Jet Smelting Of Iron May Be Feasible Soon

By GREG MacDONALD
Canadian Press Staff Writer

Jet smelting—a one step process for making pig iron with the use of natural gas — may soon be commercially feasible.

The Ontario Research Foundation, which has been working on the process for the last four years and which owns exclusive rights to it, recently developed an experimental furnace with a one-ton capacity.

R. L. Cavanagh, director of the foundation's metallurgical engineering research division, says jet smelting is intended for relatively small-scale operations, from 25 to about 200 tons a day capacity.

"But," says Mr. Cavanagh, "the process is still in the experimental stage and although results have been encouraging it is not yet ready for commercial use."

The process when developed, will make possible exploitation of small iron ore bodies or will permit foundries to operate their own ore reduction plant.

The foundation says it will enter into licensing agreements with companies for the use of the process and is also prepared to provide the engineering and research to adapt the process to specific smelting requirement when it reaches the commercial stage.

The foundation was recently awarded $50,000 by the Ontario mines department for further development of jet smelting through the use of natural gas.

In the process, high - grade iron concentrate is fed into a natural gas and oxygen flame—jet flame — which is directed downward to a pool of molten iron and slag at the base of the furnace.

The flame heats the ore particles to a temperature of about 3,600 degrees fahrenheit. The molten ore particles are then driven into a previously established bath of molten iron in the furnace hearth. The iron pool is maintained at a high carbon level so that any unreduced iron is reduced in the slag layer. Lime and carbon may be introduced with the feed or added to the bath. The molten iron and slag are tapped off periodically.

This system of smelting contemplates the use of exhaust gases for preheating the ore feed and gas and oxygen supply.

In a commercial plant gases would probably also be recycled to derive the most benefit from their high reducing power. The final exhaust would still contain an appreciable amount of hydrogen and carbon monoxide and thus have the residual energy required to operate an oxygen-manufacturing plant or to provide heat for auxiliary purposes.

Pearson Is Visitor At Curling

BRANDON, Man. (CP)—Liberal Leader Pearson paid his respects to curling Thursday but with no thanks from the dour Scot masters of the game.

Driving from Brandon, where he spoke to a college Liberal rally, to a farm supper at Portage la Prairie, Mr. Pearson stopped at the Wheat City Arena to see the eighth draw of the Canadian curling championships.

His first itinerary mentioned him throwing the first rock in the event, but a local storm welled up with curling officials being quoted as saying they wouldn't have the sports event turned into a political rally.

Mr. Pearson spent about 25 minutes seated in a guest box high over an entranceway on one side of the ice. His arrival and departure were not announced and he made no appearance on the ice.

At Carberry, on the way to Portage, about 100 persons gathered on the main street in front of the Legion hall and Liberal committee rooms, and Mr. Pearson went mainstreeting on both sides of the town's business section.

At MacGregor, it was snowing heavily but about 50 people were gathered in front of a cold storage locker building. Mr. Pearson playfully tossed snowballs, and was splattered with one.

RIPLEY'S BELIEVE IT OR NOT

CONTRACT BRIDGE

By B. JAY BECKER

West dealer.
Neither side vulnerable.

NORTH
♠ J 10 6 3
♥ 10 7 2
♦ Q J
♣ J 10 6 3

WEST
♠ K 7 4
♥ K J 8 4
♦ 6 2
♣ A 9 8 7

EAST
♠ A Q 9 8 2
♥ A 6
♦ 10 9 7 5 3
♣ Q

SOUTH
♠ 5
♥ Q 9 5 3
♦ A K 8 4
♣ K 5 4 2

The bidding:

West	North	East	South
Pass	Pass	1♠	Dble
Redble	Pass	Pass	2♠
Dble	Pass	Pass	Redble

Opening lead—four of spades.

The language of bidding in bridge contains only 15 words! The operative words are the numbers one to seven, spades, hearts, diamonds, clubs, no-trump, double, redouble, and pass. Nevertheless, despite this limited vocabulary, a good pair will describe their hands adequately and reach the best contract the overwhelming majority of times.

But even good players occasionally get confused about the meaning of the various words. Here is a hand played in a team match where the players got their wires badly crossed.

