

Ares

THE MAGAZINE OF SCIENCE FICTION AND FANTASY SIMULATION

Nr. 1, Mar 1980 \$3.00

The
Game of
Planetary
Assault

WORLDKILLER

In this
issue...

FICTION

Dragon Ghost

M. LUCIE CHIN

Gangsters

HENRIK NORDLIE

Plus...

WorldKiller

Storyboard

FACT

**No, You're Not
Going to the Stars!**

JOHN BOARDMAN

PLUS

**Reviews of 58
SF and Fantasy Games**

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in this issue dramatically
simulates a planet's
fight for life against
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alien fleet.



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THE MAGAZINE OF
SCIENCE FICTION
AND FANTASY
SIMULATION

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Muse

With this first issue, we take a significant step towards the unification of an audience heretofore extant only as parts of other audiences. Fantasy, science fiction, and simulation gaming share a common cord of connective tissue: the constructed world. To a greater degree than any so-called "mainstream" fiction, works of science fiction and fantasy imply or explain worlds much more dependent upon the product of the imagination — worlds inherently more poetic and allusive, thereby. The readers accept the construct in order that they may properly experience the fiction.

Similarly, simulation games depend upon the acceptance of a construct — but in a more overt and interactive manner. In games, the audience is required not only to visualize the events (and background) of the "story" but also to *cause* them to happen. This feature is perhaps the most powerful asset of simulation games as an sf/f medium.

I see an ever increasing interest in science fiction/fantasy simulation games — indeed, all of SPI's bestsellers are now from that category. This relatively young form of science fiction and fantasy publishing promises to enhance both the gaming hobby and the literary side of the genre. New hobbyists will be drawn to the games — those that have no interest in conventional

historical simulations but whose reading tastes bring them to the sf/f games — and (with *Ares*) a new outlet for short fiction comes to life in a period of dying sf/f periodicals.

The advent of *Ares* should not be confused with the recent spate of science and quasi-science magazines nor with the recent flood of *schlock* sf/f films. Our magazine springs from the separate phenomenon that correlates gaming and sf/f. This correlation was appreciated by SPI several years ago when it published *StarForce*, the first of a long line of science fiction and fantasy games. It would be more accurate to say that the pressure of the existence of so many games caused the inception of *Ares*. This process operated in much the same way that the growing body of historical simulations caused the birth of *Strategy & Tactics Magazine*. In fact, the basic suggestion that started the launch of *Ares* came from a volunteer game tester (Bill Seligman) on a Friday game-test night at SPI's New York editorial offices (it was on 20 July '79, the tenth anniversary of humankind's landing on its moon).

Aside from its service features, the magazine is designed around three main axes: its game; its stories; and its factual science and historical fantasy articles. The third category of material is meant to perform the same function as the historical articles in *Strategy & Tactics Magazine*. They provide a context within which the creative fiction and simulation material can be enjoyed and explored. In science, our intention is to cover all the major areas that support or form the heart of most science fiction. The

roots and archetypes of magic, myth, and legend will be the basis for articles that link fantasy with historical and literary reality.

We are all truly glad to have you with us as of this our first issue. Please actively use your vote (via the Feedback system unique to SPI publications) and also cajole us in writing every chance you get. — Redmond

SUBMISSIONS:

Fiction: *Ares* seeks original, high quality fiction from established fantasy and science fiction writers. For story needs and specifications, Michael Moore, Associate Editor.

Nonfiction: *Ares* needs articles, 3000 to 6000 words in length, on science and historical magic and myth as they relate to science fiction and fantasy. Previous publication credits are desirable. Submit summary or outline.

Game Related Articles: Short critical and technical pieces (1000 to 3000 words max) dealing with fantasy and science fiction games and gaming are needed. In this category, submissions by hobbyists are encouraged.

Press Releases and Announcements: Publicity material should be sent well in advance of the event or product release. *Ares* publishes — free of charge — announcements of sf/f conventions and fan events.

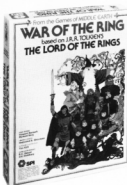
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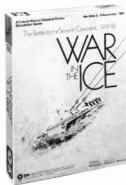
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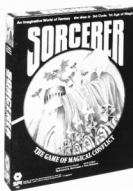
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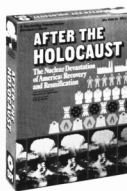
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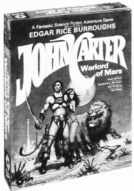
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Dragon...Ghost



by M. Lucie Chin

ILLUSTRATION BY JOHN H. BUTTERFIELD

HSU YUEN PAO WAS a Taoist monk: an eccentric wanderer, an educated man, poet and a magician. To me he was mentor, protector, companion and friend. He was sometimes called by the peasants we encountered The Man Who Walks With Ghosts.

I am the ghost.

Or so I have been told. So often in fact that after all the time I have been here that name alone might be enough, but there is more. I remember dying. That is I remember the event; the time, the place, the circumstances, the stupidity... but not the moment itself. Sometimes I think I am still falling, it was a long way from the top of the Wall, and all my life since that asinine mistake is just a dream, one long last thought between living and dying. But only sometimes. It is hard to believe when the night is cold enough to freeze dragon fire. It is hard to believe when drought turns rivers to muddy washes and rice fields to waste lands and a poor traveler must become a thief to eat. At such times it is easier to believe I have always been here, following Hsu Yuen Pao across the land.

But in the end that too is utterly unbelievable. I know too much of another place and time. In my childhood mankind reached for the stars. The Sons of Han have yet to reach across the sea.

I do not know the date by any measure of time I was ever taught. I can not translate the Lunar calendar into the Julian of my memory. It is ancient China, the women have not yet begun to bind their feet and no man in this land has ever seen a European. That is what I know of now. What of then?

I was born in Boston Massachusetts on the 12th of June 2010, a fourth generation American of Chinese descent. My name was Daniel Wing and the extent of my ethnic education was limited to the salutations exchanged on Chinese New Year and the names of my favorite edibles. Barefoot on the road I stand five feet nine and a half inches, and at the time of the accident atop the Great Wall of China, I was as much a tourist as any of the obvious Caucasians who made up my group, following the polite guide who filled our heads with images of the past.

It was early April atop the Wall. Somewhere on the way down, as I exchanged one

reality for another, it became warm and balmy late spring and I became *gwai*... the ghost. Towering above that diminutive ancient population, dressed strangely, babbling incomprehensibly, understanding nothing and no one, I was a perfect candidate for ghosthood: a non-person, inhuman. Gwai. It is the only word the Chinese have for those who are not of the Sons of Han, the True People, the Chinese themselves. It expresses, more than a lack of life, a lack of *reality*. It suits perfectly, these days, my own concept of myself.

It is said that a ghost grows faint when touched by the breath of a living man. To spit upon him robs him of his powers to change form and vanish. I was spit upon often in the days before Hsu Yuen Pao found me. He was a wise man. He understood ghosts far better than the peasants who harried and chased me from their villages and fields. I did not trust him particularly, but he was quiet and patient and fed me and talked for me until I learned enough to speak for myself.

He was a small man, even among his own people, and he wore his garments oddly and in a most casual manner. He was young in appearance, though generally travel worn, but his obsidian eyes seemed old as time, deep as wells, seeming to hold yet conceal the knowledge of great age. Villagers sometimes whispered that he had found the secret of eternal life, the personal immortality the ancient Taoist monks sought relentlessly. His hair was very black and carefully braided into the longest queue I have ever seen, which he wore looped through his sash in back for convenience. There hung about his person and around his neck an array of bags, pouches and containers of many types and sizes, and across his back was slung a long, narrow sheath. It was curved, seemingly to better fit the line of his body, and nearly a yard long, black and slim enough to house only the most needle thin of blades. A most unusual and impractical weapon I felt but surely one of great value, for the hilt was the purest and clearest of pale pink crystal and in gossamer script of gold upon the scabbard were the two characters *yu* and *yu*, one the ideograph for abundance, the other the symbol for fish.

He was afraid of nothing. Brave, in my opinion, to the edge of foolishness, mischievous as a child when the mood struck him, and we were frequently in trouble of one sort or another.

There was not a dialect we encountered which he did not speak with fluency and command, and he wrote poems I have never gained the skill to appreciate. I loved them though I could not read them.

In the quiet of night or as we walked the endless land, migrating more or less with the seasons, he would tell me of ghosts and he would tell me of dragons.

"The face of the earth is covered with endless, invisible trails of the dragon Lung Mei. To build a house or bury the dead upon such a spot is a great fortune."

He often said he felt that he and I had met upon such a spot.

IN THE SECOND SUMMER of my new existence we made a leisurely journey toward the western mountains. At the convergence of certain mountain streams there is a cataract called the Dragon Gate. The great carp of the rivers migrate yearly to this spot to make the valiant but usually futile attempt to leap the falls. Those fish who succeed and gain the higher waters are immediately rewarded and transformed into dragons. They then climb to the highest peaks, mount the passing clouds and are borne off into the heavens.

The Dragon Gate and the slopes around it are also the site of rare dragon bones of the finest quality, and Hsu Yuen Pao had made this journey often to collect them for geomancy and medical uses. In the evenings as we sorted our small hoard, setting some to dry by the fire and grinding the more fragile ones into fine powders, he would instruct me as best he could, considering the still simple state of my vocabulary.

"Remember, Little Brother, Lung is the god of all waters and the lord of all scaled creatures. When Lung is small, all fish are small. When he is of great size and well pleased with himself, there is abundance in all the land."

He was patronizing and often condescending. But he was also totally fascinat-

ing; no less so for believing himself everything he told me. And I learned. Sifting through the convoluted speech patterns the Chinese love, the multiple meanings and implications, carefully sorting fact from myth and tradition, anecdote from parable, I slowly built a body of knowledge I could rely on... in one way or another. My preconceptions and skeptical nature frequently got in the way, however, and my memories of another place and time. The first severe blow to these notions came at the end of a month on the slopes around the falls.

There had been a great display of heat lightning far off on the eastern plain during the night, and I had been amused by Yuen Pao's suggestion that it was an omen of some sort, by the seriousness with which he sat up much of the night watching the patterns of light and the scanty film of clouds hovering above the mountaintops looking for interpretations. He found none, though.

W I SPENT THE MORNING descending to lower slopes through hardwood and conifers and rhododendrons.

In the afternoon we passed a village nestled where three mountain streams converged. In spite of this the crops which had earlier promised abundant yields now were only mediocre and then only at the cost of great labor to irrigate. At the next village we spent the night.

Their situation was much the same but there was word that the central flat lands were suffering badly. What had been scanty rain upon the mountain slopes and valley in the past month had not reached the plains at all. Every morning the women and girls offered sweet rice steamed with sausages and nuts, bound in leaves, to the rain god, tossing them into the streams by the dozens. Beside the fields and in the bamboo groves braces of swallows hung from poles, with long banners of red paper inscribed with respectful prayers.

Hsu Yuen Pao looked about, nodding sagely as we walked, and did not bother to explain. But I got the gist of things pretty well by that time. The Chinese system of education by osmosis was quite workable... if it was the only thing you had to do with your life, which in my case was literally true.

He marked our course southeast as we continued toward the plain. It was his contention that we must reach the coastal lands before the monsoon season.

Things were not yet so bad in the lowlands as we had expected to find on that first day and at noon we stopped in a bamboo grove, still delicately lovely in the motionless air. I took the pack, which I had become accustomed to carrying, from my back and went about collecting the youngest shoots. When I returned with my pockets full I found Yuen Pao standing across the grove, looking at me so oddly it stopped me in my tracks.

"Brother Gwai," he said somberly. "The night of the lightning was indeed an omen. But it was not for me to understand."

I have never been an endlessly patient man. Occasionally, the obliqueness of his technique exasperated me.

"Brother Pao," I said. "I do not understand. I am not a prophet. I know nothing of

dreams or omens. I am ignorant. Please speak more plainly." I had learned to talk humbly in this land.

"Lan Lung," he said in a low tone. "The lazy deal one? I was perplexed. Colloquialisms are confusing in any language, particularly so in Chinese. But *Lung* is also the word for dragon. Being unable to hear, the dragon came to be known by the word for its only handicap. Lan Lung, then, was also a lazy dragon. I had heard the term as an epithet hurled at street beggars. I made utterly no sense in a bamboo grove. It did not understand and said so.

Yuen Pao instructed me to stay exactly where I was till he returned, then he seemed literally to vanish. When he returned there was a brace of swallows in his hand and the odd look was still on his face.

I went to my pack as he told me, folded back the flap, stepped aside and waited. Yuen Pao approached the pack cautiously, slowly swinging the dead birds by their feet, wings trussed with red cord.

At first I watched Yuen Pao. Then I watched what he watched. There was the smallest ripple of movement within my bag. Hsu Yuen Pao said one word.

The creature that emerged was tiny, palm-sized. It seemed, as the young of many reptiles may, exquisitely perfect in miniature.

"This," I said, my smile broad with delight, "is a dragon?"

"Do not deceive yourself, Little Brother. Lan Lung is dragon enough for any man."

Gesturing for me to move farther aside he offered the swallows before him and backed slowly away. Within the shadow of the pack tiny eyes flashed incandescently orange, bobbed up and down and were extinguished by daylight as it crept from cover.

It was not as tiny as I had at first thought, though still small and precious. A large handful then, perhaps a foot long head to tail. It had a vaguely bovine head with a long broad-nostrilled snout. Scalloped plates of scale — white rimmed in blue, green and orange — lay flat against the head, three rows deep behind the eyes and below the jaw. Its muzzle bristled with catlike lavender whiskers and upon its crown were short, blunt, double branching horns.

Eying the birds greedily, the little lizard arched his sinuous, serpentine body and rose upon his haunches, stroking the air with four clawed paws. The sleek body was covered with lacelike scales, white edged in pale blue, and the curved claws were deep cobalt. There were flat plates of scale similar to those about his head at each shoulder and hip. It had no wings nor was the spine serrated, but there played about the body a vague bright aura.

As the little dragon's muscles bunched and he sank down upon his haunches, tail braced, he opened his mouth; instead of a hiss there was a sound like the chiming of small brass bells. Hsu Yuen Pao swung the birds in a gentle arc, tossing them several feet into the grove. The dragon sprang, covering incredible distance in a single leap, as though gravity had no meaning for him. And as he moved he seemed to grow. He was cat-sized when he landed upon the swallows and began quickly to devour them.

With the dragon thus occupied, Yuen Pao, moving carefully, collected our few belongings and steered me with deliberate lack of hurry from the grove.

We shortly came upon a road and followed it for a couple of hours in silence before stopping to prepare the bamboo shoots still in my pockets. Yuen Pao was deeply contemplative, but for the first time in my admittedly limited experience he also seemed burdened by a weight of uncertainty. As we ate he told me a story.

Lung is the greatest of all creatures living in the world besides man himself. But as there are lazy men, so too are there lazy dragons. They do not like to exert themselves in the task of directing rain clouds about the sky. So they make themselves small and drop to earth where they hide in trees, under the roofs of houses and even in the clothing of unsuspecting men. Lung may also make himself invisible, as is usually the case when man is present. Lung Wang, the dragon king, learning of their desertion from duty, sends messengers into the world to search for them. These messengers are seldom seen, but when Lan Lung is found, the Lung Wang, in fury, raises a great storm, killing the deserter with lightning bolts. This explains what might often seem a wanton destruction of life and property during such storms.



The convenient logic with which these stories usually ended invariably amused me and I made the mistake of smiling. Hsu Yuen Pao became indignant and proceeded to tell me more about dragons in the next hour than I truthfully cared to know.

"It is a great puzzle," he said as we finally walked the road again. "It is rare that lung allows himself to be seen by the eyes of mortal man. Such sightings are auspicious occasions and would normally be related directly to the emperor. But this is Lan Lung. It is not clear to me what this could mean."

I squinted up at the bright, cloudless sky. What did anything mean in this place? My whole existence was a mystery. Alice down the rabbit hole. But as for the dragon, I had to admit the little fellow was fascinating. He had displayed an interesting degree of mutability and he *did* look strikingly like the creatures I had seen in Chinese artworks. Hardly the beast of legend — but a little dragon and a lot of imagination, persistently applied, can leave behind legends larger than life. Hsu Yuen Pao *believed* this was a dragon capable of all he claimed for it.

When I looked back, Yuen Pao was also contemplating the sky.

"Yes," he said, "this must be so, though I am still unsure of what it means." I pleaded ignorance.

"Lung is territorial," he said in an uncharacteristically straightforward manner, still looking into the sky. "Each is responsible for the rainfall upon his own lands." The rest was obvious enough. This time I managed not to smile.

THE NEXT TWO DAYS on the road provided clear enough evidence that the tales we had heard in the hills were true. The drought deepened substantially as we entered the central plain and promised to worsen. The rice crop was already unsalvageable, it being too late to plant again even if rain came soon, and despair was growing over the other, less fragile sorts of produce. And everywhere the people shook their heads and wondered what they had done to offend such a powerful dragon, for the area of drought was extensive.

In the villages we passed, Hsu Yuen Pao bartered geomancy and spells and prayers for roots and dried preserves and goat bladder water bags (which were lighter to carry when full) and we amended our course to follow the streams and rivers more closely.

On the evening of the fourth day we camped on the bank of a muddy stream. Yuen Pao dug for roots. He would forage as long as possible to save our stores of dried goods for harder times. Those he found were pulpy and shriveled, but we boiled them in the water I had spent over an hour straining again and again. It made a bitter, unpleasant broth. The tubers were nearly tasteless but edible, and we supplemented the meal with a small handful of dried plums.

The fire was to have been extinguished as soon as the meal was prepared. Everything around us was dry as tinder and a fire of any size was perilous in the open. Yet when I moved to do so, Yuen Pao stopped me with a silent gesture. Peering intently into the dark, it was several seconds before I saw what he saw. At first I thought it was a shadow by my pack, but when it moved, two iridescent orange eyes flashed in the firelight and it had my complete attention.

Yuen Pao took up his small copper bowl and his chopsticks and began to eat with the same deliberate, unhurried movements with which he had steered me from the bamboo grove. I did the same, dividing my attention between Yuen Pao and the flickering eyes. Eventually the creature moved into the light and I saw that this "dragon" too was white and roughly the same size as the other. This, Yuen Pao insisted, was because it was the same dragon.

We finished our meal and sat watching the little lizard prout about our belongings while Yuen Pao recited poetry (ostensibly to keep the two of us tranquil, since the dragon could not hear them) till the fire went out on its own. He told me to lie down and sleep, which I eventually managed to do, but for a long time I could see his silhouette against the stars as he sat in contemplation of his dragon.

In the morning the little creature was gone, but Yuen Pao continued to conduct

himself with the same care as the night before. It was his belief that lung had been with us all along. He had simply been invisible as he may well have been at that very moment.

I tried to take the matter seriously. For him this was an important event and he had been allowed to participate, if only he could understand in what way. Personally, I envisioned the little fellow either sleeping quietly beneath a rock or curled up among our foodstuffs out of the heat of the sun. The notion that he might be happily feasting on dried mushrooms and plums which we would later need bothered me a great deal, but Yuen Pao would not let me sort the contents of my pack before we set out.

In the evening as I laid our small fire the dragon appeared again. I could not tell from where. He was simply there, sitting on my pack on the ground in the smothering, breezeless heat. Again he was white. I, too, was beginning to believe it was the same dragon.

The next morning he was nowhere to be seen. This time, however, I sorted my pack. All our belongings were in order and no food had been disturbed. Perhaps he ate bugs, or a pair of swallows would last him a week. I did not bring the subject up with Yuen Pao.

Again the night and morning were the same. We were getting used to him. Yuen Pao was no longer quite so careful in his movements, deciding that the key to the riddle was to wait for the ending. This day, however, at our noon meal (little more than mushrooms and lotus root soaked in stale water) our companion showed himself. I caught Yuen Pao staring at me and, looking down, found Lan Lung curled up in the shadow of my left knee. When we finally stood to go, the little dragon scampered to my pack and vanished beneath the flap.

From that time on I seemed to take on a different dimension in Yuen Pao's eyes. But since I was never quite sure how he regarded my ghosthood, the new status was equally unclear.

In the following weeks the dragon established himself as a permanent member of our party and my own special companion. It was impossible to say what attracted him to me. Perhaps my smell. Perhaps it was my ghosthood. He and I were both fantasies, lung and gwai; dragons and ghosts; stories to frighten children into obedience. It seemed appropriate that the myths of our existence should keep each other company.

He developed a habit of riding upon whatever part of my body shaded him from the sun, taking to my pack less and less frequently. Sometimes he would ride in one of the pockets of my loose, sleeveless coat or slither down my chest beneath my shirt and curl up next to my belly, a small bulge above my belt. He was smooth and dry to the touch and the strange aura rippling over his body (Yuen Pao called it dragon fire) was almost like a cool breeze against my skin. When he climbed a leg or arm or scampered across my shoulders, his tiny claws pricked and his whiskers tickled. He seemed to absorb the moisture of my sweat, leaving a trail of dry skin in his wake. He was virtually weightless.

The hardships of the summer were incredible. The people were ravaged as badly as the land and during the passage of the weeks

became increasingly hostile to transients, guarding their stores of food and water jealously. It became impossible to barter anything we possessed for the things we needed, especially water. And to find a village with a good, deep, spring fed well was a great fortune. Obtaining fresh water, however, even from these places, became an exercise in stealth.

At such rare times as we passed other travelers or stopped at a town or village, Lan Lung would disappear from sight. A bit added by the heat, perhaps, I actually began to think of him as invisible myself.

Work made progress slowly. The heat became a weighty burden, requiring us to stop often for rest. The rivers were reduced to muddy sludge and many streams had vanished entirely. For a time we took to traveling by night. Not that it was noticeably cooler, but it spared us the direct assault of the sun.

I lost count of the weeks; could not make out even the slightest progress toward our goal. The mountains of the southern coast looked as far away as ever. Our rate of travel by then could have been little more than ten miles per day, and Yuen Pao guessed we had another five or six days to go. Two days out from the river there was so little food left that any attempt to ration it further was a useless illusion, and we finished it off without further pretense. The water was in no better shape but that illusion we maintained as long as we could.

Lan Lung had settled into my right pocket and for over a week had barely stirred. When Yuen Pao and I shared our small bowl of water, a bit was always left for the little dragon who would crawl into the bowl and curl up into a ball rolling over and over in an attempt to bathe himself as best he could. On the evening our food ran out, I found it was necessary to help him. I carefully lifted him from my pocket with both hands, placing him in the bowl. He moved a bit, tucking his tail feebly but did not roll over. When Hsu Yuen Pao was not looking, I wet my palm from the last goat bladder bag and stroked his dry body. He felt brittle to my touch and it seemed days since I had seen his aura about him.

Looking up from the bowl, I found Yuen Pao watching me and realized he had seen what I had done. He did not disapprove. Days before, when I had mentioned that Lan Lung seemed to be suffering from thirst even more than we, he had explained that it was not thirst. It is the *presence* of moisture which preserves his powers of motion and mutability. Without this, lung becomes powerless and dies.

The following evening there was not enough water to preserve that illusion either.

THE NEXT TWO DAYS became an exercise in placing one foot before the other.

We moved when we could move and stopped when we could do nothing else. I believed I had begun to hallucinate when we finally reached the foothills, where we at least found shade and the vaguest hint of motion in the air. The leaves on the trees were not shriveled here, and farther up the slopes the grass was almost green. We rested there, digging up a half decent root or two and locating a few edible berries. In my pocket Lan Lung was very still.

The next morning we made our way slowly into the foothills. The heat was still oppressive and the going even slower since we now had to climb and frequently had to help each other, but the world seemed fresher around us and things were making a reasonably successful attempt to grow. There was hope of water here, if only we could find it. Yuen Pao crushed leaves and grasses and put the broken vegetation into our pocket with the little dragon in the vain hope that there might be enough moisture to preserve him.

I wondered what would preserve us, but Yuen Pao felt it was any great import to this dragon it was our duty to do all that was possible. I think it kept him going far longer than I could only expect to save his own life. As for me, I had been reflecting that dying the first time would have been far easier than the second seemed destined to be.

ON THE AFTERNOON of the third day, amid green grass and cool shady trees, we came upon a swiftly flowing stream, very deep and clear. Snow fed, I realized, raising my cupped hands that ached from the frigid water. The long prayed for moisture was more pain than comfort in my mouth and throat and transformed my stomach into a clutch of knots.

Yuen Pao filled our two copper cooking bowls from the stream and set them on a warm rock in the sun. Then he set about filling our water bags before drinking himself. As he did these things and I tried to contain my eagerness for the water, I felt a feeble stirring in my pocket. I reached in and carefully removed Lan Lung with both hands, but Yuen Pao would not let me place him in one of the bowls. The water was still too cold for his enfeebled condition. So I put the limp little lizard back into my pocket and removed the garment, hanging it on a tree branch in the shade. When the water was warmed, Yuen Pao dribbled some of it into the pocket and he and I shared the rest, refilling the bowl before starting the next. By the time we had drunk two bowls each and given as many to my pocket, the activity within had increased and it began to swell even as the water soaked through and ran off.

"It is enough," Yuen Pao said. "The belly is better filled with food."

"If we had any," I agreed.

"Look in the stream," he said.

There were fish in the deep swiftiness of the current. Brown and white and golden orange carp, large and sleek, flashed by too rapidly for my weary eyes to follow. There was an abundance of food within reach but how to obtain it? I had neither the strength for speed nor the courage against the bone biting cold to consider seriously trying to catch them by hand.

Pointing out a far tree, Yuen Pao sent me to hang my dripping garment there, dragon and all, which I did while he took our water bags from the stream. As I watched, he raised both hands, gripping the crystal hilt above his right shoulder. Murmuring in low tones, eyes closed, he uttered an incantation I could not properly hear and slowly moved his hands up and forward. What he drew forth was not a sword. I was surprised to realize that in the time I had known him I had never actually seen this object before.

Amazingly flexible, too long to be withdrawn straight, the shaft whispered from its sheath and sprang free, whipping back and forth in supple, diminishing strokes. A yard long, it was less thick at the hilt than the stem of a flower, tapering away to nothing. It shone in the sun, lustrous and brilliantly purple. Yuen Pao's face was set and serious as he gazed up and down the length of the shaft, his voice hushed and reverent as he said, "Dragon whisker."

I thought of Lan Lung, his tiny whiskers tickling my neck or hand and was dumb-founded.

Yuen Pao stepped to the bank, the crystal hilt in his right hand and murmured a few more barely audible words. Slipping the dragon whisker into deep water, he and I knelt upon the brink and watched.

"Come, brother Yu," he said. "Come seek your master Lung Wang."

The fish and eels came from all directions, massing about the purple wand till it was no longer visible among the bodies. Even from downstream they came, fighting the current to reach the dragon, master of all scaled things upon the earth. They crushed together from bank to bank till there was barely room to move and those closest to the surface could be picked up by hand, barely wetting the fingers.

That night we feasted on eel and fish roasted upon flat rocks about a large fire. Others were prepared for drying to be carried with us for future meals. Finally, fed and watered and rested, I began to feel human again as we slowly climbed the foothills, following the course of the water upstream. Then there was a road and villages again, nestled in the mountain valleys. The people in this land had not suffered drought at all. The crop here was good, though it could not begin to make up for the devastation upon the plains, and the people were willing to barter for Yuen Pao's skills. There were many dialects here and they seemed to vary from valley to valley. Travelers were few, especially in the higher villages and, after an initial period of suspicion, for which my own appearance was no great help, the stories of our journey and the news of the lowlands were as much in demand as spells or medications.

Lan Lung once again took to riding upon my shoulder or occasionally on top of my head. As we reached the higher passes, however, he once again took to my pocket or to nestling beneath my shirt. It was cold here but Hsu Yuen Pao, in his infinite wisdom, proclaimed that was not the reason. We were too close to heaven here. The clouds were thickening on the southern horizon and puffy white ships sailed close over our heads. The messengers of the Lung Wang would be watching. During the last days of our crossing Lan Lung rarely betrayed his presence even to me. Only when he rode in my pocket was I truly aware of him.

Then we were climbing down. Though we were still high on the slopes, I was jubilant. It was almost like coming home.

Yuen Pao was known in many of the villages we passed, a fact I had come to realize was not particularly unusual. But one pleasant, near autumn afternoon as we passed a

mile or so from the outer wall of a large town, Yuen Pao stopped short in the road, nearly causing me to run him over. In my pocket, Lan Lung squirmed unhappily for a moment. Then we abruptly changed course, away from the wall and the town. He would not tell me why. At dusk, when we stopped to lay our fire, he told me a story from his seemingly inexhaustible fund.

