



Illustrated by J. V. Arcilesi

THE SKY'S NO LIMIT

By DWIGHT V. SWAIN
Instructor in Journalism

One of the nation's outstanding science fiction writers, the author presents a challenging picture of the Engineering world of 1975

"The great silver ship lanced skyward, then, far out into the utter black of the interplanetary night. Ganymede faded away below it, a dimming blob of light engulfed in an ebon sea.

"Aboard the craft, a flicker of sound came to Laen Hanfal. Tight-lipped, he spun about, taunt as a Yarca's bowstring.

"The hideous, pseudopodal mass of a three-headed torglor loomed in the doorway like some monstrous nightmare. Eyestalks swaying, tentacles aglitter in the eerie light, it. . ."

No, friends, not even a science fiction writer thinks it's going to be like that in 1975. Not really.

But, on the other hand, the quarter-century between now and then will certainly see some changes made.

Trouble is, when you try to pin the future down to anything much more concrete or specific than that, you find you've moved in on a poker game where all the cards are wild, and the best prophet is often at a loss. The casualty rate is bound to be high when finite minds try to second-guess the infinite.

Consider, for example, the plight of the author or artist who creates "extraterrestrial life-forms" (what most folks call bugeyed monsters) for pseudo-science magazines.

Even with the accent on imagination and no holds barred, the boys still come up with relatively unoriginal (and unimpressive) variations on the familiar. True, the Mercurian mutant may have eight scarlet legs, a shell like an armadillo, and multi-faceted insectile eyes. But the fact remains that the critter *does* have legs and eyes and a shell. It's still a recognizable projection of creatures that readers (or writers, or artists) have known.

In a word, no one can imagine anything truly beyond human ken, any more than a Stone Age savage could invent radar.

What a crimp this puts in prophecy!—Especially when you take a moment off to recognize that the most vital factor in tomorrow's civilization may today be only an accident hunting for a time and place to happen.

Or look at the role played by emotional and economic elements. A would-be Nostradamus can always hedge his bets by arguing that, for most people, life a quarter-century hence will be just about the same as now. Even though you announced free trips to the moon, starting at eight a.m. tomorrow morning, such are the forces of human conservation that takers would be few and far between for quite some time.

Space Ship: 1975

And a good many newspapers will still use linotype machines long after new inventions have rendered them obsolete, if only because the investment is too big to scrap.

So . . . what kind of world *will* we face in 1975?

As a science fiction writer who knows more about fiction than science, the one thing that seems to me sure enough to stake a shirt on is that (even more than now) it will be an engineers' world.

Our culture may follow any of a thousand divergent paths. But whatever the principle, the key men will be those who can translate theory into structures and machines and products. The individual in demand will be the one who's not afraid to grab a problem by the nape of the neck and beat on it till it hollers uncle. Today, he'll work with steel girders subjected to the 200-below-zero temperatures of Jupiter's seething ammonia-and-methane seas. Tomorrow, the assignment may call for devising a way to protect space travelers from the effects of cosmic rays while they explore satellites which lack atmosphere.

Yes, I think space travel is coming—if not by 1975, then surely soon thereafter.

It will come, for my money, as a logical development of the work now being done on the relationship between mass and energy, rather than in the stereotyped blaze of rocketry that permeates too much of today's thinking on the subject. As a matter of fact, the scientific achievements which must necessarily precede our first interplanetary expeditions will have far more initial impact on our society than any mere bridging of the void.

I can foresee at least three key inventions

Asphere of dully gleaming metal some fifty feet in diameter, it rests on stubby, retractable legs beside the buildings of the port center. Carriers speed to and fro from refrigerated warehouses, carrying cargo to the conveyer lift built into the ship's base.

The load consists of 8,000-odd men and women, each frozen solid in a coffin-like block of chemical ice. Living organic matter is the one thing the duplicator units can't reproduce. This quick-freeze system cuts down space per passenger to fourteen cubic feet, slashes crew requirements, and eliminates physiological and psychological problems en route entirely.

Now the last of the ice-blocks is aboard, the dozen-odd crewmen at their stations, the hatches sealed. The sphere floats for a moment, barely off the ground, while the stubby stabilizing legs retract. Then, slowly at first (in order to avoid the heat of atmospheric friction) it soars into the sky. No one knows for sure how fast it can go. In theory, gravity acts instantaneously, and even the electro-magnetic waves that carry the ship's power travel at speeds up to 186,000 miles per second. . .

as essential before we can hope to achieve space travel:

1. A wireless power transmitter.
2. A contragravitational device.
3. A transmutational duplicator.

Already, our first tentative probings of atomic structure have established the potentiality of unlimited power through release of nuclear energy.

Given this inexhaustible driving force, it's only a step to the electro-magnetic wireless wave transmission of energy itself, analogous to the broadcasting of sound by radio or of pictures *via* television.

Parallel with this, a frontal attack on gravity itself is bound to take form.

At present, and in spite of wise looks and broad references to Newton, Einstein & Co., no one really understands just why, throughout the universe, particle attracts

particle with a force proportional to the masses involved.

