

No. 28

CHALLENGE



GDW's Magazine of Adventure Gaming

*For Twilight: 2000—
Air Module II
by Frank Frey*

*For Traveller—
Across the Imperium
by Gary Thomas*

*For Traveller: 2300—
The Near Star List and Map
by Marc W. Miller*



Incorporating the Journal of the Traveller's Aid Society

ACADEMY OF ADVENTURE GAMING ARTS & DESIGN

OFFICIAL ORIGINS AWARDS NOMINATION BALLOT

For the year 1986, to be presented at Origins '87, July 2-5, 1987, in Baltimore, MD
(for information about Origins '87, write P O Box 15405, Baltimore, MD 21230)

The Origins Awards, presented at Origins each year, are an international series of awards aimed at recognizing outstanding achievements in Adventure Gaming. The awards are comprised of the Charles Roberts Awards for boardgaming, and the H. G. Wells Awards for miniatures and role-playing games. An Awards Committee of hobbyists (some professionals, but primarily independents) directs and administers the awards system.

INSTRUCTIONS. Read carefully. Print legibly or type nominations. Ballots that are messy, not completed correctly, or show attempts at ballot stuffing will not be counted. You may list three nominees per category. It does not matter in what order you list them. To keep the voting as meaningful as possible, do not list selections in unfamiliar categories. **YOU MUST SIGN THE BALLOT!** Include your address. You may vote only once. Nominations should be for products released during the calendar year 1986. Miniatures figure series nominations should be for new product lines or lines which were substantially expanded in 1986.

This ballot may be reproduced and circulated by any means available, provided its contents are faithfully copied. ALL Adventure Gamers are encouraged to vote! YOUR VOTE makes a difference! A final ballot is prepared by the committee and voted on by the members of the Academy of Adventure Gaming Arts & Design. Academy membership, \$3.00 per year, is open to active, accomplished hobbyists, both professional and amateur. Membership guidelines are available for a SASE from the addresses given below. Correspondence should be mailed to the U S address. Present members may renew by sending their check with their ballot. Checks should be made payable to GAMA for \$3 U.S. The Academy and the Awards Committee as well as the Origins Convention itself, function under the authority of GAMA, the Game Manufacturers Association.

DEADLINE: MAY 2, 1987

THE H. G. WELLS AWARDS FOR OUTSTANDING ACHIEVEMENT IN MINIATURES AND ROLE-PLAYING GAMES

1. Best Historical Figure Series, 1986

2. Best Fantasy/ Science Fiction Figure Series, 1986

3. Best Vehicular/ Accessory Series, 1986

4. Best Miniatures Rules, 1986

5. Best Role-Playing Rules, 1986

6. Best Role-Playing Adventure, 1986

7. Best Role-Playing Supplement, 1986

8. Best Professional Role-Playing Magazine, 1986

9. Best Professional Miniatures Magazine, 1986

10. Best Play-By-Mail Game, 1986

THE CHARLES ROBERTS AWARDS FOR OUTSTANDING ACHIEVEMENT IN BOARDGAMING

11. Best Pre-20th Century Game, 1986

12. Best 20th Century Game, 1986

13. Best Fantasy/Science Fiction Game, 1986

14. Best Professional Boardgame Magazine, 1986

15. Best Military/Strategy Computer Game, 1986

16. Best Fantasy/ Science Fiction Computer Game, 1986

17. Best Screen Graphics in a Computer Game, 1986 (Given a particular computer's limitations)

18. Best Amateur Adventure Gaming Magazine, 1986

19. Best Graphic Presentation, 1986

20. Hall of Fame, 1986

Name _____
Address _____

Signature _____

Send your ballot to only one of the following addresses by the deadline, May 2, 1987.

Awards
GAMA
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Fairfax, VA 22031

Australia & New Zealand
Awards, Adrian Pett
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P O Box 162
Mooroolbark, Vic 3138
Australia

No. 28

CHALLENGE

GDW's Magazine of Adventure Gaming

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Challenge, GDW's magazine of Adventure Gaming is published quarterly and includes the *Journal of the Travellers' Aid Society* as an internal section.

Journal of the Travellers' Aid Society is Game Designers' Workshop's registered trademark for its science-fiction gaming magazine devoted to *Traveller*.

Traveller is Game Designers' Workshop's registered trademark for its role-playing game of science-fiction adventure set in the far future.

Twilight: 2000 is Game Designers' Workshop's trademark for its role-playing game of survival in a devastated world.

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

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Submissions: We welcome articles and illustrations for *Challenge*. Please inquire before submitting manuscripts, enclosing a stamped, self-addressed envelope; we will send manuscript guideline and format sheets. Foreign inquiries (except APO/FPO) please include an International Reply Coupon.

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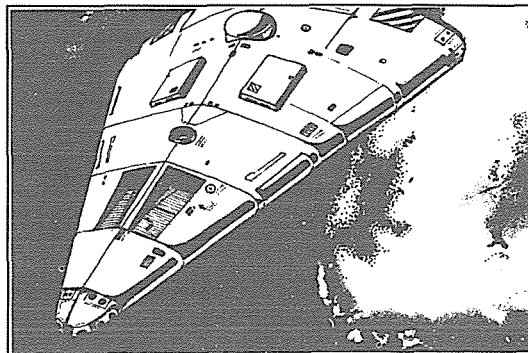
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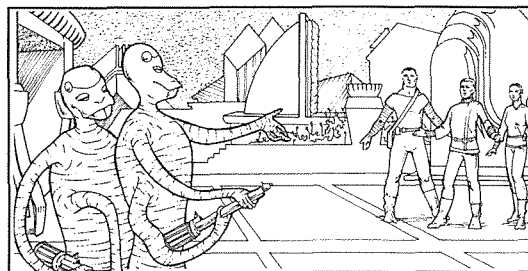
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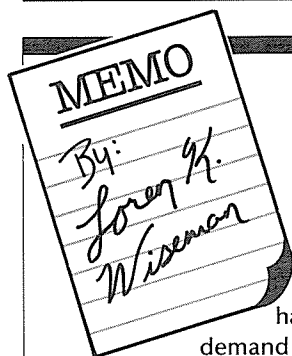
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From the Management

Tim Brown and I (and a few others) have been talking it over, and we have decided that there is now sufficient demand for a combined errata and question & answer column, and we will begin one with this issue. It will be called E&C, which requires some explanation. E&C stands for *Errata & Corrigenda*. Everyone knows that errata are mistakes, but few people are aware that corrigenda are corrections, and that what most people call errata sheets are more properly called errata and corrigenda sheets (since they are a listing of both errors and corrections). For those of you with less technical outlooks (or less picky ones), you can simply think of E&C as standing for errata and clarifications, and leave it at that.

In any case, the first installment of E&C appears on page 47, and clears up a few points about **Traveller: 2300** and *Airlords of the Ozarks*. Readers are encouraged to submit questions of general interest.

—Loren K. Wiseman

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JUST DETECTED

CONVENTIONS

TRI-STATE CON '87

March 27-29, 1987, Cincinnati, Ohio. Cincinnati's first regional convention will be held at the Tangeman Student Center on the campus of the University of Cincinnati. Events will include games and tournaments of all types, an auction, and a dealer's area. Prices are \$10.00 in advance and \$12.00 at the door. For more information, contact Lonnie Barnett, 5661 McCarthy Ct, W. Chester, OH 45069.

GAMES PLUS DAY

April 4, 1987, Mount Prospect, Illinois. Tournaments, auction, and dealers' room as well as other events are featured, to be held at the Mount Prospect Holiday Inn. For information, write Games Plus, 20 W. Busse Ave, Mount Prospect, IL 60056, or call (312) 577-9656.

GAMEX 1987

May 22-25, Pasadena Hilton Hotel, Pasadena, California. RPGs, wargames, miniatures, computer and family boardgame tournaments, flea markets, auction, seminars, demonstrations, and exhibitor area. For more information, contact Gamex 1987, C/O DTI, PO Box 8399, Long Beach, CA 90808, or call (213) 420-3675.

MAGAZINES

SECURITY LEAK

A new **Traveller** fanzine from Sorag Laboratories. They promise brand new adventures (each loaded with intrigue and action) with detailed background, floorplans, new technology, new weapons, new medicines, and columns on a diversity of subjects. Subscriptions are \$12 for four issues, \$4 per issue, please make checks and MOs payable to Gregg Giles (send no cash, please).

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Air Module II

The **Twilight: 2000** Air Module in *Challenge #26* proved so popular that more information seemed in order. Demand was greatest for more aircraft, so here they are. All types listed are fixed-wing aircraft.

MIRAGE F1-J

A French-built, all-weather fighter aircraft, supplied to Iraq, Jordan, Kuwait, and Qatar before the start of the war.

Special Features: Cyrano IV radar **Price:** \$2,500,000 (R/R) **RF:** + 40 **IR:** + 40 **Armament:** 2×30mm, one CFP 2000 kg, two UWP 1000 at kilograms each **Ammo:** 80×30mm **Tr Mov:** 1050 **Com Mov:** 1450 **Agility:** 8/4 **Turn Radius:** 80/40 **Acc:** 1450 **Fuel Cap:** 4300 **Fuel Cons:** 1500 **Wt:** 7.4 tons **TO Run:** 640 m **Land Run:** 610 m **Cargo:** none **Load:** 8350 kg **Mnt:** 40 **Crew:** 1 **Armor:** FF (30), CF (30), RF (30), W (30), T (25) **Damage Chart:** C.

MIRAGE 2000

A French-built, multi-role combat aircraft. **Special Features:** Antelope V ground-scan/all-weather radar, one CFP at 2000 kg, two UFP at 750 kilograms each, two UFP at 500 kilograms each, two UWP at 500 kilograms each, two UWP at 100 kilograms each. **Price:** \$5,000,000 (R/R) **RF:**

+ 40 **IR:** + 40 **Armament:** 2×30mm **Ammo:** 80×30mm **Tr Mov:** 1110 **Com Mov:** 1500 **Agility:** 9/5 **Turn Radius:** 90/150 **Acc:** 1500 **Fuel Cap:** 3800 **Fuel Cons:** 3500 **Wt:** 7.4 tons **TO Run:** 800 m **Land Run:** 750 m **Cargo:** none **Load:** 9500 kg **Mnt:** 40 **Crew:** 1 **Armor:** FF (30), CF (30), RF (30), W (30), T (30) **Damage Chart:** C.

MIRAGE 4000

A French-built, multi-role combat aircraft. **Special Features:** All-weather avionics, one CFP at 2000 kilograms, four UFP at 750 kilograms each, two UFP at 500 kilograms each, two UWP at 500 kilograms each, two UWP at 100 kilograms each. **Price:** \$8,000,000 (R/R) **RF:** + 40 **IR:** + 40 **Armament:** 2×30mm **Ammo:** 80×30mm **Tr Mov:** 1600 **Com Mov:** 2200 **Agility:** 10/7 **Turn Radius:** 100/70 **Acc:** 2000 **Fuel Cap:** 11,400 **Fuel Cons:** 10,000 **Wt:** 8 tons **TO Run:** 900 m **Land Run:** 845 m **Cargo:** none **Load:** 18,600 kg **Mnt:** 40 **Crew:** 1 **Armor:** FF (30), CF (30), RF (30), W (30), T (30) **Damage Chart:** C.

Kfir C-9

The final variant of the Israeli Kfir C-2 jet. **Special Features:** All-weather avionics, three CFP at 1000 kilograms each, four UWP at 500 kilograms each. **Price:** \$4,500,000 (R/R) **RF:** + 40 **IR:** + 40 **Arma-**

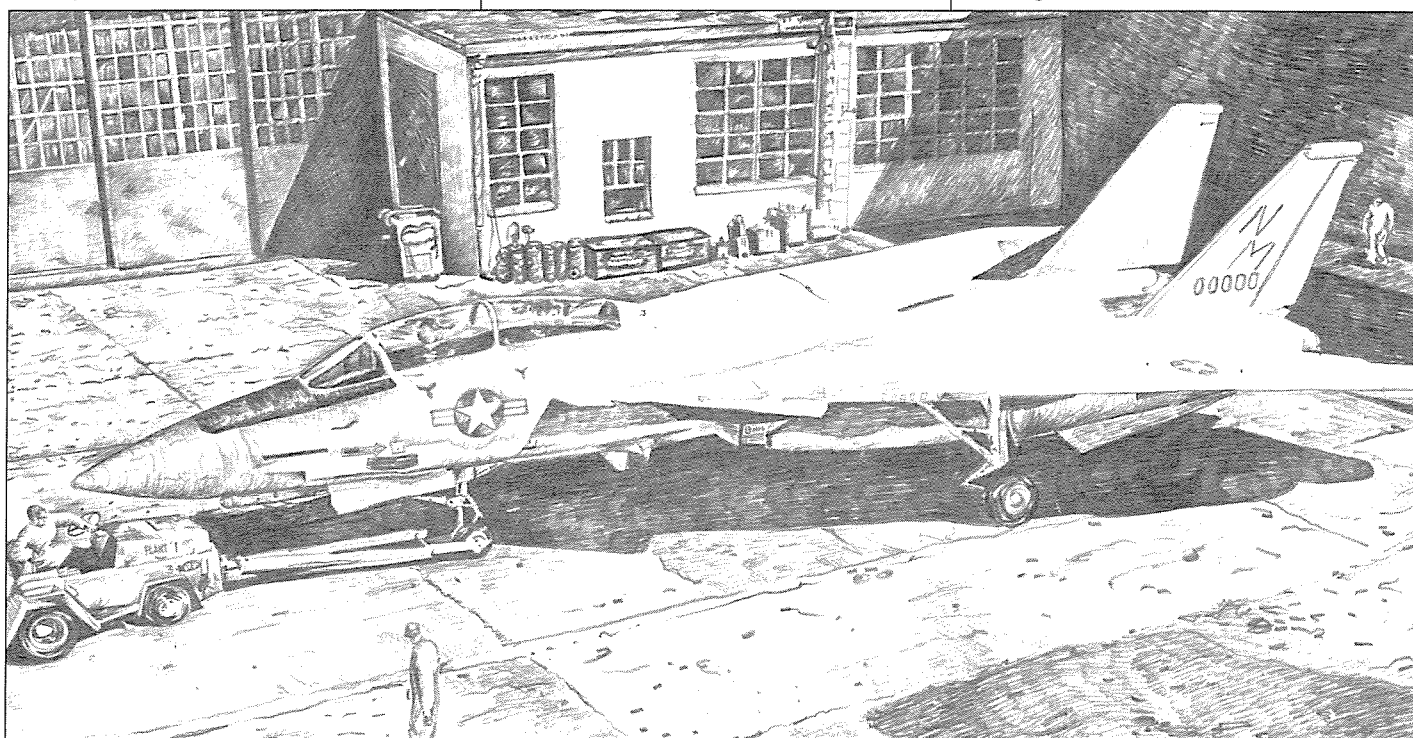
ment: 2×30mm **Ammo:** 80×30mm **Tr Mov:** 975 **Com Mov:** 1350 **Agility:** 10/6 **Turn Radius:** 100/60 **Acc:** 1400 **Fuel Cap:** 3243 **Fuel Cons:** 3000 **Wt:** 7.3 tons **TO Run:** 1450 m **Land Run:** 1555 m **Cargo:** none **Load:** 8243 kg **Mnt:** 40 **Crew:** 1 **Armor:** FF (30), CF (30), RF (30), W (25), T (30) **Damage Chart:** C.

AN-32 CLINE

Special Features: none. **Price:** \$2,500,000 (R/R) **RF:** none **IR:** + 40 **Armament:** none **Ammo:** none **Tr Mov:** 530 **Com Mov:** 735 **Agility:** 2/1 **Turn Radius:** 40/20 **Acc:** 450 **Fuel Cap:** 5500 **Fuel Cons:** 1100 **Wt:** 15 tons **TO Run:** 1200 m **Land Run:** 1600 m **Cargo:** 6700 m **Load:** 12,200 kg **Mnt:** 40 **Crew:** 5 + 40 **Armor:** FF (25), CF (25), RF (25), W (30), T (20) **Damage Chart:** B.

DNC-6 TWIN OTTER

A twin-turboprop, STOL (Short Take-Off/Landing) transport aircraft. **Special Features:** none. **Price:** \$1,500,000 (R/R) **RF:** none **IR:** + 40 **Armament:** none **Ammo:** none **Tr Mov:** 750 **Com Mov:** 350 **Agility:** 4/2 **Turn Radius:** 60/25 **Acc:** 300 **Fuel Cap:** 1446 **Fuel Cons:** 300 **Wt:** 1.9 tons **TO Run:** 366 m **Land Run:** 320 m **Cargo:** 1900 kg **Load:** 3346 kg **Mnt:** 35 **Crew:** 2 + 18 **Armor:** FF (20), CF (20), RF (20), W (20), T (15) **Damage Chart:** B.



TRANSALL C-160

A French-built, medium-range transport aircraft. **Special Features:** none **Price:** \$3,750,000 (R/R) **RF:** none **IR:** +40 **Armament:** none **Ammo:** none **Tr Mov:** 400 **Com Mov:** 555 **Agility:** 2/1 **Turn Radius:** 30/15 **Acc:** 300 **Fuel Cap:** 19,050 **Fuel Cons:** 4760 **Wt:** 8.9 tons **TO Run:** 990 m **Land Run:** 550 m **Cargo:** 16,000 kg **Load:** 35,050 kg **Mnt:** 40 **Crew:** 3 + 90 **Armor:** FF (35), CF (35), RF (35), W (30), T (25) **Damage Chart:** B.

PANAVIA TORNADO IDS II

Special Features: All-weather avionics, blind strike capacity, one CFP at 1500 kilograms, two UFP at 1000 kilograms each, two IWP at 500 kilograms each, two OWP at 250 kilograms each. **Price:** \$5,500,000 (R/R) **RF:** +40 **IR:** +40 **Armament:** 2 × 25mm **Ammo:** 60 × 25mm **Tr Mov:** 900 **Com Mov:** 1250 **Agility:** 9/6 **Turn Radius:** 90/60 **Acc:** 1250 **Fuel Cap:** 10,000 **Fuel Cons:** 8500 **Wt:** 14 tons **TO Run:** 900 m **Land Run:** 370 m **Cargo:** none **Load:** 15,000 kg **Mnt:** 40 **Crew:** 2 **Armor:** FF (30), CF (30), RF (30), W (25), T (25) **Damage Chart:** C.

A-10B THUNDERBOLT II

Special Features: All-weather avionics, one CFP at 2200 kilograms or two CFP at 1500 kilograms each, plus two UWP at 1500 kilograms each, two UWP at 1100 kilograms each, and two OWP at 450 kilograms **Price:** \$3,500,000 (R/R) **RF:** +40 **IR:** +30 **Armament:** 1 × 30mm **Ammo:** 330 × 30mm **Tr Mov:** 600 **Com Mov:** 830 **Agility:** 7/4 **Turn Radius:** 40/20 **Acc:** 550 **Fuel Cap:** 4800 **Fuel Cons:** 2400 **Wt:** 11 tons **TO Run:** 1220 m **Land Run:** 616 m **Cargo:** none **Load:** 7200 kg **Mnt:** 40 **Crew:** 1 **Armor:** FF (50), CF (50), RF (50), W (40), T (40) **Damage Chart:** D.

A-7 CORSAIR III

Special Features: All-weather avionics, two IWP at 225 kilograms each, two IWP at 1100 kilograms each, four OWP at 1500 kilograms each **Price:** \$3,000,000 (R/R) **RF:** +40 **IR:** +40 **Armament:** 1 × 20mm **Ammo:** 300 × 20mm **Tr Mov:** 800 **Com Mov:** 1100 **Agility:** 8/5 **Turn Radius:** 40/30 **Acc:** 800 **Fuel Cap:** 5600 **Fuel Cons:** 2240 **Wt:** 8 tons **TO Run:** 1700 m **Land Run:** 850 m **Cargo:** none **Load:** 8650 kg **Mnt:** 40 **Crew:** 1 **Armor:** FF (30), CF (30), RF (30), W (25), T (25) **Damage Chart:** C.

AV-8B HARRIER

A British fighter manufactured under license in the U.S and other countries. **Special Features:** All-weather avionics, VSTOL (Vertical/Short Take-Off/Landing) capability, one center pylon at 450 kilograms, two IWP at 900 kilograms each, two CWP at 450 kilograms each, two OWP at 280 kilograms each **Price:** \$3,750,000 (R/R) **RF:** +40 **IR:** +35 **Armament:** 2 × 25mm **Ammo:** 200 × 25mm **Tr Mov:** 700 **Com Mov:** 970 **Agility:** 9/5 **Turn Radius:** 60/40 **Acc:** 650 **Fuel Cap:** 4100 **Fuel Cons:** 2000 **Wt:** 6 tons **TO Run:** 370 m **Land Run:** 0 m **Cargo:** none **Load:** 8650 kg **Mnt:** 40 **Crew:** 1 **Armor:** FF (30), CF (30), RF (30), W (25), T (25) **Damage Chart:** C.

F15E STRIKE EAGLE

Special Features: All-weather avionics, thermal sight and image intensifier for weapons officer, one center pylon at 1000 kilograms, two IWP at 1000 kilograms each. **Price:** \$3,750,000 (R/R) **RF:** +40 **IR:** +35 **Armament:** 2 × 20mm **Ammo:** 200 × 20mm **Tr Mov:** 1100 **Com Mov:** 1500 **Agility:** 10/7 **Turn Radius:** 100/70

Acc: 1400 **Fuel Cap:** 6100 **Fuel Cons:** 2000 **Wt:** 14 tons **TO Run:** 300 m **Land Run:** 1070 m **Cargo:** none **Load:** 4000 kg **Mnt:** 40 **Crew:** 2 **Armor:** FF (30), CF (30), RF (30), W (25), T (25) **Damage Chart:** C.

F-14D TOMCAT

Special Features: All-weather avionics, two CFP at 900 kilograms each, two UWP at 500 kilograms each. **Price:** \$6,000,000 (R/R) **RF:** +40 **IR:** +40 **Armament:** 1 × 20mm **Ammo:** 225 × 20mm **Tr Mov:** 930 **Com Mov:** 1300 **Agility:** 10/8 **Turn Radius:** 100/80 **Acc:** 1600 **Fuel Cap:** 7350 **Fuel Cons:** 3675 **Wt:** 18 tons **TO Run:** 400 m **Land Run:** 825 m **Cargo:** none **Load:** 10,150 kg **Mnt:** 40 **Crew:** 2 **Armor:** FF (30), CF (30), RF (30), W (25), T (25) **Damage Chart:** C.

SU-24 FENCER-G

Soviet combat aircraft. **Special Features:** All-weather avionics, blind strike capability, four CFP at 1000 kilograms each, two IWP at 1500 kilograms each, two OWP at 500 kilograms each. **Price:** \$5,000,000 (-/R) **RF:** +40 **IR:** +40 **Armament:** 2 × 23mm **Ammo:** 300 × 23mm **Tr Mov:** 900 **Com Mov:** 1250 **Agility:** 6/2 **Turn Radius:** 60/20 **Acc:** 1000 **Fuel Cap:** 13,000 **Fuel Cons:** 10,000 **Wt:** 19 tons **TO Run:** 1000 m **Land Run:** 1250 m **Cargo:** none **Load:** 8000 kg **Mnt:** 45 **Crew:** 2 **Armor:** FF (40), CF (40), RF (40), W (25), T (25) **Damage Chart:** C.

SU-27 FLANKER-B

A Soviet multi-role fighter. **Special Features:** All-weather avionics, look-down/shoot-down radar, two CFP at 800 kilograms each, four UWP at 300 kilograms each. **Price:** \$7,000,000 (-/R) **RF:** +40 **IR:** +40 **Armament:** 1 × 23mm **Ammo:** 100 × 23mm **Tr Mov:** 1300 **Com Mov:** 1800 **Agility:** 10/7 **Turn Radius:** 100/70 **Acc:** 1750 **Fuel Cap:** 10,000 **Fuel Cons:** 10,000 **Wt:** 17 tons **TO Run:** 1000 m **Land Run:** 1250 m **Cargo:** none **Load:** 1280 kg **Mnt:** 45 **Crew:** 1 **Armor:** FF (35), CF (35), RF (35), W (25), T (25) **Damage Chart:** C.

MIG-27 FLOGGER-Q

A Soviet ground-attack aircraft derived from the MiG 23. **Special Features:** All-weather avionics, one CFP at 1000 kilograms, two IWP at 750 kilograms each, two OWP at 500 kilograms each. **Price:** \$4,000,000 (-/R) **RF:** +40 **IR:** +40 **Armament:** 1 × 30mm **Ammo:** 200 30mm **Tr Mov:** 625 **Com Mov:** 870 **Agility:** 9/5 **Turn Radius:** 90/50 **Acc:** 1250 **Fuel Cap:** 6000 **Fuel Cons:** 3500 **Wt:** 9.5 tons **TO Run:** 900 m **Land Run:** 900 m **Cargo:** none **Load:** 9500 kg **Mnt:** 40 **Crew:** 1 **Armor:** FF (35), CF (35), RF (30), W (25), T (25) **Damage Chart:** C.

MIG-29 FLOGGER-M

The final variant of the Soviet MiG-23 series. **Special Features:** All-weather avionics, look-down/shoot-down radar, one CFP at 2000 kilograms, two CFP at 1000 kilograms each, two IWP at 250 kilograms each. **Price:** \$3,500,000 (R/R) **RF:** +40 **IR:** +40 **Armament:** 1 × 23mm **Ammo:** 150 × 23mm **Tr Mov:** 750 **Com Mov:** 1000 **Agility:** 10/6 **Turn Radius:** 100/60 **Acc:** 1500 **Fuel Cap:** 5750 **Fuel Cons:** 3400 **Wt:** 8 tons **TO Run:** 900 m **Land Run:** 900 m **Cargo:** none **Load:** 10,250 kg **Mnt:** 40 **Crew:** 1 **Armor:** FF (30), CF (30), RF (30), W (25), T (25) **Damage Chart:** C.

MIG-31 FOXHOUND

A Soviet high-performance interceptor. **Special Features:** All-

weather avionics, look-down/shoot-down radar, four UWP at 600 kilograms each. **Price:** \$8,000,000 (R/R) **RF:** +40 **IR:** +60 **Armament:** Pods **Ammo:** none **Tr Mov:** 1500 **Com Mov:** 2000 **Agility:** 9/5 **Turn Radius:** 90/50 **Acc:** 2000 **Fuel Cap:** 17,000 **Fuel Cons:** 17,000 **Wt:** 21 tons **TO Run:** 1380 m **Land Run:** 2180 m **Cargo:** none **Load:** 19,400 kg **Mnt:** 50 **Crew:** 2 **Armor:** FF (40), CF (40), RF (40), W (25), T (25) **Damage Chart:** C.

AN-28 CASH

A Polish-built, twin-engine, STOL transport aircraft. **Special Features:** none **Price:** \$1,000,000 (R/R) **RF:** none **IR:** +40 **Armament:** none **Ammo:** none **Tr Mov:** 335 **Com Mov:** 465 **Agility:** 3/2 **Turn Radius:** 30/15 **Acc:** 75 **Fuel Cap:** 1960 **Fuel Cons:** 650 **Wt:** 3.7 tons **TO Run:** 360 m **Land Run:** 315 m **Cargo:** 2000 kg **Load:** 3960 kg **Mnt:** 30 **Crew:** 2 + 16 **Armor:** FF (15), CF (15), RF (15), W (15), T (15) **Damage Chart:** B.