THERE WAS ONCE a Taoist monk (I wondered who) traveling through the mountain passes where he came upon six men bearing baskets of oranges northward — bound for a high official in the emperor's court. The baskets were very heavy, and in return for the protection of their company, the monk agreed to help bear the loads.

He took a basket and carried it for an hour, then another and so on till all had been shared and the monk took his leave.

Sometime later, at a lavish feast in honor of the emperor, the court official presented the fat oranges; a rare and expensive delicacy from the south. But when the emperor lifted one, it seemed oddly light, and when the skin was broken... it was empty. Another was opened and another, but they were all the same.

The bearers were sent for and charged upon pain of death to explain the mystery, whereupon they told of the Taoist monk and exclaimed that he had surely tricked them by magic. Since the peasants were too stupid to have conceived of such a skillful theft, the emperor was inclined to believe them. But rather than gaining favor, as the official had hoped, he found himself rewarded with a reduced income and the government of a poor province in the south, far from the court and power.

Yuen Pao claimed to have been told the story by one of the bearers only a year or two before he found me, implying that all travelers in this land were suspect and monks most especially. Sometimes I wondered exactly how glib he thought I was.

It was not yet mid-morning of the next day when they caught up with us, even though we had been prudent enough to stay off the road — eight armed men on horseback. Any argument would have been utter stupidity and, though we proceeded at a fast forced march, it was dusk before we reached the great gate of the town wall. Our belongings were confiscated and we spent the night in a hovel on the edge of town. By the smell and the consistency of the floor, it was a structure frequently used to house swine, which was a clear statement of what the magistrate thought of us.

Lan Lung, who had been in my pocket that morning, was gone. He had vanished, as was his habit when strangers were about. But this time, Yuen Pao said, he would not return. Lung has no love for men and their communities. When I naively suggested he might join us again on the road, Yuen Pao did not reply.

In the end, even I was astute enough to realize what a man seeking status would consider proper satisfaction for the affronted dignity of his emperor — though I still did not believe the business about the oranges. The fact that I had nothing to do with anything was unimportant. By now the magistrate had heard all he required from the nearby

villages. In his mind I would be an integral part of Hsu Yuen Pao and his Taoist magic.

There was no sleep that night. This time it was I who stood in the dark, watching the lightning far to the south as the monsoons gathered at the coast and wondering about omens and dragons.

At dawn we were ushered out and made to stand waiting like penned sheep in the town square throughout the dismal grey morning and on into the afternoon. Awaiting Pei Tae Kwan's pleasure. Waiting to die at his leisure.

It was unclear to everyone, including myself, if a ghost could be killed, though I had a pretty good notion by now. But as there was no answer, Pei Tae Kwan had willingly accepted for himself the honor of discovering the facts.

The executioner arrived well before noon and stood like a statue among his swords. A dozen guards, stoic and heavily armed, encircled us. Beyond them, curious villagers and bold little boys eyed us carefully, pointing and talking loudly. Old women peered between the shoulders of the guards and railed at us. Yuen Pao was unmoved by the abuse. I simply did not understand the dialect.

The murky overcast had grown dense and slate grey by early afternoon. The air was a sullen broth of humidity, and water droplets occasionally fell out of suspension; creating a fine mist. Though they threatened heavily, hanging low and pregnant overhead, the clouds did not open and drown us.

Pei Tae Kwan showed his face at last about mid-afternoon, making his way slowly down the street from the ornate monumental gate. The men in the drum towers signalled his approach, and a wave of silence fell upon the villagers as he passed. He took his time quite deliberately.

Entering the armed circle, he walked around slowly looking us over with obvious contempt. When he spoke, the tone of his voice was unmistakable — insulting, berating, humiliating. Two servants who had followed him into the guarded circle now began rummaging through our belongings, which had been dumped on the ground several feet away. They smashed our rice bowls under foot and broke our chopsticks, throwing the pieces in our faces. They opened the boxes and containers of Yuen Pao at the magistrates' command, spilling the contents to show his contempt for us. We could not buy him. We had hardly expected to.

The boys opened the black lacquered container and spilled out the shards of

variegated bone we had collected at The Dragon Gate. They broke the lid from the carved box of red cinnabar and emptied the pale yellow dust of ground dragon bones into the dirt, shouting and picking out small round rubies (petrified dragon blood Hsu Yuen Pao had called them).

Alarmed, the magistrate left us and took the gems from the boys, sending them out among the villagers. He laughed at Yuen Pao, placing the stones in a pocket of his gown, and called out mockingly as he kicked our belongings about. He spied the black scabbard and drew out the shining purple whisker which quivered in his hand like a stiff whip. There was silence for a moment, then more loud chatter. He bellowed, holding the prize aloft for all to see, and looked at Hsu Yuen Pao, his eyes alight with greedy triumph. He brandished it like a sword and advanced upon us, kicking my pack out of his way. I saw it moved aside by his foot with an odd jerk which seemed more like a lurch to my eye, and it suddenly began to writhe and swell on the ground.

At the collective cry from the crowd Pei Tae Kwan turned and, seeing the churning form within the cloth, beat at it with the dragon whisker, then backed away and fled beyond the line of his guards as the bag swelled again.

Weapons drawn, the soldiers formed rank around the magistrate and one man sprang forward, striking a blow to the bag with his sword. There was a muffled sound like the distant toll of a bell, and the pack split to shreds as lung burst forth, growing to immense size in an instant. His serpentine body writhed, his tail lashing about, massive cowlike head held high, four clawed fore paws slashing air. He was an explosion of silver and blue in the darkness of afternoon, fifty feet long. His voice was the booming of a gong. In the damp air his breath shone bright. Dragon fire played over his body. Beneath his chin was the great blue pearl of the sea, and upon his left shoulder was a long, ragged wound of red.

So rapidly did lung grow to his full, terrible size, that the soldier who had struck the blow was crushed beneath the scaled belly, without even the time to scream. Then lung leapt, much as I had seen him do that first day in the bamboo grove, but now his body blotched out the sky. When he landed among the terrified screams of the people, men died beneath his huge feet and trashing tail. The living fled in panic — villagers, soldiers and dignitaries — but the magistrate Pei Tae Kwan, the dragon whisker still clutched in his hand, lay beneath the right fore foot of the great saurian, a foot long claw embedded in his chest.

The gong of his voice beat again, and lung moved around the tree, dragging the body of Pei a step or two before it dropped from his claw. I watched, numb but fascinated, only slowly becoming aware of a persistent tugging at my arm. When I looked at Yuen Pao, I was surprised to see the fear so plainly on his face, but I recognized it to be the fear of a prudent man. As the thunder began to rumble above and a hot wind came up at our backs, I looked once more at Lan Lung, my little pet, and realized the magnitude of my folly. This was no pet, had never

been one. I perhaps, had been his. This was Tsao Lung, a great scaled dragon, Lord of Rain, Ruler of Rivers, Commander of Floods. The monsoons at our backs were under his control as were the clouds above our heads. He was deaf to the voice of man and paid no heed to the puniness of his life. Had I expected obedience from this creature? Affection? At that moment I would count myself lucky if he did not even notice me.

The town wall preventing retreat, the dragon between us and the street, Yuen Pao and I moved slowly about the tree, keeping it between us and the dragon as we maneuvered toward the door of the nearest house.

Lightning startled me and the dragon turned, watching us. His breath was a bright haze about his head and he favored his left leg. Out beyond the tree the house seemed very far away. Behind the great reptilian body we could see a knot of people, the boldest of the curious, peering from the shelter of the memorial gate. The lightning and thunder came again, and lung turned end to end, facing in our direction now. Body arched, head waving high, his voice boomed once more. Yuen Pao tensed beside me as my own muscles set for a bolt to the door — but there was no time to run. The dragon sprang into the air, his arc long and flat, looming ever huger as he hurtled toward us.

MY MUSCLES JERKED in an attempt to run but I fell instead. The dragon dropped to the ground barely ten feet from me, twisting his head and body away to confront what I suddenly saw fall from the sky and land farther up the street. Another dragon, this one gold and orange. He was five clawed and the pearl beneath his chin was the color of honey.

Sheltered behind the wall-like back of Lan Lung, we scrambled for the house. As we moved, he moved, leaping away up the street. A moment later there was an ear-ringing crash of lightning, shattering the tree across the square barely a yard from the tip of his tail.

I thought of Yuen Pao's story. Lan Lung, the lazy dragon. For desertion of his post and duty, Lung Wang would send messengers to seek him and, when found, would destroy him with lightning bolts.

The two dragons confronted each other, rearing on their hind legs, their breath at last turning to fire as the rain came. Their voices beat upon the ear, and when they leapt to each other, the ground shook beneath their bodies. They changed size rapidly and often, looking for advantage. Scales as big as a man's hand littered the street like fallen leaves as the dragons, red clawed, red fanged, rolled about in each other's embrace. Lightning struck twice more, gouging the road and shattering the wall. The rain poured down in dark sheets till all that could be seen was the fiery glow of their bodies and breath. They could no longer be told apart.

Then, as Yuen Pao and I sheltered in the doorway of the house, the quaking earth stilled, the brightness diminished and there came a great quiet beneath the beating of the rain.

Slowly, as the torrent thinned, a mountainous form could be seen lying in the street

(continued on page 13)



No, You're *Not* Going to the Stars

An Examination of the Realities of Manned Interstellar Flight

by John Boardman, Ph.D.

The relationship between science and science fiction is like a marriage between two compatible but strong-willed people. Things are generally congenial, but when the differences of opinion develop, they are likely to be deep and difficult.

Much science fiction takes a didactic approach to the sciences. The author has some scientific principle or speculation which he or she wishes to present to the reading public, and uses the story as a teaching device. This is an approach that can be mishandled, and in the older science fiction, frequently was. Paper characterizations and unconvincing plots frequently decorated a fictional exposition of a scientific idea. Hugo Gernsback's "classic" and unreadably awful novel *Ralph 124C41+*, nearly 70 years ago, was the father of this lineage, and he sought out similar stories when he founded the first science fiction magazine, *Amazing Stories*, in 1929. In his honor, this approach to science fiction was later called "the Gernsback Delusion."

But the opposite approach can be just as bad. Many of the early science fiction "pulp" writers sent stories around to all the popular fiction magazines: detective, Western, romance, sports, and fantasy. If a story wouldn't sell as a Western, for example, the author would rewrite it with the cowboy as a spaceman, the horse as a rocket ship, the pistol as a ray-gun, and the sinister Indian chief as something green, Martian, and elaborately tentacled.

Since literary rather than scientific considerations were important to this class of author, no boring scientific ideas were allowed to get in the way of the plot line. This approach could be acceptable as long as the travel was limited to within the solar system. As of 1930 or 1940, the best astronomical information seemed to indicate that Mars, Venus, and the satellites of Jupiter might be plausibly habitable by human beings, and therefore could have indigenous populations. Hermann Oberth's orbital calculations were available, and so Northwest Smith plotted larceny along the canals of Mars while the blind Rhysling sang in Lunar cabarets and Ham Hamilton courted his English sweetheart through the steaming jungles of Venus.

But in the 1930's new ground was broken, as E.E. Smith took the backyard spaceship *Skylark* completely out of our galaxy, and Isaac Asimov and Edmond Hamilton then designed Galactic Empires. It was well-known by then that the velocity of light is a "speed limit" in the universe, and if you were limited to this slow crawl, it would take over four years to get to Alpha Centauri, the nearest star, and centuries to reach the singing crystal mountains of a planet of Canopus.

Here, science fiction parted company with science, producing not a few mutual re-creations. The special theory of relativity, first published in 1905 by Albert Einstein, demonstrated that the velocity of light in a vacuum — 300,000 kilometers per second — is an absolute upper limit. Huge amounts of energy would have to be expended to get a particle even close to this value, which is conveniently called "c" for "constant" by physicists. An infinite amount of energy would have to be used to attain "c," let alone to exceed it.

However, if science fiction writers limited themselves to this slow crawl, no plot could ever take the hero outside the solar system. Several writers tried to work within this limitation. In 1941, Robert Heinlein's novelette *Universe* introduced the "generation ship," a huge self-contained spaceship aboard which generations of human beings would live and die as the ship slowly plodded onward, at below the speed of light, toward its destination. An alternate form of this story, the "freezer ship," loaded the passengers aboard at cryogenic temperatures, to be thawed out automatically when the ship got to a habitable planet of another star.

The same physical theory which makes "c" a speed limit, means that duration and length change with the velocity of the observer. For example, a spaceship which travels from the Sun to Alpha Centauri at 99% of the speed of light would take over four and a third years by the clock of an observer on Earth. However, the elapsed time would only be 7 months for the spaceship's crew. Still faster velocities would shrink the travel time, as measured on the spaceship, even more drastically. A spaceship that travels at 99.9% of the speed of light could make a round trip to a planet 100 light years away in only 9 years as measured by the spaceship's clocks. However, 200 years would have elapsed on Earth.

There is raw material for a number of good stories in this effect, and several have been written. L. Ron Hubbard, who was a good science fiction writer before he founded Dianetics, handled the effects of this time-dilation very well in his 1950 novel *To The Stars*. Space travelers become a society unto themselves, detached from all planet-bound concerns. In some stories, such as Poul Anderson's *Ghetto* (1954), they become not an elite but the scorned scapegoats of planet-bound society.

Still, the limitations imposed by the special theory of relativity bother many writers, including some with good scientific background such as Isaac Asimov, Larry Niven, and Jerry Pournelle. After all, every other type of adventure story has a hero who leaves for six months, fights all kinds of sins-



ter menaces, and returns home to find that his girlfriend has spent six months waiting for him. Why should this change, simply because the sinister menace is a slimy, megalomaniac, intelligent octopus on the ninth planet of Rigel?

Beating the Speed Limit

Maybe a flaw can be found in the special theory of relativity? Poul Anderson, in his 1958 novel *We Have Fed Our Sea*, attempted to find around Einstein's general theory of relativity a way around the "speed limit." Unfortunately, at just about the time Anderson was writing this novel, Vladimir Aleksandrovich Fok was writing a paper which proved that "c" is just as much a speed limit in the general theory as it is in the special theory.

Other attempts to "get around" Einstein, by both physicists and science fiction writers, have been equally fruitless. A quarter-century after Einstein's death, as more experimental tests of his ideas become technically feasible, his ideas still stand against all opposition.

The "space-warp" is a popular way to beat the "speed limit." In any number of stories, the inventor of a space-warp persuades a skeptic by marking two dots on a piece of paper. "Observe," he says, "these dots are quite far apart. But now I bend the paper, and these two dots are now next to each other. My gizmo does the same thing with space — it warps it so that we are actually quite near to our destination, the planet Fornak VIII."

It sounds good. Unfortunately, we know from the general theory of relativity what it takes to "warp" space. What it takes is mass. Unless the inventor has some way to drag in a huge amount of mass from the hind end of the universe, space will obstinately remain unwarped.

Some writers remain unconvinced. Arthur C. Clarke believes that a way will be found around the "speed limit." He bases this belief on nothing more than the fact that, in the past, many generally accepted scientific ideas have been abandoned in the face of better evidence. This, by itself, does not constitute a proof, or even a valid inference.

How about tachyons? These are particles that were first hypothesized by the physicist Gerald Feinberg about 20 years ago. They do indeed move faster than light — if, of course, they exist. But, although they have been a fertile field for speculation, no experimental evidence for their existence has ever been presented. Furthermore, even if they do exist, they are already moving faster than light, and an infinite amount of energy would be needed to slow them down to below "c." But if these particles cannot even interact with our normal universe of velocities below "c," there is no sense in speculating about them. Trying to infer the properties of tachyons by analogy with known particles is like trying to infer the breeding habits of unicorns by analogy with known ungulates.

And so, on this issue, scientists and science fiction writers have come to a parting of the ways. If the exigencies of plot development require that Dexter Farnsworth spends three weeks in travel from Earth to

the fourth planet of Sirius, then the writer hokes up a method of space travel that keeps Our Hero *en route* for three weeks. Never mind that light takes more than eight years to get from here to Sirius. (Also, never mind that Sirius is highly unlikely to have planets. But that's a whole other story, which I hope to take up at a future date.)

Since scientists like good adventure fiction as much as anyone else, few nasty letters from them are likely to follow publication of a story in which the Upchuck Horde takes a month to travel in from the Magellanic Clouds for the purposes of ravaging Earth. Science fiction editors are just as glad about this, because scientists are likely to write in with vigorous protests of errors of just about any other sort. If a flying creature with a mass of much more than 25 kilograms takes to the air on an Earth-like planet, the editor who published the story is likely to be hearing about it for weeks from engineers, physicists, biologists, physiologists, and ornithologists. But the continuing tide of stories about faster-than-light travel has apparently deadened the critical impulse in science fiction readers.

Problems with Simulations

As with science-fiction stories, so with science-fiction war games. War gamers and war game designers fall into two categories: those who emphasize historical authenticity, and those who emphasize playability. SPI's *Sinai* game began play-testing before the fourth Arab-Israeli War, and the game's developers found it a real problem to design a scenario that the Arabs could win, and still avoid hoots of laughter from anyone who knew anything about the relative military capabilities of the two sides. (In one 1967 scenario, the Arab victory conditions require that they not get beaten *too* badly). However, no one at SPI figured that the Egyptians could knock down the Bar-Lev Line with firehoses, and as the play-testers incorporated the events of the then-current 1973 war, the game developed a little more balance.

There is as yet no question of "historical" authenticity in science fiction war games. However, scientific authenticity is also worth discussing in game development. *StarForce: Alpha Centauri* and its successors at SPI have assumed an instantaneous teleportation system of space travel, comparable to "jaunting" introduced by Alfred Bester in his 1956 classic *The Stars My Destination*. Similarly, the science fictional war games of other firms either invoke methods of space travel beyond the present understanding of physics, or simply do not mention the matter at all. And SPI's *BattleFleet Mars*, limiting itself to the solar system, can get along with the "old-fashioned" nuclear-powered reaction drive.

There are still some interstellar scenarios, either for science fiction stories or for war games, that remain scientifically practicable. Most nations make war with the hope that their conquests can bring back raw materials, finished products, precious metals, or slaves to be of use to the home country. Interstellar distances make this impracticable, unless you want to hypothesize a race whose life is measured in millennia. But a horde of nomads or exiles, looking for a

place to settle down, loot, and rule could be an acceptable set of villains within the limitations of relativity. The Xenophobes of *StarForce: Alpha Centauri* are an example of this sort. Or the enemy may not be alive at all. Imagine a pathological warrior race that gets jumped in desperate self-defense by its past and projected victims. Going down under the combined assault (a thing which happens to most warrior races, sooner or later), they build an army of warrior robots with the one directive to kill anything alive, anywhere in the universe. Having exterminated the destroyers of the warrior race, this horde storms through the Galaxy (sound familiar?) One day, they arrive at Earth...

A Slow Jaunt

Still, most anticipations of space travel assume that Our Heroes will get into their interstellar ships at or near Earth, go wandering off across light years of space, and eventually return in their own lifetimes and not significantly older by the ship's clocks. In order to do this, they first have to speed up their ships to a suitably high velocity. This means that the ships would have to be accelerated, and here slightly different dilations of time take place from those we have already discussed. Let us suppose that the ship begins at rest, on Earth. (Oh, I know that Earth isn't at rest, but its orbital velocity around the Sun is something like 30 kilometers a second, which is about .0001 that of light.) It then accelerates until it reaches some large fraction of "c." This is likely to take quite a bit of time, so we'll assume that the ship travels with the same acceleration that we experience daily, right here on Earth, from gravity — 9.8 meters per second per second. In astronomical terms, this is 1.03 light years per year per year. Now, how much time will be required for the ship to get to some pre-selected fraction of "c," both by Earth's clocks and by the ship's? And how far will the ship have traveled by the time it reaches this velocity? See Table 1 for examples.

At last we seem to be getting somewhere. Considering that Ferdinand Magellan's expedition took three years to get around the Earth, times like these seem to be reasonable. Of course, Magellan lost his own life, four of his five ships were lost, and very few of his crewmen ever saw Spain again. But the expedition returned a handsome profit to its backers, and that seems to be what most people want out of the space program.

Just to have a number to talk about, let us assume that a star ship makes a round trip to a planet 20 light years away. This is a good guess, as the nearest single sun-like star is Delta Pavonis, at approximately this distance. Since we already know of one single sun-like star which possesses a habitable planet — the Sun itself — Delta Pavonis seems a good object for further speculation.

So we accelerate our ship at "one gee" until it is at some desirably large fraction of light speed, and then coast under "weightlessness" until it's time to decelerate at "one gee" to rest, and see if anyone near Delta Pavonis wants to buy our baubles, bangles, and beads. (Columbus found that hawks' bells were highly prized by the West Indians. With falconry currently undergoing a revival, this might not be a bad idea for an item of

trade.) Then, after loading up with raw materials, we head back the same way. How long would this take, by Earth clocks and by ship clocks? See Table II.

However, the time required for the round trip will not be the most important consideration for the planners of the voyage. The energy required to produce this acceleration and deceleration will be the biggest problem involved in planning interstellar travel. Let us assume the most energetic nuclear reaction available in contemporary physics — the complete annihilation of ordinary matter with an equal mass of anti-matter. This will produce an enormous flux of gamma radiation, which can be expelled out the back of the spaceship, rocket-style, to push it forward. (Be careful that nothing important, such as the Earth, is in the way of that blast of gamma rays.)

Energy Crisis

Where you get the anti-matter is a good question in itself. There may be chunks of it lying around some corner of the universe, though this appears increasingly unlikely. But it can always be created, together with an equal mass of ordinary matter, out of whatever source of energy you have available near your home base. It won't come cheap, though. To make one kilogram of anti-matter requires 5704 megawatts of power, operating for one year — about 2.5% of U.S. 1976 electric power output. (One ton = about 25 years of U.S. electricity production.) Then, once you have the anti-matter, it has to be suspended magnetically in a vacuum to prevent premature ignition by contact with ordinary matter. The spaceship's fuel will consist of equal amounts of matter and anti-matter. Difficult as this reaction will be to arrange and con-

trol, it is far more energetic than any mere nuclear fusion.

If we assume this method of propulsion, the "Mass Ratio" columns of Tables I and II apply. This is the ratio of the initial mass of fuel plus payload, to the final mass after all the fuel has been expended. This ratio rises sharply as the maximum velocity rises, to the place where a small increase in velocity may not be worth the huge additional expenditure in fuel.

If we cannot count on finding any filling stations away from Earth, then the fuel re-

quired for the return trip must be carried along. This gives us the Mass Ratio for the second to last column in Table II. For example, to take a 5-ton payload on a 20 light year round trip with a maximum velocity of 0.99c, we would need a blast-off mass of 198,000 tons. And five tons is a very small estimate for the capsule. Equipment would be needed for separating matter from anti-matter, and for shielding the passengers against cosmic radiation. At a speed 99% that of light, every hydrogen atom at rest in interstellar space would be coming at the ship with 6 billion electron volts of kinetic energy.

There might be some relief if we could arrange in advance for refueling. If we set up, in advance, a radio contact with our destination and if they have a technology that can produce anti-matter, then we can refuel when we get there. That will reduce the necessary Mass Ratio to the figures given in the "Refueling" column of Table II. Our five-ton payload would then need a blast-off mass of only about 1,000 tons.

In the end, some government expert would have to run his finger down such a chart as Table II and see where the desirability of speed and the cost of fuel meet at an acceptable value of maximum velocity. (It would *have* to be a government, too. Any private agency, corporation, faction, or foundation with the money and power to undertake interstellar flight would have long since become a government. (We have long since passed the era of Robert A. Heinlein's film *Destination Moon*, in which the first lunar flight was accomplished by passing the hat in a suitably filled board room.) I would be partial to some such figure as 0.8c. If an anti-matter technology is feasible at all, and the crew begins in their twenties, the expedition comes within range of reasonable expectation. However, a source of energy for producing all that anti-matter will still have to be found.

TABLE I: Kinematics of a Space Ship that Accelerates from Rest at 9.8 m/sec²

Final velocity as fraction of c (speed of light)	Time required (in years) by clock on		Distance traveled (in light years)	Mass Ratio
	Earth	Ship		
0.1	.10	.10	0.005	1.11
0.5	.56	.53	0.150	1.73
0.6	.73	.67	0.242	2.00
0.7	.95	.84	0.389	2.38
0.8	1.03	.85	0.647	3.00
0.9	2.00	1.43	1.26	4.36
0.99	6.81	2.57	5.91	14.10
0.996	10.82	2.99	9.89	22.30
0.999	21.70	3.69	20.70	44.70

The Superfuel and Its Cost

The most efficient fuel possible requires a truly staggering amount of energy to produce. Imagine, if you might, the total annual energy production of the United States, including all forms of energy — electrical, chemical, fossil fuel — and that all this energy is available to turn into matter/anti-matter fuel for our starship. Furthermore, presume that this can be done with 100% efficiency (a very big presumption since few processes are even 50% efficient). How much fuel could we then produce in one U.S. Energy Year (USEY)?

Less than one ton (880 kilograms, to be exact).

So, to determine how many USEY's would be required to send a payload of a given mass out to the planet of a nearby star and then back home, we should multiply the mass of the ship by one of the mass ratios indicated on Table II. The key controlling factor is the crew, particularly their lifespan and endurance under long confinement.

If we suppose a starship no more massive than the Apollo Lunar mission configuration (about 20 metric tons, minus the service module) and we don't want the crew to spend more than twenty-five years in such an absurdly confined space, then the distance you can travel most efficiently is ten light years (roundtrip) at about 0.5 c, lasting 18.4 years ship's time. This distance is just a little more than the roundtrip to the nearest star system, Alpha Centauri. The mass ratio is nine.

The energy cost is 204.5 USEY's.

Keep in mind that all the above presumes perfect efficiency, a ridiculously small payload, and a very patient, long-suffering crew (who won't eat much). The upshot is that, barring a "miracle," manned travel to the stars doesn't seem to be a very likely possibility. Despite the optimistic homilies one cares to cite concerning the "infinite" potentials of science, the fact remains that there *are* hard and fast realities and limits to everything we do or could hope to do.

■ ■ ■

TABLE II: Time in Years for Round Trips¹ of Various Durations

Maximum velocity as fraction of c (speed of light)	10 Light Years		20 Light Years		40 Light Years		80 Light Years		Mass ratio required ² ...	
	Earth Time	Ship Time	Earth Time	Ship Time	Earth Time	Ship Time	Earth Time	Ship Time	No Refuel	Refuel at Destination
0.1	100.2	99.7	200.2	199.2	400.0	398.0	800.0	796.0	1.49	1.22
0.5	21.0	18.4	41.0	35.7	81.0	70.4	161.0	140.0	9.00	3.00
0.6	18.0	14.7	34.6	28.1	68.0	54.7	134.6	108.0	16.0	4.00
0.7	15.9	12.0	30.2	22.2	58.7	42.6	115.9	83.4	32.1	5.67
0.8	14.4	9.8	26.9	17.3	51.9	32.3	101.9	62.3	81.0	9.00
0.9	13.5	8.1	24.7	13.0	46.9	22.7	91.3	42.0	361	19.0
0.96	13.3	7.6	23.7	10.5	44.6	16.3	86.2	28.0	2,401	49.0
0.986 ³	-	-	23.6	9.7	43.9	13.1	84.4	19.9	20,100	142
0.99	-	-	-	-	43.8	12.6	84.2	18.3	39,600	199
0.996	-	-	-	-	43.7	12.1	83.9	15.7	249,000	499
0.999	-	-	-	-	-	-	83.8	14.8	4,000,000	2,000

1. A round trip includes travel time out and back; thus, a 10 light year trip would reach a point 5 light years away from Earth. 2. The mass ratio does not change over distance; i.e., a trip of 10 light years or 80 light years would use the same mass ratio at 0.1 the speed of c . On all trips the ship is assumed to accelerate to the desired velocity, coast a certain distance, and

then decelerate for the rest of the trip. 3. At the bottom end of the chart there is a variation in velocity reached. A ship undertaking a 10 light year trip would be unable to achieve 0.999 c , for it would not have enough time to slow down before reaching its target.

By the Numbers...

