

1959

## CONGRESSIONAL RECORD — APPENDIX

Before closing, I would like to note the contributions of the U.S. Army Signal Research and Development Laboratory, Fort Monmouth, N.J., which developed the instrumentation in the cloud cover satellite; also, the contributions of the industrial firms which have been associated with Project Vanguard under the Martin Co. as prime contractor. The General Electric Co. provided the first-stage rocket. The Aerojet General Corp. provided the rocket for the second-stage booster, and the Grand Central Rocket Co. made the third-stage rocket. The guidance and control equipment was developed from contributions by the Minneapolis-Honeywell Regulator Co., Designers for Industry, Air Associates, and the Martin Co. The fine contributions of these industrial teams are representative of the high level of the Nation's industrial technology and lead us to a feeling of confidence in the future of our programs.

## New Challenges to Education

## EXTENSION OF REMARKS

OF

## HON. RALPH YARBOROUGH

OF TEXAS

IN THE SENATE OF THE UNITED STATES

Monday, February 23, 1959

Mr. YARBOROUGH. Mr. President, it was recently my pleasure and privilege to address the Texas breakfast at the National School Administrators convention held in Atlantic City, N.J.

The school administrators of this Nation are a most important group. To them and the teachers under their supervision falls the vital task of training the youth of the United States. The excellent record they have already established stands as a living monument to their skill and dedication to duty, particularly when we consider they have been forced to work with inadequate facilities and are generally underpaid. To remain at their posts and continue to work for the betterment of young people requires a missionary zeal. These people are to be heartily commended.

At the request of friends, I am asking unanimous consent to have my address, given February 17, 1959, printed in the Appendix of the Record.

There being no objection, the address was ordered to be printed in the Record, as follows:

## NEW CHALLENGES TO EDUCATION

(Address by U.S. Senator RALPH YARBOROUGH at the annual Texas breakfast at the National Association of School Administrators convention, Atlantic City, N.J., February 17, 1959)

Mr. Chairman, fellow Texans, fellow Americans, I am very grateful for the privilege of participating in your annual meeting. This is a doubly pleasurable meeting to me, because some of the happiest days of my life have been spent in school—most of them as a student under inspiring teachers.

Although some of my former students in the Piney Woods country of the Neches River Valley may feel differently about those times, my 3 years as a country schoolteacher in Henderson County were to me some of the happiest days of all.

Now, as a member of the Senate Education Subcommittee, I am having an exceptional opportunity to learn something of the many complex problems facing our schools today.

In common with most informed Americans, I am deeply concerned about the lagging progress of public education and I am particularly concerned about it in Texas. This does not mean that I am critical of you and of our teachers. On the contrary, I commend you for doing an excellent job despite limited tools, inadequate pay, and lukewarm public support. It is my job, and the responsibility of every thinking citizen, to do everything possible to see that you have the funds to pay adequate teachers' salaries and to build adequate classrooms.

I firmly believe that teachers' pay in Texas should be raised from 50 percent to 100 percent, but not because I feel that every teacher is worth twice as much as he or she is now receiving. I am convinced that doubling teacher pay would not only solve the teacher shortage, it would create competition for the jobs. Then you as administrators would be in position to demand a high degree of excellence in this vital profession.

To those who say we "can't afford it," my answer is—we cannot afford to do otherwise. Like it or not, we cannot afford either having only half of our Texans educated, or having all Texans half educated. Yet, we are dangerously near that point.

Only one Texan in three over the age of 25 years has completed 4 years of high school. Texans rank 38th among people from all the States in the percentage qualified through the selective service mental test. Likewise, our students rank 38th among the students of other States in the per capita average number of days they attend school each year, under Texas' generally unenforceable compulsory school attendance law.

It is a shocking disgrace for big, rich Texas to rank 32d among the States in public school expenditures for each pupil in average daily attendance. But one must confess that is what might be expected in a State where an inept Government is blind to the needs of education. It taxed students by raising university tuition fees, and refused to tax the interests that are exploiting Texas, her people, and her resources.

A century and a quarter ago, our Texas forefathers revolted because of the failure of the general government to establish a public system of education in Texas.

