelõe:* Decrease to Size 9
+3	*Stronger Caravel:* Increase to STR 58
+5	*Caravela de Armada:* Increase to Size 11 and four masts
9	*Twelve-Pounder Cannons:* RKA 2d6, Increased Maximum Range (2,000"; +½); OIF Bulky (cannons; -1), Real Weapon (-¼), Extra Time (1 Turn to load and fire; -1¼), Limited Arc Of Fire (one hex row, same horizontal level; -1), 12 Charges (-¼)
20	*Twelve-Pounder Cannons:* 15 more Twelve-Pounders (total of 16)

Description: The caravel is a three-masted sailing ship popular in the Mediterranean, and to a lesser extent the waters around the British Isles, in the fifteenth and sixteenth centuries (primarily 1430-1530). It derives from earlier northest African, Portuguese, and Castillian fishing vessels known as *caravo*s or *qarib*s. After English and Irish raiders captured some of them in the 1440-60 period, the caravel helped to spread the skeleton-hull-and-carvel-planking style of ship building to Northern Europe. This gave rise to the three-masted *carvel* used in the waters around the British Isles.

Although used primarily as a trading and fishing vessel, the caravel also sailed in voyages of exploration, largely because of its shallow draft, ability to tack to windward, and general seaworthiness. The Portuguese explored the coast of Africa in caravels; when Bartholomew Diaz rounded the Cape of Good Hope in 1487, he was in a caravel. Two of Columbus's ships, the *Niña* and the *Pinta,* were caravels.

Some captains armed their caravels for patrol duties, interdiction, and anti-piracy missions. Cannon above 15-pounders were usually considered unsafe for caravels, due to the weapons' weight and size.

Most caravels have a distinctive appearance — a low silhouette, no forecastle, a square stern, and a low, long aftercastle or quarterdeck. It had a draft of about 6-7 feet (1"); later caravels were as much as 75 feet long (with 50-foot keels), 25 feet beam, a hold 9 feet long, and 110-120 tons in weight. Early caravels were lateen-rigged (*caravela latina*), but captains later converted many to square rigs on the foremast and mainmast (*caravela redonda*). Although considered highly maneuverable, the caravel also requires careful handling. Caravels typically have crews of about 12-30 sailors.

CARRACK

Val	Char	Cost	Notes
12	Size	60	16" x 8"; -12 KB; -8 DCV
70	STR	0	Lift 400 tons; 14d6 HTH [0]
10	DEX	0	OCV: 3/DCV: 3
25	BODY	3	
4	DEF	5	Does Not Protect Some Occupants (-¼)
3	SPD	10	Phases: 4, 8, 12
			Total Characteristic Cost: 78

Movement: Ground: 0"/0"
Swimming: 5"/10"

Abilities & Equipment

Cost	Power	END
	Propulsion Systems	
1	*Sailed Watercraft:* Swimming +3" (5" total); Surface Only (-1), Sailed (-1), OAF (sails; -1), Limited Maneuverability (-¼), Cannot Move Backwards (-¼)	0
10	*Four-Masted Ship:* Total of four masts	
-12	*Water Vehicle:* Ground Movement -6" (0" total)	
	Tactical Systems	
14	*Thirty-Pounder Cannons:* RKA 3d6, Increased Maximum Range (2,500"; +½); OIF Bulky (cannons; -1), Real Weapon (-¼), Extra Time (1 Turn to load and fire; -1¼), Limited Arc Of Fire (one hex row, same horizontal level; -1), 12 Charges (-¼)	[12]
25	*Thirty-Pounder Cannons:* 31 more Thirty-Pounders (total of 32)	[12]
26	*Large Boat's Anchor:* 70 STR, Reduced Endurance (0 END; +½); OIF Bulky (-1), Partial Coverage (-2)	0
	Skills	
4	*Seizing Grapnel:* +2 OCV with Grab	

Total Abilities & Equipment Cost: 68
Total Vehicle Cost: 146

Value Disadvantages
None

Total Disadvantage Points: 0
Total Cost: 146/5 = 29

ADDITIONAL VEHICLES

Cost	Vehicle
4	*Lifeboats:* Four lifeboats (use Canoe, TUV page 61)

OPTIONAL EQUIPMENT

Cost	Equipment
-10	*Two-Masted Carrack:* Reduce to Size 11 and two masts
+10	*Bristling With Guns:* Increase to 124 more Thirty-Pounders (total of 125)

Description: The carrack is a large ship first built in Italy in the late 1300s or early 1400s. It became the preferred type of ship for journeys between Italy/Iberia and Northern Europe during much of the fifteenth and sixteenth centuries, but had largely fallen out of use by 1600. Although based on the cog (page 112), it was longer, more maneuverable, and had more carrying capacity. Thanks to its ability to carry large amounts of bulk cargo, it helped to forge and cement trade routes between major European cities.

Many carracks were also used as warships. Because they were tall and rode high in the water, they gave soldiers on board the ability to fire down at other ships and made it harder for enemies to board, both considerable tactical advantages in medieval naval battles. The carrack depicted in this character sheet has 16 30-pounder cannons on each side, as well as a "seizing grapnel" that could be fired from the bow to make it easier for the ship to grab and hold onto an enemy vessel.

One of the most famous carracks (or, more accurately, carrack evolving into a galleon) is the *Mary Rose,* a 91-gun warship built in 1510 by Henry VIII of England. In 1545 it rolled over due to badly-hoisted sails and sank into the Thames on its way to battle French warships, leading to the deaths of 700 crewmen and soldiers. It was recovered in 1982 and has proved an important archaeological find.

A carrack has three or four masts, typically with a square rig on the fore- and mainmasts, and a latteen sail on the mizzenmast. It's a little over 100 feet long, with a beam of about 38 feet (5.5"), and heavy — some of the enormous Portuguese carracks weighed as much as 2,000 tons, though most carracks were in the 400-1,200 ton range. It has one to three decks. It has a high, curved stem, a rounded stern with square corners, and an integral forecastle that rises higher than the aftercastle. It has a crew of about 20-40 for a commercial vessel, or as much as 400 or more for the larger war-carracks.

CLIPPER SHIP

Val	Char	Cost	Notes
15	Size	75	32" x 16"; -15 KB; -10 DCV
85	STR	0	Lift 3.2 ktons; 17d6 HTH [0]
11	DEX	3	OCV: 4/DCV: 4
25	BODY	0	
4	DEF	5	Does Not Protect Some Occupants (-¼)
3	SPD	9	Phases: 4, 8, 12
			Total Characteristic Cost: 92

Movement: Ground: 0"/0"
Swimming: 9"/18"

Abilities & Equipment

Cost	Power	END
	Propulsion Systems	
1	*Sailed Watercraft:* Swimming +7" (9" total); Surface Only (-1), Sailed (-1), OAF (sails; -1), Limited Maneuverability (-¼), Cannot Move Backwards (-¼)	0
3	*Full Rig:* +10 BODY; Partial Coverage (sails only; -2)	0
10	*Three-Masted Ship:* Total of three masts	
-12	*Water Vehicle:* Ground Movement -6" (0" total)	
32	*Large Boat's Anchors:* 85 STR, Reduced Endurance (0 END; +½); OIF Bulky (-1), Partial Coverage (-2)	0
5	*Large Boat's Anchors:* A second anchor (total of 2)	0

Total Abilities & Equipment Cost: 39
Total Vehicle Cost: 131

Value Disadvantages

None

Total Disadvantage Points: 0
Total Cost: 131/5 = 26

ADDITIONAL VEHICLES

Cost	Vehicle
20	*Lifeboats:* 20 lifeboats (use Canoe, TUV page 61)

OPTIONAL EQUIPMENT

Cost	Equipment
+10	*Large Clipper:* Increase to Size 17 and four masts
+2	*Iron-Framed Clipper:* Increase to 27 BODY

Description: Beginning in the early part of the 1800s, ship designers devised a larger, faster cargo ship. These three-masted ships, known as clipper ships (perhaps for the way they went over the waves "at a clip," or their ability to "clip" time off a run), had multiple square-rigged sails on each mast, and sometimes lateen-rigged sails on mizzenmasts as well. Among the most famous of them were: the *Cutty Sark* (launched 1870), which could sail from Britain to China in just 104 days; the *Flying Cloud* (launched 1851), which made the trip from New York to San Francisco in just under 90 days; and the *Thermopylae* (launched 1868), which sailed the 14,000 miles from London to Melbourne in 59 days (a sailing speed record that stands to this day). The opening of the Suez Canal in 1869 eventually spelled the demise of the clippers, since they couldn't go through the canal. That meant other types of ships could make journeys faster than clippers could.

Early clipper ships were mostly American, and in fact for a while threatened to take the China tea trade away from the British. They were often made from relatively poor-quality American wood (which was cheaply available for a ship intended to make its profits quickly, rather than over a long lifespan). The Civil War derailed the United States's commercial shipping industry, allowing the British to become superior clipper creators. By the 1870s designers improved the ship's durability by building its frame out of iron and its planking from wood.

A typical clipper ship is about 190-240 feet long, has a beam of about 30-40 feet, and has a mainmast about 130-150 feet tall. It can make a speed of about 17-20 miles per hour for short runs, but on the average over a long run sailed at about 8-10 miles per hour. It has a crew of around 70 men.

COG

Val	Char	Cost	Notes
15	Size	75	32" x 16"; -15 KB; -10 DCV
50	STR	-35	Lift 100 tons; 10d6 HTH [0]
11	DEX	3	OCV: 4/DCV: 4
25	BODY	0	
4	DEF	5	Does Not Protect Some Occupants (-¼)
3	SPD	9	Phases: 4, 8, 12
			Total Characteristic Cost: 57

Movement: Ground: 0"/0"
Swimming: 9"/18"

Abilities & Equipment

Cost	Power	END
	Propulsion Systems	
1	*Sailed Watercraft:* Swimming +7" (9" total); Surface Only (-1), Sailed (-1), OAF (sails; -1), Limited Maneuverability (-¼), Cannot Move Backwards (-¼)	0
-12	*Water Vehicle:* Ground Movement -6" (0" total)	
32	*Large Boat's Anchor:* 85 STR, Reduced Endurance (0 END; +½); OIF Bulky (-1), Partial Coverage (-2)	0

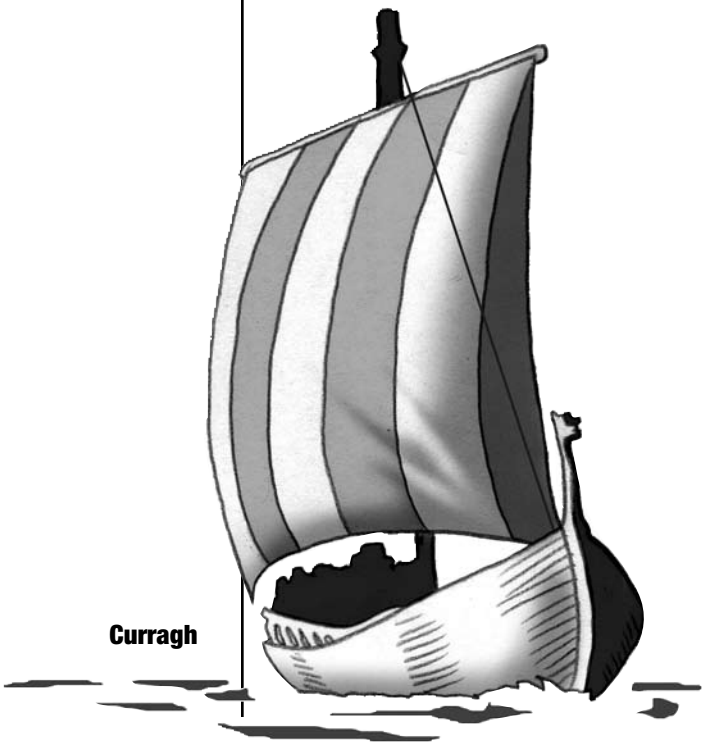
Total Abilities & Equipment Cost: 21
Total Vehicle Cost: 78

Value Disadvantages
None

Total Disadvantage Points: 0
Total Cost: 78/5 = 16

ADDITIONAL VEHICLES

Cost	Vehicle
4	*Lifeboats:* 4 lifeboats (use Canoe, TUV page 61)



Curragh

Description: Developed in Northern Europe beginning around the year 1200, the cog was one of the most common merchant vessels in that area during medieval times. It was used extensively by, among others, the member cities of the Hanseatic League. Its relatively roundish shape allowed it to carry large amounts of cargo. In addition to its commercial functions, the cog could also be impressed into service as a warship by kings who needed to enlarge their fleets. This typically meant using the cog to transport soldiers, not actually arming it.

A typical cog is about 60-90 feet long and had a beam of about 20-30 feet — an unusual ratio that led to the cog also being known as the "roundboat." Its bottom parts are flush-laid (plank edges flush against each other), and its upper parts clinker-built (plank edges overlapping), creating a relatively flat-bottomed hull that could beach in shallow waters without heeling over. "Castles" are often attached to the deck, aft and fore, especially on cogs intended to carry soldiers. It has a single mast with a square sail and a crew of about 6 men.

CURRAGH

Val	Char	Cost	Notes
6	Size	30	4" x 2"; -6 KB; -4 DCV
40	STR	0	Lift 6,400 kg; 8d6 HTH [0]
10	DEX	0	OCV: 3/DCV: 3
16	BODY	0	
3	DEF	2	Does Not Protect Some Occupants (-¼)
3	SPD	10	Phases: 4, 8, 12
			Total Characteristic Cost: 42

Movement: Ground: 0"/0"
Swimming: 5"/10"

Abilities & Equipment

Cost	Power	END
	Propulsion Systems	
1	*Sailed Watercraft:* Swimming +3" (5" total); Surface Only (-1), Sailed (-1), OAF (sails; -1), Limited Maneuverability (-¼), Cannot Move Backwards (-¼)	0
-12	*Water Vehicle:* Ground Movement -6" (0" total)	

Total Abilities & Equipment Cost: -11
Total Vehicle Cost: 31

Value Disadvantages
None

Total Disadvantage Points: 0
Total Cost: 31/5 = 6

Description: From the fifth to the nineteenth centuries, Celtic/Irish shipbuilders crafted a type of ship called a *curragh,* or coracle. It consists of a framework of wooden laths over which hides (or, in more modern times, tarred canvas) were stretched. The resulting ship, which had one mast with a square sail, was as much as 30 feet long and normally had a complement of about four to eight people. However, some curraghs could carry as many as 40 men.

Smaller coracles were often one-person boats that were rowed instead of sailed. For them, use the character sheet for the Canoe (TUV, page 61).

FELUCCA

Val	Char	Cost	Notes
9	Size	45	8" x 4"; -9 KB; -6 DCV
45	STR	-10	Lift 12.5 tons; 9d6 HTH [0]
14	DEX	12	OCV: 5/DCV: 5
19	BODY	0	
4	DEF	5	Does Not Protect Some Occupants (-¼)
3	SPD	6	Phases: 4, 8, 12
			Total Characteristic Cost: 58

Movement: Ground: 0"/0"
Swimming: 6"/12"

Abilities & Equipment

Cost	Power	END
1	*Sailed Watercraft:* Swimming +4" (6" total); Surface Only (-1), Sailed (-1), OAF (sails; -1), Limited Maneuverability (-¼), Cannot Move Backwards (-¼)	0
5	*Two-Masted Ship:* Total of two masts	
1	*Rowed Watercraft:* Swimming +2" (4" total); Surface Only (-1), OAF (oars; -1), Costs Endurance (rower's END; -½), Increased Endurance Cost (x3 END; -1), Limited Maneuverability (-¼)	3
15	*20 Oars:* x5 oars (total of 20)	
-12	*Water Vehicle:* Ground Movement -6" (0" total)	
20	*Anchor:* 55 STR, Reduced Endurance (0 END; +½); OIF Bulky (-1), Partial Coverage (-2)	0

Total Abilities & Equipment Cost: 30
Total Vehicle Cost: 88

Value Disadvantages

None

Total Disadvantage Points: 0
Total Cost: 88/5 = 18

ADDITIONAL VEHICLES

Cost	Vehicle
4	*Lifeboats:* Four lifeboats (use Canoe, TUV page 61)

Description: The felucca is a Mediterranean ship developed from the galley during medieval or Rennaissance times. It has two masts — a forward-raking mainmast and a similar (but smaller) mizzenmast, both supporting lateen sails — and an afterdeck that extends over the stern. In addition to its sails, it has up to 20 oars for use in times of calm.

Feluccas were relatively swift and maneuverable, and thus found favor as privateering and pirate ships in some places. In the late 1700s, the French used them to run the blockades established by the British around French ports.

FLUTE

Val	Char	Cost	Notes
12	Size	60	16" x 8"; -12 KB; -8 DCV
70	STR	0	Lift 400 tons; 14d6 HTH [0]
10	DEX	0	OCV: 3/DCV: 3
25	BODY	3	
4	DEF	5	Does Not Protect Some Occupants (-¼)
3	SPD	10	Phases: 4, 8, 12
			Total Characteristic Cost: 78

Movement: Ground: 0"/0"
Swimming: 4"/8"

Abilities & Equipment

Cost	Power	END
	Propulsion Systems	
1	*Sailed Watercraft:* Swimming +2" (4" total); Surface Only (-1), Sailed (-1), OAF (sails; -1), Limited Maneuverability (-¼), Cannot Move Backwards (-¼)	0
10	*Three-Masted Ship:* Total of three masts	
2	*Full Rig:* +6 BODY; Partial Coverage (sails only; -2)	0
-12	*Water Vehicle:* Ground Movement -6" (0" total)	
26	*Large Boat's Anchor:* 70 STR, Reduced Endurance (0 END; +½); OIF Bulky (-1), Partial Coverage (-2)	0

Total Abilities & Equipment Cost: 27
Total Vehicle Cost: 105

Value Disadvantages

None

Total Disadvantage Points: 0
Total Cost: 105/5 = 21

ADDITIONAL VEHICLES

Cost	Vehicle
4	*Lifeboats:* Four lifeboats (use Canoe, TUV page 61)

OPTIONAL EQUIPMENT

Cost	Equipment
+5	*Large Flute:* Increase to Size 13
+5	*Cat:* Increase to Size 13
9	*Twelve-Pounder Cannons:* RKA 2d6, Increased Maximum Range (2,000"; +½); OIF Bulky (cannons; -1), Real Weapon (-¼), Extra Time (1 Turn to load and fire; -1¼), Limited Arc Of Fire (one hex row, same horizontal level; -1), 12 Charges (-¼)
15	*Twelve-Pounder Cannons:* 7 more Twelve-Pounders (total of 8)

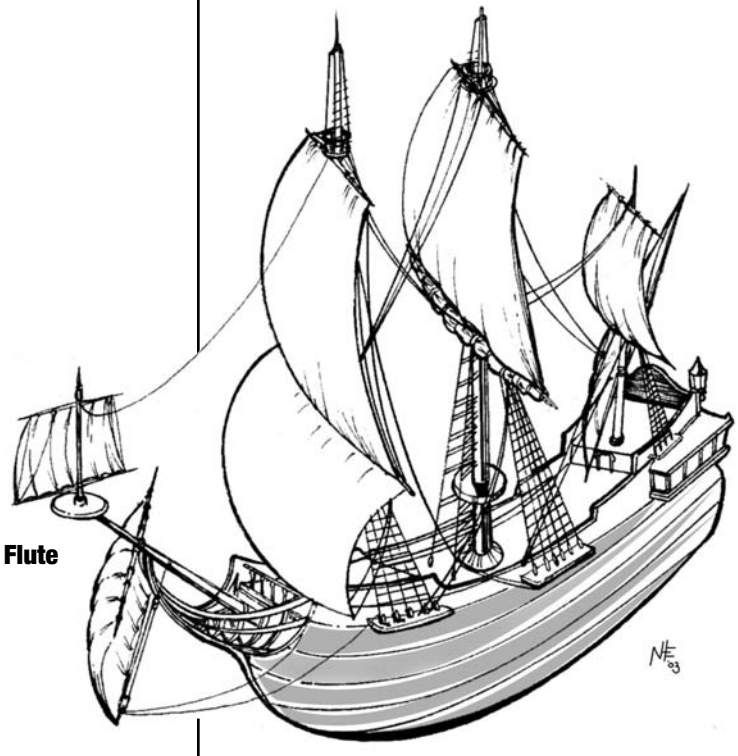
Description: The flute (from the Dutch *fluyt* or *fluit,* a name possible deriving from the fact that its narrow form suggests a thinly-shaped glass) was developed in Holland beginning in 1595. History credits a shipbuilder named Peter Jansz Liorne with inventing it. Its configuration derived from some earlier types of vessels, such as the *boyer* and the *buss,* and employed familiar technologies so it was cheap and easy to build. It quickly became a popular merchant vessel, because its narrow weather

deck and bulging sides minimized the amount of toll the vessel had to pay (the amount of the toll depended on the ship's dimensions) while maximizing its cargo-carrying capacity.

A flute has three masts, typically with a square rig on the fore- and mainmasts, and a lateen sail on the mizzenmast. It's slightly over 100 feet long, with a beam of about 25-30 feet (4") and a relatively shallow draft. It has a single deck, underneath which is a large hold for cargo. It has an unusual, distinctively-rounded stern, and little or no beak to speak of. It carries a crew of about 8-30. Compared to many similarly-sized vessels of the time, it has relatively little sail, making it slow.

Since flutes were intended to hold as much cargo as possible, typically in well-developed, peaceful areas, they usually weren't armed. Flutes that ventured into more dangerous waters would install guns, but that cut into the amount of goods the ship could carry. A preferred method of protection was to have heavily-armed galleons or pinnaces escort flutes.

With a few changes, you can use this character sheet for a *cat,* a type of merchant ship found in northern European waters in the 1600s and 1700s. It's essentially an enlarged, simplified flute with blunt, unadorned features and a sort of "boxy" look to it.



Flute

FRIGATE

Val	Char	Cost	Notes
12	Size	60	16" x 8"; -12 KB; -8 DCV
70	STR	0	Lift 400 tons; 14d6 HTH [0]
14	DEX	12	OCV: 5/DCV: 5
22	BODY	0	
4	DEF	5	Does Not Protect Some Occupants (-¼)
3	SPD	6	Phases: 4, 8, 12
			Total Characteristic Cost: 83

Movement: Ground: 0"/0"
Swimming: 7"/14"

Abilities & Equipment

Cost	Power	END
	Propulsion Systems	
1	*Sailed Watercraft:* Swimming +5" (7" total); Surface Only (-1), Sailed (-1), OAF (sails; -1), Limited Maneuverability (-¼), Cannot Move Backwards (-¼)	0
10	*Three-Masted Ship:* Total of three masts	
3	*Full Rig:* +9 BODY; Partial Coverage (sails only; -2)	0
-12	*Water Vehicle:* Ground Movement -6" (0" total)	
	Tactical Systems	
9	*Nine- And Twelve-Pounder Cannons:* RKA 2d6, Increased Maximum Range (2,000"; +½); OIF Bulky (cannons; -1), Real Weapon (-¼), Extra Time (1 Turn to load and fire; -1¼), Limited Arc Of Fire (one hex row, same horizontal level; -1), 12 Charges (-¼)	[12]
30	*Nine- And Twelve-Pounder Cannons:* 41 more cannons (total of 42)	[12]
5	*Swivel Guns:* RKA 1d6; OIF Bulky (-1), Real Weapon (-¼), Extra Time (Extra Phase to load and fire; -¾), 12 Charges (-¼)	[12]
10	*Swivel Guns:* 3 more Swivel Guns (total of 4)	[12]
26	*Large Boat's Anchor:* 70 STR, Reduced Endurance (0 END; +½); OIF Bulky (-1), Partial Coverage (-2)	0

Total Abilities & Equipment Cost: 82
Total Vehicle Cost: 165

Value Disadvantages

None

Total Disadvantage Points: 0
Total Cost: 165/5 = 33

ADDITIONAL VEHICLES

Cost	Vehicle
50	*Lifeboats:* 50 lifeboats (use Canoe, TUV page 61)

OPTIONAL EQUIPMENT

Cost	Equipment
+5	*Large Frigate:* Increase to Size 13
-5	*Two-Masted Frigate:* Decrease to two masts
+16	*Small Frigate:* Decrease to Size 11 and add:

Cost	Power
1	*Rowed Watercraft:* Swimming +2" (4" total); Surface Only (-1), OAF (oars; -1), Costs Endurance (rower's END; -½), Increased Endurance Cost (x3 END; -1), Limited Maneuverability (-¼)
20	*32 Oars:* x8 oars (total of 32)
-7	*Sloop:* Increase to DEX 15 and decrease to 15 more cannons (total of 16)

Description: The term *frigate* has meant many things during the history of ships and shipbuilding. As used here, it refers to a type of warship of the 1700s and 1800s with fewer than 50 guns (a ship of the fifth or sixth rate, in naval parlance) — and those relatively small ones, such as nine-, twelve-, or eighteen-pounders. Famous frigates include the *U.S.S. Constitution* and the *H.M.S. Pandora* (which captured some of the mutineers from the *H.M.S. Bounty*). American, French, and Spanish frigates tended to be larger than British or Dutch frigates.

A frigate's main missions were despatch carrying, scouting, merchant ship escort, repeater ships (which repeated the admiral's commands so all ships in a battle could see them), towing disabled ships out of battle, blockading, and the like. They were not considered "ships of the line," and thus rarely participated in frontline naval combat; there was an unwritten law of naval combat that a ship of the line would not fire on a frigate unless the frigate fired first. On the other hand, frigates could engage other frigates at will; many famed naval battles and chases of the period pitted one frigate against another.

Some frigates come equipped with oars for use when the wind dies. For example, on July 16-18, 1812, the *U.S.S. Constitution* used rowing as part of her legendary escape from five British frigates that had surrounded her.

Designed for speed, a frigate has three masts and two decks (plus a hold). It's about 100-130 feet long, with a beam of about 30-35 feet. It has a crew of approximately 350-500.

With a few adjustments, you can also use this character sheet for a *sloop,* here meaning a type of fighting vessel ranked just below a frigate in terms of power. Known for their speed, sloops were often designed to counter privateers. Typically a sloop mounted no more than 18 guns.