Suppose that a space ship begins from rest and accelerates at a constant acceleration g until it attains a velocity u . By the time the ship reaches u , it has traveled a distance x . The time that has elapsed in this process is t according to a planet's clock, and t' according to the ship's own clocks. If c is the velocity of light, these quantities are related by the following equations:

$$t = \frac{Ku}{g}, \quad t' = \frac{c}{g} \sinh^{-1} \frac{Ku}{c}, \quad x = \frac{c^2}{g} (K - 1)$$

where:

$$K = \left(1 - \frac{u^2}{c^2}\right)^{-\frac{1}{2}}$$

In metric units, $c = 300,000,000$ meters per second, and $g = 9.8$ meters per second per second. Using these values will give x in meters, t and t' in seconds, and u in meters per second. If "universal units" are used, $c = 1$, $g = 1.03$ light years per year per year, x is in light years, t and t' are in years, and u is a fraction of the velocity of light.

Let us consider a round trip to a planet whose distance from Earth is d . The space ship will accelerate from rest to u , and continue at the constant velocity u until it is necessary to decelerate. Having reached its destination, it will return by the same process. Necessarily, d must be greater than or equal to $2x$ for this to be possible. Let T be the time for the round trip by a planet's clocks, and T' be the time by the ship's own clocks. Then:

$$T = \frac{2}{Kgu} [2c^2(K - 1) + Kgd],$$

$$T' = \frac{4c}{g} \sinh^{-1} \frac{Ku}{c} + \frac{2}{Kgu} [gd - 2c^2(K - 1)].$$

The Mass Ratio m is the ratio of the initial mass of the ship plus fuel, to the mass of the ship alone. If the ship travels by matter-antimatter annihilation, emitting gamma rays and traveling on the reaction energy from these gamma rays, then m is given by the following equation:

$$m = \left(\frac{c+u}{c-u}\right)^{\frac{1}{2}}$$

This is the m required to get to u . For a round trip, with refueling at the destination, the Mass Ratio is m^2 . Without refueling at the destination, it is m^4 . ■

Dragon...Ghost (continued from page 9)

— motionless, fireless — and beyond it, burning faintly, another dragon stood, its head waving slowly in the air, upturned to the clouds.

I wiped rain from my eyes, straining for a glimpse of color through the sheets of grey. I could not help but care. I had been his refuge till the end, even after I believed he had left me, and, in spite of all I had just seen, if he had scampered, mouse-sized, toward the door where I hid, I would have sheltered him again, foolish as it doubtlessly would have been. But in the thinning rain I could identify neither the dead dragon nor the live one.

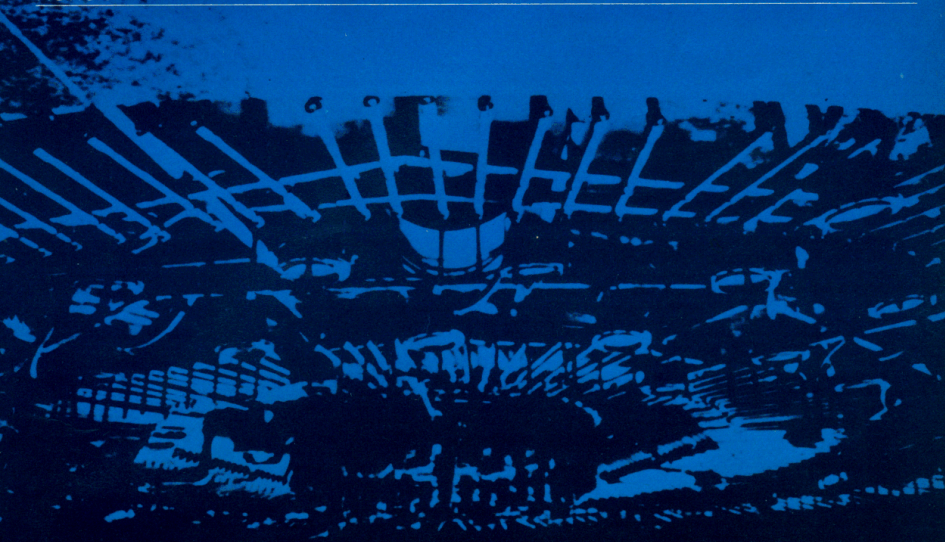
Then the final bolt of lightning struck. Hours later, when the rain stopped, there was not so much as a splintered bone

in the muddy, cratered street. But beneath the blasted tree Yuen Pao found one large round scale of silver scalloped in blue. I wear it on a braided cord about my neck like an amulet. It marks me, though that is hardly necessary these days. Word of mouth travels swiftly in this land. The villagers saw from whence the dragon came. They knew whose pack it was. It was never established whether or not a ghost could die a second death (and I am still not sure about the oranges) but no one questioned the power of ghostly magic. It has been mainly to my advantage, I suppose; only occasionally have I resented it. I wear the reputation as I wear my "amulet" and the name the people gave me.

I am called Lung Gwai.

The Dragon Ghost.





Gangsters

by Henrik Nordlie

Photo illustration by Redmond A. Simonsen

As he walked through the noise and disorder of the crumbling tenement block, his eyes moved down the street to the narrow alleyway that led to the loading dock of his loft building. He swore under his breath. A yellow van blocked the access from the street. The damned stupid baker had parked his delivery truck in "his spot" again. Ever since moving into the long unoccupied building, he'd had trouble with the old baker and his van. The man had the habit of parking in the loft building's driveway while he ate lunch or drank wine at the small walk-down restaurant across the street. Even though it was a posted "No Parking" zone, the truck never got a ticket. Time after time he'd confronted the old man and commanded him to move his vehicle. There were always protests and comments to endure. Patrons in the restaurant and children in the street would jabber and catcall while the same words and arguments would again be exchanged by the tall, strange man they called "the artist" and the baker, Peretti:

"Your truck is illegally parked in my driveway!"

"Relax. It's not so bad. I always park there. Before you own the building."

"Move your truck, now. I expect a delivery."

"Look. I deliver too. See, but now's lunch; nobody delivers. Relax."

"Move it or I'll move it for you."

"Now don't touch my van. Soon, you'll see. Relax. Have something while you wait. My son, he got me that van. It's nice, hah?"

"Move immediately!"

"Don't lose your temper to me, now."

With that admonition the baker would usually wipe his hands on his shirt and slowly move outside towards the van. His little creased face would grin broadly as the children would chant some insult in a language the artist wasn't supposed to understand. Peretti would turn and make eye contact with several of the adults on the sidelines, all of whom would laugh in turn at the shared secret joke they were having at the strange one's expense. An elaborate ceremony would ensue in which the old man would solemnly select the door key from a large ring he had produced with a flourish from his coverall pocket. Climbing in, he always needed to adjust the mirror carefully while the engine slowly warmed. One of the stoop sitters would stand to direct the departing maneuver with all the complexity of gesture of a carrier flight deck signalman.

The whole calculated-to-be-infuriating act would be stretched out for at least ten minutes (particularly if the baker had finished eating).

There was no time for this neighborhood ritual in this latest instance. The artist could see his expected delivery truck stopped for a light less than two blocks away. Once in the past when the alleyway had been blocked, the truck driver had paused for a few moments while the ceremony was going on and then had pulled away, claiming the press of other deliveries. It had almost seemed as if the truckdriver was glad to be part of the artist's humiliation.

The delay of the final shipment of circuits could not be tolerated. He put his bags of groceries on the step of the loft entrance and ran to the restaurant door.

"Move your van immediately!"

"Relax..."

The artist didn't wait to hear the usual litany. He quickly recrossed the street and worked at the handle of the yellow van's door.

His mouth still filled with food, the old man grunted a protest from the steps of the restaurant. To the surprise of the baker the van door opened. The engine gunned as the tall figure grasped the wheel. Peretti squeez-

ed his coveralls and felt his key ring as the yellow vehicle bucked forward out of the tight parking space. Three carlengths up the street, the artist recklessly swerved the baker's truck into a vacant spot. The van lurched as it stopped and a parking light crunched into the car ahead of it. Jumping out, the artist slammed the van door shut just as his delivery pulled into the alley.

"Hey criminal, you break my door. You break my light. Come back," Peretti complained as he bent to look at his vehicle's front end.

The artist ignored the shouts of the red-faced baker as the crates of circuit boards were loaded on a dolly by the truckman. He signed the bill of lading and swiftly rolled the shipment through the freight door, banging it shut behind him.

As the angry baker rushed to the front door of the loft building and raised his fist to hammer on it, the artist appeared in the entrance. He held ten twenty dollar bills in his hand and had his face fixed in a cold smile.

"For your damages. Relax, it's not so bad." Then he laughed in a staccato barking noise as he threw the money down the steps past the wild-eyed Peretti.

The artist was delighted at the way the old man unthinkingly scrambled for the airborne bills. The usual street audience was struck silent by this humiliation of the gasping, confused baker. Never stopping his yips of laughter, the artist picked up his grocery bags, slammed shut the metal clad front door of the loft, and threw its bolt with a thunk that announced the end of this round of confrontation.

Methodically he placed the crates near each appropriate subassembly of his "sculpture." Although he was vastly excited, he didn't rush or tear into the shipment before it had all been initially placed. His strong fingers easily pried open the steel packing bands and pulled apart heavy copper industrial staples on the first case. He reached inside carefully and with deliberate slowness extracted the first slim corrugated container. His sharp nail neatly slit open the top and revealed a glistening froth of plastic bubble-packing individually wound around each of four heavy anti-static envelopes. He undressed the rightmost envelope and pried open its self-sealing end.

The pale green board slid out into his large, long-fingered hand. The silvery circuit tracings glinted in the work lights that were hung all around. Little chips and brightly colored resistors ornamented the surface of the incredibly complex board. Lovingly, he slid the unit into the brass colored frame of the first subassembly.

"Step one of the last phase," he announced to no one.

His voice echoed in the large, circular working space he had cut out of the first three stories of the old, cement floored building. Bright new insulated structural stringers sprung from the exposed steelwork of the lofts. They connected and supported a spidery cylindrical framework that rose some 15 meters, up through the layers of the building. The old baker's slightly mangled van could easily have been driven between the vertical supports and park within the circle of the base.

The cylinder and its supports occupied the center third of the whole building. Cinderblock walls separated its space from the front and rear on each floor, and each of these walls had but a single steel clad door in its center.

The artist had supplemented the already muscular electrical lines with several connections of his own devising, made without benefit of Con Edison's approval. The main cables ribbed the ground floor and connected to step-up transformers and voltage regulators located near the base of each of the cylinder's four main vertical structural members.

When the time comes, he thought, the lower half of this island is going to black out — which itself was part of the plan.

As he completed the ceremony of inserting the first circuit board, he breathed a sort of sigh and massaged the tense muscles of his neck in an almost human gesture.

"Time for a little justifiable self-indulgence," he said aloud, leaving the boards of the open packing crate, he walked through to the freight elevator. It thrummed down into place as he released the switch on his remote controller. The lights shining through its gate strobed across his features as he rose into the gloom of the sealed third-floor segment of the shaft. He slid aside the safety gate of the car and faced the cinderblock-sealed portal. Taking off his electric wrist watch, he reversed the expansion band and pressed all three control studs at once. Something hummed behind the wall, and the cinderblocks emitted a soft blue glow, becoming transparent as they did so. The artist walked through the glow into the space beyond.

Now he was contained in a room filled with intense, deep blue light. Floor joined wall seamlessly and undetectably, making the space seem vast, even though it was no more than six meters square. In the center of the room was a transparent, green, hexagonal column rising almost to the ceiling. One face of the booth-like column had many gleaming, glassy planes intersecting its surface along its entire height. Striding to that side, he reached into one of the seemingly sealed facets and withdrew a slender tool about the size and shape of a dental mirror. The disk on its end glowed orange when he put it to his forehead. His mask fell off and made a flopping noise as he caught it with his other hand. He flashed a delighted expression as he glimpsed his reflection in the cabinet.

"Good to see you again," he joked, making the barking noise. Quickly he stripped off his clothes and, in turn, the pseudo-human skin and appliances underneath until he was completely himself.

Standing before the plain, semi-transparent side of the cabinet, he admired his image: pure white, translucent skin tinted blue by the light; a fine tracery of purple veins moving and pulsing just under the surface. Powerful dark cords of muscle rippled in his long arms and legs.

Fingers and toes flexing, he peeled back his lips and hosed out his dark, toothless mouth with a little, flexible spigot he drew from the green glassy structure. A black liquid sluiced out the side of his mouth; a

hacking and blowing noise came from the flapped slit between his orange eyes as he sucked in.

Turning sideways, he struck himself in the middle of his torso and whispered to his reflection, "Even with all of the chem-change and bio-tailoring you could still kill a friend or two in an Endgame."

He spat and then stepped into the booth-like half of the cabinet, reaching overhead to hit its ceiling. The panes of its opening closed in one smooth, practiced motion. Fans producing a mini-cyclone blew pumice and sand against his body while he groaned in satisfaction. Reaching up again, he switched off the grit and buffeted his body with air at 90° C. Stepping out into the relative coolness of the room, the large white being reeled a wire from the side of the cabinet. He clipped this to a wattle that hung from his lower belly just above his featureless crotch. As he squatted on the floor, his eyes glazed over and his mouth hung open loosely. He remained in that state for exactly 104 minutes before he was awakened by the intruder alarm.

A LDO BARONE LOOKED UP OVER his half-glasses at the two large young men who stood in front of his marble topped desk. The marble top was one of Aldo's few concessions to conspicuous consumption. In his personal behavior, and in most of his business dealings, he was conservative, fair, and not given to rashness and temper. He was displaying a little temper now, however.

"This very day my mother's brother was pushed around — disgraced! And in our own neighborhood!" He swept a hand towards the window of his third floor office. Placing both his be-ringed hands on the desk top with elaborate care, he lowered his voice to almost a purr. "I want the man responsible informed of to whom he should show respect. I want this man to publicly apologize to Carlo Peretti and give his solemn word never to cause any trouble in the neighborhood any more."

"How much difficulty should he have in learning this respect, Mr. Barone?" asked the larger of the two young men.

"You be careful and smart, Johnny. I don't want this artist to be hurt unnecessarily. Absolutely no rough stuff except a bend of the arm to show you're serious — and that only if this guy is as stupid as they say. No repeats of that laundry number."

Johnny tried to look embarrassed and contrite. A commercial laundry owner had resisted Mr. Barone's business offers with regard to his restaurants, and Johnny stuffed the man into one of his own machines. The big young man figured that Barone liked him for it in spite of what he said, knowing it to be a sign of the tremendous loyalty Johnny Case felt for the low-key leader of the small organization. As a gesture of recognition of his temper problem, Case asked, "You want us to go see him naked, Mr. Barone?" He held out his heavy pistol butt-first as if making an offering.

Barone took off his glasses and came around the desk to hug his two employees around the shoulders, drawing them almost into a huddle. "No, no, no. Georgie, Johnny, you two I trust. You're my best.

God took away my Julio to give me two sons in his place."

Barone coughed and pinched his nose, overcome with his own sentiments. "Go, go," he said, "and be careful yourselves. Maybe this guy's nuts, huh?"

"Sure thing, Mr. Barone," nodded George, "an' if we're through by ten, we'll stop by personal and let you know the score."

Their well-made shoes clicked down the old tile hallway, and they ran down the steps instead of waiting for the building's sluggish elevator.

IN THE BLUE OF THE ROOM, the stillness was broken by a small pinging noise as the wattle clip released in response to the alarm. With amazing speed the naked, pale creature re-entered its man-suit while activating the molecular doorway to the elevator. Maybe some more of those ignorant children want another score, he thought as he rode down the elevator, tossing his head back to seat the teeth and mouth-wall appliance. In the past when the outer perimeter of his building was violated, it had always turned out to be children or young adults showing off their courage to friends outside. A shout or a beam of light had usually sufficed to scare them away. The freight entrance was where they usually broke in. This time it was in the front.

On the ground floor, he dimmed the work lights and activated a viewing screen that showed him the front-third of the building — the part that contained his mock living quarters. The wide spectrum screen showed two large adult males dressed in business suits and topcoats. Under their suits, the screen showed an outline he recognized. Projectile guns. Unsophisticated weapons, but deadly in close fighting. The men looked physically strong as well. The taller was only half a head shorter than he.

The manner in which they stalked through the darkened quarters made the artist uncomfortable. They were professional. Calm, but alert. Could it be that the native police suspected him of some sort of illegal activity? Had the paper camouflage covering his industrial theft been penetrated? Telling himself to stop assuming the worst, he entered through the false back of the closet just before the taller human opened it.

"You're in clear violation of the law," he declared, stepping out into the room. The young man lost his composure only momentarily.

"We come to talk to you about community relations and like that," said Johnny Case, jabbing a gloved finger into the artist's chest.

"Get out of my building or I'll call the police."

"No, I don't think you wanta do that," George said from across the room. As the artist faced the speaker, he noticed the first one move behind him. He felt his upper arms being grabbed as the man across the room came towards him.

"Now here's what you are gonna..." The artist kicked out and caught the speaker between the legs. Simultaneously, he jabbed his elbow backwards into the

chest of the man holding his arms. Both blows were extremely powerful in human terms. For an instant, he thought he'd put both of them down for good, but no, the one he had elbowed came up from the floor, swinging his fist at the artist's head and bringing his left knee up into the groin.

The blow to the head jarred him but the knee simply pushed him further out into the center of the room. The artist reached down, easily picked up George Aletta from the floor and simply threw the man at the other intruder. Johnny was knocked back into the closet, falling onto a heap of clothes. He saw George's head lifelessly looking at him from top of an obviously broken neck. Even Mr. Barone would use his gun now, thought Case.

In the hyper time of his fighting mode, the artist saw the large pistol being drawn out of the tangle of the big man's coat. To ruin the aim, he made a rapid horizontal move. Two shots smashed into the plaster behind him. He sprang and caught the gunman by the throat with one hand and by the wrist with the other. Johnny Case made a little noise of regret and died.

Rocking back on his haunches, the victor cleared his lungs and consciously adjusted his body chemistry from fighting mode. His hands were spasming slightly, something that they would normally never do, had he not been altered somewhat to survive on this world. Picking up both intruders, one under either arm, the artist activated the main door to the inner chamber. He dropped the bodies near the framework and considered the situation. If he finished the first stage of the final assembly now, he'd have a field into which he could drop the bodies without a trace. Happy to have a goal, he hummed a passage from one of his native atonal schemes as he set to work.

"Well, I knew you had something going down, Mr. Barone," the phone voice said, "an' I saw your guys go in...n I heard these shots an' nobody comes out." Aldo Barone just looked at the phone in his hand with disbelief. "An' I figured, you'd wanta know right away, Mr. Barone," said the little voice. "You there?"

Barone hung up.

THE FOUR MEN PLAYING CARDS in the back of the restaurant rose quickly as Barone approached.

"I have an order that needs to be filled immediately," he said.

"What style you want this Mr. Barone?"

"The old style, all the way. I want you to bring the merchandise out to me in the street and I'll take delivery personally."

The men at the table stared at each other in wonder. Aldo Barone? Personally? But they recognized the look on the older man's face and nodded.

"Right away, Mr. Barone."

Two of the men trotted down the steps to the basement while the others shooed out the lingering diners at the front tables. Barone filled in his staff with what had apparently happened to George and Johnny.

"All due respect, Mr. Barone, but I always said Johnny Case had a habit of going into things half-cocked, kinda." When he saw the stony glare that greeted this ap-

praisal, he quickly added, "But don't you worry, we'll make it good for Johnny and George. Nobody's gonna get away with nothin'. You'll see."

The two men came up from the basement and opened heavy cases on two tables. Inside were four straight-clip Thompson sub-machine guns and two Walther P-38 automatic pistols.

"Best one's for you, Mr. Barone," said the staff man as he handed him a loaded Walther butt first.

"Let's make it quick and no mistakes," ordered the aging gang leader. The five men matter-of-factly walked out to the waiting limousine, making little effort to conceal the weapons.

He had only to install and check two more boards on the last column before power could be put into the grid and the bodies dumped. There were still many hours of work left before the gate could be tuned accurately enough to link with its twin twenty light years away, and more days of testing before full power was applied. Only then could members of his consortium transfer along with their heavy weapons. Once the 380 shareholders had come across, this world would fall in a matter of days.

We'll only need to hold it hostage for two years before the Council meets, pays the ransom for our accounts and allows us to dissolve as a group. What a relief to be unburdened of the obligation of administration. He'd personally invested most of his eco-group's positive funds in designing and purchasing the equipment and energy for this initial landing. The years of his life he'd wasted in dormancy, getting here in a normal-space body capsule, arriving virtually naked on a hostile world. Too bad that the nearest gate was so far away and the sublight payload cost was so high.

The irony was, once they got through the ransom period, the inhabitants of this world would be accepted as provisional citizens and allowed to build their own accounts in combat against organized forces. With the pugnaciousness of these people, it would take only three or four major losses before they'd gain enough experience to win a few money yielding skirmishes. They'd be able to pay off, recover, and fit in, most likely. Of course, they'd have to trade population for time, but that's the way it always was when some minor race entered the mainstream.

He and his group of protectors wouldn't get any real thanks, of course. Not that they did it for the glory. It was the money and the relief from Endgame challenges that it bought. Still and all, one would think that a ransomed race would show some gratitude every once in a while. Look at the wonderful automated metal and semiconductor plants he'd given them! Of course when the L'cleth entities bound into the software matured and began to fabricate themselves, there might be a few difficulties — but doesn't everything have a consequence and a price? And, he had to fund his stay here somehow, didn't he?

He hummed as he slid the last board into place and applied the checking matrix. Perfect. Nothing like a plant driven by a L'cleth fetus for accuracy. The urge for

perfection and consequent assurance of a properly fabricated birth found its way into every aspect of the factory's function. Were it not for the severe drawbacks of coming to term, Clethie would be routinely used on civilized worlds.

He should credit the natives too, he reluctantly admitted. It was their semiconductor and metals technology that lured his group here in the first place. The long-scan had shown that the little beings were damn clever in some things. Oddly enough, they were nowhere near the theoretical basis for travel by scan gate. And their power generation systems were laughable. Actually, in most areas they were losers and they deserved to be oppressed for a couple of years.

The application of partial power to the grid resulted in a satisfying discontinuity in the center of the latticework cylinder. It was in a random roll of course, drunkenly scanning all over hell-and-gone for a hundred light years or more. But it was more than adequate for waste disposal. One at a time he picked up the dead bodies of Aldo Barone's best boys and flung them into the galaxy. After punching up a check run on the test control board, he left the gate under power and went to the front of the building to clean up the signs of the disturbance. A weapon filled his right hand as he made his rounds through the gloom. He spotted the day's groceries sitting on the hall table. Taking them to the kitchen, he traded them for the ones on the shelves and in the refrigerator. The "old" food was opened and flushed down the toilet. No sense getting careless this late in the game, he thought.

"GILLY, YOU AND TOMMY GO ROUND THE BACK — Vinny an' me will go in front. I give ya 'til thirty to get back an' go." Aldo Barone watched his men move silently towards their jump-off points. He sighed and sat back in the limo's plush upholstery. The heavy Walther came to his hand, and he pulled back and released the slide to jack the first round into the chamber.

They could see where Johnny and George had wired the bolt on the front door and jimmied the cylinder lock. Only the knob lock was engaged and that was easy to defeat. They entered in complete silence. The barrels of their submachine guns gleamed dully in the half-light from the door.

"Vinny?" he whispered.

"Joy?" came the reply in the dark.

"I'm goin' round in here," he said softly, "and you go in..."

Both men froze as they saw the tall shape watching them from the central room at the end of the hall.

The night blazed and thundered as each squeezed a burst from his weapon. A terrific cloud of dust, debris and smoke kicked back into the hallway. Joey and Vinny peered from the doorframes of the rooms on either side of the hallway.

"He down?"

As if to answer, a white and purple beam struck Vinny in the upper thigh and burned a hole right through, setting the doorframe smoldering.

"Ah Shees!" he moaned, rolling and clutching his burning leg.

Another beam lanced out at where Joey had been. It was quick — like an electric spark, but perfectly straight. It made a sharp cracking sound when it passed through the air. Joey popped out low in the doorframe and threw a burst down the hall, then skipped across to where Vinny lay cursing his pain.

"Shut up. You're alright," he lied. "Get back in action."

"What is it, Joey? — I ain't never faced nothing like that — hah?"

"Look," he whispered, "you gotta put some heat on that doorway while I move up."

Vinny made the heavy submachine gun speak. Joey advanced like the well-trained infantryman he was — weapon up, body flat against the wall until he got to the cover of the center doorframe. For a few seconds it was quiet except for the distant hammering of the two men at the back of the building. Joey looked back and saw Vinny's sweat covered face gleaming like a sickly moon. He signalled him to withdraw into the doorway of the side room. With a racket of firing Joey burst into the center room and dove onto his belly.

There was no one there.

"You hear that, Gilly? They're having a goddamned firefight up front." Tommy was terrifically excited at the prospect of actually using the submachine gun, and was desperate to find some way out of the apparent dead-end storage space that the freight entrance led to.

"Gilly, com'on, the elevator."

It made no sense but both men wanted to do something and so they got in the elevator and pushed the lever towards "UP." They found the second floor to be a duplicate of the first, and the steel door in the forward wall was apparently barred from the opposite side. Back in the elevator they continued their ascent.

"Look at that, a sealed floor." Tommy reached out a hand to touch the cinderblock of the third floor. It was hot.

The unused fourth floor was completely dark. Gilly struck one of the big kitchen matches he liked to carry for his panatelas. As far as they could see, the floor was empty except for heaps of old packing material and empty crates. Walking to the far end of the eerily creaking floor brought them to a dead end.

"Hey, watch the matches! This place could go up like a tinderbox, hey."

"Would you care?" said Gilly as he flipped the dying match to the floor.

Both turned as they heard a deep clunking noise. The elevator was leaving without them.

"How the hell...that's a manual elevator!" complained Gilly.

"Put a cork in it! Get over against the other wall an' be ready. I got a feeling we're going to have company on the fourth floor."

The two men took up separate positions, each about five meters from the elevator shaft.

"What if it's the other guys?" whispered Gilly.

"Then don't shoot, idiot."

The space they were in was almost completely black except for the faintest of light

coming up the shaft. They both heard the metallic clicking sounds and the whine as the elevator reversed and began to climb back to the fourth floor. They sensed the coming bulk of the car and readied their weapons. The cage of the elevator appeared, dully illuminated by the one weak bulb in its ceiling. It stopped before it was level with the floor.

Gilly was the first to stand up. "There ain't nobody on it. Tommy! It's goddamned empty for chrissake!" He turned to face Tommy with hands indignantly on hips, gun held loosely under his right arm.

Two quick purple beams sprang from the top of the elevator, taking off the top of Gilly's head and burning a hole through Tommy's stomach; his Thompson seemed to fire itself at the top of the cage, continually until it jammed. The elevator descended.

One of the bullets had grazed his face and most of his mask was hanging off. More seriously, another round had shattered his left shoulder and the arm was hanging uselessly. Worse yet, he had to go up front to make sure he had gotten both of the other assault troops that he'd seen on the screen. He tapped the controller with his thumb and the elevator settled to the ground floor again.

IN THE LIMOUSINE, Aldo Barone was very concerned. All that firing. It meant that it was going wrong again. Was this guy indestructible? Did he have help? Five minutes I give it and I'm going in myself, he vowed.

Joey felt along the wall of the windowless center room for any place that the big man might have passed through. He risked his pocket flash light to examine the floor and there he found a trail of scuff marks and stains that led to the closet. Secret doors yet, he thought. This is the craziest thing I've ever done. Inside the closet he noticed nothing. Why be subtle, he shrugged, and cracked the back wall sharply with his gun butt. It immediately swung out into a huge, well-lit space containing a kind of gleaming metal tower in its center.

But in the middle of the thing was this weird black space filled with constantly changing flecks of light. It made him sort of sick to his stomach to concentrate on the strange rolling mass inhabiting the framework. Whatever it was, it must be important to the guy he was trying to nail. Experimentally, he smashed his gunstock into some of the more delicate looking parts of the lattice work. He heard sounds like little drops of water on a very hot skillet. Yellow sparks showered down and the thing began to make a deep thrumming sound. Joey backed away, feeling scared and looking about nervously almost as if he feared to be blamed for what he had done. He took up a position on the far side of the framework, behind a heap of crates and bubble packaging.

He sensed more than heard the approach of the loft building's owner. Joey was good at remaining absolutely still, a technique he'd acquired on ambush missions in the war. He nevertheless almost flinched when he saw the face of this thing. Its skin was hanging off and what was underneath made Joey's stomach heave. In the thing's right hand was a silver wand with

a loop on the end — like those wire rings kids blow bubbles with. The left arm looked like somebody had scored a hit.

"Freeze, asshole!" he shouted, standing up from the crates. The artist stopped in mid-stride. Absolutely still, except for the slight twirling motion his fingers imparted to the wand in his hand. Joey kept the big piece trained on him as he came out around the framework.

