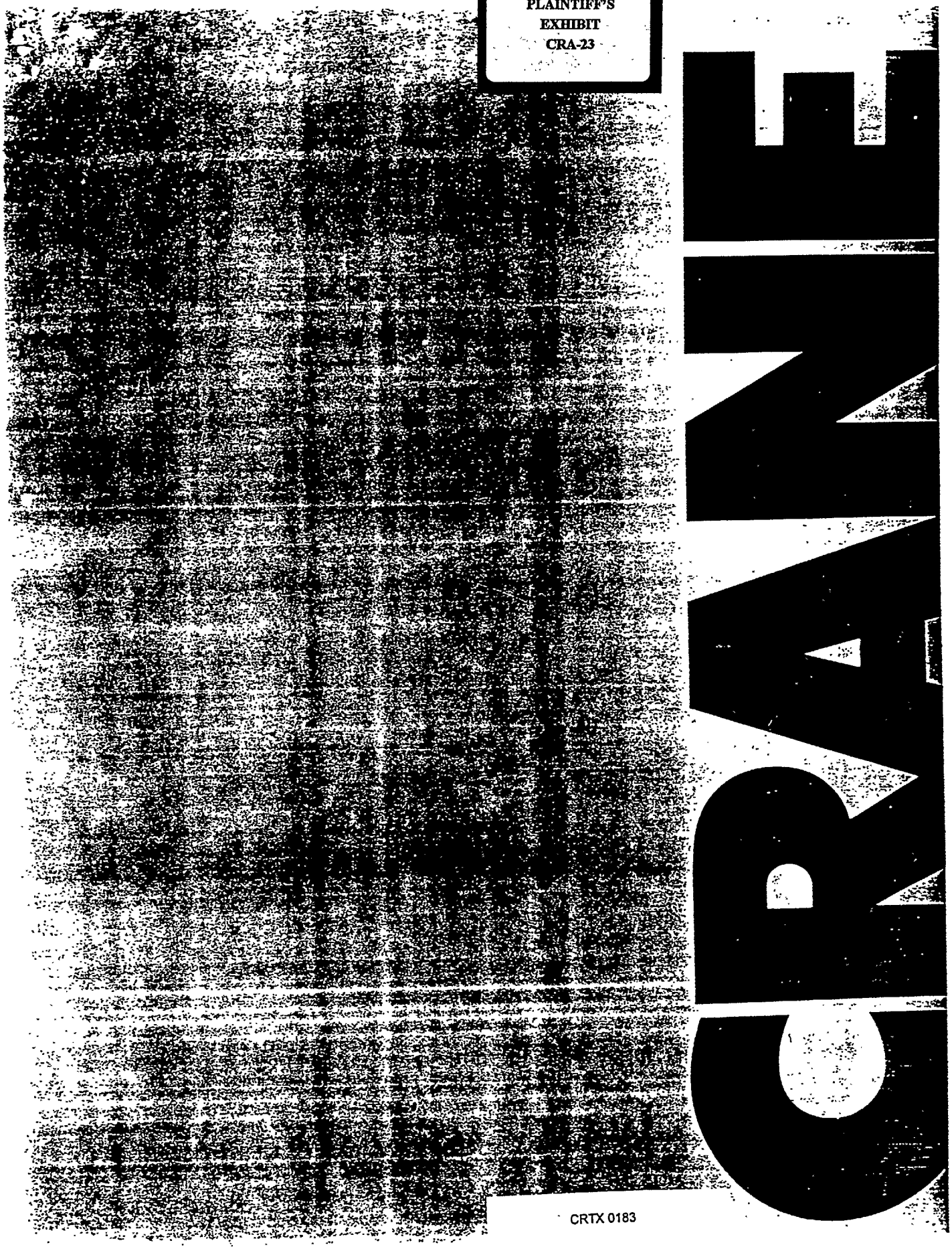
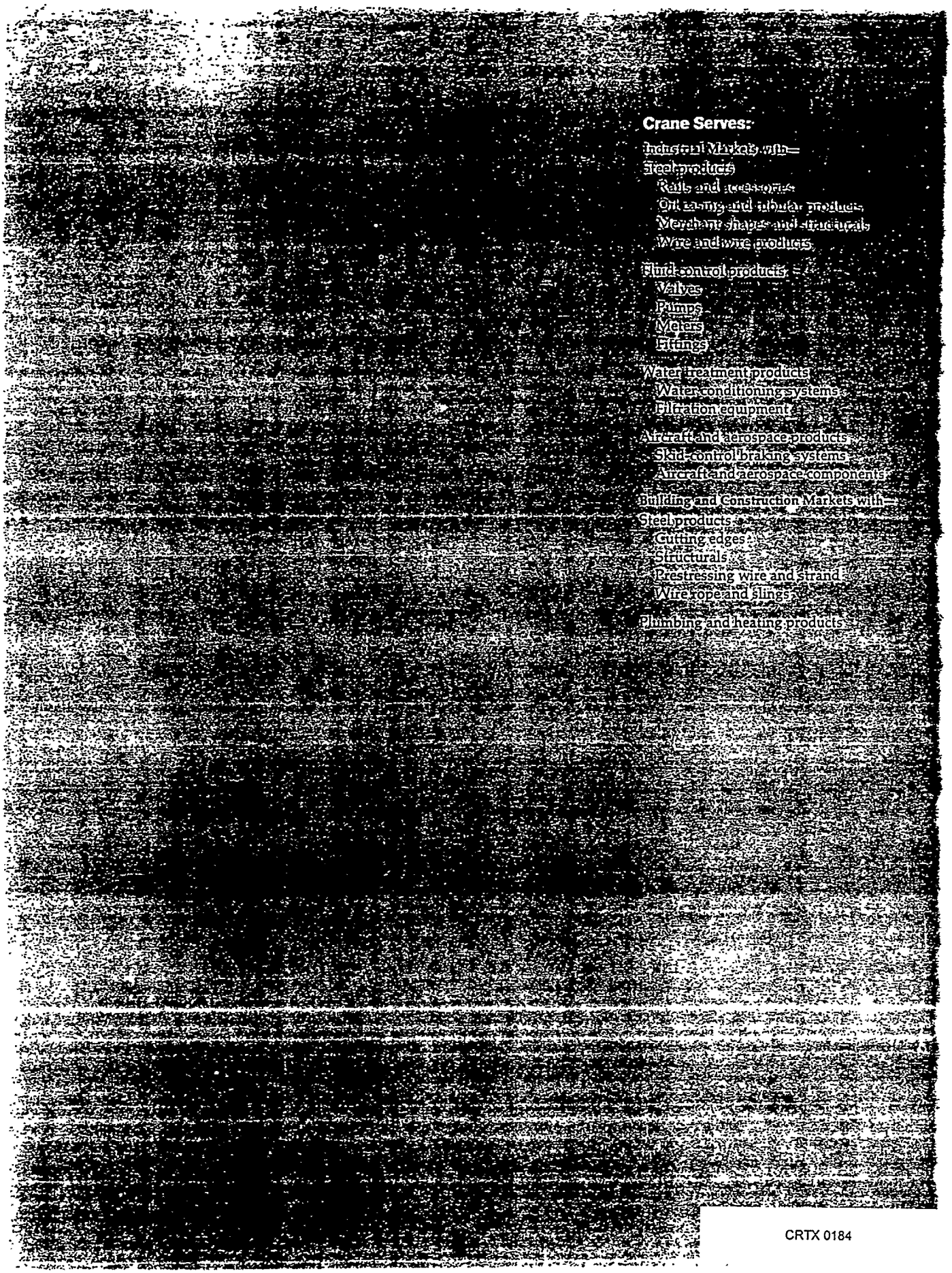
PLAINTIFF'S
EXHIBIT
CRA-23





Crane Serves:

Industrial Markets with—
Steel products
- Rails and accessories
- Oil casing and tubular products
- Merchant shapes and structurals
- Wire and wire products

Fluid control products
- Valves
- Pumps
- Meters
- Fittings

Water treatment products
- Water conditioning systems
- Filtration equipment

Aircraft and aerospace products
- Skid-control braking systems
- Aircraft and aerospace components

Building and Construction Markets with—
Steel products
- Cutting edges
- Structurals
- Prestressing wire and strand
- Wire rope and slings

Plumbing and heating products

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Annual Meeting

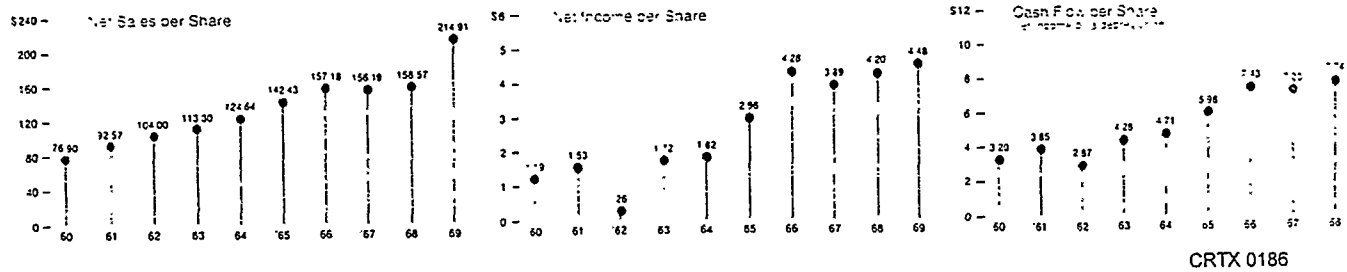
The Crane Co. 1970 annual meeting will be held Tuesday, April 28, 1970, at Morgan Guaranty Hall, 28th floor, 15 Broad Street, New York City, starting at 10 A.M.

Finar.cial Highlights

	1969	1968
Sales	$550,707,000	$409,549,000
Income before net extraordinary credit	9,493,000	8,495,000
Net income	11,602,000	10,998,000
Cash dividends	4,141,000	4,136,000
Net working capital	194,321,000	122,103,000
Total assets	577,410,000	295,315,000
Common shareholders' equity	146,094,000	140,514,000
Common shares outstanding at year end	2,543,015	2,532,012
Ratios at year end:		
Net income to sales	2.1%	2.7%
Common shareholders' net income to average equity	8.1%	7.9%
Current ratio	3.1	4.1
Per common share:		
Income before net extraordinary credit	$ 3.66	$ 3.23*
Net extraordinary credit	.82	.97*
Net income	4.48†	4.20*
Depreciation	5.60	3.54*
Cash flow from operations	10.08	7.74*
Cash dividends	1.60	1.60
Common shareholders' equity	57.45	54.41*

*Adjusted for 2% stock dividend in December, 1969.

†Assuming conversion of subordinated debentures, net income per common share would amount to $3.67 ($3.96 in 1968).



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To our shareholders:

Last year Crane Co. made progress in a number of directions. The major accomplishment was the acquisition of more than 84 per cent of the common stock of CF&I Steel Corporation. At year end, after repurchases in the open market, there were issued and outstanding a net amount of $52,077,200 in 7 per cent subordinated debentures and $48,552,900 in 5 per cent convertible subordinated debentures, convertible at $57.50, each due in 1994, covering the purchase of 2,897,480 shares of CF&I common. In addition, Crane purchased 458,900 CF&I common shares in the open market for $11,761,230. The acquisition of CF&I has put Crane into a new and promising business and has lessened its dependence on overseas operations.

CF&I is a vertically integrated steel company operating its own railroad and coal, iron and limestone mines. In addition to the main plant at Pueblo, Colorado, CF&I operates plants in New Jersey, Massachusetts and California. Crane believes that the growth prospects for steel products in the territory served by the Pueblo plant are extremely promising. CF&I also has outlying lands in Colorado, Wyoming, Utah, South Dakota and New Mexico, consisting of 380,000 acres of land and 10,000 acres of mineral rights, in addition to its holdings in Pueblo.