JUNK

Val	Char	Cost	Notes
14	Size	70	25 x 12.5"; -14 KB; -9 DCV
80	STR	0	Lift 1.6 ktons; 16d6 HTH [0]
13	DEX	9	OCV: 4/DCV: 4
24	BODY	0	
4	DEF	5	Does Not Protect Some Occupants (-¼)
3	SPD	7	Phases: 4, 8, 12
			Total Characteristic Cost: 91

Movement: Ground: 0"/0"
Swimming: 6"/12"

Abilities & Equipment

Cost	Power	END
	Propulsion Systems	
1	*Sailed Watercraft:* Swimming +4" (6" total); Surface Only (-1), Sailed (-1), OAF (sails; -1), Limited Maneuverability (-¼), Cannot Move Backwards (-¼)	0
10	*Three- Or Four-Masted Ship:* Total of 3-4 masts	
2	*Full Rig:* +6 BODY; Partial Coverage (sails only; -2)	0
-12	*Water Vehicle:* Ground Movement -6" (0" total)	
	Operations Systems	
3	*Bulkheads:* Life Support (Self-Contained Breathing); Partial Coverage (about one-twentieth of ship, see text; -2)	0
25	*Bulkheads:* 19 more bulkheads (total of 20)	0
30	*Large Boat's Anchor:* 80 STR, Reduced Endurance (0 END; +½); OIF Bulky (-1), Partial Coverage (-2)	0

Total Abilities & Equipment Cost: 59
Total Vehicle Cost: 150

Value Disadvantages
None

Total Disadvantage Points: 0
Total Cost: 150/5 = 30

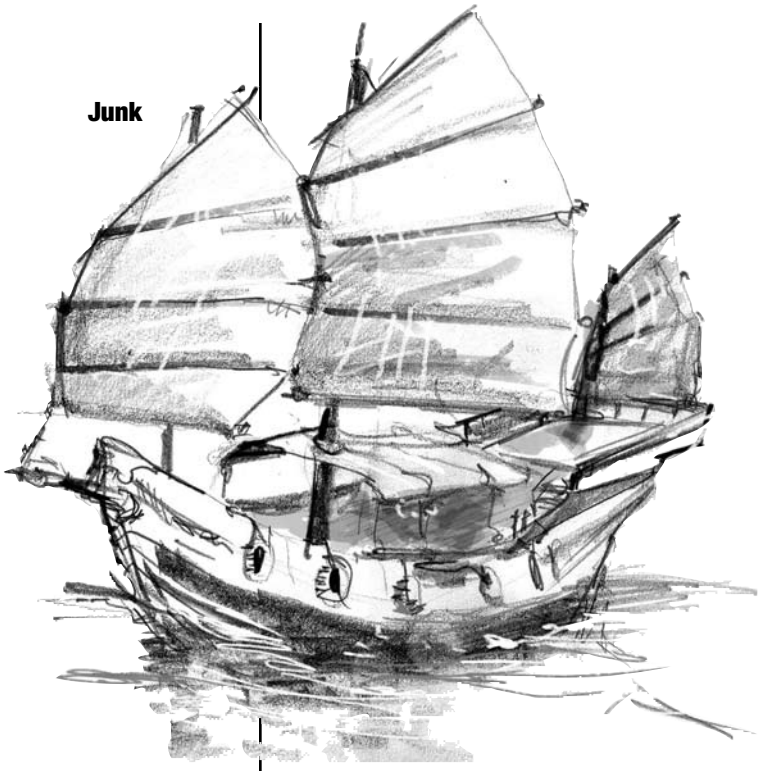
ADDITIONAL VEHICLES

Cost	Vehicle
5	*Lifeboats:* Five lifeboats (use Canoe, TUV page 61)

OPTIONAL EQUIPMENT

Cost	Equipment
-10	*Small Junk:* Decrease to Size 12

Description: A *junk* is a Chinese sailing ship used for fishing or trade. The first reports of them were made to the West by Marco Polo in the late 1200s. At that point in time junks tended to be more advanced, in many ways, than European or Mediterranean ships; for example, they had a single stern-mounted rudder. Junks were also built with as many as 20 bulkheads belowdecks, creating watertight compartments that kept the entire ship from sinking even if part of the hull was holed. Junks had relatively flat bottoms, allowing them to sit on the ground if beached instead of heeling.



Junk

A typical seagoing junk is about 120 feet long, with a beam of about 25-30 feet, with as many as four masts fitted with square sails made from woven fiber matting and bamboo battens. It has a crew of 8-30 men. Smaller junks may be limited to riverine or coastal waters. Many junks, regardless of size, are elaborately decorated with lacquers and paints, magic eyes on the bow, painted symbols, and so forth.

KETCH

Val	Char	Cost	Notes
9	Size	45	8" x 4"; -9 KB; -6 DCV
50	STR	-5	Lift 25 tons; 10d6 HTH [0]
14	DEX	12	OCV: 5/DCV: 5
20	BODY	1	
4	DEF	5	Does Not Protect Some Occupants (-¼)
3	SPD	6	Phases: 4, 8, 12
			Total Characteristic Cost: 64

Movement: Ground: 0"/0"
Swimming: 6"/12"

Abilities & Equipment

Cost	Power	END
1	*Sailed Watercraft:* Swimming +4" (6" total); Surface Only (-1), Sailed (-1), OAF (sails; -1), Limited Maneuverability (-¼), Cannot Move Backwards (-¼)	0
5	*Two-Masted Ship:* Total of two masts	
-12	*Water Vehicle:* Ground Movement -6" (0" total)	
20	*Anchor:* 55 STR, Reduced Endurance (0 END; +½); OIF Bulky (-1), Partial Coverage (-2)	0

Total Abilities & Equipment Cost: 14
Total Vehicle Cost: 78

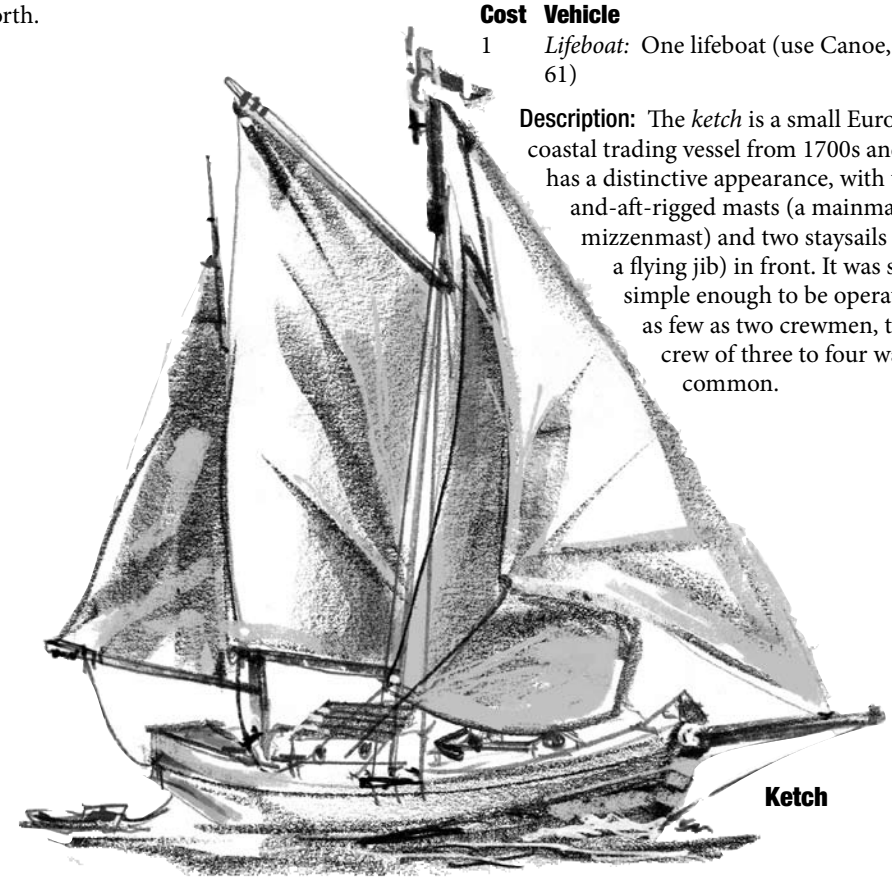
Value Disadvantages
None

Total Disadvantage Points: 0
Total Cost: 78/5 = 16

ADDITIONAL VEHICLES

Cost	Vehicle
1	*Lifeboat:* One lifeboat (use Canoe, TUV page 61)

Description: The *ketch* is a small European coastal trading vessel from 1700s and 1800s. It has a distinctive appearance, with two fore-and-aft-rigged masts (a mainmast and a mizzenmast) and two staysails (a jib and a flying jib) in front. It was small and simple enough to be operated by as few as two crewmen, though a crew of three to four was more common.



Ketch

PINNACE

Val	Char	Cost	Notes
13	Size	65	20" x 10"; -13 KB; -8 DCV
65	STR	-10	Lift 200 tons; 13d6 HTH [0]
13	DEX	9	OCV: 4/DCV: 4
23	BODY	0	
4	DEF	5	Does Not Protect Some Occupants (-¼)
3	SPD	7	Phases: 4, 8, 12
			Total Characteristic Cost: 76

Movement: Ground: 0"/0"
Swimming: 5"/10"

Abilities & Equipment

Cost	Power	END
	Propulsion Systems	
1	*Sailed Watercraft:* Swimming +3" (5" total); Surface Only (-1), Sailed (-1), OAF (sails; -1), Limited Maneuverability (-¼), Cannot Move Backwards (-¼)	0
5	*Two-Masted Ship:* Total of two masts	
-12	*Water Vehicle:* Ground Movement -6" (0" total)	
24	*Anchor:* 65 STR, Reduced Endurance (0 END; +½); OIF Bulky (-1), Partial Coverage (-2)	0
	Tactical Systems	
9	*Nine- And Twelve-Pounder Cannons:* RKA 2d6, Increased Maximum Range (2,000"; +½); OIF Bulky (cannons; -1), Real Weapon (-¼), Extra Time (1 Turn to load and fire; -1¼), Limited Arc Of Fire (one hex row, same horizontal level; -1), 12 Charges (-¼)	[12]
20	*Nine- And Twelve-Pounder Cannons:* 15 more cannons (total of 16)	[12]

Total Abilities & Equipment Cost: 47
Total Vehicle Cost: 123

Value Disadvantages

None

Total Disadvantage Points: 0
Total Cost: 123/5 = 25

ADDITIONAL VEHICLES

Cost	Vehicle
4	*Lifeboats:* Four lifeboats (use Canoe, TUV page 61)

OPTIONAL EQUIPMENT

Cost	Equipment
5	*Three-Masted Pinnace:* Increase to three masts
+1	*Small Pinnace:* Decrease to Size 10 and add:

Cost	Power
+0	*Sailed Watercraft:* Increase to Swimming +4"
1	*Rowed Watercraft:* Swimming +2" (4" total); Surface Only (-1), OAF (oars; -1), Costs Endurance (rower's END; -½), Increased Endurance Cost (x3 END; -1), Limited Maneuverability (-¼) 3
20	*32 Oars:* x8 oars (total of 32)
-5	Decrease to 8 cannons total

Description: Different authorities have used the term *pinnace* (or pinnance, from the Dutch *pinas*) to refer to various types of watercraft. As used here it refers to a two-masted, square-sailed vessel of the 1500s and 1600s. It was popular in the Carribean and on the Spanish Main, and thus might fight (or be the ship of) pirates. Pinnaces often accompanied larger ships of exploration. The large pinnace depicted here could have a crew of about 60-200 men.

Smaller pinnaces often served as tenders or scouts for larger ships; during battles they might act as despatch ships, carrying messages from the senior commander to the ships under him. They have crews of about eight to twelve sailors on board, and carry oars for use when becalmed or tacking into the wind. Sometimes explorers took pinnace "kits" in the holds of their large ships for assembly when they reached their destination.

SAILING YACHT

Val	Char	Cost	Notes
8	Size	40	6.4" x 3.2"; -8 KB; -5 DCV
40	STR	-10	Lift 6,400 kg; 8d6 HTH [0]
15	DEX	15	OCV: 5/DCV: 5
18	BODY	0	
4	DEF	5	Does Not Protect Some Occupants (-¼)
3	SPD	5	Phases: 4, 8, 12
			Total Characteristic Cost: 55

Movement: Ground: 0"/0"
Swimming: 7"/14"

Abilities & Equipment

Cost	Power	END
	Propulsion Systems	
1	*Sailed Watercraft:* Swimming +5" (7" total); Surface Only (-1), Sailed (-1), OAF (sails; -1), Limited Maneuverability (-¼), Cannot Move Backwards (-¼)	0
5	*Two-Masted Ship:* Total of two masts	
-12	*Water Vehicle:* Ground Movement -6" (0" total)	
19	*Anchor:* 50 STR, Reduced Endurance (0 END; +½); OIF Bulky (-1), Partial Coverage (-2)	0
	Operations Systems	
11	*Radar:* Radar (Radio Group), Increased Arc Of Perception (360 Degrees), Telescopic (+8 versus Range Modifier); OIF Bulky (-1), Affected As Sight Group As Well As Radio Group (-½)	0
5	*Communications System:* HRRP (Radio Group); OIF Bulky (-1), Affected As Sight And Hearing Group As Well As Radio Group (-½)	0
5	*GPS Tracker:* Detect Exact Position On Earth 16- (Radio Group); OIF Bulky (-1)	0

Total Abilities & Equipment Cost: 34
Total Vehicle Cost: 89

Value Disadvantages

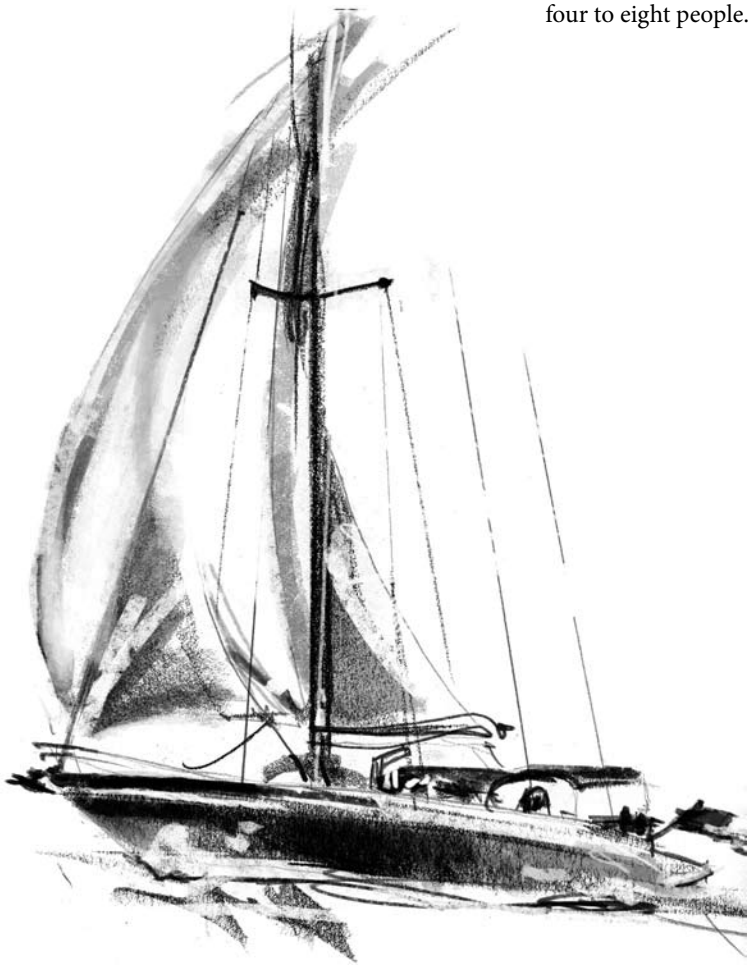
None

Total Disadvantage Points: 0
Total Cost: 89/5 = 18

ADDITIONAL VEHICLES

Cost	Vehicle
1	*Inflatable Tender:* One small boat (use Canoe, TUV page 61, but give it an outboard motor)
+5	*Large Sailing Yacht:* Increase to Size 9
+0	*Racing Yacht:* Increase to Swimming +6"

Description: This character sheet represents a typical modern sailing yacht, whether used for pleasure sailing or racing. It has a large mainmast and smaller mizzenmast, and all the modern amenities: GPS tracker, radar, advanced communications system, electronic winches for raising and lowering sails, and so forth. It has an internal diesel engine to generate power for all its electrical gear. Depending on size and configuration, it can sleep about four to eight people.



ENGINE-DRIVEN SURFACE CRAFT

Once steam engines, and later diesel engines, became small and powerful enough to install on ships, the Age of Sail was about to come to an end. Before long, engine-driven vessels had replaced sailed ships for almost all applications.

CIVILIAN WATERCRAFT

CONTAINER SHIP

Val	Char	Cost	Notes
21	Size	105	125" x 64"; -21 KB; -14 DCV
115	STR	0	Lift 200 ktons; 23d6 HTH [0]
8	DEX	-6	OCV: 3/DCV: 3
31	BODY	0	
5	DEF	7	Does Not Protect Some Occupants (-¼)
2	SPD	2	Phases: 6, 12
			Total Characteristic Cost: 108

Movement: Ground: 0"/0"
Swimming: 19"/38"

Abilities & Equipment

Cost	Power	END
	Propulsion Systems	
5	*Propeller-Drive Watercraft:* Swimming +17" (19" total); Surface Only (-1), 1 Continuing Fuel Charge (easily-obtained fuel; -0), Limited Maneuverability (-¾), Side Effects (propeller does KA 2d6 to anyone coming in contact with bottom stern of vehicle, occurs automatically, only affects environment around vehicle; -¾) [1cc]	
-12	*Watercraft Only:* Ground Movement -6" (0" total)	
43	*Anchors:* 115 STR, Reduced Endurance (0 END; +½); OIF Bulky (-1), Partial Coverage (-2)	0
10	*Anchors:* 3 more anchors (total of 4)	0
	Operations Systems	
11	*Radar:* Radar (Radio Group), Increased Arc Of Perception (360 Degrees), Telescopic (+8 versus Range Modifier); OIF Bulky (-1), Affected As Sight Group As Well As Radio Group (-½)	0
5	*Communications System:* HRRP (Radio Group); OIF Bulky (-1), Affected As Sight And Hearing Group As Well As Radio Group (-½)	0
5	*GPS Tracker:* Detect Exact Position On Earth 16- (Radio Group); OIF Bulky (-1)	0

Total Abilities & Equipment Cost: 67
Total Vehicle Cost: 175

Value Disadvantages
None

Total Disadvantage Points: 0
Total Cost: 175/5 = 35

ADDITIONAL VEHICLES

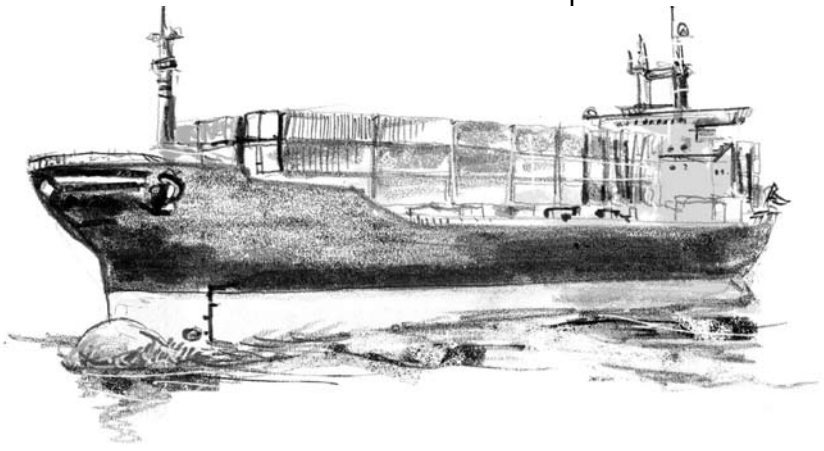
Cost	Vehicle
36	*Lifeboats:* 100 lifeboats (use Canoe, TUV page 61)

OPTIONAL EQUIPMENT

Cost	Equipment
-5	*Smaller Container Ship:* Decrease to Size 20
-10	*Smallest Container Ship:* Decrease to Size 19
-2	*Oil Tanker:* Decrease to Swimming +11"

Description: This character sheet represents a modern *container ship,* a cargo vessel which carries stacks of railroad car-sized cargo containers on its deck. Container ships ply the oceans of the world, moving billions of dollars' worth of goods every year. Some, knowingly or unknowingly, become involved in schemes to smuggle stolen goods, illegal immigrants, and fugitives from justice.

Container ships tend to be about 500-1,000 feet long, and 80-120 feet in beam. They typically have a maximum speed of about 24 knots per hour (about 28 miles per hour). Because they're heavily automated, they require much smaller crews than one would expect for so large a ship.



OIL TANKER

You can also use this character sheet for modern oil tankers, such as the *British Skill,* the *Futura,* or the infamous *Exxon Valdez.* They're designed to carry well over a hundred thousand tons of oil, and tend to be about 300-1,000 feet long (most modern ones are in the 750-950 foot range), and 60-150 feet in beam. They typically have a maximum speed of about 10-17 knots per hour (about 11-20 miles per hour).

PERSONAL WATERCRAFT

Val	Char	Cost	Notes
3	Size	15	2" x 1"; -3 KB; -2 DCV
20	STR	-5	Lift 400 kg; 4d6 HTH [0]
18	DEX	24	OCV: 6/DCV: 6
13	BODY	0	
3	DEF	2	Does Not Protect Occupant (-½)
3	SPD	2	Phases: 4, 8, 12
			Total Characteristic Cost: 38

Movement: Ground: 0"/0"
Swimming: 16"/32"

Abilities & Equipment

Cost	Power	END
	Propulsion Systems	
5	*Propeller-Drive Watercraft:* Swimming +14" (16" total); Surface Only (-1), 1 Continuing Fuel Charge (easily-obtained fuel, 2 Hours; -0), Limited Maneuverability (-¾)	[1cc]
-12	*Watercraft Only:* Ground Movement -6" (0" total)	

Total Abilities & Equipment Cost: -7
Total Vehicle Cost: 31

Value Disadvantages

None

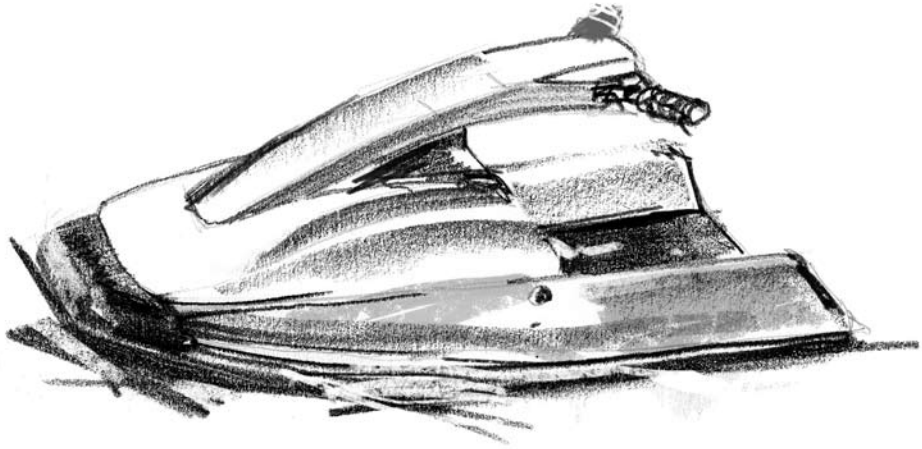
Total Disadvantage Points: 0
Total Cost: 31/5 = 6

OPTIONAL EQUIPMENT

Cost	Equipment
+5	*Large PWC:* Increase to Size 4
+1	*Faster PWC I:* Increase to Swimming +18"
+3	*Faster PWC II:* Increase to Swimming +23"
+4	*Racing PWC:* Increase to Swimming +20", x4 Noncombat

Description: The personal watercraft (PWC), better known by the Kawasaki-trademarked name "Jet Ski," was invented in 1968 by Clay Jacobson. Jacobson, a motorcycle racer, was tired of hurting himself by falling from motorcycles, but still wanted to experience the thrill of motorcycling. The first commercially available "PWC" was sold by Kawasaki in 1973, and since then the "jetski" has become a favorite of water recreation enthusiasts. Their small size and weight — about two meters long, .6 meters wide, and 110-130 kg — makes them easy to transport and use. (Some larger jetskis allow two or three people to ride together.)

A typical jetski can attain speeds of about 35-55 miles per hour, though some performance models are faster; the world's record is over 100 mph. To ensure safety, a jetski's impeller (propeller) is contained within a shroud so neither the rider nor other persons in the water can come into contact with it. Other safety features include built-in bouyancy, self-righting ability if the vehicle turns over, and automatic circling mode if the rider falls off.



MISSISSIPPI RIVERBOAT

Val	Char	Cost	Notes
17	Size	85	50" x 25"; -17 KB; -11 DCV
75	STR	-20	Lift 800 tons; 15d6 HTH [0]
8	DEX	-6	OCV: 3/DCV: 3
27	BODY	0	
4	DEF	5	Does Not Protect Some Occupants (-¼)
2	SPD	2	Phases: 6, 12
			Total Characteristic Cost: 66

Movement: Ground: 0"/0"
Swimming: 13"/26"

Abilities & Equipment

Cost	Power	END
	Propulsion Systems	
4	*Paddlewheel-Driven Watercraft:* Swimming +11" (13" total); Surface Only (-1), 1 Continuing Fuel Charge (easily-obtained fuel, 1 Day; -0), Limited Maneuverability (-¾)	[1cc]
-12	*Watercraft Only:* Ground Movement -6" (0" total)	

Total Abilities & Equipment Cost: -8
Total Vehicle Cost: 58

Value Disadvantages

None

Total Disadvantage Points: 0
Total Cost: 58/5 = 12

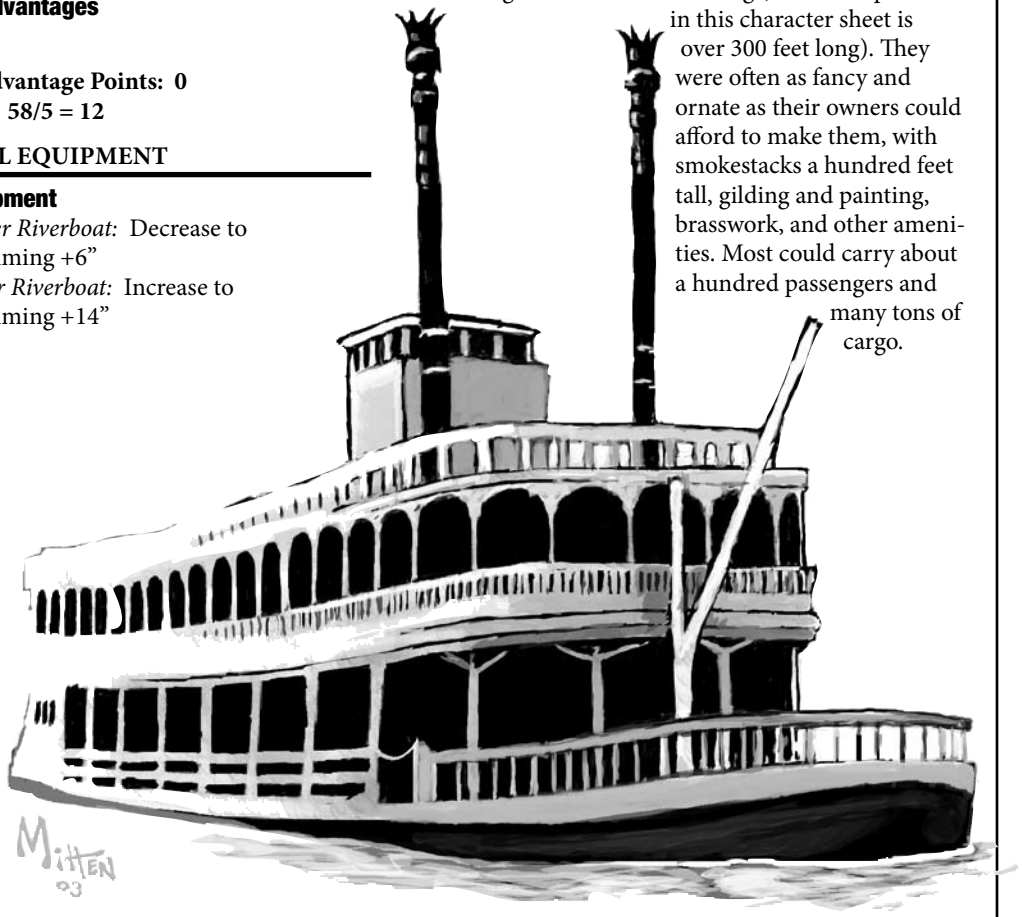
OPTIONAL EQUIPMENT

Cost	Equipment
-2	*Slower Riverboat:* Decrease to Swimming +6"
+1	*Faster Riverboat:* Increase to Swimming +14"

Description: This character sheet represents a typical Mississippi riverboat of the mid-1800s — the type frequented by gamblers and card sharps in movies. Hundreds, if not thousands, of them competed for passenger and cargo traffic up and down the Mississippi River (and other American bodies of water) before, during, and after the Civil War, becoming an indelible part of the lore of the Wild West.