"I got him, Mr. Barone. Vinny!" he called over his shoulder.

The shaft of purple white light hit Joey squarely in the neck. His spasming fingers fired one round into the hip of his killer, and sprayed the remainder of the clip into the complex framework running up one of the main supports of the cylinder. Joey slid down against the base of the framework, and his upper torso teetered into the strange black space and vanished, leaving behind his legs and hips.

The space inside the lattice was gyrating even more wildly and some of the bright spots resolved themselves as stars before zooming away. The now crippled creator of the lattice staggered through the opened closet and into the central front room. His clouded vision resolved the form of Vinny lying unconscious on the floor, and he beamed him through the head to make sure. I've got to secure and shut down, he thought. Get to my room, repair.

Barone waited more than five minutes after hearing the last shots. For the first time in a long while he was truly terrified. He looked at the dark, hateful building standing isolated on the corner and contemplated the ruin of his orderly, business-like world of routine extortion and bribery that was signalled by the ominous quiet. I need help, he thought.

Even though he was old, the thin little man in Brooklyn came quickly awake at the sound of the almost hysterical voice on the other end of the phone.

"Calm yourself, calm yourself, Aldo. Tell me again, more slowly."

He listened and grew concerned. In all the years he had known Aldo Barone, he had never heard a lie or exaggeration come from his lips. If anything the man was usually guilty of understatement. So he listened patiently and credulously.

"You just stay near your car and watch, Aldo. I'll take care of everything."

He owed Barone a great deal — tonight it would all be paid in full. Thanking the Mother of God for touch-tone phones, his arthritic fingers quickly punched several numbers and woke many young men.

The wall glowed and he staggered into the room, almost crashing against the green booth. In pain that was just barely controllable in his body's fighting mode, he peeled off his damaged outer coverings. What did these people want? The credentials he'd taken off the last one told him nothing. Probably not police after all. They behaved like a group in an Endgame.

Have to change chemistry to repair, the blurred thinking ran in his throbbing head. Little yellow lines of light were spreading across the green translucent plate that

swung down over his long bleeding form. Lying on his back, he willed the metabolic changes that would slow his body functions and enable the mechanism to repair his body. Before his eyes the blue in the room deepened to black and he lost consciousness.

Sixteen men jogged up the stairs of the old tenement building. Even though they all carried long heavy cases, they moved easily. They were all young and strong, well trained by both the legal and illegal governments of their country. The tenants had already been moved out by some of the organization members in the neighborhood. They had all obeyed unquestioningly, knowing that whatever was to be done that night was for their own good. And they knew it was to be directed against the tall strange artist who owned the loft building next door. They had all smiled at that part.

Most of the men had served together or had been in similar units. When they had been told that the work was to be done from the outside exclusively, they knew what tools to bring and how to proceed. Half of the men went to the roof and used an ingenious folding contraption to make a little aluminum bridge to the other building. They set the black cylinders at precise intervals, carefully throwing the little levers on top as they did so. The tar of the roof cracked under their boots.

In admiration, Aldo Barone watched from behind the wheel of his car. He saw four ropes fly out from the roof on the street side of the building and men seem to hop down them as if flying. Every few meters they stopped and stuck something to the side of the building, paying particular attention to the bricked up windows. On the alley side, the others reached out with telescoping aluminum poles to stick things to the windows that looked like black coffee cans. In a short while the loft was dotted with them. Not once in all this time did a patrol car, or any other vehicle for that matter, pass by the scene of all this silent activity.

SOMETHING WAS DRASTICALLY WRONG. The tearing pain in his hip and arm told him that the medical unit was not yet finished, yet it was interrupting its work and shutting down. He saw the pulsing of the lights and heard the shrill rhythmic beeping of the intruder alarm. They're all dead...I got them all. More? Why do they keep coming?

He saw an image form on the far wall. Against the deep blue, an iridescent green schematic of the building appeared. At regular intervals it glowed with brilliant red spots, and cloudy orange shapes that moved and left new red spots. Extended the field, he thought. Get downstairs. Make a weak expansion outside the frame to neutralize the humans and their devices. Might kill me but only chance. Hurry.

Spikes of excruciating pain stabbed through him as he lumbered against the wall. He fumbled with the controller as he saw more bright red spots form on the schematic.

The man in the alley waved a penlight at the watching faces in the windows. They all withdrew in unison. Feet could be heard running down the creaky steps of the old apart-

ment house. Shortly, all the men were in the street carrying their now lightened long cases. The man with the penlight walked over to the car and handed Barone a little black box with an aerial on it.

"Your good friend in Brooklyn said that you wanted to do the honors, Mr. Barone."

"No wires? Aren't we too close?" asked the worried voice from the dark limousine.

The young man smiled patronizingly. "Now, it's by radio see — and all the force goes inward. I could stand on the steps with my mother's teacups an' be alright. Relax. You'll see! Just turn it to the right and make a wish."

THE BLACK FIELD SWELLED and spun, sending fingers of space radiating out from the frame. Orange blood bubbled from his tortured arm and hip. The power in the frame keened upwards and seemed to make the whole building throb. He punched in the last delimiting coordinates on the test board. A blue digit glowed on the panel. "Eight," he counted, "seven..."

All of downtown Manhattan went black.

"Christ, what's with the streetlights. Hit the switch, Barone. Hit it."

"...three..."

Barone goggled as the walls of the building seemed to turn to black glass and shine with points of rose and purple light.

"...two..."

The young man wrenched Barone's hand on the switch.

"...one..."

A tremendous stillness accompanied the visually spectacular detonation of the shaped charges. The explosions bloomed with red-white heat from all sides of the now weird looking building, but at first no sound was heard.

Then there was a rushing noise and a strong wind built at the backs of the awe-struck men in the street. The shape of the loft was filled by fiercely white lines radiating from the center. Trash on the gutter lifted up into the shape. A dynamo sound whined towards the unhearable range.

"Run!" the demolitions leader shouted over the roar of the air disappearing into space. Barone started the car. Some of the men seemed to rise into the night, silhouetted against the mad lights of the thing across the street. Random shafts of black wavered out of the mass. Barone felt sick to his stomach. Dizzy. Weightless.

The heavy Cadillac whirled like a leaf and disappeared into black with a dull booming noise.

The three men who had escaped turned at the noise and saw a tall, iridescent figure seemingly suspended in the space where the building had been. The radiating lines had dulled to red. They heard a deep grating noise and felt a shuddering vibration through the street. The brilliance snapped out, and a prolonged loudening hiss rose up, followed by a climactic thump like the slamming shut of a gigantic book.

A ragged smoking hole had taken the place of the four story building. The adjacent tenement was in ruins.

In downtown Manhattan, the lights went back on.

The Game of Planetary Assault WORLDKILLER

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Read This First:

The rules to *WorldKiller* are organized by major topics arranged in the order in which they occur in the play of the game. Each such major topic is given a number and a name below which is given (usually) a General Rule or Description which summarizes the rules in that section. This is usually followed by numbered paragraphs called Cases, which give the specifics of the rules. Note that the numbering of the Cases is a decimal form of the Major Section number. Players should examine the map and counters and then quickly read the rules (without trying to memorize them). Then the game should be set up to play and a "trial run" made. Note that it isn't even necessary to have an opponent — the game can be played solitaire without any special rules, simply by assuming the roles of the opponents in proper turn. Because simulation games are richer and more complex than the typical board game, this style of play can be quite enjoyable (and is certainly one of the best ways to learn the rules).

Inventory of Game Parts

Each game of *WorldKiller* should contain the following parts:

- One 11" x 16" mapsheet
- One sheet of die-cut counters (100 pieces)
- One rules folder (bound into *Ares* version)
- One die (not in *Ares* version)
- One game box (not in *Ares* version)

If any of these parts are missing or damaged, notify SPI's Customer Service Department.

Rules Questions

Should you have any difficulty interpreting the rules, please write to SPI, phrasing your questions so that they can be answered by a simple sentence, word, or number. You must enclose a stamped, self-addressed envelope. We cannot guarantee a proper answer should you choose to phone in your question (the right person is not always available — and since SPI has published hundreds of games, no one individual is capable of answering all questions). Write to:

SPI
Rules Questions Editor for
WorldKiller
257 Park Avenue
New York, N. Y. 10010

[1.0] Basic Description of Play and Equipment

GENERAL COMMENT:

WorldKiller is a simulation of the classic science fiction theme of planetary assault. In

the standard scenario, one Player commands the ships and orbital fortresses of the defending human forces; and the other Player commands the ships of the marauding alien force. Beyond the standard scenario there are provided additional rules and types of ships in order that play might be varied and scenarios of the Players' own devising be gamed.

BASIC PROCEDURE OF PLAY:

The Planetary Player's fortresses and ships are set up first, and then the forces of the Intruder Player, according to the Standard Scenario instructions (2.0). Taking alternating turns, each Player moves or fires the weapons of one of his ships. Movement takes place on the 11" x 16" map that shows the position of the planet in a rectangular volume of space. The basic object of the game for the Intruder is to destroy the planet and its defending forces.

CASES:

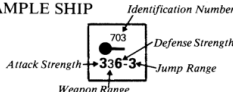
[1.1] **The *WorldKiller* map represents a rectangular volume of three dimensional space, measuring eight by twelve by seven Cubes.**

The basic unit of distance by which all range and movement is measured is the *Cube* (each cube is a scale 10,000 kilometers across). The two dimensional surface on which the map is printed also includes the third dimension as a series of positive (to + 3) or negative (to - 3) positions within each two dimensional grid box. Note that each grid box is numbered with a three digit number. Since each grid box is actually seven Cubes deep, this number should be followed by a zero or a positive or negative number to indicate an exact Cube. For example 101 + 3 is the "highest" Cube in the upper left space. Zero coordinates use "@"; e.g., 101 @ 0.

[1.2] **The playing pieces represent the ships and orbital fortresses involved in the battle.**

Carefully punch out the cardboard counters and examine them. Each ship counter has a series of numbers printed on its front side which represent the capabilities of that particular ship.

SAMPLE SHIP



Definition of Values on Counters:

Attack Strength: The basic offensive power of a ship or fortress.

Weapon Range: The maximum number of Cubes of distance at which a ship or fortress may use its Attack Strength to hit an Enemy.

Defense Strength: The basic defensive capability of a ship or fortress.

Jump Range: The maximum number of Cubes a ship may move in a single Game-Turn.

[1.3] **A single six-sided die is necessary to play *WorldKiller*.**

This is provided in the boxed edition of the game but not in the subscription version. This die is used to generate a random number for use in the combat procedure. It has nothing to do with movement.

INTRUDER SHIPS AND MISSILES

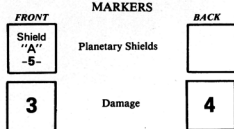
FRONT		BACK
	<i>WorldKiller</i> (assault ship) Quantity: 9	
	<i>Dominator</i> (assault ship) Quantity: 5	
	<i>Smasher</i> (missile carrier) Quantity: 2	
	<i>Crusher II</i> (missile) Quantity: 6	

PLANETARY SHIPS AND ORBITAL FORTRESSES

	<i>Outrider</i> (orbital fortress) Quantity: 4	
	<i>V-Duster</i> (patrol frigate) Quantity: 7	
	<i>Spacetrain 3</i> (reserve cruiser) Quantity: 6	
	<i>Sentry IX</i> (regular cruiser) Quantity: 2	
	<i>K-Wagon</i> (light cruiser) Quantity: 3	
	<i>BlitzRider</i> (scout vessel) Quantity: 4	

REMOVING THE RULES FROM THIS ISSUE:

Open the magazine to the center, bend the staples with a penknife or screwdriver; lift out the rules and close staples.



[2.0] Standard Scenario

How to Start the Game and How to Win

GENERAL DESCRIPTION:

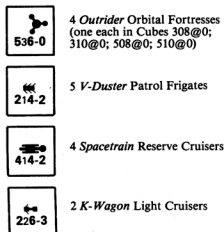
In 3021, the fragile peace that existed between the human race and the *e'kenn* was shattered by *e'kenni* attacks on the frontier worlds of humankind. *E'kenn* strategy and operations consisted largely of unsubtle frontal attacks aimed at nothing short of annihilation of the target planets. The populations of two frontier worlds were totally destroyed before the others had sufficient time to develop defense fleets to respond to the alien threat. The game presents the attack on Greendream in 3022.039, at 1755 hours Sector Three Standard Time. In the actual battle, the defense forces from Greendream inflicted heavy losses on the *e'kenni* assault group, while losing most of their own reserve forces. Because the weakened alien fleet was subsequently annihilated in the Battle of Margrett, Greendream is looked upon as the turning point that led to the Truce of Ikenna in 3023.019.

PROCEDURE:

The Planetary Player sets his forces up first, in any of the Cubes not in the Intruder set-up zone marked on the map. He also places his orbital fortresses on the Cubes indicated on the map. The Intruder then sets up his forces in any of the Cubes within the Intruder set-up zone. Play then proceeds according to the Sequence of Play (see Section 3.0) until one side or the other wins or resigns the game.

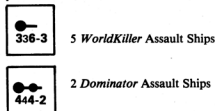
CASES:

[2.1] The Planetary Player's starting forces are as pictured:



These forces deploy in any Cubes not in the Intruder Set-up Zone.

[2.2] The Intruder Player's starting forces are as pictured:



These forces deploy in any Cubes in the Intruder Set-up Zone.

[2.3] The Intruder Player wins if he destroys the planet and has at least one surviving ship upon doing so; otherwise, the Planetary Player wins.

Note that, if after twenty Game-Turns of play, the Intruder has been so weakened as to be incapable of destroying the planet and yet still capable of avoiding the Planetary Player's attempts to eliminate him completely, the Planetary Player can claim victory by having twice as many total Attack Strength Points in play as the Intruder has total Defense Strength Points in play at the end of any Game-Turn. This provision is only meant to prevent the weakened and losing Intruder from dragging out the game by dodging around the map avoiding combat.

[3.0] Sequence of Play

GENERAL RULE:

WorldKiller is played in consecutive turns called Game-Turns. Each Game-Turn consists of a number of alternating Player events called *acts*. Basically, each Player can perform one act per Game-Turn with every ship or fortress he has. The game can continue for an indefinite number of Game-Turns, until one or the other Player satisfies the victory conditions.

Outline of the Sequence of Play of a Game-Turn

Step 1. Intruder performs an act with one of his eligible ships (or passes). Upon acting, he turns the ship face down.

Step 2. Defender performs an act with one of his eligible ships or fortresses (or passes). Upon acting, he turns the ship or fortress face down.

Step 3. Repeat Steps 1 and 2 until both Players have passed consecutively. If both pass consecutively (regardless of order) — or all possible actions have been performed — then the Game-Turn ends, and all ships and fortresses are turned *face-up* and a new Game-Turn begins.

CASES:

[3.1] There are any one of five possible actions a ship can take: Jump, Attack, Pop, Stretch, and Repair

[3.2] There are only two possible actions a fortress can take: Attack and Repair.

[3.3] No ship or fortress may ever perform more than one act per Game-Turn.

[3.4] A ship or fortress is eligible to act if it is face-up on the map (i.e. it hasn't yet acted in that Game-Turn).

Note also that a ship or fortress may be ineligible to fire if it currently sustains a number of Damage Points at least equal to its Attack Strength (see 6.2).

[4.0] Jumping

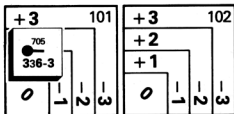
The Act of Moving

GENERAL RULE:

When it is a Player's turn to act, any one of his eligible ships may jump a distance equal to or less than its Jump Range. The Jump Range is expressed in *Cubes* of distance. Damage does not affect Jumping.

PROCEDURE:

The Player takes the ship from its current position and places it in its new position, being careful to place it on the exact line within the grid box that indicates the specific Positive or Negative Cube that it occupies. This is done by placing the edge of the counter abutting the appropriate line.



Ship in sample illustration is positioned in the "+2" Cube.

CASES:

[4.1] A ship measures the distance of its jump by reference to the True Distance Table (see page 22).

The Players should note that there are some legal jumps, particularly in diagonal directions, that are not readily recognized as such. The True Distance Table is a simple expression of the three dimensional geometry of Jumping. See last page of rules.

[4.2] Ships may jump through any Cube on the way to their destination Cube.

Jumping is considered to be a kind of hyperspace travel (moving from one point to another without having to traverse the intervening space), and as such, nothing can block or get in the way of a jump.

[4.3] Ships may Jump into or from Cubes containing other Friendly ships or fortresses.

[4.4] Ships may not enter Cubes containing Enemy ships or fortresses, nor may they ever enter the Cube containing the planet (409@0).

[4.5] **Intruder ships may not enter the Cubes near the planet which are marked with stars.**

These Cubes are prohibited (to Intruder ships only) due to the presence of powerful, short-ranged planet-based defenses.

[5.0] Stretching

A Special Kind of Intruder Jump

GENERAL RULE:

Any Intruder ship may increase the range of a given jump by inactively waiting (Stretching) a number of Game-Turns before performing the Stretched Jump. An Intruder that remains inactive for *two* Game-Turns may jump a distance of *six* Cubes (regardless of its normal range). An Intruder that waits for *three* Game-Turns may jump on the following Game-Turn to *any* Cube on the map (except the Prohibited Cubes, the one containing the Planet, and Enemy occupied Cubes).

PROCEDURE:

Each Game-Turn in which Intruders have been Stretching should be recorded on a piece of paper (using the I.D. number on the counter).

CASES:

[5.1] **An Intruder is not required to execute a Stretch Jump simply because it is eligible to do so.**

The ship may continue to stretch or it may attack, pop, repair, or move normally thereby making itself ineligible to Stretch Jump. It may reinstitute the procedure simply by starting to wait inactively again.

[5.2] **Damage does not interfere with Stretching.**

[6.0] Attacking and Popping

How Combat is Resolved

GENERAL RULE:

Each ship and fortress has an Attack Strength and Weapon Range. When eligible, a ship or fortress may attack any single Enemy within its range.

PROCEDURE:

Subtract the Attack Strength of the acting ship or fortress from the *final* Defense Strength of the target. Take the resulting number* and subtract it from the number determined by the roll of one die. The result is the number of Damage Points inflicted on the ship or fortress. Place a Damage marker under the affected ship.

*If less than zero, treat as zero.

For example, a *WorldKiller* (Attack Strength of "3") fires at an undamaged *V-Duster* (Defense Strength of "4"). The die-roll obtained (for the sake of the example) is "5." This is reduced to "4" (Defense Strength minus Attack Strength yields a subtractor of "1"). The *V-Duster* sustains four Damage Points and now has an *effective* Defense Strength of "2."

CASES:

[6.1] **When a ship or fortress sustains a number of Damage**

Points double (or more than double) its printed Defense Strength, then that ship or fortress is destroyed.

Removed the piece from the game immediately. For example, if a *WorldKiller* assault ship currently has 12 Damage Points scored on it, it is destroyed.

[6.2] **When a ship or fortress sustains a number of Damage Points equal to or greater than its Attack Strength, then that ship or fortress can no longer attack.**

Should it repair itself, reducing the current Damage Points sustained below its Attack Strength, it may resume its ability to attack.

[6.3] **The effective Defense Strength of a ship or fortress is equal to its printed strength minus half of the damage Points it is currently sustaining.**

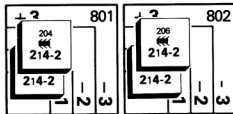
Round down when halving Damage Points for calculation of effective Defense Strength.

Example: A ship with a printed Defense Strength of "3" that has three points of damage on it has an effective Defense Strength of "2."

[6.4] **The Planetary Player's ships (not fortresses) may have their Final Defense Strength increased by as much as two Points due to the adjacency of Friendly ships or fortresses**

The Final Defense Strength increases by one for each of any two adjacent ships or fortresses. There is no increase beyond two, nor may any ship ever have a Final Defense Strength greater than six.

Example: There is a *V-Duster* Frigate each in 801 + 1; 802 + 1; 801 + 2; and 802 + 2. All are mutually adjacent to each other and therefore can add as much as two to each other's Defense Strength.



[6.5] **Any eligible ship may make a Pop attack by moving and firing (or firing and moving) in the same Game-Turn.**

Immediately after making a Pop attack, the acting ship suffers two points of Damage (for straining its capacities). Note that a Pop attack is only considered to be one act.

[6.6] **When a ship or fortress is destroyed, all other ships (but not fortresses) in the same Cube are immediately destroyed as well.**

[6.7] **The Planet has three passive ground based shields, each with a Defense Strength of "5."**

These shields must all be destroyed before the Planet is considered destroyed. They must each be attacked individually and they may not repair themselves. Players keep track of the status of the shields on a piece of scratch paper. Alternatively, Players may use the Shield Markers provided to record which Shields remain and which one is under attack.

[7.0] Repair

The Ability of Ships and Fortresses to Recover from Damage

GENERAL RULE:

When eligible to act, a ship or fortress may choose to repair itself. The number of Damage Points removed is equal to the *effective* Defense Strength of that ship or fortress considered alone (i.e., without any possible adjacency benefit).

Example: If a ship with a printed Defense Strength of "4" had four points of damage on it, its *effective* Defense Strength would be "2," and it could remove two Damage Points in an act of repair, making its current effective Defense Strength "3."

[8.0] The Reinforcement Scenario

GENERAL DESCRIPTION:

As an alternative line of the history of the battle, it is presumed that the long range engagement which preceded the main battle did not result in the mutual destruction that actually occurred. Rather, some of the forces involved recover and return to assist in the defense of the planet, pursued by the remnants of the second enemy fleet.

PROCEDURE:

On Game-Turn thirteen, the Planetary Player rolls the die, and as a result, may possibly bring on an additional force of seven ships. These new vessels enter the map from a randomly determined map edge. When the Planetary Player brings on his ships, the Intruder Player follows on a subsequent Game-Turn with a group of six of his own.

CASES:

[8.1] **The Planetary reinforcement group consists of the following seven ships:**

Two *V-Duster* Patrol Frigates
Two *Spacetrain* Reserve Cruisers
Two *Sentry IX* Regular Cruisers
One *K-Wagon* Light Cruiser

[8.2] **The Intruder reinforcement group consists of the following six ships:**

Three *WorldKiller* Assault Ships
Three *Dominator* Assault Ships

[8.3] **Starting with Game-Turn 13, the Planetary Player throws a die to determine whether the reinforcement group will arrive; the chance for reinforcement improves on every subsequent Game-Turn.**

On Game-Turn 13, a roll of "1" means the reinforcements arrive. On Game-Turn 14, a roll of "1" or "2" means the reinforcements arrive. A roll of "3" or less on Game-Turn 15, a roll of "4" or less on Game-Turn 16, and a roll of "5" or less on Game-Turn 17 will bring on the reinforcements. The reinforcement force automatically enters on Game-Turn 18, if it has not been activated before.

[8.4] The edge on which the Planetary reinforcement group enters is determined by the throw of the die.

- 1 = any Cube with a number ending in 01.
2 = any Cube with a number ending in 12.
3,4 = any Cube with a number starting in 1.
5,6 = any Cube with a number starting in 8.

The whole group is placed in the entry Cubes and is eligible to act individually as of the Game-Turn of entry.

[8.5] The Intruder reinforcement group may enter in any Cube(s) not occupied by Enemy forces and not closer than three Cubes to the planet.

The Intruder reinforcement group arrives on the Game-Turn following the arrival of the Planetary Defense reinforcements.

[9.0] Missile Cruisers

An Optional Intruder Ship Type

GENERAL RULE:

If the Players desire, they may allow Intruder Player to use two Smasher Missile Cruisers, either as starting forces or as reinforcements. These ships could have been present in the actual battle had the *e'kenn* stripped their home system defenses. The cruisers fire missiles which act independently after being launched.

PROCEDURE:

Missile Cruisers may each fire one missile as an act.

CASES:

[9.1] Missile Cruisers have a missile carrying capacity of six missiles.

There is no need to move the onboard missiles with the ships; rather they should appear only when launched.

[9.2] Missiles act independently on every Game-Turn, including the Game-Turn of launch.

They move just as ships do.

[9.3] When a missile enters an Enemy occupied Cube, it immediately explodes and attacks the Enemy with its Attack Strength.

Once a missile explodes it is removed and recycled for use as a new launch (presuming the ships have not used up their six missile load). Note that the missile (or a BlitzRider acting as a missile, 10.3) is the only piece allowed to enter an Enemy occupied

Cube. Missiles may be used against the planet. Note that the explosion of a missile or BlitzRider acting as a missile does *not* automatically destroy ships or forts as described in Case 6.6.

[9.4] Although missiles don't repair themselves, damage never affects their Attack Strength.

Notice that the Attack Strength has no Weapon Range and can only come into use when the missile explodes.

[10.0] BlitzRider Scout Vessels

An Optional Planetary Ship Type

GENERAL RULE:

If both Players agree, the Planetary Player may be assigned as many as four BlitzRiders, one to each orbital fortress. Although this type was not then found in the inventories of frontier worlds, a change of central fleet policy could have made them available.

PROCEDURE:

In any Game-Turn an orbital fortress may launch its BlitzRider which then acts independently after being launched.

CASES:

[10.1] BlitzRiders may execute a Pop without suffering the usual mandatory damage, if they move no more than half their Jump Range.

[10.2] BlitzRiders may always attack regardless of the damage they might be sustaining.

[10.3] A BlitzRider may act as a missile, i.e., crashing itself into an Enemy and immediately attacking.

If it performs this suicidal maneuver, it executes its final attack with an Attack Strength of "3." This maneuver is treated as a Pop; i.e., the BlitzRider may move and then explode in the same act.

[11.0] Variable Strength of Forces

GENERAL RULE:

If the Players agree, they may vary the starting forces and reinforcements in any manner they wish. Even switching positions is allowed; i.e., the Intruder ships defend the planet and the normal Planetary forces attack. Note that an extra *WorldKiller* ship has been included in the mix to make the Intruder even stronger if so desired.

PROCEDURE:

After gaining some experience with the qualities of the various ships, the Players may construct any reasonable scenario. It is advisable to record variations and track the results so that successful variants can be played again. None of the conventions of the game should be considered sacrosanct —

Players should feel free to change starting forces, set-ups, positions of fortresses, etc.

The entire frontier war can be simulated by playing a series of games. Start the Intruders with *all* of their ships (including optional counters). Planetary forces can start with only fortresses and four *V-Dusters* for the first two games. The third game is the standard scenario (except that the Intruder only has what survives the first two games). Players may elaborate this suggested format in any way they deem reasonable.

TRUE DISTANCE TABLE

X-Y or Y-X	Z Axis						
	0	1	2	3	4	5	6
1-1	1	2	2	3	4	5	6
1-2	2	2	3	4	4	5	5
1-3	3	3	4	4	4	5	6
1-4	4	4	4	5	5	6	6
1-5	5	5	5	5	6	6	-
1-6	6	6	6	-	-	-	-
	0	1	2	3	4	5	
2-2	3	3	3	4	5	6	
2-3	4	4	4	5	5	6	
2-4	4	5	5	5	6	-	
2-5	5	5	6	6	-	-	
2-6	6	6	-	-	-	-	
	0	1	2	3	4		
3-3	4	4	5	5	6		
3-4	5	5	5	6	6		
3-5	6	6	6	-	-		
	0	1	2	3			
4-4	6	6	6	6			
4-5	6	6	-	-			

How to Use the True Distance Table:

When a ship displaces from Cube to Cube, the Player should think of the move as a shift in three separate dimensions. If we call the two directions on the flat map surface X and Y, we can use the conventions of geometry and call the third (up and down) dimension Z. So, for example, a move from 801@0 to 604+2 is expressed as X3, Y2, and Z2. Looking on the Table we find that this is a true distance of 4 Cubes.

