UNITED STEELWORKERS OF AMERICA
609 PROVIDENCE BUILDING
DULUTH, MINNESOTA

TO: Honorable Hubert H. Humphrey **DATE:** Jan. 13, 1961

FROM: Earl T. Bester, Director Dist. 33

SUBJECT: Letter to Honorable Eugene McCarthy

For your Information.

Earl T. Bester

Min. file

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SECRETARY-TREASURER

DAVID J. McDONALD
PRESIDENT

HOWARD HAGUE
VICE PRESIDENT

United Steelworkers of America

EARL T. BESTER
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DISTRICT 33
609 PROVIDENCE BUILDING
Duluth 2, Minnesota

PHONE RA 2-2869

January 13, 1961

Honorable Eugene McCarthy
Senate Office Building
Washington, D. C.

Dear Gene:

As one of the members of President-elect Kennedy's Task Force Committee you are aware of the many things that were discussed concerning the distressed areas that exist in this country.

It was my desire, representing the Lake Superior Region, which embraces Northern Wisconsin, Northern Michigan, as well as Northeastern Minnesota, to make it very plain to this committee the need of help and development in these areas in which we have chronic unemployment because of the many displacements concerning our chief industries, steel and iron ore. Of course, there are many other factors in other various industries of which we have an interest, but at the same time, we think a healthy iron ore industry in these areas contributes to the employment of people and that is our chief concern.

I proposed to Congressman John Blatnik that we introduce legislation for allowance of accelerated amortization on the construction or expansion of plants for beneficiating of low grade ores or taconite in distressed areas. I am sure you are aware that Congressman Blatnik was chiefly responsible for the construction of Erie Mining Company and Reserve Mining taconite plants. At the same time the amortization was allowable as a national defense measure, but at the same time was an important factor in the decision of those companies to go ahead with the construction of their plants. No doubt this policy has an advantage as in the long run the government does not lose tax monies since the total amount of depreciation allowed cannot exceed the investment. However, the right to write-off the investment over a short period of years would seem to me a very important factor both from the stand-point of eliminating the risk element and from the stand-point of allowing a more rapid turn-over of capital, thus making available capital for still further investment.

This development of taconite has got to come I assume from local and state level, but I know nothing of which Congress could do which would contribute as much as this allowance. As long as it is confined to plant investment in areas which have been classified as distressed areas, I can see where there would evidently be no exception to this type of policy. There is nothing which could contribute more to the relief of the situation on the Iron Ranges than the encouragement of the investment in plants.

Much discussion was had while in committee at Charleston, West Virginia about research and development of coal and its by-products to aid the State of West Virginia and also the Appalachian Valley projects.

It is my belief that research in taconite has already reached its developing stages and is already a reality and that investments on the basis of the above mentioned amortizations could be of true value to aid the Lake Superior Region to no end.

From time to time we will call upon you on many other process developments that could be of value, but this is one that has already gone through the pilot stage and has already become an industrial giant in itself, employing already in the State of Minnesota close to four thousand people.

I am sure you will get in touch with Congressman Blatnik and use your influence to see that some bill to fit this area can be devised and passed.

Hoping to hear from you as quickly as possible as to what your feeling is concerning this matter. At the same time I have taken the privilege of sending copies of this letter to Senators' Humphrey, William D. Proxmire of Wisconsin, Patrick McNamara and Philip A. Hart of Michigan.

Sincerely yours,

Earl T. Bester, Director
District No. 33, USA

ETB/ag

CC: Senators Humphrey
Proxmire
McNamara
Hart

Mary Frances

STATEMENT OF SENATOR HUBERT H. HUMPHREY

COPY

1/30/61

Mr. President,

I introduce for appropriate reference a bill designed to provide accelerated amortization deductions for industrial or commercial plants and facilities constructed in economically depressed areas.

The purpose of this proposal is to encourage capital investments which will provide new employment opportunities in areas suffering from high and prolonged unemployment.

It is estimated that 10 to 20 percent of the people wanting work in the depressed areas are unable to find jobs.

The suffering of hundreds of thousands of American workers and their families living in depressed areas and unable to find gainful employment demand our immediate concern.

I am pleased that President Kennedy has placed high priority on dealing with the problems of depressed areas. And I am confident that this Congress is going to give the President the backing he needs and deserves in his efforts to assist in improving the economies of such areas.

I would point out that the task force on problems of depressed areas, appointed by President Kennedy in December, and headed up by the distinguished senior Senator from Illinois, Mr. Douglas, in its report to the President, recommended consideration of the proposal which I am offering today. I am hopeful that this measure will be given careful and sympathetic consideration by the Senate Committee on Finance and by the House Committee on Ways and Means to which a companion measure offered by Representative John Blatnik of Minnesota has been referred.

It should be emphasized that the bill I am offering specifically states that accelerated amortization deductions will be allowed only on those capital investments made in a depressed area -- as defined in the bill -- and "which will provide new employment opportunities all or substantially all of which will be filled by individuals residing in such area."

The basic purpose of this proposal is to bring new job opportunities to the workers in areas of substantial unemployment. Capital investments which will not provide new job opportunities to workers of the area will not, under the terms of my bill, qualify for a fast tax writeoff.

I know, Mr. President, that this legislation would definitely encourage new capital investment in economically depressed areas -- including northeastern Minnesota which is experiencing serious economic problems and high and sustained unemployment.

The passage of this legislation, coupled with enactment of the area redevelopment bill and my youth conservation corps proposal, would without a doubt stimulate the economy in northeastern Minnesota and in scores of areas throughout our country which face similar economic problems.

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87TH CONGRESS
1ST SESSION

S. 672

IN THE SENATE OF THE UNITED STATES

JANUARY 30, 1961

Mr. HUMPHREY introduced the following bill; which was read twice and referred to the Committee on Finance

A BILL

To amend the Internal Revenue Code of 1954 to provide an accelerated amortization deduction for industrial or commercial plants and facilities constructed or established in economically depressed areas.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That (a) part VI of subchapter B of chapter 1 of the Internal Revenue Code of 1954 (relating to itemized deductions for individuals and corporations) is amended by adding at the end thereof the following new section:

"SEC. 181. AMORTIZATION OF FACILITIES IN ECONOMICALLY DEPRESSED AREAS.

"(a) ALLOWANCE OF DEDUCTION.—

"(1) ORIGINAL OWNER.—Any person who constructs, reconstructs, or erects a redevelopment facility (as defined in subsection (d)) shall, at his election, be entitled to a deduction with respect to the amortization of the adjusted basis (for determining gain) of such facility based on a period of 60 months. The 60-month period shall begin as to any such facility, at the election of the taxpayer, with the month following the month in which the facility was completed, or with the succeeding taxable year.

"(2) SUBSEQUENT OWNERS.—Any person who acquires a redevelopment facility from a taxpayer which—

"(A) elected under subsection (b) to take the amortization deduction provided by this subsection with respect to such facility, and

"(B) did not discontinue the amortization deduction pursuant to subsection (c),

shall, at its election, be entitled to a deduction with respect to the adjusted basis (determined under subsection (e) (2)) of such facility based on the period, if any, remaining (at the time of acquisition) in the 60-

month period elected under subsection (b) by the concern which constructed, reconstructed, or erected such facility.

"(3) AMOUNT OF DEDUCTION.—The amortization deduction provided in paragraphs (1) and (2) shall be an amount, with respect to each month of the amortization period within the taxable year, equal to the adjusted basis of the facility at the end of such month, divided by the number of months (including the month for which the deduction is computed) remaining in the period. Such adjusted basis at the end of the month shall be computed without regard to the amortization deduction for such month. The amortization deduction above provided with respect to any month shall be in lieu of the depreciation deduction with respect to such facility for such month provided by section 167.

"(b) ELECTION OF AMORTIZATION.—The election of the taxpayer under subsection (a) (1) to take the amortization deduction and to begin the 60-month period with the month following the month in which the facility was completed shall be made only by a statement to that effect in the return for the taxable year in which the facility was completed. The election of the taxpayer under subsection (a) (1) to take the amortization deduction and to begin such period with the taxable year succeeding such year

shall be made only by a statement to that effect in the return for such succeeding taxable year. The election of the taxpayer under subsection (a) (2) to take the amortization deduction shall be made only by a statement to that effect in the return for the taxable year in which the facility was acquired. Notwithstanding the preceding three sentences, the election of the taxpayer under subsection (a) (1) or (2) may be made, under such regulations as the Secretary or his delegate may prescribe, before the time prescribed in the applicable sentence.

"(c) TERMINATION OF AMORTIZATION DEDUCTION.—A taxpayer which has elected under subsection (b) to take the amortization deduction provided in subsection (a) may, at any time after making such election, discontinue the amortization deduction with respect to the remainder of the amortization period, such discontinuance to begin as of the beginning of any month specified by the taxpayer in a notice in writing filed with the Secretary or his delegate before the beginning of such month. The depreciation deduction provided under section 167 shall be allowed, beginning with the first month as to which the amortization deduction does not apply, and the taxpayer shall not be entitled to any further amortization deduction with respect to such facility.

"(d) DETERMINATION OF REDEVELOPMENT FACILITIES.—

"(1) DEFINITION OF TERMS.—For purposes of this section, the terms 'redevelopment facility' and 'facility' mean any facility, land, building, machinery, or equipment designed for commercial or industrial operations, or any part thereof—

"(A) the construction, reconstruction, or erection of which was completed on or after January 1, 1960, and which is first used in such operations on or after the date of the enactment of this Act,

"(B) which is located in an economically depressed area, determined as of the close of the taxable year with respect to which the election under subsection (b) is made, and

"(C) which will provide new employment opportunities all or substantially all of which will be filled by individuals residing in such area.

Such terms shall include only property of a character which is subject to the allowance for depreciation provided in section 167, and shall not include any facility any part of which is an emergency facility (within the meaning of section 168). In no event shall an amortization deduction be allowed under this section in respect of any facility for any taxable year unless a certificate in respect thereof under paragraph (3) of this subsec-

tion shall have been made with or before the filing of the taxpayer's return for such taxable year.

"(2) ECONOMICALLY DEPRESSED AREAS.—For purposes of clause (B) of paragraph (1), the term 'economically depressed area' means a labor market area (as defined by the Secretary of Labor) which is located within the United States and in which—

"(A) the unemployment rate, excluding unemployment due primarily to temporary or seasonal factors, is currently 6 per centum and has averaged at least 6 per centum for the qualifying time periods specified in subparagraph (B) of this paragraph; and

"(B) (i) the annual average unemployment rate has been at least 50 per centum above the national average for four of the preceding five calendar years, or

"(ii) the annual average unemployment rate has been at least 75 per centum above the national average for three of the preceding four calendar years, or

"(iii) the annual average unemployment rate has been at least 100 per centum above the national

average for two of the preceding three calendar years; and

"(C) nonagricultural employment has declined, or has shown a smaller increase than in the country as a whole, during the preceding five calendar years; but no area shall be excluded by the requirement of this subparagraph if the annual average unemployment rate in that area for three of the last four years exceeds 8 per centum.

"(3) DETERMINATIONS BY SECRETARY OF LABOR.—The determinations required by paragraph (2) shall be made from time to time by the Secretary of Labor and certified by him to the Secretary or his delegate. The determinations required in the case of any facility by subparagraphs (B) and (C) of paragraph (1) shall be made by the Secretary of Labor whenever requested by the Secretary or his delegate and, if such facility satisfies such subparagraphs, shall be certified by the Secretary of Labor to the Secretary or his delegate.

