

2300TM

1011

Ships of the FRENCH ARM

Timothy B. Brown



*Starships Which Supply
and Protect a Branch of Human Space*

Game Designers' Workshop

Scan/OCR by aSundAdar 2003



Hunger...

2300

Ships of the FRENCH ARM

Introduction.....	2
Warships.....	4
Commercial Ships.....	42
Courier Ships.....	68
Survey Ships.....	78
Miscellaneous Ships.....	88

Design.....Timothy B. Brown

Development and Assistance.....Frank Chadwick

Loren Wiseman,

Lester W. Smith

and Matt Renner

Art Direction.....Barbie Pratt

Art Assistants.....Lauretta Oblinger

and Dana Reischauer

Cover Art.....Steve Venters

Interior Art.....Tom Peters,

Rob Caswell,

Bryan Gibson

and Steve Crompton

Copyright ©1987 Game Designers' Workshop, Inc. All rights reserved.

Printed in USA. Made in USA. ISBN 0-943580-34-X.

Traveller: 2300™ is GDW's trademark for its science fiction role-playing game set in the 24th century.

Traveller® is a registered trademark of Game Designers' Workshop.

PO Box 1646, Bloomington, Illinois 61702-1646 USA

GAME DESIGNERS' WORKSHOP

Introduction

WHAT IS THIS BOOK?

Ships of the French Arm is a compilation of data for 46 ships commonly found in that region of space. This compilation does not include all of the ships which can be found there (see **Traveller: 2300** and *Star Cruiser* for other ships), but provides a listing of many of the vessels that players will be likely to encounter, use, and perhaps even own in a **2300** game.

Within this book, the ships are divided into four broad classifications—warships, commercial ships, survey ships, and everything else.

Warships: Two wars characterize the nature and number of warships in the French Arm. The first, the War of German Reunification, has been over for years, but involved two of the most powerful earth nations in the French Arm. Today these two rival nations still maintain significant fleets of ships along the arm, both to watch each other and to guard against the newer threat, the Kafers.

The Kafers first met and attacked humankind only recently, and their battle fleets have been met and fought in several systems on the furthest frontiers of the arm. Many nations, most notably France, Germany, England, and America, have committed space fleets to guard against the Kafer advance. Sorties with Kafer ships are frequent, and human patrols are on the lookout for Kafer advance ships as far back as Beta Canum Venaticorum.

Many of the warships along the French Arm were designed and constructed to fight in one of these two wars. Most others are older designs sent to the area to support national interests there and to protect against possible future conflicts.

Commercial Ships: Earth's resources are dwindling as they have been for nearly four centuries. The stars have held the answer to those problems and others, such as overpopulation, since the perfection of the stutterwarp-capable ship. Ships used for commercial ends are often specialized for their specific tasks.

Cargo Carriers: Also called freighters or transports, these are the workhorses of interstellar shipping. They range in size from the very small to the very large, capable of transporting the production of a single mine or perhaps entire worlds.

The two largest bulk commodities in transit in 2300 are food and minerals. Some budding colony worlds are only now making their way toward being self-sufficient in food, but many still depend on outside sources to feed their hungry colonists. The factories of Earth are in need of metal ores, most often mined in the outer systems of distant star systems. Many of the ships which carry

these bulk commodities are modular in design, capable of varying their capacity to suit their requirements at the moment.

Passenger Carriers: Also known as space busses or liners, these vessels are specially adapted for transporting people. These are still the days of massive colonization, and nations often make attractive offers to their earthly citizens to entice them to move to frontier colony worlds. Liners are specially made to keep the passenger in the comfort of artificial spin gravity on his journey to the frontier, either to visit or to become a permanent resident.

Survey Ships: There are countless systems which have never been explored by man. The survey of a single system, mapping navigational hazards and planetary bodies, can take years, even for a ship tailored to the task.

Most nations make and employ their own survey vessels. Stumbling onto a new garden world can be a terrific boon to a country, and discovering it can give the nation a good headstart against the rest of humanity when exploiting it.

Survey vessels most often take advantage of the best sensor equipment available and have large scientific sections to analyze data recorded. Their mission duration time is traditionally quite long, and crews can usually expect to be away from home for a long time.

Courier Ships: In 2300 there is no faster-than-light communication system. The fastest a message can travel is limited by the speed of the ship carrying it. Courier ships are used for a variety of private, commercial, and military communications, and a variety of ships have been designed to perform those tasks.

Miscellaneous Ships: Not all starships fall into one of the aforementioned classifications. Highly specialized ships such as these are listed last in this book.

WHAT IS LISTED FOR EACH SHIP?

All of the ships in this book are presented in a standard format.

Illustration: Each ship has an accompanying illustration. Specific details, such as identification, additional weaponry, or other extraordinary circumstances, about the ship illustrated will be mentioned in the text. Otherwise, the ship illustrated is assumed to be a typical example of the ship class.

Ship History: Each ship is given a brief history consisting of the following dates and documentary information.

Original Date of Design: The date the designers submitted a final plan for the ship class.

First Example Laid Down: The date the first ship in the class was put into construction.

First Example Completed: The date the first ship in the class was completed and, most likely, put into service.

Documentary Information: Several paragraphs of information about the ship are given as background. This information includes items such as service history, reasoning behind the design, current service, and more.

Fleets of Service: For military ships, those fleets in which the ship class is currently serving are given.

Sensor Package: If unusual, the sensor package of the ship class is given. If not noted, the ship is assumed to have navigational radar plus whatever active and passive sensors are mentioned on the ship status sheet.

Crew: The number of crew members in each section is given. The total of these is the total number of crew on the ship.

Performance Characteristics: This includes the following information.

Warp Efficiency: There can be two numbers here. The first will be the warp efficiency of the ship when not loaded. The second, parenthetical number, will be the warp efficiency of the ship when carrying a standard load.

Power Plant: This will give the mega-wattage and type of the power plant on the ship.

Fuel: This will be expressed in tons and in the amount of time before the ship needs to consider refueling.

Range: This is the distance before the stutterwarp must be discharged. A notation of NA indicates that the ship has insufficient fuel and is never expected to make journeys outside a significant gravity well.

Mass: This will give the mass of the ship in tons when both unloaded and loaded.

Cargo Capacity: This is given in m^3 of space. For modular freighters, the area available per module is given along with the maximum number of modules the ship can carry.

Comfort: The relative comfort of the vessel's accommodations is given here.

Total Life Support: This number is the total number of people who can journey on the ship at the comfort level shown.

Ordnance Carried: If the ship carries any military ordnance, it will be listed here.

Price: Given in livres, this is the price of the ship when new.

Ship Status Sheet: Every ship has a completed ship status sheet on the opposite page of the description and illustration. This can be photocopied for use with *Star Cruiser*.

OTHER CONSIDERATIONS

Lift: For all ships which are streamlined, assume that it has a lift value of 1 unless otherwise indicated.

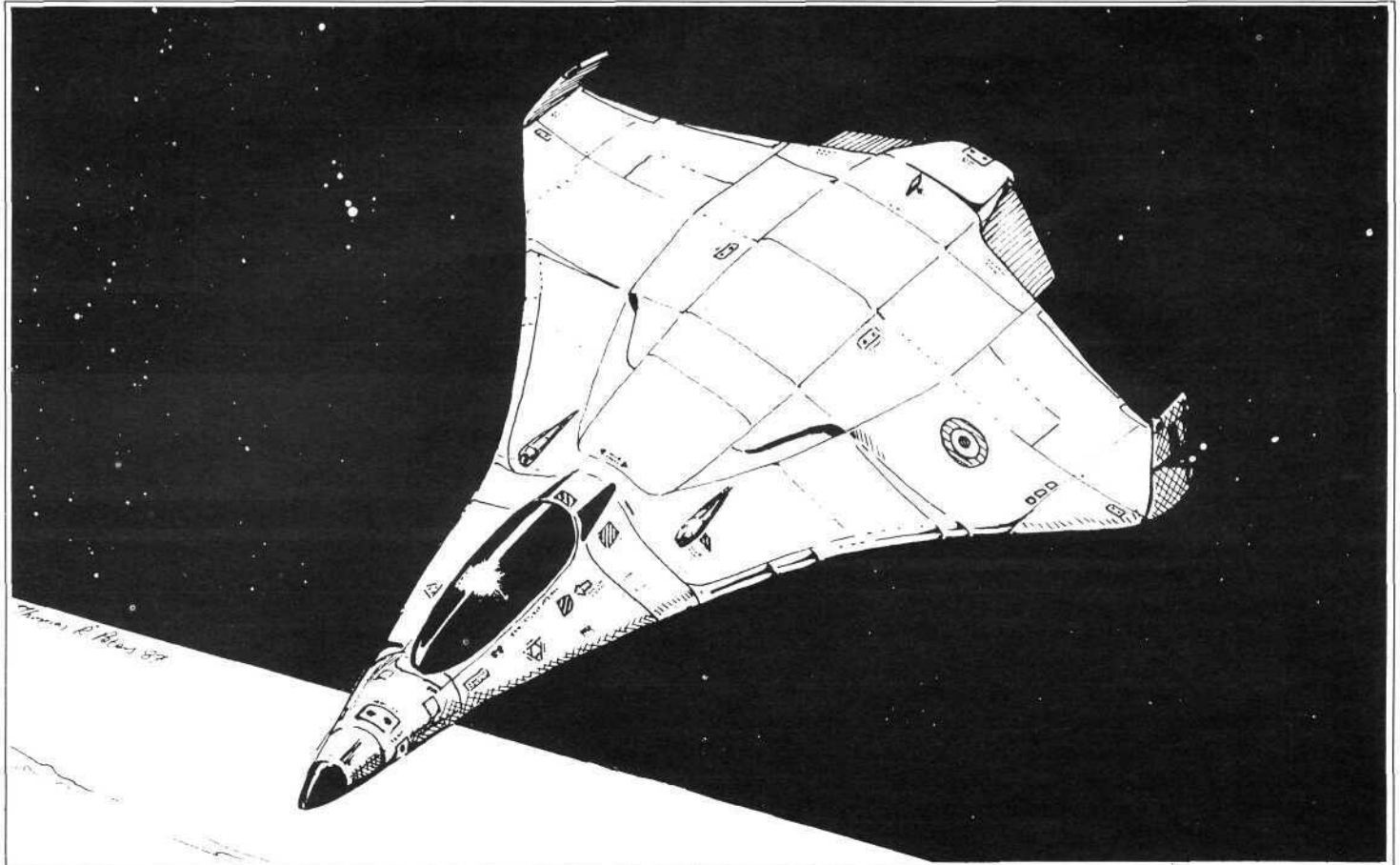
Standard Load: Materials which can be carried by a starship differ in density greatly. For purposes of this booklet, a standard load is considered to be three tons per cubic meter. If a ship is carrying something out of the ordinary, you may wish to recalculate the warp efficiency for that particular journey.

MISSILES AND BAYS

Many of the warships in *Ships of the French Arm* have ordnance and bays. This is a summary of those ships and their missile characteristics.

The *Mistral Illbis* class carries one missile in a magnetic sling mount. The *Bufer* class carries four missiles in magnetic sling mounts. The *Orange* class has no missiles in its original design. However, the Incan and the Mexican conversions of the ship have missiles in their single cargo bays. This arrangement counts as one bay and can hold missiles up to its volume capacity. The

Donovan-class fighter is designed so that each of its 24 missiles is in its own bay. Finally, the *Bismark* class has a total of 96 missiles, when fully loaded, which can fire out of two bays.



Warships

French *Mistral-IIIbis*-class Fighter

Original Date of Design: August 3, 2280

First Example Laid Down: March 5, 2285

First Example Completed: March 23, 2286

Fleets of Service: France

After several successful fighter designs, Mileaux and his team of architects were charged with the design of a twin place fighter which took advantage of the latest space technology, especially in the area of missile delivery. Two prototype designs were submitted which were turned down. The final design, however, met everyone's expectations and was dubbed the *Mistral-IIIbis*.

The *Mistral-IIIbis* is the first French warship to be constructed solely from advanced composite materials. The streamlined design takes advantage of the greatest stealth technology. There is one jack turret mounted atop the vessel which when not in use does not interfere with the ability of the fighter to make atmospheric landings or attacks.

A magnetic sling mount is available to allow the *Mistral-IIIbis* to carry a single Ritage-2 missile into combat. The thrusters will allow a single planetary approach with the missile in its slung position. The single Guiscard laser installed is a standard weapon on many other designs—having proved themselves effective their mechanics have not been altered to fit onto the *Mistral-IIIbis*. The relatively small MHD plant installed provides sufficient power for the drives, sensors, and weapons to operate simultaneously. There is an internal solar array which may be deployed for either emergency power or for fuel conversion upon demand.

Considering its advanced technology, the *Mistral-IIIbis* is a rather inexpensive design. French allies have requested copying the

design for themselves, or outright purchase of fighters built by the French, but have thus far been refused. Details of the design have never been released.

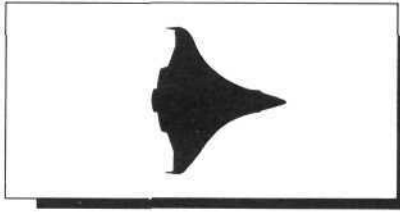
The *Mistral-IIIbis* has seen considerable action, both against German and Kafer ships on the French Arm. From the German perspective, the *Mistral-IIIbis* has proven itself to be an effective warship capable of delivering significant punch. Of course, only the Kafers know what they think of this excellent French fighter.

Crew: one pilot and one weapons officer.

PERFORMANCE CHARACTERISTICS

Warp Efficiency: 2.90, *Power Plant:* 1.5 MW MHD turbine, *Fuel:* 21.6 tons, sufficient for 24 hours, *Range:* NA, *Mass:* 96.1 tons (110.37 with one Ritage-2 missile in magnetic sling), *Cargo Capacity:* none, *Comfort:* 0, *Total Life Support:* 2, *Price:* Lv17,352,000

Ship Status Sheet



Mistral-IIIbis

Ship Name

Fighter

Ship Type

France

Owning Nation or World

Movement

6

Screens

0

Radiated
Signature

2

Radial
Reflected

1

Lateral
Reflected

2

Targeting
Computer

+1

Radial
Profile

-3

Lateral
Profile

-3

Armor

0

Hull Hits

Minor
Major

Power Plant Hits

Inoperable

Surface Fixture Hits

—Weapons—						—TTAs and Submunitions—																																	
1. ☒	2. ☐	3. ☐	4. ☐	5. ☐	6. ☐	7. ☐	8. ☐	9. ☐	10. ☐	11. ☐	12. ☐	13. ☐	14. ☐	15. ☐	16. ☐	17. ☐	18. ☐	1. Communicator	2. ☐	3. ☐	4. ☐	5. ☐	6. ☐	7. ☐	8. ☐	9. ☐	10. ☐	11. ☐	12. ☐	13. ☐	14. ☐	15. ☐	16. ☐	17. ☐	18. ☐	19. ☐	20. ☐	21. ☐	22. ☐
—Active Sensors—						—Passive Sensors—																																	
Primary						Primary						10																											
Redundant						Redundant																																	

Critical Hits

—Computer—						—Tactical Action Center—						—Bridge—																	
Primary	2. ☐	3. ☐	4. ☐	5. ☐	6. ☐	Active Operator	2. ☐	3. ☐	4. ☐	5. ☐	6. ☐	Engineer	2. ☐	3. ☐	4. ☐	5. ☐	6. ☐	Navigator	2. ☐	3. ☐	4. ☐	5. ☐	6. ☐	Communications	2. ☐	3. ☐	4. ☐	5. ☐	6. ☐
—Life Support—						—Drive—						—Hangar Deck—						—Missile Bay—						—Continuous—					

Damage Control

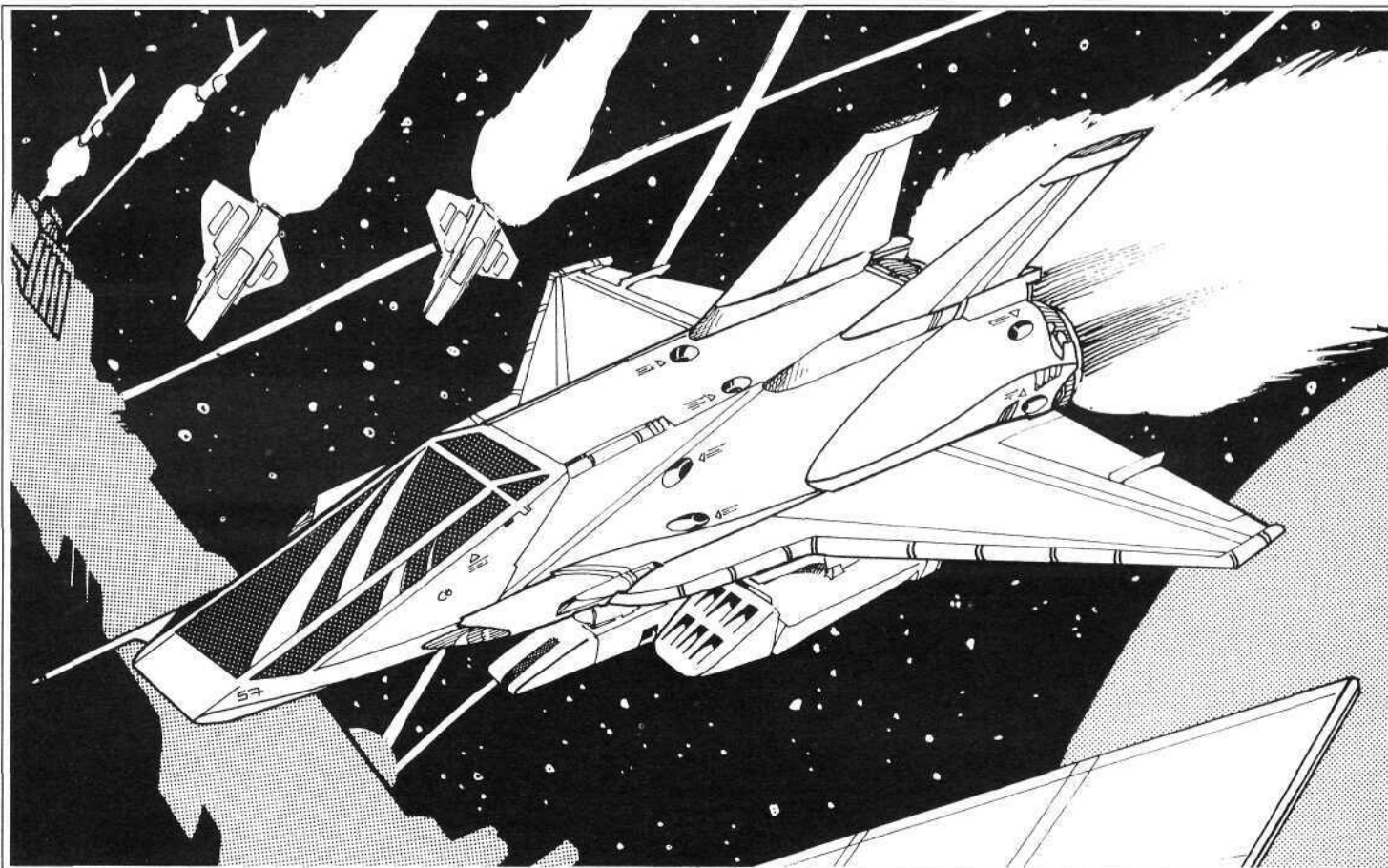
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----

Ordnance

(record ordnance load and type)

Crew

Comfort	0
Crew Quality	



French *Riche*-class Fighter

Original Date of Design: February 12, 2284

First Example Laid Down: March 14, 2287

First Example Completed: September 27, 2290

Fleets of Service: France, Ukraine, UAR

The *Riche* design takes advantage of non-energy weapons in order to maximize its drive efficiency. Generally, a laser mounted on a small ship draws a large percentage of the ship's available power for its continuous operation. The introduction of submunition tactics (getting in close to a target and releasing a single-shot device to do the actual firing) has provided an easy out which the *Riche* design has taken advantage of.

Basically, the *Riche* is a two-seat fighter craft, with a pilot and weapons officer. Since the fighter is designed to perform very close-in (in deep space terms) fighting, an active sensor array was deemed unnecessary. The passive array installed will serve most purposes when the fighter closes to within just a few light seconds of its target. The hull is constructed with some armor and with basic hull masking to protect the vessel when it goes into harm's way. The ship is streamlined and has thruster fuel set aside for one mission to and from an atmosphere-present world.

The submunition dispenser on the *Riche* is a unique design. Two dispensers, each with six shots, are carried below the vessel. Each shot is a 1 x 1 battery powered detonation laser submunition.

Since its introduction, the *Riche* has been purchased in quantity by the French government. French *Riche* craft can most commonly be found at the core where they perform patrol and defense duties in the inner systems. Several of the ships have been sold both to the Ukraine and to the UAR.

Crew: one pilot and one weapons officer.

PERFORMANCE CHARACTERISTICS

Warp Efficiency: 3.49, *Power Plant:* 1 MW MHD Turbine, *Fuel:* 14.4 tons, sufficient for 24 hours of operation, *Range:* NA, *Mass:* 96.7 tons, *Cargo Capacity:* none, *Comfort:* 0, *Total Life Support:* 2, *Price:* Lv10,831,000



French *Bufer* Fighter

Original Date of Design: August 3, 2289

First Example Laid Down: October 12, 2291

First Example Completed: December 3, 2293

Fleets of Service: France

The *Bufer* is the first French fighter design which uses carried ordnance as its only offensive weapons. Originally the design called for four magnetically harnessed Ritage missiles, then the most common missile in the French arsenal. Now, however, most *Buffers* have been refitted to accept the updated Ritage-2 missile designs which are quicker and boast the powerful detonation type laser.

In order to carry several large missiles, the *Bufer* design had to be somewhat on the large side. The ship itself is 16 meters from nose to tail and has a wingspan of just over 10 meters. The four missiles are carried magnetically on the underside of the wings. There is one pilot and one remote pilot per vessel. The *Bufer* is limited to piloting only one of its own missiles at a time without significant penalty to performance due to overextending the remote officer.

The hull is streamlined and is composed of advanced synthetics. Sufficient material has been added to the hull to give it noticeable armor resistance. Masking the hull has made the ship virtually invisible to enemy passive detection, and the design is not so large that the ship suffers from having too great a profile.

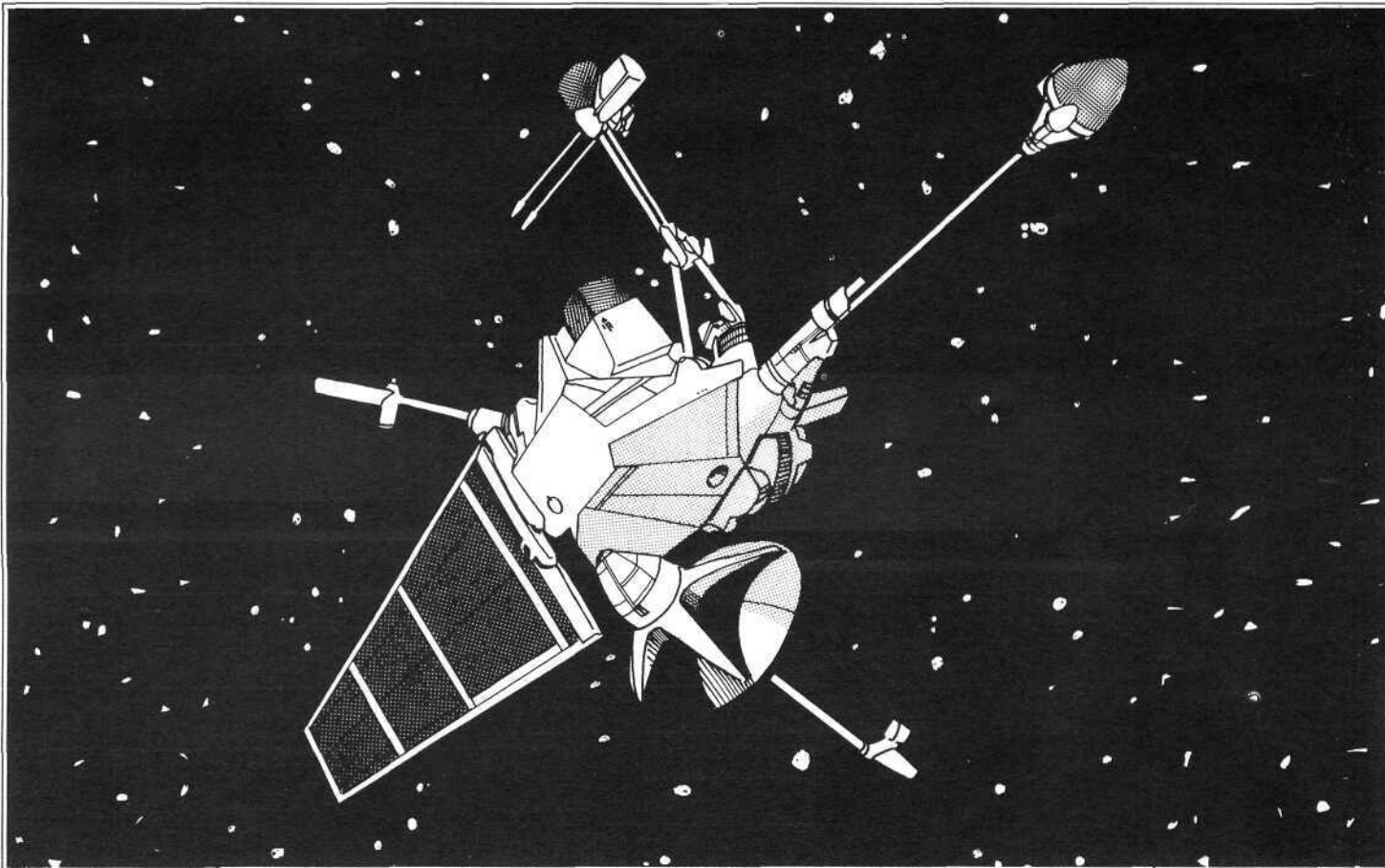
Buffers are currently deployed sparingly along the French Arm. Their numbers are rumored to be somewhat low, but actual figures have never been released by the French government. To date there have been no *Buffers* sold to any other nation.

Crew: one pilot and one weapons officer.

PERFORMANCE CHARACTERISTICS

Warp Efficiency: 3.04, *Power Plant:* 1 MW MHD Turbine, *Fuel:* 9.6 tons, sufficient for 16 hours of operation, *Range:* NA, *Mass:* 190.93 tons, *Cargo Capacity:* none, *Comfort:* 0, *Total Life Support:* 2, *Ordnance Carried:* 4 Ritage-2 missiles in magnetic sling, *Price:* Lv22,565,000

Comfort	0
Crew Quality	



French Horloge Sensor Drone

Original Date of Design: September 15, 2294

First Example Laid Down: April 1, 2295

First Example Completed: August 15, 2295

Fleets of Service: France, Germany, America

Using sensor drones to scout out enemy positions has been a part of space combat doctrine since just after the first Alpha Centauri War. Designing these probes to utilize the latest technology and be very cost-efficient has kept naval architects busy for decades. The latest French design is the Horloge which has been introduced in the last few years.

Like most sensor drones, the Horloge has no stutterwarp drive. Its power plant is designated *solely* to the operation of the active sensors it carries. The hull itself houses the plant and fuel; the sensor equipment is mounted on pylons outside the hull proper.

Currently the Horloge is in service against the Kafers in the arsenals of the French, German, and American forces fighting there. Their low cost makes them expendable, and their abilities make them invaluable to the human forces in that frontier conflict.

PERFORMANCE CHARACTERISTICS

Warp Efficiency: 0, *Power Plant:* 2 MW MHD Turbine, *Fuel:* 2.4 tons, sufficient for 2 hours of operation, *Range:* NA, *Mass:* 28.6 tons, *Cargo Capacity:* none, *Price:* Lv2,315,000

Owning Nation or World

0

0

Radiated
Signature

2

2

2

Targeting Computer

0

—

—

C

☐ Minor ☐ Major	

Minor
Major

Inoperable

Inoperable

—Weapons—

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____



7. _____

8. _____

9. _____

10. _____

11. _____

12. _____



13. _____

14. _____

15. _____

16. _____

17. _____

18. _____



—Active Sensors—

Primary _____

Redundant _____



10

—Passive Sensors—

Primary _____

Redundant _____



5

—TTAs and Submunitions—

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

8. _____

9. _____

10. _____

11. _____



12. _____

13. _____

14. _____

15. _____

16. _____

17. _____

18. _____

19. _____

20. _____

21. _____

22. _____



The diagram illustrates the layout of the USS Enterprise (NCC-1701-A) bridge and support areas. It is divided into several sections:

- Primary:** A row of six rectangular modules.
- Computer:** A 6x6 grid of modules.
- Life Support:** A 6x6 grid of modules.
- Drive:** A 6x6 grid of modules.
- Hangar Deck:** A 6x6 grid of modules.
- Missile Bay:** A 6x6 grid of modules.
- Continuous:** A 6x6 grid of modules.
- Active Operator:** A row of six rectangular modules.
- Passive Operator:** A row of six rectangular modules.
- Tactical Action Center:** A row of six rectangular modules.
- Bridge:** A row of six rectangular modules.
- Captain:** A row of six rectangular modules.
- Navigator:** A row of six rectangular modules.
- Communications:** A row of six rectangular modules.
- Engineer:** A row of six rectangular modules.
- Computer:** A row of six rectangular modules.

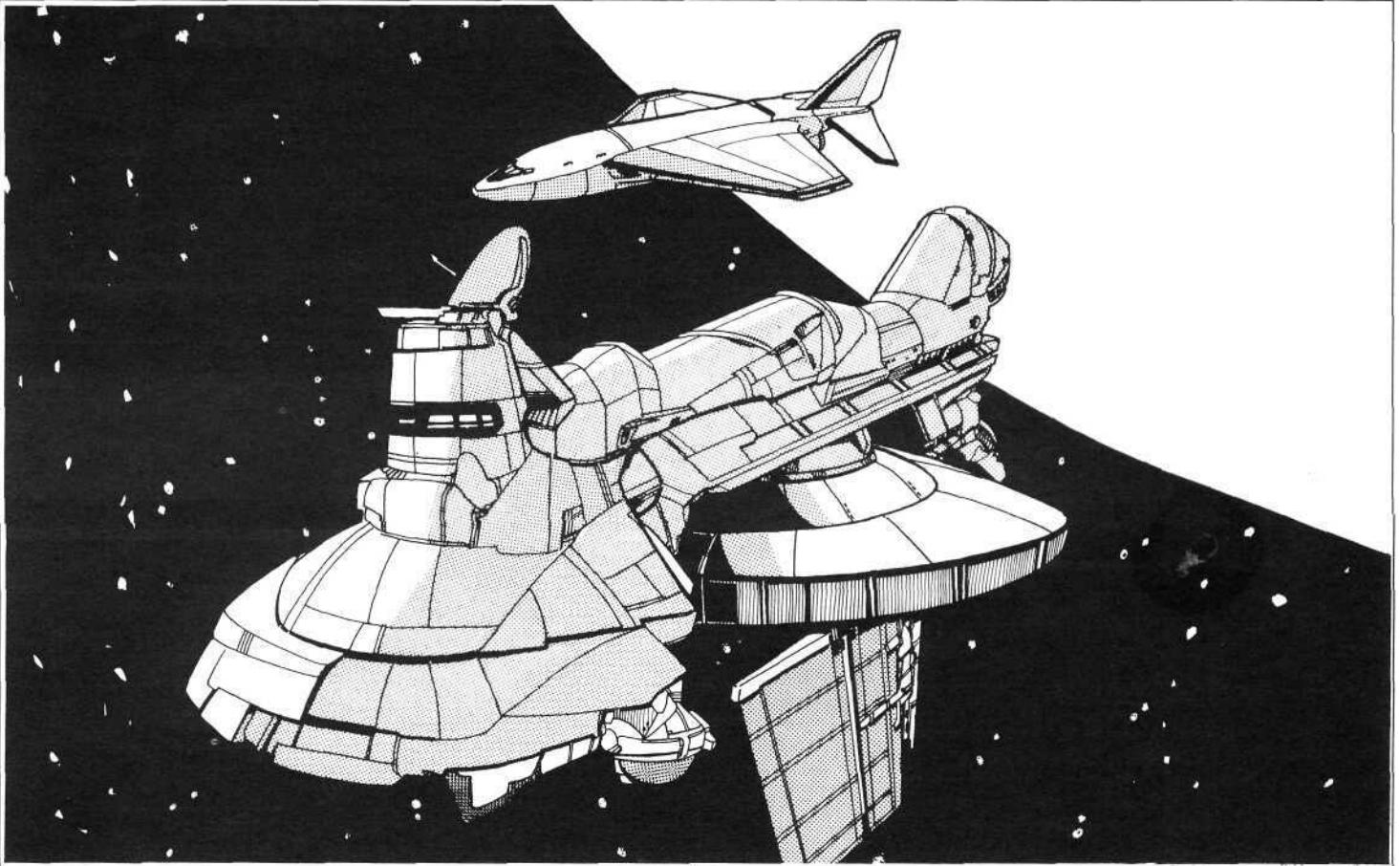
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
															

	(record ordnance load and type)
--	---------------------------------

Comfort	NA
Crew Quality	

Comfort

Crew
Quality



French Orage-class Frigate

Original Date of Design: March 10, 2277

First Example Laid Down: October 9, 2278

First Example Completed: December 2, 2279

Fleets of Service: France, Mexico, Inca Republic

In the early 2200s warship design began to switch from heavily armed energy weapon ships to heavily armed missile carrying ships. Seventy years later, the French attempted to return to a well protected laser-armed ship without missile armament. Although adequate for peacetime patrol duties, the Orage-class frigates proved nearly worthless in combat during the Central Asian War and have since been sold off except for two ships retained for training duties.

The frigate itself is a sturdy design encompassing a masked, advanced synthetic armor hull roughly 10 meters in diameter and 76 meters in length. A protrusion in the bow of the ship houses much of the fuel while a disk in the underbelly is dedicated mainly to the crew accommodations. The older designs of the active and passive sensor arrays extend from below the disk and above the bridge, respectively. The ship is not streamlined and has no thrusters for non-stutterwarp travel.

France has sold off all but two of its Orage Frigates to Mexico and the Inca Republic. The original design is armed with two double-mount external turrets, each with two standard Guiscard lasers, one mounted on each side of the vessel below the bridge area. Ships in Mexican and Incan service carry missiles or drones in the cargo hold. Two remote stations are converted from former computer stations, and crew from the ship's troops section are employed to heave the missiles out of the ship prior to launch.

One French Orage-class, the *Pluie*, was damaged in a sortie in the Augereau system during the War of German Reunification.

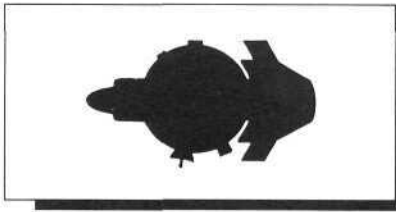
It was never recovered after the sortie and is presumed to still exist somewhere in the system.

Crew: Bridge: 12, Tactical Action Center: 6, Engineering: 6, Ship's Troops: 10, Medical: 2.

