6-2-1974

Commencement of Montana College of Mineral Science and Technology

Mike Mansfield 1903-2001

COMMENTARY - 1974

REMARKS OF SENATOR MIKE MANSFIELD (D., MONTANA)

AT THE

COMMENCEMENT EXERCISES

OF THE

MONTANA COLLEGE OF MINERAL SCIENCE AND TECHNOLOGY

THE FOX THEATER, BUTTE, MONTANA

SUNDAY, JUNE 2, 1974

3:30 P. M., M. D. T.

To be with you, today, brings a flood of memories. My life and work have been closely aligned with this Institution and this part of the State. The Butte-Anaconda region has given me enormous support and encouragement over the years. I can never repay the people of this area nor the people of Montana for their trust and faith.

Butte is the place where I worked in the mines for nine years as a mucker, a miner and an assistant mining engineer. Butte is the place where I met the girl, a teacher at Butte High School, who became my wife, my sustenance and my support down through the years.

Butte is the place of the old School of Mines, where at the insistence of my wife-to-be, I applied for admission. At that point, I was already approaching thirty and I had not gone to high school. In fact, I had not even completed eight grades. The then President of the School of Mines, Dr. Charles Clapp, was understanding but dubious. He told me that the only way I could be admitted was as a special student. To become a regular student, he said, I would have to make up my high school entrance credits. I completed the school year, 1927-28, while working in the mines at night. At the end of that year, I had passed the required subjects, most of them just barely. The teachers were generous and took a personal interest in what to them must have been something of an educational oddity. With me, they had to conduct, not a "Head start," but a kind of "Late start" program.

Among the professors who taught me, guided me, and counseled me, was a man from Harvard by the name of Walter T. Scott, Professor of English. I cannot begin to express how honored I am to be on the same platform with Professor Scott.

He meant much to me as a student as he has meant much to this school through the years. He has done a great deal for education in this State and community and he is receiving, today, the kind of recognition he richly deserves and which is long overdue.

Also, on the platform today, is another long-time friend from Butte, a man with whom I served on the faculty at the University of Montana, Ambassador Andrew Corry, who is also being honored by his old school.

When I enrolled in Montana Tech, the entire student body was only about 130. In the same year, girls were admitted for the first time. The girls in that first class numbered somewhere between twenty-five and thirty. They came almost entirely from Butte High School, Butte Central and Anaconda High and were looked upon as either a distraction or an inspiration. In either case, this school, along with the State, was in the vanguard in according full legal recognition to women as equal persons.

In the 1920's and 30's, the Departments of Mining, Metallurgy, Minerology and Geology were the basic components in

which degrees were awarded at the School of Mines. It was considered the outstanding educational center of its kind in the world. Today, Montana Tech continues to enjoy that reputation and it is eminently deserved. The standards have been maintained even as the scope of the educational program here has been extended to take in a Liberal Arts calendar. A studies program in Liberal Arts and other changes have had the effect of increasing the size of the student body many times over. So far as I can see, however, there has not been any diluting of the quality of the educational experience. On the contrary, it has been enriched greatly since the days when I was a student.

I would anticipate an even larger enrollment and a greater scope of intellectual pursuits at Montana Tech in the years ahead. That can be all to the good. I would only hope that in the process of growing, this school will never lose what to me, as a somewhat bewildered and uncertain student, meant so much at an earlier time. That was the sense of personal concern

which was communicated by the members of the faculty and administration. You mattered to them and they mattered to you.

I would hope, too, that this school will keep, as it has always had, a unique core of excellence associated with the mineral sciences because Montana is deeply involved in that aspect of the nation's well being. Montanans have exploited hard rock minerals and others have come here to exploit them throughout the history of the State. I choose the word "exploit" advisedly. The history of mining in this State is not one of unalloyed contribution to the welfare of the people of Montana. Its advantages have been interlaced with a great deal of human misery and suffering, callousness and corruption.

It is important to remember that, it seems to me, especially at this time when there is underway a dramatic shift of national attention to the vast deposits of low sulfur coal in the Great Plains. Many people would like us to believe that this close-to-the-surface coal is the easy answer to the nation's energy problems. I do not go along with glib thinking of that kind.

There are questions--many questions--to be asked and answered. Who, for example, profits by the exploitation of that coal? Do the people of this State gain if an energy shortage is exchanged for a shortage of clean air and clean water? In the long run, do the people of the nation gain thereby? Yet, that may be in store unless we move cautiously in exploiting these coal reserves.

Eastern Montana with its vast plains, rolling hills, and badlands, has a tradition of agriculture and livestock production. People who live there are wary of the massive disruption which is associated with crash surface mining. They have valid reason to be concerned and I share their concern. As yet, there is insufficient indication that the huge coal companies and out-of-state utilities have any deep interest in confronting the problems that their presence creates for local areas.

To be sure, there are gains to be derived from the exploitation of the coal reserves. The income and public revenues associated with mineral developments of great magnitude are very tempting. So, too, are the high prices offered for leases. But,

the other concerns I have noted are not to be ignored. They are of great significance to the people of the State and, in particular, to the generation of young people represented in this graduating class and those who will come after them.

Living Americans do not hold the land, the rivers, the sky and the hills of Montana as an absolute right. The nation's natural treasures are ours to use, not to abuse. They are a trust to be maintained for future generations. In the assertion of our own rights, we cannot ignore the rights of those who will come after us.

So, insofar as I am concerned, the question of coal-stripping will be approached carefully and cautiously. In concert with the other members of the Montana Congressional delegation, it is my intention to use every avenue of the Federal government which is open to us to see that such is the case.