PC-6 TURBO-PORTER

A Swiss-built, single-engine, high-wing monoplane, STOL transport aircraft. **Special Features:** none **Price:** \$800,000 (R/R) **RF:** none **IR:** +40 **Armament:** none **Ammo:** none **Tr Mov:** 250 **Com Mov:** 350 **Agility:** 5/3 **Turn Radius:** 40/20 **Acc:** 75 **Fuel Cap:** 480 **Fuel Cons:** 120 **Wt:** 2.2 tons **TO Run:** 110 m **Land Run:** 80 m **Cargo:** 500 kg **Load:** 980 kg **Mnt:** 30 **Crew:** 1 + 8 **Armor:** FF (15), CF (15), RF (10), W (15), T (10) **Damage Chart:** A.

ARAVA 202

Israeli-built, twin-engine, STOL transport aircraft. **Special Features:** All-weather avionics. **Price:** \$850,000 (R/R) **RF:** none **IR:** +40 **Armament:** none **Ammo:** none **Tr Mov:** 300 **Com Mov:** 415 **Agility:** 4/2 **Turn Radius:** 30/15 **Acc:** 100 **Fuel Cap:** 1600 **Fuel Cons:** 400 **Wt:** 4 tons **TO Run:** 470 m **Land Run:** 470 m **Cargo:** 2350

kg **Load:** 3950 kg **Mnt:** 30 **Crew:** 2 + 20 **Armor:** FF (15), CF (15), RF (15), W (15), T (10) **Damage Chart:** B.

AN-2P COLT

Soviet-built, single-engine, biplane transport aircraft. **Special Features:** none **Price:** \$750,000 (R/R) **RF:** none **IR:** +40 **Armament:** none **Ammo:** none **Tr Mov:** 200 **Com Mov:** 275 **Agility:** 4/2 **Turn Radius:** 30/15 **Acc:** 50 **Fuel Cap:** 1200 **Fuel Cons:** 300 **Wt:** 2.8 tons **TO Run:** 200 m **Land Run:** 100 m **Cargo:** 1500 kg **Load:** 2700 kg **Mnt:** 30 **Crew:** 2 + 10 **Armor:** FF (20), CF (20), RF (15), W (15), T (15) **Damage Chart:** A.

AN-12 CUB

Soviet-built, four-engine, transport aircraft. **Special Features:** All-weather avionics. **Price:** \$4,000,000 (R/R) **RF:** none **IR:** +50 **Armament:** none **Ammo:** none **Tr Mov:** 630 **Com Mov:** 875 **Agility:** 3/1 **Turn Radius:** 20/10 **Acc:** 100 **Fuel Cap:** 13,900 **Fuel Cons:** 2500 **Wt:** 26 tons **TO Run:** 800 m **Land Run:** 650 m **Cargo:** 14,500 kg **Load:** 28,400 kg **Mnt:** 45 **Crew:** 5 + 100 **Armor:** FF (30), CF (35), RF (30), W (20), T (20) **Damage Chart:** B.

BOMBS

Type	Dam	Arm	BR
100 kg	× 50c	× 10	3 m
200 kg	× 60c	× 8	6 m
350 kg	× 65c	× 6	10 m
450 kg	× 70c	× 4	15 m
1000 kg	× 80c	× 2	25 m

—Frank Frey

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Wilderness Travel and Pursuit

Referees of **Twilight: 2000** will occasionally find it necessary to adjudicate travel through wilderness areas. Normally, this will not prove too difficult: the referee simply adds a few days to the time required to cross the area. But when the players are chased by hostile NPCs (a militia or particularly virulent marauder band, for instance), the players might appreciate the increased level of detail this article presents. Use of these rules is completely optional. They are included to increase the realism of the scenario by simulating the difficulties encountered in extended travel across backcountry wilderness areas.

INTRODUCTION

Large reaches of the world are unspoiled wilderness. Even the continental United States boasts sizable remote areas. In *Airlords of the Ozarks*, for example, the upper reaches of the area called Lost Valley were not discovered until as recently as 1945 by student-explorers hiking in the area. Even populated areas remain relatively isolated from one another by farmland, woods, streams, and hills.

Twilight: 2000 referees taking characters through such remote areas may wish to make use of the following set of special encounter tables. The referee should modify the results to reflect terrain as shown in the area through which they are travelling on the map. If, for example, their course on the map brings them to a river, the referee should deliberately introduce a river result to play rather than rely on chance. The tables in this article are pretty much self-explanatory and should present no problems. The referee simply uses whatever table seems most appropriate depending on the terrain the players are



travelling through at that moment.

MAPS

Use of the rules in this article requires more detailed maps than are normally found in the adventure modules. The most ideal maps for this purpose are topographic survey maps, printed by the United States Geological survey. Large libraries often have these maps, as part of their own map collections, or as a part of the federal map repository program (check the local library for information). The maps are also available directly from the U.S. Geological survey (write USGS Public Inquiries Office, 1028 General Services Building, 19th & F Sts, Washington DC 20244...tell them the specific state you're interested in).

Rate of movement and other considerations for an individual map will depend upon the scale of the map used and will have to be worked out for an individual map by the referee.

WILDERNESS TRAVEL

A basic travel rate is established by characters depending on whether they are going uphill, downhill, or across more or less level ground. Progress in wilderness travel is measured in 15-minute periods.

The first 15-minute period is made over

terrain of the referee's choice and may be dictated by the situation (the flat, open land around a town or camp, for example.)

At the end of each 15-minute period, the referee rolls 2D6 on wilderness travel table I, again on wilderness travel table II, and again on wilderness travel table III.

If the result of the table III roll indicates water, a fourth roll is made on wilderness travel table IV (Water). If the result of this roll is 11 or 12, a 5th roll is made on wilderness travel table IV-b (Water—special.)

If the result of the table III roll indicates "other," a fourth roll is made on wilderness travel table V (special—natural). This may result in "water," requiring a roll on wilderness travel table IV, or it may result in "other," in which case a 5th roll is made on wilderness travel table V-b (special—artificial.)

The referee informs the characters of the result, which will be a combination of table I (level, hill, or steep hill), table II (cover, if any), and table III (any special terrain, if any). They will be able to see the indicated terrain ahead and be able to plan their next move.

If the characters decide to proceed ahead, the referee determines the distance they will be able to travel in the next 15 minutes. He does this by taking the base travel rate (either .25 or times *all* applicable travel modifiers). If a modifier is variable (such as $(1D6 - 2)/10$), he makes this roll but does not tell the characters the result. If a variable modifier result is 0, of course, the characters will make no progress at all in the next 15 minutes. Otherwise, all modifiers are multiplied times the base travel rate in order to create a modified travel distance for the next period.

For example, the characters are moving uphill (base travel distance of .2 km) through moderate woods (modifier .7).

The actual distance travelled in 15 minutes is $.7 \times .2 = .14$ km., or about 140 meters.

If the hill had been covered with mud rather than moderate woods, the referee would have rolled 1D6-2. Had the result been 0 or less, the way would have been impassable, but the characters would not have realized this until they tried. If the result was 3, it would have been divided by 10, then multiplied times the other factors, giving a result of $.3 \times .7 \times .2 = .042$ km, or 42 meters.

Characters may check terrain to either side before deciding which way to go. The referee should keep track of the terrain through which they have just come in case they want to double back.

The referee should use common sense in using these tables which are provided as a guide only. A lake at the crest of a very steep hill or at the top of an overlook is quite unlikely. The referee should change such results to something in keeping with reality. (Mud or rough terrain might be found on top of the hill, rather than a lake, for example.) A right-angle turn will not make a lake or sheer cliff vanish in 15 minutes; and if they return to their original course, they will still see the lake to one side or may be climbing a steep slope alongside the cliff they tried to avoid. The results of earlier rolls should be carried over into the referee's determinations of new terrain.

Similarly, the referee should not introduce new terrain in front of the characters until they have actually covered the original basic travel distance. He may occasionally introduce new elements which might logically be hidden from the player characters (a house, stream, or clearing hidden from their original position by moderate woods, for example), but if he tells them that the next .2 km. consists of a steep hill and they only travel 50 meters in the next segment, he should not then roll again and tell them the hill has been replaced by something different. Each of the referee's revelations about the terrain should flow logically and consistently from previous revelations.

The referee should also keep track of the characters' progress on the game maps. If their accumulated travel distance and direction of travel suggest that they are travelling up the face of a mountain or approaching a town or large river, the referee should modify the results of his die rolls accordingly. The wilderness travel tables are provided *only* as a general guide for travel in wilderness country, particularly when being pursued.

REGULAR ENCOUNTERS

The referee should continue to make regular encounter rolls every four hours in addition to rolls for terrain. Encounter rolls will provide such events as animals, enemy patrols, or civilians encountered in the woods. The referee should choose some particular (and different) 15-minute travel segment during each overall 4-hour period in which to introduce an encounter, however, rather than always having the encounter occur at the beginning of the period.

SPECIAL WILDERNESS ENCOUNTERS

The following encounter table can be used any time the characters are travelling in wilderness areas. This table should be used to supplement the regular area tables in order to provide additional flavor and background to the character's ac-

tivities in the wild. The referee may roll on this table occasionally instead of regular area encounter tables, or he may make periodic rolls on this table in addition to normal area table rolls.

SPECIAL WILDERNESS ENCOUNTER TABLE

Die Results

- 2-3 Special terrain
- 4-9 No encounter
- 10 Special encounter
- 11+ Danger

WILDERNESS ENCOUNTER RESULTS

Special Terrain: The referee makes an additional extra roll on one of the special terrain tables, (table IV-b, V, or V-b) as appropriate.

Special Encounter: This encounter is entirely at the referee's discretion. It could be a terrain feature drawn from any of the special terrain tables, such as a cave or cliff.

Danger: This will be a special encounter requiring a saving throw by one or more of the characters. The nature of the danger will depend on the local terrain. Possibilities include an encounter with a poisonous snake (most likely in rough terrain or near a stream), a cliff or ledge giving way under foot (on a steep slope, hill, along the edge of a cliff or a steep-banked stream), a log bridge giving way (while crossing a stream), a severe storm (anywhere), or a cave-in (in a cave, or inside an abandoned or damaged house or other building). The referee's application of this encounter may be deferred to an appropriate time later in the 4-hour period.

Actual damage sustained by failing a saving throw is up to the referee but may be anything from 1D6 points of damage to something life-threatening. Saving throws will generally be made against Agility (to avoid falling or being crushed) but may sometimes be made against other skills. Recon skill, for example, may be used to find shelter during the approach of a sudden thunderstorm.

Fatigue: These rules add additional detail to the basic rules for fatigue given in **Twilight: 2000**.

Each type of terrain lists a *fatigue factor*. These are accumulated as the character traverses various types and combinations of terrain. For example, a character climbing a steep hill covered with heavy woods will accumulate $10 + 4 = 14$ fatigue points in 15 minutes. If the next travel segment is up a steep hill with moderate woods, he will add $10 + 2$ fatigue points to his total for a new total of 26.

For every 15-minute travel segment spent resting, 4 fatigue points are eliminated.

Sixteen fatigue points lost constitute one *fatigue level* as described in the *play manual*. When a character's fatigue point total passes 16, he loses one point each from his STR, AGL, CON and INT. All other basic rules concerning fatigue are unchanged.

This rule reflects how tiring vigorous cross-country travel can be in rugged or steep terrain over an extended period of time.

SPEED

The base distance travelled can be doubled or tripled, allowing a character to cross 1 or 1.5 kilometers on level ground in 15 minutes. This has the effect of doubling or quadrupling the character's fatigue point loss in the same period of time.

These values represent increased paces but not an all-out run.

PURSUIT

In some cases the characters may be pursued by hostile forces. The mechanics and random chance of such a pursuit can be simulated in the following manner.

Each type of terrain through which the characters travel has a different *pursuit number*. Pursuit numbers are higher for open country, lower for thick and tangled terrain where a fugitive will have an easier time hiding. If the pursuers have bloodhounds on the trail, however, the pursuit number is automatically increased by 4. If they have aircraft (including helicopters, dirigibles or ultralights) in the immediate area, the pursuit number is increased by 2.

Whether or not the pursuers have bloodhounds or aircraft available to devote to a manhunt is left entirely to the referee's discretion.

Once every four hours, the referee secretly rolls 2D6 for the players, applies the pursuit modifiers as needed, then *subtracts* the pursuit number for the dominant type of terrain through which the characters have been travelling. Certain localized types of terrain (streams and rivers, for example) will provide additional DMs to the 2D6 roll. These are listed on the terrain tables as *pursuit DMs*.

The result, plus or minus, is recorded. The result of the roll and calculations four hours later is added to the first, and so on, creating a positive or negative number which continues to change as the chase continues. The result of all rolls is kept secret from the players. If, however, the pursuers are using bloodhounds, the baying of the dogs will be heard incessantly as soon as the player characters' running total drops below 0.

If the total drops to -20, the pursuers will catch up.

If the total reaches +30, the pursuers will lose the character's trail and the characters will have escaped.

Throughout the pursuit, the characters should continue to roll for terrain type and for encounters. Many normal encounters will have a direct impact on the pursuit.

Pursuit Modifiers: Various pursuit modifiers are listed for various types of terrain. These are listed below, together with other factors which affect pursuit.

PURSUIT MODIFIERS

<i>Terrain</i>	<i>DM</i>
Heavy woods (moving only)	-1
Heavy woods (remaining still)	+1
Dense underbrush (moving only)	-2
Dense underbrush (remaining still)	+3
Small stream	+1
Moderate stream	+2
Wide stream	+3
River	+5
Steep, slippery, or muddy bank	-2
Mud, swamp, flooding	-3
Sheer cliff, overlook, way blocked	-5
Rough	+2
Path, road, firecut, railroad	-2
Finding concealment	+3
Remaining in one place, resting	-4
Special tricks	+1D6

Pursuit Modifier Explanations: Most of the factors which in-

fluence pursuit are self-explanatory and are the result of terrain which slows the fugitives (rough, woods) or disguises their trail (rivers, streams). The following actions require special explanation:

Woods Moving/Remaining Still: As long as the characters are on the move, the woods will tend to slow their progress, handicapping them more than their pursuers (who, after all, can work in relays or teams to keep the pressure on the prey). If the characters find a place to hide and remain there, they have a better chance of avoiding the pursuers' net by remaining quiet. This tactic is best used if the characters are able to win a large lead first (this is especially true if the pursuers are using dogs).

Finding Concealment: Applied to any use of caves, rough terrain, rocks, or other terrain to hide. The advantage does not quite offset the pursuers' use of dogs, however.

Resting: Remaining in one place for a full 4-hour period drastically reduces any lead the fugitives have over their pursuers.

Special Tricks: Inventive or ingenious players may devise special tricks to throw the hunters off (climbing trees, wading up creeks, hiding in hollow logs, using game or blood to distract dogs, etc.) If the players can convince the referee that what they have in mind would work, he may assign a DM of between +1 to +6 for the attempt, or roll 1D for a random result.

PURSUIT NUMBER TABLE: TERRAIN

Add 4 if the pursuers are using dogs. Add 3 if they are using aircraft.

<i>Terrain Type</i>	<i>Pursuit #</i>
Flat, open, terrain; fields	10
Light woods	8
Moderate woods	6
Heavy woods	4

WILDERNESS TRAVEL TABLE I (Hills)

If previous roll 4 or less, DM -3. If previous roll 10 or more, DM +3.

<i>Die</i>	<i>Result</i>	<i>Fatigue Points</i>	<i>Pursuit DMs</i>	<i>Distance</i>
2-3	Steep uphill	10	0	.05
4-5	Uphill	5	0	.2
6-8	Level	1	0	.5
9-10	Downhill	2	0	.2
11+	Steep downhill	4	0	.1

WILDERNESS TRAVEL TABLE II (Cover)

If last roll was 5 or less, DM -4. If last roll was 9 or more, DM +3.

<i>Die</i>	<i>Results</i>	<i>Fatigue Points</i>	<i>Pursuit DMs</i>	<i>Distance</i>
2-4	Clear	0	0	×1
5	Clearing	0	0	×1
6-7	Light woods	1	0	×.9
8	Mod. woods	2	1	×.7
9-10	Heavy woods	4	-1/+1	×.4
11+	Dense underbrush	10	-2/+3	×1D10/20

WILDERNESS TRAVEL TABLE III (Special terrain)*Die Results*

2-9	No special terrain
10-11	Water
12	Other

WILDERNESS TRAVEL TABLE IV (Water)

Water result automatic if following water.

Roll each time for "Special."

Die	Result	Fatigue Points	Pursuit DMs	Distance
2-6	Small stream	—	+1	× 1
7-8	Mod. stream	—	+2	× .7
9	Wide stream	1D6	+3	× .3
10	River	1D6 × 5	+5	× .1
11-12	Water—special	—	—	—

WILDERNESS TRAVEL TABLE IV-b (Water—special)

Die	Result	Fatigue Points	Pursuit DMs	Distance
2-4	Spring	—	—	—
5-6	Pond, lake	—	—	× 1D6/10
7-8	Steep bank	5	−2	× .9
9	Ford/bridge/log	—	—	—
10-11	Mud/swamp/flood	15	−3	× (1D6 − 2)/10
12	Other	—	—	—

WILDERNESS TRAVEL TABLE V (Special—natural)

Die	Result	Fatigue Points	Pursuit DMs	Distance
2-5	Water	—	—	—
6	Sheer drop	—	−5	× (1D6 − 4)/10
7-8	Sheltered area	—	—	—
9-10	Rough	1D6 × 3	+2	× 1D6/10
11	Cave	—	—	—
12	Other	—	—	—

WILDERNESS TRAVEL TABLE Vb (Special—artificial)

Path/road, etc. is automatic if one is being followed.

Die	Results	Fatigue Points	Pursuit DMs	Distance
2-4	Town	—	−3	× 1
5-6	House/ruins	—	—	—
7-8	Path/road	—	−2	× 1.5
9-10	Lone Build.	—	—	—
11	Industrial	—	—	—
12	Cache	—	—	—

TERRAIN FEATURES EXPLANATION

Uphill: A steady, uphill grade. Tiring if continued over a period of time. A character can travel at a basic rate of .2 kilometer in 15 minutes going uphill.

Steep Uphill: A slope of more than 40°, requiring frequent rests. Very tiring over a long distance. The character has a base rate of .05 kilometer (50 meters) in 15 minutes of climbing a steep slope. The steep section can be skirted by changing direction by 90° for 15 minutes (treat terrain as uphill) before turning back to the original course.

Level: The terrain is more or less flat or gently rolling. The

character travels at a basic rate of .5 kilometer in 15 minutes.

Downhill: A steady, downhill slope. The character travels at a basic rate of .2 kilometer in 15 minutes.

Steep Downhill: A slope of 40° or more. Tiring over long periods. The character travels at the basic rate of .1 kilometer in 15 minutes on a steep downslope. The terrain may be skirted by changing direction by 90° for 15 minutes (treat terrain as downhill) before returning to the original course.

Clear: A field, wide clearing, or other treeless area. There is no effect on travel.

Clearing: An open area within a woods. If previous roll was clear, treat this result as more of the same. There is no effect on travel.

Light Woods: Scattered trees, little or no underbrush. Reduces movement slightly.

Moderate Woods: Average density woods with slight to moderate underbrush. Includes heavy woods with little or no underbrush. Slows travel slightly.

Heavy Woods: Many large trees with broken ground, fallen trees, and moderate to thick underbrush. Impedes travel. Tiring over extended distances.

Dense Underbrush: A nearly impenetrable barrier of trees, tangled ground vegetation, and/or thorn-bearing shrubs. Impedes or blocks travel entirely. Roll 1D6 − 1. A result of 0 indicates no progress at all. A result of 1 to 5 is divided by 10 (.1 to .5) to give the actual travel multiplier.

Small Stream: A narrow, shallow creek. Does not impede travel at all.

Moderate Stream: A stream several meters wide and up to one meter deep. Requires wading. Slows travel slightly.

Wide Stream: A stream over ten meters wide, up to two meters deep. May be waded at ford or swum. Slows travel.

River: Generally refers to a particular river such as the Buffalo. Over ten meters wide, two meters or more deep in the middle. May be waded at ford or swum at any point. Impedes travel.

Spring: A fresh water spring flowing from ground. Probable (though not certain) source of good water. No effect on travel.

Pond, Lake: A large, stagnant or backed-up body of water. Depth and size vary. May be swum. Impedes travel depending on the size. Roll 1D6 − 2. A result of 0 or less means the lake is too wide, deep, or soft-bottomed to wade and must be swum or skirted. Divide a result of 1 through 4 by 10. The result (.1 to .4) is the multiplier necessary to wade across. The water may be skirted by changing direction for 15 minutes before turning back to the original course.

Steep Bank: A bank of a river or a stream which requires care traversing. Requires saving throw against Agility to avoid fall and 1D6 − 2 (less than 1 = 0) damage points. Impedes travel slightly.

Ford, Bridge, Log: A way across a stream or river. Fallen logs bridge small and moderate streams only. Fords cross medium and wide streams and rivers. Bridges occur only where a road or path crosses the water and could introduce the characters to same. Allows characters to cross water without impeding their travel.

Mud/Swamp/Flood: The ground is muddy or submerged. May be the result of flooding or a recent rain, or it may be a permanent swamp or drying lake. Impedes or blocks travel. Roll 1D6 − 2. A result of 0 or less indicates the area is impassable



and could require a saving throw against Agility to avoid quicksand. A result of 1 through 4 is divided by 10, and the result (.1 to .4) is the modifier for wading through the swamp. Skirting the swamp requires a change of direction for at least 15 minutes before turning back to the original course.

Other: This could be any of a number of possible special encounters of the referee's choice, including the discovery of a second stream or river tributary to the first, a lake into which the stream flows, a waterfall, beaver dam or man-made dam, or any special (natural) or special (artificial) feature.

Water: This will be a body of water of some type: stream, river, lake, pond, swamp, or reservoir. When encountered while following water, it may mean a second body of water, such as a tributary stream or a lake.

Sheer Drop: An extremely abrupt interruption of the terrain, such as a cliff, bluff or overlook. It is at the referee's discretion whether the characters find themselves at the top looking down or the bottom looking up. It will completely block or severely impede travel without special equipment. Roll 1D6–4. If the result is 0 or less, the cliff cannot be climbed or descended without special equipment. Divide a result of 1 or 2 by 10 to give the multiplier for the area if it can be traversed. The area can be skirted by changing course by 90° for 15 minutes (treat as up- or downhill terrain) before turning back to the original course.

Sheltered Area: An area sheltered by boulders, trees, a rock outcropping, or even an open area under the extended canopy of a single tree or layer of vines. It offers a sheltered camp area and provides cover from observers but does not protect the characters if they are being tracked by dogs.

Rough: Extremely rugged, broken, or boulder-strewn ground. May also denote extremely unstable/loose/dangerous rock or ground on hills, steep hills, or cliffs. Roll 1D6 and divide by ten to give a multiplier (.1 to .6) for travel over this terrain.

Cave: A natural cave in a hillside. It may be dry or wet, shallow or extensive, with an easily seen entrance or a narrow, well-hidden one. Details are up to the referee. It provides shelter but may be a trap.

Other: Another terrain feature of the referee's choosing. This could be a second roll on the same table (allowing, for example, a cave and rough ground together—indicating a possibly hazardous area, prone to cave-ins). It could also indicate a special discovery such as a hot spring or allow a roll on the special (artificial) table.

Town: A collection of buildings and roads...anything from a gas station and two houses up to a large city. Movement through an inhabited town increases the chance of encounters. A deserted town has no effect.

House/Ruins: A lone house or farm, more or less isolated from other dwellings. May also be the foundation or ruins of a long-vanished or recently-burned building.

Path/Road: Any man-made cut through woods or other terrain. A road or path is automatically discovered at a house; and a road, path, or railroad is automatically discovered at a bridge. At least one road and possibly a railroad is automatically discovered at a town. Moving along a road speeds travel but increases the chance of encounters.

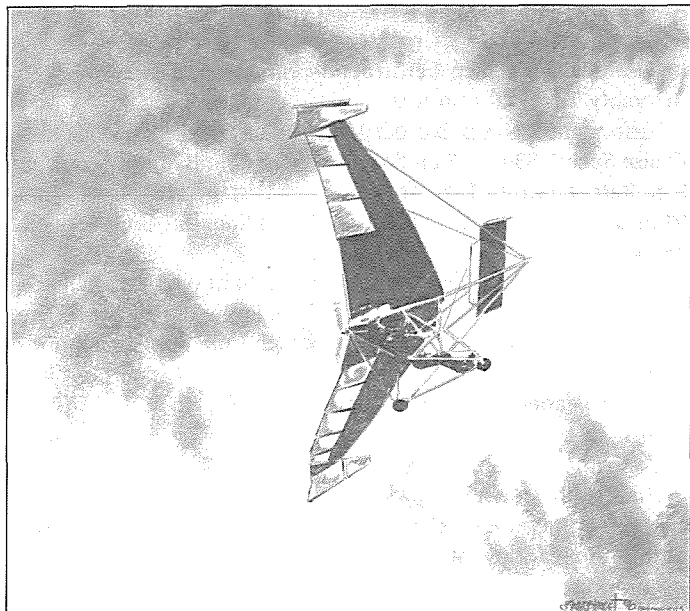
Lone Building: A special building generally found far from other buildings. Mills are found on moderate to wide streams or rivers. Ranger buildings are found on former state or federal parks. Fire towers are found on any wooded terrain. Microwave relay stations are found only on the tops of high hills.

Industrial: A former mine site. Mine may be a mine shaft or strip mine. Logging area will have buildings, a sawmill, and large, cleared areas. A quarry will be a large pit, with supply sheds and possibly buildings nearby. A quarry pit may impede travel (treat as a swamp) at the referee's discretion.

Cache: A special find, at the referee's discretion. May be a cache of food, arms, or supplies left by a hunter or trapper, a vacation house stocked with food or other supplies, the body of a man carrying food or weapons, an abandoned vehicle with salvageable parts, or an encounter with an NPC who has supplies. It could also be an encounter with a natural source of food or supplies, such as a deer or other animal, a patch of blackberries, or an outcropping of flint for making fire.

—William H. Keith, Jr.

Ultralights: A Closer Look



Space considerations in *Airlords of the Ozarks* prohibited dealing with ultralight aircraft in any but the most cursory fashion. Since these will prove to be very popular with players and referees of **Twilight: 2000**, I felt a closer examination of these fascinating aircraft is warranted. Please note that the rules in this article and those given in *Airlords of the Ozarks* are not compatible, and are not intended to be. These rules are an optional replacement for those in the adventure, not a supplement to them.

Several ultralight models may be encountered during the course of a **Twilight: 2000** adventure. The stats for a representative selection of ultralight craft are given below, but first I will give a brief explanation of the terms involved.

Wingspan, Length, Height, Wing Area, Engine: Self-explanatory.

Fuel Capacity: How much fuel the craft can hold. It may be possible to extend this by carrying extra fuel cans and a makeshift hand-pump rig aloft.

Fuel Consumption: Liters consumed per hour at cruising speed. Climbing, combat, or flying at top speed uses fuel 40% to 50% faster.

Gross Weight: The weight the aircraft can carry aloft, including its own weight plus the weight of fuel, pilot, and cargo. In other words, the weight of the craft fully loaded.

Empty Weight: The weight of the aircraft without pilot, cargo, or fuel (but including the empty tank).

Useful Load: Gross weight minus empty weight. The total weight which can be carried aloft including the pilot, his clothing and gear, his fuel (1 liter = about 1 kg), and any weapons, ammo, or other cargo he carries with him.