Texas was ravaged by fire and by sword, her cities besieged, her towns burned, her heroes killed. But her right to a system of public education was won. Are we, the inheritors of those rights, to fall this, and the next generation? Are we too weak, too conformist, too servile and supine, to fight for what we know is right? Is big money to connote big ignorance? I call on every Texan to rally now, and help us build the best system of public education in the United States.

Proud, wealthy Texas is paying its elementary teachers an average of only \$4,296 yearly, considerably below the national average. This is criminal neglect because the student is the casualty in the long run. As your representative in the Senate, I am working for the solution of this problem.

As a member of the Senate Education Subcommittee, I have been present at hearings on Senate bill No. 2, the so-called School Support Act of 1959 introduced by Senator MURRAY, of Montana. Under this provision, Texas would be eligible to receive an allotment of \$25 per school age child in fiscal 1959-60, \$50 the next year, \$75 the next year, and \$100 per student in 1962-63. The estimated allotments for Texas by respective year would total \$63.8 million; \$132.9 million, \$206.4 million, and \$285.3 million.

This money, and I want to emphasize this—without any Federal controls or intervention—would be available to local school districts to use as local boards see fit, either for teacher pay increases or construction of new school rooms, or both.

Regardless of whether this bill passes, you can count on me to fight to see that we do not lose any of the good programs al-

ready underway. I will continue to strenuously oppose moves to abolish or to limit the school-lunch program, and the school-milk program, vocational education programs, and Federal assistance to federally impacted areas. I am working to expand all of these programs. You know, some of these people who are against spending money on public education, no matter why or where the money is needed, have been running around the State saying, "Why you've got to watch out for old RALPH YARBOROUGH. He's for Federal aid to education."

I'd like to clear that point up once and for all. I'm not just for Federal aid to education. I'm for all aid to education. The soundest investment we can make in America is in developing the minds of our young people. The need for more funds in the field of public education is so critical that revenues from local districts, cities, States, and the Federal Government all are required.

With this in mind, I have been shocked and saddened to learn that the board of regents of our Texas State teachers colleges have declined by an official resolution to participate in the student loan provisions of the National Defense Education Act of 1958. As you know, this is the act which primarily is designed to start us on the road to higher educational achievement, particularly in the field of science.

One provision of the National Defense Education Act of 1958, which, incidentally, I had the honor of coauthoring, provides funds for loans to college students. Most colleges in Texas and throughout the Nation have responded enthusiastically to this loan program as a very worthwhile means of assisting worthy students in securing a college education. But I was astonished to learn that the board of regents of Texas State teachers colleges have denied participation in these loans to students in five colleges.

Despite the fact that college officials had estimated a student loan need totaling \$195,333, the board saw fit to deny this loan program to students at Sam Houston Teachers College, Southwest Texas State Teachers College, Stephen F. Austin, East Texas State, and Sul Ross College.

The board of regents of these colleges has made a decision which I would not want on my conscience. If a single student drops out of a single one of these schools for lack of funds, the regents should be held accountable. Ironically, one of the colleges which the regents prohibited from participating in the loan program has this statement of purpose printed on its letterhead: "Founded to promote the advancement of the profession of teaching. Dedicated to the cause of better schools. Devoted to the welfare of children and youth."

It is my sincere hope that the board of regents of Texas State teachers colleges, for the good of the students, will reconsider its position on this matter: A total of \$21,758 has been reserved for the five colleges involved. If the regents finally deny this aid to their students, I shall make every effort to see that these funds are apportioned to other Texas students in other schools so that they will not be diverted to other States.

In my opinion, the people who make the mistake of opposing the granting of sufficient funds for the Nation's educational program are doing this country, themselves, and particularly our children, one of the greatest injustices of which they are capable.

Basically, the cold war now raging between democracy and communism around the world is a struggle for the minds of men. Enlightenment has always been free men's bulwark against tyranny. Education is the foundation stone of democracy, and it is an ever-increasing factor in the standard of living each man and his family can enjoy. We cannot, we must not, and we will not continue to deny all our students an education of the first class.