The development of the coal resources does not have to be ruled out if it can be done safely. In this connection, Montana Tech and other units of the Montana University System can be

especially useful. They can devise, continuously, new and better ways in which coal can be extracted and utilized effectively without devastating the land and polluting the waterways. That is the only way these resources can be developed if they are to benefit Montana and the nation not only today but in all the days of the future. There is no need, in my judgment, to turn the State into a scarred and twisted wasteland in a frantic search for cheap fuel for the nation.

The oil crisis last winter which precipitated this search was a kind of hand-writing on the wall. Repeated and well-founded scientific and other expert warnings of an impending shortage were ignored for many years. Oil yields declined at home even as the nation became more and more dependent on petroleum. Alternatives were ignored. Research was neglected. Wasteful consumption continued. Then came the Arab boycott.

The great metropolitan areas of the nation were thrown into near panic when the king pin of the nation's economic and social structure was jarred. Almost overnight the Federal

government went from do little to do everything. In a sudden determination to assure self-sufficiency, a massive financial and technical assault was launched in the field of energy. Dozens of agencies and offices plunged into the search. No matter that the problem was a long time in brewing and would be a long time in passing. No matter that crash Federal programs in other moments of crises have invariably proved wasteful and often misdirected. The only answer of which we were capable at that point was to pull out all the stops. It was not a very reasoned approach but it was about the only way, as a government, we were able to react at all.

That is why, it seems to me, it is high time to look beyond the immediate question of energy. We need to consider closely the way in which our entire national economic life has come to be organized and the role which government plays therein. We need to think deeply about the economic structure of the nation not just as it is today but as it is likely to be five or ten years hence.

Not only in energy but in many other facets of our economy there have also occurred haphazard and wasteful usages, unwise development and random and uncoordinated government intervention. That there is a sudden fixation of federal attention on oil, natural gas, and other fuels is understandable. But what about nickel, tin, iron, copper and bauxite? Where will we get the supplies of these and other essential resources in the years ahead? What about food? Indeed, what of the exhaustibility of clean air and pure water?

Four years ago, the Interior Department said we depended preponderantly on foreign countries to supply us with thirteen basic minerals. Today, there are at least forty minerals on the same list. They include, bauxite-aluminum, tin, lead, nickel and chromium. What happens if the countries from which we get those basic minerals should decide to cut us off? I think we can withstand a cartel such as the one which recently threatened to raise the export price of bananas from Central America--but what of other commodities? We have already seen, for example, how foreign

sources can affect our economy deeply by withholding petroleum in which we ourselves have great resources. What of basic commodities in which we have little or none?

What, for example, of bauxite? Over 80 percent of the bauxite used in the production of aluminum is imported. Aluminum pervades our society. Gas-saving engines are built from it. The building trades are voracious consumers. Food packaging is dependent on it. A myriad of other industries are affected by its availability. With time, perhaps, we could step-up domestic bauxite production. But aluminum refining requires massive amounts of electricity, and we already have a shortage of power.

Chromium is another essential element which goes into a great many products. We are 100 percent dependent on imports of chromium. Most of the imports presently come from the Soviet Union. Yet, there are still delays in putting trade with that nation, as well as with China, on an equal footing with other nations. The administration has requested legislation to that end and I am frank to acknowledge that it is in the Congress

where the question has become snarled in extraneous issues. Sooner or later, however, we must face up to the need to enlarge to the fullest possible extent foreign supply sources for many commodities.

The problems of a complex economy such as we have in this nation go well beyond metals and minerals. In 1973, the nation experienced the biggest boost in the cost of groceries in over twenty-five years. Any relationship between ultimate retail prices and the prices paid to the farmer is minimal at best. The price of beef on the hoof, for example, has dropped very sharply in recent months as this State knows only too well, but a similar drop in retail prices is scarcely discernible. Prices of cotton, wool and synthetic fibers have risen 93 percent. The inflation was 10½ percent from March of 1973 to March of 1974; 14½ percent for the first three months of this year. If we are going to have a chance to minimize difficulties such as these, it is going to be necessary to re-examine and readjust the government apparatus which exists in one way or another for dealing with them.

At last report, more than fifty Federal agencies and administrations were collecting and compiling data on the subject of materials-supply. The total continues to increase with the growing interest in environmental safeguards, product safety and similar questions. A great deal of information is available so that is not the critical point. Nor is it that government intervention and controls are inadequate; in some respects, they are excessive.

The root of the difficulty, as I see it, is how to employ more effectively the intellectual, technical, scientific and other resources which we have available in this nation for confronting the needs of the economy. It is, largely, how to convert what is already known into what can be done but is not being done. In the end, it is a matter of using our heads, of coordinating and applying pertinent knowledge in a rational manner.

This approach need not mean more government intervention in the private economy. The fact is that the government is already intervening up to its ears and has been doing so for

decades. That is not going to change. The question is whether the intervention is going to be coordinated for nationally acceptable ends or pursued in a way that is so disjointed and infuriating as to tax the confidence of the people in the fundamental political and governmental institutions of the nation.

What is needed, in short, and what is lacking in the role of the Federal government, to date, has been a kind of central alarm system, an early-warning system, with regard to trends in the nation's economy. May I add that an effort is now being made to design that kind of instrument. When I was asked by my Senate colleagues and the networks, last February, to speak to the nation for the Congressional majority as a supplement to the President's State of the Union message, I put the problem in these words:

> "The need is to take a careful look not only at the flashing of the single danger signal (of the energy shortage) but at the whole integrated switchboard of our national existence. It is not enough, for example,

for the Federal government to spend tens of millions of dollars in a rescue operation to keep the bankrupt Penn Central Railroad on the tracks. We need to know where an action of that kind fits into a national rail policy; where that policy, in turn, fits into a total transportation pattern; where that pattern, in turn, fits into the over-all requirements of the nation, today, and for the next decade or more."

In short, we need to think ahead in order to make hard political choices between what is more important to the nation and what is less, between what is enduring and what is transitory. That is the full scale by which government intervention in the nation's economy, when it must take place, should be measured. Unless we begin to use that scale, the right hand of government will tend more and more to undo or do over what the left hand has just done.