Construction Time: The time, given in man-hours (i.e., what 1 man can do in 2 hours, 2 men can do in 1) required to assemble the aircraft

from kit form. Most ultralights can be assembled from kits using ordinary tools. This stat is included in case the characters are able to capture one or more kits and find they must assemble them. Reducing the assembly time by increasing the number of helpers usually cannot take it below half the original construction time given.

Field Assembly Time: The time required to assemble an ultralight disassembled for storage. This is the time required to ready an ultralight for launch from a dirigible in flight.

Never Exceed: At the stated speed, the aircraft is in serious danger of breaking apart from the stress. A saving throw against the pilot's ultralight skill is necessary to reduce speed and prevent the craft from disintegrating in midair. Ultralights cannot be launched from dirigibles travelling at more than this speed.

Top Level Speed: The top speed attainable by the aircraft at full throttle in level flight.

Cruise Speed: The most fuel-efficient speed, usually at 50% to 65% of full throttle.

Stall Speed: Of vital importance in piloting ultralights, stall speed gives the lower limit of the aircraft's speed. Slower than this the aircraft's wings can no longer provide enough lift and it starts to fall. Dirigibles should be travelling at just slightly faster than the ultralight's stall speed for midair takeoffs and

recoveries. Stall speed refers to the aircraft's speed in still air. A headwind will further reduce the aircraft's actual speed, giving it a higher stall speed. Meticulous referees may wish to incorporate this factor into their calculations. In most cases it can be ignored.

Climb Rate: The basic rate of ascent at full throttle, allowing calculations of how long (and how much fuel) it will take to reach a given altitude.

Sink Rate: The basic rate for descent at minimum throttle, allowing calculations of how long it will take to reduce altitude gradually.

Takeoff Run: The distance required for the aircraft to get clear of the ground on takeoff. This stat may be disregarded during midair launches from airships.

Distance to Clear 15 m: The distance past the liftoff point required to build enough lift to clear 15 meters. This is a good average height to clear most obstructions such as telephone poles, power lines, and medium-sized trees. This stat is important in takeoffs from sheltered fields or clearings hemmed in by trees or other obstacles. It may be disregarded during launches from airships.

Landing Roll: The distance required after touchdown for the aircraft to come to a complete stop. Ultralights do not have brakes. The figures given assume a concrete runway. The landing roll can be reduced by about half on a grass field, but an additional pilot skill roll is necessary to prevent what is euphemistically called a "ground loop."

Ceiling: The maximum altitude to which the aircraft can climb.

Range at Cruise Speed: The distance the aircraft can travel at its most economical throttle setting, allowing for extra fuel burned on takeoff. This range will be reduced somewhat by maneuvers or combat.

ULTRALIGHT CHARACTERISTICS

This article does not pretend to be a complete description of the range of ultralights available. The models described are commercially available today, and similar models will presumably be flying in 2000. Additionally, players may find the materials to construct such aircraft. In the latter case, the referee will

have to determine the characteristics of the craft by comparing its dimensions with the closest example given below.

SNOOP

Specifications: Wingspan: 10 m Length: 4.9 m Height: 2.6 m Wing Area: 15.3 m² Engine: 35 hp Cuyuna UL II-02 Fuel Capacity: 11.3 liters Fuel Consumption: 5.6 lph Gross Weight: 235 kg Empty Weight: 108 kg Useful Load: 127 kg Construction Time: 30 man-hours Field Assembly Time: 45 minutes

Performance: Never Exceed: 88 kph Top Level Speed: 80 kph Cruise Speed: 64-72 kph Stall Speed: 29 kph Climb Rate: 180 mpm Sink Rate: 90 mpm Takeoff Run: 15 m Distance to Clear 15 m: 45 m Landing Roll: 30 m Range at Cruise Speed: 128 km

The Snoop is an ideal aircraft for inexperienced ultralight pilots. It is a cable-braced, high-wing monoplane with a pusher propeller and tricycle landing gear. The pilot cage is located at the craft's center of gravity, eliminating the need to change trim for pilots of different weights.

EAGLE 2-PLACE

Specifications: Wingspan: 10.6 m Length: 4.5 m Height: 3 m Wing Area: 16.4 m² Engine: 50 hp Rotax 503, two-cylinder Fuel Capacity: 15 liters Fuel Consumption: 7.5 liters Gross Weight: 295.5 kg Empty Weight: 125 kg Useful Load: 170.5 kg Construction Time: 75 man-hours Field Assembly Time: 15 minutes

Performance: Never Exceed: 88 kph Top Level Speed: 80 kph Cruise Speed: 72 kph Stall Speed: 54 kph Climb Rate: 137 mpm Sink Rate: 100 mpm Takeoff Run: 76 m Distance to Clear 15 m: 91 m Landing Roll: 76 m Ceiling: 2400 m Range at Cruise: 120 km

The Eagle series of aircraft suspend the pilot's cage and a tricycle landing gear from a main overhead wing mounted above the engine with a pusher-type propeller and a canard suspended forward on the main wing's keel tube. The airframe consists of wire-braced aluminum struts held together with bolts.

The Eagle 2-place is not a true ultralight within the prewar definition of the term and had to be registered as an amateur-built aircraft and piloted by someone with at least a student pilot license. It was, however, often used by Eagle dealers to train students to fly ultralights, taking advantage of the side-by-side, two-seater pilot's cage. The 50hp engine allows an unusually large payload—either a passenger/observer or an extra load of fuel, weapons, grenades, or jury-rigged bombs.

FOXBAT

Specifications: Wingspan: 10 m Length: 3 m Height: 1.8 m Wing Area: 14.6 m² Engine: 38 hp Kawasaki 440 Fuel Capacity: 18.9 liters Fuel Consumption: 7.5 lph. Gross Weight: 216 kg Empty Weight: 100 kg Useful Load: 116 kg Construction Time: 8 man-hours Field Assembly Time: 30 minutes

Performance: Never Exceed: 101 kph Top Level Speed: 101 kph Cruise Speed: 72 kph Stall Speed: 37 kph Climb Rate: 152 mpm Sink Rate: 112 mpm Takeoff Run: 23 m Distance to Clear 15 m: 61 m Landing Roll: 23 m Ceiling: 2000 m Range at Cruise Speed: 182 kph

The Foxbat is a hang glider (called the Fledge) with an engine and tricycle landing gear attached. It can be assembled and flown either as an ultralight or as a hang glider. There is no tail assembly; the rudders are set into the vertical wingtips and are controlled by slider bars.

SUN RAY

Specifications: Wingspan: 10 m Length: 4 m Height: 1.8 m Wing Area: 12 m² Engine: 35 hp Kawasaki Fuel Capacity: 7.6 liters Fuel Consumption: 5.7 liters Gross Weight: 236 kg Empty Weight: 113 kg Useful Load: 123 kg Construction Time: 150 man-hours Field Assembly Time: 10 minutes

Performance: Never Exceed: 136 kph Top Level Speed: 101 kph Cruise Speed: 88 kph Stall Speed: 43 kph Climb Rate: 195 mpm Sink Rate: 80 mpm Takeoff Run: 61 m Distance to Clear 15 m: 91 m Landing Roll: 45.5 m Ceiling: 3000 m Range at Cruise Speed: 144 km

The Sun Ray is a highly advanced ultralight with an enclosed pilot's compartment and a hull made of lightweight Kevlar. The engine is mounted behind the pilot, the main wing is an inverted gull above and behind the canopy, and the aircraft has a forward canard rather than a tail assembly. An added advantage is the outrigger pontoons at the dihedral wing breaks, making the aircraft fully amphibious.

The Sun Ray must be modified to be used offensively in combat, since the pilot is completely enclosed behind his canopy. Either the canopy must be removed, or a machinegun is mounted to the outside hull with slots cut for ammo feed and a remote firing mechanism.

FLIGHTSTAR

Specifications: Wingspan: 9.1 m Length: 5 m Height: 2.3 m Wing Area: 13.4 m² Engine: 35 hp Kawasaki TA 440A Fuel Capacity: 18.9 liters Fuel Consumption: 6.8 lph. Gross Weight: 227 kg Empty Weight: 113.5 kg Useful Load: 113.5 kg Construction Time: 20 man-hours Field Assembly Time: 30 minutes

Performance: Never Exceed: 112 kph Top Level Speed: 101 kph Cruise Speed: 80 kph Stall Speed: 40 kph Climb Rate: 260 mpm Sink Rate: 112 mpm Takeoff Run: 30.5 m Distance to Clear 15 m: 91 m Landing Roll: 61 m Ceiling: 3600 m Range at Cruise Speed: 240 km

The Flightstar is a strut-braced, high-wing monoplane with a tractor propeller and tricycle landing gear. The pilot's canopy is an open cage with a fiberglass nose and windshield. A V-strut assembly supports the wing. The Flightstar has a reputation as an excellent flying machine.

SPECIAL SKILLS

Referee's Note: Ultralight Pilot Skill (UPS) is a special skill created for the purposes of these rules. It is a subclass of Pilot Skill and allows characters to fly ultralight aircraft.

Instructor skill allows them to teach the skill to others. Ultralight Pilot Skill can be acquired by player characters in the same way (instruction or observation) that other skills are acquired. Detailed rules are provided to allow the players to role-play ultralight flight and combat for this reason.

Most maneuvers can be carried out in a fairly straightforward fashion. For simple patrols or straight line flights, the information provided in the specifications and performance data will allow the players and referee to calculate how long it takes to travel a certain distance, and on how much fuel.

When a player character faces an enemy NPC in air-to-air combat, it will be necessary for the referee to keep track of the relative position of each aircraft on a blank sheet of paper which serves as a map called a *plot*. The vectors of the air-

craft can be recorded using arrows of different lengths.

Combat occurs in normal combat turns of 30 seconds each, which may be further divided into combat rounds of 5 seconds each. To determine distance travelled in 1 combat round, multiply each ultralight's speed by .008. In 30 seconds, an ultralight travelling 40 kph will travel $.008 \times 40 = .32$ kilometer. Relative vectors can be determined by drawing arrows to scale with the distance covered in 30 seconds. For example, .32 kilometer is represented by an arrow 32 millimeters long, while .45 kilometer is an arrow 45 millimeters long, and so on.

When things are happening very quickly, or when two opposing aircraft are within a few tens of meters of one another, it may be necessary to expand the scale. Movements are plotted on the map every 5 seconds instead of every 30. All speed vectors are divided by 5 and a larger scale is used. For example, a vector arrow of .32 kilometer (32 millimeters) becomes .064 km (an arrow 6.4 millimeters long). For convenience, the scale is increased by a factor of 10, so that the arrow representing .064 km—64 meters (medium range for an M16)—is now 64 millimeters long. When the scale is increased, *all* factors, including the distances between all aircraft, must be increased as well, of course.

The range between aircraft can be determined by measuring the distance between their positions on the plot. With the expanded 10-to-1 scale, a distance of 50 millimeters represents 50 meters.

Though it won't always be necessary, precise range can be calculated between aircraft when the aircraft are at different altitudes by using the formula $A^2 + B^2 = C^2$. Aircraft which are separated by a range of 100 meters on the plot, and which are 200 meters apart in altitude, are the square root of $10,000 + 40,000$, or 223.6 meters apart.

Maneuvers require rolls against the pilot's skill as ESY, AVG, and DIF tasks. The following maneuvers are possible. Some may be intentional; others are decidedly unintentional.

Takeoff: Requires a piloting roll of AVG difficulty. Failure results in a mishap, or may result in a collision if there are obstacles within the aircraft's stated distance to climb 15 m performance stat. At the referee's option, catastrophic failure would result in a particularly bad crash. An ordinary failure could result in something as relatively minor as slight damage to the controls or a loss of power.

Landing: Requires a piloting roll of AVG difficulty. Failure results in a mishap, with a catastrophic failure resulting in a particularly bad mishap (such as flying into a tree), at the referee's option.

Climb: The aircraft may gain altitude at up to its climb rate. No special rolls are necessary. Climbing uses fuel at a rate approximately 50% faster than cruising. Thus, an aircraft with a fuel consumption rate of 1.5 liters per hour would use 2.25 liters if it spent the entire hour climbing. The actual amount of fuel used can be calculated by determining what proportion of an hour is actually spent climbing, and calculating the fuel consumption accordingly.

Level Flight: Requires no special rolls. Level flight is generally carried out at cruising speeds and the stated fuel consumption figure is used. The pilot may choose to apply full throttle to increase his speed. This will increase fuel consumption. For example, if an aircraft cruises at 65% throttle and the pilot wants to increase to full throttle, he will use fuel at a

$100 - 65 = 35\%$ faster rate. A fuel consumption rate of 1.5 liters/hour would increase to about 2 liters/hour.

Sink: The aircraft loses altitude at any rate up to the stated sink rate for that aircraft. The maneuver is used to reduce altitude. No special rolls are necessary.

Dive: Aircraft loses altitude faster than its sink rate. For each meter of altitude above its sink rate lost in one combat round, add 1 kph to the aircraft's speed. A saving throw must be made against the pilot's skill to pull out of the dive. If the throw fails, the aircraft continues to dive during the next round, continues to gain speed, and continues to lose altitude. Pulling out of a dive is an AVG task. Control systems damage will make this a DIF task. Pulling out of a dive once the never exceed speed is passed, or if the dive is uncontrolled, is a DIF task.

A catastrophic failure in the saving throw may result in the aircraft breaking apart (regardless of actual speed), going into an uncontrollable dive or spin, or it may (at the referee's option) simply make future attempts to pull out of the dive a DIF task.

Uncontrolled Dive: An uncontrolled dive may result from damage, or from failure to recover from a stall. It is handled in exactly the same way as a controlled dive, but pulling out is a DIF task.

Pulling out of an uncontrolled dive once the *never exceed* speed is reached, or with damaged control systems, becomes a VDIF (very difficult) task; the pilot's skill level is divided by 3 rather than 2.

Side Slip: The aircraft moves to the left or right a distance equal to up to half of what it would travel at its current forward speed and loses altitude equal to half its sink rate. The maneuver is an AVG task and is used to close with or otherwise outmaneuver an opponent, or to make it more difficult for an opponent to hit you.

A catastrophic failure in the throw may put the aircraft into a spin, or may damage the control systems.

Turn: The aircraft turns, logically enough, to change direction. Turning is an ESY, AVG, or DIF task depending on how sharp the turn is. Turns are made during combat rounds of 5 seconds each.

A turn of 45° or less (measured with a protractor on the plot sheet, or simply estimated) is an ESY task.

A turn of between 45° and 90° is an AVG task.

A turn of 90° to 120° is a DIF task.

A 90° (right-angle) turn could be made in a single 5-second round, but this would be an AVG task. The pilot could, instead, spread the turn across two or more 5-second periods as two or more ESY tasks; a gentle turn is easier to complete than a sudden, sharp turn.

A successful turn will result in the desired change of heading on the plot sheet. Failure of a throw may result in a stall (if the aircraft's speed is within 10 kph of its stall speed), a loss of control, or simply failure to achieve the desired heading by some arbitrarily determined amount. (The degrees remaining of the desired turn could be divided by 1D, for example, with the result being the actual number of degrees turned.)

A turn may be combined with a sink maneuver. Failure in the piloting roll will result in a spin.

Stall: A stall occurs when the wing's angle of attack is so great (in a steep climb with insufficient power, for example) that the airflow across the wing's upper surface is broken, causing loss

of lift.

In game terms, the aircraft goes into a stall when its forward speed falls below the listed stall speed. The aircraft will lose 5 kph from its speed, lose altitude equal to its sink rate in one turn, then regain the lost speed at the end of the turn. The pilot must recover from the stall at the end of the turn, however, or he will go into a spin or an uncontrolled dive.

The pilot may go into a deliberate stall in order to begin a dive since this will reduce his forward speed and extend the range of his dive. He may also use a controlled series of stalls to reduce altitude without increasing speed—on a landing approach, for example. A stall may also occur as the result of damage taken in combat.

Recovery from a stall is an AVG task. Failure to make the saving throw results in a spin.

Spin: A spin is a rotation of the aircraft about a vertical axis, coupled with a drastic loss of altitude. It may occur as the result of damage (such as loss of the tail section) or as a result of a stall while turning.

In game terms, an ultralight in a spin does not move forward at all but remains in the same location on the map. Its altitude decreases, however.

In a controlled spin, altitude will decrease at a rate of 30 meters/30 seconds until the aircraft's sink rate is reached.

In an uncontrolled spin, altitude will decrease at a rate of 30 meters/30 seconds until the aircraft's never exceed velocity is passed. It will then maintain that speed until the aircraft crashes or the spin is controlled.

As soon as an aircraft goes into a spin the pilot must make a roll for an AVG task to control the spin. If he fails, the spin becomes uncontrolled. A pilot in a controlled spin must make a saving throw every 30 seconds to retain control of the spin.

When the pilot wants to pull out of a controlled spin he must make a separate roll as an AVG task to do so. The spin will end at the aircraft's current altitude at the aircraft's stall speed. The aircraft's heading at this point will be random, and determined by the referee.

A pilot in an uncontrolled spin must make a saving throw as a DIF task to make the spin a controlled spin. Catastrophic failure results in the breakup of the aircraft. Failure means the spin (and fall) continues. Success means the spin becomes a controlled spin with velocity reduced to the aircraft's sink rate, and the pilot must make another saving throw to come out of the spin altogether.

If the rate of descent of an uncontrolled spin reaches the aircraft's never exceed velocity, the aircraft may break up, or it may suffer damage which will make pulling out of the spin more difficult. In any case, the pilot is in serious trouble.

Never Exceed: Once the never exceed speed is passed there is a basic 10% chance, rolled at the beginning of each combat round, that the aircraft's structure will fail and an additional 20% chance that the aircraft will suffer damage to its control systems. Thus a D100 roll of ≤ 10 results in the breakup of the aircraft in midair, while a roll of 11-30 will result in systems damage and greater difficulty (or disaster₁) in subsequent attempts to regain control.

Midair Launch: Ultralights may be launched from a dirigible in flight. This requires a roll for an ESY task. Success results in the aircraft flying 10 meters below the dirigible at the same course and speed. Failure results in anything the referee cares

to dictate, from damage to the aircraft to loss of control or an uncontrolled spin. The referee may simply require a second saving throw to be made to represent some last-second maneuvering in a sudden crosswind or tight spot, with unfortunate consequences if this roll fails as well.

Docking: Ultralights may also dock in flight with a dirigible by coming up underneath the dirigible's hangar deck, matching speeds, and easing forward onto the landing platform. This is an AVG task. Success results in a successful docking aboard the dirigible. Failure results either in damage to the aircraft as it flies into the dirigible structure, or a stall, depending on whether the pilot was approaching too fast or not fast enough. It could also result in loss of control. On a failed roll the referee may simply require a second saving throw to represent some tricky last-second maneuvering, with unfortunate consequences if this roll, too, fails.

Glide: Ultralights are descended from hang gliders, and while not generally designed as gliders, they will serve in that capacity if the engine quits.

An aircraft in a glide may continue to fly and maneuver normally. However, it will descend at its sink rate. The only way to gain speed is to go into a dive; otherwise the aircraft's speed will remain at the speed at which it was travelling when the engine quit.

All maneuvers are one level more difficult while gliding than with powered flight. Thus, an ESY turn becomes AVG, while a DIF maneuver becomes VDIF. Automatic tasks such as level flight become ESY tasks requiring a roll to succeed.

Gliding ultralights cannot climb. The referee may allow brief periods of level flight as an experienced pilot takes advantage of thermals (rising columns of warm air) but these will be sharply limited.

Once the aircraft drops below 15 meters the pilot is committed to a landing. Rough ground or tree-blocked terrain is likely to cause a crash or mishap. It will be up to the referee to determine the pilot's chances of finding a suitable landing place given the area over which he was flying.

Gliding may be used to extend an ultralight's range with the pilot killing the motor for periods then turning it on to gain altitude.

Complex Tasks: Flying an ultralight and engaging in combat at the same time can be tricky. The pilot must keep one hand (or both knees!) on the control stick while using one or both hands to aim and fire his weapon. All flying tasks attempted while engaging in combat become one level more difficult. Thus, automatic tasks (such as holding the aircraft steady in straight and level flight) become ESY tasks, requiring a die roll, ESY tasks (such as a 20° turn) become AVG, and difficult tasks (such as pulling out of an uncontrolled dive) become VDIF, requiring division of the pilot's skill by 3 rather than 2.

This reduction in skill is applied both to flying and combat tasks. Attempting to turn and fire during the same combat round will result in the range being effectively increased for that shot. For example, a character trying to fire at an opponent at medium range while turning his aircraft 40° must roll for the turn as an AVG task, and must resolve his attack as for long range with that weapon. Weapons normally requiring two hands and a steady position to fire them (such as a submachine gun or rifle, as opposed to a pistol) will have their base to hit

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Across the Imperium

THE BIG DIFFERENCE

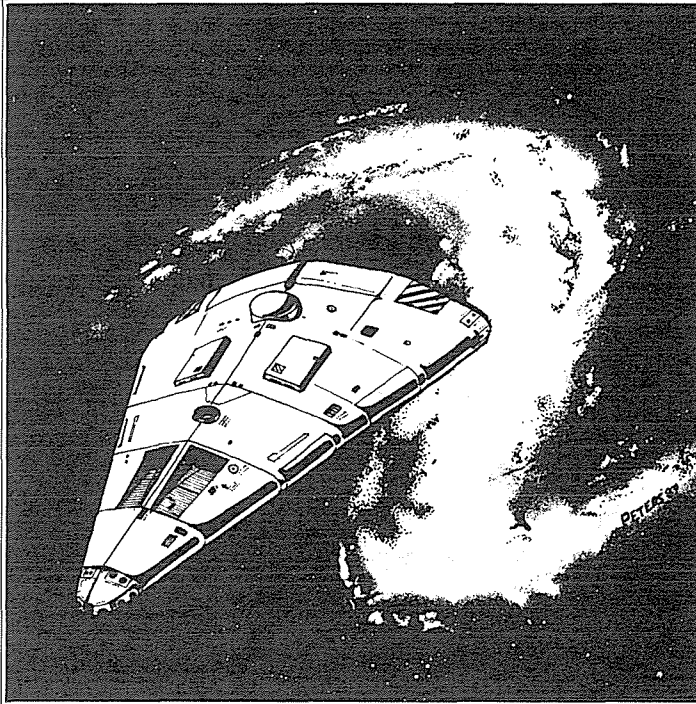
From *The Traveller Book*: "To begin [playing Traveller], start out small, especially if you are also new to **Traveller**. Don't try to run something of breathtaking scope the first time out; the record-keeping alone will overwhelm you, and your players will rapidly lose interest." But now you've played those smaller campaigns. Both you, as the referee, and your players have learned the basic **Traveller** rules, and they feel comfortable with the game. They're ready for a big challenge, and you want to give it to them.

But it isn't easy. Large-scale campaigns have different problems than do smaller gaming sessions, or adventures that begin and end in a few sessions. Record-keeping is one of the biggest headaches in bigger games, but there are other problems, too. This article will give you hints and tips to simplify your life as the referee when you're ready to take this ambitious step and give your players a more complex large-scale campaign.

If large-scale campaigns are so much work, are they worth the trouble? Definitely! While shorter "one-shot" adventures are fun, they don't equal the satisfaction you and your players can derive from a well-orchestrated campaign that spans a wider range of space and time in a consistent fashion.

My own expertise in this area comes from running what is now the largest-scale campaign for **Traveller** ever published. As editor of the *Travellers' Digest*, I have helped shepherd four characters across five sectors, from the Spinward Marches to Core. Future issues will take these adventurers on to Terra, into Aslan space, and back to the Spinward Marches across the J-5 route. This grand excursion has taken the players 24 months of playing time so far, with eight quarterly issues already in print. (The characters have spent more than 36 months doing this.)

I'm still learning new tricks all the time from several sources. **Traveller** is a big enough game to keep learning more rules (which are more ways to keep excitement high for the players). The players themselves keep learning, and as they mature in terms of the game, they make my life both easier and more challenging as I strive to keep them interested and they think up new responses to scenarios. Player interaction should give you plenty of ideas about their desires concerning future adventures (if they're bored with the present scenario, don't make the next one similar to it—try something new). And the "real world" keeps growing, giving me new ideas for adven-



tures, personalities, and technology.

TRAVELLER BOOKS

Don't cheat yourself. A wide-ranging campaign is difficult and there is no reason for you to make it harder than it needs to be. Make use of the many **Traveller** products available that will do some of your work for you. *The Atlas of the Imperium* is out of print, but you may still be able to find it in your local store, or a friend might have a copy you could borrow. That book alone will save you hours of sector generation. (Naturally, if you enjoy doing this, don't let the availability of the book stop you from rolling up your own personal

universe.)

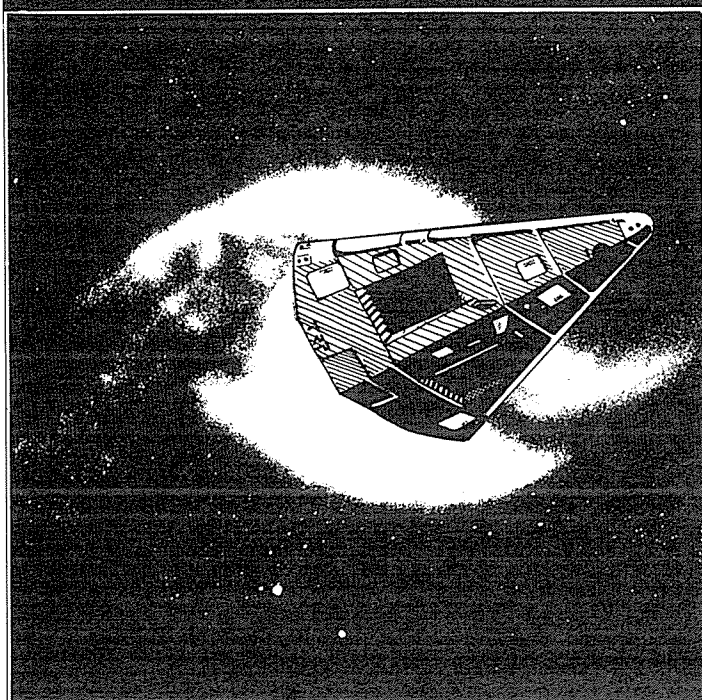
Book 6, *Scouts*, has a wealth of additional information for world generation as do the books *Grand Survey* and *Grand Census* by *Digest Group Publications*. The *GameLords* environment series can be useful for details of individual worlds also. For creating NPCs, books such as *1001 Characters*, *76 Patrons*, and *Citizens of the Imperium* can be precious time-savers.

If you or a friend can program a computer, let it do much of your generating "grunt work." It's fun to hand generate worlds and characters, of course, but in a large-scale campaign you might need so many that you'll wear all the spots off your dice if you don't have some help. A computer can kick out hundreds of worlds instantly, letting you pick the good ones. Most importantly, this assistance gives you the time and mental energy to do the real creative work of the campaign, fleshing out the numbers to come up with a consistent world.

HELP FROM YOUR PLAYERS

You need not do all the work yourself. Let your players help out if you are short on time. They can each roll up a world's basic library data stats. You can then take up where they leave off to create the bells and whistles that the players will discover only as you lead their characters through the adventure.

This method also adds extra color just because your players will do things a little differently than you would have. Variety is the spice of life, whether that life is genuine or played in a game. Remember that **Traveller** has this solitaire playability. When the whole group cannot get together, you or some of your players can still play the game by doing such things as generating worlds and characters, conducting trade, and designing ships. **Traveller's** more advanced rules, such as *High Guard* and *Scouts* make these sessions almost as challenging and interesting as play itself, and more often than not sharpen



everyone's **Traveller** skills.