PERFORMANCE CHARACTERISTICS

Warp Efficiency: 1.19, *Power Plant:* 5 MW MHD Turbine, *Fuel:* 1500 tons, sufficient for three weeks of operation, *Range:* 7.7, *Mass:* 2451.6 tons, *Cargo Capacity:* 260 m³, *Comfort:* 0, *Total Life Support:* 40, *Ordnance Carried:* none standard, but ordnance common in cargo hold, *Price:* Lv26,863,000

Ship Status Sheet



Orage
 Ship Name _____
Frigate
 Ship Type _____
France
 Owning Nation or World _____

Movement

2

Screens

0

Radiated
Signature

3⁽⁴⁾

Radial
Reflected

4

Lateral
Reflected

4

Targeting
Computer

0

Radial
Profile

-2

Lateral
Profile

+1

Armor

4

Hull Hits

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100

Minor
Major

Power Plant Hits

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100

Inoperable

Surface Fixture Hits

—Weapons—										—TTAs and Submunitions—																													
1. x1 dbl	2. x1 dbl	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	1. TTA	2. TTA	3. Communicator	4. Communicator	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.	21.	22.
—Active Sensors—										—Passive Sensors—																													
7										3																													
Primary										Primary																													
Redundant										Redundant																													

Critical Hits

—Computer—										—Tactical Action Center—																																							
Primary	1	2	3	4	5	6	7	8	9	Active Operator	1	2	3	4	5	6	7	8	9	Passive Operator	1	2	3	4	5	6	7	8	9	Fire Control	1	2	3	4	5	6	7	8	9	Fire Control	1	2	3	4	5	6	7	8	9
—Life Support—										—Bridge—																																							
—Drive—										Captain																																							
—Hangar Deck—										Navigator																																							
—Missile Bay—										Engineer																																							
—Continuous—										Computer																																							
										Engineer																																							

Damage Control

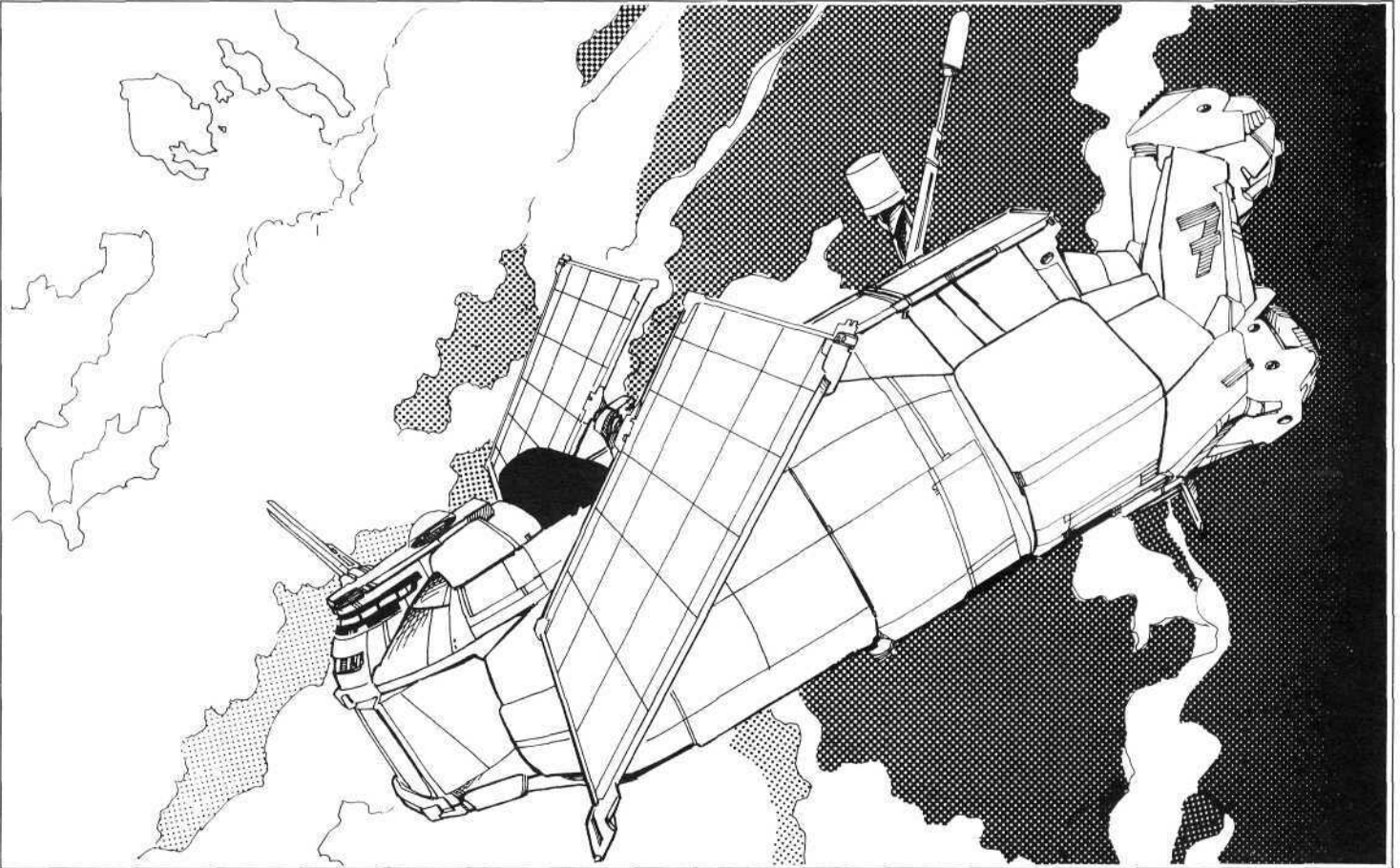
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

Ordnance

(record ordnance load and type)

Crew

Comfort	0
Crew Quality	



French Ypres-12 Frigate

Original Date of Design: December 19, 2256

First Example Laid Down: May 30, 2257

First Example Completed: June 21, 2259

Fleets of Service: France, Azania, UAR, Mexico

One of the larger frigates ever produced, the *Ypres* is also one of the first ships to employ extensive screen capabilities. The great power requirements force the inclusion of a large fusion power plant which could run a much larger vessel, but which was easily constructed from designs and tooling already in existence at the time.

The excess power available to the ship allows the *Ypres* to mount an impressive 15 standard laser mounts and still have its screens in operation. The crew itself includes 25 troops designated for boarding and security duty. The *Ypres* also mounts a large sensor package, allowing it to double as a survey vessel during peacetime.

Due to their high cost and the advent of better technology, there were only five *Ypres* vessels ever built. The French retain one, and have sold two to the Azanians and one each to the UAR and the Mexican governments.

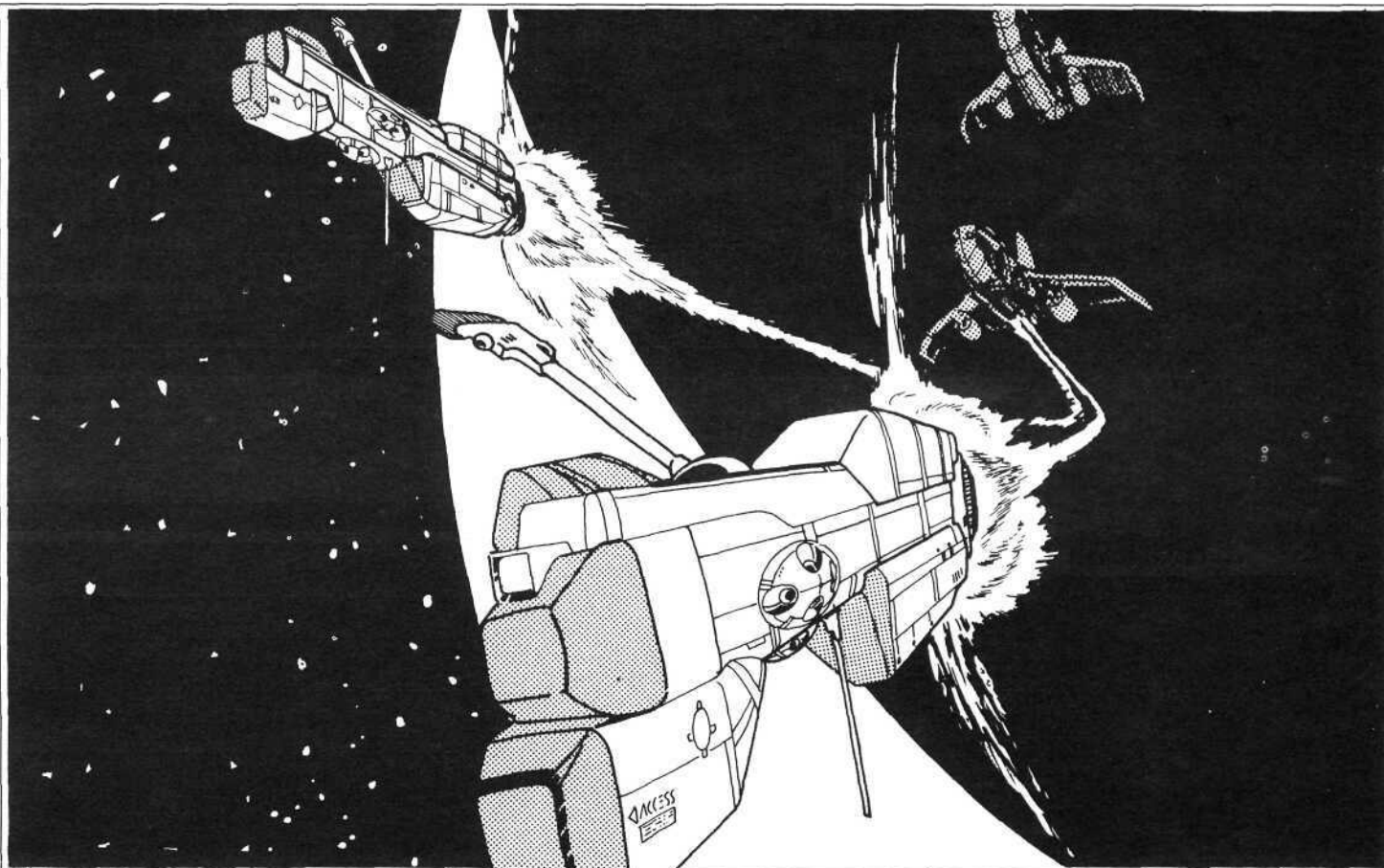
Sensor Package: Passive, active, navigational radar, deep-system scan, minimal life sensors, minimal cartographic sensors.

Crew: Bridge: 20, Tactical Action Center: 19, Engineering: 22, Ship's Troops: 25, Medical: 3.

PERFORMANCE CHARACTERISTICS

Warp Efficiency: 2.896, *Power Plant:* 150 MW Fusion, *Fuel:* NA, *Range:* 7.7, *Mass:* 12,552.5 tons, *Cargo Capacity:* 1980 m³, *Comfort:* 0, *Total Life Support:* 100, *Ordnance Carried:* none, *Price:* Lv166,850,000

+1



French DA-2290 Missile

Original Date of Design: August 7, 2288

First Example Laid Down: September 14, 2289

First Example Completed: January 2, 2290

Fleets of Service: France

The DA-2290 was designed using space combat techniques learned during the Central Asian War. It combines the remote effectiveness of a missile with the multiple use capabilities of a submunition dispenser.

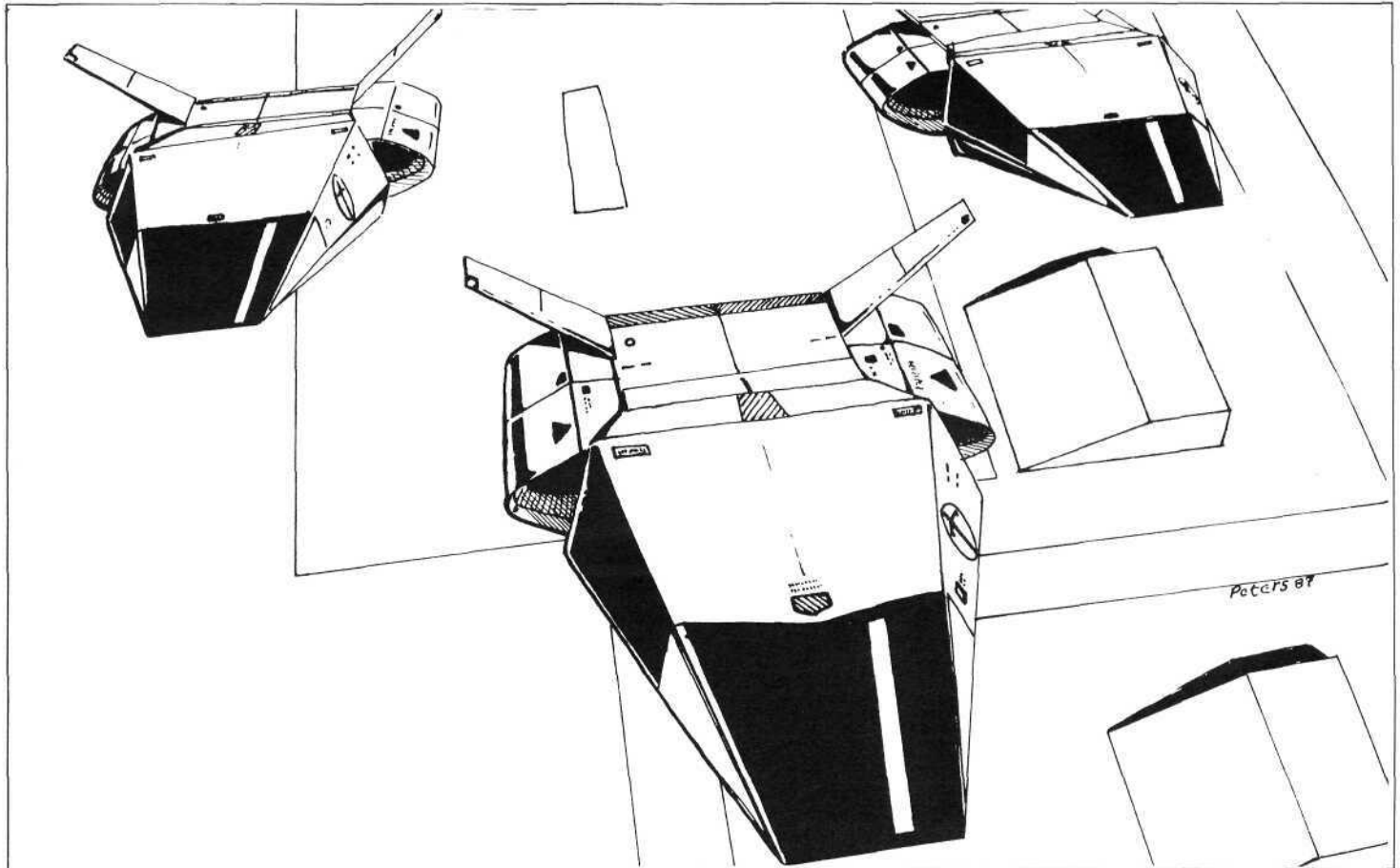
The missile itself is a small stutterwarp and power plant in the largest of a three-part hull. The two smaller parts are detachable detonation lasers. The larger section is also a detonation laser but can simply be used to carry the two smaller charges into position.

Replacement parts for the DA-2290 are readily available for French ships so armed. The prices for each are given below.

PERFORMANCE CHARACTERISTICS

Warp Efficiency: 2.73, *Power Plant:* 0.1 MW Fuel Cell, *Fuel:* 0.225 tons, sufficient for five hours of operation, *Range:* NA, *Mass:* 20.225 tons, *Cargo Capacity:* none, *Ordinance Carried:* two 5x2 and one 10x2 detonation lasers. *Price:* Large Module, Lv540,000, Small Modules, Lv120,000 each.

Crew
Quality



German Wespe Fighter

Original Date of Design: October 23, 2292

First Example Laid Down: June 5, 2293

First Example Completed: April 7, 2294

Fleets of Service: Germany

The original design of the *Wespe* was begun just as the war of Reunification was brewing. Hanoverian designers, anxious for a unified German state, began secret design work on several vessels with the hope that German industry would be able to produce these designs during a struggle against the French. The designers got their wish, and, though no *Wespes* actually saw action in the war, they became a vital part of the German peacetime navy which had to make the unification stick.

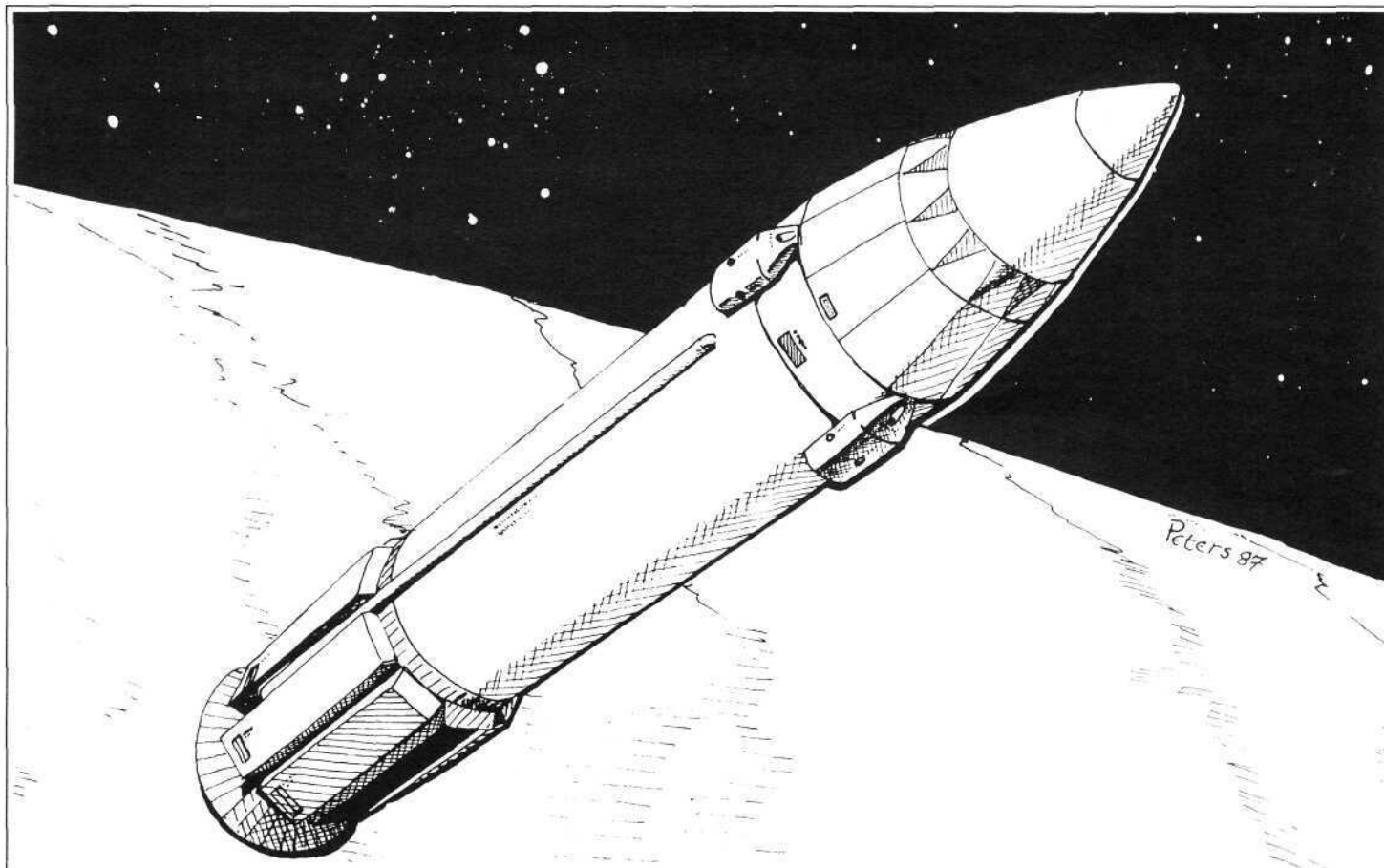
The *Wespe* is a simple design which employs a sophisticated stutterwarp drive and large plant to give it great speed. It is a two-, side-by-side-seat fighter with both a passive and active solar array. The ship is armed with a single Hyde EAA 1000 jack turret (several Hyde lasers were in Bavarian inventories during the beginning of the conflict and found their way into German designs of that period). The hull is armored and streamlined, and its thrusters are capable of taking it to and from an atmosphere-present world.

The rather high cost of the *Wespe* has kept its numbers rather low. While there is a certain amount of pride involved in designing and using only native ships, many in the German government see the economics of less expensive foreign fighters. At present there are approximately fifty *Wespes* in existence, mostly distributed among the German colony and outpost worlds of the French Arm. *Wespes* have seen action against Kafers in the Eta Bootis and Hochbaden systems, and have performed well against the alien threat.

Crew: one pilot and one weapons officer.

PERFORMANCE CHARACTERISTICS

Warp Efficiency: 3.829, *Power Plant:* 7 MW MHD Turbine, *Fuel:* 50.4 tons, sufficient for twelve hours of operation, *Range:* NA, *Mass:* 286.3 tons, *Cargo Capacity:* none, *Comfort:* 0, *Total Life Support:* 2, *Ordnance Carried:* none, *Price:* Lv35,724,000



German Donnerwetter Missile

Original Date of Design: February 15, 2294

First Example Laid Down: March 20, 2294

First Example Completed: July 13, 2294

Fleets of Service: Germany

The newly reunited nation of Germany found itself in a dangerous situation during the mid-2290s. That technology which had been given to the Bavarians by their French allies had been absorbed, or "inherited" by the Germans, much to the French's chagrin. This is why many German designs have UTES technology built in, even though German engineers have never achieved a native UTES system of their own. Also, much of the ordnance which the inherited Bavarian ships were designed to accept was French made, and when inventories of these began to run low, the Germans were without homegrown substitutes.

The Donnerwetter project was funded and designed very quickly during the spring and summer of 2294, a time when the possibility of renewed hostilities with the French were ever present in the minds of the German people. The size and dimensions of the missile itself are matched to the Ritage missile, and the standard packs and bays for those missiles will readily accept the new Donnerwetter.

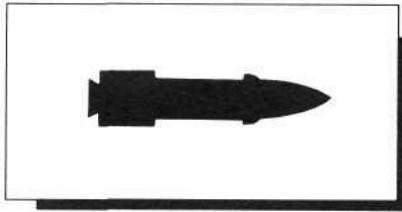
The mass of the Donnerwetter is somewhat greater than usual, due to the larger mass of the detonation warhead. It has a minimal passive sensor array, and presents a very slight profile of its own in a hostile environment.

At present the Donnerwetter is used in many German ships. Since the Ritage is generally cheaper, and the French and Germans are cooperating on the frontiers, German ships in the Kafer War can be found with either type of missile.

PERFORMANCE CHARACTERISTICS

Warp Efficiency: 2.48, *Power Plant:* 0.1 MW Fuel Cell, *Fuel:* 0.09 tons, sufficient for two hours of operation, *Range:* NA, *Mass:* 20.24 tons, *Cargo Capacity:* none, *Ordnance Carried:* one 10x3 detonation laser, *Price:* Lv730,000

Ship Status Sheet



Donnerwetter

Ship Name

Missile

Ship Type

Germany

Owning Nation or World

Movement

5

Screens

0

Radiated
Signature

0⁽¹⁾

Radial
Reflected

0

Lateral
Reflected

1

Targeting
Computer

0

Radial
Profile

-4

Lateral
Profile

-3

Armor

0

Hull Hits

	Minor
	Major

Power Plant Hits

	Inoperable
--	------------

Surface Fixture Hits

—Weapons—						—TTAs and Submunitions—					
1.		7.		13.		1.	10x3 Detonation		12.		
2.		8.		14.		2.			13.		
3.		9.		15.		3.			14.		
4.		10.		16.		4.			15.		
5.		11.		17.		5.			16.		
6.		12.		18.		6.			17.		
—Active Sensors— —						—Passive Sensors— 3					
Primary 						Primary 					
Redundant 						Redundant 					
						11. 22. 					

Critical Hits

—Computer—		—Tactical Action Center—	
Primary		Active Operator	
		Passive Operator	
—Life Support—			
—Drive—			
—Hangar Deck—			
—Missile Bay—			
—Continuous—			
		Captain	
		Navigator	
		Communications	
		Engineer	
		Computer	

Damage Control

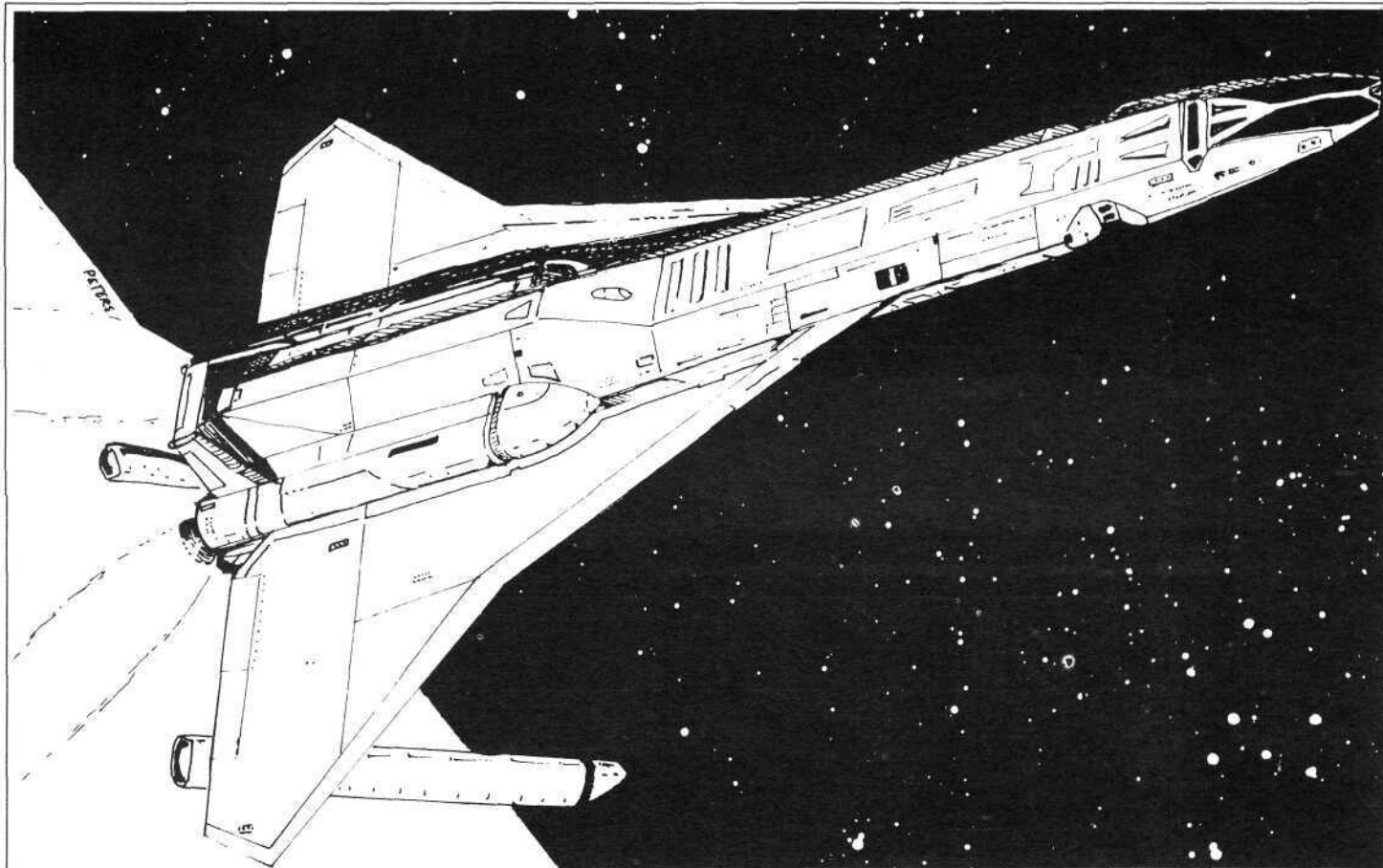
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

Ordnance

(record ordnance load and type)

Crew

Comfort	NA
Crew Quality	



German *Udet*-class Fighter

Original Date of Design: July 2, 2293

First Example Laid Down: August 17, 2294

First Example Completed: September 7, 2295

Fleets of Service: Germany

The *Udet*, named in honor of Ernst Udet, famous WWI German flying ace, is a streamlined fighter capable of operating from a planetary surface or orbital station. It is intended to provide a planetary-based fighter capable of medium duration during in-system and near-system operations against all types of hostile craft.

Takeoff is normally achieved with disposable solid fuel booster pods, although the *Udet* can make it into orbit on its own at the expense of 18 hours cruising time. By using the boosters, the *Udet* can also take off under extreme (greater than 1.5 g) gravity conditions. The *Udet* is equipped with in-flight refueling fittings and can be used in cooperation with an orbital tender.

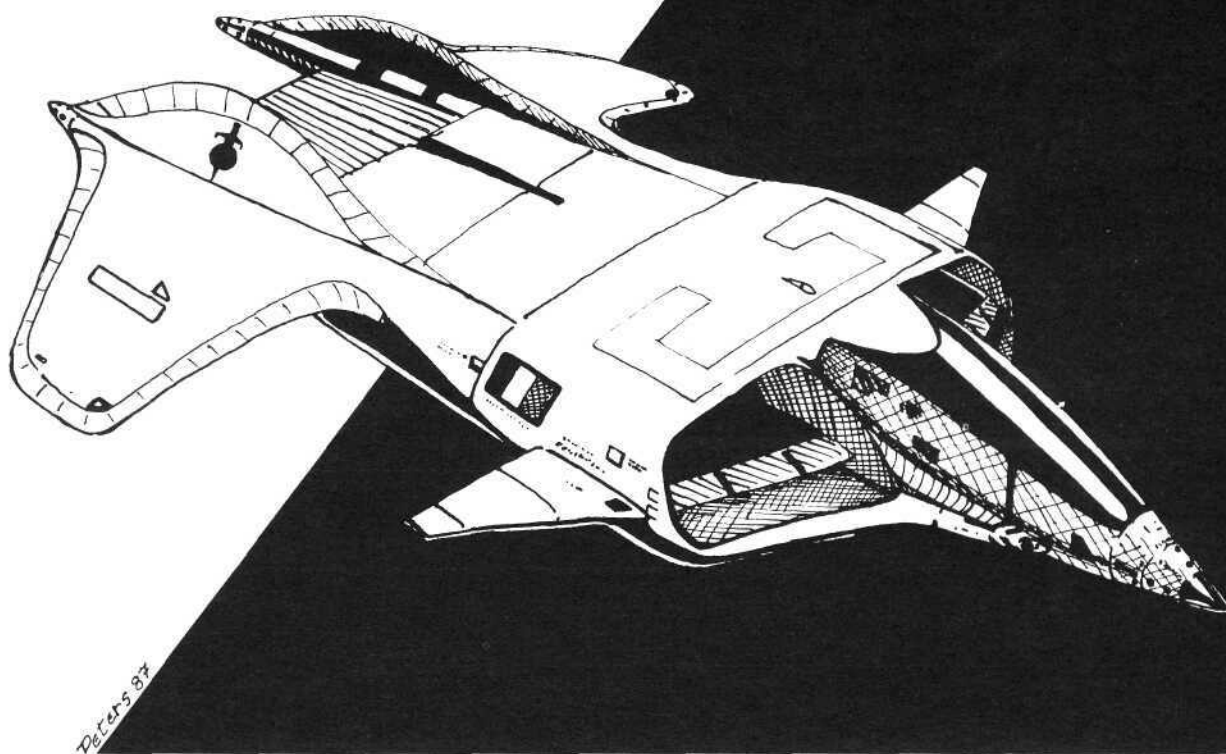
The advanced hull is lightly armored and is capable of withstanding quite a bit of battle damage. The ship has one dorsal masked double turret mount which is UTES capable. A good sensor array is provided, as the *Udet* is intended for use generally without support of larger vessels. Overall, reports from crews and tacticians say that the *Udet* is a versatile, survivable fighter and should prove to be a tremendously valuable point defense craft against a possible Kafer onslaught.

The disposable solid fuel booster rockets are fairly inexpensive (Lv100,000 each, two required per launch) and are presently in abundance for those vessels so far created. The most notable group of *Udet* fighters is a squadron of twenty which has recently been based at Uethen on the German continent of Beta Canum Venaticorum.

Crew: one pilot and one weapons officer.

PERFORMANCE CHARACTERISTICS

Warp Efficiency: 3.48, *Power Plant:* 4 MW MHD Turbine, *Fuel:* 68 tons, sufficient for 24 hours of operations plus a normal takeoff and landing if booster assisted, *Range:* NA, *Mass:* 136 tons, *Cargo Capacity:* none, *Comfort:* 0, *Total Life Support:* 2, *Price:* Lv21,340,000



French Bonapart-class Fighter

Original Date of Design: November 11, 2287

First Example Laid Down: August 31, 2289

First Example Completed: January 3, 2290

Fleets of Service: France

Designed and built in anticipation of colonial problems, actual production of the first several *Bonapart*-class fighters was accelerated when unrest in French-dominated Hanover and Bavaria began to gain worldwide attention. The ship itself is one of the finest fighters in human space today, and played an important role for the French in the War of German Reunification, gaining a reputation as the best protected, most heavily armed fighter in space.

The French *Bonapart*-class Fighter's streamlined design includes added thrusters for atmospheric maneuvering, which slightly increases the mass and expense of its two-megawatt plant. Its mission duration is 16 hours, but this length can be extended, and commonly is, through the use of fuel tankers and deep-space refueling. The *Bonapart*'s hull is heavily armored, which makes the *Bonapart* a very survivable craft.

What is most unusual about the design is its weaponry. The ship has one belly-mount Guiscard laser jack turret with UTES capability, with dedicated power from the ship's plant. In addition to this, however, is an imported American designed submunition dispenser, the Grape-Shot, which is set in a retractable mount on the top of the fighter, just behind the crew compartment. (For game purposes, treat the submunition dispenser as a jack turret when considering armor affects.)

The considerable weaponry required additional crew, and the *Bonapart* has three positions to perform its job—one pilot and two weapons officers. Despite its expense, the *Bonapart* is a marvelous

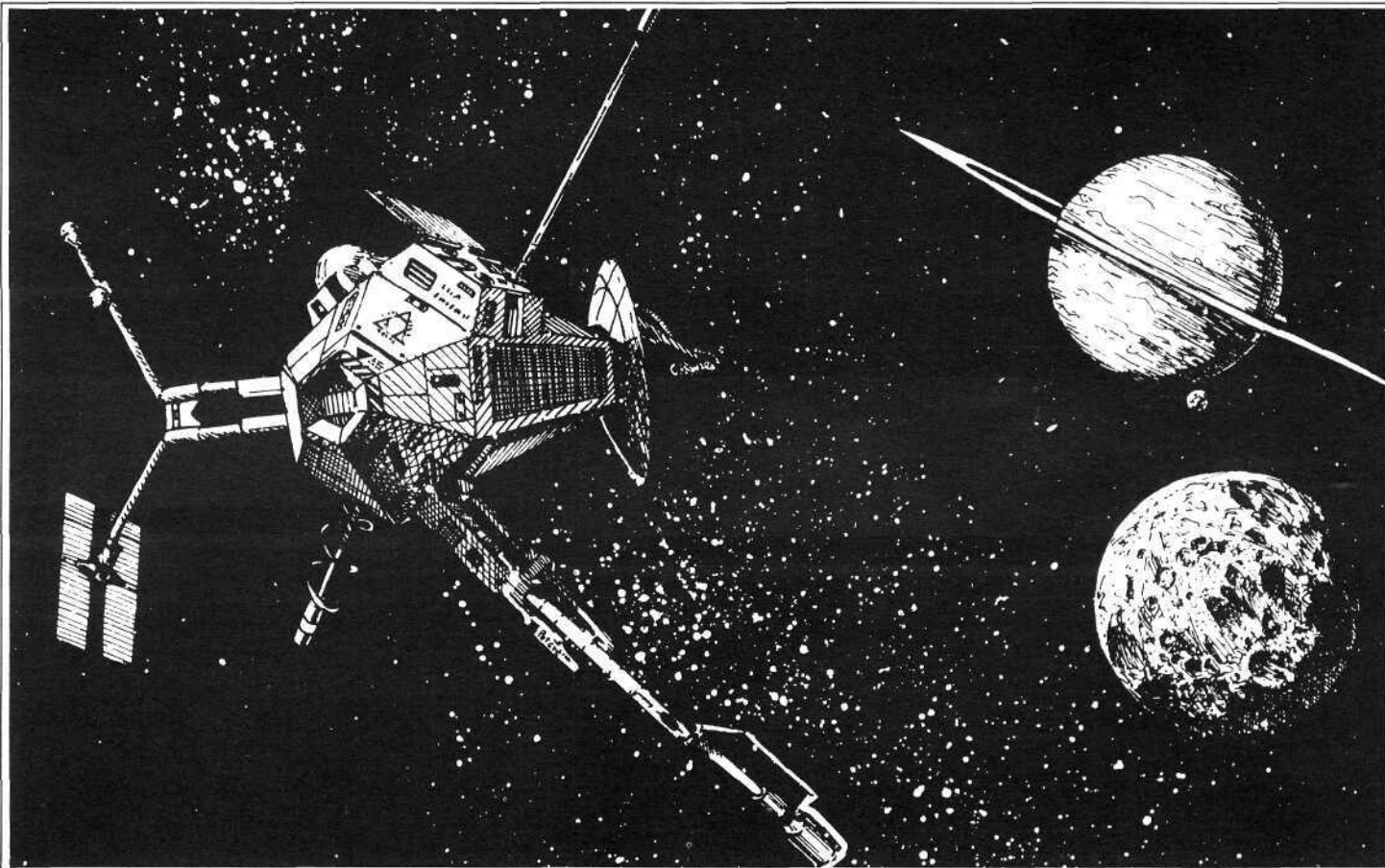
fighter displaying tremendous performance, well deserving of its reputation of quality.