Shortly after my statement was made last February, Senator Scott, the Republican Leader, joined me in recognizing

this need and, together, we sought the cooperation of the Leadership of the House of Representatives and the President. It was forthcoming. For several weeks, thereafter, the Leaders of both parties in both Houses of Congress gathered in my office, together with the Secretary of the Treasury and several other key economic officials of the Administration in a series of unprecedented meetings to consider this question.

A short time ago, this all-government group was able to reach unanimous accord on how to pursue this matter. As we see it, there is a need for tripartite cooperation on the part of the Congress, the Executive Branch and Americans drawn from outside of government to work together in a national commission which will --

- First, act as the central focal and refining point for the ever-accumulating mountain of information which is available on the structure and operation of the nation's economy;

- Second, to sort out this vast array of information with the aid of such wisdom and skills that the nation can muster

from all relevant sources in order to perceive and forecast with reasonable accuracy what the fundamental economic needs and problems of the nation are likely to be a few years hence;

- And, finally, on that basis, to make recommendations to the Congress and the President which can be translated into coordinated and effective government action in meeting those needs and problems. In that fashion, perhaps, crises like that of petroleum, which would otherwise burst in on us one after another, can be mitigated or prevented.

There is now under consideration in the Congress, legislation which has the unanimous support of the two party leadership in both Houses of Congress and of the Executive Branch. If passed, it will permit the taking of the next steps in fashioning a new coordinated approach to the nation's gathering economic needs and problems.

It may seem strange to you that the Executive Branch and the Legislative Branch and the two parties can cooperate at the present time in this fashion. How can there be cooperation

there when there is a virtual confrontation on the question of Watergate and related matters? Is not the Congress at this very moment considering the impeachment of the President? Have there not been calls from individual members of Congress of both parties for the resignation of the President? The answer is, yes, it is a time of virtual confrontation over the Watergate affair. Yes, the Congress or, at this point, the House of Representatives, is considering impeachment. Yes, individual members of both parties have called for resignation.

But confrontation in the one instance cannot be allowed to preclude cooperation in others when cooperation is essential to the nation. Nor has it done so. The fact is that there has been cooperation with the Executive Branch not only in regard to the economic question which I have just discussed but also in other matters. Just recently, for example, I returned from discussions with the new President of France, discussions which were pursued with the full knowledge and concurrence of the President. Repeatedly, the Secretary of State, speaking and acting as he

does, on behalf of the President of the United States, has had expressions and actions of support from the Senate and the House of Representatives. Not too long ago, I was with the Secretary in Mexico City at a meeting of American Foreign Ministers for precisely that reason.

So I would like to emphasize that the impeachment proceeding which is a Constitutional obligation of the most solemn kind, has not and will not impair the functioning of the Congress in its regular legislative business. Least of all will it stand in the way of cooperation with the Executive Branch in the field of foreign policy. The President knows that there is a large area of agreement in foreign relations between the two Branches and the two parties. So, too, does the Congress. And so, too, may I add do foreign governments.

To be sure, the time is not a happy one either for the President or for the Congress. But the contentment of the elected and appointed incumbents is not what the Constitution is all about. What matters is not the convenience of the men and women in

government--those of us who are here today and gone tomorrow--what matters is the validity and durability of the federal institutions and their continued capacity to meet the needs of the people of the nation.

It is obvious that the confidence of the people in these institutions has been badly shaken by the events and revelations of the past year and a half. We can't escape the reality, however, that Watergate and related matters was not a bad dream. It did happen. It cannot be ignored. It cannot be swept out of sight. There are no short-cuts out of the situation. For Congress to drop the matter, even if it were possible, would provide no answer. For the President to resign, even if he were so inclined, would not provide an answer. A satisfactory answer, in my judgment, can be found only in the Constitution and in the processes provided therein. These are the processes which are now being pursued in a most responsible fashion in the Courts and in the Congress. They will continue to be pursued until the matter is resolved.

It is a trying time for this nation and especially for the young among us. It is not easy to face up to shortcomings in institutions which we have come to regard with a respect bordering on reverence. It is a time for patience and restraint. It is a time for understanding of your government, of the Congress and the Presidency. With that understanding, we can and will carry on during this period of difficulty. Above all, it is a time to remember that "the price of liberty is eternal vigilance."

Our political processes, in the end, will be purified and strengthened by this ordeal. Watergate will pass and we will endure because there is a great deal that is right in this nation. There is a strong, decent, industrious and compassionate people. There is a bountiful land. There is intelligence, inventiveness and vitality. There must be forthcoming the leadership to put these attributes to use for the benefit of all. That is the responsibility of those who serve in government, in the Presidency, in the Congress and in the military and civilian services. This nation deserves more than a decent present. This nation deserves and it will have a decent future in freedom.

COMMENCEMENT ADDRESS OF SENATOR MANSFIELD AT MONTANA COLLEGE OF MINERAL SCIENCE AND TECHNOLOGY: A GREAT SCHOOL

Mr. MANSFIELD. Mr. President, on Sunday last, the distinguished Republican leader had the privilege and the opportunity to give the commencement address at Randolph Macon College, a school which he attended as an undergraduate and from which he graduated before going on to the University of Virginia and other schools.

Coincidentally, on that same day, I had the opportunity and the privilege to give the commencement address at Montana College of Mineral Science and Technology in Butte, Mont., a school which I attended and for which I have a great affection, because it gave me a start in life, which all people need at certain times.

It was a day of memories; it was a day of sadness, and a day of joy, a day of remembrance and even, perhaps, a day of forgetting.

The Montana College of Mineral Science and Technology which, until 1965, was known as the Montana School of Mines, is one of the six institutions comprising the Montana university system.

