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UNITED STATES AGENCY FOR
INTERNATIONAL DEVELOPMENT

REPORT ON

L*A WATER TREATMENT CORPORATION

MAY 1988

JMM James M. Montgomery
Consulting Engineers Inc.

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May 11, 1988

United States Agency for International Development
320 21st Street N.W.
Washington, D.C. 20523

Attention: Mr. Tom Johnson

Subject: Transmittal of Report on
L*A Water Treatment Corp. (L*AWT)

Gentlemen:

Enclosed please find our final report. It covers a number of aspects of the team which L*AWT has put together for the Provincial Cities Project. The report has little concrete financial data, since that was not available to JMM for its review. Much of the other data was obtained from the Bid Documents and from other information furnished by L*A WT and its team.

The L*AWT team of individuals and subcontractors, as currently configured and manned, provides for a project team which can, in our opinion, reasonably complete the project. There are a number of strong team members and organizations which counter a few weaker members of the team.

The financial backing of the L*AWT parent companies commits those companies to directly or indirectly support the project. Thus the team has resources which are not shown in the organization plan or financial plan.

Very truly yours,

Wilfried F. Langer
Vice President

/ts

Encl.

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Hydraulics Laboratory
Reproduction Room
Drafting Area
Completed Projects File Storage (2 photographss)
Package Treatment Facilities under Construction in in L*AWT Shop (3 photographs)
Portion of Outside Storage Area

SECTION 1

COMPANY HISTORY AND FACILITIES

A. EXISTING PROJECT TEAM

The L*AWT Team of firms and individuals that have been proposed comprise a number of existing ongoing organizations. A brief outline of the team members is presented to acquaint the reader with the various organizations and individuals.

L*AWT, as the Team Leader, has proposed Pittsburg DesMoines Steel (PDM) for the fabrication and erection of a number of elevated steel tanks. PDM is a national and international firm with significant experience in its area of contribution to the projects. The bid documents list a number of similar projects built by PDM.

Stanley Consultants, Inc., (a member of The Stanley Consultants Group) is a large 300-person engineering firm. The Stanley Consultants Group, as noted in a Standard Form 254, had 508 employees as of October 1986. This firm has worked in a number of foreign countries, including West Africa, the Sultanate of Oman, Malaysia, and others (see Appendix for the Stanley Consultants, Inc., SF 254 document).

Pacific Sewer Maintenance Corporation (PSM) and West Coast Leak Detectors, Inc., are two smaller firms that will provide specialty services for the project.

PSM has been in the sewer maintenance business since 1977 and has completed work for numerous governmental services. The bid package submitted by L*AWT included a listing of specific clients and outlined the work and equipment that would be required for the project.

West Coast Leak Detectors, Inc., is a specialty leak detection company with key personnel that show 15 or more years of experience in this type of work. A limited number of references were shown in the bid package.

Raymond International of Delaware, Inc., (Raymond International) is another specialty firm that is a subsidiary of the larger Raymond International Builders, Inc. Raymond International specializes in water pipeline cleaning and relining. Its history of operation includes work in Egypt, India, and Saudi Arabia, among other countries, within the period 1983 to 1986.

Overseas subcontractors to L*AWT include the Egyptian consulting firm of Badran & Associates-Consulting Engineers and several Egyptian contracting firms. Included in the bid package are the firms of Bonian and Orascon, Onsi Sawiris & Co., among others. Five alternative customs facilitating firms are also shown in the bid package. For complete backup information on all of the firms, see the bid package. Included in the Appendix herein are the key pages for the above firms.

B. EXISTING FACILITIES AT L*AWT

L*AWT is located in the City of Industry in Southern California. The property on which the offices and fabricating facilities are located is owned by Halbert Corp.; and L*AWT has a long-term 99-year lease with the current lease portion valid through September of 1993.

There are 30,000 sq ft of office space, 15,000 sq ft of undercover storage space, 15,000 sq ft of working yard exclusive of parking, and 12,000 sq ft of undercover work and fabrication area serviced by a 10-ton overhead crane. There is a fully equipped water testing laboratory on site and also a hydraulic test laboratory with a recirculation pump and sump. Pictures of the physical plant of L*AWT are at the rear of this Section.

Within the office space there are 25 ± drafting tables, 2 CAD work stations with plans for a third CAD station when the Provincial Cities Project gets underway. There currently are 75 staff members. This total is exclusive of the fabrication shop, which is primarily manned by contract employees of subcontractors. The company has had as many as 450 people, total, working at this site at its peak level of employment.

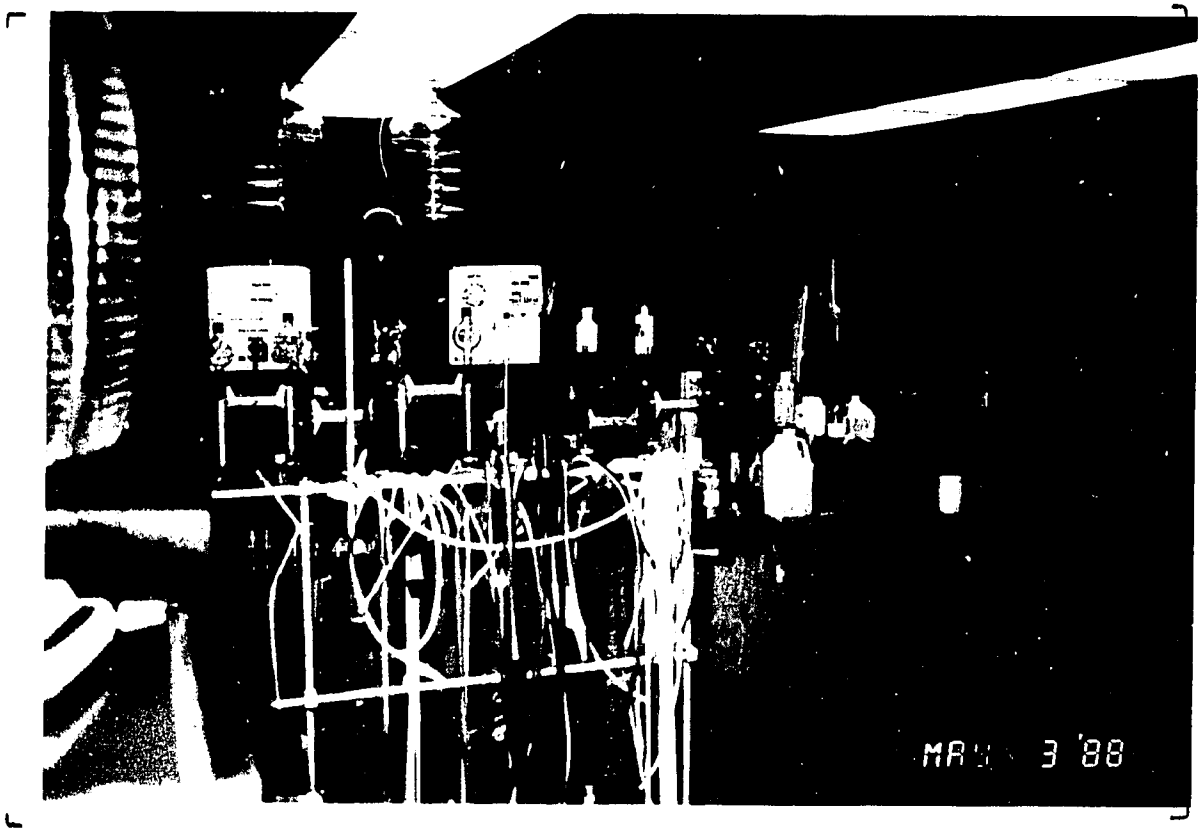
HISTORY OF L*AWT

L*AWT was originally a family-owned water conditioning company that started in 1939. By 1960, the employees purchased the company, incorporating it as L*A Water Treatment, Inc. In 1965, L*A Water

