

Multiple Visions of Our Future

by Scott Ready

For three days I had been alone working my way into the depths of Boulder Canyon. I was now traveling through a soft meadow nourished by a small stream. The nearby lights and sounds of a glistening waterfall were flowing through my mind. Moving alongside the

stream I climbed above the waterfall and arrived at a quiet pool of water. The surrounding air was remarkably refreshing and somewhat misty. As I rested there, bathing in the ultraviolet splendor of the high altitude, I rethought my questions.

What will our future be like? What new living patterns are we moving into? What kinds of activities will be in phase with the new times ahead? Gazing at the water I probed and dowsed its depths

with these questions. Running my eyes along its current I tried to propagate my mind into the future.

The soft sunlight raining on the pool caused a beautiful flickering motion as scintillating rays of light leaped off the waters and into my eyes. Suddenly the rustling sound of many leaves falling in a small area filled my mind. I turned to my left, and as pieces of my ordinary vision flaked away, the image of an old man collected before my very eyes.

"Well, hello there," I said.

"Hello. Nice place you have here," he called back cheerfully. "I sensed your questions and could not resist helping you. It takes a polished form of intuition to see into the future."

"Intuition?" I asked.

"That's right. Intuition—a practiced way of seeing. First you must see the source of how we have arrived.

"Only through an unprecedented use of fossil fuels has our present world come into being. But today world energy developments are climaxing. Considering how much energy we expend in our present efforts to obtain energy, one realizes that net energies are less today than ever before. As our present energy base powers down and shifts into long range patterns, the entire world will progress into a steady state system.

"Corporate managers who are planning for large scale expansions will not be able to realize their dreams. In the future there will simply not be enough energy to fulfill everyone's plans.

"As we power down, many of our 'technological advantages' will evaporate. This means farewell to rapid transportation, nonrecyclable products, air conditioning, aluminum, clothes dryers in dry climates, powered street cleaners, and street lights. Conventional street lighting will be replaced by hand held light sources which expend energy only when and where it is needed.

"Free enterprise will prevail. However, money will not be able to generate more



money as easily as it does today. The high costs of energy will prohibit rapid growth and the fulfillment of many investments. Deregulation of our energy industries will allow them to mushroom in size while still delivering little net energy. Inflation will be rampant. Businesses will not be able to spur on growth by simply advertising. Opinions will not be so easily molded when energy is limited. Advertising must appeal to the new long range goals of steady state systems.

"Local small companies which have ingenuity, flexibility, and low energy demands will displace large companies. Regional centers will give way to local centers. There will be less repetition of products and an increase in diverse businesses that have cooperative symbiotic relationships. As zoning rules are changed to allow small businesses to move into residential areas, neighborhoods will become more complete, more self-sufficient.

"There will be less emphasis on rapid transportation. People will work at home

or in mini-offices within their neighborhoods. People will be more self-responsible, more do-it-yourselfers.

"As the cities break up and people diffuse into the countryside, many will grow their own food. People will enjoy the more wholesome foods of their own locality. It will no longer be profitable to transport groceries over great distances."

"Just a minute," I broke in, "this all seems more like a vision of our past than a glimpse of the future."

"Well the funny thing about it," the wizard chuckled, "is that an advance in the future may very well be a return to what we once grew well on in the past. The universe is like a lizard with its tail in its mouth. When we see into the past we simultaneously see what may be coming in the future. Believe me, after 250 years of intense climbing into higher and higher levels of fossil fuel energies, we are projecting ourselves into a future like no society before.

"Blazing stars, imagine the future of microelectronics. From their own homes people will be able to perform elaborate

communications and consultations between co-workers, resource centers, and their own selves. Through a wise use of our fossil fuel powered research and development, we may infuse an extremely rich heritage into this new era for humanity. Just imagine, futuristic people enjoying, thanks to our developments, hot baths via solar energy!

"As we power down, hot pinpoints of energy, such as cities, will no longer be feasible. Automatically people will diffuse into the countryside. Concomitant with these trends will be the loss of fuel for farm machinery and the fall of large scale agribusiness. Mini-farms will sprout up everywhere as people practice low energy, personalized farming. These farms will be strong absorbers of people whose jobs in the cities have been displaced.