At the first table, South doubled the spade bid and West redoubled, showing 10 or more points. North, with no convenient bid, passed, and East did likewise. South then bid two clubs, which West doubled.

South became panic-stricken, holding such poor clubs, and redoubled. He intended the bid as an SOS, and was trying to get North to name diamonds or hearts, for which he had good support. But North apparently misunderstood the call for help and passed.

A spade was led and returned. Declarer ruffed, played a diamond to the jack, ruffed a spade, and played a diamon to the queen to ruff dummy's last spade, trumping with the king. West overruffed and returned the seven of clubs, the ten losing to the queen. Declarer later made two more tricks, but went down two redoubled—600 points.

The East-West pair had every reason to think they had achieved a good result, but this was the bidding at the second table, when their teammates held the North-South cards:

Here, also, South made an SOS redouble, begging partner to choose a suit. But the North player at this table was also impervious to South's plea, so the final contract was one no trump redoubled.

West led a low spade. Ten lost to the ace and a spade was returned. The declarer eventually made only three tricks, going down four—1,400 points!

Obviously, the bridge vocabulary isn't big enough!

DAILY CROSSWORD

ACROSS
1. Young deer
6. Muffler
11. Hawaiian flower
12. Set between pals
13. Pygmy antelope: Afr.
14. Boxing site
15. Goddess of dawn
16. Two-footed animals
17. King's chair
20. Misrepresent
22. Famous golf pro
26. Had debts
27. Old capital: Ir.
28. Basquelike cap
30. Wild
31. Brambles: var.
38. Lament
36. Mischief
39. Above a whisper
40. Greek letter
42. By oneself
43. —— post
44. Smooths with abrasive paper
45. Louis

DOWN
1. North Atlantic hayard
2. Of the air (combining form)
3. American painter
4. Gist
5. Cebine monkey
6. Young gallants: post.
7. A wood worker, as house builder
8. Author of "A Death in the Family"
9. Rip with violence
10. Monks (titles)
16. Tramp
18. Obstinately conservative
19. Music note
21. Comedian Hope
21. Female sheep.
33. An abalone
24. Macaw: Braz.
25. Split pulse
29. Exchanges
30. Music note
32. At home
33. Sounds of sheep
34. Girl's name
35. Earth's satellite
37. Eye
38. Shore recesses
40. Japanese sash
41. Middle

Yesterday's Answer

DAILY CRYPTOQUOTE — Here's how to work it:
A X Y D L B A A X B
is L O N G F E L L O W

One letter simply stands for another. In this sample A is used for the three L's, X for the two O's, etc. Single letters, apostrophies, the length and formation of the words are all hints. Each day the code letters are different.

A Cryptogram Quotation

P D X C S G K I N U U B I K X T G X E ' H K W O D F D N A B W H Y N Q O D F W A F X D W E U C I F . — C E P W A T N K M - D N T

Yesterday's Cryptoquote: TO LOVE A FRIEND IS THE GREATEST OF ALL EVILS.—SENECA

(© 1963, King Features Syndicate, Inc.)

OUR BOARDING HOUSE MAJOR HOOPLE

TV. CALLS

NITE or DAY
Day 4-3537 Nite 4-4503—4-7462

VAIL'S RADIO & TV.
304 Kent St. Ch'town

ON THE AIR

SATURDAY PROGRAMS

CFCY-TV

2.30 P.M.—Musicale
3.00 p.m.—World of Sport Curling—Que. vs. Sask.
4.00 p.m.—World of Sport—Figure Skating Championships
5.00 p.m.—Gateways 1963
6.00 p.m.—Kingfisher Cove
6.31 p.m.—Fishermen's Log
6.46 p.m.—CFCY TV News and Weather
7.01 p.m.—Country Time
7.30 p.m.—To Tell The Truth
8.00 p.m.—Beverly Hillbillies
8.30 p.m.—Cinema 13-7—To Shores of Tripoli
9.00 P.M.—NHL Hockey New York at Montreal
11.15 p.m.—Juliette
11.45 p.m.—Let's Talk About It
12.00 p.m.—CBC TV News
12.08 a.m.—Local Weather
12.09 P.M.—The Late Show The Ghost That Walks Alone

CENTRAL RADIO and TV
Call 4-8246
Open 8:30 a.m.-9 p.m.
176 Kent St. (Opp. Eaton's)