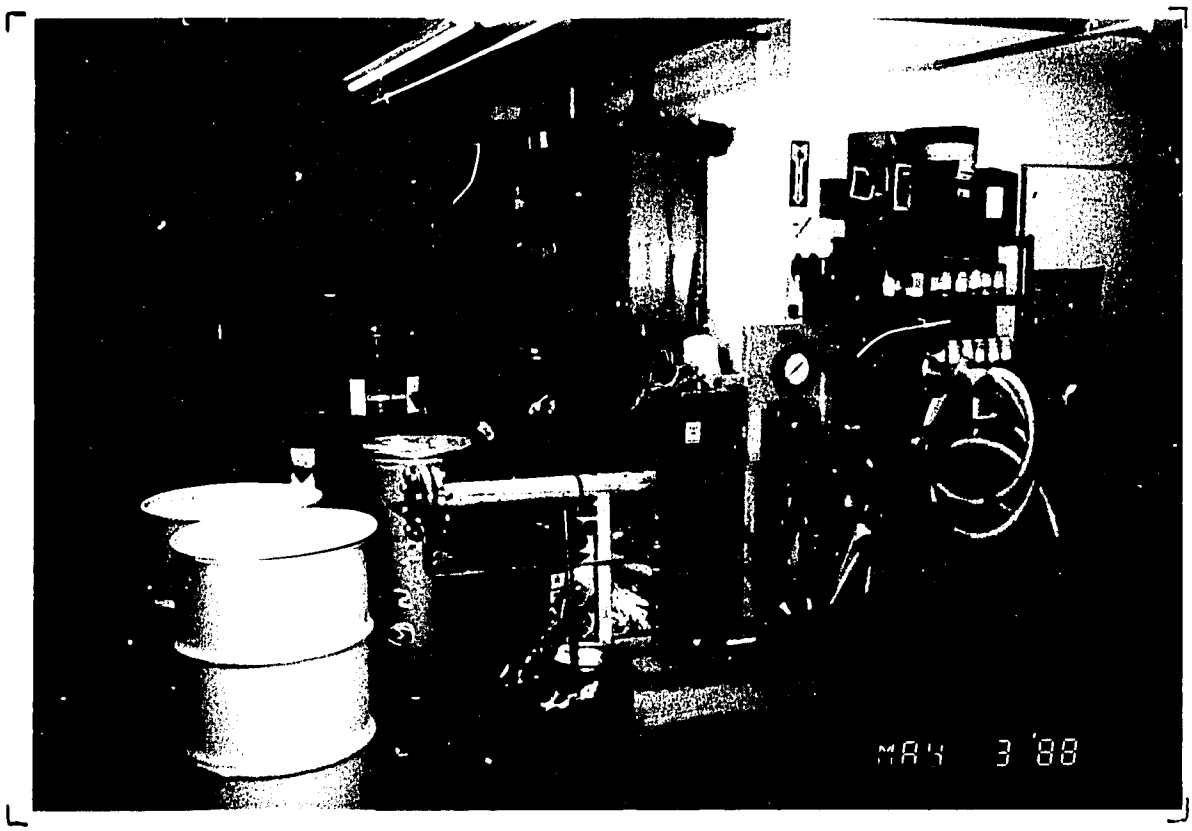
Treatment, Inc., became a division of Water Treatment Corporation, a national, publicly held company with 1965 net sales of $8.6 million. L*A Water Treatment, Inc., became L*A Water Conditioning Division. By 1971, L*A Water Conditioning was sold and became a division of Chromalloy American Corporation, and was identified as L*A/Water Treatment Division of that organization. Chromalloy also was a publicly held company with 1971 net sales of $453 million. In 1983, L*A Water Treatment was purchased by Portals Holding PLC, a British public company. For additional information, see Section 3, Financial Capability and History.

