

Sandia Ranks at the Very Top

Ed. Note: President George Dacey recently shared with members of Public Affairs and Employee Communications Department 3160 his views of Sandia's past, present, and future. This is a summary of that discussion.

SLN: Let's begin with our relationship with DOE, especially in light of the recent report by ERAB (Energy Research Advisory Board), which studied the role of the national labs.

GCD: The ERAB report is a very satisfactory report, I think, from our standpoint. It recognizes that the national laboratories differ among themselves — some are weapon laboratories, some are engineering laboratories, some are physics laboratories, some operate facilities, and others have a single, precise mission. The report no longer attempts to give a single role statement that applies to all the labs.

A second and most important perception from our standpoint was the recognition that the national labs, Sandia in particular, are national resources and therefore should be treated with the respect due any valuable possession. You can dissipate such a resource very easily, but it takes many years, a generation or so, to build a laboratory of quality.

“Our stock with DOE has never been higher.”

A third perception, which is welcome at least from our rather narrow point of view, is that the ERAB felt that the laboratories were well managed by local professionals in science and engineering but that there was too much of an attempt to “micromanage” from Washington. The labs ought to have more, rather than less, freedom to manage their affairs.

In fact, the report went so far as to say that a certain portion of the budget ought to be left discretionary for the laboratory director — to do anything he or she wants to do with it. The whole report finally, as I viewed it, was a resounding endorsement of the national laboratories and a plea to the federal government to treat these resources as they are, as valuable assets.

As far as Sandia specifically is concerned, I have the feeling that our stock with DOE has never been higher in two respects: one, the perception is that our management of budgetary matters, of programmatic matters, of schedules, of commitments is among the best in the national labs family. As far as management is concerned, DOE puts very high faith in Sandia.

The second point is that we are now regarded, I think, as at least the equal in technical quality (albeit in engineering rather than pure science) of any of the other national laboratories. Part of that high regard comes from the increase in educational level that we have attained over the



GEORGE DACEY, president of Sandia National Laboratories.



past couple of decades. And part of it is the very successful programs that Sandia has had — nothing speaks as loudly as success. These programs are after all the bottom line — a measurable output, in other words. For all those reasons, our stock is very high with DOE, both technically and managerially.

SLN: You said “Sandia in particular.” Are we perceived as unique then?

GCD: In some ways, yes. That uniqueness stems from the fact that we are the only national lab that is simultaneously multiprogram, mission-oriented, weapon-oriented, and engineering-oriented. The other two weapon labs are multi-program and mission-oriented, although a much smaller fraction of their total effort goes to their mission, but they are much more scientifically oriented.

We are the only big mission-oriented national engineering laboratory, and that is recognized. In fact, in this period of concern about how much national support for R & D

should go to the university world and how much to the industrial world, having an engineering focus makes us immune to such concerns as “Why is it not left to the universities?” And having a product, namely a nuclear weapon, that is reserved by Congress to the control of the United States government avoids competition with the private sector, which also makes us unique. Nobody is attacking Sandia.

“Nobody is attacking Sandia.”

SLN: How about the Bell System divestiture? Will it affect us?

GCD: Sandia is, of course, a subsidiary of the Western Electric Company. After the divestiture, WE will survive as part of AT&T. Thus, in terms of our basic procedures and policies, I don't foresee any immediate change. There may be some

(Continued on Page Four)



BILL CALDES (7530) marks 40 years with Sandia National Laboratories today. In terms of service, he is the oldest employee at the Labs.

Bill Caldes Marks 40 Years at Labs

Bill Caldes, manager of Field Simulation Testing Department 7530, observes his 40th anniversary with Sandia today. In terms of service, he is the oldest employee at the Labs. Even though "Sandia Corporation" was organized in November 1949, Bill is credited with service to Sandia from April 1, 1943, when he joined the nuclear weapon pioneers at Los Alamos.

"I was with the Physics Lab at Princeton," Bill says, "working for the Office of Scientific Research and Development and thinking about becoming a Navy pilot when the word came for our transfer to Los Alamos. Once I joined the Project on the Hill, there wasn't time to think about anything else."

The success of the Manhattan Project is documented history. Bill was responsible for electronic instrumentation at the Trinity test. In late 1945 he was a group leader within Z Division, the one assigned liaison between Los Alamos and the Army Air Force to fit the bomb into the B-29. He moved to Albuquerque with part of the group; the

Antojitos

A Couple of Thank Yous--This issue contains the first "State of the Labs" message in almost two years, the first ever by President Dacey. The man is an interviewer's delight--knowledgeable, articulate, an excellent separator of wheat from chaff. And highly personable. His only concern--"Is there really anyone out there who's interested in all this?" I speak, I believe, for nearly eight thousand Sandians when I reply "Most assuredly, yes!" Thank you, Mr. Dacey. Thanks too to Rose Ann Schultz (2613) who transcribed from the recording tape 59 pages of questions and answers.

* * *

Editorial Decision-Making: Everyday Category (Hard)--We're not going to run a most touching and well-written tribute written by Warren Merritt's daughter Nancy on the occasion of his recent retirement after 35 years of service to Sandia. It's not that those of us who fill these pages can't face competition, but rather that we'd likely receive a host of others, few with the sincerity, spontaneity, and sparkle of this one. ●BH

Laws of Dynamics for the Layman:

A body at rest tends to remain at rest--if it can reach the alarm clock.

For every action, there is an equal and opposite criticism.

rest followed in June 1946. Their assignment was to assemble the leftover components and hardware from Los Alamos into the nation's nuclear weapon stockpile.

In November of 1949, Z Division became the nucleus of what is now Sandia National Laboratories. The mission was to start production of nuclear weapons. Bill's job was electronic inspection, the forerunner of the Tool Made Sample activity. When the AEC established a Quality Assurance function for nuclear weapons, Bill helped write the original QA instructions and policies.

"It was like a chess game," Bill says. "First I was responsible for AEC acceptance criteria making sure the customer was getting what he ordered. Then I moved to the other side of the board to be responsible for inspection control before product was submitted to the AEC -- helping the production side. I had the black pieces and then the white."

Bill spent several years heading production tester design, then more years in component environmental testing. Since 1978, he has headed development testing in Coyote Canyon and Area III.

"No, I'm not thinking about retiring," Bill says. "Maybe sometime before I'm 70. The years have been good, and there are good years to come."

Of all the memories of changing challenges in the weapons program, Bill's early memories of Los Alamos are still the most vivid.

"It was a small group," Bill says, "and absolutely dedicated. Youngsters today -- and I've got five children and eight grandchildren -- can't know the threat and terror of world war. While I was at Los Alamos during the early years of WWII, America and the free world were taking a beating. Germany had Europe, most of North Africa, and was at the doorsteps of Moscow. The British and China had lost the Far East, and

America had lost the Phillipines and the Pacific. Australia and Hawaii were threatened. Japanese troops were in the Aleutians.

"At Los Alamos we were working night and day to save the world. . . history shows our efforts made a difference.

"I'll never forget Trinity. The light. The fireball. I remember rubbing the palms of my hands into my eyes to block the light. It was a moment when an unprecedented scientific accomplishment was realized.

"I hear the comment nowadays that if we had not made the bomb, there would be no nuclear age or nuclear weapons to worry about. That's absurd. It was bound to happen. Germany was on track. We can only be thankful that Hitler got hung up on rockets. After 40 years at Sandia in the nuclear weapons program, I have no qualms whatsoever. I have served my country."

Info Packet Available For World Travelers

If foreign travel is on your agenda, you may be interested in a program called Laymen Abroad. The program offers an information packet covering accepted greetings, customs, courtesies, gestures (to avoid as well as to use), dress, personal appearance, and the like -- for 96 countries. The program can also provide you with a list of English-speaking residents of the countries you will visit. Although affiliated with the Southern Baptist Convention, the service is available to all faiths. A seminar on Laymen Abroad will be held April 19 at 7 p.m. at the Highland Baptist Church. For more information, contact Mickey Harr, 3833 Westerfeld NE, Albuquerque, 87111; for the packets, provide 30 days notice before departure, if possible.

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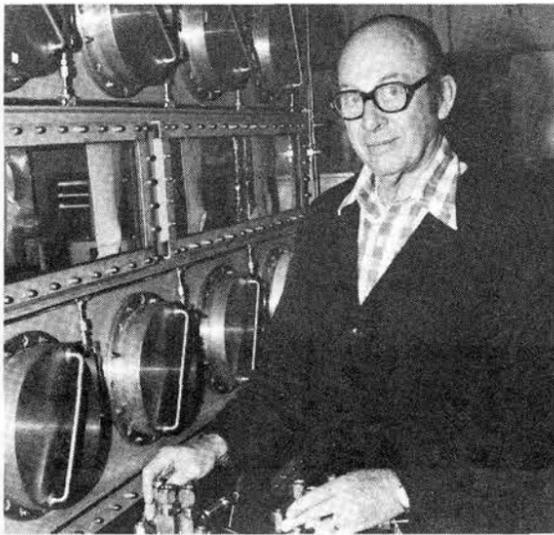
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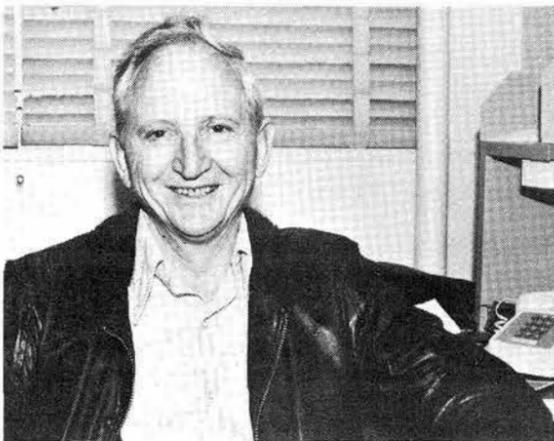
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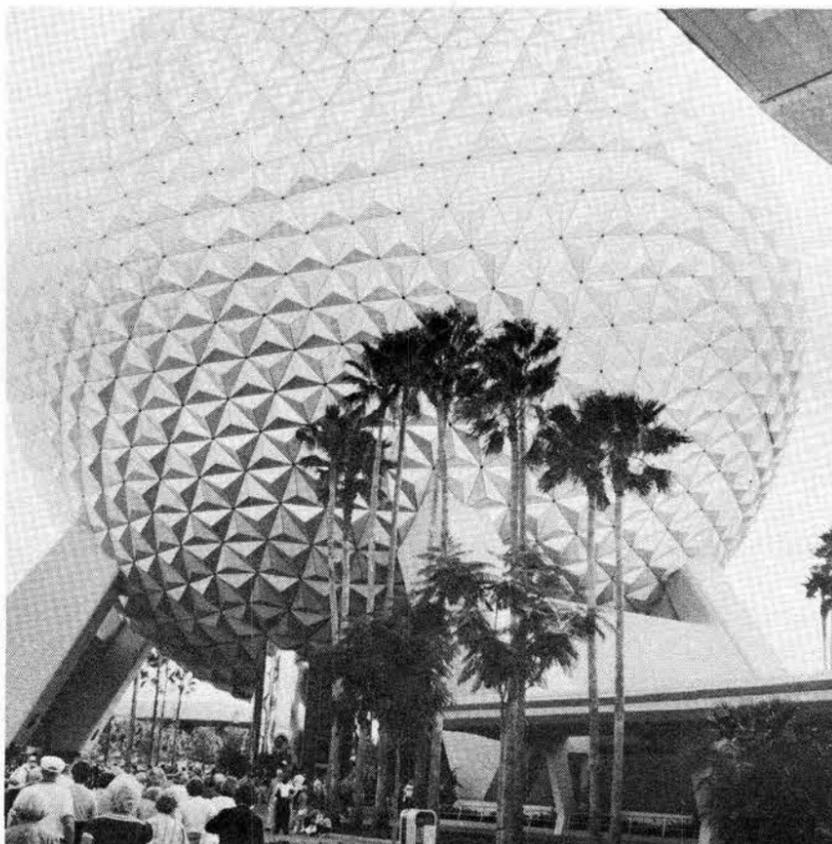