A riverboat's speed depended on many factors: wheel orientation (sidewheelers were faster and more maneuverable than sternwheelers); engine strength (the engines burned wood, pitch, or coal); load carried; environmental conditions (currents, tides, wind); and so forth. Most seem to have been able to reach speeds of 10-24 miles per hour on the average. The most famous riverboat race, between the *Natchez* and the *Robert E. Lee* on June 30, 1870, resulted in the *Lee* making the journey from New Orleans to St. Louis in three days, eighteen hours, and 14 minutes (though to be fair, the *Lee* carried no cargo, and even removed its pilothouse windows to make itself lighter, whereas the *Natchez* had its normal load of passengers and freight and made its usual scheduled stops along the way).

Riverboats range in size from about 150 feet long to around 400 feet long (the one depicted in this character sheet is over 300 feet long). They were often as fancy and ornate as their owners could afford to make them, with smokestacks a hundred feet tall, gilding and painting, brasswork, and other amenities. Most could carry about a hundred passengers and many tons of cargo.



ELIMINATOR 380 EAGLE XP SPEEDBOAT

Val	Char	Cost	Notes
8	Size	40	6.4" x 3.2"; -8 KB; -5 DCV
30	STR	-20	Lift 1,600 kg; 6d6 HTH [0]
17	DEX	21	OCV: 6/DCV: 6
18	BODY	0	
3	DEF	2	Does Not Protect Some Occupants (-¼)
4	SPD	13	Phases: 3, 6, 9, 12
			Total Characteristic Cost: 56

Movement: Ground: 0"/0"
Swimming: 18"/72"

Abilities & Equipment

Cost	Power	END
	Propulsion Systems	
9	*Propeller-Drive Watercraft:* Swimming +16" (18" total), x4 Noncombat; Surface Only (-1), 1 Continuing Fuel Charge (easily-obtained fuel; 3 Hours; -0), Side Effects (propeller does KA 1d6 to anyone coming in contact with bottom stern of vehicle, occurs automatically, only affects environment around vehicle; -¼) [1cc]	
-12	*Watercraft Only:* Ground Movement -6" (0" total)	
15	*Anchor:* 40 STR, Reduced Endurance (0 END; +½); OIF Bulky (-1), Partial Coverage (-2)	0
	Operations Systems	
5	*Communications System:* HRRP (Radio Group); OIF Bulky (-1), Affected As Sight And Hearing Group As Well As Radio Group (-½)	0
5	*GPS Tracker:* Detect Exact Position On Earth 16- (Radio Group); OIF Bulky (-1)	0

Total Abilities & Equipment Cost: 22
Total Vehicle Cost: 78

Value Disadvantages

None

Total Disadvantage Points: 0
Total Cost: 78/5 = 16

OPTIONAL EQUIPMENT

Cost	Equipment
+1	*Enhanced Speed:* Increase to Swimming +18" (20" total)

Description: The Eliminator 380 Eagle XP is a 38-foot long power speedboat described in advertising literature as "an exercise in self-indulgence that showcases every imaginable comfort and convenience within the framework of a true, enthusiast-level sport machine." Although not as maneuverable as a smaller speedboat, the Eagle XP more than makes up for the difference with its high speed — over 100 miles per hour normally, and possibly higher with advanced modifications.

The Eagle XP has a beam of up to 8.5 feet. With its engine, it weighs 4,181 kg. It has seating capacity for six to 10 people, depending on configuration.

FOUNTAIN 47 LIGHTNING

Val	Char	Cost	Notes
8	Size	40	6.4" x 3.2"; -8 KB; -5 DCV
30	STR	-20	Lift 1,600 kg; 6d6 HTH [0]
16	DEX	18	OCV: 5/DCV: 5
20	BODY	2	
3	DEF	2	Does Not Protect Some Occupants (-¼)
4	SPD	14	Phases: 3, 6, 9, 12
			Total Characteristic Cost: 56

Movement: Ground: 0"/0"
Swimming: 15"/60"

Abilities & Equipment

Cost	Power	END
	Propulsion Systems	
8	*Propeller-Drive Watercraft:* Swimming +13" (15" total), x4 Noncombat; Surface Only (-1), 1 Continuing Fuel Charge (easily-obtained fuel; 3 Hours; -0), Side Effects (propeller does KA 1d6 to anyone coming in contact with bottom stern of vehicle, occurs automatically, only affects environment around vehicle; -¼) [1cc]	
-12	*Watercraft Only:* Ground Movement -6" (0" total)	
15	*Anchor:* 40 STR, Reduced Endurance (0 END; +½); OIF Bulky (-1), Partial Coverage (-2)	0
	Operations Systems	
5	*Communications System:* HRRP (Radio Group); OIF Bulky (-1), Affected As Sight And Hearing Group As Well As Radio Group (-½)	0
5	*GPS Tracker:* Detect Exact Position On Earth 16- (Radio Group); OIF Bulky (-1)	0

Total Abilities & Equipment Cost: 21
Total Vehicle Cost: 77

Value Disadvantages

None

Total Disadvantage Points: 0
Total Cost: 77/5 = 15

OPTIONAL EQUIPMENT

Cost	Equipment
+1	*Enhanced Speed:* Increase to Swimming +16" (18" total)

Description: For those who think the Eliminator 380 Eagle XP is a little too small and subtle, the Fountain 47 Lightning may be just the thing. Nearly 50 feet long, it can attain speeds of about 90 miles per hour, and cruise at 70-80 without difficulty; with the proper modifications, it can exceed 100 mph.

The 47 Lightning has a beam of up to 9 feet. With its engine, it weighs approximately 5,900 kg. It seats four.

GRAND BANKS 52 EUROPA YACHT

Val	Char	Cost	Notes
9	Size	45	8" x 4"; -9 KB; -6 DCV
45	STR	-10	Lift 12.5 tons; 9d6 HTH [0]
12	DEX	6	OCV: 4/DCV: 4
19	BODY	0	
4	DEF	5	Does Not Protect Some Occupants (-¼)
3	SPD	8	Phases: 4, 8, 12
			Total Characteristic Cost: 54

Movement: Ground: 0"/0"
Swimming: 7"/14"

Abilities & Equipment

Cost	Power	END
	Propulsion Systems	
2	*Propeller-Drive Watercraft:* Swimming +5" (7" total); Surface Only (-1), 1 Continuing Fuel Charge (easily-obtained fuel; 1 Day; -0), Side Effects (propeller does KA 1d6 to anyone coming in contact with bottom stern of vehicle, occurs automatically, only affects environment around vehicle; -¼)	[1cc]
-12	*Watercraft Only:* Ground Movement -6" (0" total)	
20	*Anchor:* 55 STR, Reduced Endurance (0 END; +½); OIF Bulky (-1), Partial Coverage (-2)	0
	Operations Systems	
5	*Communications System:* HRRP (Radio Group); OIF Bulky (-1), Affected As Sight And Hearing Group As Well As Radio Group (-½)	0
5	*GPS Tracker:* Detect Exact Position On Earth 16- (Radio Group); OIF Bulky (-1)	0

Total Abilities & Equipment Cost: 20
Total Vehicle Cost: 74

Value Disadvantages

None

Total Disadvantage Points: 0
Total Cost: 74/5 = 15

Description: For people who prefer to travel the waters of the world in style, the Grand Banks Europa 52 is just the thing. Large enough to have comfortable accomodations for six people, the Europa 52 is luxurious throughout — the perfect vessel for a day of idle elegance on the water, a deep-sea fishing trip in plush comfort, or cruising the Greek islands at one's own pace.

The 52 Europa is actually a little over 53 feet long, with a beam of over 15 feet. It can cruise at speeds of about 11 miles per hour, and achieve top speeds a little beyond that. It has an enclosed pilothouse and covered side and aft decks, allowing for a variety of configurations.

VIKING 84MY YACHT

Val	Char	Cost	Notes
11	Size	55	12.5" x 6.4"; -11 KB; -7 DCV
50	STR	-15	Lift 25 tons; 10d6 HTH [0]
10	DEX	0	OCV: 3/DCV: 3
21	BODY	0	
4	DEF	5	Does Not Protect Some Occupants (-¼)
3	SPD	10	Phases: 4, 8, 12
			Total Characteristic Cost: 55

Movement: Ground: 0"/0"
Swimming: 6"/12"

Abilities & Equipment

Cost	Power	END
	Propulsion Systems	
2	*Propeller-Drive Watercraft:* Swimming +4" (6" total); Surface Only (-1), 1 Continuing Fuel Charge (easily-obtained fuel; 1 Day; -0), Side Effects (propeller does KA 1d6 to anyone coming in contact with bottom stern of vehicle, occurs automatically, only affects environment around vehicle; -¼)	[1cc]
-12	*Watercraft Only:* Ground Movement -6" (0" total)	
20	*Anchor:* 55 STR, Reduced Endurance (0 END; +½); OIF Bulky (-1), Partial Coverage (-2)	0
	Operations Systems	
5	*Communications System:* HRRP (Radio Group); OIF Bulky (-1), Affected As Sight And Hearing Group As Well As Radio Group (-½)	0
5	*GPS Tracker:* Detect Exact Position On Earth 16- (Radio Group); OIF Bulky (-1)	0

Total Abilities & Equipment Cost: 20
Total Vehicle Cost: 75

Value Disadvantages

None

Total Disadvantage Points: 0
Total Cost: 75/5 = 15

Description: If you think the Grand Banks Europa 52 is a little too small and cramped, you might want to consider the Viking 84MY. In addition to luxurious accomodations for eight passengers (and additional space for three crew members), it has all the features of smaller yachts, and more. It's about 84 feet long and 20 feet in beam, with a shallow draft that lets it enter shoal waters and small ports despite its size.

MILITARY WATERCRAFT

ARLEIGH BURKE-CLASS DESTROYER

Val	Char	Cost	Notes
18	Size	90	64" x 32"; -18 KB; -12 DCV
100	STR	0	Lift 25 ktons; 20d6 HTH [0]
10	DEX	0	OCV: 3/DCV: 3
30	BODY	2	
11	DEF	22	Does Not Protect Some Occupants (-¼)
3	SPD	10	Phases: 4, 8, 12
			Total Characteristic Cost: 124

Movement: Ground: 0"/0"
Swimming: 16"/32"

Abilities & Equipment

Cost	Power	END
	Propulsion Systems	
4	*Propeller-Driven Military Vessel:* Swimming +14" (16" total); Surface Only (-1), 1 Continuing Fuel Charge (easily-obtained fuel; 1 Day; -0), Limited Maneuverability (-¾), Side Effects (propeller does KA 2d6 to anyone coming in contact with bottom stern of vehicle, occurs automatically, only affects environment around vehicle; -¾) [1cc]	
-12	*Water Vehicle:* Ground Movement -6" (0" total)	
	Tactical Systems	
90	*Mark 45 127mm Deck Gun:* RKA 8d6, Indirect (can be arced over some intervening obstacles; +¼), +1 Increased STUN Multiplier (+¼), Increased Maximum Range (9,650", or about 12 miles; +½), 500 Charges (+1); OIF Bulky (-1), Extra Time (1 Minute; -1½), Real Weapon (-¼), Limited Arc Of Fire (360 Degrees above ship; -¼) [500]	
165	*20mm Mark 15 Phalanx CIWS:* Multipower, 165-point reserve, 1,550 Charges for entire reserve (+1); all OIF Bulky (-1) [1,550]	
7u	1) *Attack Mode:* RKA 4d6, Autofire (10 shots; +1), Armor Piercing (+½), +1 Increased STUN Multiplier (+¼); OIF Bulky (-1), Limited Arc Of Fire (360 Degrees above ship; -¼)	
1u	2) *Defense Mode:* Missile Deflection (all physical projectiles), Range (+1); OIF Bulky (-1), Requires 10 Charges Per Use (-¾)	
5	*20mm Mark 15 Phalanx CIWS:* Another Phalanx (total of two) [1,550]	
44	*ECM Systems:* Suppress Electronic Warfare 8d6, any Power one at a time (+¼), Increased Maximum Range (6,250", or about 7.5 miles; +½), No Range Modifier (+½), Reduced Endurance (0 END; +½); OAF Bulky (-1½)	0
8	*Chaff Dispenser:* Darkness to Sight and Radio Groups 1" radius, MegaArea (1" = 100"; +¼); OIF Bulky (-1), Real Weapon (-¼), 12 Charges (-¼) [12]	
10	*ECM Systems:* Radio Group Flash Defense (10 points)	0
16	*EMP Hardening:* Power Defense (20 points); Only Works Against Limited Type Of Attack (EMPs, electronic warfare attacks, and the like; -¼)	0
4	*Systems Armoring:* +4 DEF; Partial Coverage (see text; -2)	0
31	*Reduced Radar Signature Profile:* Change Environment 64" radius, -3 to Radar Perception Rolls, Reduced Endurance (0 END; +½), Persistent (+½); Easily Removed (see page 73; -½), No Range (-½), Self Only (-½)	0
31	*Exhaust Suppression System:* Change Environment 64" radius, -3 to Infrared Perception Rolls, Reduced Endurance (0 END; +½), Persistent (+½); Easily Removed (see page 73; -½), No Range (-½), Self Only (-½)	0
33	*Prairie/Masker Propeller Suppression System:* Change Environment 64" radius, -3 to Hearing Group Perception Rolls, Reduced Endurance (0 END; +½), Persistent (+½); Easily Removed (see page 73; -½), No Range (-½), Self Only (-½)	0
	Operations Systems	
9	*Communications Systems:* HRRP (Radio Group), Discriminatory, Analyze; OIF Bulky (-1), Affected As Sight And Hearing Group As Well As Radio Group (-½)	0
19	*AEGIS SPY-1D Radar Systems:* Radar (Radio Group), Discriminatory, Analyze, Increased Arc Of Perception (360 Degrees), Telescopic (+18 versus Range Modifier); OIF Bulky (-1), Affected As Sight Group As Well As Radio Group (-½)	0
5	*AEGIS SPY-1D Radar Systems:* another AEGIS (total of 2)	0
12	*Sonar Systems:* Active Sonar (Hearing Group), Discriminatory, Analyze, Increased Arc Of Perception (360 Degrees), Telescopic (+12 versus Range Modifier); OIF Bulky (-1), Only Usable Underwater (-1), Affected As Sight And Hearing Groups As Well As Radio Group (-½)	0
14	*IR Sensing Systems:* Infrared Perception (Sight Group), Increased Arc Of Perception (360 Degrees), Telescopic (+18 versus Range Modifier); OIF Bulky (-1)	0
5	*GPS Tracker:* Detect Exact Position On Earth 16- (Radio Group); OIF Bulky (-1)	0
63	*Fire Extinguishing System:* Detect Unauthorized/Uncontrolled Fires 14-; Only Within Affected Area (20" x 20" zone; -2) **plus** Dispel Fire Powers 20d6, all Fire powers simultaneously (+2); Only Within Affected Area (20" x 20" zone; -2), 16 Charges (-0)	0/[16]
15	*Fire Extinguishing System:* 7 more Fire Control Systems (total of 8)	0/[16]
37	*Large Boat's Anchor:* 100 STR, Reduced Endurance (0 END; +½); OIF Bulky (-1),	

Partial Coverage (-2) 0
2 *Heavy Anchor Chain:* +10 BODY; OIF Bulky (-1), Partial Coverage (-2) 0

Personnel Systems

12 *NBC Protection Citadel:* Life Support (Safe Environment: High Radiation; Immunity: all terrestrial biowarfare and chemical warfare agents); Partial Coverage (-1) **plus** Life Support (Diminished Eating: no need to eat); Partial Coverage (-1), 1 Continuing Fuel Charge (easily replaced from sources outside the ship; 1 Month; -0) 0

Talents

3 *Laser Rangefinder:* Absolute Range Sense

Skills

25 *Weapon Control Systems:* +5 with Ranged Attacks

Total Abilities & Equipment Cost: 658
Total Vehicle Cost: 782

Value Disadvantages

25 Distinctive Features: US warship (Not Concealable; Causes Extreme Reaction [fear])

Total Disadvantage Points: 25
Total Cost: 757/5 = 151

ADDITIONAL VEHICLES

Cost	Vehicle
31	*Lifeboats:* 40 lifeboats (use Canoe, TUV page 61)
30	*Harpoon Missiles:* 1 Harpoon Missile (use AIM-7 Sparrow, TUV page 131)
15	*Harpoon Missiles:* 7 more Harpoons (total of 8)
30	*Mark 41 VLS With Tomahawk Missiles:* 1 Tomahawk Missile (use AIM-7 Sparrow, TUV page 131)
35	*Mark 41 VLS With Tomahawk Missiles:* 95 more Tomahawks (total of 96)
20	*Mark 50 Torpedo Launchers:* 1 Mk 50 torpedo (use Mark 48, TUV page 133)
20	*Mark 50 Torpedo Launchers:* 13 more torpedoes (total of 14)
18	Two Tactical Computers (TUV, page 162) for Phalanx systems (includes Infrared Perception (Sight Group) and Radar (Radio Group))

OPTIONAL EQUIPMENT

Cost	Equipment
-45	*Flight I Block I Ship:* Remove Harpoons
36	*Flight IIA Ship:* Add two SH-60 Seahawk helicopters (page 103)

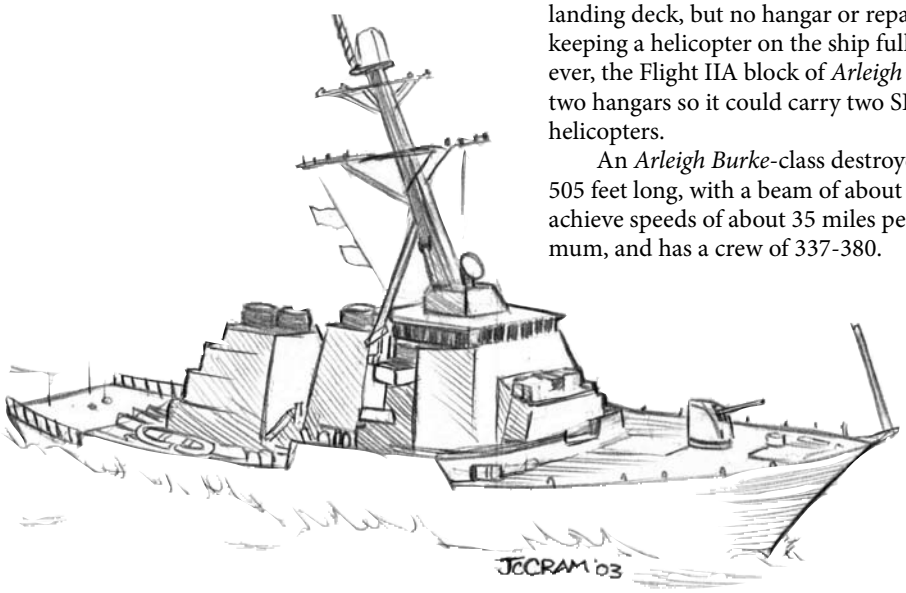
Description: Designed to replace the *Coontz*-class destroyer and *Leahy*- and *Belknap*-class missile cruisers, the *Arleigh Burke* guided missile destroyer (DDG) entered service in 1991 (later Flight I Block II ships debuted in 1998; the Flight IIA ships will enter service in the 2000-2008 timeframe).

Tasked with both anti-air and anti-ship warfare roles, an *Arleigh Burke* comes heavily armed. Its weaponry includes: two quadruple Harpoon SSM launchers; two vertical launch missile systems (the ship carries 90 or 96 missiles, such as Tomahawk SSMs and ASROC ASWs, for these launchers); one 127mm (5-inch) gun; two Phalanx CIWS systems; and two launchers for firing Mark 50 torpedoes. But it's also well-protected — other than its aluminum funnels, it's made entirely of steel, and important systems (including the command and control center) have individual Kevlar armoring. Furthermore, the ship has a "citadel" within the hull where the crew can obtain protection from NBC warfare attacks.

As an additional defensive measure, the *Arleigh Burke* is the first U.S. Navy ship to include extensive stealth features. It has suppression systems to minimize the IR plume caused by its engine exhaust and the sound caused by its propellers; its surfaces are angled and corners rounded to minimize its radar profile.

The *Arleigh Burke* lacks one thing that most ships of its size have: helicopter facilities. It has a landing deck, but no hangar or repair facilities for keeping a helicopter on the ship full-time. However, the Flight IIA block of *Arleigh Burke*s added two hangars so it could carry two SH-60 Seahawk helicopters.

An *Arleigh Burke*-class destroyer is about 505 feet long, with a beam of about 66 feet. It can achieve speeds of about 35 miles per hour maximum, and has a crew of 337-380.



CYCLONE-CLASS COASTAL PATROL BOAT

Val	Char	Cost	Notes
14	Size	70	25" x 12.5"; -14 KB; -9 DCV
80	STR	0	Lift 1.6 ktons; 16d6 HTH [0]
12	DEX	6	OCV: 4/DCV: 4
24	BODY	0	
8	DEF	14	Does Not Protect Some Occupants (-¼)
3	SPD	8	Phases: 4, 8, 12
			Total Characteristic Cost: 98

Movement: Ground: 0"/0"
Swimming: 18"/36"

Abilities & Equipment

Cost	Power	END
	Propulsion Systems	
5	*Propeller-Driven Military Vessel:* Swimming +16" (18" total); Surface Only (-1), 1 Continuing Fuel Charge (easily-obtained fuel; 10 Days; -0), Limited Maneuverability (-¾), Side Effects (propeller does KA 2d6 to anyone coming in contact with bottom stern of vehicle, occurs automatically, only affects environment around vehicle; -¾)	[1cc]
-12	*Water Vehicle:* Ground Movement -6" (0" total)	
	Tactical Systems	
72	*Bushmaster 25mm Guns:* RKA 4d6+1, Autofire (5 shots; +½), +1 Increased STUN Multiplier (+¼), 1,000 Charges (+1); OIF Bulky (-1), Real Weapon (-¼), Limited Arc Of Fire (360 Degrees above ship; -¼)	[1,000]
5	*Bushmaster 25mm Guns:* Another Bushmaster	[1,000]
50	*M2-HB 12.7mm Heavy Machine Guns:* RKA 3d6, Autofire (5 shots; +½), +1 Increased STUN Multiplier (+¼), 1,000 Charges (+1); OIF Bulky (-1), Limited Arc Of Fire 360 Degrees above ship; -¼), Real Weapon (-¼)	[1,000]
15	*M2-HB 12.7mm Heavy Machine Guns:* 4 more M2-HBs (total of 5)	[1,000]
50	*Stinger SAMs:* RKA 4d6, Armor Piercing (+½), Explosion (+½), No Range Modifier (+½); OIF Bulky (-1), Real Weapon (-¼), 6 Charges (-¾)	[6]
8	*Mark 52 Mod 0 Chaff Dispenser:* Darkness to Sight and Radio Groups 1" radius, MegaArea (1" = 100"; +¼); OIF Bulky (-1), Real Weapon (-¼), 12 Charges (-¼)	[12]
	Operations Systems	
5	*Communications System:* HRRP (Radio Group); OIF Bulky (-1), Affected As Sight And Hearing Group As Well As Radio Group (-½)	0
13	*Radar Systems:* Radar (Radio Group), Increased Arc Of Perception (360 Degrees), Telescopic (+12 versus Range Modifier); OIF Bulky (-1), Affected As Sight Group As Well As Radio Group (-½)	0
9	*Sonar Systems:* Active Sonar (Hearing Group), Increased Arc Of Perception (360 Degrees), Telescopic (+10 versus Range Modifier); OIF Bulky (-1), Only Usable Underwater (-1), Affected As Sight And Hearing Groups As Well As Radio Group (-½)	0
5	*GPS Tracker:* Detect Exact Position On Earth 16- (Radio Group); OIF Bulky (-1)	0
30	*Anchor:* 80 STR, Reduced Endurance (0 END; +½); OIF Bulky (-1), Partial Coverage (-2)	0

Total Abilities & Equipment Cost: 255
Total Vehicle Cost: 353

Value Disadvantages

25	Distinctive Features: US military ship (Not Concealable; Causes Extreme Reaction [fear])

Total Disadvantage Points: 25
Total Cost: 328/5 = 66

ADDITIONAL VEHICLES

Cost	Vehicle
18	*Raiding Craft:* 1 Rigid Inflatable Boat and two CRRCs (for all use Zodiac CRRR, TUV page 64)

OPTIONAL EQUIPMENT

Cost	Equipment
-12	*M60 Machine Guns:* Replace some or all M2-HBs with RKA 2d6+1, Autofire (5 shots; +½), +1 Increased STUN Multiplier (+¼), 1,000 Charges (+1); OIF Bulky (-1), Limited Arc Of Fire (360 Degrees above ship; -¼), Real Weapon (-¼)
-18	*Mk. 19 40mm Grenade Launcher:* Replace some or all M2-HBs with RKA 2½d6, Explosion (+½), 48 Charges (+½); OIF Bulky (-1), Limited Arc Of Fire (360 Degrees above ship; -¼), Real Weapon (-¼)

Description: The *Cyclone*-class Patrol Craft (PC) entered service in 1993; the U.S. military currently has 13 of them active. It's a coastal patrol and interdiction ship that's also used in support of various special warfare missions (such as SEAL insertion and extraction).

The *Cyclone* comes heavily armed. In addition to two 25mm Bushmaster guns and six Stinger missiles, it has five weapons mounts. These mounts can hold 12.7mm machine guns, M60 machine guns, or Mk. 19 40mm grenade launchers; the exact configuration varies from ship to ship.

A *Cyclone* is about 170 feet long, with a beam of about 25 feet. It can achieve speeds of about 40 miles per hour maximum. It has a crew of 28, and can carry an additional nine personnel (such as Navy SEALs, U.S. Coast Guard law enforcement officers, and the like).

