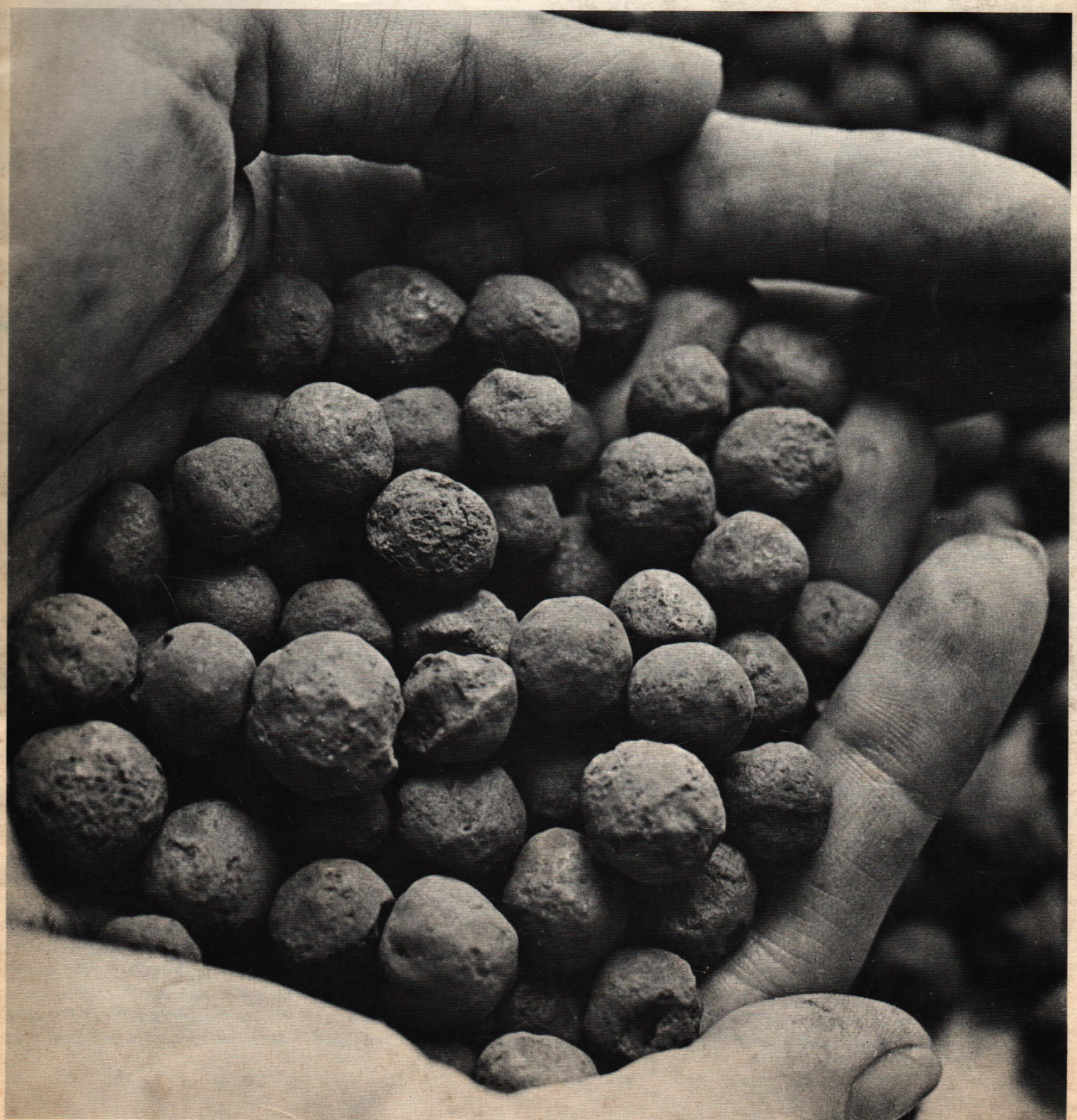
ISSUE NO. 8, JUNE 1968

PM Producer



New Pellets From the Land Down Under . . . The Savage River Story—Page 2

The Savage

In the wilderness of western Tasmania, a great deposit of iron ore lay known but useless for 75 years.

Early investigations disclosed problems that were enough to discourage potential developers before they began. The ore contained too little iron and too many impurities.

The deposit was located in some of the most rugged, inaccessible country on the island, virgin bushland and rain forest in mountains cut by deep gorges, uninhabited, and, to make matters worse, with an average annual rainfall over 100 inches.

The story of Savage River Mines is the story of how this deposit was brought at last into production, when men of three continents combined their efforts, knowledge, and financial support, under the guidance and management of Pickands Mather & Co.

The first ray of hope for the Savage River ore came about twenty years ago, when iron mining companies began testing on a commercial basis methods of concentrating and pelletizing low grade ores, like the Minnesota taconite. This came about because reserves of high grade ores suitable for blast furnace use were seriously depleted during World War II, and it was imperative for North American steelmakers to find other

River Story

sources of raw material.

PM was one of the iron ore companies that had forseen this shortage, and early in the 1930's initiated, for several of its large customers, a long range laboratory investigation of methods for upgrading low iron content ores.

From this investigation came a process in which the ore is ground to facepowder fineness, the iron particles separated from the waste by magnetic and other means, and the resulting high grade concentrates rolled into pellets and heat hardened to withstand handling and shipping.

Although the pellets were intended first as a substitute raw material, when American and Canadian users realized they were better than high grade ore, they became the preferred blast furnace feed in these countries. It wasn't long before Japanese and European steel companies began rapidly increasing their usage as well.

The Savage River ores are similar in some important respects to the Minnesota ores PM learned to upgrade. This fact proved to be the key that finally unlocked Tasmania's iron ore potential. And the increasing demand for pellets, 5,100 miles away in Japan, provided a possible market for the ore.

In 1963, PM undertook a major study of the Savage River deposits.

From the first, it was obvious a small-scale operation would not pay its cost, and a large-scale one would require many millions of dollars.

How much exactly? Where and for what price could the ore be sold? What assurance was there the operation could continue for enough years to pay off its investment? Where would the money come from, and what return would be necessary? Would the government approve exporting the ore?

Thousands of questions had to be answered in detail before PM could answer the BIG question: *Can the Savage River deposits be developed?*

Completed in October, 1965, the study took two years and cost over $2.5 million before enough facts had been gathered to make a sound decision. In Cleveland, New York, Tokyo, and Sydney, Australia, the men who had the responsibility for the decision reviewed the findings of the study.

The orebody had been drilled and mapped, to determine extent and metallurgical properties of the ore. Exhaustive tests at the PM Research Laboratory, Hibbing, Minnesota, demonstrated it was amenable to concentrating and pelletizing. A processing flow sheet had been worked out. Ore would be fine ground and concentrated at the mine and transported to Tasmania's north coast, for pelletizing and shipment.