"(4) EFFECT OF TERMINATION OF ECONOMICALLY DEPRESSED STATUS OF AN AREA.—The entitlement of a taxpayer (or subsequent owner) to an amortization deduction with respect to any facility, once established

in accordance with this section, shall not be terminated or otherwise affected by the fact that after the beginning of the 60-month period with respect to such facility the area in which such facility is located ceases to be an economically depressed area.

"(e) DETERMINATION OF ADJUSTED BASIS.—

"(1) ORIGINAL OWNERS.—For purposes of subsection (a) (1), in determining the adjusted basis of any redevelopment facility the construction, reconstruction, or erection of which was begun before January 1, 1960, there shall be included only so much of the amount of the adjusted basis (computed without regard to this subsection) as is properly attributable to such construction, reconstruction, or erection on or after such date.

"(2) SUBSEQUENT OWNERS.—For purposes of subsection (a) (2), the adjusted basis of any redevelopment facility shall be whichever of the following amounts is the smaller:

"(A) the basis (unadjusted) of such facility for purposes of this section in the hands of the transferor, donor, or grantor, adjusted as if such facility in the hands of the taxpayer had a substituted basis within the meaning of section 1016 (b), or

"(B) so much of the adjusted basis (for determining gain) of the facility in the hands of the

taxpayer (as computed without regard to this subsection) as is properly attributable to construction, reconstruction, or erection on or after January 1, 1960.

"(f) DEPRECIATION DEDUCTION.—If the adjusted basis of the redevelopment facility (computed without regard to subsection (e)) exceeds the adjusted basis computed under subsection (e), the depreciation deduction provided by section 167 shall, despite the provisions of subsection (a) (3) of this section, be allowed with respect to such facility as if the adjusted basis for the purpose of such deduction were an amount equal to the amount of such excess."

(b) The table of sections for part VI of subchapter B of chapter 1 of the Internal Revenue Code of 1954 is amended by adding at the end thereof the following new item:

"Sec. 180. Amortization of facilities in economically depressed areas."

SEC. 2. (a) Section 642 (f) of the Internal Revenue Code of 1954 is amended—

(1) by striking out the heading and inserting in lieu thereof "(f) Deduction for Amortization.—"; and

(2) by striking out "of emergency and grain storage facilities provided by sections 168 and 169" and

inserting in lieu thereof "provided by sections 168, 169, and 180".

(b) Section 1082 (a) (2) (B) of such Code is amended by striking out "168 or 169" and inserting in lieu thereof "168, 169, or 180".

(c) Section 1238 of such Code is amended by striking out "section 168 (relating to amortization deduction of emergency facilities)" and inserting in lieu thereof "section 168 (relating to amortization deduction of emergency facilities) and section 180 (relating to amortization deduction of facilities in areas of substantial unemployment)".

SEC. 3. The amendments made by this Act shall apply only with respect to taxable years ending on or after December 31, 1960.

87TH CONGRESS
1ST SESSION

S. 672

A BILL

To amend the Internal Revenue Code of 1954 to provide an accelerated amortization deduction for industrial or commercial plants and facilities constructed or established in economically depressed areas.

By Mr. HUMPHREY

JANUARY 30, 1961
Read twice and referred to the Committee on Finance

UPPER GREAT LAKES IRON ORE INDUSTRY PROBLEMS

HEARING

BEFORE THE

SUBCOMMITTEE ON MINERALS, MATERIALS, AND FUELS

OF THE

COMMITTEE ON INTERIOR AND INSULAR AFFAIRS UNITED STATES SENATE

EIGHTY-SEVENTH CONGRESS

FIRST SESSION

ON

PROBLEMS OF THE UPPER GREAT LAKES IRON ORE INDUSTRY

JUNE 22, 1961

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file-iron ore [July 12, 1961]

COPY

STATEMENT BY SENATOR HUBERT H. HUMPHREY
FOR THE SUBCOMMITTEE ON MINERALS, MATERIALS, AND FUELS
COMMITTEE ON INTERIOR AND INSULAR AFFAIRS

I would like to address myself to a subject of extreme national importance -- the full development of the iron ore potential of the Lake Superior region.

In doing so, I speak with a note of urgency about our national steel-production picture. I am sure we are all aware that the production of steel is a basic factor in the industrial preeminence of any nation. One statistic highlights this fact: total production of steel is 20 times as great as the combined production of copper, lead, zinc, and aluminum.

If the United States is to maintain its industrial posture domestically and internationally, it must in turn maintain a healthy expanding steel industry. Implicit in this is the idea that it must also assure itself of adequate supplies of iron ore in the best condition for steel/furnaces. During the past decade over 84% of the domestic supply of iron ore which fed the American steel furnaces came from the Lake Superior Region. Of the remaining domestic iron ore seserves both measured and

potential, 78% lies within the Lake Superior region. Therefore, the importance of the Lake Superior district to the National security and National economy is obvious.

There is a substantial body of evidence that the Soviet Union also recognizes the importance of steel production to its own economy and to its plans for dominance of the world economy. It likewise has recognized that it must provide its steel furnaces with a supply of top-grade iron ore, and the evidence is strong that the Soviet Union has provided for a program of intensive research with the intent of rapidly expanding its iron ore production facilities.

In short, iron ore production has become an area of keen competition with the Soviet Union. It behooves us therefore, to inquire seriously into the situation of the Lake Superior iron ore region and to determine, from a standpoint of our National security and National economy, and our standing among the industrial nations of the world, whether proper steps are being taken by the American iron ore industry to develop the ore potential of the Lake Superior iron ore district.

Some days ago Senator McCarthy and other Senators from the Lake Superior region joined with me in requesting this Subcommittee on Minerals, Materials and Fuels of the Committee on Interior and Insular Affairs to specifically inquire into the facts and conditions affecting the Lake Superior iron ore industry. This request was prompted by the fact that there is widespread unemployment in the Lake Superior iron ore region. Unemployment in this region has been averaging twelve percent of its labor force. The President's Council of Economic Advisors tells us that we have reached a danger point when National unemployment figures rise to six percent. Certainly a twelve percent unemployment rate over such a widespread area indicates that the Senate of the United States should become seriously concerned about the underlying reasons for such unemployment -- affecting as it does both the lives of the iron ore workers in the mining areas, and very national security. After briefly reading the testimony and statements before this Subcommittee, I must say that I am appalled at the lack of information and the apparent lack of knowledge on a subject which is so important in the life of our nation

and to the lives of the iron ore workers in the Lake Superior area. If the Congress of the United States is to chart the proper course for this Nation and maintain the prestige of a free economic system, it is imperative that we secure information through appropriate and intensive reaearch studies in several areas vital to a proper understanding of domestic and foreign iron ore production.

The first area of inquiry and research should be into the extent of reserve areas and the ownership of these reserve areas. From the testimony before the Committee it does not appear that there is available in any single place, complete and accurate information as to the location and ownership of the various types of ore bodies in the Lake Superior area. People from my own State of Minnesota for many years have felt concern about our inability to secure such data.

Many people in my constituency allege that the ownership of a very substantial amount, perhaps a dominant amount, of the iron ore reserves is under the control of a single steel corporation. They further allege that this single corporation is expanding iron mining considerably in foreign countries, but has not developed its production

facilities in the Lake Superior region in the same proportion and relationship that other smaller steel corporations have in recent years. If one of the largest steel producers in this country is developing foreign deposits, while neglecting to make similar investments in the Lake Superior district, there may be a substantial imbalance in the strategic posture of the United States. Such foreign sources are, of course, particularly vulnerable to adverse political and military actions.

I am also advised that there are steel and ore companies which would consider expanding in the Lake Superior area if reserves were available to them. Therefore, it becomes imperative that the Congress seek to determine whether, in the ownership of iron ore reserves, there are monopolistic procedures now preventing the proper and timely development of the Lake Superior, and particularly Mesabi Iron Range, ore deposits.

Secondly, from the testimony before the Subcommittee it has become obvious that the Federal Government must provide more aggressive leadership in securing detailed geological surveys of the Lake Superior Iron Ore region.

With iron ore so basic to our economy, it is quite shocking to learn that we have such a limited knowledge of the geological details of the Lake Superior district. In contrast, adjacent to the Lake Superior district, Ontario, Canada, has developed detailed geological surveys and provides valuable detailed geological maps to encourage further investigation and ore development by industry. A more detailed study into the extent of the geological makeup of the Lake Superior iron ore area to determine the exact extent of the formation, the quality and qualtity of ore reserves is imperative if we are to have sufficient facts to make proper decisions.

Thirdly, more intensive research into the methods of commercially beneficiating low-grade non-magnetic ore should be supported by the Federal Government. Non-magnetic ores exist in nature at about the ratio of ten to one, over magnetic ores. Although the technological breakthrough has been made in the area of magnetic low-grade ores, more encouragement is needed to provide a substantial commercial development of the non-magnetic low-grade ores. Such a development would assure the United

States a supply of iron ore for hundreds of years into the future. Testimony before the Subcommittee indicates that the Mines Experiment Station at the University of Minnesota is in need of $75 thousand to establish a pilot plant to test the commercial feasability of a system which it has devised for this purpose.

Fourth, an investigation into the impact of railroad transportation rates upon the competitive deposits from the Lake Superior region should be undertaken. It has been reported to me that railroad transportation rates in certain areas tend to give an advantage to imported iron ore.

Perhaps one of the most important phases of research and inquiry should be into the further expansion of taconite production facilities in the Lake Superior iron ore region. I believe that expansion of taconite facilities is vital to our National security and to a resolution of the serious unemployment problem in the Lake Superior Iron Ore region. Several American steel companies have already proceeded by cooperative efforts to establish two large taconite production facilities in Minnesota with a total

investment of approximately $600 million. However, the largest steel producer in the country, through its subsidiary, the Oliver Iron Mining Division, has failed to make a proportional expansion and investment in taconite production facilities even though it is reported to own over fifty percent of the remaining natural ore reserves in the Mesabi Iron Range area, and probably holds an equal or even greater proportion of taconite reserves. This corporation has failed to develop proportionately its taconite production facilities, and yet by its substantial ownership precludes other companies from being able to develop such iron ore reserves. The failure of the largest steel producer in the country to develop these reserves is particularly incomprehensible when one considers the fact that the Minnesota taconite pellet is competitive with both domestic and foreign direct shipping ores.

The development of taconite beneficiation facilities in the Lake Superior iron ore region is so strategically important to the United States that a special mention is in order at this time as to the history, development and competitive position of the taconite industry.

Taconite is the original iron-bearing formation from which the high grade shipping ores were derived. The basic taconite formation is a fine grained ore containing from 25% to 30% iron. It is the magnetic taconite which has presently been commercially derived in Minnesota. This taconite process is designed to improve the chemical and physical structure of the taconite ore by first grinding the ore to a fine mesh, separating it by magnets, and putting it back together in the form of a taconite pellet. The vast size of the Minnesota taconite furnaces and the procedures involved in producing the taconite pellet might imply that the cost of this procedure would be in excess of the profit available from direct shipping ores from the United States or foreign countries. On the contrary, there is evidence that the taconite process is actually a more economical method to produce pig iron than by the utilization of direct shipping ores, because of tremendous savings in the cost of using blast furnaces when a taconite pellet is used. This is not new to the 20th Century. Over 60 years ago Thomas Edison developed a similar system for grinding a hard, lean, low-grade ore, separating it magnetically and

reconstructing it in the form of a briquette. Edison's reasons for developing this system are clearly stated as recorded in the Iron Age magazine in 1897:

> "Mr. Edison has started from the general proposition that a finished product of iron ore of the best quality and in the most suitable form for the first man can be obtained at the lowest cost by treating on an adequate scale a large body of low grade ore. He also states that it is cheaper to process low grade ore and combine it than to attempt to mine over adverse circumstances a limited high grade ore."