Main Entrance to L*AWT Office

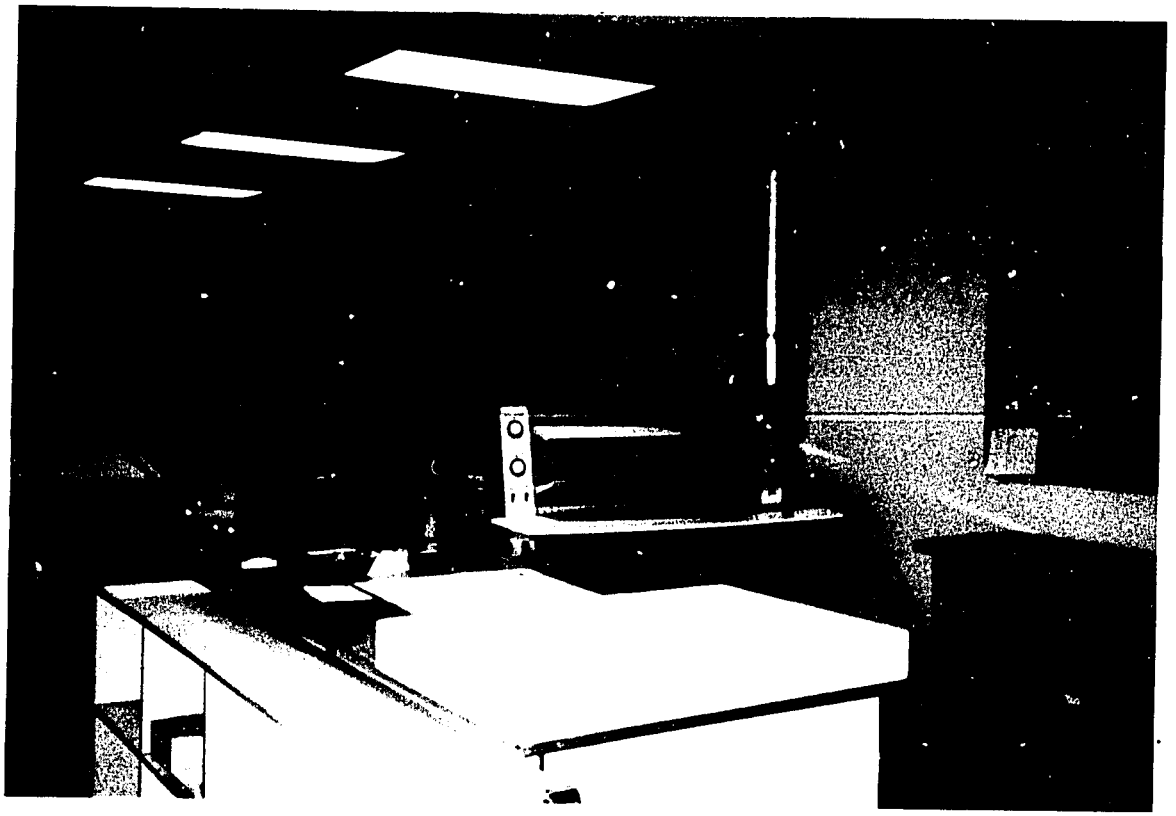
L*AWT Office and Shop Entrance



Water Quality Laboratory

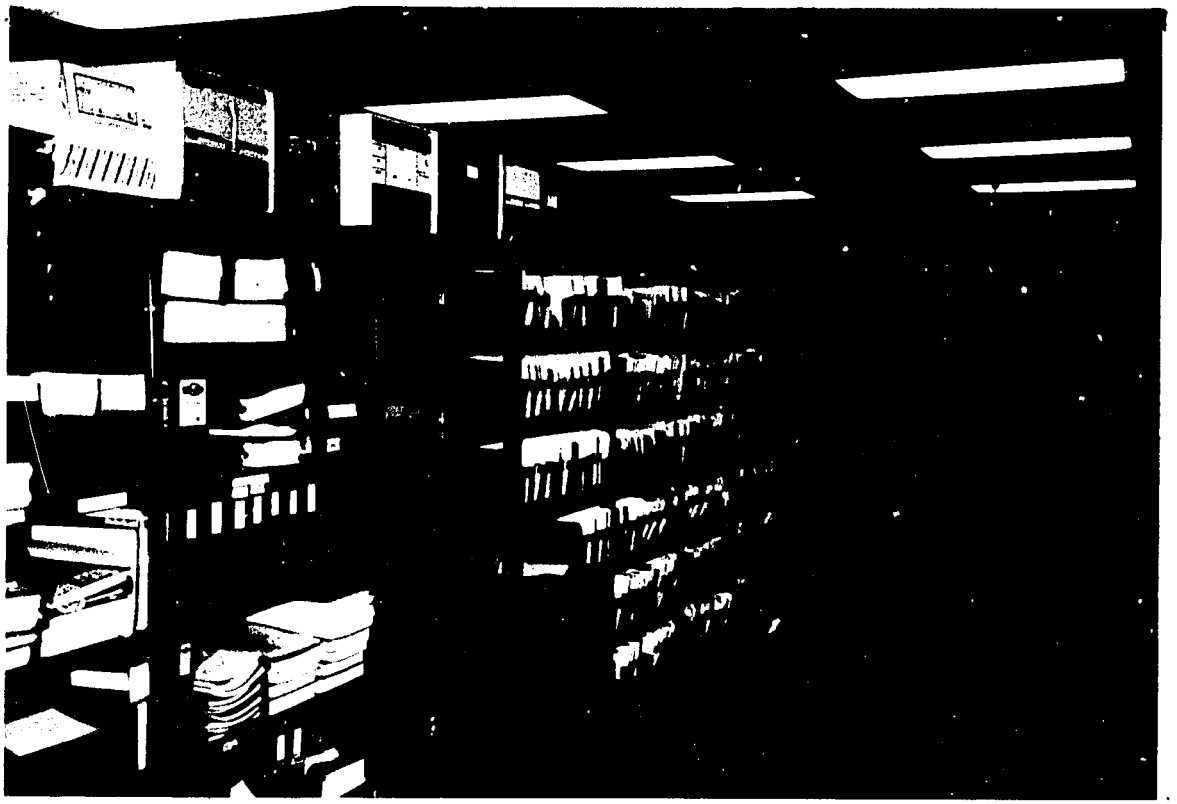


Hydraulics Laboratory

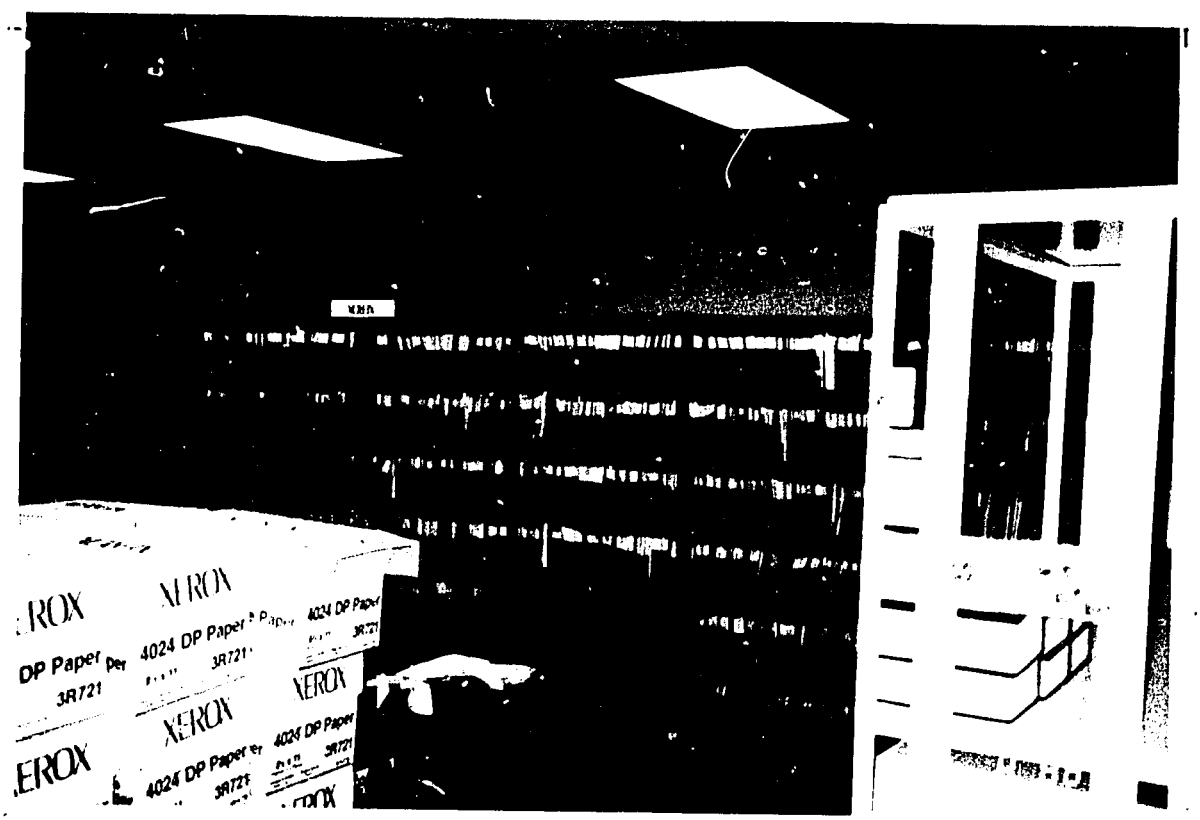


Reproduction Room

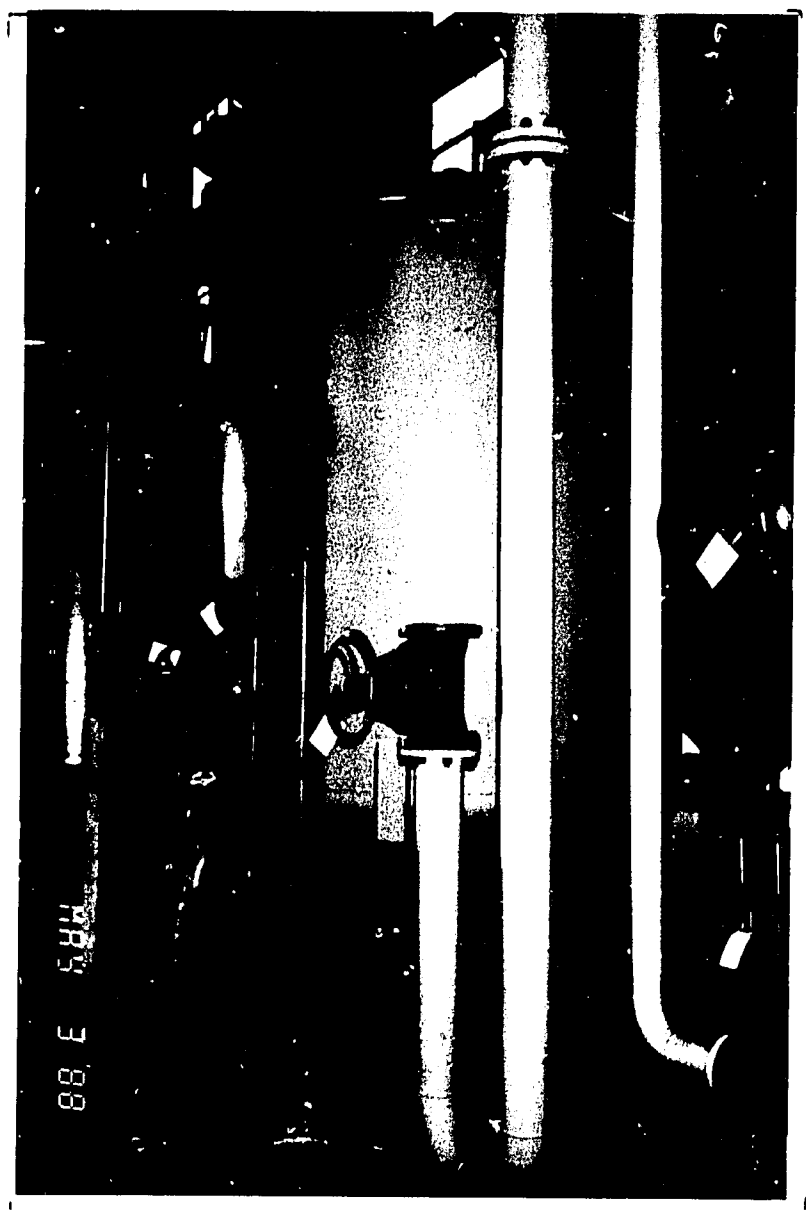
Drafting Area



Completed Projects File Storage

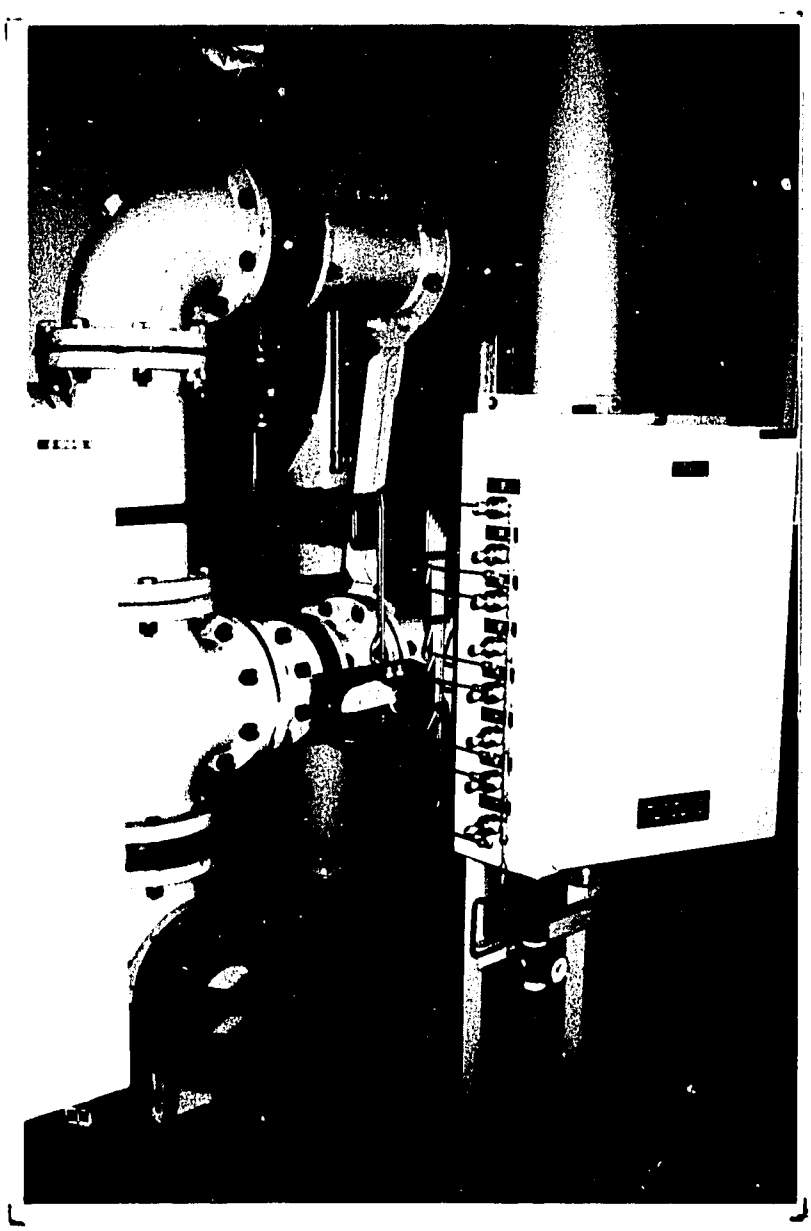


Completed Projects File Storage



Package Treatment Facilities Under Construction in L*AWT Shop

Package Treatment Facility Under Construction in L*AWT Shop



Package Treatment Facilities Under Construction in L*AWT Shop

Portion of Outside Storage Area

SECTION 2

EXPERIENCE

A. INTRODUCTION

The experience of the L*AWT Team comprises a number of facets, including its total business, its turnkey projects, its treatment plants greater than 4.0 mgd and, finally, the experience of the personnel it proposes for this project; as well as the experience data of the several subcontractors/subconsultants to L*AWT. Included in the following discussion is a list of projects completed by L*AWT. The list gives the project type, the L*AWT dollar value of each project, the project start and completion date, and the project location.

B. COMPLETED PROJECTS

L*AWT has furnished to JMM a computer list, entitled Project Performance, of engineered projects (see Table 1 for the period September 1, 1983, through December 31, 1985). The list includes only those projects for which an engineering design was prepared and a finished package or plant was delivered. This L*AWT Table utilizes the "project start dates" within this time period to begin the table and a December 31, 1985, "project start date" for the ending date of the table. It should be noted that some other projects starting at an earlier date could have been substantially worked on and completed within the period but were not included, and some jobs