It was founded, legislation was passed, in 1893, 5 years after Montana became a State. The actual construction of the first building was begun in 1896, and the college opened its doors on September 11, 1900, and graduated its first class in June 1903.

The State bureau of mines and geology, was added to the college as a research department in 1919.

In the past decade, the college has expanded its traditional offerings in various phases of mineral engineering to include degree programs in environmental engineering, mathematics, chemistry, history, and English.

Since its founding, the Montana School of Mines, now known as the Montana College of Mineral Science and Technology, has had a worldwide reputation for the excellence of its curriculum, especially in the fields of mining, metallurgy, mineralogy, geology, petroleum engineering, and the like.

It has expanded from a school of about 130 students, when I attended it, to around 800 today. It is the best mining school in the world, without exception. It has a reputation which can only be compared with that of Frieberg in Germany, and that was prior to the Second World War.

Its graduates are in demand, and they cover the Nation and the world. It students come from all over the globe.

It is an especially outstanding institution, in my opinion, and has meant much to the Butte-Anaconda, western Montana area, and has meant a great deal to the State and the Nation.

I wish it well. I hope it continues to grow and expand.

I want to emphasize that basically it is a mining school, and I hope that its emphasis will remain in that particular area.

Mr. President, I ask unanimous consent that the program for that day and the commencement address which I made be incorporated in the RECORD.

There being no objection, the program and the commencement address were ordered to be printed in the RECORD, as follows:

SEVENTY-FOURTH COMMENCEMENT—MONTANA COLLEGE OF MINERAL SCIENCE AND TECHNOLOGY, BUTTE, MONT.

(FOX Theatre, June 2, 1974, 3:30 p.m.)

PROGRAM OF COMMENCEMENT EXERCISES

Processional—Montana Tech String Ensemble, Rick Hartwig, Director.

(The audience is requested to stand for the Processional and remain standing through the Invocation and the playing of the national anthem.)

Invocation—Reverend Edward W. Newman, Immaculate Conception Church.

"Star Spangled Banner"—String Ensemble.

Introduction of Guests—President Fred W. DeMoney.

"Commentary: 1974"—Senator Michael J. Mansfield.

Conferring of Degrees—President Fred W. DeMoney.

Conferring of Degree of Doctor of Letters, Honoris Causa, on Walter Todd Scott, Professor Emeritus—Presentation of Professor Scott by Dean Kenneth McLeod.

Conferring of Degree of Doctor of Engineering, Honoris Causa, on Senator Michael J. Mansfield—Presentation of Senator Masfield by Vice-President Donald McGlashen.

Presentation of Honor Award for High Scholarship—President Fred W. DeMoney.

Benediction—Reverend Oliver L. Jones, Gold Hill Lutheran Church.

(The audience is requested to remain standing for the Recessional)

Recessional—String Ensemble.

A reception for the graduates, their parents, and their friends will be held in the Student Union building following the Commencement Exercises.

CANDIDATES FOR DEGREES

Degrees in course

Associate of Arts

James Coryel Axelson, Butte, Montana.
Maskin Milovan Bigovich, Butte, Montana.
Michael David Boston, Butte, Montana.
Nicholette Ellyn Breyer, Butte, Montana.
John Robert Burke, Butte, Montana.
Rose Mary Carollo, Butte, Montana.
Richard Douglas Daniels, Butte, Montana.
Jumana A. ElSharif, Lebanon.
Colleen Marie Fischer, Butte, Montana.
Barbara Joann Hayes, Butte, Montana.
Thomas Kenneth Hohn, Townsend, Montana.
Carol Anne Miller, Butte, Montana.
Otis Nelson Mohn, Whitesburg, Kentucky.
Charles Henry O'Donnell, Anaconda, Montana.
Billie Jean Peterson, Gregson, Montana.
Dale David Rawlings, Butte, Montana.
Sheila Kay Rivers, Anaconda, Montana.
Karen Anne Seymour, Ramsay, Montana.
Joseph Frederick Sommers, Anaconda, Montana.
Robert James Turk, Butte, Montana.
Joseph Frederick Sommers, Anaconda,

Associate of Science

Kimberly Adele Bawden, Butte, Montana.
Kathleen Ann Dillon, Butte, Montana.
Abdul Fattah A. ElSharif, Lebanon.
Shirlee L. Kaighn, Butte, Montana.
Keith B. Jensen, Wolf Point, Montana.
Stanley W. D. Lawrence, Missoula, Montana.
Julie Bossard LeFever, Butte, Montana.
Colleen Marie McGee, Butte, Montana.
Rebecca Jane McGee, Butte, Montana.
Cindy Lou Osmanson, Butte, Montana.
Linda Marie Storm, Butte, Montana.
Reginald Lee Thereault, Butte, Montana.
James Richard Vennes, Malta, Montana.
John Larry Vuicich, Anaconda, Montana.

Associate of Science/Engineering

Andrew Morgan Chadwick, Lewistown, Montana.
Loren, George Hoekèma, Laurel, Montana.
James Lawrence Nelson, Drummond, Montana.
Brian Charles Sayre, Great Falls, Montana.
Robert Joseph Smollack, Anaconda, Montana.
Momo J. Vezele, Fisebu, Liberia.

Bachelor of Science in Chemistry

Rhonda Elaine Farrow Jacobson (with high honor), Butte, Montana.

Bachelor of Science in Engineering Science

Robert Dean Bentley, Butte, Montana.
Joel Bruce Knutson, Butte, Montana.
Larry Alvin Olson, Butte, Montana.
Donald James Shea, Butte, Montana.
James Bennett Smitham, Jr., Butte, Montana.
Robert Joseph Smollack, Anaconda, Montana.