Design Credits:

Game Design, Graphic Design and Rules:
Redmond A. Simonsen

Game Development:
Anthony Buccini, Eric Goldberg

Graphic Production:
Dave Engler, Rosalind Fruchtman,
Ted Koller, Manfred F. Milkunh,
Mike Moore, Bob Ryer

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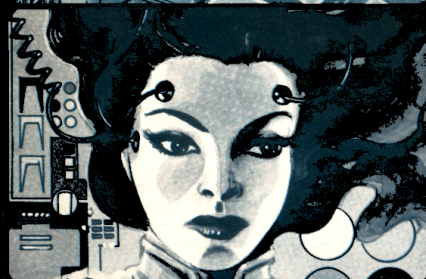
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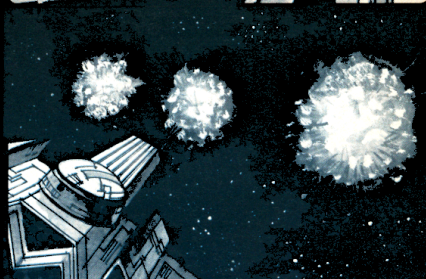
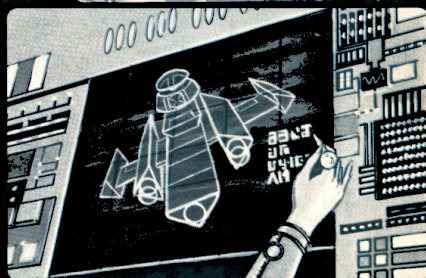
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OUTRIDER FOUR RECEIVING LONG PROBE TRANSMISSION FROM ABLE EIGHTY ON FOUR OH OH. SAY MIN EIGHT BODIES ON JUMP IN GREENDREAM AREA SPACE. V-DUSTER TWENTY-ONE-TWO. GO TO WARPLAN RED DELTA NINE. QUICKLAUNCH IN THREE, TWO, ONE. LAUNCH. *Hear you well Outrider. Forming k-link on launch from Outriders Two and Three. In-jumping in four, three, two, one. In-jump. THANK YOU TWENTY-ONE-TWO. HEAR SIXTY-FIVE-SIX IN LOCAL SPACE. RENDEZVOUS YOUR*

FRAME 0021 s4 100298471001726100183272002FFRAME 0035 s4 10024755476610024615377500216FFRAME 0132 49 00837120037177284661107029377

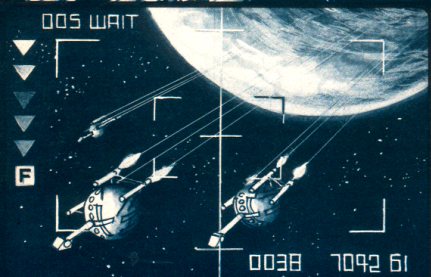
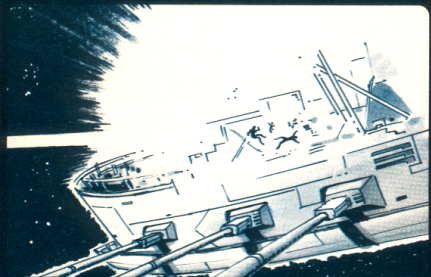
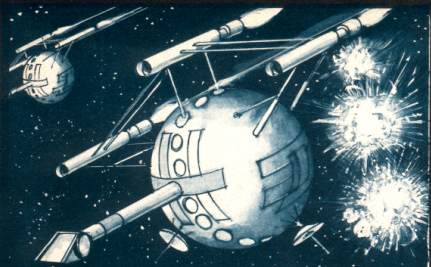


POINT IN ONE. Hear Twenty-One-Two. Forming jump image on Spacettrain R-30. Jumping in five. Max window and tuning...three, two, one. Jump. I have you on longprobe Spacettrain. Say? AFFIRMATIVE RED DELTA LEADER. TAKING FIRE FROM COORDINATES EIGHT-OH-FOUR WORLDKILLER CLASS, MIN FOUR HULLS. I SAY AGAIN, TAKING FIRE FROM COORDINATES EIGHT-OH-THREE ONE-FOUR. WORLDKILLER CL-KKKKKKKKKXXXXULLS. SUGGEST CLOSE ON COORDINATES EIGHT-OH-

FRAME 0177 49 0008 28 100387141002030640167FFRAME 2120 48 00172884610020389101010001637FFRAME 2184 c3 22017721011172000382811000550

Shortfile of the Attack on Planet Greendream by Elements of the E'kenni Warfleet.

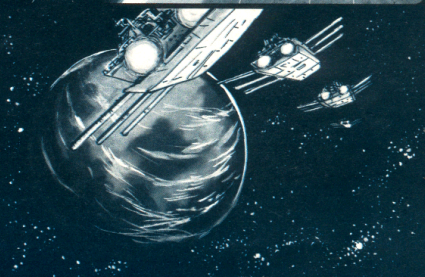
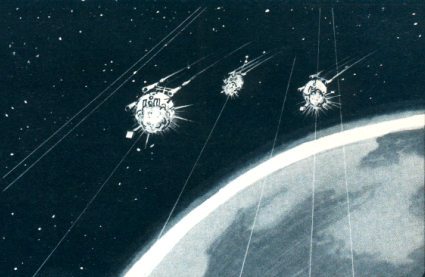
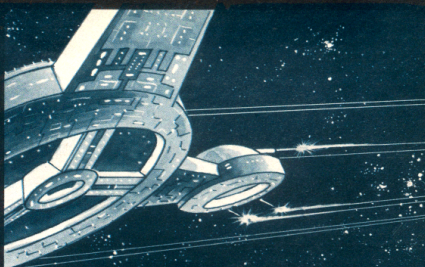
Representative video frames and k-radio transcriptions. 3022.039/1755TST



THREE-TWO-FOUR IN THREE. COORDINATES EIGHT. OH-TH-XXXXXXXXXXXXX IN THREE. SAY? Tack jump coming in four...three...two...one...jump. Lock and fire main tubes, Delta Nine Group. Firing now. Tubes heating, Delta Nine Left, execute maneuver kkkkkkkkkkkk-adio freak jade one. Delta Nine Left exec kkkkkkkk-maneuver gold-forty-two, change k-radio freak jade one. Say? KKKKXXXX-elta Leader. Cannot comply. Tube hits on ablatives three, two, and six. KKKKXX-not comply to maneuver order gold-forty two. Say? I hear you well, Delta Nine Left, am taking fire as well. Ablatives gone on four, fi. KKKKKKXXXX. THIS IS DELTA NINE CENTER LEADING. ALL FORCES EXECUTE RED-FIVE, I SAY AGAIN. DELTA NINE CENTER LEADING. EXECUTE RED FIVE. Outrider

WORLDKILLER

Storyboard illustration by Joe Barney; text by Redmond Simonsen



Three Fire Control on wait. We have devils three in bombardment configuration at coordinates one-one-oh-two. OUTRIDER. OUTRIDER. THIS IS PLANET BASE REDOUTABLE. ALL SHIELDS GONE. CASUALTIES MAX-PLUS. FUNCTION GONE. UP TO YOU. PROVIDE COVER THIS QUAD. GIVE THE BASTARDS EVERYTHING YOU'V—KKK. KKKKKX. Firing in three. Two. One. All tubes fire. OUTRIDER THREE, THIS IS RED DELTA NINE COVERING. WE SEE YOUR HITS ON MAIN DEVILS AT ONE-ONE-0H-TWO. CLOSING NOW. NO RETURN FIRE. ONE GONE. TWO. XXXXXXXX-REF GONE. SIGNAL TO BASE INVINCIBLE. ALL CLEAR. CODE GREEN TWENTY. I SAY AGAIN: ALL CLEAR. SAY? [END 3022 039] 1759 51TST]

FRAME 3004-1p 200103/4710471001653100477103FRAME 3251-d7 20047757120029964655620116467FRAME 3340-s3 00183288610016565511041047502

FRAME 3521-s3 110277/6461084801991034551035FRAME 3590-s3 0003737100488665538596037623FRAME 4126-d7 0018547757329205817179900000

Film & Television

STAR TREK — The Motion Picture

Producer: Gene Roddenberry
Director: Robert A. Wise
Story: Alan Dean Foster
Screenplay: Harold Livingston
Special Effects:
 Douglas Trumbull, John Dykstra

Cast

William Shatner Admiral James T. Kirk
 Leonard Nimoy Mr. Spock
 De Forest Kelley Dr. McCoy
 Stephen Collins Decker
 Persis Khambatta Ilia
 James Doohan Scotty
 Nichelle Nichols Uhuru
 Walter Koenig Chekov
 George Takei Sulu
 Majel Barrett Christine Chapel

While *Star Trek* was not without its appeal as a television series in the sixties, the intervening years have increased the defunct show's reputation beyond all sense of reality. Gene Roddenberry, *Trek*'s creator and guru, prefers to locate the saga's continuing success in his facile, pro-future gospel, but it is more probable that the series' greatest strength lay in the simple but pleasurable schemata of its character interactions. In the empty-million dollar *Star Trek — The Motion Picture*, the Enterprises' crew is reunited, only to become subsumed by the absurdly high-tech vision of our future. The ultimate result of the transformation of series to film is to reveal the complete hollowness of Roddenberry's mock liberal/humanist vision.

The film's failure in the philosophic arena is overshadowed by its concurrent failures as either interesting science fiction or dramatic filmmaking. While the episodes of lasting resonance from the series (*The City on the Edge of Forever*, *Amok Time*) involved intriguing tensions between and within the characters, *Star Trek — The Motion Picture* concentrates instead upon an obfuscated confrontation with a machine called V'ger in a sloppily constructed narrative that seems, after considering the tales of multitudes of rejected scripts, a desperate eleventh-hour recourse. Alan Dean Foster, an sf writer of a frighteningly prolific nature, is credited with the story. He has simply dusted off several ideas old even to *Star Trek* and added a predictable dose of quasi-mystical pretension. V'ger, generating an impossibly powerful energy field, is discovered to be heading directly for Earth, destroying everything it can along the way. The Enterprise, orbiting Earth in drydock, is hastily dispatched with Kirk, McCoy, *et al.*, to avert the approaching disaster. Probing V'ger's inner depths, Kirk dirties his hands to discover that V'ger has acquired an ancient *Voyager* probe that has acquired its own brand of electronic sentience since its launch way back in the dark ages of the twentieth century. An annoying officer

named Decker merges with the machine (in the mechanical duplication of Ilia — his one true love) and disappears in a holy shimmer of light. Its quest for its "creator" satisfied, V'ger takes off for higher planes.

This V'ger/Voyager conceit is remarkably uninspired, a lame effect to rank with the inglorious finale of *Planet of the Apes*. What first appears as profound or witty is, upon reflection, revealed as mechanical and trite. As a climactic hook in an hour-long episode it is inconsequential enough; as a central revelation in a two and one half hour, fantastically expensive, "major" motion picture, it is only insipid.

To accentuate the banality of the plot, a background rife with human, dramatic potential, concerning a desk-bound Admiral Kirk who is recalled to command a heavily-modified, and largely unfamiliar Enterprise, is clumsily side-stepped with only the most perfunctory treatment. As is usual with most modern science fantasy films, Foster's story and Harold Livingston's screenplay seem designed only to make full use of the over-extended and appallingly exaggerated special effects budget. Electronic gimmickry again scores over dramatic characterization, a decision which, in the case of *Star Trek* results in an empty, joyless film.

As treated by director Robert Wise, this material also becomes stately slow and ponderously dull, a misguided attempt to apply the epic poetry of Kubrick's *2001* to Roddenberry's moralistic fortune cookie. The audience is reintroduced to the Enterprise via an overly loving, almost erotic, five-minute sequence. The reverence with which the film's technological setting and technical effects are treated neatly undercuts all the "emotion over electronics" philosophizing, effectively revealing the hypocrisy at the film's core. Humans are treated as static objects, and thus the eye is constantly drawn to the bewildering profusion of flashing lights and cruising spacecraft provided by the effects department. Perhaps *Star Trek* could never have survived the change in format. The crew aboard the bridge is mainly occupied with punching buttons and staring at a viewscreen — not the stuff from which effective film is made. On television, the enclosed simplicity of the bridge set was perfectly suited for the presentation of workable, intimate, television drama. Expanded to Panavision proportions, however, the stasis is overwhelming. A complete lack of dramatic editing — odd for Wise, a former editor himself — only emphasizes the failure of the filmmakers to exploit any of the existent human possibilities. The clutter of the film isolates the characters, and renders impossible any of the series' intimacy. At first this disorder works to the film's advantage; Kirk's return is to a cold, sterile Enterprise, and its unfamiliarity alienates an audience as it should Kirk. However, this alienation, never acknowledged, is never overcome. The Enterprise is too big, too clean, too new.

With *Star Trek*, Roddenberry's trick has been to wear the mask of the humanist as he plays with his Erector set. The scale of the television series arrested his vision at a comfortable and still interesting level, but the new film has finally removed the mask.

Scott Bukatman

THE LATHE OF HEAVEN

Co-Producers/Co-Directors:

David Loxton, Fred Barzyk
Story: Ursula K. LeGuin
Teleplay: Roger E. Swaybill, Diane English
Creative Consultant: Ursula K. LeGuin
Special Effects: Lori Spiegel

Cast

Bruce Davison George Orr
 Kevin Conway Dr. William Haber
 Margaret Avery Heather Leleche

If we are lucky, *The Lathe of Heaven*, produced by PBS from the novel of the same name by Ursula K. LeGuin, will put to rest the ghost of *Star Wars*. The success of *Star Wars* spawned a succession of high-priced imitations, from *Battlestar Galactica* all the way through *Star Trek — The Motion Picture* and *The Black Hole*. These latter two movies emphasized the special effects to the exclusion of plot and character. While they may have been visually impressive, both films were sorely lacking in the fundamentals of good story-telling and good film-making.

Lathe, however, has shown that a superb science fiction production can be created without a mammoth budget. Indeed, produced for less than one million dollars, *Lathe* managed, nevertheless, to capture the core of Ms. LeGuin's novel (thanks perhaps to the fact that she was creative consultant for the production), and maintain good production values and appearance as well.

The story of George Orr, who by his dreams *actually* changes the flow of reality, builds consistently. The plight of his existence — the re-creation of the world during sleep — is examined through his conflict with Dr. Haber, a man who would use George's dreams to create paradise on Earth. Each new dream induces a widening sense of awe, as the world's climate changes, as aliens are drawn into conflict with Earth (only to be found to be peaceful) and as the problems of humanity are erased by erasing most of humanity. *Lathe* succeeds where the sf exploitation films collapse: in the universe of storytelling and meaning. The central problem is eventually resolved ingeniously using the materials of the world-construct LeGuin has created. *Lathe* is the best piece of science fiction (as opposed to science fantasy) film to appear in years.

One hopes some producers who plan yet more clones of *Star Wars* will have watched *Lathe* and learned that science fiction does not consist solely of dogfights in space and cardboard heroes facing "gee-whiz" challenges. The best science fiction, such as *Lathe*, examines humankind's place in the universe and the products and problems created by intelligence. Let us hope PBS continues with more science fiction. Just think, for the price of one *Star Trek*, you could have fifty *Lathe*s of Heaven.

Michael Moore

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A Galaxy of Games

Reviews of the Most Significant Science Fiction and Fantasy Games

by Greg Costikyan, Eric Goldberg, Steve List, and David Ritchie. EDITED BY ERIC GOLDBERG.

Conflict simulations are well-suited for exploring future and fantastic crises. The past decade has seen science fiction and fantasy games become increasingly popular. The reviews that follow are intended as both guides for the purchaser and as a retrospective for "veteran" gamers.

Each game is given a capsule review. The initials of the company that produces the game will be found in parentheses after the game title; consult the list of companies for the name and address of the producer. The second line lists the designer and, if there is a slash between the designer's and a second name, the developer. The components and price are listed in *italic type*; the price will generally be an indicator of the size and sturdiness of the components. The body of the review concludes with a numerical rating for the game, so the reader may see the relative "worth" of the game in the eyes of the reviewer.

For those to whom individual reviewer biases matter, the reviewers are identified by their initials at the conclusion of each review.

The numerical ratings of the games may be interpreted as follows:

- 1 — Without redeeming social value
- 2 — Terrible
- 3 — Poor
- 4 — Below average
- 5 — Fair or average
- 6 — Good
- 7 — Very good
- 8 — Excellent
- 9 — Great (one of the best)

The following list of company addresses is provided for readers who wish to contact the publishers for further information:

AH: The Avalon Hill Game Company, 4517 Harford Road, Baltimore, MD 21214.

EG: Excalibre Games, Inc., P.O. Box 29171, Brooklyn Center, MN 55429.

EP: Eon Products, 96 Stockton Street, Dorchester, MA 02124.

FGUI: Fantasy Games Unlimited, Inc., P.O. Box 182, Roslyn, NY 11576.

GDW: Game Designer's Workshop, 203 North Street, Normal, IL 61761.

MC: Metagaming Concepts, Box 15346, Austin, TX 78761.

OSG: Operational Studies Group, 1261 Broadway, New York, NY 10001.

SPi: Simulations Publications, Inc., 257 Park Ave. South, New York, NY 10010.

TC: The Chaosium, P.O. Box 6302, Albany, CA 94706.

TFG: Task Force Games, 405 South Crockett, Amarillo, TX 79106.

TSR: Tactical Studies Rules, P.O. Box 756, Lake Geneva, WI 53174.

YP: Yaquinto Publications, P.O. Box 24767, Dallas, TX 75224.

ZE: Zocchi Enterprises, 01966 Pass Road, Gulfport, MS 39501.

Science Fiction

After the Holocaust (SPi)

R. Simonsen/I. Hardy

One 22" by 34" map, 400 playing pieces, 144 pieces of play money, four 4-page charts and tables, 20-page rules, six-sided die, pasteboard box and counter tray. \$14.00.

This is as much an economic model as it is a wargame. America and Canada have been devastated by a nuclear holocaust. Each player controls a section of the country which is attempting to reconstruct a central government. The heart of the game is the management of the labor pool, natural resources, transportation net, and the balance of trade with the other regions (Far West, Southwest, Midwest and Northeast). Though the game deals with complex concepts, it is a relatively simple economic model. The rules are muddy in places, and economic realities limit the "payoff" a player can receive for good play. However, *After the Holocaust* is a fine teaching device and an intriguing game. It falls short as a simulation only because of the difficult nature of its subject. The patient or the studious gamer will find *After the Holocaust* a worthwhile investment. 7/EG

Asteroid Zero-Four (TFG)

S. Cole

16.5" by 21.5" map, 273 playing pieces, strategic display, 20-page rules, resealable plastic bag. \$3.95.

There are these two fortified island bases somewhere in the Pacific, covered with airfields and missile launches and flak and just wait... Whoops! There are these two asteroids out in space, serving as bases for mining operations but nevertheless armed to the teeth with missile and spacecraft (fighters and bombers), launching and service facilities, defensive lasers and engineer gangs for damage repair. Solar flares threaten to cut off traffic with Earth, so the U.S. and Soviet high commands see it as an opportunity to cripple the other's vital mining operations in an isolated campaign to be

finished before forces from Earth can interfere. Timing is of essence in this game — outguessing your opponent while his CAP (pardon me, that's Combat *Space* Patrol) is down for servicing. However, the key to the game is the static defenses: missiles to pick off the incoming ships at long range and lasers to swallow up those who close. Massed attacks are necessary to saturate these defenses. While this game is not particularly good science fiction, it is fun to play. 6/SLJ

BattleFleet Mars (SPi)

B. Hessel & R. Simonsen/G. Costikyan

Two 22" by 34" maps, 400 playing pieces, 2 record keeping pads, 2 distance measures, 28-page rules, 2 six-sided dice, pasteboard box and counter tray. \$15.00.

As the close of the 21st century draws nigh, the colonists on Mars, several asteroids, and the moons of Jupiter wish to cut their ties with the Ares Corporation. That corporation, headquartered on Earth, has been exploiting its field workers by making Mars a "company planet." Ares will not let its lucrative profit margins be reduced, and so the colonists go to war. The resulting conflict is examined at two levels: ship-to-ship and in overview. The tactical game pioneered an excellent three-dimensional movement system, a streamlined method for recording ship functions, and a realistic combat system (i.e., in its extrapolation of current science and weapons systems). In short, the game is "hard" science fiction. Unfortunately, the tactical version has several weaknesses as a game, chief among them being the non-dependence of ships upon each other (which eliminates most positional play). The strategic game, on the other hand, is worth the price of the game alone. The design encompasses the revolution of the planets about the sun and the movement of ships according to Newtonian Law, and includes an elegant political system. The object is not to win a purely military victory — a goal neither side can really afford — but to place enough economic, military and political pressure on the other side to force capitulation. To this end, players may perform sabotage, implant spies, attempt assassination (of spies), and negotiate truces. Each turn the players consult the political indices and determine how news of the war affects their respective populations. Every time there is a battle, it may be resolved using the tactical game, or via a simplified strategic version. *BattleFleet Mars* remains one of the better science fiction games. 8/EG

Belter (GDW)

M. Miller & F. Chadwick

22" by 28" map, 480 playing pieces, 3 sheets of charts and tables, 12-page rules, 1 die, pasteboard box. \$11.98.

Belter is a multi-player game in which players take the roles of the leaders of great mining corporations which are in competition for the wealth of the asteroid belt. Competition is by political, economic and military means (on the theory, apparently, that there ain't too much law and order out in them ther asteroids). Features include: prospecting and mining system, maintenance rules, a system for recruiting personnel, a nice rule on labor relations (transferring personnel, riots, strikes, etc.), shipping and equipment purchase rules. The advanced game brings into play the PKF (Peace Keeping Force), dedicated to protecting the industrialized states back on Earth. The PKF Player wins by maximizing price for the products of the belt. That player may also accept bribes (if simulations are teaching devices, then...). When greedy corporate players are allowed to revolt against the PKF, it is a bit too much of a good thing, since it takes *Belter* out of the realm of limited conflict into a more conventional setting of revolt and repression that muddies the basic themes of the game. Still and all, an interesting product with much to recommend it. Moderately complex, and playable in an afternoon. 7(10)

Bloodtree Rebellion (GDW)

L. Willis/J. Harshman

22" by 28" map, 480 playing pieces, city maps display, 4 organization displays, 16-page rules, 1 die, pasteboard box. \$12.98.

The human-colonized planet Sombra is occupied by a clone regiment whose purpose is to insure the exploitation of the planet by the Petrochem Orionid interstellar cartel. Needless to say, the indigenous populace is less than thrilled by the presence of these futuristic Hessians. Accordingly, they rebel. Deep within the Bloodtree forests they set up their sanctuary and begin a guerrilla campaign against their oppressors. This is the framework of the game. Within that framework, the rules allow for agtprop, assassinations, kidnappings, riots, demonstrations, arrests (and prison breaks), desertions from the ranks of loyal troops, espionage and most of the other elements of modern insurgency. Interestingly enough, if you remove the sf trappings, you have a very accurate treatise on the "little wars" of our own age. Some-what complex, but playable within a few hours. Buck Rogers goes to Vietnam. 6(10)

Chitin: I (MC)

H. Thompson

8.5" by 14" map, 112 uncut playing pieces, 24-page rules (largely advertising), resealable plastic bag. \$2.95.

Science fiction provides many possibilities, most of which have not yet been explored by wargaming companies. Luckily, the designer of *Chitin: I* is a Jack Vance fan who saw fit to borrow an idea from his id. The game posits a planet dominated by intelligent insects who regularly slaughter each other in "harvest wars," fought for the rich *vlaras* which the hive uses for sustenance. The game uses a standard "move/fight" sequence of play for two sides. The design departs from the norm when it liberally does out combat bonuses by

unit type, making for a tactical daisy chain in which one unit type is extremely effective against a second type which is effective against a third type, etc. While the combat units are busy rending and tearing at the psychic behest of leader types called "basics," the workers scramble around trying to snag as much *vlaras* as possible. Fairly short and simple. Lots of fun. Those with a taste for the bizarre will appreciate their units' ability to eat friendly casualties. 5(10)

Colony Delta (FGU)

A. Gruen

Two mounted 11" by 17" maps, 2 sheets of playing pieces (about half blank), 13-page rules, one die, pasteboard box. \$12.00.

Humans and aliens join in a brushfire war over a rich colony world. The humans (from Earth) compete with the "Siggies" (from Sigma Draconis, and suitably bug-eyed), both claiming the planet because of their colonists. Winning is by Victory Points, which are gained by farming and mining the planet, not fighting the enemy. Indeed, purchasing troops costs Victory Points, rather than money, so a purely military campaign could win battles at the expense of losing the war. As an added fillip, the planet has semi-intelligent (whatever that means) native life which dislikes all aliens. This is abstracted in an attrition rule, which is supplanted by alien units in the advanced game. The chief drawback with the basic game is the lack of action. Each player may only make six round-trip deliveries to the planet in twelve turns, and must use these to bring in everything (not only colonists). The advance game removes these limits, but will last for a decent while. 5(10)

Dixie (SPI)

R. Simonsen/J. Nelson

17" by 22" map, 100 playing pieces, 12-page rules, six-sided die, resealable plastic bag. \$4.00.

If some preparatory text were included with this package, it could be titled "How Not to Design a Wargame." It seems the Confederacy secured a peace treaty with the Union at the end of the Civil War by mutual exhaustion, and so remained independent. It is now the midst of the Depression, and war has begun anew. The rationale is plausible, but the game robs it of its credence. First, both sides begin the game with virtually identical forces. This may work well in chess and Go, but those are not played on a map of the United States. The real culprit is the Administrative Point system, which is structured so that the player with the greater number of points is the winner, given at least mediocre play. There are a host of other problems, but this dead horse has had the skin flayed off it long ago. Of course, one should not waste time or money on *Dixie*, but students of the history of wargames might be interested to know that the concept of Administrative Points was invented with this game. 2(10)

Dune (AH)

Future Pastimes/M. Uhl & R. Hamblen

22" by 28" map, 3 sheets of playing pieces, 2 battle wheels, 54 cards, player aid pad, 8-page rules, pasteboard box. \$15.00.

Frank Herbert's *Dune* has been rendered into game form by the designers of the estimable *Cosmic Encounters*. Gone from the transfer of novel to game is the "reproduce

everything down to the protagonist's sneeze on page 182" approach; it is replaced by a game which is intended for the family market. Players become characters representing one of six different factions on Arrakis; each character will lead his or her faction to glory (i.e., control of the planet) or defeat. The system centers around control of spice, which is highly addictive and the main export of Arrakis. Battles are won and lost dependent on the number of spice tokens present in an area. Treachery, storms and the fearsome *shai-hulud* (gigantic sandworms) enliven affairs. *Dune* is a nice little game, but nothing special. 6(10)

GEV (MC)

S. Jackson

12" x 14" map, 135 uncut playing pieces, 24-page rules, resealable plastic bag. \$2.95.

This game is compatible with *Ogre*, but concentrates on the interaction of the other weapons systems, primarily the GEV, or Ground Effects Vehicle. Presumably this is "Son of *Ogre*!" It is good enough to warrant "Revenge of Son of *Ogre*." *GEV* is not as clean as *Ogre*, but probably has more replay value. There are some imaginative scenarios, including one involving an armored train. Possibly the best single micro game. 8(10)

Godsfire (MC)

L. Willis

Two 22" by 34" maps, 980 die-cut playing pieces, 616 uncut playing pieces, 15 system sheets, 6 national government sheets, 16-page rules, pasteboard box. \$15.95.

Those who dream great dreams of galactic domination will like this one. From two to fifteen players can take part, though components are provided for only eight. *Godsfire* is divided into a basic and an advanced game. The basic game concentrates on the mechanics of operational space combat in three dimensions. The advanced game adds a thick pastiche of political and economic elements, including taxation, loans, production, political parties, revolts, subversion, diplomacy, inflation, elections.... Well, anyway, there's not much left to the imagination. Either the basic or advanced games would have been quite interesting alone, if further developed. Taken together in unproffered form, they are a wee bit too much. The amount of data the players are asked to handle can be immense even when only two are competing. Quite long and complex but definitely worth a good look, if systems politics in the far future is your bag. 5(10)

Holy War (MC)

L. Willis

12" by 14" map, 135 uncut playing pieces, 24-page rules, resealable plastic bag. \$2.95.

Amтик is a nebulous, space-dwelling creature some 400,000 kilometers long. Out of scientific curiosity, it has enclosed a cosmic anomaly within itself, and created a pocket universe. Unanticipated intelligent life developed on the planets in this universe and discovered seams on either end of Amтик, which led to a religious schism. The resulting war between the Holy War, who believed in Amтик as a god, and the Sun Throwers, who wished to give Amтик a "hot-seam" by hurling a star into a seam, was rather bloody. If the player is interested in the struggle, that is too bad. The rules to *Holy War* are extremely

difficult to decipher, and, as the game is interpreted by the designer, only one side may win. The design concepts are worthy of a true development being essayed on the game; hopefully, Metagaming will see fit to do so. *2 (EG)*

Ice War (MC)

K. Gross
8.5" by 14" map, 135 uncut playing pieces, 24-page rules, resealable plastic bag. \$2.95.

Metagaming apparently decided that SPI should not have a monopoly on arctic warfare and anagrammatical names. This one postulates a raid by something called the Eurasian Socialist Alliance on the oil fields at Prudhoe Bay within the larger context of a USA-ESA war. Included are a variety of unit types, among them sled-borne troops, infantry and outposts, as well as others. There is heavy emphasis on limited intelligence and the effect of various weapons on the ice pack off the bay. Playable in 45 minutes or less. Simple, but fun. *7 (DR)*

Imperium (GDW)

M. Miller
22" by 34" map, 352 playing pieces, two sheets of charts and tables, 12-page rules, 1 die, pasteboard box. \$9.98.