Charles Drummond (8271)



Bill Morehouse (8162)

MA BALL is what employees at EPCOT Center call the 18-story aluminum sphere that greets visitors at the gate. The sphere houses Bell System's "Spaceship Earth" display.



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Tourist's-Eye View of EPCOT Center

The Bell System played a major role in Disney World's new EPCOT Center near Orlando. I went to see it while I was in Florida visiting relatives over the holidays. And I am glad I did.

At the entrance, I joined the other tourists in appreciating the 18-story brushed aluminum globe sponsored by Bell. We had plenty of time to appreciate the geodesic sphere, the focal point of the 500-acre park, because we stood in line for an hour to tour its interior.

It was worth the wait. Called "Spaceship Earth," the pavilion presents the history of civilization and communications from the Stone Age to the Information Age, then into the future. Visitors sit in roller coaster-type cars for a slow but spectacular ride, beginning with soothing music and a gray, cool fog that encircles each car. The ride takes visitors on a tour through time, winding up to the top of the globe and back down, and encountering dozens of tableaux complete with lifelike "audioanimatronics" figures. These Disney creations are so lifelike they reminded me of the androids in "Star Trek."

Another Bell contribution to EPCOT is the FutureCom section of the Communicore buildings that flank Spaceship Earth. In 9000 square feet of exhibition space, FutureCom portrays experimental information and communication concepts. Video teleconferencing (similar to that between Livermore and Albuquerque) was one of the more popular demonstrations.

Once inside the park, I had to choose which pavilions to see — if you have only one day there it is nearly impossible to cover all the offerings. In the Future World

half of EPCOT (which stands for Experimental Prototype Community Of Tomorrow), I visited four other major attractions: The Universe of Energy, an electrifying show (as you might guess) set within a solar-powered building the size of three football fields, sponsored by Exxon; The World of Motion, a roadshow highlighting milestones in America's ever-accelerating mobility, offered by General Motors; Journey into Imagination, a trip through the colorful worlds of art, literature, science, and technology including a 3-D movie and some hands-on displays, presented by Kodak; and The Land, a six-acre pavilion exploring imaginative agricultural techniques around the globe along with a musical, "Kitchen Kabaret," hosted by Kraft Foods.

The second section of the park is like a world's fair, with eight nations — China, Japan, Germany, Italy, France, the United Kingdom, Mexico, and Canada — putting their best feet forward with impressive pavilions, many built as replicas of famous landmarks in their countries. You can stroll through a Japanese tea garden, dine next to the Eiffel Tower, join an Oktoberfest in a Bavarian biergarten, gaze at Hampton's Court Castle, and take a boatripe through ancient Mexico. In addition, there are stage shows, panoramic movies, more audioanimatronics, restaurants serving authentic ethnic cuisine, lots of gift shops, and museum-quality exhibits. The employees in each pavilion are natives of the country sponsoring it.

Easily the most spectacular presentation in my opinion is the American Adventure's show. In a 1200-seat theater that is an architectural blend of Monticello and Independence Hall, spectators witness a combined backscreen projection of America's history and some 35 audioanimatronic figures performing on stage. "Hosts" Benjamin Franklin and Mark Twain lead the show, which gives the audience an insight into America's pioneering spirit, its melting pot of immigrants, its patriotism, and the conflicts that make the country what it is today. Disney even broaches the subjects of human rights and equality for women, subjects that have been avoided in past entertainment extravaganzas in such parks.

If you have only one day to spend there, arrive early and plan to stay through the evening pageant of song and dance at the American Adventure's garden amphitheater. With the opening soon of two more Future World centers — The Living Seas and General Electric's Horizons exhibition — and with Israel, Africa, and Spain joining the other countries in the World Showcase, there's more than enough reason for a visit. I'm already planning to return. *Barry Schrader (8212)*

State of the Labs

change in the AT&T ethos over time, but it will be many years, in my opinion, before such a change would affect the way in which AT&T operates, at least in those issues which are relevant to us.

SLN: How about weapons programs? What's the current outlook?

GCD: At the moment, of course, we are very busy. We have a larger number of weapons under various stages of development than we've had in many years. If anything, our concern is that our resources are spread too thin.

"It is difficult to predict just what the nature of new weapons is going to be."

On the other hand, if you go out to 1985 and beyond, then the list of proposed new weapons begins to thin out. It is difficult to predict just what the nature of new weapons is going to be after the present group reaches completion.

There is fairly general agreement in the country that we need a replacement for the Trident submarine system. And there is obviously a tremendous debate going on as to whether or not we need another land-based ICBM. My own view is that continuous R & D leading toward new weapon possibilities, including ICBMs, is essential to deterrence; therefore I predict that the nation will ultimately fix on some acceptable land-based system and go ahead with it. The air-launched leg of the triad, of course, ultimately will need modernization repair as well, as will tactical weapons. It is very difficult at this point to predict with very much certainty just what those systems will be because, again, public concern and Congressional concern make us examine our national posture again and again. But there will always be important work to do.

"We need a conventional deterrent that is at least as convincing against conventional adventures as the nuclear deterrent has been."

SLN: What about non-nuclear weaponry?

GCD: I've said before that I feel that the nation will have to pay greater attention to conventional weaponry in the future because it really is a vital part of deterrence. We need a conventional deterrent that is at least as convincing against conventional adventures as the nuclear deterrent has been for the past 30 or 40 years.

So what is the role for Sandia? In the future, the systems that deliver nuclear weapons and the enhanced conventional deterrence that we must achieve will all be part of an integrated battlefield in which current distinctions between service branches, between delivery systems, between the nature of the firepower (nuclear and non-nuclear) tend to become more

blurred. Hence, it seems to me that Sandia has an important integrating role coming from our traditional nuclear capabilities.

Beyond that, the kinds of skills that we have acquired as a multiprogram ordnance engineering laboratory for the nuclear side of the house equip us to assist the country in non-nuclear areas as well. The Future Options Group is examining those possibilities so that, when and if we get to that point, we will be ready to offer the country our expertise.

SLN: Can you be more specific about the mission of that group?

GCD: One of the major things that the Future Options Group is considering is what kind of role Sandia could play in the future defense of the country. For example, the Army's Air-Land Battle 2000 study describes a kind of situation in which the high technology capability that Sandia has would be very valuable indeed in devising and improving the systems that would be needed for defense. The basic idea is that the U.S. wants a defense against aggression, but doesn't have ambitions against its neighbors. However, we do not want to devote a major fraction of our resources to standing armies and massive armaments. What we

"The West has . . . a very strong technological lead. Yet we haven't fully applied those resources to classical conventional warfare."

should do, it seems to me, is to examine the means by which we can do that by using the superiorities at our disposal. Clearly, the West has a major advantage in high technology. If you look at the technological infrastructure of the NATO powers and compare it with that of the Warsaw Pact, I think it is clear that — in terms of integrated circuits and microprocessors and computing technology and software and display technology and space technology and all sorts of other things — we have a very strong technological lead. Yet we haven't fully applied those resources to classical conventional warfare. If we utilize these advantages, it seems to me we can very well defend ourselves, even with numerical inferiority, by being technically superior to the offense.

We have really no choice — we can't, in our society, maintain millions of people in arms. So the direction we should be moving is toward "Star Wars," if you will. And as we do that, I think Sandia certainly has contributions to make.

SLN: Let's talk about some promising new developments. For example, strained-layer super lattices.

GCD: It is hard to know what the next big breakthrough will be in solid state physics. VLSI (Very Large Scale Integrated circuits) is nothing more than the replication of individual devices on a single piece of material. The device principles that are operative inside an integrated circuit are not different in kind. The strained-layer super lattice, however, changes the properties of the material and thus may enable the design of devices very different in their basic parameters from others in the past. So it is a different direction, a different axis, than VLSI. It is hard to predict just

"It is hard to predict just where it [strained-layer super lattice work] will lead, but it is very exciting and very good science."

where it will lead, but it is very exciting and very good science.

SLN: Speaking of microelectronics, is it not an advantage to have an in-house capability in this area?

GCD: I think it does give us tremendous advantage. The basic justification for our having an in-house semiconductor operation is multifold. We found that our special requirements could not be met by industry — that radiation-hardened electronics constituted too small a market to encourage industry to provide that capability. Therefore we had to do it internally if we were going to get it done at all. We're talking about small numbers of highly sophisticated units which are worth their cost to us but not to industry at large. Then there is the question of security. Some of our chips contain classified information in the form of codes or keys or cryptographs, etc. and maintaining an adequately secure facility also leads you to an in-house capability.