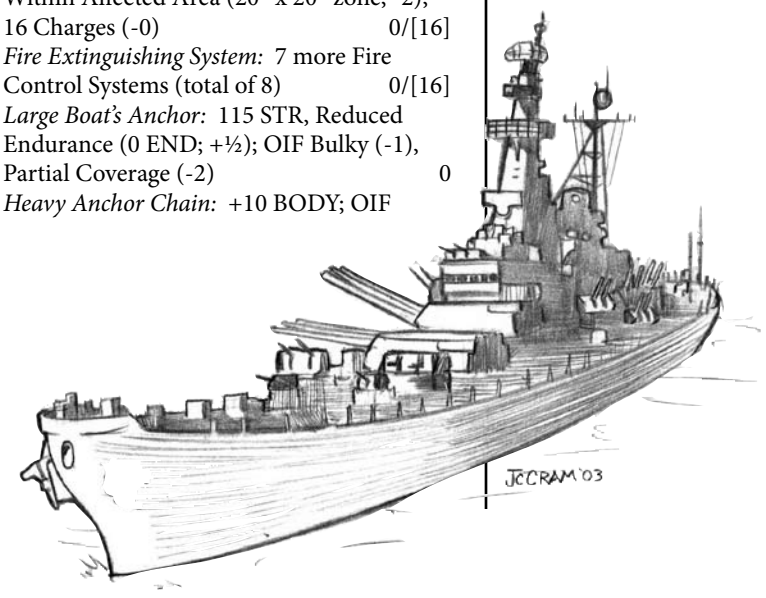
IOWA-CLASS BATTLESHIP

Val	Char	Cost	Notes
21	Size	105	125" x 64"; -21 KB; -14 DCV
115	STR	0	Lift 200 ktons; 23d6 HTH [0]
10	DEX	0	OCV: 3/DCV: 3
35	BODY	4	
10	DEF	19	Does Not Protect Some Occupants (-¼)
3	SPD	10	Phases: 4, 8, 12
			Total Characteristic Cost: 138

Movement: Ground: 0"/0"
Swimming: 16"/32"

Abilities & Equipment

Cost	Power	END
	Propulsion Systems	
4	*Propeller-Driven Military Vessel:* Swimming +14" (16" total); Surface Only (-1), 1 Continuing Fuel Charge (easily-obtained fuel; 10 Days; -0), Limited Maneuverability (-¾), Side Effects (propeller does KA 2d6 to anyone coming in contact with bottom stern of vehicle, occurs automatically, only affects environment around vehicle; -¾) [1cc]	
-12	*Water Vehicle:* Ground Movement -6" (0" total)	
	Tactical Systems	
135	*Mark 7 16-Inch Guns:* RKA 9d6, Armor Piercing (+½), Indirect (can be arced over intervening obstacles; +¼), Explosion (-1/3 DC; +1), +1 Increased STUN Multiplier (+¼), Increased Maximum Range (19,000", or about 24 miles; +½), 64 Charges (+½); OIF Bulky (-1), Extra Time (1 Minute; -1½), Real Weapon (-¼), Limited Arc Of Fire (360 Degrees above ship; -¼) [64]	
20	*Mark 7 16-Inch Guns:* 8 more 16-inch guns (total of 9) [64]	
97	*Twin Mark 45 127mm Deck Guns:* RKA 8d6, Autofire (2 shots; +¼), Indirect (can be arced over some intervening obstacles; +¼), +1 Increased STUN Multiplier (+¼), Increased Maximum Range (9,650", or about 12 miles; +½), 1,500 Charges (+1); OIF Bulky (-1), Extra Time (1 Minute; -1½), Real Weapon (-¼), Limited Arc Of Fire (360 Degrees above ship; -¼) [1,500]	
15	*Twin Mark 45 127mm Deck Guns:* 5 more twin Mark 45s (total of 6) [1,500]	
165	*20mm Mark 15 Phalanx CIWS:* Multipower, 165-point reserve, 1,550 Charges for entire reserve (+1); all OIF Bulky (-1) [1,550]	
7u	1) *Attack Mode:* RKA 4d6, Autofire (10 shots; +1), Armor Piercing (+½), +1 Increased STUN Multiplier (+¼); OIF Bulky (-1), Limited Arc Of Fire (360 Degrees above ship; -¼)	
1u	2) *Defense Mode:* Missile Deflection (all physical projectiles), Range (+1); OIF Bulky (-1), Requires 10 Charges Per Use (-¾)	
10	*20mm Mark 15 Phalanx CIWS:* 2 more Phalanxes (total of three) [1,550]	
44	*ECM Systems:* Suppress Electronic Warfare 8d6, any Power one at a time (+¼), Increased Maximum Range (6,250", or about 7.5 miles; +½), No Range Modifier (+½), Reduced Endurance (0 END; +½); OAF Bulky (-1½)	0
8	*Chaff Dispenser:* Darkness to Sight and Radio Groups 1" radius, MegaArea (1" = 100"; +¼); OIF Bulky (-1), Real Weapon (-¼), 12 Charges (-¼) [12]	
5	*ECM Systems:* Radio Group Flash Defense (5 points)	0
	Operations Systems	
9	*Communications Systems:* HRRP (Radio Group), Discriminatory, Analyze; OIF Bulky (-1), Affected As Sight And Hearing Group As Well As Radio Group (-½)	0
18	*SPS Radar Systems:* Radar (Radio Group), Discriminatory, Analyze, Increased Arc Of Perception (360 Degrees), Telescopic (+14 versus Range Modifier); OIF Bulky (-1), Affected As Sight Group As Well As Radio Group (-½)	0
12	*Sonar Systems:* Active Sonar (Hearing Group), Discriminatory, Analyze, Increased Arc Of Perception (360 Degrees), Telescopic (+12 versus Range Modifier); OIF Bulky (-1), Only Usable Underwater (-1), Affected As Sight And Hearing Groups As Well As Radio Group (-½)	0
14	*IR Sensing Systems:* Infrared Perception (Sight Group), Increased Arc Of Perception (360 Degrees), Telescopic (+18 versus Range Modifier); OIF Bulky (-1)	0
5	*GPS Tracker:* Detect Exact Position On Earth 16- (Radio Group); OIF Bulky (-1)	0
63	*Fire Extinguishing System:* Detect Unauthorized/Uncontrolled Fires 14-; Only Within Affected Area (20" x 20" zone; -2) **plus** Dispel Fire Powers 20d6, all Fire powers simultaneously (+2); Only Within Affected Area (20" x 20" zone; -2), 16 Charges (-0)	0/[16]
15	*Fire Extinguishing System:* 7 more Fire Control Systems (total of 8)	0/[16]
43	*Large Boat's Anchor:* 115 STR, Reduced Endurance (0 END; +½); OIF Bulky (-1), Partial Coverage (-2)	0
2	*Heavy Anchor Chain:* +10 BODY; OIF	



Bulky (-1), Partial Coverage (-2) 0

Skills

20 *Weapon Control Systems:* +4 with Ranged Attacks

Total Abilities & Equipment Cost: 700
Total Vehicle Cost: 838

Value Disadvantages

25 Distinctive Features: US warship (Not Concealable; Causes Extreme Reaction [fear])

Total Disadvantage Points: 25
Total Cost: 813/5 = 163

ADDITIONAL VEHICLES

Cost	Vehicle
41	*Lifeboats:* 250 lifeboats (use Canoe, TUV page 61)
41	*Helicopters:* Four Kaman SH-2D Seasprites (use SH-60 Seahawk, page 103)
30	*Harpoon Missiles:* 1 Harpoon Missile (use AIM-7 Sparrow, TUV page 131)
20	*Harpoon Missiles:* 15 more Harpoons (total of 16)
30	*Mark 143 ABL With Tomahawk Missiles:* 1 Tomahawk Missile (use AIM-7 Sparrow, TUV page 131)
25	*Mark 143 ABL With Tomahawk Missiles:* 31 more Tomahawks (total of 32)
23	Four Tactical Computers (TUV, page 162) for Phalanx systems (includes Infrared Perception (Sight Group) and Radar (Radio Group))

OPTIONAL EQUIPMENT

Cost	Equipment
+5	*U.S.S. Missouri And U.S.S. Wisconsin:* Increase number of Twin Mark 45s to 10, and remove from final cost of vehicle the Tomahawks and Harpoons (-105 points)
-10	*1943-Era* Iowa: Make the following changes, and also remove from final cost Tomahawks, Harpoons, helicopters, and Tactical Computers (-169 points)

Cost	Power
88	*40mm Antiaircraft Guns:* RKA 5d6+1, Autofire (5 shots; +½), +1 Increased STUN Multiplier (+¼), 1,500 Charges (+1); OIF Bulky (-1), Real Weapon (-¼), Limited Arc Of Fire (360 Degrees above ship; -¼)
35	*40mm Antiaircraft Guns:* 79 more 40mm guns (total of 80)
66	*20mm Antiaircraft Guns:* RKA 4d6, Autofire (5 shots; +½), +1 Increased STUN Multiplier (+¼), 1,500 Charges (+1); OIF Bulky (-1), Real Weapon (-¼), Limited Arc Of Fire (360 Degrees above ship; -¼)
30	*20mm Antiaircraft Guns:* 48 more 40mm guns (total of 49)
-183	Remove Phalanxes
-18	Remove SPS Radar Systems
-4	Change Sonar Systems to: Active Sonar (Hearing Group), Increased Arc Of Perception (360 Degrees), Telescopic (+8 versus Range Modifier); OIF Bulky (-1), Only Usable Underwater (-1), Affected As Sight Group As Well As Radio Group (-½)
-14	Remove IR Sensing Systems
-5	Remove GPS Tracker
-5	Change Communications Systems to: Radio Perception/Transmission (Radio Group); OIF Bulky (-1), Affected As Hearing Group As Well As Radio Group (-¼)
-192	*1968-Era* Iowa: Make the following changes, and also remove from final cost Tomahawks, Harpoons, and Tactical Computers (-169 points)

Cost	Power
+5	Increase number of Twin Mark 45s to 10
-183	Remove Phalanxes
-4	Change Sonar Systems to: Active Sonar (Hearing Group), Increased Arc Of Perception (360 Degrees), Telescopic (+8 versus Range Modifier); OIF Bulky (-1), Only Usable Underwater (-1), Affected As Sight And Hearing Groups As Well As Radio Group (-½)
-5	Remove GPS Tracker
-5	Change Communications Systems to: Radio Perception/Transmission (Radio Group); OIF Bulky (-1), Affected As Hearing Group As Well As Radio Group (-¼)

Description: First launched in 1943, the *Iowa*-class battleship was the largest and most powerful battleship ever constructed (except for the Japanese *Yamato* and *Musashi*). The most famous of them was the *U.S.S. Missouri,* on which the peace treaty with Japan was signed. After the Korean War, the *Iowa*s were mothballed. In 1968 the *U.S.S. New Jersey* was re-activated and refitted, but it only remained in service until 1969. In 1983 all four *Iowa*s (the *Iowa,* the *New Jersey,* the *Missouri,* and the *Wisconsin*) were re-activated and refitted; the *Iowa* and the *Missouri* both participated in Operation Desert Storm. Manpower shortages forced the U.S. Navy to decommission all four ships in 1995. Today the *New Jersey* and the *Missouri* are both museums (in Campden, NJ and at Pearl Harbor, respectively).

This character sheet represents two post-1983 *Iowa*s, the *Iowa* and the *New Jersey,* which carried the following weapons: 32 Tomahawk SSM missiles (fired from eight quadruple launchers); 16 Harpoon SSM missiles (fired from four quadruple launchers); a total of nine 16-inch (406mm) guns in three batteries of three guns each; six twin 127mm deck guns; and four Phalanx CIWS systems. The other two *Iowa*s, the *Missouri* and the *Wisconsin,* were not upgraded with missiles; instead, they have 10 127mm guns. (You can use the options to change this sheet to reflect the 1943- and 1968-era *Iowa*s.)

Regardless of era, the main weapons of an *Iowa* are her nine 16-inch guns. Capable of firing a 2,700-pound shell up to 38,000 meters (about 24 miles) from the ship, they allow the ship to deliver a level of firepower unmatched even by modern warships. During the Gulf War, the *Missouri* and the *Wisconsin* used Pioneer UAVs (page 88) to improve

the guns' accuracy, sometimes prompting Iraqi soldiers to raise a surrender flag as soon as they saw a Pioneer. However, the guns are time-consuming and difficult to operate properly, as the tragic 1989 turret explosion aboard the *U.S.S. Iowa* demonstrated.

An *Iowa*-class battleship is about 887 feet long, with a beam of about 108 feet. It can achieve speeds of about 37 miles per hour maximum. It has a crew of approximately 1,570-2,365.

KNOX-CLASS FRIGATE

Val	Char	Cost	Notes
18	Size	90	64" x 32"; -18 KB; -12 DCV
100	STR	0	Lift 25 ktons; 20d6 HTH [0]
11	DEX	3	OCV: 3/DCV: 3
28	BODY	0	
10	DEF	19	Does Not Protect Some Occupants (-¼)
3	SPD	9	Phases: 4, 8, 12
			Total Characteristic Cost: 121

Movement: Ground: 0"/0"
Swimming: 14"/28"

Abilities & Equipment

Cost	Power	END
	Propulsion Systems	
3	*Propeller-Driven Military Vessel:* Swimming +12" (14" total); Surface Only (-1), 1 Continuing Fuel Charge (easily-obtained fuel; 1 Day; -0), Limited Maneuverability (-¾), Side Effects (propeller does KA 2d6 to anyone coming in contact with bottom stern of vehicle, occurs automatically, only affects environment around vehicle; -¾) [1cc]	
-12	*Water Vehicle:* Ground Movement -6" (0" total)	
	Tactical Systems	
90	*Mark 42 127mm Deck Gun:* RKA 8d6, Indirect (can be arced over some intervening obstacles; +¼), +1 Increased STUN Multiplier (+¼), Increased Maximum Range (9,650", or about 12 miles; +½), 250 Charges (+1); OIF Bulky (-1), Extra Time (1 Minute; -1½), Real Weapon (-¼), Limited Arc Of Fire (360 Degrees above ship; -¼) [250]	
165	*20mm Mark 15 Phalanx CIWS:* Multipower, 165-point reserve, 1,550 Charges for entire reserve (+1); all OIF Bulky (-1) [1,550]	
7u	1) *Attack Mode:* RKA 4d6, Autofire (10 shots; +1), Armor Piercing (+½), +1 Increased STUN Multiplier (+¼); OIF Bulky (-1), Limited Arc Of Fire (360 Degrees above ship; -¼)	
1u	2) *Defense Mode:* Missile Deflection (all physical projectiles), Range (+1); OIF Bulky (-1), Requires 10 Charges Per Use (-¾)	
8	*ECM Systems:* Radio Group Flash Defense (8 points)	0
10	*ECM Systems:* Power Defense (12 points); Only Works Against Limited Type Of Attack (EMPs, electronic warfare attacks, and the like; -¼)	0
8	*Chaff Dispenser:* Darkness to Sight and Radio Groups 1" radius, MegaArea (1" = 100"; +¼); OIF Bulky (-1), Real Weapon (-¼), 12 Charges (-¼) [12]	
33	*Prairie/Masker Propeller Suppression System:* Change Environment 64" radius, -3 to Hearing Group Perception Rolls, Reduced Endurance (0 END; +½), Persistent (+½); Easily Removed (see page 73; -½), No Range (-½), Self Only (-½)	0
	Operations Systems	
9	*Communications Systems:* HRRP (Radio Group), Discriminatory, Analyze; OIF Bulky (-1), Affected As Sight And Hearing Group As Well As Radio Group (-½)	0
18	*SPS Radar Systems:* Radar (Radio Group), Discriminatory, Analyze, Increased Arc Of Perception (360 Degrees), Telescopic (+16 versus Range Modifier); OIF Bulky (-1), Affected As Sight Group As Well As Radio Group (-½)	0
13	*SQS Sonar Systems:* Active Sonar (Hearing Group), Discriminatory, Analyze, Increased Arc Of Perception (360 Degrees), Telescopic (+16 versus Range Modifier); OIF Bulky (-1), Only Usable Underwater (-1), Affected As Sight And Hearing Groups As Well As Radio Group (-½)	0
5	*GPS Tracker:* Detect Exact Position On Earth 16- (Radio Group); OIF Bulky (-1)	0
63	*Fire Extinguishing System:* Detect Unauthorized/Uncontrolled Fires 14-; Only Within Affected Area (20" x 20" zone; -2) **plus** Dispel Fire Powers 20d6, all Fire powers simultaneously (+2); Only Within Affected Area (20" x 20" zone; -2), 16 Charges (-0)	0/[16]
15	*Fire Extinguishing System:* 7 more Fire Control Systems (total of 8)	0/[16]
37	*Large Boat's Anchor:* 100 STR, Reduced Endurance (0 END; +½); OIF Bulky (-1), Partial Coverage (-2)	0
2	*Heavy Anchor Chain:* +10 BODY; OIF Bulky (-1), Partial Coverage (-2)	0
	Skills	
15	*ASW Tactical Data System:* +3 with Ranged Attacks	

Total Abilities & Equipment Cost: 490
Total Vehicle Cost: 611

Value Disadvantages

25	Distinctive Features: US warship (Not Concealable; Causes Extreme Reaction [fear])

Total Disadvantage Points: 25
Total Cost: 586/5 = 117

ADDITIONAL VEHICLES

Cost	Vehicle
31	*Lifeboats:* 40 lifeboats (use Canoe, TUV page 61)
31	*Helicopters:* One Kaman SH-2F Seasprite (use SH-60 Seahawk, page 103)
30	*Harpoon Missiles:* 1 Harpoon Missile (use AIM-7 Sparrow, TUV page 131)
10	*Harpoon Missiles:* 3 more Harpoons (total of 4)
30	*Mark 116 ASROC Launcher:* 1 ASROC Missile (use AIM-7 Sparrow, TUV page 131)
20	*Harpoon Missiles:* 11 more ASROCs (total of 12)
20	*Twin Mark 32 Torpedo Launchers:* 1 Mk 46 torpedo (use Mark 48, TUV page 133)
25	*Twin Mark 32 Torpedo Launchers:* 21 more torpedoes (total of 22)
13	One Tactical Computer (TUV, page 162) for Phalanx systems (includes Infrared Perception (Sight Group) and Radar (Radio Group))

OPTIONAL EQUIPMENT

Cost	Equipment
-128	*Pre-Phalanx Knox:* Replace Phalanx system with an octuple Sea Sparrow missile launcher with 8 missiles (use AIM-7 Sparrow, TUV page 131); you should also remove the Tactical Computer from the ship's final cost (-18 points)

Description: The *Knox*-class frigate first entered service with the U.S. Navy in 1969; the ships of the class were all completed by 1974 (though they've been upgraded since then, and often serve as the testbed for new weapon systems as well). Intended solely for antisubmarine warfare (ASW), the *Knox* has only one deck gun (a 127mm cannon) and just one propeller.

In addition to its Mark 42 cannon, a *Knox* has an extensive selection of missile-type weapons, including two twin Mark 32 ASW torpedo launchers firing Mark 42 torpedoes. It also has one octuple ASROC (Anti-Submarine Rocket) launcher for which it carries four Harpoon missiles and 12 ASROCs.

A *Knox*-class frigate is about 438 feet long, with a beam of about 47 feet. It can achieve speeds of about 31 miles per hour maximum, and has a crew of 283.

MARK V PEGASUS SPECIAL OPERATIONS CRAFT

Val	Char	Cost	Notes
11	Size	55	12.5" x 6.4"; -11 KB; -7 DCV
55	STR	-10	Lift 50 tons; 11d6 HTH [0]
18	DEX	24	OCV: 6/DCV: 6
21	BODY	0	
10	DEF	19	Does Not Protect Some Occupants (-¼)
3	SPD	2	Phases: 4, 8, 12
			Total Characteristic Cost: 90

Movement: Ground: 0"/0"
Swimming: 27"/54"

Abilities & Equipment

Cost	Power	END
	Propulsion Systems	
7	*Propeller-Driven Military Vessel:* Swimming +25" (27" total); Surface Only (-1), 1 Continuing Fuel Charge (easily-obtained fuel; 1 Day; -0), Limited Maneuverability (-¾), Side Effects (propeller does KA 2d6 to anyone coming in contact with bottom stern of vehicle, occurs automatically, only affects environment around vehicle; -¾) [1cc]	
-12	*Water Vehicle:* Ground Movement -6" (0" total)	
	Tactical Systems	
50	*M2-HB 12.7mm Heavy Machine Guns:* RKA 3d6, Autofire (5 shots; +½), +1 Increased STUN Multiplier (+¼), 1,000 Charges (+1); OIF Bulky (-1), Limited Arc Of Fire 360 Degrees above ship; -¼), Real Weapon (-¼) [1,000]	
15	*M2-HB 12.7mm Heavy Machine Guns:* 4 more M2-HBs (total of 5) [1,000]	
50	*Stinger SAMs:* RKA 4d6, Armor Piercing (+½), Explosion (+½), No Range Modifier (+½); OIF Bulky (-1), Real Weapon (-¼), 6 Charges (-¾) [6]	
23	*Reduced Radar Signature Profile:* Change Environment 13" radius, -3 to Radar Perception Rolls, Reduced Endurance (0 END; +½), Persistent (+½); Easily Removed (see page 73; -½), No Range (-½), Self Only (-½)	0
23	*Reduced IR Signature Profile:* Change Environment 13" radius, -3 to Infrared Perception Rolls, Reduced Endurance (0 END; +½), Persistent (+½); Easily Removed (see page 73; -½), No Range (-½), Self Only (-½)	0
25	*Propeller Suppression System:* Change Environment 13" radius, -3 to Hearing Group Perception Rolls, Reduced Endurance (0 END; +½), Persistent (+½); Easily Removed (see page 73; -½), No Range (-½), Self Only (-½)	0
	Operations Systems	
5	*Communications System:* HRRP (Radio Group); OIF Bulky (-1), Affected As Sight And Hearing Group As Well As Radio Group (-½)	0

13 *Radar Systems:* Radar (Radio Group), Increased Arc Of Perception (360 Degrees), Telescopic (+12 versus Range Modifier); OIF Bulky (-1), Affected As Sight Group As Well As Radio Group (-½) 0
9 *Sonar Systems:* Active Sonar (Hearing Group), Increased Arc Of Perception (360 Degrees), Telescopic (+10 versus Range Modifier); OIF Bulky (-1), Only Usable Underwater (-1), Affected As Sight And Hearing Groups As Well As Radio Group (-½) 0
5 *GPS Tracker:* Detect Exact Position On Earth 16- (Radio Group); OIF Bulky (-1) 0
22 *Anchor:* 60 STR, Reduced Endurance (0 END; +½); OIF Bulky (-1), Partial Coverage (-2) 0

Total Abilities & Equipment Cost: 235
Total Vehicle Cost: 325

Value Disadvantages

25 Distinctive Features: US warship (Not Concealable; Causes Extreme Reaction [fear])

Total Disadvantage Points: 25
Total Cost: 300/5 = 60

ADDITIONAL VEHICLES

Cost Vehicle

18 *Zodiac CRRCs:* Four CRRCs (for all use Zodiac CRRR, TUV page 64)

OPTIONAL EQUIPMENT

Cost Equipment

-12 *M60 Machine Guns:* Replace some or all M2-HBs with RKA 2d6+1, Autofire (5 shots; +½), +1 Increased STUN Multiplier (+¼), 1,000 Charges (+1); OIF Bulky (-1), Limited Arc Of Fire (360 Degrees above ship; -¼), Real Weapon (-¼)
-18 *Mk. 19 40mm Grenade Launcher:* Replace some or all M2-HBs with RKA 2½d6, Explosion (+½), 48 Charges (+½); OIF Bulky (-1), Limited Arc Of Fire (360 Degrees above ship; -¼), Real Weapon (-¼)

Description: The Mark V Pegasus Special Operations Craft (SOC) (not to be confused with the Navy's PMH 1 Pegasus combat hydrofoil) is one of the newest vessels in the Naval Special Warfare fleet. It looks like an armored power speedboat because its hull is shaped for "stealth" capabilities. Its primary mission is medium-range insertion and extraction for the Special Operations Forces, but it can also engage in coastal patrol, interdiction, and similar operations.

A Pegasus carries six Stinger missiles standard, and also has five weapons mounts. These mounts can hold 12.7mm machine guns, M60 machine guns, or Mk. 19 40mm grenade launchers; the exact configuration varies from boat to boat.

The Mark V possesses an unusual capability — it can launch and recover small watercraft while in motion. Usually this means one of the four Zodiac CRRCs it has on board, but the Mark V has also served as a testbed for unmanned surface vehicle (USV) programs.

A Pegasus SOC is about 81 feet long, with a beam of about 17 feet. It can achieve speeds of around 60 miles per hour maximum. It has a crew of six, and can carry another 16 troops.

PATROL BOAT, RIVERINE

Val	Char	Cost	Notes
7	Size	35	5" x 2.5"; -7 KB; -4 DCV
40	STR	-5	Lift 6,400 kg; 8d6 HTH [0]
15	DEX	15	OCV: 5/DCV: 5
17	BODY	0	
5	DEF	7	Does Not Protect Some Occupants (-¼)
3	SPD	5	Phases: 4, 8, 12
			Total Characteristic Cost: 57

Movement: Ground: 0"/0"
Swimming: 13"/26"

Abilities & Equipment

Cost Power END

Propulsion Systems

3 *Propeller-Driven Military Vessel:* Swimming +11" (13" total); Surface Only (-1), 1 Continuing Fuel Charge (easily-obtained fuel; 1 Day; -0), Limited Maneuverability (-¾), Side Effects (propeller does KA 2d6 to anyone coming in contact with bottom stern of vehicle, occurs automatically, only affects environment around vehicle; -¾) [1cc]
-12 *Water Vehicle:* Ground Movement -6" (0" total)

Tactical Systems

50 *M2-HB 12.7mm Heavy Machine Guns:* RKA 3d6, Autofire (5 shots; +½), +1 Increased STUN Multiplier (+¼), 500 Charges (+1); OIF Bulky (-1), Limited Arc Of Fire 360 Degrees above ship; -¼), Real Weapon (-¼) [500]
5 *M2-HB 12.7mm Heavy Machine Guns:* 1 more M2-HBs (total of 2) [500]
32 *Mk. 19 40mm Grenade Launcher:* RKA 2½d6, Explosion (+½), 48 Charges (+½); OIF Bulky (-1), Limited Arc Of Fire (360 Degrees above ship; -¼), Real Weapon (-¼) [48]
7 *Ceramic Armor:* +5 DEF; Partial Coverage (only on vital crew areas; -1) 0
21 *Engine Silencing System:* Change Environment 5" radius, -3 to Hearing Group Perception Rolls, Reduced Endurance (0 END; +½), Persistent (+½); Easily Removed (see page 73; -½), No Range (-½), Self Only (-½) 0

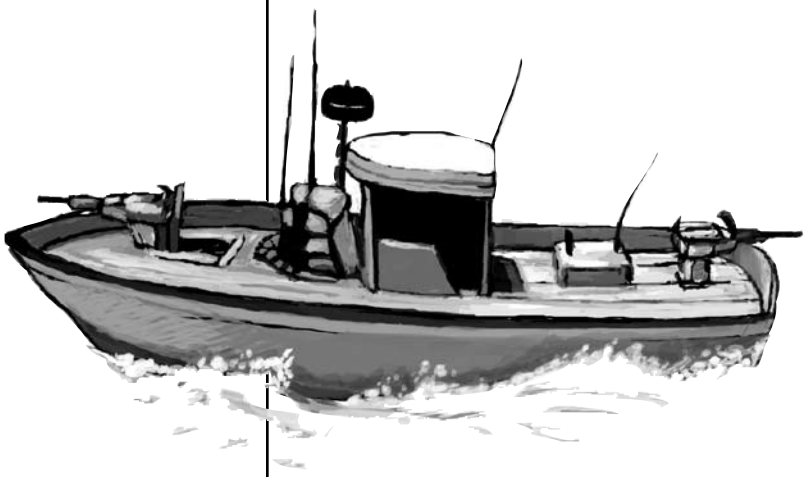
Operations Systems

4 *Communications System:* Radio Perception/Transmission (Radio Group); OIF Bulky (-1), Affected As Hearing Group As Well As Radio Group (-¼) 0
11 *Surface-Search Radar:* Radar (Radio Group), Increased Arc Of Perception (360 Degrees), Telescopic (+8 versus Range Modifier); OIF Bulky (-1), Affected As Sight Group As Well As Radio Group (-½) 0

Total Abilities & Equipment Cost: 121
Total Vehicle Cost: 178

Value Disadvantages

25 Distinctive Features: US patrol boat (Not Concealable; Causes Extreme Reaction [fear])



Total Disadvantage Points: 25
Total Cost: 153/5 = 31

Description: The Patrol Boat, Riverine (PBR) first entered U.S. military service in the 1960s and has become closely associated with the Vietnam War, though the military has used it in many other places and times since then. It's intended for high-speed brownwater patrols, the insertion and extraction of SEAL teams, and similar missions. It comes equipped with an engine sound suppression system to make it harder to hear.