It would be simpler if I could say at this point, "Well, we are going to help you get some money, and that will solve the educational problems in America in general, and in Texas in particular."

But it isn't that simple. The educational problem facing us all goes much deeper than money. The thing we need most in education cannot be bought with money; it must grow again in the hearts and minds of the American people. I refer to the once proud dream that this land would be the world's model of universal educational attainment and cultural development. I refer to the spirit which made a backwoods boy named Abraham Lincoln study by firelight because he and other young people of his time recognized that knowledge is an invaluable stepping stone to happiness and to greatness.

What has become of the insatiable and inexorable quest for knowledge which played such a dominant role in pioneering of our Nation? Does it exist no more? Is a penchant for a be-bop ducktail culture a passing fad, or evidence of the long decline?

As a people we have more time free from work and drudgery than any other people in the history of mankind. But are we Americans using this time, even a small portion of this free time, to improve our minds through new educational attainment or even serious thought?

The answer is all too obvious. We have become a Nation with its head stuck in a television set; a people establishing new records annually in the consumption of alcohol and happy pills. We spend our lives vainly searching for happiness from a bottle. We are more concerned with the tearful soap opera TV heroine than with Communist terror in Hungary.

This is a deadly trend. As Adlai Stevenson has said: "We have confused the free with the free and easy." We threaten to become a people whose principal purpose is piling up profits and partaking of fleeting pleasures.

In the words of Abraham Lincoln, "We cannot escape history. . . . We will be remembered in spite of ourselves. No personal significance or insignificance can spare one or the other of us. The fiery trial through which we pass will light us down, in honor or dishonor, to the latest generation."

There must be an awakening. As a people and a Nation we cannot afford to retire in the prime of our lives. We have reached what might be considered a breathing point in American history. But our indolence and vacuity and indifference cannot continue. This breathing point must not become a permanent campsite. Let us adopt as a national educational aim the motto of an American State "Ad astra per aspera." "To the stars through difficulties."

We must recapture our desire for high educational excellence, and unflinchingly meet the mental disciplines and hard work basis to superior knowledge.

Mass education of all the people, once an American monopoly, is fast coming to the whole world. We can maintain our leadership only by moving faster and working harder for educational progress than other countries now turning their efforts to mass education.

The parent, the teacher, and the politician must all make up their minds that easy courses, little discipline, and stunted funds for education will never add up to high educational standards. Major emphasis on athletic spectacles and academic trivia cannot produce a high percentage of well-educated citizens. It is more likely to produce mediocrity.

We must turn from mediocrity to educational excellence, not only in pursuit of happiness for more Americans, but to achieve educational superiority.

Never before in the history of man have the talents and the specially developed abilities of educated men been in more

urgent demand. Never have the opportunities for educated, thinking, freemen been so great. The next 10, 20, or 30 years will tell whether this Nation produces the large numbers of high caliber citizens it so needs.

The brunt of the burden is on your shoulders. Those of us in public service can assist in the work of making known the need, and by helping to make funds available. But the real job of turning out young men and women who are intellectually prepared to be responsible Americans is up to you.

Upon the success or failure of your mission may well rest the eventual fate of freemen everywhere.

I wish you (odspeed).

## REA Co-ops Deserve Protection and Encouragement

### EXTENSION OF REMARKS

OF

## HON. WILLIAM PROXMIRE

OF WISCONSIN

IN THE SENATE OF THE UNITED STATES

Monday, February 23, 1959

Mr. PROXMIRE. Mr. President, the rural electric cooperatives of Wisconsin and of America have been the agencies through which the greatest benefit to farmers has been accomplished in all the history of public action in agricultural policy. Now, unfortunately, these REA co-ops are under attack.

From one of Wisconsin's finest REA co-ops, which held its annual members' meeting early this month, I have received a number of resolutions. The policies advocated by these resolutions are sound and, in my opinion, fully merited. I agree with these co-op members that REA should be taken out of politics; in fact I am a cosponsor of the Senate bill to accomplish this. I agree also that REA should not now withdraw from its traditional role as the banker to the rural electrification program, and that its rate of interest should not be raised above the present 2 percent. This rate of interest has been sufficient to cover the cost of money to the Treasury most of the time since REA was established 23 years ago, and there is no reason why it should not do so at present, if our Government would abandon its high interest policy of forcing interest charges to go up. In any event, these co-ops are undertaking considerable expenses and obligations on behalf of the public, particularly in their complete area coverage policy, which entitle them to an interest charge of no more than 2 percent.