"Plants will be stronger, cows will be fewer, and stockyards will be rare. More wild game will be consumed.

"Plastics will be developed from present day plants rather than from ancient fossil fuels.



"Forestry will shift from pulp for paper products to lumber for building materials.

"Houses will be smaller, separately constructed, and individually maintained. There will be more stone, less concrete, less pavement, and less uniformity. Homes will be fitted into natural landscapes and vegetation so as to use natural means of cooling and heating. Landscaping will use less energy and be more labor intensive. Ornamental lawns will be rare.

"Public works projects will focus on restoring and maintaining existing buildings rather than constructing new ones. More open malls like Boulder's and Aspen's will appear. Many office buildings will become dwellings for people who work in the immediate vicinity. Noise levels will drop, the air will be cleaner, and windows will open."

Completely flooded with information, I looked up into the sky and saw a beautiful cloud sprouting flowerets like a growing cauliflower.

"As we power down there will be less energy to store information, and hence less repetition of storage supplies and fewer complete libraries. Information that we now have that is essential must be separated from what is excessive, superfluous, or incorrect. Newspapers will be replaced by electronically encoded cards that can be inserted into videocommunications units.

"Universities will have fewer members, fewer departments, and much less uniformity. They will do less new research and more teaching that helps individuals adapt to their new conditions. Courses will be integrated around unifying synthesis involving such things as energy network dynamics, the principles of yin and yang, and geometric formulations of physics. Engineers will expand their vision and see how their designs fit into the larger schemes of humanity and nature. There will be a decline in reductionistic and analytic thinking. Steady state systems will be taught rather than boon and bust cycles.

"Laws that encourage runaway expansion, homogenous zoning, and excessive waste will be replaced by laws that favor the small, efficient, and ecological.

"The spending of tax dollars will shift from national to local interests. Government budgets will be balanced. Deficit spending will be much more disastrous since planners will not be able to count on the future being bigger and more powerful. As the spheres of controllable influence of individual countries shrink, defense budgets will decrease.

"By the early twenty-first century, the feeling that expansion is necessary will

have been eliminated. There will be more pride and enjoyment in simple efficiencies, quality, and beauty. People will work shorter hours. There will be less production of material goods. Characteristics of high concentrations such as crime, noise, and accidents will have diminished. The shorter work hours will provide more jobs.

People will be happier, feel more complete, and understand the world around them better than people of today. More attention will be given to individual creativity and specialized strengths. Families will be smaller. There will be more interaction between relatives and hence less welfare.

"International travel and frivolous luxuries will occur only in places where energy is growing. Overall, people will have fewer choices in activities. However, personal freedoms will be more clearly recognized, understood, and applied. Like an intensely active steady state tropical forest, there will be a tremendous diversity of colorful life styles.

"People will feel light, buoyant, just heavy enough to make convenient their passage on this earth. They'll experience their bodies as vibrating masses emitting and receiving filamentous fibers of energy that wrap around and within themselves and then leave, metamorphosed by the form, their body, that has been sustained. People will perceive far more within their own surroundings.

"For us, the intelligence of large scale systems such as forests, coral reefs, or the biosphere as a whole has escaped our grasp in very much the same way that the intelligence of our bodies escapes the awareness of individual neurons. But in the future people will cooperatively communicate with the intelligent designs of large scale ecosystems. Out of this a high level form of ecological engineering will evolve. Insects will be controlled by birds, schools of salmon will be directed through larger fish, and varieties of species will be planted in cultivated forests.

"Novel means of diffusing and separating our wastes will be employed. Special microbes from around the world will be imported to decompose our wastes. Miniature waste treatment plants will take advantage of natural purifying processes as nutrients from animal and human by-products are sought for recycling in the production of food and lumber.

"Medicine will move towards the source of our illness. Focus will be on improving our life support systems and diet. There will be less surgery. During the transition to a steady state, civil

disorder, heart disease, and cancer will increase.