Dr. E. W. Davis, one of the pioneers in the development of the Minnesota taconite industry similary predicted the outcome of the taconite system in a brochure on magnetic competition of iron ore published in 1921:

> ". . . it is certain that the cost of facilities or heat units is going to increase gradually if the supply of coal is exhausted. The direct results of an increase in fuel costs will be a demand for iron ore requiring less fuel in the production of steel. Undoubtedly the physical structure and chemical composition of the manufactured ores can be made such that the fuel consumed in smelting them will be less than the fuel consumed in smelting natural ores. The furnace operators will also be assured of a perfectly uniform cost. Supply will not vary in plysical structure or chemical composition. It would therefore seem that, in the future, manufactured ores would be in greater and greater

demand and would be recognizes as a superior product more valuable than the direct smelting ores."

The truth of these predictions is evident in the Minnesota taconite industry, since the large taconite reserves of the Mesabi Range and Lake Superior district have produced the "adequate scale" large mass-production type facilities referred to by their experience in 1897.

This permits the application of mass-production techniques to provide low unit costs in the amortization of large plant facilities over a fifty-year or longer duration.

Substantial savings in costs of expensive metallurgical coke, limestone, and manpower required in the blast furnaces, result in tremendous overall savings. This saving in the blast furnaces is said to result in a substantial net gain on the cost of producing the taconite pellet, so much so that industrial spokesmen have indicated the taconite pellet is superior to and competitive with any foreign and domestic shipping. More specifically, in terms of the process of going from an iron unit in the

ground to a unit of pig ingot out East, the total process appears to be much more economical than the use of direct high-grade ores.

The use of the taconite pellet is said to provide an additional advantage to the blast furnace owner. Spokesmen for the taconite industry, metallurgists representing the steel furnace users, and people in the field of iron ore research indicate use of taconite pellet permits an increase in the efficiency of the blast furnace from 50% to 100%. Production in a typical blast furnace has been increased from 1,400 tons per day to 3,400 tons per day using taconite pellets. The cost of such a blast furnace may run as high as $100 million. It can be readily seen that if capacity is developed by the use of the taconite pellet the furnaceman can save himself $100 million which would normally be necessary to provide an additional furnace.

It is the judgment of some individuals that this creates a third and additional advantage, because it frees a substantial amount of capital which the furnaceman normally had to reinvest for increasing the production

capacity of his blast furnace. This capital amount having been freed is available for investment to secure his own captive ore supply; thus freeing him from the open iron-ore market which is subject to varying prices and supply.

In effect, the taconite pellet is said to pay for itself both in terms of the plant cost and the cost of operation.

If any proof of these contentions is needed, one should note that in addition to the $600 million originally invested in Minnesota taconite facilities, the Reserve Mining Company has announced an additional $120 million expansion to increase its production of taconite pellets to an amount in excess of 9 million tons per year.

I wish to emphasize to my colleagues that much of the data which I have used today has been pieced together from scattered information from technical and non-techical sources. From the testimony before the Subcommittee it is already demonstrated that there is no complete and accurate compilation of data relating to the costs and the value of the taconite pellet, nor to the cost of producing

a ton of pig iron. Again I emphasize that information of this type is vitally important if the Congress is to make the decisions necessary for this country to maintain a healthy and free economy, and to resolve with firmness and dispatch the serious unemployment problems of the Lake Superior iron ore district.

Another fact of great significance is revealed in studies made by the State of Minnesota, under former Governor Orville Freeman. These studies indicate that the State taxes are quite comparable to the Province taxes in Canada, and that if there is any disparity in the tax picture it comes in the U.S.Federal Taxes and the Canadian Dominion Taxes. Secondly, in the case of Venezuela, the next largest competitor to the Lake Superior district, recent reports indicate that the Venezuelan Government continues to get an increasingly large share of the income from Venezuelan iron ore production. Engineering and Mining Journal of April, 1961, indicates that the tax in Venezuela is now 63% of the net profits in mining. In addition to this a recent Time magazine article indicates that the Venezuelan Government has a $340 million investment of its own in

steel production facilities where they intend to utilize a new direct-reduction process. It is not likely that the Venezuelan Government is going to permit any substantial degree of competition after these facilities are put into operation.

In the course of the Subcommittee hearing on the problems of the Lake Superior iron ore district, I believe Senator Carroll asked the direct question whether any ore or steel company was hiding back in the development of taconite beneficiation facilities. I do not believe the question received a satisfactory answer. Evidence does indicate that the Oliver Iron Mining Division has undertaken substantial preliminary work including a taconite pilot plant producing 750,000 tons annually; but its President states that it will not build a full-scale taconite plant until the Minnesota Legislature and the voters of Minnesota approve the constitutional amendment which they have been seeking.

Any restraint of progress in the American iron ore industry should concern this body. For example, testimony before our Senate Subcommittee indicates that the American

iron-ore industry is spending less than 3% of its sales value on research. Other industries spend as much as 10% to maintain their competitive position. Both industry and government should intensify research efforts to keep ahead of the Soviet threat by finding new and more efficient ways of producing iron ore and steel. Direct reduction of steel from iron ore is of significance for the Lake Superior district and for all areas ofthe United States. Direct reduction is a system by which low-grade and other ores may be made directly into steel in a continuous process without the expensive investment in additional blast furnace facilities. This system would permit many smaller concerns to erect their own steel production facilities.

The following article from Time magainze of April 7, 1961, page 90, indicates that commercial direct reduction is already in practice. (please print attached article from Time at this point).

Certainly we should know how far along the industry is in this regard, and whether advances in this area may be held back by a few segments of the industry which may

desire to maintain the advantage the high-cost blasting-furnace system affords them.

I do not wish to imply that I have made a detailed authoritative study of the iron ore industry. Much of what I have concluded has had to be inferred from public statements, technical journals, and news reports. The fact is that neither Senator Humphrey nor the United States Government has available sufficient data in a comprehensive and authoritative form upon which sound judgments and conclusions can be made relative to the present and future problems of the Lake Superior district, the foreign ore situation and the iron and steel industry in general. Therefore, I urge that the Subcommittee recommend the following projects:

1. A study to determine the ownership of iron-ore reserves, both foreign and domestic;
2. A study to determine the costs of producing taconite pellets;
3. An immediate detailed geological survey to indicate the location and extent of

ore deposits in this country;

4. Research concerning the direct reduction of iron ore;

5. Further research to develop known methods of processing non-magentic taconite;

6. An investigation of transportation rates and their affects on the development of iron-ore mining.

July 12, 1961

From the Office of
SENATOR HUBERT H. HUMPHREY
1311 New Senate Office Building
Washington 25, D. C.
CApitol 4-3121, Ext. 2424

FOR RELEASE: WEDNESDAY P. M.
AUGUST 2, 1961

HUMPHREY ASKS FOR IRON ORE SURVEY IN LAKE SUPERIOR REGION

Senator Hubert H. Humphrey (D., Minn.) said today that he has asked a Senate Interior subcommittee to investigate the potential of iron ore development in the Lake Superior region, including Northeastern Minnesota.

Humphrey said he was "appalled" by the lack of information, research and planning relating to utilization of domestic iron ore reserves.

The Senator emphasized that "expansion of taconite production facilities is vital to our national security and to alleviate the serious unemployment problem in the Lake Superior Iron Ore region." He noted that the largest steel company, U.S. Steel, has been reluctant to move into full-scale taconite production despite the reported rapid depletion of American reserves of high-grade direct-shipping iron ore, and despite the demonstration by several other mining companies that taconite is competitive with direct-shipping ores.

The Assistant Majority Leader's comments, addressed to the Senate Subcommittee on Minerals, Material and Fuels, emphasized that a greater effort should be made both by industry and government to get the facts about American iron ore reserves.

"Testimony before Congressional committees indicates that the American iron-ore industry is spending less than 3 per cent of its sale value on research. Other industries spend as much as 10 per cent to maintain their competitive position.

"Both industry and government should intensify research efforts to keep ahead of foreign competition and the threat of Soviet economic warfare by finding new and more efficient ways of producing iron ore and steel."

Humphrey urged the subcommittee to recommend the following projects:

1 -- A study to determine the ownership of iron-ore reserves, both foreign and domestic.

2 -- A study to determine the costs of producing taconite pellets.

3 -- An immediate geographical survey to indicate the location and extent of ore deposits in the United States.

More

4 -- A research program on methods of direct reduction of iron ore.

5 -- Additional research to develop known methods of processing non-magnetic taconite.

6 -- An investigation of transportation rates and their effects on the development of iron-ore mining and steel processing.

SOME OBSERVATIONS RE

THE ECONOMICS OF IRON ORE

WITH PARTICULAR REFERENCE

TO MINNESOTA

OCTOBER 1961

GEORGE SELTZER

SOME OBSERVATIONS REGARDING
THE ECONOMICS OF IRON ORE

The future of Minnesota's iron ore industry is currently a matter of much speculation and political controversy. Such concerns, I should emphasize, are not new. The present interest and debate, however, have been accentuated by the low-level operations of the past several years.

My purpose, then, is to place the economic outlook for Minnesota iron ore in perspective and to identify the principal factors which may affect its future operations. Accordingly, this paper is organized as follows:

(1) Consideration of the industry's underlaying nature and role in the Minnesota economy;

(2) Examination of operating and competitive developments during the past World War II years (1947-60) -- on the assumption that the recent past offers useful insights and a basis for understanding the future; and,

(3) Discussion of the factors which may enter into judgements regarding the levels of future operations.

I. BASIC CHARACTERISTICS OF MINNESOTA'S IRON ORE INDUSTRY

Relative Position in State's Economy

At the outset of the discussion, it is desireable that we place in proper perspective the role of iron ore mining in the Minnesota economy. There are various ways to approach this matter. One way is to inquire into the industry's relative volume of employment.

The highest absolute level of employment experienced to date was recorded in 1957 when an average monthly level of 18.9 thousand was recoorded. Throughout the period 1950-60, however, iron mining employment in Minnesota averaged about 15.3 thousand. See Table 1 for year-to-year detail.

In relative terms, this industry accounts directly for somewhat less than two per cent of the State's non-farm employment. Another way of looking at it, is that the direct employment of this industry is somewhat on the same order of magnitude as the Honeywell operations in the Minneapolis area.

The iron ore industry, however, is geographically concentrated (almost 100 per cent) in St. Louis, Itasca, and Crow Wing Counties and is of key significance in their employment structure.[1] As a consequence, changes in the industry's manpower requirements are sharply focused and intensified in terms of these three northern counties rather than diffused throughout the rest of the State's economy.

Importance of Transportation Costs

Geography, however, has an even larger significance in the operations of this industry.

Iron ore is a tonnage commodity of relatively low value which is transported large distances from point of extraction to point of use. Transport charges, therefore, represent its largest item of cost and loom large in its economics. For example, in 1960 it cost $6.56 to move a ton of standard iron ore from the Mesabi to Pittsburgh.[2] This amounted to almost 50 per cent of the estimated market value of the ore.

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[1] See U.S. Bureau of the Census, County and City Data Book, 1952, p. 236..

[2] John S. Wilbur, Vice President, Ore Sales and Marine, Cleveland - Cliffs Iron Company, before the Twenty-first Annual Mining Symposium, University of Minnesota, School of Mines and Metallurgy, January 12, 1960, Proceedings, Page D-13.