A FEW WORDS OF WARNING

I can't tell you how to successfully run a large-scale campaign in five words, but I can tell you how to wreck a large-scale campaign using that many—*let it grow too fast*. Don't lose control of your game. When a player character becomes a sector duke, or when they each have personal Ancient artifacts that disintegrate opponents with a thought, you'll find it harder and harder to think up challenging scenarios.

Keep things a manageable size. Naturally, a large-scale campaign has more in it than a short adventure, but that's no excuse to let things get away from you. Stay on top of the situation with advance organization, and you'll find life a lot simpler.

Take your time in developing your campaign, and you'll find that it grows naturally by itself. Sure, it will need regular watering and fertilizing, but if you're spending all your resources pruning the overgrowth, neither you nor your players will find time to enjoy the game.

SIZE AND SPACE

The primary necessity for a large-scale campaign is a large area of space. To get this, the easiest way is to pick two locations some distance apart. The first is the beginning and the second is the destination. This seems easy enough, but more important is a motive for the travel between the two locations. There are several approaches that can be used to develop these motives.

One of these approaches is the "courier" method. If the characters need to deliver a person or a package to the destination, the entire problem is solved. By making sure that there are plenty of interferences between the two locations, the adventure keeps moving.

A second technique is the "historical" or "tourist" approach. With this method, the referee presents a situation so that the characters are interested in travelling to the destination by virtue of its historical importance.

In the *Travellers' Digest*, for example, we have made use of both of these methods. In the first adventure of the campaign we set up a situation that would result in the characters being knighted by the Duke of Deneb. Emperor Strephon then desired that the characters come to Capital to be officially knighted in an Imperial ceremony. By providing them with Imperial space-required vouchers, he made travel there easy. This made use of the "courier" concept because the characters had to deliver themselves to Capital. The situation simultaneously solved the problem of travel expenses for at least part of the trip.

For the next major leg of their journey, we will use the historical method; the characters will continue on to Terra, which is interesting as the homeworld of the human race.

Since such travel must be made through the Imperium, to be a wide-range adventure it is necessary to use an "imperial" reason for travel, something that involves more than one location. A local affair will not work for this.

TRADE

Another more obvious source of interworld travel is trade. If the characters have a ship, you can manipulate the markets in such a way that their most lucrative profits can be made by continuing to travel farther and farther in one direction. This works in a campaign only when there is no hurried time table that the characters must meet. Trade also has the advantage of providing a means of travel as well as a motive.

THE WHEEL METHOD

A simple way to run a far-ranging campaign is what I call the "wheel method." Start the player characters at a certain world and then let them radiate out into surrounding areas like the spokes of a wheel from a central axle. This allows you the pleasure of developing one world in more detail, since the characters will be returning to it again and again.

BACK AND FORTH CAMPAIGNS

Sometimes twice as much work is easier. That is, when planning a long-range campaign, start it at both ends with two groups of characters (played by the same players, of course). They can work toward each other, meeting in the middle or retracing steps to get back to one of the original endpoints. This has several advantages. One is that the referee can use the two different locations to develop two different types of overall environment and culture, perhaps crossing an Imperial border to get two different "flavors" at the two ends.

By playing back and forth between the two locations, this method also gives the referee time to develop more intricate plots at one end while the characters are busy at the other. The players themselves are happy because of the variety of playing multiple characters. At the same time, less experienced players will learn good habits in playing more than one character. One common problem is that new players have an improper tendency to share possessions between their characters. If the characters are far enough away from each other that they don't even know each other, this possibility is eliminated.

This technique also makes it easier to use more than one race in the campaign, since different groups of characters at different locations would be more likely to be from different

aces. It would be easy, for example, to have a campaign span the border between the Imperium and Vargr space. Vargr player characters could start at one location and humans could start at the other.

Very intricate plots can be developed by working both ends against the middle. It is difficult even for a good referee to think of all the ins and outs of a situation immediately. But if there are "vacations" from the campaign, the referee has an opportunity to develop events that will stimulate the players.

Remember that everyone is active, not only the player characters. Political groups will continue to grow (or shrink, as the case may be). Trade will go on. Battles and disagreements will not disappear just because the players are busy with a different part of the campaign. To handle this, keep in mind that absent characters are still active, then think logically about what their actions would be. While the player characters battle the intricacies of one adventure, you have time to invent new characters and new situations at another location, giving the illusion that all of these events were preplanned. This way small acorns can grow into large oaks.

A VARGR EXAMPLE

For example, in our campaign we once prepared some library data for a sector that mentioned that a certain world was popular with Vargr because it was an Ancient site and an unnamed Vargr had written a number of books about it. The entire mention was only a line or two in the library data. Several months later, we wanted to center an adventure around an Ancient site a whole sector away. We also wanted to include some Vargr in the adventure to give it extra spice.

Naturally we thought of the earlier mention of the Vargr, although we had had nothing specific in mind at the time we invented him. He was just "color" added for no real reason. At this time we rolled him up as an NPC and put him in charge of an excavation at an Ancient site. Here the illusion for the players was that we had planned this whole scenario in advance.

To continue with the example, at that time we wanted some extra peculiarity in the Vargr. We took a small paragraph from the Vargr module which mentioned the Church of the Chosen Ones and developed a belief system for them. We put a few adherents in the adventure and they served their purpose at the time. A few months later we dug this mine again to create another Vargr character for a later adventure.

Again the repeat of the earlier theme gave a sense of continuity to the campaign even though the ideas were developed at quite different times. Who knows; one of these themes may even appear again in another future adventure. We won't know until we decide to use one, but the players will not know this was not planned all along unless we tell them.

When themes reappear, the players have a sense of playing the game in a "real" universe, because over time they grow accustomed to old "friends" cropping up. As a referee, I get a real kick out of hearing one of my players say, "Oh, yeah, we met one of these guys at that adventure we played in Deneb last summer."

THEMES AND MORE THEMES

Where can the referee get these themes? Almost anywhere, as long as he knows how to look. Newspapers are an excellent

source. We saw an article once about the problem of space debris becoming a hazard to satellites orbiting the earth. This became the basis of a piece of library data mentioning the destruction of a Vargr vessel that collided with just such debris, just more local color in that case, but it was food for thought for players, reminding them again that *Traveller* was different from their daily lives.

Another article on the possibility of new fruits and vegetables through the use of cloning is clipped and filed away. Some day we will use it in an adventure as flavor. It could end up as a library data entry, or as part of a continuing look at how life at high tech levels is different by showing such advances in the course of an adventure. Such a description of a product would also add interest to a ship's cargo.

Any newspaper can fill the bill for this purpose, particularly if it is one that your players do not read. Go to the public library and find the *Christian Science Monitor* or the *Sunday New York Times* (this won't work if you live in New York) or another large newspaper with regular science and human interest sections. Find the science magazines and read them with an eye to how you can use new discoveries in an adventure setting. Almanacs and trivia books can serve the same purpose. Seek and you shall find.

PEOPLE AND OTHER LIVING THINGS

Personalities can make or break a campaign. No, I don't mean the personality of the referee or of the players, I refer to the personalities of the NPCs. If a campaign is wide-ranging, characters will meet more NPCs than they would otherwise, and this means more work for the referee.

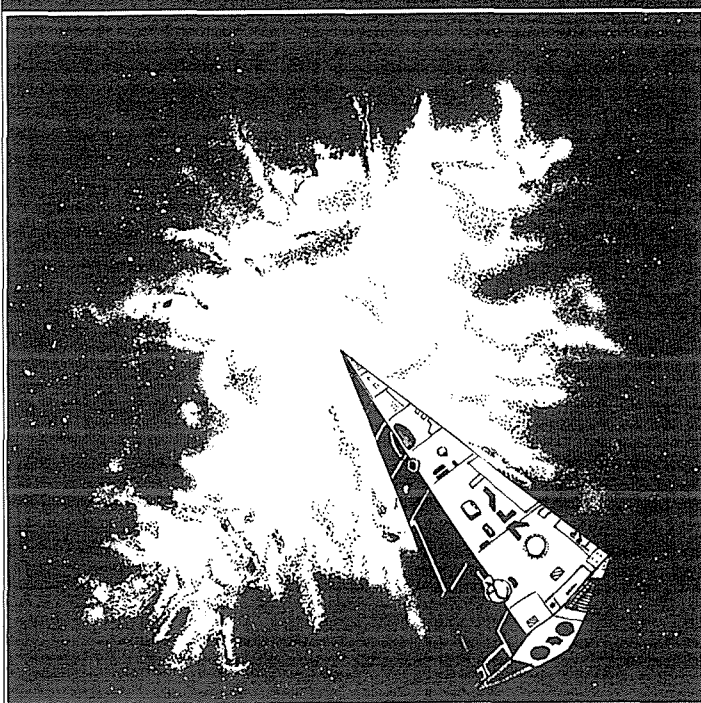
Fortunately, there are ways to make this effort easier and more worthwhile. As discussed before, reuse characters if possible to fit in with the theme of the campaign. Since the player characters are "travellers" by definition of the game, the individuals they meet are more likely to be travellers also.

If your player characters meet a certain trader in a spaceport on Junidy, it should not be too surprising if they see him again at the Regina spaceport. Don't overdo this or you will have an entourage tailing your characters, but an occasional "chance" meeting (you decide if the meeting was really accidental, of course) gives a sense of continuity to the campaign. If your characters go through Vland customs once and must deal with a pesky official, the next time they arrive at Vland you can use that official again.

MORE NPC ADVICE

Where can you get NPCs and how can you make them seem real to your players? Read a lot. Meet a lot of different people yourself. Learn the diversity present in your fellow man. Then draw upon this well in your campaign. If you have the time and the inclination, take a cultural anthropology class at a local university. Plutarch's *Lives of the Ancient Greeks and Romans* is a beautiful book for different personalities and motivations, and I guarantee you will be able to find it in your library.

One of my favorite techniques for "instant" personalities is to use a real person. When the characters question the clerk of the local TAS hostel, I think of a friend I knew in high school or college, or one of the teachers. I saw these people day in and day out for years, so it's pretty easy to guess their reactions, and to mimic their personality traits. This will take a lit-



tle practice if you're not used to it, but your players will then always encounter three-dimensional characters instead of cardboard cutouts. Since everyone seems "real," your players won't know which of these encounters is important and which is "just some guy in the starport."

WAKING UP FROM THE BOOKKEEPING NIGHTMARE

How can you best organize all of this material? Get a three-ring binder with divider tabs. Label one tab for each world.

Then put in your information. Use books such as *Scouts*, *Grand Survey*, and *Grand Census* to create more world detail and put that in the book. Develop important NPCs ahead of time and put them in the book. Maps of the world and its important cities should also go in. If you can, put the gist of the information on a separate page which you can show to the players for library data. They should never see the material straight from your notebook because it contains too much information for their tender eyes.

If an NPC moves from one world to another, then move the page with his information to that section of the book. Keep a table of contents at the front of the book with each NPC's name in alphabetical order. When you move the pages for that NPC to another world, make sure that you update the table of contents so you can find that information later.

Moving these pages physically automatically makes sure that NPCs are "real." That is, you must not move a page more than once every week since travel time must be kept in account. When you move a page for a certain date, jot down the details of the trip, time, and means of passage so that you can refer to it later on. In effect, each NPC has his own diary page. If you keep these up to date, when the characters arrive at another world you can flip to that section of the notebook and instantly tell which NPCs they might run across while there. Different colors of notebook paper can be used to instantly alert you if an NPC is a particularly important patron, merely a clerk, or some shade between. Similar systems using note cards or computer files can be developed.

LIFE AND DEATH

Health in a long-term campaign is an important issue. If a character dies or is otherwise unable to actively participate, another character must be introduced for the player who has lost that character. If you use the wheel method, your players may play several different characters from a particular world (naturally, they play only one in any game session, while their other characters are "busy" with other activities of their own).

In this case, if a character is out of the action, the player can use one of his other characters from the same locale. You as referee must make sure that the introduction of the character to the rest of the group is believable. You just can't pick up a character and drop him somewhere else.

If a player does not have another character already available in the same area, then a new one must be generated and you must again make sure that the addition of this character into the campaign makes sense.

There are other methods that can be used to help characters continue in the campaign as long as these methods are not overused. If your players enjoy "puzzle" adventures that depend mostly on thought rather than gunplay, then the characters may live a long time without ever finding themselves in life-threatening situations.

This does not mean that you should "make life easy on the players." When combat happens, it happens, and you must not interfere with it when it does. If characters are hurt, they are hurt, and the players can only hope that medical science can bring them back up to full health. If you fudge rolls or give characters rewards that they have not earned, you will find your campaign becoming weaker rather than stronger. Anything worth having is worth waiting for.

In the field of medical science, there are some things that can be done to save a favorite character from the jaws of death. At higher tech levels, doctors can revive "dead" patients in some circumstances, and working toward a successful "rebirth" could form an adventure scenario in itself. (Naturally, the player involved would have to run a different character for these sessions.) See *Journal #11* for the details of this medical procedure.

KEEP IT SMALL

The secret to having a successful wide-ranging campaign is not to let it grow larger than you can handle. The key is to start small. Begin with one or two worlds worked out to some degree of detail. Give your players characters on each of these worlds, then let them loose. If you have not decided on a theme or two you will probably find that your players come up with a few by themselves. A character that steals something precious may be chased halfway across the galaxy. The reoccurrence of his pursuers gives a (pleasant?) feeling of continuity to the campaign while with each new world reached for refuge, your campaign gets bigger. This step-by-step growth is easy to handle and you are not swamped with work by a sudden deluge of worlds.

If your characters move too fast for you, erect barriers to them. Make sure these barriers are genuine by thinking them up ahead of time. A high law level world can help by locking up part of the group. Once thought up, these barriers can be used whenever appropriate—just keep a list of simple ideas

in the back of your notebook.

Plots can come from a variety of sources. There are a few books which claim to provide a number of guidelines on how to construct plots. One of these books which I have used is *Steal This Plot: A Writer's Guide to Story Structure and Plagiarism*, by June and William Noble, published by Eriksson. It lists a number of possible motives for characters, many of which can be adapted to adventure situations.

WHEELS WITHIN WHEELS

One thing to remember in a large-scale campaign is the tip "wheels within wheels." You should have several plots going at once if only because your characters are playing in several different areas. But you should also see to it that your plots interrelate somehow so that there is a sense of continuity to the campaign.

The simplest way to accomplish this is to think it up later—you should never be in a hurry in a large-scale campaign. When the valuable museum piece is stolen and the characters must look for it, let them spend some time. As the item is moved from world to world, they must chase after it, and in so doing you already have a bigger campaign. Just introduce smaller scenarios on the in-between worlds.

You should have a general idea ahead of time concerning who made off with this thing, but you can change this later as long as it fits with the facts so far. If this is too difficult, but you want to connect the incident to some other group some distance away, let the second group swipe it from the original thieves. Just remember to have a motive.

THE MAGIC QUESTION

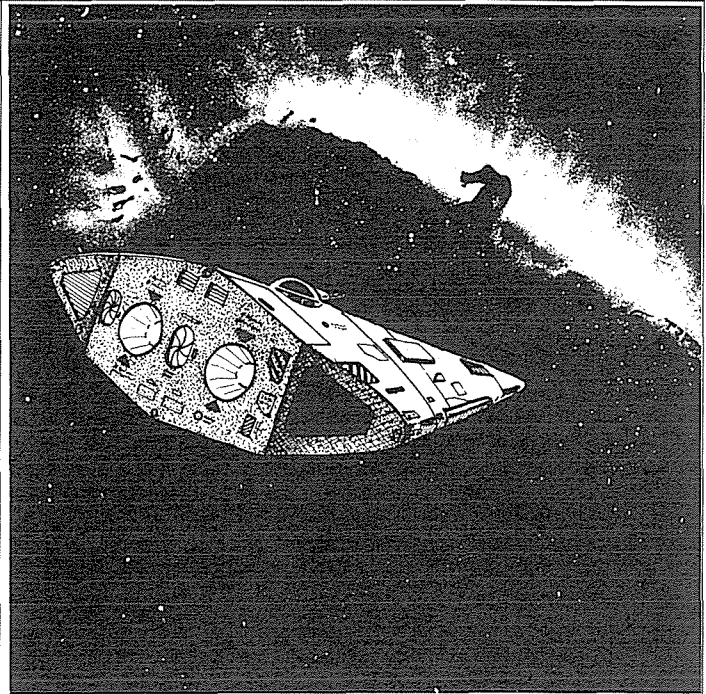
Before any NPC does anything important, make sure you can reasonably answer "Why?" Practice this, and you'll soon find yourself with a multitude of usable ideas. In the incident just mentioned, think of five reasons for stealing something before reading on.

Got 'em? Compare yours to mine: 1) the obvious cash value; 2) religious or cultural importance; 3) desire to get others in trouble by leaving false clues that point to them; 4) the item is part of a set, and the thief owns the rest of the set; 5) the museum personnel were rude, and the thief is performing a quick snatch-and-run "revenge." If yours don't match, then that means you have more than five ideas now, and two or three of these already sound like the basis for a mystery adventure. Pick the one you like best, and then leave clues for one of the other motivations. Let your characters loose and presto, instant scenario.

Why is it so important to be able to come up with these "instant" scenarios? Because in a large-scale campaign, you need a lot of things going on at once. Even if you aren't running a "solve-the-theft" adventure, you can still broadcast the loss over the evening news and leave your players wondering whether it's important or not.

RED HERRINGS

These false leads go by the general name of "red herrings." Over the course of time, you'll need hundreds of these in a large-scale campaign. NPCs need interesting motivations; worlds must have their interesting features; events take place. Any of these not directly germane to the main adventure theme



is a red herring. The fun of a large-scale campaign is that you and your characters have the time for some real fishing. You'll find that some of these red herrings become important themes that later recur. You don't have to tell the players that this wasn't what you had in mind from the very beginning.

YOU'RE ON YOUR OWN

Perhaps you've played *Traveller* for years, and you've run a few big adventures already. If you've read this far, you must have learned something you can inject into your campaign to give it some extra spice.

If you've never run a large-scale campaign, your head may be spinning with all these tips. This issue's *Amber Zone* article shows you step by step how a large-scale campaign can be developed. Try it out and let me know in a few years how your adventure is progressing.

—Gary L. Thomas

Reading Gary's article reminds me of my first attempts to play *Traveller*. I set immediately to work mapping out a huge star cluster with perhaps three thousand systems in it. I designed about twenty worlds to my satisfaction, and then promptly lost interest—before play could even begin.

My point is that the temptation to make things too large is hard to ignore. Gary is right when he suggests you keep even your large-scale campaigns as small and manageable as possible. If you don't, not only you but your players will lose interest as well. If you plan to roll-up the entire galaxy, go ahead, but don't expect to have an exciting campaign because of all your random data.

My two cents? Even in a campaign which spans the galaxy involve a most-likely straight line journey. Design the worlds on the most likely route first, then go on to some of the more interesting worlds just off of that route. Only a spectacular event or attraction will draw the players far off their course, so design those last. Cut your work whenever possible.

—Timothy B. Brown

K'kree Starships: A Human Perspective

Note: The author of this piece is Brian Stokes, a Vilani Professor of Sociology at the Tomutov Institute, Antares. His travels have made him something of an authority on K'kree behavior and methods—Mr. Stokes is a familiar face to holovision viewers throughout the Antares sector.

The K'kree have not taken as readily to spaceflight as have their human neighbors—among their own kind it is still the “madman” who will even submit to work within such a confining device as a spaceship. The Imperium relies heavily on its space lanes and the flow of people and materials between planets; they need thousands of ships to keep moving every standard day. The K'kree, on the other hand, call upon each of their worlds to support its own population; far fewer ships need move between K'kree stars.

But commerce does take place, nevertheless. K'kree merchant vessels carry mostly specialized materials such as exotic foodstuffs and scarce repair parts between worlds. Only in special instances are great amounts of material necessary to keep a world's population supplied, and these are generally taken care of by larger tug-type freighters.

Relatively small K'kree merchant vessels are still almost floating cities compared to human equivalents. The Xeekr'kir! type merchant, for instance, carries relatively little cargo (only 34 tons are dedicated to cargo), but has sufficient space to accommodate 74 individual K'kree. It is their race's claustrophobia which prevents them from taking fuller advantage of ship design technology for their purposes—K'kree ships must be enormous by human standards for two reasons. First, each K'kree requires considerable space for his personal comfort and sanity. Second, each K'kree actually involved in running the ship comes with a retinue, or family, which balloons the complement of the ship with non-productive personnel.

THE HUMAN PERSPECTIVE

For humans to understand K'kree ship design and method is difficult. The best way to arrive at such an understanding is to actually visit a K'kree ship, particularly while in operation, and observe the differences firsthand. This author has done just that, travelling as a guest of the Khiir' family in their Xeekr'kir! class ship from Antares to Kirur and back between 1109 and 1111. My experiences have led me to respect this herbivorous race in many areas, not the least of which is their ability to produce and operate ships despite their natural prejudices.

If possible, to more fully comprehend this essay, a tour of a K'kree vessel would be of enormous help to the reader. Such vessels can occasionally be found operating in the trailing portions of the Imperium—proper petitions to the owners of the vessel might yield an audience on board. Care should be exercised in regard to diet—violent reactions can be expected from the K'kree if the correct precautions are not taken.

THE XEEKR'KIR!

We will examine the Xeekr'kir! vessel in the order it would appear to a new visitor. The diagrams here (holographic, video, or paper, depending on the version of this essay) will be re-

ferred to often; keep these available for occasional inspection.

The Hull: From the outside, the Xeekr'kir! is a huge vessel in the shape of a flattened sphere over a hundred meters across. In human terms, this would be a huge merchant vessel, but to the K'kree it is merely a run-of-the-mill ship capable of carrying a moderate amount of material.

The hull is a polished white poly-ceramic sitting on three support legs. Access to and from the vessel is gained through the rear of the vessel using a ramp which lowers from the hull to ground level. The upper front of the saucer-shaped ship houses the bridge, and this area is a clear ceramic, allowing direct visual contact for the comfort of the otherwise confined bridge personnel. In the vessel I travelled in, this ceramic was one-way, allowing light from the outside in but appearing glossy black to the outside observer.

The Ramp: Entering a K'kree vessel for the first time will be something of a shock to an unprepared human. We are used to stainless steel, well-groomed spaceships, steward service to our staterooms and overall cleanliness of the ship and its passengers. Be warned that a K'kree ship is more like a stable than a starship. There is dirt and mud everywhere, tracked around from the central areas through the rest of the ship by the excessive number of individuals aboard. Sanitation is uncommon, to say the least (this will be discussed later), and the resulting smell is enough to deter any would-be humanoid visitor. I personally had to wear a filter mask for most of my trip from Antares into the Two Thousand Worlds—the smell will literally take your breath away!

Cargo: Directly off the large, grubby airlock are the two sections of dedicated cargo. These areas are rather confined, and would be difficult for a K'kree to enter and move about in. Therefore, each compartment has a specifically designed cargo handling robot built into it. The robots can detach themselves and move freely, but only when in need of repairs—their only functions are to handle cargo in these locations.

The Main Compartment: Most of the ship's interior is dedicated to the main compartment, where the K'kree congregate during the long intervals between planets, comforted by their numbers. Any other comforts are artificial. The following K'kree-made disguises attest to both the cleverness of the designers and the psychological necessity for the illusion of nature.

At either end of the large open compartment are the entrances to the airlock (aft) and the bridge (forward). These entrances are hidden by hedges which stand approximately three meters off the ground level. Similar hedges circle the compartment, hiding the exterior walls of the compartment from the ground level up to the beginning of the smooth, featureless domed ceiling.

The compartment has a dirt floor—literally—which is probably one-half meter thick. There is a ground cover of grass from end to end, and random plants growing all around the compartment. On my vessel there were gardens planted in various areas, where many of the non-specialized K'kree spent many hours each “day” tending crops of delicacies for both enjoyment and consumption.

The central feature of the main compartment is a huge tree at its very center. This is an artificial tree disguising a pillar/strut essential to the structural integrity of the ship. It also houses many of the environmental controls essential to the mental well-being of the K'kree on board.

For instance, the "tree" houses an image projector for the domed ceiling of the main compartment. When in use, the projector regularly simulates the light level of the K'kree home planet, Kirur, complete with a moving sun, an image of Kirur's large satellite Kirrixur, and a day/night cycle exactly simulating a standard Kritur, or K'kree day. Clouds are projected to move overhead, and storm clouds are timed to coincide with a light misty rain generated from the ceiling and the top of the tree.

The simulated rainfall is quite important to the K'kree passengers. It gives them a great deal of comfort and soothes them while it lasts, and is almost the sole contributor to their personal hygiene. With the rain and the simulated sunlight a variety of native plants grow and flourish within the ship. To complete the effect, there are breeze generators (fans) located in the tree which regulate the airflow in the compartment, creating winds which vary in direction, intensity, and temperature.

Also, I found out, much to my chagrin, that the odors readily in abundance from the K'kree complement on the ship were scarcely enough to simulate life on the plains of Kirur. To supplement these smells, special odor emitters are also housed in the tree which pump out all the native smells of Kirur, including natural plant odors, the smells of the sea airs, etc. However, to my nose these were "drowned out" by the emission of sufficient K'kree body odors to simulate not tens of K'kree but a plains herd of thousands of them. Needless to say, my trips to the vicinity of the central tree were rare and of short duration.

Despite my objections, however, the area around the central tree was a preferred area among the K'kree themselves. My ship had in excess of fifty individuals in it, and except for occasional departures by a few K'kree to tend gardens or perform ship's duties, the entire group congregated around the tree for the entire voyage. The grasses flourished around the exterior of the main compartment, but were trampled flat around the tree.

As a side note, the fire control for the ship is located in the vicinity of the tree, but is concealed underground until needed. During an emergency situation an alarm is sounded. The K'kree assured me that this is a simulated cry of the long extinct Gnaak. However, to my human ears the alarm was somewhat less threatening, sounding more like the gobbling of a Terran turkey. The fire control stations emerge from the dirt floor to be operated by K'kree gunners in the safety and comfort of the main compartment. Remote fire control is the rule among K'kree ships.

The methods of waste removal on the Xeekr'kir! are at once primitive and highly sophisticated. No specific facilities are apparent for the removal of K'kree waste, which, over the period of a one week jump, would be expected to pile pretty high in the simulated meadowlands. Instead, there is a symbiotic relationship between the grasses of the floor and a bacteria designed to immediately decompose K'kree wastes. The bacteria breaks the waste down much more quickly than nature would be able to, and the grass absorbs the nutrients more

rapidly as well. The bacteria is also airborne, and is carried by the simulated breezes to be distributed more evenly around the main compartment. The grass/bacteria symbiont was genetically engineered especially for this task.

Certain Imperial worlds have taken great measures to isolate K'kree ships from their ecospheres out of fear of this bacteria use. They feel that the bacteria will be a danger when it leaves the ship during any landing on their planet, be it by air or on the hoofs of the K'kree themselves. However, this fear is completely unfounded. The bacteria is designed to cycle only through the grass on the K'kree ships. If it does not do so, it dies. Even if an area of the engineered grass were to be transplanted into the ecosphere, its related bacteria would only survive in that limited area, where it could be detected and removed if it were doing any harm. The bacteria has been thoroughly tested and is harmless to all lifeforms.