This one has Terra as the home of the barbarians who have come in contact with the ancient and powerful (but decadent) Imperium. Much of the game is fairly standard fare: the infrastructure of limited conflict between a young, self-confident, somewhat savage civilization (our own) and the older, less corkscrew culture of the Imperium is what really powers this design. Since the sector portrayed is little more than a backwater in the vastness of the Empire, a problem could have arisen in the game balance (i.e., the likelihood that a galactic Empire could easily crush upstart Earth). The designer has neatly solved the problem with a minor gem of a system: The Glory Index. Basically, the conflict becomes one of Terran barbarians versus the Provincial Governor of the sector (who wins by accumulating Glory Points, representing the number of times his name is mentioned in a positive light at the Imperial court). This is either a serendipitous design or a cold-blooded development of a classic. Nicely conceived and beautifully executed. A moderately complex game, playable in a few hours. *8 (DR)*

Invasion: America (SPI)

J. Dunnigan/J. Nelson
Two 22" by 34" maps, 400 playing pieces, 16-page rules, six-sided die, pasteboard box and counter tray. \$18.00.

A paranoid patriot's nightmare is simulated in this near future history game. The United States' position in the world power structure has been reduced considerably; in fact, the other three world powers have decided to annex the U.S. and Canada for their material riches. A coalition of South American, European and Far Eastern countries (whose names are rendered as alphabet soup) spearhead the invasion, supported by the Soviet Union, which has developed laser technology capable of destroying nuclear weaponry. The action takes place on a beautiful map of North America and, for a large game, plays quite well. The concept of "untried" units was first used here (i.e., a player does

not know the strength of a unit until it is involved in combat). The system covers amphibious landings, air and naval action (though the U.S. Navy has already been sunk). There are serious problems in the scenario victory conditions and some of the miscellaneous rules; the game is not one this writer would play more than once. There was enough interest in the system, however, to do a game in which the Soviet Union got the same treatment (*Objective: Moscow*). *6 (EG)*

Mayday (GDW)

F. Chadwick
Four 8" by 11" maps, 120 playing pieces, 8-page rules, resealable plastic bag. \$5.00.

This game may be played by itself or plugged into GDW's *Traveller* as a ship-to-ship combat resolution module. The simple vector movement system utilizes counters to represent the past, present and future position of each ship in the hexfield. The combat system features missiles distinguished by propulsion and guidance types, but also includes lasers. Combat, maneuver and navigation are all affected by the capacity of the ship's computer and the program currently in progress (a nice touch). Relatively simple. Playable within two hours. *6 (DR)*

Ogre (MC)

S. Jackson
8.5" by 14" map, 112 uncut playing pieces, 24-page rules, resealable plastic bag. \$2.95.

The first of the MicroGames, *Ogre* started an avalanche of small, fast, playable games which continues to this day. The basic scenario pits the "unstoppable thing," in this case a 50-meter high cybernetic super-tank, against a conventional force of 21st century cannon fodder (infantry, howitzers, several varieties of tank, and something called a Ground Effects Vehicle or GEV). The *Ogre* player keeps a record of his available missiles, state of his treads and the conditions of his main and secondary batteries and anti-personnel weapons systems. His opponent just throws everything available at the *Ogre* and prays a lot. Playable in 20 minutes once the system is understood. A panzer freak's ultimate dream. *7 (DR)*

Olympica (MC)

L. Willis
8" by 14" map, 96 uncut playing pieces, 24-page rules, resealable plastic bag. \$2.95.

U.N. forces are attempting to raid Mars to capture the "Web Mind Generator," which closely resembles a big, bright green pleasure machine that turns all under its influence into dedicated servants of the Web. The dedicated men and women of the expedition face fanatical webbie infantry dug into strongpoints inside their tunnels. The U.N. troops do have all manner of sophisticated weaponry, laser tanks for support and a giant drill to break into the tunnels holding the machine. The game borrows quite shamelessly from Heinlein's *Starship Troopers*, but for all that (and despite a really horrible map) is fairly interesting and fun. Playable in an hour or so. Moderately simple. *5 (DR)*

Outreach (SPI)

I. Hardy/B. Hessel
22" by 34" map, 400 playing pieces, 2 charts and

tables sheets, 16-page rules, six-sided die, pasteboard box and counter tray. \$12.00.

The *Outreach* rationale completes the future history begun with *StarForce*. After the human race has surpassed the other races within twenty-five light years of Sol through a series of interstellar wars, it is ready to struggle for galactic hegemony. The ability to explore and colonize becomes as potent a weapon as military might. The technicolor map portrays most of our galaxy, with each hex coded for its habitability, how navigable it is, etc. The unique system allows for the creation of alliances, setting up colonies, and discovering the center of the galaxy (where some incredibly ancient race has left records of the secrets of the ages), etc. *Outreach* has enough play value to entertain the first few times it is played, but then degenerates into a mathematical puzzle. Still, the ideas and general direction of the design allow the enterprising player to design a much better game. *6 (EG)*

Snapshot (GDW)

M. Miller
17" by 22" map, 120 playing pieces, chart sheet, 28-page rules, 2 dice, pasteboard box. \$7.98.

The folks at GDW do come up with strange titles — *Snapshot* is a game of sentient-being to sentient-being combat aboard a ship in deep space environment. The game may be linked with *Traveller*, presumably whenever there is a mutiny, a boarding action (shades of the Jolly Roger!) or over-eager customs officials. Discussions of the improbability of a ship being hijacked in deep space aside, this game is a reasonable stand-alone adventure (four scenarios are included). *Snapshot* has the distinction of having the largest combat results table in all of wargaming — it spans 10 pages. The scale is 15 seconds a turn and 1.5 meters to the square. A section on character generation is included for those who do not have the parent game. Slightly more complicated than necessary, but fairly playable. Adventures can take half an hour or an afternoon. *5 (EG)*

StarForce (SPI)

R. Simonsen/J. Young
22" by 34" map, 200 playing pieces, 24-page rules, plot pad, six-sided die, pasteboard box and counter tray. \$12.00.

Earth has sent her children to the stars, where they will meet and do battle with other races. Interstellar travel is an inexact science, requiring the use of specially-designed "teleships" run by strongly telesthetic and mildly telekinetic women. Since such women are extremely rare, Earth's capability to wage war (not to mention commerce) is very limited. The aliens have similar problems, so the result of each war is a huge number of civilian losses and the capture of the losing race's home planet. Despite the grim nature of the rationale, the game itself is "bloodless." Ships may be moved an unlimited distance on the stellar display (which extends three-dimensionally 21 light years from Sol); however, the further a ship attempts to move, the less certain its chance of arriving at the desired destination. Combat results in the vanquished ship being neutralized, or randomly teleported to another location. Battles are conducted on a small tactical display, with a ship's strength being dependent on its range from its target and on how the owning player wishes to allocate

that strength (offensively or defensively). Play can seem very stale at times, due to the peculiarities of the system. *StarForce* was the first mass market science fiction wargame, and holds up remarkably well.

6(EG)

Star Quest (OSG)

E. Curran/T. Walczyk

11" by 17" map, 100 playing pieces, one plot sheet, 4-page rules, resealable plastic bag, \$3.95.

This is a limited scope tactical spaceship combat game. Each of the two to six players controls one ship and up to six missiles at one time. Movement is plotted prior to its execution along the X and Y axes (which is distorted due to the use of a hexgrid). The movement is pseudo-Newtonian, as velocity from prior turns carries over, and the gravitational effects of the star are felt at close enough range. Combat is resolved by missile only — if a missile passes through a ship counter, both are removed from play. This allows for rather stark victory conditions, in that the winner is the last player on the board. Ships may also be moved via "hyper-space jump" which positions ships randomly on the board. As a space combat game, it is more realistic than most, in that it almost obeys the laws of physics. It is also one that pays off both on the ability to plan ahead and react quickly. If one ignores the rationale (the game is based on a coin-operated game), and the minor inconvenience of photocopying the plot sheets, it is a serviceable little game.

5(SL)

Starship Troopers (AH)

R. Reed

22" by 28" map, 2 sheets of playing pieces, 1 map pad, 1 chart sheet, 24-page rules, 1 die, paste-board box, \$12.00.

Robert Heinlein's *Starship Troopers* is regarded as a science fiction classic; it is an anti-fascist satire written during the 1950's. The story is told from the viewpoint of soldiers in the service of an Earth with imperial aspirations. First, the humanoid Skinnies are conquered (and become subject allies), and then the Arachnids are annihilated. The game examines the conflict at a tactical level: almost all the scenarios concern a landing by Terrans into enemy territory. The system used to simulate these future battles is a *PanzerBlitz* derivative (which is a game of WWII Eastern Front battles). Of course, there are many rules to account for the special nature of an atmospheric landing — and also for the peculiarities of the alien cultures. The emplacement of the Arachnid tunnels, which is crucial to the play of the most interesting scenarios, is handled via a plot pad. The play of the game will prove interesting for the first few times, but then the simulation value of the game will be exhausted — this cannot stand on its own as a game. The designer should not be held wholly responsible for this problem, since simulating an aspect of a popular novel is almost as difficult as fitting the proverbial square peg in a round hole. Simulation of a novel proves harder than that of history because the designer must satisfy both those who wish rigorous attention to detail and those who want a fun game.

5(EG)

Stellar Conquest (MC)

H. Thompson

17" by 22" map, 480 playing pieces, 80 star cards,

sheet of *Player Records*, 16-page rules, paste-board box, \$15.95.

The classic game of inter-stellar system warfare. One to four players start in their respective corners of the map and come out colonizing. As the number of star systems under their control increases, the players almost inevitably come into contact and conflict with each other. Rules include system exploration, ship-to-ship and ship-to-planet combat, the effects of technological research, production and population increases, and conquest of colonies. Extensive record keeping is required in play, but the payoff for all that writing is fairly substantial.

After five years and three printings, the game remains almost as fresh and exciting as the day it was published. Somewhat complex and long, but can be completed in an afternoon.

7(DR)

Traveller (GDW)

M. Miller

Three c. 40-page rules books, pasteboard box, \$12.00.

The game contains three booklets dealing with generating, supplying and adventuring with an imaginary character. The basic game allows characters to become explorers, free traders, con men, etc., within the generalized context of a sprawling, loosely organized Imperium. Succeeding releases in the series expanding upon *Traveller* include: *Mercenary* (rules for generating army and marine types and details on training and combat), *High Guard* (rules for the organization and use of various navies within the *Traveller* construct), *1001 Characters and Animal Encounters* (pre-generated characters and beasts for those too lazy to make their own), *The Spinward Marches* (maps and tables of information on one Imperial subsector), *Citizens* (more spoonfed characters), *Mayday* and *Snapshot* (games which may be played separately or to resolve battles in the *Traveller* construct) and *Kinurir* (a programmed adventure using the *Traveller* rules). This game starts where *Dungeons and Dragons* left off, but, if there is any justice, will end up being more popular than that venerable relic. For one thing, the *Traveller* rules are fairly consistent (more so than is usual for such games). For another, unlike the first generation of role-playing games, this one requires no referee or gamesmaster. Somewhat complex. Variable playing time.

8(DR)

Science Fantasy

Alien Space (ZE)

L. Zocchi

36-page rules, eight 4" x 4" cardstock playing pieces, resealable plastic bag, \$7.00.

Alien Space was one of the first commercially published games dealing with tactical space combat. There is no board; instead, each ship is represented by a 3-inch square with a ship silhouette and a 360° compass rose superimposed. The squares are placed on the table (or floor, if you live in an apartment and don't have room for ping-pong) and movement is conducted by measuring distances with a yardstick. Ship data — speed, power allocation, damage status, and so forth — are recorded on data sheets pro-

vided in the rules (which must be xeroxed if they are to be reused). Combat is conducted using a rather simple system; a string is fastened to the middle of each ship's square, and when it is his turn to fire, a player estimates the angle at which his ship must fire, then lays the string out along this angle on the ship's compass rose — if the string intersects the enemy ship, it has been hit. This is not precisely realistic, but it produces a fast-moving and enjoyable game. *Alien Space* is not for the hard-core simulations freak, but it's certainly a pleasant way to kill an afternoon.

6(EG)

Atlantis: 12,500 B.C. (EG)

D. O'Leary

22" by 28" map, 74 playing pieces, 111 page rules, resealable plastic bag, \$3.40.

This goober was designed for the esthetically retarded. The components include a map, of sorts, showing the world of 12,500 B.C. replete with a few extra continents, perforated counters reminiscent of the worst of Zap Comix, and the aforementioned single rules page. If you are into the turgid nonsense churned out by Erik von Daniken and company, this should please you no end. The premise is that Mu and Greece are locked in a death struggle with Atlantis in which such exotic weapons as hovercraft, rocket bombers and flying saucers vie with (presumably spear-armed) infantry, giants and mythological monsters. Double ugh! The rules are so sketchy as to be non-existent and, if it weren't for the fact that this rearguard of low-grade pulpdom's worst sins is so unintentionally funny, the game would long ago have been confiscated by the Surgeon-General as hazardous to our mental health. By all means, do throw your money away on this.

1(DR)

Black Hole (MC)

R. Taylor

8.5" by 21" map, 135 uncut playing pieces, 24-page rules, resealable plastic bag, \$2.95.

Black Hole has two sides duking it out over a doughnut-shaped asteroid with the unfortunate name of Dunkin'. In the center of the asteroid is a black hole (quick, recall all astro-physical texts and have them revised to account for this amazing discovery). The unique shape of the battlefield provides most of the interest of the game. Since most of the weapons with which units landed on Dunkin' are projectile-types, the various missiles tend to whiz off the map and come around the other side in a turn or two (which makes for a good deal of uncertainty). Oh, yes, there's the black hole from which the game takes its name. Actually, the black hole doesn't have much effect on play, except to randomly radiate units trying to jump across the hole from one side of the doughnut to the other. However, it does make a hell of a good title. Playable in an hour or so. Moderately simple.

6(DR)

Cosmic Encounter (EP)

Future Pastimes

5 hex "tiles," 80 plastic playing pieces, 16 colored discs, 54 playing cards, 15 Alien Power cards, cardboard case, pasteboard box, \$12.00.

Cosmic Encounter is a game you're going to be seeing more of, like it or not. It is by no means a wargame; it is a relatively simple,

mass-market-oriented game. It is also a classic, and despite Eon Products' small size and distribution, it is destined to become one of America's favorite games — on a par with *Monopoly* and *Risk*. Each player controls a single solar system with five planets. His objective is to gain bases on five planets outside his home system. Combat and conflict is handled according to an extremely simple system, which is explicitly described in 500 words of rules. But a game of *Cosmic Encounter* is considerably more complicated — and wilder — than those simple rules would imply. You see, each player has a Power, which allows him to break, change, or circumvent one or several provisions of the rules (depending on his power). The result is a weird, constantly mutating, and gripping game that does not lose its appeal even after innumerable playings. The addition of any of the four expansion sets makes *Cosmic Encounter* even more fascinating. **9(GC)**

The Creature that Ate Sheboygan (SPI)

G. Costikyan

11" by 17" map, 100 playing pieces, two 1-page charts and tables, 4-page rules, pasteboard box or resealable plastic bag. \$5.95 boxed, \$3.95 soft-pack.

It's 1:30 a.m., and all regular programming for incommensurate TV station is over. Now, insomniac viewers are treated to *Gongo*, the giant dinosaur/ap/sect methodically destroying an English/Japanese/Midwestern city, because pollution/radiation/an ancient curse made the fearsome beastie grow large and ornery. No matter how highbrow you fancy yourself, you probably have not escaped such a film. *Creature* is a delightful treatment of this genre, pitting one player as the monster versus the other player as the National Guard, police and populace of Sheboygan. The monster is constructed from an initial allotment of Strength Points, while human forces are chosen via a similar method. The monster comes rampaging onto the board, burning city blocks, grabbing helicopters and munching on them, and using any of its special abilities (flying, web-spinning, lightning throwing) to terrorize the innocent citizens. Tanks and guns then enter the fray, and the game almost always proves tense. Six different monster counters are provided, so a player's favorite monster may be used. Since *Creature* even appeals to non-gamers, no one should be without a copy. **9(GE)**

Double Star (GDW)

M. Miller

22" by 28" map, 480 playing pieces, 2 sheets of charts and tables, 8-page rules, 1 die, pasteboard box. \$9.95.

An Islamic culture and a Chinese culture have settled separate planets of a binary system. The Chinese, having settled the poorer of the planets, ultimately attempt to increase their living standard via military means. The premise of the game is sociologically absurd. The science is almost equally ludicrous (the planets of this system are not inhabitable as described), but the game is so much fun that lapses in logic are soon forgotten. What powers the game is the insertion of minor touches of detail at the right places, creating a patina of verisimilitude throughout. Fairly detailed interaction between fleets and planetary defense systems, nice mechanics for entering and exiting planetary

gravitational fields, and use of formations in fleet engagements are all included to good effect. A nice touch is the "training" rule which limits the effectiveness of fleet units which have not operated together for a sufficient period to operate formations. All in all, this is a honey that chooses to entertain by doing a few things and doing them well. Playable, rather than definitive, you might say. Moderately complex. May be played in an afternoon. **7(DR)**

Freedom in the Galaxy (SPI)

H. Barasch & J. Butterfield

22" by 34" map, 400 playing pieces, 140 cards, 12- and 32-page rules, 2 six-sided dice, pasteboard box and counter tray. \$19.95.

A disclaimer at the beginning of the rules book might read "Any resemblance between this game and an extremely popular movie is purely intentional." That's right, kids, there is this evil Galactic Empire being opposed by a small but valiant band of rebels, including The Incredibly Brave Young Hayseed, The Lovely Princess Who Satisfies Her Conscience, The Wise Old Man, etc. The required villains are at Stage Left. *Freedom* is divided into a Star System, a Province and a Galactic Game, so players may choose the level of involvement (and concomitant amount of time) in the game. The map displays the inhabitable star systems of the Empire, and is extremely attractive. However, most of the action is conducted via the character and action cards. Characters are used to perform missions on key planets — these can vary from sabotage, recruiting allies, and starting or stopping rebellions to leading an army against the foe. The rules format allows players to layer on sophistication, up to the Planetary Stabilizer (Empire jargon for a weapon capable of destroying an entire planet — no John Dykstra special effects included). The game is marred by the cutesy approach used in naming characters and places; many are simply anagrams for SPI staffers' names, bad puns, or true nonsense words. However, the amount of care that went into the game and the smooth flow of play make *Freedom* a very good game. It is certainly the most professional development effort in science fiction and fantasy this past year. **7(EG)**

Invasion of the Air Eaters (MC)

K. Gross

12" by 14" map, 135 uncut playing pieces, 24-page rules, resealable plastic bag. \$2.95.

Alien creatures cast covetous eyes upon fair Mother Earth, but must transform the atmosphere to sulfur dioxide before they can breathe it. The aliens begin with a mothership and base, plus a few other units. A base may be used to build another base, combat units or atmospheric converters. The latter is used to alter the atmospheric index toward zero; if it gets there, the aliens have their version of clean air. The earthlings begin with armies and submarine fleets, neither of which is very useful for attacking the aliens. Numerous more effective types can be built, but Industrial Units must be expended to have a chance of building such units. The number of available IU's is limited by alien activity. The design should have made for an intriguing game of management as well as combat, but the aliens never lose. This may be a design statement that certain corporations have saturated the atmosphere with

too much sulfur dioxide already, but it does ruin the play value of the game. **4(SL)**

John Carter (SPI)

M. Herman & E. Goldberg/E. Goldberg

22" by 34" map, 400 playing pieces, 168 cards, two 8-page charts and tables, 16- and 28-page rules, six- and twenty-sided dice, pasteboard box and counter tray. \$19.95.

John Carter is a character role-playing game based on the E.R. Burroughs' "Barsoom" series. The rules to this game are presented in a semi-modular format, offering a number of possible "games." These range in subject matter from a superlunary Military Game through three levels of character games (The Dueling Game, The City Sub-Game and The Strategic Game). With the exception of the Military Game, all of the modules present the same basic structure: a villain has captured the fair love of the protagonist and must be given his just deserts by the hero. The distressed damsel must be rescued before she is subjected to "unspeakable acts" (think about it!) at the hands of the villain and/or his henchmen. The differences are in the scope of the scenarios. Where the Dueling Game deals with the denouement of the hero's quest, the City Game places him at the penultimate decision point of the story (seeking to come to swordpoint with the villain once he has traced him to a city), and the Strategic Game starts at the very beginning, with the hero pursuing his lonely love and her evil abductor across the vast expanse of Barsoom. All three levels can be used together within the Strategic Game. The game is notable in that winning is not all... not by a long shot. Like Burroughs' original heroes, their cardboard counterparts must win only by fair means. To win by engaging in foul acts — which, among other things, loses the love and respect of your lady — means that, in game terms, you've lost the whole *enchilada*. For the first time in the history of the hobby, a game has been built around such themes as love, romance, treachery, remorse, hatred and friendship. The only thing which happily remains vague is just what happens between the time John Carter and Dejah Thoris tie the nuptial knot and Carthoris appears on the scene. Somewhat complex. The Strategic Game plays in about 6 hours. Other games take considerably less time. **8(DR)**

Lords of the Middle Sea (TC)

L. Willis

22" x 34" map, 240 playing pieces, 16-page rules, 4 chart sheets, resealable plastic bag. \$10.00.

Nuclear holocausts have been credited with causing many a future North America, but none so delightfully bizarre as that described in *Lords of the Middle Sea*. The Middle Sea of the title occupies what was once the Middle West, and elsewhere the geography of the Americas is pretty much the same. Several quasi-feudal kingdoms have arisen, and many of these ply their trade across the Middle Sea. Still others ship goods by devices which resemble ornithopters. The heads of state in this latter-day America have developed magic, and are much feared for it. However, the game is not a fantasy game with a science fiction background; rather, it is a well-balanced presentation of medieval forces doing battle with the aid of supernatural and technological help. While this is a fairly simple strategic game, there is

enough of substance to warrant several playings.
7(EG)

Metamorphosis: Alpha (TSR)

J. Ward

32-page rules book. \$5.00.

The propulsion drive and the minds of the passengers on a spaceship are discombobulated when passing through a giant cloud of cosmic radiation. Furthermore, the radiation causes rapid mutation among all the passengers, but does not interfere with the workings of the life-support system and other internal machinery. Since this is a role-playing game, each player represents a mutant who is theoretically trying to repair the ship's drive so he may go home again. In actuality, the player as mutant will search through the various rooms, attempting to gain ray guns and medkits and, incidentally, slaughtering the occupants of those rooms. If this sounds vaguely familiar, it's because *Metamorphosis: Alpha* is *Dungeons and Dragons* in space. Regrettably, one can only stretch a great idea so far; this offering is far too contrived to gain acceptance in the minds of most players. Perhaps Roger Corman (king of science fiction B-movies) will bid for the film rights to the game. 3(EG)

Quazar (EG)

Four 21" by 27" maps, 840 playing pieces, charts and tables, 6-page rules, resealable plastic bag, \$12.00.

The Quazarian Galaxy, a humanoid galactic society, is being threatened with invasion by something called the X-confederation. The two sides maneuver and conduct combat within the framework of a fairly standard, but not very complete, set of rules. The most innovative element in the design is the random appearance of secret weapons for both sides. The rationale is not quite as logical as, let's say, a Marvel Comics plot, but if you bought this gobble because of the cover, you shouldn't expect better. Set-up time of about two hours with an equal amount of time absorbed by each Game-Turn (called a "time phase segment" in the rules). There are 40 turns in the game. Slow. Simple. Deadly. 2(DR)

Rivets (MC)

R. Taylor

8.5" by 14" map, 112 uncut playing pieces, 24-page rules, resealable plastic bag. \$2.95.

Rivets is a two-player game of robotic conflict set sometime after the utter obliteration of the human race. Man may be dead, but his creations live on. In this case, the creations are the "boppers"—robotic tanks "with the average intelligence of an electric can opener." Each side's boppers are controlled, built and programmed by that side's BCPC (Bopper Control and Production Center). The game depends on a variation of "rocks break scissors" combat system, in which the various types of boppers are programmed by their BCPC to attack only one other type of enemy bopper. Their program can be changed during the game, but so long as a Jack Bopper is programmed to attack only Tiny (pronounced "teeny") Boppers, they will ignore other unit types and will be at a disadvantage when attacked by an enemy they are not programmed to attack. If it all sounds slightly silly...it is. This one is simple, and should be played by players with the average

intelligence of an electric can opener. An average game lasts three-quarters of an hour. 3(DR)

Time War (YP)

J. Peek

21.5" by 27.5" map, 400 playing pieces, log sheets, 20-page rules, 2 dice, counter tray and pasteboard box. \$13.00.

Time War is not a wargame in the traditional sense, though it surely is a "conflict simulation." The board is an abstract diagram of time from 550 million B.C. to 2075 A.D. Twelve eras of varying length are delineated by concentric circles. The corners of the board are the "bureaus," or home bases, for each of the players. Here they train their time travel agents and conduct research to improve efficiency of such travel; they are also sanctuaries, as fighting may only be done in the past. Twelve radial lines intersect the concentric era circles; each intersection is known as a "Jonbar Junction." Initially, a set of black arrows is placed on the junctions of the neutral line to show the unaltered flow of time. The players' objective is to alter the flow to their advantage. Each player holds a hand of three cards, each representing a specific era. If he can make a controlled shift in an era for which he has a card, the black arrow is replaced with one of his own color (players should ignore the legends on the cards — most are in poor taste). Combat occurs whenever two players have operatives at one junction, and results in the total elimination of one force. Thus, it is necessary to keep a constant flow of replacements heading into the fray. Since the more effective operatives take longer to train, players may be forced to be gun-shy in play. The move mechanics require a more than ample amount of time, but do make planning and outthinking the opponent paramount. *Time War* is an excellent effort into a heretofore unexplored field, and thus many of its flaws should be excused. 7(SL)

Villains & Vigilantes (FGUI)

J. Dee & J. Herman

One 40-page rules booklet. \$6.00.

Villains & Vigilantes is a superhero role-playing game — that is, players assume the persona of superheroes. Requisites are not rolled; instead, the gamesmaster assigns requisites equal to his judgment of the player's abilities. This is a bit silly, actually, as gamers tend to be introverted, bookish types while superheroes are brawny, Conan types; but the purpose here is not to argue with a design decision. The designers have obviously done extensive research, as they list an innumerable volume of different superhero powers — I can't think of any powers omitted from the list. Since *V&V* ostensibly follows the Comics Code, characters are not permitted to be supervillains; the Comics Code prohibits villains from being presented in favorable or sympathetic light. *Villains & Vigilantes* is an imaginative, enjoyable game. Its major problem is "creeping *D&D*ism;" most of the game-systems are directly derived from *D&D*, and are out of place in a superhero rpg. Also, the short rules do not really provide enough background material and world-design advice for a full-scale role-playing game. 6(GC)

War in the Ice (SPI)

P. Kosnett

22" by 34" map, 400 playing pieces, 24-page rules, 2 six-sided dice, pasteboard box and counter tray, \$12.00.

The two great superpowers have run out of African and Asian continents in which to conduct their brushfire wars by the 1990's. Since penguins are unable to petition the United Nations for sanctions against invaders, the US and USSR get a chance to test out their arctic weaponry. The cost of producing such weaponry is quite expensive, so the number of vehicles and men committed to the Antarctic War is limited. *The War in the Ice* system meshes land (or snowdrift), air and electronic warfare. The electronic warfare mechanic is an excellent idea, which helps flesh out a rather spare skeleton of conventional game ideas. Regrettably, there is not enough play value in the game to make this potentially fascinating situation come alive. The various scenarios plod along until the players seek a more amusing diversion (such as throwing snowballs). Even the background is poorly constructed: a lost civilization is found beneath the Antarctic surface, beginning another war for its technology. It's an amusing idea, but doesn't belong in this package. 4(EG)

Fantasy

Annihilator/OneWorld (MC)

W. Armintrout/J. Tucker

8.5" by 14" and 12" by 14" maps, 135 uncut playing pieces, 24-page rules, resealable plastic bag, \$2.95.