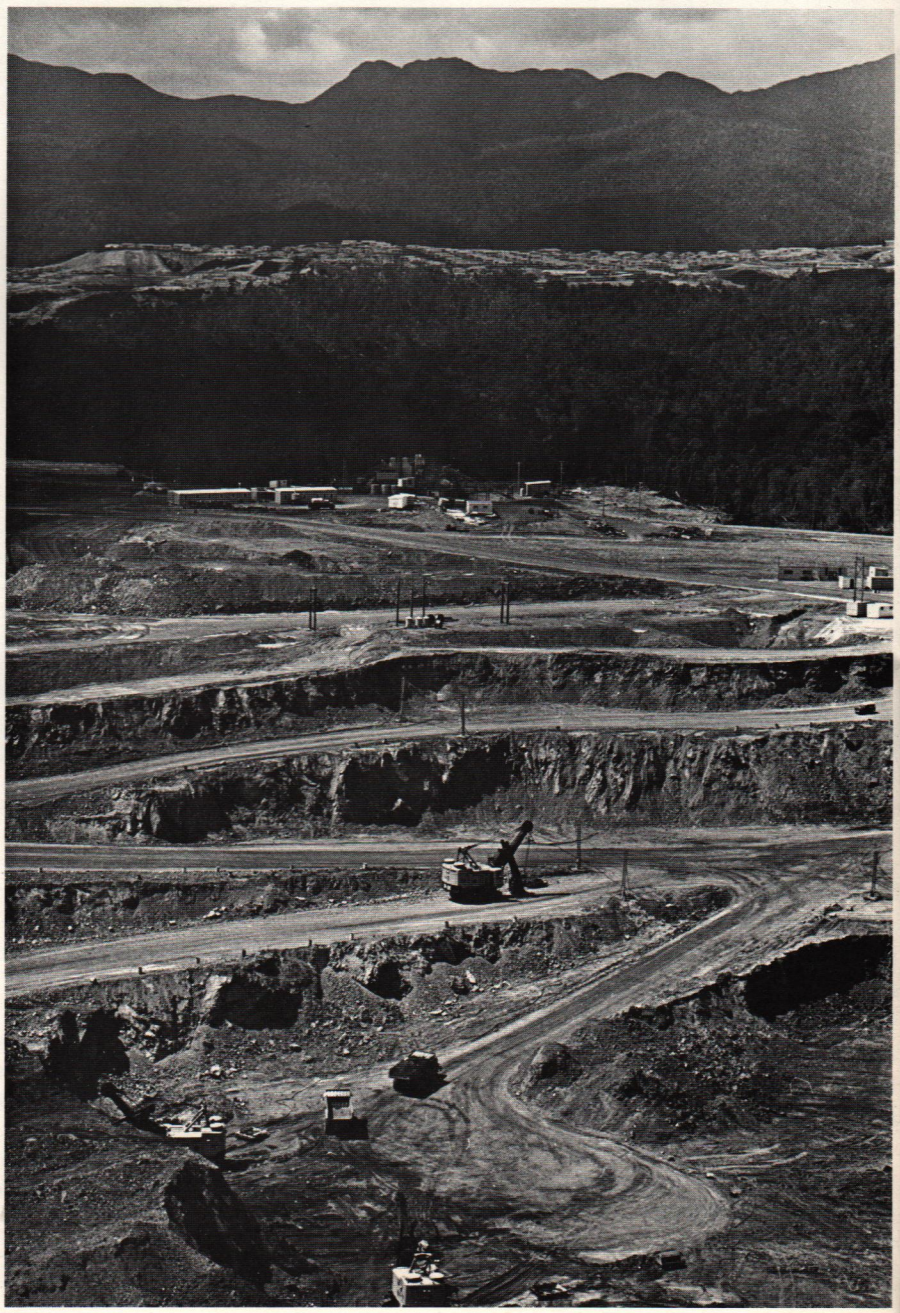
Logistical problems were studied . . . how to get enormous quantities of construction materials and equipment into the selected locations and how to get the product out. It was decided that because of the rugged terrain, rail or road transportation would be too expensive. Instead, the concentrate would be moved to the coast by high-pressure pipeline . . . the longest of its kind in the world.

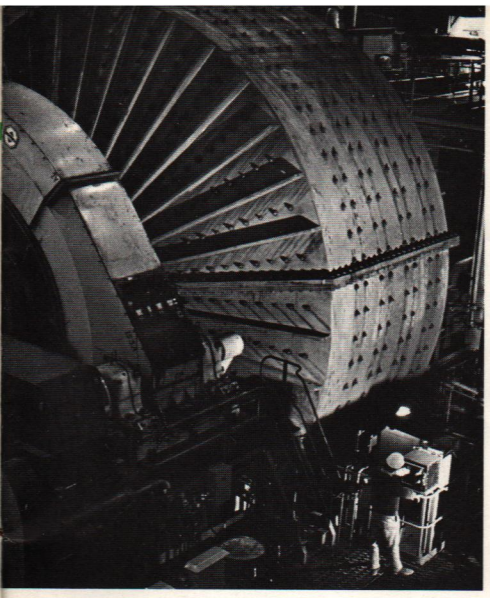
Detailed cost studies were made, covering planning, construction, operation, and financing. The cost of the plants, pipeline, and equipment to bring them into operation would be $67 million. Financing for the project was arranged, mainly in long-term notes, with equity capital held in Australia, Japan, and the U.S. The Tasmanian government agreed to provide a loan of $4 million for construction of the offshore shiploading facilities.

Legal implications of the project in three countries as well as the State of Tasmania were checked and necessary agreements reached. Details of price, rate of delivery, and quality of the product were worked out.

Once the decision was made to proceed, events moved with startling swiftness, and before the end of that year, construction work had begun at both the mine and pellet plant sites.

In a little over two years, Savage River Mines was ready for start-up.

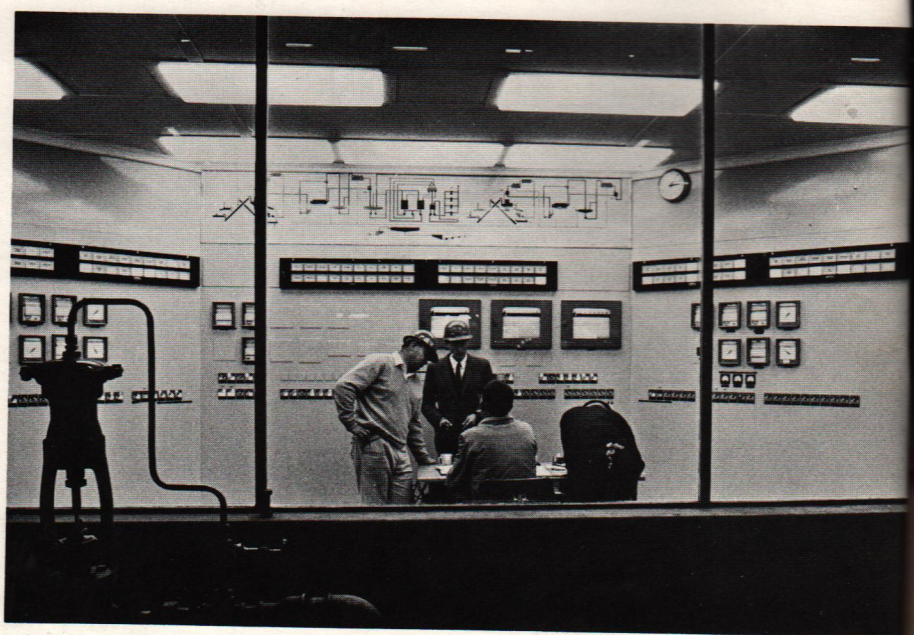




At the mine site a concentrating plant had been built to crush, grind, and separate 10 million tons per year of low grade ore and waste rock. This is the quantity of material that must be mined to produce the 2¼ million tons of pellets scheduled as the project's production. In addition to the plant itself, there are complete maintenance facilities for mining and other equipment, including haulage trucks up to 50 tons capacity.

Nearby is a townsite for the mine employees. Designed to accommodate up to 1,500 people, including 200 families, it has a school, church, motel, service station, shops, police and fire stations, nursing center, and water and sewage systems. Roads were built into the area by the Tasmanian Department of Public Works, and electric power for both the mine and the town comes from the Hydro-Electric Commission of Tasmania.


N. PELLET PUMP
LO SPEED
N. PELLET PUMP
HI SPEED
PELLET PUMP
FEEDER SLOW
S. PELLET PUMP
HI SPEED



Constructing the pipeline added to the challenge of the Savage River project. Iron ore had never been transported so far in this manner. Its 53-mile length had to be engineered to span the 450-foot deep Savage River gorge and to resist the stresses of the countryside and climate, as well as the pressure and abrasion from within of the dense iron ore slurry.

Clearing crews followed close on the heels of the surveyors. Construction was aided by one of the driest Tasmanian winters on record, as the pipeline jumped the Savage and then the Authur River, and stretched through, over, and around the forests, mountains, and gorges.

At the pipeline's northern end, at Port Latta, the pellet plant was built. Here the ore slurry is dewatered, mixed with additives, rolled into ½-inch balls, and heat-hardened into pellets containing 67% iron, of adequate quality to compete in world markets.

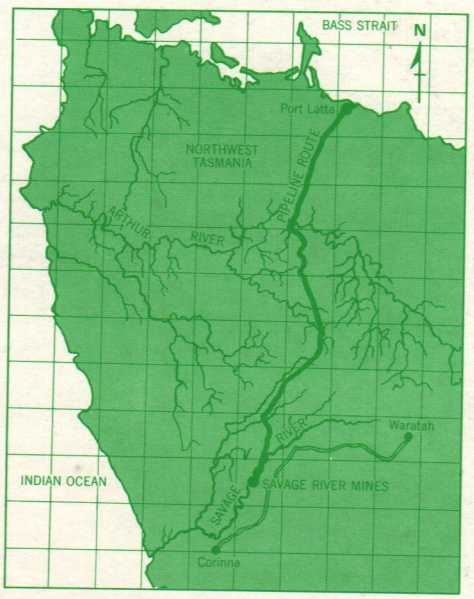
Pellets are stockpiled by special stacker machinery capable of handling a ton every four seconds. Reaching a mile out into Bass Strait, where water depth is sufficient to handle giant bulk carrier vessels, is a special conveyor system for loading the pellets rapidly into oceangoing ships.