My "stateroom" on this flight was any particular place I wished to sleep. Obviously, my stay with the K'kree on their ship was more like a camping trip than an interstellar voyage. I had a tent to keep out the wind, the rain, and what smells I could. My foods were limited to what I brought with me and what I could stand to eat from the gardens of my hosts. In short, travel on a K'kree ship is really roughing it.

The Bridge: The K'kree bridge is larger than one might be on a human ship. Obviously, K'kree are larger than men and they wish to be as comfortable as possible while on duty. The ceiling of the bridge is clear ceramic, giving the bridge crew a striking view of the stars around them. This also gives the room a very open feeling it would lose to walls and bulkheads.

The bridge area is characterized by its interesting K'kree work stations. Each station is recessed into the floor (a metal floor in the bridge) into which the K'kree sits with his four hind legs. This leaves his forelimbs free to operate the control panels spread out on the floor in front of each station.

The captain's station is in the center of the bridge, and can rotate as necessary. The navigational and engineering stations are fanned out on the floor in front of him. Scientific stations are located on either side of the bridge.

Below Decks: The engines and power plant of the Xeekr'kir! are located below the main compartment of the ship on a deck roughly one to two meters in height. This level has no gravity or atmosphere, and is the abode of a master engineering robot and his three slave robots. All engineering functions are taken care of by these robots—the level is too small for K'kree to enter. From the main compartment occasional activity can be heard from below, but rarely anything substantial. The engineering robots move about tirelessly, maintaining the machinery to which they are tied.

The Xeekr'kir! is designed specifically for the K'kree race. Humans would find it difficult to control the vessel or use it for their purposes without extensive modifications.

The Two Thousand Worlds can offer us in the Imperium endless possibilities for trade, cooperation, and fascination. Brief encounters such as mine can yield valuable information about their culture, their everyday lives, and themselves. The K'kree, I'm certain, would also like to learn more about us. Contact on the personal level is the first step toward interstellar cooperation between our two races, and it is up to the interested individual to begin that contact in his own way.

—Rob Caswell and Timothy B. Brown

Xeekr'kir! Class Merchant

Using a 6000-ton hull, the K'kree merchant is typical of most commercial starships in the Two Thousand Worlds, and is frequently encountered as a vessel operated by a merchant family—it is a standard mustering-out benefit for some K'kree merchants. It has jump drive-2, power plant-2, and maneuver drive-1, giving a performance of jump-2 and 1-G acceleration. Fuel tankage of 1320 tons supports the power plant and allows one jump-2. Adjacent to the bridge is a computer Model/2. Accommodations for up to 80 individuals are available. There are 12 hardpoints and 24 tons set aside for fire control; no weapons are initially mounted. There are no ship's vehicles. Cargo capacity varies with crew size; 34 tons are always available, plus 48 tons per individual not carried on board. The ship is unstreamlined.

The merchant requires a crew of six: pilot, four engineers, and medic; retainues of these individuals can provide needed technicians, gunners, servant and stewards, etc. A total of 74 family members or passengers can be carried. The ship costs MCr2322.18 (including 10% discount for standard designs) and takes 33 months to build.

K'kree Engineering Robot Master

54010-02-NP32E-P475	Cr405,155	138.5 kg
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Fuel = Interface/battery Duration = Indefinite/1 hour

TL=13

Speed = 0

20/50 (mesh)

4 light arms

Basic sensor package, magnetic sensor, radiation sensor, mass sensor, neutrino sensor

Power interface

Master unit

Radio, distant

TL13 holo recorder

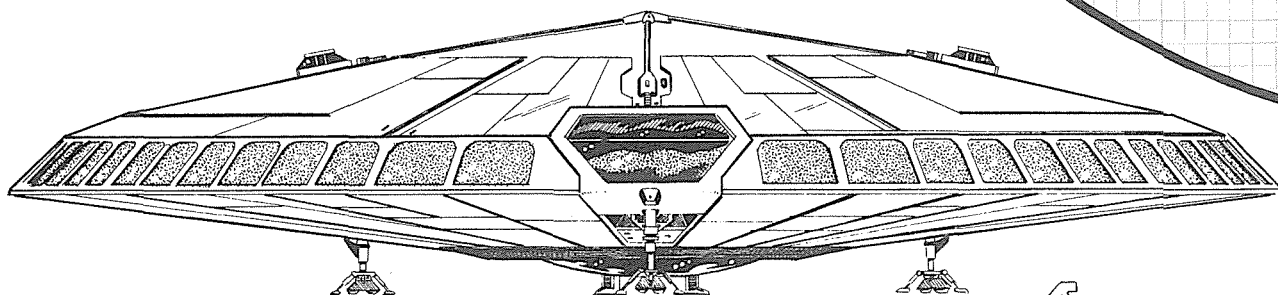
Laser welder

Mechanical tool package

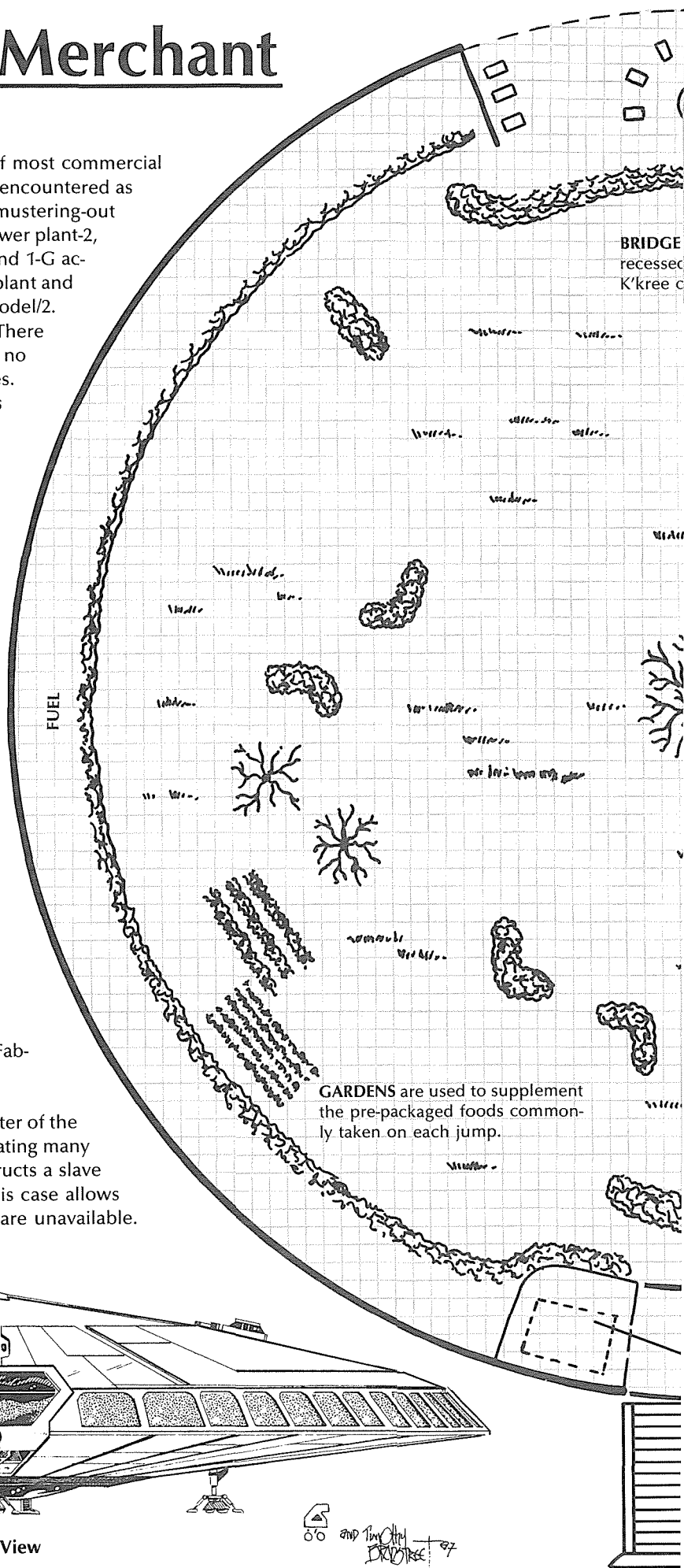
Electronic tool package

Engineering-4, Mechanical-4, Electronics-4, Construction/Fabrication-2

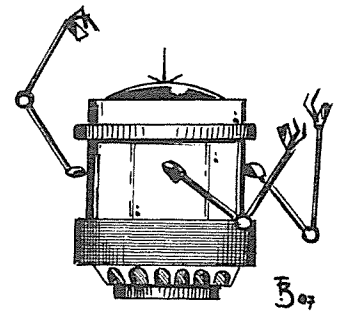
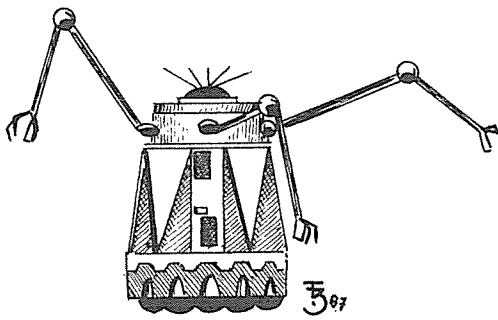
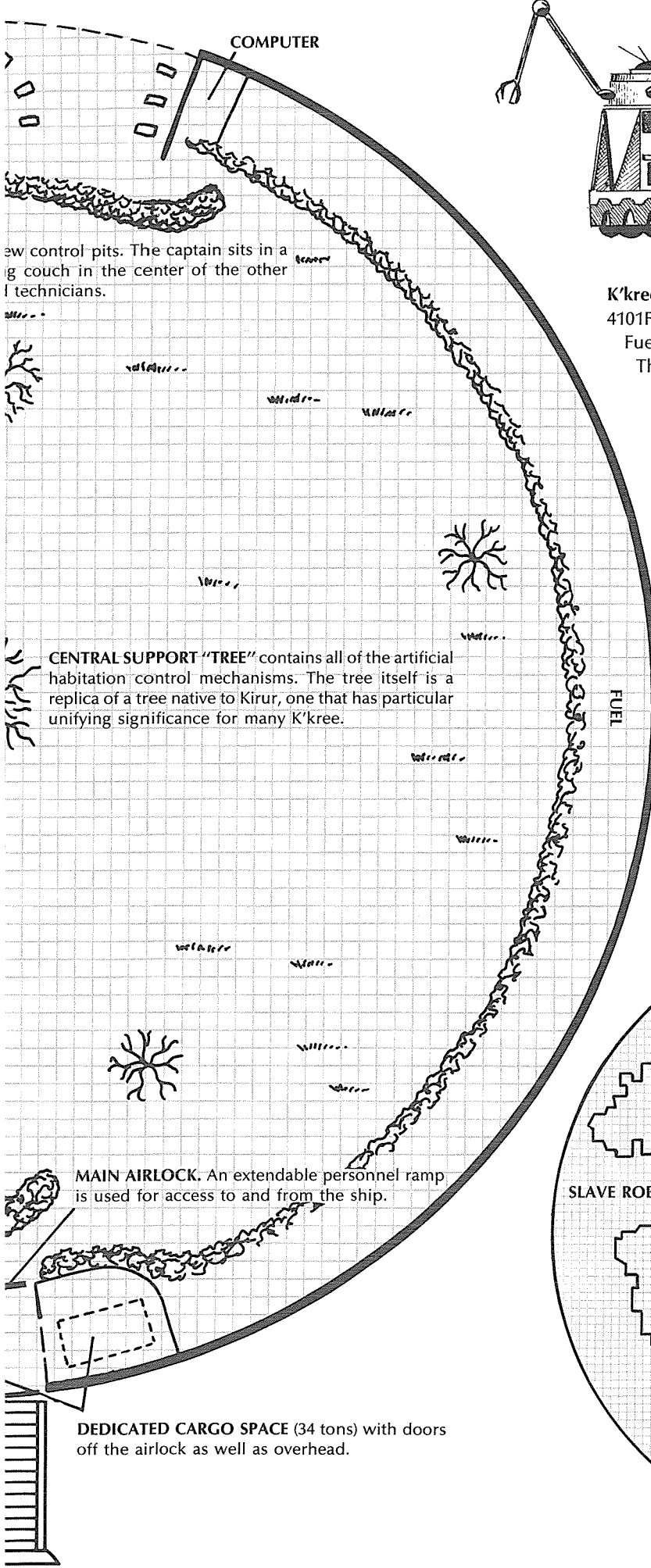
The master engineer is immobile, positioned in the center of the lower deck. Its arms are capable of reaching and manipulating many of the engine components—those it cannot reach it instructs a slave to attend to. The construction/fabrication program in this case allows the master to fabricate some engine parts when spares are unavailable.



Front View



and Timothy
DREW



K'kree Engineering Robot Slave

4101F-04-00000-MF00

Cr81,275

84.1 kg

Fuel = Interface/battery

Duration = Indefinite/1 hour

TL = 13

Thrust = 100 kg

16/40

4 light arms

Slave unit

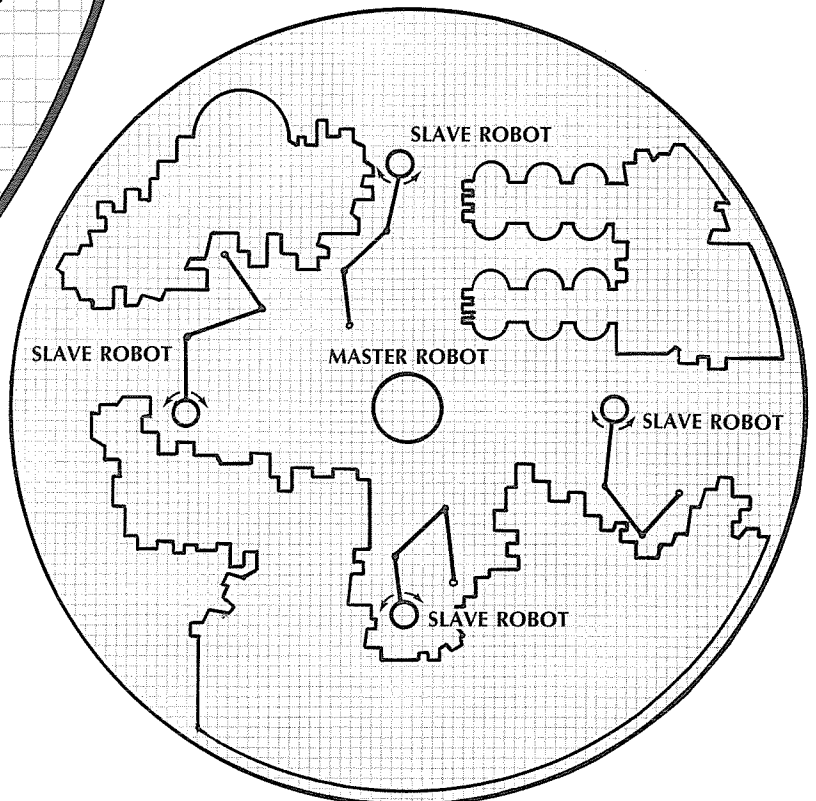
Radio, distant

Laser welder, light

Mechanical tool package

Electronic tool package

The slave engineers rely on their master for virtually everything, including instruction, sensors, and skills. Like the master, they rely on the ship's power plant for their own purposes, but have sufficient battery capacity to keep them operating at full efficiency independent of ship's power for up to one hour. The slave units are capable of extra-vehicular activity.



Engineering Deck

Behind the Scenes

This *Amber Zone* is different from many that have been published in *Challenge* or in *The Journal of the Travellers' Aid Society* in the past. For one thing, this *Amber Zone* is a large-scale *Amber Zone*, covering a wider region than is typical. Second, this *Amber Zone* will allow the referee inside my own thought processes to gain a "behind the scenes" look at how to construct and run a large-scale campaign.

IN THE BEGINNING

Every campaign, large or small, has to start somewhere. For this *Amber Zone*, I thumbed through the *Atlas of the Imperium* and chose the Antares Sector. Why? It was a new sector to me, so I could have free rein in whatever I did; but there is more to it than that. Look at the sector map more closely, and you'll see that it is chockful of opportunities for adventure situations involving many elements.

Most of its coreward edge consists of Vargr worlds, outside the reach of Imperial law. The coreward-rimward corner contains part of the Joint Action Confederation, labeled "jr" on the map. Just coreward of Antares lie the worlds of the League of Antares, labeled "la." Finally, this sector contains Sabmiqys (Antares 2117), and having some foreknowledge of this world,

AMBERZONE

I thought that an interesting scenario could be woven to include it.

The first thing I did, having chosen this sector, was to use highlighter markers to color in the "mains" of the sector. Start-

ing with any color at any world, I proceeded to color in all the worlds that could be reached using only a jump-1 vessel. (Use a photocopy of the page so you can later use different color schemes for other information.) This was meant only as a rough rule-of-thumb indication, so I blithely included starport X desert worlds in my mains, even though such a world would effectively stop a jump-1 ship from arriving there. I did not include non-Imperial worlds in the mains, and left them uncolored.

It turns out that most of the worlds in the central and rimward areas of Antares Sector belong to one large main, stretching from Antares 2505 at the top, clear down to the bottom of the sector. This looked good, but there were still enough gaps and travel inconveniences that I made a mental note to consider jump-2 transportation for the characters.

WORLDS AND MORE WORLDS

For the next step (still in preparation, without player assistance), I rolled up UPPs for some of the worlds around Sabmiqys. At this stage of the game, I am still drifting without

a fixed goal, letting my mind wander into whatever nooks and crannies it can discover on its own. Genius, as they say, is 99 percent perspiration and one percent inspiration. Rolling up worlds is part of the perspiration.

I used a Pascal program to simplify the process. I let it print out 40 random worlds for each starport class, and then fitted world stats onto the map as appropriate. If you don't have a computer, roll 'em by hand. Keep alert in this step—we're looking for anything out of the ordinary that we can spin into an adventure.

Remember, too, that you are the referee; if you want to do something your own way, go ahead. You're the boss. Things don't have to come out randomly, and sometimes your flat decision is the key that turns the lock and makes the adventure click. When I was writing my *Shudusham* adventure, I hand-rolled more than 25 different worlds until I got one that I liked. In the end, I combined the physical characteristics from one with the cultural characteristics of another world.

Was this a monstrous waste of time? No, because the random nature of the rolls made me consider some options I would have otherwise overlooked, and one of these options (the perspiration) gave me a good idea (the inspiration).

Of course, other methods may be used to come up with random world statistics. For instance, it is possible to steal them from *Atlas of the Imperium*, possibly mixing up the physical and social statistics from world to world. This way the random nature of the worlds is preserved, and your players are not likely to arrive at the next gaming session convinced they've been to this planet before.

Here's what we have generated so far for the Antares



Sector:

2117	X160056-H	(Sabmiqys) Red Zone. De. Lo. nIn.
2118	C676416-8	nIn.
2216	B464321-C	nIn.
2218	D897000-5	Ba. Lo. nIn.
2219	D425553-8	nIn.
2220	B433231-D	Lo. nIn. Po.
2315	B898998-B	(Irale) Hi. In.
2316	E653967-6	Po.
2320	E798315-3	Lo. nIn.
2411	EAB4116-5	Fl. Lo. nIn.
2413	A8A6779-B	Fl.
2417	C898351-6	Lo. nIn.
2421	A762ADA-D	(Antares) Hi.
2422	X550544-0	De. nIn. Po.
2512	E638234-8	Lo. nIn.
2611	A243232-9	(client state) Lo. nIn. Po.
2612	C312202-9	(non-aligned) Ic. Lo. nIn.
2712	A56576B-A	(non-aligned) Ag. Ri.
2812	B554643-A	Ag. nIn.

We also need to name the worlds. I'll leave you to your own devices for this, but I will also give you a tip that will come in handy later on. After you have named these worlds, on a separate sheet of paper jot down some other world names for later use, and put this list in the back of your three-ring notebook. When the player characters suddenly decide to investigate a world that you hadn't planned on, you'll be ready.

The players ask about this new world, and you can flip to your list and tell them the world's name with little hesitation. You'd be surprised how often a definite name adds veracity to a situation, particularly to red herrings. If it is "just some world," the players can guess that it is unimportant to the adventure, but if it's "Nove" or whatever, your players can't be sure without playing the situation out.

You might also keep a list of UPPs handy, too, for exactly the same reason. You don't need to assign these precisely until necessary, but when the players ask, "What tech level is Nove, anyway?" you'll be able to give them a ready answer with a straight face by picking a set of world stats from your list.

WHO AND WHY

Clothes make the man, so the proverb goes. In the same way, characters make the adventure, dressing it up in memorable ways. Besides, characters are the best sources for motivations, and without motivations, player characters would tend to just sit.

Here's the idea for a patron then. A collector purchased an unusual artifact from an art dealer. The collector has shown the device to several technicians at a local university, but none of them knows where the device came from or how it works. The collector wants to find out.

Watching things from behind the scenes, you can probably guess that the artifact I have in mind came from Sabmiqys, with its tech 17 civilization. But your players won't know this unless you tell them the adventure concerns Sabmiqys. Mum's the word—and we can proceed with some more frills.

The collector's curiosity provides one motivation, but the more the merrier. Perhaps another NPC doesn't want the col-



lector to find out, or perhaps wants the artifact himself, or... The beauty of a long-term adventure is that we don't have to decide yet. We can play it by ear until we reach that crossroads, and then give the players what we think they would enjoy the most.

BEGINNING OR END?

We still have a little more work to do before we can let the scenario loose on the players. They have to start somewhere, with their own characters, in some situation. As mentioned in the accompanying article, we can choose a spot as the origin or as the destination of an adventure, we can fan out from a central point, or we can work both ends against the middle.

Since this is a "puzzle" type adventure, probably with some action thrown in, it's apparent that we have to work toward the answer, so let's start somewhere else. We'll have plenty of red herrings along the way; we may as well start with one, too. We can set this up then so that the search for the origin of the artifact is a "long leash," always pulling the characters in one main direction over time, even though minor incidents along the way may entail short detours.

Looking over the worlds above, Antares 2712 (A56576B-A (non-aligned) Ag. Ri.) looks good for the characters' homeworld. With a tech level A and a starport class A, it is solidly within the interstellar community, and its position outside the Imperium may give us some advantages later. Since we have already thought up the name Nove, let's use it for this world.

The artifact is much higher tech than anything on the world or known as Imperial technology. Maybe it could be an Ancient artifact. I looked in *Adventure 12, Secret of the Ancients*, to see what I could dig up (sorry about the pun). Here again, perspiration led to inspiration. Listen to this:

"The Imperium has strict laws controlling traffic in artifacts, which cannot be legally sold unless registered with the Imperium...there is an illicit traffic in artifacts. Any artifact besides a piece of rubble can usually be sold for more money in the illegal market than it can to the Imperium." And this:

"The Imperium has long searched for Ancient sites, but it has never been able to find them all. Aware of this, the Imperium has established a series of incentive bonuses designed to encourage the reporting of newly located Ancient sites to the authorities. A payment of Cr50,000 is made for reporting a previously unknown Ancient site to the authorities. A subsequent bonus of between Cr100 and Cr1,000,000 is made depending on an analysis of the site in depth."

Notice that magic word, "incentive." Monetary reward could be a strong motivation for these characters, and the complete picture starts to fall into place.

The collector has an Ancient artifact, which he bought from some antique dealer who didn't realize what he had. The collector now wants to trace the source of this artifact, which must be a new Ancient site, since none have been reported in this part of Antares Sector. The characters' motivation is the initial discovery bonus, and perhaps an "extra" bonus depending upon each individual's sense of personal honesty: they could strip the site of the most valuable materials before they report it to the Imperium.

ON WITH THE SHOW

Simple so far, isn't it? We need to roll up the collector; someone rich and powerful but unable to travel himself to solve

this mystery. Sounds a little like a noble. Use *Citizens of the Imperium* to roll one up, and put him in charge of some smaller area on Nove. Double-check the world's UPP: the government type is captive government or colony. Let's use captive government, and that will help explain why this guy is here. Choose some nearby world to be the "big bosses." Antares 2812 could work, but I'll leave that decision up to you—I can't do all the work.

We want the characters to travel rimward. We may as well overshoot the distance we need to go because then we can have a bigger campaign and start new characters at the other end. Let's put that off for now, because your players can handle only one character apiece in any given gaming session, so let's begin with Nove.

Ansenz (Antares 2425) is a good distance away, but it's not even generated yet. No problem—we just look up our list of pre-generated stats and find one that fits. It's a high population world with a B starport, so we can use B656AD8-7. This one came out of my computer, and it has several salient features. Tech 7? Hmm. Religious dictatorship? Hmm. Possibilities already spring to mind.

PUTTING THE PIECES TOGETHER

So the noble on Nove wants to find out exactly where his Ancient artifact came from, and he knows his dealer picked it up at Ansenz. Again the magic question comes into play: why? Always, always, always, test NPC motivations, and your players will not detect any seams in your campaigns.

The situation here is that the noble is hiring the characters

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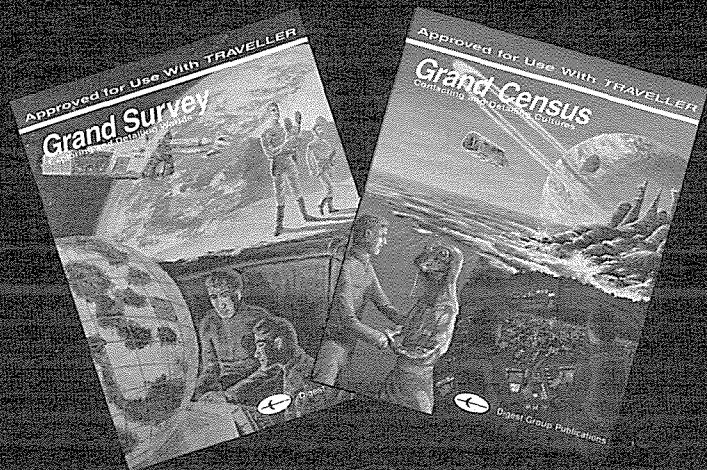
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to discover the information. Why does he hire the characters? Why not travel to Ansenz himself? (We already solved this one.) Why not just talk to the dealer himself? (Maybe he's dead—that's simple enough.) Why not write to someone on Ansenz?

Look at what we have to work with: Ansenz is part of the League of Antares, and Nove is outside the Imperium, so communication may be censored. Ansenz's low tech level may interfere with the mail. Its religious dictatorship may censor or totally prohibit incoming letters. Any of these could do the job, so let's use...

Hold it right there. This is the beauty of a large-scale campaign. We know there's a reason, but we don't know what the player characters will do over the next few months. It's good enough for the noble to say that he has sent inquiries to Ansenz over the past several years, but he has never gotten any response. He doesn't know why; so he's sending the characters to find out.

This way, the theme has a chance to "brew" in your subconscious. When you think of an interrelated theme for this adventure, you can choose the reason that fits with it the best. Or maybe you'll think up an entirely new reason. Maybe someone on Ansenz is intercepting these messages, and will be waiting for anyone asking questions. Maybe...but you get the idea. I'm sure you've thought of a few yourself.

SLOW AND EASY

Now look at what we've done. Playing *Traveller* is an investment in time that pays off in fun, and with any investment it's better to get a bigger return than a smaller one. To develop this scenario, we've spent about an hour rolling dice and five or ten minutes looking over a map and talking to ourselves. This minimal investment already gives us the basis for a scenario, and at the same time protects us from unfortunate "losses" on our investment. Suppose the player characters show no interest in this assignment—we've lost little time, and most of the work we've done can be adapted to another theme in the same part of space.