Once you have such a facility, there is no question that the capability of the device designer and the system designer working together to optimize the chip in its system configuration makes that system a better, more optimized design than if they have to work at arm's length. Then too, given our facility, we can create customized chips, whereas if we didn't have that capability we would have to use whatever is available in the catalogs; and we wouldn't come up with quite as optimal a design.

It is also true that vertical integration at Sandia includes basic research. We will be able to use whatever device inventions come out of the super lattice work, for example, earlier than the community at large will be able to do.

SLN: How about our Inertial Confinement Fusion work?

GCD: The ICF program has undergone a reexamination recently. It is generally recognized that the road to a practical ICF power device is a very long road indeed. We have in recent months tried to give the program a multipronged approach in which our capability in high pulse power can take, and in fact is now taking, several directions — not just confinement fusion but also weapon effect simulation and other applications that take advantage of our ability to confine large amounts of power in short periods of time in small regions of space.

In that regard it seems to me that Sandia is in a good position because all of these uses involve the concentration of large amounts of power in a small space and are therefore not as limited as approaches that use a particular form of energy, such as photons from a high-power laser. I regard the ICF program in the three laboratories (Sandia, Livermore, and Los Alamos) as being complementary rather than competitive.

SLN: Do you foresee a continuing phase-out of our energy programs?

GCD: We have demonstrated over the past 10 years or so that Sandia can do very useful things in the energy field and can provide an understanding of energy options for the country that, I would say, no other organization could provide as well. When it was the national imperative that we find alternate energy sources, I think we met that challenge and reflected credit on the Laboratories. The pendulum now appears to have swung more toward defense work.

“When it was the national imperative that we find alternate energy sources, we met that challenge and reflected credit on the Labs.”

However, long range research in energy may well become a national priority once again. When and if it does, we will have some very good technical contributions to make.

SLN: What particularly good contributions have we made in this area?

GCD: In the solar thermal program, we have solved the outstanding engineering problems and reached an understanding of the economic problems related to the use of solar energy to generate electricity or to provide industrial heat. It was sound engineering work that reached honest answers that underlie the engineering judgments that will guide the nation as to what it should and shouldn't build. And, in the fossil fuel extraction programs, our contribution was significant in that for the first time a disciplined and analytical engineering approach was applied to these questions. On the whole, I think our energy work has been extremely good.

SLN: Anything new in the reimbursable field?

GCD: Sandia has many capabilities that others are eager to fund on a reimbursable basis. How much we can accept depends on the needs of our major mission, for which we can expect funding on an approximate level-of-effort basis from the Office of Military Applications in Defense Programs. We must be careful that we do not become a kind of job shop, with salesmen out drumming up business to keep our employees busy. But we can and should use our technical capabilities on the nation's behalf in areas that make mutual sense to us, to the Department of Energy, and to the potential reimbursable customer.

In this regard, I hope Sandia will not become involved in a sort of program surveillance where not much technical value is added. I don't think that we should be in the role of purchasing for others simply because we are informed buyers. We ought to restrict our activities to those programs to which we can make a real technical contribution.

SLN: Where do we stand in terms of new facilities?

GCD: We have done well in the last couple of years in getting new buildings. We now have most of the 823 complex (the Energy Laboratories and the Technology Transfer Center) funded, and we have gone out for bids on the Technology Transfer Center. We will be breaking ground on that

soon. Building 891 is nearing completion.

On the other hand, while we have a long list of other facilities that should be built over the next several years (our Long Range Plan adds up to \$275 million or so for facilities for the next five years), I think it is unrealistic to expect that all of those buildings will in fact be authorized on the time scale that we have requested them. For example, some of our high priority buildings that we hoped would be started in FY 84 have been pushed out into 85. What will happen when 85 comes we can't know yet. I'm sorry that has happened because it means there will be no starts in fiscal 84, at least not under the present budgets. I feel particularly bad about the VLSI facility; I think we ought to at least begin its design in 84. But it looks as if we may have a hiatus for a year or two after the present spate of building starts has ended.

“It looks as if we may have a hiatus for a year or two after the present spate of building starts has ended.”

SLN: Our budget this year appears to put us in a stronger position than some of the other laboratories. We must have done something right.

GCD: The major reason that we are in better shape than some of the other laboratories is that a much larger fraction of our activities is in defense, and defense is growing while energy is shrinking. Since we had allowed our energy programs to grow only very cautiously during the 70s — in fact, the growth in our energy programs never compensated for the decrease in defense programs (we're smaller today as a lab than we were in 1970) — the result was that we had little difficulty in making the transition from energy to defense.

Another reason is that Congress' continuing resolution, under which we're now operating, happens to hit us better than it does other laboratories. The continuing resolution authorizes us to spend nearly what we would have spent if the budget proposed by the administration had been passed. So we are in good shape this year.

SLN: The following years don't look as rosy?

GCD: Well, the early indications for 84 look very acceptable with funding on a sort of level-of-effort basis. We think that we will stay at about the same size in 84 if the existing proposals (that we see at a very early stage from the Office of Management and Budget and from the Congressional staffs) do in fact materialize. On the other hand, it is too early to be sure of that because we are all aware that the Congress is divided on how to bring the budget into better balance. There seems to be an increasing indication that some cuts in the defense budget may be necessary to get Congressional approval for other cuts. The degree to which that may happen and the degree to which it would affect us aren't at all clear. But the numbers that we have seen so far are quite acceptable.

SLN: Can we extrapolate from the budget any personnel growth?

GCD: Our plan calls for us to grow slightly through 84, then stay flat for 85 and beyond. But, of course, that depends on

what the budget finally turns out to be.

Even under the most pessimistic circumstances, under the most stringent budget cuts that anyone has even remotely discussed, I don't anticipate any difficulty in accommodating our staff within normal attrition limits; we might have to suspend hiring at some time in the future, but I don't anticipate that we would ever have really serious problems in supporting our staff, given the normal attrition rate.

SLN: You've been around the R & D environment for a long time. How about the quality of people we are getting now?

GCD: We have been fortunate in having had a reasonable budget appropriation during this period of recession, so we have been hiring in a very good buyer's market. Our rate of acceptances of job offers is around 80 percent, the highest in our history. It is my impression that we are hiring a crop of new people who are as good as or better than any we have ever had.

SLN: When you were here 20 years ago, Sandia was quite different. Is there anything that particularly strikes you about the composition of the work force?

GCD: At that time something like 25 percent of the technical staff had advanced degrees; today it's 75 percent. That has to make a great difference. If you look at the level of penetration of computers and modern instrumentation, we are much better off today than we were then. If you look at the degree to which analysis rather than empirical methods inspires our work, we are much further ahead today. In almost every technical sense, we are both a broader and deeper technical laboratory than we were then. I don't mean to criticize the work that was done in those days — I think it was very good. But it is better now.

SLN: How about a thumbnail capsule of how you see Sandia.

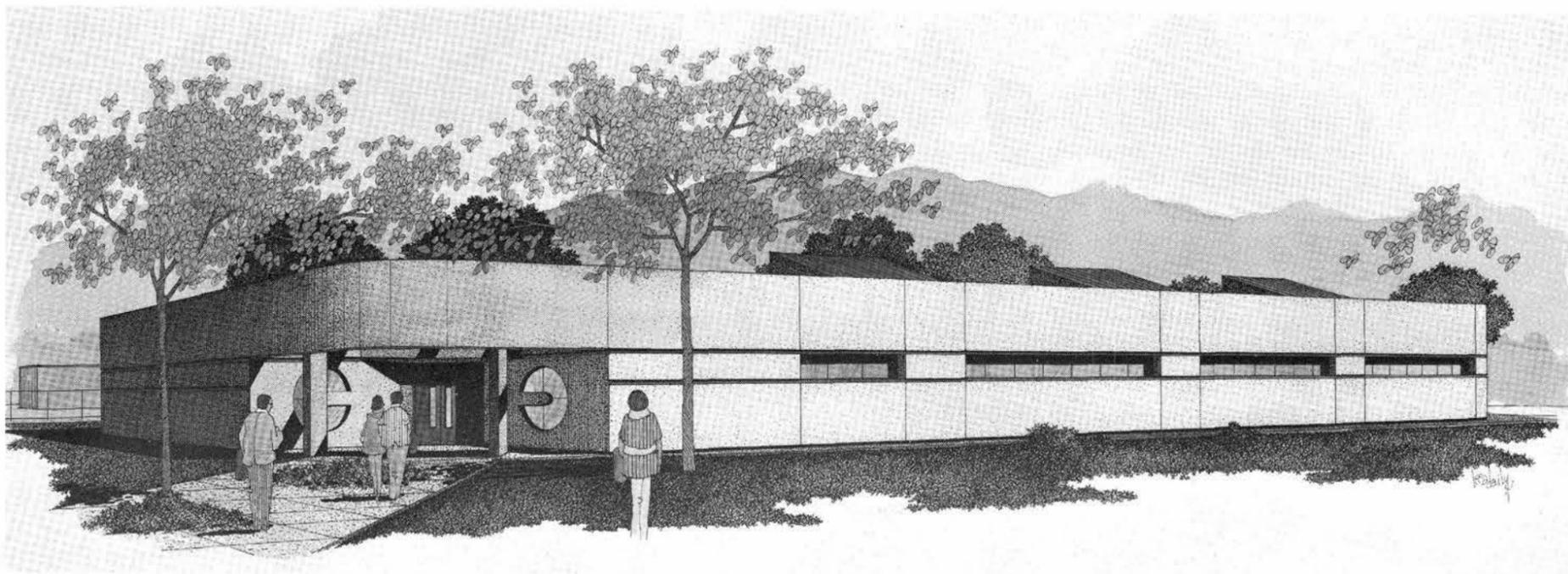
GCD: I believe I would say today that, technically and from the management standpoint, Sandia ranks at the very top of any laboratory that I know about in the country. The people, the accomplishments, and the reputation really leave very little to be desired. Sandia is better than it has ever been.

“Sandia is better than it has ever been.”

SLN: What about the year and a half you have been here — anything that you take a particular satisfaction and pride in?