The PBR mounts three weapons: two 12.7mm (.50) machine guns and one Mark 19 40mm grenade launcher. Additionally, the crew (and any passengers) are usually equipped with personal weaponry.

A PBR is about 32 feet long, with a beam of about 12 feet. It can achieve speeds of about 28 miles per hour maximum. It has a crew of four, and can carry up to six more personnel.

SUBMARINES

Numerous movies and books, from *Run Silent, Run Deep* to *The Hunt For Red October* and *Crimson Tide,* reflect the public's fascination with submarines and submarine warfare. Here are a few sample subs in *HERO System* terms in case you want to run a Dark Champions submarine warfare story or pit your Atlantean superhero against some *real* undersea opposition.

DIESEL-ELECTRIC SUBMARINES

TYPE VIIA U-BOAT

Val	Char	Cost	Notes
15	Size	75	32" x 16"; -15 KB; -10 DCV
85	STR	0	Lift 3.2 ktons; 17d6 HTH [0]
12	DEX	6	OCV: 4/DCV: 4
25	BODY	0	
8	DEF	18	
3	SPD	8	Phases: 4, 8, 12
			Total Characteristic Cost: 107

Movement: Ground: 0"/0"
Swimming: 8"/16"

Abilities & Equipment

Cost	Power	END
	Propulsion Systems	
3	*Propeller-Driven Military Vessel:* Swimming +6" (8" total); Limited Maneuverability (-½), No Noncombat Movement While Submerged (-0), Side Effects (propeller does KA 2d6 to anyone coming in contact with bottom stern of vehicle, occurs automatically, only affects environment around vehicle; -¾), 1 Continuing Fuel Charge (easily-obtained fuel; 1 Month; -0)	[1cc]
-12	*Water Vehicle:* Ground Movement -6" (0" total)	
	Tactical Systems	
79	*80mm Deck Gun:* RKA 7d6, +1 Increased STUN Multiplier (+¼), 220 Charges (+1); OIF Bulky (-1), Cannot Fire While Sub Is Submerged (-½), Limited Arc Of Fire (360 Degrees above ship; -¼), Real Weapon (-¼)	[220]
65	*Quad 20mm Antiaircraft Gun:* RKA 4d6, Autofire (8 shots; +1), +1 Increased STUN Multiplier (+¼), 1,000 Charges (+1); OIF Bulky (-1), Cannot Fire While Sub Is Submerged (-½), Limited Arc Of Fire (360 Degrees above ship; -¼), Real Weapon (-¼)	[1,000]
	Operations Systems	
11	*Submersible:* Life Support (Self-Contained Breathing; Safe Environment: High Pressure)	0
3	*Bulkheads:* Life Support (Self-Contained Breathing); Partial Coverage (about one-sixth of ship, see text; -2)	0
15	*Bulkheads:* 5 more bulkheads (total of 6)	0

13 *Periscope:* Clairsentience (Sight Group), Reduced Endurance (0 END; +½); OIF Bulky (-1), Limited Range (8"; -¼) 0

Total Abilities & Equipment Cost: 177
Total Vehicle Cost: 284

Value Disadvantages

25 Distinctive Features: Nazi submarine (Not Concealable; Causes Extreme Reaction [fear])

Total Disadvantage Points: 25
Total Cost: 259/5 = 52

ADDITIONAL VEHICLES

Cost Vehicle

20 *21-Inch Torpedo Launchers:* 1 torpedo (use Mark 48, TUV page 133, but reduce its performance and damage to represent the more primitive technology of the World War II era)
20 *21-Inch Torpedo Launchers:* 10 more torpedoes (total of 11)

OPTIONAL EQUIPMENT

Cost Equipment

+0 *Torpedo Load, VIIB-C:* Increase to 14 torpedoes
+81 *Flak U-Boat:* Add the following:

Cost Power

+5 One more Quad 20mm AA Gun (total of 2)
76 *Quad 37mm Antiaircraft Gun:* RKA 4½d6, Autofire (8 shots; +1), +1 Increased STUN Multiplier (+¼), 1,000 Charges (+1); OIF Bulky (-1), Cannot Fire While Sub Is Submerged (-½), Limited Arc Of Fire (360 Degrees above ship; -¼), Real Weapon (-¼)

Description: Considered one of the most important designs in submarining history, the Type VII *unterseeboot* ("u-boat") was produced between 1936 and 1945; a total of 709 of them, of all variants, were manufactured, the first being the U-27, the last the U-1308. Although not the "best" submarine of its time in any respect, it was an elegant compromise between various design considerations. Additionally, it had the range — 4,900-7,500 miles on the surface, and 92-104 miles submerged — and seaworthiness to fight (or disrupt commercial shipping) far out in the Atlantic. The most successful submarine of World War II was a Type VIIB, the *U-48.* It sailed on 13 missions, spent 291 days at sea, and sunk 51 ships. The *U-47,* another Type VIIB, snuck into the Scapa Flow and sank the British battleship *Royal Oak* in 1939.

All Type VIIs are a single-hull design with saddle tanks; they have six internal watertight compartments. They all have the same weaponry: five 21-inch torpedo tubes (four in the bow, one in the stern); one 88mm deck gun; and one quad 20mm antiaircraft gun (the latter two can only be used when the sub is on the surface, of course). Type VIIs also have the benefit of small conning towers, making them difficult to see when surfaced in daylight (and almost impossible to detect at night).

The Type VII u-boat is 211-220 feet long and 19-20 feet in the beam. It can achieve a speed of about 18 miles per hour on the surface, and 9 miles per hour submerged. Its maximum diving depth is 328 feet (or 394 feet for the Type VIIC/41). It has a crew of 44.

NUCLEAR SUBMARINES

Since January 1955, when the *U.S.S. Nautilus* became the first submarine to operate on nuclear power, the most powerful subs in the world have had onboard nuclear reactors to power them. This allows the sub to remain underwater and on missions for far longer than a diesel-electric sub, thus increasing the sub's secrecy and effectiveness.

AKULA-CLASS

Val	Char	Cost	Notes
17	Size	85	50" x 25"; -17 KB; -11 DCV
95	STR	0	Lift 12.5 ktons; 19d6 HTH [0]
14	DEX	12	OCV: 5/DCV: 5
27	BODY	0	
9	DEF	21	
3	SPD	6	Phases: 4, 8, 12
			Total Characteristic Cost: 124

Movement: Ground: 0"/0"
Swimming: 18"/36"

Abilities & Equipment

Cost Power **END**

Propulsion Systems

7 *Propeller-Driven Military Vessel:* Swimming +16" (18" total); Limited Maneuverability (-½), Side Effects (propeller does KA 2d6 to anyone coming in contact with bottom stern of vehicle, occurs automatically, only affects environment around vehicle; -¾) 0
-12 *Water Vehicle:* Ground Movement -6" (0" total)

Tactical Systems

60 *Strela SA-N-5/8 Air Defense System:* RKA 4d6, Armor Piercing (+½), Explosion (+½), No Range Modifier (+½), Increased Maximum Range (4,125; +¼), 18 Charges (+¼); OIF Bulky (-1), Cannot Fire While Sub Is Submerged (-½), Limited Arc Of Fire (360 Degrees above ship; -¼), Real Weapon (-¼) [18]
33 *MG-74 Korund Noise Simulation Decoys:* Images to Hearing and Radio Groups, -4 to PER Rolls, Increased Size (50" radius; +1½), 12 Charges lasting 1 Minute each +½); OIF Bulky (launcher; -1) [12cc]
38 *Fared Fin And Sound Suppression Measures:* Change Environment 50" radius, -5 to Hearing Group Perception Rolls, Reduced Endurance (0 END; +½), Persistent (+½); Easily Removed (see page 73; -½), No Range (-½), Self Only (-½) 0
10 *ECM Systems:* Radio Group Flash Defense (10 points) 0

12 *ECM Systems:* Power Defense (15 points); Only Works Against Limited Type Of Attack (EMPs, electronic warfare attacks, and the like; -¼) 0

Operations Systems

5 *Communications Systems:* HRRP (Radio Group); OIF Bulky (-1), Affected As Sight And Hearing Group As Well As Radio Group (-½) 0

13 *Periscope:* Clairsentience (Sight Group), Reduced Endurance (0 END; +½); OIF Bulky (-1), Limited Range (8"; -¼) 0

11 *MGK-503-M Skat Sonar Arrays:* Active Sonar (Hearing Group), Increased Arc Of Perception (360 Degrees), Telescopic (+8 versus Range Modifier); OIF Bulky (-1), Affected As Sight Group As Well As Hearing Group (-½) 0

8 *Flank And Towed Sonar Arrays:* +4 PER with Hearing Group; OIF Bulky (-1) **plus** Ultrasonic Perception (Hearing Group); OIF Bulky (-1) **plus** Telescopic (+4 versus Range Modifier for Hearing Group); OIF Bulky (-1) 0

15 *Snoop Pair Surface-Search Radar Systems:* Radar (Radio Group), Increased Arc Of Perception (360 Degrees), Telescopic (+18 versus Range Modifier); OIF Bulky (-1), Affected As Sight Group As Well As Radio Group (-½) 0

14 *IR Sensing Systems:* Infrared Perception (Sight Group), Increased Arc Of Perception (360 Degrees), Telescopic (+18 versus Range Modifier); OIF Bulky (-1) 0

10 *Nuclear Reactor Shielding:* +10 DEF, Partial Coverage (covers a total 80 hex area; -2) 0

1 *Nuclear Reactor Shielding:* Life Support (Safe Environment: High Radiation); Partial Coverage (covers a total 80 hex area; -2) 0

63 *Fire Control System:* Detect Unauthorized/Uncontrolled Fires 14-; Only Within Affected Area (20" x 20" zone; -2) **plus** Dispel Fire Powers 20d6, all Fire powers simultaneously (+2); Only Within Affected Area (20" x 20" zone; -2), 16 Charges (-0) 0/[16]

25 *Fire Control System:* 31 more Fire Control Systems (total of 32) 0/[16]

Personnel Systems

11 *Submersible:* Life Support (Self-Contained Breathing; Safe Environment: High Pressure) 0

3 *Watertight Compartments:* Life Support (Self-Contained Breathing); Partial Coverage (about one-sixth of ship, see text; -2) 0

15 *Watertight Compartments:* 6 more compartments (total of 7) 0

Skills

20 *Targeting Systems:* +4 with Ranged Attacks

Total Abilities & Equipment Cost: 362
Total Vehicle Cost: 486

Value Disadvantages

25 Distinctive Features: Soviet submarine (Not Concealable; Causes Extreme Reaction [fear])

Total Disadvantage Points: 25
Total Cost: 461/5 = 92

ADDITIONAL VEHICLES

Cost	Vehicle
20	*26.4- And 21-Inch Torpedo Launchers:* 1 torpedo (use Mark 48, TUV page 133)
30	*26.4- And 21-Inch Torpedo Launchers:* 39 more torpedoes (total of 40)

OPTIONAL EQUIPMENT

Cost	Equipment
90	*Granat (SS-N-21 Sampson) Cruise Missiles:* A total of 12 nuclear cruise missiles (use Nuclear Space Missile on TUV 132 with appropriate changes)

Description: Conceived as a follow-on to the *Victor III*-class sub, the *Akula* was the largest submarine created by the Soviet Union. (The Russian designation is *Shchuka-B*-class; *Akula* is the NATO name for this sub.) Made of low-magnetic steel (which is easier to work and cheaper than titanium), it's notable for the way its long fin fares into the hull to reduce hydrodynamic swirl (and thus noise). Unlike earlier Russian subs, which had notorious noise problems, the *Akula* incorporates numerous systems and improvements designed to make it as quiet as possible.

Improved Group I and Group II *Akula*s have 14 torpedo tubes: four 26.4-inch internal; four 21-inch internal; and six 21-inch external. Standard Group I boats have no external tubes. An *Akula* typically carries 40 torpedoes, typically Novator SS-N-15 Starfish and Novator SS-N-16 Stallions; it can also carry *Granat* nuclear-tipped cruise missiles for use against land-based targets. *Akula*s also have a Strela SA-N-5/8 portable missile launcher for air defense.

The *Akula* nuclear sub is 361-375 feet long and 44 feet in the beam. It can achieve a speed of about 11 miles per hour on the surface, and 40 miles per hour submerged. Its maximum diving depth is 1,970 feet (about 300"). It has a crew of 44 and can remain at sea for approximately 80 days. A total of 10 were built between 1984 and 2000, but two are only partially complete and apparently being leased to India.

U.S.S. NAUTILUS

Val	Char	Cost	Notes
17	Size	85	50" x 25"; -17 KB; -11 DCV
95	STR	0	Lift 12.5 ktons; 19d6 HTH [0]
12	DEX	6	OCV: 4/DCV: 4
27	BODY	0	
9	DEF	21	
3	SPD	8	Phases: 4, 8, 12
			Total Characteristic Cost: 120

Movement: Ground: 0"/0"
Swimming: 12"/24"

Abilities & Equipment

Cost	Power	END
	Propulsion Systems	
4	*Propeller-Driven Military Vessel:* Swimming +10" (12" total); Limited Maneuverability (-½), Side Effects (propeller does KA 2d6 to anyone coming in contact with bottom stern of vehicle, occurs automatically, only affects environment around vehicle; -¾)	0
-12	*Water Vehicle:* Ground Movement -6" (0" total)	
	Tactical Systems	
33	*Noise Simulation Decoys:* Images to Hearing and Radio Groups, -4 to PER Rolls, Increased Size (50" radius; +1½), 12 Charges lasting 1 Minute each +½); OIF Bulky (launcher; -1)	[12cc]
33	*Sound Suppression Measures:* Change Environment 50" radius, -3 to Hearing Group Perception Rolls, Reduced Endurance (0 END; +½), Persistent (+½); Easily Removed (see page 73; -½), No Range (-½), Self Only (-½)	0
	Operations Systems	
4	*Communications Systems:* Raiod Perception/Transmission (Radio Group); OIF Bulky (-1), Affected As Hearing Group As Well As Radio Group (-¼)	0
13	*Periscope:* Clairsentience (Sight Group), Reduced Endurance (0 END; +½); OIF Bulky (-1), Limited Range (8"; -¼)	0
10	*Active Sonar Arrays:* Active Sonar (Hearing Group), Increased Arc Of Perception (360 Degrees), Telescopic (+6 versus Range Modifier); OIF Bulky (-1), Affected As Sight Group As Well As Hearing Group (-½)	0
6	*Passive Sonar Arrays:* +2 PER with Hearing Group; OIF Bulky (-1) **plus** Ultrasonic Perception (Hearing Group); OIF Bulky (-1) **plus** Telescopic (+4 versus Range Modifier for Hearing Group); OIF Bulky (-1)	0
13	*Surface-Search Radar Systems:* Radar (Radio Group), Increased Arc Of Perception (360 Degrees), Telescopic (+12 versus Range Modifier); OIF Bulky (-1), Affected As Sight Group As Well As Radio Group (-½)	0
10	*Nuclear Reactor Shielding:* +10 DEF, Partial Coverage (covers a total 80 hex area; -2)	0
1	*Nuclear Reactor Shielding:* Life Support (Safe Environment: High Radiation); Partial Coverage (covers a total 80 hex area; -2)	0
63	*Fire Control System:* Detect Unauthorized/Uncontrolled Fires 14-; Only Within Affected Area (20" x 20" zone; -2) **plus** Dispel Fire Powers 20d6, all Fire powers simultaneously (+2); Only Within Affected Area (20" x 20" zone; -2), 16 Charges (-0)	0/[16]
25	*Fire Control System:* 31 more Fire Control Systems (total of 32)	0/[16]
	Personnel Systems	
11	*Submersible:* Life Support (Self-Contained Breathing; Safe Environment: High Pressure)	0
3	*Watertight Compartments:* Life Support (Self-Contained Breathing); Partial Coverage (about one-sixth of ship, see text; -2)	0
15	*Watertight Compartments:* 6 more compartments (total of 7)	0
	Skills	
10	*Targeting Systems:* +2 with Ranged Attacks	

Total Abilities & Equipment Cost: 242
Total Vehicle Cost: 362

Value Disadvantages

25	Distinctive Features: US submarine (Not Concealable; Causes Extreme Reaction [fear])

Total Disadvantage Points: 25
Total Cost: 337/5 = 67

ADDITIONAL VEHICLES

Cost	Vehicle
20	*21-Inch Torpedo Launchers:* 1 torpedo (use Mark 48, TUV page 133, but reduce its performance and damage to represent the more primitive technology of the early Cold War era)
25	*21-Inch Torpedo Launchers:* 23 more torpedoes (total of 24)

OPTIONAL EQUIPMENT

Cost	Equipment
-1	*U.S.S. Seawolf:* Decrease to Swimming +8"

Description: The age of the nuclear submarine began on January 17, 1955 when the *U.S.S. Nautilus* sent the signal, "Underway on nuclear power." The *Nautilus* was the result of an intensive research and development project led by then-Captain Hyman Rickover. Although a revolutionary design, the *Nautilus* was considered a working sub by the U.S. Navy and remained in active service until decommissioning in 1980; it's now a museum in Groton, Connecticut. During its career it achieved the first polar transit by a submarine.

The *Nautilus*'s weapon systems are six 21-inch torpedo tubes in the bow. It carries 24 torpedoes.

The *Nautilus* is about 323 feet long and about 27 feet in the beam. It can achieve a speed of about 21 miles per hour on the surface, and 26 miles per hour submerged. Its maximum diving depth is 400 feet (about 61"). It has a crew of 111.

You can also use this character sheet for the *U.S.S. Seawolf,* SSN-575 (not to be confused with

the *Seawolf*-class sub; see page 136). The *Seawolf* was built at the same time and is basically the same sub, just slightly slower and with a crew of 105. It was decommissioned in 1987.

SEAWOLF-CLASS

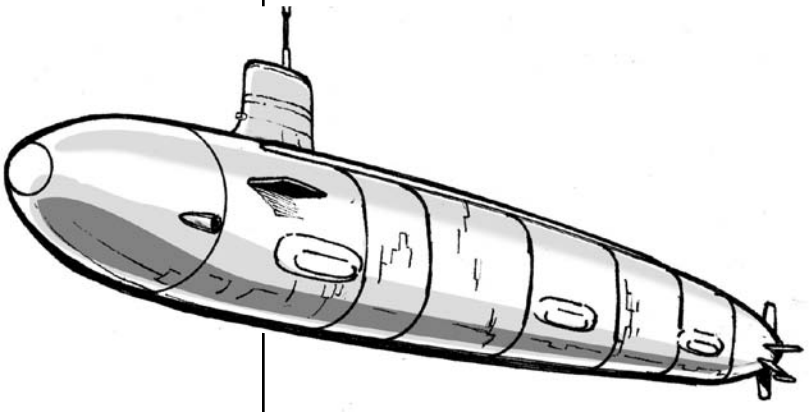
Val	Char	Cost	Notes
17	Size	85	50" x 25"; -17 KB; -11 DCV
95	STR	0	Lift 12.5 ktons; 19d6 HTH [0]
15	DEX	15	OCV: 5/DCV: 5
28	BODY	1	
11	DEF	27	
3	SPD	5	Phases: 4, 8, 12
			Total Characteristic Cost: 133

Movement: Ground: 0"/0"
Swimming: 18"/36"

Abilities & Equipment

Cost	Power	END
	Propulsion Systems	
7	*Propeller-Driven Military Vessel:* Swimming +16" (18" total); Limited Maneuverability (-½), Side Effects (propeller does KA 2d6 to anyone coming in contact with bottom stern of vehicle, occurs automatically, only affects environment around vehicle; -¾)	0
-12	*Water Vehicle:* Ground Movement -6" (0" total)	
	Tactical Systems	
33	*WLY-1 Torpedo Decoy System:* Images to Hearing and Radio Groups, -4 to PER Rolls, Increased Size (50" radius; +1½), 12 Charges lasting 1 Minute each (+½); OIF Bulky (launcher; -1)	[12cc]
40	*Anechoic Coating And Sound Suppression Measures:* Change Environment 50" radius, -6 to Hearing Group Perception Rolls, Reduced Endurance (0 END; +½), Persistent (+½); Easily Removed (see page 73; -½), No Range (-½), Self Only (-½)	0
10	*WLQ ECM Systems:* Radio Group Flash Defense (10 points)	0
16	*WLQ ECM Systems:* Power Defense (20 points); Only Works Against Limited Type Of Attack (EMPs, electronic warfare attacks, and the like; -¼)	0
	Operations Systems	
5	*Communications Systems:* HRRP (Radio Group); OIF Bulky (-1), Affected As Sight And Hearing Group As Well As Radio Group (-½)	0
13	*Periscope:* Clairsentience (Sight Group), Reduced Endurance (0 END; +½); OIF Bulky (-1), Limited Range (8"; -¼)	0
11	*Active Sonar Arrays:* Active Sonar (Hearing Group), Increased Arc Of Perception (360 Degrees), Telescopic (+8 versus Range Modifier); OIF Bulky (-1), Affected As Sight Group As Well As Hearing Group (-½)	0
8	*Passive Sonar Arrays:* +4 PER with Hearing Group; OIF Bulky (-1) **plus** Ultrasonic Perception (Hearing Group); OIF Bulky (-1) **plus** Telescopic (+4 versus Range Modifier for Hearing Group); OIF Bulky (-1)	0
15	*Surface-Search Radar Systems:* Radar (Radio Group), Increased Arc Of Perception (360 Degrees), Telescopic (+18 versus Range Modifier); OIF Bulky (-1), Affected As Sight Group As Well As Radio Group (-½)	0
14	*IR Sensing Systems:* Infrared Perception (Sight Group), Increased Arc Of Perception (360 Degrees), Telescopic (+18 versus Range Modifier); OIF Bulky (-1)	0
10	*Nuclear Reactor Shielding:* +10 DEF, Partial Coverage (covers a total 80 hex area; -2)	0
1	*Nuclear Reactor Shielding:* Life Support (Safe Environment: High Radiation); Partial Coverage (covers a total 80 hex area; -2)	0
63	*Fire Control System:* Detect Unauthorized/Uncontrolled Fires 14-; Only Within Affected Area (20" x 20" zone; -2) **plus** Dispel Fire Powers 20d6, all Fire powers simultaneously (+2); Only Within Affected Area (20" x 20" zone; -2), 16 Charges (-0)	0/[16]
25	*Fire Control System:* 31 more Fire Control Systems (total of 32)	0/[16]
	Personnel Systems	
11	*Submersible:* Life Support (Self-Contained Breathing; Safe Environment: High Pressure)	0
3	*Watertight Compartments:* Life Support (Self-Contained Breathing); Partial Coverage (about one-sixth of ship, see text; -2)	0
15	*Watertight Compartments:* 6 more compartments (total of 7)	0
	Skills	
25	*Targeting Systems:* +5 with Ranged Attacks	

Total Abilities & Equipment Cost: 313
Total Vehicle Cost: 446



Value Disadvantages

25 Distinctive Features: US submarine (Not Concealable; Causes Extreme Reaction [fear])

Total Disadvantage Points: 25
Total Cost: 421/5 = 84

ADDITIONAL VEHICLES

Cost	Vehicle
20	*26.5-Inch Torpedo Launchers:* 1 Mark 48 ADCAP torpedo (TUV page 133)
30	*26.5-Inch Torpedo Launchers:* 49 more ADCAPs (total of 50)

OPTIONAL EQUIPMENT

Cost	Equipment
90	*Tomahawk Cruise Missiles:* Substitute for 12 ADCAPs a total of 12 nuclear cruise missiles (use Nuclear Space Missile on TUV 132 with appropriate changes)
30	*Harpoon Missiles:* Substitute for 1 ADCAP a Harpoon Missile (use AIM-7 Sparrow, TUV page 131); you can make further substitutions if desired
+12	Virginia-*Class Submarine:* Increase to Size 18, DEF 12, and -7 to Hearing Group PER Rolls for Anechoic Coating

Description: Successor to the *Los Angeles*-class attack sub (TUV, page 68), the *Seawolf*-class nuclear submarine is generally considered the most advanced submarine currently afloat. It's specially strengthened for under-ice operations and instead of a traditional propeller has a six-finned shrouded propulsor.

A *Seawolf* has eight 26.5-inch torpedo tubes amidships. From them it can fire Mark 48 ADCAP torpedoes, Harpoon anti-ship missiles, or Tomahawk nuclear cruise missiles; the exact mix varies from sub to sub (though normally a *Seawolf* doesn't carry more than 12 Tomahawks). The version depicted here carries 50 ADCAPs.

A *Seawolf* nuclear sub is 353 feet long and 42 feet in the beam. It can achieve a speed of about 11 miles per hour on the surface, and 40 miles per hour submerged. Its maximum diving depth is 1,970 feet (about 300"). It has a crew of 133 and can remain at sea for approximately 90+ days. A total of three were built between 1997 and 2004 (the *U.S.S. Seawolf,* SSN-21; the *U.S.S. Connecticut,* SSN-22; and the *U.S.S. Jimmy Carter,* SSN-23).

The *Seawolf*-class will be followed by the *Virginia* class. *Virginia*-class subs will have 12 vertical launch tubes for Tomahawk SLCMs and four 21-inch torpedo tubes, and carry a total of 50 missiles (12 Tomahawks plus 38 others, including Unmanned Underwater Vehicles [UUVs]). The option given above for the *Virginia* class is speculative, since not all details for the sub have been finalized and/or made public.