We do need a good rousing start, and we haven't yet solved the problem of transportation for the characters. Traders with a jump-2 vessel could work: if we use a subsidized vessel, we're sure that the characters are still "hungry" enough to take on some sideline work.

Mercenaries could also participate in this adventure. They were hired on to settle some petty squabble on Nove and happened to meet this nobleman. How do we decide which setup to use? Let the players do it. They have their own preferences for the character types they like to play. At the game session, before you start this campaign, just ask them which they plan to use for the next scenario, then design accordingly.

THE FIRST STOP

Look at the stats we generated for the worlds near Nove so we can decide on the first session's scenario. Antares 2611 is a client state, quite small, with only a few hundred people on the world, but a naval base in orbit. Antares 2612 is non-aligned, with only a few hundred people and no government at all. Antares 2512 is within the Imperium, again with only a few hundred inhabitants. If we come up with an idea that doesn't need very many people, we could use it anywhere.

I now turn to *10,000 Ideas for Term Papers, Projects and Reports*, a book I sometimes refer to for "idea seeds." (I got mine at the university bookstore.) Opening it at random, I find "genetic bases for aging." Fortunately, I don't have to write a thesis, but I can still use this as a jumping-off point for a scenario. Maybe a world is doing special research. Anagathics spring to mind, but they need tech level 15 and these worlds are all eight and nine. But this still might work. After all, we invented these UPPs a while ago, so we can feel free to change them to suit our convenience.

But this isn't always the case, and I don't want to take the easy way out. Suppose we're stuck with eights and nines. We still have some loopholes: library data is sometimes incorrect, after all. Sometimes the tech level in one specialty will be significantly higher or lower than the general tech level. But that still feels a little like cheating, and I don't want to do that in a how-to article.

So we scrap the anagathics idea, right? Wrong. As long as we went to the trouble to think it up, let's jot it down in our notebook. We'll encounter a tech 15 world sooner or later, and we might be a little dry on ideas at the time.

So back to the idea book—this time with an entry on "factors contributing to organized crime." Here we have something. One of these worlds is actually run by hoodlums, say. If your players rolled up mercenaries, send them in to clean up the place. If they're using merchants, tell them after they get to the world. They'll find out soon enough.

We can also use more than one idea and meld them together. For example, we can go back to the idea book and look up another entry—this time we come up with "scientific research grants." Now add this to the hoodlums idea, throw in a little imagination, and see what we come up with. Perhaps the hoodlums are actually a front for a bogus research company accepting grant money from a university or the Imperium itself. Or maybe the scientists are for real, but they are oppressed and intimidated by the new thugs in charge. If the player characters are going in to clean things up anyway, these new problems might add flavor to the scenario. Maybe there is a

reward for uncovering the fake researchers, or will there be some spoils from grateful scientists?

I won't give you the whole scenario for this adventure. Once you have the idea for an adventure with a small population overrun with thugs, it's easy enough to make it up yourself in a few hours. All I'm showing you here are ways to integrate these smaller scenarios into a bigger campaign.

WHATEVER HAPPENED TO...

Speaking of bigger campaigns, you may be wondering whatever happened to Sabmiqys and the Ancients. See how the adventure is going later on; you may decide to switch horses in midstream. Maybe your characters get all the way to Ansenz before turning around and coming back. Maybe they get to the real source earlier. It's up to you and your mood. If they never reach Ansenz, you haven't lost more than about five minutes work. And you may come up with another theme that has more sparkle to it between now and then.

When the time comes and the characters do reach Sabmiqys, use the contact piece for more adventure ideas. If your players have already read the thing, or if you change your mind, there's nothing stopping you from choosing some world as an Ancient site after all and letting your characters dig it up. After all, if it was interesting enough to make a good red herring, you should be able to use it as an adventure.

PUBLISHED MATERIALS

Large campaigns such as this one will require quite a bit more legwork than will an adventure or scenario situated on just one

or two worlds. Don't get me wrong; a single world can never be described in complete detail (think of the diversity of peoples and geography on Earth), and the task should not be taken lightly. But to come up with information on several worlds, or several dozen, will take time and effort. If you don't have the time, however, there are means for having the work done for you.

Obviously, if you're planning to set your long-range campaign in the Imperium, *Atlas of the Imperium* will be a life-saver. First, lots of the information is already there for you. Second, if you don't use *Atlas* you're running the risk that a rules lawyer player will complain that this is not the "real" Imperium.

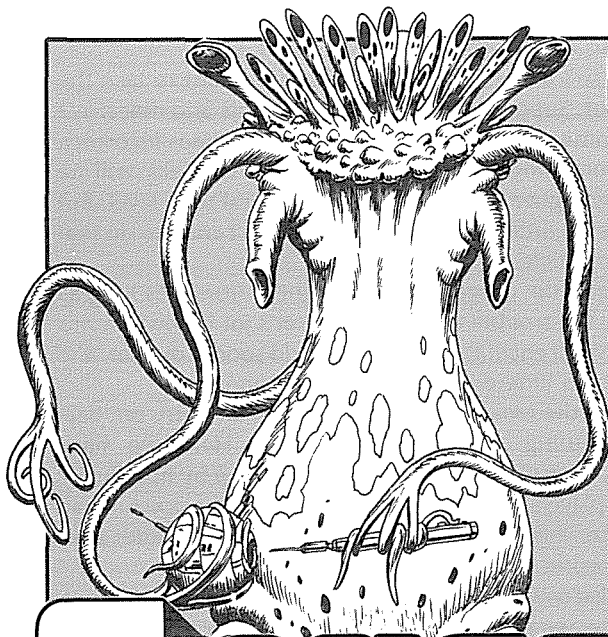
But maps are not the greatest gift offered by already published materials. All the adventures ever published for sciencefiction games (both *Traveller* and others) by any company (*Game Designers' Workshop*, *Digest Group*, etc.) are goldmines of information to fill in holes you haven't time to fill.

The most common misconception about adventures is that their locations are carved in stone. This is simply not the case. Any adventure can be adapted to take place somewhere else in the Imperium, or in any part of space for that matter. You simply have to make a few adjustments. You might have to change Vagr pirates to Aslan clansmen—a formidable task, but not impossible. You might have to change several of the planet names, but this is simplicity itself. In no time at all you can fill up your campaign area with interesting situations for the players to run across. These can tie in with the main theme of your adventure or be independent, as you desire.

—Gary L. Thomas

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The Sabmiqys

CONTACT

In -5889, Scouts from the First Imperium conducted a sub-orbital flyby of a world in the habital zone of Antares 2117 (see the Atlas of the Imperium). The flyby was part of the routine pre-contact process for a world suspected of harboring intelligent life forms. During the flyby mission, the ship's boat reported a series of unexplained internal explosions and shortly erupted in a final catastrophic explosion. The incident was reported as an unfortunate accident.

Over the next several months, numerous Scout ships were sent to contact the world—in every single instance any starship attempting to contact the local culture was destroyed by some unknown weapon (apparently emanating from the planet) which induced the ship to explode from within. Baffled, the Scouts declared the world a navigational hazard and off limits to all starship travel. The Scouts named the system "Gashukubi," which in Vilani means "Certain Death."

Toward the end of the Interstellar Wars between the Solomani of Terra and the Vilani of the First Imperium, Solomani breakthroughs in starship weapon technology produced the starship mounted meson gun. The first time the Vilani encountered meson fire from the Solomani, the Vilani were horrified—their ship was induced to explode from inside—just like the Gashukubi legends. Rumors of the "gashukubi" weapon of the Solomani did much to break the Vilani's will to continue the fight.

With the founding of the Second Imperium, it didn't take long for the Vilani to realize that the mysterious starships' explosions in the Gashukubi system was almost certainly caused by meson fire from the planet's surface. Thus came the startling truth: the mysterious inhabitants of Gashukubi had a superior weapons technology. Curiosity about Gashukubi abounded—Were these aliens another major race? Was this a world inhabited by the "Ancients?" What other superior

technology did they possess?

The Sylean Federation was the first to use meson screens as a protection against meson fire, which ultimately opened the way for surviving to contact the in-

habitants of Gashukubi shortly after the founding of the Third Imperium.

During the 70s and 80s, two starships with meson screens attempted to land on Gashukubi—one was destroyed. The other starship that did survive to land was never heard from again after only a few hours. Even though knowledge of the inhabitants of Gashukubi still remained a mystery, this incident proved the alien's meson weapons were survivable.

In 311, the *Gem of Fornol* (a starship with new tech 13 meson screens) managed to land on Gashukubi and finally make contact with its inhabitants.

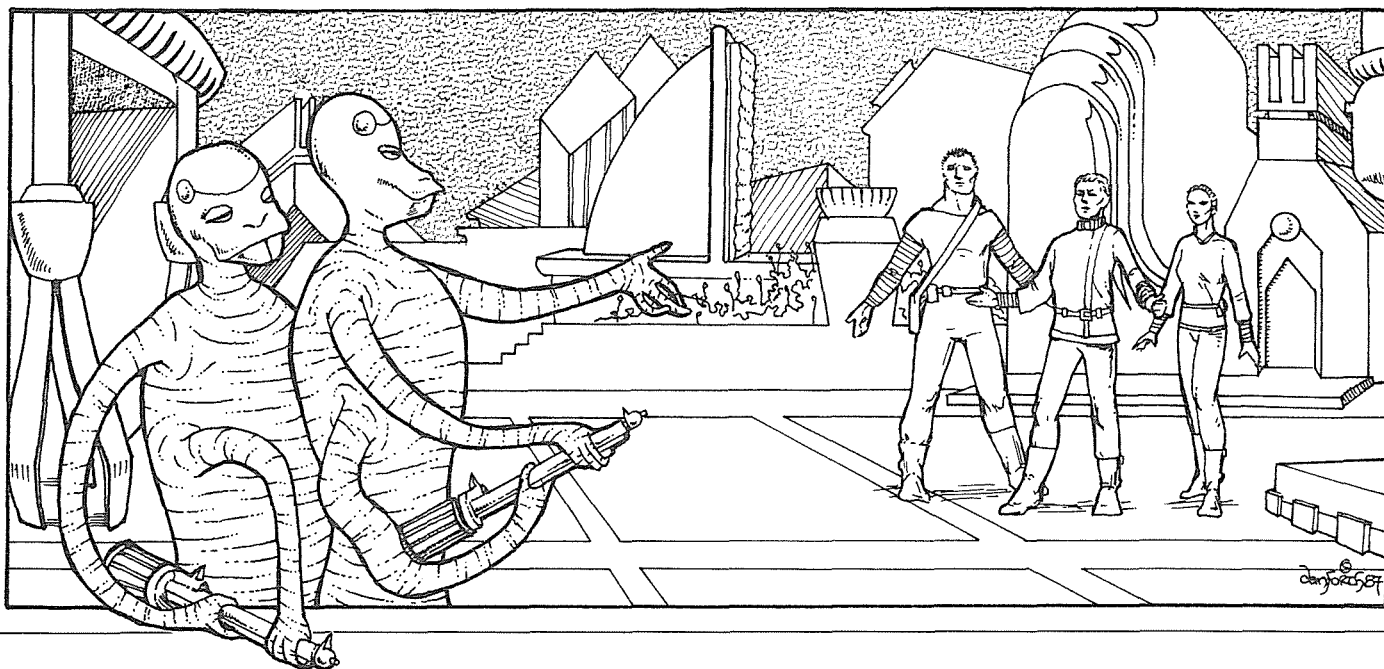
THE EARLY CONTACTS

The *Gem of Fornol's* crew (wearing vacc suits, routine procedure in all first encounters) were met by a horde of large, ugly metal robots wielding a nasty array of weapons. Many of the crew were herded off at gunpoint, never to return to the ship. The remaining crew members finally left while their ship was still intact, for fear that they too would be captured.

The world was classified as a red zone which harbored a highly xenophobic race. The Scouts were puzzled as to why the inhabitants were so "afraid" of offworlders. So much so, in fact, the locals never met the Scouts face-to-face; the locals sent their robots instead.

The next contact party a few years later noticed a surprising difference from all previous contact attempts—no more meson fire. Why had the fire stopped? The Scouts were unable to find out, for they met with a fate similar to that of the *Gem of Fornol's* crew.

The Scouts stepped up efforts to establish friendly relations



with the Gashukubi locals during the First Survey. Even though the next several contact parties continued to lose a high percentage of their members, a gradual understanding of the locals developed, and from that followed a rapport of sorts.

CULTURE AND HISTORY

The local inhabitants call their world "Sabmiqys." Sabmiqys (Antares 2117, X160056-H) is a desert world, possessing a mere 3% hydrosphere. Apparently, long ago, the world's surface was about 25% water, but most of the water was lost due to some prehistoric cataclysm. Sabmiqys orbits its star in a highly eccentric orbit, making the world's seasons and environment quite harsh.

As the Scouts managed to learn the language of the local culture, the Scouts were able to communicate to the local robots their desire to meet "those in charge." Finally, the Scouts got to meet the actual Sabmiqys instead of their robots.

They found the race to be from omnivore/gather stock, about 2.5 m in height, and massing about 100 kg. They were thin and lithe, with no body hair and a bumpy, thick, spongy grey hide. They had two legs, four tentacle arms with four finger manipulators, a head with two eyes, four nostril slits, and a wide mouth with over 100 teeth.

There were very few of the aliens left. Most of the society consisted of robots of all kinds. The Scouts had a very difficult time estimating the tech level of Sabmiqys, for much of the technology seemed very advanced, almost incomprehensible.

Over time, various contact parties managed to learn some mind-boggling facts about the Sabmiqys. They claimed to replace their body parts as they wore out (although the Scouts never witnessed this firsthand; this was not too surprising, for the most advanced Imperial medical facilities could do this as well). What really shocked the Scouts, however, was that a few of the living Sabmiqys claimed to be nearly 10,000 years old! This was never verified though, because the Sabmiqys would never let the Scout Medical Experts examine them despite their interest in the medical expertise of the Imperium.

The Sabmiqys had several strange cultural "quirks."

They referred to themselves as "Gya Ks," and their ancestors as "Egya Ks." In time, the Scouts came to understand the reference a little better. More appropriately the term seemed to mean "our great ancestors who brought down death from the sky." Just what significance this had, the Scouts were unable to determine.

The Sabmiqys appeared to require little sleep, and retired to their quarters once a day to eat in private.

It was difficult for the contact parties to learn a great deal about the Sabmiqys because they were very secretive, and party members would continue to disappear from time to time. When asked about the missing members, the Sabmiqys would gladly offer to show the curious party member—who would also fail to return! If pressed for an answer, the Sabmiqys would lead off the offending party member at gunpoint, who would also never come back.

Several mercenary parties hoping to rescue the missing humans travelled to Sabmiqys, never to be heard from again.

So the Scouts learned it was better not to ask what had happened to the missing humans. In fact, in certain parts of the service, Sabmiqys became a byword for any potentially dangerous mission.

THE TRUTH COMES OUT

In the late 600s, a Scout contact party visited Sabmiqys and stumbled upon a robot repair facility. To the party's amazement, a "living" Sabmiqys was undergoing extensive repairs. The Sabmiqys in the repair facility was, in fact, an extremely sophisticated pseudo-biological robot. Shortly thereafter, the party learned the entire remnants of the "race" inhabiting the planet had been pseudo-biological robots all the time!

Slowly, the sad tale of the "great ancestors who brought down death from the sky" unfolded.

Around -8000 (shortly after the Vilani had invented jump drive), the Gya Ks had sent out one sub-light ship to a nearby star system one parsec distant (their space travel technology was far behind their computer/robotics technology).

It appears that the sub-light ship returned on robot auto pilot, all its passengers dead from an unknown cause. Once the Gya Ks on Sabmiqys were able to determine the cause for the mysterious deaths, it was too late, for they too were infected with the deadly virus harbored on that ship.

The toxic effect of the virus was near symptomless until the very end. Medical robots frantically looked for a cure—global panic struck overnight as millions that were fine one day were dead the next for no apparent reason. The very fabric of Gya Ks' society unravelled overnight—bedlam and anarchy prevented the coordination of effort that might have otherwise led to a cure.

The study of the mysterious ship had lasted for 6 months—the incubation period of the virus. Once the deaths started, from beginning to end, it was all over in less than 10 days—the death of an entire world in 10 days.

The million or so robots left on the world decided that space travel is of little or no value, and thus have never put any effort into pursuing interstellar exploration.

SABMIQYS IN 1100

Currently, Sabmiqys is still an interdicted red zone world.

The second survey UPP stats for the world of Sabmiqys are X160056-H. Note the world UPP does not list the robot population, since the Imperium is divided over the question of whether or not the robots should even be considered "sentient." Prevailing opinion is that the robots *should not* be considered sentient, no matter what: The robots are not biological beings; they are artificial imitations, even if they are quite intelligent.

The robots that populate the world vary from highly intelligent pseudo-bios to dumbot servants. The bulk of the intelligent robots are of contoured configuration, resembling the Gya Ks.

The controversy within the Imperium over whether or not the Sabmiqys robots are true sentients continues to rage on.

Travellers are cautioned not to go to Sabmiqys for any reason. Many who have violated the red zone restriction by visiting the world have never returned.

REFEREE'S NOTES ON THE SABMIQYS

The following information is not common knowledge, and is available only to the referee.

Because Sabmiqys orbits its star in a highly eccentric orbit, the intense heat of the hot season would shrivel the 25%



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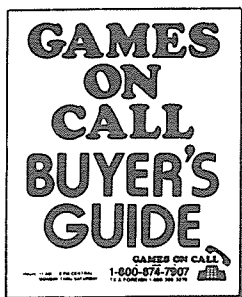
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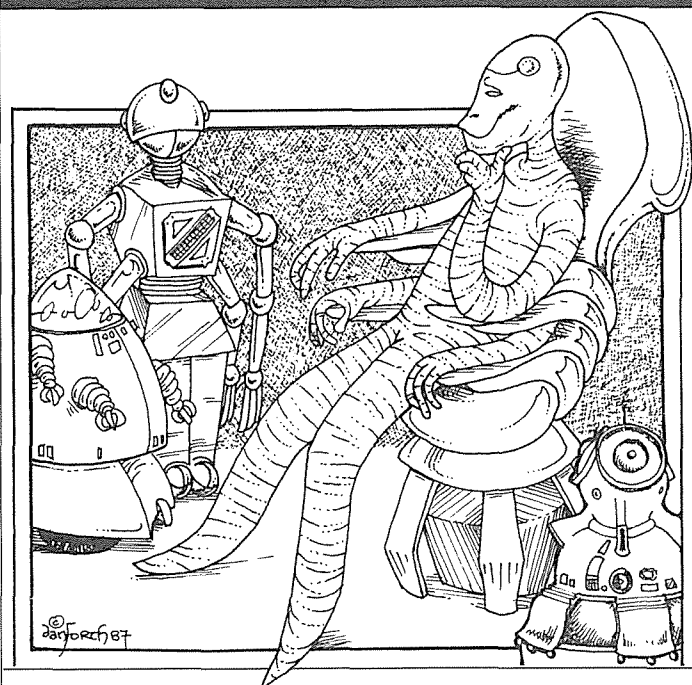
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hydrosphere to a mere fraction of its original size as most of the surface water evaporated into the atmosphere.

The cooling season would bring on monsoon rains in certain areas, depositing much of the water in locations different from where it was in the prior season. The lakes, rivers, and seas would move about from season to season on the world's relatively flat surface.

Since the original pre-Sabmiqys of prehistoric times had few natural enemies, the harsh environment itself was the primary factor that drove them to intelligence.

The Sabmiqys developed an impressive skill in world terraforming in a few short millenia. At the time of the disaster on Sabmiqys, the environmental sciences had reached tech level 17. The other highly advanced science was computers and robotics, which had also reached tech level 17.

The other sciences were not so advanced. Energy technology was around tech level 15, as was communications and military technology. Because the Sabmiqys possessed few biological enemies on the world, their medical tech level was only 11. The Sabmiqys had never possessed a great racial drive to reach the stars, and had barely managed to achieve tech level 9 in space travel.

Globally, the Sabmiqys were discordant, often having disagreements and spats. The Sabmiqys' way of settling a harsh disagreement was to have a "contest." The contest consisted of a test wherein the contestants would each build devices to perform some agreed-upon function. The builder of the best device won the argument. This method of settling disagreements fostered many technological advances.

The Sabmiqys used their sophisticated environmental technology to store most of their world's water in vast underground aquifers. Their robots did all the work, including supervising the project. In fact, in many areas the robots really ran the world. They were the doctors, the policemen, the professional "contestants" (soldiers), the clerks, and the janitors.

Since the time of the ill-fated starship, the robots have always had a severe distrust of anything from space. When the First

Imperium Scouts showed up on the scene, the robots naturally decided that destroying the "scourge from space" was the proper decision.

When the Imperial Scout ship was finally able to penetrate the meson defenses in the early 80s, the Sabmiqys robots (not the pseudo-biological robots), met the humans at their ship with guns in hand. The robots were expecting other robots or worse yet, infested alien Sabmiqys. They were totally confused by the humans who came out. The robots took the humans to the leader robots (the pseudo-biological models).

The robot leaders decided they needed to find out more about these creatures and "dismantled" several of them. The medical robots discovered these biological beings carried the virus which wiped out their creators long ago. They now had a source for the virus, and biological beings to experiment with. They must allow these beings to come to their world, so that they can pick other subjects to experiment with.

As various contact parties arrived, the Sabmiqys hand-picked their experiment stock, and began to breed their laboratory "animals." After about 150 years of experimenting, they finally isolated what they thought was a possible cure for the virus. Unfortunately, they had no live Sabmiqys to test the serum on.

At this point (around 500) the Sabmiqys took a strong interest in learning more of the Imperium's medical technology. They soon learned that the Imperium (then at tech level 13) was using high-tech cloning techniques to clone new body parts.

The robots had enough foresight to cryogenically freeze several Sabmiqys shortly after they had died from the virus—some of their body cells were still alive when they were frozen. With luck, a Sabmiqys could be cloned from suspended corpses.

After another 300 years of frustrating cloning experiments on humans, the Sabmiqys managed to push their medical tech level to 13. Another 175 years of experiments produced a successfully cloned full-grown Sabmiqys. The robots had succeeded in reviving their race!

Currently, in 1100, there are several hundred biological Sabmiqys on the world, immune to the effects of the death virus.

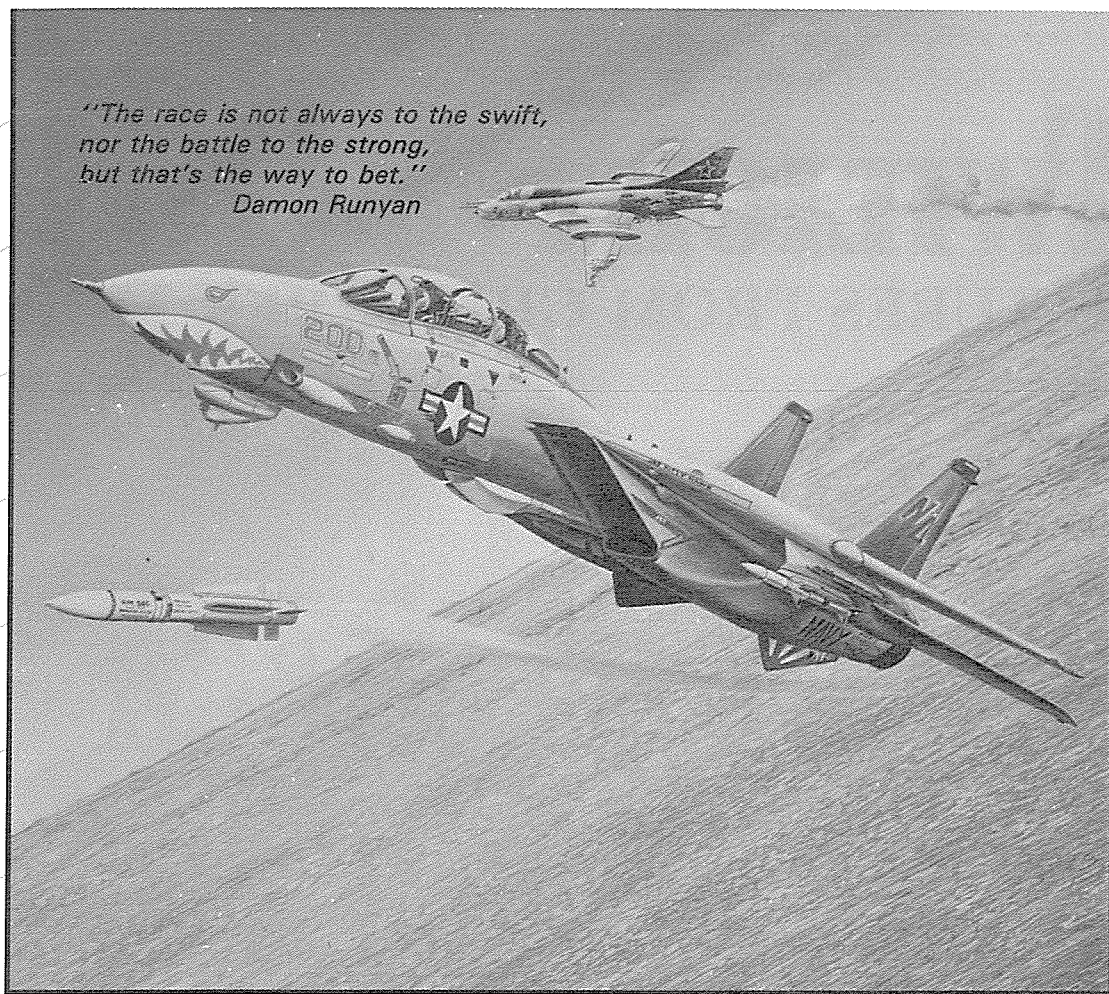
Unfortunately, now that the robots have solved the problem that plagued them for nearly 10,000 years, they have forgotten that their creators were their superiors. The Sabmiqys and the humans continue to reside in the labs, being used in further biological "contests."

A few humans and Sabmiqys have escaped the cities from time to time and are living a meager existence in the wilds. The harsh environment away from the cities makes life a constant struggle for these escapees, and some die during their first year in the desert.

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—Joe Fugate

"The race is not always to the swift,
nor the battle to the strong,
but that's the way to bet."
Damon Runyan



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ments for gaining domination of the skies, and *Air Superiority* puts you at the controls. Thirty aircraft are completely rated and ready to go, from the relatively outdated MIG-21 Fishbeds to the super-sophisticated F-19 Stealth Fighter.

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good ole U.S.A. for pack #408 — U.S. Assault Squad and #409 U.S. Heavy Weapons. #410 gives the Reds an even chance (lotta good it'll do 'em) with Soviet Heavy Weapons. Polish Paratroops have landed in *Twilight: 2000* Blister #411 and three mounted Polish Lancers hit the trail in #412.

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Playable realism. Many games which are realistic can't be played; most playable games aren't terribly realistic. **Traveller: 2300** is both at once, balancing exquisite detail with simple, accurate game systems.

The heart of **Traveller: 2300** is its task resolution system. With it, the referee has a plethora of examples and precedents to use in any situation, and the players have a reasonable idea what their options will be on any given task. Rules cover all aspects of conflict resolution from arguments to all-out battles. Detailed character generation, starship operations and combat, and economics make **Traveller: 2300** the state of the art in science fiction role-playing. If you're playing anything else, you're behind the times.