GCD: I certainly have been very pleased with this assignment. I anticipated that it would be good and have found it so. My predecessor, Mr. Sparks, and the whole management team here at Sandia have done such a good job that I can come in and bask in the glory of a job well done. I find the new organization that we have put into place working quite well, and I personally feel that the number of initiatives that we now have open to us make for a very exciting future. So it has been a very fine year and a half, and I am looking forward to the next few.

George Dacey's "Nuclear Freeze"
Comments on Page Seven.



ARCHITECT'S DRAWING shows the new Center for Radiation-Hardened Microelectronics Bldg. 857. The new facility under construction just east of Bldg. 870

will provide 50 people in Microelectronics Directorate 2100 with office and laboratory space.

Plant Engineering Busy

\$8 Million General Plant Projects Underway

More than \$8 million in construction and modification projects are currently underway or were recently completed at the Labs under the FY82 and 83 General Plant Projects (GPP) budget, according to Ken Harper, manager of Plant Engineering Design Department II 3640. These projects do not include the "line item" construction projects such as the \$13.6 million Bldg. 891 in Tech Area I or Bldgs. 960 and 961 of the Reactor Support Facility in Area IV, with a combined construction cost of almost \$10 million. (Line items are construction projects costing more than \$1 million in the federal budget approved individually by Congress.)

"The FY82 and 83 GPP budgets of \$4.5 million and \$4 million represent twice the amount expended in previous years," Ken says. "This, along with new line item construction and upcoming utilities upgrading, is indicative of the support Sandia is receiving from the Office of Military Applications. Most of our plant facilities are more than 20 years old. These new GPP projects are helping us close the gap to modernization."

In the FY82 budget is the new Center for Radiation-Hardened Microelectronics Bldg. 867 for Organization 2100. This new lab and office building nearing completion just east of Bldg. 870 will house 50 people and will cost \$995,000. Project engineer Bill Hendrick (3643), reports that construction should be complete in June.

Modifications to Bldg. 836 will be made in three phases — the first phase in the FY82 budget will cost \$950,000. This project will enclose the open courtyard and add two stories (some 16,800 square feet of space) to the building. The first floor will be a conference center and a skylighted atrium; the second will provide space for design definition support activities. The second and third phases of Bldg. 836 modification will include removal of existing metal partitions, construction of new office spaces, and replacement of suspended ceilings. Fire protection, mechanical, and electrical systems will be updated. The second and third phases are now programmed for FY84 and 85 with construction to be underway about September

1984, according to Cecil Morrisett (3642), project leader. This will allow space to be emptied for modifications in Bldg. 836 by moves to space created by the occupancy of the new Bldg. 891.

Recently completed under the FY82 GPP budget was the paving of H Street between 14th and 20th Streets, a distance of about a quarter mile. The project cost \$170,000 and changed traffic patterns to make H Street a main thoroughfare between Gate 6 and the Security Escort facility west of Eubank Blvd. Project leader was Wayne Burton (3631).

Also completed were utility extensions in Tech Area I to accommodate future new buildings in the southeast corner. The utilities included 1530 feet of steam and condensate lines, 1250 feet of water lines, 1950 feet of sewer and 400 feet of storm sewer lines. Project leader was Jim Grossman (3631).

Bldg. 967 at Livermore

At Livermore, a new Tritium Research laboratory and office building is nearing completion. The new Bldg. 967 will provide approximately 4000 square feet of space for people of Department 8440. The vacated space in Bldg. 968 will be converted to much-needed laboratory space. Total cost of the project is \$400,000. Project leader is Dick Ulrech (8255).

Bldg. 804 Library Addition

Other remaining FY82 projects include the 6000 square foot addition to the Technical Library, Bldg. 804. The addition will provide a new two-level stack area for periodicals, a reading area, a microfilm reading room, and a periodical work room. Scheduled for completion in May, the addition costs \$635,000. Cecil Morrisett (3642) is project leader.

Bldg. 868 Addition

Scheduled for completion in August at a cost of \$615,000, a new 6000-square-foot addition to Bldg. 868 will provide office space for 30 people in Organization 0300. New restroom facilities and a new entrance on the east side of the building are also part of the project. Bruce Phillips (3643) is project leader.

A second phase of this project (FY83) is another 3900-square-foot addition on the northwest side of the building for more office space for 0300 groups. The \$375,000 addition is scheduled for completion in February 1984, Project leader is Bill Hendrick (3643).

Bldg. 864 Addition

A two-story addition to Bldg. 864 of about 2300 square feet is under construction and scheduled for completion in May. The new addition will provide more laboratory space for the Scientific Glass Laboratory. The project includes moving existing laboratory equipment and reconnecting to utility and exhaust services. Cost is \$325,000. Bill Hendrick (3643) is project leader.

More FY83 Projects

Fiber Optics Cable — Extension of a fiber optic cable from Bldg. 821 to the Pulse Power complex in Area IV should be complete during the third quarter of FY83 at a total cost of \$150,000. The fiber optic net is operating now between Bldgs. 802 and 880. Sandia's long-range plan to improve data communications is based on a wideband optical network — a network connecting strategically located technical control centers in all major Tech Area I buildings with extensions to remote area centers. Requesting organization is 2600. Cliff Rudy (3631) is project engineer.

Bldg. 6584 - About 60 percent of a new \$500,000, 3740-square-foot addition to Bldg. 6584 will be computer-floored space to house the Area III Computer Network Control, Area III Development System, Area III Network Fiber Optic Communications, Interactive Graphics System, FM Magnetic Tape A/D Reduction Center, and a portion of the Engineering Data Analysis Center to support all of the Coyote Test Field facilities. The remainder of the addition will house the Area III and remote areas security force. It will include dressing rooms, showers, a ready room, and office space. Completion is expected during the third quarter of FY84. Project leader is Charles Fink (3632).

Bldg. 831 — Medical 3300 will use a new 4700-square-foot addition to Bldg. 831 for im-

'A Kind of Crossroads'

I am concerned about the nuclear freeze movement, more concerned than I would be were it not coming from a central segment of our society. In the earlier "peacenik" movements, we were dealing with people who were on the fringes of society. Today, however, the debate features Catholic bishops, members of the American Bar Association, American Medical Association — people whose views cannot be dismissed as not representative. That is one reason, I think, that it is an important movement. But I regard it as dangerous for this reason — these people don't seem to be any better informed than people were in the former movements.

Furthermore, it seems to me that the rubric of "nuclear freeze" tends to sweep up a variety of ideas into a sort of general banner without careful thought as to just what is being recommended. When you say freeze, what in fact do you mean? Do you mean a unilateral freeze? Maybe not. Do you mean a bilateral freeze? Then what about the other nations such as Britain, France, China, India, and how many other nations in a few years? Do you mean to freeze production or deployment or use or R & D or all of these things or none of these things or some other things? What do you mean by freeze? Do you mean that we agree to freeze even if we don't know whether in fact others have lived up to the agreement? How does "freezing" relate to the issue of verification?

The implementation of a nuclear freeze would be in fact a very complicated matter in which you would have to very carefully specify what it is you are freezing, how you would assure compliance with a treaty, who would be parties to the treaty, and all sorts of other questions. It would be extremely complicated and time-consuming — more frustrating than SALT I, SALT II, or any previous negotiations. Yet none of these questions seems to be involved in the debate.

The debate seems rather to center on "Is a nuclear bomb a good thing or a bad thing?" We can dispose of that issue right away. It's a good thing if you use it to deter war, and it's a bad thing if you use it to kill people.

The whole debate is very emotional, un-specific, diffuse and, in many respects it

seems to me, destructive because it gives emotional release to people who feel good by campaigning for something — yet without directing their laudable energies toward getting something done that might in fact affect the course of human events. A practical arms limitation movement, which would in fact engage other nations of the world, which would in fact be verifiable, and which would in fact bring about measurable movement toward less tension and less danger in the world is something that is very deserving of human energy. But to jump wildly to a utopian end solution because the current situation is repugnant will be ineffective. Therefore it seems to me that these energies are being diverted in the wrong direction. So I think the nuclear freeze movement is a bad thing.

How does the freeze movement affect us? One obvious area is the budget. We compete for dollars for everything. Every dollar that is spent on nuclear weapons is not spent on conventional weapons. Every dollar that is spent on weapons in general is not spent on medical advances; one always competes for dollars.

Morale is another area in which the freeze affects us. The people who have chosen to join us over the years have made a commitment to excellence. Sandia is a place that permits them to realize their potential. But the nature of our activities — the weapon business — clearly causes public polarization. We have some evidence, albeit slight, that newly graduating people are somewhat more reluctant to go into nuclear work than previous generations have been. This is some cause for concern — not because the nature of our business is anything other than that in which we should take pride (after all, we are contributing to the national interest and national welfare, programs which are of transcendent national importance) — but because not all of society agrees with our point of view. That does and will create problems for Sandians. At the same time that our people can take just pride in the excellence of their work and in the importance of what they do to the national welfare, they need to justify their viewpoints to an increasingly skeptical segment of the population. I can't predict the end result — I don't know where it is going to lead. I suspect that, like all pendu-



lums, this one will swing again.

Up until now we have had a clear sense of what our mission is and we have increased our capability to carry it out. But today we live in an environment of national introspection. We are at a kind of crossroads.

We may not have a clear new directive for many years. This debate is going to have to run its course. It is obvious that the West cannot neglect its nuclear deterrent, however emotional the populace becomes. Ultimately, the people will recognize that the deterrent force is there to keep us from getting involved in war. Deterrence, after all, has been a successful policy since World War II. We must not drift into unilateral disarmament, no matter how horribly the consequences of war are portrayed.

But there may be several years of confusion while we sort out some questions: "What are we going to do about conventional weapons? What are we going to do about arms control and arms limitations? What kinds of relationships are we going to forge with the new administration in Russia?" It is going to be a very uncertain period, and to some extent it will be frustrating for all of us.

As a nation we are now seriously asking, "Just what are our imperatives in defense?" Whatever the answer, it will affect us. It is good that Sandia is there in this kind of querying period. It is good to be needed and wanted and appreciated and strong. I am confident that whatever the future holds, we will be an important contribution to it.

proved diagnostic and treatment facilities. Cost will be \$625,000 with completion projected for July 1984. Tom Ashwill (3642) is project leader.