OHIO-CLASS BALLISTIC MISSILE CARRIER

Val	Char	Cost	Notes
19	Size	95	80" x 40"; -19 KB; -12 DCV
105	STR	0	Lift 50 ktons; 21d6 HTH [0]
14	DEX	12	OCV: 5/DCV: 5
29	BODY	0	
12	DEF	30	
3	SPD	6	Phases: 4, 8, 12
			Total Characteristic Cost: 143

Movement: Ground: 0"/0"
Swimming: 13"/26"

Abilities & Equipment

Cost	Power	END
	Propulsion Systems	
5	*Propeller-Driven Military Vessel:* Swimming +11" (13" total); Limited Maneuverability (-½), Side Effects (propeller does KA 2d6 to anyone coming in contact with bottom stern of vehicle, occurs automatically, only affects environment around vehicle; -¾)	0
-12	*Water Vehicle:* Ground Movement -6" (0" total)	
	Tactical Systems	
35	*Mark 2 Torpedo Decoy System:* Images to Hearing and Radio Groups, -4 to PER Rolls, Increased Size (50" radius; +1½), 16 Charges lasting 1 Minute each (+¾); OIF Bulky (launcher; -1) [16cc]	
40	*Anechoic Coating And Sound Suppression Measures:* Change Environment 50" radius, -6 to Hearing Group Perception Rolls, Reduced Endurance (0 END; +½), Persistent (+½); Easily Removed (see page 73; -½), No Range (-½), Self Only (-½)	0
10	*WLQ ECM Systems:* Radio Group Flash Defense (10 points)	0
16	*WLQ ECM Systems:* Power Defense (20 points); Only Works Against Limited Type Of Attack (EMPs, electronic warfare attacks, and the like; -¼)	0
	Operations Systems	
5	*Communications Systems:* HRRP (Radio Group); OIF Bulky (-1), Affected As Sight And Hearing Group As Well As Radio Group (-½)	0
13	*Periscope:* Clairsentience (Sight Group), Reduced Endurance (0 END; +½); OIF Bulky (-1), Limited Range (8"; -¼)	0
15	*Active Sonar Arrays:* Active Sonar (Hearing Group), Increased Arc Of Perception (360 Degrees), Telescopic (+18 versus Range Modifier); OIF Bulky (-1), Affected As Sight Group As Well As Hearing Group (-½)	0
8	*Passive Sonar Arrays:* +4 PER with Hearing Group; OIF Bulky (-1) **plus** Ultrasonic Perception (Hearing Group); OIF Bulky (-1) **plus** Telescopic (+4 versus Range Modifier for Hearing Group); OIF Bulky (-1)	0
15	*BPS-15A Surface-Search Radar Systems:* Radar (Radio Group), Increased Arc Of Per-	

	ception (360 Degrees), Telescopic (+18 versus Range Modifier); OIF Bulky (-1), Affected As Sight Group As Well As Radio Group (-½)	0
14	*IR Sensing Systems:* Infrared Perception (Sight Group), Increased Arc Of Perception (360 Degrees), Telescopic (+18 versus Range Modifier); OIF Bulky (-1)	0
10	*Nuclear Reactor Shielding:* +10 DEF, Partial Coverage (covers a total 80 hex area; -2)	0
1	*Nuclear Reactor Shielding:* Life Support (Safe Environment: High Radiation); Partial Coverage (covers a total 80 hex area; -2)	0
63	*Fire Control System:* Detect Unauthorized/Uncontrolled Fires 14-; Only Within Affected Area (20" x 20" zone; -2) **plus** Dispel Fire Powers 20d6, all Fire powers simultaneously (+2); Only Within Affected Area (20" x 20" zone; -2), 16 Charges (-0)	0/[16]
25	*Fire Control System:* 31 more Fire Control Systems (total of 32)	0/[16]
	Personnel Systems	
11	*Submersible:* Life Support (Self-Contained Breathing; Safe Environment: High Pressure)	0
3	*Watertight Compartments:* Life Support (Self-Contained Breathing); Partial Coverage (about one-sixth of ship, see text; -2)	0
15	*Watertight Compartments:* 6 more compartments (total of 7)	0
	Skills	
25	*Targeting Systems:* +5 with Ranged Attacks	

Total Abilities & Equipment Cost: 315
Total Vehicle Cost: 460

Value Disadvantages

25	Distinctive Features: US submarine (Not Concealable; Causes Extreme Reaction [fear])

Total Disadvantage Points: 25
Total Cost: 435/5 = 87

ADDITIONAL VEHICLES

Cost	Vehicle
20	*21-Inch Torpedo Launchers:* 1 Mark 48 ADCAP torpedo (TUV page 133)
30	*21-Inch Torpedo Launchers:* 49 more ADCAPs (total of 50)
90	*Trident Nuclear Missiles:* 1 Trident (use Nuclear Space Missile on TUV 132 with appropriate changes; see text)
25	*Trident Nuclear Missiles:* 23 more Tridents (total of 24)

OPTIONAL EQUIPMENT

Cost	Equipment
+52	*Tomahawk TLAM Missiles:* Reduce number of Tridents to two (-20 points) and add 154 Tomahawk TLAMs (use AIM-7 Sparrow, TUV page 131, but increase damage to RKA 7d6, Explosion)
-5	*Typhoon Class:* Reduce number of "Tridents" to 20 and number of torpedoes to 30

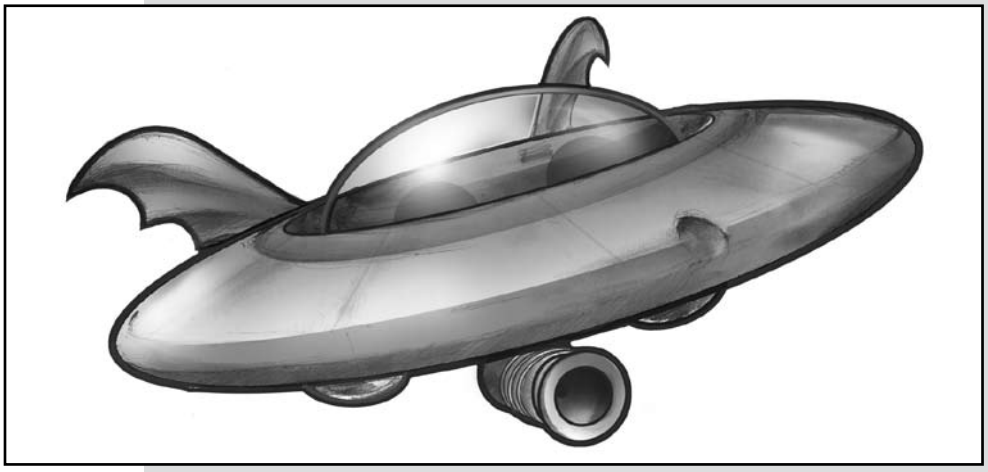
Description: The *Ohio* class entered service in 1982. It's a ballistic missile submarine (SSBN) designed primarily to carry nuclear missiles, and thus to form one-third of America's nuclear deterrence strategy. Successor to the *Benjamin Franklin* and *Lafayette* classes, it's one of the most powerful weapons in the American arsenal. The eighteen ships of the class carry approximately half of the United States's strategic warheads.

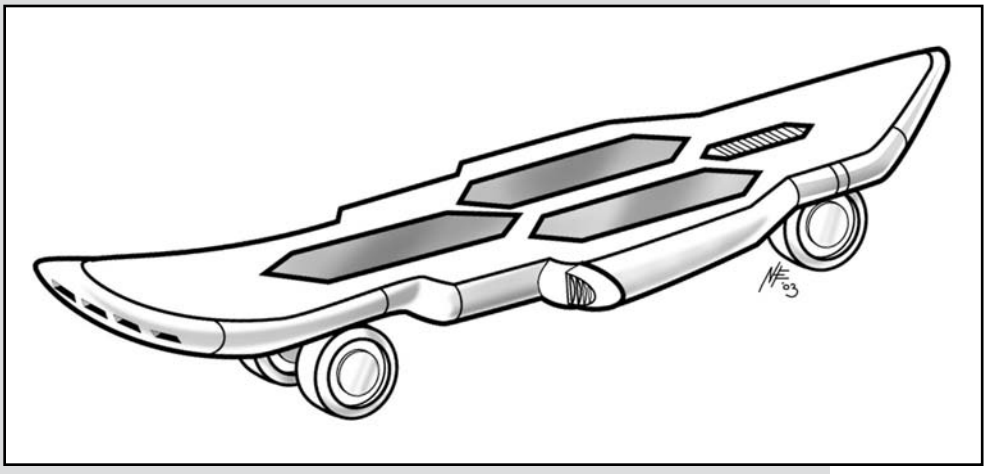
An *Ohio* has four Mark 68 21-inch torpedo tubes amidships that typically fire Mark 48 ADCAP torpedoes. More importantly, it has 24 tubes for vertically-launched Trident II D-5 nuclear missiles, each of which carries eight 475-kiloton W-88 MIRVed warheads. (Some earlier *Ohio*s have Trident C-4 missiles instead.) Beginning in 2007-10, some *Ohio*s will be modified, replacing 22 of their 24 Trident tubes with launchers containing a cluster of seven Tomahawk TLAM (land attack) nonnuclear missiles.

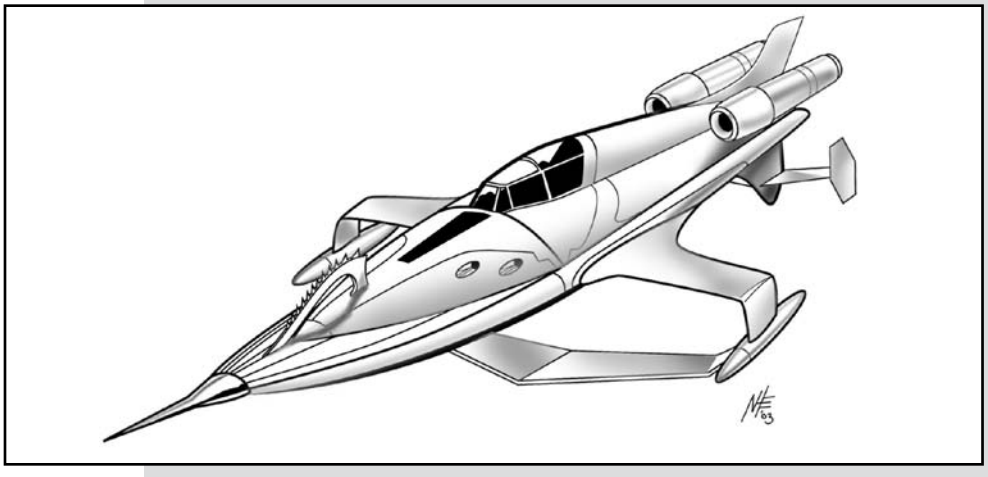
An *Ohio*-class sub is 560 feet long and 42 feet in the beam. It can achieve a speed of about 23 miles per hour on the surface or 29 miles per hour submerged. Its maximum diving depth is 984 feet (about 150"). It has a crew of 163 (split into two, Blue and Gold) and can remain at sea for approximately 70 days. A total of 18 were built between 1981 and 1997, with nine based on each coast of the United States.

With a few changes you can use this character sheet for the Soviet/Russian equivalent sub (known to NATO as the *Typhoon* class) — the largest sub ever built. The *Typhoon* can descend to a depth of 1,300 feet (about 200"). A *Typhoon* can attack the United States with its nuclear missiles without leaving Russian waters.

chapter four:







FANTASY AND SUPERHERO VEHICLES

FANTASY VEHICLES

Vehicles don't play a major role in most *Fantasy Hero* campaigns, but that's not to say they're nonexistent. Here are a few that your bold warriors and wise wizards might encounter or use.

OTHER FANTASY VEHICLES

In addition to the vehicles described here (and the Fantasy-era ships in Chapter Three), you can find several vehicles suitable for *Fantasy Hero* campaigns in *The Ultimate Vehicle,* including:

- Canoe (page 61)
- Chariot (page 43)
- Flying Carpet (page 74)
- Galleon (page 63)
- Stagecoach (page 44)
- Trireme (page 61)
- Viking Longship (page 62)

ENCHANTED SLED

Val	Char	Cost	Notes
3	Size	15	2" x 1"; -3 KB; -2 DCV
25	STR	0	Lift 800 kg; 5d6 HTH [0]
8	DEX	-6	OCV: 3/DCV: 3
13	BODY	0	
3	DEF	2	Does Not Protect Some Occupants (-¼)
2	SPD	2	Phases: 4, 8, 12
			Total Characteristic Cost: 13

Movement: Ground: 22"/44"

Abilities & Equipment

Cost	Power	END
16	*Magic Runners:* Ground Movement +16" (22" total); Only On Appropriate Terrain (ice and snow; -1)	0

Total Abilities & Equipment Cost: 16
Total Vehicle Cost: 29

Value Disadvantages
None

Total Disadvantage Points: 0
Total Cost: 29/5 = 6

OPTIONAL EQUIPMENT

Cost	Equipment
+10	*Larger Sled:* Increase Size to 5
+28	*Flying Sled:* Change to Flight 22"
-5	*Sled Pulled By Flying Reindeer:* Change to Gliding 22"; Towed (-½), Costs Endurance (towing creature's END; -½)

Description: A valued vehicle in the icy lands of the far north, the Enchanted Sled looks like an ordinary sled suitable for carrying as many as six riders — except that it's made of finer materials than normal and has no harness for horses or reindeer. When one of the occupants speaks the command word, the sled moves on its own, without the need for any animal to pull it! It can maintain a steady speed of nearly 50 miles per hour without the need for rest breaks, food, or fuel (though harsh terrain may slow it down).

FLYING SHIP

Val	Char	Cost	Notes
13	Size	65	20" x 10"; -13 KB; -8 DCV
70	STR	-5	Lift 400 tons; 14d6 HTH [0]
10	DEX	0	OCV: 3/DCV: 3
25	BODY	2	
6	DEF	10	Does Not Protect Some Occupants (-¼)
3	SPD	10	Phases: 4, 8, 12
			Total Characteristic Cost: 82

Movement: Ground: 0"/0"
Flight: 10"/20"
Swimming: 3"/6"

Abilities & Equipment

Cost	Power	END
5	*Sailed Flying Ship:* Flight 10"; Sailed (-1), OAF (sails; -1), Limited Maneuverability (-¾), Cannot Move Backwards (-¼)	0
1	*Sailed Watercraft:* Swimming +1" (3" total); Surface Only (-1), Sailed (-1), OAF (sails; -1), Limited Maneuverability (-¾), Cannot Move Backwards (-¼)	0
3	*Full Rig:* +10 BODY; Partial Coverage (sails only; -2)	0
10	*Three-Masted Ship:* Total of three masts	0
-12	*Flying Vehicle:* Ground Movement -6" (0" total)	

Total Abilities & Equipment Cost: 7
Total Vehicle Cost: 89

Value Disadvantages
None

Total Disadvantage Points: 0
Total Cost: 89/5 = 18

OPTIONAL EQUIPMENT

Cost	Equipment
+2	*Mystic Engine:* Change to Flight 10"; OIF Bulky (-1), Limited Maneuverability (-¾)
20	*Plane-Sailing Ship:* Add Extra-Dimensional Movement (any location in any dimension); OIF Bulky (mystic engine; -1)
26	*Magefire Cannons:* RKA 3d6, Increased Maximum Range (2,500"; +½), No Range Modifier (+½); OIF Bulky (-1), Extra Time (Full Phase; -½), Limited Arc Of Fire (one hex row, same horizontal level; -1), 15 Charges (-0)

Description: In some Fantasy settings, powerful wizards have the ability to create ships that can sail through the clouds as well as over the waves! A Flying Ship, also known as a sky galleon, allows the owner to travel great distances in comfort without having to face the perils of the open road — and to carry vast amounts of cargo (or treasure) if necessary. But the skies may hold dangers of their own; besides thunderstorms, a Flying Ship could suffer attack from griffins, dragons, vulture-folk, or even other wizards with Ships of their own.

Most Flying Ships use the wind to move, just like sailing ships. But a few have mystic engines that allow them to fly even when there is no wind... and others, stranger still, can cross the barriers into different planes of reality, carrying their passengers into realms most bizarre.

IRON STEED

Val	Char	Cost	Roll	Notes
40	STR	30	17-	Lift 6,400 kg; 8d6 [0]
20	DEX	30	13-	OCV: 7/DCV: 7
10	CON	0	11-	
20	BODY	20	13-	
20	INT	10	13-	PER Roll 13-
0	EGO	0	—	ECV: N/A
20	PRE	10	13-	PRE Attack: 4d6
14	COM	2	12-	
10	PD	21		Total: 10 PD (10 rPD)
10	ED	27		Total: 10 ED (10 rED)
5	SPD	20		Phases: 3, 5, 8, 10, 12
10	REC	0		
0	END	-10		
—	STUN	—		**Total Characteristics Cost: 160**

Movement: Running: 15"/60"
Leaping: 8"/16"

Cost	Powers	END
18	*Iron Steed's Legs:* Running +9" (15" total)	0
15	*Tireless:* Reduced Endurance (0 END; +½) on Running	0
4	*Tireless:* Reduced Endurance (0 END; +½) on Leaping	0
1	*Tireless:* Reduced Endurance (0 END; +½) on Swimming	0
20	*Tireless:* Reduced Endurance (0 END; +½) for STR	0
15	*Iron Steed's Body:* Does Not Bleed	0
10	*Iron Steed's Body:* No Hit Locations	0

45	*Iron Steed's Body:* Takes No STUN	0
15	*Iron Steed's Body:* Hardened (+¼) for 10 PD/10 ED	0
37	*Iron Steed's Body:* Damage Resistance (10 PD/10 ED), Hardened (+¼)	0
60	*Heavy:* Knockback Resistance -10"	0
50	*Iron Steed Vitality:* Life Support: Total (including Longevity: Immortality)	0

Skills

10	+2 HTH
3	Riding 13-

Total Powers & Skills Cost: 303
Total Cost: 463

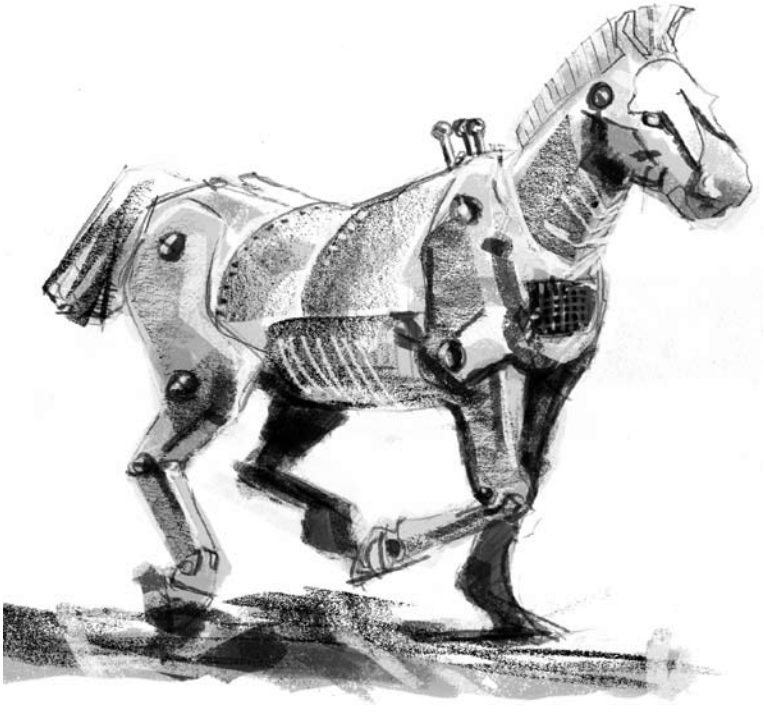
200+ Disadvantages
None

Total Disadvantage Points: 0
Total Cost: 463/5 = 93 (or more; see text)

OPTIONAL ABILITIES

Cost	Power
30	*Iron Demon Steed — Fiery Breath:* Add RKA 1d6, Penetrating (+½), Reduced Endurance (0 END; +½)

Description: This is a rare example of a "vehicle" that's not built using the Vehicle rules. Instead, this object — sort of a metal golem in the shape of a powerful steed — is built as an Automaton which the character can buy as a Follower (you should adjust the listed final cost based on the relationship between the Steed's and the purchasing character's point totals, of course). Intelligent and powerful, the Iron Steed not only serves as a conveyance, it can fight on the character's behalf and may even offer useful advice. Depending on who made it, how it was trained, and its experiences in "life," you may want to give an Iron Steed other Skills (particularly Knowledge Skills).



WITCH'S BROOMSTICK

Val	Char	Cost	Notes
0	Size	0	.5" x .5"; -0 KB; -0 DCV
10	STR	0	Lift 100 kg; 2d6 HTH [0]
18	DEX	24	OCV: 6/DCV: 6
5	BODY	-5	
3	DEF	2	Does Not Protect Riders (-½)
4	SPD	12	Phases: 3, 6, 9, 12
			Total Characteristic Cost: 33

Movement:	Ground:	0"/0"
	Swimming:	0"/0"
	Flight:	15"/30"

Abilities & Equipment

Cost	Power	END
30	*Witch's Flight:* Flight 15"	0
-12	*Only Flies:* Ground Movement -6" (0" total)	
-2	*Only Flies:* Swimming -2" (0" total)	

Skills

4	*Maneuverable:* +2 with Flight

Total Abilities & Equipment Cost: 20
Total Vehicle Cost: 53

Value Disadvantages
None

Total Disadvantage Points: x
Total Cost: 53/5 = 11

OPTIONAL EQUIPMENT

Cost	Equipment
+10	*Faster Broomstick I:* Increase to Flight 20"
+5	*Faster Broomstick II:* Increase to x4 Non-combat
-14	*Apprentice's Broomstick:* Decrease to Flight 8"

Description: Witches are widely known for their ability to fly on broomsticks. While some buy this as a spell (see *The Fantasy Hero Grimoire,* page 210), others craft their broomsticks as enchanted items built using the Vehicle rules. While not sturdy, broomsticks are maneuverable and can carry one passenger in addition to the witch herself.

SUPERHERO VEHICLES

In addition to a wide variety of mundane modern vehicles (such as the ones in Chapters One through Three), *Champions* campaigns often feature super-vehicles. Many of them are simply normal vehicles enhanced with super-technology, and these you can create by improving standard cars and planes. But others, such as the ones described below, are more unusual — perhaps even unique to one character within the campaign.

You can find more superhero vehicles in *The Ultimate Vehicle, VIPER,* and *UNTIL,* among other books.

OTHER SUPERHERO VEHICLES

In addition to the vehicles described here, you can find several vehicles suitable for *Champions* campaigns in *The Ultimate Vehicle,* including:

- Hovercraft (page 52)
- Powered Armor Suit (page 83)
- Supercar (page 46)
- Superjet (page 82)

Of course, *The Ultimate Vehicle* also contains many ordinary modern-day vehicles (as does this book) which fit perfectly well into the average *Champions* game. Superhero campaigns which feature alien invaders or adventures in galactic empires may also benefit from TUV's extensive selection of space vehicles and mecha.

For additional vehicles appropriate to superhero campaigns, see the *VIPER* and *UNTIL* sourcebooks.

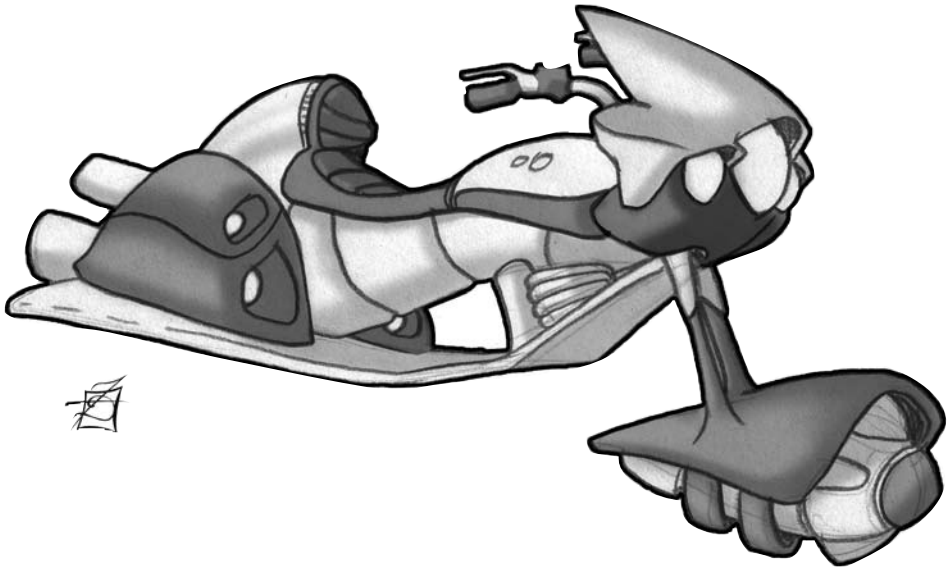
AIR-CYCLE

Val	Char	Cost	Notes
1	Size	5	1.25" x .64"; -1 KB; -0 DCV
25	STR	10	Lift 800 kg; 5d6 HTH [0]
18	DEX	24	OCV: 6/DCV: 6
15	BODY	4	
7	DEF	10	Does Not Protect Riders (-½)
4	SPD	12	Phases: 3, 6, 9, 12
			Total Characteristic Cost: 65

Movement: Ground: 0"/0"
Swimming: 0"/0"
Flight: 25"/100"

Abilities & Equipment

Cost	Power	END
55	*Jet Engine:* Flight 25", x4 Noncombat Multiple; 1 Continuing Fuel Charge lasting 6 Hours (requires specially-refined jet fuel, Difficult to obtain; -0)	0
-12	*Only Flies:* Ground Movement -6" (0" total)	
-2	*Only Flies:* Swimming -2" (0" total)	
27	*Forward Blaster:* RKA 2d6, Autofire (5 shots; +½), 60 Charges (+½); OIF Bulky (-1), Limited Arc Of Fire (180 Degrees; -¼)	[60]
5	*Rear Blaster:* As Forward Blaster	[60]
5	*Communications System:* HRRP (Radio Group); OIF Bulky (-1), Affected As Sight And Hearing Group As Well As Radio Group (-½)	0
10	*Radar Array:* Radar (Radio Group), Increased Arc Of Perception (360 Degrees); OIF Bulky (-1)	0



Skills

4 *Maneuverable:* +2 with Flight

Total Abilities & Equipment Cost: 92
Total Vehicle Cost: 157

Value Disadvantages

None

Total Disadvantage Points: 0
Total Cost: 157/5 = 31

OPTIONAL EQUIPMENT

Cost	Equipment
+42	*Hover Generator:* Instead of having a jet engine, the Air-Cycle employs hover technology, making it even faster and more maneuverable. Change to Flight 30", x4 Noncombat Multiple, Sideways Maneuverability (+½); 1 Continuing Fuel Charge lasting 6 Hours (requires specially-refined jet fuel, Difficult to obtain; -0)
+5	*Turbo-Flight System:* Increase to x8 Noncombat
+13	*Enhanced Blasters:* Increase Forward and Rear Blasters to RKA 3d6
45	*Rocket Launchers:* RKA 3d6, Armor Piercing (+½), Explosion (+½), Indirect (always comes from Air-Cycle, but can strike target from any angle; +½), No Range Modifier (+½); OIF Bulky (-1), 4 Charges (-1)
13	*Stealth Systems:* Invisibility to Hearing Group and Radar, Reduced Endurance (0 END; +½); IIF Bulky (-¾)

Description: This vehicle is a small flying craft, sort of a "flying motorcycle" (hence its name). It has space for one person to ride in comfort, with a second rider behind him if both can tolerate cramped conditions (at the GM's option, this may impose a -1 penalty on all rolls made by either person). It can reach speeds of approximately 150 miles per hour (more with the optional turbo-charge system), and comes equipped with forward- and rear-mounted blasters in the event of combat. The character can enhance the blasters or add side-mounted rocket launchers, if desired. It also has a full communications and radar suite; some version come with stealth technology, making it difficult to hear them or pick them up on radar.