Crew: one pilot and two weapons officers.

PERFORMANCE CHARACTERISTICS

Warp Efficiency: 3.13, *Power Plant:* 2 MW MHD Turbine, *Fuel:* 19.2 tons, sufficient for 16 hours of operation, plus 24.7 tons dedicated to thruster operation, *Range:* NA, *Mass:* 174.24 tons, *Cargo Capacity:* 26.3 m³, *Comfort:* 0, *Total Life Support:* 3, *Ordinance Carried:* none, *Price:* Lv22,597,000

Crew
Quality



German Mainz-21-class Armed Drone

Original Date of Design: July 30, 2279

First Example Laid Down: March 15, 2284

First Example Completed: December 12, 2286

Fleets of Service: Germany

Attempts at making armed sensor drones, drones that are more survivable in a combat situation, have traditionally met with mixed results. The very nature of drones being somewhat disposable and designed to be a remote listening post closer to the enemy than to the owning ships makes the drones easy targets for enemy fighters and missile screens. Placing sufficient defenses on the drones most often brings their expense up close to the level of a manned ship, which is undesirable in the eyes of most of the nations seeking economy.

The Mainz-21 is such an armed sensor drone. Its Bavarian designers felt confident that they could overcome the price problem, but in the end they failed. Cost overruns and scandal among the designers shook the Bavarian government, and they ended up with a very expensive item which, though effective, was not within the budget allowed. Only a few dozen prototypes were ever produced, but, due to their increased survivability, a few are still in use today.

When in communication link with the owning ship, the Mainz-21 can use its active and passive tracking arrays to advantage. However, the hull is heavily armored and masked, and the drone mounts a single jack turret and laser—this can be operated remotely if the communications link is working. With armor and point defense the drone has some chance of living through laser fire from enemy ships and missiles.

During a patrol raid in the Arcturus system, Kafer forces managed to disable and capture a Mainz-21. It is assumed that they have

dismantled it and learned much about the sensor capabilities of their human adversaries.

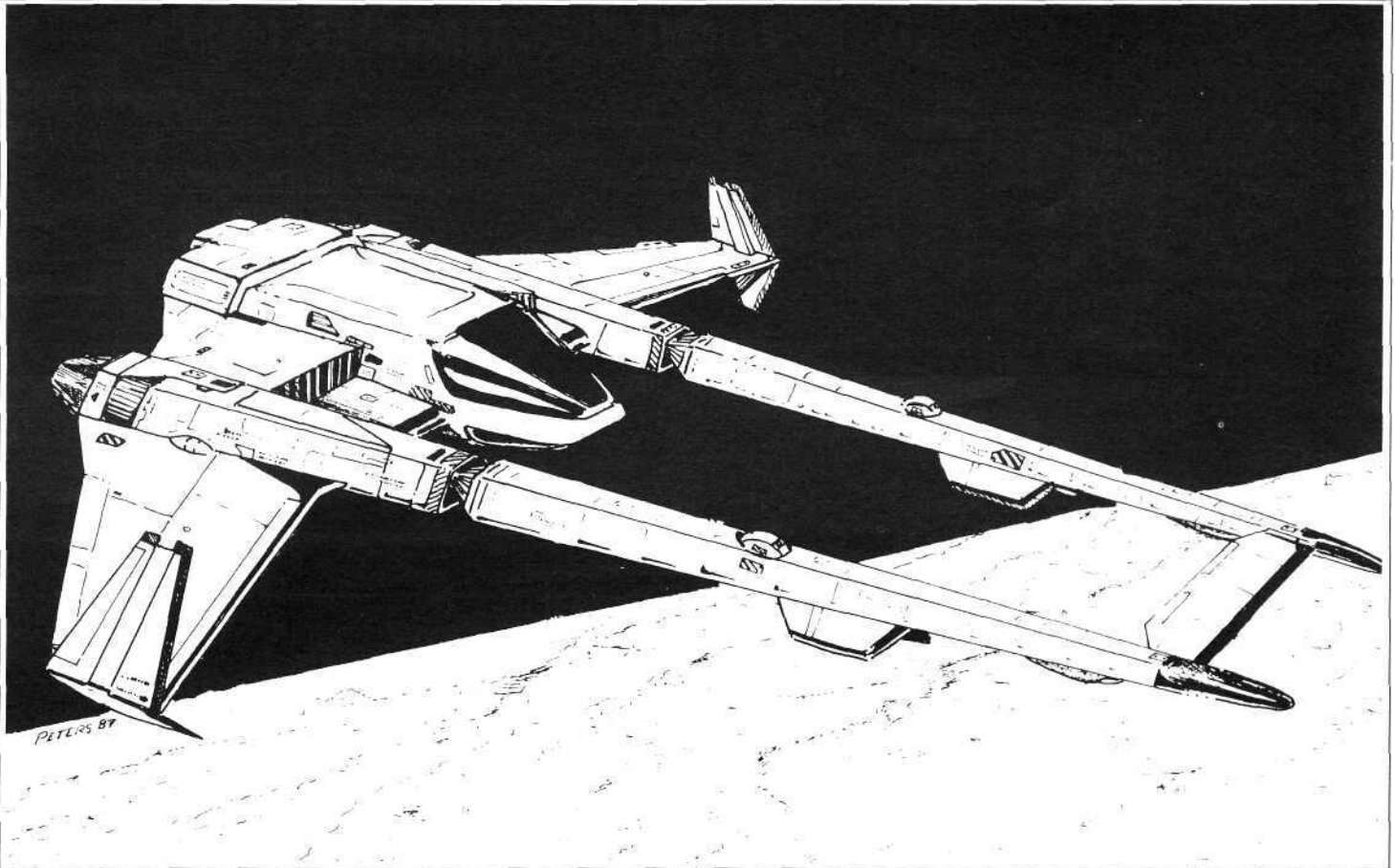
Sensor Package: Active and passive arrays only.

Crew: none.

PERFORMANCE CHARACTERISTICS

Warp Efficiency: 0, *Power Plant:* 3 MW MHD Turbine, *Fuel:* 21.6 tons, sufficient for 12 hours of operation, *Range:* NA, *Mass:* 109.5 tons, *Cargo Capacity:* none, *Comfort:* NA, *Total Life Support:* 0, *Price:* Lv4,588,900

Crew
Quality



English *Wellington-class* Fighter

Original Date of Design: April 14, 2278

First Example Laid Down: December 21, 2278

First Example Completed: July 21, 2279

Fleets of Service: Great Britain

The British navy has not been actively involved in a space conflict since the Alpha Centauri War almost 150 years ago. The English military has been on a peacetime footing for such a long period of time, in the shadow of their near-superpower ally the French, that advances in British warfare equipment or technology are few and far between. The *Wellington-class* fighter is the latest warship designed and constructed by the English, and it has never seen action in anything other than patrol missions.

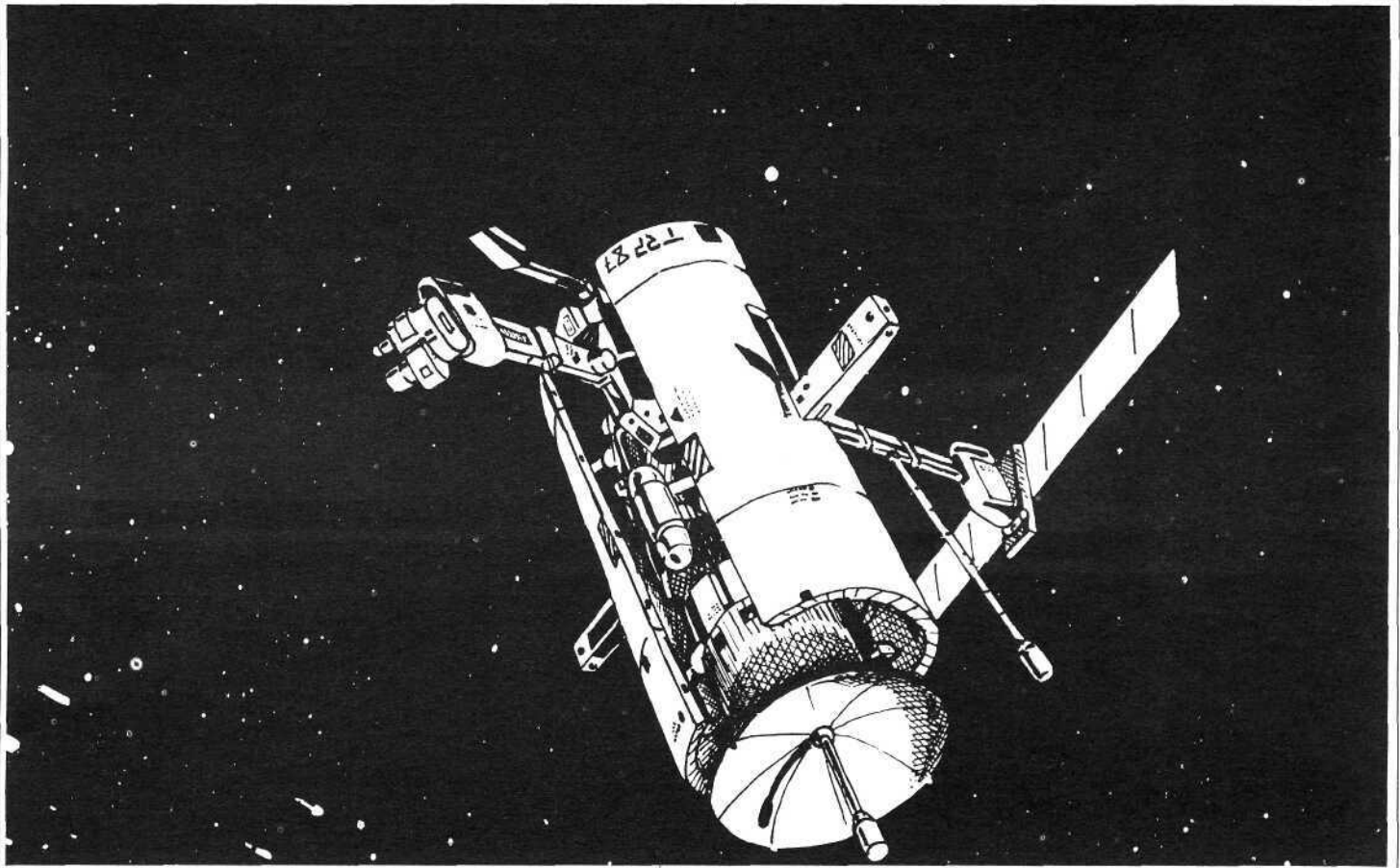
The *Wellington* is a two-place fighter which mounts a powerful, if somewhat inaccurate, particle accelerator weapon imported from DunArmCo of Australia. The DunArmCo ALS-22 has two megawatts of power dedicated from the ship's plant. The remainder is used for the ship's stutterwarp.

The English have announced placement of three squadrons of *Wellington-class* fighters around their space. A first is located at Tirane performing routine patrol missions. The second and third are at Henry's Star and Beta Canum where their crews are undergoing indoctrination for anticipated combat with Kafers should they reach those systems.

Crew: one pilot and one weapons officer.

PERFORMANCE CHARACTERISTICS

Warp Efficiency: 2.90, *Power Plant:* 3 MW MHD Turbine, *Fuel:* 27 tons, sufficient for 15 hours of operation, *Range:* NA, *Mass:* 219.3 tons, *Cargo Capacity:* none, *Comfort:* 0, *Total Life Support:* 2, *Price:* Lv19,756,000



Argentinian JA-77-class Sensor Drone

Original Date of Design: October 21, 2268

First Example Laid Down: December 8, 2269

First Example Completed: June 18, 2270

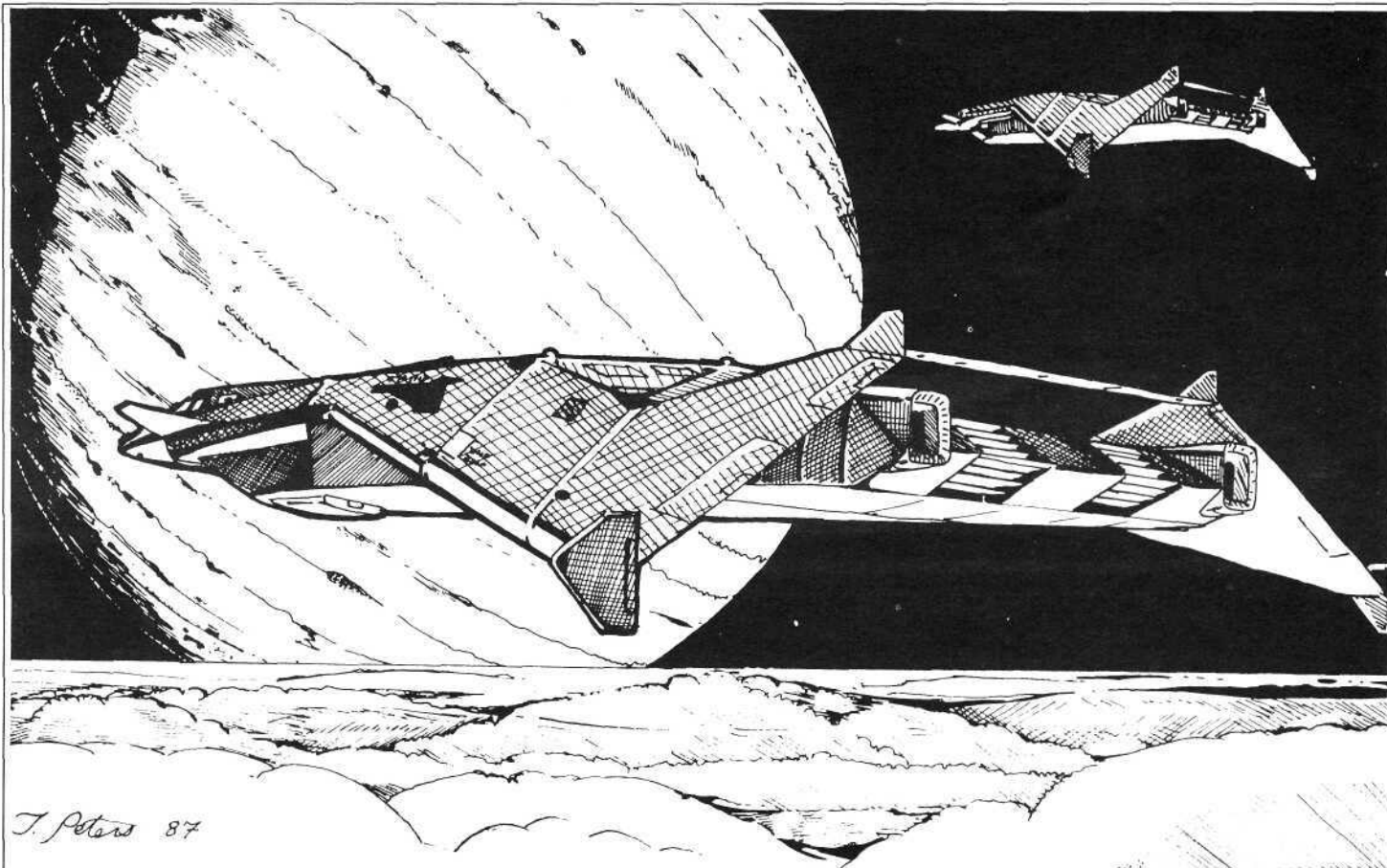
Fleets of Service: Argentina

Between the Second and Third Rio Plata Wars, Argentina designed and built its own mobile sensor drone, the JA-77. Engagements with Brazilian vessels thirty years before had convinced the Argentinian command that, should hostilities begin again (and at that time tensions were beginning to mount), such a sensor drone would be necessary in their inventories.

The JA-77 has both an active and passive array which can make fair detections out to ten light seconds. Further than this distance makes identification of bogies difficult, at best. The drone is not armed or armored, but is quick enough to get out of the way in many instances. Since the ship cannot take much damage before being destroyed, thus speed is its only survivability characteristic, and the remote pilot in charge must be well aware of this during combat.

PERFORMANCE CHARACTERISTICS

Warp Efficiency: 3.74, *Power Plant:* 3 MW MHD Turbine, *Fuel:* 108 tons, sufficient for six hours of operation, *Range:* NA, *Mass:* 78.8 tons, *Cargo Capacity:* none, *Comfort:* NA, *Price:* Lv11,930,000



English Exeter-class SDB

Original Date of Design: March 5, 2275

First Example Laid Down: June 23, 2277

First Example Completed: August 1, 2278

Fleets of Service: Great Britain

At a time during the Third Rio Plata War, there was considerable public fear that Great Britain would be drawn into the conflict on the side of Brazil. British high command shared this viewpoint, and after the war they made a study which *revealed* that many facilities in the solar system were dangerously undefended if England's French allies stayed neutral in a showdown. Plans were quickly drawn up for a large system defense ship which could protect English interests in the Sol system.

The Exeter-class system defense boat is the end result of that effort. The ship is armed sufficiently and is fast enough to patrol areas of a system and deter interference with British property. The *Exeter* has two single mount Hyde Dynamics EA122 jack turrets tied into a targeting computer, some armoring of the hull, and sensors to detect enemy bogies at reasonable distance. The ship has a retractable spin habitat for the comfort of the sixteen-man crew. When retracted, the ship is streamlined, and has thrusters and fuel for atmospheric operations.

Currently there are two squadrons of Exeter-class ships in British inventories. These are located at Sol and Alpha Centauri for the time being. However, should hostilities with the Kafers or other operations along the French Arm be called for, these Exeters would most likely be relocated there.

Crew: Bridge: 10, Tactical Action Center: 2, Engineering: 3, Medical: 1

PERFORMANCE CHARACTERISTICS

Warp Efficiency: 1.97, *Power Plant:* 5 MW MHD Turbine, *Fuel:* 500 tons, sufficient for one week of operations, *Range:* 7.7, *Mass:* 1407 tons, *Cargo Capacity:* none, *Comfort:* 0, *Total Life Support:* 16, *Ordnance Carried:* none, *Price:* Lv31,075,000

Owning Nation or World

1

+

3

[illegible]

	Inoperable
--	------------

—Active Sensors—

7

Primary					
Redundant					

—Weapons—

5

Primary					
Redundant					

—TTAs and Submunitions—

1. TTA	2	12. _____	2
2. TTA	2	13. _____	2
3. _____	2	14. _____	2
4. _____	2	15. _____	2
5. _____	2	16. _____	2
6. _____	2	17. _____	2
7. _____	2	18. _____	2
8. _____	2	19. _____	2
9. _____	2	20. _____	2
10. _____	2	21. _____	2
11. _____	2	22. _____	2

The diagram illustrates the layout of the Star Trek: Voyager Bridge. It features a central console area with a grid of 10 columns and 4 rows. The rows are labeled on the left as follows:

- Primary
- Life Support
- Drive
- Hangar Deck
- Missile Bay
- Continuous

On the right side of the grid, the positions are labeled as follows:

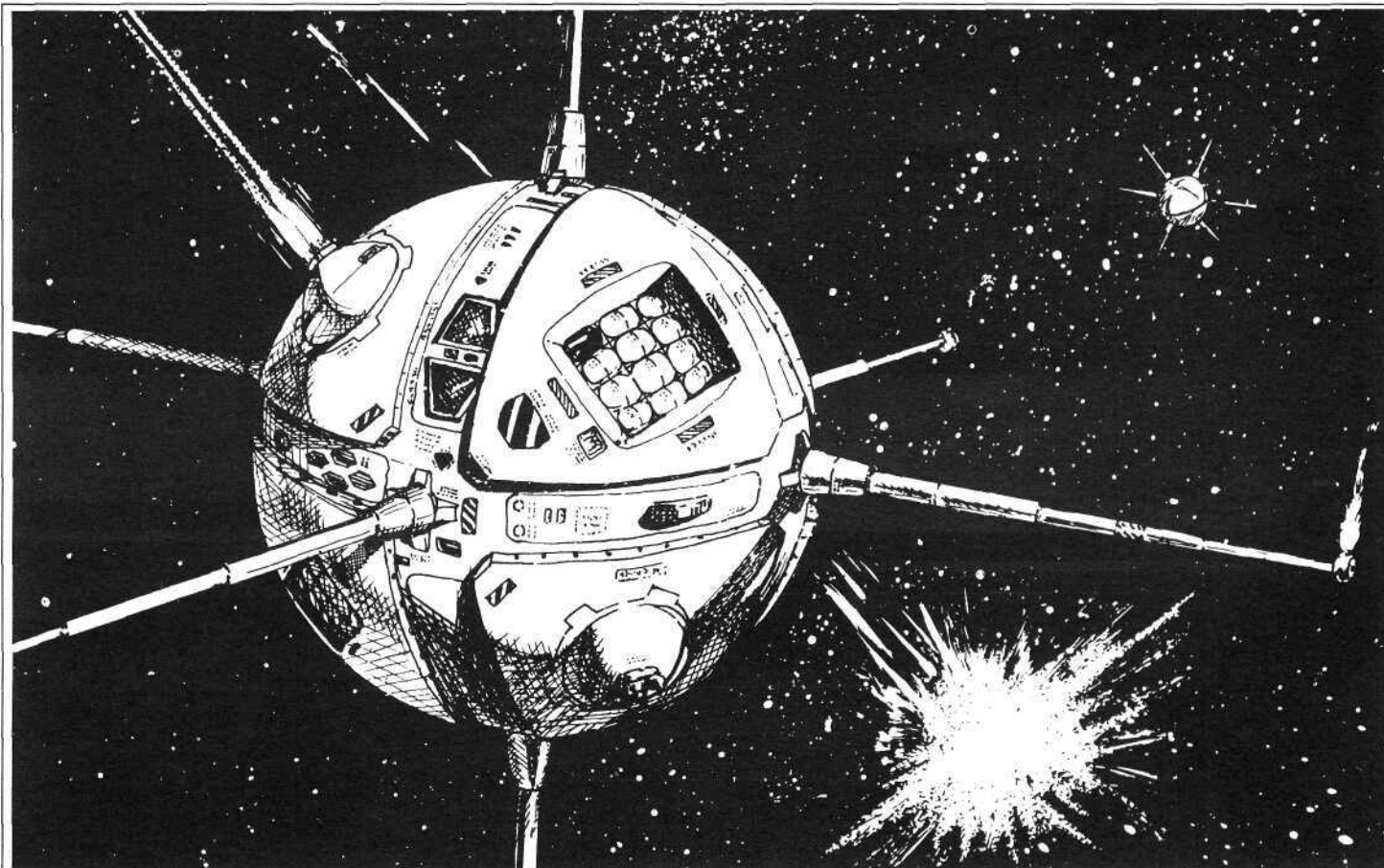
- Computer
- Active Operator
- Passive Operator
- Engineer
- Navigator
- Communications
- Tactical Action Center
- Bridge

The diagram shows the relative positions of the various stations and the central console area.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16



(record ordnance load and type)



English *Donovan-class* Fighter

Original Date of Design: June 5, 2213

First Example Laid Down: August 6, 2215

First Example Completed: February 29, 2216

Fleets of Service: Great Britain

The *Donovan-class* fighter was originally built to police the inner portion of the solar system. Fighters of this type were maintained at stations orbiting Earth and other inner planets; they have no planetary takeoff or landing capabilities. From these orbiting stations, *Donovan-class* fighters could be scrambled quickly to deal with acts of piracy or smuggling, and they packed enough of a punch to be of use in wartime as well.

As the years passed and new types of fighter were built, many of the *Donovan-class* ships were scrapped. A good number were shipped to British colonies along the French Arm, however, where they served in security forces.

A few unusual features about this fighter are worth noting. First, each carries 24 missiles, in two groups of 12. Rather than provide each group of missiles with one exit port—the standard configuration for missile-carrying fighters—each missile on a *Donovan-class* fighter has its own, separate bay. This means that any number of the missiles, from one to 24, may be fired at once. Historically, when fighting in the company of larger ships, *Donovan-class* fighters would rush in close to an enemy, fire off their entire load of missiles, and retreat behind their larger allies.

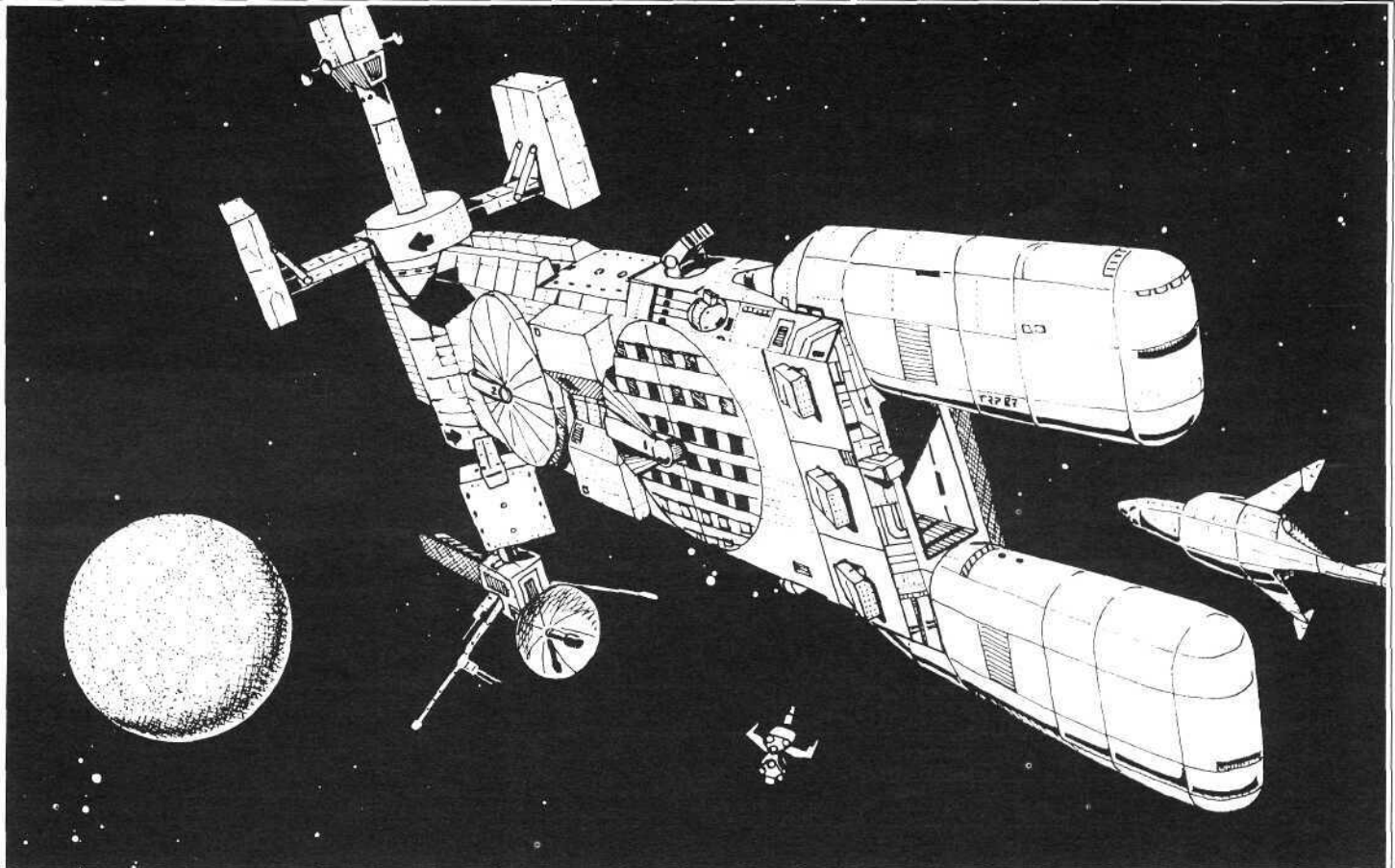
A second unusual feature is the maneuvering thrusters on the ends of extensible arms. With the increased leverage provided by the length of these arms, *Donovan-class* fighters are able to make very precise maneuvers while travelling at very high speeds. For quicker, less accurate, maneuvers, thrusters are also built into the main hull.

Crew: one pilot and one weapons officer.

PERFORMANCE CHARACTERISTICS

Warp Efficiency: 2.96 (2.52 loaded), *Power Plant:* 10 MW MHD Turbine, *Fuel:* 14 tons, sufficient for 15 hours of operation, *Range:* NA, *Mass:* 640 tons (1036.9 loaded), *Cargo Capacity:* 132.30 m³, *Comfort:* 0, *Total Life Support:* 2, *Ordnance:* 24 Ritage-1 missiles *Price:* Lv26,328,000

Crew
Quality



German *Bismark*-class Battlecruiser

Original Date of Design: September 21, 2293

First Example Laid Down: July 3, 2294

First Example Completed: April 19, 2298

Fleets of Service: Germany

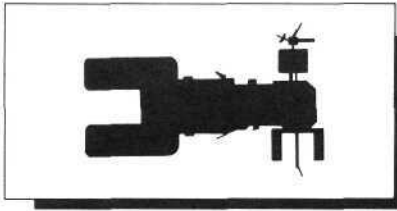
The first ship laid down by the reunified German state for service with the Deutsches Stern Kriegsmarine (DSKM) was the battlecruiser *Bismark*, named in honor of the first architect of the original unified German state. Equipped with the potent and business-like little Gustav fighters, and capable of landing considerable numbers of troops, the *Bismark* fills a clear gap in the DSKM's power projection capability. Unlike the similar (but larger) *Richelieu*-class battleship of French navy, the *Bismark* was never intended to operate independently. Rather it is intended as the core of a potent strike squadron capable of tackling any likely fleet mission. It currently is the flagship of the German squadron engaged against the Kafers. Two additional ships of this type have been laid down, but neither have yet been named and are well over a year from completion.

Crew: Bridge: 22, Tactical Action Center: 26, Engineering: 23, Shipboard Vessels: 21, Ship's Troops: 420, Medical: 18.

PERFORMANCE CHARACTERISTICS

Warp Efficiency: 2.75, *Power Plant:* 150 MW Fusion, *Fuel:* NA, *Range:* 7.7, *Mass:* 25,720 tons, *Cargo Capacity:* none, *Comfort:* 0, *Total Life Support:* 516, *Ordnance Carried:* 24 SR-10 missiles, *Price:* Lv465,000,000

Ship Status Sheet



Bismark

Ship Name

Battlecruiser

Ship Type

Germany

Owning Nation or World

Movement

6

Screens

5

Radiated
Signature4⁽⁷⁾Radial
Reflected

8

Lateral
Reflected

7

Targeting Computer

+2

Radial Profile

+ 2

Lateral Profile

+ 2

Armor

6

Hull Hits

Category	Count
Minor	40
Major	60

Power Plant Hits

[illegible]

Surface Fixture Hits

—Weapons—

1. $\times 3 - 2$

2. $\times 3 - 2$

3. $\times 3 - 2$

4. $\times 3 - 2$

5. $\times 3 - 2$

6. $\times 3 - 2$

7. $\times 2 + 1 \text{ dbl}$

8. $\times 2 + 1 \text{ dbl}$

9. $\times 2 + 1 \text{ dbl}$

10. $\times 2 + 1 \text{ dbl}$

11. _____

12. _____

—TTAs and Submunitions—

1. TTA

2. TTA

3. TTA

4. TTA

5. TTA

6. TTA

7. Communicator

8. Communicator

9. _____

10. _____

11. _____

12. _____

13. _____

14. _____

15. _____

16. _____

17. _____

18. _____

19. _____

20. _____

21. _____

22. _____

—Active Sensors—

Primary

Redundant

10

—Passive Sensors—

Primary

Redundant

6

Critical Hits

The diagram illustrates the Main Deck layout of the USS Zumwalt (DDG 1000). It features a grid-based representation of the ship's deck, divided into various functional areas. The areas are labeled as follows:

- Primary**: A single square at the top left.
- Computer**: A row of six squares below Primary.
- Life Support**: A 2x4 grid of squares below Computer.
- Drive**: A single square below Life Support.
- Hangar Deck**: A 2x4 grid of squares below Drive.
- Missile Bay**: A 2x4 grid of squares below Hangar Deck.
- Continuous**: A single square at the bottom left.
- Active Operator**: A single square in the middle row, first column.
- Passive Operator**: A single square in the middle row, second column.
- Remote**: A single square in the middle row, third column.
- Tactical Action Center**: A row of four squares in the middle row, fourth to seventh columns.
- Captain**: A single square in the bottom row, first column.
- Navigator**: A single square in the bottom row, second column.
- Communications**: A single square in the bottom row, third column.
- Bridge**: A row of four squares in the bottom row, fourth to seventh columns.

Damage Control

[illegible]

Ordnance

(record ordnance load and type)

Crew

Comfort	0
Crew Quality	

French Richelieu-class Battleship

Original Date of Design: November 11, 2284

First Example Laid Down: August 21, 2285

First Example Completed: June 16, 2293

Fleets of Service: France

By the middle years of the Central Asian War, the French Navy was solidly committed to the so-called "big ship" concept pioneered by the Suffren-class missile cruisers. Having proven themselves time and again as valuable independent units or as the core of a task force, large powerful ships were what the line admirals demanded more than anything else. Considerable war losses also necessitated a renewed building program which mostly concentrated on proven designs. However, a naval requirement was also issued for a truly massive ship capable of carrying out deep raids into enemy territory.

The basis of the requirement was for a vessel superior to the Suffren class in its ability to operate for extended periods away from friendly maintenance and able to take on a wider variety of combat missions by itself. The requirement to operate away from friendly repair yards meant that the vessel would either have to be able to absorb and repair considerable amounts of battle damage or avoid suffering damage in the first place. Since its expanded combat capability by necessity required a larger ship, simple speed and stealth characteristics were not considered an adequate solution. Armor and shields fulfilled part of the requirement, but the principal solution adopted was to concentrate much of the ship's offensive power in six fighter craft which, while valuable in their own right, could theoretically keep a superior enemy at bay and preserve the mother ship from crippling damage.

In addition to its considerable fighter complement, the vessel carried nine small armed troop landers, each capable of transporting two squads of infantry or one armored personnel *earner*. For armament the ship included 30 jack turrets, each with a single laser. The turrets were controlled from 16 target tracking arrays.

When the Central Asian War ended in 2287 the *Richelieu*, as it was by then named, remained incomplete in orbit over Tirane, and had been extensively damaged by a successful Manchurian commando-style raid in 2286. During the post-war European recession, work on the *Richelieu* was repeatedly delayed by budgetary constraints and some of the money appropriated was apparently diverted to other projects by the Rouchard-Ligget Cartel responsible for its construction. When the War of German Reunification broke out in 2292, the French navy was caught poorly prepared and short of serviceable ships, and a panic crash construction program was instituted. As equal priority was given to all ships currently under construction, few new vessels were actually commissioned prior to the cessation of hostilities in mid-2293, and the *Richelieu* remained incomplete. However, it was now sufficiently close to completion that work continued and the *Richelieu* joined the fleet shortly before Christmas.