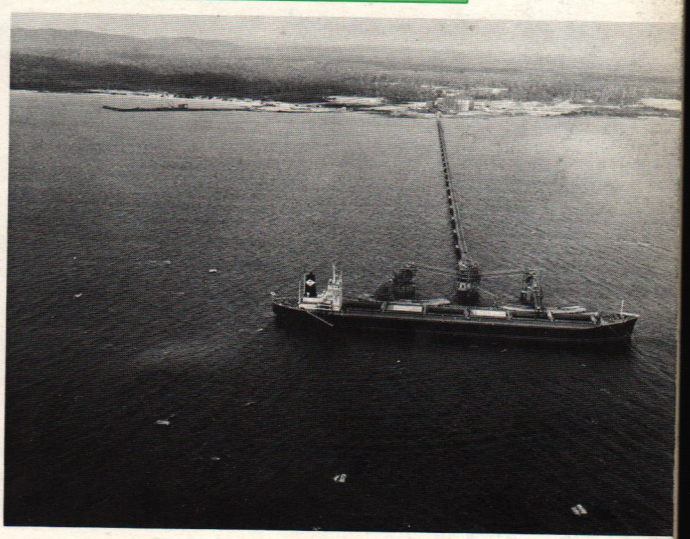
And so a body of ore that lay frustratingly useless for generations has been converted into a great natural resource.

The people and government of Tasmania, indeed the whole of Australia, benefit from the Savage River achievement. Governments receive royalties and substantial taxation. The economy gains new export income of some $20 million per year. The Tasmanian northwest has a new area of employment and a sudden growth, with hundreds of new families now moved there permanently. The towns of the north coast, largely dependent on rural activities and the tourist trade, have experienced a surge of new people, new activity, new opportunity, and new ideas.

Of these changes, the Hon. E. E. Reece, Premier of Tasmania, speaking at the dedication of the project in March, said:

"*The birth of this great new mining venture will give a great economic impetus to the West and North-West Coast regions of Tasmania. It has been responsible for the birth of a town and the creation of a modern industrial port, and both will grow in parallel with the development of the iron ore export industry.*"





SAVAGE RIVER MINES

DAHLIA MINING CO. LTD.

JAPANESE OWNERS:
MITSUBISHI SHOJI KAISHA LTD.
SUMITOMO SHOJI KAISHA LTD.

USERS OF PELLETS:
YAWATA IRON & STEEL CO. LTD.
NIPPON KOKAN KABUSHIKI KAISHA
SUMITOMO METAL INDUSTRIES LTD.
KAWASAKI STEEL CORPORATION
NISSHIN STEEL CO. LTD.

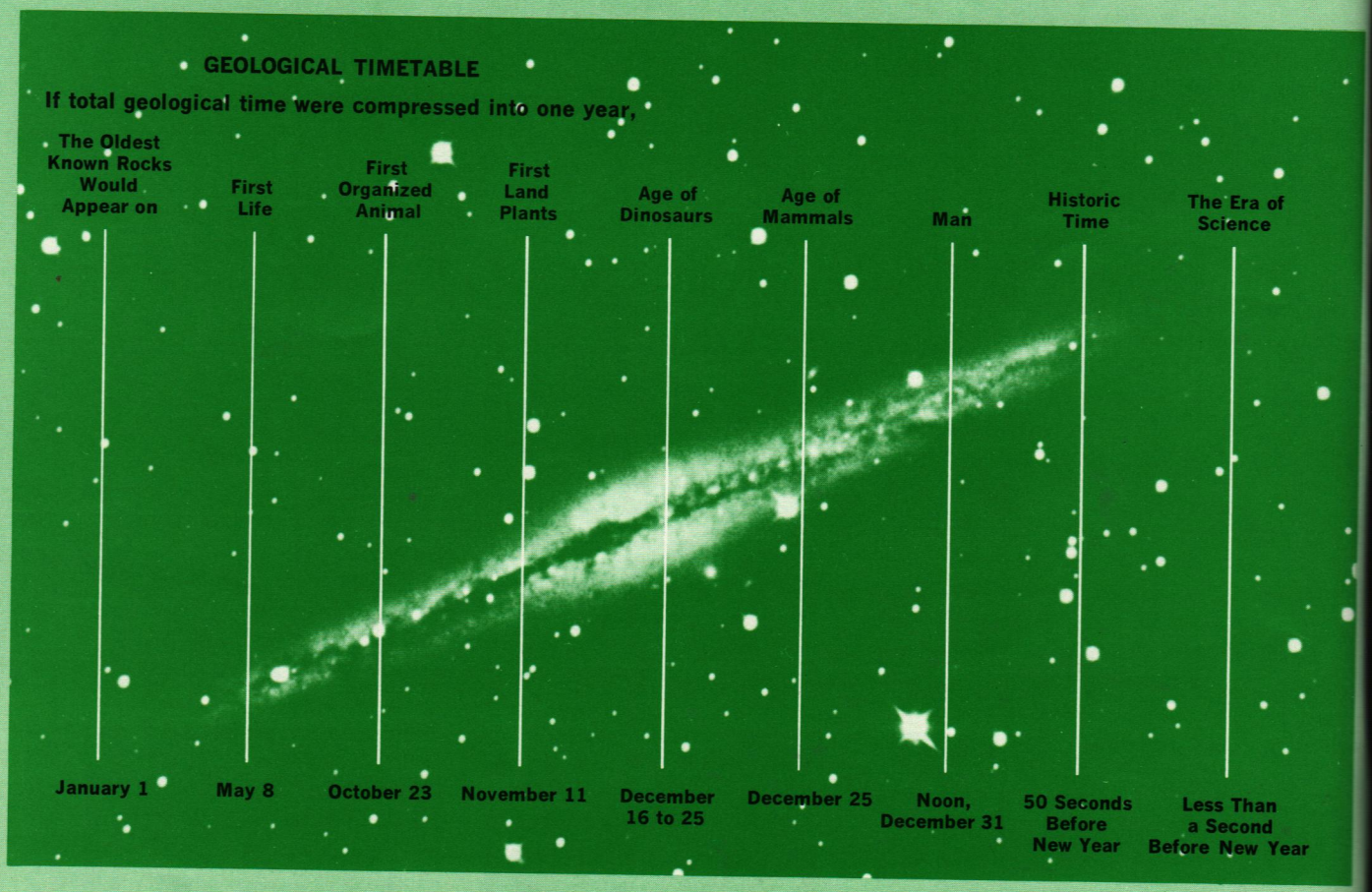
NORTHWEST IRON CO. LTD.

AUSTRALIAN OWNERS:
AUSTRALIAN MUTUAL PROVIDENT SOCIETY
COLONIAL MUTUAL LIFE ASSURANCE SOCIETY LTD.
MUTUAL LIFE AND CITIZENS ASSURANCE COMPANY LTD.
NATIONAL MUTUAL LIFE ASSOCIATION OF AUSTRALASIA LTD.
UNITED INSURANCE CO. LTD.
KATHLEEN INVESTMENTS (AUSTRALIA) LTD.
AMPOL MINING PTY. LTD.

AMERICAN OWNERS:
POCANTICO CORPORATION
CERRO CORPORATION
PICKANDS MATHER & CO. INTERNATIONAL
CHEMICAL INTERNATIONAL FINANCE LTD.

Of Time, Man, and Knowledge

June is the month for graduation exercises, students returning home from college, scholarship announcements, and other events that focus our interest more strongly on higher education than in any other month. We hope you will find the short essay on this subject below (reprinted by permission, from "The Hundredth Man," a booklet published by California Institute of Technology) as interesting and thought-provoking as we did.



All mankind is faced with on overpowering problem: ignorance.

Our island of knowledge in the vast sea of ignorance is so tiny we wonder whether it may not be wholly engulfed.

So what shall we do?

First: Let's not be discouraged. This earth has existed for over four billion years and will probably last another four billion. Human beings began to learn how not to be so ignorant only a few thousand years ago. Maybe a few million years hence we may have learned quite a lot!