Bldg. 9956 — A pre-engineered metal building containing 2800 square feet will be added to Bldg. 9956 to house Department 1530's high velocity research powder gun. The gun will be moved from its present location in Bldg. 9956 to the new addition. Charles Fink (3632) is project leader.

Cafeteria Bldg. 861 — About 3800 square feet will be added to the south side of Bldg. 861 to increase seating capacity from 270 to 490. A sound-resistant folding door will be installed to provide a multi-purpose space

for luncheon meetings, training sessions, and retirement open houses. At a cost of \$250,000, the addition should be open in May 1984. Tom Ashwill (3642) is project leader.

Bldg. 966 at Livermore — An addition of 3700 square feet to Bldg. 966 at Livermore will provide about 530 square feet for a temperature-regulated test cell and a classified assembly area, and approximately 2500 square feet for relocation of the high pressure laboratory from Bldg. 913. Larger test cells and cells with temperature controls will be provided, as well as a hydrogen test facility. Cost of the addition, scheduled for completion in December 1983, is \$950,000. Department 8440 will occupy the

new addition. Project leader is Bob May (8254).

At Tonopah Test Range — Earl Gruer (3642) is project leader on two projects for TTR totaling more than \$300,000. The new construction will provide a maintenance facility for optical trackers and a shop and support building at the MPS/36 radar facility. Construction will start this spring.

Now Under Design — The remainder of the FY83 budget is earmarked for a building and facility to handle trailer shipments to the 6000 Igloo area and a two-bay addition to warehouse Bldg. 954 at Livermore. Construction will start in late FY83.

Supervisory Appointments

STEVE HEAPHY to section supervisor (Lieutenant) in Security Operations Division II 3434, effective April 1.

Steve joined the Labs extra board security force in February 1976; he became a full-time security inspector in May 1980. Steve received a BS in criminology and an associate degree in police science from the U of A. He will receive his BA in business from the U of A in August.

Steve enjoys basketball, racquetball, and running. He and his wife Teresa have a nine-month-old son. They live in the NE heights.

* * *

TOM CLEVELAND to supervisor of Branch Labs Division 7482, effective March 16.

Tom joined Sandia in March 1961. Later that year, he entered the machinist apprenticeship program and graduated in 1965. He then completed Sandia's five-year mechanical TI program, graduating in 1973. Tom was promoted to supervisor of the composite machining section in 1975.

Tom enjoys fishing, swimming, and auto racing (as a spectator). He and his wife Carolyn have two grown sons. They live in the NE heights.

* * *

BILL SWARTZ to supervisor of Test Data Programming Division 7524, effective March 1.

Since coming to Sandia as a staff member in 1967, Bill has worked in the area of data reduction for weapons programs.

* * *

Aerobic Dance — An aerobic lady, Donna Ness, will lead her dancers through the 12-week spring session of Aerobic Dance, Inc.'s version of fitness fun starting April 4. If your heart and lungs are not getting a regular workout and you want to punish those unwanted pounds, come on over to the Coronado Club Mondays and Wednesdays from 9:30-10:30 or 5:30-6:30. Call Donna for more information on 255-6314 or 293-0316.

* * *

Therapeutic Massage — There seems to be no end in sight to interest in this class, so it's being offered again this month — April 12, 19, and 26 from 7-9 p.m. in room B5 of the Coronado Club. Cost per couple is \$13 payable before April 8. Very few openings are available, so call Tom Lenz, recreation manager, now at 4-8486.

* * *

Racquetball — A couple of frustrated Sandia tennis players (racquetballers) want to rent a private club on a weekend and run a fun racquetball tournament. Tom Lenz says it beats getting the yard in shape for summer. The date is Saturday, April 30, so give Tom a call on 4-8486. All levels of skill — zeros to tens — are needed.

* * *

Biking/Hiking — All area bicyclists are invited to join the fight against diabetes



STEVE HEAPHY (3435), TOM CLEVELAND (7482), BILL SWARTZ (7524), and, seated, GARY MAUTH (7320).

Early in his career, he worked on applications programming; more recently his work has been with systems programming.

Bill received a BS and MS in math from the University of Washington. He enjoys hunting, skiing, and gardening. He and his wife Cherry live in NE Albuquerque.

* * *

GARY MAUTH to manager of Space Sensors Department 7320, effective March 16.

Following graduation from the Univer-

sity of Colorado with a BS in EE, Gary joined the Laboratories in June 1965 as a member of the Technical Development Program. He received his MS in EE from UNM in 1967. Since 1966 Gary has worked with the group responsible for development of sensor instrumentation for satellite systems, and has supervised the Satellite Sensors Division 7322 since 1976.

Gary enjoys skiing, camping, gardening, and fishing. He and his wife Mary have two high-school-age sons. They live in NE Albuquerque.

Fun & Games

April 24 during the American Diabetes Association Bike Ride and Stride. Bikers can do a 55-mile race or 25-35 mile tour. Entry fee for the event is either \$50 in pledges for the Diabetes Association or a \$5 pre-registration fee (\$6 the day of the ride). The challenge routes are sanctioned by local bicycle racing and touring clubs.

For details on the challenge routes and on the prizes to be awarded, call the American Diabetes Association at 266-5716.

For cyclists and runners at KAFB, there will be a 12-mile bike ride and stride route on the back roads of the Base. Participation in the Kirtland routes, sponsored by the Que Pasa Recreation Center, makes striders and riders eligible for state and local prizes, including a weekend for two at Disneyland. For information on the Kirtland route, call Que Pasa at 4-5420.

* * *

Kid's Arts and Crafts — KAFB's Arts and Crafts Center is offering a ceramics class for 6-9 year olds beginning April 10. Call 4-0222 for info.

* * *

A number of Coronado Club tennis club memberships are open. Cost for family membership is \$40 annually, singles \$32. If interested, call Tom Lenz, recreation manager, 4-8486 for information.

An effort to organize a Coronado Swim Team to compete in the Sundance Aquatic Association is underway. Children of all ages through 18 are eligible to compete. The Coronado team will compete against the various private clubs in town. Swim practice will be Mondays through Fridays from 7:30 to 9 a.m. in the Club's twin pools. Cost will be \$15 per child. An active parents group is required. If interested, call Tom Lenz before April 15.

Congratulations

Robert (2524) and Tina Cutler, a daughter, Sarah Louise, Feb. 19.

Felix (3618) and Betty Garcia, twin daughters, March 4.



FEMINIST FILMMAKER

Argentine feminism has reared its head in María Luisa Bemberg's film *Nobody's Woman*. The film, released last spring despite government censorship of most movies challenging traditional values, portrays a woman who leaves her philandering husband. "The Government does not consider feminism a political movement," explains Ms. Bemberg. She was refused permission to make the film five years ago. The censors changed their ruling after *Kramer vs. Kramer* — in which a woman leaves her husband — gained a wide Argentine audience.

— World Press Review

Take Note

Secretaries who would like to attend the Sandia secretarial seminar next week and who have not been scheduled to do so should contact their secretarial coordinators. The seminar, sponsored by the Sandia Secretarial Committee, will be held April 4-8 in the Mesa Room of the Officer's Club East, KAFB. Committee members are: Shirley Baker (1000), Pat Hamlet (2000), Marie Iverson (3000), Patsy Zmiejko (7000), and Julia Norwood (9000); Bob Garcia (3500) is sponsor, and Mary Campbell (3523), Shirley Dean (11-1), and Bob Hepplewhite (3650) are ad hoc members.

* * *

Two new faces and talents in Equal Opportunity and Affirmative Action Division 3511: Yolanda Padilla-Vigil, Women's Program Coordinator, available for assistance with any sexual harrasment problems; and Rose Gonzalez, who handles employee counselling of all kinds.

* * *

The Second Annual Alice M. King Conference on Women's Cancer, sponsored by the New Mexico Foundation Against Women's Cancer, is scheduled April 9 from 9 a.m. to 4:30 p.m. at the Albuquerque Convention Center.

The public is invited; no registration fee. For more information, call Julie Vargas at 4-2364.

* * *

The Albuquerque Police Department is now accepting applications for its Seventh Police Reserve Unit cadet class. An APD reserve officer is an unpaid volunteer who is willing to give some time to improve the community's law-enforcement capability. APD is looking for mature, responsible, and active members of the community who will not only provide outstanding law-enforcement service, but who will also provide a two-way feedback of ideas between the police and the community. For information on the program, contact Officer James Hulst, coordinator of the Reserve Corps, at 766-4562.

* * *

Sandia is seeking furnished houses or apartments for summer employees — responsible college professors and graduate students who will be arriving in May or June and leaving in August or early September. If you have summer rental property available, call 4-3441 by April 10.

* * *

Terri Lovato (2432) was elected secretary of the newly organized New Mexico Chapter of the National Micrographics Association. At the meeting, Karen Moynier (2432) received a plaque for her collaborative design of the chapter logo, and Ruth Llamas (2432) received one for her newsletter design.

* * *

"Italian Images," a photographic display by Joe Laval (3163), opens today at Ruth Ramberg Gallery, 2929 Monte Vista Blvd. NE. The show represents the work Joe did in Italy the past two summers while leading a photographic workshop sponsored by UNM. A reception for the public will be held at the gallery on April 10 from 3 to 6 p.m.

* * *

The Albuquerque Chapter of Professional Secretaries is conducting a seminar called "Improving Personal Communications and Stress Management for Secretaries" on April 16. Scheduled at the Classic Hotel from 7:30 to 2:30, the seminar costs \$35 which covers the presentation, an exhibit, and lunch. Registration deadline is April 5. For more information call 892-9300.

* * *

Millie Hooker (9269) shown in a LAB NEWS retiree photo today, claims a remarkable attendance record — more than 20 years at Sandia without a day of sick leave. In addition, she's worked evenings and weekends for the past 10 years as a medical transcriptionist for Lovelace Medical Center.

* * *

Registration is now open for three new Parentcraft groups. Groups are for expectant parents and mothers of infants one to

four months old. A group for single mothers will also be starting. To register, or for more information, call Parentcraft, Inc., at 256-1191.

* * *

Prickly subject — The New Mexico Cactus and Succulent Society will hold its annual plant show and sale on April 16-17 at the Albuquerque Garden Center in Los Altos Park. For information on entering the show or purchasing plants, call Gary Loos at 897-1971.