Mr. President, because these matters are of such great and direct concern to all of our rural citizens, I ask unanimous consent to have them printed in the Appendix.

There being no objection, the resolutions were ordered to be printed in the Appendix, as follows:

RESOLUTIONS ADOPTED BY MEMBERS OF THE CHIPPEWA VALLEY ELECTRIC COOPERATIVE, CORNELL, WIS., AT ANNUAL MEETING OF FEBRUARY 6, 1959

#### REA REORGANIZATION

Whereas the original REA act of 1936 provided for strictly nonpartisan administra-

tion of REA and provided for the appointment of an Administrator by the President, with confirmation by the Senate for a 10-year term to insure nonpartisan, nonpolitical administration; and

Whereas Secretary Benson has supported a bill in Congress which would drastically increase interest rates and drive electric and telephone cooperatives to Wall Street for their financing; Now, therefore, be it

*Resolved*, That we are vigorously opposed to any reorganization of REA; and be it further

*Resolved*, That as soon as the new Congress convenes in 1959 a bill which would restore to the REA Administrator all of the functions and authority vested in him by the original act of 1936, be introduced and passed.

#### INTEREST RATES

Whereas a number of bills and proposals were presented to the 85th Congress to increase REA interest rates; and

Whereas the Congress, by enacting the Pace Act in 1944, and fixing the interest rate of 2 percent, therein made a covenant with the rural electric cooperatives to proceed with area coverage at reasonable, retail rates; and

Whereas we believe the continuance of the 2 percent interest rate is necessary to enable the rural electric systems to complete the task of providing full, efficient, and reasonably priced electric service on an area coverage basis; Now, therefore, be it

*Resolved*, That we urge the Congress to vigorously oppose any change or proposed change in the law, the effects of which would increase REA interest rates.

#### REA LOAN SOURCE

Whereas the Secretary of Agriculture last February sent to the Congress a proposed bill which provided that the cooperatives secure their financing in Wall Street—for which no legislator would act as sponsor; and

Whereas such bill would double or triple interest rates to the rural electric systems; and

Whereas such bill would virtually kill the program and bankrupt many distribution cooperatives; and

Whereas the Congress has always evidenced its wholehearted support of the REA program by consistently providing sufficient loan funds; Now, therefore, be it

*Resolved*, That we urge Congress to oppose any and all proposals which would send the rural electric systems into the private money market for their financing, and we urge Congress to continue its fine support of the rural electric program which means so much to the people of rural America and to the country as a whole.

#### SELLOUT PROTECTION

Whereas forces opposing the rural electrification program are moving in on cooperatives in various parts of the country, e.g., the New Jersey and Arizona cases, for the expressed purpose of buying them out; and

Whereas it is evident that the power companies instituting sellouts are being directed by executives hired and maintained by their holding companies; and

Whereas electric consumers in and outside the program will pay more for electricity if these sellouts become more widespread; Now, therefore, be it

*Resolved*, That we urge REA to provide more aggressive assistance to cooperatives needing its help to continue their existence—such as was the case of cooperatives in New Jersey and Arizona; and be it further

*Resolved*, That we urge our State legislatures to provide use with the machinery to function as public agencies or utility districts where such a step is necessary to preserve consumer ownership; and be it further

*Resolved*, That we urge Congress to protect rural electric and all electric consumers by

same thing as output per man hour. In any one company or industry, for example, an increase in output per man hour may be completely offset by the increased cost of machines or materials that made the higher output possible. So when we talk in terms of output per man hour we are usually exaggerating greatly any increase in real productivity that may have occurred.

We must also remember that productivity—as an offsetting factor to inflationary wage increases—cannot be measured on a short term basis covering a month, a few months, or even a few years.