MINNESOTA, TOTAL NON-FARM AND METAL MINING

AVERAGE EMPLOYMENT, 1947-60

(in thousands)

Year (1)	Total Non-Farm Employment (2)	Metal Mining Employment (3)	Metal Mining As a Per cent of Total Non-Farm (4)
1947	766.5	13.7	1.8
48	793.9	15.1	1.9
49	776.6	14.2	1.8
1950	804.2	15.6	1.9
51	837.0	16.9	2.0
52	844.3	14.6	1.7
53	875.2	18.6	2.1
54	864.1	16.0	1.9
1955	883.1	15.7	1.8
56	910.3	17.5	1.9
57	920.1	18.9	2.1
58	908.6	15.6	1.7
59	932.6	13.5	1.4
1960	956.1	15.8	1.7

Source: Minnesota Department of Employment Security.

Accordingly, either relative shifts in consuming locations or changes in the modes, rates, or technology of transportation may significantly affect the competitive position of existing or potential iron ore fields.

Interdependent Market Structure

The market structure of the iron ore industry, moreover, is characterized by a high degree of concentration on both its supply and demand sides plus an intertwined network of relationships between suppliers and users which range from outright integration to long-term operating and supply contracts.

While some 40 to 50 companies are listed from time to time as active in Minnesota, one operator alone, the Oliver Mining Division of United States Steel, generally accounts for some 50 per cent of the State's iron ore production.[1] Another 30-40 per cent is produced by the Hanna Affiliated Companies and the group managed by Pickands-Mather.

In addition, a close relationship between the producers and the preponderent users of iron ore, the integrated steel companies, is evident. Though exact data are lacking, there is sufficient information to suggest that about 80 per cent of iron ore produced in the United States and Minnesota is "captive" in nature -- i.e., it is owned by basic steel companies and produced for their account. In other words, the "open-market" for iron ore is relatively confined and the "spot" market (i.e., supply contracts of less than one year's duration) -- in the words of the Federal Trade Commission -- "is virtually non-existant."[2]

Moreover, the same basic steel concerns control the foreign sources which supply the bulk of iron ore imported into the United States. Thus, US Steel

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[1] Based on various reports of the Minnesota Department of Taxation and the Minnesota Legislative Commission on Taxation of Iron Ore.

[2] Report on the Control of Iron Ore, December 24, 1952, p. 82.

and Bethlehem are the principal developers of Venezuelian ores and also figure prominently with other American basic steel companies in Canadian operations.

The implications of these circumstances are several. For example, the availability of market data, particularly comparative costs information and realistic price data formation, are generally lacking.

But, perhaps the principal implication is that the strategic participants in this intertwined and relatively closed market structure are insulated to a significant degree against the pressures of competition in the usual sense. Put another way, the relative "competitiveness" of Minnesota and other ores is dependent not only on a direct readily measureable, dollars and cents comparison but also upon corporate policy and corporate "statecraft" regarding investment.

Dependence on External Conditions

The level of iron ore operations in Minnesota is dependent upon factors external to the state.

The demand for iron ore, like most of other primary resources, is derived from the goods ultimately produced. Iron blast furnaces, steel furnaces and sintering plants, whose output is used almost exclusively in iron and steel production, account for 99 per cent of iron ore consumed in the U.S. It is obvious, then, that the rate of iron ore operations in Minnesota is affected in an immediate sense by the level of iron production and steel-making activity in the United States.

Moreover, the location of the basic iron and steel industry is such that Minnesota's iron ore consumption is fractional in significance. Less than one per cent of total U. S. blast furnace capacity is located in Minnesota. Obviously, iron ore is in the nature of an "export" industry insofar as Minnesota is concerned. This, to be sure, is a consideration of long standing in the history of the Minnesota iron ore industry.

Within the past decade, however, a new external factor has been added which must be taken into account in appraising the future rate of Minnesota iron ore operations -- namely, foreign ore sources accessible to the iron and steel industry of the United States.

But, before examing this factor more fully, let us balance our perspective by giving consideration to the operating experience of the Minnesota iron ore industry during the past 10 years.

II. OPERATING EXPERIENCE AND COMPETITIVE DEVELOPMENTS

The operating experience of the Minnesota iron ore industry during the post-World War II period may best be described and summed up, perhaps, by the following observations made with reference to Tables 2 and 3:

(1) In absolute terms new production records were set in 1951 and again in 1953. The more recent years of the period, however, were marked by low levels of operation. Thus:

1958 - was a year of general economic recession.

1959 - was affected significantly by a labor dispute which covered a good part of the Minnesota season.

1960 - represented a period of moderate recovery but was not sustained so that production fell short of the 60 + million ton years that the industry had become accustomed to in the post-WW II years.

1961 - appears to be the worst year since 1939.

(2) Notwithstanding this recent operating experience, the Minnesota iron ore industry maintained its position with only some variation

TABLE 2

IRON ORE PRODUCTION

MINNESOTA, LAKE SUPERIOR DISTRICT, AND THE UNITED STATES,

1947 - 60

Year	Minnesota Production (Gross Tons - Millions)	Minnesota Production as Per Cent of -	
		Lake Superior District	United States
(1)	(2)	(3)	(4)
1947	62.5	81.8	67.2
48	68.0	82.6	67.3
49	55.9	81.6	65.8
1950	65.2	81.9	66.5
51	78.5	83.6	67.4
52	63.8	81.5	65.2
53	80.1	82.7	67.9
54	48.8	80.0	62.4
1955	69.4	83.3	67.4
56	63.2	81.2	64.6
57	68.3	81.8	64.4
58	42.2	81.5	62.3
59	35.9	81.6	59.5
1960	56.8	80.4	65.1

Source: Prepared from U. S. Bureau of Mines data.

TABLE 3

MINNESOTA PRODUCTION AND U.S.

CONSUMPTION OF IRON ORE,

1947 - 60

Year (1)	Minnesota Production* (2)	U. S. Consumption* (3)	Minnesota Production as a Per Cent of U.S. Consumption (4)
1947	62.5	98.6	64.4
48	68.0	102.8	66.1
49	55.9	91.0	61.4
1950	65.2	110.3	59.1
51	78.5	120.6	65.1
52	63.8	105.8	60.3
53	80.1	127.0	63.1
54	48.8	97.8	49.9
1955	69.4	127.4	54.5
56	63.2	123.8	50.5
57	68.3	129.2	52.9
58	42.2	93.2	45.3
59	35.9	96.0	37.4
1960	56.8	108.1	52.6

Source: Prepared from U. S. Bureau of Mines data.

*Millions of gross tons.

in the Lake Superior District and the United States as a whole (Table 2 - Columns 3 and 4). Apparently, domestic ore developments -- apart from the operating swings due to the level of steel demand -- had only minor impact on Minnesota operations during this period.

(3) However, examination of iron ore consumption data provides additional insight into the underlying factors at work. Thus, Minnesota production which in the earlier years of the period under consideration provided 60 per cent of United States requirements, hovers about 50 per cent and even falls below in the more recent years. (See Table 3 - Column 4). And, in 1957, when the present peak of iron ore consumption for the United States was recorded, Minnesota provided only 53 per cent of total requirements.

These data should be interpreted with caution. Note, for example, that they understate the relationship of iron ore production to manpower requirements in iron ore mining. This is the case because the production data are in terms of "useable" rather than "crude" iron ore and the latter have been rising relatively and significantly. Nonetheless, these data (Table 3 - Column 4) indicate the impact of emergence of a factor of major magnitude -- namely, the large-scale importation of foreign ores.

Let us turn to consideration of this development.

Foreign Ores

The importation of iron ore by the United States increased approximately four-fold during the course of the last decade. In 1950 imports totaled 8.2 million tons; by 1960, the comparable figure was 34.6 (Table 4 - Column 2).

TABLE 4

U.S. IMPORTS OF IRON ORE

1947 - 60

Year	Total Imports		Principal Sources	
	Gross Tons (Millions)	As a Per Cent of Minnesota Shipments	Canada Gross Tons (Millions)	Venezuelia Gross Tons (Millions)
(1)	(2)	(3)	(4)	(5)
1947	4.9	7.9	1.6	...
48	6.1	9.0	1.0	...
49	7.4	13.2	1.6	...
1950	8.2	12.7	1.8	...
51	10.1	12.9	2.0	0.6
52	9.8	15.3	1.8	1.8
53	11.1	13.8	1.8	1.9
54	15.8	32.5	3.5	5.2
1955	23.4	33.5	10.1	7.1
56	30.4	48.6	13.7	9.2
57	33.7	49.5	12.5	12.2
58	27.8	65.4	8.3	12.2
59	35.6	98.6	13.5	13.5
1960	34.6	63.2	10.6	14.6

Source: Import Data - U. S. Department of Commerce.
Minnesota Shipments Data - U. S. Bureau of Mines.

The relative impact of foreign ore is indicated by the steady and sharp rise in the relationship of imported iron ore to Minnesota shipments. Thus, in 1950 imported ores constituted only 13 per cent of Minnesota shipments; by 1957, the imported ores had zoomed to almost 50 per cent; and, in 1960, stood at 63 per cent (Table 4 - Column 3).

The implication of these data is clear. Minnesota iron ore is now confronted by competition pressure of major magnitude as a result of the rapid and continuing expansion of foreign iron ore sources.

The principal suppliers of imported ores for the United States are Venezuela and Canada. Each has experienced dramatic growth within the past decade.

Imports of iron ore from Venezuela into the United States started in 1951. The natural iron content of Venezuelan ore reserves is reported to be 58 per cent.[1] Operating subsidiaries of United States and Bethlehem are the producers of Venezuelan ore. Thus, the two largest consumers of iron ore in the United States have a substantial financial stake and institutional interest in the utilization of Venezuelan ore. The potential reserve of Venezuelan ore has been described as "at least comparable in tonnage to that of the Mesabi Range in 1900 with an average grade of ore higher than the Mesabi average."[2]

Growth in Canada is largely -- though not exclusively -- the result of development of deposits in the Labrador-Quebec area. Up to now, the bulk of ore imported from Canada has been classified as "direct-shipping", ranging in

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[1] Minnesota Legislative Commission on Taxation of Iron Ore, Report Submitted to the Legislature, 1955, pp. 121-22.

[2] Ibid., p. 141.

iron content from 52½ to 55 per cent. However, between 1961-65, three major projects with an estimated annual production of 19-20 million tons of 65 per cent iron concentrate ore are slated to come into operation. These include among their owners such familiar names as US Steel, M.A. Hanna, Armco, Bethlehem, National Steel, Republic, Inland Steel, Youngstown Sheet and Tube, Pickands-Mather, Jones and Laughlin, etc. The full potential of the Labrador-Quebec area cannot be determined at this time. But, this much is evident. The Labrador-Quebec area will provide a major source of iron ore for the United States in the years ahead.

Before leaving the discussion of foreign iron ores, I would like to comment briefly on the issue of tariffs.

By way of background, note that iron ore has entered the United States duty free since 1913.

Moreover, pursuant to a resolution introduced in Mid-1960 by Senator Eugene J. McCarthy, the United States Tariff Commission undertook an investigation to ascertain whether the growth of imports has resulted in or threatens serious injury to domestic iron ore operations. The Commission's report, dated December 30, 1960, concluded that "iron ore ... is not being imported in such increased quantities, either actual or relative, as to cause or threaten serious injury to the domestic industry producing like or directly competitive products."[1]

I disagree with the substance and implications of this finding. My view is based on the data cited previously (Tables 3 and 4) plus the judgement that foreign and domestic iron ores are in fact substitutes for one another and, therefore are "like or directly competitive products."