TABLE 1

PROJECT PERFORMANCE

FROM SEPTEMBER 1, 1983 THRU DECEMBER 31, 1985

JOB NO.	PROJECT	CODE	VALUE	PERFORMANCE START	PERFORMANCE SHIPPED	PERFORMANCE TIME/WKS	PROJECT LOCATION	TYPE OF PROJECT
F-6754	CHEVRON	7	100,000	9-07-83	1-19-84	19	IN U.S.	AE
F-6766	COLETO CREEK	3	1,900,000	9-13-83	6-21-84	40	IN U.S.	AE
F-6775	TAIWAN POWER	3	50,000	9-14-83	10-31-83	7	OUTSIDE U.S.	AE
F-6781	UDHAILIYAH LAB	10	1,000	9-16-83	11-09-83	8	MIDDLE EAST	AE
F-6782	U.S. GOV'T	4	8,000	9-16-83	9-21-83	2	IN U.S.	AE
F-6811	MIDWAY SUNSET	13	150,000	9-26-83	03-06-84	23	IN U.S.	AE
F-6821	ABBOTT LABS	4	20,000	9-27-83	02-24-84	21	IN U.S.	AE
F-6852	LAJET ENERGY	4	20,000	10-05-83	11-23-83	7	IN U.S.	AE
F-6900	EXXON NUCLEAR	2	400,000	10-24-83	06-15-84	33	IN U.S.	AE
F-7016	HYPERION ENERGY	4	80,000	11-29-83	09-04-84	40	IN U.S.	AE
F-7039	AMERICAN CAN	3	50,000	12-02-83	04-12-84	19	OUTSIDE U.S.	AE
F-7049	AMERADA HESS	2	80,000	12-09-83	04-23-84	20	IN U.S.	AE
F-7101	KANSAS POWER	3	30,000	01-04-84	05-06-84	17	IN U.S.	AE
F-7106	KIMBERLY CLARK	3	75,000	01-04-84	05-06-84	17	IN U.S.	AE
F-7147	GIUMARRA VINYDS	2	45,000	01-17-84	06-27-84	23	IN U.S.	AE
F-7202	INSERTECH LTD.	2	40,000	02-01-84	07-24-84	25	OUTSIDE U.S.	AE
F-7229	WITCO CHEMICAL	3	200,000	02-17-84	09-05-84	28	IN U.S.	ABE
F-7244	FT.HOWARD PAPER	4	70,000	02-21-84	06-25-84	18	IN U.S.	AE
F-7255	WITCO CHEMICAL	4	15,000	02-29-84	05-02-84	9	IN U.S.	ABE
F-7270	SAN JOSE UNIV.	17	200,000	02-29-84	09-18-84	29	IN U.S.	AE
F-7274	WILLAMETTE IND.	2	15,000	03-06-84	05-30-84	12	IN U.S.	AE
F-7318	CHEMBOND CORP.	3	65,000	03-15-84	07-30-84	20	IN U.S.	AE
F-7332	CHEVRON	7	60,000	03-20-84	09-06-84	24	IN U.S.	AF