For example, if we take the records of the American Iron and Steel Institute, and do a little arithmetic, we find that in 1956—the year in which our present steel wage agreement was signed—the industry turned out considerably more steel per thousand man hours than it did last year. Over that period, in fact, output per man hour declined by more than 7 percent.

That, of course, was due primarily to the sharp drop in steel production during a period of recession; and now that the demand for steel is rising rapidly, it may be expected that output per man hour will do likewise. So if the steel union seeks to justify its wage demands by claiming some spectacular rise in output per man hour during the coming months, it may fool a number of people; but that will not make its demands one whit less inflationary.

The truth is, of course, that from 1940 through 1957, hourly employment costs in the steel industry have gone up an average of 7.6 percent for 17 solid years. And in contrast, the reports of the Department of Labor show that output per man-hour has risen by only 2.6 percent per year. And, as I pointed out before, using "output per man-hour" overstates the real productivity gains.

So there you have it: 7.6 percent against 2.6 percent, each year for 17 years. The difference spelled wage inflation.

Now, let's take a look at those profits.

The argument here is that rising corporate profits, rather than wages, are responsible for the ever-mounting cost of living. And the trouble with this argument is that corporate profits haven't been rising for years. In fact, only twice during the present decade have the after-tax profits of corporations as a whole been as high as they were in 1950. In all other years they were lower. And Government reports show that last year they were \$5 billion less than they were in 1950.

The same Government reports also show, however, that compensation of employees, throughout the Nation, has risen by \$100 billion during these same 9 years. So I leave it to you; whence cometh this cost-push inflation?

I should add, however, that this decline in corporate profits may have contributed, in one respect, to the inflationary effect of the wage increases; because, you see, there is only one way in which these corporate profits can be spent. They all go to pay for the use and improvement of the tools and other capital facilities necessary to production \* \* \* and had the profits of all corporations risen as they should have, during this period, there is no doubt that many of the cost-reducing improvements that American industry is still waiting to make in its facilities would have already been installed and would now be yielding the fruits of increased efficiency.

So when we hear union leaders say that higher wage costs can, and should, come out of profits, let us remember one little economic maxim: that less profit means fewer tools—or poorer tools—of production; and that this, in turn, means less efficiency, higher production costs, higher prices, shrinking purchasing power, diminishing markets, and fewer jobs. It is just as simple as that.

Ladies and gentlemen, at the outset of this little talk I said I wanted to discuss my prob-

lems with you because you could really do something about them. As you see, however, they are not my problems alone. They are the problems of all of us, of you, of the men in the mines and the mills, and of union members and leaders alike; for no matter what economic group we may belong to, and no matter what the conflicting interests of these groups may seem to be, we are a Nation of 175 million consumers and each one of us has a vital stake in the task of protecting the consumer purchasing power of all of us.

If there is one banner under which we should all unite, I suppose it would read something like this: "Hold that line in 1959."

No single group of us can do it alone. We who represent the steel companies are going to do our full part, but in saying that, let me remind you that at the American bargaining table, in these days of industrywide unions, the power that is concentrated on the labor side normally outweighs by a considerable margin that on the management side. This is especially true when any single company is negotiating with the union and is still likely to be true even when a group of companies have joined together for bargaining purposes.

Unless the representatives of the union are fully satisfied when our present steel contracts expire, they can strike the plants and close down about 90 percent of the steel industry. And they have done so five times in the last 13 years.

The steel companies have taken these costly strikes in an effort to help check the rising tide of wage-cost inflation; but they have never succeeded in doing so. For a strike in steel is not a weapon that is aimed at the companies alone. After it has gone on for a few weeks, many of our customers begin to run out of steel. Thus they face a shut-down of their plants and a layoff of their employees. The flow of steel needed for defense is shut off too; and so the pressure upon the companies to settle finally reaches a point where it is difficult to withstand any longer. It comes from our customers, from the public, and—frequently—from the Government itself.