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The **Traveller: 2300** universe deals with star systems within 50 light years of Earth. Extensive research and analysis has produced the most accurate star map ever made. Never before has such a monumental task been undertaken, either in gaming or in science fiction. Over 700 stars in over 500 systems, on a 22" x 25" full color map. Location, spectral type, size, and magnitude are all documented in a separate star catalog.

The local neighborhood of stars contains white dwarves, red giants, and warm yellow stars like our own. The map extends far beyond the furthest reaches of human settlement into the realms of aliens and the unexplored. **Traveller: 2300** maps out the local neighborhood in detail never before accomplished, helping to make the game what it was designed to be—the ultimate in playable realism.

Traveller: 2300 includes complete rules for science fiction role-playing, a complete full color map of everything within 50 light years of Sol with accompanying stellar data, and an introductory adventure set on mankind's frontier. Be a part of the New Age, with **Traveller: 2300**.

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Traveller: 2300

DESIGNER'S NOTES

THE NEAR STAR LIST AND MAP IN TRAVELLER: 2300

Maps of the stars have long been of interest to science fiction game designers and players. Because state-of-the-art games and simulations depend on the quality of the information they present, there is strong pressure from the marketplace to produce maps that accurately represent the neighborhood of Sol.

PREVIOUS MAPS

Triplanetary (GDW, 1973) started the modern realistic genre of science fiction games with a vector movement structure set in the solar system. The map in *Triplanetary* used a hexagon grid and an astrology text to place the planets for the year 2000. *Stellar Conquest* (Metagaming Concepts, 1974) was an interstellar exploration and warfare game which sidestepped the problem of true stellar positions by setting its situation in a hypothetical globular cluster. *Star Force* (Simulations Publications, Inc., 1975) produced a 3D map of the stars within 30 light years of Sol and touted it as the most accurate map yet produced. However, no supporting data was produced, and some starnames on the map were obscure or fanciful. *Universe* (SPI, 1982) upgraded and revised the *Star Force* map, but it still lacked a solid source listing for its stars. *Imperium* (GDW, 1977) produced a 2D map of the region near Sol which became less accurate with distance (although at least one reviewer was taken in and marveled at its accuracy). *Traveller* (GDW, 1977) used the *Imperium* map as a basis for its *Solomani Rim* (GDW, 1982) maps of portions of an interstellar empire in the far future.

TRAVELLER: 2300

The decision (in 1985) by GDW to proceed with the design of a science fiction role-playing game using state-of-the-art gaming rules created a requirement for a state-of-the-art stellar environment as well. The underlying philosophy of the game was established as "playable realism," and a realistic star map was considered absolutely necessary.

The basic reference for near star data is W. Gliese's *Catalog of Nearby Stars*, 1969. Naturally, we went to that first, and the catalog was keyboarded into a series of Apple II+ DOS 3.3 data files, proofread, and then transferred to a Macintosh. During transfer, stars at a distance of greater than 50 light years were eliminated.

MacSpin (TM) was the essential program for this project, and it was an invaluable resource; it allowed projection of the star points onto a Macintosh screen to produce a 3D image of space within 50 light years of Earth and then rotating it to discover the details of stellar locations. Using *MacSpin* (TM), we produced a view of the nearby universe as if looking down on it from a distant point. That view (an xv plot) was produced and saved as a *MacPaint* file, then blown up using *Poster Maker* and individual star names were added. Stars were size coded based on height in the Z axis. The final poster-sized map was printed out on an *Imagewriter*, taped together, and sent to the GDW art department.

The GDW art department executed the map, color coding stars according to spectral class, and producing size codes

based on height in the Z axis. The final product was produced as a poster map measuring 22 by 25 inches. At the same time, the data files were sorted alphabetically by star name, formatted and transferred to a Compugraphic typesetting system for final production. The data was then printed as an eight-page list of near star data. But don't think the project was easy: it consumed nearly two months of effort on the part of a designer and a typist, and that doesn't count the further work performed by the art department to finish it off.

The result was not only a beautiful map of space around Earth; it is the most accurate map of nearby stars ever produced. *The Near Star Map* from *Traveller: 2300* shows, to the best that modern science can determine, what space is actually like within 50 light years of Earth. Because true spatial relationships are maintained, you can tell at a glance what stars are near what other stars, and which ones have no real connections.

NEAR STAR LIST ON COMPUTER MEDIA

The data on the *Near Star Map* and in the *Near Star List* is also available in the following forms.

Apple II+ Text Files: Two DOS 3.3 disks containing 19 files with the basic data formatted for random access. A file editor (Basic language) is included on each disk. A file printer (configured for MX-80) is also included. Use of the data will require some knowledge of AppleSoft Basic. These files contain the entire list of stars from Gliese's *Catalog of Nearby Stars*. They are in rougher shape than the Macintosh files (below), and contain some typographical errors (primarily in names).

Macintosh Files: One Macintosh 400K disk contains files for *MacWrite*, *MDS Edit* (also accessible by other applications), *Record Holder*, and *MacSpin*. It also contains supporting documentation in *MacWrite* files.

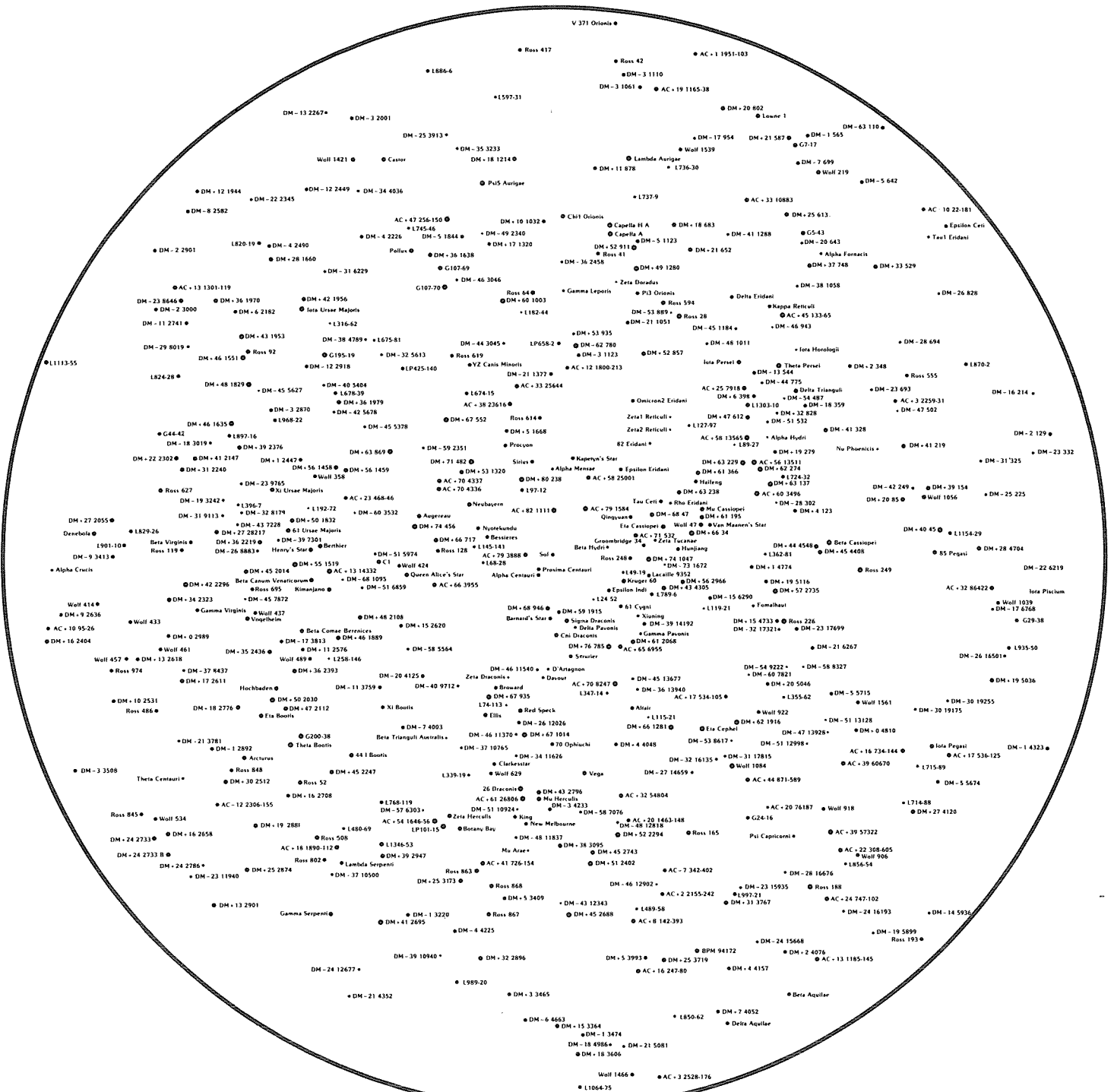
The *MacWrite* file is used for printing out the basic data. The *Record Holder* file is used for data base purposes. The *MDS Edit* is a generic text file which can be accessed by other applications (we used ZBasic for this sort of work). The *MacSpin* file is used with *MacSpin*, a three-dimensional graphical data analyzer. The disk contains only data files; no applications or system files are included.

These files are a subset of the Apple files (only stars with a distance of 50 light years or less are included). They have been edited to correct errors as they were found. Star names have been checked and correct constellation names included where possible.

The *Traveller: 2300* game system required some fanciful names; actual catalog names are appended to the fanciful names in the data listings.

—Marc W. Miller

NEAR STAR MAP



TRAVELLER: 2300

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The Astronomischen Rechen-Institut

HISTORY

During the political upheavals which followed the discovery of stutterwarp travel and the need for tantalum to achieve such travel, governments began to see themselves as owning a chunk of the heavens—staking out a few planets for themselves, expanding their boundaries in spite of their Earth-bound geographic limitations. The world had already been through several oil shortages and had seen its metal reserves begin to disappear. The stars held the solution to the problem of depleted resources and space for a growing world population as well.

At the time, these conclusions were more or less valid. Little did anyone know that most of the nearby worlds were certainly not garden spots. Nor could they be expected to know that the local neighborhood harbored other intelligent and sometimes, as the current situation on the French Arm indicates, hostile races.

No, the stars were not the answer to man's biggest problems. Those answers can only be found within himself. However, the race for the stars was on and no man was allowed to stand in its way.

In Germany, at the University of Heidelberg, hundreds of professors and students, the greatest minds in the entire nation, were already assembled. Their minds were cultivated and allowed to grow by an unusually foresighted regime interested in expanding theoretical and hard knowledge, especially in the sciences. Before the spread to the stars, these intellectuals had brought home to Germany the reputation for brilliance and ingenuity it had lost centuries before. Great minds from around the world travelled to Heidelberg to study at what had become the largest, best equipped university/laboratory complex on the planet.

Naturally, as mankind moved to the stars, the University and its scientists soon followed. In a joint venture with the Azanian government, endowed with a generous surplus of tantalum, the University of Heidelberg opened a specific department to deal with firsthand observations of stellar and planetary events—the Astronomischen Rechen-Institut. In actuality, the Rechen-Institut had been a mathematical and astronomical organization in existence for more than a hundred years, centered in Heidelberg and closely tied to the University. With German industrial money and Azanian tantalum, the Institut



built a fleet of several scientific starships, each equipped to travel to and take measurements of astronomical phenomenon. While France led the world to exploit the stars, Germany led the world to study and understand them.

The Institut's Early Years:

The actual charter for the Institut was signed by the president of the University of Heidelberg and the German Prime Minister in 2144. The Azanians refrained from signing the charter, preferring to keep their involvement underpublicized. The first scientific craft for the Institut were at that time already under construction, contracts having been award-

ed to mostly German firms. However, at the time, though the technology for building a working stutterwarp drive was available to everyone, only certain French industries were actually tooled to manufacture them. It was with as little fanfare as possible that the Germans sent across the border for engines for their new ships.

From its conception, Institut efforts have been split into two broad categories. One portion of the Institut would expand the knowledge of spacecraft and spaceflight, this partially at the request of a German government anxious to begin cashing in on the budding starship industry. The other portion would use that technology to obtain firsthand observational data—pure research of the stars and planets and all manner of astronomical phenomenon.

Expanding the Technological Envelope: Early stutterwarp drives had enormous disadvantages, including extremely limited range and very complex computer navigation systems. The first French-built craft sent by ESA to Alpha Centauri had to carry three stutterwarp drives with it—each one had only range enough to get the ship halfway there. A drive unit reaching its range limit in deep space was ejected from the vessel in favor of a new drive. Two of these three drives have been preserved and are on display in the *Musee Imperial Aeronautique* in Paris. The third drive was never recovered and is still somewhere in deep space between Alpha Centauri and Sol.

Institut engineers addressed themselves to these limitations quickly and efficiently. Their research yielded substantial results in a very short time. They devised methods of extending the range of the stutter drive to nearly double in their first three years of investigation, which brought the use of

faster-than-light travel into the realm of possibilities for commercial use. Institut engineers pioneered the construction of the first Hauptmann-Mbasso stutter unit, named for its co-discoverer/designers, which vented the gravimetric charge picked up during operations through a tantalum-ceramic coil, minimizing its effects enormously. The principles of the Hauptmann-Mbasso enhancement are still in use in ships today.

ESA soon took great advantage of advances made by the Institut. Of course, the member nations readily exchanged ideas and information, but the fact that France was the absolute leader in the organization had a tendency to create more than a little rivalry between itself and the other nations, especially Germany. When French industrialists made an attempt to buy into the Institut, German industrialists took specific actions to avoid this. More than any other, this single event led to the transformation of the Institut from a large university department to a self-sufficient corporation, the first step on its road to becoming a foundation (see *Transformation into a Foundation*, below). In the century and a half since the conception of the Institut, relations have fallen off drastically between the two nations of France and Germany—present day exchanges of technical information are rare.

Exploration and Observation: Using the technical knowhow being generated by their Earth-bound counterparts, Institut ships and crews set out from Earth by the hundreds in the latter half of the 22nd century. Some of the greatest missions of discovery in that era were made by Institut personnel, including the initial mapping of Beta Canum Venaticorum and Vogelheim and participation in the historic deep penetration races held by the member nations of ESA in 2188, 2198, and 2205.

Since that time, Institut ships and crews have visited hundreds of star systems, most of which are within thirty-five light years of Earth. However, deeper penetrations into the unknown have been undertaken by the Institut. Several expeditions are currently engaged in long-range exploratory missions.

The Encyclopedia: *Das Nachschlagewerk der Sternen* is the Institut's ongoing contribution to the knowledge of mankind. The Stellar Encyclopedia was originally published in 2189 and has been continuously updated since that time. As new information is gathered and returned to Earth, the Institut's publishing staff sets to work, cataloging the information and publishing it in its own magazine and in other sources. When sufficient material has been accumulated, the Institut republishes the encyclopedia in a new edition. New editions are published every five to ten years in paper, computer chip, and hologram chip forms.

Information contained in *das Nachschlagewerk der Sternen* originally pertained only to scientific data on stars, their planets, and other stellar occurrences. However, now that man lives among the stars, there are volumes of social information included as well, including nationalities, patterns of colonization and development, histories of systems and their populations, and all manner of political and physical geographic information.

Institut expeditions have been to hundreds of systems and mapped thousands of planets (from orbit at the very least). However, *das Nachschlagewerk der Sternen* benefits also from other sources including all ESA documentation, the archives of the Royal Society (more specifically the Foundation for Practical Knowledge), and an information exchange arranged with

Approved For Use With **TRAVELLER®** **Undersea**

The Undersea Environment by J. Andrew Keith. New rule systems simulating the underwater environment: aquatic activities and hazards, the use of underwater gear and equipment, and special events and encounters to help construct underwater encounter tables. (GL-1984 48pp \$5.95)

The Drenslaar Quest by William H. Keith, Jr. On the watery world of Yarthfahl, the adventurers join the race to salvage a valuable cargo from the *Drenslaar*, a sunken star freighter. Will they elude detection long enough to complete their task? Makes use of rules and information presented in *The Undersea Environment*. (GL-1985 64pp \$6.95)

Mountain

The Mountain Environment by J. Andrew Keith. Travel and survival in rugged terrain. New rule systems simulate mountaineering and other activities and hazards found on mountainous terrain. Explains the use of mountaineering equipment and includes a guide for the construction of specific mountain situations: special events, encounters, and adventures. (GL-1986 48pp \$5.95)

Ascent To Anekthor by J. Andrew Keith. Lady Sandra Lockhart was rich, famous . . . and bored. A thrill-seeker and daredevil, she was always on the lookout for new horizons to conquer. Now she has set her sights on the triple peaks of Anekthor where an old love and an old hatred await Lady Sandra's challenge. Makes use of rules and information presented in *The Mountain Environment*. (GL-1987 56pp \$5.95)

Desert

The Desert Environment by William H. Keith, Jr. Travel and survival in a desert climate. New rule systems simulate all aspects of desert survival, explains the use of desert equipment, and gives guidelines for setting up specific desert situations: special events, encounters, and adventures. (GL-1988 56pp \$6.95)

Duneraiders by William H. Keith, Jr. Riches, danger, and mystery lie within the arid wastes of Tash-rakaar, a desert world peopled by the savage and enigmatic Duneraiders. The adventurers soon learn that desert nomads and desert heat aren't the only enemies they face. Makes use of rules and information presented in *The Desert Environment*. (GL-1989 64pp \$6.95)

Adventure

A Pilot's Guide to the Drexilthar Subsector by J. Andrew Keith. From the navigational computer files of the Imperium comes a detailed explanation of a subsector on Reaver's Deep, in the Imperial frontiers. Presents background information on the Deep and on the Drexilthar subsector (setting for the adventures *The Drenslaar Quest* and *Duneraiders*). Each world in the subsector is explored to sufficient depths to be the setting for one or more adventures. (GL-2980 48pp \$5.95)

Wanted: Adventurers by John Marshal. From the want ads of a starport news service come 20 short adventure situations. Job opportunities abound for adventurers in this collection of scenarios which can lead a band of characters into anything from a luxury cruise to a mercenary expedition. (GL-1971 48pp \$5.95)

Startown Liberty by John Marshal. Startown . . . the rough and tumble district on any world where travellers can find anything from entertainment to the worst sorts of crime and corruption. Condemned by the majority of honest citizens, exploited by the criminal subculture, and visited by starship crews looking for entertainment, information, jobs, and almost everything else, this is "a wretched hive of scum and villainy" . . . this is Startown. (GL-1975 48pp \$5.95)

Lee's Guide to Interstellar Adventure: Volume 1 by Gregory P. Lee. The journals of the noted galactic wanderer Aramais P. Lee have now been converted into a referee's aid. *Lee's Guide* provides complete planetary specifications and detailed plot outlines for 10 worlds in which the situations taking place on the planet form the basis for a varied range of adventure opportunities, suitable for both small parties and large groups. (GL-1980 48pp \$5.95)

Available from Sleuth Publications, Ltd., 2814-19th Street, San Francisco CA 94110. Add \$2 per order for postage & handling.

the various American and Australian star services.

The Pleiades: A manned mission to the Pleiades was planned for the year 2297 on the *Bayern*, a ship specially designed for the project. The expedition was forced to return prematurely because of technical difficulties, but plans to relaunch are in the works even now. The Pleiades cluster promises to reveal great amounts of information concerning the origins of stars and their creation. The cluster is approximately 350 light years distant. (The approximate coordinates of the center of the cluster are $x=200$, $y=300$, $z=150$.)

The Core: In the 2250s, the head of the Institut designed a plan for a robot mission to the galactic core using existing technology. The mission gained funding more from the Administrator's high prestige than from genuine interest by the board of directors, but was under way nonetheless. The mission, dubbed *Entferntest* (Ultimate), involved the construction of an expensive, completely automated ship with multiple backup and self repair systems built in. The plan for the mission was to visit the core and return with the information.

The core itself lies approximately 9000 parsecs distant, generally in the direction of the Z axis (its coordinates are very roughly $x=-2000$, $y=-1000$, $z=-30,000$). However, since stutter drives need to discharge in a gravity well every few light years, the ship must confine its travel to the arms, never to venture outside of them. This meant that a straight line journey to the core and back was out—the distance to travel along our arm of the galaxy is about triple the straight line distance.

The ship was completed after a decade of work and launched in the year 2261. If all goes well, the ship will reach the core

in approximately 500 years. The return trip will take at least as long. Opponents to the *Entferntest* project point out that the ship will probably never reach its destination due to the propensity for life forms in the galaxy. However, the Institut holds that a mission to the core will yield great information for mankind and the expense and time factors should not enter into the picture.

REVENUE

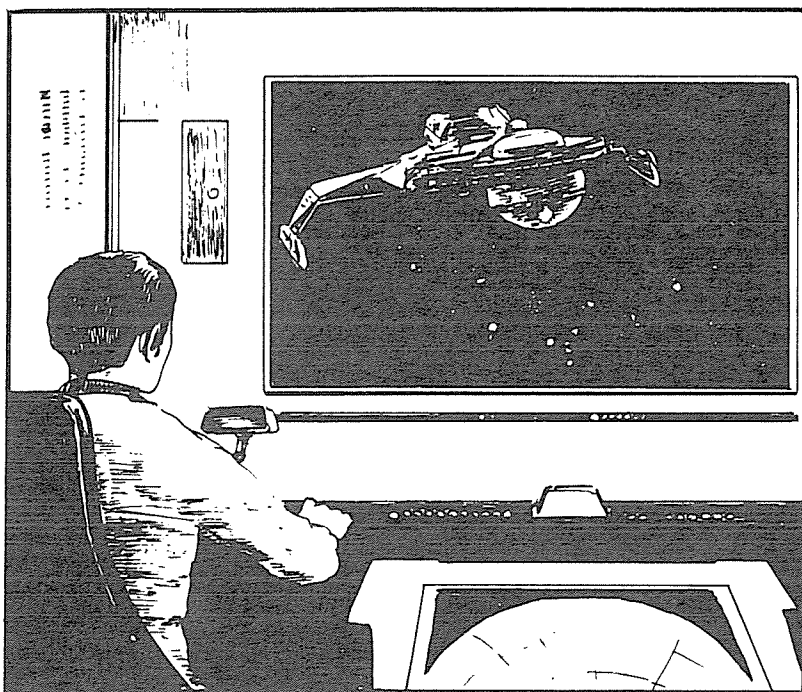
Transformation into a Foundation: When French industrial interests made an attempt to economically take over the Institut just over a century ago, German backers did everything they could to avoid it. Since the Institut was billed as an organization open to all people interested in knowledge, the Germans had no legal right to keep the French from funding projects. They found their only means of keeping out French money was to endow the Institut itself with sufficient funds that it could direct its own operations without the guiding hand of industrial interest. This would in turn keep German interests at bay, but was at the time considered preferable to allowing French money to overwhelm the Institut and its principles.

The original endowments included large areas of land on Tirene and some on Earth, plus outright gifts of some industrial facilities, mostly of a technical nature. At the time, the Institut was short of administrators who could manage such facilities, but cooperation from other University departments soon solved that problem. Soon the endowments were making sufficient profits that the Institut could begin taking its own direction toward research. To this day, the Institut is landlord to

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many thousands of people on dozens of worlds.

However, this source of income has dwindled by comparison to the patents awarded to the Institut and its scientists. Scarcely a ship is built in the modern era which does not owe some royalty to the Institut for design features which improve its performance.

ORGANIZATION

All Institut activities are originated and closely monitored by its headquarters on Earth. The very top echelon of the organization is the Economic Administrator. He, in association with a board of directors and the heads of the major departments (industries, endowments management, space services, and each branch of research), makes policy decisions on large research projects and the allocation of all resources. Sometimes these decisions can concern a single project or the overall direction of an entire arm of research which will affect policy and progress for decades to come.

The current Administrator and board of directors are hardliners—their unwavering dedication to pure research regardless of outside input is renowned throughout human space. The Institut traditionally remains neutral in times of war, and has even become impartial with respect to nationality in times of peace. The original bias toward German points of view has virtually disappeared.

Cooperation with Nations: Nations wishing to join with the Institut in certain projects may do so by petitioning the Administrator for cooperation. There are three rules applied by the upper echelon of the Institut to all such cooperative ventures. First, the Institut will conduct no research that it feels will be valuable in a military situation. Second, the Institut retains partial rights to all information and methods discovered as a result of the research in question. Finally, the Institut has the right to take over the research at any time by paying back the original investment to the nation in question.

This final condition has kept many potential cooperative nations away from the Institut. The Institut promises only to enforce this condition if research yields knowledge which could be of danger to mankind for whatever reason. To this date, no such cooperative effort has called for implementation of the final condition.

Lower Level Organization: The Institut retains many of its university department roots, especially in its organization of individual research projects. A reputable doctor in a given area who is successful in getting funding for a project will assemble around himself a core of assistants from his particular department (biology, physics, etc.) Newcomers to the organization must serve time with small projects, performing the menial tasks such as digging, rote research, and the like.

Also, like a university, continuous effort is appreciated, but continuous results are not strictly necessary. Provided all information is published regularly for inclusion in *das Nachschlagewerk der Sternen*, the Institut is content to keep projects running.

SCOPE

The Institut is mainly confined to work within the French and American Arms of human space. Overall they employ over 500,000 people, over half of whom are dedicated scientists who operate at the headquarters of the foundation on Earth.

Ships: Nearly all Institut ships are specially designed and built by their own facilities. Exceptions are restricted to courier and cargo ships. These are necessary to foundation operations, but virtually any ship will perform these tasks equally well from the point of view of the upper echelons.

Specific installations are also built to order. For example, the Institut maintains and operates a stellar observation station in orbit around Vega. The strange flare activity of Vega is providing volumes of research data, all gathered by an energy-sufficient station tailored to the energy output of the star.

Overall, the Institut owns approximately two hundred vessels and operates over twenty research outposts. In cooperation with a sovereign nation, however, the Institut can call upon considerably greater resources for some of its projects.

ADVENTURES

The Institut is often in search of persons with space service skills and/or academicians. Recruiting teams are active in all nations of Earth and most human inhabited worlds, attempting to draw the cream of humanity into their fold. Admission into the ranks of the Institut is an impressive achievement for a person's life—they can afford to be very particular since they have all of humanity to choose from.

In fact, there is a small contingent of aliens within the ranks of the Institut. As one of its few contacts with the Chinese Arm, the Institut maintains an outpost on Beta Hydri which is studying the Ebers there. The outpost virtually employs several dozen Ebers in its operation as full-time objects of study and as workers and guides. Several Ebers have been sent back to Earth from there and now reside as extraterrestrial citizens of the foundation in Heidelberg.

Being Admitted to the Institut: Should the players be interested in joining the Institut, it should be made clear to them that they will need to be the best at what they do. Finding a recruiting team to which they can apply will be easy—being qualified in their eyes will be difficult.

In short, any character with a space crew skill or academic skill of 5 or better will be admitted. Any other skills are less in demand by the foundation, but a character with some other skills of level 6 or better might be admitted.

The Klaxun: Following the events in *Energy Curve*, the Institut may be introduced to an entirely new alien race—the Klaxun. If this is the case, the players may become part of an Institut research team sent to DM+17 2611 II. They will be charged with continuing contact with the aliens, learning about their habits and culture from the comfort of an orbiting ship.

The Kafers: To date there have been no Kafers taken alive for study. The Institut would be very interested in obtaining live specimens for in-depth research. The player characters need not be accepted into the foundation for this mission. They need only offer their services to hunt down and capture some Kafers and return them to Earth. For details on the Kafers, consult the adventure module *Kafer Dawn*.

Research: While the chief aim of the Institut is to conduct pure research, pure research is not a very interesting game topic. The referee is encouraged to use this research to introduce the players to a more adventurous situation. After all, research can take the players to many exotic environments and to meet many interesting people throughout human space.