As far as we've gone, however, there appears to be a definite relationship between electricity, magnetism, and gravity.

Given a few breaks and a stroke or two of genius, sooner or later some "pure" scientist is going to work out the key to that relationship—at which point the world's engineers will take over. In sweat and headaches and profanity, they'll translate theory into a practical contragravitational device—that is, a gadget that will focus wave-transmitted power in a pattern that reverses the Earth's attraction, so that the unit will fall up instead of down, much as you reverse the poles of a magnet so that it repels iron filings instead of attracting them.

And that will be the first true space ship.

For all practical purposes, such ships will become artificial satellites, using wave-transmitted power (projected from Earth in beams, perhaps—radar technicians have already bounced such off the moon) to hurl themselves across the void by increasing or decreasing the gravitational attraction of whatever celestial body happens to be closest at the moment.

The transmutational duplicator, in turn, offers a practical answer to the problem of supply.

Our physicists have given us the secret of the philosophers' stone already: Add or subtract a few protons and/or neutrons from a given substance, and lead becomes gold or carbons turns into plutonium. Or, we can create new elements to fit our needs of the moment.

Devices to duplicate material objects by

The City: 1975

The city. . . Or is it? It looks more like a park . . . no power lines, no pavement save occasional footwalks, no neatly ordered rows of buildings. Houses seem scattered almost at random. There's an emphasis on trees and greenery, functional designs open to the air and sun.

Carriers ride contragravitational beams straight up from the ground to their proper level—private north, south, east or west; commercial, ditto—then follow directional power flow channels to their destinations.

Community centers offer recreation, services, and scanners. The latter enable you to examine (in three dimensions and full color) and duplicate any object on display at the regional merchandise center, at the flick of a button and for next to nothing. Services—haircuts, hotel rooms, heloidal reducing baths—come higher.

Not that it matters too much. Social control of power and of the duplicator units have made this a land of material plenty where finance is largely a matter of bookkeeping anyhow. . .

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SOONER MAGAZINE

Roll Call . . .

M. M. Vickers, '50m.ed, has resigned as superintendent of Watonga schools effective June 30 to accept a sales position with the Hillyard Chemical Co. He will continue to live in Watonga.

Dr. S. E. Dakil, '50med, has moved to McAlester where he will practice medicine. Dr. Dakil formerly practiced in Wewoka.

'51 Lt. Rex S. Hayes, '51eng, is in Letterman Hospital, San Francisco, California, for a series of operations after returning from Korea where he was wounded in action.

William D. Pullen, '51ba, has resigned as Hobart Democrat-Chief advertising manager to accept a position as national advertising salesman on the *Farmer Stockman* magazine, Oklahoma City.

Lt. Wayne N. Whatley, '51ba, Wichita Falls, Texas, recently was awarded jet pilot wings. He is taking advanced pilot training.

MACK-McCULLOUGH: Miss Marilyn Mack, Oklahoma City, and Gerald W. McCullough, '51bs, Bartlesville, were married December 27 in the First Baptist Church of Oklahoma City. The couple has established a home in Oklahoma City where McCullough is a student in the University Medical School.

Doyle J. Taylor, '51bus, Norman, received his pilot wings and was commissioned a second lieutenant in December. He completed his pilot training at Reese Air Force Base in Texas.

James F. Trice, '51geol, Walters, recently was released from active duty with the Air Force. A veteran of world War II, he served his latest tour in Germany.

Lt. Jack H. Vaughn, '51eng, Oklahoma City, has been promoted to first lieutenant while serving with the army engineers in Chinnon, France.

Tommy Long, '51fa, '51m.fa, a private in the Medical Corps, has been assigned to Special Services in Korea, according to letters received by his parents. Mrs. Long, the former Jacquelyn Brewer, '50fa, has taken a position in the LeFlore County clerk's office while her husband is overseas.

Lt. James L. Atkinson, '51ba, recently returned from Korea and duty with the First Marine Division as photo interpreter.

Ralph N. Caffey, '51bus, was employed recently in Stanolind Oil and Gas Company's Tulsa Accounting Department.

Henry C. Warren, '51geol, recently was employed in the Exploration (Geophysical) Department of Stanolind Oil and Gas Company in Anadarko.

KRUSE-WALDRIP: Miss Margaret Jo Anne Kruse, Perry, and Lt. James W. Waldrip, '51geol, Healdton, were married in early January in Perry's First Presbyterian Church. The couple is living in

Belleville, Illinois, where Lieutenant Waldrip is stationed with the Air Force.

MATHERS-WALLACE: Miss Paula Mathers, '51lib.sci, Hereford, Texas, and Harry Eugene Wallace, Norman, were married in early January in the First Presbyterian Church of Hereford. The couple has established a home in Norman where Wallace is a student at the University and Mrs. Wallace is an employee at the University library.

Lt. Wayne Speegle, '51bus, and Mrs. Speegle, Oklahoma City, announced the birth of a daughter, Deborah Louise, born January 3. Lieutenant Speegle is expected to return to the U. S. from Korea in February or March.

Cooper D. Ray, '51ba, Martha, is a junior student in the School of Medicine of Washington University, St. Louis.