Settle, they tell us; and settle we must. So the companies alone cannot stop wage inflation. Neither can the Government, I think, under present circumstances. Conceivably it might legislate a more equal distribution of power at the bargaining table, but I cherish little hope that it will do so. Failing that, it could resort to the peacetime imposition of wage and price controls; but those have been tried in nation after nation for more than 2,000 years, and never yet have they stopped inflation. They have only stopped production and progress.

Yet there is, I believe, one great, irresistible force in this country that can stop wage inflation at its source. That is the force of informed public opinion. And the power to create an informed public opinion is the power of the press.

Now I know that the issues in any wage negotiation are many and complex; and that working as you do under the inexorable pressure of the clock, you have little time to delve into them fully. I also know that a wage negotiation, even in a nationwide industry, is pretty small potatoes as news goes, these days, and that there is very little space that you can give it.

It is true, moreover, that you have fully and fairly discharged your reportorial duties when you give both sides of the story. You tell your readers that the union says its wage demands will cost X cents per hour; but the companies claim that it will cost a good many cents more per hour. So the reader, who is often a pretty busy fellow himself, is likely to conclude that both sides are protesting too much, and that it really doesn't matter much because they're only haggling over a few pennies anyway.

But which side is protesting too much? And just how much does it matter?

Well it matters a great deal, because, you see, an increase of 1 little cent per hour in the cost of employment will add some \$15 million a year to the industry's cost of making steel. And in saying that, I am referring only to the direct employment cost. As similar wage boosts occur in other industries and are reflected in our purchased goods, services, taxes, and so on, the increase in our indirect employment costs soon mounts up to an equal sum. So as a kind of rough rule of thumb, we may say that each 1 cent increase in steel wages and benefits means some \$30 million of increased costs to add to the inflation spiral.

But it lies within the power of the press to determine what the exact facts are. You men and women have the opportunity to go to the source of these conflicting statements on both sides, to check the figures for yourselves, and to tell your readers of your findings.

My purpose here today is to invite you most cordially to do so; because unless the public can be fully and truthfully informed, it looks as if we may have another billion-dollar bundle of unwanted inflation on our national doorstep for keeps.

## Industrialization of the States

### EXTENSION OF REMARKS

OF

## HON. WILLIAM PROXMIRE

OF WISCONSIN

IN THE SENATE OF THE UNITED STATES

Monday, February 23, 1959

MR. PROXMIRE. Mr. President, the Milwaukee Sentinel recently printed a table showing the degree of industrialization of each of the 48 States excluding Alaska, as measured by percentages of personal income derived from manufacturing wages and salaries.

It will surprise many Members of Congress to discover that the State of Wisconsin is now seventh in the country in industrialization by this measure and ranks ahead of such States as Massachusetts, Rhode Island, Illinois, New York, California, and Texas.

Mr. President, I ask unanimous consent that the table and the interesting article accompanying it, written by William A. Norris of the Sentinel be printed in the Appendix of the Record.

There being no objection, the table and article were ordered to be printed in the Record, as follows:

STATE RESIDENTS' INCOME HEAVILY DEPENDENT  
UPON MANUFACTURING  
(By William A. Norris)

Here's a good method of measuring the degree of Wisconsin's industrialization, its dependence on manufacturing for its economic life:

Out of every dollar of personal income received by Wisconsin people, 30 cents comes from manufacturers in the form of wages and salaries.

The remaining 70 cents of the State's total personal income are derived from wages and salaries in all nonmanufacturing occupations, and from the professions, interest and dividends, profits on farms and businesses, pensions, annuities and other nonwage sources.

The figures used in this column are based on reports of the Department of Commerce

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for 1957 (percentages by courtesy of my slide-rule).

Only six States get a higher percentage of personal income from manufacturing wages and salaries than does Wisconsin.

At the top of the list is Michigan, with 36.8 percent; at the bottom is North Dakota, with only 2.6 percent. The national average is 23.4 percent.

The following table does not show which States have the most manufacturing, but it does show which States have the most manufacturing in relation to all their other sources of personal income.

As a result, some rather surprising things appear. New York, which leads all States in total value of manufacturing, is No. 19 on the list, slightly below the national average. That's because New York has tremendous sources of personal income other than manufacturing—financial institutions, shipping, vast wholesale and retail structures, service industries, utilities, transportation of all sorts. Manufacturing is relatively less important to New York than it is to Wisconsin.