—Timothy B. Brown

Double Feature

PLAYER INFORMATION

Palantir (D886644 9 Ag G) is an isolated world on a minor trade route. Recently its climate has cooled, and local meteorologists suspect that the change is the first sign of an ice age. Imperial experts disagree with this diagnosis, saying that the weather change is temporary. The cold weather has caused several successive crop failures, and the government has been forced to borrow heavily from the Sector Treasury to finance the purchase of extra power plants, cold-weather seeds, soil heating equipment and fertilizers. Now the Treasury refuses to finance further imports and has taken the unusual step of freezing Palantir's off-world credit.

The Treasury demands MCr4570 in loan repayments and interest. The final repayment date is in six months. Palantir can't pay the entire debt, but Treasury sources have suggested that a token 5% payment will make the Governor extend the credit period and release Palantir's assets. If the loan isn't paid, Palantir will be bankrupt, and all external assets will be confiscated by the Imperium. The colonists will be forced to use a barter economy, and trade will probably come to an end. It seems unlikely that the colony could survive such a blow.

Apart from agriculture, there is only one industry on Palantir—ExArts, Inc, an entertainments corporation exporting to several worlds of the sector. At present this company has two films ready to sell. There's only one problem—if they are exported legally they will be confiscated by the sector authorities and held as part of the planet's assets.

REFEREE'S INFORMATION

The adventurers should be the operators of a merchant vessel, and this scenario is best played as one of several ongoing plots involving their ship. It would fit in well with a long term campaign, such as *The Traveller Adventure*. Palantir should be three of four jumps from the sector capital.

The films are science fiction, the first two parts of a tetralogy set in the remote future. They deal with the routine use of magic-like technology and travel through time and parallel dimensions. The team will be shown excerpts, and the referee should imply that neither seems to be particularly good.

The small print of the contract with Makhidkarun, a company interested in distributing the films, contains several clauses, which all seem to relate to the status of ExArts after Makhidkarun takes control. Computer analysis (roll 9+, + computer, + administration) will reveal that they also give Makhidkarun the right to reach "reasonable" levels of artistic merit through editing. If delivery is refused, the contract will be void and no payment will be made. These are actually irrelevant standard clauses—Makhidkarun wants control of ExArts (and patents and shares owned by the company) and isn't especially worried about the merit of the films, provided they are delivered. A company with Makhidkarun's resources can afford an occasional tax loss, or may simply sell the films in a package with more desirable products. The films will be almost worthless to smaller distributors.

AMBERZONE

Professional holofilm masters are recorded on 20 cm wide plastic tape, on 85 cm reels. Each film occupies three reels, (one reel is approximately an hour's screen time) stored in humidity-controlled metal

transport cases weighing 45 kg. These cases are fitted with combination locks and anti-theft beeper alarms. The alarms are extremely sensitive and will accidentally trigger on a roll of 8+ each day. Prolonged exposure to heat, cold, moisture, vacuum, radiation, or ultraviolet light will eventually ruin the masters. The films can't be shown on ship's entertainment projectors, since they must be transferred to one of the formats used in the Imperium. Transfer requires the use of a master decoding strip, a section of holo-film carried by Pascal Gratzar, the company president (described below). Formats used in the Imperium range from flatscreen optical projection, through videotape and videodisk technology, to storage in data chips and holographic memory crystals. They may also be converted into interactive computer games or sensory recordings.

The officials who will accompany the shipment are Pascal Gratzar, his wife Filar Gratzar, Trask Kimble, and Rezege, a male Vargr.

Pascal Gratzar is the president of ExArt. He is secretly trying to break the contract. Although the government of Palantir has promised to compensate him for the loss of the company, he would prefer to retain ownership and sell the films on the open market. He has been outvoted by other directors and shareholders. He will attempt to sabotage the deal or find a way of making an extra profit. However, he won't talk to the Imperial authorities, since this would lead to confiscation of the films.

Filar Gratzar is a moderately well-known actress who appears in both films. She sees their sale as her big break, a chance to become known throughout the Imperium. She will do anything to make the deal succeed. She doesn't love her husband and may seek romantic interludes with other passengers or team members during the voyage. Her luggage contains several costumes from the film, including a tunic incorporating a concealed grav belt and a prop weapon which looks like an Ancient artifact but is actually a modern laser pistol.

Trask Kimble is an actor/director, a former Scout and TAS member who was twice decorated while serving as a Navy auxiliary. He was once a brilliant star, but is now middle-aged and tired. He knows that the films aren't his best work and realizes that Makhidkarun isn't trying to buy ExArt just to own them.

Rezege is the charismatic leader of a small Vargr community on Palantir. The community owns 23% of ExArts, and he is present to protect their investment.

The player characters will be asked to use their ship to transport these persons plus the films off planet. Keep in mind that any constabulary will be watching for anything being smuggled off Palantir. Then, once safely away, the ship will be used for a meeting between the passengers and Makhidkarun officials interested in buying the films (and ExArts itself). Intrigues by interested parties should keep the player characters guessing as the final deals are made. —Marcus L. Rowland

Continued from Page 14

numbers further reduced by $\times .5$.

Failure to resolve a task involving control of the aircraft (turning, sinking, pulling out of a dive, etc.) will result in loss of control.

Loss of Control: Loss of control is just that: for that 5-second combat round the pilot is not in control of his aircraft. The character must make an immediate roll against his skill (an AVG task) to regain control. If this roll fails, the result will depend on what the aircraft was doing at the moment the pilot lost control, according to the following table.

<i>Attempted Maneuver</i>	<i>Result</i>
Fly level	Sink
Sink	Dive
Turn	Spin
Landing	Stall
Takeoff	Stall
Climb	Stall
Sink	Stall
Slip	Stall
Stall	Spin
Dive	Uncontrolled dive
Spin	Uncontrolled spin

Regaining control can be attempted at the beginning of any combat turn, but it will be an AVG, DIF, or VDIF task, depending on the circumstances.

Crash: When an aircraft's loss of altitude in a single turn exceeds his current altitude and the pilot has not made a successful roll for a normal landing, the aircraft has crashed.

Damage to pilot and aircraft will depend on how hard they hit.

The result of an uncontrolled dive or spin from altitudes greater than 15 meters is automatically fatal to both the pilot and the aircraft. A crash resulting from loss of altitude (for any reason) from an altitude of 15 meters or less, results in damage points equal to the aircraft's speed when it hits—ie. 30 points of damage for a speed of 30 kph. Damage is applied separately to aircraft and pilot. Note that the performance stat distance to climb 15 m can be used to determine the likelihood of colliding with an obstacle 15 meters tall or less (such as a telephone pole) on takeoff.

Mishap: Mishap is a euphemism for a minor crash. The referee may dictate this as the result of a failed takeoff or landing roll, because of damage to the landing gear, or for some other reason. Damage can be incurred during a mishap on takeoff or landing, for example, if the aircraft hits an obstacle, suffers a landing gear failure, or goes into a ground loop. In this case, pilot and aircraft will each suffer $1D6 \times 5$ points of damage, the two totals being made in two separate rolls. The referee may arbitrarily set a low rate of damage to machine and pilot if the speeds involved were low.

The most common mishap is the ground loop—popular terminology for the aircraft flipping over onto its back. This can be funny at low speeds, but quite serious if the ultralight is still travelling above its stall speed.

The speed at which the aircraft is travelling depends on how close to liftoff or touchdown it is, and hence is largely a referee's judgement call which can be resolved randomly.

Obstacles: Whether or not the aircraft hits an obstacle (tree, building, telephone pole, another aircraft, etc.) is largely a judgement call made by the referee based on the success or failure of piloting throws by the pilot and the difficulty of the terrain. The result will generally be the same as for a crash, though colliding with a fence on takeoff may have less severe consequences.

A collision is possible any time two aircraft come within 10 meters (the typical wingspan of an ultralight) of one another. Determining range at this scale may be made as a judgement call by the referee, or by expanding the scale used on the plot. It may be necessary to map each aircraft's moves and maneuvers 5 seconds at a time as they pass close to one another, with a 50% chance of collision in very close cases.

ULTRALIGHT COMBAT

Combat can be carried out according to the usual **Twilight: 2000** rules within the constraints given for piloting ultralights given above.

Damage is applied to ultralights with the assumption that they have 1 point of armor from every aspect. Characters may choose to aim at the pilot of an ultralight as if he were the rider of a motorcycle or other small vehicle.

Any damage to the wings has a 20% chance of causing control damage. This will make piloting and maneuvering the aircraft more difficult.

Any damage to the engine has a 20% chance of causing the motor to quit, the fuel to leak out, or the fuel to catch fire, at the referee's option.

Any damage to the landing gear has a 50% chance of causing a mishap upon the next takeoff or landing.

Any damage to the tail section or canard of an ultralight has a 10% chance of damaging the structure badly enough for it to break off. This will result in an uncontrolled spin from which the pilot will be totally unable to pull out. At the referee's discretion, this damage may be deferred until the ultralight attempts a violent maneuver—such as a 90° turn—before it manifests itself.

Additional damage to a damaged part of the aircraft compounds the chance of failure. For example, the chance that the tail will fall off is 10% the first time the tail receives damage, 20% on the second instance, 30% on the third, and so on.

The referee may require special saving throws at any time during combat for the pilot to avoid dropping his weapon, firing into his own aircraft, stalling, losing control of the aircraft while panicking, or running into an obstacle because he was watching the other aircraft and not where he was going. Ultralight flying can be a hazardous sport (if only because a mistake is potentially fatal) but trying to do it while engaging in combat is far more dangerous.

BOMBS

Ultralights may drop grenades and other projectiles per the conditions given in *Airlords of the Ozarks*. Note the correction to these procedures given on page 47 of this magazine.

CONCLUSION

In some ways, this set of expanded rules for ultralights is a game in itself. I hope that they will provide many hours of enjoyable play.

William H. Keith, Jr.

This is the first installment of a new feature in *Challenge*. In future installments, we will answer questions of general interest to players and referees of our various RPGs. From time to time we will also print corrections and clarifications to our other games.

Readers with questions of general interest are encouraged to submit them for consideration in this column.

TRAVELLER: 2300

Player's Manual, page 22: Under *Finalizing the Character, Life levels*, substitute "mass in kilograms" for "size." Consciousness level equals mass in kilograms divided by 20; life level equals mass in kilograms divided by 10.

Player's Manual, page 47: Under *The Colonies of Earth*: For the Texas enclave on 82 Eridani, the star type is incorrect; 82 Eridani is a G5 V star.

Referee's Manual, page 12: Under *Wound Effects, Shock Point*, the following line was omitted:

"The character is dead when his total of shock points equals his life level."

Referee's Manual, page 21: Under *Arming Your Ship*, the list of additional weapons is missing. Use the following:

Hyde Industries Laser, Model EA122: Hyde Industries has always been at the forefront of space weapons technology, and the model EA122 is their most popular design. *Damage: ×1 Targeting: +1 Price: Lv105,000.*

Hyde Industries High Output Laser, Model EAA1000: The EAA1000 is the high output favorite of most national space fleets. This model is often adaptable to use in detonation laser devices. *Damage: ×2 Targeting: +1 Price: Lv174,000.*

Allen Model BMZ 150MW Particle Beam Weapon System: An American produced weapon, the Allen was one of the first particle weapon with sufficient targeting to be a viable space combat asset. *Damage: ×3 Targeting: -2 Price: Lv212,000.*

e&c

Guiscard LL-98: The LL-98 is the standard armament of the French naval and merchant vessels. *Damage: ×1 Targeting: +0 Price: Lv97,000.*

DunArmCo Amplified Particle System,

ALS-22: Australian DunArmCo is attempting to break into the space weapons field, introducing the ALS-22 in 2296. *Damage: ×2 Targeting: -3 Price: Lv146,000.*

Referee's Manual, page 43: The *Average Temperatures* table indicates that the ranges are measured in Kelvin. They are actually measured in Centigrade.

The Map: On the map itself, there are two stars on the far right for which the dots were left off. DM - 22 6219 should have a red dot of the -10 to -30 ly size. Iota Piscium should have a white dot of the -10 to 10 ly size.

On the Z Axis Distance, the line which reads -30 to -20 ly should instead read -30 to -10 ly.

AIRLORDS OF THE OZARKS

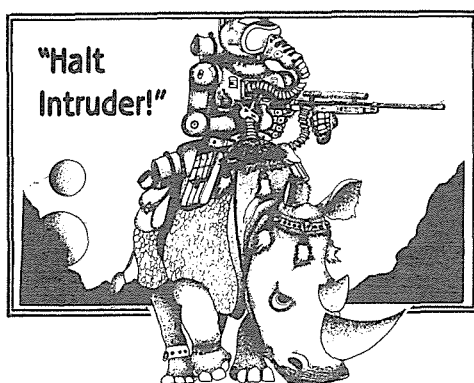
On page 26 it states that a grenade with a four-second fuse dropped from a dirigible will fall 10 meters before exploding. This is not true, as any physics major will tell you. The error occurred when the text was edited (William H. Keith, Jr. knows better), and should say that it will fall about 78.5 meters. For those of you who are interested, the formula for this is:

$$D = \frac{1}{2}AT^2$$

where D is distance, A is the acceleration due to gravity (9.81 m/second² on Earth) and T is time (4 seconds in this case). Plugging these numbers into the equation, we get d=78.48 meters...a sizable difference.

CHALLENGE 27

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Jadgpanther (Greenfield Garrisons)
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Nach Paris (Courier Publishing Co)

5 *Best Role-Playing Rules, 1986*

Delta Force (Task Force Games)
Freedom Fighters (Fantasy Games Unlimited)
Gamma World (TSR, Inc)
GhostBusters (West End Games)
GURPS (Steve Jackson Games)
Harnmaster (Columbia Games)
Hawkmoon (Chaosium)
Marvel Super Heroes Advanced (TSR, Inc)
The Mechanoids (Palladium Books)
MechWarrior (FASA Corp)
Middle-earth Role Playing, boxed edition (Iron Crown Enterprises)

Price of Freedom (West End Games)
Recon (Palladium Books)
Robot Warriors (Hero Games/Iron Crown Enterprises)
Robotech the RolePlaying Game (Palladium Books)
Traveller: 2300 (Game Designers' Workshop)
Warhammer Fantasy Role Play System (Games Workshop US)

6 *Best Role-Playing Adventure, 1986*

A Domsday Like Any Other, Star Trek (FASA Corp)
Adventure in Blackmoor, Expert D&D (TSR, Inc)
Alien Realms, Traveller (Game Designers' Workshop)
Armies of the Night, Twilight: 2000 (Game Designers' Workshop)
The Awakening, Dungeons & Dragons (Games Workshop US)

Beneath Two Suns, Role-Aids (Mayfair Games)
The Black Sword, Stormbringer (Chaosium)
Clones in Space, Paranoia (West End Games)
Conflict of Interest, Star Trek (FASA Corp)
The Coriolis Effect, (Hero Games/ICE)
Countdown to Armageddon, DC Heroes (Mayfair Games)
Decision at Midnight, Star Trek (FASA Corp)
Delta Force Terror at Seas, Delta Force (Task Force Games)
Don't Ask, DC Heroes (Mayfair Games)
Doomsday Program, DC Heroes (Mayfair Games)
Dragons of Glory, AD&D (TSR, Inc)
Dragons of Triumph, AD&D (TSR, Inc)
Dragons of Truth, AD&D (TSR, Inc)
Dream Machine, DC Heroes (Mayfair Games)
Element of Danger, DC Heroes (Mayfair Games)
Escort to Hell, DC Heroes (Mayfair Games)
Eternity, Inc, DC Heroes (Mayfair Games)
Fire and Ice, DC Heroes (Mayfair Games)
For Your Eyes Only James Bond 007 (Victory Games)
Four Horsemen of Apokolis, DC Heroes (Mayfair Games)
The Gauntlet (Autoventures (Task Force Games)
Ghost Toasties, Ghostbusters (West End Games)
Going Home, Twilight: 2000 (Game Designers' Workshop)
Graduation Exercise, Star Trek (FASA Corp)
The Grey Knight, Pendragon (Chaosium)
Griffin Island, RuneQuest (The Avalon Hill Game Company)
Hot Rods of the Gods, Ghostbusters (West End Games)
King of Crime, DC Heroes (Mayfair Games)
Lost Telepaths, Spacemaster (Iron Crown Enterprises)
The Mines of Selka, Star Trek (FASA Corp)
Night of Seven Swords, AD&D (TSR, Inc)
Nightmare in Norway, Call of Cthulhu (Games Workshop US)

US)

Nights of Dark Terror, All D&D (TSR, Inc)
Orcbusters, Paranoia (West End Games)
Pawns of Time, DC Heroes (Mayfair Games)
Pinnacle, Role-Aids (Mayfair Games)
Phantom of the Northern Marshes, MERP (Iron Crown Enterprises)

Queen of the Spiders, AD&D (TSR, Inc)
Queen Victoria and the Holy Grail, Golden Heroes (Games Workshop US)
Ravenloft II, AD&D (TSR, Inc)
Red Star/Lone Star, Twilight: 2000 (Game Designers' Workshop)

Return to Axnar, Star Trek (FASA Corp)
Search for New Gods, Dungeons & Dragons (Games Workshop US)

Spawn of Azathoth, Call of Cthulhu (Chaosium)
Statue of the Sorcerer, Call of Cthulhu (Chaosium)
Swords of the Daimyo, AD&D (TSR, Inc)
Teen-age Mutant Ninja Turtles Adventures, Teen-age Mutant Ninja Turtles (Palladium Books)
Temple of Elemental Evil, AD&D (TSR, Inc)
Terror from the Stars, Call of Cthulhu (Chaosium)
Trolls of the Misty Mountains, MERP (Iron Crown Enterprises)

War of Darkness, Role-Aids (Mayfair Games)
Warriors Code, Dr Who (FASA Corp)
Wizard's Revenge, Role-Aids (Mayfair Games)
You Only Live Twice II, James Bond 007 (Victory Games)

7 *Best Role-Playing Supplement, 1986*

Acute Paranoia, Paranoia (West End Games)
After the Bomb, Teen-age Mutant Ninja Turtles (Palladium Books)
Batman, DC Heroes (Mayfair Games)
BattleTech Technical Readout (FASA Corp)
Beastary (Bard Games)
Book of Lairs, AD&D (TSR, Inc)
The British in World War II, Behind Enemy Lines (The Companions)

Carse (Chaosium)
Cities (Chaosium)
Cthulhu by Gaslight, Call of Cthulhu (Chaosium)
Cybermen, Dr Who (FASA Corp)
Dragons, Role-Aids (Mayfair Games)
Dreamlands, Call of Cthulhu (Chaosium)
Dueltrack, Car Wars (Steve Jackson Games)
Dungeoneer's Survival Guide, AD&D (TSR, Inc)
Evaal, Harn (Columbia Games)

The Federation, Star Trek (FASA Corp)
Gadgets! (Hero Games/ICE)
Grimtooth's Traps Fore (Task Force Games)
GURPS Autoduel, GURPS (Steve Jackson Games)
GURPS Fantasy Book, GURPS (Steve Jackson Games)
Hero Bestiary (Hero Games/ICE)

Hil Sector Blues, Paranoia (West End Games)
Hivers, Traveller (Game Designers' Workshop)
Kanday, Harn (Columbia Games)
King Arthur Companion, Pendragon (Chaosium)
Legion of Superheroes, Volume I-The Characters, DC Heroes (Mayfair Games)

Lords of Middle-earth, Volume I, MERP (Iron Crown Enterprises)
Lorien, MERP (Iron Crown Enterprises)
The Nobles Book, Pendragon (Chaosium)
Oriental Adventures, AD&D (TSR, Inc)
The Platoon Leader's Pocket Guide, Behind Enemy Lines (The Companions)

Realms of Magic, Marvel Super Heroes (TSR, Inc)
RDF Sourcebook, Twilight: 2000 (Game Designers' Workshop)
Road Hogs, Teen-age Mutant Ninja Turtles (Palladium Books)

Robots, Traveller (Game Designers' Workshop)
Rolemaster Companion, Rolemaster (Iron Crown Enterprises)
Solomani, Traveller (Game Designers' Workshop)
The Squad Leader's Pocket Guide, Behind Enemy Lines (The Companions)

Star Trek IV Sourcebook (FASA Corp)
Super Agents (Hero Games/ICE)
Thieves World Companion (Chaosium)
Uncle Albert's 2036 Catalog, Car Wars (Steve Jackson Games)

Undead, Role-Aids (Mayfair Games)
US Army Vehicle Guide, Twilight: 2000 (Game Designers' Workshop)
Villains, James Bond 007 (Victory Games)
Wilderness Survival Guide, AD&D (TSR, Inc)

8 *Best Professional Role-Playing Magazine, 1986*

Adventurers Club (Hero Games/Iron Crown Enterprises)
Autoduel Quarterly (Steve Jackson Games)
Challenge (Game Designers' Workshop)
Different Worlds (Sleuth Publications)
The Dragon (Dragon Publishing Co)
Dungeon (Dragon Publishing Co)
Nexus (Task Force Games)
The Space Gamer (Diverse Talents Inc)
Traveller Digest (Digest Group Publications)
White Dwarf (Games Workshop)

9 *Best Professional Miniatures Magazine, 1986*

The Courier (The Courier Publishing Co)
Miniature Wargames
Military Modeling

10 *Best Play-By-Mail Game, 1986*

Alamaze (Pegasus Productions)
Company Commander (Schubel and Son)
Crack of Doom (Advanced Gaming Enterprises)
Duelmasters (Reality Simulations)
Epic (Midnight Games)
Family Games (Andon Games)
Feudal Lords (Graaf Simulations)
First World (White Lion Enterprises)
Fleet Maneuvers (Fantastic Simulations)
Galactic Prisoners (Grandel, Inc)
Galaxy: Alpha (Intergalactic Games)
Global Supremacy (Schubel & Son)
Hyborian War (Reality Simulations)
It's a Crimel (Adventures By Mail)
Mazeworld (Acme Game Moderators)

Out Time Days (Twin Engine Gaming)
Outer Rim (Outremer Games)
Paths to Glory (Triumph Games Systems)
Privateers (Tudor Games)
Quest of the Great Jewels (Zorph Games)
State of War (Game Systems)
Supernova (Rolling Thunder Games)
Takamo (Advent Games)
Universe II (Clemens and Associates)

11 *Best Pre-20th Century Game, 1986*

Chickamauga (West End Games)
Condotteri (Wargamer #54)
1830: Robber Barons (The Avalon Hill Game Company)
The Emperor Returns (Clash of Arms Games)
Empires in Arms (The Avalon Hill Game Company)
Glory Road (Wargamer #51)
Knights of Justice (Wargamer #50)
Napoleon and the Archduke Charles: The Battle of Aspern-Essling (Wargamer #49)
Pleasant Hill (S&T #106)
Railway Rivals (Games Workshop US)
Rebel Sabers (TSR/SPI)
Remember the Maine (S&T #108)
Shanghai Trader (Panther Games)
Terrible Swift Sword (TSR/SPI)
Warlords (Panther Games)

12 *Best 20th Century Games, 1986*

Aegean Strike (Victory Games)
Against the Reich (West End Games)
Air and Armor (West End Games)
Anvil-Dragoon: Southwall 1944 (Wargamer #60)
Barbarossa (TSR/SPI)
Battle Cry! (World Wide Wargames)
Battle Hymn (Victory Games)
Battleship (Simulations Canada)
Bloody Keren (Wargamer #59)
Bundeswehr (Game Designers' Workshop)
Clash of the Epics August, 1914 (Wargamer #58)
Counterstrike from France (Task Force Games)
Duel for Kharkov (Peoples Wargames)
Duel in the Desert (Wargamer #51)
Dunkirk: 1940 Operation Dynamo (Wargamer #53)
Easter Front Tank Leader (West End Games)
First Team! (Vietnam (Wargamer #56)
Flight Leader (The Avalon Hill Game Company)
Fortress America (Milton Bradley)
France: 1944 (Victory Games)
Korean War (Victory Games)
Okinawa (Wargamer #55)
Persian Gulf (Game Designers' Workshop)
Race for Tunis (Wargamer #57)
RAF (West End Games)
Rommel at Bay (World Wide Wargames)
Rommel in North Africa (West End Games)
St. Lo (West End Games)
Second Fleet (Victory Games)
Sniper! (TSR/SPI)
Superpower (Games Workshop US)
Target Libya (S&T #109)
Top Gun (FASA Corp)
War to End Wars (World Wide Wargames)
Warsaw Rising (S&T #107)
Ruweisat Ridge (S&T #105)

13 *Best Fantasy/Science Fiction Game, 1986*

Aero Tech (FASA Corp)
Bond Assault Game (Victory Games)
City Tech (FASA Corp)
Cosmic Encounter (West End Games)
Dark Emperor (The Avalon Hill Game Company)
Elfquest (Mayfair Games)
Ellery Queen (Mayfair Games)
Federation and Empire (Task Force Games)
Introduction to Star Fleet Battles (Task Force Games)
Kings & Things (West End Games)
Star Trek Combat Simulator (FASA Corp)
Warlock of Firetop Mountain (Games Workshop US)

14 *Best Professional Boardgame Magazine, 1986*

Fire & Movement (Diverse Talents, Inc)
The General (The Avalon Hill Game Company)
The Grenadier (J. Tibbetts & Sons)
Strategy & Tactics (Dragon Publishing)
The Wargamer (World Wide Wargames)

15 *Best Military/Strategy Computer Game, 1986*

Battlefront (Strategic Studies Group)
Battlegroup (Strategic Simulations, Inc)
Conflict in Vietnam (Microprose)
Europe Ablaze (Strategic Studies Group)
Gettysburg: The Turning Point (Strategic Simulations, Inc)
Gulf Strike (The Avalon Hill Game Company)
Gunship (Microprose)
Kursk Campaign (Simulations Canada)
Panzergruppe Guderian (The Avalon Hill Game Company)
Rommel (Game Designers' Workshop)
Spitfire 40 (The Avalon Hill Game Company)
Stalingrad Campaign (Simulations Canada)
War in the South Pacific (Strategic Simulations, Inc)
Wargame Construction Set (Strategic Simulations, Inc)
Warship (Strategic Simulations, Inc)

16 *Best Amateur Adventure Gaming Magazine, 1986*

Abyss
Alarms & Excursions
The Wild Hunt
The Midwest Wargamers Association Newsletter
Europa Nuts and Bolts

18 *Best Fantasy/Science Fiction Computer Game, 1986*

Darkhorn (The Avalon Hill Game Company)
Gemstone Healer (Strategic Simulations, Inc)
Mission on Thunderhead (The Avalon Hill Game Company)
Ogre (Origins Systems)
Phantasia II (Strategic Simulations, Inc)
Rings of Zilfin (Strategic Simulations, Inc)
Road War: 2000 (Strategic Simulations, Inc)
Shard of Spring (Strategic Simulations, Inc)
Wizard's Crown (Strategic Simulations, Inc)

TWILIGHT: 2000

By Air or By Sea

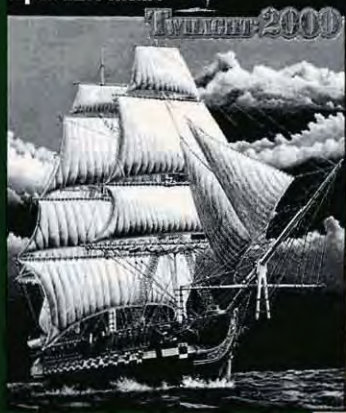
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