F-7333	TEXAS MIRROR	7	6,000	03-21-84	07-12-84	16	IN U.S.	AE
F-7339	FORD MOTOR	3	300,000	03-21-84	12-10-84	38	IN U.S.	AF
F-7356	UNION OIL CO.	4	35,000	03-28-84	06-21-84	12	IN U.S.	AE
F-7366	SUN PROD.	13	20,000	03-29-84	07-18-84	16	IN U.S.	AE
F-7381	CONOCO INC.	3	70,000	03-30-84	09-11-84	23	IN U.S.	AE
F-7389	SO. CAL EDISON	7	(PILOT PLANT)	04-05-84	---	---	IN U.S.	AE
F-7424	FORD MOTOR	3	40,000	04-16-84	07-26-94	14	IN U.S.	AE
F-7427	GETTY OIL	3	70,000	04-16-84	09-26-94	23	IN U.S.	AE
F-7465	E.I. DUPONT	3	55,000	04-19-84	10-24-84	7	IN U.S.	AE
F-7468	ATLANTIC-GULF	4	25,000	04-27-84	07-18-84	12	IN U.S.	AE
F-7470	CAL FED SAVINGS	2	15,000	04-27-84	07-30-84	14	IN U.S.	AE
F-7476	TENNECO OIL	13	50,000	04-27-84	9-24-84	21	IN U.S.	AE
F-7532	SUNKIST PLANT	17	300,000	05-24-84	9-28-84	18	IN U.S.	AE
F-7540	TAIWAN POWER	3	55,000	05-24-84	8-2-84	10	OUTSIDE U.S.	AE
F-7543	EXXON CO.	4	15,000	05-25-84	10-3-84	18	IN U.S.	AE
F-7562	CHEVRON	7	200,000	06-04-84	10-31-84	21	IN U.S.	AE
F-7568	AMAX MAGNESIUM	4	20,000	06-04-84	7-24-84	7	IN U.S.	AE
F-7676	CHUGACH ELECT.	7	(TEST COLUMNS)	07-17-84	9-24-84	10	IN U.S.	AE
F-7749	ITT RAYONIER	4	35,000	08-14-84	12-10-84	17	IN U.S.	AE
F-7753	AMAX MAGNESIUM	4	20,000	08-16-84	9-11-84	4	IN U.S.	AE
F-7756	CON EDISON	7	120,000	08-16-84	12-5-84	16	IN U.S.	AE
F-7765	SAN QUENTIN	4	15,000	08-20-84	3-15-85	30	IN U.S.	AE
F-7766	SO CAL EDISON	7	(TEST COLUMNS)	08-20-84	----	----	IN U.S.	AE
F-7861	FRITO-LAY	2	30,000	09-26-84	9-11-85	50	IN U.S.	AE
F-7872	SO CAL EDISON	7	(TEST COLUMNS)	10-01-84	----	----	IN U.S.	AE
F-7884	SO CAL EDISON	3	1,900,000	10-26-84	11-01-85	54	IN U.S.	AE
F-7913	ISMALIA, EGYPT	3	600,000	10-21-84	08-12-85	42	EGYPT	AF
F-7919	U.S. GOV'T	4	15,000	10-22-84	11-30-84	6	IN U.S.	AE

F-7926	E.I. DUPONT	3	700,000	10-23-84	06-21-85	34	IN U.S.	AE
F-7951	FORD MOTOR CO.	2	10,000	10-29-84	12-12-84	6	IN U.S.	AE
F-7954	U.C.L.A.	7	5,000	10-30-84	11-08-84	2	IN U.S.	AE
F-7993	RUBICON	4	15,000	11-13-84	02-04-85	12	IN U.S.	AE
F-8007	CHEVRON CHEM.	2	40,000	11-19-84	02-11-85	12	IN U.S.	AE
F-8043	MCMASTER-CARR	2	6,000	11-21-84	01-23-85	9	IN U.S.	AE
F-8051	WILLAMETTE IND.	2	16,000	11-26-84	02-13-85	12	IN U.S.	AE
F-8092	YANKE ENERGY	9	15,000	12-11-84	04-08-85	17	IN U.S.	AE
F-8093	YANKE ENERGY	3	80,000	12-11-84	04-08-85	17	IN U.S.	AE
F-8109	WITCO CHEMICAL	4	25,000	12-18-84	01-28-85	7	IN U.S.	AE
F-8124	SUNCOR	3	550,000	12-20-8[illegible]	CANCELLED		OUTSIDE U.S.	AE
F-8222	A.P.S.	3	65,000	01-22-85	03-12-85	7	IN U.S.	AE
F-8223	AMERICAN FOREST	4	30,000	01-22-85	03-28-85	9	IN U.S.	AE
F-8240	IMC	3	200,000	01-28-85	05-24-85	17	IN U.S.	AE
F-8254	FED.MIN.NIGERIA	3	1,100,000	02-04-85	11-15-85	41	OUTSIDE U.S.	AF
F-8264	KIMBERLY-CLARK	3	110,000	02-05-85	06-14-85	19	IN U.S.	AE
F-8320	PETRO-LEWIS	13	100,000	02-21-85	07-12-85	21	IN U.S.	AE
F-8328	SIERRA PAC. IND	4	40,000	02-22-85	06-19-85	17	IN U.S.	AE
F-8344	GEORGIA-PACIFIC	4	55,000	02-27-85	08-07-85	23	IN U.S.	AE
F-8390	WHITE HAVEN CTR	4	15,000	03-13-85	07-22-85	18	IN U.S.	AE
F-8426	AMOCO OIL	3	1,800,000	03-25-85	06-03-86	10	IN U.S.	AE
F-8441	HERCULES, INC.	2	7,000	04-02-85	05-24-86	8	IN U.S.	AE
F-8447	AMARADA HESS	17	400,000	04-03-85	07-23-85	16	IN U.S.	AE
F-8448	TEMPO PLASTIC	4	12,000	04-03-85	06-11-85	10	IN U.S.	AE
F-8458	S.ILL.PWR.COOP	3	50,000	04-09-85	10-04-85	25	IN U.S.	AE
F-8478	NEVADA POWER	3	800,000	04-11-85	07-25-86	15	IN U.S.	AE
F-8479	HERCULES, INC.	4	30,000	04-11-85	07-30-85	16	IN U.S.	AE
F-8481	PENNWALT	4	40,000	04-11-85	08-22-85	19	IN U.S.	AE

F-8493	CONTAINER CORP.	4	25,000	04-15-85	09-06-85	21	IN U.S.	AE
F-8501	AMERICAN FOREST	3	200,000	04-16-85	11-1P 95	31	IN U.S.	AE
F-8521	CHEVRON	7	80,000	04-25-85	12-10-85	33	IN U.S.	AE
F-8609	WISC.PUB.SERV.	7	(PILOT PLANT)	06-06-85	06-27-85	3	IN U.S.	AE
F-8629	SO. CAL. EDISON	4	400,000	06-13-85	04-25-86	46	IN U.S.	AE
F-8665	D.M. WEATHERLY	4	15,000	06-28-85	10-21-85	16	IN U.S.	AE
F-8715	UNION OIL	4	200,000	07-23-85	11-20-85	17	IN U.S.	AE
F-8716	DETROIT EDISON	3	110,000	07-23-85	01-14-86	25	IN U.S.	AE
F-8718	UNION OIL	3	1,100,000	07-23-85	10-14-86	64	IN U.S.	AE
F-8732	TEXACO	3	55,000	07-30-85	12-30-85	22	IN U.S.	AE
F-8744	YANKE ENERGY	3	90,000	08-05-85	11-19-85	15	IN U.S.	AE
F-8772	LAWSCO MEX	3	100,000	08-13-85	ENG. ONLY		IN U.S.	AE
F-8773	U.S. MARINES	10	3,000	08-14-85	09-30-85	7	OUTSIDE U.S.	AE
F-8808	EGYPT ELECT.	3	2,400,000	08-27-85	10-09-86	58	EGYPT	AG
F-9809	3M COMPANY	2	25,000	08-27-85	12-19-85	17	IN U.S.	ABF
F-8817	SHELL PROD.	4	30,000	08-29-85	10-16-85	7	IN U.S.	AE
F-8874	QUEEN VAL. HOSP	4	15,000	09-11-85	11-13-85	11	IN U.S.	AE
F-8894	TENNECO OIL	13	110,000	09-19-85	02-16-86	22	IN U.S.	AE
F-8922	SO. CAL. EDISON	7	200,000	10-07-85	05-01-86	30	IN U.S.	AE
F-8961	NEW ENG. POWER	3	800,000	10-23-85	10-02-86	49	IN U.S.	AE
F-8964	SO. CAL. EDISON	3	120,000	10-23-85	05-08-86	28	IN U.S.	AE
F-8969	MICHIGAN UNIV.	3	150,000	10-24-85	05-15-86	29	IN U.S.	AE
F-8970	FORD MOTOR CO.	3	75,000	10-24-85	02-18-86	17	IN U.S.	AE
F-8976	U.C.L.A.	7	3,000	10-25-85	02-09-86	16	IN U.S.	AE
F-8978	U.S. NAVY	4	70,000	10-28-85	CANCELLED		IN U.S.	AE
F-8982	GENERAL ELECT	3	20,000	10-30-85	03-03-86	22	IN U.S.	AE
F-9028	HERCULES	2	7,000	11-18-85	01-16-86	9	IN U.S.	AE
F-9076	CLEVELAND ELECT	4	150,000	11-27-85	03-20-87	16	IN U.S.	AE