CKCW-TV

11.25 a.m.—Sign On
11.30 a.m.—Comment and Conviction
12.00 p.m.—Top Ten Plus
3.00 p.m.—World of Sport Curling—Que. vs. Sask
4.00 p.m.—World of Sport Figure Skating Championship
5.00 p.m.—The Lawman
5.30 p.m.—Bugs Bunny
6.00 p.m.—Kingfisher Cove
6.30 p.m.—The Early Show Next to No Time
8.00 p.m.—Beverly Hillbillies
8.30 p.m.—Hennessey
9.00 p.m.—The Untouchables
10.00 p.m.—NHL Hockey New York at Montreal
11.15 p.m.—Juliette
11.45 p.m.—Sports Unlimited
12.00 p.m.—CBC TV News
12.10 a.m.—CKCW-TV News
12.15 a.m.—The Late Show End of the Affair

SUNDAY PROGRAMS

CFCY-TV

12.30 p.m.—Musicale
1.00 p.m.—Hour of St. Francis
1.30 p.m.—Country Calendar
2.00 p.m.—All Star Golf
3.00 p.m.—Time of Your Life
4.00 p.m.—Speaking French
4.30 p.m.—Heritage
5.00 p.m.—Twenty-Twenty
6.27 p.m.—CBC TV News
6.30 p.m.—Twentieth Century
6.00 p.m.—Citizen's Forum
6.30 p.m.—Nature of Things
7.00 p.m.—Best of the Past
7.30 p.m.—Father Knows Best
8.00 p.m.—Hazel
8.30 p.m.—Flashback
9.00 p.m.—Ed Sullivan
9.00 p.m.—Bonanza
10.00 p.m.—Close-Up
11.30 p.m.—Quest
12.00 p.m.—CBC TV News
12.08 a.m.—Local Weather
12.09 a.m.—Sign Off

CKCW-TV

12.55 p.m.—Station Sign On News, Weather, Sports
1.00 p.m.—Oral Roberts
1.30 p.m.—Country Calendar
2.00 p.m.—Faith In Action
2.30 p.m.—The Christophers
3.00 p.m.—Youth Concert
4.00 p.m.—Speaking French
4.30 p.m.—Heritage
5.00 p.m.—Twenty Twenty
5.27 p.m.—CBC News
5.30 p.m.—20th Century
6.00 p.m.—Citizen's Forum
6.30 p.m.—Nature of Things
7.00 p.m.—Going My Way
8.00 p.m.—Hazel
8.30 p.m.—Flashback
9.00 p.m.—Ed Sullivan
10.00 p.m.—Bonanza
11.00 p.m.—News Special—Cuba
11.30 p.m.—Quest
12.00 p.m.—CBC TV News
12.10 a.m.—CKCW TV News

CFCY RADIO

SATURDAY

4.28—Sign On
4.30—News & Weather
4.35—Country & Western Roundup
5.00—News & Weather
7.00—Hebrew Christian Hour
7.15—Country & Western Roundup
7.30—News & Weather
8.00—CFCY Farm Report
7.41—Country & Western Roundup
8.00—News
8.11—Weather
8.15—Country & Western Roundup
8.45—Weather
8.50—Atlantic News
8.57—Be Still and Know
9.00—News & From Our Own Correspondent CBC
9.10—Keyboard Melodies
9.20—Melodoy Parade
10.00—News & Weather
10.05—Melody Parade
11.00—News Headlines & Weather
11.02—Magic Of Music
11.55—Atlantic News Roundup
12.00—Weather
12.05—Clare Burt Show
1.00—Band Parade
2.30—News & Weather
2.43—P.E.I. Road Report
2.45—Mostly Music
3.00—News Headlines & Weather
3.02—Mostly Music
3.30—I.Q. Quiz
4.00—News & Weather
4.05—Hits & Encores
5.00—News & Weather
5.05—Saturday Hit Parade
6.00—News & Weather
6.45—Saturday Hit Parade
6.50—The Outports
7.00—News & Weather
7.05—The Outports
5.25—Marine Weather
5.28—The Outports
6.00—News & Weather
6.15—Sports Parade
6.20—Report From Parliament Hill
6.30—Waltztime
6.45—The Magic Carpet
7.00—Back To The Bible
7.30—News & Weather
7.45—Saturday Night Hoedown
9.25—CBC National News
9.30—National Hockey League Game CBC
11.30—Music 'till Midnight CBC
12.00—Marine Weather CBC
12.10—Sign Off