* * *

A national workshop for the Southwest Region — "Making Invention Work" — is scheduled at the Hilton Inn in Santa Fe on April 16-17. The workshop will bring together inventors, entrepreneurs, and interested organizations to exchange information and mutual assistance. Principal theme is to encourage innovation in energy. Sandia is one of the regional sponsors. For more information, call Bob Stromberg (400) on 4-5535.

* * *

Glenn Fowler (9000) will be honored by the secretaries of Sandia with a luncheon on May 25 at the Tanoan Country Club. Mark your calendars — additional details will be forthcoming soon. Planning coordinator for the event is Harriet Mason, 281-3052.

* * *

Graduates of Albuquerque High School's class of 1963 are planning a 20-year class reunion on July 16 and 24. For more information, call Richard Montoya (2451) on 877-7501.

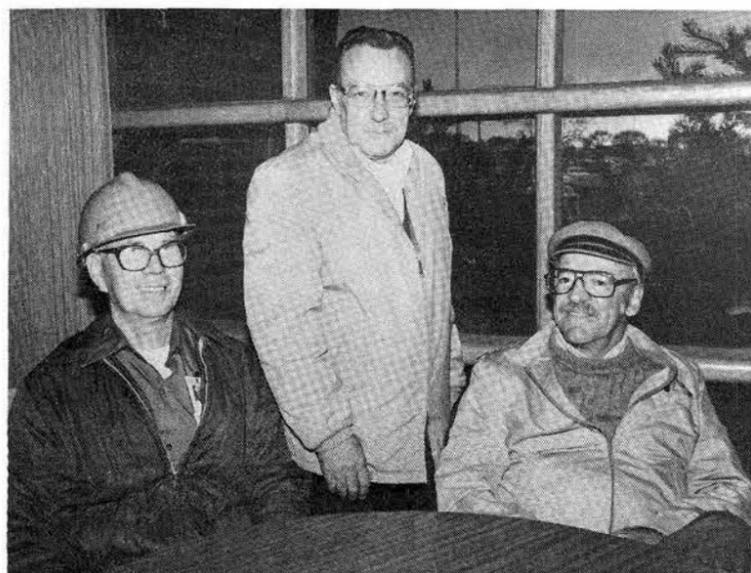
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Sympathy

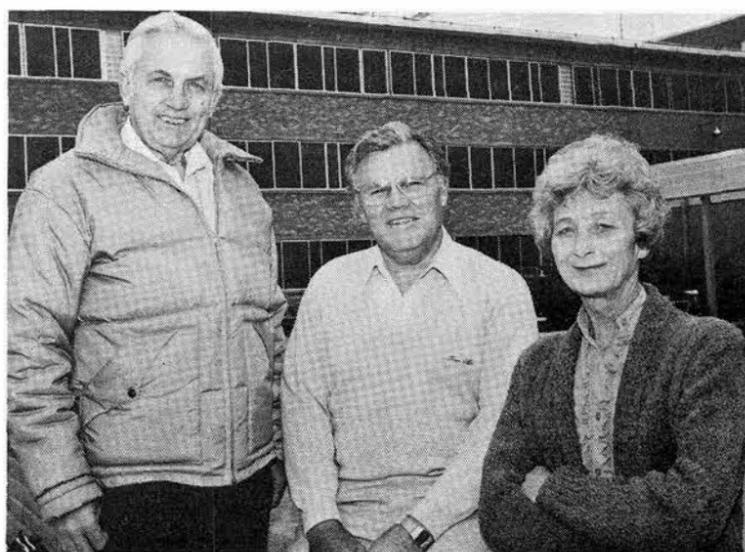
To Andrew Kersey (3618) on the death of his mother, Feb. 25 in Lubbock.

To Frank Ezell (7523) on the death of his father, March 21 in Missouri.

Retiring



Bill Short (3662), Rol Cleveland (2433), and Bob Male (7137).



Ray Arvidson (7263), Jerry Thompson (3713), and Millie Hooker (9269).



Barney Barnett (3734)



Roy Brett (3435)

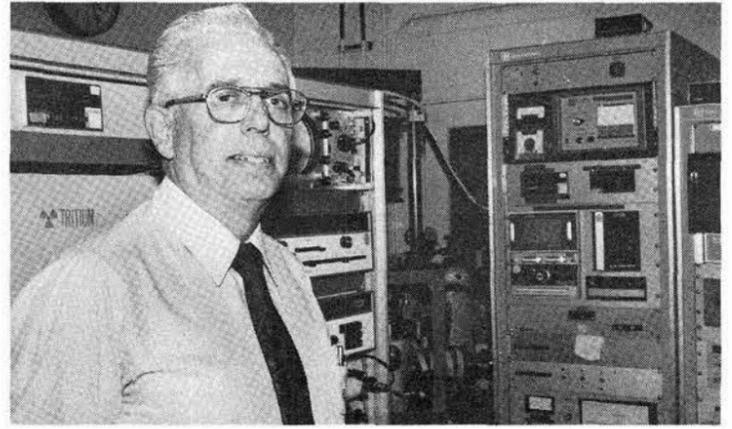
MILEPOSTS

LAB NEWS

APRIL 1983



Sadie Hesselden - 7540 15



Ben Gardiner - 7471

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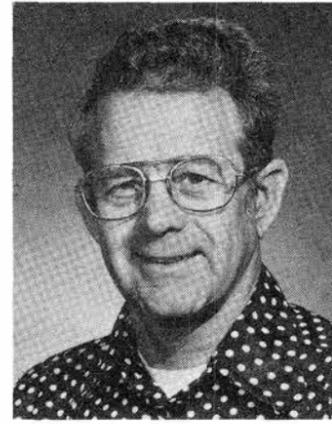


Ellis Heustess - 9265

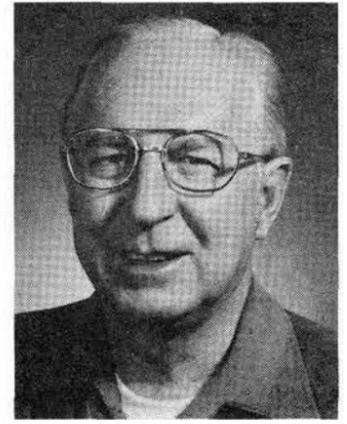
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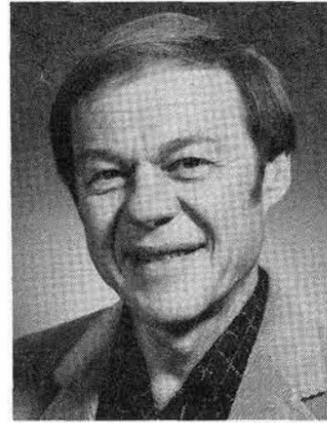
John Banister - 7111 30