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[1] U.S. Tariff Commission. Iron Ore. Report on Escape Clause Investigation No. 7-92, Under Section 7 of The Trade Agreements Extension Act of 1951 as Amended, p. 3.

If the United States had a truly, independent domestic iron ore industry, under the circumstances, the principal operators would demand tariff protection. This is the experience certainly in other sectors of the American economy. However, the institutional structure of the iron ore industry outlined previously puts a block on such action.

Do not misunderstand me. I am not advocating the imposition of tariff duties on iron ore at this time. Other important considerations of national policy enter here - for example:

(1) re international affairs - the "good neighbor" policy to the North and South as well as our relationships with Africa.

(2) re domestic objectives - the maintenance of an efficient basic iron and steel industry operating at high and growing levels.

Does this mean, then, that the people and communities of the Range should be left to bear the brunt of adjustment alone.

No! In my judgement, the realistic and equitable way to deal with this situation is to admit that we have a problem -- and to recognize that there is a strong element of national responsibility for dealing with it. In particular, I think more funds should be made available for research regarding the beneficiation of low-grade iron ores and for the adjustment of range communities. Properly viewed, these communities are areas "impacted by national policy considerations." There is precedent for such action. Note, for example, when a military base removes land from the tax rolls of a local community, the Congress makes "in-lieu-of" grants to support local services.

Growth in Capacity and Relative Shift in Location

The development of foreign ore supplies was associated with and took place in a context of (1) marked growth and (2) noticeable relative geographic shifts in the location of blast furnace capacity, the principal consumer of iron ore.

Both these aspects of iron making capacity, have important implications for future levels of Minnesota iron ore mining operations. The significance of the absolute growth in blast furnace capacity is in terms of the over-all potential for iron ore operations. The importance of the geographic shift in blast furnace capacity is that it increases the relative vulnerability of Minnesota ore to down-swings in steel operations.

Total pig iron capacity in the United States increased approximately 30 per cent between 1950 and 1960 - from about 71.5 to 96.5 million tons (Table 5). The growth in capacity was particularly sharp during the past several years -- almost 10 million tons between 1957 and 1960. And, the growth in steel ingot capacity has been even greater -- almost 50 per cent from 1950-60. However, the impact of this potential growth in iron ore requirements has been blunted by the low operating rates of the basic iron and steel industry since 1958.

On the other hand, viewed in geographic terms, the iron-making areas predominantly dependent upon Minnesota and other Lake Superior ores (Pittsburgh-Youngstown, Chicago, and Cleveland-Detroit), and which account for about 65 per cent of total pig iron capacity, grew at approximately half the relative rate experienced by areas which draw principally on "other United States" and foreign ores. The details regarding growth in blast furnace capacity by Districts are set out in Table 6. Similar trends are indicated for the growth and relative location of steel ingot capacity.

TABLE 5

BLAST FURNACES

CAPACITY AND PRODUCTION

UNITED STATES, 1947 - 60

Year (1)	Number (2)	Capacity (Net tons - Millions) (3)	Production as a Per Cent of Capacity (4)
1947	233	65.7	90.3
48	239	67.4	90.5
49	246	70.5	76.8
1950	248	71.6*	91.4
51	250	72.5	98.3
52	251	73.8	84.2
53	258	79.4	95.6
54	260	82.0	71.6
1955	261	84.0	92.6
56	261	85.5	88.9
57	262	86.8	91.4
58	265	91.0	63.5
59	266	94.6	64.3
1960	263	96.5	69.7

Source: American Iron and Steel Institute

*Average annaul capacity as of Jan. 1 and July 1.

TABLE 6

Geographic Changes in Blast Furnace Capacity, 1948-58[1]

	January 1, 1948		January 1, 1958		Increase, 1948-58	
	Net Tons (millions)	Per Cent of Total	Net Tons (millions)	Per Cent of Total	Net Tons (millions)	Per Cent
Districts Using Primarily Minnesota and Lake Superior Ores:	46.8	69.4	59.5	65.4	12.7	27.1
Pittsburgh-Youngstown	25.6	38.0	31.7	34.8	6.1	23.8
Cleveland-Detroit	6.5	9.6	10.5	11.5	4.0	61.5
Chicago	14.7	21.8	17.3	19.0	2.6	17.7
Districts Using Primarily "Other United States' and Foreign Ores:	20.6	30.6	31.5	34.6	10.9	52.9
Eastern	13.1	19.4	20.3	22.3	7.2	55.0
Southern	4.9	7.3	6.6	7.3	1.7	34.7
Western	2.6	4.0	4.6	5.1	2.0	77.0
Total -- United States	67.4	100.0	91.0	100.0	23.6	35.0

Sources: 1948 -- American Iron and Steel Institute, Directory of Iron and Steel Works, 1948 (25th ed.), pp. 456-460.
1958 -- Ibid., Annual Statistical Report, 1957, p. 8.

[1] Will not add due to rounding.

The most significant development in the relative geographic distribution of capacity from a competitive standpoint relates to the marked expansion of the Eastern District. This area increased its blast furnace capacity from 13.1 million in 1948 to a total of 20.3 million tons in 1958. The net effect is to enhance the competitive position of that District by providing -- as an alternative to the historical center of iron and steel-making -- a source of some volume strategically located to areas of relative steel "deficit." The principal loser appears to be the largest consumer historically of Minnesota ores -- the Pittsburgh-Youngstown District. As a result, in periods of relatively slack steel demand, the rate of blast furnace operations -- and hence, the demand for Minnesota ores -- in the Pittsburgh-Youngstown area is likely to be curtailed to a greater extent than would otherwise be the case. This judgement is supported by the operating experience of the 1958 and 1960-61 recessions.

On the other hand, it is important to note that the Districts principally associated with Minnesota ores in the past experienced an absolute increase in blast furnace capacity of some 12.7 million tons during 1948-57. This "increment" is almost equal in size to the total for the Eastern District in 1948, and exceeds somewhat the combined total of the Southern and Western Districts in 1958. This suggests that in periods of high level steel demand, the relative shift in location of blast furnace and steel capacity, taken by itself, will not significantly reduce the demand for Minnesota ores. However, it does not alter the observation made above that an additional element has been added to intensify the cyclical instability of demand for Minnesota iron ore.

Blast Furnace Technology

An equally dramatic development -- to the growth in foreign ores and potential capacity in recent years -- is the marked and continuous gain recorded

in the efficiency of blast furnace operations. This represents a major breakthrough in the economics of iron-and steel-making and has important implications for iron ore.

The gains in blast furnace efficiency have been spectacular and have contributed importantly to the enlargement of effective blast furnace capacity. Thus, in 1960 it took 10 per cent less ore by weight to produce a ton of pig iron than was required in 1950. And, the over-all weight of all materials was reduced by some 15 per cent.

This record is the result of a complex of elements -- namely:

(1) Increasing the oxygen in the blast;

(2) Adding auxiliary equipment to conserve heat;

(3) Improving the quality of coking coal;

(4) Sizing and grading, including pelletizing, the furnace feed; and,

(5) Using richer iron ore.

The effect of the last element on blast furnace efficiency and capacity has been described theoretically in these terms:

> When an ore of 62% fe replaces ore with 52% the production of a blast furnace will be incraased by 20 per cent in iron analysis alone. If a company has 5 furnaces, in effect, they have built a 6th if they use high-grade ore. Their labor costs will be correspondingly reduced because the same crew would be used to get the additional tonnage.[1]

And, this judgement has been more than amply confirmed by the operating experience of various iron and steel companies. For example, Inland Steel reports:

> Inland's eight blast furnaces in 1947 were rated at 7,350 tons of pig iron per day. Today, with only minor capital improvements and enlargement, the same furnaces can produce 10,500

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[1] H. S. Harrison quoted by E. H. Rose in Mining Engineering, September, 1961, p. 1057.

> tons per day. The increase is more than 1.1 million tons of pig iron produced each year, mostly from improved iron ore. This is more than the capacity of the largest U.S. Blast furnace costing $60,000,000 to build.[1] (Underscoring supplied)

But the enlargement of effective blast furnace capacity and reduction in labor costs are not the only gains flowing from the use of high-grade ore.

Recall that the outset of this discussion, I had cited the importance of transport costs in the economics of iron ore. Thus, for example, if a ton of ore contains 62 per cent iron content rather than 52 per cent, the cost of transporting a unit of iron is effectively reduced by 20 per cent.

The net result of these developments is an increasing demand for "tailor-made" ore -- that is, ore of greater iron content, uniform size and physical structure, and preferred chemical analysis. As a consequence, the future of traditional "direct shipping" iron ore (of the 49-51 per cent variety) is dimmed. The prime demand is for beneficiated ores of higher quality.

Minnesota taconite pellets represent such a product.

Taconite Beneficiation

The commercial processing of taconite ore became a reality during the past decade. Its spectacular growth is spelled out in Table 7.

The increase in taconite employment is equally dramatic. Some 5,000 are now thus employed and account for about one-third of the State's total iron ore employment.

Several observations regarding the impact of taconite processing on iron-ore employment are pertinent:

(1) The degree of seasonal variation in the State's iron-ore industry has been and will continue to be dampened significantly --

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[1] Carl B. Jacobs, Vice President of Raw Materials, Inland Steel Co., in a paper presented September 13, 1961, before the American Mining Congress at Seattle, Washington.

TABLE 7

GROWTH OF TACONITE CONCENTRATES

MINNESOTA, 1947 - 60

Year (1)	Minnesota Iron Ore Shipments (Gross tons - Thousands) Taconite (2)	Total (3)	Taconite as a Per Cent of Total (4)
1947	...	63,517.2	...
48	...	69,108.9	...
49	15.8	56,826.0	(a)
1950	62.1	65,331.9	0.1
51	137.6	79,068.7	0.2
52	106.4	64,719.9	0.2
53	561.3	81,511.5	0.7
54	888.9	49,080.8	1.8
1955	1,155.4	70,191.5	1.7
56	4,816.9	63,203.3	7.6
57	6,347.5	68,296.3	9.3
58	8,421.5	42,835.7	19.7
59	8,346.5	36,493.4	22.9
1960	11,368.1	55,097.3	20.6

Source: University of Minnesota, Mines Experiment Station.

(a) Less than 0.1 per cent.

particularly on the downward side -- as the proportion of taconite concentrates to direct-shipping ore rises. This is the case because the processing plants can be operated the year round with the pellets stockpiled until the opening of the shipping season.

(2) The skill composition of iron ore employment has experienced and will undergo further modification. Thus, the State's iron ore industry will increasingly be a "mining-manufacturing" combination.

(3) The manpower required to produce a ton of "marketable" iron ore in the State has increased as taconite and other concentrates have grown relative to direct-shipping ores. Precise quantification in this regard is impossible because of the limited data available. But, it does not appear unreasonable to hazard the opinion that taconite concentrates will require 2.0 to 2.5 times more man-hours per ton than direct-shipping ores. This higher labor-cost per ton is offset by the higher iron content of taconite concentrate and by its over-all superiority as a furnace material. Furthermore, under present Minnesota law, taconite concentrate is taxed at an appreciably lower rate than direct-shipping ore.

"Taconite" is defined by the Minnesota Legislative Commission on Taxation of Iron Ore as "Iron bearing rock, known as chert, very dense and hard."[1] It is found in abundance on the Mesabi Range. Estimates regarding useable magnetic taconite reserves in Minnesota range from 5.1 billion to 10.0 billion tons.[2]

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[1] Report Submitted to the Minnesota Legislature of 1955, p. 9.

[2] Ibid., p. 149.