For all of the care lavished on the vessel, the design was quickly found to be deficient in a number of areas. The defensive armament of the ship was considered inadequate and the armed landers, designed by the now-defunct Rouchard-Ligget Cartel, had many troublesome teething problems which have never been completely overcome. A second vessel of the *Richelieu* class had been laid down in 2287, and a third in 2288, but little progress had been made on either. These two vessels were now christened, *Ste. Jeanne D'Arc* and *Tallyrand*, but were completed with considerable modifications and are considered a separate class of vessel. The most important modifications are:

The 16 TTA installations have been replaced with 16 additional jack turrets.

All 36 jack turrets are now rebuilt as double turrets with UTES capability.

Part of the cargo hold has been converted to a missile bay for 16 Ritage-1 (since upgraded to Ritage-2) missiles.

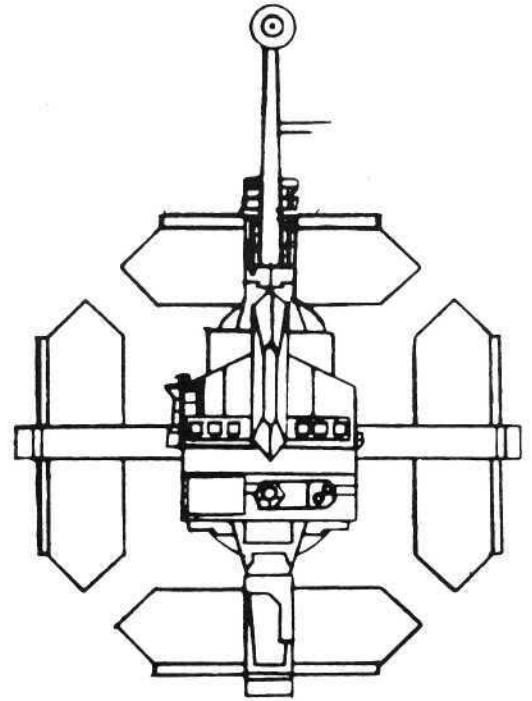
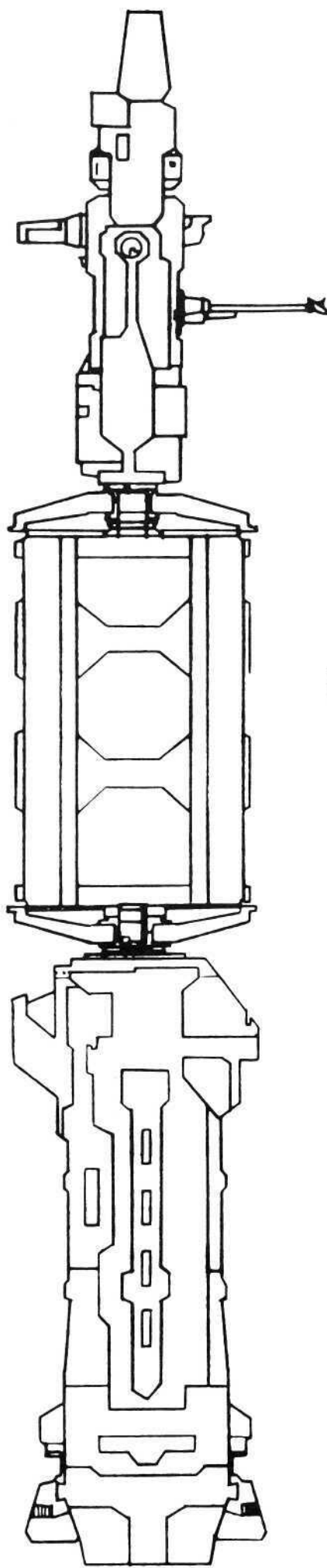
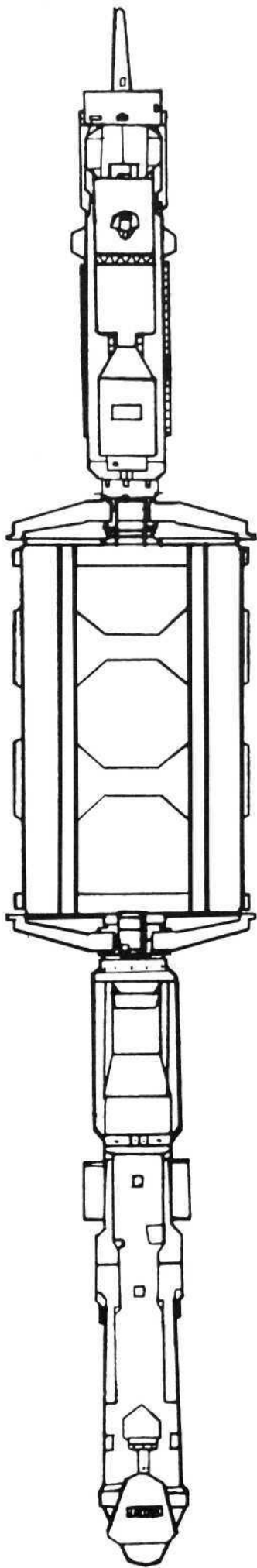
The hangar decks have been redesigned to accept six large standard landers, the same type as used by the Suffren-class cruisers, in place of the nine smaller vessels carried by the *Richelieu*.

Since their completion the two ships of the *Ste. Jeanne D'Arc*-class have seen considerable action against the Kafers (the *Ste. Jeanne D'Arc* was lost with all hands at the First Battle of Tithonus), but the *Richelieu* has yet to see action. It is currently stationed at Beta Canum Venaticorum and flies the flag of Vice Admiral Jean Baptiste d'Aumont, commander of the Third French Fleet. It is rumored that it is currently having its drives overhauled and is having a missile bay installed in the cargo bays. In the mean time it is serving as a tender for a variety of fighter craft tasked with defending the Beta Canum system.

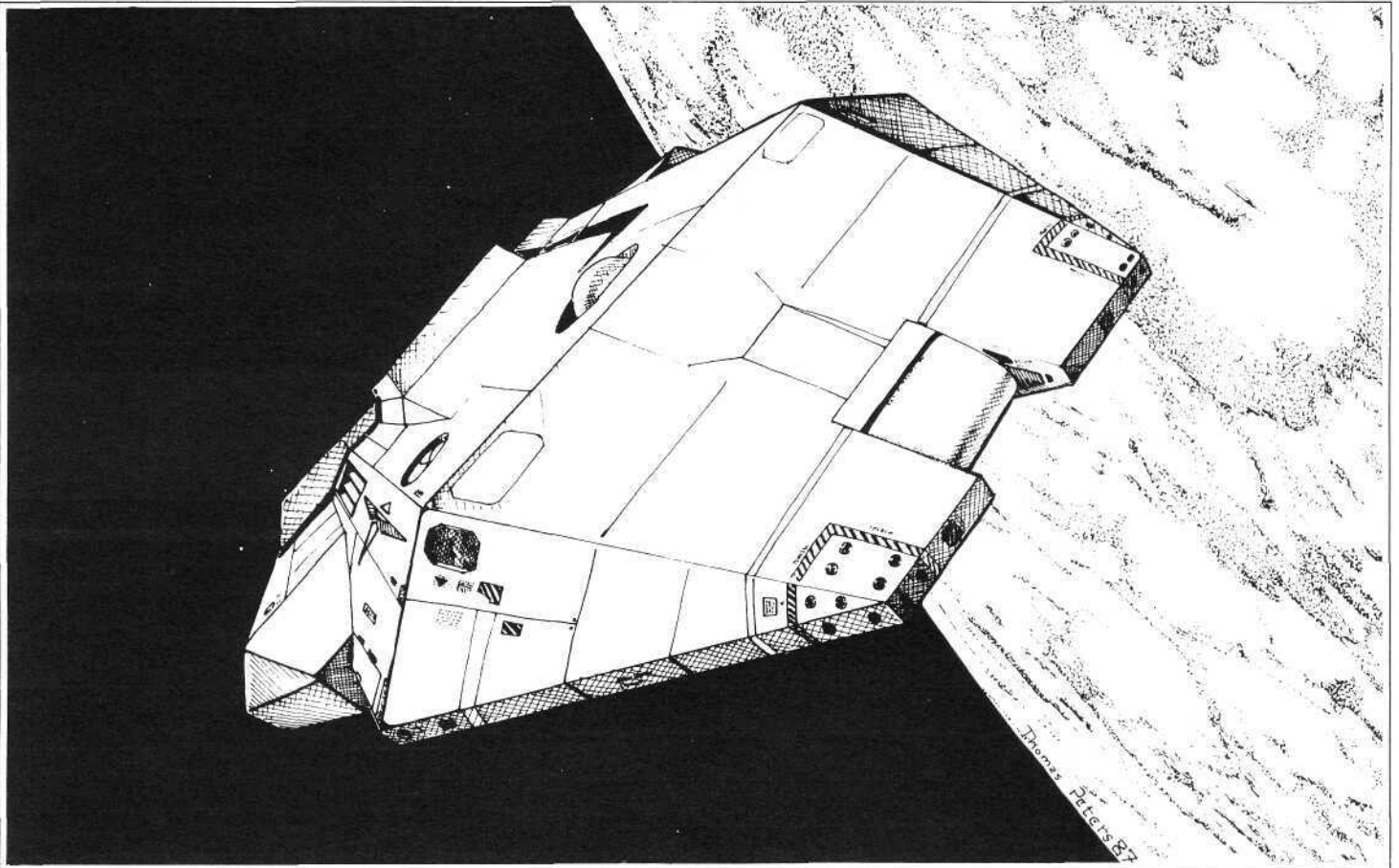
Crew: Bridge: 34, *Tactical Action Center:* 60, *Engineering:* 56, *Shipboard Vessels:* 24, *Ship's Security:* 50, *Ship's Troops:* 1041, *Steward:* 5, *Scientific:* 20, *Medical:* 100.

PERFORMANCE CHARACTERISTICS

Warp Efficiency: 2.97 (2.33 loaded), *Power Plant:* 415 MW Fusion, *Fuel:* NA, *Range:* 7.7, *Mass:* 61,262.24 tons (126,448.64 tons loaded), *Cargo Capacity:* 21,728 m³, *Comfort:* 0, *Total Life Support:* 3200, *Ordnance Carried:* 16 Ritage-2 missiles, *Price:* Lv523,770,000 (without vehicles; with vehicles approximately MLv1000)



Crew
Quality



Commercial Ships

Civilian *Commercant-class*

Original Date of Design: August 23, 2245

First Example Laid Down: December 18, 2247

First Example Completed: March 3, 2249

The *Commercant-class* drop-cargo *earner* is a design common to the French Arm. There are literally hundreds of the ships in service, virtually all owned and operated in the private sector.

Drop-cargo has several advantages on the frontier, though more so fifty years ago than today. When many colony worlds could not support their own regular interface transportation, goods could not be easily transported to them from the core. Most merchant vessels were simply not adapted to getting cargo to the surface of a colony world.

The *Commercant* filled this gap, transporting a cargo module which could be simply dropped to the surface of any atmosphere-present world. The module contains a retro-rocket package, heat resistant hull materials, and parachutes to bring its cargo safely to the surface from orbit. Though the module itself is fairly expensive at Lv950,000 a copy, the drop-cargo approach was hailed as a boon to struggling colony worlds. Also, the cargo module is collapsible after use and is somewhat reusable, provided another vessel can bring the collapsed version out of the gravity well.

The *Commercant* itself is a cramped vessel which can take up to six passengers. Unloaded, the ship can make fairly good time, but when towing a loaded cargo module it is slowed to a more standard speed for cargo vessels.

Crew: Bridge: 10, Engineering: 3, Shipboard Vessels: 1.

PERFORMANCE CHARACTERISTICS

Warp Efficiency: 2.07 (1.26 loaded), *Power Plant:* 3 MW MHD Turbine, *Fuel:* 600 tons, sufficient for two weeks of operation, *Range:* 7.7, *Mass:* 1018 tons (4577 tons loaded), *Cargo Capacity:* none integral, 3267 m³ if carrying a drop-module, *Comfort:* - 1, *Total Life Support:* 20, *Price:* Lv4,529,000 (without drop-module)

Ship Status Sheet



Commercant
 Ship Name _____
Drop Cargo Carrier
 Ship Type _____
France(Civilian)
 Owning Nation or World _____

Movement	3	Radial Reflected	6	Radial Profile	-1
Screens	0	Lateral Reflected	8	Lateral Profile	+1
Radiated Signature	3	Targeting Computer	0	Armor	0

Hull Hits

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Minor Major																													

Power Plant Hits

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Inoperable																													

Surface Fixture Hits

—Weapons—												—TTAs and Submunitions—																	
1. _____	2. _____	3. _____	4. _____	5. _____	6. _____	7. _____	8. _____	9. _____	10. _____	11. _____	12. _____	13. _____	14. _____	15. _____	16. _____	17. _____	18. _____	19. _____	20. _____	21. _____	22. _____	23. _____	24. _____	25. _____	26. _____	27. _____	28. _____	29. _____	30. _____
—Active Sensors—						—Passive Sensors—																							
Primary						Primary																							
Redundant						Redundant																							

Critical Hits

—Computer—												—Tactical Action Center—											
Primary												Active Operator											
												Passive Operator											
—Life Support—																							
—Drive—																							
—Hangar Deck—																							
—Missile Bay—																							
—Continuous—																							
												—Bridge—											
												Captain											
												Engineer											
												Navigator											
												Computer											
												Communications											

Damage Control

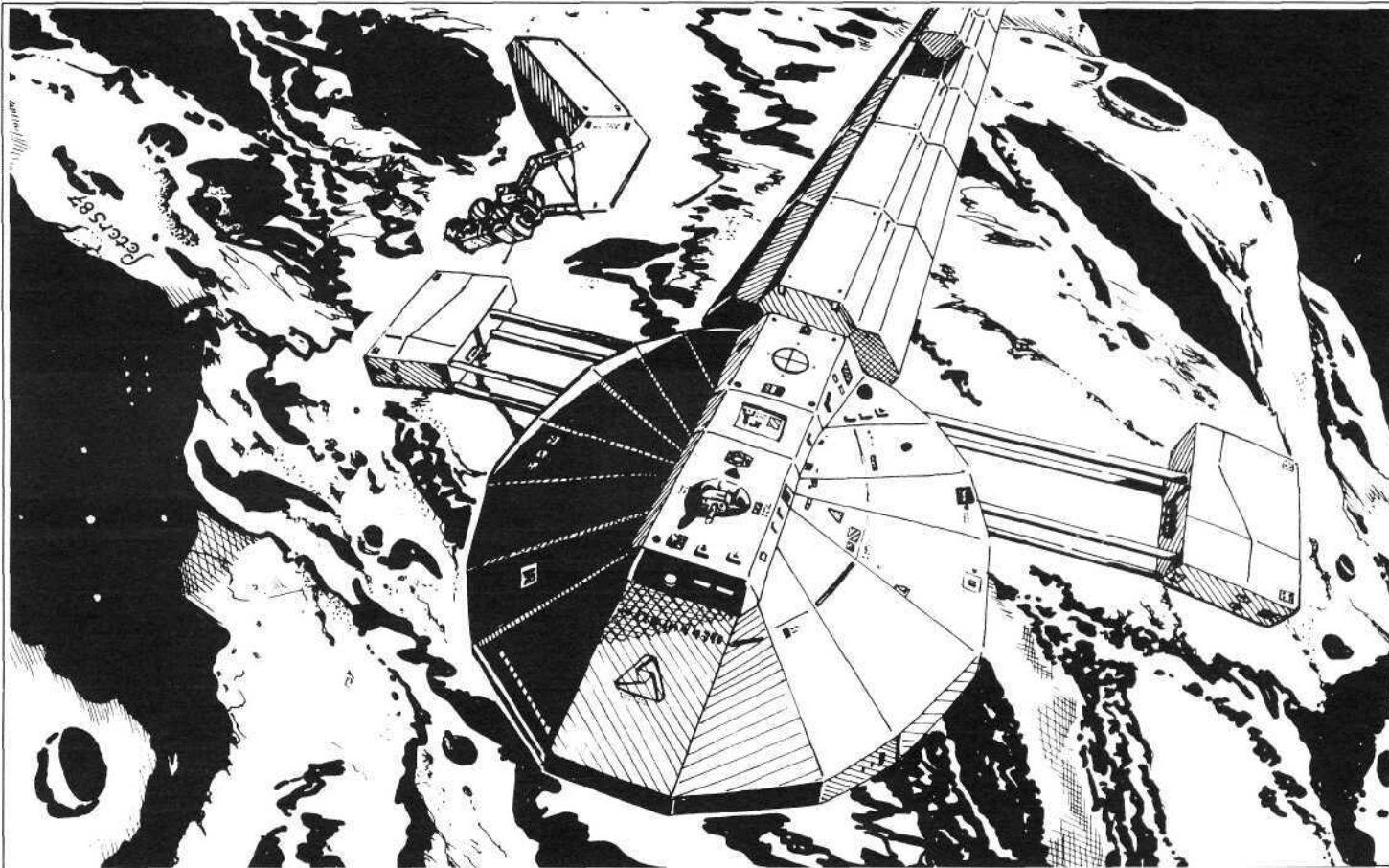
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

Ordnance

(record ordnance load and type)

Crew

Comfort	-1
Crew Quality	



French *Metal* Modular Freighter

Original Date of Design: October 15, 2215

First Example Laid Down: June 1, 2217

First Example Completed: January 22, 2219

During the French crisis of resources (which occurred during the first and second decades of the 23rd Century), a tremendous effort was made to mine the outer systems of the worlds where France had a significant interest. Even the great African reserves of metals were insufficient for France's still ambitious national expansion policies, so they turned to their extraterrestrial holdings for exploitation.

Moving considerable amounts of ore back to France's earthly processing plants and industry became as big a project as mining the materials themselves. Ships of that capacity simply didn't exist at that time, so new models had to be developed. The *Metal* design takes advantage of cargo modules which can be collected from different sites as the ship makes a scheduled journey through the outer systems. The ship can haul up to 72 modular containers with over 55,000 m³ of material at one time, albeit very slowly. When fully loaded, a *Metal* can take over two weeks to travel between stars on the Arm.

The cargo modules designed for the *Metal* are now out of date, but can still be found on worlds where the few remaining vessels call. The *Metal* is restricted generally to asteroid belts and vacuum worlds, as it is unstreamlined and has no means of moving modules to and from atmosphere-present worlds. The *Metal* has two module manipulator craft, commonly referred to as "grabbers" which are housed in extended bays on either side of the vessel. The grabbers can move one loaded module at a time, placing them into one of the nine positions available in each of the eight rows behind the main portion of the ship.

There are three *Metal*-class ships still in the service of the French government. One other ship has been sold off to Truax corporation where it is used for heavy ore shipments between Xi Ursae Majoris and the inner systems.

Each module masses 37.5 tons and costs Lv150,000.

Crew: Bridge: 10, Tactical Action Center: 2, Engineering: 3, Shipboard Vessels: 2.

PERFORMANCE CHARACTERISTICS

Warp Efficiency: 1.71 (0.59 loaded), *Power Plant:* 4 MW MHD Turbine, *Fuel:* 1600 tons, sufficient for four weeks of operation, *Range:* 7.7, *Mass:* 2449.51 tons (58,609.51 tons with a standard load), *Cargo Capacity:* 742.5 m³ per module carried (up to maximum of 72), *Comfort:* - 1, *Total Life Support:* 1 7, *Price:* Lv7,685,000

--	--



German Krupp 821 Cargo Carrier

Original Date of Design: August 14, 2234

First Example Laid Down: January 3, 2236

First Example Completed: September 12, 2236

The mining of vacuum worlds presents many unique problems to be overcome. Workers have to be provided with air to breathe, and they must be protected from harmful radiation which an atmosphere would otherwise block. But getting from surface to orbit is quite a bit simpler without the friction of an atmosphere to contend with. Spacecraft need not concern themselves with extensive streamlining to make planetfall on vacuum worlds and can do so with only the benefit of thrusters.

The firm, Krupp Architects, designed and supervised the construction of their model 821 in the mid-2230s. The cargo earner design itself is rather small, only capable of hauling approximately 12,000 tons of ore at one time. However, the needs of any one particular mine site rarely exceed that amount in any period of months, and a single 821-size vessel making calls frequently was often preferable to a single large ship making calls only once every year or so.

The 821 has thrusters which allow it to make orbit-planet-orbit transition on vacuum worlds. When landed on its tripod gear, the ship stands over eighteen meters tall, is roughly ten meters wide and over 30 meters long. The three large cargo doors (one port, one starboard, and one aft) allow sufficient access to the spacious cargo area in the rear of the vessel. The crew quarters and bridge are located forward, and engineering and fuel storage is located in the lower bow of the ship.

The German government has purchased over twenty 827s from Krupp. Several civilian firms also operate 827s despite their relative age. 827s have been used throughout the French Arm, most

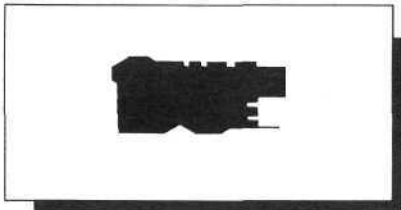
notably in service during the material lift to begin the German outpost in the Augereau system in the late 2260s.

Crew: Bridge: 10, Engineering: 3, Medical: 1.

PERFORMANCE CHARACTERISTICS

Warp Efficiency: 1.53 (0.62 loaded), *Power Plant:* 1 MW MHD Turbine, *Fuel:* 200 tons, sufficient for 2 weeks of operation, *Range:* 7.7, *Mass:* 843.7 tons (1 2,693.7 tons loaded), *Cargo Capacity:* 3950 m³, *Comfort:* 0, *Total Life Support:* 14, *Price:* Lv3,337,000

Ship Status Sheet



Krupp 821
Ship Name
Cargo Carrier
Ship Type
Germany
Owning Nation or World

Movement	1	Radial Reflected	5	Radial Profile	-1
Screens	0	Lateral Reflected	7	Lateral Profile	0
Radiated Signature	1	Targeting Computer	0	Armor	0

Hull Hits

Minor
Major

Power Plant Hits

Inoperable

Surface Fixture Hits

1. 2. 3. 4. 5. 6.

7. 8. 9. 10. 11. 12.

13. 14. 15. 16. 17. 18.

—Weapons—

1. 2. 3. 4. 5. 6.

7. 8. 9. 10. 11. 12.

13. 14. 15. 16. 17. 18.

—TTAs and Submunitions—

1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11.

12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22.

—Active Sensors—

Primary
Redundant

—Passive Sensors—

Primary
Redundant

Critical Hits

Primary

—Computer—

—Life Support—

—Drive—

—Hangar Deck—

—Missile Bay—

—Continuous—

Active Operator
Passive Operator

Captain
Navigator
Communications

Engineer
Computer

—Tactical Action Center—

—Bridge—

Damage Control

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

Ordnance

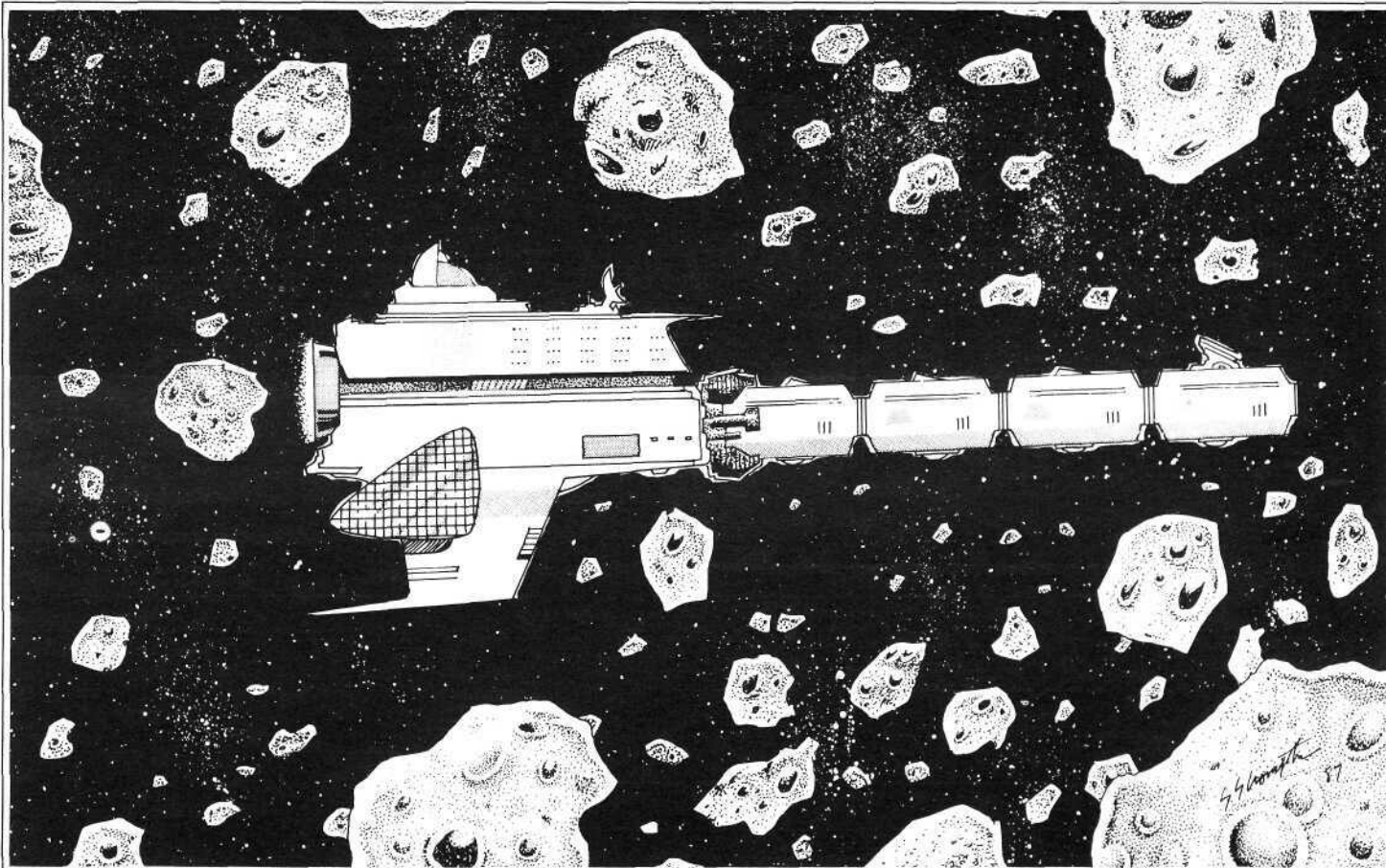
(record ordnance load and type)

Crew

Comfort

0

Crew Quality



Manchurian *Shenyang* Freighter

Original Date of Design: December 12, 2198

First Example Laid Down: August 23, 2201

First Example Completed: March 10, 2203

Manchurian interests in the French Arm have been traditionally limited. Today, the so-called Chinese Arm is dominated by Manchuria, and their colonies and outposts permeate the pillar of stars just in the positive direction along the x-axis from Sol. However, the route to those stars is tenuous, passing through such systems as Broward and Serurier on the long path from Sol.

As a result, Manchurian colonies tend to be younger than most, and the nation's material needs grew out of proportion to the ability of those colonies to fill them. So, Manchuria contracted with several older colonies along the French Arm for grain and ore shipments, and they sent their own ships in to make the long journey either back to Sol or further out to the Chinese Arm. One ship design dedicated to this task was the *Shenyang*.

Designed over a century ago, the *Shenyang* shows all the signs of being a Manchurian vessel. It is powered by a single, large fission power plant which requires a rather large engine crew to keep in operation. The accommodations are considered spacious by most Manchurian crews, but serve as only adequate to the frontier crews using them today. Unfortunately, the *Shenyang* has no interface capacity and must rely on local interface vehicles for loading and unloading of cargo.

The cargo hold of the *Shenyang* is set at 3389 m³, which can haul about 10,000 tons of raw materials, such as grain or metal ores.

The Manchurians have since ended their contracts for most materials from the French Arm. In the 2250s their government put several *Shenyang* vessels up for sale, and a few were purchased

by small, independent trading companies. At the time, the ships were very inexpensive and the ideal solution to the "big ticket" problems faced by most struggling small businesses.

Crew: Bridge: 10, Engineering: 17, Medical: 2.

PERFORMANCE CHARACTERISTICS

Warp Efficiency: 3.34 (1.73 loaded), *Power Plant:* 20 MW Fission, *Fuel:* NA, *Range:* 7.7, *Mass:* 1637.7 tons (11,803.7 tons loaded), *Cargo Capacity:* 3389 m³, *Comfort:* 0, *Total Life Support:* 29, *Price:* Lv14,138,000

Shenyang

Owning Nation or World

3

C

5

5

10

0

-1

 $+1$

0



Minor
Major

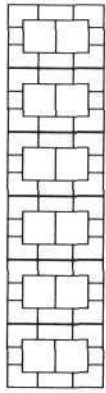


Inoperable

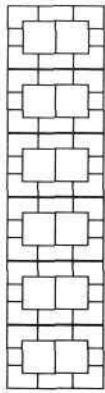


—Weapons—

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____



7. _____
8. _____
9. _____
10. _____
11. _____
12. _____



13. _____

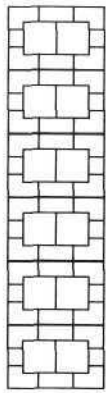
14. _____

15. _____

16. _____

17. _____

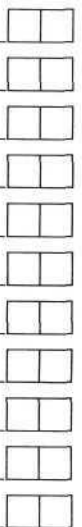
18. _____



1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____

—TTAs and Submunitions—

12. _____
13. _____
14. _____
15. _____
16. _____
17. _____
18. _____
19. _____
20. _____
21. _____
22. _____



—Active Sensors—



Primary
Redundant

—Passive Sensors—



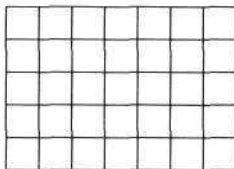
Primary
Redundant

—Computer—

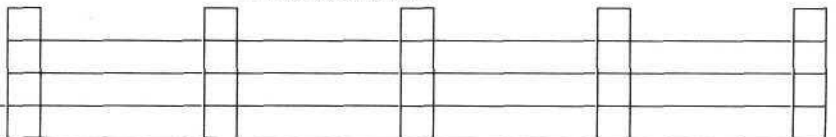
Primary



- Life Support—
- Drive—
- Hangar Deck—
- Missile Bay—
- Continuous—

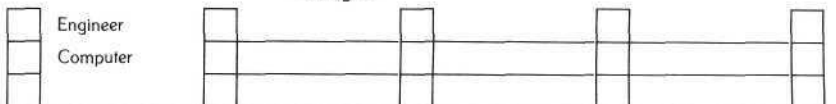


Active Operator
Passive Operator



Captain
Navigator
Communications

Engineer
Computer



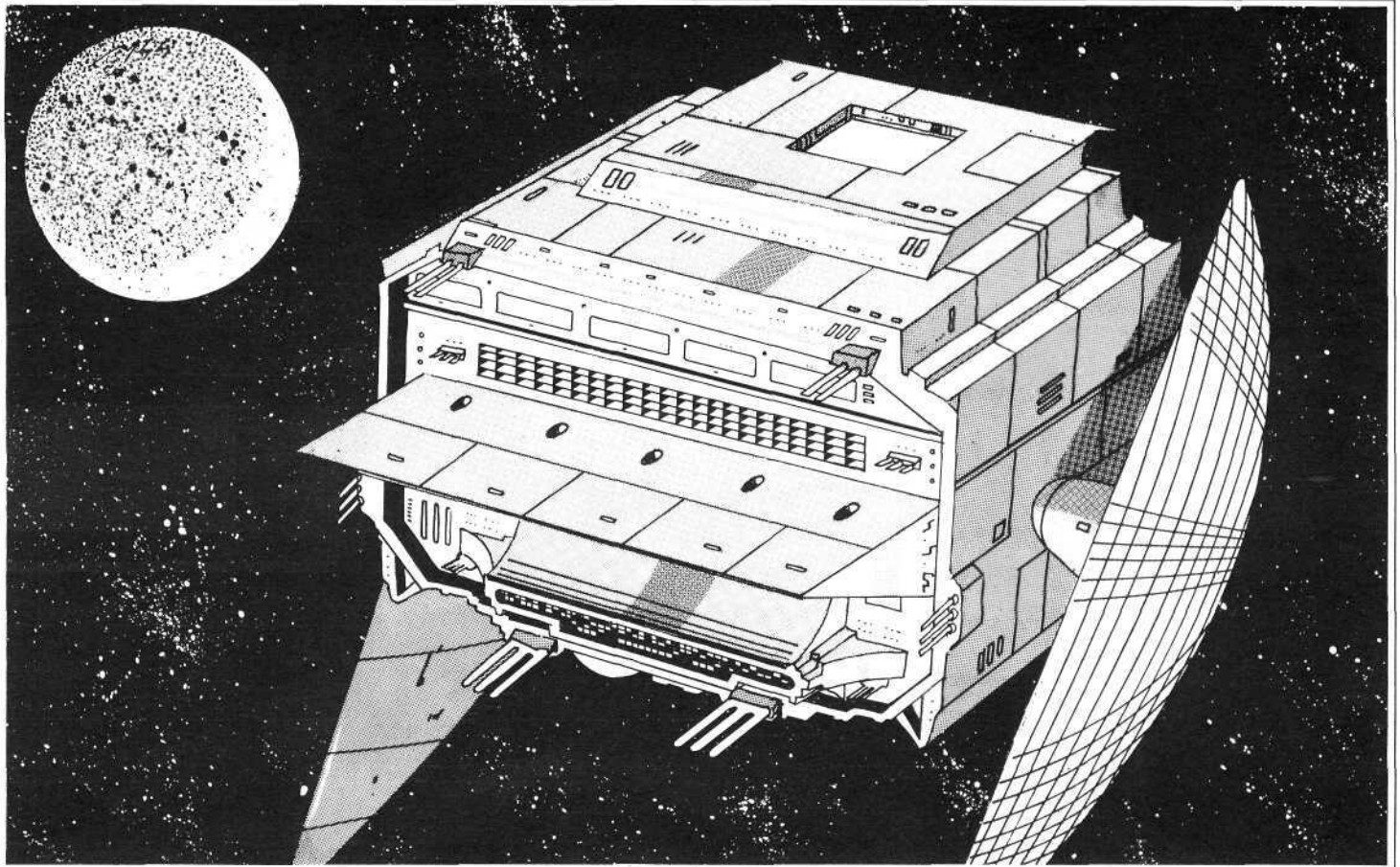
Crew

(record ordnance load and type)

Comfort

Crew
Quality

0



Nigerian *Maiduguri*-class Freighter

Original Date of Design: October 30, 2243

First Example Laid Down: December 15, 2245

First Example Completed: March 3, 2247

The *Maiduguri*-class cargo ship, the first interstellar ship designed and built by Nigerian Industries, was itself an attempt to compete with other cargo freighters on the market. Their attempt was not entirely successful as foreign competitors were able to produce ships in quantity which were much less expensive than those the newer Nigerian firm could turn out, but several of their vessels did find their way into service with shipping companies along the Chinese and French Arms.