Second: Let's spend more effort on learning. We may be terribly ignorant but we don't have to stay that way. We at least have learned how to learn.

That is why thousands of centers of learning exist throughout the world. They are the essential outposts in this quest for more knowledge in all fields.

"*Seek ye the truth—and the truth shall make you free.*"

No more important injunction was ever enunciated to the human race.

—Lee A. DuBridge, President,

California Institute of Technology

The Search for Good People Goes On

College Recruiting an Important Part of PM's Management Manpower Planning Program

If someone asked you to name the single, most important thing PM furnishes its customers, what would you say?

Iron Ore?

Coal?

Raw materials for steelmaking?

If you answered any of the above, you'd be right in one sense . . . these are among our most important products. But in the raw materials business, there is something just as important as products, and that something is *service*.

Service is a "product" that can come only from people. So, in order to give our customers good service . . . better service than our competition can offer . . . we have to have good people. In fact, we need the very best people we can get.

For 85 years, PM has recognized the importance of having good management people and of planning ahead to make sure it will continue to have capable people at all levels of management. The company's management manpower planning program functions as an aid in making sure there will always be adequate numbers of qualified people to fill key positions throughout the organization. One way it does this is by assisting the company to make the best use of the good people we already have.

As part of this program, an organization-wide inventory of management personnel is maintained, with up-to-date information on their education, experience, and interests. This makes it possible, when a need

As part of PM's college recruiting program, Clyde Keith, Erie Mining Company assistant works manager, addresses a group of mining engineering students at Michigan Technological University, Houghton, Michigan. His talk is for the most part a technical discussion of PM mining operations, with a general description of how the company operates.

arises for a person with particular qualifications, to make a quick check of everyone the company already has, to see who might fit the job.

In addition to helping PM make the best possible use of employees it already has, another important function of the program is recruiting new management employees.

Hiring college graduates has changed quite a bit in the last twenty years or so. Before the end of World War II, students graduating from college would contact companies they were interested in working for, in the hopes of finding employment. Few firms bothered to send representatives to college campuses or to actively solicit interviews.

Nowadays, it is necessary for the companies to seek out the graduates. In recent, years, demand for college graduates, particularly in technical fields; has soared. At the same time, the number of graduates with Bachelor of Science degrees available for industrial employment has dwindled. Larger proportions are going on to graduate school, or teaching, or government jobs, including military service.

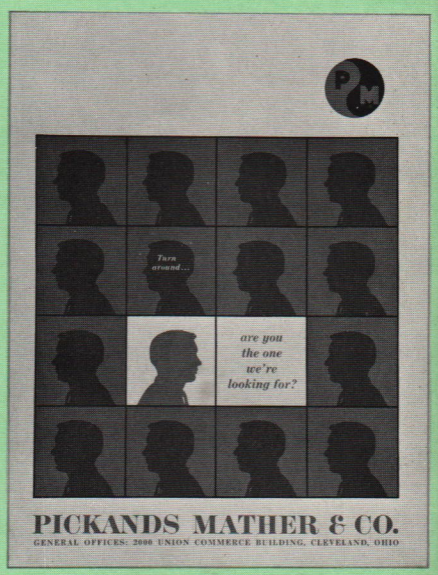
For example, in a recent year American colleges and universities had less than 4,000 chemical engineers graduating at the B. S. and M. S. levels. Of these, less than 2,400 were available for employment, because of graduate school, military commitments, and other reasons. Michigan Technological University says that last year 817 industrial recruiters conducted 8,698 interviews on their campus, with a total of 623 job candidates. That's an average of almost 14 interviews apiece for each candidate!

Sparkplug of PM's recruiting efforts is Del W. Carlton, director of organizational and manpower planning in the comany's corporate industrial relations department. Del tells us he visits approximately 12 college campuses per year, to recruit engineers and other types of management people, and that our "batting average" for this kind of recruiting is running well above the national average.

Incidentally, one of those Michigan Tech grads who were wooed by an average of almost 14 companies each, decided PM looked best to him. A native of Canada named Alan Caverson, he was recruited by Del for the Mahoning Mine, where he now works as a mining engineer.

PM also has a special program to hire selected engineering college seniors for summer employment at U. S. operations, to give them a chance to get to know us and us to know them, in hopes of being able to hire them as permanent employees when they graduate from college. Erie Mining Company has 16 specially selected seniors in this category for the present summer. A similar program at Wabush Mines involves engineering co-op students . . . who work part of the year and go to school part of the year . . . from Waterloo University, in Ontario.

PM's Cleveland office and some of the operations often receive inquiries from employees who have friends or relatives who are college seniors, asking about employment possibilities for them with the company. Employees are encouraged to have these students communicate directly with Mr. Carlton at the company's Cleveland address.

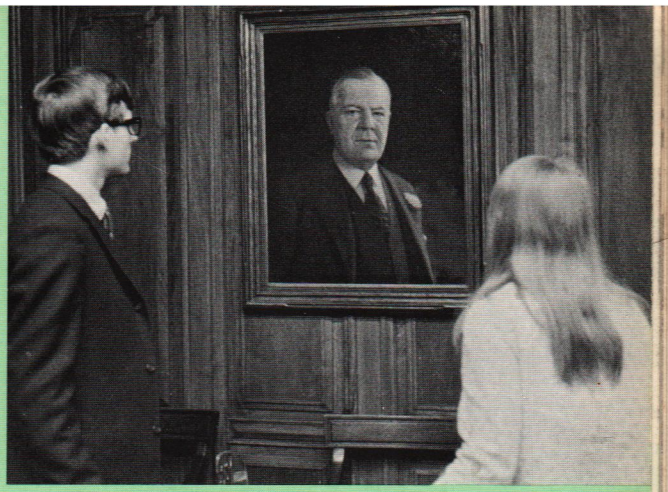


Attractive folder used for PM's campus recruiting contains descriptive material about the company (including a copy of the PRODUCER).

PM's Del Carlton, with O. T. Berge, assistant to management at Erie Mining, follows up a week or two after Clyde's presentation with another visit to the Michigan Tech campus, to conduct interviews. Because it has highly rated engineering courses, Michigan Tech is one of the schools visited regularly by PM recruiters.

Something More Than Luck

The 1968 Harry Coulby Scholarship Winners



Carol and Roger view the portrait of Harry Coulby in the PM Board of Directors meeting room. Coulby was a managing partner of PM at his death in 1929. Funds for The Harry Coulby Scholarships are made available through The Cleveland Foundation, from Mr. Coulby's estate.

Mention that a couple of teen-agers have just been awarded four-year, full-tuition, all-expense scholarships to the colleges of their choice, and someone is sure to say, "*Oh, aren't they lucky!*"

But a look at the qualifications of this year's two winners of The Harry Coulby Scholarships makes you realize it takes something more than luck.

This year's winners are Carol M. Tilley, step-daughter of Lucille L. Tilley, secretary at Milwaukee Solvay Coke Co. Division, and Roger D. Kamm, son of First Mate Rudolph W. Kamm, of the Steamer *Robert Hobson*, in the Interlake Steamship Co. Division fleet.

If we had to choose only two words to characterize these two young people those words would be *energy* and *determination*.

Carol maintained close to a straight-A average at Nathan Hale High School, West Allis, Wisconsin (a suburb of Milwaukee), from which she is graduating this spring. One of her teachers describes her as "*the outstanding student in my classes in the last two years, and the outstanding girl student of the past fifteen years.*" In addition, Carol participated in a number of extracurricular activities, including the National Honor Society, the girls' swimming team and a water ballet group, the girls' athletic association, and the drama and ski clubs. She also found time to be active in many activities outside of school, including Junior Achievement, Catholic Youth Organization, and volunteer work as a hospital "Candy Striper" and swimming instructor for the handicapped.

This kind of record in itself is evidence enough that Carol is indeed an outstanding person. But there is more to her story . . . very much more. She is the oldest girl in a family of ten children. Two older brothers are in military service: Jim, 24, a lieutenant in the Air Force, and Loren, 20, in the Army in Vietnam. In addition there are Paul, 18; John, 16; Lynn, 13; Dave, 11; Patricia, 9; Tom, 8; and Margaret 7. Mrs. Tilley also has two other children by a previous marriage: Gary, 21, also in the Air Force, and Marcie, who is also 21.

When her mother passed away several years ago, Carol, although herself only in her early teens, took over the care of her six younger brothers and sisters for almost two years, until her father remarried. Viewed against this background, Carol's high school achievements are truly amazing!