Bachelor of Arts in English

John R. Beatty, Anaconda, Montana.
Rose Mary Carollo (with high honor), Butte, Montana.
Sylvia Frances Carollo, Butte, Montana.
Charlene A. Davis (with high honor), Butte, Montana.
Clara Parko Haft (with high honor), Butte, Montana.
Lillian Elizabeth McCauley (with high honor), Butte, Montana.
Grace M. Orgain (with honor), Butte, Montana.
Phyllis Adell Stout (with high honor), Butte, Montana.
William John Suydam, Butte, Montana.

Bachelor of Science in Environmental Engineering

Mark Alan Bossard, Anaconda, Montana.
Phillip Maurice DeDycker, Butte, Montana.
Harry Nick Obstar, Great Falls, Montana.
Darrell Robert Scharf (with high honor), Butte, Montana.
Ray Wallace Springer, Sunburst, Montana.

Bachelor of Science in Geological Engineering

Thomas Allen Behling (with honor), Darby, Montana.
Steve John Czehura, Butte, Montana.
Melvin LeRoy Granberg, Butte, Montana.
Wendell Eyre Johnson, Anaconda, Montana.
Brian Joseph Lunty, Edmonton, Alta., Canada.
Robert John Pederson, Billings, Montana.

Bachelor of Science in Geophysical Engineering

John Byron Aultmann, Jr. (with high honor), Butte, Montana.
Carole Cecelia Collier Speake (with honor), Butte, Montana.
Richard Conrad West (with high honor), Charlotte, North Carolina.

Bachelor of Arts in History

Elissa Kay Clark, Butte, Montana.
John Patrick Foley, Butte, Montana.
Keith B. Jensen, Wolf Point, Montana.
Stanley George Mayra (with honor), Butte, Montana.
Charles Wayne McDaniel, Butte, Montana.
Wayne Michael O'Brien, Butte, Montana.
James Robert Person, South Gate, California.

Agnes Mary Seymour (with high honor) Butte, Montana.
Doreen B. Williams, Walkerville, Montana.

Bachelor of Science in Mathematics

Gleen Dale Laitinen, Butte, Montana.
Bruce Carlyle Rowe, Butte, Montana.
Wendy Lee Swanson (with high honor), Butte, Montana.
John Larry Vuicich (with honor), Anaconda, Montana.
Thomas J. Walsh, Butte, Montana.

Bachelor of Science in Metallurgical Engineering

Joseph Frederick Sommers, Anaconda, Montana.
Mehrdad Nonahal Tehrani, Tehran, Iran.

Bachelor of Science in Mineral Dressing Engineering

Steven Wallis Banning, Butte, Montana.
Kurt Alan Forgaard (with high honor), Salmo, B.C., Canada.
Jon Nicholas Hoyrup, Dillon, Montana.
Donald Edward McCarthy, Butte, Montana.
Robert Dale Osmanson, Butte, Montana.
Joseph Frederick Sommers, Anaconda, Montana.

Bachelor of Science in Mining Engineering

Thomas Allen Behling (with honor), Darby, Montana.
William Robert Hansen, Glasgow, Montana.
Dean J. Honey, Butte, Montana.
John Edward Howard, Philipsburg, Montana.
Curtis Allan Johnson, Glendive, Montana.
Scott William Lorber (with honor), Butte, Montana.
Donald Ernest Moe, Missoula, Montana.
Charles Justice Speake, Jr., Victor, Montana.
Jerry Lee Stacey, Butte, Montana.

Bachelor of Science in Petroleum Engineering

Gary Ernest Aho (with honor), Butte, Montana.
Kenneth Bernard Allen, Cochrane, Alta., Canada.
W. Joris Brinkerhoff, Denver, Colorado.
Roy L. Brown, Billings, Montana.
Lawrence Edward Brumit, III, Butte, Montana.
Albert John Ciallella, Anaconda, Montana.
Ali T. Dabbagh, Mecca, Saudi Arabia.
Stephen Alfred Davies, Butte, Montana.
Thomas Kenneth Hohn, Townsend, Montana.
David John Loran, Butte, Montana.
Craig Nicholas Madeen (with high honor), Butte, Montana.
David Margolin, Browne Station, New Jersey.
Otis Nelson Mohn, Whitesburg, Kentucky.
Eric Howard Olsen, Butte, Montana.
Richard Lee Paynter, Butte, Montana.
Ralph Dale Tronstad (with high honor), Fort Shaw, Montana.

Master of Science in Engineering Science

Gary Wayne Mannix, Butte, Montana.

Master of Science in Geophysical Engineering

Ming-Ju Jan, Taiwan, Republic of China

Master of Science in Metallurgical Engineering

John Robert Knoepke, Butte, Montana.

Master of Science in Mineral Dressing Engineering

Kent, Joseph McGrew, Sacramento, California.
Reginald Ohab, Guyana, South America.
David Harry Rust, Whitehall, Montana.

Professional degrees

Engineering Science Engineer (honoris causa)

Terrence Kirkland, Alexandria, Virginia.

Geological Engineer (honoris causa)

Andrew Corrp, Alexandria, Virginia.

Mineral Dressing Engineer (honoris causa)

Frank Antonioli, Butte, Montana.
Truxton Fisher, Butte, Montana.

Mining Engineer (honoris causa)

Petrus J. Du Toit, Tucson, Arizona.
Rayworth F. Howe, Butte, Montana.

Honorary degrees

Doctor of Engineering (honoris causa)

Michael Joseph Mansfield, Washington, D.C.

Doctor of Letters (honoris causa)

Walter Todd Scott, Butte, Montana.

The Montana College of Mineral Science and Technology (until 1965 the Montana School of Mines) is one of six institutions comprising the Montana University System.

Although the necessary legislation was passed in 1893, the actual construction of the first building was not begun until 1896. The college opened its doors on September 11, 1900, and graduated its first class in June 1903.

The Bureau of Mines and Geology was added to the college as a research department in 1919.