On the other hand, little Delaware, with manufacturing output only about one-sixth of Wisconsin's, is tied with us in the list because its total personal income is only about one-sixth of ours. Relatively, Delaware is as highly industrialized as we are. Some other small States, such as New Hampshire, Rhode Island, and Vermont, are higher on the list than you might expect.

Some industrial giants, like California and Texas, whose manufacturing volume exceeds Wisconsin's, are far down on the list because their economies include big nonmanufacturing resources. Here's the list:

*Percentage of personal income derived from manufacturing wages and salaries*

1. Michigan.....	36.8
2. Indiana.....	35.2
3. Connecticut.....	34.5
4. Ohio.....	34.2
5. New Jersey.....	31.4
6. Pennsylvania.....	31.0
7. Wisconsin.....	30.4
8. Delaware.....	30.4
9. New Hampshire.....	28.7
10. Rhode Island.....	27.6
11. Massachusetts.....	26.8
12. South Carolina.....	26.1
13. Illinois.....	25.7
14. North Carolina.....	25.0
15. Maine.....	24.8
16. Tennessee.....	23.4
U.S. average.....	23.4
17. Alabama.....	22.5
18. Vermont.....	22.4
19. New York.....	22.0
20. Missouri.....	21.4
21. Maryland.....	20.8
22. Georgia.....	20.4
23. West Virginia.....	20.2
24. California.....	19.5
25. Washington.....	19.5
26. Kentucky.....	19.2
27. Oregon.....	19.0
28. Minnesota.....	17.5
29. Kansas.....	16.3
30. Texas.....	16.0
31. Iowa.....	15.6
32. Mississippi.....	15.5
33. Virginia.....	15.5
34. Arkansas.....	13.8
35. Louisiana.....	13.6
36. Utah.....	12.4
37. Idaho.....	11.5
38. Oklahoma.....	10.9
39. Colorado.....	10.7
40. Arizona.....	9.9
41. Nebraska.....	9.5
42. Florida.....	8.1
43. Montana.....	7.6
44. Wyoming.....	5.3
45. New Mexico.....	4.9
46. Nevada.....	4.5
47. South Dakota.....	4.5
48. North Dakota.....	2.6

(Apologies to Alaska, for which we have no figures.)

This list, perhaps, will help to impress public officials and private citizens alike with the vital necessity of preserving and expanding our State's manufacturing industries.

### The Vanguard Weather Satellite

#### EXTENSION OF REMARKS

OF

### HON. JAMES G. FULTON

OF PENNSYLVANIA

IN THE HOUSE OF REPRESENTATIVES

Thursday, January 29, 1959

Mr. FULTON. Mr. Speaker, under leave to extend my remarks in the RECORD, I include the following statement:

STATEMENT OF DR. ABE SILVERSTEIN, DIRECTOR OF SPACE FLIGHT DEVELOPMENT, NATIONAL AERONAUTICS AND SPACE ADMINISTRATION, BEFORE THE HOUSE COMMITTEE ON SCIENCE AND ASTRONAUTICS, FEBRUARY 18, 1959

As you know, we launched a 2 1/4-pound Vanguard weather satellite yesterday morning. From all indications, it is transmitting valuable cloud cover data which can be related to the overall meteorology of the earth.

This is a very exciting, historic, experiment. It represents a first step toward obtaining continuous, 24-hour-a-day weather mapping of global scope. At the present time, by means of weather ships, balloons, etc., we are able to map only 10 percent of the world's weather, so it's not hard to see why we are excited about this experiment.

I'd like to review, briefly, the history of Project Vanguard because I feel there has been considerable misunderstanding about this project from the very beginning. And at the outset, I'd like to pay tribute to Dr. John Peter Hagen, chief of NASA's Vanguard division, whose faith in the Vanguard rocket, and the project in general, has never wavered.