Roger Kamm, our other Coulby Scholarship winner, is an equally energetic young person. Roger is the youngest of three sons of Rudy and Betty Jane Kamm. Their oldest boy, Keith, 24, recently finished his degree in pharmacy, and Richard, 21, is presently in college.

Roger's grade average puts him well into the top one percent of his 500-student graduating class at Superior Senior High School, Superior, Wisconsin. A member of the National Honor Society since his junior year, he has received a number of scholastic honors, including two awards for straight-A grades and the American Legion Honor Award for citizenship and academic excellence.

Not all of his time and efforts in high school were devoted to studies, however. He served on the Student Council for three years and was elected vice president of his senior class. In addition, he was an active menber of the Science Club. Outside of school he belonged for four years to the Luther League.

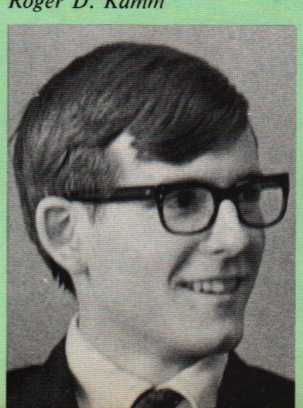
In athletics, he was a member of the track team for a year; but his real passion is hockey, and he says the reason for going out for track was to stay in shape for hockey during the off-season. Over the past five years he has been active in two city league hockey teams outside of school, as well as serving as a coach and referee. In school he played wing on the varsity hockey team for three years, one of them as captain . . . no mean achievement in the upper Great Lakes region, where hockey is King of the sports, and almost every boy cuts his teeth on a hockey stick and learns to skate almost as soon as he learns to walk!

A quiet, soft-spoken boy, Roger is popular with fellow students and teachers alike. Of him, one teacher says, "*It has been my pleasure to have him among my students for two years . . . he often leads class discussion and is brave enough to argue a point with me when convinced he's right. A fine sense of humor, coupled with Roger's naturally polite nature, really make him a blessed addition to the class.*"

Both Carol and Roger will put their Coulby Scholarships to good use.

Carol plans to enter the pre-medical course at Michigan State University, and Roger will study engineering at Northwestern University, and plans to continue on into graduate school.

Roger D. Kamm



Carol Marie Tilley

Mrs. Lucille L. Tilley, secretary to J. R. Lenz, general manager of PM's Milwaukee Solvay Coke Co. Division, is Carol's stepmother. Her father, James W. Tilley, was plant engineer at Milwaukee Solvay until last year.

Roger's father, First Mate Rudolph W. Kamm, is sailing on the Interlake steamer Robert Hobson *this season. Our photographer caught "Rudy" coming off watch when the* Hobson *delivered a load of pellets to a major steel producer located on Cleveland's Cuyahoga River.*

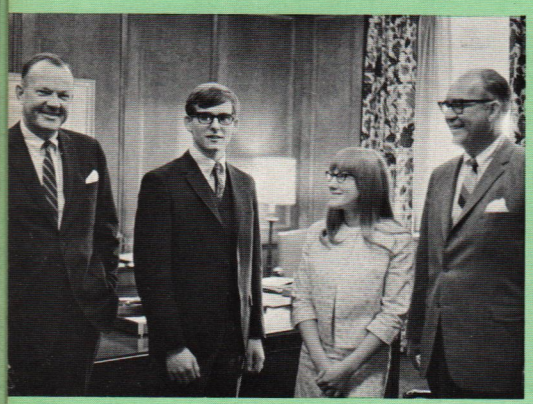
Carol says she has wanted to be a doctor since she was a very young child. "*This career will enable me to fullfill my many wants and desires,*" she says, "*one of which is to use my abilities to the fullest. I feel the need to help others. Direct contact with individual persons is important in my life.*" She says that although the time when she will begin her practice of medicine is still many years away, when that time comes she wishes to work in Africa, probably with a government, religious, or private organization. While she realizes this plan may never materialize, she tells us that "*I have set it as my goal and will strive to obtain it in any possible way.*"

When you look at her present record of accomplishment, you feel no doubt that Carol will some day carry out her dream.

Roger decided on an engineering career when in the eighth grade. He has not yet chosen the area of engineering he will enter, but he is leaning toward the mechanical or aeronautical fields. One of the more interesting things about this very determined young man is his attitude toward the financial aspects of a college education. "*I made up my mind not to accept any financial aid from my parents,*" he says, "*for they have helped one brother through college and are in the process of helping another.*"

To carry out this decision, he has been working summers and at odd jobs since junior high school, to save money for college, and planned to continue working part-time to pay his own way through. He says that the Coulby Scholarship will enable him to get a better education than he had hoped for and will make going to graduate school easier.

Yes, Carol Tilley and Roger Kamm certainly are lucky. But we think our readers will agree that it takes something more than luck.



A

B

C

D

Two Harry Coulby Scholarships are available each year through The Cleveland Foundation to sons and daughters of all employees and retirees of the PM organization, except principal officers and directors of the company or its subsidiaries. Recipients are chosen by a selection committee appointed by the Foundation. Further information and application blanks will be available in September, through your local PM management.

Carol and Roger visited PM's corporate headquarters in Cleveland shortly after their selection as Harry Coulby Scholarship winners was announced. At the Cleveland office they received personal congratulations from (A) PM President Keith S. Benson (right) and Executive Vice President Robert S. Carey; (B) Vice President—Administration Donald M. Chisholm; (C) PM Vice President John H. Bemis, who is also President of Milwaukee Solvay Coke Co. Division; and (D) PM Marine Division Manager David A. Groh.

THE
Better/Half

We like to share with our readers the occasional glimpses we catch of the "better halves" of PM families. Both male and female employees are invited to submit items to this department about spouses who have unusual occupations, hobbies, interests, activities, etc. Send one or more black and white snapshots, and be sure to tell us the address to which they should be returned.

Instructor Eric Williams helps Mrs. David Elliot perfect her weight-lifting technique.

Wabush Ladies Stress Physical Fitness

With the coming of spring, a group of employee wives and female staff members of the PM-managed Scully Mine, Wabush, Labrador, decided that a physical fitness and calisthenics class might be just the remedy for that logy, overweight feeling most of us have at the end of a long winter.

It didn't take very long at all before the class got past the idea stage. A capable instructor was found in the person of the Scully Mine training supervisor, Eric Williams, himself a physical fitness devotee. Art Latto, welding instructor in the training department, volunteered to assist Eric, as did Ross McCallum, business manager of the Wabush community Recreation Centre. Ross also offered the use of the Rec Centre's well-equipped gymnasium.

The group began meeting in April, and has been holding regular meetings, two or three a week, since. In addition to calisthenics, activities of the class include swimming, and for some of the ladies, even weight-lifting!

When we first heard that this class was being formed, we thought that these Wabush "Better Halves" might have started it with the idea of making their best possible appearance in their bathing suits when the brief outdoor swimming season opens there in August. But that was before Eric reminded us that Wabush residents enjoy the luxury of year-round swimming in the Recreation Centre's heated indoor pool. However, he tells us that apparently we weren't that far off in our guess about the ladies' motives. Many of them have set goals like "*three inches off the waist before July 4th*" in anticipation of their summer vacation trips, when many Wabush residents journey "outside" to visit families and friends "back home" in Newfoundland and other locations.

Besides the obvious advantages of losing weight and improving muscle tone, the class has brought a few Wabush women an unexpected "bonus" benefit in the form of healthier husbands and youngsters. Not to be outdone by the gentler sex, some of their menfolk (adults and teenagers both) have formed their own classes, also under Eric's direction. (*Attention all Employees: It wouldn't be fair to mention any names, but we have noticed a few individuals around the organization, in Cleveland as well as at the various operations, who could benefit from a little of this kind of initiative!*)

To date the response to the ladies' class has been enthusiastic, with over two dozen employee wives and female staff members participating, and nine other women of the Wabush community, who are not employed by or married to Scully Mine employees.

"Better Halves" from the first category include: Mrs. Roy Andrews, Mrs. Bob Anderson, Mrs. Dan Bell, Mrs. Brian Casey, Mrs. Douglas Collins, Mrs. Wilfred Falls, Mrs. Roy Fancy, Miss G. Gillam, Mrs. Alfred Gosse, Mrs. Doug Honsberger, Mrs. Ted Humphrey, Mrs. Jim Lemke, Miss Winnie Maher.