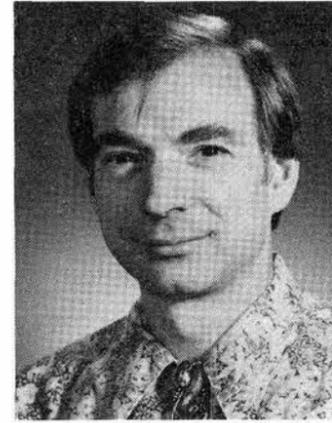
Roy Smith - 2632 15



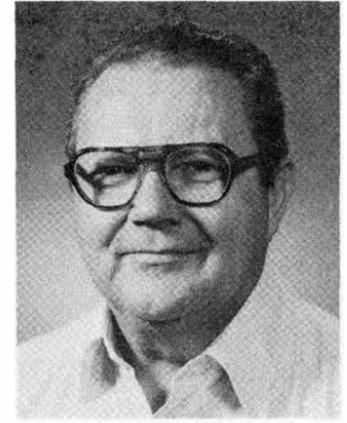
Bob Taffe - 2140 30



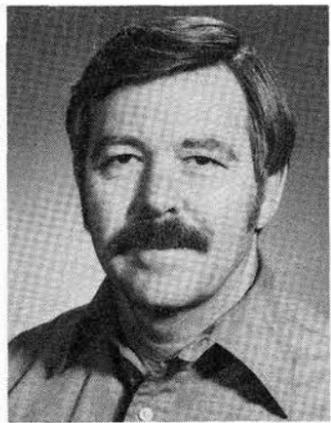
Bill Sieger - 1521 25



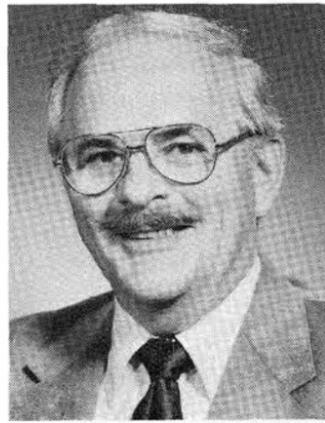
George Kaye - 9351 10



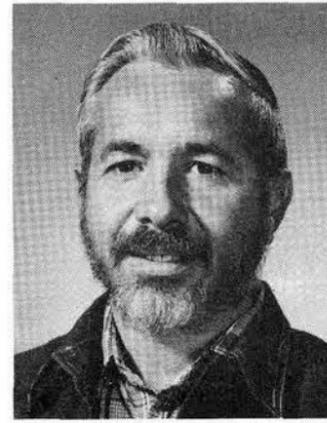
Harold Maciolek - 9325 30



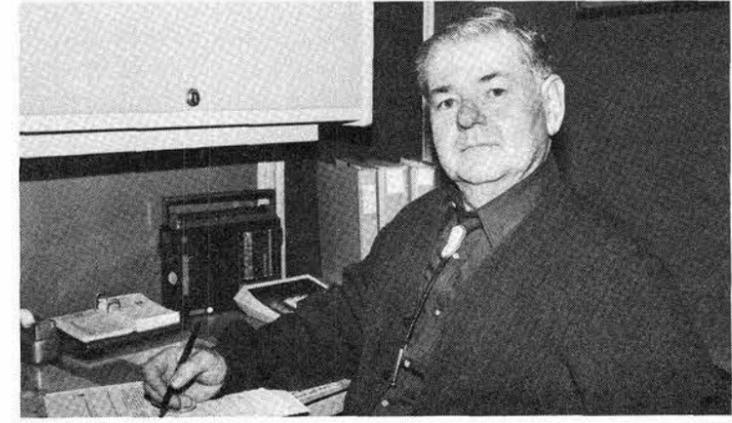
Carl Longerot - 2116 25



Burton Hill - 7546 25

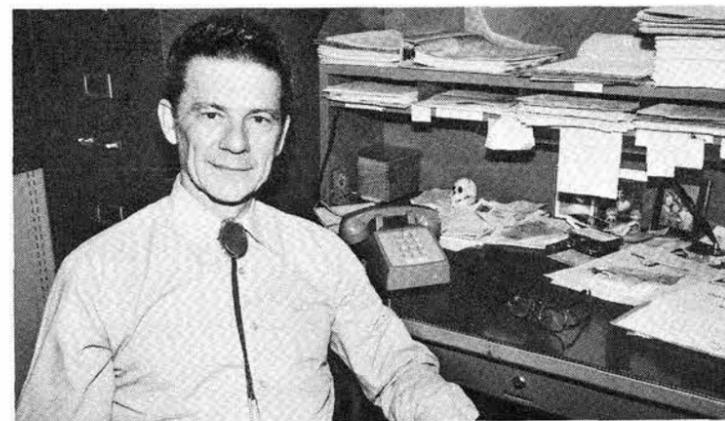


Hilario Montano - 3618 15



Ralph Davies - 3733

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Floyd Coppage - 2155

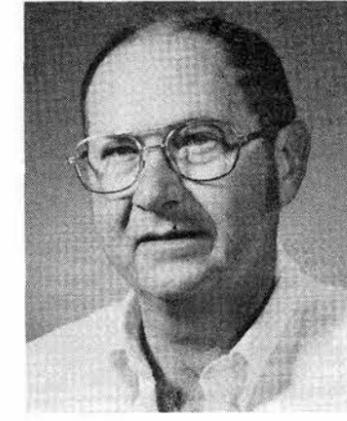
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Bill Roche - 7474 25



Bill Bedwell - 3435 30



Karl Svensson - 7535 25



COORDINATOR of the first National Technical Association regional student symposium was Anthony Thornton (1633). Sponsored by UNM, Los Alamos, and Sandia, the symposium provided an opportunity for undergraduate and graduate stu-

April 1-3 — Cochiti, Jemez, San Felipe, San Ildefonso, Santa Ana, Santa Clara, and Santo Domingo Pueblos: Annual Easter Celebrations. Basket or Corn dances on the 2nd, ceremonial foot races, pole shinies on the 1st & 3rd (except Jemez). Contact pueblos.

April 6 — Latin American Feast of Film — "Chulas Fronteras," 7 p.m., auditorium, Albuquerque Museum.

April 7-9 — Primitive Antiques & Collectibles Show, 12-9 p.m. Thurs., 12-8 Fri., 12 to 6 Sat., Albuquerque Convention Center.

dents, most of them minorities, in engineering and science to present their work to others in a professional setting. Many of the 105 students who attended the symposium toured Sandia during the two-day event.

Events Calendar

April 8-9, 15-16 — "Strider," musical taken from a story by Tolstoy, 8 p.m., Stage One, U of A, 831-1111.

April 9-10 — "Cinderella," SW Ballet and NMSO, 8:15 p.m. Sat., 2:15 p.m. Sun., Popejoy.

April 9-10 — 4th Annual Albuquerque Artists Assoc. Arts & Crafts Fair. Over 145 artisans from SW & Canada, 9-9 Sat., 10-6 Sun., Agriculture Bldg., State Fairgrounds.

April 10-May 14 — Craftworks V, juried state-wide contemporary crafts exhibition, free, Tues.-Sat., 11 a.m. to 4 p.m., Downtown Center for The Arts.

April 11 — Albuquerque Philharmonic Orchestra concert, St. Andrews Presbyterian Church, 5301 Ponderosa Ave. NE, 8:15 p.m.

April 12 — Travel Adventure Film, "American Southwest," 7:30 p.m., Popejoy.

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RULES

1. Limit 20 words.
2. One ad per issue per category.
3. Submit in writing. No phone-ins.
4. Use home telephone numbers.
5. For active and retired Sandians and DOE employees.
6. No commercial ads, please.
7. No more than two insertions of same ad.
8. Include name and organization.
9. Housing listed here for sale is available for occupancy without regard to race, creed, color, or national origin.

MISCELLANEOUS

WOMEN'S wet suit, size 9, 1/4" long sleeve jacket, pants, hood, booties; 1/2" sleeveless jacket; skis, 160s; Blizzard Wizard ski boots, women's size 7. Downs, 255-6524 or 293-9320.

GE dishwasher, about 6 yrs. old, \$70. Oberkamp, 292-4366.

COUNTER stools, 4 ea., molded white plastic w/chrome legs, all 4 stools \$15. Marchi, 299-3610.

COUCH & CHAIR, green & gold, \$45. McConahy, 884-5071.

TIMEX-SINCLAIR 1000, 2 manuals. Zoss, 822-0816.

MIRRORS, 1/4"x38"x48". Sanchez, 292-3852.

ELECTRIC GUITAR, rock music type w/amplifier, \$125; Dyna gym, all exercise unit, \$150; motocross bike, LaCross, \$125. Arana, 299-1214.

BUNK BEDS, \$50. Tompak, 293-6545.

HONEYWELL auto Strobolar 782 w/Stobo-eye & 2 battery packs, \$75. Kramer, 898-7149.

LEAD BULLETS for black powder rifles: 54 cal. maxi, 50 cal. maxi, 54 cal. RB, 375 RB, 389 RB. Stephens, 299-8231 after 5:30.

LUGGAGE: American Tourister Triumph, 26" pullman, soft side, steel frame, brown, expandable, washable, used once. Buss, 298-1589.

BARBIE Western Star Traveler, \$15; Barbie pool, \$8, Muppets secret doll house, \$4; all accessories complete. Thompson, 294-5704.

BOY'S 5-spd. 20" bicycle; manual typewriter. Eley, 296-3185.

TWO motorcycle covers. Eckley, 294-7650 after 5.

FREE apple tree, for the digging. 10' high, trunk 2 1/2" in dia., green cooking apples. Kupferman, 265-7224.

S/S coppertone refrig-freezer, \$200; washer & dryer, \$150 ea.; 21 cu. ft. upright freezer, \$100; stereo console, \$100. Shew, 299-8045 or 298-3619.

GEESE: 2 Embdens, \$8, ganders probably; rabbits: 13 Rex, \$4-\$7.50; 11 mixed bunnies, \$3-\$5. Orr, 345-0631.

TWO cemetery lots in Sandia Gardens, below market, \$350 ea. Gregory, 268-2022 after 5.

VIVITAR 35mm rangefinder camera w/flash, \$20; oscilloscope, \$10; fence charger, \$10; power supply, rack mount, multiple outputs, \$20. Pritchard, 293-5297.

BLACK Angus bull, \$1000; cows, \$550; 1200 egg incubator, \$300; round incubator, 50 eggs, \$50; brooders, \$30 & \$50. Lackey, 898-6638.

SWING SET frame & slide, no swings, \$5. Caskey, 294-3218.

CORNING WARE SET: 11 pieces, 3 saucepans, 9" skillet, saucemaker, w/covers & handles, \$27.50; crockpot, \$5. Raunch, 821-6992.

BEDROOM SET: box springs (double bed), bookcase headboard, dresser, mirror & 2 nightstands, \$150. Purcell, 296-4986.

4/15" PONTIAC factory mag rims, \$100. DeReu, 821-6063.

ATARI 2600 w/Pitfall, Atlantis, Breakout, Space Invaders, Street Races, and Combat, \$110. Zanner, 281-1789.

BUNK BEDS, sturdy & heavy pine, w/mattresses. Gutierrez, 821-8476 or 846-2014.

MICROWAVE, Amana RR-4 (single power), \$125. Vortman, 255-8510.

BALDWIN Acrosonic spinet piano, mahogany, \$950. Howerton, 299-6409.

AUDIO TUNER, Sansui Tu-717 AM/FM, black w/rack handles, \$145; 4 American racing 13x5.5 wheels for Mazda RX7/626 w/worn B.F. Goodrich tires, \$100. Ritchey, 268-7620.

TOOL BOX for wide-bed pickup, \$50; new tires: G78-15 w/5-hole rim, \$50, CT 4.80-8 w/rim, \$25; used tires: 145 SR-13, P195-75-R-14, \$15 ea.; L78-15 w/5-hole rim, \$20. Fenimore, 298-8052.

INSULATED camper shell for Toyota long bed pickup, includes floor liner w/floor & sidewall carpets, \$250. Ashmore, 881-4653.

'77 SERVICE MANUAL for Dodge Colt, Plymouth Arrow, '77 edition Peter's Big Book of Auto Repair, \$5 ea. Burstein, 821-6688.

POWER MOWER w/rear catcher, used 1 month, \$150. Ripi, 293-2553 after 5.

APPLE II Plus computer, FR gen., counter, voltmeter, power supplies, DEC computer parts, 8" floppy disk drives. Belding, 294-7443.

SCHWINN BICYCLES: men's 26" 3-spd. & 2 girl's 20"; Yamaha trumpet w/case & mutes. Conrad, 298-2691.

DINING ROOM TABLE & 4 chairs, \$250. Kolb, 293-2044.

ROTARY lawn mower w/grass catcher, Tru-Test, needs muffler & throttle handle, \$30. Baack, 296-2312.

TYPEWRITER, Smith-Corona "Classic 12" manual portable, \$45. Hughes, 299-6674.

GOLD couch & love seat, reversible cushions, corner piece plus corner table, 2 chairs, \$450, offer. Montoya, 881-6898.

ANTIQUe pedestal mahogany oval dining table, \$200; 2 carved rosebud chairs, \$150; butcher block pine table, 3'x6', \$125 Lukens, 299-1271.

RUGER NR-5 super single six, 22 cal. revolver, \$150. Sexson, 292-0742 after 5.

TRANSPORTATION

'75 HONDA CVCC hatch back, 5-spd., \$1600. Percival, 299-6606.

BICYCLE, women's 26" 3-spd., royal blue Free Spirit, less than 1 yr. old. Beardsley, 292-5910.