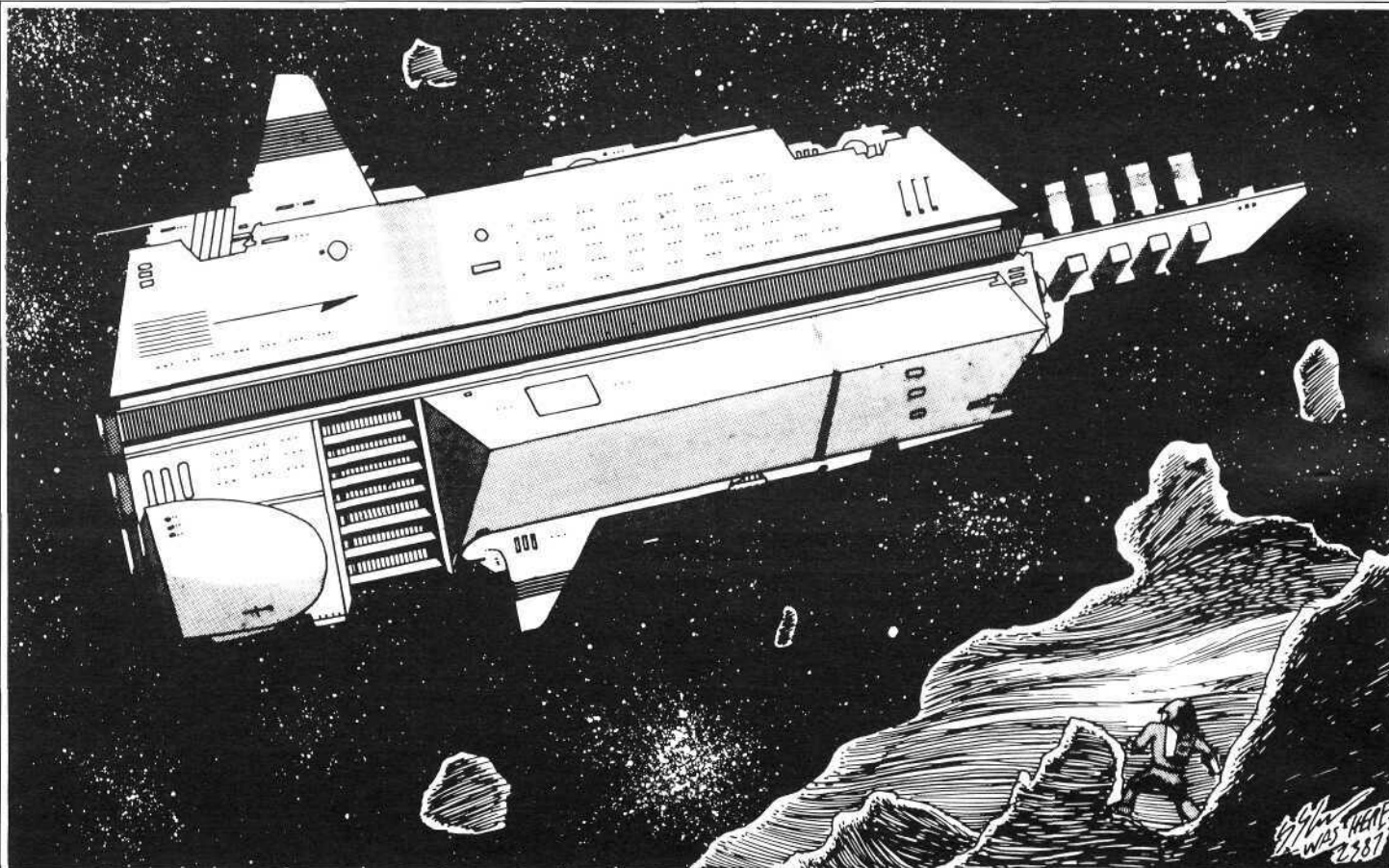
Unfortunately, since the *Maiduguri* has no spin capability, its less than spacious living accommodations make it an unattractive choice for passengers. As a result, its twenty-passenger limit often travels at less than capacity. But, on the other hand, the *Maiduguri* benefits from having a powerful fission power plant which allows the ship to travel at much greater than normal speeds for a cargo carrier and to ignore refueling which can slow a fuel cell- or MHD-driven ship. In fact, with a standard load warp efficiency of 1.36, the *Maiduguri* is one of the quickest freighters in space.

The *Maiduguri* is not streamlined, has no additional thrusters installed, and is, therefore, dependent upon local interface transport.

Crew: Bridge: 10, Engineering: 12, Ship's Security: 5, Stewards: 2, Medical: 2.

PERFORMANCE CHARACTERISTICS

Warp Efficiency: 2.95 (1.36 loaded), *Power Plant:* 15 MW Fission, *Fuel:* NA, *Range:* 7.7, *Mass:* 1786.3 tons (17,981.2 tons loaded), *Cargo Capacity:* 5398.2 m³, *Comfort:* -2, *Total Life Support:* 51, *Price:* Lv12,745,000



Canadian *Hudson-class* Cargo Carrier

Original Date of Design: September 12, 2250

First Example Laid Down: November 9, 2251

First Example Completed: July 4, 2252

The Canadian expansion into space has been a fairly recent one. Their outposts and colony were established in the 2250s, 2260s and 2270s, mostly on the fringes of the accessible Chinese Arm. The Canadian parliamentary panels concerned with stellar exploration during the 2250s recognized and dealt with the absolute lack of domestic vessels with which to exploit their share of near space. A committee was delegated to the construction of a Canadian fleet of transport vessels which could move both colonists and materials from Earth to new territories to be found in the future. Two ships came from that committee's efforts. The colonization vessel, the *Westerner*, has fallen into disuse. However, several examples of the *Hudson-class* cargo vessel can still be found working throughout human-occupied space.

The *Hudson* has been the workhorse of Canadian stellar expansion. It was used extensively during the construction of the outpost at DM +19 5116 and ferried supplies from Canada to the colony on DM+ 20 5046 for over a decade while the colonists were trying to take hold on that planet. The ship is serviceable and rugged, attested to by the fact that several of them are still operating without major mechanical overhauls.

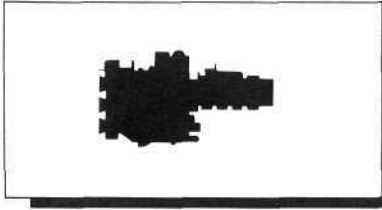
The *Hudson* is constructed with a basic metallic hull, has little in the way of sensory apparatus, and offers no frills to its crew. The large cargo area dominates the vessel along with fuel tankage which can last the ship several weeks on the long trek between Earth and the outlying worlds.

Crew: Bridge: 10, Engineering: 3, Shipboard Vessels: 1, Ship's Security: 5, Stewards: 3, Medical: 3.

PERFORMANCE CHARACTERISTICS

Warp Efficiency: 1.36 (0.63 loaded), *Power Plant:* 3 MW MHD Turbine, *Fuel:* 1800 tons, sufficient for six weeks of operation, *Range:* 7.7, *Mass:* 3618 tons (36,189 tons loaded), *Cargo Capacity:* 10,857 m³, *Comfort:* -1, *Total Life Support:* 50, *Price:* Lv5,016,000

Ship Status Sheet



Hudson

Ship Name

Cargo Carrier

Ship Type

Canada

Owning Nation or World

Movement

1

Screens

O

Radiated
Signature

3

Radial
Reflected

7

Lateral
Reflected

10

Targeting Computer

0

Radial
Profile

0

Lateral Profile

+ 1

Armor

0

Hull Hits

Minor
Major

Power Plant Hits

[illegible]

Surface Fixture Hits

— Weapons —

| | |
|----------|--|
| 1. _____ | |
| 2. _____ | |
| 3. _____ | |
| 4. _____ | |
| 5. _____ | |
| 6. _____ | |

— Active Sensors —

—

Primary
Redundant

— Passive Sensors —

3

Primary
Redundant

— TTAs and Submunitions —

| | | | |
|-----------|--|-----------|--|
| 1. _____ | | 12. _____ | |
| 2. _____ | | 13. _____ | |
| 3. _____ | | 14. _____ | |
| 4. _____ | | 15. _____ | |
| 5. _____ | | 16. _____ | |
| 6. _____ | | 17. _____ | |
| 7. _____ | | 18. _____ | |
| 8. _____ | | 19. _____ | |
| 9. _____ | | 20. _____ | |
| 10. _____ | | 21. _____ | |
| 11. _____ | | 22. _____ | |

Critical Hits

The diagram illustrates the bridge layout of the USS Enterprise (NCC-1701-A). It features several key stations and their interconnections:

- Primary Computer:** A central hub at the top left, connected to the Tactical Action Center, Life Support, Drive, Hangar Deck, Missile Bay, and Continuous systems.
- Tactical Action Center:** A central hub at the top right, connected to the Primary Computer, Active Operator, Passive Operator, Captain, Engineer, Navigator, and Communications.
- Life Support:** A central hub on the left, connected to the Primary Computer and Drive.
- Drive:** A central hub on the left, connected to the Life Support and Hangar Deck.
- Hangar Deck:** A central hub on the left, connected to the Drive and Missile Bay.
- Missile Bay:** A central hub on the left, connected to the Hangar Deck and Continuous system.
- Continuous:** A central hub on the left, connected to the Missile Bay and Primary Computer.
- Active Operator:** A station connected to the Tactical Action Center and Passive Operator.
- Passive Operator:** A station connected to the Active Operator and Tactical Action Center.
- Captain:** A station connected to the Tactical Action Center, Engineer, Navigator, and Communications.
- Engineer:** A station connected to the Captain and Tactical Action Center.
- Navigator:** A station connected to the Captain and Tactical Action Center.
- Communications:** A station connected to the Captain and Tactical Action Center.

Damage Control

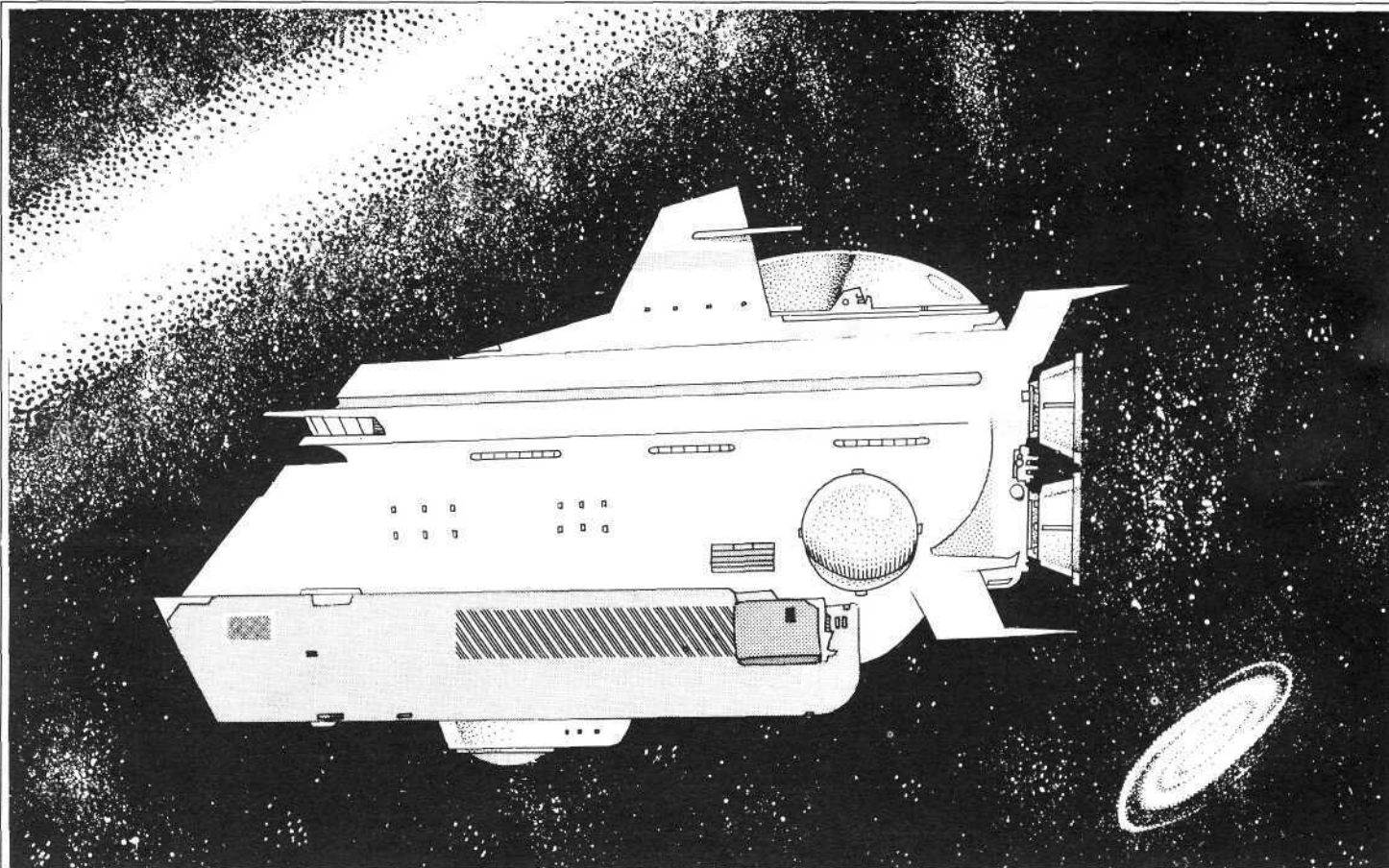
| | | | | | | | | | | | | | | | | |
|--|--|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| |  | | | | | | | | | | | | | | | |

Ordnance

(record ordinance load and type)

Crew

| | |
|--------------|----|
| Comfort | -1 |
| Crew Quality | |



French Guiana-class Freighter

Original Date of Design: June 5, 2267

First Example Laid Down: August 17, 2268

First Example Completed: March 3, 2269

As France began to once again *re-exert* itself as a dominant world power in the mid-23rd Century, many prosperous French corporations quietly rode its coattails, as it were, to advance themselves in the business community. Not the least among these corporations was the Societe Commerciale de Guyana, a mercantile firm interested in distributing its tropical produce and utilizing the cheap labor of that region. By 2260 the company had its own economic and industrial base and had become self-sufficient enough to contract the design and construction of its own ships. Using French naval construction yards (an option open only to the most influential corporations of that time), the Societe Commerciale de Guyana laid down and built its first ship, the *Guiana*, in the late 2260s.

Since these vessels would often serve as the company's "ambassadors" to space, careful consideration was given to the interior design. Though there is no spin habitat, the passenger area is quite spacious and comfortable. A pair of conference rooms are provided so that the ship can serve as a business center, and important meetings can be conducted and contracts discussed on the spot.

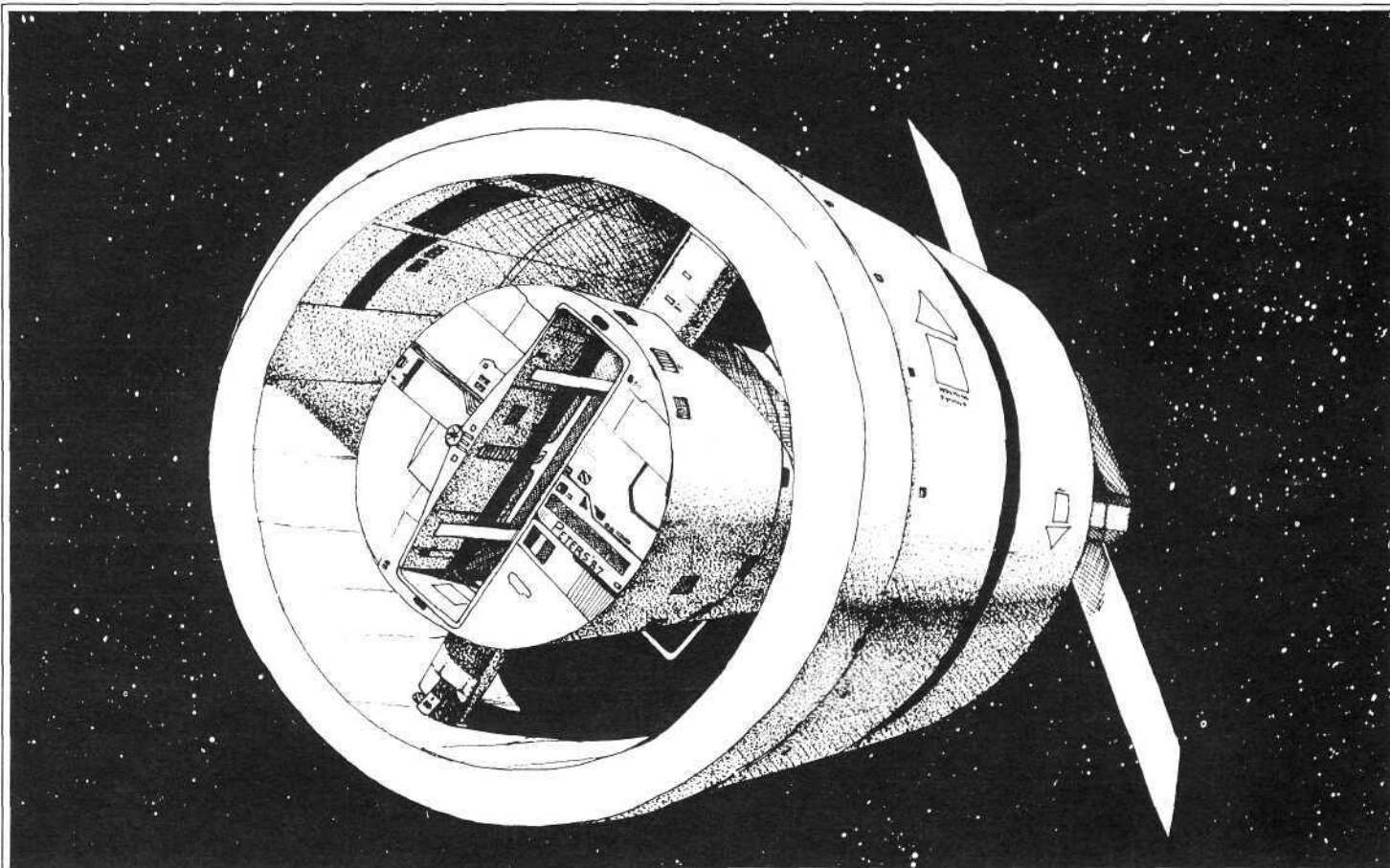
In addition, the *Guiana* is an impressive cargo carrier. Its capacity is set at 18,625 m³, and it can carry up to 20 passengers easily. The fuel tankage can allow the ship to call on several worlds before making a refueling stop.

The Societe Commerciale de Guyana built three vessels for its own uses. They are all still in company service, trading along the French Arm, flying the Tricolor and enjoying the protection of the French fleet.

Crew: Bridge: 10, Engineering: 3, Shipboard Vessels: 1, Ship's Security: 4, Stewards: 2, Medical: 2.

PERFORMANCE CHARACTERISTICS

Warp Efficiency: 1.46 (0.59 loaded), *Power Plant:* 3 MW MHD Turbine, *Fuel:* 1800 tons, sufficient for six weeks of operation, *Range:* 7.7, *Mass:* 3991 tons (59,866 loaded), *Cargo Capacity:* 18,625 m³, *Comfort:* +1, *Total Life Support:* 42, *Price:* Lv14,207,000



Brazilian Vaca-class Animal Transport

Original Date of Design: June 19, 2214

First Example Laid Down: August 31, 2214

First Example Completed: November 12, 2217

During the lull in French dominance of both Earthly and extraterrestrial affairs, many smaller nations had their chance to exert their claims to space. The Brazilians, though given a token colony on Alpha Centauri in 2184, were unable to really take advantage of the colony until nearly three decades later. Now they have established a colony in the Procyon system, which can only be reached by a long tenuous route which goes through the Chinese Arm and loops back again, and many of their older ships are being pressed into service again to supply this distant colony world.

Since about 2250, animals have been transported between worlds in embryonic states. Embryo transfer is the most economic means of moving animals. However, before embryo transfer was made completely reliable, many nations simply moved them live. The Vaca-class animal transport was Brazil's solution to this problem. Its two main spin habitats keep a large internal area in artificial gravity for animal pens and stalls. Depending upon the animal, one Vaca ship can move several thousand animals at once.

In the year 2278, as Brazil's need for animal transport and its need for population transport shifted, the Vaca was redesigned as a passenger ship. The spin habitats were adapted into small staterooms which could accommodate 600 passengers in addition to the crew. Considerable public relations were necessary, however, to convince potential colonists to travel to their new homes in what was, in effect, a converted cattle car.

A large docking bay is provided in the bow of the ship which can accommodate most interface vehicles. The Vaca has no such

vehicles of its own and relies on indigenous ships for interface work.

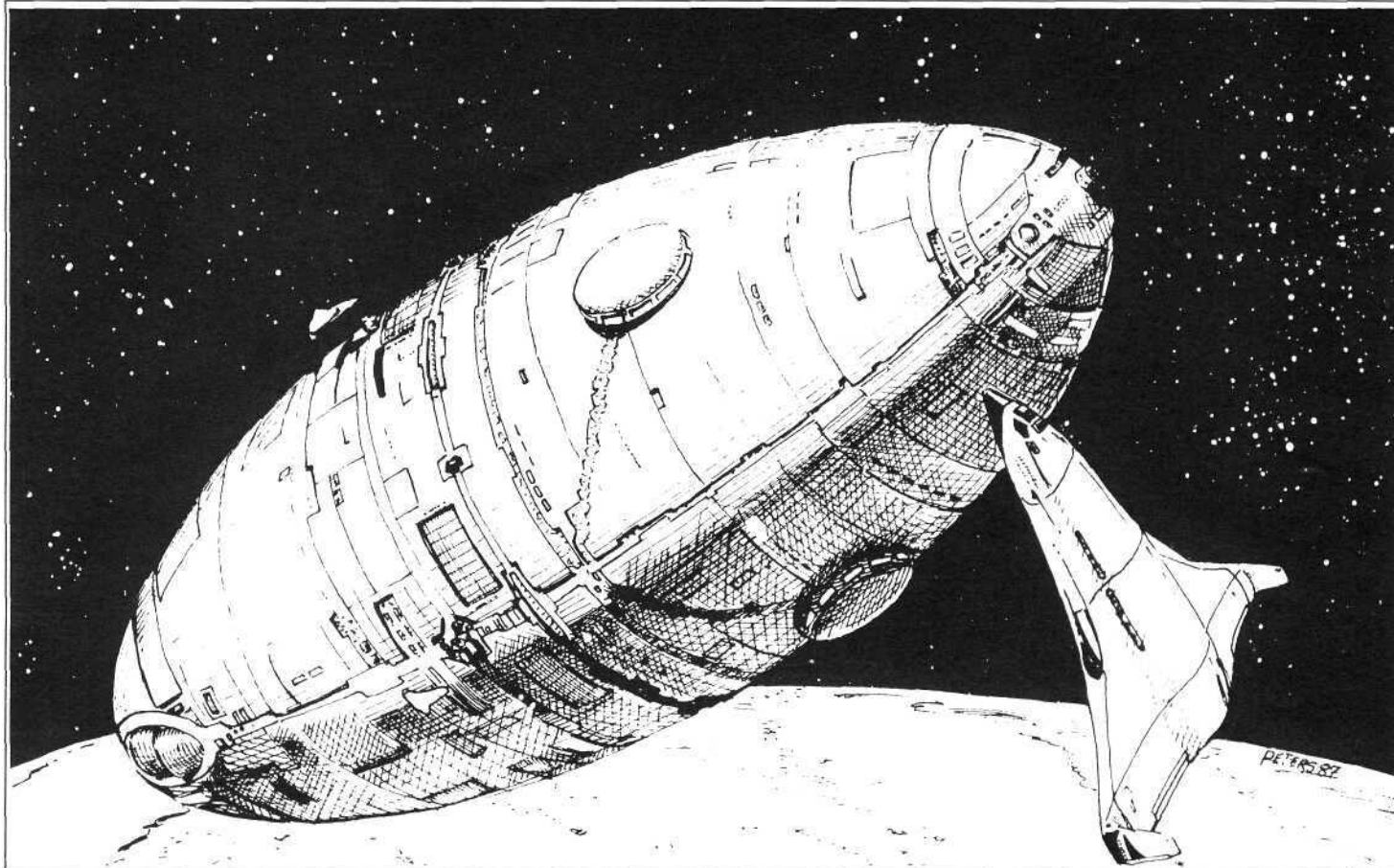
The Brazilians built a total of five Vaca-class ships. One has been scrapped after massive engine and drive failures. Three were sold off to independent companies, but one was re-acquired in 2291 and pressed into service building up the budding Procyon colony.

Crew: Bridge: 10, Engineering: 5, Medical: 1.

PERFORMANCE CHARACTERISTICS

Warp Efficiency: 1.00 (0.42 loaded), *Power Plant:* 2 MW MHD Turbine, *Fuel:* 800 tons, sufficient for four weeks of operation, *Range:* 7.7, *Mass:* 6161.3 tons (84,881.3 tons loaded), *Cargo Capacity:* 10,729 m³ dead cargo, 15,707 m³ additional available in spin for use with dead cargo, animals, or passengers, *Comfort:* 0, *Total Life Support:* normally 16, but up to 628 if converted for passenger service, *Price:* Lv8,270,000

Crew
Quality



American *New Orleans*-class Liner

Original Date of Design: September 12, 2250

First Example Laid Down: January 14, 2252

First Example Completed: October 2, 2254

The *New Orleans*-class passenger liners are among the most sought-after passenger ships in human space. They have been designed with ultimate comfort and safety in mind, and, as a result, the five ships in the class are all on continuous duty.

The large egg-shaped hull is set to spin along its long axis to create artificial gravity on the outer decks. Of course, down is away from the ship's center when in spin, and most vision ports are through the "floor" of the ship. All of the passenger sections, which can accommodate up to a thousand passengers in addition to the crew, are placed in the outer shell of the ship—the interior is reserved for drives, fuel, and other devices which don't benefit from simulated gravity.

The passengers are provided with a bewildering variety of entertainment facilities, including live entertainment in any one of three theaters and parks recessed from the ship in the artificial "down" direction. The large steward section will see to every need of the passengers on the leisurely journeys between stars.

There are 300 lifeboats (termed survival balls) located throughout the ship. In an emergency, up to four passengers may escape the main ship in each survival ball which can eject itself from its own port at the surface of the ship. Enough survival balls are installed to satisfy safety regulations set up for passenger vessels—that is to say, there's a spot for everyone on a *New Orleans*-class ship to get out in an emergency.

There are five ships in the *New Orleans* class. The *New Orleans* and the *Columbus* are regularly on duty between Earth and Tirane. The *Sacramento* is commonly on a run from Tirane to Beta Canum

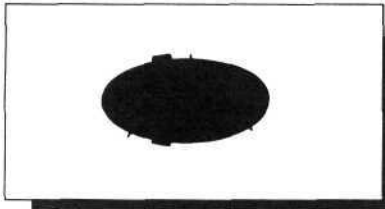
and beyond to 61 Ursae Majoris. The *Ann Arbor* and *Philadelphia* are in service along the American Arm.

Crew: Bridge: 10, Engineering: 3, Shipboard Vessels: 5, Ship's Security: 20, Steward: 100, Medical: 39.

PERFORMANCE CHARACTERISTICS

Warp Efficiency: 0.80 (0.62 loaded), *Power Plant:* 5 MW MHD Turbine, *Fuel:* 2000 tons, sufficient for four weeks of operation, *Range:* 7.7, *Mass:* 29,848.5 tons (63,553.5 tons loaded), *Cargo Capacity:* 11,235 m³, *Comfort:* +4, *Total Life Support:* 1177, *Price:* Lv36,049,000

Ship Status Sheet



New Orleans
 Ship Name
Passenger Liner
 Ship Type
America
 Owning Nation or World

| | | | | | |
|--------------------|---|--------------------|----|-----------------|----|
| Movement | 1 | Radial Reflected | 13 | Radial Profile | +2 |
| Screens | 0 | Lateral Reflected | 15 | Lateral Profile | +4 |
| Radiated Signature | 4 | Targeting Computer | 0 | Armor | 0 |

Hull Hits

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|-----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |
| | | | | | | | | | |

Minor
Major

Power Plant Hits

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|-----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |
| | | | | | | | | | |

Inoperable

Surface Fixture Hits

| —Weapons— | | | | | | | | | | | | —TTAs and Submunitions— | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|------------------|----|----|----|----|----|-------------------|----|----|-----|-----|-----|-------------------------|-----|-----|-----|-----|-----|----|----|----|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1. | 2. | 3. | 4. | 5. | 6. | 7. | 8. | 9. | 10. | 11. | 12. | 13. | 14. | 15. | 16. | 17. | 18. | 1. | 2. | 3. | 4. | 5. | 6. | 7. | 8. | 9. | 10. | 11. | 12. | 13. | 14. | 15. | 16. | 17. | 18. | 19. | 20. | 21. | 22. |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| —Active Sensors— | | | | | | —Passive Sensors— | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Primary | | | | | | Primary | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Redundant | | | | | | Redundant | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Critical Hits

| —Computer— | | | | | | | | | | | | —Tactical Action Center— | | | | | | | | | | | |
|----------------|--|--|--|--|--|--|--|--|--|--|--|--------------------------|--|--|--|--|--|--|--|--|--|--|--|
| Primary | | | | | | | | | | | | Active Operator | | | | | | | | | | | |
| | | | | | | | | | | | | Passive Operator | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | |
| —Life Support— | | | | | | | | | | | | | | | | | | | | | | | |
| —Drive— | | | | | | | | | | | | | | | | | | | | | | | |
| —Hangar Deck— | | | | | | | | | | | | | | | | | | | | | | | |
| —Missile Bay— | | | | | | | | | | | | | | | | | | | | | | | |
| —Continuous— | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | —Bridge— | | | | | | | | | | | |
| | | | | | | | | | | | | Captain | | | | | | | | | | | |
| | | | | | | | | | | | | Navigator | | | | | | | | | | | |
| | | | | | | | | | | | | Engineer | | | | | | | | | | | |
| | | | | | | | | | | | | Computer | | | | | | | | | | | |
| | | | | | | | | | | | | Communications | | | | | | | | | | | |

Damage Control

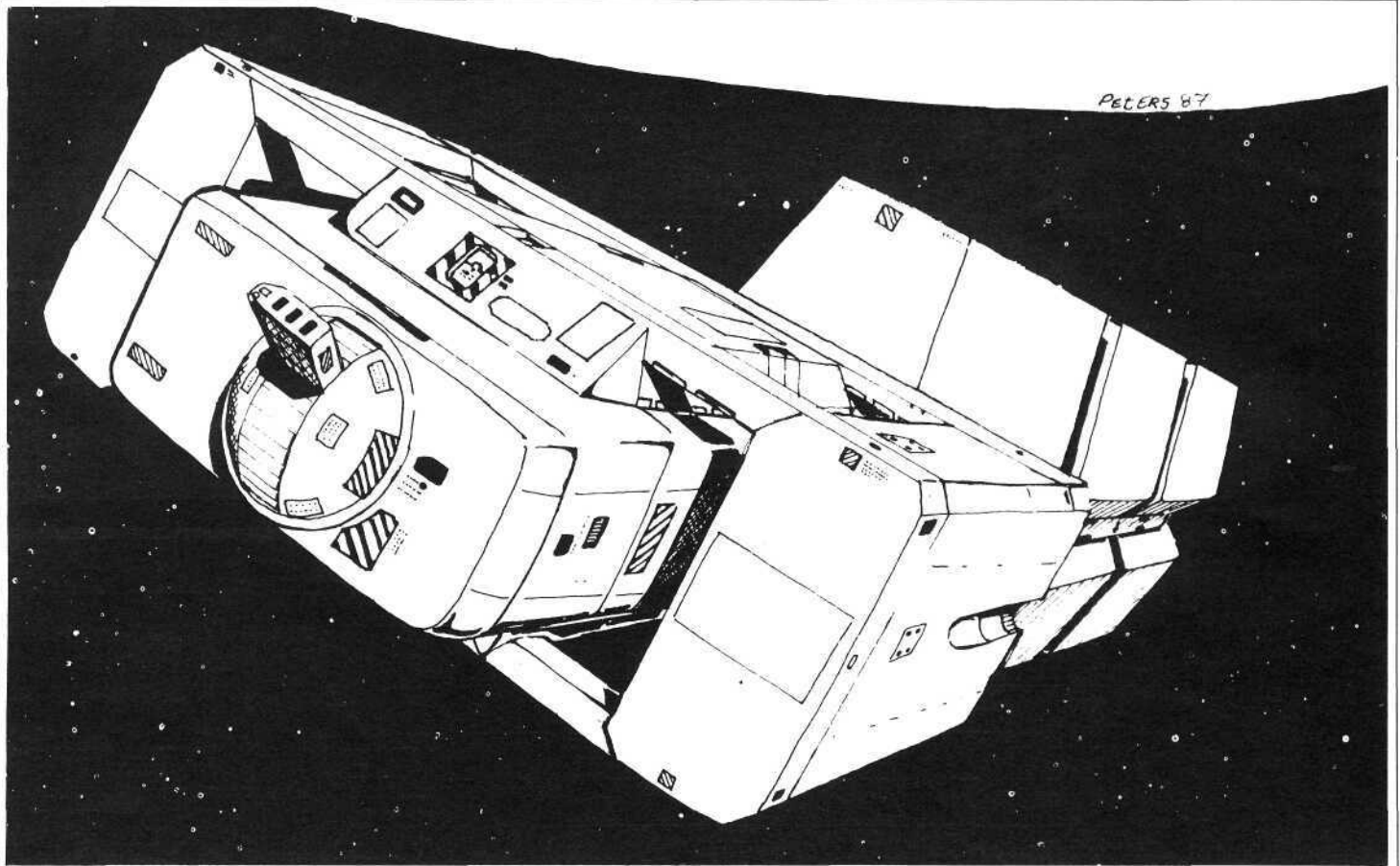
| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| | | | | | | | | | | | | | | | |

Ordnance

(record ordnance load and type)

Crew

| | |
|--------------|----|
| Comfort | +4 |
| Crew Quality | |



English BC-4-class Cargo Carrier

Original Date of Design: September 11, 2234

First Example Laid Down: August 1, 2235

First Example Completed: July 30, 2237

English space transport needs began to blossom in the first half of the 23rd Century. Until then, British industry was supplied from terrestrial possessions, such as mines in Antarctica and Greenland, or from materials taken from Tirane and moved on French vessels. However, British Cargo, LTD came into its own designing cargo vessels which at once lifted Britain's dependency on French support and took advantage of already existing materials.

The BC-4 is a modular freighter which uses modules originally designed for the French *Metal* cargo hauler. Using a standard module design helped the newer ships mesh and interface well with existing port facilities and other ships. Thousands of these modules exist all over the French Arm and are most commonly used by French and British vessels.

Actually, the BC-4 is a rather unimpressive design. The power plant and crew accommodations are merely sufficient to perform the task but are nothing noteworthy.

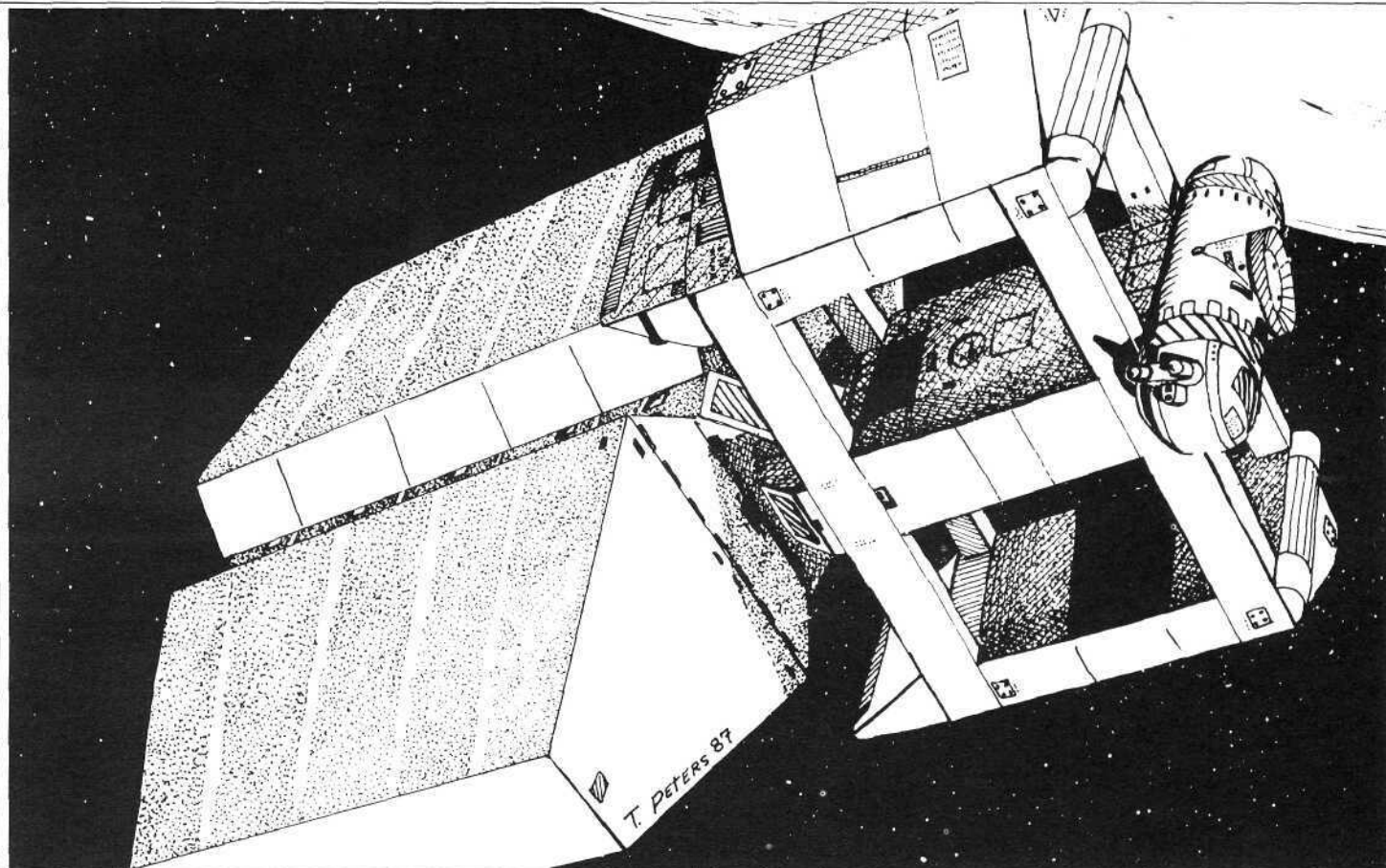
Recently, some owners of BC-4 ships have mounted weapons systems on them for protection on the far frontiers. The model shown, for example, has mounted on it an American "Big Clip" exterior submunition dispenser.