F-9130	L.A. COUNTY	4	30,000	12-17-85	02-04-87	7	IN U.S.	AE

TOTAL ENGINEERED PROJECTS: 108

OTHER ORDERS: 2,323

TOTAL PROJECTS: 2,431

started after December 31, 1985, were partially or substantially completed during 1986 prior to the Invitation for Bids cutoff date.

Table 1 provides a total of $16.9 million of projects. JMM manually extracted additional jobs that were logged into the system earlier than September 1983, and were logged in up to May of 1986, in order to reflect jobs that were more or less worked on, produced, or beneficially earned during the window of November 1983 and November 1986. The JMM manual method added $7.1 million of projects to this list for a total of approximately $24 million, an average of about $8 million per year.

Three additional projects that were outside the 3-year time window but of significant size were: CNTIC, the China project, listed at $15 million; and the PTPUPUK KUJANJ and PT SRIWIDJAJA projects in Indonesia, listed at $3.9 million. These projects are listed in the supplement to Table 1, Project Performance (see Table 2).

By reviewing Table 1, Project Performance, a bit further, it can be noted that the job numbers are not consecutive. Many job numbers are skipped in this list. It is explained that the job number is, in fact, an invoice number and the intervening numbers not listed are orders for off-the-shelf items and materials such as softener resins, etc. The L*AWT list begins at F-6754 and extends to F-9130, for a total of 2,376 invoices during the time window. JMM's manual extraction, which allowed a slightly more liberal interpretation of work completed or worked on during the time window, ran from F-5734 to F-9496, for a total of 3,762 invoices.

TABLE 2

OTHER LARGE PROJECTS PRIOR TO 1983

Job. No.	Project	Code	Value	Performance Start	Performance Shipped	Time/Wks	Project Location	Type of Project
E-3094	CNTIC	3	15,000,000	11-16-73	10-07-79	307	Outside U.S.	AF
E-5558,9	PT PUPUK KUJANG	3	1,500,000	08-14-75	08-14-77	104	Outside U.S.	AF
E-6338,9	PT SRIWIDJAJA	3	2,400,000	08-22-76	02-26-76	129	Outside U.S.	AE

A further examination of the same tables shows the starting and ending dates of the work, the project locations, and the type of project as well as the type of product that was furnished. Table 3 lists the code legends for the products and the type of project. Table 4, Turnkey and Larger Projects, pinpoints projects within Table 1 and outside the time frame of Table 1, and identifies turnkey and larger projects.

Figure 1, attached, is a copy of a typical invoice supplement for Project F-7884. In the course of JMM's extraction of job invoices, over 120 such invoices were examined in a file; and in the case of three projects, the backup files were examined. In the case of Project F-7884, earlier or prior supplemental documents were examined, correspondence files were scanned, and drawings and technical submittals were noted and examined to determine the level of backup information. Change order requests were also noted, and backup information supporting the claims indicated additional accounting records and internal auditing by L*AWT of their costs.

Three other projects were examined to a lesser degree, and equivalent detail was found on each. This sampling of data provided JMM with insight to L*AWT's project records and administration. L*AWT monitors costs or cost overruns and tracks change orders or extra work, indicating good project management from a fiscal standpoint. Their technical management and scheduling control are implied in the number of completed projects and in their adherence to short schedules. Their ability to manufacture facilities or components that handle nuclear reactor deionized water attests to their technical management.

SUPPLEMENT TO EXISTING ORDER

L☆A/WATER TREATMENT DIVISION

Chromalloy American Corporation

17400 EAST CHESTNUT ST. – CITY OF INDUSTRY, CALIF. 91749
(213) 912-5411

Water Conditioning Equipment Engineering & Manufacturing Since 1920

ENG.

SUPPLEMENT DATE	YOUR ORDER NO.	TERMS	SUPPLEMENT NO.	JOB & INVOICE NO.
11-25-87	S4100335	(*)	15	F-7884

SOLD TO:
SOUTHERN CALIFORNIA EDISON CO.
SAN ONOFRE GENERATING STATION
UNITS 2 & 3
P.O. BOX 700
SAN CLEMENTE, CA 92672

SHIP TO:
SOUTHERN CALIFORNIA EDISON CO.
14300 MESA RD.
SAN CLEMENTE, CA 92672

SAN ONOFRE NUCLEAR GENERATING STA.
ATTN: MR. R.L. MILLER PAX 2-2756

F.O.B.	FACT.	DEST.	PPD & CHGE.	PPD & ALLOWED	OTHER
					FREIGHT COLLECT

Supplement entered to accomplish the following:

JOB NAME: SOUTHERN CALIFORNIA EDISON
SAN ONOFRE NUCLEAR STATION

ITEM NO.		Deduct	Add
	Total price less taxes before this supplement		$1,831,358.[illegible]
1.	ACKNOWLEDGE RECEIPT OF CHANGE ORDER #15 ADDING ADDITIONAL CHARGES RELATED TO CHANGES AND DELAYS IN SCHEDULE AT	. . . .	40,843.00
2.	PAYMENT RECEIVED ON 11-25-87		
	Total price less taxes after this supplement		$1,872,201.[illegible]

SHIPPING SCHEDULE COMPLETED

SHIP BY	O.T.	PICK UP	R.R.	UPS	P.P. INS.	RY. EXP.	AIR FRT.	AIR P.P.	MOTOR FRT.	PPD	COLLECT
				BEST WAY							X

SPECIAL INSTRUCTIONS

SUB/DATA BY	ENG.
M/L BY	ENG.
PO BY	L*A TREATI

(*) SEE ORIGINAL AND SUPPLEMENTS FOR OTHER DATA

	CC
NONE	NONE

AUTHORITY: ITEM 1
11-24-87 FCA

LA-101

FIGURE 1

TYPICAL L*AWT
SUPPLEMENTAL INVOICE

TABLE 3

PROJECT PERFORMANCE CODE LEGEND

Product Code

2	Industrial Softeners
3	Demineralizers
4	Deaerating Heaters & Continuouos Blow-Off Systems
5	Hot Process Softeners
6	FlocTreators - Coagulators
7	Sand, Coal, Carbon Filters
8	Diatomite Filters
9	Chemical Feeders
10	Commercial Softeners
13	Microsofteners
14	Resins
15	Microionic
16	Cascading Foamator
17	Reverse Osmosis

Type of Project Code

A	Water
B	Wastewater
C	Supply Only
D	Supply Construct
E	Design Supply
F	Turnkey (Design Supply Construct)
G	Design Only

TABLE 4

TURNKEY AND LARGER PROJECTS

1. L*AWT Turnkey projects during last six years:

   a. In U.S.A.