OneWorld takes the childhood game of "rocks break scissors" and attempts to dignify it by using that system (thinly disguised) to power a game. The premise is a world in which two gods strive for dominance. Their children, in the form of blade, stone or fog, attack the rival god. The game ends when one god is destroyed. This one doesn't even qualify as cotton candy. *Annihilator* is even simpler than *OneWorld*, but manages to hold a bit more interest. A planet-killing, computer-controlled spaceship is heading toward Earth and must be stopped. One player becomes the computer; the other leads a boarding party which has the task of destroying the computer with demolition charges. The computer's automatic defenses (plus some robots) are a fairly significant challenge to the boarding party. The result is a nicely balanced game which almost succeeds in overcoming the flimsiness of its premise. The two games are playable in one-half to three-quarters of an hour. 2(DR)

Beast Lord (YP)

M. Matheny

Two 21.5" by 27.5" maps, 640 playing pieces, 4 set-up sheets, 4 screens, 20-page rules, 2 dice, counter tray, pasteboard box. \$15.00.

Beast Lord is a fantasy board game of a fairly conventional nature. A valley is more or less peacefully shared by three races (men, elves and goblins), but at its center is the lair of the Dragon. These ruins house the Great Sword of the almost mythic Beast Lord and are surrounded by the breeding grounds of the beasts who follow him. Strategically, the three races must each defend their own terri-

tory from the others, and then deal with the return of the Beast Lord and his army of unlovable creatures. Players gain Victory Points for wreaking havoc on other players' forces; how these points are garnered is strictly up to the players' consciences (alliances are not binding). Generally, a player will not be aware of where the other players' main forces are; a single counter on the board can represent nothing or a huge stack — the corresponding force is placed on one of the counter displays behind a screen. Physically, the game is quite sturdy, though some of the graphic choices are a bit peculiar (maize yellow for a map background?). The only truly defective component is the rules booklet, which leaves out crucial information. *Beast Lord* is really a four player game, and mediocre at that. **4 (SL)**

Chivalry & Sorcery (FGUI)

E. Simbalist & W. Backhaus
One 128-page rule book, \$10.00.

Chivalry & Sorcery was the first second-generation role-playing game. It, unlike previous frp games, contains complete rules covering almost every aspect of a European medieval fantasy world: a realistic and complicated combat system; extensive social rules; large-army combat (i.e., miniatures rules); a plethora of different modes of using magic; monsters; and characters. *C&S* is a must for experienced frps who have become sick of the insipid *D&D* system. It is not for novices, though; the 128 pages are filled with dense, compressed text, and the sheer quantity of information which must be read and digested before the game-system may be adopted will daunt the occasional frp gamer — although it will delight the hardcore gamesmaster. Another drawback is the fact that *C&S* is designed specifically for civilized medieval Europe, and requires a fair amount of work if it is to be adapted to other cultures; however, this drawback is mitigated by the publication of *C&S* supplements dealing with barbarians (*Swords & Sorcerers*) and intelligent reptiles (*Saurians*). Also in the works is an Asian medieval supplement, designed by the indefatigable Lee Gold. Although the lack of world-design rules and poor organization are sorely felt, *C&S* remains the best full-scale complicated frp game published to date. **6 (GC)**

Deathmaze (SPI)

G. Costikyan
200 playing pieces, 16-page rules, pasteboard box or resealable plastic bag, \$5.95 boxed, \$3.95 soft-pack.

The idea of adventurers going into a large hole in the ground to combat monsters guarding treasure is a very silly one. The concept of the "dungeon," as treated in most fantasy role-playing games, is totally illogical. But such is the popularity of *Dungeons & Dragons* that a "spin-off" game has been released. This is not to denigrate *Deathmaze*, which is a good enough small game, but to demonstrate that popularity lends credence to the most ludicrous of premises. Each player takes his character into the *Deathmaze*, a series of catacombs of ill repute. The shape of the *Deathmaze* is determined by the drawing of counters at random, and laying the sections adjacent to each other. All the standard elements of the fantasy role-playing dungeon are here: wandering monsters, monsters guarding trea-

sure in remarkably cramped rooms, and neat little magic items. Still, if one ignores the premise, *Deathmaze* will hold the attention of the purchaser as well as any of the recent releases. **6 (EG)**

Demons (SPI)

J. Dunnigan
11" by 17" map, 100 playing pieces, 8-page rules, pasteboard box or resealable plastic bag, \$5.95 boxed, \$3.95 soft-pack.

Here is the perfect present for Walter Mitty: a game in which demons can be compelled to give Mr. Mitty power over everyone who wrongs him. The demons can intimidate or slay his enemies, procure vast quantities of treasure, or cause women to fall in love with him. Each player assumes the role of a magician in medieval Armenia, seeking to employ demons to find treasure before the secular and spiritual authorities can catch up with him. Those authorities wish to torture the magical entrepreneurs, so the penalty for failure is high. The magicians are powerless by themselves, but as they master control of demons, they become able to ignore all opposition of mortal ken. The game may be played solitaire, and various systems are of interest, but *Demons* does not stand up to repeated playings. **5 (EG)**

Divine Right (TSR)

G. & K. Rahman
24" by 34" map, 280 playing pieces, 4 sheets of identity and personality cards, 1 sheet of diplomacy cards, 24-page rules, 2 dice, pasteboard box, \$10.00.

Divine Right is a fantasy boardgame a bit out of the usual mold. While there is some magic in it, it is essentially a game of military and political strategy. Thirteen states are represented on a mythical continent, and one of them is assigned to the two to six players at random. Each of the players is "on the board" in the form of a monarch piece, which, if killed or captured, knocks the player out of the game. Non-player monarchs are assigned personality cards which will govern their interactions with the players to some extent. The essence of the game is to create alliances with these non-players, recruit additional forces from the many available special mercenary units, and use these to eliminate other players from the game. Each player uses his ambassador piece in attempts to cement pacts between his country and a neutral (there are no inter-player alliances). Combat is based on a single die-roll, which may be modified by odds. The game systems employed make *Divine Right* well-suited for solitaire (despite its multi-player nature) and postal play. Play is fast moving, as usually few units are in play and lengthy discussions between players are not as important as in other multi-player games. The description tells nothing of the artistry and humor that went into its making, or the many ramifications and possible strategies available to a player. **7 (SL)**

Dungeons and Dragons (TSR)

G. Gygas & D. Arneson
Three rule books of c. 36 pages each, pasteboard box. Also: **Advanced Dungeons and Dragons:** Three hardbound rule books of c. 150 pages each; **Basic Dungeons and Dragons:** 32- and 48-page books, 5 polyhedral dice, pasteboard box. **D&D:** \$12.00, **Adv D&D:** \$39.00, **Basic D&D:** \$10.00.

The most important concept to be introduced to the wargaming hobby in the last ten years is that of role-playing. Unlike other wargames, role-playing games do not make clear-cut distinctions between winners and losers. To be sure, some players will do better than others, but since the game length is theoretically infinite, there is plenty of time to set matters right. *Dungeons and Dragons* is an impressive achievement based on the concept alone, and also must be credited with cementing the marriage between the fantasy genre and gaming. The actual game, however, qualifies for federal relief as a disaster area. If anyone can discern organization in the rules, he is eminently qualified to make a living as a cryptologist. The design shows a (hopefully unintentional) contempt for the English language and classical mythology. Matters become completely confused when combinations of typographical errors and game phraseology conspire to make phrases such as "1% liar" (in actuality, this reference is supposed to give the percentage chance of a particular beast being in its abode when adventurers happen by, but seems to have more relevancy to a polygraph test). Many of the people who play the game regularly have spent much time at redesigning the game to fit their particular needs, so that it is rare to find two groups playing the same version of the game. TSR has attempted to mend matters by issuing a more complex version of the original, but the revision creates as many problems as it solves. Though *D&D* is a mediocre game supported by a great idea, it will become the all-time wargame best seller in the not too distant future. **6 (EG)**

King Arthur's Knights (TC)

G. Stafford
One 16-page rule book, four-color map, 320 cards, resealable plastic bag, \$10.00.

In *King Arthur's Knights*, each player is a knight of King Arthur's court, wandering around Arthurian Britain in quest of holy objects and monsters and fair damsels in distress and tyrannical monsters to slay. As players move through provinces, they draw cards to determine obstacles encountered; such obstacles are of three types — knights, wizards and women. Knights may be slain or befriended; wizards may be slain or befriended, and the results of such an encounter may grant a knight a magical boon, or curse him, or send him on a quest. A knight must be especially wary when encountering women, for at one extreme he may be driven to suicide at the periphery of his love, and at the other he will find all of his advances rejected. In between, he may wed the damsel, in which case, he takes his wife and places her in the pile of cards containing his other possessions — magical swords, holy objects, and the like. *King Arthur's Knights* is an enjoyable game for an evening's entertainment; it is not particularly sophisticated, and falls after a few playings, but, after all, so do most other games. **5 (GC)**

Lankhmar (TSR)

F. Leiber & H. Fischer
22" by 28" map, 3 sheets of die-cut counters, 1 sheet of gear cards, 1 sheet of reward cards, 12-page rules, pasteboard box, \$10.00.

An accomplished author does not necessarily make a good game designer, even when he is designing a game based on a world of his own creation. Fritz Leiber has kindly pro-

vided the proof to this statement in this simple, lifeless game. Players become a character from one of Mr. Leiber's Fafhrd and the Gray Mouser stories, and gallivant across an area map of the land of Lankhmar. The character must fulfill games (i.e., quests), gaining much wealth for doing so. While a game cannot be expected to capture fully the mood of a story which it simulates, *Lankhmar* manages to strip the Leiber stories of interest. Many wargame companies now understand how to simulate history properly, but few know how to recreate a story. The basic mistake committed in *Lankhmar* is the design approach: the stories depend on a great degree of uncertainty (or mystery), which is absent in the game. 3 (EG)

Lords & Wizards (FGUI)

A. Gruen

One 60-page rules book, 4 chart sheets, 800 die-cut counters, four-color map, resealable plastic bag. \$12.00.

Lords & Wizards is a multi-player fantasy game of world conquest, resembling nothing so much as a fantasy *Blitzkrieg*. Combat is in-hex with multiple combat rounds, and differentiation between missile and melee combat. Units are differentiated not only by ownership and type, but also by race — human, dwarven, orcs, and so forth. (This last results in a graphics problem, as the units have neither race nor unit type printed on them; one must infer their nature from the illustration on the counter, which results in frequent reference to the counter summary in the game rules.) Magic is present, but is less important than in other similar games; strategic finesse is the major factor in determining the outcome of the game. All in all, *Lords & Wizards* is a solid, competent design with no great innovation, and some graphics problems. 5 (GC)

Magic Realm (AH)

R. Hamblen

20 map "hexes," 1 sheet of magic cards, 16 character cards, personal history pad, 36-page rules, 2 dice, pasteboard box. \$15.00.

The physical and game design are rather unconventional in this package. Players assume the role of a character, whose abilities are well-defined. The character will venture forth into a fantasy land formed by the players' placement of the hex tiles which serve as a map. There are seven different levels of play, so one can learn the game at any pace one chooses. Many fresh new ideas which could be used to good effect are presented here. Unfortunately, the game doesn't work. After negotiating the first adventure, which is no more than a footnote, the characters settle down for some serious hacking at one another. The personal combat system is simple — simple enough for any player to figure out whether he will win or lose *before* he engages in combat. This problem exposes, in turn, the inequities between the various characters, which, of course, destroys any chance of enjoyable competitive play. As the rules become more sophisticated (and this is a complex game when all the rules are used), the murky rules require as much interpretation as a Supreme Court decision. There could have been a great game in *Magic Realm*, but it was aborted early in the life-cycle of the game. 4 (EG)

Melee (MC)

S. Jackson

8" by 14" map, 68 uncut playing pieces, 24-page rules, resealable plastic bag. \$2.95.

This number may be played separately or as a combat resolution module for role-playing games. The rules include character generation and selection of weapons. Experience, which is gained in mortal combat, can be cashed in for increased attributes (strength and dexterity). All in all, fairly standard stuff but executed in an integrated manner with very little "dirt." The actual combat procedure involves randomly assigning initiative to one character whose player then chooses the sequence in which he will "move/fit." As the initiative passes from player to player, each selects an "option" from a list provided and executes the movement portion of the option with his character. When all have moved, combat takes place. Performance is governed by randomly generated attributes, weapon and armor types. Clean, fast and deadly. Combats can be resolved between individual characters in 5 to 15 minutes. Simple, but not simple-minded. 7 (DR)

Runequest (TC)

S. Perrin, R. Turney, S. Henderson, & W. James

One 120-page rule book. \$12.00.

Runequest was the third major fantasy role-playing game to appear, and has the most polished and comprehensible rules of the lot. The rules are organized in logical progression, and numerous examples dot them, making them enjoyable to read and easy to learn. The game-system is simple compared to *Chivalry & Sorcery*, but on about the same level as *D&D* — and *Runequest* is a much superior game. In *Runequest*, there are no artificial character classes; instead, each character is free to learn whatever skills he is capable of picking up. Each character is assigned a number between 1 and 100 for each of the skills he learns. When he attempts to use a skill, he rolls percentile dice against this number to determine whether he succeeds. Thus, characters acquire a wide range of skills, leading to diversity of characters and a more interesting game. Similarly, there are no artificial levels; i.e., characters do not suddenly jump in all abilities through some sort of idiotic admission to higher circles of power. They progress as people actually progress, concentrating on perfecting one skill at a time, or several skills simultaneously. In other frp games, all fifth-level fighters are identical to all other fifth-level fighters — they are killing machines with no other interest in life. In *Runequest*, to the contrary, characters are forced to develop personal philosophies through the need to join a religious cult, and develop different powers and interests by the process of learning different skills and spells. *Runequest* is the most playable and elegant fantasy role-playing designed to date. Its only drawback is that it does not cover enough ground for a full-scale role-playing campaign, and is, perhaps, a bit simpler than experienced frpers would desire. The first problem should be solved as *Chaosium* comes out with the sequels to *Runequest* (*Heroquest* and *Godquest*) and produces supplements such as the excellent *Cults of Prax*; the latter makes *Runequest* the ideal game for novice and occasional role-playing gamers. 7 (GC)

Sorcerer (SPI)

R. Simonsen/T. Walczyk

22" by 34" map, 400 playing pieces, 16-page rules, six-sided die, pasteboard box and counter tray. \$12.00.

The world of *Sorcerer* is the intersection of seven planes of reality. Mere mortals have constructed villages in the plane in which magic has little or no effect; all other planes are magic-rich. The six magical planes are distinguished by the three primary and three secondary colors, which causes a viewer of the map to check his coffee for any trace of halucinogens. Several humans have harnessed the necessary forces to become magicians; they too are distinguished by the color of their magic (though some may control more than one color). As one might suspect, a player's key unit is his primary sorcerer. All action begins with the sorcerer, who may conjure units, teleport about the map, hurl magic bolts, etc. The combat system is based on color interrelationships: if red is better than three colors, it will also be worse than the other three colors. Magical units may at-trite away (i.e., go back to their own plane), depending on the color of the hex they occupy. The game system is nice, but it seems more appropriate for an abstract color war game than for a fantasy game. In the final analysis, *Sorcerer* fails as both a game and as fantasy. 5 (EG)

Swords and Sorcery (SPI)

G. Costikyan & E. Goldberg

22" by 34" map, 400 playing pieces, 56 cards, 2 separate displays, two 6-page charts and tables booklets, 56-page rules, six-sided die, pasteboard box and counter tray. \$18.00.

S&S is an extremely detailed game of magical combat and quest in a fantasy world of the designer's creation. Basically an incomplete distillation of both the best and the worst of fantasy gaming ideas, *S&S* is not recommended for the person with a casual interest in fantasy gaming. Ground covered in the system includes: the use of mana (the stuff of magic for those not cognizant of Larry Niven), the effect of astral bodies on magical powers, individual and army combat, demoralization and rallying, vortices, conjuration, talismans, diplomacy, capture and escape of characters, spell-casting, wandering monsters, neutrals, invasions, emissaries, racial characteristics and species differentiation... you get the idea. The game is presented in a series of scenarios and adventures rather than a massive campaign game, which is just as well since the wealth of information presented is almost too much to handle in a lump. Quite complex. The average scenario takes about three hours to play. If you can get past the truly awful puns, it's worth more than a few replays. 6 (DR)

War of the Ring (SPI)

H. Barasch & R. Berg/B. Hessel & E. Goldberg

22" by 34" and 11" by 34" map, 400 playing pieces, 112 cards, 28-page rules, six-sided die, pasteboard box and counter tray. \$18.00.

Middle Earth, the fantasy world of the late J.R.R. Tolkien, is reconstructed in this game covering the War of the Ring, S.R. 1418 to 1419. The design breaks down into two separate games. The first, a somewhat feeble "Character Game" (obviously designed for the mass market) concentrates on the events of the quest of the Fellowship. It is enjoyable (continued on page 39)

Books

- Another Fine Myth**, Robert Asprin
Dell Fantasy, \$1.95
- Thieves' World**, ed. by Robert Asprin
Ace Books, \$1.95
- The Ruins of Isis**, Marion Zimmer Bradley
Pocket Books, \$1.95
- Tales of Neveryon**, Samuel R. Delany
Bantam Books, \$2.25
- Jesus on Mars**, Philip Jose Farmer
Pinnacle Books, \$1.95
- Electric Forest**, Tanith Lee
DAW Books, \$1.75
- Empire of the East**, Fred Saberhagen
Ace Books, \$6.95
- A World Between**, Norman Spinrad
Pocket Books, \$2.25
- The Face**, Jack Vance
DAW Books, \$1.95

Science Fiction

Generally speaking, science fiction — unlike mainstream fiction — has been able to avoid falling into the "relevant" trap. Science fiction writers have avoided obsession with the burning issues of the day, and thus have generally avoided many of the idiocies which quickly out-date "relevant" fiction. There have been stories written about the moral problems of Viet Nam and ecocatastrophe, of course, but these stories were generally neither sermons nor calls to action — they simply took the moral questions as starting points. In the last few years, however, a huge number of stories — mostly by feminist writers — have been written about the problems of feminism. There is nothing wrong with this *per se*, of course, but the result is a disheartening cornucopia of feminist clichés. If I read another story telling me how a society consisting entirely of females will inevitably result in a utopia where war is totally unknown, I will suffer severe stomach pains.

As it happens, the problem of sex roles in a technological society is not entirely exhausted, as two recent novels by excellent writers show. Marion Zimmer Bradley's *The Ruins of Isis* deals with the adventures of a sociologist and her husband on a female-dominated planet. The pair comes from a society in which sexual attitudes approximate our own, and they are forced to adapt to the cultural forms of the female planet — an awkward situation, when the head of the scientific team is treated like an unintelligent animal. Bradley, thankfully, refuses to preach, and the novel, instead of becoming shrill feminist propaganda, becomes a fast-paced adventure novel which explores the nature of sexual relationships.

Ruins of Isis is by no means Bradley's best work; and her characters seem less well-realized than those of previous novels. On balance, however, the book is worth its \$1.95 cover price.

The other novel is Norman Spinrad's *A World Between*, which takes place on a

planet called Pacifica. Pacifica's governmental system is a media democracy, in which elections are held on a world-wide computer net, and every citizen, as a constitutional right, has access to innumerable media channels continually carrying a vast variety of shows. Sexually, the planet is pretty much devoted to equality. In the course of the novel, two ships arrive at Pacifica — one from the Transcendental Scientists and the other from the Terran Femocracy. The first is a union of scientists who have developed a technology far beyond that of Pacifica and are using their technological superiority to establish cultural domination over as many human worlds as possible, by making acceptance of Transcendental Science tutelage a prerequisite for access to their technology.

The Femocracy is a female-dominated society which embodies all the worst and most extreme facets of feminism. Their objective is to mobilize the females of Pacifica to seize power, oppress their males, and join the Femocracy. Naturally, the Transcendental Scientists retaliate by trying to mobilize male opinion, and the result is a devastatingly divisive propaganda war fought through Pacifica's ubiquitous media network.

The story deals with the efforts of Carlotta Madigan, Pacifica's Chairman, and Royce Lindblad, the Minister of Media and Carlotta's lover, to fight both sides of the "Pink and Blue War" and maintain Pacifica's independence and cultural integrity. In Spinrad's firm hands, the result is a gripping story from start to finish. His portrayal of Pacifican society is so convincing that the reader takes for granted its differences from our own, and his depiction of all three sides' propaganda is at once moving and convincing — yes, this is what their propaganda would be like. If Spinrad sometimes succumbs to the urge to preach, what he preaches is democracy, sexual equality, and human understanding; surely, we can forgive him for this.

Tanith Lee's *Electric Forest* is more than an excellent novel — it is, in my opinion, one of the best works of science fiction has so far produced, something I will reread for the rest of my life, and something which, if there is any justice in the world, will garner several of this year's sf awards. The story is gripping, the writing is excellent, the plot twists are dazzling — but even more, *Electric Forest* turns the reader inside-out, emotionally. Much science fiction is cold, cardboard, and deals only with events and not at all with emotion. *Electric Forest*, without sacrificing the solid story of hardcore science fiction, has none of these flaws. In short, it is a perfect and seamless union of a well-plotted adventure story and the mainstream fiction which deals primarily with human emotion.

I can't tell you much about the story itself, because I don't want to ruin it by revealing any of the plot. However, it deals with a deformed woman who is given a new body as part of a government espionage effort.

Philip Jose Farmer's latest novel, *Jesus on Mars*, is a disappointment. Only Farmer could get away with a topic as weird as this: mankind's first manned mission to the Red Planet lands in the Vallis Marineris and finds a door that leads to an underground complex in which Hassidic Jews — and their Messiah,

Jesus Christ — live a happy existence. The premise is fascinating, but *Jesus on Mars* seems to have been written with no other purpose in mind. In the beginning of the story, the expedition discovers the Hassidim and meets Jesus; in the middle of the story, the characters struggle to integrate the reality of Christ's existence with their world-views; and at the end of the story, Jesus goes to Earth and initiates the millennium. In other words, the title is a fair summary of the story, and the novel has little else to say — and 256 pages is a bit long for an extended gag. Again, *Jesus on Mars* would be brilliant if it were written by a novice; but from Farmer, one expects better things.

Another long-standing writer from whom we expect good things is Jack Vance. Although Vance is pretty well known, he hasn't attained the status of one of sf's best as yet (for reasons that escape me); like so many other good writers, most of his fiction has been recently republished in paperback form, so it's readily available.

Back in the thirties and forties, there was a theory among mainstream critics and writers that the Fiction of the Modern Age should deal not with individuals — for individuals were outmoded — but societies. Obviously, this idea was engendered by the sort of simplistic Marxism which was then prevalent in intellectual circles. Devotees of this theory took Dos Passos as their best example. Vance's fiction likewise deals with societies more than people. Each of his novels deals with one or more societies, which are all exotic and incredibly different from our own. Vance's societies are extremely detailed and entirely believable — and, usually, quite bizarre. But simply describing a society is not enough, of course, to hold the reader's interest; Vance does this by using his well-realized societies as the background for a violent, fast-paced and exciting adventure story.

The Face is the fourth novel in Vance's "Demon Princes" series. The Demon Princes are a group of five interstellar criminals of bizarre character. The series deals with the efforts of Kirth Gerson, whose family and entire city was enslaved by the Demon Princes in one of their few cooperative efforts, to hunt down and destroy these criminals. Presumably, the series will incorporate five novels, since there are five Demon Princes; *The Face* deals with Gerson's assassination of Lens Larque.

Lens Larque is a Darsh, from the planet Dar Sai, and the bulk of the novel concerns Gerson's efforts to flush Larque out into the open on that planet. The men of Dar Sai are nearly hairless, and their women mustached; the males chase adolescent females, known as kitchets, while the females chase young boys. Darsh mate by journeying out on the desert at night and attempting to waylay members of the opposite sex of the appropriate age, while attempting to avoid being waylaid by members of the opposite sex who they consider ugly or too old. Thus, the most usual sexual encounter is rape, which is not a crime but a way of life.

This describes only the sexual habits of the Darsh, however; their other customs are equally bizarre. The novel deals not only with the Darsh, but also with the planets of

Methlen and Aloysius, which Gerson also visits.

All in all, *The Face* is an intriguing and well-plotted adventure in Vance's usual strange style. It is also considerably more expert and cleanly written than most of Vance's other work; apparently, Vance is still refining his style and sharpening his abilities. *The Face* is well worth reading, especially if you can get hold of the previous three novels in the "Demon Princes" series.

Fantasy

In the last couple of years, publication of fantasy has experienced a renaissance. It is my belief that the success of role-playing games is at least partially responsible for this upsurge; anyone who gets into role-playing to any great degree will probably become sufficiently intrigued by fantasy to pick up a few fantasy books. According to rumor, *Dungeons & Dragons* is now selling as rapidly as the typical Parker Brothers game, which means a hell of a lot of people are getting exposed to it.

Whether that's the case or whether there has simply been a rise in interest in fantasy, it seems that a number of well known science fiction writers are trying their hand at writing fantasy. This is by no means a trend, of course, as most of the fantasy writers of the forties and fifties were also science fiction writers. However, Fred Saberhagen, for instance, is hardly the sort of person I would expect to see writing fantasy, since he is well known as a hard-core technology-oriented sf writer. Nonetheless, in *Empire of the East*, he has produced an extremely interesting fantasy work.

Empire of the East takes place on an Earth in the future when, as the result of a scientific experiment, magic has become possible. It deals with the efforts of the Western Kingdoms to overthrow the domination of the evil Empire of the East, which has almost conquered the world. In so doing, they use, among other things, an ancient tank and hot-air balloons; the resulting mixture of technology and magic is quite interesting. *Empire of the East* is actually three separate novels — *The Broken Lands*, *The Black Mountains*, and *Arden's World* — all of which can be read separately but are tied together. The first deals with the freeing of a single Western Kingdom; the second with the overthrow of the Eastern Satrap of the West; and the third with the final destruction of evil. Together, they pretty much follow the standard sequence of events for an apocalyptic fantasy epic, a la *Lord of the Rings*.

Empire of the East is extremely cleanly written, moves along rapidly, and is fun.

Another science fiction writer moving over into fantasy is Samuel Delany, author of *Nova* and that monumental piece of glug, *Dhalgren*. In *Tales of Neverson* he shows not only that he has not completely succumbed to the modern penchant for meaningless pretention, but that he is still capable of writing a dynamite story. *Tales of Neverson* claims to be the novelization of an ancient legendary epic called the Culhar' Text which is even older than the Gilgamesh legend. At the end of the book, Delany includes a pretentiously witty scholarly article called "Some

Informal Remarks Toward the Modular Calculus, Part Three" which deals with this suppositious legend.

This appendix shouldn't scare potential readers off; *Neverson* is written in a straightforward style, not some mock-epic style. The book contains five inter-locking stories dealing with several characters in a bronze-age prehistory, and in the process deals with the nature of power, servitude, and money. The imagery is extremely well-defined and the philosophical aspects integrate nicely into the story without affecting the rhythm of the novel; all in all, *Neverson* is brilliant. My only carp is Delany's attitude toward money, which is that of the typical modern socialist — and this is not a valid kvetch, of course, since the book's politics have nothing to do with its value. Buy it.

Robert Asprin is not exactly a new writer, but he hasn't been around for that long, either. His *Another Fine Myth* (that's a pun) is a fast-moving fantasy story in the tradition of De Camp — an unsuspecting hero roving through a series of impossibly strange events. Skeeve is the apprentice of a notoriously-competent wizard in the land of Klahd, when his master is killed by the minions of an evil wizard while in the process of summoning a demon. The demon is actually an old friend of Skeeve's master, and decides that it is necessary to destroy the evil wizard. Unfortunately, Skeeve's master took the demon's powers away before dying, so the pair must rely on Skeeve's rather skimpy magical expertise — and the story is off to a running start. *Another Fine Myth* is extremely funny and thoroughly enjoyable.

Another book from Robert Asprin is *Thieves' World*, which he edited. The idea for *Thieves' World* is: a fantasy world, containing many heroic characters, is created in which any number of writers are welcome to set their stories, as long as they conform to the pre-established world-background. The result is a series of multi-hero fantasy stories; since fantasy role-playing involves the group production of a multi-hero fantasy story, role-playing fans especially will find *Thieves' World* enjoyable.

The stories are set in the city of Sanctuary, a dying trading city on the southern tip of a peninsula. The city has recently received a new governor appointed by the empire that owns it, and this governor is vigorous in his attempts at reform. The resulting conflict forms the backdrop for many of the stories. Sanctuary has become a den of thieves, primarily because there is little other industry; life is cheap, fighting is endemic, etc.