'52 Dick Wainerdi, '52eng, Houston, Texas, was called to active duty in the Air Force recently. He has been serving at Lackland Air Force Base in Texas but has been transferred to Lowry Air Force Base, Denver, Colorado.

HUSER-CARTER: Miss Cora Susan Huser, Wewoka, married Lorenzo Edward Carter, '52ba, Lawton, at Wewoka, December 28. They are both attending the University.

DONALDSON-CHARSET: DeAnn Donaldson, '52ba, and R. G. Charset, both of Norman, were married December 29 in Norman. They have established a home in Norman.

CAPORAL-WOLFE: Miss Helen Caporal, '52ba, and Hal H. Wolfe, '52ba, both of Oklahoma City, were married December 27 in Oklahoma City.

Winfred E. McGee, '52bfa, Norman, was recently promoted to airman second class with the 148th Aircraft Control and Warning Squadron, Tinker Air Force Base, Oklahoma City.

JOHNSON-AGAR: Miss Jerelyn Farrar Johnson, '52ba, and James Rogers Agar were married January 3 in St. John's Episcopal Church, Norman. The couple has established a home in Palo Alto, California, where Agar is attending Stanford University.

PURYEAR-SAVAGE: Miss Nancy Ruth Puryear, '52ed, and Howard Halsell Savage, both of McAlester, were married December 27 in the Grant Avenue Methodist Church in McAlester. The couple has established a home in Oklahoma City while Savage completes his requirements for an engineering degree from the University in June.

Margaret Conley, '52bus, was recently employed in the Exploration Department of Stanolind Oil and Gas Company in Oklahoma City.

Ray E. Plumb, Jr., '52ba, and Mrs. Plumb, Lafayette, Louisiana, have chosen the name Nancy Kathleen for their daughter born January 5 in Lafayette.

The Sky's No Limit . . .

means of nuclear transmutation will surely follow. A three-dimensional scanner will analyze the atomic structure of the object to be copied, then reproduce it out of whatever raw material comes to hand.

A space ship equipped with such a unit could manufacture anything needed from those elements most plentiful on a planet. By coupling the reproducer unit to

Man: 1975

Meet Mr. 1975. (Or maybe it's 2000, or 2050.)

Whatever the date, he looks just about like we do.

Inside, though, something's happened to him. Sum it up by saying that his world has, paradoxically, made him more individualistic.

Limitless power and the transmutational duplicator give him material security—and then threw on reverse English to prove just how empty security can be. Because it also took the sparkle out of reward as an incentive. Acquisition lost its glamor. Our Hero found that interest, the intrinsic subjective lure of a given task, was the only motivation worth a hoot for the long pull.

So he took off on a couple of new tangents.

One was curiosity; the other craftsmanship.

Craftsmanship gave him originality, pride of creation, in a day when push-buttons had stripped copies of everything but utility.

Curiosity drove him into the laboratory and beneath the sea and out onto the spaceways in an eager search for new intellectual and physical experience.

He may end up almost anywhere. . .

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a scanner still on Earth, the ship wouldn't even need to carry original thingumbobs and dohinkuses to serve as patterns.

And so, at last, man will cross the void—to the moon; to the planets; perhaps, some day, even to the stars.

Some will ask: Why should he go?

For my part, I don't think he's got much choice.

For man's a restless animal. Or if you want to be fancy about it, say that the desire for new experience looms large in his psychology.

He's a problem-solver, too. Trouble is his natural habitat. Above all, he's a creature that doesn't dare to stagnate. If he stops driving ahead, he's sure to fall behind.

Yet more and more, here on Earth, he's

mastering his environment. Society organizes and orients and integrates him. His horizons close in about him. Boredom drags him down like a disease, and his spirit grows old and weary.

Each day, each year, brings more restrictions. The world progresses—and it's a welcome progress. Only progress also hems man in.

But in the skies, a thousand—a million—an infinity of new frontiers are beckoning.

How can Living Man resist them?

I just wish I could be here to go along!

Colony: 1975

Dense white carbon dioxide clouds swirl and eddy about the gigantic plastic bubble that holds Venus City's atmosphere to a point where Earth lungs can breathe it.

Inside the bubble, noise hammers at you—the ring of steel on steel as melder's join framing girders to expand the bubble; the rattle of carriers unloading; the pulse of oxygen converters; the clash of voices, the echo of laughter.

There's a frontier air about it all. The .85 gravity gives a feeling of lightness that makes men walk with a trace more swagger. Newcomers fresh from the thawing laboratories move gingerly, wide-eyed and a trifle pale about the mouth. Research crews in space helmets crowd every airlock. One reports discovery of a silicon-chemistry life-form. Another brings in a metal whose structure can't be broken down by the duplicators. Hydroponic

teams sweat over the tanks that soon will provide fresh vegetables.

And everywhere, everywhere, there's excitement and talk of high adventure—here, or on Ganymede, or Callisto. . .

Hal Muldrow, Jr.

'28

Insurance of all Kinds

Bonds

Security National Bank Bldg.

Norman

PHONE

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Clark Cleaners

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