Mrs. Hugh Martin, Miss Doreen McCarthy, Mrs. Pat McGregor, Mrs. John Miller, Miss Dolores Murphy, Mrs. Paul O' Leary, Mrs. Malcolm Snow, Mrs. George Taylor, Mrs. Stu Taylor, Mrs. Irene Tilburn, Mrs. Eric Williams, Mrs. James Ward, Mrs. Nita Wood.

In the second group are: Miss M. Cantwell, Miss M. Dalton, Miss J. Delaney, Mrs. Ron Dunphy, Mrs. M. Elliot, Miss M. Frecker, Miss J. Goodwin, Miss I. Kean, Miss A. Young.

Enthusiastic turnout attests to the popularity of women's physical fitness class at Wabush Recreation Centre.

Mrs. Douglas Collins, white suit, tries some sit-ups, while Doreen McCarthy lends a helping hand.

Casting MELTRITE pigs at Interlake Steel Corporation's Toledo, Ohio, plant. Pigging machine has special molds moving on an endless chain belt.

PM Introduces Smaller Pig Iron

As exclusive sales agent for MELTRITE pig iron, produced by Interlake Steel Corporation, America's largest shipper of merchant pig iron, PM has for many years been a leader in the nation's highly competitive merchant pig iron industry.

Merchant pig iron is iron produced for sale rather than for use by the producer's own steelmaking facilities. Most of it is sold to iron foundries, where it is made into a wide range of products, from kitchen utensils to automobile parts. The origin of the term "pig iron" is attributed to the resemblance, in the early days of ironmaking, between bars of iron cast in sand molds, and a litter of nursing pigs.

Back at the turn of the century, all of the pig iron produced was cast in this manner. Tapped from the blast furnace, the white-hot molten iron ran through troughs to molds that were little more than loaf-shaped depressions in sand beds near the furnace. In those days, the average sand-cast pig was about 26 inches long and weighed between 75 and 100 pounds.

In 1908, PM pioneered machine casting of pig iron, with a 70-pound product that offered the advantages of uniform size and melting characteristics, and fewer impurities. Foundry operators soon recognized these advantages, and it wasn't long before machine-cast pig iron became the standard raw material for the foundry industry.

In 1935 came another PM innovation: the 40-pound MELTRITE pig. It was received with enthusiasm by the foundrymen, and the rest of the merchant pig iron producers soon followed with lightweight pigs of their own.

This year, again leading the industry, PM has introduced a new, 1968 model MELTRITE pig weighing only 20 pounds. Formerly more of an art than a science, cast iron foundry practice has over the years become more and more exacting. With this change has come the need for more accurate measurement of the raw materials charged into foundry *cupolas* (the furnaces used to melt the iron for casting); for even more uniform size, weight, and melting characteristics; and for improved charge density.

PM sales representatives Ronald E. Thrasher, Chicago (second from left) and Wilbur R. Ferguson, St. Louis (third from right) discuss the merits of the new look in pig iron with customers in the PM booth at the American Foundrymen's Society's 72nd annual Castings Congress, held in Cleveland early this May. PM introduced the new MELTRITE pig at this convention.

Always sensitive to the needs of its customers, PM's Pig Iron, Ferroalloys, and Coke Sales Division recommended to Interlake Steel the design of a new pig just half the weight of the old MELTRITE pig.

According to Elton Hoyt III, PM vice president in charge of the division, the new pig size offers a number of additional advantages to foundrymen, "*Operators of small foundries should prefer it*," he points out, "*because their cupolas are usually charged by hand, and the new pig is easier for charge crews to handle. On the other hand, operators of larger foundries should be pleased with it, too, because its smaller size is more adaptable to mechanical charging.*"

He also pointed out that the new pig causes less splash when charged into furnaces already containing molten metal, behaves better in electric furnaces, causes less abrasion of furnace linings, and has better metallurgical characteristics because of its improved surface area to volume ratio.

"*We've run into some stiff competition in the past few years, both from the scrap metal industry and from imported foreign pig iron*," Hoyt said. "*Faced with this problem, we've tried to do what free enterprise has always done when the competition gets tough . . . improve our product. Judging from early responses in the foundry industry, we've made a step in the right direction.*"

STELCO, PM DEDICATE NEW GRIFFITH MINE

On June 17th, The Honourable J. P. Robarts, Prime Minister of Ontario, officially dedicated The Griffith Mine, Canada's newest iron ore mining and pelletizing complex, during ceremonies held at the property in Bruce Lake, Ontario. The $62 million project is owned by The Steel Company of Canada, Limited and managed by Pickands Mather & Co.

Named in honor of H. M. Griffith, Stelco's President and Chief Executive Officer, the property is located about 35 miles south of the historic gold-mining community of Red Lake in northwestern Ontario. Construction of the plant, which has an annual rated capacity of 1.5 million tons, began in March, 1966, and the first pellets were shipped on March 13 this year.

During the dedication ceremonies, Prime Minister Robarts and Mr. Griffith officiated at the unveiling of a monument, made, appropriately, of Stelco's weather-resistant Stelcoloy steel and incorporating a large piece of ore from the mine with a commemorative inscription.

After a briefing and tour of the plant, the group of more than 100 officials and guests attended a luncheon hosted by F. P. Morawski, manager of The Griffith Mine. In addition to the Prime Minister, speakers at the luncheon were V. W. Scully, Chairman of the Board of Stelco, and John Sherwin, PM's Chairman of the Board.

The speakers emphasized the importance of the project to the Canadian economy, its role in Stelco's current expansion program, and the long and fruitful relationship between Stelco and PM.

The project is particularly important to Stelco because it fulfills the company's long-standing objective of developing a major source of iron ore in its home province of Ontario, and also because it increases Stelco's self-sufficiency in the raw materials required for its expanding steelmaking facilities. Pellets from the plant will be transported by rail to Fort William, Ontario, where they will be loaded into bulk ore Lakes freighters for shipment to Stelco's Hilton Works, Hamilton, Ontario.

Operating 365 days a year on an around-the-clock basis, The Griffith Mine provides new employment opportunities for over 350 men. With ore reserves estimated sufficient for 30 to 50 years of production, the property also creates a continuously increasing need for local services, supplies, and facilities.

H. M. Griffith, President of Stelco, and The Honourable J. P. Robarts (right), Prime Minister of the Province of Ontario, look on as local boy scouts unveil the Griffith Mine dedication monument. Flag is the official flag of the Province of Ontario.

Griffith Mine manager F. P. Morawski addresses guests at the dedication ceremonies.

The Griffith Mine is the latest achievement in a long association between The Steel Company of Canada and PM. For many years, PM has served as managing agent for Stelco-interest mining properties. More recently, the two firms have conducted joint exploration, research, and development programs. Much of the process technology used at this new property is based on PM's experience in operating three other iron ore pelletizing complexes partially owned by Stelco: The Hilton Mines near Shawville, Quebec; Wabush Mines, in Newfoundland and Quebec; and Erie Mining Company, Hoyt Lakes, Minnesota.

Representing the participants in the project at the dedication were a number of other directors and officers of Stelco, President Keith S. Benson and various executives from PM, and management personnel from the mine.

Government officials accompanying the Prime Minister included The Honourable A. F. Lawrence, Minister of the Ontario Department of Mines; J. M. Reid, Member of Parliament from Kenora-Rainy River; Leo Bernier, Member of the Ontario Legislative Assembly from Kenora; and J. H. Jessiman, Member of the Ontario Legislative Assembly from Fort William. Also attending were other members of the Province's Department of Mines, Department of Municipal Affairs, Department of Lands and Forests, the Ontario Water Resources Commission, and the Ontario Housing Corporation, which is building a modern housing development at nearby Ear Falls to meet the needs of mine personnel.

Other guests included representatives of Canadian National Railways, which built a 68-mile spur line to link the plant with existing rail facilities; Canada Steamship Lines Limited; Calmor Iron Bay Mines Limited, lessor of mining rights for the property; and major contractors for the project.

(A more detailed article on The Griffith Mine will appear in a future issue of the PRODUCER.)