F-7332	Chevron	$ 60,000
F-7339	Ford Motor Co.	$ 300,000
F-7476	Tenneco Oil	$ 50,000
G-148	Kaiser Aluminum	$ 102,000
G-296	So. Cal. Edison	$ 85,000
G-623	Commonwealth Edison	$1,330,000
G-608	Ford Motor Co.	$ 652,000

   b. Outside U.S.A.

F-7913	Ismailia #4	(Egypt)	$ 600,000
F-8254	Fed. Min. of Ind.	(Nigeria)	$1,100,000
F-8808	EEA	(Egypt)	$2,400,000
F-9280	EEA	(Egypt)	$ 792,000
F-9700	Ford Motor Co.	(Canada)	$ 437,000

2. Completed plants - 4 MGD or larger capacity:

F-5853	Carolina Power & Light	21.6 MGD
F-6766	Central & So. W. Services	5.3 MGD
F-8426	AMOCO	6.3 MGD

C. EXPERIENCE OF PERSONNEL

In order to evaluate the managerial and administrative capabilities of the L*AWT Team, it is necessary to focus on the past experience of each of the Team members; years of work with L*AWT, or with similar organizations, provide a reasonable starting point. Team members who have worked together on previous projects provide a reasonable assurance that they can continue to work together on a new project. Conversely, however, newly hired staff adds an element of unknown to such a team; there is no sure way of confirming the performance of newly hired personnel unless one has direct references who can make that judgement based on their demonstrated ability. JMM did not have direct references available, except for Mr. Wagner as noted below.

L*AWT has proposed a team of firms and individuals as outlined in their Drawing D14117 (see Figure 2 attached). Certain selected positions are staffed by existing personnel from within L*AWT. These include: W. Burns, Chief of Projects; H. Archer, Cost Controls; P. Giacolletti, Assistant Chief of Projects; H. Romines, USA Quality Control; L. Hiegel, USA Planning and Progress; R. Cox, Contracts Administration, Logistics, and USAID Liaison; and F. Albia, Parts Procurement. All other staff on the project are employees of subcontractor/consultants or new hire employees for the project. In Cairo, Mr. Sami Gabr of Permuttit-Boby is listed as an Advisor.

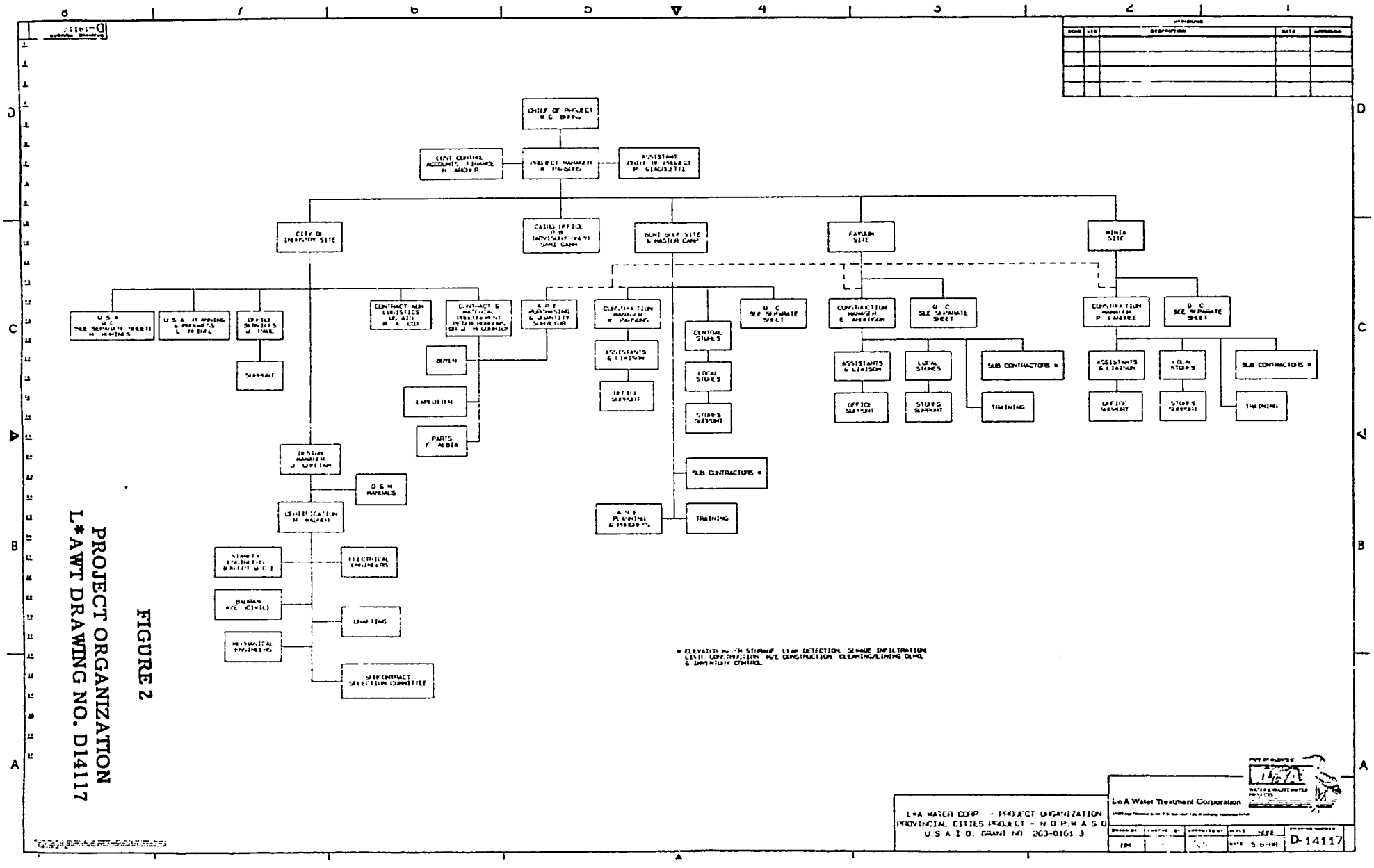


FIGURE 2

PROJECT ORGANIZATION
L*AWT DRAWING NO. D14117

Again referring to Drawing D14117, Figure 2, the key new hire employees are: W. Parsons, Project Manager; J. Cheetham, Design Manager; R. Wagner, Certification Engineer; E. Anderson, Construction Manager at the Fayoum site; and P. Landree, Construction Manager at the Minia site. All other personnel are members of subconsultant firms or are other new hires.

One key person who is a new hire is W. Parsons, the proposed Project Manager. JMM was not able to meet with him, but we did talk with him via telephone in New York. His past 13 years of experience have involved primarily overseas work in the Middle East and or South East Asia. JMM did not have his detailed resume from which to contact references; most of his employers were overseas corporations or governments, requiring more time to obtain supporting information. The telephone calls with Mr. Parsons revealed that he had seven different jobs/employers from 1975 to 1985. The jobs have been in a number of countries, and he has worked in various capacities from senior consulting engineer to construction management coordinator. Based on our cursory telephone conversation, it was not possible to confirm Mr. Parsons' ability to manage and coordinate a $60-million engineering and construction project over a 3-year period. This project would be his longest assignment over the past 14 years. He did state that he was licensed in Saudi Arabia and in Indonesia as a professional engineer. He is not licensed in the USA.

Mr. Wagner has an extensive resume siting firms, positions, projects, publications, and multiple licensing in the USA. He has worked for

consulting firms known to JMM and is personally known by some JMM employees. He will have significant input to the design process based on his previous experience with Walker Process, a water and wastewater treatment equipment firm, and with VTN, a consulting engineering firm.

Mr. Cheetham is shown on the organization chart as the Design Manager. Mr. Cheetham has been the Chief Engineer of Patterson Candy International, Ltd (P.C.I. Ltd) for some 20 years. In this position, he has unquestionably been involved in all PCI Ltd's projects and brings direct water treatment experience to the project. JMM is aware of many Candy projects overseas, and Mr. Cheetham's input to their design process cannot help but have been significant. He is a British citizen.