On July 29, 1955, the White House announced that the United States planned to launch earth satellites as part of this country's contribution to the International Geophysical Year which ended formally on December 31, 1958. Project Vanguard was the name assigned to that part of the satellite program which was under management of the Chief of Naval Research, Adm. Rawson Bennett. The Naval Research Laboratory (NRL) in Washington, D.C., under the leadership of Capt. F. H. Horn, had responsibility for technical aspects of the program.

Here, I would like to emphasize a fact that is too often forgotten: the Navy set out to produce, essentially from scratch, a satellite launching vehicle in a remarkably short time. The very production of this vehicle was to be, in a sense, one of the most significant contributions of the IGY. The Vanguard vehicle is an advanced rocket, parts of which are in use in other U.S. rockets and missiles.

On October 1, 1958, the President by Executive Order 13783 transferred "all functions (including powers, duties, activities, and parts of functions) of the Department of Defense, or of any officer or organizational entity of the Department of Defense with respect to \* \* \* the U.S. scientific satellite project (Project Vanguard)" to the National Aeronautics and Space Administration.

Under authority of this Executive order, 133 members of the Vanguard group at the Naval Research Laboratory and 25 persons in other divisions of the Naval Research Laboratory devoting substantially full time to the Vanguard project, a total of 158 persons, were transferred to NASA on November 30. Of these, 86 are scientists, 42 technicians, and 30 administrative and support personnel.

Project Vanguard developed not only the Vanguard vehicle but also the IGY radio tracking net (Minitrack) which has been used not only for Vanguard but for observations of every active satellite so far launched, United States and Russian. With the transfer, responsibility for this network passed to NASA.

At the time of transfer to NASA the engineering and manufacture of the vehicles was essentially completed. Seven three-stage vehicles, i.e., test vehicles TV-3, TV-3BU, TV-4, TV-5, and satellite launch vehicles SLV-1, SLV-2, SLV-3, had been launched. Modifications which resulted from study of records from each launching attempt were being incorporated in the remaining vehicles. Additional preflight operations, intended to eliminate the causes of low performance of the second stage in previous flights, had been adopted and were being applied to SLV-4. Four satellite launching vehicles remained to be fired.

When responsibility for the Vanguard program was given to NASA, we reviewed the complete history of the project. The Vanguard vehicle is comparable in complexity and application of advanced techniques to military ballistic missiles. Its early flight experience is substantially the same as that of the other missiles, whose failures and successes were not made a matter of public record. The personnel of the Vanguard group are highly competent, and we are pleased that their services have been made available. They have joined in the overall activity of NASA with highly cooperative spirit and are active in the formulation of the national space program.

As a result of administrative review of Vanguard history, NASA decided to postpone the Vanguard firing scheduled for December 1958 to February 1959 to provide time for an objective technical review of the vehicle to determine whether any additional steps might be taken to increase the probability of success. A working committee composed of experts having no previous connection with Vanguard studied in detail the systems involved in the vehicle and vehicle launching. The committee examined all pertinent data from the Vanguard launchings and from the use of Vanguard components in other vehicles such as the Thor-Able reentry and moon-probe vehicles. Numerous modifications in the system and operational practices were made as a result of the work of the review teams and the Vanguard and industrial teams working together.

Whether any of these modifications definitively helped in achieving success of Vanguard II is difficult to say. Definitely the conservative engineering approach that led to a deliberate look by all the participants at their equipment and operating practices was correct in principle.

Prior to yesterday's successful experiment, one Vanguard satellite had achieved orbit—a three-and-one-quarter-pound test sphere which was launched on March 17, 1958. (Its 50-pound third stage rocket casing also went into orbit.) Vanguard I, as it was christened, is still aloft, with an expected lifetime of hundreds of years. Its solar batteries are still doing their job and the Army Map Service has been making electronic observations of the satellite from Pacific islands to pinpoint their location more exactly. The satellite is also being used for more exact determination of the earth's shape.

The Vanguard II cloud cover satellite is the first in a series of meteorological satellites to be launched by NASA during the next few years. These satellites should gain information about the weather and how it develops. Substantial economic returns—to say nothing of returns in the form of lives saved by accurate forecasting of hurricanes, typhoons, etc.—can be expected as the technology is developed.