Producer *is published four times a year, in March, June, September, and December, by Pickands Mather & Co., 2000 Union Commerce Building, Cleveland, Ohio 44115, for employees of Pickands Mather & Co., its subsidiaries, and operations under its management.*

CHEMICALS DIVISION ACQUIRES JOLIET PLANT

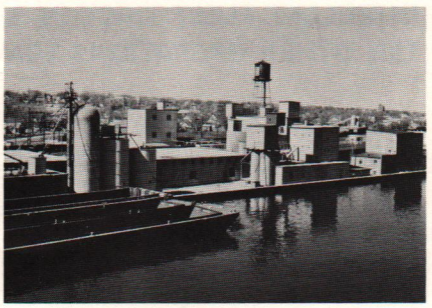
PM has announced the purchase of Johns-Manville Perlite Corporation's minerals processing plant facilities at Joliet, Illinois.

J. Thomas Wilson, formerly Production Superintendent at the Manganese Chemicals hydroquinone plant at Baltimore, has been appointed superintendent of the plant, with responsibility for getting this new facility into operation promptly.

The plant occupies a six-acre site and has a 900-foot bulkhead along the Illinois Barge Canal, which provides access for bulk shipments to both Great Lakes and Gulf Coast ports. It will be operated as part of PM's Chemical Division, a major producer of various ferrous and non-ferrous chemicals.

According to F. R. Dykstra, PM vice president in charge of the Chemical Division, "We anticipate that this action will substantially broaden our marketing scope. The Joliet site will provide a particularly effective location for the further processing of our own chemical products and various other mineral raw materials used in those markets currently served by our division." Among these diversified markets are mineral feed supplements, ferrites, foundry, and ceramic industries.

This acquisition marks another step in the continuing expansion of PM's Chemicals Division, which includes Manganese Chemicals Co., with plants in Baltimore and Kingwood, West Virginia, and the Henry Bower Chemical Co. of Philadelphia.



A partial view of PM's new minerals processing plant at Joliet, Illinois. The Illinois Barge Canal, shown in the foreground, will permit fast and efficient distribution of chemical and mineral products from the plant's extensive warehouse facilities to markets throughout the Great Lakes and Gulf Coast area.

The Joliet plant was originally designed and engineered to process bentonite, perlite, vermiculite and bauxite. Since 1959 it has been used for grinding dolomitic limestone, siderite, alumina and various other raw materials. Facilities include several grinding circuits of various types, perlite and vermiculite expansion equipment, and extensive blending and packaging units. There are also more than 50,000 square feet of modern warehouse capacity supplemented by large bulk storage silos.

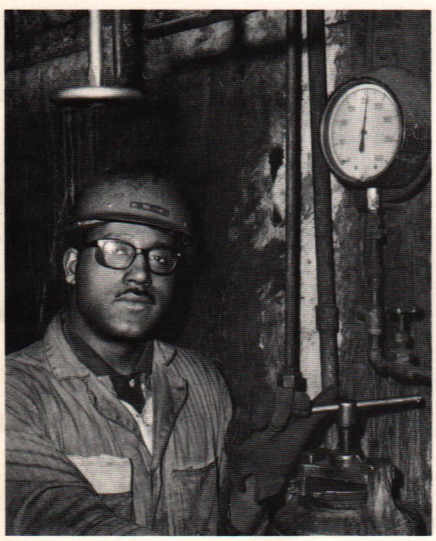
PM SPONSORS AWARD-WINNING JUNIOR ACHIEVERS

Fresko, a Junior Achievement company sponsored by PM employees in Hibbing, Minnesota, was named winner of the local JA "Company of the Year" award

Continued on page 18

PM advisors of Fresko, *the Junior Achievement "Company of the Year" in Hibbing, Minnesota, pose with a sample of* Fresko's *product in front of the PM Metallurgical and Research Laboratory in Hibbing. Left to right: Joe Plaistow, Charles Danielson, and Robert Ives, all employees of the Laboratory. Right, Russell W. Anderson, assistant superintendent of the Mahoning Mine.*

Russell McLean



MILWAUKEE EMPLOYEE FEATURED AS EXAMPLE OF EQUAL OPPORTUNITY

The achievement record of Russell McLean, boilerhouse employee at PM's Milwaukee Solvay Coke Co. division, was featured recently as an example of equal employment opportunity in a special issue of the *Greater Milwaukee Star*, a Negro-oriented newspaper serving the greater Milwaukee area. McLean, who recently received his Second Class Stationary Engineer's License, began work at Milwaukee Solvay in 1961 as a coke ovenman.

Described in the *Star* article as being "determined and willing to make the sacrifices and studies necessary for a better job," McLean plans to qualify eventually for his First Class license, because, he says, "I'd like to go into supervision."

The section of the *Star* that carried the article, along with a photo of McLean, was a special June Graduation supplement designed to motivate young people and assure them that opportunity awaits them if they are willing to apply their abilities and develop their qualifications.

PM is a member of the Plan For Progress, which in effect assures the federal government that the company's long-standing policy of equal employment opportunity will be continued.

Continued from page 17

at an awards dinner held in Hibbing recently.

Fresko's product, a pivoted assembly of small jars for organizing storage of small items, was evidently a popular seller. In addition to the "Company of the Year" award, *Fresko* Junior Achievers won a number of individual awards for their successful participation in the program, including three $100 scholarships.

Russell Anderson was management advisor to the teen-age *Fresko* executives, Joe Plaiston was sales advisor, and Charles Danielson and Bob Ives were production advisors.

A PRODUCER salute to another winning PM team!

Junior Achievement is an international non-profit organization dedicated to teaching teen-agers the principles of free enterprise. Youngsters who join JA organize companies under the guidance of volunteer adult advisors from the business community, incorporate, sell shares of stock, select a product or service for their company to sell, and go through all the stages of a normal business cycle, over a 30-week period. Profit or loss from the company's operation is a measure of its success or failure.

PM people at all locations who would like to receive information on how to sponsor Junior Achievement companies should contact their local management or write directly to the PRODUCER.

INTERLAKE FLEET FIRST IN SAFETY TEN OTHER OPERATIONS WIN AWARDS

PM's Interlake Steamship Co. division fleet was the winner of the National Safety Council Great Lakes straight-deck bulk cargo carrier safety competition for the 1967 shipping season. Interlake ships are flying special Safety Council flags this year in recognition of this achievement. Interlake placed second in this competition for three consecutive years prior to 1967, and last won the contest in 1950.

Ten fleets, representing approximately 75% of the American flag bulk cargo capacity, and one Canadian fleet, with about one quarter of that country's capacity, participate in the competition.

The Interlake ships will fly white Safety Council flags with the Council's emblem in green and the words "1967 Winner". Interlake's Steamer FRANK PURNELL, the company's only self-unloader, which competed in a special category for that type of vessel, will not be entitled to fly the special flag. This ship, which has operated as a self-unloader since the summer of 1966, has a clean safety record, but finished second in the self-unloader class because it had accumulated fewer accident-free manhours than the first place winner.

Thirteen of the 15 Interlake ships that operated in 1967 won individual safety awards from the Council, for a cumulative total of more than 3.8 million manhours worked without a disabling injury, over periods ranging as long as 15 years.

Fourteen vessels of PM's Interlake Steamship Co. fleet are flying special National Safety Council flags this season in recognition of the fleet's having won the Council's Great Lakes straight-deck bulk cargo vessel safety contest for the 1967 sailing season. Safety Council and company officials raise the flag in a ceremony held at Cleveland aboard the Steamer SAMUL MATHER, in May. The MATHER holds the Interlake fleet safety record of more than 14 seasons of operation without a disabling injury to its crew. This period represents a total of almost 950,000 manhours worked abard the ship.

Commenting on the fleet's achievement, PM Executive Vice President Robert S. Carey said, "Emphasis on safety is a long-standing tradition in the Pickands Mather organization, and we are very proud of the safety record of the Interlake fleet. Winning this competition would not have been possible without the wholehearted participation of our vessel

SERVICE AWARDS

Congratulations to the following employees who qualified for service awards representing 25 or more years of service with the PM organization during the second quarter of 1968.

Chisholm Mine

R. Berry . . . . . 35 years

Cleveland

J. H. Bemis . . . . . 40 years
R. G. Sawyer . . . . . 25 years

Danube Mine

V. Bowman . . . . . 25 years
R. Moren . . . . . 25 years
G. Uremovich . . . . . 25 years

Erie Dock

F. A. Greene . . . . . 25 years
F. L. Stepic . . . . . 25 years

Erie Mining Company

H. A. Erickson . . . . . 25 years
F. E. Maxfield. . . . . 25 years
P. J. Schuster . . . . . 25 years
C. A. Sedgeman . . . . . 25 years
R. W. Shain . . . . . 25 years
C. H. Verplaetse . . . . . 25 years

Interlake Steamship Co. Division

G. R. Coughlin . . . . . 40 years
G. A. Hanson . . . . . 40 years

Mahoning Mine

C. W. Martinson . . . . . 45 years
J. F. Wiehe . . . . . 45 years
D. D. Finney . . . . . 30 years
G. G. Finney . . . . . 30 years
L. E. Newman . . . . . 25 years

Milwaukee Solvay Coke Co. Division

I. Van Ess . . . . . 45 years

personnel. This achievement is a good example of what can be accomplished by management and employees working together toward a common goal."