Consolidated net sales of Crane Co. in 1969 totaled $550,707,000, an increase of 35 per cent over the $409,549,000 recorded in 1968. Net income for the year was $11,602,000, equal to $4.48 per share, compared with $10,998,000, or $4.20 per share in 1968. The inclusion of CF&I for the last six months of 1969 was the primary reason for the substantial increase in sales and the modest improvement in net income.

Excluding non-recurring extraordinary credits, net income per share was $3.66 in 1969 and $3.23 in 1968. The 1969 extraordinary after-tax credit of $2,109,000 was from the sale of real estate not used in the business. In 1968, the extraordinary credit was from a net $5,027,000 gain on sale of securities, less a net $2,524,000 loss on start-up costs of new plants and disposal costs sustained in closing old plants.

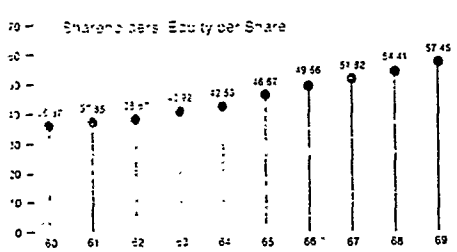
Cash flow (net income plus depreciation) amounted to $25,957,000, or $10.08 per share in 1969, compared with $20,143,000, or $7.74 per share in 1968. Consolidated net working capital at December 31, 1969, was $194,321,000. During 1969, common shareholders' equity increased from $54.41 to $57.45 per share. During 1968 and 1969, the cash dividend of $1.60 per share was maintained and a 2 per cent stock dividend was again paid in December, 1969. All per share statistics have been adjusted to reflect this stock dividend.

Crane operations outside of North America in 1969 contributed net sales of $60,430,000, compared with $54,560,000 in 1968, and net income of $679,000, compared with $978,000 for 1968. These subsidiaries represented 16.7 per cent of shareholders' equity in 1969, compared with 16.2 per cent at the end of 1968.

Increased start-up costs, higher interest costs, and longer break-in periods for new and renovated plants in North America, along with devaluation of the French currency and continued lower performance in the United Kingdom accounted for the decline in Crane net profits. CF&I operations for the last six months of 1969 contributed $2,800,000 to income before extraordinary credit, after deducting $800,000 minority interest charged to miscellaneous other deductions and after-tax interest on the subordinated debentures. In addition, $1,074,000 for deferred credit amortization was included in cost of sales.

Crane's investment in Huttig Sash & Door Company was increased to 55.3 per cent by the end of 1969. This investment is recorded at cost plus equity in undistributed earnings since acquisition. Equity in 1969 income before taxes, credited to miscellaneous other income, amounted to $1,551,000 and after taxes amounted to $753,000. During 1969, Crane decreased its holdings in Alcan Aluminium Limited by 223,700 shares and acquired additional shares in North Jersey National Bank, with present ownership at approximately 22 per cent.

In 1969, Crane Co. adopted the straight line method of computing depreciation for financial reporting purposes but continued to take the accelerated method for income tax purposes. This change increased net income by $801,000 during the year. Consolidated deferred tax charged to current earnings was $2,313,000 in 1969, of which $936,000 resulted from the inclusion of CF&I Steel



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Corporation. At December 31, 1969, the deferred tax liability included with operating and other reserves amounted to $1,777,000.

The 1969 effective income tax rate was reduced to approximately 10 per cent, compared with 36 per cent in 1968, by investment credits of $1,075,000 and investment income, including gains on the sale of securities and other capital assets, of $3,502,000 which carried an unusually low income tax rate. Similar items in 1968 amounted to $906,000 and $1,438,000. In addition, CF&I Steel Corporation's tax provision had been reduced approximately $800,000 by percentage depletion and certain other charges for tax purposes which were deducted for financial accounting purposes prior to 1969. The difference between reported income and taxable income will result in a $3,150,000 refund of 1966 federal income tax paid by Crane which was included in accounts receivable at December 31, 1969.

In 1969, the outlay for capital expenditures, including CF&I Steel for the last six months, amounted to $38,326,000. A private placement of $50,000,000 of 7¾ per cent first mortgage bonds was made to provide funds for CF&I's capital improvement program, of which $23,750,000 was received in 1969, with an equal amount to be received in 1970 and the balance in 1971.

Crane's program of modernizing its manufacturing facilities continued in 1969, as the new vitreous china plumbing products plant at Trenton, Ontario, was completed at year end and the new valve manufacturing plant at Madrid, Spain, went into operation late in 1969. Initial operation of the Nevada, Missouri, plumbing products plant has been deferred into 1970 due to construction delays. Including this plant, annual rental obligations aggregate $3,131,000 under long-term leases expiring through 2008.

Crane Co. and its subsidiaries have a variety of pension plans and have followed the practice of funding current service costs and interest on unfunded past service costs for its major plans. In addition, CF&I provides for funding of past service costs over a 30-year period. Investment gains, which have been substantial, are used under an averaging method to reduce payments to the trustees on certain United States plans. Pension payments under all plans charged against operations in 1969 amounted to $4,239,000, compared with $1,294,000 in 1968. At December 31, 1969, CF&I vested benefits exceeded pension funds and balance sheet accrual by $30,132,000.

In December, management was informed that the Court of Appeals upheld Crane in its law suit against American Standard, Inc. and Blyth & Co. which arose out of the merger of Westinghouse Air Brake Company into American Standard. Counsel for Crane confirmed that the Court's opinion unanimously sustains its claim that American Standard, Inc. and Blyth & Co. manipulated the market in Westinghouse Air Brake shares and thereby illegally interfered with Crane's exchange offer to Westinghouse Air Brake stockholders. American Standard has petitioned the appellate court for a rehearing, and it is impossible to determine at this time the extent of the damages which may be awarded to Crane. Management continues to believe, however, that American Standard's suit against Crane for so-called "insider's profit" is without substantial merit, especially in the light of the appellate court's decision.

As reported to you in previous years, Crane is a defendant in numerous private civil suits arising out of indictments in 1966 by a federal grand jury charging certain violations of the Sherman Anti-Trust Act. Crane is defending all of these remaining actions, and continues to be advised by counsel that the final decision should not materially affect the financial position and earnings of the Company.

Speaking for the Board of Directors, we wish to thank all employees, suppliers, customers and shareholders for their continuing support.



D. C. Fabiani, President and T. M. Evans, Chairman

Respectfully submitted,

D. C. Fabiani
President

T. M. Evans
Chairman

February 23, 1970

CRTX 0188

Consolidated Statement of Income for Years Ended December 31

	1969	1968
Net Sales	$550,707,177	$[illegible]
Operating Costs and Expenses:		
Cost of sales	464,665,938	338,839,859
Selling, general and administrative	67,360,814	55,451,143
	532,026,752	394,291,002
Operating Profit	18,680,425	15,257,663
Other Income (Deductions):		
Interest—net	(11,947,201)	(4,675,655)
Gain on disposal of capital assets—net	1,089,863	481,312
Dividend income on investments	2,617,755	1,514,090
Miscellaneous—net	210,894	746,322
	(8,028,689)	(1,933,934)
Income Before Income Taxes	10,651,736	13,323,729
Provision for Income Taxes	1,158,267	4,829,222
Income Before Net Extraordinary Credit — per share: $3.66 in 1969 and $3.23 in 1968 ($3.08 and $3.07 assuming conversion of debentures)	9,493,469	8,494,507
Net Extraordinary Credit	2,108,830	2,503,047
Net Income	$ 11,602,299	$ 10,997,554
Net income per common share:		
On average shares outstanding	$4.48	$4.20
Assuming conversion of debentures	3.67	3.96

Consolidated Statement of Earned Surplus for Years Ended December 31

	1969	1968
Balance at Beginning of Year	$ 72,580,736	$ 68,674,272
Net Income	11,602,299	10,997,554
	84,183,035	79,671,826
Dividends:		
Preferred shares—$3.75 per share	122,754	165,129
Common shares:		
Cash—$1.60 per share	4,018,390	3,970,462
Stock—2% per share, market value of 50,084 shares in 1969 (49,627 in 1968)	2,172,644	2,767,203
Excess of Cost Over Par Value of Reacquired Shares—Net:		
5,870 preferred (8,530 in 1968) and 48,300 common reacquired, less 6,169 issued under stock options (16,500 and 16,559, respectively, in 1968)	1,001,256	188,296
	7,315,044	7,091,090
Balance at End of Year	$ 76,867,991	$ 72,580,736

See comments in letter to shareholders.

Consolidated Balance Sheet at December 31

ASSETS	1969	1968
Current Assets:		
Cash	$ 17,865,804	$ 13,959,603
Short-term investments	39,061,024	4,767,815
Accounts receivable, less allowances of $1,990,492 ($1,220,755 in 1968)	96,110,081	63,691,441
Inventories, less LIFO reserve of $31,274,298 ($22,373,877 in 1968), at lower of cost or market:		
Finished goods	66,675,813	41,492,762
Work in process	45,717,560	27,034,313
Raw materials and supplies	18,932,464	9,848,331
	131,325,837	78,375,406
Prepaid expenses	3,613,851	1,033,785
Total current assets	287,976,597	161,828,050
Investments and Other Assets:		
Investments at cost:		
Southern Pacific Company, 1,000,000 shares of common stock	41,779,984	41,779,984
Alcan Aluminium Limited, 301,300 shares of common stock (525,000 in 1968)	7,859,749	13,571,161
North Jersey (formerly Hudson County) National Bank, 135,052 shares of common stock (5,584 in 1968)	4,934,362	223,360
Outlying lands	1,261,388	—
Miscellaneous	4,472,726	1,234,138
	60,308,209	56,808,643
Investment (equity method) in Huttig Sash & Door Company	7,515,528	6,626,430
Other assets	4,774,833	2,540,884
	72,598,570	65,975,957
Property, Plant and Equipment at Cost:		
Land	14,386,053	4,720,096
Buildings and improvements	108,104,626	59,489,569
Machinery and equipment	380,856,938	131,659,823
	503,347,617	195,869,488
Less accumulated depreciation	286,513,152	128,358,391
	216,834,465	67,511,097
	$577,409,632	$295,315,104

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LIABILITIES AND SHAREHOLDERS' EQUITY	1969	1968
Current Liabilities:		
Current maturities of long-term debt	$ 2,736,985	$ 1,129,400
Loans payable by foreign subsidiaries	7,891,193	2,465,823
Accounts payable	42,408,221	18,543,707
Accrued payrolls, taxes and other liabilities	34,536,509	12,735,263
U.S. and foreign taxes on income	6,082,611	4,851,025
Total current liabilities	93,655,519	39,725,218
Long-Term Debt (see details on page 8)	271,411,242	106,458,484
Operating and Other Reserves	20,158,889	—
Minority Interest in Subsidiaries	26,627,972	1,764,777
Deferred Credit from Acquisition	13,958,955	763,072
Shareholders' Equity:		
Preference stock of Glenfield & Kennedy Holdings Limited, 5½%	2,400,000	2,400,000
Cumulative preferred shares, 3¾% par value $100 (redeemable at the option of the Company and subject to sinking fund requirements): Authorized—76,806 shares (81,056 in 1968); outstanding—31,026 shares (36,896 in 1968) (after deducting 45,780 shares in treasury in 1969 and 44,160 in 1968)	3,102,600	3,689,600
Serial preferred shares, par value $5: Authorized—600,000 shares	—	—
Common shareholders' equity:		
Common shares, par value $25: Authorized 10,000,000 shares (5,000,000 in 1968); outstanding—2,543,015 shares (2,532,012 in 1968) (after deducting 197,688 shares in treasury in 1969 and 153,090 in 1968)	63,575,375	63,300,300
Capital surplus (see details on page 9)	5,651,089	4,632,917
Earned surplus—$13,874,241 in 1969 ($16,671,310 in 1968) is not restricted under the terms of the 6½% sinking fund debentures	76,867,991	72,580,736
Total common shareholders' equity	146,094,455	140,513,953
Total shareholders' equity	151,597,055	146,603,553
	$577,409,632	$295,315,104

See comments in letter to shareholders.