Crew: Bridge: 10, Engineering: 3, Medical: 1.

PERFORMANCE CHARACTERISTICS

Warp Efficiency: 1.67 (0.48 loaded), *Power Plant:* 0.5 MW MHD Turbine, *Fuel:* 200 tons, sufficient for four weeks of operation, *Range:* 7.7, *Mass:* 326.4 tons (13,916.4 tons with six loaded modules), *Cargo Capacity:* 742.5 m³ per module, up to six, *Comfort:* 0, *Total Life Support:* 14, *Price:* Lv3,420,000

Crew
Quality



English BC-7 Robot Cargo Carrier

Original Date of Design: June 4, 2256

First Example Laid Down: September 23, 2258

First Example Completed: March 3, 2259

Many cargo runs within a system, such as those from asteroid belts or the outer system to the inner system planets, have always been considered by merchant crews to be the worst duty stations. Automated transports were first introduced by the Chinese in the 2230s, and the British soon followed with the British Cargo, LTD model 7, or BC-7.

As with other British Cargo designs, the BC-7 uses the standard cargo module pioneered by the French. Though it can only carry two modules, this is often enough to carry away the ore produced by an asteroid mine in a few weeks. Regular journeys by automated BC-7s can take care of an entire mine's output without paying and supporting a ship crew.

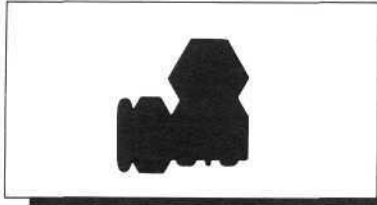
The automated computer center for the BC-7 uses very simple commands for avoidance of collision and location of destination, and it is linked directly to the ship's navigational radar. Some models, like the one shown here, can also support weapons which will return fire, though with almost no chance of hitting (such ships generally have a targeting modifier of -3).

BC-7s are commonly used in the Henry's Star and Queen Alice's Star systems, though many have been sold to the Manchurians and are employed in their systems.

PERFORMANCE CHARACTERISTICS

Warp Efficiency: 1.14 (0.32 loaded), *Power Plant:* 0.05 MW Fuel Cell, *Fuel:* 45 tons, sufficient for twelve weeks of operation, *Range:* 1.1, *Mass:* 102.7 tons (4632.7 tons loaded), *Cargo Capacity:* 742.5 m³ per module, up to two, *Price:* Lv2,425,000

Ship Status Sheet



BC-7

Ship Name

Robot Cargo Carrier

Ship Type

Great Britain

Owning Nation or World

Movement

1

Screens

0

Radiated
Signature

1

Radial
Reflected

6

Lateral
Reflected

7

Targeting
Computer

0

Radial
Profile

-1

Lateral
Profile

0

Armor

0

Hull Hits

Minor
Major

Power Plant Hits

Inoperable

Surface Fixture Hits

—Weapons—

—TTAs and Submunitions—

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

| | |
|--|--|
| | |
| | |
| | |
| | |
| | |
| | |

7. _____
8. _____
9. _____
10. _____
11. _____
12. _____

| | |
|--|--|
| | |
| | |
| | |
| | |
| | |
| | |

13. _____
14. _____
15. _____
16. _____
17. _____
18. _____

| | |
|--|--|
| | |
| | |
| | |
| | |
| | |
| | |

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____

| | |
|--|--|
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |

12. _____
13. _____
14. _____
15. _____
16. _____
17. _____
18. _____
19. _____
20. _____
21. _____
22. _____

| | |
|--|--|
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |

—Active Sensors—

| |
|--|
| |
|--|

Primary
Redundant

| |
|--|
| |
|--|

—Passive Sensors—

| |
|--|
| |
|--|

Primary
Redundant

| |
|--|
| |
|--|

Critical Hits

—Computer—

Primary

| | | | | | | | |
|--|--|--|--|--|--|--|--|
| | | | | | | | |
|--|--|--|--|--|--|--|--|

—Life Support—
—Drive—
—Hangar Deck—
—Missile Bay—
—Continuous—

| | | | | | | | |
|--|--|--|--|--|--|--|--|
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

Active Operator
Passive Operator

| | | | | | | | |
|--|--|--|--|--|--|--|--|
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

—Tactical Action Center—

Captain
Navigator
Communications

Engineer
Computer

—Bridge—

| | | | | | | | |
|--|--|--|--|--|--|--|--|
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

Damage Control

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

| |
|--|
| |
|--|

Ordnance

(record ordnance load and type)

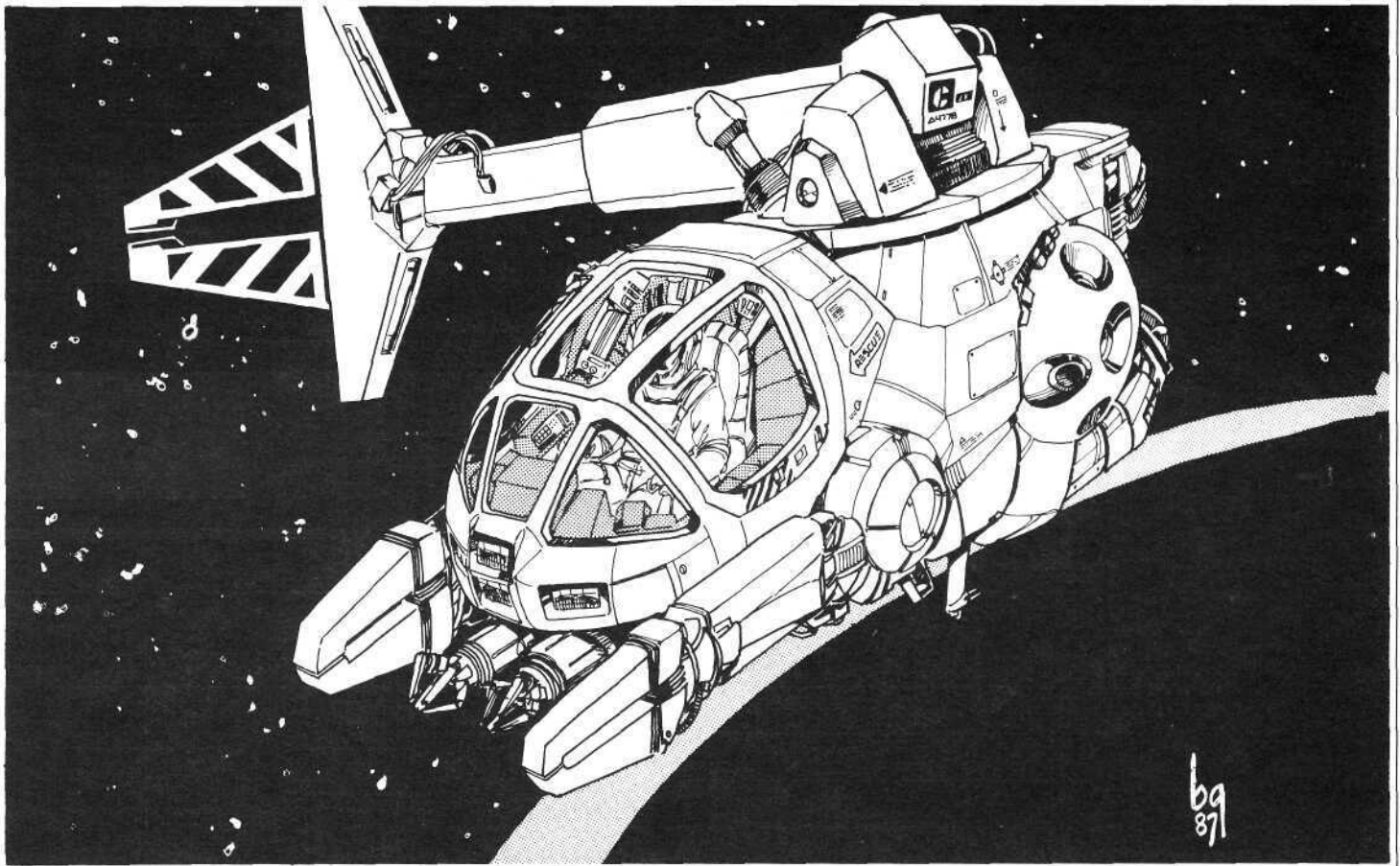
| |
|--|
| |
|--|

Crew

Comfort

| |
|--|
| |
|--|

Crew
Quality



American *CargoDevil* Freight Handler

Original Date of Design: November 1, 2288

First Example Laid Down: April 12, 2289

First Example Completed: June 24, 2290

Midwest Technologies (MidTech), an American consulting and design firm headquartered in Omaha, petitioned for and won the contracts for producing cargo handling vehicles for much of Beta Canum's beanstalk orbital facility. Modular freighters which call at Beta Canum most often have no inherent capacity for moving their modules onto or off of their ships. The MidTech *CargoDevil* is designed to perform exactly that task.

The *CargoDevil* is a single-operator spacecraft displacing roughly 15 cubic meters. Thrusters can move the handler around the port facilities and spaceships while carrying a cargo module, but the ship is not stutterwarp capable. The operator sits in a spacious cockpit where he has a good view and commands a variety of manipulation devices.

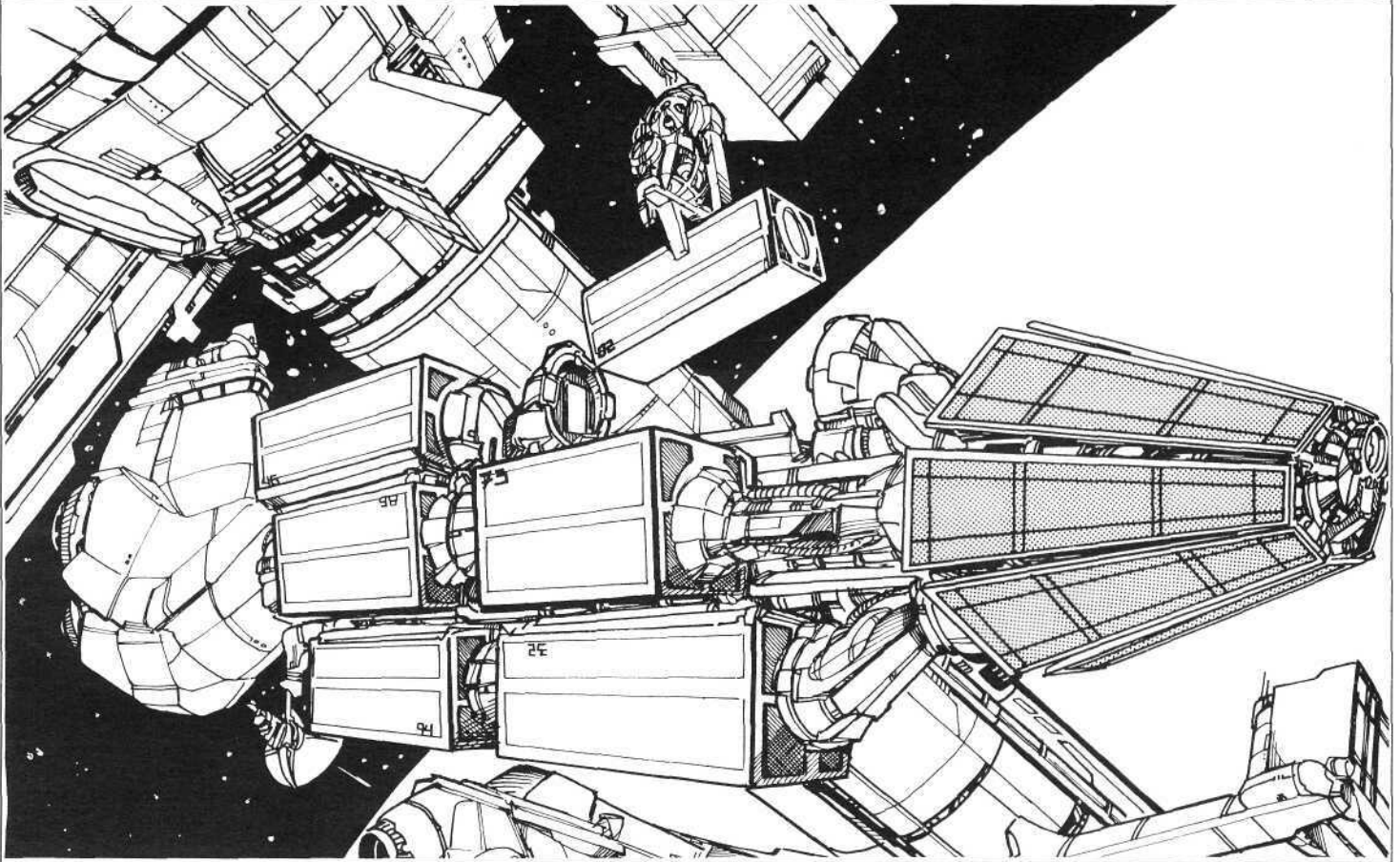
The largest manipulator is a top mounted hydraulic arm which can be extended and can grab modules up to five meters across. In combination with two smaller hydraulic hands located on either side of the cockpit, the *CargoDevil* operator can safely grab and move very large pieces of cargo. Two smaller manipulative arms, located in the bow of the ship, can be extended to perform more delicate tasks, such as opening airlocks and preparing slots for receiving a module.

The *CargoDevil* is heavily lit and usually brightly colored for safety reasons. It is not unusual for several *CargoDevils* to be loading a single ship—heavy traffic can become a safety hazard.

Crew: one operator.

PERFORMANCE CHARACTERISTICS

Warp Efficiency: 0, *Power Plant:* 0.02 MW Fuel Cell, *Fuel:* 0.018 tons, sufficient for two hours of operation, *Range:* NA, *Mass:* 30.418 tons, *Cargo Capacity:* various, *Comfort:* 0, *Total Life Support:* 1, *Price:* Lv501,000



American Mammoth-class Freighter

Original Date of Design: October 23, 2289

First Example Laid Down: December 4, 2290

First Example Completed: October 12, 2292

MidTech of Omaha has created its own cargo ship for sale to private industry. The *Mammoth-class* is a modular freighter which can carry up to eight specially designed modules. The modules are also designed to be easily stacked onto several standard air-film train cars for containerized shipment from point to point.

The *Mammoth* contains drives and living quarters in a rear section. Atop this section are the bridge and control offices. A central shaft runs out from this rear section, onto which the container modules are attached. Each module is secured at both ends, and access is allowed to each through the central shaft. At the bow end of the shaft is a deployable solar array which, when in the inner system, is often fanned out for fuel processing.

The *Mammoth* is constructed with two outer mounts at the aft of the rear section where two *CargoDevil* handlers are installed. The model can be purchased from MidTech with or without the *CargoDevils* and their mounts.

There is no spin habitat for the crew of a *Mammoth*. Space is left for a pursers station and several assistants. The *Mammoth* is an ideal ship for independent shippers—an entire business can be run from the single vessel.

Crew: Bridge: 10, Engineering: 3, Shipboard Vessels: 2, Medical: 1.

PERFORMANCE CHARACTERISTICS

Warp Efficiency: 1.78 (1.22 loaded), *Power Plant:* 3 MW MHD Turbine, *Fuel:* 1 800 tons, sufficient for six weeks of operations, *Range:* 7.7, *Mass:* 2185.3 tons (6793.3 tons loaded), *Cargo Capacity:* 192 m³ per module, up to eight, *Comfort:* 0, *Total Life Support:* 15, *Price:* Lv15,034,000

Owning Nation or World

3

0

0

[illegible][illegible]

—Weapons—

1. _____ 7. _____ 13. _____

2. _____ 8. _____ 14. _____

3. _____ 9. _____ 15. _____

4. _____ 10. _____ 16. _____

5. _____ 11. _____ 17. _____

6. _____ 12. _____ 18. _____

—Active Sensors—

Primary

Redundant

—Passive Sensors—

Primary

Redundant

—TTAs and Submunitions—

1. _____ 12. _____

2. _____ 13. _____

3. _____ 14. _____

4. _____ 15. _____

5. _____ 16. _____

6. _____ 17. _____

7. _____ 18. _____

8. _____ 19. _____

9. _____ 20. _____

10. _____ 21. _____

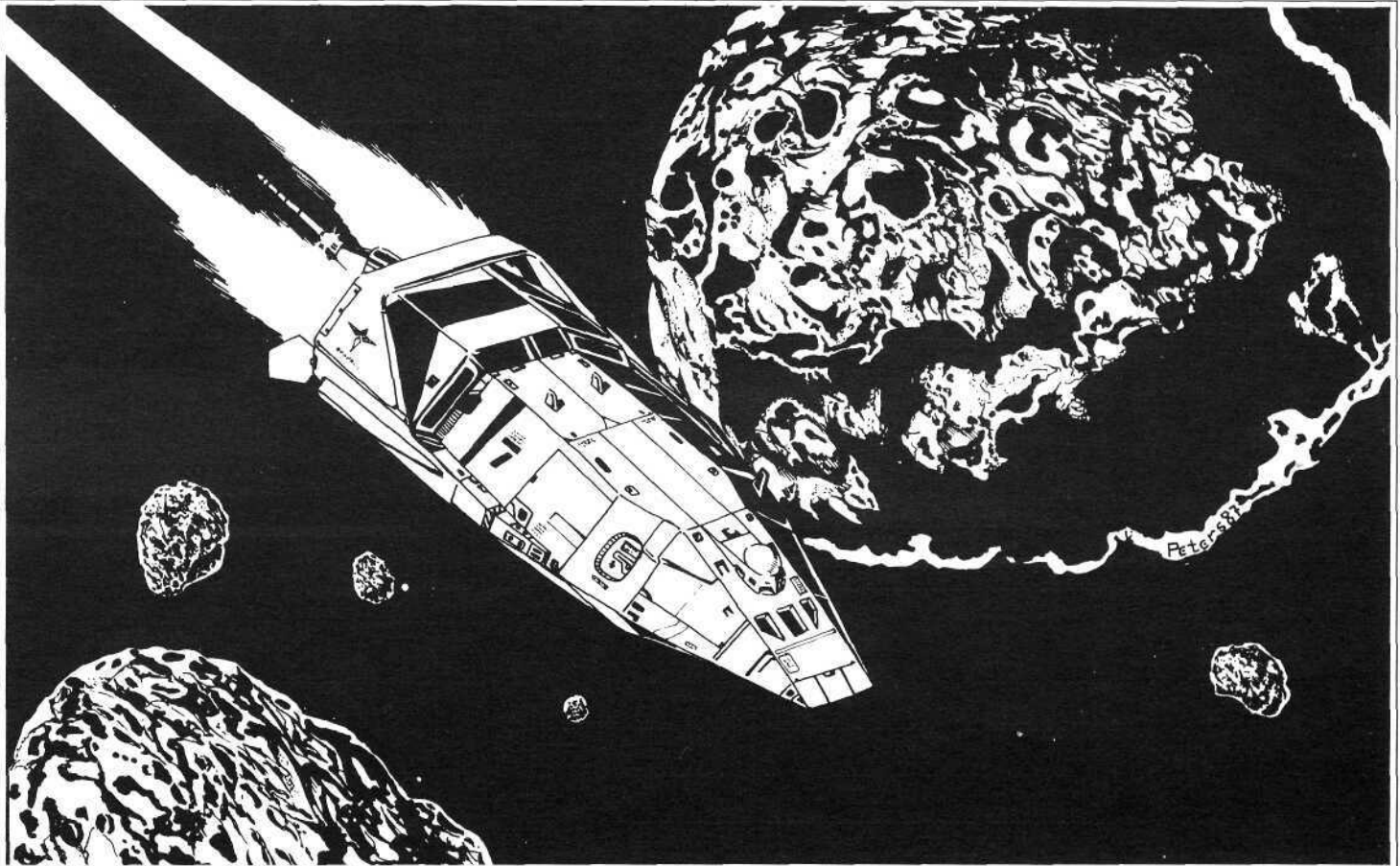
11. _____ 22. _____

The diagram illustrates the layout of the Main Battle Space (MBS) and the Main Control Space (MCS) of the USS Zumwalt (DDG 1000). The MBS is divided into three main sections: Primary, Secondary, and Tertiary Battle Stations. Each section contains a Computer and a Tactical Action Center. The MCS is divided into five main sections: Life Support, Drive, Hangar Deck, Missile Bay, and Continuous. Each section contains a Captain, Navigator, and Communications officer. The diagram also shows the Bridge and the Main Control Space (MCS) layout.

[illegible]

(record ordnance load and type)

1101



Courier Ships

German *Merkur*-class Courier

Original Date of Design: December 19, 2280

First Example Laid Down: March 21, 2282

First Example Completed: October 1, 2283

The *Merkur*-class is designed to make interplanetary or even interstellar journeys from planetary surface to planetary surface without dependence on local interface vehicles. Many governments and businesses are in the market for private couriers of this kind, and the *Merkur* has dominated that particular market since its introduction in 2283.

The ship is, of course, streamlined and has thrusters for atmospheric landings. The airfoil design is efficient but restricts the inclusion of interior space. The rather large crew, considering the size of the vessel, is forced to live in very cramped conditions without benefit of spin for the duration of their missions. The warp efficiency is fair, and individual missions usually last only a few days. The *Merkur* is capable of taking along up to two passengers, but they will have to suffer through the inadequate living conditions along with the crew.

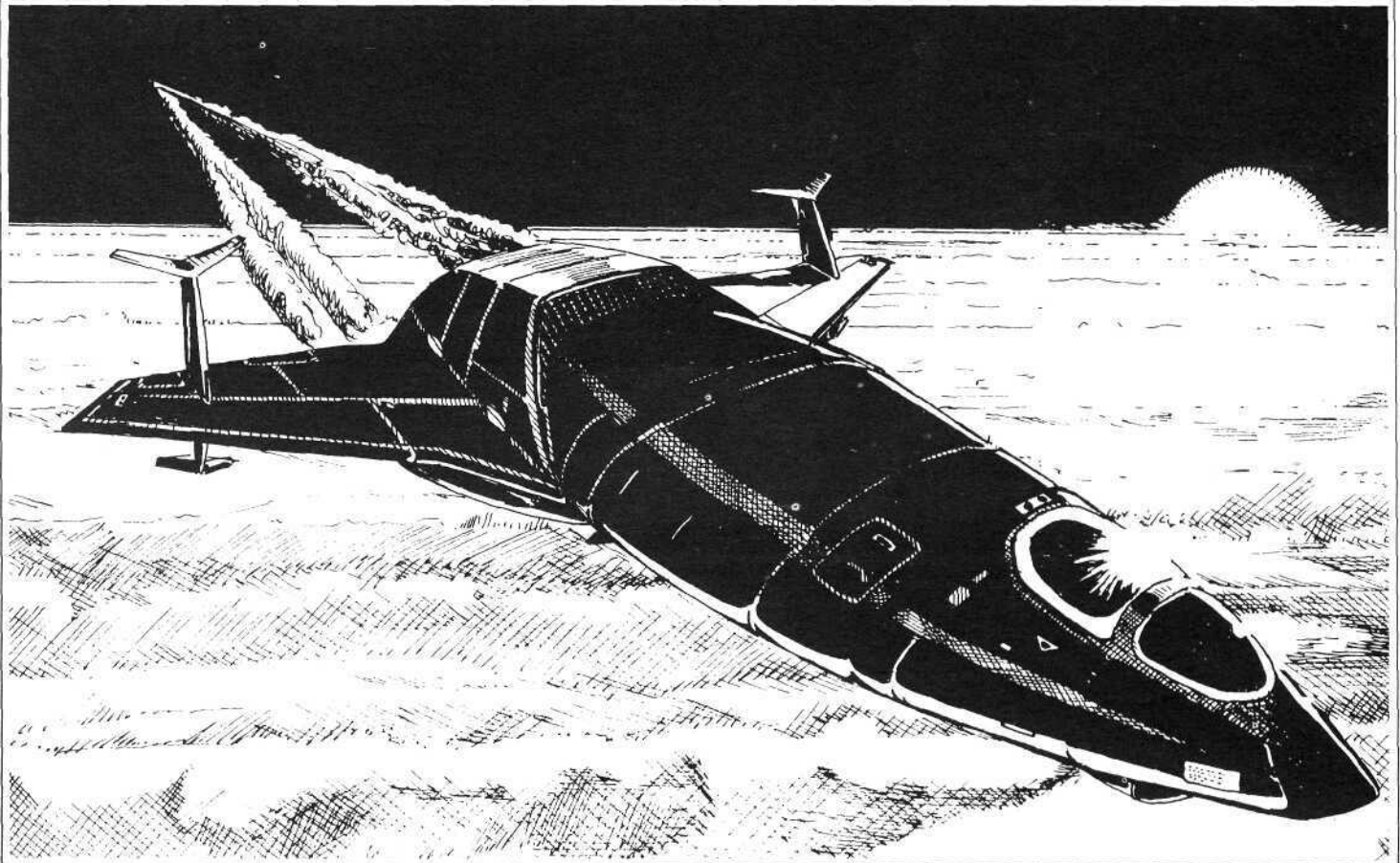
The German military has purchased several *Merkur*-class ships for their own purposes. Any modifications for military use are strictly classified. *Merkurs* can be found operating throughout the French Arm.

Crew: Bridge: 10, Engineering: 3.

PERFORMANCE CHARACTERISTICS

Warp Efficiency: 2.83, *Power Plant:* 4 MW MHD Turbine, *Fuel:* 400 tons, sufficient for one week of operation, *Range:* 7.7, *Mass:* 732.6 tons, *Cargo Capacity:* none, *Comfort:* -2, *Total Life Support:* 15, *Price:* Lv17,230,000

- 2



French *Lideau*-class Courier

Original Date of Design: September 13, 2245
First Example Laid Down: June 4, 2247
First Example Completed: August 17, 2248
Fleets of Service: France

Interfleet communications are tremendously vital during any action. In the absence of a faster-than-light communications source, courier ships must carry messages between bodies of ships in action. One particular instance in which the fate of a single courier ship had far-reaching effects was the Battle of Hochbaden-3 during the War of German Reunification. When the French courier ship *Marathon* was intercepted and destroyed, a second body of French ships was not alerted to intervene, and victory went to the Germans.

A typical French-designed courier is the *Lideau*-class, designed in the mid-2240s by the French Navy with the help of independent contractors. The ship is quick enough to catch up to most battle fleets or at least make scheduled rendezvous with them. Though usually ordered to avoid trouble where possible, the ship is constructed with a single LL-2 submunition dispenser. Sensors are installed to help the courier detect trouble before it arrives, if possible. Life support and fuel are provided for four weeks in case the ship has to make a particularly long journey.

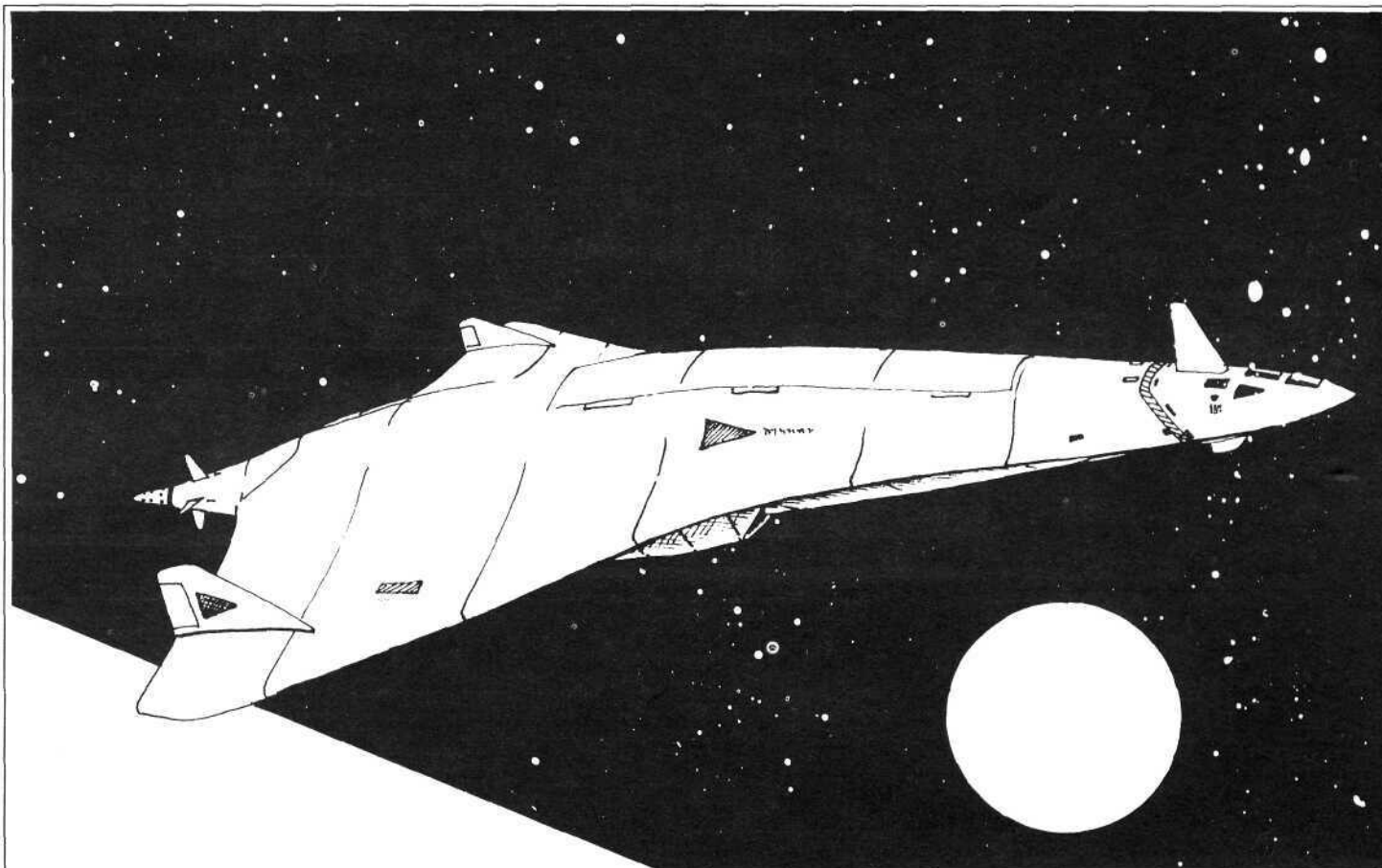
The *Lideau* also has a small area set aside to take on one or two passengers. One passenger can be carried with a comfort rating of 0, or two can be carried with comfort ratings of -2.

Crew: Bridge: 10, Tactical Action Center: 1, Engineering: 4, Medical: 1.

PERFORMANCE CHARACTERISTICS

Warp Efficiency: 1.85, *Power Plant:* 3 MW MHD Turbine, *Fuel:* 1200 tons, sufficient for four weeks of operation, *Range:* 7.7, *Mass:* 645 tons, *Cargo Capacity:* none, *Comfort:* 0, *Total Life Support:* 18, *Ordinance Carried:* none, *Price:* Lv9,427,000

Crew
Quality



Azanian *Faidi*-class Courier

Original Date of Design: March 12, 2267

First Example Laid Down: December 14, 2268

First Example Completed: June 3, 2270

The Azanians put their *Faidi*-class courier vessel on the open market as soon as it was in production in the early 2270s. A contract with British Ludlum Industries, LTD, calling for six of the first ones off the line was concluded prior to production to ensure "break-even" for the Azanians. Since then some 15 more have been produced and sold.

The *Faidi*, if properly armed, is suitable for limited combat use. The production models have no weapons installed, but the hull is masked and is constructed of advanced composites for durability. Without weapons, the *Faidi* is capable of using its low profile and speed to get out of sticky situations.

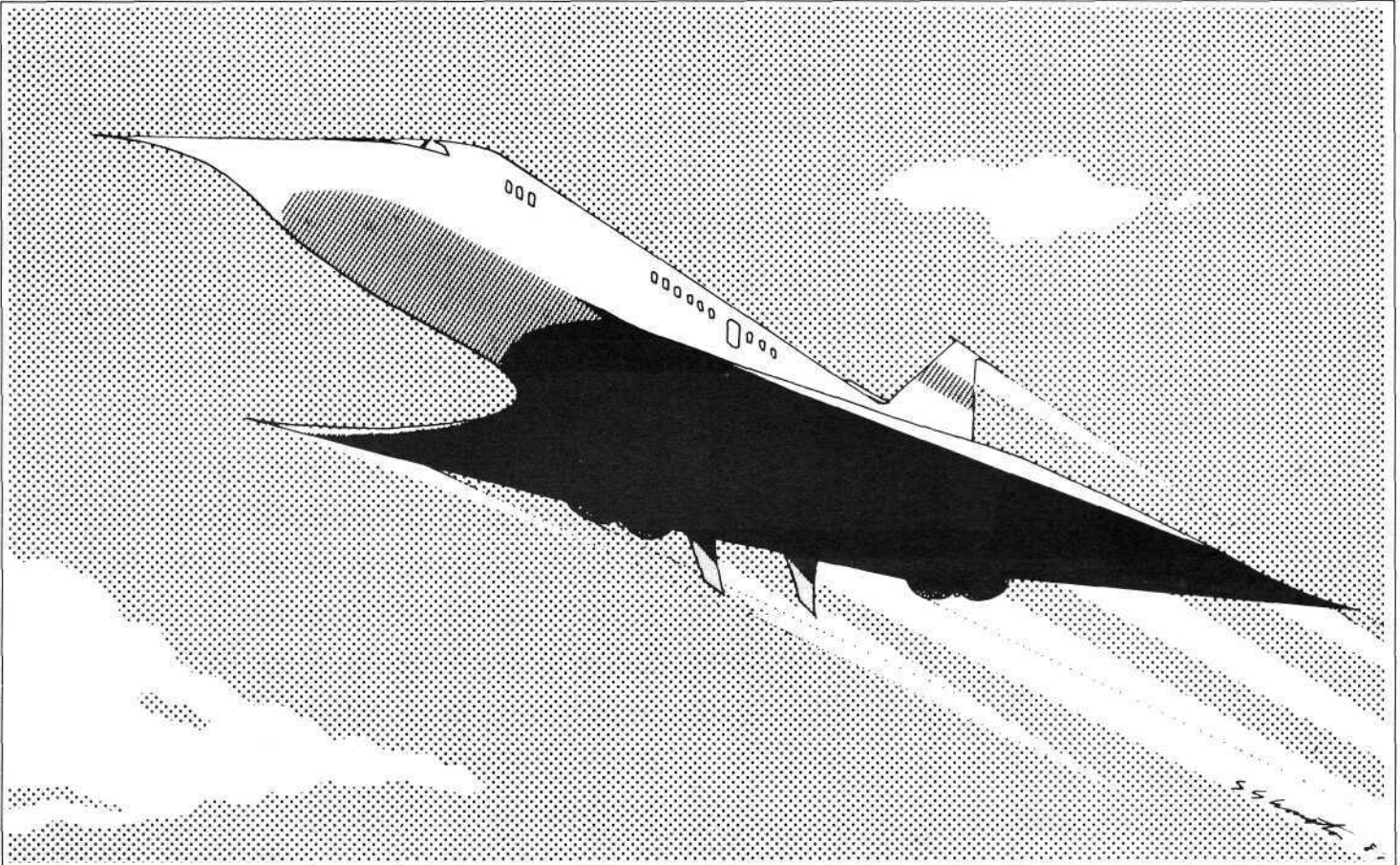
There is no spin habitat on the *Faidi*, and the accommodations are cramped. The ship is streamlined and has thrusters for atmospheric landings. There is also some cargo space set aside for rapid delivery of some bulk materials.