'77 JEEP Wagoneer, Quadratrac, V8, AT, PS, PB, AC, AM/FM, cruise control, extra 22-gal. tank, Reese hitch, \$3950. Grear, 344-2009.

ROGER DECOSTER racing bike w/all added extras, 3-piece cranks, hand brake, more. \$150. Rodriguez, 296-3277.

'81 XR500R Honda dirt bike, 1000 miles, licensed, \$1195 or offer. Stronach, 294-5271.

'79 MAZDA RX-7GS, 5-spd., sunroof, louvers, back spoiler, stereo, \$6700. Platzbecker, 292-6866.

'77 OLDSMOBILE Starfire, red w/red interior, PS, PB, AT, R&H, louvers, luggage rack, \$2800 firm. O'Neill, 892-6754.

'72 OLDS Delta 88, small V8, 2-bar. carb., power, AC, AT, \$1450. Ridlon, 298-4729.

MEN'S bicycle, Columbia Tourister, 3-spd., 26" frame, \$30. Henry, 266-6467.

'81 CITATION, low mileage, many extras, book value \$5000-best offer. Eley, 296-3185.

'80 MUSTANG, AT, AM/FM cassette, 19,300 miles, 2.3L, avg. retail \$4600, sell for \$3995. Stang, 256-7793.

'81 HONDA 750 custom M/C, full dress w/Hondaline fairing & Vetter luggage, low mileage, \$2800. Brandon, 881-6698.

GPZ 1100 Kawasaki, 1981 modifications & extras, \$3500 (negotiable); radar gun for racing or sports, 12 volt operation, \$100. Johnson, 299-2526.

SCHWINN Continental bicycle, 25" frame, \$125. Anderson, 265-0403.

'76 DATSUN pickup, short bed, AT, \$1900. Patterson, 299-1062.

'82 VW Rabbit, white, camel tweed interior, take over payments, 2K miles. Sanchez, 266-8864.

'78 YAMAHA, 125cc Enduro, 7K miles, adult ridden, \$495 firm. Hymer, 293-6029.

'74 MGB convert., 4-spd., w/OD, AM/FM, \$3000. Fenwick, 294-2138.

'79 BUICK Riviera, loaded, one owner, avg. retail \$9K, will take \$7900. Edwards, 292-4700.

'71 FORD pickup for parts, 1/2 ton, perfect body, 302 engine, 3-spd. trans. Griego, 877-6842 after 5.

'78 VW Campmobile, pop-top, AM/FM radio. Richards, 865-7158.

'74 400 cu. in. small block Chev. engine, including heads & intake manifold, still running and in car, over 100K miles, \$400 or make offer. Romero, 897-1009.

'76 YAMAHA XS 500, windjammer, saddle bags, new tires, new battery, brown, 16K miles, orig. owner, \$950 or best offer. Daut, 255-2529.

TRACTOR, Sears 12hp, 3-point hitch, turning plow, \$750; '54 Ford Crestliner Victoria, needs restoration, \$400. Morrison, 873-0357.

'78 CHEV. Silverado C10 pickup, loaded, 454 eng., AC, cruise, AM-FM cassette stereo, Rallye wheels, 61K miles, dual tanks. Plagge, 255-1801.

'79 SPORSTER motorcycle, 7K miles, mag wheels, 6" over stock, dark blue. Johnson, 888-4114.

'81 SUBARU 4x4 wagon DL, 4-spd., AC, less than 14K miles, \$5950. Stone, 821-5070.

'78 YAMAHA 750 Special, low mileage, matching fairing, rack & back rest. Stevenson, 821-9079.

BICYCLES, Centurion LeMans 23", \$195; Schwinn Suburban, ladies frame, \$85; Sinclair 2x80, \$50. Siemers, 296-0651.

'77 OLDS Cutlass Supreme, below book. Romero, 293-8611.

'80 SUZUKI GS550E, Slipstreamer fairing, Bates rack, Bates box, case savers, \$1650. Bryant, 299-1292.

'73 JEEP 1/2 ton pickup, \$2500. Marder, 883-3863.

'78 FORD super van E250, 41K miles, PS, PB, AC, AM-FM-8TK, cruise

control, new tires & shocks. Renninger, 883-1232.

'81 YAMAHA 650 Special II, burgundy, sissy bar, luggage rack, 7K miles, \$1650. Kolb, 293-2044.

'73 DUSTER 2-dr., new battery, 90K miles, one owner, \$1250. Hoice, 821-7590 after 6.

'81 SUZUKI RS-250, off-road dirt bike, 400 miles, adult ridden, \$1065 or best offer. Sexson, 292-0742 after 5.

REAL ESTATE

3-BDR. HOUSE, den/fp, Sandia High district, back yard access, 2 storage units, 50s. Simpson, 298-4749.

3-BDR., 2-bath, w/fp, 1300 sq. ft., 5 yrs. old, 8% assumable mortgage, \$70K. Bradford, 292-3882.

ROBERSON 3-bdr., lg. LR/fp, 1 1/4 baths, hw floors, 2-car garage, NE heights, upper 60s. Ouellette, 299-9266.

ONE ACRE residential lot on west side near river, underground utilities, view, \$28,900 w/terms, cash discount. Menicucci, 842-6330.

WANTED

BICYCLE, 10-spd., 24" wheels or 26" wheels w/small frame, good condition. Byers, 298-8326.

PEOPLE interested in running the Salt River in Arizona this spring. Mattox, 821-3945.

ROOMMATE to share NE house near work, rent \$187.50 plus utilities. Eley, 296-3185.

ROKOR 28mm lens for Minolta SRT-101 camera. Moyer, 881-3879.

WANT part time occasional farm worker in south valley — irrigating, tractor driving, etc. pay by check or hay. Patterson, 299-1062.

12' ALUM. fishing boat, small gasoline outboard motor (water cooled); 7.75x15 4-ply Goodyear trailer special tire. VanDen Avyle, 898-6474.

CELLO. Dalphin, 265-4029. OWNER'S MANUAL & factory manual for 1970 VW bug. Leisher, 281-5258.

WORK WANTED

POWER raking, rototilling, aerating, hauling, mowing, etc. Paul Holt, 296-6928 or Tom, 881-2395.

SHARE-A-RIDE

PARADISE HILLS-Taylor Ranch S.E.C.A. van seeking riders, \$43/mo., & alternate \$2.30/day. Patterson, 831-3454.

Casino Night Set April 9

TONIGHT at Happy Hour the main lounge opens at 4:30 with special prices in effect until closing. There's no buffet scheduled. The dining room staff joins with our members in observing Good Friday. There'll be a spread of goodies and munchies in the lounge during the evening.

TOMORROW is Variety Night and the kids will love a repeat of Walt Disney's greatest cartoon classic — *Bambi*. Super sandwiches are available at 5 p.m. At 6:15, the New Mexico Emergency Council will present a program called "Hug a Tree and Survive" aimed at helping prevent children from getting lost during hiking and camping trips. If an emergency occurs, the Council has some good information on what to do about it. The movie starts at 7:15. Admission is 50 cents per person.

GRAND OPENING of Coronado Club Games Night happens Thursday, April 7, and will revive an exciting tradition from the old days. Check the poster in the Club lobby. Super sandwiches and refreshments will be available at 5:30. The first "early-bird" game goes at 6:45. Check that poster.

NEXT FRIDAY, April 8, sees Alma on the bandstand. This group has earned the reputation of playing the best jazz in Albuquerque — from up-tempo swing to the old blues ballads. Combine that with a beef kabobs buffet for \$5.50 (adults) and \$3 (children under 12) and it should be an exciting evening.

CASINO NIGHT on Saturday, April 9, is shaping up as a spectacular event. The ball-



CASINO NIGHT, Saturday, April 9, turns the old Coronado Club into Las Vegas on the Rio Grande where \$2 in real money buys a bundle of play money to wager on craps, blackjack, chuckaluck, and poker. Elton Travis and the Westernaires play for dancing. A weekend for two in Las Vegas is the grand door prize. Inviting you to try your luck at beating the house are Keith Mote (7483), Phyllis Sanchez (3510), and, top right, Cindy Trompak (0152).

room will be transformed to Las Vegas on the Rio Grande with blackjack, craps, poker, and chuckaluck operating full blast manned by 50 Club member volunteers who invite you to try your luck. You trade \$2 admission for a bundle of play money and get with it. The action starts at 7:30. Green and red chili plus hamburgers will be available for those who need time out for sustenance. Elton Travis and Westernaires will be on

the bandstand playing popular country and western.

During the evening a number of door prizes will be given away including the grand prize — a free weekend in Las Vegas for two at the luxurious Maxim Hotel, air fare by Western Airlines. It's the "Toast of the Town" package which includes breakfast, cocktails, dinner, and a cabaret show.

TWO-FOR-ONE Tuesday dining is one of the more pleasant evenings happening at the Club these days. On Tuesday, April 12, prime rib is the menu feature. Price is \$11.50 for two. You are served in a candlelit atmosphere with pianist Alex Montoya playing your requests at the piano.

SEASON TICKETS for the Club's twin pools and patio area go on sale at the Club office April 12. Grand Opening party for swim season is set Memorial Day, Monday, May 30. The pools will actually open on Friday, May 27, at 11 a.m. Enroll for swim lessons on Saturday, May 7, from 9 until noon.

TRAVEL — The Club's travel package to Hawaii April 16-24 for \$580 or \$652 (depending on where you stay) is closing rapidly. Only a few seats remain. Call the Club office, 265-6791, right now if you're interested.

Other Club travel packages include Las Vegas May 29-June 1 by bus for \$122 or May 29-31 by air for \$146; Puerto Vallarta May 19-26 for \$384; Chaco Canyon May 14 for \$24; and the big one: China in mid-September for three weeks, \$2810. See travel director Shirley McKenzie (2432) in the lobby tonight between 5 and 6 or call her on 4-6886 for travel information.



APRIL AERODYNAMICS — The controversial Sleuth aircraft recently underwent advanced design detection tests at a local facility. The Sleuth's paper-thin profile and rigid-flex skeleton (of advanced organic compounds) combine to ensure that it can slip through the most advanced radar detection facilities even when cruise speeds are reduced to the point that it's nearly stationary. Aerodynamic tests in the Advanced Wind Tunnel (Tijeras Canyon) will complete the current test series. The test program should be completed by April 1, 1984.