CRTX 0191

Details of Long-Term Debt at December 31

	1969	1968
Crane Co.:		
6½% Sinking fund debentures due 1992, $2,000,000 due annually beginning in 1973, of which $373,000 was in treasury in 1969	$ 39,627,000	$ 40,000,000
6% and 6½% Serial promissory notes due 1973 and 1977, payable annually	2,613,437	3,372,499
8¾% and 9% Bank term loans due 1973 ($1,000,000 due quarterly beginning October, 1970)	15,000,000	—
Miscellaneous	200,000	400,000
	57,440,437	43,772,499
Subordinated debentures:		
7% Sinking fund debentures due 1993, up to $1,000,000 due annually beginning in 1974	20,204,400	20,204,400
7% Debentures due 1994	52,077,200	—
5% Convertible debentures due 1993, convertible at $50 per share (380,412 common shares reserved in 1969), after deducting $1,169,000 debentures in treasury in 1969	19,020,600	20,199,600
5% Convertible debentures due 1994, convertible at $57.50 per share (844,398 common shares reserved), after deducting $3,387,000 debentures in treasury	48,552,900	—
	139,855,100	40,404,000
	197,295,537	84,176,499
CF&I Steel Corporation:		
5¾% First mortgage and collateral trust bonds, sinking fund series due 1979, minimum of $2,000,000 due annually, of which $2,000,000 was in treasury	20,000,000	—
7¾% First mortgage and collateral trust bonds, sinking fund series due 1990, $3,000,000 due annually beginning in 1975. Additional amounts of $23,750,000 and $2,500,000 to be issued in 1970 and 1971	23,750,000	—
4⅞% Convertible sinking fund debentures due 1977 (convertible into CF&I common shares at $31 per share), $1,000,000 due annually, of which $2,601,000 was in treasury	7,920,200	—
	51,670,200	—
Foreign Subsidiaries:		
Crane Canada Limited 5¾% sinking fund debentures (secured by a general claim on property and assets), due 1985, $407,000 due annually, of which $910,200 was in treasury in 1969	7,636,800	8,547,000
Crane Ltd. (England):		
8¾% Bank term loan due 1972 (8¼% in 1968)	4,320,000	4,320,000
9% Bank term loan due 1973 (8½% in 1968)	3,442,550	2,473,522
Glenfield & Kennedy Holdings Limited 5¾% unsecured loan stock due 1982	3,683,513	3,748,360
Miscellaneous	3,362,642	3,192,603
	$271,411,242	$106,458,484

Consolidated Statement of Capital Surplus for Years Ended December 31

	1969	1968
Balance at Beginning of Year	$ 4,632,917	$ 3,102,390
Excess of market value over par value of 50,084 common shares issued in 1969 (49,627 in 1968) as 2% stock dividends	920,522	1,526,527
Excess of subordinated debentures converted over par value of common shares issued:		
1993 debentures—200 shares (160 in 1968)	5,000	4,000
1994 debentures—2,850 shares	92,650	—
Balance at End of Year	$ 5,651,089	$ 4,632,917

Consolidated Statement of Source and Application of Funds for Years Ended December 31

	1969	1968
Source of Funds:		
Net income	$ 11,602,299	$ 10,997,554
Depreciation	14,354,342	9,145,942
Cash flow from operations	25,956,641	20,143,496
Disposals of property, plant and equipment	1,979,764	4,173,033
Long-term debt—(including issuance of 1994 debentures on the acquisition of CF&I)	132,827,758	44,422,609
Increase in minority interest	24,863,195	—
	$185,627,358	$ 68,739,138
Application of Funds:		
Acquisition of CF&I Steel Corporation's non-current assets, less long-term debt and operating reserves	$ 68,060,190	$ —
Additions to plant and equipment	38,326,059	15,017,376
Investments and other assets	93,326	44,156,382
Reacquisition of shares (less options exercised)	2,641,553	1,031,822
Cash dividends paid	4,141,144	4,135,591
Other	146,840	1,133,993
Increase in net working capital	72,218,246	3,263,974
	$185,627,358	$ 68,739,138

Details of Stock Option Plans at December 31, 1969

	Number of Shares	Price per Share
Plan Adopted in 1951:		
Outstanding January 1, 1969	6,679	$18.51-$26.75
Options exercised (3,702 shares issued from treasury)	(4,702)	21.45- 26.75
Adjustment for 2% stock dividend	38	
Outstanding and exercisable, December 31, 1969	2,015	$18.15-$26.23
Plan Adopted in 1965:		
Outstanding January 1, 1969	33,738	$24.10-$56.13
Options granted	20,500	41.75- 57.75
Options cancelled	(3,193)	24.10- 57.75
Options exercised	(1,467)	25.53- 28.19
Adjustment for 2% stock dividend	977	
Outstanding, December 31, 1969	50,555	$25.03-$55.03

At December 31, 1969, options for 17,320 shares were exercisable and options for 57,063 shares could be granted (72,599 at December 31, 1968).

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Ten-Year Consolidated Financial Summary

	Sales	Income Before Income Taxes	Net Income	Depreciation	Net Working Capital	Preferred Shares	Common Shareholders' Equity		
							Total	Per Share†	Net Income Per Share†
1960	$285,618,712	$7,216,250	$4,824,463	$7,457,676	$89,560,647	$10,459,300	$135,064,791	$36.37	1.19
1961	319,556,202	9,121,253	5,675,770	8,000,070	99,371,959	10,009,300	130,649,983	37.85	1.53
1962	333,766,863	6,926,092	1,176,184*	8,383,196	88,226,079	9,109,300	124,105,295	38.67	.26
1963	337,365,571	10,703,634	5,447,378	7,606,845	92,081,379	8,441,300	121,833,594	40.92	1.72
1964	357,823,354	10,028,987	5,529,829	8,316,181	96,098,246	8,069,300	122,086,670	42.53	1.82
1965	370,084,039	13,836,113	7,991,351	7,846,942	105,843,822	6,318,600	121,256,497	46.67	2.96
1966	405,906,737	20,284,865	11,251,085	8,124,427	107,044,223	4,908,600	128,254,678	49.66	4.28
1967	403,360,619	17,327,137	10,228,250	8,632,062	118,838,858	4,452,600	133,830,812	51.82	3.89
1968	409,548,665	13,323,729	10,997,554*	9,145,942	122,102,832	3,689,600	140,513,953	54.41	4.20
1969	550,707,177	10,651,736	11,602,299*	14,354,342	194,321,078	3,102,600	146,094,455	57.45	4.48

† Adjusted for 2% stock dividend in December, 1969.

* After extraordinary charge of $2,018,000 in 1962 and extraordinary credits of $2,503,047 in 1968 and $2,108,830 in 1969.

Report of Independent Accountants

To the Shareholders of Crane Co.:

We have examined the consolidated balance sheet of Crane Co. and subsidiaries as of December 31, 1969, and the related consolidated statements of income, earned surplus, capital surplus and source and application of funds for the year then ended. Our examination was made in accordance with generally accepted auditing standards, and accordingly included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances. We did not examine the financial statements of CF&I Steel Corporation, a consolidated subsidiary, which statements were examined by other independent certified public accountants whose report thereon has been furnished to us.

In our opinion, based upon our examination and the aforementioned report of other independent certified public accountants, the accompanying balance sheet and statements of income, earned surplus, capital surplus and source and application of funds present fairly the consolidated financial position of Crane Co. and subsidiaries at December 31, 1969, and the consolidated results of their operations, changes in shareholders' equity and source and application of funds for the year then ended, in conformity with generally accepted accounting principles applied on a basis consistent with that of the preceding year, except for the change, which we approve, in the method of computing depreciation as described in the Letter to Shareholders.

Ernst & Ernst

New York, N. Y.
January 29, 1970

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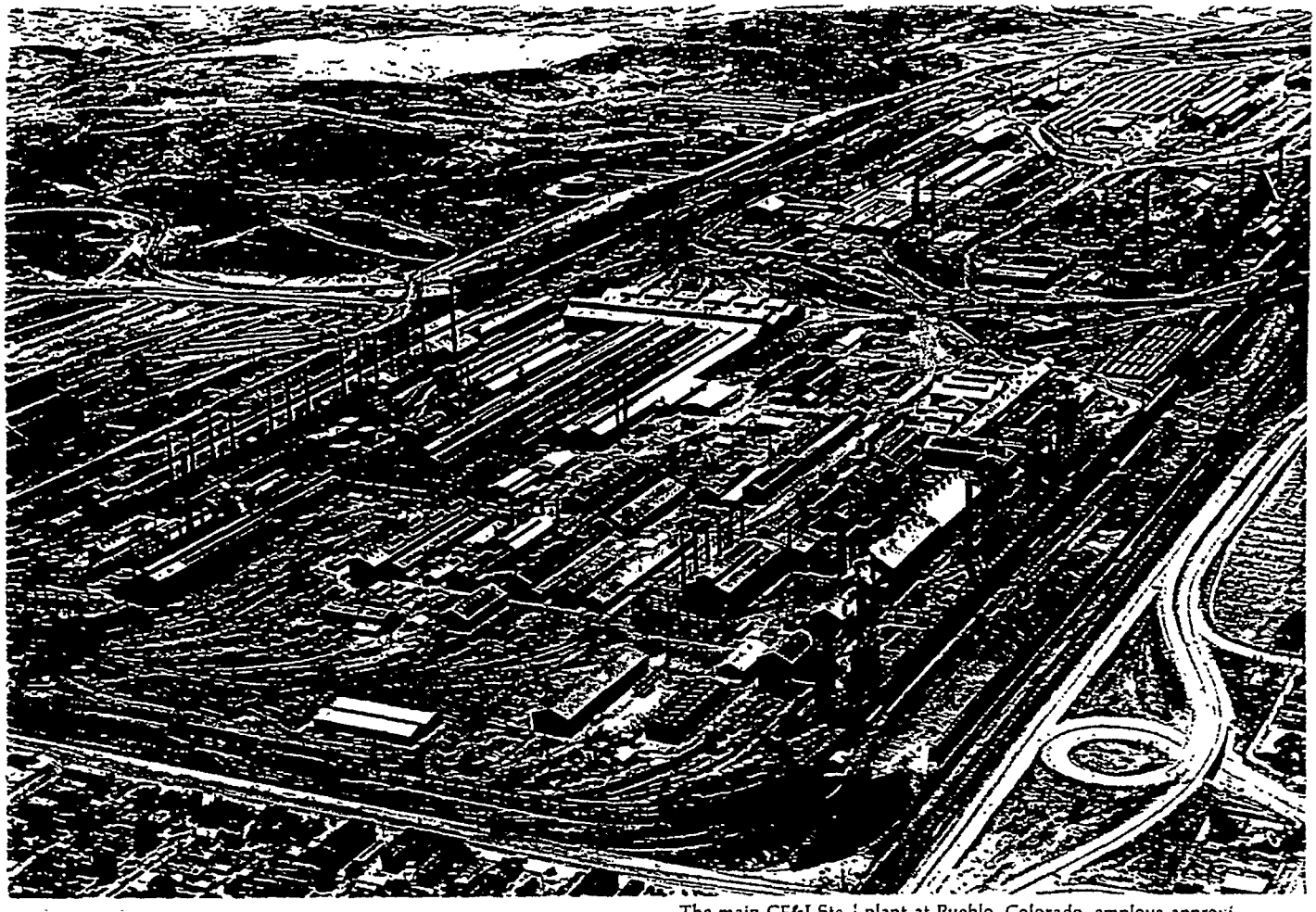
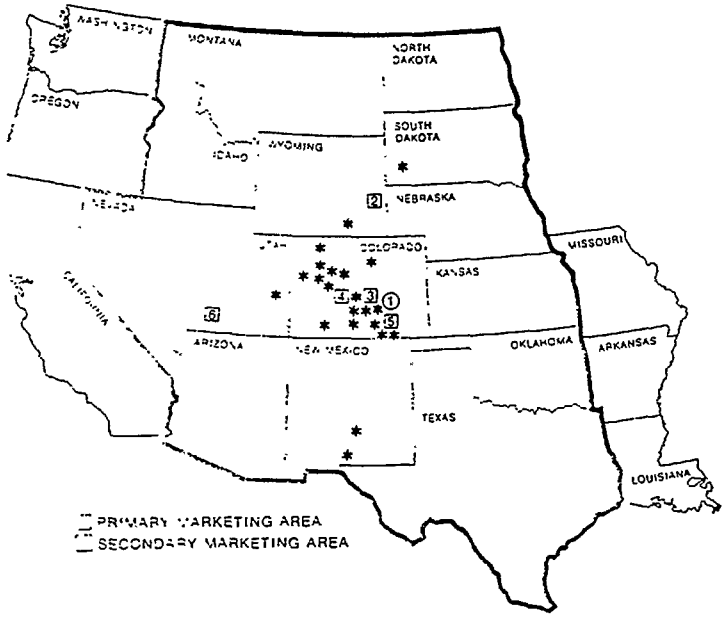


The main CF&I Steel plant at Pueblo, Colorado, employs approximately 7000 people, covers 639 acres. Within this area, there are 70 miles of railroad trackage and 25 miles of plant highways. The facility contains coke ovens, four blast furnaces, open-hearth and basic oxygen furnaces as well as rolling mills and seamless tube, rod and wire mills.