Crew: Bridge: 10, Engineering: 3.

PERFORMANCE CHARACTERISTICS

Warp Efficiency: 2.91, *Power Plant:* 10 MW MHD Turbine, *Fuel:* 1000 tons, sufficient for one week of operations, *Range:* 7.7, *Mass:* 1672 tons, *Cargo Capacity:* 108 m³, *Comfort:* -2, *Total Life Support:* 13, *Price:* Lv22,620,000

Crew
Quality



Japanese *Hayabusa*-class Courier

Original Date of Design: December 30, 2278

First Example Laid Down: October 23, 2279

First Example Completed: April 14, 2280

The *Hayabusa*-class is a civilian orbital/interplanetary passenger transport adapted to line-of-communications and liaison duties. Most often employed in the core systems of Alpha Centauri and Sol, the ship is of limited utility for interstellar missions. It is best adapted to interplanetary diplomatic missions, common only in the most densely populated systems.

The light power plant and limited fuel supply make interstellar journeys very difficult for the *Hayabusa*. The passenger compartment, as well, is better suited to short journeys of a few hours rather than longer missions which can last up to several days. The *Hayabusa* is crewed as a small craft; only in very special cases can one make an interstellar voyage.

The *Hayabusa* is not armed or armored. It has no special sensor apparatus, either. The ship is a simple design for making limited diplomatic courier missions, generally within the confines of a single system.

Crew: one pilot and one copilot.

PERFORMANCE CHARACTERISTICS

Warp Efficiency: 1.64, *Power Plant:* 1 MW MHD Turbine, *Fuel:* 100 tons, sufficient for one week of operations, *Range:* 7.7, *Mass:* 364 tons, *Cargo Capacity:* none, *Comfort:* - 1, *Total Life Support:* 14, *Price:* Lv12,400,000

Ship Status Sheet



Hayabusa

Ship Name

Courier

Ship Type

Japan

Owning Nation or World

Movement

3

Screens

0

Radiated
Signature

1

Radial
Reflected

3

Lateral
Reflected

2

Targeting Computer

0

Radial
Profile

-2

Lateral Profile

-3

Armor

0

Hull Hits

[illegible]

Minor
Major

Power Plant Hits

[REDACTED] Inoperable

Inoperable

Surface Fixture Hits

—Weapons—

1. _____ 7. _____ 13. _____

2. _____ 8. _____ 14. _____

3. _____ 9. _____ 15. _____

4. _____ 10. _____ 16. _____

5. _____ 11. _____ 17. _____

6. _____ 12. _____ 18. _____

—Active Sensors—

Primary _____

Redundant _____

—Passive Sensors—

Primary _____

Redundant _____

—TTAs and Submunitions—

1. _____ 12. _____

2. _____ 13. _____

3. _____ 14. _____

4. _____ 15. _____

5. _____ 16. _____

6. _____ 17. _____

7. _____ 18. _____

8. _____ 19. _____

9. _____ 20. _____

10. _____ 21. _____

11. _____ 22. _____

Critical Hits

The diagram illustrates the layout of the Combat Information Center (CIC) and the Bridge on the USS Zumwalt (DDG 1000). It is divided into two main sections: the CIC and the Bridge.

CIC Section:

- Computer:** A single row of 8 cells.
- Tactical Action Center:** A single row of 8 cells.
- Active Operator:** A single row of 8 cells.
- Passive Operator:** A single row of 8 cells.
- Life Support:** A single row of 8 cells.
- Drive:** A single row of 8 cells.
- Hangar Deck:** A single row of 8 cells.
- Missile Bay:** A single row of 8 cells.
- Continuous:** A single row of 8 cells.

Bridge Section:

- Captain:** A single row of 8 cells.
- Engineer:** A single row of 8 cells.
- Navigator:** A single row of 8 cells.
- Computer:** A single row of 8 cells.
- Communications:** A single row of 8 cells.

The diagram shows the relative positions and connections between these various operational centers.

Damage Control

Ordnance

(record ordnance load and type)

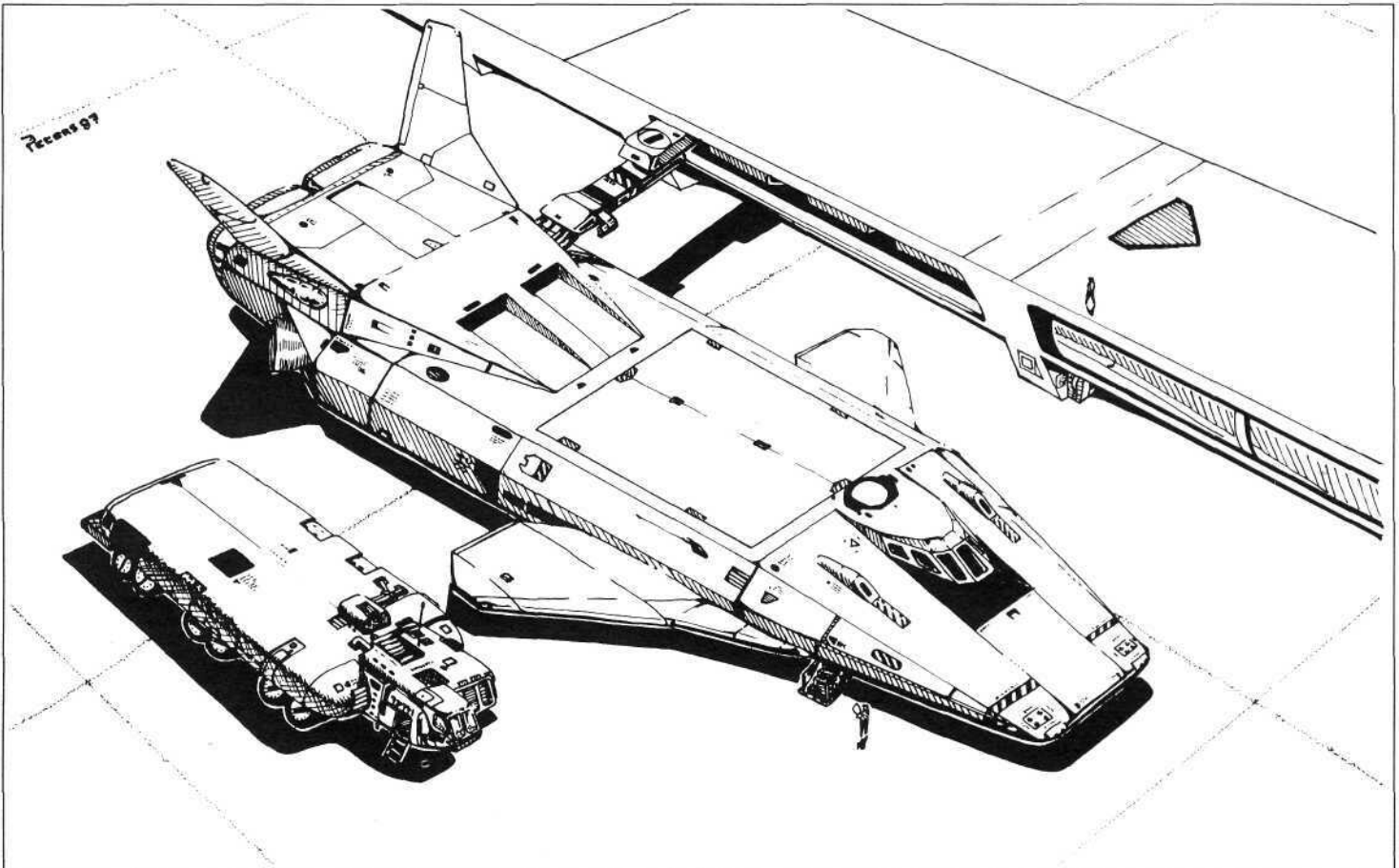
(record ordnance load and type)

Crew

Comfort

Crew
Quality

| |
|----|
| -1 |
| |



French *Thorez*-class Courier

Original Date of Design: March 20, 2267

First Example Laid Down: January 19, 2269

First Example Completed: March 20, 2271

The *Thorez*-class is typical of limited cargo capacity courier vessels in use today. Most space plane designs require extremely long runways for landing since they traditionally travel at very high speeds. The *Thorez*'s specially adapted retro-firing thrusters and advanced air braking techniques make it capable of landing at many planetary airfields which otherwise would not be able to accommodate a spaceplane at all. As a result, the *Thorez* is in demand for courier runs to more remote frontier establishments, usually those without benefit of a spaceport.

The large top-opening cargo bay doors can accept an item up to 9x12 meters, and the bay itself can hold up to 863 m³ of material. This capacity is generally taken up with general mail and parcels, though in some privately owned vessels the hold is adapted to contain one or more small surface vehicles.

Unfortunately for the crew, the *Thorez* has no spin capacity, making the ship very uncomfortable. Accommodations are available for up to seven passengers, but it is recognized that if fewer passengers are carried the crew can stretch out into the available space to make their time on the ship less cramped. No sensors other than those necessary for navigation are installed.

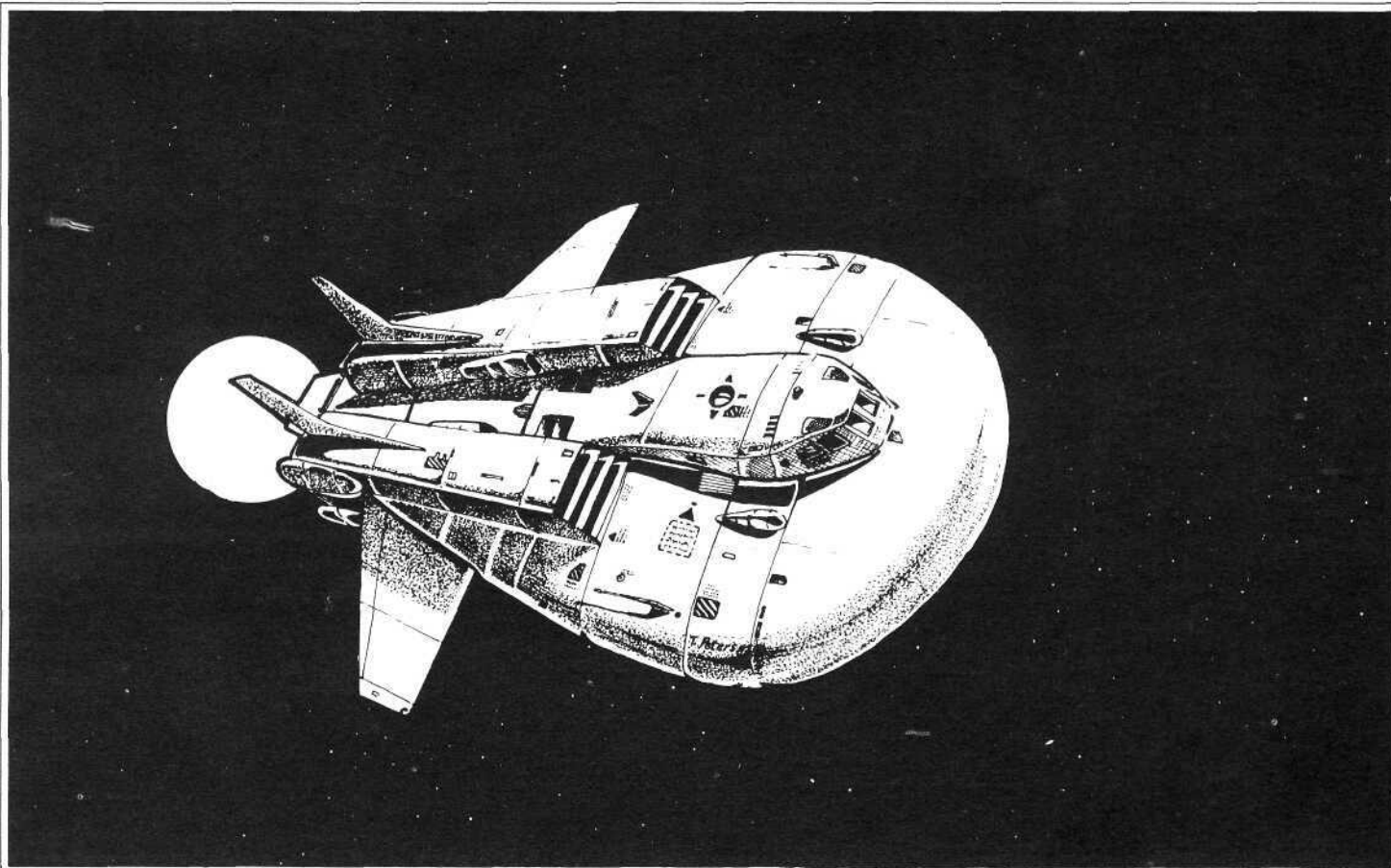
There are probably nearly one hundred 777orez-class ships in service, most of these along the French Arm. Most are independently owned and operated.

Crew: Bridge: 10, Engineering: 3, Steward: 1, Medical: 1.

PERFORMANCE CHARACTERISTICS

Warp Efficiency: 1.99 (1.12 loaded), *Power Plant:* 1 MW MHD Turbine, *Fuel:* 100 tons, sufficient for one week of operations, *Range:* 7.7, *Mass:* 387 tons (2976 tons loaded), *Cargo Capacity:* 863 m³, *Comfort:* -2, *Total Life Support:* 22, *Price:* Lv3,950,000

-2



Survey Ships

French Cambaceres-class

Original Date of Design: March 13, 2274

First Example Laid Down: August 3, 2275

First Example Completed: December 1, 2277

Planetfall-capable survey ships were more the exception than the rule until the later half of the 23rd century. The French came up with their own vessel in the 2270s and named it in honor of Jules Cambaceres (2140-2199), a prominent explorer in service to France during the Second Age of Exploration.

The *Cambaceres* takes advantage of several design techniques. The spin habitat is located in the forward section of the ship and is retractable. In its retracted position, the ship is streamlined and has thrusters capable of taking it through an atmosphere to explore a planetary surface.

Once on the surface, the *Cambaceres* can disgorge a set of surface exploration vehicles. It commonly carries two Explorer ATVs and one Bridgeport Songbird in its vehicle bay. The large scientific section can man these vehicles to survey from ground level, while the *Cambaceres* mother ship can make low orbit or atmospheric passes.

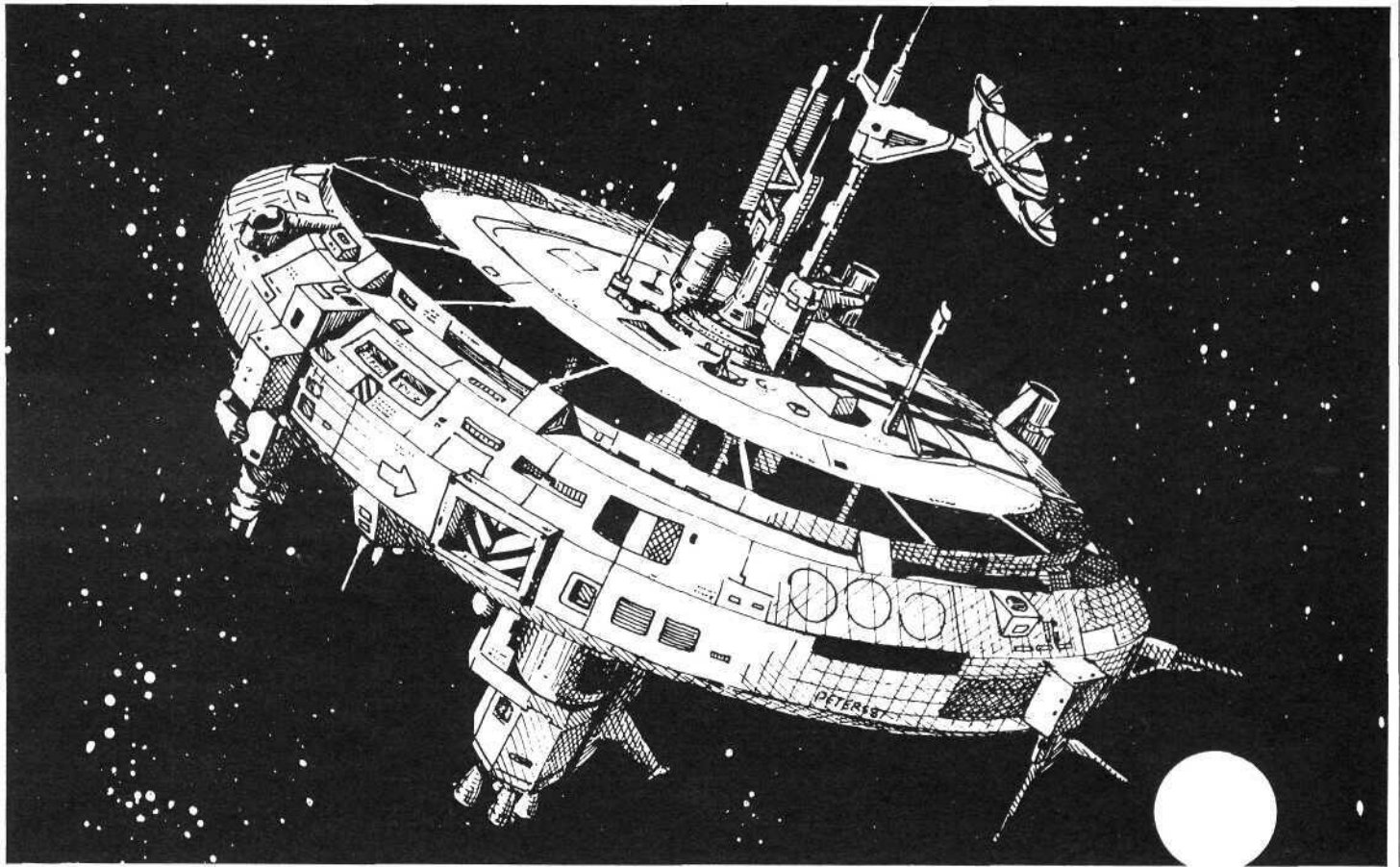
Unfortunately, the interior is not capable of carrying much fuel by comparison to other planetary survey vessels. Common practice for *Cambaceres* crews is to put down and then immediately deploy solar arrays for fuel processing.

Sensor Package: Gravitational scanner, advanced cartographic, advanced life, and passive sensors.

Crew: Bridge: 10, Engineering: 3, Shipboard Vessels: 1, Ship's Security: 5, Scientific: 25, Medical: 2.

PERFORMANCE CHARACTERISTICS

Warp Efficiency: 1.85, *Power Plant:* 2 MW MHD Turbine, *Fuel:* 400 tons, sufficient for two weeks of operations, *Range:* 7.7, *Mass:* 965.5 tons, *Cargo Capacity:* 945 m³, *Comfort:* 0, *Total Life Support:* 46, *Price:* Lv6,915,000



German *Vogelperspektive*-class

Original Date of Design: August 23, 2278

First Example Laid Down: January 4, 2281

First Example Completed: November 12, 2285

Built in the last years before the reunification of Germany, the Bavarian-designed *Vogelperspektive* is a one-of-a-kind vessel. In fact, the ship was never crewed and used before the war, and has only flown the German flag. When finally put into service in 2294, its crew was picked from both the German navy and from specialists at the Astronomischen Rechen-Institut at Heidelberg. After an initial training mission lasting one year, the *Vogelperspektive* was put into service under the German Ministry of Exploration in 2296.

The *Vogelperspektive* was constructed with the latest in investigative equipment. It has the best sensor devices available for mapping and exploring an entire star system. There are also three interface space planes which can make close fly-bys of any planets deemed sufficiently interesting.

The scientific crew is given a large work area with several specialized computers. With them the ship can be expected to complete a survey of a system in approximately one year. The survey will include maps of the system and its planets, locations and make-up of other objects in the system, and detailed navigational data for safe use of the system by future visitors.

Thus far the *Vogelperspektive* has been used to confirm data in several German-dominated systems along the French Arm. However, the Ministry of Exploration is apparently reluctant to send the ship too near the Kafer sphere, as it does not want its prize exploratory vessel to become a statistic of the war there.

Sensor Package: Gravitational scanner, advanced cartographic, advanced life, passive and active sensors.

Crew: Bridge: 10, Engineering: 3, Shipboard Vessels: 3, Scientific: 39, Medical: 2.

PERFORMANCE CHARACTERISTICS

Warp Efficiency: 1.41, *Power Plant:* 5 MW MHD Turbine, *Fuel:* 4000 tons, sufficient for eight weeks of operations, *Range:* 8.7, *Mass:* 5967 tons, *Cargo Capacity:* 4487 m³, *Comfort:* +1, *Total Life Support:* 57 *Price:* Lv19,565,000

Owning Nation or World

4

0

0

[illegible][illegible]

—Weapons—

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

8. _____

9. _____

10. _____

11. _____

12. _____

—Active Sensors—

Primary

Redundant

—Passive Sensors—

Primary

Redundant

—TTAs and Submunitions—

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

8. _____

9. _____

10. _____

11. _____

12. _____

13. _____

14. _____

15. _____

16. _____

17. _____

18. _____

19. _____

20. _____

21. _____

22. _____

The diagram illustrates the internal layout of the USS Zumwalt, showing various functional areas and their connections. The layout is organized into several sections:

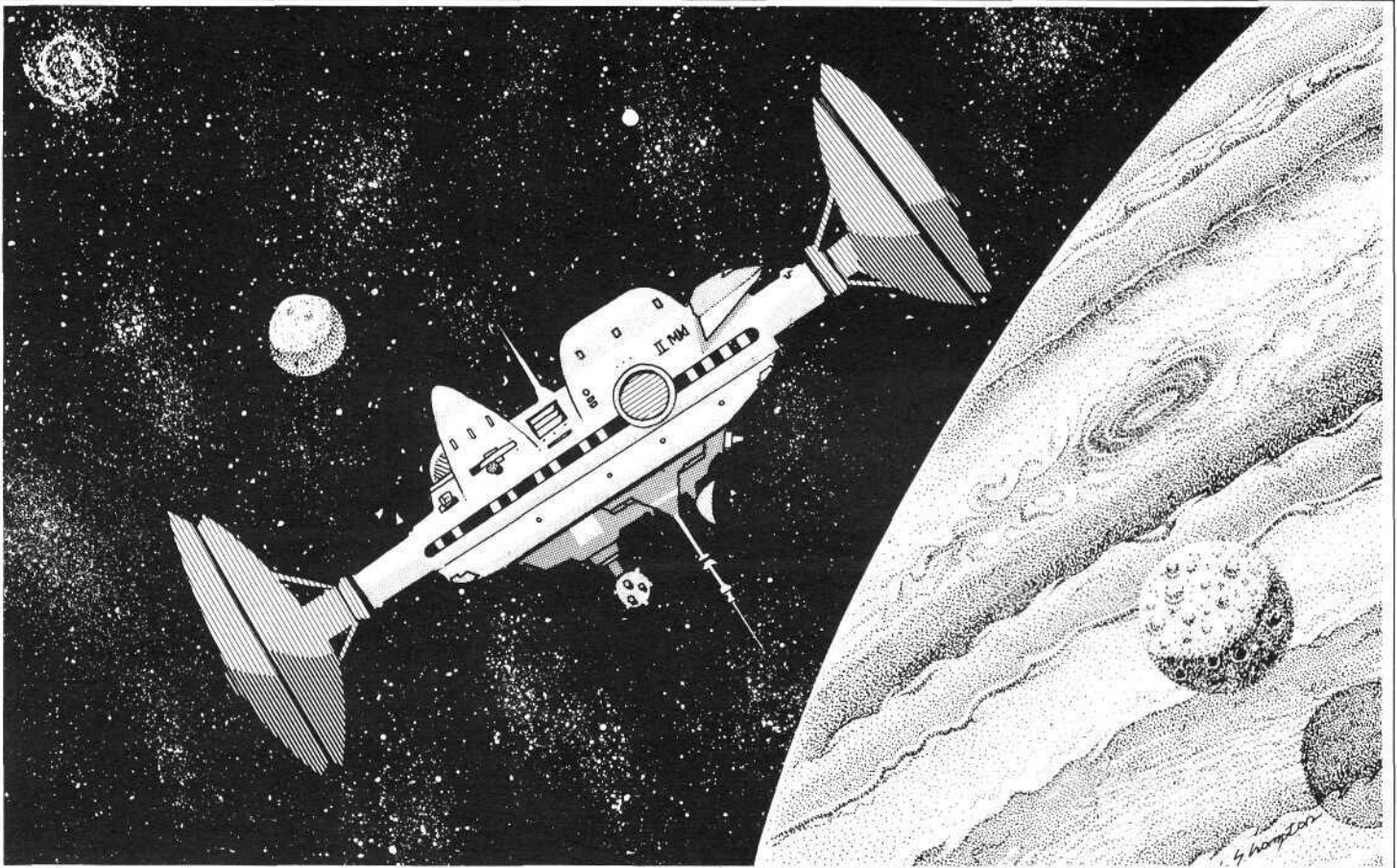
- Primary:** A horizontal row of eight rectangular boxes.
- Life Support:** A vertical column of eight rectangular boxes.
- Drive:** A horizontal row of eight rectangular boxes.
- Hangar Deck:** A vertical column of eight rectangular boxes.
- Missile Bay:** A horizontal row of eight rectangular boxes.
- Continuous:** A vertical column of eight rectangular boxes.
- Computer:** A horizontal row of eight rectangular boxes.
- Tactical Action Center:** A horizontal row of eight rectangular boxes.
- Active Operator:** A horizontal row of eight rectangular boxes.
- Passive Operator:** A horizontal row of eight rectangular boxes.
- Captain:** A horizontal row of eight rectangular boxes.
- Navigator:** A horizontal row of eight rectangular boxes.
- Communications:** A horizontal row of eight rectangular boxes.
- Engineer:** A horizontal row of eight rectangular boxes.
- Computer:** A horizontal row of eight rectangular boxes.
- Bridge:** A horizontal row of eight rectangular boxes.

The diagram uses a grid system to show the spatial arrangement of these areas. The Primary, Life Support, Drive, Hangar Deck, Missile Bay, and Continuous areas are arranged in a 2x4 grid. The Computer, Tactical Action Center, Active Operator, and Passive Operator areas are arranged in a 2x4 grid. The Captain, Navigator, Communications, Engineer, Computer, and Bridge areas are arranged in a 2x4 grid.

Figure 1 shows a schematic diagram of a 16-column array. The columns are numbered 1 to 16. Column 1 is white, and columns 2 through 16 are black.

(record ordnance load and type)

| | |
|--------------|----|
| Comfort | +1 |
| Crew Quality | |



Azanian *Emilon Gheni*-class Seeker

Original Date of Design: February 11, 2190

First Example Laid Down: March 30, 2197

First Example Completed: April 10, 2203

Azania rode the wave created by its large tantalum reserves right into the 23rd century. With their tantalum revenues the Azanians became a force in interstellar politics that they wouldn't have been otherwise; and with ESA's technology they could make their own ships and, therefore, their own claims in space.

Azanian exploration has always been of the school "first come, first served." Quick missions to systems to make initial surveys and claims has been the rule, and detailed exploration has been most often left up to the more thorough member nations of ESA, like the French or English. In the first decade of the 23rd century the Azanians introduced their *Emilon Gheni*-class initial survey vessel, a design they have been relying on ever since.

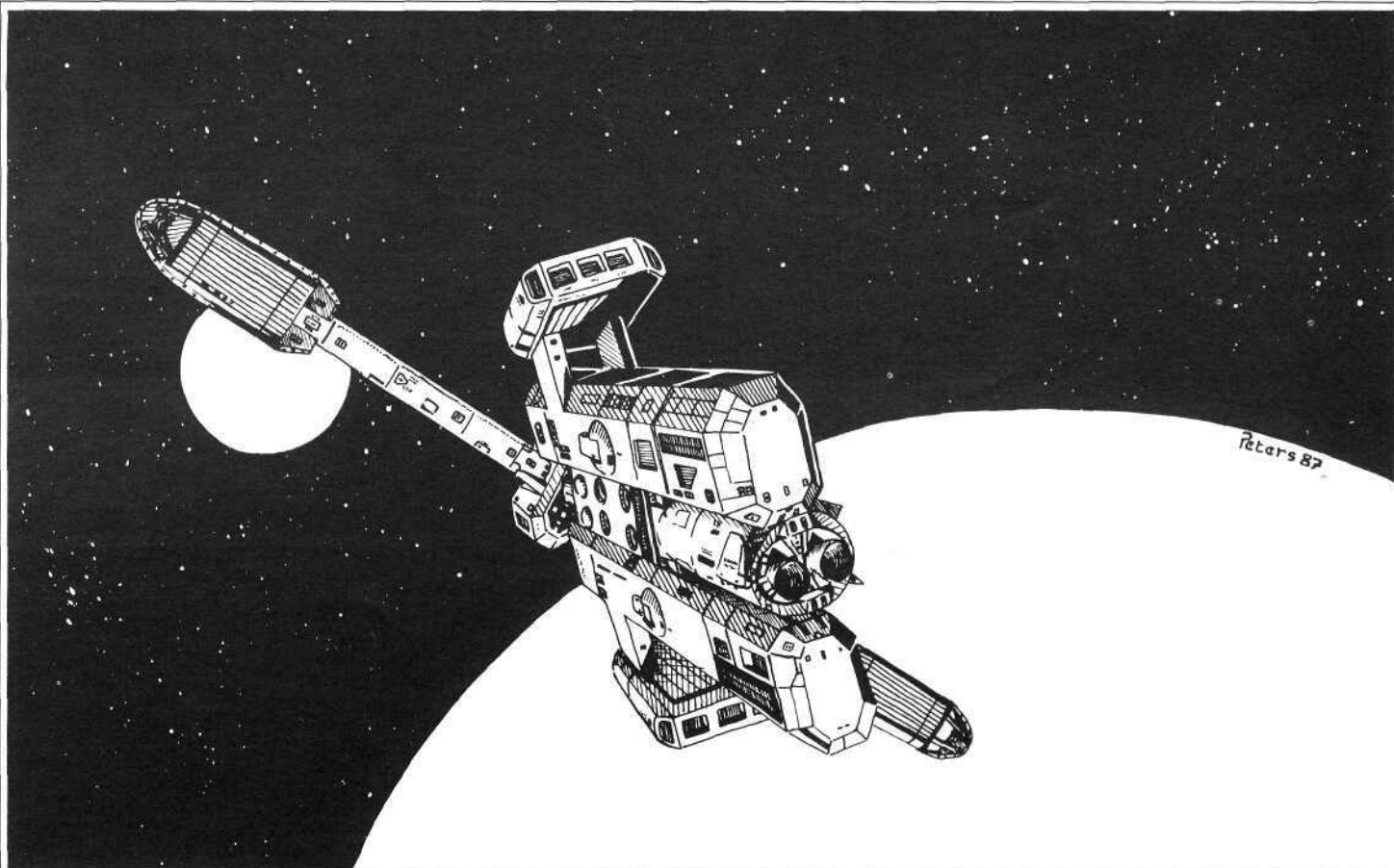
The *Emilon Gheni* was designed with economy in mind. The ship has no planetfall shipboard vessels, so it must make all of its observations from orbit. Its accommodations are adequate, as are its sensors. The entire ship must spin in order to approximate gravity in either of the two opposing capsule stations.

Sensor Package: Gravitational scanner, advanced cartographic, standard life, passive sensors.

Crew: Bridge: 10, Engineering: 3, Scientific: 5, Medical: 1.

PERFORMANCE CHARACTERISTICS

Warp Efficiency: 1.59, *Power Plant:* 2 MW MHD Turbine, *Fuel:* 1200 tons, sufficient for six weeks of operation, *Range:* 7.7, *Mass:* 1505.8 tons, *Cargo Capacity:* none, *Comfort:* 0, *Total Life Support:* 13, *Price:* Lv5,345,000



German Hamid-class Survey Ship

Original Date of Design: June 16, 2245

First Example Laid Down: April 19, 2250

First Example Completed: March 21, 2252

Performing most of Germany's frontier expeditions is the *Hamid*-class survey ship. Though not as modern and sophisticated as the *Vogelperspektive* class, the *Hamid* has yet to be replaced as the workhorse of German exploration.

The original design is unarmed, and carries a variety of lab and scientific personnel. One interface-capable lander is attached which can ferry scientists to a planet and specimens back to the ship.

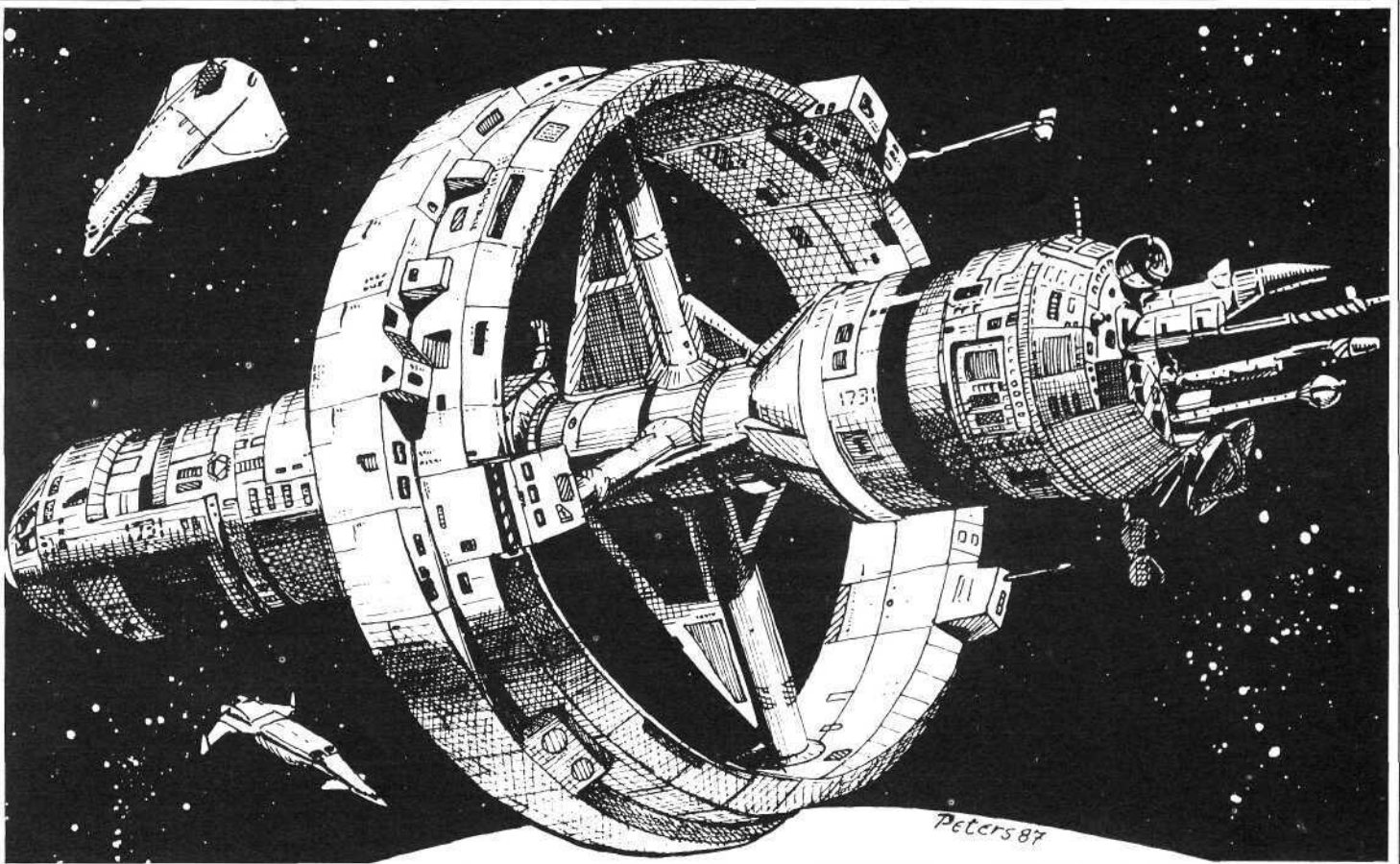
However, as with most survey vessels in the French Arm after the start of the Kafer War, the *Hamid*-class is now armed, although not very well. The addition of the weapons, the targeting arrays, and the supporting electronics have forced several changes to the ship's performance. The scientific personnel are now cramped into quarters designed to hold half their number, and the range of the ship is now only 60 days instead of the normal 120. The crew needed to operate the weapons and additional sensors has been subtracted from the science personnel on most vessels, but some ships are lucky enough to have science crew members cross-trained in gunnery or sensor operation. Lab space (particularly specimen storage) is very much at a premium on these vessels, to the extent that the lander is often used for this purpose.