In the past decade, the college has expanded its traditional offerings in various phases of mineral engineering to include degree programs in environmental engineering mathematics, chemistry, English, and history.

Since its founding, the college has gained a world-wide reputation for its excellent graduates, who have contributed significantly to the mineral industries. Moreover, the college has offered broad educational opportunities ot the people of Butte and surrounding areas.

COMMENTARY—1974

(Remarks of Senator MIKE MANSFIELD (D., Montana))

Commencement, in medieval times, meant a beginning. Today is a day of joy and relief to this class, sadness to your parents, and, to some of us, remembrances. To be with you, today, brings a flood of memories. My life and work have been closely aligned with this Institution and this part of the State. The Butte-Anaconda region has given me enormous support and encouragement over the years. I can never repay the people of this area nor the people of Montana for their trust and faith down through the decades.

Butte is the place where I worked in the mines for nine years as a mucker, a miner

and an assistant mining engineer. Butte is the place where I met the girl, a teacher at Butte High School, who became my wife, my sustenance and my support down through the years. Wtihout her and this institution I would not be standing before you today; without her and this institution I would not be what I am today. You can understand, I'm sure, why my first two loves were my wife and this school.

Butte is the place of the old School of Mines, where at the insistence of my wife-to-be, I applied for admission. At that point, I was already approaching twenty-five and I had not gone to high school. In fact, I had not even completed eight grades. The then President of the School of Mines, Dr. George Craven, was understanding but dubious. He told me that the only way I could be admitted was as a special student. To become a regular student, he said, I would have to make up my high school entrance credits. I completed the school year, 1927-28, while working in the mines at night. At the end of that year, I had passed the required subjects, most of them just barely. The teachers were generous and took a personal interest in what to them must have been something of an educational oddity. With me, they had to conduct, not a "Head start," but a kind of "Late start" program.

Among the professors who taught me, guided me, and counseled me, was a man from Harvard by the name of Walter T. Scott, Professor of English. I cannot begin to express how honored I am to be on the same platform with Professor Scott.

He meant much to me as a student and friend as he has meant much to this school through the years. He has done a great deal for education in this State and community and he is receiving, today, the kind of recognition he richly deserves and which is long overdue.

Also, on the platform today, is another long-time friend from Butte, a man with whom I served on the faculty as the University of Montana, Ambassador Andrew Corry, who is also being honored by his old school.

I am also honored by being on the platform with Terrence Kirkland, who is receiving the Professional Degree of Engineering Science Engineer, Frank Antonioli and Truxton Fisher, who are receving the Professional Degree of Mineral Dressing Engineer, and Petrus J. Du Toit and Rayworth F. Howe (posthumously), who are receiving the Professional Degree of Mining Engineer.

When I enrolled in Montana Tech, the entire student body was only about 130. In the same year, girls were admitted for the first time. The girls in that first class numbered somewhere between twenty-five and thirty. They came almost entirely from Butte High School, Girls Central and Anaconda High and were looked upon as either a distraction or an inspiration. In either case, this school, along with the State, was in the vanguard in according full legal recognition to women as equal persons.

In the 1920's and 30's, the Departments of Mining, Metallurgy, Mineralogy, Petroleum Engineering and Geology were the basic components in which degrees were awarded at the School of Mines. It was considered the outstanding educational center of its kind in the world. Only Freiburg, in Germany, was considered comparable. Today, Montana Tech continues to enjoy that reputation and it is eminently deserved. The standards have been maintained even as the scope of the educational program here has been extended to take in a Liberal Arts calendar. A studies program in Liberal Arts and other changes have had the effect of increasing the size of the student body many times over. So far as I can see, however, there has not been any diluting of the quality of the educational experience. On the contrary, it has been enriched greatly since the days when I was a student. May I suggest to the Regents on this platform that they keep this in mind as the school goes on to greater heights.

I would anticipate an even larger enrollment and a greater scope of intellectual pursuits at Montana Tech in the years ahead. That can be all to the good I would only hope that in the process of growing this school will never lose what to me, as a somewhat bewildered and uncertain student, meant so much at an earlier time. That was the sense of personal concern which was communicated by the members of the faculty and administration. You mattered to them and they mattered to you.

I would hope, too, that this school will keep, as it has always had, a unique core of excellence associated with the mineral sciences because Montana is deeply involved in that aspect of the nation's well being. Montanans have exploited hard rock minerals and others have come here to exploit them throughout the history of the State. I choose the word "exploit" advisedly. The history of mining in this State is not one of unalloyed contribution to the welfare of the people of Montana. Its advantages have been interlaced with a great deal of human misery and suffering, callousness and corruption.

It is important to remember that, it seems to me, especially at this time when there is underway a dramatic shift of national attention to the vast deposits of low sulfur coal in the Great Plains. Many people would like us to believe that this close-to-the-surface coal is the easy answer to the nation's energy problems. I do not go along with glib thinking of that kind. There are questions—many questions—to be asked and answered. Who, for example, profits by the exploitation of that coal? Do the people of this State gain if an energy shortage is exchanged for a shortage of clean air and clean water? In the long run, do the people of the nation gain thereby? Yet, that may be in store un-

less we move cautiously in exploiting these coal reserves.

Eastern Montana with its vast plains, rolling hills, and badlands, has a tradition of agriculture and livestock production. People who live there are wary of the massive disruption which is associated with crash surface mining. They have valid reason to be concerned and I share their concern. As yet, there is insufficient indication that the huge coal companies and out-of-state utilities have any deep interest in confronting the problems that their presence creates for local areas.

To be sure, there are gains to be derived from the exploitation of the coal reserves. The income and public revenues associated with mineral developments of great magnitude are very tempting. So, too, are the high prices offered for leases.

But, the other concerns I have noted are not to be ignored. They are of great significance to the people of the State and, in particular, to the generation of young people represented in this graduating class and those who will come after them.