PUEBLO PLANT AREA

1 Pueblo plant and land holdings
2 Sunrise Mine (iron ore) and land holdings
3 Canon Quarry (dolomite) and land holdings
4 Monarch Quarry (limestone) and land holdings
5 Allen Mine (coal) and land holdings
6 Comstock and Duncan Mines (iron ore) and land holdings
* Other land holdings



CF&I Steel Corporation

Acquisition of a majority stock interest in the Colorado-based CF&I Steel Corporation gives Crane Co. a far broader product base and the opportunity to participate to a greater degree in the American economy. A vertically integrated steel company, CF&I has its own coal, iron ore and limestone deposits as well as substantial land holdings. The twelfth largest shipper of finished steel products in the United States, it produced 1,685,006 net tons in 1969. CF&I manufactures these alloy and carbon steel items in its five plants:

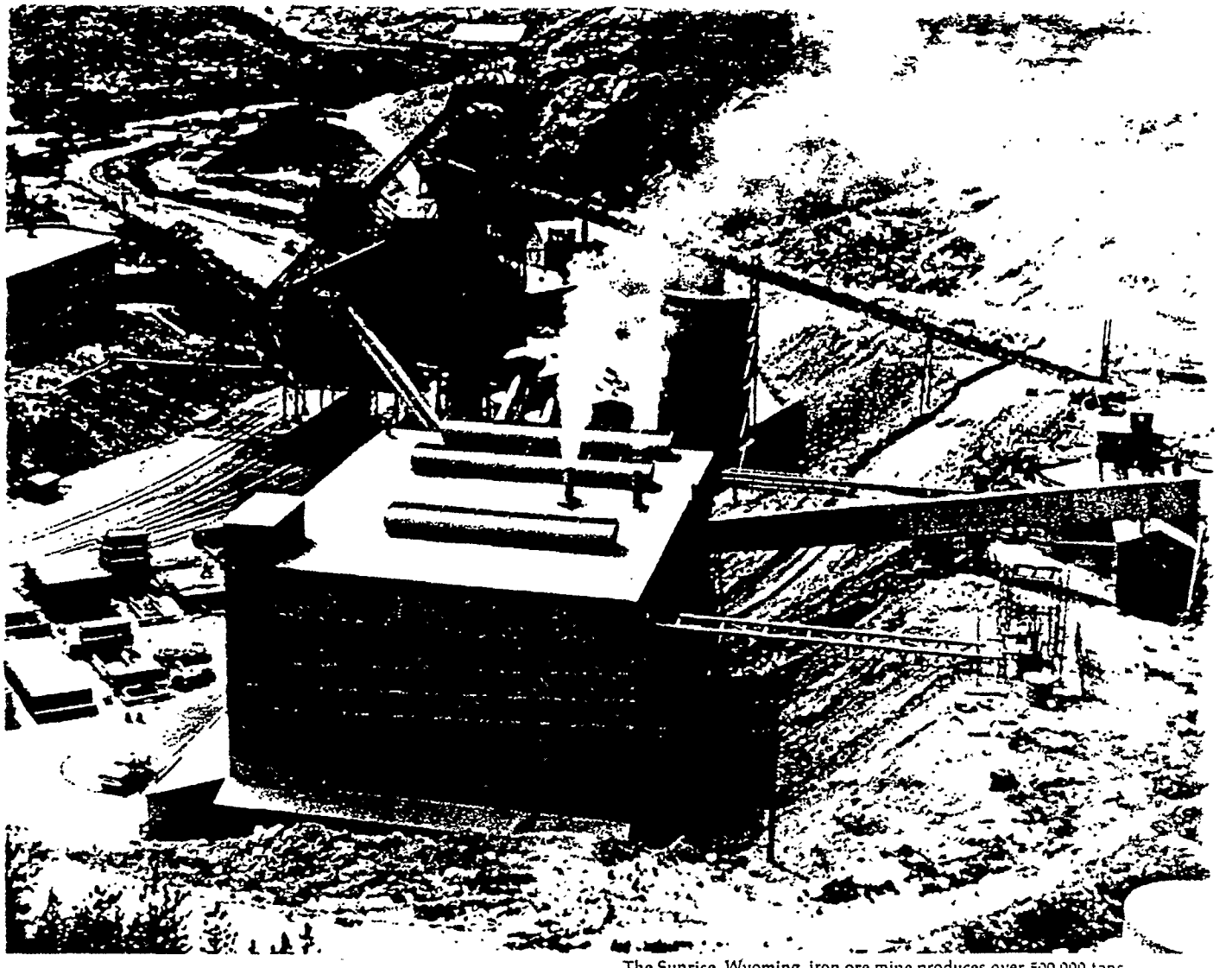
Principal Products

Billets
Cold rolled steel
Cutting edges
Grinding balls and rods
Merchant bars and shapes
Oil country tubular products
Rails and accessories
Reinforcing bars
Structurals
Wire and wire products

Plant Locations

Pueblo, Colorado
Trenton and Roebling, New Jersey
Palmer, Massachusetts
South San Francisco, California

CRTX 0195



The Sunrise, Wyoming, iron ore mine produces over 500,000 tons annually. It is an underground mine. The beneficiation plant (foreground) upgrades the ore before shipment to Pueblo. Other iron ore comes from open pit mines in southwestern Utah.

Steelmaking

Now operating as a Crane subsidiary, CF&I Steel Corporation is primarily engaged in the manufacture and sale of over 1200 carbon and alloy steel products. As the key supplier to the rapidly growing Rocky Mountain area, CF&I sells to such industries as construction, farming and ranching, petroleum, metalworking, mining and transportation.

The iron ore, coking coal, limestone and dolomite used by the Pueblo, Colorado, plant are supplied from mines and quarries owned or leased in Colorado, Wyoming and Utah. In these and other holdings in South Dakota and New Mexico, it is estimated that proven reserves are available to supply operations for 40 years or longer. CF&I also owns water rights under which the Pueblo plant draws the water necessary for its operation.

A subsidiary, The Colorado & Wyoming Railway Company, serves these mining properties and transports finished products. CF&I also manufactures and sells coke and coke plant chemicals such as benzol, toluol, xylol, creosote and roofing pitch.

In 1969, CF&I made noticeable progress in many of the traditional market areas it serves. In addition, the extensive land holdings of the Company are being reviewed for possible industrial, recreational or residential development. The Company is conducting an intensive exploration program on these and other lands for minerals and materials not normally required in steelmaking operations.

The acquisition of an engineering and manufacturing company early in 1969, now called CF&I Engineers, Inc., provides additional marketing outlets. This Denver-based organization designs and builds specialized equipment that is sold domestically and abroad. Its food processing equipment, particularly that used for sugar cane and beet conversion in special applications, is unique.

A number of new or upgraded products were introduced during 1969. Of interest to the railroad industry is

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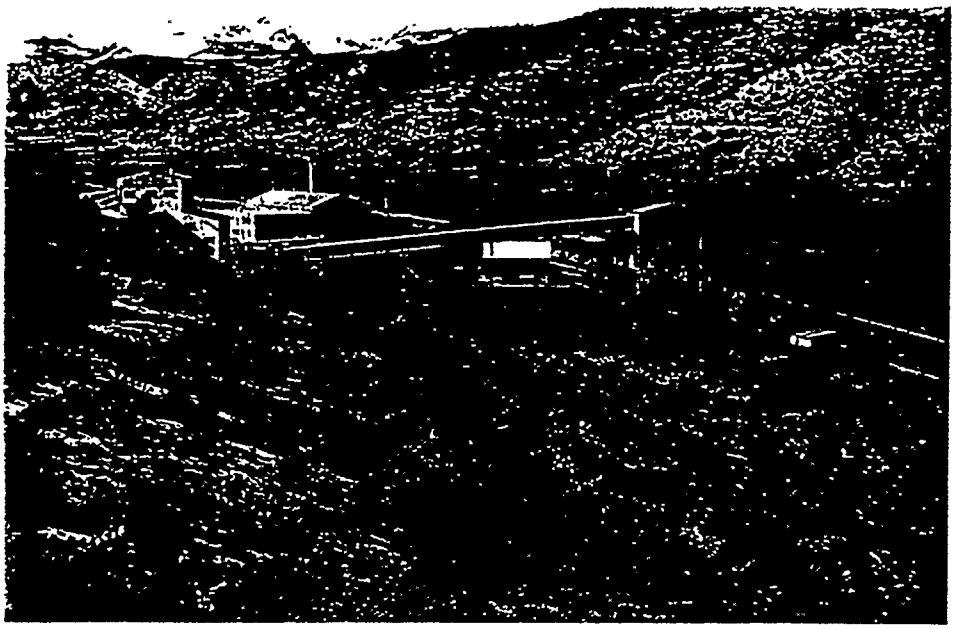
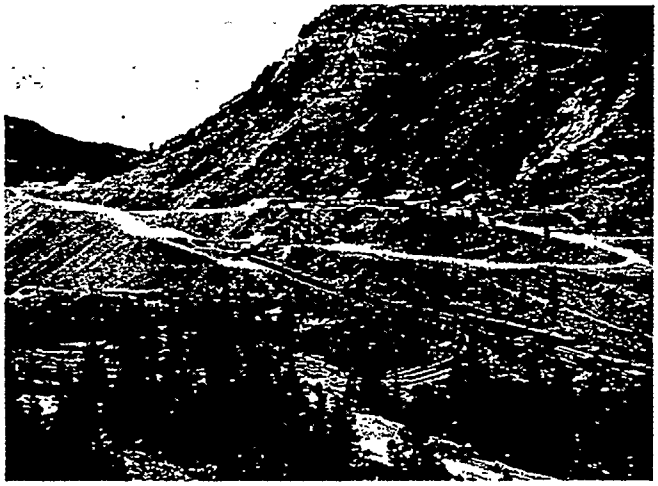


Approximately 90 per cent of the coking coal for the Pueblo ovens comes from the Allen Mine near Trinidad, Colorado.



The Colorado & Wyoming Railway Company serves the Sunrise and Allen Mines and the Pueblo plant area. It is entirely equipped with diesel-electric locomotives.



Limestone, which provides the necessary flux or cleanser in making iron and steel, comes from the CF&I quarry high on the Monarch Pass in central Colorado.

the Hi-Cant tieplate that offers a pronounced slope on which the outer rail rests on curves. The cant provides a better bearing surface between the wheel and track, reducing rail wear considerably. Over ten major railroads are currently conducting tests with Hi-Cant tieplates to verify CF&I's own testing program.

Lok-Stress strand, used in prestressed concrete, found wide acceptance. With a reinforcement life longer than any strand on the market, it reduces the amount of strand needed in the concrete.