CBA

SATURDAY

6.00—Music On The Menu
8.00—News & Island Weather CBC
8.13—Maritime Sportscast and Sports Interview
8.30—Sports College
8.45—Songs Around The World, Jr. Farm B'cast
9.00—CBC News From our own Correspondent
9.11—Music For Saturday
10.15—Matinee Highlights
10.45—Saturday Date
11.45—CBC Camera Club
12.00—Luncheon Date
12.30—Maritime Farm and Jr. Farm B'cast and Program Preview
1.00—CBC Inland News & Weather
1.15—Songs From Here and There
1.30—Mood Latine
1.59—D.O. Time Signal
2.00—Off The Record
2.45—Chansonnettes
3.00—Time For French
4.30—Pratley At The Movies
7.00—CBC News
7.07—Inland and Marine Weathtr
7.15—Looking Through The Papers
7.30—On The Move
8.00—U.N. Radio
8.15—Pick Of The Pops
9.00—Best Of Dixie
9.25—CBC News
9.30—NHL Hockey
11.30—Music Till Midnight
12.00—Marine Weather
12.15—Inland Weather

CFCY RADIO

SUNDAY

7.30—Sign On
7.32—Sacred Heart Program
7.47—News & Weather
8.00—La Bonne Nouvelle
8.30—Radio Bible Class
9.00—News & Weather
9.10—Sunday School By Radio
9.30—Bible Institute Broadcast
10.00—Sunday Morning Magazine CBC
10.30—Weather & Maritime Gardener
10.45—Neighbourly News
11.00—Local Church Service
12.10—Piano Classics
12.30—Old Fashioned Revival Hour
1.00—News & Weather
1.15—Tell Us A Story
1.30—Voice Of Prophecy
2.00—News CBC
2.03—Capital Report CBC
2.30—World Vision
3.00—Where The Bible Speaks
3.30—Church Of The Air CBC
4.00—News CBC
4.03—Hebrew Christian Hour
4.15—Bible Chapel Broadcast
4.30—Hour Of Decision
5.00—Project '63 CBC
6.00—News & Weather
6.15—Be Still and Know
6.30—Unshackled
7.00—Peoples Gospel Hour
7.30—Family Bible Hour
8.00—CBC Stage CBC
9.00—Music Styled By CBC
9.30—On The Move CBC
10.00—CBC National News
10.10—Weekend Review & Our Special Speaker CBC
10.30—Carl Tapscott Singers
11.00—News & Regional Weather
11.05—Starlight Serenade
11.30—News Headlines & Maritime Weather
11.35—Starlight Serenade
12.00—News, Regional Weather & Sports Scores
12.05—Sign Off

CBA

SUNDAY

7.15—Inland & Marine Weather and Music For Sunday
8.45—World Church News
9.00—CBC News
9.05—Postmark U.K.
9.30—Inland Weather and Mar. Gardener
9.45—Neighborly News
10.00—Sunday Morning Mag.
10.30—CBC Halifax Concert Orch.,
11.00—News, Inland and Marine Weather and Intermission
11.30—Choral Encores
12.00—Rod and Charles
12.30—I.Q.
1.00—BBC News and Commentary
1.15—Inland and Marine Weather
1.30—Carl Tapscott
1.59—D.O. Time Signal
2.00—News CBC
2.03—Capital Report
2.30—Sunday Con., CBC Symphony Orchestra
3.30—Church of the Air
4.00—CBC News
4.03—Critically Speaking
4.45—Performers Choice
5.00— Project '63
6.00—News and Weather
6.10—In Reply
6.30—New York Philharmonic
8.00—CBC Stage
9.00—Music Styled by Lucine Agustine
9.30—On The Move
10.00—CBC Nat., News, Weekend Review and Our Special Speaker
10.30—Famous Canadian Trials
11.00—Symphony Hall
12.00—Marine Weather
12.09—Inland Weather
12.12—Northern Messenger