Living Americans do not hold the land, the rivers, the sky, the air and the hills of Montana as an absolute right. The nation's natural treasures are ours to use, not to abuse. They are a trust to be maintained for future generations. In the assertion of our own rights, we cannot ignore the rights of those who will come after us.

So, insofar as I am concerned, the question of coal-stripping will be approached carefully—very carefully—and cautiously—very cautiously. In concert with the other members of the Montana Congressional delegation, it is my intention to use every avenue of the Federal government which is open to us to see that such is the case.

The development of the coal resources does not have to be ruled out if it can be done safely. In this connection, Montana Tech and other units of the Montana University System can be especially useful. They can devise, continuously, new and better ways in which coal can be extracted and utilized effectively without devastating the land and polluting the waterways. That is the only way these resources can be developed if they are to benefit Montana and the nation not only today but in all the days of the future. There is no need, in my judgment, to turn the State into a scarred and twisted wasteland in a frantic search for cheap fuel for the nation. Nor will it be.

The oil crisis last winter hich precipitated his search was a kind of hand-writing on the wall. Repeated and well-founded scientific and other expert warnings of an impending shortage were ignored for many years. Oil yields declined at home even as the nation became more and more dependent on petroleum. Alternatives were ignored. Research was neglected. Wasteful consumption continued. Then came the Arab boycott.

The great metropolitan areas of the nation were thrown into near panic when the king pin of the nation's economic and social structure was jarred. Almost overnight the Federal government went from do little to do everything. In a sudden determination to assure self-sufficiency, a massive financial and technical assault was launched in the field of energy. Dozens of agencies and offices plunged into the search. No matter that the problem was a long time in brewing and would be a long time in passing. No matter that crash Federal programs in other moments of crises have invariably proved wasteful and often misdirected. The only answer of which we were capable at that point was to pull out all the stops. tI was not a very reasoned approach but it was about the only way, as a government, we were able to react at all.

That is why, it seems to me, it is high time to look beyond the immediate question of energy. We need to consider closely the way in which our entire national economic life has come to be organized and the role which government plays therein. We need to think deeply about the economic structure of the nation not just as it is today but as it is likely to be five or ten years hence.

Not only in energy but in many other facets of our economy there have also occurred haphazard and wasteful usages, unwise development and random and uncoordinated government intervention. That there is a sudden fixation of federal attention on oil, natural gas, and other fuels is understandable. But what about nickel, tin, iron, copper and bauxite? Where will we get the supplies of these and other essential resources in the years ahead? What about food? Indeed, what of the exhaustibility of clean air and pure water?

Four years ago, the Interior Department said we depended preponderantly on foreign countries to supply us with thirteen basic minerals. Today, there are at least forty minerals on the same list. They include, bauxite-aluminum, tin, lead, nickel and chromium. What happens if the countries from which we get those basic minerals should decide to cut us off? I think we can withstand a cartel such as the one which recently threatened to raise the export price of bananas from Central America—but what of other commodities? We have already seen, for example, how foreign sources can affect our economy deeply by withholding petroleum in which we ourselves have great resources. What of basic commodities in which we have little or none?

What, for example, of bauxite? Over 80 percent of the bauxite used in the production of aluminum is imported. Aluminum pervades our society. Gas-saving engines are built from it. The building trades are voracious consumers. Food packaging is dependent on it. A myriad of other industries are affected by its availability. With time, per-

haps, we could step-up domestic bauxite production in the form of aluminum clays to be found in Georgia, Idaho and Montana. But aluminum refining requires massive amounts of electricity, and we already have a shortage of power.

Chromium is another essential element which goes into a great many products. We are 100 percent dependent on imports of chromium even though we have low grade chrome in the Absarokees in southern Montana. Most of the imports presently come from the Soviet Union. Yet, there are still delays in putting trade with that nation, as well as with the Peoples Republic of China, on an equal footing with other nations. The administration has requested legislation to that end and I am frank to acknowledge that it is in the Congress where the question has become snarled in extraneous issues. Sooner or later, however, we must face up to the need to enlarge to the fullest possible extent foreign supply sources for many commodities.

The problems of a complex economy such as we have in this nation go well beyond metals and minerals. In 1973, the nation experienced the biggest boost in the cost of groceries in over twenty-five years. Any relationship between ultimate retail prices and the prices paid to the farmer is minimal at best. The price of beef on the hoof, for example, has dropped very sharply in recent months as this State knows only too well, but a similar drop in retail prices is scarcely discernible. Prices of cotton, wool and synthetic fibers have risen 93 percent. The inflation was 10½ percent from March of 1973 to March of 1974; 14½ percent for the first three months of this year. If we are going to have a chance to minimize difficulties such as these, it is going to be necessary to re-examine and readjust the government apparatus which exists in one way or another for dealing with them.

At last report, more than fifty Federal agencies and administrations were collecting and compiling data on the subject of materials-supply. The total continues to increase with the growing interest in environmental safeguards, product safety and similar questions. A great deal of information is available so that is not the critical point. Nor is it that government intervention and controls are inadequate; in some respects, they are excessive.

The root of the difficulty, as I see it, is how to employ more effectively the intellectual, technical, scientific and other resources which we have available in this nation for confronting the needs of the economy. It is, largely, how to convert what is already known into what can be done but is not being done. In the end, it is a matter of using our heads, of coordinating and applying pertinent knowledge in a rational manner.

This approach need not mean more government intervention in the private economy. The fact is that the government is already intervening up to its ears and has been doing so for decades. That is not going to change. The question is whether the intervention is going to be coordinated for nationally acceptable ends or pursued in a way that is so disjointed and infuriating as to tax the confidence of the people in the fundamental political and governmental institutions of the nation.