Continuing aggressive safety programs have also paid off at a number of other PM-managed operations. The Toledo Lakefront Dock Co., Toledo, Ohio, of which PM is joint manager, received its second consecutive Award of Honor, the Council's highest recognition, based on a comparison of its safety record over the past three years with that of the stevedoring industry as a whole.

The Scully Mine, Wabush, Labrador won the first of what we hope will be a long series of safety awards, receiving the Safety Council's second-highest recognition, the Award of Merit, for 834,616 manhours worked without a disabling injury, during the period from October 15, 1967 to March 9, 1968.

Awards of Merit were also received by The Erie Dock Company, Cleveland, and the Ashtabula & Buffalo Dock Company, Ashtabula, Ohio.

PM's Metallurgucal and Research Laboratory, Hibbing, Minnesota, won an NSC Certificate of Commendation, as did Portage Coal & Dock Company, Hancock, Michigan, and the Harbor Area Department of Erie Mining Company, Taconite Harbor, Minnesota. The Detour Dock Company, DeTour, Michigan, won a Safety Council President's Letter award.

"ALL GALL, ETC."

A small boy was asked in hygiene class to enumerate the parts of the human body. After much pencil chewing, he came up with this:

"Our body is divided into three parts, the *brainium*, the *borax*, and the *abominable cavity*. The *brainium* contains the brain, if any. The *borax* contains the lungs, heart, and liver. The *abominable cavity* contains the bowels, of which there are five—a, e, i, o, and u."

SCULLY MINE GRADUATES SECOND GROUP OF APPRENTICES

Eleven employees of the PM-managed Scully Mine, Wabush, Labrador, have received Apprenticeship Program graduation certificates from Wabush Mines and the Newfoundland Department of Labour.

Mr. Howard Noseworthy and Mr. George Sellars of the Department of Labour came to Wabush to make the official presentation. R. C. Baxter, Resident Manager at the Scully Mine represented the company.

To qualify in the Apprenticeship Program, apprentices follow a 12-month course in a specific trade in one of the recognized trade schools in Newfoundland. They are then employed in their trade by the company as apprentices for a period of 2½ years. After this period they work as "Improvers" for another year before becoming Journeymen. During this time, the apprentices attend four hours per week of organized technical instruction by the Company's Training Department, and they take written and practical examinations every six months.

The eleven employees who received their certificates are now recognized as Journeymen by both the company and the Provincial Department of Labour. The ten men pictured below are the first to graduate in Mechnical Maintenance at Scully Mine. Through joint planning and effort by Wabush Mines and the Newfoundland Department of Labour, a new program has been established opening new fields to Trade School students.

This is the second group of apprentices to graduate at Scully Mine and plans are already in progress to start a new program in September of this year.

Smiling Clarence Barnes receives his graduation certificate from Howard Noseworthy, Apprenticeship Officer of the Newfoundland Department of Labour. Roy Legge, Supervisor Industrial Relations, Scully Mine, Eric Williams, Training Supervisor and R. C. Baxter, Resident Manager are also enjoying the moment. (Come, now, Clarence! Were you really that *amazed when your name was called?)*

Seated, left to right: George Sellars, Apprenticeship Branch, Newfoundland Department of Labour; Nels Sheren, Superintendent, Mechanical Maintenance, Scully Mine; R.C. Baxter, Resident Manager, Scully Mine; Garland Jennings, Superintendent, Electrical Maintenance, Scully Mine; Howard Noseworthy, Apprenticeship Officer, Newfoundland Department of Labour. Standing: Instructor Bob Ross; Apprentices Ron Farrell, Terry Pinsent, Cyril Squires, Wilson Purchase, Fred Grandy; Scully Mine Training Supervisor Eric Williams; Clarence Barnes, Mel Warren, Ted Pike, Lee Loder, Art Coward; and Instructor Lloyd Murchy. (Also graduating, but not present when the photos were taken, was H. Maddox, who received his Journeyman rating in Instrumentation.)

Producer

PICKANDS MATHER & CO.
2000 Union Commerce Building
Cleveland, Ohio 44115 U.S.A.

Return Requested

14092 MISSON ZENON
P.O. BOX 636
WABUSH, LABRADOR

industry notes

LARGEST POWERHOUSE

The 7 million horsepower Churchill Falls hydroelectric development, now under construction in central Labrador near Twin Falls, which furnishes power for the Scully Mine, will have the world's largest underground powerhouse, equivalent in size to a 16-story building. At its deepest, the excavation for it will be 984 feet below the surface.

SOVIET TROUBLES

An article in Pravda blames shortcomings of the Ukranian steel industry on low iron content in Russian-mined iron ore, claiming blast furnace charge Fe content is 2% lower than the planned 63.5% and this reduces blast furnace productivity by 4% to 6%. Russia is the world's largest producer of iron ore.

NATIONAL PAY CUT?

According to the U. S. Dept. of Labor, the average earner's weekly pay reached a record of $104.63 in April. However, inflation has cut real spendable earnings to $77.64 (in terms of 1957-59 dollars) for a worker with three dependents. Unless inflation can be stopped, our purchasing power will continue to decline.

LADY SAILORS

Lady sailors may appear soon on the decks of Norwegian vessels, according to the *Wall Street Journal*. A shortage of seamen has led one shipping company there to advertise for female deck hands. The Norwegian seamen's union has approved the idea, and several women have already applied.

FRIGHTENING ODDS

A Harvard University traffic safety expert estimates the average American's chance of being seriously hurt or killed in a traffic accident within the next 15 years is one in ten. Use those seat belts . . . you're gambling with the rest of your life, whether you want to or not, whenever you get into a car!

COAL RESOURCES

A U. S. Geological Survey report estimates total coal resources still in the ground at over 3 trillion tons. A U. S. Bureau of Mines report estimates that actual recovery at existing mines is averaging about 57%. Total consumption of U. S. coal in 1967 was 530 million tons. At this rate of use, we have enough coal in the ground to last another 2,800 years.

LARGEST LAKER

A 1000-foot Great Lakes bulk carrier vessel capable of carrying 51,500 gross tons of iron ore pellets has been ordered by a major steel company fleet for delivery in 1970. Maximum carrying capacity of Lakers now sailing is 25,000 to 27,000 tons. Construction of new, larger size vessels is now possible because of increased size of a new, larger size lock almost ready for use at Sault Ste. Marie.

U. S. STEELMAKING CAPACITY UP

The raw steel capacity of the U. S. rose an estimated 3 million tons during 1967, to a total of 187 million net tons, according to a Dow-Jones survey of steelmakers, engineers, and steel financial analysts. This was smaller than increases of 6 million tons in 1965 and 10 million tons in 1966.

$250,000 QUESTION

As part of a $250,000 program in Puerto Rico, a federal agency surveyed 1,500 islanders to find out what makes them happy. Some of the answers: Healthy people happier than sick people. Positive thinkers happier than negative thinkers. High-paid people happier than low-paid people. Young people happier than old folks. Question: Would taxpayers be happier if government agencies spent their money less foolishly?

COMPETITION FOR CANS?

A German firm claims to have a plastic beer bottle with walls thin enough to be economical, strong enough to contain gas pressure, almost ready for production. The U. S. plastics industry says American engineers haven't progressed quite this far, but plastic beer bottles may some day compete with glass bottles and steel cans.

PENNSYLVANIA IRON ORE?

An aerial magnetic survey of 8,000 square miles in southeastern Pennsylvania indicates possible iron ore concentrations there that warrant further investigation, according to a U. S. Geological Survey report. There appear to be two bands of magnetic ore in fairly close proximity to major steel producing centers.

BRAZILIAN ORE TO EAST

In Brazil, the government-owned iron ore company is forming a new subsidiary in Zurich, Switzerland to promote and handle sales of iron ore to Eastern Europe, according to a leading mining journal.

Printed in U.S.A.