The idea for the collection has apparently caught the imagination of a number of excellent writers, for it contains stories by writers such as John Brunner, Paul Anderson, and Marion Zimmer Bradley — as well as relative unknowns such as Christine DeWees and Lynn Abbey. The stories themselves range from mediocre to excellent, but all are worth reading.

Thieves' World, according to the Editor's notes, is only the first volume of a series of story collections based around the city of Sanctuary; further collections containing stories by writers of the same caliber will be forthcoming.

Greg Costikyan

Media

The phenomenal success of *Star Wars* and *Close Encounters of the Third Kind* has finally opened the eyes of the movie industry to science fiction. Currently in the works are a number of major projects plus some interesting minor ones — mainly in science fiction but also in fantasy.

Coming soon and greatly anticipated, is the next *Star Wars* film entitled *The Empire Strikes Back*. Its official release date in this country is May 21, 1980. *Close Encounters* is getting some new blood or, at least, a slight revision. A re-release is planned for August, less five minutes of original footage but with an additional seven minutes of new footage.

The world famous producer, Dino DeLaurentis (*King Kong*, *Orca*, etc.) has immersed himself in science fiction and fantasy projects of grand magnitude. The properties in work are *Flash Gordon*, *Dune* and *Conan*. *Flash Gordon*, which is the closest of the three to completion, is expected to have a release date of December, 1980. The movie will be based on Alex Raymond's comic strip and will feature a newcomer in the title role. Max von Sydow is *Flash*'s adversary, Ming the Merciless. Michael Hodges will direct.

Frank Herbert's *Dune* is just getting underway and features Ridley Scott (*Alien*) as director. Herbert will help with the screenplay, and the film is promised a \$20 to \$40 million budget. Most likely, a 1982 release would be in order. Again, as is typical with DeLaurentis, a newcomer will be selected to play Paul Atreides.

R.E. Howard's *Conan* is moving toward the casting phase, with Arnold Schwarzenegger billed as the super-barbarian. Oliver Stone is handling the script which will offer an original Conan story. John Milius will direct.

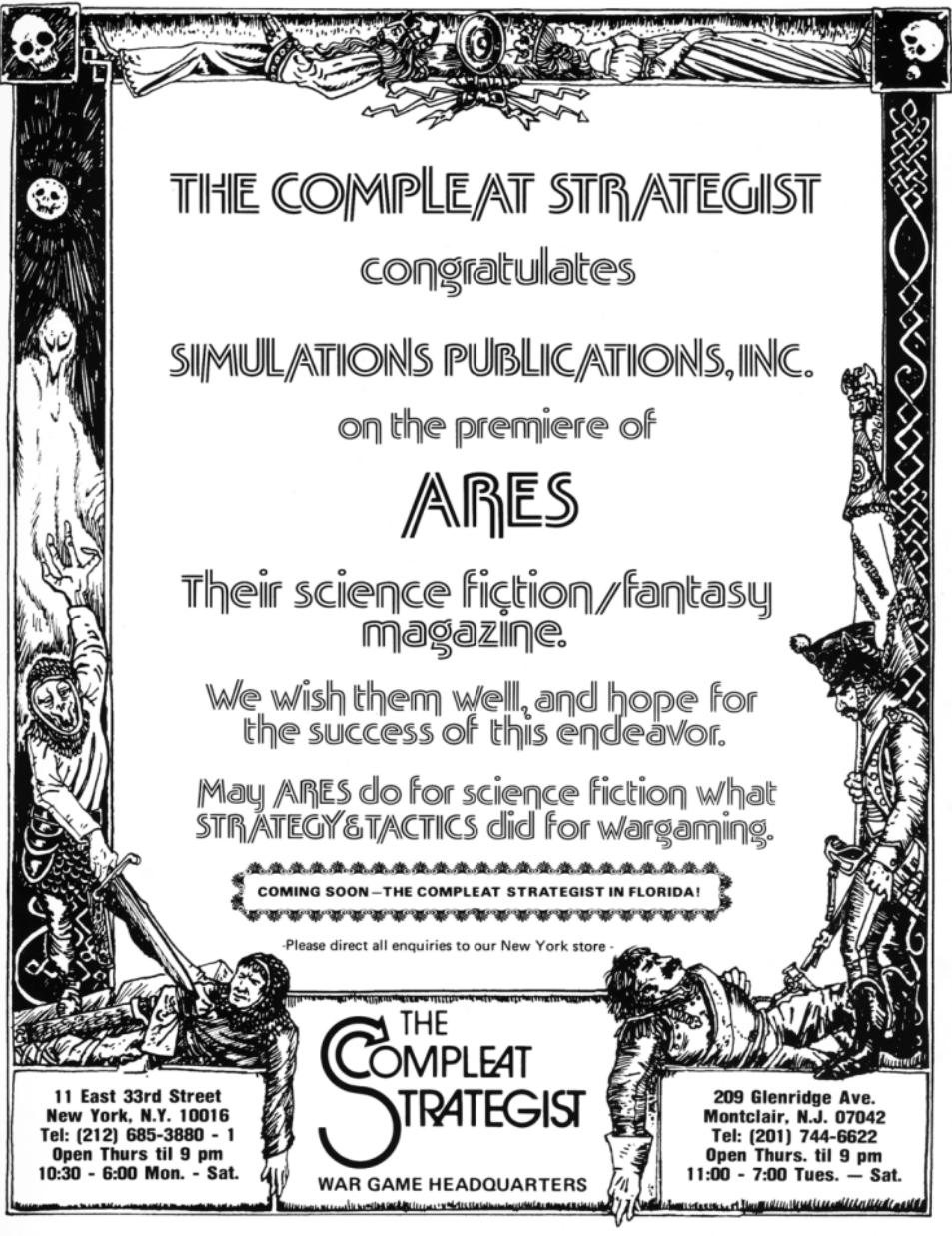
Bakshi is moving slowly on *Lord of the Rings: Part II*, and Easter of 1981 will probably be the release date. In the wings we have the makings of a *Heavy Metal* movie which is being called "a feature-length animated anthology." Some of the six stories to be adapted in the film include *Moeblis' Arzbach* and Corben's *Tales of the Arabian Nights*. Harry Harrison will do the script.

A potentially interesting picture, despite possible miscasting, is *Saturn 3* scheduled for spring, 1980. Kirk Douglas and Farrah Fawcett are hard at work in an underground hydroponics station on Titan, Saturn's largest moon. Harvey Keitel cum robot drops in to pay them an unusual visit.

In the world of the absurd we have an Italian made *Star Wars* to be known as *Two in the Stars*, starring Fred Williamson, Bo Svenson and Arthur Kennedy. Also on tap is a musical version of H.G. Wells' *War of the Worlds*. (That's right!) It's a spinoff of the 3 million LP seller from Columbia Records — and you're going to tell me that you never knew that there was a record.

Howard Barasch





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Feedback

Reader Survey, Ares nr. 1

Your opinions directly affect the editorial content of *Ares* Magazine. We invite you to participate in this, our regular survey of readers.

How to use the Feedback Response Card: After you've finished reading this issue of *Ares*, please read the Feedback questions below, and give us your answers by writing the answer numbers on the card in the response boxes which correspond to each question number. See centerfold for card. Please be sure to answer all questions but do not write anything in the box for question numbers labelled "no question". Incompletely filled-out cards cannot be processed.

What the numbers mean: When answering questions, "0" always means NO OPINION or NOT APPLICABLE. When the question is a "yes or no" question, "1" means YES and "2" means NO. When the question is a rating question, "1" is the WORST rating, "9" is the BEST rating, "5" is an AVERAGE rating, and all numbers in between represent various shades of approval or disapproval.

1-3. No question

The following questions ask you to rate the articles in this issue on a scale of 1 (poor) through 9 (excellent); 0 = no opinion.

4. WorldKiller (game)
5. WorldKiller Storyboard (fiction)
6. Dragon... Ghost (fiction)
7. Angels (fiction)
8. No, You're not Going to the Stars (science)
9. A Galaxy of Games (game reviews)
10. Books (review)
11. Media (review)
12. Film and Television (review)
13. Music (editorial)
14. No question
15. This issue overall

16. Assume that you don't subscribe to *Ares*. Would the quality of this issue alone motivate you to subscribe?

1 = Yes; 2 = No.

17. Your age: 1 = 13 years old or younger; 2 = 14-17; 3 = 18-21; 4 = 22-27; 5 = 28-35; 6 = 36 or older.

18. Your sex: 1 = Male; 2 = Female.

19. Education: 1 = 11 years or less; 2 = 12 years; 3 = 13-15 years; 4 = 13-15 years and still in school; 5 = 16 years; 6 = 17 years or more.

20. How long have you been playing conflict simulation games? 0 = less than a year; 1 = 1 year; 2 = 2 years; 3 = 3 years; 4 = 4 years; 5 = 5 years or more.

21. What is the average number of hours you spend playing simulation games each month? 0 = none; 1 = 1 hour or less; 2 = 2-5 hours; 3 = 6-9 hours; 4 = 10-15 hours; 5 = 16-20 hours; 6 = 21-25; 7 = 26-30; 8 = 31-40; 9 = 40 or more hours.

22. How many simulation games (of all publishers) do you possess? 1 = 1-10; 2 = 11-20; 3 = 21-30; 4 = 31-40; 5 = 41-50; 6 = 51-60; 7 = 61-70; 8 = 71-80; 9 = 81 or more.

23. What level of complexity do you prefer in games? Rate your preference on a 1-9 scale, with higher numbers indicating increased complexity. Use the following games as guidelines. 4 = *WorldKiller*; 7 = *BattleFleet Mars*; 9 = *Air War*.

24. How many conflict simulation games have you purchased in the last twelve months? Do not include games received by subscription. 1 = one to three; 2 = four to six; 3 = seven to nine; 4 = ten to fifteen; 5 = sixteen to twenty; 6 = 21 to 30; 7 = 31 to 40; 8 = 41 to 50; 9 = 51 or more.

25. How many games do you plan to buy in the next twelve months (not including *Ares* subscription games)? 1 = one to three; 2 = four to six; 3 = seven to nine; 4 = ten to fifteen; 5 = sixteen to twenty; 6 = 21 to 30; 7 = 31 to 40; 8 = 41 to 50; 9 = 51 or more.

26. What percentage of the games you buy do you expect will be SPI games? 1 = 10%; 2 = 20%; 3 = 30%; ... 9 = 90%.

27. How much money do you plan to spend on conflict simulation games in the next twelve months? 1 = less than \$10; 2 = \$10-25; 3 = \$25-50; 4 = \$50-75; 5 = \$75-100; 6 = \$100-200; 7 = \$200-300; 8 = \$300-400; 9 = \$400 or more.

28. How much have you spent on conflict simulation games in the last twelve months? 1 = less than \$10; 2 = \$10-25; 3 = \$25-50; 4 = \$50-75; 5 = \$75-100; 6 = \$100-200; 7 = \$200-300; 8 = \$300-400; 9 = \$400 or more.

29. Pick the one area of science fiction that you most enjoy reading: 1 = Space opera/science fantasy; 2 = "Hard" science fiction adventure; 3 = Problem-solving hard science fiction; 4 = Extraterrestrial societies; 5 = Future societies (utopia/dystopia); 6 = Alternate history; 7 = Time-travel; 8 = Soft science fiction (a.k.a. "new wave"); 9 = Other (please write in the category description).

30. Pick the one area about which you would most like to see science fiction games done: 1 = Strategic space conflict; 2 = Tactical space conflict (ship against ship); 3 = Strategic planet-bound conflict (army against army); 4 = Tactical planet-bound conflict (man against man); 5 = Alternate history; 6 = Conflict in a contemporary setting; 7 = Role-playing adventure; 8 = Economic/sociological/political conflict; 9 = Other (please write in the category description).

31. How many science fiction games do you own (including the game in this issue)? 1 = 1; 2 = 2; 3 = 3; 4 = 4; 5 = 5 to 10; 6 = 11 to 15; 7 = 16 to 20; 8 = 21 to 25; 9 = 26 or more.

32. How much do you spend on science fiction books in the last twelve months? 1 = under \$10; 2 = under \$20; 3 = under \$30; 4 = under \$40; 5 = under \$50; 6 = under \$60; 7 = under \$70; 8 = under \$80; 9 = \$81 or more.

33. What percentage of the money spent on science fiction books was spent on hard-cover books? 1 = 10%; 2 = 20%; 3 = 30%; 4 = 40%; ... 9 = 90%.

34. Pick the one area of fantasy that you most enjoy reading: 1 = Sword and Sorcery; 2 = Mythological fantasy; 3 = Quest adventure; 4 = Classically-based fantasy (e.g., Arthurian legend); 5 = Fantasy in a contemporary setting; 6 = Superhero/heroic adventure; 7 = Anthropomorphic fantasy (e.g., *Watership Down*); 8 = Horror/occult; 9 = Other (please write in the category description).

35. Pick the one area about which you would most like to see fantasy games done: 1 = Strategic sword and sorcery boardgames (army against army); 2 = Tactical sword and sorcery boardgames (hero against evil-doer); 3 = Quest/adventure boardgames; 4 = Sword and sorcery role-playing; 5 = Quest/adventure role-playing; 6 = Classically-based fantasy; 7 = Anthropomorphic societies; 8 = Horror/occult; 9 = Other (please write in the category description).

36. How much money did you spend on fantasy books in the last twelve months? 1 = under \$10; 2 = under \$20; 3 = under \$30; 4 = under \$40; 5 = under \$50; 6 = under \$60; 7 = under \$70; 8 = under \$80; 9 = \$81 or more.

37. What percentage of the money spent on fantasy books was spent on hard-cover books? 1 = 10%; 2 = 20%; 3 = 30%; 4 = 40%; ... 9 = 90%.

38. How many fantasy games do you own? 0 = none; 1 = 1; 2 = 2; 3 = 3; 4 = 4; 5 = 5 to 10; 6 = 11 to 15; 7 = 16 to 20; 8 = 21 to 25; 9 = 26 or more.

39. How did you first learn of *Ares*? 1 = A friend told me about it; 2 = I saw an ad in a science fiction magazine; 3 = I saw an ad in a wargaming magazine; 4 = I saw an ad in another kind of magazine; 5 = I saw a copy at a hobby store; 6 = I saw a copy at a toy store (retail or wholesale); 7 = I saw a copy at a bookstore; 8 = I read an article about *Ares* in a newspaper or magazine; 9 = Other.

The following questions concern other magazines. Pick one statement that is most true about each magazine.

1 = I have never seen a copy; 2 = I almost never buy a copy; 3 = I occasionally buy a copy, but I do not have a subscription; 4 = I did have a subscription to this magazine in the past, but I do not read it anymore; 5 = I did have a subscription to the magazine in the past, but I only buy it on the newsstand now; 6 = I have a subscription to the magazine for one year or less; 7 = I have subscribed to this magazine for two years or less; 8 = I have subscribed to this magazine for 3 to 5 years; 9 = I have subscribed to this magazine for over 5 years.

40. Strategy and Tactics

41. MOVES

42. The General

43. Fire and Movement

44. Space Gamer

45. Sorcerer's Apprentice

46. The Dragon

47. Science Digest

48. Analog

49. Omni

50. Fantasy & Science Fiction

51. Galaxy

52. Isaac Asimov SF Magazine

53. Galileo

54. Starlog

Please rate the following games on a 1 to 9 scale, with "1" indicating a particularly strong dislike for a game, and "9" an especially favorable opinion. Please rate only those games which you have played against an opponent or solitaire at least once in the last six months. If you have not played the game in the last six months, please do not rate it (respond "0" in the space). All games listed are SPI published, unless otherwise specified.

55. War of the Ring

56. John Carter of Mars

57. Creature that Ate Sheboygan

58. Vector 3

59. Titan Strike

60. Stargate

61. Sword & Sorcery

62. Demons

63. Dungeons & Dragons (TSR)

64. Deathmaze

65. Ogre (MGW)

66. The China War

67. Dune (AH)

68. Magic Realm (AH)

69. Cosmic Encounters (EPI)

70. Melee (MGW)

71. Freedom in the Galaxy

72. Starfall (Yaq)

73. The Beastlord (Yaq)

74. Traveller (IGDW)

75. Commando

76. Divine Right (TSR)

Rate the following game proposals on a scale of 1 to 9, with 1 indicating very little inclination to buy the game if published up through 9 indicating a definite intention to purchase it.

77. 21st Century: Our Next Hundred Years. Compare 1980 to 1980; every aspect of social existence has changed. Now compare 1980 to 2080; what will man, society, and the nations of the world be like 100 years from now? Will China indeed reach a state of modern industrialization? Will the scarcity of oil drive the world to war or financial disaster, or will alternate energy sources come to the rescue? How will the Middle East and NATO-Warsaw Pact empires end? These questions and others will be explored in 21st Century, a player-oriented but heavily researched simulation tracing the world's "future-history" from today to the end of the next century. Two to eight players will control the current major political, economic or religious powers, although rarely will a player's power-base retain the same geographical or ideological structure for the game's duration. Extensive use of cards, a geo-political map of the world, and five year Game-Turns will keep the game relatively simple while involving the players in all economic, scientific, political, military and disastrous developments that might occur between now and 2080. Will include one map, 168 cards, 400 counters and extensive study material.

78. Planet Drap! The QuirkCh6 struck swiftly; swarming out of the galaxy, they brought fire and death to the thinly settled worlds of the Periphery. The peaceful races of the Galactic Confederacy were shocked back, their worlds despoiled and the populations enslaved. Now they are determined to win back the lost worlds; one by one they will liberate the planets. Planet Drap! is a simulation of a planetary military landing in the 26th Century. Using a geographic map and 200 double-sided counters, Planet Drap! will recreate several such planetary assaults by human and allied alien forces

against varying numbers of the enemy, who care for little but victory at any cost. Based on SPI's *Star Soldier*, *Planet Drop!* will retail for \$12.00.

79. The Corporate Wars: 2031. The year is 2031. There are no more nations. There are no more political parties. There are no more unions. Only the Corporations exist. Only the Corporations prosper. It has been this way for thirty years. Ever since the series of devastating wars characterized by the end of the 20th century effectively sounded the death knell of the nation-state, the Corporations have grown and prospered. Now the great multi-national Corporations hold unchallenged power. They control the world's resources. They control the world's cities. Their power is limited only by their mutual interests. *The Corporate Wars: 2031* would be a multi-player, multi-scenario simulation of the possibilities for conflict in such a setting. Each Player would adopt the role of "The Chairman" of his own corporation, engaged in a struggle for wealth and power via political, economic and/or military means with his opposite numbers in other corporations. Included would be limited warfare scenarios depicting major "offensive" involving two, three or more corporations as well as a "Brave New World" scenario depicting a world-wide revolt against the corporations by a secret society of committed individuals and an Armageddon scenario for up to six players which would end with one player in control of the world, the entire globe a radioactive wasteland. A gamut of political and military weapons would be available including assassins, agitprop nets, orbital weapons platforms, NBC systems and conventional land, air and sea units, among others. Two maps depicting the entire globe, 800 counters. \$16.

80. Laserburst. A full size-map game, dealing with a fighter-to-fighter battle over a future city. Each player would control a fighter squadron, or more, and try to attack and destroy the city and its ground units (including a special presidential envoy), and the other player attempting to hurl back the defenders, by using his smaller fighter force, armed ground units, and tower top laser turrets to blow the enemy out of the skies, while keeping the important ground units, buildings, and the president, safe from harm. The game would use simultaneous movement, with many movement and fire options for the fighters, and a special damage system that can cripple a ship's guns, jets, or destroy it all together. Damage would be noted on the same sheets that the s-moves would be written on, this sheet being specially formatted for just that, not unlike the *Battlefield* March board sheets. To win would require careful strategy to outthink the enemy fighters, especially when you have one on your "tail", and must use special maneuvers or the braking technique to shake him off. All-in-all, a true game of strategy. To sell for \$12.

81. War of the Western Reach. The Terran Confederation and the Centaurian Alliance have been colonizing the archipelago world of Poseidon for over a century. The peculiar nature of the planet and the lack of high-technology resources prevented the inhabitants from thinking about anything but survival; now, both colonies are virtually self-sufficient. Meanwhile, tension runs high between Confederation and Alliance, and Poseidon becomes the site of the first "brush fire" war between the two great human powers. Players control military forces which include hovercraft, amphibious assault vehicles, space-to-surface attack vessels, and infantry. Anything more potent than 2 kiloton tactical nuclear weapons is eschewed by both forces, as the geological structure of the home islands is relatively fragile. Strategy will have to be formulated with both the enemy and the nature of the planet in mind. In addition, political consideration must be given to Confederation-Alliance relations, and to those who advocate self-government for Poseidon. *War of the Western Reach* will be the first operational level exploration of surface warfare in the distant future. Will include map, political and tactical displays, 400 counters and (hopefully) a background story. \$17 to \$20.

82. The Field at Danninyne. *The Masters of Solitude* is an important new science fiction novel, co-authored by Marvin Kaye and Parker Godwin. Set in an America two millennia hence, the story pits the technologically adept, tribes against the technologically sophisticated City. The City has isolated itself from the tribes by means of the Self-Gate, which destroys the mind of any who dare to cross it. To further discourage the tribes, the people of the City have been hiring mercenaries to systematically kill members of those tribes which might seek entrance to the City. Garick of the Shando tribe realizes that the tribes' survival is dependent

on the technology of the City, and so leads several tribes to do battle with the City's mercenaries at Danninyne. Garick has many more troops than his counterpart, Callan, but Callan is a far superior military strategist. The mercenaries also have flamethrowers. The tribes must defeat the mercenaries before sundown, or the mercenaries will be able to link up with a mercenary army from the north. Danninyne can be simulated using a simple combat system, with rules stressing terrain, flamethrowers, telepathic abilities, and especially leadership (a renegade mercenary commander won the battle for the tribes). The timetable imposed upon the tribes will make for a tense, exciting capsule game, which may be included in *Ares*.

83. Barbarian Kings. The savage and sorcerous continent of Quemerua includes many provinces and a such is led by one of the great Hero-Kings, who seek to unify the various peoples into one powerful nation. Every nation is assembling its multi-racial armies, levying taxes and recruiting wizards to their service. The winner of this massive struggle will become Overlord of Quemerua. Each player is assigned one province and a Hero-King. From his initial allotment of beazants and Hero Points, the player must choose abilities for his Hero-King and determine the composition of his army. The combat units are divided by type (archer, infantry, etc.) and race (elves, goblins, etc.). Mercenary leaders must be hired to lead armies, and wizards must be employed to cast spells and conduct research. The player who leads his city-state to control of the most provinces will become the Overlord. One capsule-size map, 200 counters, and relatively short rules. \$8.

84. Citadel of Blood. A fantasy role-playing game using the *Dethazne* game system, but set in the Valley of the Great Sword, first popularized in SPI's *Swords and Sorcery*. From one to five players enter the Citadel of Blood in search of The Heligate, a hidden talisman which was the foundation of the power of the Dethlord of Arahelm. The game would include the entire gamut of characters and species from the sword and sorcery cosmology, but would be presented in a serious format. 200 counters, 12 page rulebook, no map. \$5.

Magic Capsules: Using the same format as the just-released *Quest* Capsule games, we are planning a series of fantasy and mythical games that would feature quick-playing, highly developed, novel systems that have been carefully balanced for competitive play. The games would each include about 50 counters, an 11" x 17" map, and four pages of rules.

85. The Fallen Angel. Lucifer and his hordes rise up to contest the angels in the ultimate power struggle.

86. Fane the Mad. Based on the *Sorcerer* world, Fane the all-color sorcerer has gone mad and must be defeated by the lesser wizards before he becomes all powerful.

87. Crazy World. In a realm where physical laws change in dizzying succession, adventures vie for glory and survival. Each Game-Turn presents different rules; no one is sure what natural laws apply. The impossible occurs every day in this topsy-turvy world.

88. Merlin. The knights of the round table, Mordred, Arthur and the old wizard battle across Camelot.

89. Asgard. Odin, Thor and the other Norse gods defend their realm against Loki and the great troll uprising. Special rainbow bridge rules.

90. Against Magic. It is the dawn of the Age of Man. The strength of the Elder Races is ebbing fast to illustrate the might of the vibrant human powers. It is a time of chaos, with many human states warring against each other as often as they battle non-humans. Most of all it is the time of the first great sorcerers and sorceresses, when the human potential proves itself. *Against Magic* will be an adaptation of the *Swords and Sorcery* game system, combining personal and army combat to illustrate the roles of the great entities of that day. To sell for \$15-20.

91. How many science fiction and fantasy magazines do you regularly buy or receive by subscription? 1 = 1, 2 = 2-3; 3 = 4 = 4-5; 9 = 9 or more.

92. How many science fiction magazines (Omni, Science Digest, etc.) do you regularly buy or receive by subscription? 1 = 1, 2 = 2-3; 3 = 4 = 4-5; 9 = 9 or more.

93-96. No questions.

On the Feedback card, please include your three favorite science fiction/fantasy authors.

[continued from page 34]

only for those who like die-rolling exercises. The second or "Army Game" is much greater in scope, taking into account the military struggle between Sauron and the Free Peoples. The Army Game captures much of the richness of the mythos which was absent in the Character Game. The use of cards, pioneered in this system, allows for the inclusion of more data than could be placed on unit counters. Other cards may be placed to represent random events, magical items of use to the characters, and the search capacity of Sauron's minions. Two major problems mark this otherwise excellent game: the atrocious rules and the player's hindsight (the climax of the novel is predicated on Sauron not being aware of the Fellowship's intentions). The first is somewhat mitigated by the thorough attention to detail (a reader of the novel will be able to put together many solutions), and the second is reduced by the uncertainty of the card play. Games of *War of the Ring* range from predictable to cliff-hanging, gut-wrenching suspense. Fairly complex, and requires several hours to play. Not for those who have not read the Ring Trilogy. 7/DR

White Bear & Red Moon (TC)

K. Stafford

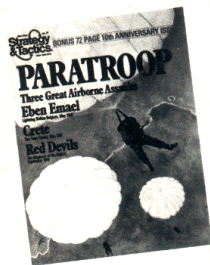
22" x 25 1/2" map, 252 playing pieces, 80-page rules, resealable plastic bag, \$10.00.

When Greg Stafford first published *White Bear & Red Moon*, he knew very little about gaming; he was, however, obsessed with Glorantha, a fantasy world of his creation, and felt the need to describe the conflicts and wars of its long history. His experience with gaming resulted in poor rules and awkward systems; regardless, *White Bear & Red Moon* is one of the few games which can safely be described as a work of art. Despite its relative obscurity, it has spawned a whole host of imitators — the rabble may not recognize its worth, but the community of designers does. *White Bear & Red Moon* is less a game than a description of an entire culture. In a short rulesbook, it provides an insight into the religions, governments, and ideologies of whole peoples; descriptions of weird and imaginative alien races; the rationale for several complex systems of magic; and the biographies of the greatest heroes of the age. Further, despite its occasional awkwardness, *White Bear & Red Moon* is an enjoyable and fast-playing game. 8/GCI

Other science fiction and fantasy games not reviewed are listed below. **BH** stands for Battletide/Heritage; **DC** stands for the Dave Casiano Company; **FB** for Flying Buffalo; and **TYR** for Tyr Games.

Alpha Omega (BH); Arms Race (DC); Battle of Five Armies (TSR); Bushido (TYR); Cerberus (TFG); Dragon Lords (FGU); Elric (TC); Empire of the Petal Throne (Lords); Gamma World (TSR); Gondor (SPI); Hot Spot (MC); The Island (GCI); IT (DC); King Arthur (SPI); Lords and Wizards (FGU); Nomad Gods (TC); Objective: Moscow (SPI); Rift Trooper (DC); Sauron (SPI); Space Quest (TYR); Spellmaker (BH); Starfall (Yaq); Star Fighters (BH); Starfire (TFG); Starfleet Battles (TFG); StarGate (SPI); Starship and Space (FGU); Star-Soldier (SPI); Stompy (TC); Strange New Worlds (BH); Titan Strides (SPI); Triplanetary (GDW); Tunnels and Trolls (FB); Vector 3 (SPI); War of the Star Slavers (DC); War of Wizards (TSR); Warp War (MC); Wizards of the Dark Star (DC); Wizard (MC); Wizard's Quest (AH); The Ythri (MC).

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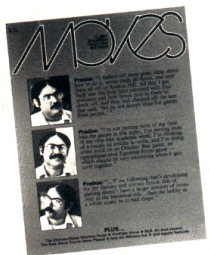


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