The lower figure is interpreted as equivalent to "1.7 billion tons of concentrates which represents about as much as all the ore shipped in the history of the Lake Superior iron ranges."[1] These estimates relate only to magnetic taconite. There are also large quantities of non-magnetic taconite ores (referred to as "semi-taconites") which are not susceptible to commercial beneficiation by present methods. Research on the beneficiation of non-magnetic taconite is being carried on by the University of Minnesota's School of Mines and others. M. A. Hanna, for example, has a sizeable semi-taconite pilot facility in Minnesota.

The known commercially suitable reserves of taconite, however, are not limited to Minnesota. There are large quantities in Michigan (referred to as "jasper"), for example, where three plants are now in operation. The Michigan plants -- with a present total capacity of 1.5 million tons per year -- are appreciably smaller than the Minnesota plants. The techniques used in these plants, however, are of special interest to Minnesota since they are expected to contribute to the subsequent processing of non-magnetic taconite.

In its natural state, Minnesota taconite contains about 25 to 30 per cent iron. About three tons of crude taconite are required to yield one ton of taconite pellets -- the finished product. The latter, however, contains about 60 to 65 per cent iron. This compares with an average iron content of about 50 per cent in the case of Mesabi direct shipping ores. The natural iron content of Labrador-Quebec and Venezuelan reserves is estimated at 54 and 58 per cent, respectively.

At present, these are two major taconite operations in Minnesota -- Reserve and Erie.

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[1] Clarence W. Nelson, "Taconite, Source of Tomorrow's Steel," Federal Reserve Bank of Minneapolis, Monthly Review, Supplement (February 1953), p. 10.

Reserve is owned on a fifty-fifty basis by Republic Steel and Armco. Its commercial plant at Silver Bay -- with an estimated capacity of 5 million tons -- began operations in 1956. In the Spring of 1960, Reserve announced a capacity expansion of some 4 million tons which is now under construction.

Erie's capacity, on the other hand, is estimated at about 8 million tons. Its plant at Hoyt Lakes began operations in 1957. The ownership of Erie is shared by Bethelhem Steel (45%), Youngstown Sheet and Tube (35%), Interlake Iron Corp. (10%), and Steel Co. of Canada (10%). It is managed by Pickands - Mather.

In addition to these two commercial operations, the Oliver Mining Division of U. S. Steel maintains a "pilot" taconite program in Minnesota (Mountain Iron and Virginia).

Before turning to a brief examination of the future outlook, it may be helpful to summarize the significant competitive developments of the past 5 to 10 years and indicate their probable qualitative import on future operations.

Let us put it in the form of a "balance" sheet, thus:

"Favorable" (i.e., to Minnesota)	"Adverse"	"Mixed"
(1) Taconite beneficiation	(1) foreign ore developments	(1) preference for "tailored" ores in blast and open-hearth furnaces.
(2) growth of iron and steel capacity	(2) relative shift in location of iron and steel capacity.	(a) adverse for direct-shipping ores. (b) favorable for taconite pellets.

III. FUTURE OUTLOOK

Peering into the future -- is a matter of judgement and probability -- rather than precision and certainty.

In over-all terms, and barring the occurrence of "total" war, this is the way the future looks to me. Iron ore activity in Minnesota (and elsewhere) during the next 10 to 15 years will depend mainly upon the interplay of various factors. Thus, on the demand side of the equation the principal variables are:

(1) The level of economic activity generally in the United States as reflected by measures of gross national product.

(2) The "mix" of economic activity -- that is, the relative proportions of durable and non-durable goods.

(3) The advances and changes in blast and open-hearth furnace technology and practice -- particulary, the trend toward "tailored" ores and the iron ore to scrap ratio.

(4) The developments regarding substitute materials for iron and steel -- for example, aluminum, plastics, fiber, etc.

While on the supply side of the equation, the major imponderables relate to:

(1) The further development of competitive iron ore supplies, especially in Canada (not limited to the growth of the Labrador-Quebec area, but also including direct-shipping ores from Steep Rock as well as beneficiated ores from Marmora and Michipicoten) and South America (likewise, not limited to Venezuelia but also including Peru, Chile, and Brazil) and Africa.

(2) The progress in taconite concentration and other forms of iron ore beneficiation.

The unfolding of these "determinants" and their interrelated impact is a highly conjectural matter. This much, however, seems clear in qualitative terms:

(1) Total potential iron ore requirements of the United States will continue to grow. Expansion on the order of 20 to 30 per cent is indicated between 1960 and 1970 on the basis of various assumptions.[1]

(2) Foreign ores will provide increasing tonnages of such requirements.

(3) Minnesota will be called upon to supply high tonnages. Thus, it is the view of the American Iron and Steel Institute that, "The Lake Superior District can and should remain for many years the most important single source of iron ore for the American Steel Industry."[2]

(4) Minnesota iron ore will be much more vulnerable in the future than in the past during periods of downturn or recession in basic iron and steel operations.

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[1] See, for example, James C. O. Harris (U.S. Bureau of Mines), paper entitled "Future Raw Material Requirements for the Domestic Iron and Steel Industry" presented at the Eastern Regional Meeting, American Coke and Coal Chemicals Institute, Rye, New York, May 12, 1959.

[2] "Statement on Iron Ore," December 31, 1958, p. 5.

Perhaps a more meaningful way to deal with the problem is to sort it out in terms of its time dimensions -- namely, the impending years as distinguished from the longer run.

First, consider the next several years -- that is, between now and 1965. The key here, in my judgement, is the level of activity of the basic iron and steel industry. The attainment and maintenance of an operating rate on the order of 85 per cent of capacity would go a long way toward dealing with the employment problem in this context.

With reference to the longer run -- say 1965 to 1975 -- potential iron ore requirements will be substantially higher than at present. Some estimates indicate increases in iron ore demand ranging from 35 to 50 per cent by 1975. But, here, too, note the importance of the actual operating rates of blast furnaces and steel making capacity. And, in this period, an additional complicating factor enters -- namely, the uncertainties regarding sources of supply.

For Minnesota, the longer term future seems to center on: (1) taconite pellets; and, (2) semi-taconite beneficiation. The first rests on additional investment in a proven commercial process; the second, on research progress.

The probabilities of additional taconite investment in Minnesota are obviously a matter of much conflict of opinion. Therefore, let us focus on this issue.

But, first, an important fact should not be overlooked. Minnesota already has a taconite industry in place. No matter what, there is assured capacity of 17 million tons and reasonable expectations regarding 5 thousand jobs.

With reference to expansion, what are the factors that affect investment decisions of the nature and magnitude involved in taconite beneficiation?[1]

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[1]The present Erie investment is reported at approximately $300 million and the Reserve outlay at approximately $310 million.

According to the American Iron and Steel Institute, three major elements are involved in present-day iron ore projects:

(1) "the assembly of the necessary capital;"

(2) "the establishment of a sufficient market for an assured large scale operation;"

(3) "the existance of a stable economic, fiscal and political 'climate'."[1]

From the viewpoint of the AISI, "the last is today the most important."[2]

Bethlehem Steel -- the nation's second largest steel company and a major partner in Minnesota's Erie taconite facility -- put it in these terms before the US Tariff Commission last year:

"Four major factors determine the source of iron ore to be used in steel making:

(1) "its geographical location in relation to consuming centers;"

(2) "the means of transportation available to those centers;"

(3) "the quality of the ore;" and,

(4) "the 'investment climate' offered by the governments of areas with mineable ore deposits."[3]

Let us consider some of these considerations. But, first, note that the ultimate decision hinges on a complex of variables some of which are tangible in nature and others that are rather intangible. Moreover, both involve a process of judgement -- are subject to error -- and are fraught with uncertainties. The tangible factors relate to:

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[1] "Statement on Iron Ore," December 31, 1958, p. 3.

[2] Ibid.

[3] Memorandum dated October 18, 1960, p. 5.

(1) the quality of the ore body -- particularly its iron content, chemical composition, physical structure;

(2) the cost of development -- which frequently includes the building of towns and the establishment of a transport system as well as the installation of mining and processing facilities;

(3) the cost of operations -- labor, taxes, power, water, etc. -- which has to be related to the quality of the end-product; and,

(4) the direct transportation costs to consuming areas.

The intangible factors center on what is referred to as the "investment" or "political climate". This in essence, is a nebulous, ephemeral and ever-shifting concept. What I mean is, it is not reducible to objective definition, its weight in the decision process is not precise, and, it is not static. The sudden shifts in the "political climate" of Latin America -- and the even less drastic developments in Canada -- illustrate the uncertainties involved in long-term investments external to the United States.

Let me make one thing clear. I do not want to convey the impression that I know with certainty the answers, but I do want to share some thoughts that enter my mind when the issue of taconite and iron ore investment is raised.

For example, as I listen to the slogans bandied via the communications media and elsewhere, I get the feeling that the average citizen must be left with the impression that there are a horde of investors waiting in the wings to rush in only if the body politic will take a certain action -- namely, the proposed constitutional amendment to equate the level of taconite taxation with that for manufacturing generally.

This is clearly not the case. It takes at least the following to enter into the taconite business:

(1) A large capital stake;

(2) Assured sizeable ore reserves (including large supplies of water and power);

(3) Large-scale mining and processing know-how; and,

(4) A relatively assured market.

Only a major steel company (or a firm closely affiliated with one) has this combination. Bethlehem, Youngstown Sheet and Tube, Armco, and Republic Steel are already heavy participants in Minnesota. On the other hand, the most logical large-scale entrant, U. S. Steel, has stated clearly that the taconite amendment in and of itself is not enough for the corporation to commit itself to a commercial taconite investment in Minnesota.[1]

Moreover, in the welter of rumors, slogans, and even reports by reputable persons, the assertion is made that non-Minnesota "taconite" ores are easier to process and yield a superior product.[2]

I wish I had the information to assess this element; but, it is not available -- at least not to the public. However, there are sufficient indications to question its full validity. For example, on the occasion of the announcement that Reserve would almost double its Minnesota capacity, Dr. W. E. Davis -- whose authority in this area is beyond question -- is quoted thus: "...(it) indicates that iron ore can be made as cheaply from taconite as from Labrador Ore."[3] An independent view regarding the desireability of Minnesota

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[1]See, for example, the Minneapolis Tribune, May 10, 1961.

[2]See page 5 of letter dated September 29, 1961, addressed to Governor Elmer E. Andersen by certain faculty members of the School of Mines and Metallurgy, University of Minnesota.

[3]Minneapolis Tribune, July 14, 1960.

taconite is expressed by E. H. Rose, Chief Beneficiation Engineer of the Koppers Company.[1]

Additional tangible indications regarding the profitability and desirability of Minnesota's taconites are available. Thus, the operating experience with taconite pellets is described as follows:

> Armco Steel Corp. has reported 3,000 tons a day production from a 28-ft. furnace, using 100% Reserve pellets in the burden. Furnaces of this size are usually rated under 1,500 tons a day on standard ore burdens.[2]

And, a recent news report states:

> Owing to expansion of Reserve Mining Co., Republic Steel has sold one-third of its interest in Iron Ore Co. of Canada, operator of open-pit iron mines in the Quebec-Labrador area ... Through the transaction Republic reduced its holdings in the iron mining company to 6.67% from 10% and reduced its share of ore commitments in the company to 10% from 15%. (Underscoring supplied)[3]

Furthermore, the impression is conveyed that many taconite-like developments are taking place in other states and areas and that these represent lost opportunities for Minnesota. (Table 8 summarizes the actual, potential, and rumored sources of high grade concentrate.) My judgement is that this element had better be put in perspective by closer examination. For example, the various major out-state projects can be classified into 3 categories:

(1) Those that are irrelevant to the discussion of Minnesota taconite.