New super alloy grinding balls and rods, a product of CF&I research, are now undergoing tests by various mining companies. These offer the advantage of extended service life because they retain their spheroidal characteristics longer.

For construction and highway maintenance, CF&I is marketing heat-treated grader blades specially hardened to withstand rugged use.

A new casing that resists the high pressures and temperatures found in deeper oil wells was also introduced.

CF&I acquired the license to produce a type of highly corrosion-resistant steel known as COR-TEN(TM). This is widely used in structural work where the steel is exposed to the elements since it does not require paint to protect its surface.

CF&I productive capabilities are being strengthened by an extensive modernization and improvement program. A new 49-wire, 22-inch tubular horizontal strander has been put into operation in the rope mill at the Trenton, New Jersey, plant. The first and only strander of its type in the United States, it was designed and built exclusively for CF&I to increase the Company's capabilities for making large strands and ropes. Earlier this year, all the wire rope facilities were also consolidated at Trenton, providing added economies and efficiency of operation.

During the year, the multi-million-dollar modernization of the rod mill at the Pueblo plant was completed. The mill produces a basic pencil-thin rod that is then

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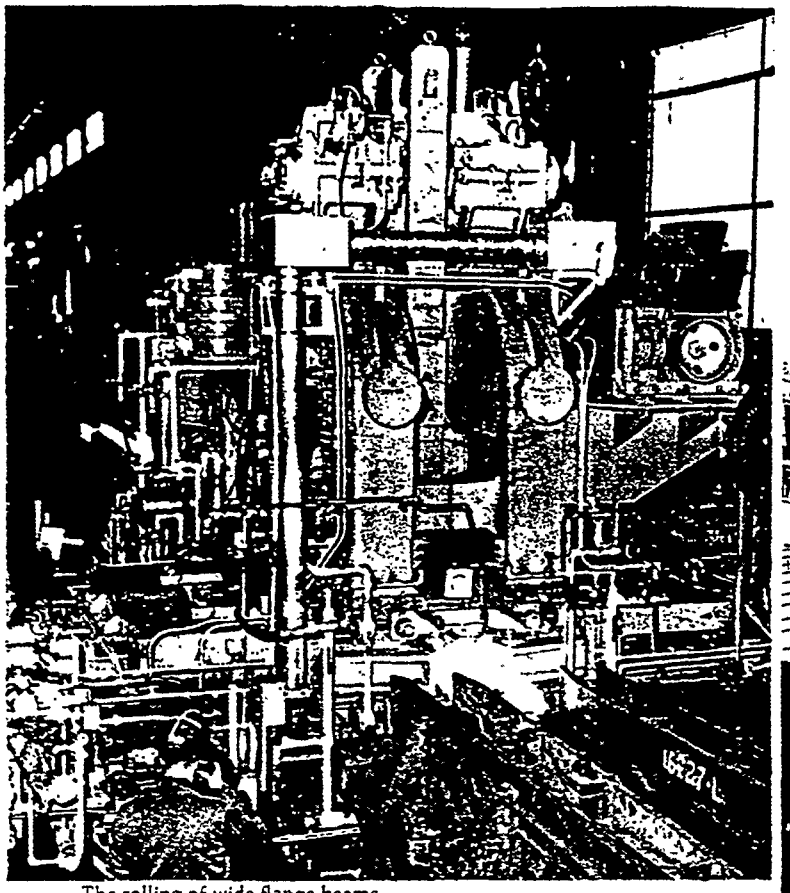
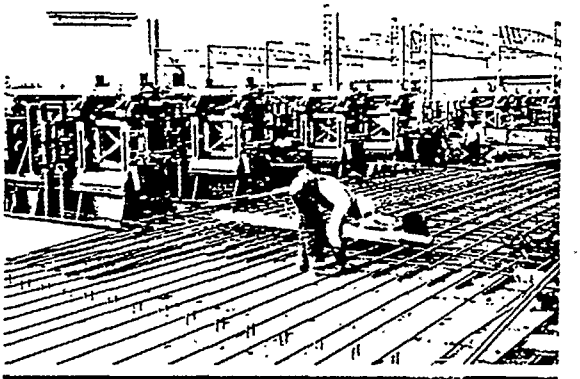


The rolling of wide flange beams is automatically controlled by punch cards which regulate the equipment. Pueblo was the first western steel plant equipped with a mill to turn out this structural shape.

The new bar mill being constructed at Pueblo takes shape. Stands to do the preliminary shaping of heated steel and the intermediate trains are shown.





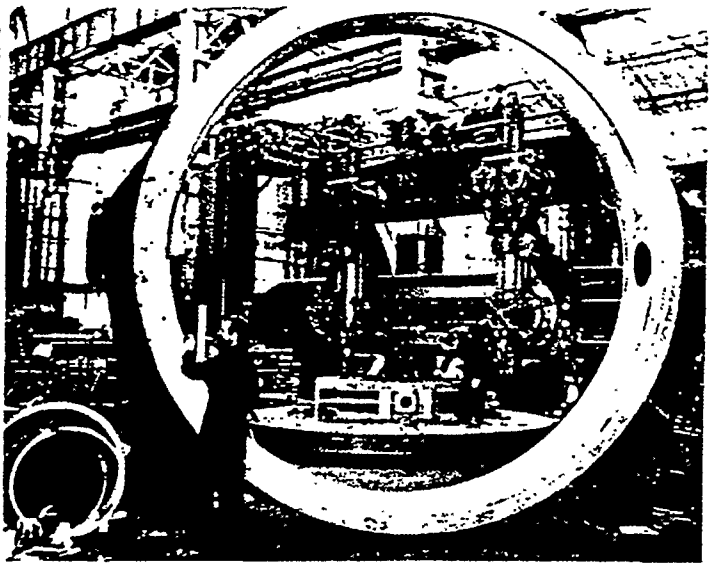
Over half of the steel production in this country is by the basic oxygen process. CF&I, the fifth company to utilize this method, uses two giant vessels in rotation. Each is capable of making about 150 tons of steel every hour.

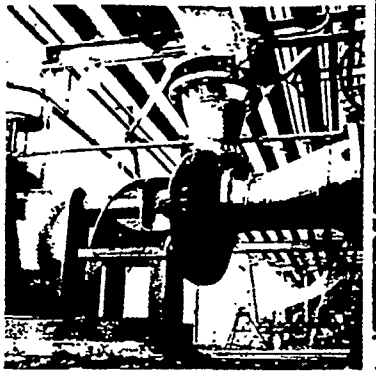
formed by the plant wire mills, or by customers, into a broad range of wire products — drawn wire, nails, barbed wire, welded fabric and fencing. Major expenditures were also made in the area of environmental control to incorporate the best equipment available to meet and maintain air and water standards.

A major new capital improvement program is now underway at Pueblo with the installation of a new 11-inch bar mill. When completed in late 1970, it will be one of the most technologically advanced facilities of its type in the country. The eight-acre bar mill will be capable of producing up to 450,000 tons per year under average working schedules. Among its products are angles, channels, strips, reinforcing bars, fence posts, coiled rods and flats.

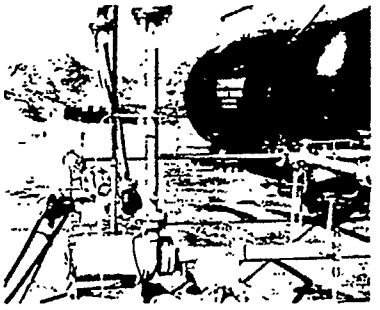
With the completion of this facility, CF&I will be in an even better position to offer high-quality products to the growing Rocky Mountain market area it serves.

A 150-inch diameter butterfly valve to be installed in South Africa is being fabricated of steel at Kilmarnock (foreground) while a 72-inch cast iron butterfly valve which will handle pump discharge in a Canadian power station is machined at the rear.

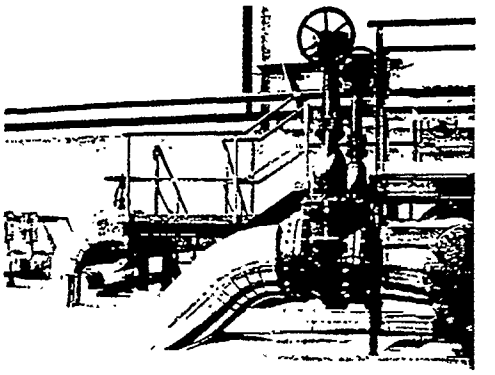




A corrosion-resistant Deming pump, handling acid solutions used in processing, is one of 41 pumps and over 125 Crane steel valves installed in this U.S. plant.



This leakproof Chempump canned pump was specified to pump volatile fluids at a testing site in the West.



Crane valves for this West German refinery, some manufactured in the United Kingdom and France, were supplied by Crane G.m.b.H.

Fluid Control

Crane offers the widest range of fluid control products to such industries as nuclear and fossil-fueled power, gas and oil production (both on- and off-shore), chemical processing, irrigation, shipbuilding — to name a few. Crane valves, pumps, meters, automatic operators, fittings and related equipment are used worldwide to control, transfer, measure, channel, meter and govern the flow of all types of fluids.

North American Operations. Crane's operating performance in the fluid control area during the past year did not come up to expectations. While good progress was made in some product lines, particularly pumps, meters and control valves, the overall results in the North America valve market were disappointing. Due to severe competition, price levels were depressed and inflationary cost increases also cut into profits.

In addition, two new valve plants, completed in the United States and Canada late in 1968 as part of a modernization program to increase capacity and lower costs, required a longer break-in period than anticipated. At year end, both had made substantial progress toward achieving efficient operating capacity, and it is believed that major operating problems have been solved.

Major capital equipment expenditures in 1969 covered modernization and expansion of the Chattanooga, Tennessee, valve plant where the installation of numerical and computer controlled machinery will be completed in the first half of this year. New heavy duty equipment in the St. Louis plant increased appreciably its capabilities to produce large diameter, heavy wall fittings for the high pressure resistance demanded today by more sophisticated industrial processes.

Crane Canada Limited further expanded its product line with the introduction of a line of forged steel valves. Its recently developed butterfly and ball valve designs showed good market acceptance during 1969.

The Flomatics Division concentrated its efforts on introducing a new line of automatic control valves to the industrial market. With an extensive line now available, orders were received from petrochemical and power plants, paper mills and shipyards.

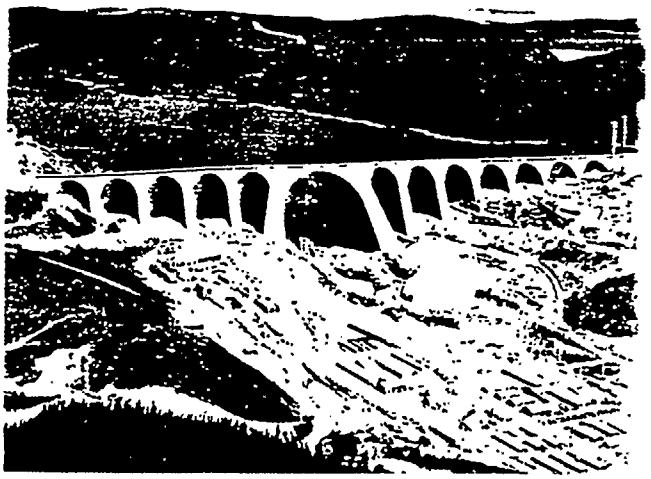
Both the Deming and Chempump operations showed substantial improvements in performance in 1969. Deming pump business increased as the result of efforts to penetrate major industrial markets for its centrifugal, chemical and alloy pumps.

To meet the increasing demand for Deming product lines, particularly engineered pumps, plans have been announced for construction of a new manufacturing plant in Salem, Ohio. Completion is scheduled for late next year.