BATTLEVAN

Val	Char	Cost	Notes
5	Size	25	3.2" x 1.6"; -5 KB; -3 DCV
40	STR	5	Lift 6,400 kg; 8d6 HTH [0]
18	DEX	24	OCV: 6/DCV: 6
20	BODY	5	
10	DEF	24	
4	SPD	12	Phases: 3, 6, 9, 12
			Total Characteristic Cost: 95

Movement: Ground: 21"/84"
Swimming: 0"/0"

Abilities & Equipment

Cost	Power	END
	Propulsion Systems	
13	*Motorized Wheeled Vehicle:* Ground Movement +15" (21" total), x4 Noncombat; OAF (tires; -1½), Only On Appropriate Terrain (-¼), 1 Continuing Fuel Charge (easily-obtained fuel; 6 Hours; -0) [1cc]	
6	*Solid Tires* (6 DEF, 6 BODY; see TUV, page 41)	0
-2	*Ground Vehicle:* Swimming -2" (0" total)	
	Tactical Systems	
60	*Turreted Blasters:* Multipower, 105-point reserve; all IIF Bulky (-¾)	
5u	1) *Primary Blaster:* RKA 4d6, 60 Charges (+½); IIF Bulky (-¾) [60]	
5u	2) *Vari-Blaster:* RKA 2d6, Variable Advantage (+1 Advantages; +2), Variable Special Effects (+½); IIF Bulky (-¾), 12 Charges (-¼) [12]	
45	*Retractable Side-Mounted Rocket Launchers:* RKA 3d6, Explosion (+½), Indirect (always originates from vehicle, but can strike target from any direction; +½), No Range Modifier (+½); IIF Bulky (-¾), 6 Charges (-¾) [6]	
5	*Retractable Side-Mounted Rocket Launchers:* Another RSML (total of two) [6]	
22	*Headlight Lasers:* RKA 3d6, Armor Piercing (+½); IIF Bulky (-¾), Limited Arc Of Fire (one hex row in front of vehicle, only on same horizontal level; -1), 12 Charges (-¼) [12]	
8	*Oil Slick Generator:* Change Environment 8" Cone, -4 to all DEX-based Rolls to move on/through; IIF Bulky (-¾), No Range (-½), Limited Arc Of Fire (60 Degrees behind vehicle, only on same horizontal level; -¾), Only Affects Characters Who Are Moving On The Ground (-¼), 4 Continuing Charges lasting 1 Turn each (-½) [4]	
9	*Concealed Ramplate:* HA +4d6, Reduced Endurance (0 END: +½); IIF Bulky (-¾), Hand-To-Hand Attack (-½), Only For Move Throughs (-1)	0
	Operations Systems	
5	*Communications System:* HRRP (Radio Group); OIF Bulky (-1), Affected As Sight And Hearing Group As Well As Radio Group (-½)	0

10 *Radar Array:* Radar (Radio Group), Increased Arc Of Perception (360 Degrees); OIF Bulky (-1) 0
25 *Extremely Advanced Locks:* Lockpicking 20- 0

Personnel Systems

2 *Advanced Restraint System:* +10 PD; OIF Bulky (-1), Only To Protect Occupants Against Damage From Collisions (-2) 0
10 *Hermetically Sealed, With Oxygen Supply:* Life Support (Self-Contained Breathing); 1 Continuing Fuel Charge (easily-obtained fuel; 8 Hours; -0) [1cc]
6 *Ejection Seats:* Telekinesis (26 STR); OIF Bulky (driver's seat; -1), Affects Whole Object (-¼), No Range (-½), Only To Throw Target Straight Up (-2), 1 Recoverable Charge (-1¼) [1rc]
5 *Ejection Seats:* Another Ejection Seat (passenger's side seat) [1rc]

Skills

10 *Tactical Computer:* +2 with Ranged Combat
6 *Autopilot:* Combat Driving 14-; OIF Bulky (-1)
10 *Navigational Computer:* AK: Campaign City And Environs 28-; OIF Bulky (-1)

Total Abilities & Equipment Cost: 265
Total Vehicle Cost: 360

Value Disadvantages

None

Total Disadvantage Points: 0
Total Cost: 360/5 = 72

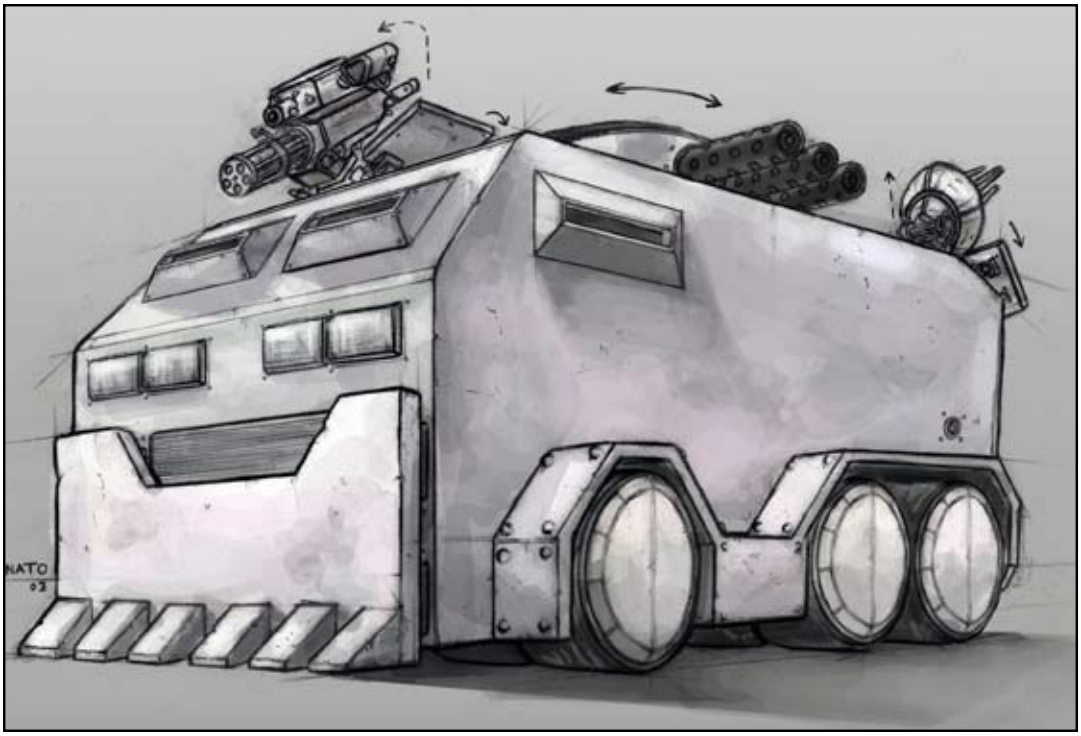
OPTIONAL EQUIPMENT

Cost Equipment

+2 *Six Wheels:* +2 wheels (total of 6)
30 *Twin Forward Machine Guns:* RKA 2d6, Armor Piercing (+½), Autofire (5 shots; +½), 50 Charges (+½); IIF Bulky (-¾), Limited Arc Of Fire (60 Degrees forward; only on same horizontal level; -¾) [50]
10 *Armored Panels:* +4 DEF; Limited Coverage (not on windshield/windows; -¼)
7 *Retractable Armor:* +4 DEF; Nonpersistent (-¼), Extra Time (Half Phase to activate; -¼), Visible (-¼)
45 *Anti-Theft System:* Energy Blast 8d6, NND (defense is rED on the parts of the body touching the car; +1), Trigger (when someone attempting unauthorized entry fails, or fails to make, a Security Systems roll to access vehicle; +¼); IIF Bulky (-¾), 12 Charges (-¼) [12]
-14 *Obvious Battlevan:* Convert all equipment that's bought as IIF (-¾) into OIFs (-1)

Description: Made of super-age metals, plastics, and ceramics, the Battlevan looks more or less like an ordinary ground vehicle... but has nearly as much armor as a tank! In addition to that, it can maintain speeds of as much as 125 miles per hour.

The Battlevan's primary weapons are mounted in a concealed turret that withdraws into the main body of the vehicle when not in use. The turret contains two weapons, a large primary blaster and a secondary "vari-blaster" that can emit a wide variety of beams and projectiles. The two weapons are independently mounted on the turret, allowing them to face and fire in different directions simultaneously. The van also comes equipped with rocket launchers that emerge from the sides, lasers concealed in the headlights, and an oil slick generator to foil pursuers. The designer can install other (or additional) weapons, additional armor, or more wheels to carry the load if desired; he can also choose to make the weapons obvious if he's not concerned about stealth.



FLYING PLATFORM

Val	Char	Cost	Notes
5	Size	25	3.2" x 1.6"; -5 KB; -3 DCV
35	STR	0	Lift 3,200 kg; 7d6 HTH [0]
20	DEX	30	OCV: 7/DCV: 7
15	BODY	0	
8	DEF	14	Does Not Protect Some Occupants (-¼)
4	SPD	10	Phases: 3, 6, 9, 12
			Total Characteristic Cost: 79

Movement: Ground: 0"/0"
Swimming: 0"/0"
Flight: 25"/100"

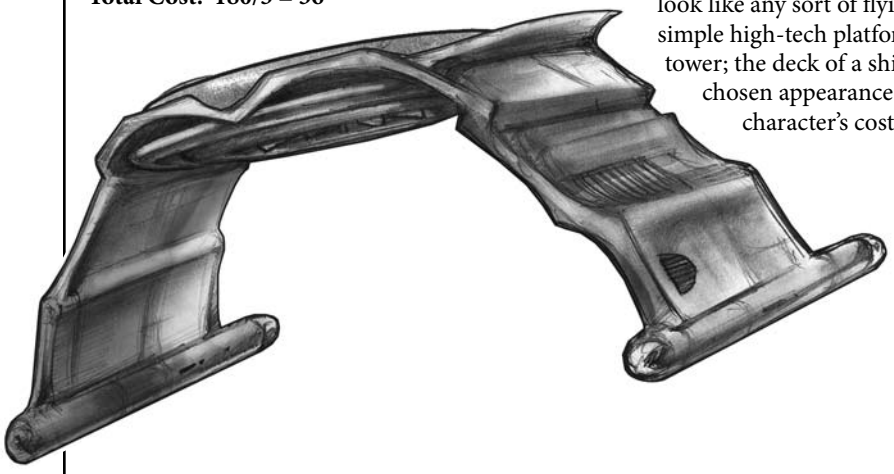
Abilities & Equipment

Cost	Power	END
96	*Hover Generator:* Flight 25", x4 Noncombat Multiple, No Turn Mode (+¼), Sideways Maneuverability (+½)	0
-12	*Only Flies:* Ground Movement -6" (0" total)	
-2	*Only Flies:* Swimming -2" (0" total)	
5	*Communications System:* HRRP (Radio Group); OIF Bulky (-1), Affected As Sight And Hearing Group As Well As Radio Group (-½)	0
10	*Radar Array:* Radar (Radio Group), Increased Arc Of Perception (360 Degrees); OIF Bulky (-1)	0
	Skills	
4	*Maneuverable:* +2 with Flight	

Total Abilities & Equipment Cost: 101
Total Vehicle Cost: 180

Value Disadvantages
None

Total Disadvantage Points: 0
Total Cost: 180/5 = 36



OPTIONAL EQUIPMENT

Cost	Equipment
-41	*Jet Engines:* Change to Flight 25", x4 Noncombat Multiple; 1 Continuing Fuel Charge (requires specially-refined jet fuel, Difficult to obtain, 6 Hours; -0)
45	*Rim-Mounted Blaster:* RKA 3d6, Autofire (5 shots; +½), 60 Charges (+½); OIF Bulky (-1)
21	*Bomb Dropper:* RKA 3d6, Explosion (+½); OIF Bulky (bomb launcher; -1), Dropped (-½), 6 Charges (-¾)
31	*Cloud Generator:* Darkness to Sight Group 4" radius, Personal Immunity (+¼), Reduced Endurance (0 END; +½); IIF Bulky (-¾), No Range (-½)

Description: A popular vehicle for supervillains who like to hover menacingly over their intended targets and make evil soliloquies while perched majestically on the edge of the craft, a Flying Platform is just that: a platform, usually with a rim or guardrail around the edge, which can fly. It uses hover technology for maximum maneuverability, and has a built-in nuclear fuel source that only needs replenishing about once a year. (Some designers substitute cheaper, but less maneuverable, jet engine technology instead.) The pilot steers the platform from a control console mounted in the platform's center or along one edge.

Most Flying Platforms don't come equipped with weapons; they're intended for transport, not combat. However, some designers include blasters (mounted on a carriage around the outside rim of the vehicle so it can target any person or object by swiveling into position) or dropped bombs. Some have smokescreen generators designed to make them look like small clouds; those inside the "cloud" can see out clearly.

The designer can make his Flying Platform look like any sort of flying creature or object: a simple high-tech platform; the parapet of a castle tower; the deck of a ship; a dragon; or the like. The chosen appearance usually depends on the character's costume, name, or powers.

FLYING SAUCER

Val	Char	Cost	Notes
13	Size	65	20" x 10"; -13 KB; -8 DCV
75	STR	0	Lift 800 tons; 15d6 HTH [0]
20	DEX	30	OCV: 7/DCV: 7
30	BODY	7	
14	DEF	46	Hardened (+¼)
5	SPD	20	Phases: 3, 5, 8, 10, 12
			Total Characteristic Cost: 168

Movement: Ground: 0"/0"
Swimming: 0"/0"
Flight: 50"/800"
FTL: 1 LY/hour

Abilities & Equipment

Cost Power **END**

Power Systems

120 *Power Plant:* Endurance Reserve (300 END, 300 REC); OIF Immobile (-1½), Only Powers Electrical Devices (-¼) 0

32 *Auxiliary Power:* Endurance Reserve (80 END, 80 REC); OIF Immobile (-1½), Only Powers Electrical Devices (-¼) 0

Propulsion Systems

134 *Hyperdrive Engines:* Multipower, 201-point reserve; all Costs Endurance (-½)

13u 1) *Atmospheric Flight:* Flight 50", x16 Noncombat Multiple, No Turn Mode (+¼), Sideways Maneuverability (+½); Costs Endurance (-½) 20

2u 2) *Spaceflight:* FTL Travel (1 LY/hour); Costs Endurance (-½) 4

-12 *Only Flies:* Ground Movement -6" (0" total)

-2 *Only Flies:* Swimming -2" (0" total)

Tactical Systems

262 *Energy Beams:* Multipower, 525-point reserve, all OIF Bulky (-1)

13u 1) *Distant Shot:* RKA 10d6, Armor Piercing (+½), MegaScale (1" = 1 km; +¼); OIF Bulky (-1) 26

21u 2) *Close-Range Shot:* RKA 10d6, Area Of Effect (1,440" Line; +2), Armor Piercing (+½); OIF Bulky (-1), No Range (-½) 52

10 *Energy Beams:* 3 more Energy Beams (total of 4) 52

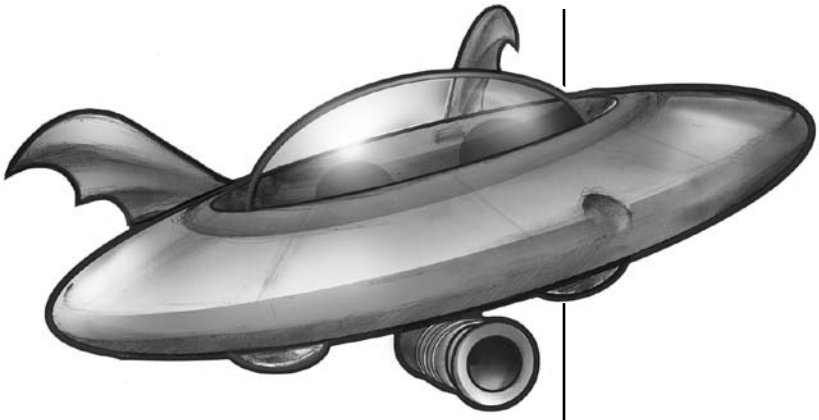
114 *Electronic Warfare Systems:* Variable Power Pool, 100 base + 50 control cost; OIF Bulky (-1), Only For Electronic Warfare (-1), Costs Endurance (-½) var

21 *Force Shield:* Force Wall (15 PD/15 ED; 8" long); OIF Bulky (shield generators; -1), Self Only (-½), Restricted Shape (one-fourth of "bubble" around ship; -¼), Extra Time (1 minute to re-erect Force Wall after it collapses; -1½) 8

10 *Force Shield:* 3 more Primary Force Shields (total of 4; each covers one-fourth of the ship)

14 *Point Defense Laser System:* Missile Deflection (all physical projectiles), Range (+1), MegaRange (1" = 1 km; +¼); OIF Bulky (-1), Costs Endurance (-½) 3

67 *Tractor Beam:* Telekinesis (100 STR); OIF Bulky (projector; -1), Affects Whole Object (-¼) 15



Operations Systems

114 *Sensor And Communication Systems:* Variable Power Pool, 100 base + 50 control cost; OIF Bulky (-1), Only For Senses And Communications (-1), Costs Endurance (-½) var

87 *Long-Range Sensors:* MegaScale (1 light-year per Active Point, can scale down to 1 km per Active Point; +3½) for any Sensor Pool Sense of up to 50 Active Points; OIF Bulky (-1) var

7 *Long-Range Sensors:* +10 versus Range for Radio Group; OIF Bulky (-1) 0

17 *Internal Monitors:* Clairsentience (Sight And Hearing Groups), Mobile Perception Point, Multiple Perception Points (up to eight at once); OAF Immobile (-2), Perception Point Cannot Move Through Solid Objects (-0) 5

Personnel Systems

12 *Life Support:* Life Support (Self-Contained Breathing; Safe Environments: High Radiation, Intense Cold, Intense Heat, Low Pressure/Vacuum); Costs Endurance (-½) 2

6 *Backup Life Support:* Life Support (Self-Contained Breathing; Safe Environments: High Radiation, Intense Cold, Intense Heat, Low Pressure/Vacuum); Only Within Affected Area (2.5" x 1.25" chamber; -2), 1 Continuing Fuel Charge (easily replaced from sources outside the ship; 1 Month; -0) [1cc]

10 *Backup Life Support:* 3 more Backup Life Support chambers (total of 4)

3 *Food Supplies:* Life Support (Diminished Eating: no need to eat); 1 Continuing Fuel Charge (easily replaced from sources outside the ship; 1 Year; -0) [1cc]

10 *Artificial Gravity:* Telekinesis (20 STR); OIF Bulky (-1), Only To Pull Objects Straight Down To The Floor (-1) 3

Skills/Laboratories

13 *Tactical Systems:* +4 with Ranged Combat; Costs Endurance (-½) 2

3 *Navigation Computer:* +4 to Navigation (Space) roll; OAF Bulky (-1½)

4 *Maneuverable:* +2 with Flight

13 Computer Programming 14-
13 Cryptography 14-
13 Electronics 14-
13 Mechanics 14-
80 Other laboratories (defined by GM or player)

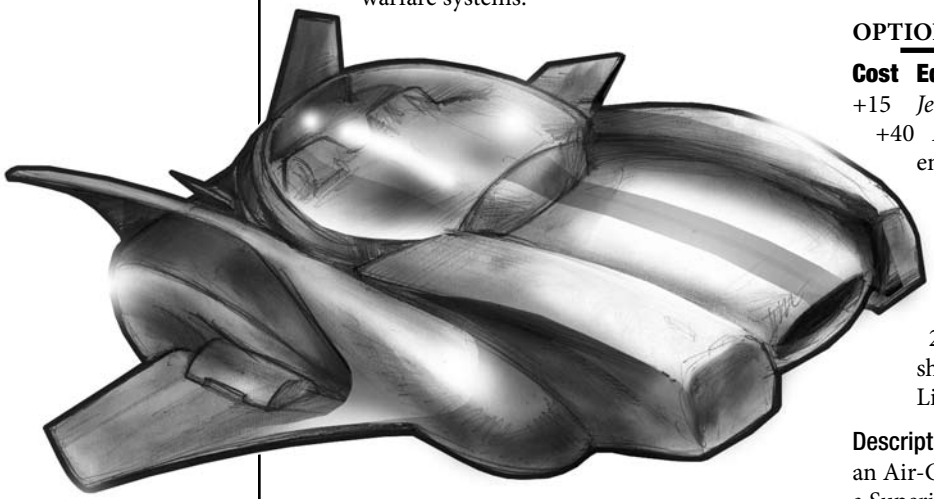
Total Abilities & Equipment Cost: 1,238
Total Vehicle Cost: 1,406

Value Disadvantages

25 Distinctive Features: creepy spacecraft piloted by strange aliens who are coming to steal our cow lips!!! (Not Concealable; Causes Extreme Reaction [fear])

Total Disadvantage Points: 25
Total Cost: 1,381/5 = 276

Description: A perfect encounter for Golden and Silver Age superheroes, this vehicle represents the typical "flying saucer" type of UFO commonly described in literature concerning extraterrestrial visitation. It's shaped like a large, flat, silvery disk; some versions have a raised section in the dorsal center (and perhaps ventrally center as well). Its pilots — a mysterious race of short, slight, large-headed, large-eyed, grey-skinned aliens — come to Earth for their own inscrutable purpose(s), at least some of which seem to involve mutilating cows and/or scaring people on lonely country roads. The vehicle itself is a wonder of alien science, able to turn and maneuver in ways no Human-built aircraft possibly could. Although not intended as an attack craft, it's equipped with powerful energy and tractor beams (either of which can fire from any point on the ship) as well as advanced electronic warfare systems.



JETCAR

Val	Char	Cost	Notes
4	Size	20	2.5" x 1.25"; -4 KB; -2 DCV
30	STR	0	Lift 1,600 kg; 6d6 HTH [0]
15	DEX	15	OCV: 5/DCV: 5
16	BODY	2	
7	DEF	15	
4	SPD	15	Phases: 3, 6, 9, 12
			Total Characteristic Cost: 67

Movement: Ground: 0"/0"
Swimming: 0"/0"
Flight: 23"/92"

Abilities & Equipment

Cost	Power	END
51	*Jet Engine:* Flight 23", x4 Noncombat; 1 Continuing Fuel Charge lasting 6 Hours (requires specially-refined jet fuel, Difficult to obtain; -0)	0
-12	*Only Flies:* Ground Movement -6" (0" total)	
-2	*Only Flies:* Swimming -2" (0" total)	
5	*Communications System:* HRRP (Radio Group); OIF Bulky (-1), Affected As Sight And Hearing Group As Well As Radio Group (-½)	0
10	*Radar Array:* Radar (Radio Group), Increased Arc Of Perception (360 Degrees); OIF Bulky (-1)	0

Total Abilities & Equipment Cost: 52
Total Vehicle Cost: 119

Value Disadvantages

None

Total Disadvantage Points: 119
Total Cost: 119/5 = 24

OPTIONAL EQUIPMENT

Cost	Equipment
+15	*Jetbus:* Increase Size to 7
+40	*Hover Engine:* Instead of having a jet engine, the Jetcar employs hover technology, making it even faster and more maneuverable and eliminating the need for frequent refueling. Change to Flight 28", x4 Noncombat
	Multiple, Sideways Maneuverability (+½)
27	*Onboard Blaster:* RKA 2d6, Autofire (5 shots; +½), 60 Charges (+½); OIF Bulky (-1), Limited Arc Of Fire (180 Degrees; -¼)

Description: Larger and more comfortable than an Air-Cycle, smaller and less well-equipped than a Superjet (TUV, page 82), the Jetcar is an excellent alternative for the superhero on a budget or a superteam that wants to supplement its larger flying craft with some short-range personal flyers. It's a great way to get around the city without having to put up with traffic jams and similar inconveniences. Some high-tech corporations in places like Millennium City have short-range Jetcars (fuel only lasts for 1 Hour) that they use to move employees around their corporate campuses or shuttle high-powered executives between office buildings.

MOLE MACHINE

Val	Char	Cost	Notes
6	Size	30	4" x 2"; -6 KB; -4 DCV
40	STR	0	Lift 6,400 kg; 8d6 HTH [0]
10	DEX	0	OCV: 3/DCV: 3
20	BODY	4	
10	DEF	24	
3	SPD	10	Phases: 4, 8, 12
			Total Characteristic Cost: 68

Movement: Ground: 6"/12"
Swimming: 0"/0"
Tunneling: 6"/12"

Abilities & Equipment

Cost	Power	END
39	*Drill Bit:* Tunneling 6" through DEF 9 materials	0
-2	*Only Digs:* Swimming -2" (0" total)	
13	*Life Support:* Life Support (Self-Contained Breathing; Safe Environments: High Pressure, Intense Heat)	0
5	*Communications System:* HRRP (Radio Group); OIF Bulky (-1), Affected As Sight And Hearing Group As Well As Radio Group (-½)	0

Total Abilities & Equipment Cost: 56
Total Vehicle Cost: 123

Value Disadvantages
None

Total Disadvantage Points: 0
Total Cost: 123/5 = 25

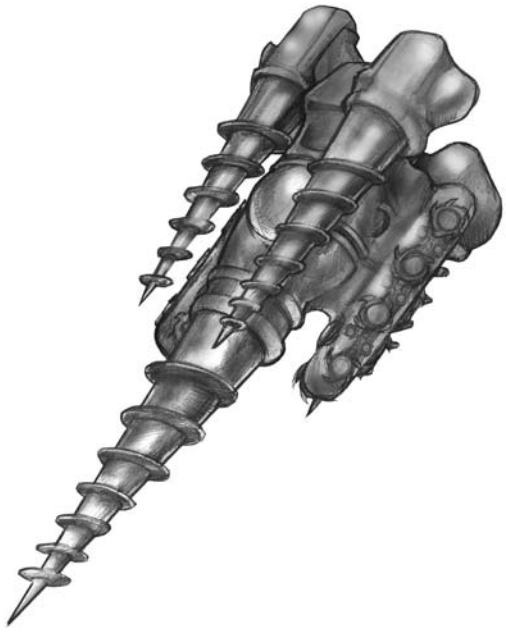
OPTIONAL EQUIPMENT

Cost	Equipment
20	*Drilling Laser:* RKA 2d6, Area Of Effect (One Hex; +½), Reduced Endurance (0 END; +½); OIF Bulky (-1), Limited Arc Of Fire (One Hex Row forward, only on same horizontal level; -1)

Description: For those times when you just *have* to get away from it all, there's no place as quiet and uncrowded as the center of the Earth. And the Mole Machine(TM) is just the vehicle to get you there! The titanium-steel drill bit on the front is carefully coated with diamond dust to ensure maximum cutting power, and the interior compartment is as comfortable as a family automobile.

Scientists have confirmed that the interior of the Earth is most likely hollow, and could even be the home to living beings. Who knows? If you get lucky, you might even find a long-lost civilization replete with gold and riches! So come on down and buy a Mole Machine today!

Offer void in California, Canada, Atlantis, and Subdimensions Gamma Alpha-12 through -26.



ROCKETBOARD

Val	Char	Cost	Notes
0	Size	0	.25" x .25"; -0 KB; -0 DCV
20	STR	10	Lift 400 kg; 4d6 HTH [0]
20	DEX	30	OCV: 7/DCV: 7
8	BODY	-2	
5	DEF	6	Does Not Protect Rider (-½)
5	SPD	20	Phases: 3, 5, 8, 10, 12
			Total Characteristic Cost: 64

Movement: Ground: 20"/40"
Swimming: 0"/0"

Abilities & Equipment

Cost	Power	END
22	*Microjets:* Ground Movement +14" (20" total); Only On Appropriate Terrain (relatively smooth solid surfaces; -¼)	0
-2	*Ground Vehicle Only:* Swimming -2" (0" total)	
10	*Grip-Tires:* Clinging (normal STR)	0

Total Abilities & Equipment Cost: 30
Total Vehicle Cost: 94

Value Disadvantages
None

Total Disadvantage Points: 0
Total Cost: 94/5 = 19

OPTIONAL EQUIPMENT

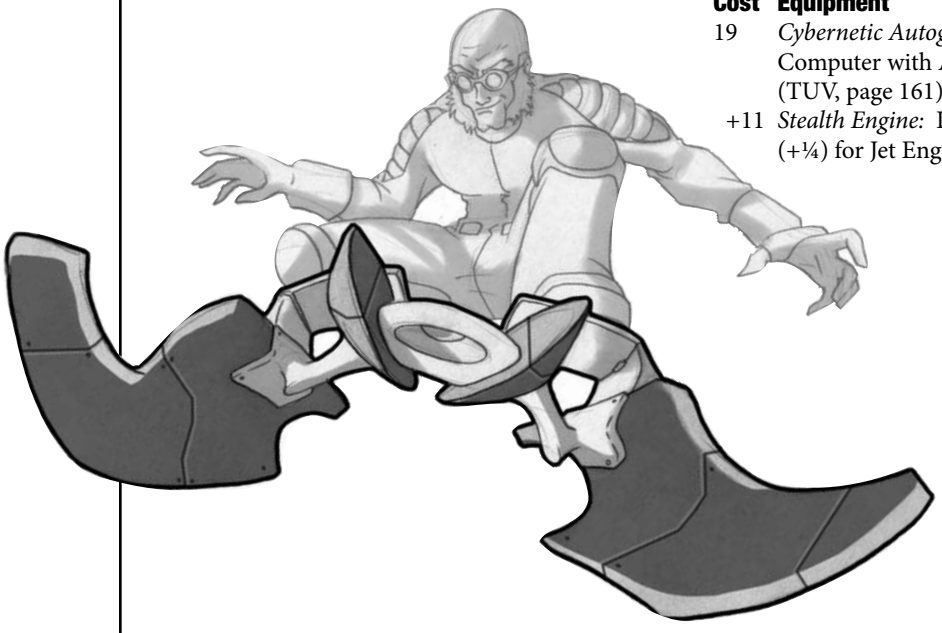
Cost	Equipment
+10	*Alternate Microjets:* Flight 20"; Only In Contact With A Relatively Smooth Solid Surface (-¼)
9	*Micromissile Rack:* RKA 2d6, Explosion (+½); OAF Bulky (-1½), Limited Arc Of Fire (One Hex Row, only on same horizontal level as Rocketboard; -1), 3 Charges (-1¼)
5	*Oil Slick Generator:* Change Environment 4" Cone, -4 to all DEX-based Rolls to move on/through; OAF Bulky (-1½), No Range

(-½), Limited Arc Of Fire (60 Degrees behind vehicle, only on same horizontal level; -¾), Only Affects Characters Who Are Moving On The Ground (-¼), 2 Charges lasting 1 Turn each (-1)

Description: This super-tech skateboard not only travels with microjet-assisted speed, it has special tires that let it ride straight up walls! (The character remains "attached" to the board via magnetic grips, and often squats down to hold onto one edge as well.) With a rocketboard beneath his feet, there's almost nowhere a character can't go in an urban environment (but the board won't work on rough surfaces, include bare or plant-covered earth in most circumstances, or on any surface less firm than loosely-packed earth). The GM may require a PS: Skateboarding roll if the character wants to perform unusual stunts, like wall-riding or jumps.