In this category I would put the U. S. Steel project in Wyoming -- about one million tons to come into

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[1] "Iron Ore: The Big Picture", Mining Engineering, September 1961, pp. 1052-1058.

[2] Carl B. Jacobs, Vice President of Raw Materials, Inland Steel Co., in a paper presented at the American Mining Congress, September 13, 1961.

[3] Skilling's Mining Review, July 29, 1961, p. 11.

TABLE 8

Summary of New Sources of High Grade Concentrate

(Plus 60% Fe), U.S. and Canada

Property	Location	Year of First Production	Thousands Long Tons Per Year	% Fe
CAPACITY NOW INSTALLED				
Extaca (U. S. Steel Experimental)	Minn.	1953	600	62.0
Reserve Mining Company	Minn.	1955	5000	62.5
Cleveland-Cliffs Humboldt	Mich.	1955	300	63.5
Cleveland-Cliffs Republic	Mich.	1955	600	63.5
Marmarton (Bethlehem)	Ont.	1955	500	64.8
International Nickel	Ont.	1957	150	68.0
Erie Mining Company	Minn.	1958	8000	62.5
Hilton (Stelco)	Que.	1958	300	67.0
Bethlehem Cornwall Pellets	Pa.	1958	1500	63.0
Low Phos Iron Co. (Hanna)	Ont.	1959	550	62.0
Groveland (Hanna)	Mich.	1959	700	60.0
Total			18,200	63.0
UNDER CONSTRUCTION OR DEFINITELY PLANNED BY 1965				
Lac Jeannine (U. S. Steel)	Que.	1961	8000	66.0
Republic Increase	Mich.	1961	600	63.5
Meramac (Bethlehem)	Mo.	1962	2000	64.0
Atlantic City (U. S.Steel)	Wyo.	1962	1000	65.0
Humboldt Increase	Mich.	1962	300	63.5
Carol Lake (Hanna)	Que.	1963	6000	66.0
Wabush (Pickands Mather)	Que.	1963	6000	66.0
International Nickel Increase	Ont.	1964	850	68.0
Reserve Mining Increase	Minn.	1962	4000	62.5
Total			28,750	65.3

(continued on next page)

TABLE 8 continued

Property	Location	Year of First Production	Thousands Long Tons Per Year	% Fe
TRADE PRESS PREDICTIONS BY 1970 (Finance and Market Permitting; Sufficient Reserves Already Proved; Concentrating Tests Completed)				
Taconite and Jasper Concentrate in Addition to Above*	U.S. Upper Great Lakes	Prior to 1970	13,300	62.0
Anaconda	Ont.	1965	2000	65.0
Normanville (J. & L., Cleveland-Cliffs)	Que.	1965	2000	65.0
Noranda	Que.	1965	100	68.0
Minerals Engineering	Mont.	1965	200	65.0
Agenda (Detroit Steel)	Wis.	1965	500	65.0
Labrador M. & E. (Timmins)	Que.	1965	4000	68.0
Rio Tinto	Ont.	1966	1000	66.0
Can-Fer	Ont.	1966	1000	65.0
Jalore (J. & L.)	Ont.	1968	1000	65.0
Albanel (Cleveland-Cliffs)	Que.	1968	3000	66.0
Southern Pacific Railway	Nev.	1968	1000	66.0
St. Joseph (Steep Rock)	Ont.	1970	3000	65.0
Ungava Iron (Cyrus Eaton)	Labr.	1970	5000	65.0
Great Whale (Little Long Lac)	Labr.	1970	2000	66.8
Woodward Iron Company	N.J.	1970	1000	68.0
Total			40,100	64.5

* From U. S. Tariff Commission Report, March, 1959; specific locations not stated.

RECAPITULATION

Now Installed	18,200	63.0
Under Construction or Definitely Planned	28,750	67.0
Possible Between 1965-1970	40,100	64.5
Total	87,050	64.5

NOTE: The above does not include old-established and conventional sources of high grade concentrate such as the Adirondacks, Pennsylvania, New Jersey, and Tennessee Copper, now totalling about 3 million annual tons at 64% Fe.

Source: Adapted from E. H. Rose, Mining Engineering, September 1961, p. 1055.

production in 1962. Its location assigns it to the Western District particularly the Geneva Steel Works of U. S. Steel which has never been served by Mesabi ore.

(2) Those that are of major competitive import for Minnesota ores, but whose decision to locate elsewhere is comingled with "strategic" considerations other than Minnesota's so-called "political" climate.

The Canadian ore concentration projects with an estimated 19-20 million tons of high-grade concentrate are probably in this category.

Consider U. S. Steel's Quebec-Cartier 8 million ton project. What were the considerations in its activation? I do not know but have a hunch that such "strategic" elements (in contrast to apparent engineering or cost considerations) as the following played a role in the decision to locate there:

(a) The prudence of having access to multiple sources of ore supplies for the Corporation's massive investment in blast furnaces and steel-making facilities.

(b) Insurance for the Fairless Works -- essentially dependent on Venezuelean ore up to now.

(c) Relative accessibility to the growing European markets for ore.

How much are such intangibles worth? What dollars and cents value should be placed on them?

(3) Those that are of potential import but which are magnified out of proportion:

Thus, the pessimists of Minnesota's future speak in glowing terms of developments in the Lake Superior District exclusive of Minnesota. Essentially, they have reference to Michigan which has three plants in operation plus two expansions scheduled. Examination of Table 9 places these contentions in perspective. Thus:

(a) The capacity of U. S. Steel's so-called "pilot" or "experimental" plant in Minnesota compares favorably with the so-called operating plants in Michigan.

(b) The Reserve expansion alone in Minnesota is approximately 70 per cent greater than total present and definitely projected Michigan capacity.

Moreover, the prolonged legislative impasses over tax policy in both Michigan and Wisconsin -- which have attracted national attention -- certainly do not suggest that the "fiscal" climates of those states have a clear-cut edge over Minnesota. The picture, therefore, properly viewed is not all black insofar as Minnesota is concerned.

I should emphasize that I am not saying that "taconite" development will not take place in Michigan and/or Wisconsin. Nor, an I advocating that such

TABLE 9

SOURCES OF HIGH GRADE CONCENTRATE (+60% FE),

U.S. LAKE SUPERIOR DISTRICT

Location and Company	Capacity - Long Tons (Thousands)	
	Now in Operation	Increase under Construction or Definitely Planned by 1965
Michigan		
Cleveland-Cliffs (Humboldt)	300	300
Cleveland-Cliffs (Republic)	600	600
Hanna (Groveland)	700	...
	1,600	900
Wisconsin	...	...
Minnesota		
Reserve	5,000	4,000
Erie	8,000	...
U.S. Steel (Extaca)	600	...
	13,600	4,000
Total	15,200	4,900

Source: Adapted from Table 8.

investment should not. On the contrary, my view is that these three states should be regarded as a single entity for the purpose in order to avoid "whipsawing" in the "political bargaining" that is bound to occur and to minimize displacement of those presently employed in iron ore mining.

Finally, a great deal is made of Minnesota's "poor" political climate in the current debate. Several considerations seem pertinent in this regard:

(1) At the beginning of this year, Robert J. Linney, President, Reserve Mining Co., expressed the view: "We believe we have received fair and understanding treatment from the state ..."[1] (Underscoring supplied). And, he backed his conviction with an additional investment of $100-125 million.[2]

(2) Minnesota has not been an obstinate obstructionist in the path of taconite development. On the contrary, the record is one of support and cooperation. Thus:

(a) The State's Mines Experimental Station is 50 years old. Since 1922, the State has spent over $2 million in iron ore beneficiation research-pioneering long before the industry was doing anything about this. The contributions to taconite beneficiation of Dr. Davis, long associated with the Mines Station, are universally acknowledged.

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[1] Paper presented before the Twenty-second Annual Mining Symposium, School of Mines, University of Minnesota, and the 1961 Annual Meeting, Minnesota Section, American Institute of Mining, Metallurgical and Petroleum Engineers, January 9, 1961, Proceedings, p. 11-A.

[2] In mid-September, 1961, the Reserve expansion project employed 2,000 construction workers; at peak, next year, it is estimated that 2,500 will be thus employed. When the expansion program is completed it is anticipated that Reserve's employment will rise to 3,250 from the present 2,400. Skilling's Mining Review, September 16, 1961, p. 10.

(b) Since 1941, the State has maintained a distinctly favorable tax rate for taconite in comparison with traditional iron ores. This tax advantage was extended to semi-taconites in 1959. And, in 1961, the Legislature -- through rejecting a proposed constitutional amendment to assure taconite parity of tax treatment with manufacturing generally -- expressed itself in favor of maintaining the present taconite tax structure. The record in the case of taconite taxes, thus, is 20 years of stability.

(c) On several occasions the State has exchanged publicly owned lands for private property to facilitate taconite and semi-taconite development. Even U. S. Steel, the largest holder of ore reserves in Minnesota, found it desireable to negotiate a land exchange with the State. Perhaps a careful investigation should be undertaken by the State to ascertain whether assembly of suitable tracts is a real barrier to taconite investment. The traditional and historical distribution of leases and titles may not serve present-day requirements. What I am suggesting is consideration of a range redevelopment program, somewhat analogus to the urban renewal programs, which has as its

objective the use of basic natural resources. If it is appropriate for the federal government and municipal authorities to clear and assemble land suitable for a hotel site (for example, the Sheraton Hotel project in Minneapolis) should not the same hold for the State regarding taconite development?

IV. SUGGESTED PROGRAM

The foregoing discussion contained various suggestions regarding actions that should be considered to cope with the employment and other economic problems of Minnesota's iron ore industry. These may be summarized as follows:

(1) The attainment and maintenance of fuller capacity operating rates (for example, 85%) by the basic iron and steel industry.

This is obviously of key significance for both the present and the longer run. However, neither local nor State action can do anything in this regard. This is a matter of urgency for national economic policy.

(2) A Range "Adjustment" Program.

This reflects the "new competition" from foreign and higher-grade iron ores that now confront the traditional mining communities. Import duties are neither desireable nor practical as a remedy for the displacement problem at hand. Instead, loans and other aids for beneficiation facilities, highway development, and consideration to easing the shock

on local community services and tax bases, for example, are in order. These are not merely local problems. They are, as indicated above, "impacted by the national interest."

(3) An Intensified Research Program.

This is basic to the longer-run. Minnesota (and the Lake Superior District) has vast reserves of "potential" iron ores. Only ten years ago, taconite was merely a "rock". Today it is an economic commodity in prime demand.

It is estimated that the combined annual expenditure in 1960 by the federal government and all the states for "iron ore and associated research" was about $750 thousand.[1] More funds must be applied to the problems of ore beneficiation. The developing fiscal position of Minnesota makes it unlikely that such resources will be forthcoming from this source. The U.S. Bureau of Mines must take on a larger role. And, the research efforts of the industry must be maintained with a sense of urgency and stimulated by various measures of cooperation, incentive, and assistance.