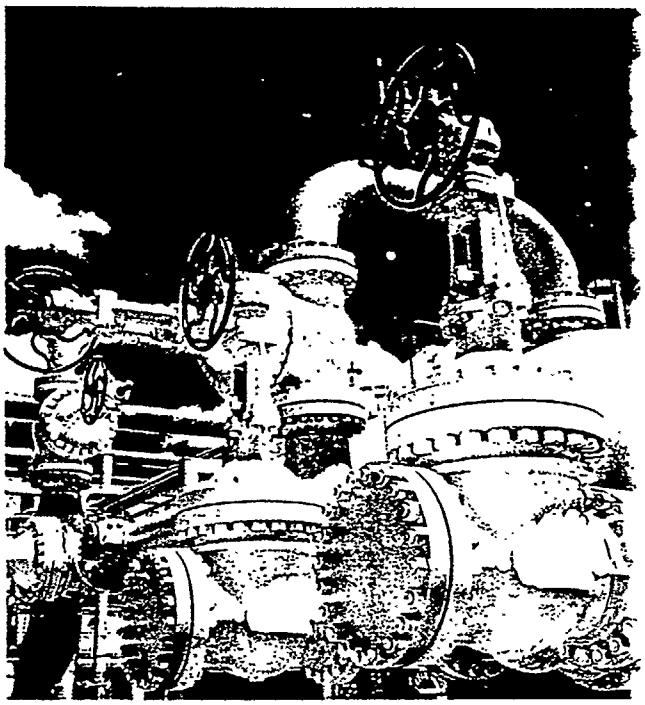
The leakproof and maintenance-free design of Chempump canned pumps resulted in the specification and use of an increasing number of units to solve problems of safety and economy in the pulp and paper, chemical processing, nuclear and aerospace industries.

CRTX 0199

Crane valves perform a wide range of services at Manic 5, one of seven hydro-electric developments on the Manicouagan and Aux Outardes Rivers by Hydro-Quebec.



Crane cast steel gate valves (below), in sizes up to 24 inches, are part of an order for two gas and oil reforming plants handling off-shore production near Melbourne, Australia. In all, Crane supplied hundreds of cast iron, bronze and cast and forged steel valves used in this complex.



A new low-cost diaphragm metering pump, Series 200 Chem. Meter, was introduced in 1969, to expand this product line. It is designed primarily for use in the chemical processing industries and water and waste treatment.

Water meter sales increased significantly last year. Crane deepened its penetration of the municipal and domestic markets with a complete line, in all sizes up to 2 inches, for household and commercial measurement.

Crane has kept pace with the rapidly advancing technology of off-shore underwater operations in the petroleum industry. A number of pilot units are in service on platforms off the Gulf Coast. New approaches and innovations initiated by Crane for pumping, filtering and straining indicate considerable savings in weight, initial costs and operating expenses for the platform operators.

International Operations. Crane Ltd. had reduced profits in 1969. While the order backlog for heavy engineered products was high, profitability on these items was less than anticipated. Corrective actions have been taken, and it is expected that the United Kingdom operation will show an overall improvement in 1970.

Crane Ltd. has completed the installation of a new automated steel valve machining center at the Kilmarnock, Scotland, works. A separate production unit has also been set up at Kilmarnock to manufacture automatic control valves similar to the line offered by Flomatics in the Western Hemisphere.

Crane Nederland N.V. showed a substantial gain in 1969. Sales of ball valves used in gas distribution increased and malleable fittings shipments were higher.

During 1970, an automated molding line will be installed in the malleable foundry. With the broadened product mix and this increased capacity, prospects for the year appear good.

In Spain, Crane-FISA, S.A. bettered its performance last year. The new cast steel valve plant near Madrid, put into operation late in 1969, will enable Crane to increase export and domestic shipments this year.

Stringent economic controls by the French government leading up to and following devaluation affected Crane shipments adversely during the year. However, with the introduction of a new line of oil valves to complement its new Gem and stainless steel ball valves, Crane S.A. will be in a position to better its performance in 1970.

Crane G.m.b.H. improved its operations through an expanded line of forged steel valves produced at the new Herne, West Germany, plant. As a result of growth in the chemical, petroleum, gas and power industries, valve sales increased appreciably in 1969, and the trend is expected to continue in 1970.

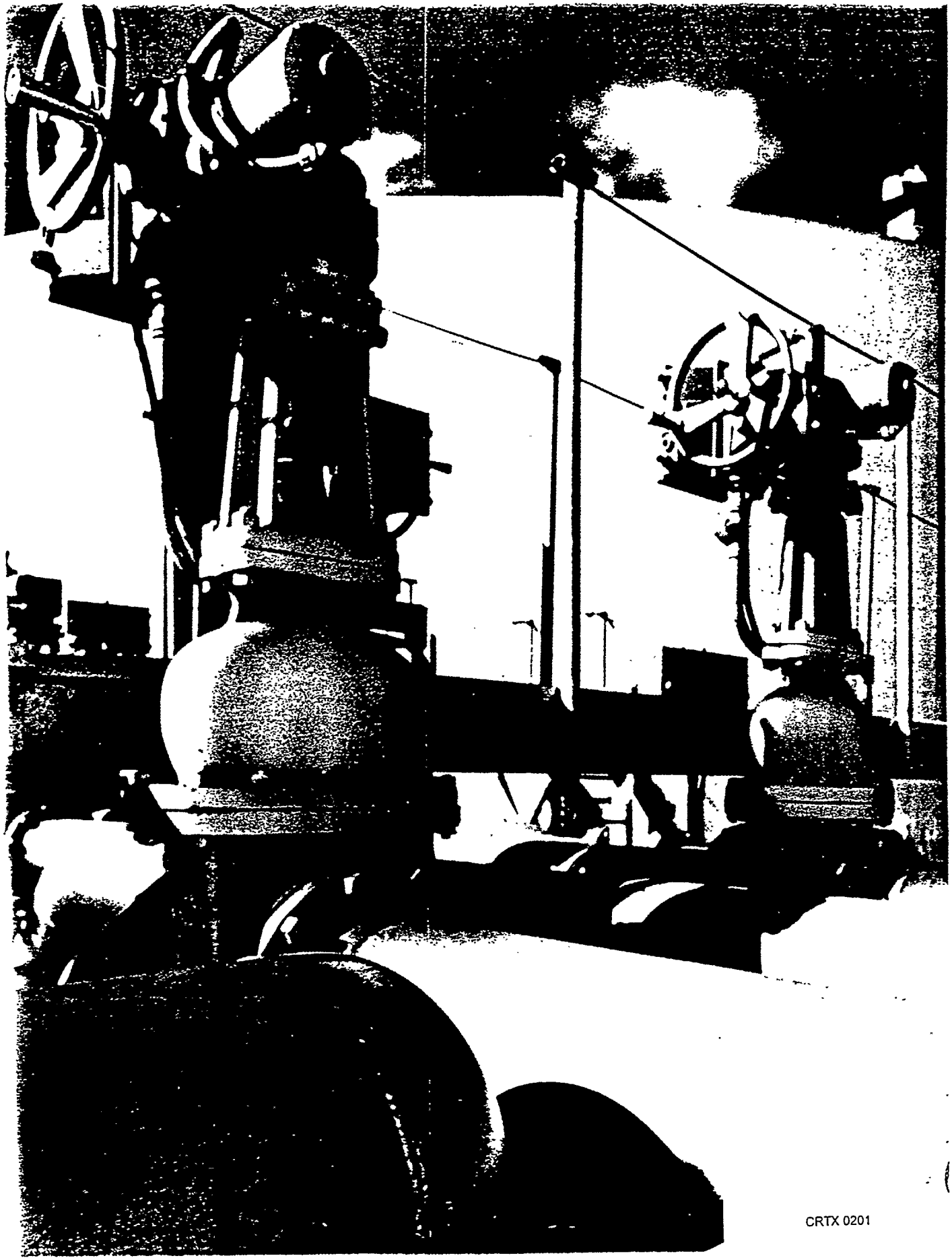
Crane Australia Pty. Limited showed continued growth last year. This unit participated in most major refinery, petrochemical, alumina and nickel refining projects. The markets for both valves and pump products are expected to remain strong in 1970.

More floor space was added last year to expand manufacturing facilities. In addition, distribution has been broadened to provide warehouses in all capital cities in Australia.

Crane-Glenfield (S.A.) Pty. Ltd. improved its performance last year, supplying valves used in the handling and distribution of water in South Africa. New foundry equipment is being installed to meet increased demand expected this year.

Crane-Deming de Mexico S.A. made positive strides in 1969 through greatly increased pump business. Close competition in valve markets, however, held valve sales lower than expected. Continued improvement should be shown by this division in 1970.

Crane Teledyne motor operators and valves, used as a manifolding installation, control the flow of crude oil on a Louisiana tank farm.



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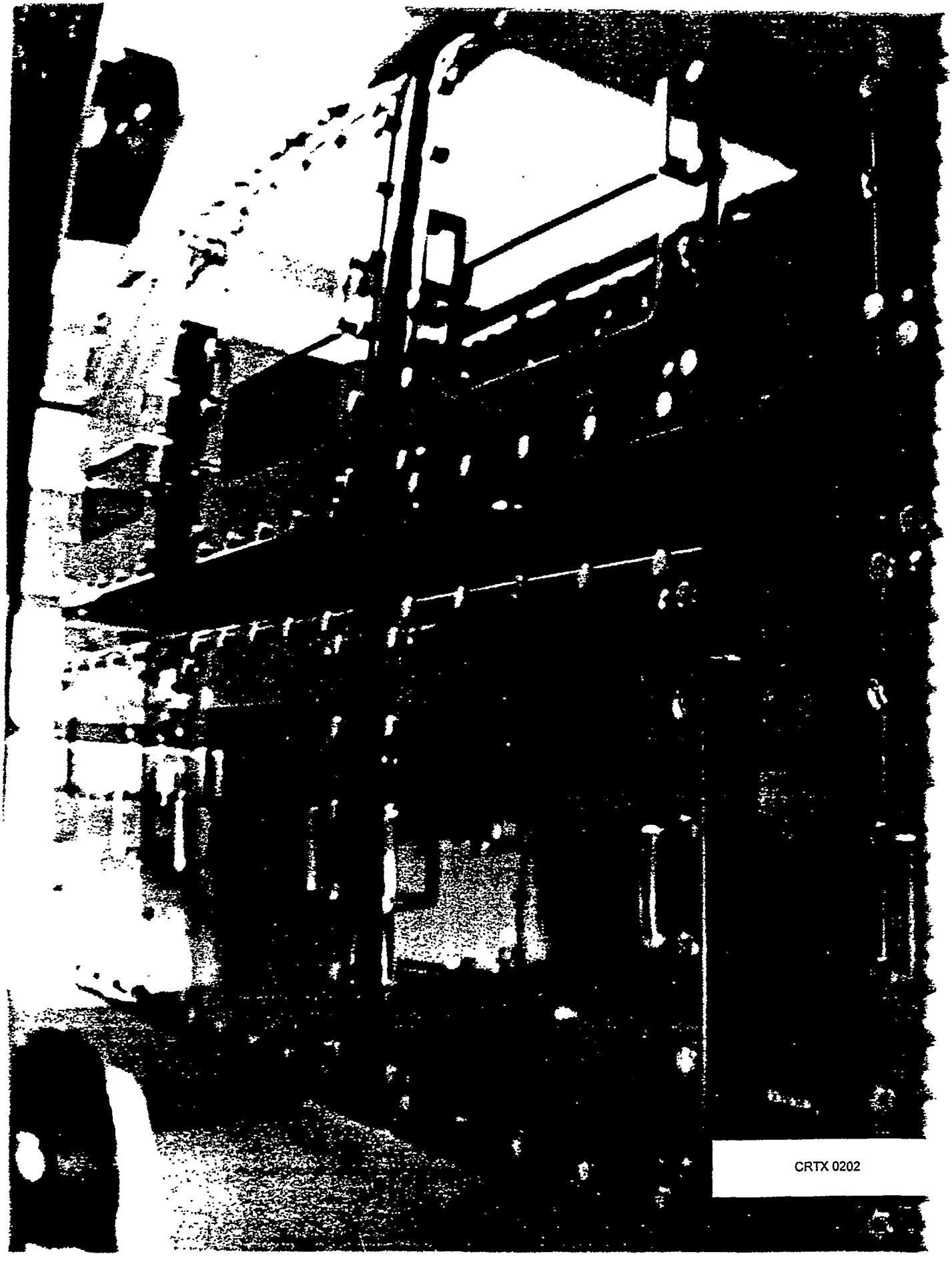