Sensor Package: Gravitational scanner, standard cartographic, standard life. Passive and active arrays are installed on most frontier ships.

Crew: Bridge: 10, Tactical Action Center: 4, Engineering: 3, Shipboard Vessels: 1, Scientific: 4, Medical: 1.

PERFORMANCE CHARACTERISTICS

Warp Efficiency: 1.20, *Power Plant:* 1.1 MW MHD Turbine, *Fuel:* 880 tons, sufficient for eight weeks of operations, *Range:* 7.7, *Mass:* 762 tons, *Cargo Capacity:* none, *Comfort:* - 1, *Total Life Support:* 23, *Ordnance Carried:* 8 submunitions, *Price:* Lv34,200,000



French Lavoisier-class Survey Ship

Original Date of Design: September 15, 2289

First Example Laid Down: January 31, 2290

First Example Completed: January 6, 2292

When France's 12th Republic suffered a military coup in 2289 and the army set up monopolies in vital industries, a few of the more far-thinking industrialists began to press the military government to fund the construction of new, larger survey ships to replace those that had grown outdated. The purpose of these new ships was to be twofold. First, they would be able to perform long-term studies (up to a year, at least) of newly discovered, prospectively colonizable worlds without having to refuel or resupply. (This emphasis on the colonization of the stars was intended to revitalize the French people's national pride and simultaneously ensure that they would not object to the spending necessary.) Second, and perhaps most important to the industrialists, the ships would be built with enough cargo space to carry the equipment necessary to mine, partially process, and transport great quantities of any rich ore deposits which the ships might discover in their studies of new star systems.

Six such ships were originally planned; only two had been completed and one other begun when Nicolas Ruffin took office in the wake of the military government's fall from power in 2294. Ruffin reasoned that as construction of the third had been started, it would be best to have it finished rather than have the money already spent written off as a loss. Therefore, he worked funding for its completion into his stringent governmental budget.

Although the three ships were originally intended to be placed under the control of the industrial monopolies that had lobbied for their construction, Ruffin ensured that as they had been funded by the French government, they would remain the property

of the French government. All three ships are currently in service within the French Arm, where they perform a variety of functions including surveying, mining, and transporting supplies to new colonies.

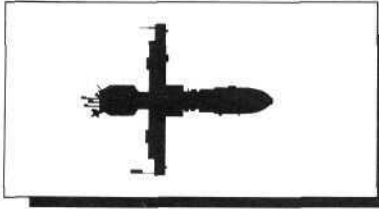
Sensor Package: Navigational radar, deep-system scan, gravitational scan, advanced cartographic, advanced life, and passive sensors.

Crew: Bridge: 10, TAC: 1, Engineering: 12, Shipboard Vessels: 1, Scientific: 5, Medical 1.

PERFORMANCE CHARACTERISTICS

Warp Efficiency: 2.87 (1.63 loaded), **Power Plant:** 1.5 MW fission reactor, **Fuel:** none, **Range:** 7.7, **Mass:** 1749.4 tons (9481.77 loaded), **Cargo Capacity:** 2577.46 m³, **Comfort:** 0, **Total Life Support:** 32, **Price:** Lv5,477,000

Ship Status Sheet



Antoine Lavoisier

Ship Name

Survey

Ship Type

France

Owning Nation or World

Movement

3

Radial Reflected

9

Radial Profile

0

Screens

—

Lateral Reflected

8

Lateral Profile

0

Radiated Signature

5

Targeting Computer

—

Armor

—

Hull Hits

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|-----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |
|---|---|---|---|---|---|---|---|---|-----|

Minor
Major

Power Plant Hits

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|-----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |
|---|---|---|---|---|---|---|---|---|-----|

Inoperable

Surface Fixture Hits

| —Weapons— | | | | | | | | | | | | —TTAs and Submunitions— | |
|-----------|----|----|----|----|----|----|----|----|-----|-----|-----|-------------------------|------|
| 1. | 2. | 3. | 4. | 5. | 6. | 7. | 8. | 9. | 10. | 11. | 12. | 13. | 14. | 15. | 16. | 17. | 18. | 19. | 20. | 21. | 22. | 23. | 24. | 25. | 26. | 27. | 28. | 29. | 30. | 31. | 32. | 33. | 34. | 35. | 36. | 37. | 38. | 39. | 40. | 41. | 42. | 43. | 44. | 45. | 46. | 47. | 48. | 49. | 50. | 51. | 52. | 53. | 54. | 55. | 56. | 57. | 58. | 59. | 60. | 61. | 62. | 63. | 64. | 65. | 66. | 67. | 68. | 69. | 70. | 71. | 72. | 73. | 74. | 75. | 76. | 77. | 78. | 79. | 80. | 81. | 82. | 83. | 84. | 85. | 86. | 87. | 88. | 89. | 90. | 91. | 92. | 93. | 94. | 95. | 96. | 97. | 98. | 99. | 100. |

—Active Sensors—

Primary

Redundant

—Passive Sensors—

0

Primary

Redundant

Critical Hits

| —Computer— | | | | | | | | | | | | —Tactical Action Center— | | | | | | | | | | | | —Bridge— | |
|------------|---|---|---|---|---|---|---|---|----|----|----|--------------------------|----|----|----|----|----|----|----|----|----|----|----|----------|-----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |

—Life Support—

—Drive—

—Hangar Deck—

—Missile Bay—

—Continuous—

Captain

Navigator

Communications

Engineer

Computer

Damage Control

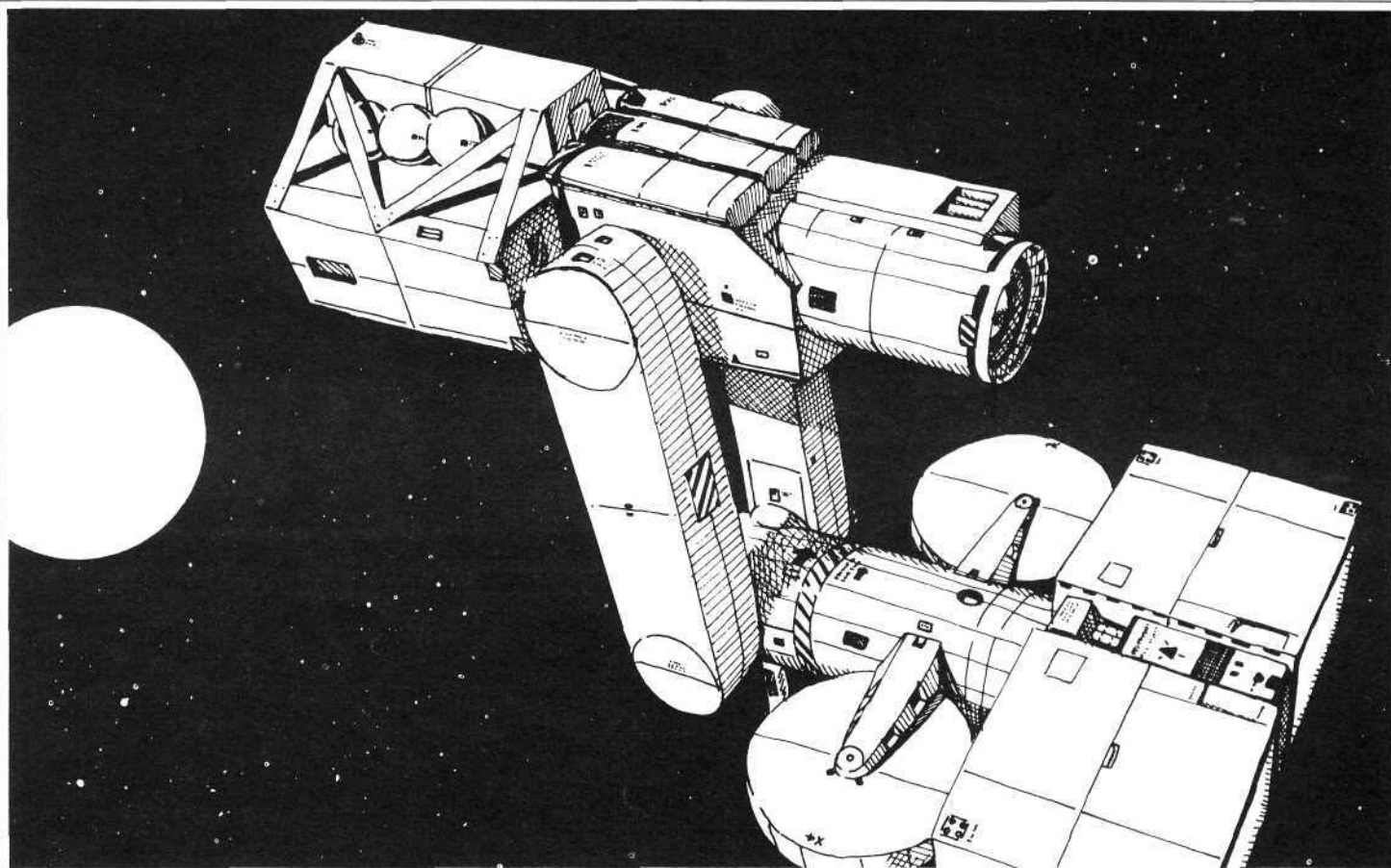
| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|-----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |
|---|---|---|---|---|---|---|---|---|-----|

Ordnance

(record ordnance load and type)

Crew

| | |
|--------------|---|
| Comfort | 0 |
| Crew Quality | |



Miscellaneous Ships

English *Dalton*-class Mining Vessel

Original Date of Design: June 6, 2244

First Example Laid Down: April 10, 2245

First Example Completed: November 23, 2247

The *Dalton*-class is one of the most recognizable ships in human space—its haphazard appearance is one of the more unusual to be found. However, the *Dalton* is set up to locate, process, and move large amounts of material, mostly from asteroids or other free-floating bodies in space.

Location: The *Dalton*-class is equipped with scanners and a powerful active sensor for locating asteroids. Often hundreds or thousands are catalogued fairly quickly, and other, smaller ships attached to the mining operation are sent to make firsthand investigations. The *Dalton* is usually held back and moved only to those locations where a rich asteroid has been found.

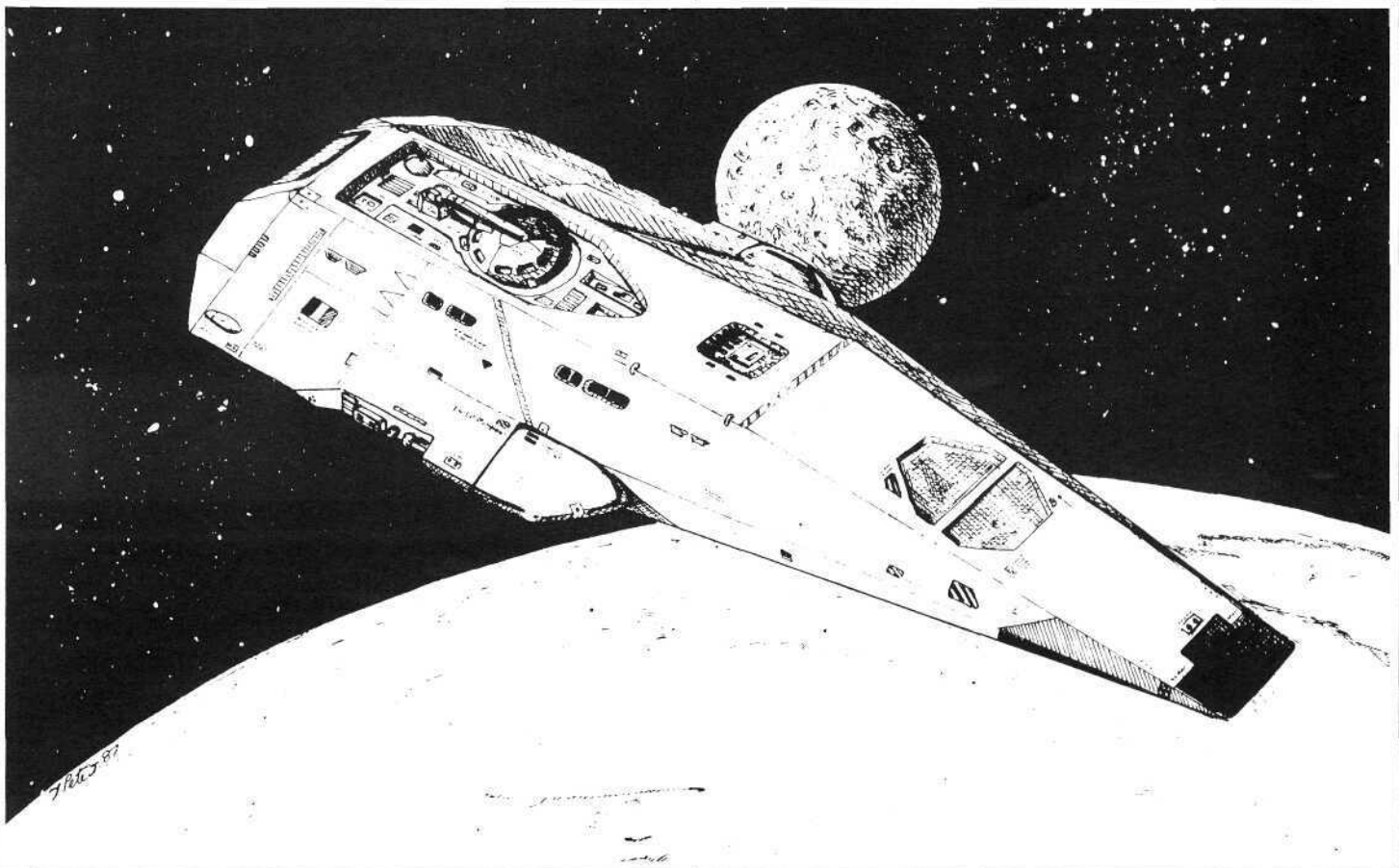
Processing: The lower section of the *Dalton* is an ore processing station, which can accept asteroids which are several meters in greatest dimension directly into its processing chamber. Larger asteroids have to be pulverized by crews using explosives outside the ship. When an asteroid is processed, it is reduced into useful and useless portions.

Delivery: The upper section of the *Dalton* is a linear accelerator. Useful materials can be shot toward a collection point elsewhere in a system. Useless materials are most often simply dumped out of the ship. Since the accelerator is not lined up with the center of gravity of the vessel, every time the *Dalton* fires a load of material, it begins to spin. This spin is gradually reduced by the ship's thrusters.

Crew: Bridge: 14, Engineering: 38, Ship's Security: 15, Mining Crew: 40, Medical: 5.

PERFORMANCE CHARACTERISTICS

Warp Efficiency: 1.93, *Power Plant:* 50 MW Fission, *Fuel:* NA, *Range:* 7.7, *Mass:* 14,300 tons, *Cargo Capacity:* 2250 m³, *Comfort:* + 1, *Total Life Support:* 125, *Price:* Lv38,278,000



Manchurian *Yinma*-class Lander

Original Date of Design: July 24, 2275

First Example Laid Down: April 16, 2276

First Example Completed: December 11, 2277

The Manchurians have challenged the market for the generic planetary lander with their *Yinma*-class design. Most often ships have the capacity to carry a lander with them, either in a magnetic sling or in a cargo hold, but have not had a specific lander designed for such a purpose. Generic landers can often be attached to any ship which is willing to make the sacrifice in warp efficiency.

Attachment: The lander itself is roughly 10 meters wide, 4 meters in height, and 25 meters long. Any ship with at least these dimensions in its cargo hold can carry a *Yinma*, provided the access is large enough (bay doors can often be modified without great difficulty). For those ships without sufficient cargo space, the *Yinma* is constructed with its own magnetic sling generators. The *Yinma* can attach itself to any twenty-five by ten meter surface area of a ship.

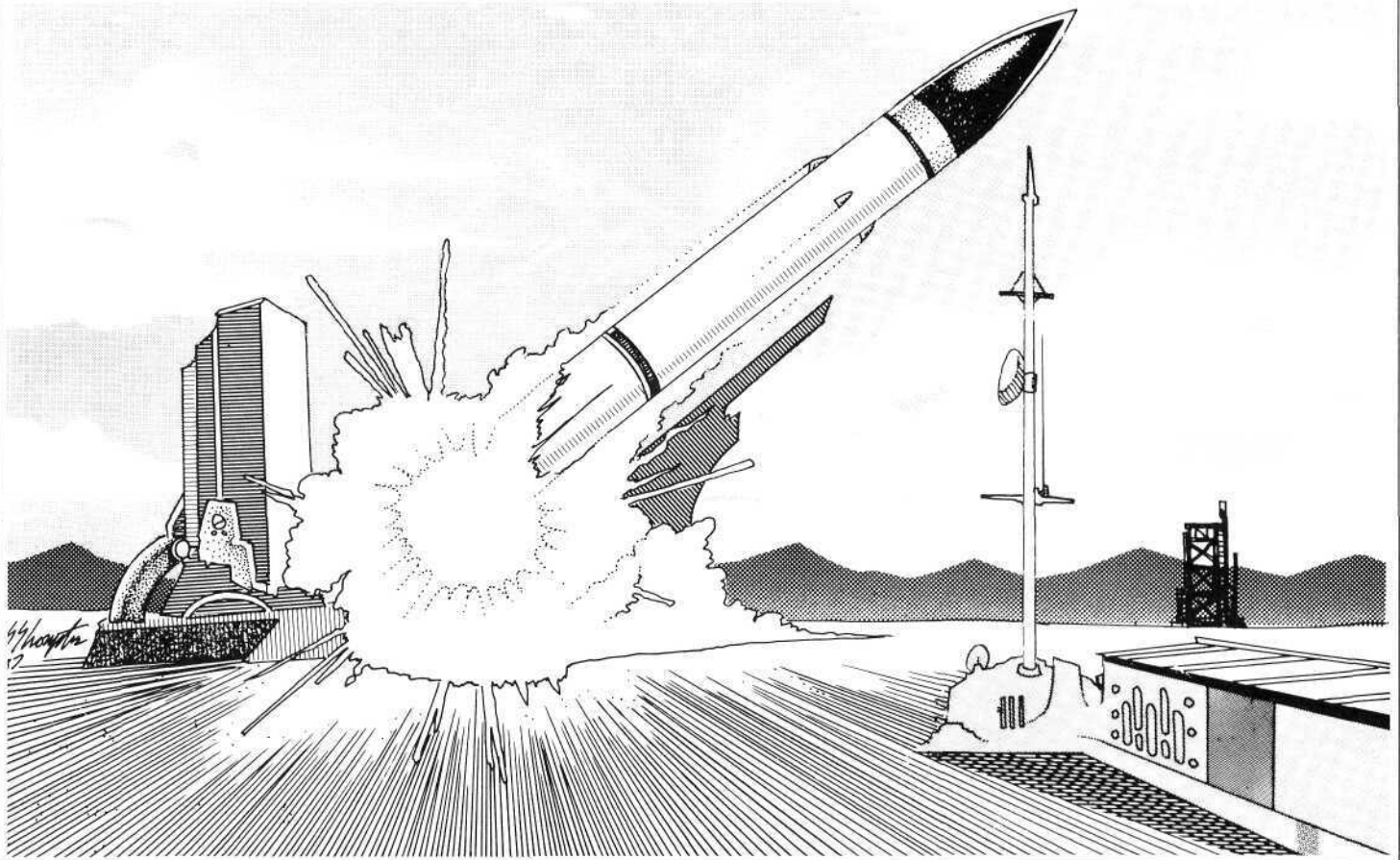
Uses: Although the *Yinma* has no stutterwarp, it is intended for long duration missions and, therefore, has a complete crew complement. Comfort is low, but often flight time is limited and bearable. Once on the surface of a world, the lander can be left unattended; security and internal monitoring systems will protect the ship in the absence of the crew.

Considering its low price and adaptability, the *Yinma* has become quite a success for its Manchurian designers. Relying on local interface can force long delays or otherwise disrupt ship operations. The *Yinma* can make almost any ship interface capable.

Crew: Bridge: 10, Engineering: 3, Medical: 1.

PERFORMANCE CHARACTERISTICS

Warp Efficiency: 0, *Power Plant:* 0.5 MW MHD Turbine, *Fuel:* 25 tons, sufficient for 84 hours of operations, *Range:* NA, *Mass:* 175 tons, *Cargo Capacity:* 225 m³, *Comfort:* — 2, *Total Life Support:* 20, *Price:* Lv590,000



French Merimee-class Courier Missile

Original Date of Design: January 1, 2256
First Example Laid Down: August 12, 2256
First Example Completed: June 19, 2257

Certain courier missions do not actually require human supervision. Standard news services, business transactions, and so on can be just as effectively transmitted with an unmanned vessel. The Merimee-class Courier Missile is suited to just this sort of task.

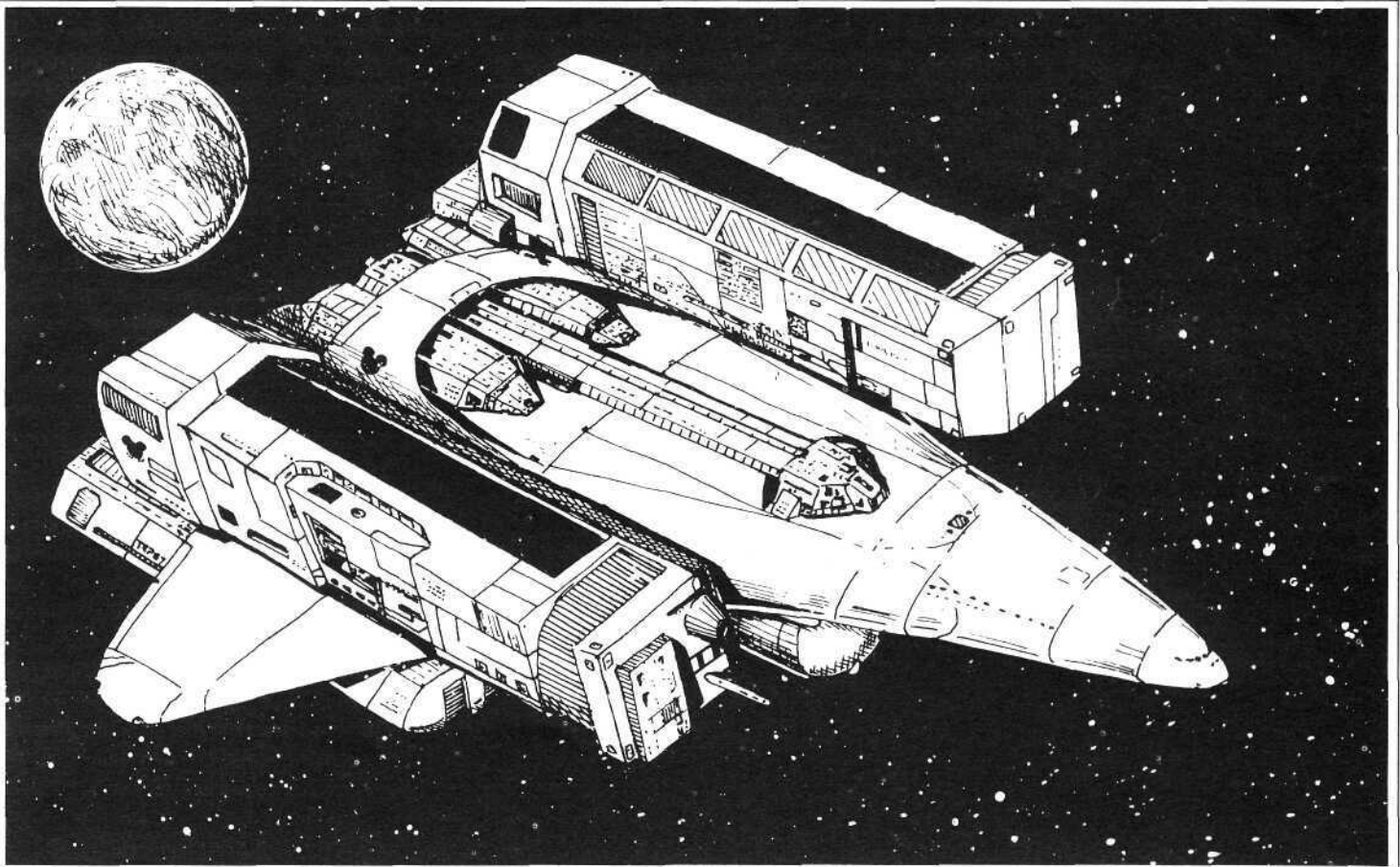
The Merimee has a stutterwarp which is computer linked to its navigational radar system. The computer controls the vessel on its flight path. Virtually no safeguards are built in (anyone could tamper with the missile itself) and the design is not considered for highly sensitive transmissions.

The message computer on board is capable of accepting an almost limitless amount of information—the equivalent of several volumes of encyclopedias at any rate. The computer can be tapped either on the spot or induced to transmit its information along a tight beam link once given the appropriate combination codes.

Merimee-class missiles can be carried by starships for interstellar communications. They can also be used in emergency situations as stutterwarp-capable space buoys.

PERFORMANCE CHARACTERISTICS

Warp Efficiency: 1.73, *Power Plant:* 0.2 MW Fuel Cell, *Fuel:* 8.64 tons, sufficient for 96 hours of operations, *Range:* 7.7, *Mass:* 35.8 tons, *Cargo Capacity:* information only, *Comfort:* NA, *Total Life Support:* 0, *Price:* Lv430,000



French *Marseilles*-class Passenger Ship

Original Date of Design: November 16, 2246

First Example Laid Down: August 12, 2262

First Example Completed: July 4, 2265

Surface-to-surface passenger service presents several design difficulties. Passengers require spin habitats for comfort, yet streamlined designs do not lend themselves well to spin. Special allowances must be made for interior volume (passengers require quite a bit) considering the streamlining itself will take up plenty of space.

The *Marseilles*-class approach is unique and effective. In short, the ship is divided into two sections. The passenger section contains all of the accommodations, the power plant, and thrusters. The orbital section, or carriage, contains the bulk of the fuel tankage and the stutterwarp drive itself. The two sections together form an unstreamlined, stutterwarp-capable vessel. However, on approach to a planet, the carriage is left in orbit and only the streamlined passenger section makes planetfall. Streamlining and thruster fuel are not wasted on those sections which do not require it, and the overall cost savings makes the liner very competitive.

The original design for the *Marseilles*-class was presented to the French military as a possible troop transport in the 2240s. After consideration, the design was labeled too unsafe in a combat environment, and the plans were shelved. Not until a bulk of documents were declassified in the 2260s were the plans rediscovered. They were turned over to private industry, and France's aerospace industry set about adjusting the design for new technology. The resulting design was certainly better than the original and would make an excellent passenger liner for the 2270s and beyond.

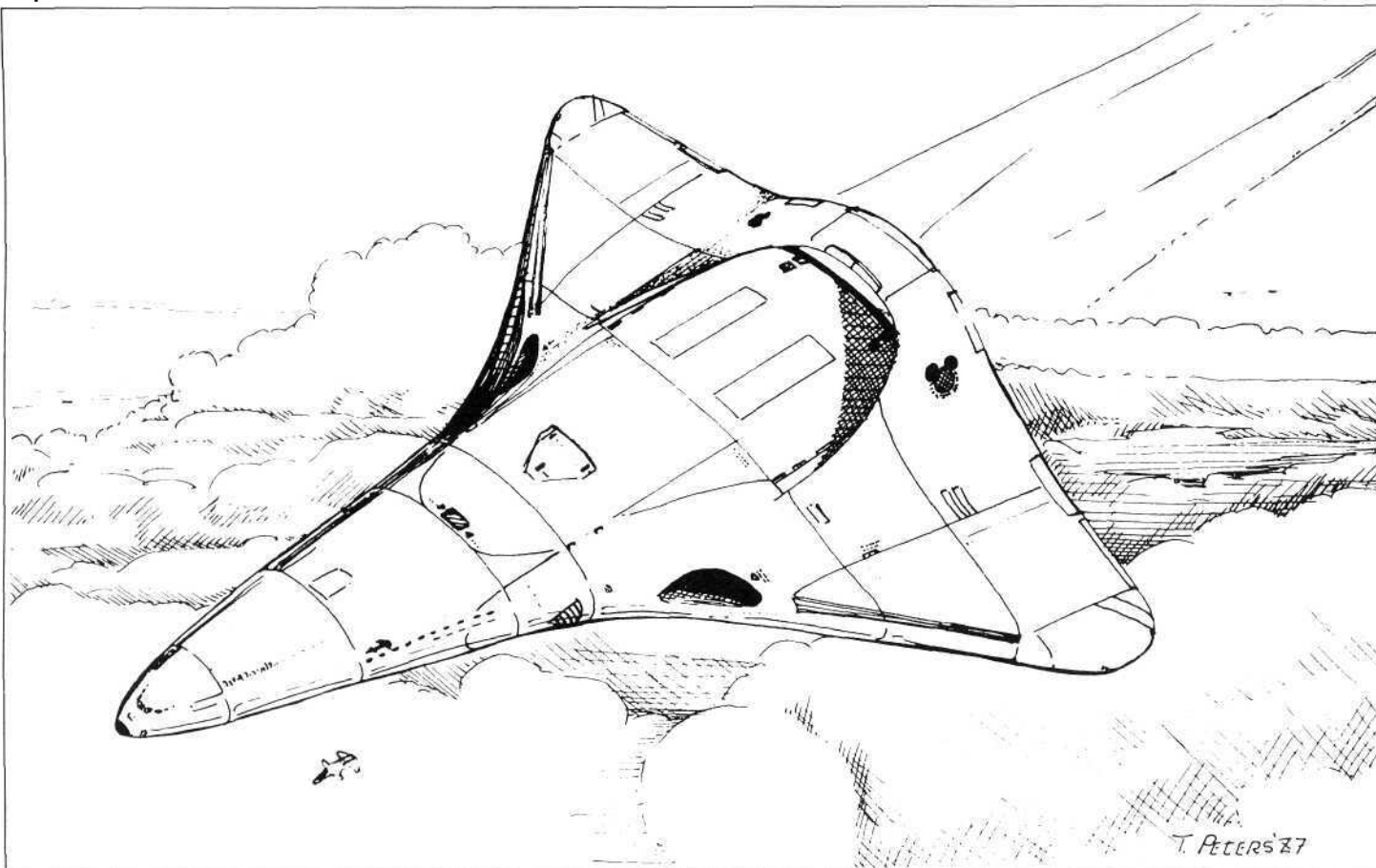
The national French aerospace-line obtained the rights to pro-

duce the first several *Marseilles*-class ships, and these were put into service between Tirane and Earth. The design proved to be so popular that they have become one of the most common vessels making that profitable passenger run. Now virtually all large passenger liner operations have at least one *Marseilles*-class ship in their inventories, and orders for new vessels keep several Earth shipyards in constant business.

The secret of the *Marseilles*-class' success lies in its three internal spin habitats. These are made up of staterooms, recreational facilities, shops, and small clubs, all spinning inside the streamlined hull of the passenger section to provide simulated gravity. However, since zero-gravity is still a novelty to many infrequent space travellers, often the spin habitats are set on a low speed or even shut off at the request of the passengers. Movement between the habitats is accomplished by elevators which travel "up" to the center of a habitat and then along the belly of the ship to the center of the other habitats. Since the passengers cannot enjoy the view out of their spacecraft due to spin, images of interesting events have to be relayed into the habitats. There are two zero-gravity observation decks, one fore and one aft on the belly of the ship, for passengers interested in a firsthand view of their journey's progress.

The total crew complement for a *Marseilles*-class ship is 95. Of these, 50 are stewards charged with food preparation, entertainment, and the general comfort of the 500 potential passengers. A large medical staff is provided for the care of both passengers and crew. Sufficient back-up safety systems have been installed so that the *Marseilles* need not have lifeboats. The ship is heavily compartmentalized and has emergency back-up power supplies and computers to take care of almost any emergency.

The illustrations depict the *Marseilles*-class in its two configurations. The first shows the ship with its stutterwarp carriage in place. The second shows the vessel making a reentry without its carriage,



in its streamlined configuration.

Many *Marseilles-class* vessels can be found along the French Arm, performing routine passenger service between colony worlds. As with all passenger service, the threat of Kafer attack is hurting business. However, most scheduled flights are still running, albeit slightly under capacity.

Crew: Bridge: 12, Engineering: 3, Ship's Security: 10, Steward: 50, Medical: 20

PERFORMANCE CHARACTERISTICS

Warp Efficiency: 1.94 (1.35 loaded), **Power Plant:** 10 MW MHD Turbine, **Fuel:** 1000 tons, sufficient for one week of operations, **Range:** 1.1, **Mass:** 5649.925 tons (16,949 tons loaded), **Cargo Capacity:** 3928 m³, **Comfort:** + 1, **Total Life Support:** 600, **Price:** Lv31,910,000

2300™

Ships of the French Arm

Since even before the time of H.G. Wells and Jules Verne, men dreamed of travelling between the stars in marvelous machines of their own creation. Stutterwarp technology has made these journeys possible, and now the near space around Sol is teeming with the activity of human starships, ferrying people and their belongings between exotic, alien worlds.

Earth and its many colonies have an inherent reliance on space travel, but the nature of the ships which move between them varies greatly with the mission it is to perform. For instance, cargo vessels are quite often tailored to their specific route of trade, such as bringing food from the core to hungry colonists, returning laden with strange goods for eager consumers. More recently, the pressing issue of the Kafer War has forced shipbuilders and tacticians alike to rethink their vocations, forcing them to redesign man's warships to effectively deal with the alien threat.

Ships of the French Arm examines over forty ships which can be found in that region of human space. Each is given splendid attention to detail, including a brief history and explanation of design, an illustration of the vessel, and complete statistics of the design for immediate use with the game *Star Cruiser*.

Ships of the French Arm deals with a wide range of human designed starships, from the *Bismark* Class Battlecruiser to the *Cargodevil* merchant ship. Special attention is given to such ships as the *Richelieu* Class Battleship and the recently upgraded *Martel Illbis* Fighter, ships on the frontline against the Kafer onslaught, being thoroughly tested by their alien opponents.

For the referee, *Ships of the French Arm* is an invaluable source of encountered vessels (both friendly and otherwise), and ships the adventurers might be travelling on. For the players, this book becomes a handy guide to the local starships, letting them know what they can and cannot expect out of the *Ships of the French Arm*.

Design.....Frank Chadwick and
Timothy B. Brown
Art Director.....Barbie Pratt
Cover Art.....Steve Venters

GDW Game Designers' Workshop
Since 1973

PO Box 1646, Bloomington, IL 61702-1646



Copyright©1987 Game Designers' Workshop. All rights reserved.
Printed in the U.S.A. Made in the U.S.A. ISBN 0-943580-34-X.