Most Rocketboards are designed solely to provide high mobility within cities, but some have offensive capabilities as well. The most common weapon mounted on a Rocketboard is a rack of micro-missiles just under the front edge; dropped weapons, such as oil slick generators, are sometimes mounted in back to foil pursuers.

Obviously a Rocketboard isn't very realistic. If you prefer greater "realism," you could: remove the Clinging; add a Continuing Fuel Charge; or require an Activation Roll each Phase for the rider to remain situated on top of the board.



ROCKET FLYER

Val	Char	Cost	Notes
0	Size	0	.5" x .5"; -0 KB; -0 DCV
20	STR	10	Lift 400 kg; 4d6 HTH [0]
25	DEX	45	OCV: 8/DCV: 8
10	BODY	0	
8	DEF	12	Does Not Protect Rider (-½)
6	SPD	25	Phases: 2, 4, 6, 8, 10, 12
			Total Characteristic Cost: 92

Movement:	Ground:	0"/0"
	Swimming:	0"/0"
	Flight:	20"/80"

Abilities & Equipment

Cost	Power	END
45	*Jet Engine:* Flight 20", x4 Noncombat; 1 Continuing Fuel Charge lasting 6 Hours (requires specially-refined jet fuel, Difficult to obtain; -0)	0
11	*Extremely Maneuverable:* No Turn Mode (+¼) for Flight 20", Reduced Endurance (0 END; +½); Requires A Use Rocket Flyer Roll (-½)	0
-12	*Only Flies:* Ground Movement -6" (0" total)	
-2	*Only Flies:* Swimming -2" (0" total)	
	Skills	
8	*Maneuverable:* +4 with Flight	

Total Abilities & Equipment Cost: 50
Total Vehicle Cost: 142

Value Disadvantages

15	Physical Limitation: vehicle easy to Grab, unbalance, or misdirect (see text) (Frequently, Greatly Impairing)

Total Disadvantage Points: 15
Total Cost: 127/5 = 25

OPTIONAL EQUIPMENT

Cost	Equipment
19	*Cybernetic Autoguidance System:* Vehicular Computer with Autopilot Variant package (TUV, page 161) and Mind Link (to rider)
+11	*Stealth Engine:* Invisible to Hearing Group (+¼) for Jet Engine

15 *Mounted Mini-Missile Rack:* RKA 3d6, Explosion (+½); OAF Bulky (-1½), Limited Arc Of Fire (One Hex Row, only on same horizontal level as Rocket Flyer; -1), 4 Charges (-1)
28 *Smokescreen Generator:* Darkness to Sight Group 10" radius (20" long and 2" wide Line; +¼); OAF Bulky (-1½), No Range (-½), Limited Arc Of Fire (0 Degrees behind Rocket Flyer, only on same horizontal level; -1), 4 Charges lasting 1 Turn each (-½)
21 *Knockout Gas Exhaust:* Energy Blast 6d6, NND (defense is Life Support [Self-Contained Breathing or appropriate Immunity]; +1), Area Of Effect (20" and 2" wide Line; +1½); OAF Bulky (-1½), No Range (-½), Limited Arc Of Fire (0 Degrees behind Rocket Flyer, only on same horizontal level; -1), 4 Charges (-1)
5 *Bladed Flyer:* HKA 1d6; OIF Bulky (-1), No STR Bonus (-½), Only Works With Move By/Through (-½)
-15 Physical Limitation: if rider takes Knockback, he must make a DEX Roll at -1 per full 2" of Knockback or he falls off the Flyer (Frequently, Greatly Impairing)

Description: This vehicle is, essentially, a jet engine the character can ride by standing on it or straddling it. The character steers it through posture and body attitude, making it extremely maneuverable — it can literally turn on a dime when operated by a trained user (a trained user is one who's bought a form of the *Power* Skill, *Use Rocket Flyer*). The downside is that it's relatively easy to misdirect the vehicle or take it away from the rider (by, for example, grabbing hold of it and upsetting its balance, or attaching a grappling hook to the back and yanking hard). Treat the vehicle as an OAF for purposes of trying to grab or hit it; the GM determines the exact effects of any attempt to unbalance or misdirect the Flyer.

To keep the character firmly in place on the Flyer, the vehicle has foot-straps and/or magnetic clamps. However, the rider may still run the risk of getting knocked off if he takes Knockback (this may even qualify for a Physical Limitation; see *Optional Equipment*).

The basic Rocket Flyer has no armament; it simply transports the character from one place to another (it may even have a full cybernetic link so the rider can control it when he's not riding it — a handy way to get it back underneath him if he's knocked off, among other things). However, the owner can install weapons if desired. The most common include a smokescreen generator (which thickens and expands the Flyer's exhaust fumes), knockout gas in the exhaust fumes, a mounted mini-missile rack, and blades (or like weapons) for use in ramming and sideswipe attacks.

The designer can make his Rocket Flyer look like any sort of flying creature or object: a bat; a bird of prey; a V-wing; a pterosaur; or the like. The chosen appearance usually depends on the character's costume, name, or powers.

SUPERBOAT

Val	Char	Cost	Notes
6	Size	30	4" x 2"; -6 KB; -4 DCV
45	STR	5	Lift 12.5 tons; 9d6 HTH [0]
20	DEX	30	OCV: 7/DCV: 7
20	BODY	4	
8	DEF	14	Does Not Protect Some Occupants (-¼)
4	SPD	10	Phases: 3, 6, 9, 12
			Total Characteristic Cost: 93

Movement: Ground: 0"/0"
Swimming: 25"/50"

Abilities & Equipment

Cost	Power	END
	Propulsion Systems	
10	*Propeller-Drive Watercraft:* Swimming +23" (25" total); Surface Only (-1), 1 Continuing Fuel Charge (easily-obtained fuel; 6 Hours; -0), Side Effects (propeller does KA 1d6 to anyone coming in contact with bottom stern of vehicle, occurs automatically, only affects environment around vehicle; -¼) [1cc]	
-12	*Water Vehicle:* Ground Movement -6" (0" total)	
	Tactical Systems	
27	*Twin Forward Machine Guns:* RKA 2d6, Armor Piercing (+½), Autofire (5 shots; +½), 60 Charges (+½); OIF Bulky (-1), Limited Arc Of Fire (60 Degrees forward; only on same horizontal level; -¾) [60]	
25	*Minelayer:* RKA 2d6, Area Of Effect (9" Radius; +1), Armor Piercing (+½), Continuous (+1), Uncontrolled (removable by spending a Turn to move the mines aside; +½); OIF Bulky (-1), No Range (-½), Limited Arc Of Fire (60 Degrees behind vehicle, only on same horizontal level; -¾), Only Affects ehicles/Characters Moving On The Surface Of The Water (-¼), DEX Roll Cancels Effect (-¼), Automatically Makes A Low Shot Against Vehicle (-0), 4 Charges (-1) [4]	
15	*Large Boat's Anchor:* 40 STR, Reduced Endurance (0 END; +½); OIF Bulky (-1), Partial Coverage (-2)	0
	Operations Systems	
5	*Communications Suite:* HRRP (Radio Group); OIF Bulky (-1), Affected As Sight And Hearing Group As Well As Radio Group (-½)	0
10	*Radar Array:* Radar (Radio Group), Increased Arc Of Perception (360 Degrees); OIF Bulky (-1)	0
4	*Sonar Array:* Active Sonar (Hearing Group); OIF Bulky (-1), Only Usable Underwater (-1), Affected As Sight And Hearing Groups As Well As Radio Group (-½)	0

Skills

4 *Maneuverable:* +2 with Swimming

Total Abilities & Equipment Cost: 88
Total Vehicle Cost: 181

Value Disadvantages

None

Total Disadvantage Points: 0
Total Cost: 181/5 = 36

ADDITIONAL VEHICLES

Cost	Vehicle
20	*Mini-Torpedo Launchers:* 1 Mark 48 ADCAP torpedo (TUV page 133)
15	*Mini-Torpedo Launchers:* 7 more ADCAPs (total of 8)

OPTIONAL EQUIPMENT

Cost	Equipment
-8	*Submersible Superboat:* Remove *Surface Only* (-1) Limitation from Swimming and add Life Support (Self-Contained Breathing; Safe Environment: High Pressure), and remove Twin Forward Machine Guns

Description: The Superboat is a speedboat that's been enhanced with super-age technology. In addition to being faster and harder to damage than an ordinary speedboat, it comes equipped with advanced communications and sensory systems (both radar and sonar). If combat breaks out, it has a forward torpedo tube and eight mini-torpedoes (equivalent to Mark 48 ADCAPs), twin forward-mounted machine guns, and a minelayer that covers an 8" radius patch of water behind it with floating mini-mines.

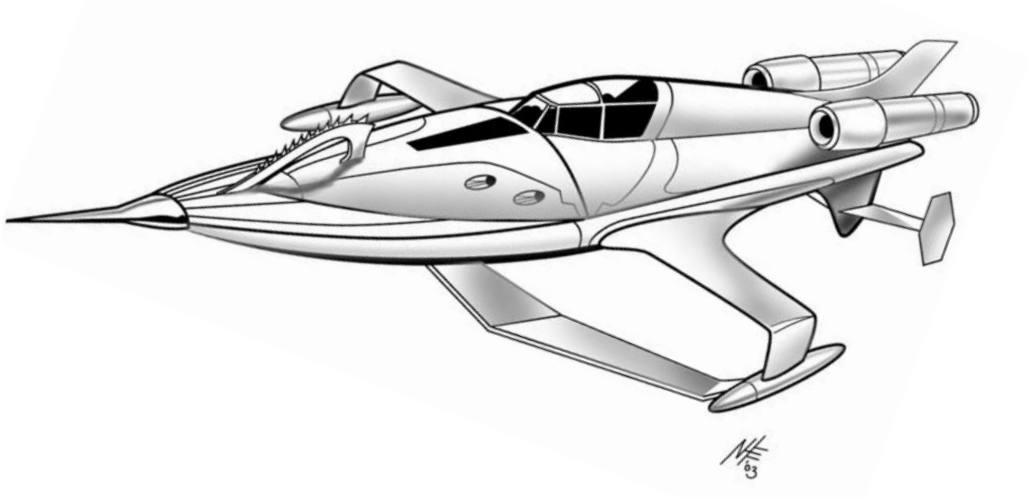
SUPERCYCLE

Val	Char	Cost	Notes
1	Size	5	1.25" x .64"; -1 KB; -0 DCV
25	STR	10	Lift 800 kg; 5d6 HTH [0]
20	DEX	30	OCV: 7/DCV: 7
15	BODY	4	
6	DEF	8	Does Not Protect Rider(s) (-½)
4	SPD	10	Phases: 3, 6, 9, 12
			Total Characteristic Cost: 67

Movement: Ground: 26"/104"
Swimming: 0"/0"

Abilities & Equipment

Cost	Power	END
	Propulsion Systems	
16	*Motorized Two-Wheeled Vehicle:* Ground Movement +20" (26" total), x4 Non-combat; OAF Bulky (tires; -1½), Only On Appropriate Terrain (-¼), 1 Continuing Fuel Charge (easily-obtained fuel; 6 Hours; -0)	[1cc]
6	*Solid Tires:* (6 DEF, 6 BODY)	0
-2	*Ground Vehicle:* Swimming -2" (0" total)	
	Tactical Systems	
22	*Forward Blaster:* Multipower, 45-point reserve, 30 Charges (+¼) for entire reserve; all OIF Bulky (-1), Limited Arc Of Fire (60 Degrees forward; -½)	[30]
2u	1) *Antivehicular Setting:* RKA 2d6, Armor Piercing (+½); OIF Bulky (-1), Limited Arc Of Fire (60 Degrees forward; -½)	
2u	2) *Antipersonnel Setting I:* Energy Blast 9d6; OIF Bulky (-1), Limited Arc Of Fire (60 Degrees forward; -½)	
2u	3) *Antipersonnel Setting II:* Energy Blast 4d6, NND (defense is ED Force Field;	



+1); OIF Bulky (-1), Limited Arc Of Fire (60 Degrees forward; -½)

Operations Systems

5 *Communications System:* HRRP; OIF Bulky (-1), Affected As Sight And Hearing Group As Well As Radio Group (-½)

Skills

4 *Superb Handling:* +2 with Ground Movement

Total Abilities & Equipment Cost: 57
Total Vehicle Cost: 124

Value Disadvantages

5 Physical Limitation: Two-Wheeled (Infrequently, Slightly Impairing)

Total Disadvantage Points: 5
Total Cost: 119/5 = 24

OPTIONAL EQUIPMENT

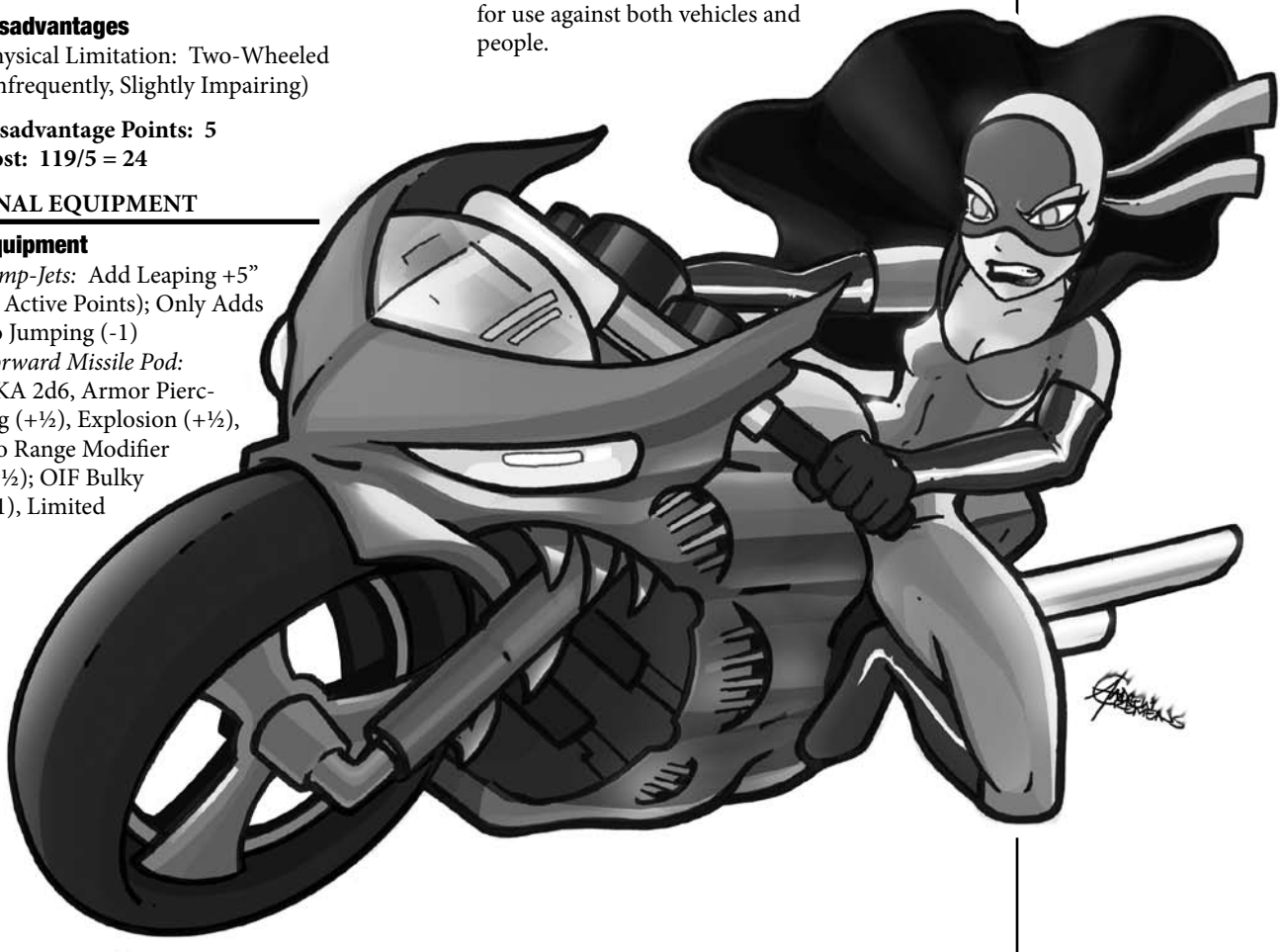
Cost Equipment

2 *Jump-Jets:* Add Leaping +5" (5 Active Points); Only Adds To Jumping (-1)

21 *Forward Missile Pod:* RKA 2d6, Armor Piercing (+½), Explosion (+½), No Range Modifier (+½); OIF Bulky (-1), Limited Arc Of Fire (180 Degrees forward, only on same horizontal level; -½), 4 Charges (-1)

13 *Silencer System:* Add Invisible Power Effects (Hearing Group; +¼) for Ground Movement 26"

Description: Not all superheroes want a supercar or -jet; for some, those vehicles are simply to large, noisy, or awkward. A super-motorcycle, on the other hand, is fast, maneuverable, and can go places a car cannot (inside buildings, for example). This supercycle can not only reach speeds in excess of 150 miles per hour, it comes equipped with a forward-mounted variable-setting blaster for use against both vehicles and people.



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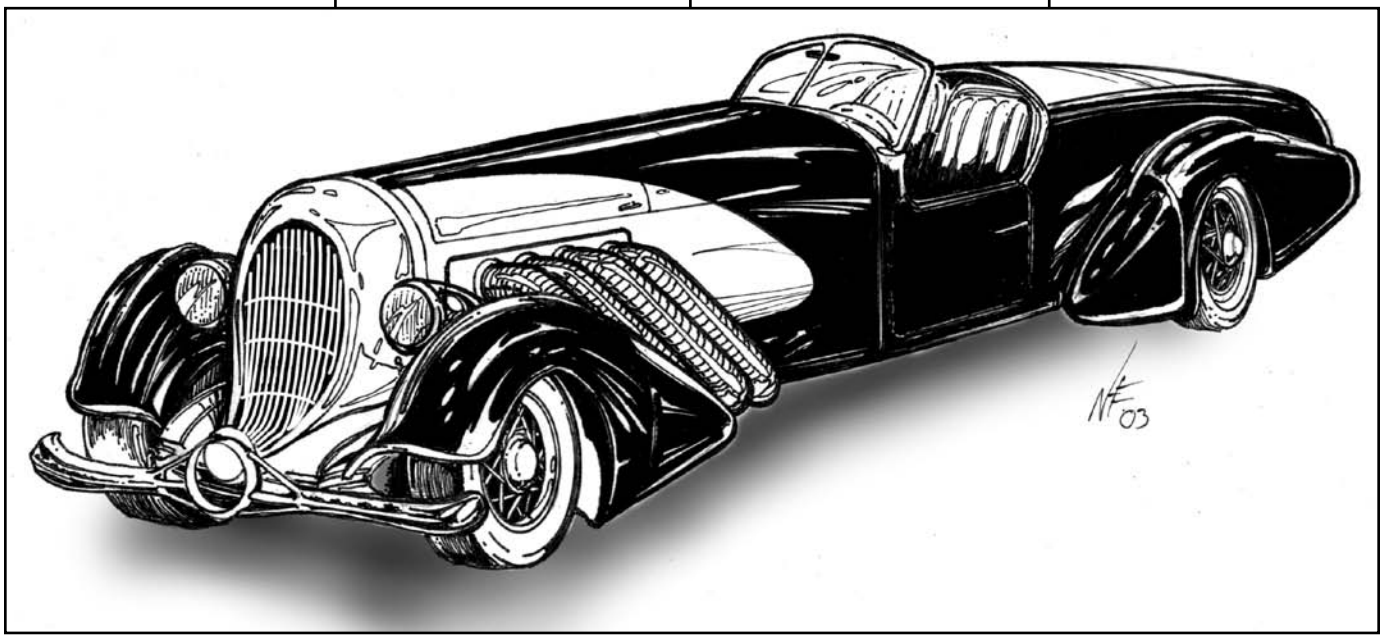

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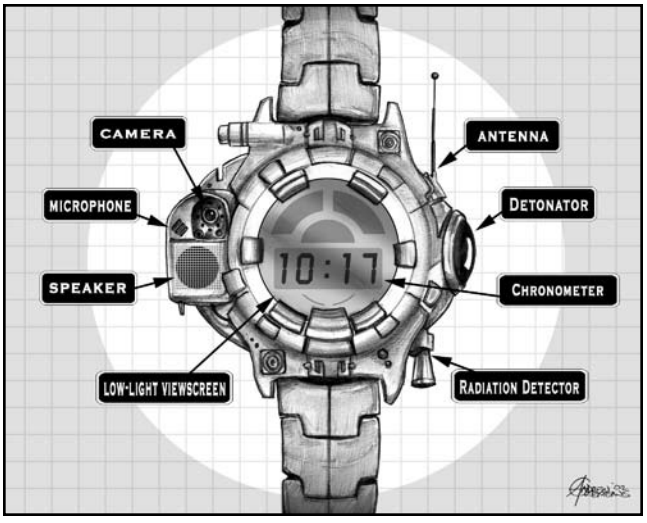

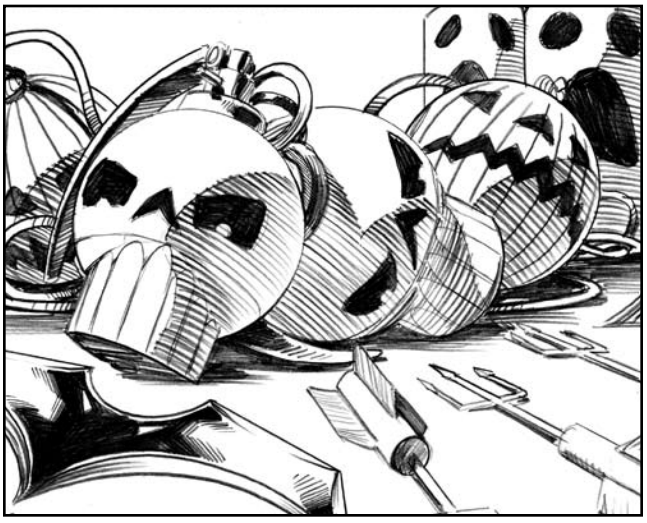

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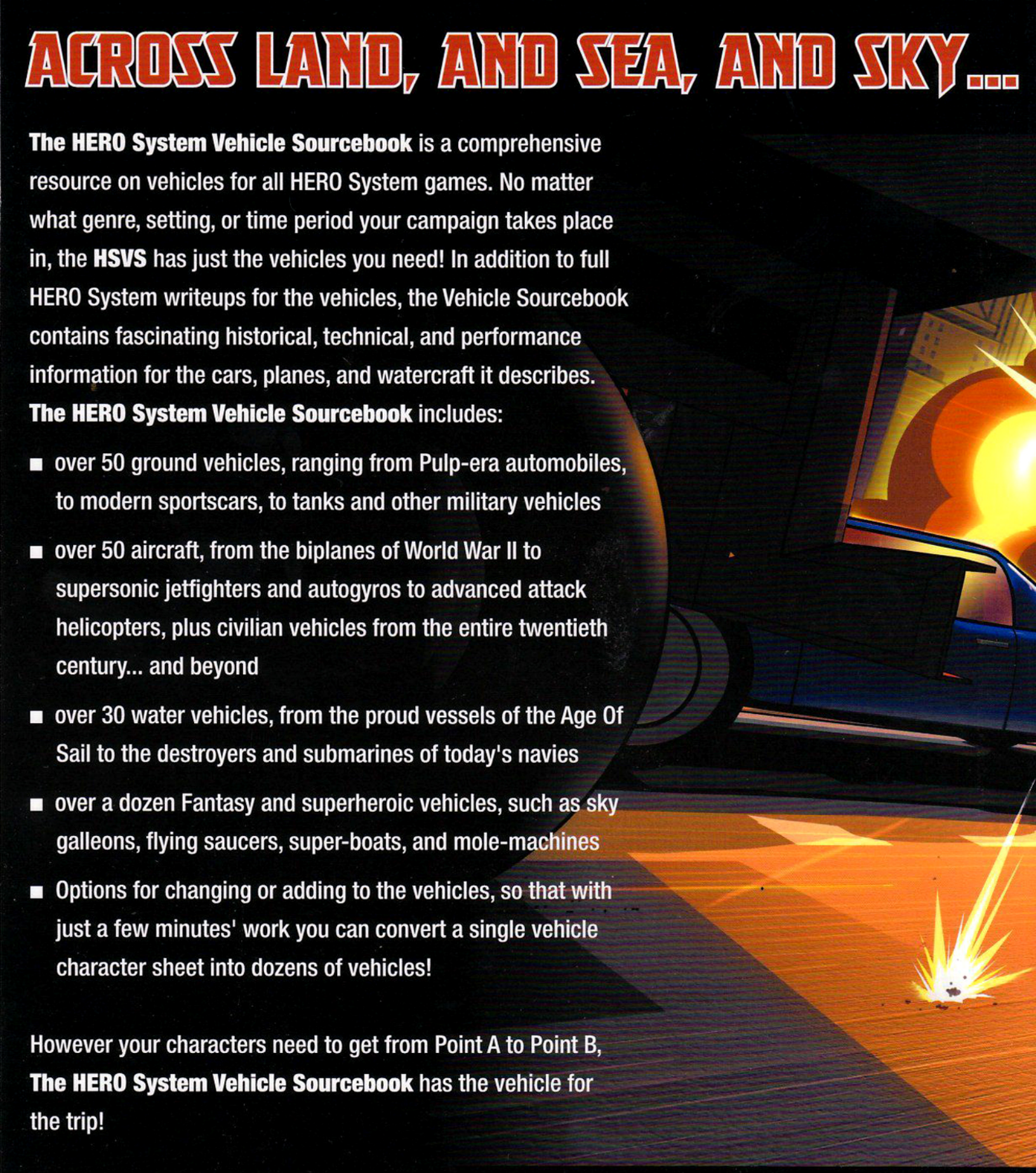

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