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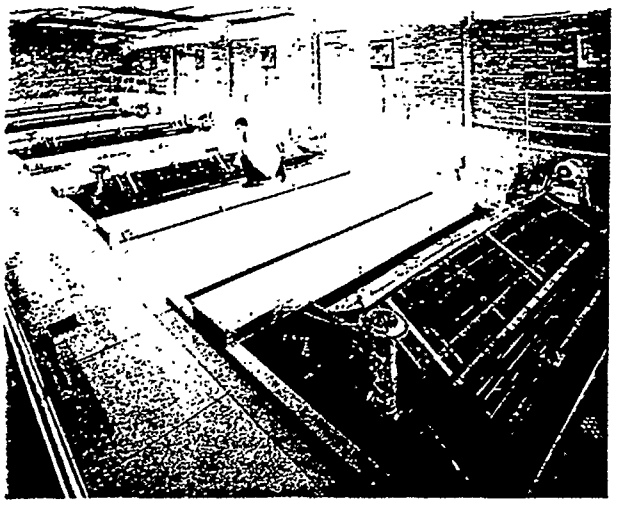
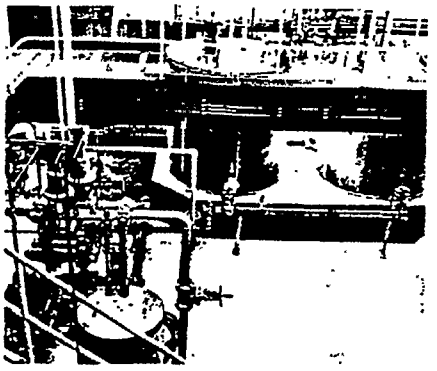
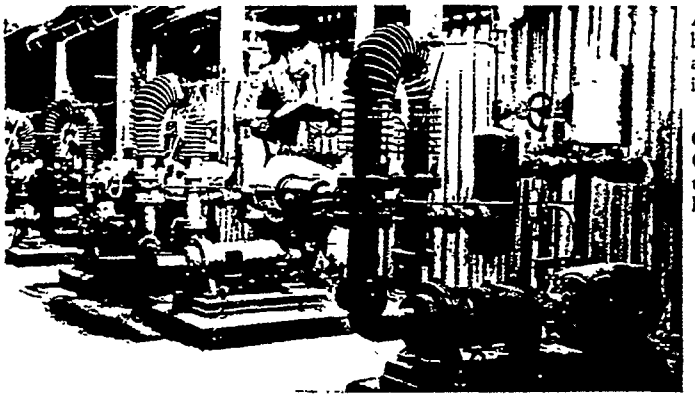


the largest tertiary treatment plant in the U.K., five Crane-Glenfield microstrainers handle final filtration of 9-million gallons of municipal and industrial effluent daily.



A Cochrane chemical treatment system helps an electric generating plant automatically neutralize the acidity in its makeup cooling water supply.



Cochrane condensate booster pumps in the Co-op City power plant drain both the refrigeration units used for air conditioning and the hot water exchangers used in space heating.

Water Treatment and Purification

With the present and ever-growing emphasis on pollution control and concern over health hazards to the world's water sources, Crane has concentrated its research efforts on solving problems in water reclamation and purification. New and improved products and processes pioneered and developed by Cochrane in this country and Glenfield & Kennedy in Scotland are helping to establish Crane as a leader in water discipline.

A significant addition to Crane's capabilities in 1969 was the consummation of an agreement with La Compagnie des Eaux et de l'Ozone, France, for the exclusive representation for Otto Process ozonation in the United States. The use of ozone not only eliminates contaminants from water; it also improves the color and particularly the taste when compared with conventional chemical purification methods.

Water filtration with the Glenfield microstrainer continued to find wide acceptance in North America and abroad, not only for the clarification of municipal water supplies, but also for an increasing number of pollution control applications involving tertiary treatment of sewage and industrial wastes.

Two years of research and testing culminated in a contract award in 1969 by the Metropolitan Sanitary District of Greater Chicago for the installation of the world's largest microstrainer, with a capacity of 15-million gallons per day. This may well be the prototype for handling the total sewage effluent of Chicago when the District goes to tertiary treatment at its three large plants. Ozonation equipment is also being tested by the city.

Pilot work involving the use of microstraining and ozonation for the treatment and control of storm water overflow has continued successfully in Philadelphia. Results of the project, sponsored by the Federal Water Pollution Control Administration, have been so encouraging thus far that test work in this field will be continued.

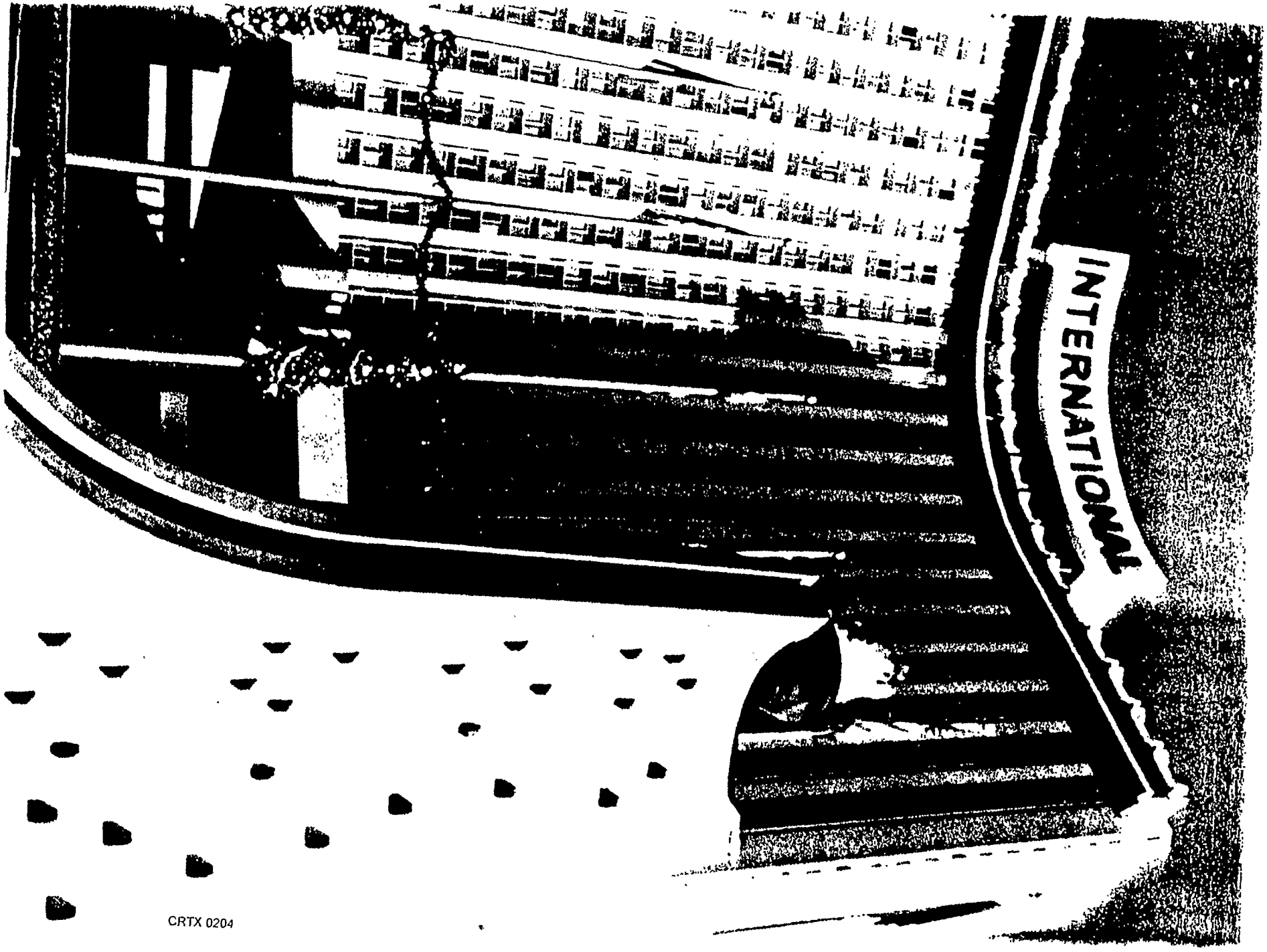
Demonstrating Cochrane's continued leadership in total water treating requirements for the electrical generating industry is a recent order for the complete system for primary water treating, makeup treatment and condensate purification for one of the largest nuclear plants in the country. Cochrane engineers are also designing the condensate purification systems for the largest fossil fuel plant ever built.

The success of the Ammonex Process for treating condensate in high-pressure steam generation in power stations continues to grow. Since its introduction early in 1968, over 35 major generating units are now using it.

Another significant combination of Crane equipment is installed at Co-op City, which covers 300 acres of northeast Bronx County in New York City. The power plant—containing Chapman valves, Cochrane condensate booster pumps, heat exchangers, a triple-unit water softener, a double-unit deaerator, and a continuous blow-off system—is an example of the Company's system engineering capability with both steam and water.

Cochrane is furnishing the deaerators for the nuclear-powered destroyers for the United States Navy. It also has been entrusted with the critical requirements of stripping radioactive gases from reactor cooling water with specially designed deaeration equipment at a major utility plant in the eastern United States.

this bank of ozonators, oxygen in the air undergoes ionization en passed between electrodes. The ozone thus generated used to complete the purification of water supplies and ered effluents, and to restore the oxygen content of the water.



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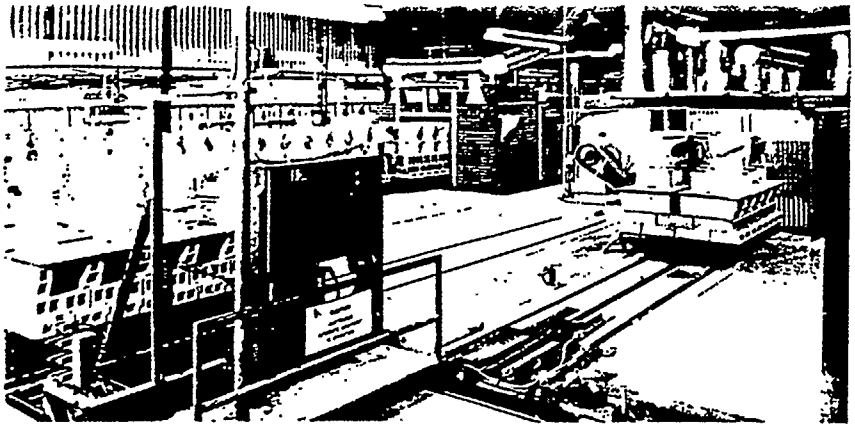
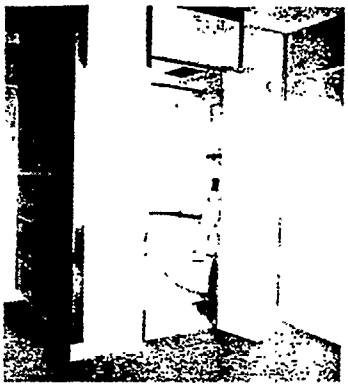
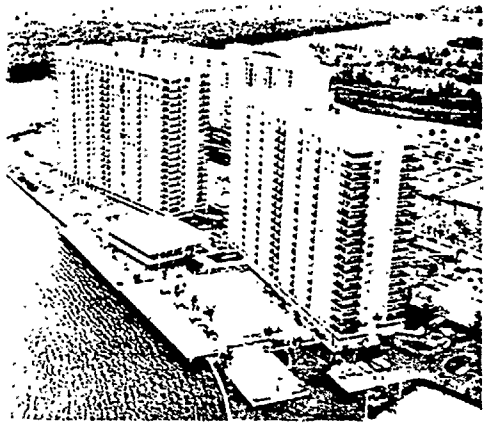


Automatic transfer equipment at the new Ontario pottery moves chinaware from color spraying through the firing kilns to inspection areas.