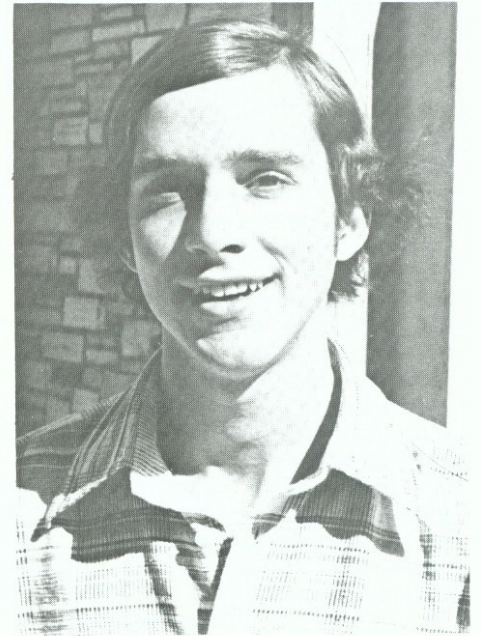
"Presently, we have unraveled much of the fabric of life that holds this world together. As we move through the transition to a steady state, wild fluctuations in climate and human conditions will occur. Like an immense ship with its stabilizers withdrawn, direction of this planet will be difficult, challenging, and exciting. The world is infinitely dimensional in a thousand ways. Focus your attention on unlimited ideas and be like the water. The bird who flies the farthest, flies without flapping his wings. . . ."

Rustling leaves breaking in a crisp autumn morning filled my mind. Opening my eyes, I found myself awakening in a pile of leaves in the hills of Chautauqua . . . □

SOURCES

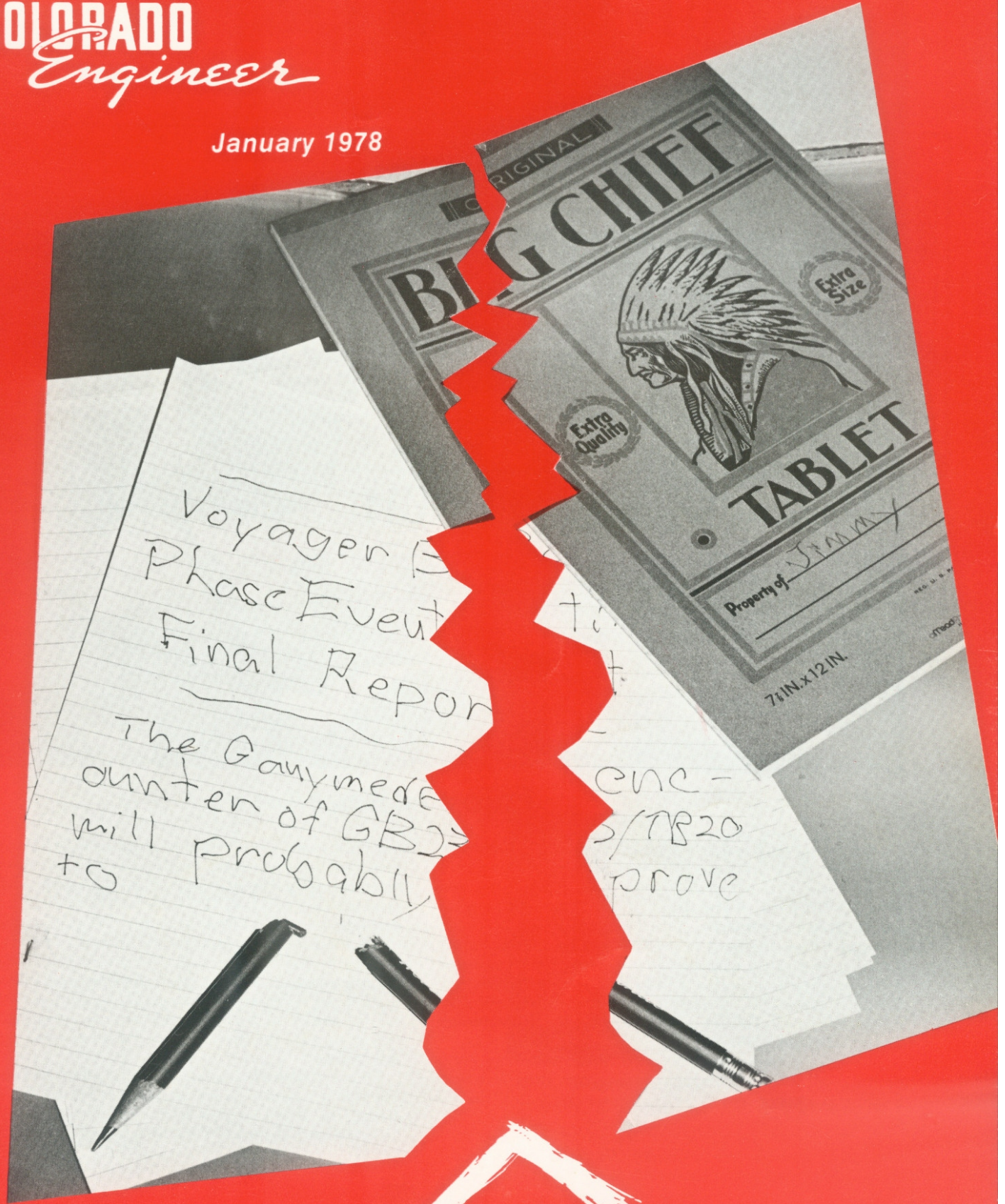
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Scott Reedy plans to be a free man of ideas. While immersed simultaneously in the worlds of electrical engineering, physics, math, and astronomy he managed to graduate from the University of Florida in 1976. Presently, he is in the CU department of mathematics and hopes to use the energy network diagrams used here to enhance quantum geometrodynamics.