(4) A Range "Development" Program

This has reference to the problems involved in the assembly of large-scale tracts and water resources required for taconite and semi-taconite beneficiation. The use of the State's powers of "eminent domain" under suitable circumstances -- as well as the exchange of public

[1] Horace T. Reno, "Iron" (preprinted from U.S. Bureau of Mines, Bulletin 585, a Chapter from the 1960 ed. of Mineral Facts and Problems), P. 16.

for private lands -- should be considered for this purpose. The State should take an initiating role in this regard rather than one of a passive participant. At the outset, a systematic State study of reserve holdings and the exploration of the problem is indicated.

work file; iron ore

From the Office of
SENATOR EUGENE J. McCARTHY
452 Senate Office Building
Washington 25, D. C.
CApitol 4-3121, Ext. 3244

For Release: UPON ARRIVAL

McCARTHY REPLIES TO ANDERSEN WIRE

Senator Eugene J. McCarthy (DFL-Minn.) sent the following letter to Governor Andersen in reply to his telegram of October 28 requesting assistance "to get the Dent Subcommittee to hold hearings in Northeastern Minnesota, for a first-hand study to show that one of the main factors causing chronic unemployment on the Range is the importation of foreign iron ore."

November 1, 1961

The Honorable Elmer L. Andersen
Governor, State of Minnesota
State Capitol
St. Paul, Minnesota

Dear Governor Andersen:

Your telegram of October 28, together with the press release which was issued at the time of your sending the wire, has been brought to my attention.

The Dent Subcommittee is, as you know, a House committee, and the determination to establish the committee and to hold hearings is a House decision. If the House members from Minnesota feel that the Dent Subcommittee should hold an inquiry of this kind, it would certainly, of course, be in order for them to recommend it. My own opinion is that such hearings would develop no new information regarding this problem.

The effect of imports and exports on iron ore has been examined and re-examined in recent years. In March, 1957, under Section 332 of the Tariff Act of 1930 pursuant to a resolution of the Finance Committee of the United States Senate, the United States Tariff Commission published a study of the effects of imports and exports on the iron ore industry of the United States. The report was, I believe, requested by Senator Thye and Senator Humphrey.

At my request, the Senate Finance Committee authorized another Tariff Commission study which was completed in December, 1960. This study concluded that imports of foreign ore were not doing sufficient damage to domestic industry to justify quotas or duties.

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MORE

In the hearings, spokesmen for the United Steelworkers, and also for the steel industry, testified against the imposition of quotas or duties. I am enclosing a copy of the testimony presented by Mr. Meyer Bernstein, International Affairs Representative of the United Steelworkers, before the Tariff Commission. You will note on page 10 his statement that "the United Steelworkers of America believes that imposition of tariffs or quotas on iron ore would be harmful to steel workers and would not be beneficial to iron ore miners. Such tariffs or quotas would also be against the best interests of the United States. These principles apply only to imports from democratic countries, not to the Soviet orbit."

On November 19-20, 1959, as chairman of the Senate Special Committee on Unemployment Problems, I conducted hearings in Duluth and Hibbing at which the Committee heard testimony on the effect of imports on the iron ore industry of Northern Minnesota. These hearings have been published and have been made available to members of Congress. The conclusion of the Special Committee on Unemployment Problems, in which I concur, was that some damage was being done and some unemployment has resulted from the importation of iron ore. The hearings did not show that the importation of foreign ore was a main factor causing chronic unemployment, but that it was a factor.

My committee recommended legislative action to offset the impact of trade policies on employees, businesses, and communities which were adversely affected.

The solution to the overall problem depends upon more than a determination that some unemployment has resulted. It involves also determination as to the effects of duties and quota limitations upon a number of things, including the total effect on the steel industry of the country, the cost production of steel, the bearing of such increased costs on the American economy, the position of United States produced steel in world markets, our balance of payments situation, and a number of less significant considerations.

I have prepared legislation involving two possible courses of action: one, the imposition of duties on imported ore to offset subsidies and other special concessions which are being given to producers of foreign ore. The purpose of this legislation would be to establish that the competition with foreign ore was truly an economic competition and not a subsidized one. I am hopeful that in the course of hearings on the extension of the Reciprocal Trade Agreements Act next year that we may be able to obtain information with reference to this point.

M O R E

It would be most helpful at that time if the State of Minnesota could testify with reference to the cost of producing Minnesota ore and delivering it to the steel mills of the United States. The steel companies have refused to divulge this information and also refused to divulge information with regard to the amount of subsidy involved in the production of foreign ore.

I have also prepared legislation which would establish a variable quota, with the purpose in mind of maintaining a consistent ratio of foreign to domestic ore during periods of low steel production in the United States, as recent practices indicate that in a recession, importation of foreign ore continues with little or no reduction, whereas production and shipment of domestic ores has been greatly reduced.

It is my intention to have these proposals considered thoroughly next year in the hearings on the extension of the Reciprocal Trade Agreements Act.

Sincerely yours,

/s/ Eugene J. McCarthy

Eugene J. McCarthy

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From the Office of
SENATOR HUBERT H. HUMPHREY
1311 New Senate Office Building
Washington 25, D. C.
CApitol 4-3121, Ext. 2424

FOR RELEASE: MONDAY P. M.
DEC. 4, 1961

HUMPHREY URGES TEST OF NEW IRON ORE PROCESS

Senator Hubert H. Humphrey (D., Minn.) today announced support for a demonstration test of the madrigal process for converting iron ore directly to steel in one continuous process.

Senator Humphrey, by letter to Secretary of the Interior Stewart Udall, requested the cooperation of the U.S. Bureau of Mines in conducting the madrigal demonstration tests at the Minneapolis Research Center.

According to Senator Humphrey, the madrigal process, a relatively recent development among direct iron processes, was developed by the International Ore Processing Co., of Los Angeles. The madrigal process operates on the principal of mixing iron ore with an alloying compound and reducing the mixture to steel ingots in thirty-five minutes by using an electrical melting furnace.

This process is reported to have definite advantages for small producers by permitting them to refine ore directly to steel ingots, without depending on pig iron, scrap iron, or coke.

The cost of producing the steel ingots by the madrigal process is reported to be below the cost of producing pig iron because of lower capitol investments and the simplicity of the operation. The madrigal process is a one-shot steel making method which for the small producer bypasses both the blast furnace and the open hearth.

The demonstration tests are being conducted by the Associated Construction Company of Portland, Oregon at the request of the Itasca County Area Re-Development Agency. This is the second direct iron testing program sponsored through this agency with Federal Cooperation. Supplies of Minnesota iron ore and North Dakota Lignite were sent to the Krupp-Renn facilities in Germany for the first direct iron testing program sponsored through the cooperation of the Itasca County Area Re-development Agency and the Area Re-development Agency of the U.S. Department of Commerce.

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From the Office of
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JANUARY 21, 1962

HUMPHREY, MCCARTHY, BLATNIK URGE STRONG FEDERAL TAX INCENTIVE TO ENCOURAGE TACONITE INVESTMENT IN MINNESOTA

In a joint statement issued today, Hubert H. Humphrey and Eugene J. McCarthy, Minnesota's two Democratic United States Senators and Congressman John A. Blatnik (D) of Minnesota's 8th District, announced a drive for a "substantial Federal tax incentive to encourage investment in new iron-ore processing equipment in Minnesota, particularly in the field of taconite processing."

The Minnesotans revealed that they had requested and are receiving assistance from Secretary of Commerce Luther Hodges in preparing materials in support of a request to the Secretary of Treasury and the Commissioner of Internal Revenue to reduce the number of years in which iron-mining companies may depreciate new equipment for tax purposes.

The Internal Revenue Service, they explained, has the authority under present law to shorten the period of years over which various kinds of equipment may be considered to be fully depreciated for tax purposes.

"The effect of a favorable decision by the Commissioner of Internal Revenue would be to substantially reduce Federal taxation on a company such as Oliver Iron Mining Company, a subsidiary of U.S. Steel, and other mining companies, during the first few years of operation of a taconite plant," the Minnesotans said.

"Currently, most equipment in taconite processing is depreciated over a period of between 15 and 20 years," they pointed out -- "a depreciation schedule which is regressive in terms of the kind of competition we are getting from countries like Germany and Sweden. Such lengthy depreciation schedules put a premium on inefficiency, and mean that other countries, such as Canada, can and do offer major investment incentives through tax concessions that draw American capital into the construction of modernized iron mining facilities outside the United States."

More

Senator Humphrey said that he had personally discussed with the Secretary of the Treasury Douglas Dillon the severe drain on the Treasury of the continued unemployment in the iron mining industry in Northern Minnesota, and that he and his two colleagues had also held extensive preliminary discussions with tax authorities and industrial engineers before deciding to seek the new Federal tax incentive for iron-ore processing equipment.

"We are very pleased," the three said, "to have the full cooperation and encouragement of the Secretary of Commerce in this effort. Both the Secretary of Commerce and the Secretary of the Treasury we know are equally as interested as we are in modernizing and revamping the American steel industry so that it can better compete in the world market, and so that our mobilization base in the event of war can be strengthened.

"What we are seeking to do in 1962 is what Congressman Blatnik succeeded in doing during the Korean War when he succeeded in including taconite in the Defense Production Act of 1950 -- when accelerated tax depreciation schedules and other tax incentives resulted in a major investment in taconite processing facilities by Erie and Reserve Mining Companies."

Congressman Blatnik was the author also of the Taxonite Tax Law earlier when he was a State legislator in the Minnesota Legislature.

"Minnesota's Iron Range needs the jobs that a major investment by United States Steel and other American steel companies in taconite and in direct-reduction of iron ore would bring," they concluded. "We are seeking to bring every power of the Federal Government to bear to encourage such investment, and therefore to make of the Iron Range area once again an economically healthy and tax-producing area."

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January 14, 1963

Memo to Senator
cc: John
Neal
Dave Nelson

From: Bill

The attached clipping from the January 9th Duluth News-Tribune outlines a broad liberal legislative program in the Minnesota Legislature. Besides the Taconite statute, one point that directly affects us is a call upon Congress to restrict imports of iron ore, to prevent integrated steel companies from selling extensive amounts of foreign ore in the United States, and to end federal financial assistance for the development of foreign mining projects.

I think that we should wait a few weeks yet to see whether the Ford project is going to come through. My feeling is that they are waiting to see how the gubernatorial election comes out before they make their decision. At any rate, we should make contact with Ford directly as soon as the election is decided. If they are not going to come in, and if U.S. Steel does not make some signs of movement toward a taconite plant, I think that we can conclude that our effort to induce U.S. Steel to come in through the 7 per cent investment credit and the accelerated tax write-off has been a failure, and if the carrot has not worked then maybe the stick will.

Although any move to restrict Venezuelan iron ore, for example, would have bad effects in Venezuela, maybe the whole thing could be postponed until after the next Venezuelan election

for final action by Congress. What we could do would be to go back to the old idea of tying the imports to the general production level of the steel industry. If we could have some kind of sliding scale with a base calculated on the last time we had a reasonable amount of steel productionnin this country, then we could see that domestic iron ore production is cut back at no greater percentage than imports are reduced. Or to put it another way, we would try to tie cutbacks in domestic iron production to cutbacks overseas. We should not permit them to continue to accelerate imports while our people are out of work.

This could be also tied to the "integrated steel companies" where the steel companies themselves wholly own the overseas mines and there is no foreign capital actually involved in those mines.

Attached is a letter from Gerry Heaney transmitting a very interesting and hard-hitting speech by John Wilbur, senior vice president of Cleveland-Cliffs Iron Company. You will note the extraordinary similarity between the proposals that have been put forward by the State Legislative liberals and the proposals that Wilbur outlined in his speech.

The more I think about this the more I think that this is a matter of major importance and that we ought to sit down and talk about what we should do. The Tariff Commission's findings that the iron ore industry is not being hurt were made on the evidence that was not presented. The people who buy the ore are the people who own the ore, and they simply did not want any quota restrictions. But what about the public interest? I think that Gerry is right and that unless we are able to force our domestic iron ore production through some kind of restrictions, we are finally going to lose that Iron Range.

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