What is needed, in short, and what is lacking in the role of the Federal government, to date, has been a kind of central alarm system, an early-warning system, with regard to trends in the nation's economy. May I add that an effort is now being made to design that kind of instrument. When I was asked by my Senate colleagues and the networks, last February, to speak to the nation for the Congressional majority as a supplement to the President's State of the Union message, I put the problem in these words:

"The need is to take a careful look not only at the flashing of the single danger signal (of the energy shortage) but at the whole integrated switchboard of our national existence. It is not enough, for example, for the Federal government to spend tens of millions of dollars in a rescue operation to keep the bankrupt Penn Central Railroad on the tracks. We need to know where an action of that kind fits into a national rail policy; where that policy, in turn, fits into a total transportation pattern; where that pattern, in turn, fits into the over-all requirements of the nation, today, and for the next decade or more."

In short, we need to think ahead in order to make hard political choices between what is more important to the nation and what is less, between what is enduring and what is transitory. That is the full scale by which government intervention in the nation's economy, when it must take place, should be measured. Unless we begin to use that scale, the right hand of government will tend more and more to undo or do over what the left hand has just done.

Shortly after my statement was made last February, Senator Hugh Scott, the Republican Leader, joined me in recognizing this need and, together, we sought the cooperation of the Leadership of the House of Representatives and the President. It was forthcoming. For several weeks, thereafter, the Leaders of both parties in both Houses of Congress gathered in my office, together with the Secretary of the Treasury and several other key economic officials of the Administration in a series of unprecedented meetings to consider this question.

A short time ago, this all-government group was able to reach unanimous accord on how to pursue this matter. As we see it, there is a need for tripartite cooperation on the part of the Congress, the Executive Branch and Americans drawn from outside of government to work together in a national commission which will—

First, act as the central focal and refining point for the ever-accumulating mountain of information which is available on the structure and operation of the nation's economy;

Second, to sort out this vast array of information with the aid of such wisdom and skills that the nation can muster from all relevant sources in order to perceive and forecast with reasonable accuracy what the fundamental economic needs and problems of the nation are likely to be a few years hence;

And, finally, on that basis, to make recommendations to the Congress and the President which can be translated into coordinated and effective government action in meeting those needs and problems. In that fashion, perhaps, crises like that of petroleum, which would otherwise burst in on us one after another, can be mitigated or prevented.

There is now under consideration in the Congress, legislation which has the unanimous support of the two party leadership in both Houses of Congress and of the Executive Branch. If passed, it will permit the taking of the next steps in fashioning a new coordinated approach to the nation's gathering economic needs and problems.

It may seem strange to you that the Executive Branch and the Legislative Branch and the two parties can cooperate at the present time in this fashion. How can there be cooperation there when there is a virtual confrontation on the question of Watergate and related matters? Is not the Congress at this very moment considering the impeachment of the President? Have there not been calls from individual members of Congress of both parties for the resignation of the President? The answer is, yes, it is a time of virtual confrontation over the Watergate affair. Yes, the Congress or, at this point, the House of Representatives, is considering impeachment. Yes, individual members of both parties have called for resignation.

But confrontation in the one instance cannot be allowed to preclude cooperation in others when cooperation is essential to the nation. Nor has it done so. The fact is that there has been cooperation with the Executive Branch not only in regard to the economic question which I have just discussed but also in other matters. Just recently, for example, I returned from discussions with the new President of France, discussions which were pursued with the full knowledge and concurrence of the President. Repeatedly, the Secretary of State, speaking and acting as he does, on behalf of the President of the United States, has had expressions and actions of support from the Senate and the House of Representatives. Not too long ago, I was with the Secretary in Mexico City at a meeting of American Foreign Ministers for precisely that reason.

So I would like to emphasize that the impeachment proceeding which is a Constitutional obligation of the most solemn kind, has not and will not impair the functioning of the Congress in its regular legislative business. Least of all will it stand in the way of cooperation with the Executive Branch in the field of foreign policy. The President knows that there is a large area of agreement in foreign relations between the two Branches and the two parties. So, too, does the Congress. And so, too, may I add do foreign governments.

To be sure, the time is not a happy one either for the President or for the Congress. But the contentment of the elected and appointed incumbents is not what the Constitution is all about. What matters is not the convenience of the men and women in government—those of us who are here today and gone tomorrow—what matters is the validity and durability of the federal institutions and their continued capacity to meet the needs of the people of the nation.

It is obvious that the confidence of the people in these institutions has been badly shaken by the events and revelations of the past year and a half. We can't escape the reality, however, that Watergate and related matters was not a bad dream. It did happen. It cannot and will not be ignored. It cannot be swept out of sight. There are no shortcuts out of the situation. For Congress to drop the matter, even if it were possible, would provide no answer. For the President to resign, even if he were so inclined, would not provide an answer. A satisfactory answer, in my judgment, can be found only in the Constitution and in the processes provided therein. These are the processes which are now being pursued in a most responsible fashion in the Courts and in the Congress. They will continue to be pursued until the matter is resolved.

It is a trying time for this nation and especially for the young among us. It is not easy to face up to shortcomings in institutions which we have come to regard with a respect bordering on reverence. It is a time for patience and restraint. It is a time for understanding of your government, of the Congress and the Presidency. With that understanding, we can and will carry on during this period of difficulty. Above all, it is a time to remember that "the price of liberty is eternal vigilance."

Our political processes, in the end, will be purified and strengthened by this ordeal. Watergate will pass and we will endure because there is a great deal that is right in this nation. There is a strong, decent, industrious and compassionate people. There is a bountiful land. There is intelligence, inventiveness and vitality. There must be forthcoming the leadership to put these attributes to use for the benefit of all. That is the responsibility of those who serve in government, in the Presidency, in the Congress and in the military and civilian services. This nation deserves more than a decent present. This nation deserves and it will have a decent future in freedom. And this, you may be certain, is what this nation will achieve.