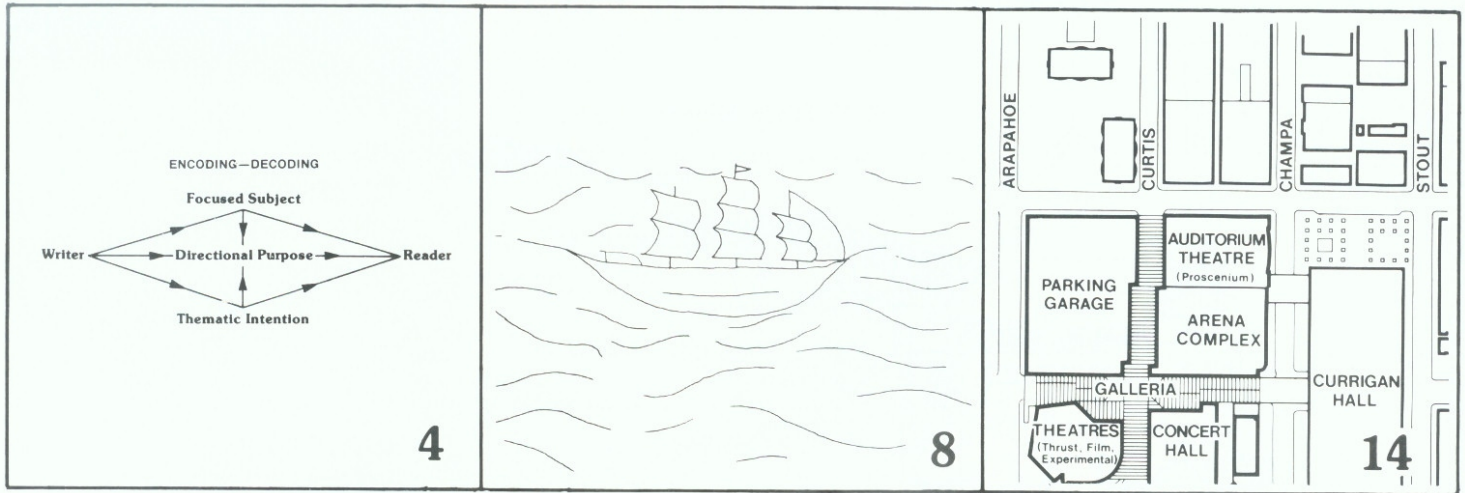
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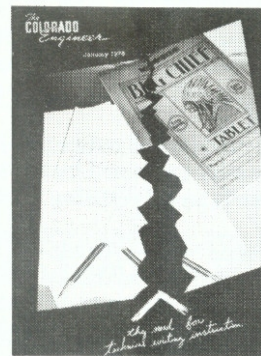
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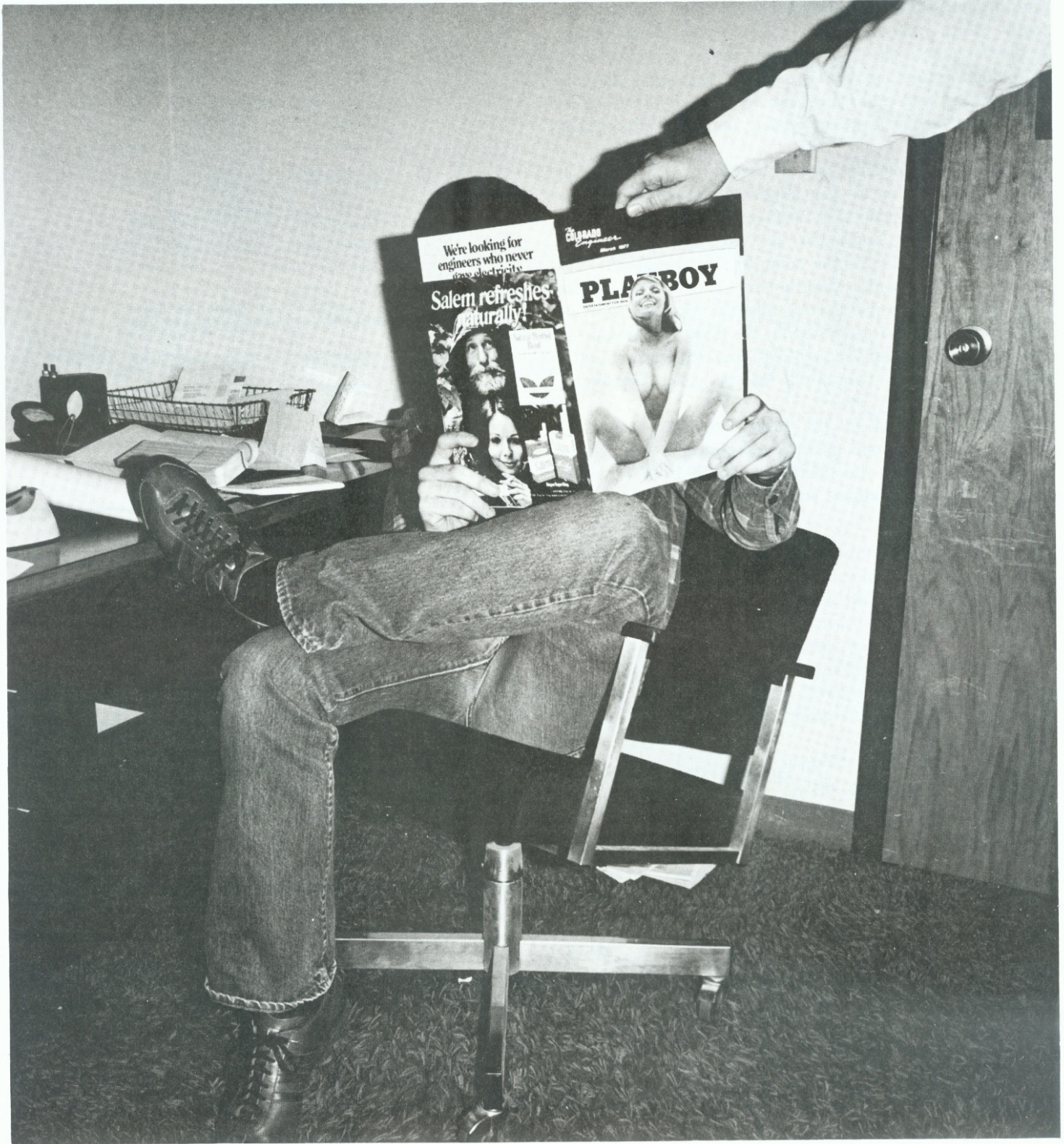


COVER

This issue's cover symbolizes the plight of most engineering graduates; the attempt to solve complicated communication problems with tools learned in the early years of education. Communication, whether oral or written, is an art. Consequently, it is often ignored as irrelevant or unnecessary by those pursuing careers in science. The lead article for this issue presents some thought on the need for technical writing instruction as well as some guidelines for more effective and efficient communication. Cover concept and original photo by Randy Clark.

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**IN THE
FINAL ANALYSIS**



Randy Clark