First specially designed hospital models of the Unette (above) are installed in Dallas, Texas. At left, an assembled unit is positioned during the conversion of part of an upper New York State motel into off-campus college dormitory space.





At Arlen House, a luxury Miami Beach condominium, baths are equipped with Crane plumbing.

Comfort Conditioning and Sanitary Control

Despite high interest rates, the inflationary economy and diverted public funds last year, Crane plumbing product sales in this country improved. This performance was due, in part, to large orders for hotels, luxury condominiums and apartments.

Crane also received large plumbing fixture contracts for new or expanded hospitals and for nursing homes. Crane's recognition in the hospital market plus the anticipated growth of nursing homes promise a good potential market for succeeding years.

The concept of a modular bathroom, pioneered by Crane during 1967, continues to gain recognition and acceptance. In this area, Crane last year introduced the new 230H Unette, a modular bathroom with unique, tailor-made features for patients and the handicapped. Designed for hospitals and nursing homes, it was a logical adaptation of the original Unette.

Last year Crane continued its emphasis on product development which enabled it to enter new, or further penetrate existing, markets. Among the products introduced in 1969, or the first of this year, are a new urinal, a rim flushing lavatory, a wheelchair lavatory, a "water miser" closet that uses far less water in flushing, and a molded fiberglass tub shower wall unit.

An entirely new enamelware manufacturing facility is being built in Chattanooga. When completed and operational late this year, the plant will contain all the latest innovations in foundry technique from the standpoint of casting, cleaning, metal preparation and enameling. Also to be completed in the latter half of 1970 is a new, modern pottery being constructed at Nevada, Missouri.

A major development in heating for single-home and multi-family dwellings during the year was the introduction of the Petite-7, a completely new line of highly styled hydronic nonferrous baseboard heating.

Sales gains for plumbing and heating products by Crane Canada Limited reflected a favorable climate during the past year. While all sectors of the construction industry showed a slowing growth, housing starts remained high. The outlook for 1970 is for a somewhat slower rate of growth in building construction and a decline in housing starts.

Crane Canada Limited continued its work with the Canadian government particularly in moderate income and public housing needs. Modern plastic fixtures, including bathtubs with integral walls and one-piece lavatory countertops, are expected to make some inroads into the conventional plumbing fixtures market.

Toward the end of 1969, the new and highly automated pottery in Trenton, Ontario, was completed and will be fully operational by mid-year. It has an annual capacity in excess of 200,000 units and provides Crane Canada Limited with pottery plants close to all its major markets.

Crane Ltd. (England) maintained its position as a major United Kingdom supplier of domestic central and hot water heating equipment despite increased competition and start-up costs for a new gas-fired, warm air heating line.

Crane Nederland N.V. showed a sizable gain in the sale of boilers for residential heating. The wide acceptance of this product line has grown out of the distribution of natural gas from discoveries in the North Sea, and sales are expected to increase in 1970.

:r 5300 Crane plumbing fixtures, most in decorator
:rs, plus fittings and valves were selected
the new International Hotel in Las Vegas.

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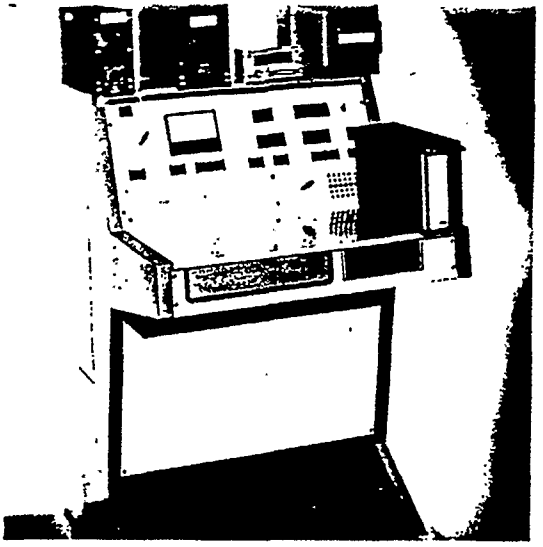
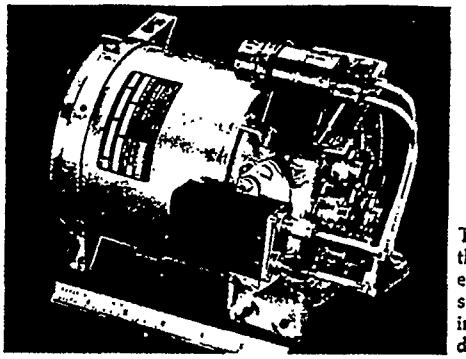
CRTX 0206



Components of the new Aircraft Integrated Data System are the data playback unit, shown with the cassette recorder on its console bench, and two data acquisition units, a data entry panel and the flight data recorder (left to right) on top.



These coolant pumps in the Apollo Lunar Modules environmental control systems kept temperatures inside between 55 and 90 degrees.



In addition to Hytrol skid-control braking, each Boeing 747 has 14 Hydro-Aire booster and transfer pumps aboard.

Stabilization and Control of Moving Objects

A pioneer in the development of skid-control braking systems, Hydro-Aire Division of Crane maintains its lead in this market. During the year, it continued to develop new products for the aerospace market, to concentrate on greater market penetration with its present product line, and to effect other long-range plans for increased volume.

Hydro-Aire's latest Mark III version of Hytrol, for example, has now demonstrated its special competence in landings on wet runways. Under investigation are such new concepts as "brake-by-wire" — a method of eliminating heavy hydraulic lines and cable linkage in wheel brakes — as well as Mark III's unique selected deceleration possibilities.

The new generation of giant jets, the Lockheed C5 Galaxy and the Boeing 747, are equipped with Hytrol anti-skid systems. The Boeing 747, largest commercial transport in the world, is also powered through Hydro-Aire fuel pumps.

A modification of the computer-controlled anti-skid braking system, marketed under the name of Sure Track, became standard equipment on the 1970 Ford Motor's Continental Mark III. Sure Track, pioneered by Hydro-Aire, is manufactured and marketed by Kelsey-Hayes Company under a licensing agreement.

erating under Class I Clean Room
ditions, technicians assemble
trol manifolds for the Boeing 747.

A major contract was awarded during the year for fuel pumps on the new DC-10 commercial jet, each of which uses nine pumps.

A highlight of the past year was the important part played by Hydro-Aire pumps in the Apollo moon landings. In addition to pumps in the Command and Service Modules, Crane glycol coolant pumps served as a crucial support in the instrument and environmental cooling system of the Lunar Modules which set down on the surface of the moon. Three of the manned rated pumps were in each module to keep the capsule and electronic equipment at optimum temperatures.

Encouraged by this and other non-space successes, Hydro-Aire is studying the translation of this unique technology into a line of coolant pumps for commercial and military aircraft.

During 1969, Hydro-Aire entered the highly competitive flight data recorder market. Its new Flight Data Recorders and AIDS (Aircraft Integrated Data Systems) are now being extensively tested. These units help to determine causes of aircraft incidents and to monitor performance and maintenance requirements on aircraft. Taken together, it permits customers to go in modular stages from the basic flight data recorder to a complete AIDS program without duplication in hardware.

The Hydro-Aire line of single stage electro-hydraulic four-way servo valves, which went on the market last year, has met with good customer acceptance. These units have a broad range of flow control, pressure control and power control applications throughout the aerospace, computer and automation equipment industries. Under exploration are new methods of extending acceptance in aerospace to marketing for all other relevant industries.

Also exhibiting significant promise is progress in the development of a new engine-driven pump for aircraft jet engines. It is being designed for the new generation of high-speed, high-performance jet engines which will be used on such planes as the DC-10, L-1011 and other new space-age aircraft.

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Applications have been filed to register *Petite·7* and *Unette* as Trade Marks.

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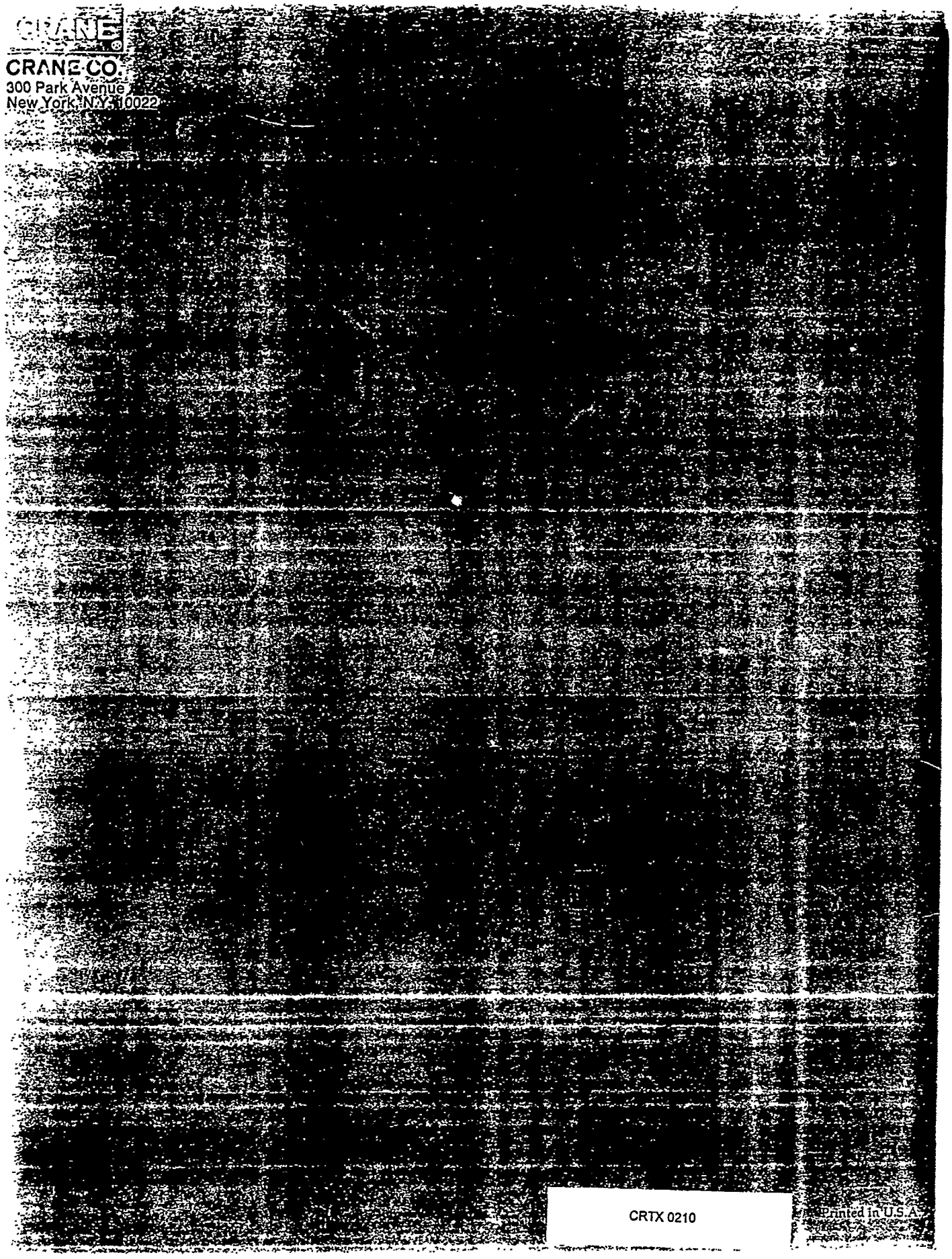
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