Mr. Anderson and Mr. Landree, the Construction Managers proposed for Fayoum and Minia, respectively, are also new hires. They show considerable overseas construction experience in their resumes, although little of it relates to hydraulic structures (i.e., water treatment plants). However, it should be noted that Stanley Consultants is providing Quality Control (Q.C.) personnel who are longer term employees and who have previously been managers of overseas operations or of projects with hydraulic structures experience.

Table 5 lists the years of experience with L*AWT for the key project personnel.

TABLE 5

YEARS OF EXPERIENCE

L*AWT EXISTING STAFF*

Name	Years With L*AWT
R. Flores	33
W. Burns	27
S. Strop	25
J. McCormick	24
R. Cox	18
B. Collins	16
P. Giacoletti	14
D. Perry	13
E. Niegel	12
J. Johnson	11
F. Arias	10
F. Albia	7
J. Cook	7
H. Romines	7

* As of 1987 Bid Submittal with 7 or more years.

D. PURCHASING AND EXPORT/CUSTOMS EXPERIENCE

During the course of past projects in Indonesia and China and for current work in Egypt, L*AWT has become familiar with purchasing and export/customs procedures. While the dollar volume of such items will be significantly greater than L*AWT's current level of effort, the mechanics and procedures will be the same, except that they will be repeated many more times. While the Project organization does not identify specific individuals, undoubtedly, a number of additional people will be required to handle the increased volume of documents and purchase orders, etc. On the receiving end in Egypt, L*AWT has listed five possible firms that it may utilize. These are all existing operating firms with a familiarity with Egyptian customs and technical equipment imports. Table 6 lists the five available import firms. See the Appendix for a complete listing of these firms.

Egyptian Construction Firms

Information supplied by L*AWT on the probable Egyptian contractors shows that these firms have completed complex construction projects. Accepting the brochures and supporting data on face value, they should be able to construct small water treatment plants and to perform the other required work.

TABLE 6

AVAILABLE IMPORT FIRMS

Morgan International Transport Marine
Daker Egypt Branch c/o Fast Freight Services
Panalpina World Transport c/o Egyptrans
Jargro
Permutit Egypt Ltd.

* Firms which L*AWT has listed in Bid Submittal.

E. QUALITY OF WORK PERFORMED

Past performance of L*AWT in completing projects as well as the quality of the physical facility and its treated water are means for determining the overall quality of work performed. To determine this, JMM contacted three of the six larger L*AWT project owners to discuss their satisfaction with L&AWT (see Table 7, References for Projects over $ 1 Million). A list of Scheduled Completions Versus Actual Completions for Projects over $500,000 is shown in Table 8.

A contact with Mr. D. Averwald of the Southern California Edison Company (S.C.E.) was quite positive. Mr. Averwald was the chemical process engineer responsible for the design and quality control of the water treatment facilities furnished for the San Onofre nuclear reactor power plant of Southern California Edison under L*AWT Job No. 7884. S.C.E. established treated water quality and certain material equipment quality. L*AWT was responsible for all other design details. The facility met part per billion requirements for a number of constituents as per specification, and it was well built. S.C.E. is quite satisfied with the facility.

A call was made to Ms. Ellen Skufca of Union Oil Company in the San Francisco Bay area to confirm the quality of the services and equipment furnished under L*AWT Job No. 8718 in 1985-86. Ms. Skufca is a chemical engineer and was responsible for the process chemistry, installation, and startup. While there were problems with the physical layout of the units,

TABLE 7

REFERENCES FOR PROJECTS OVER $1 MILLION

Job No.	Project	Company/ Contact	Telephone
F-6766	Coleto Creek	Coleto Creek	
		Carlos Zuazua	512-575-0573
		Mike Fields	
F-7884	So. California Edison	So. California Edison	
		D. Auerswald	213-633-0130
F-8254	Fed. Min. Nigeria	M. W. Kellogg	
		J. Jaeger	713-960-2000
F-8426	Amoco Oil	Amoco Oil	
		Glen Rider	409-945-1955
F-8718	Union Oil	Union Oil	
		Ellen Skufca	415-799-4411
F-8808	Egypt Elect.	Egypt Elect.	
		Dr. S. Hanna	

TABLE 8

SCHEDULED COMPLETIONS
VS. ACTUAL COMPLETIONS
(Projects Over $500,000)

Job No.	Project	Shipping Performance Scheduled	Actual
F-6766	Coleyo Creek	06-01-84	06-21-84
F-7884	So. Cal. Edison	11-05-85	11-01-85
F-7913	Ismalia, Egypt	12-27-85	08-12-85
F-7926	E.I. Dupont	06-21-85	06-21-85
F-8254	Fed. Min. Nigeria	09-27-85	11-15-85
F-8426	Amoco Oil	06-03-86	06-03-86
F-8478	Nevada Power	07-15-86	07-25-86
F-8718	Union Oil	10-14-86	10-09-86
F-8808	Egypt Elect.	10-09-86	10-09-86
F-8961	New Eng. Power	09-22-86	10-02-86
E-3094	CNTIC	08-26-79	10-07-79
E-5558,9	Pt PUPUK KUJANG	08-04-76	08-14-75
E-6338,9	PT SRIWIDJAJA	08-22-78	08-22-78

she felt these were problems generated by the general contractor rather than by L*AWT. The L*AWT personnel involved in the project were responsive, knowledgeable, and timely in their dealings with Union Oil Company. Ms. Skufca believed that the facility met all its criteria in spite of the problems with the general contractor to whom L*AWT was a subcontractor. L*AWT would again be invited to propose work for Union Oil, while the general contractor has not been so requested.

A call was made to a Mr. Glen Rider of Amoco Oil concerning L*AWT Job No. 8426. Mr. Rider noted that while there were minor equipment problems that were solved during construction and some delays in processing some parts of the shop drawings, on the whole, the facility performed as expected. The L*AWT Team was responsive and knowledgeable, and Amoco would probably consider L*AWT for future projects. There was a concern about the type and run time of the resins in one part of the facility. American resin was requested and eventually delivered. This resin seems to have a shorter than expected life cycle. L*AWT programs used to design the systems may have impacted the run time cycle (per the Amoco engineer).

In summary, the three firms contacted were positive about the work performed by L*AWT. Minor problems were handled by the L*AWT staff in a timely manner, and each firm expressed a willingness to consider L*AWT for future projects.

F. CONTRACTORS LICENSE

In information given to JMM, L*AWT has listed a California State Contractors License Class C-55 (see Appendix, attached). Discussions with the California State Licensing Board local office revealed that a C-55 license allows "water conditioning" work that may include plumbing and minor work incidental to the installation of water conditioning equipment. JMM asked if that could be interpreted to include a water treatment plant with concrete structures, electrical work, plumbing connections, and other larger waterworks constructed on site. The initial interpretation was that a General Contractor's "A" License would be required for such water treatment works constructed in the State of California.

G. CONCLUSION

In conclusion, while L*AWT's workload and experience does not reach $20 million per year, it has completed more technically difficult projects dealing with water treatment. The data submitted with the L*AWT bid shows a detailed knowledge and understanding of the work that is to be done. Stanley Consultants will provide engineering quality control and has overview responsibilities.

While the L*AWT staff lacks only two long-term in-house people at key points, the backbone of the staff have long-term experience related to L*AWT or to water treatment equipment. One of the key positions is to be filled by the former Chief Engineer of Candy. While he would be a new

hire, he brings experience to the team. The weakest link at this point may be the overseas project manager, but JMM has little direct information on him other than the telephone calls and a two-page, somewhat limited, resume. Selection of the person to fill the position of project manager is apparently not final so this could change in the future. The proposed project manager has worked on major overseas jobs since 1975 and, thus, brings that experience to this project.

The next weakest links would appear to be the construction managers of the other two sites. They would also be new hires, therefore, there is an unknown aspect to their ability to perform on waterworks projects in Egypt. They have worked overseas on other projects, so they bring that experience to this project.

In summary, if the project manager performs his work and the other two construction managers perform their work, the project should be completed as expected. Again, it should be noted that the parent Portals firms cannot allow the project to have any difficulties since they are backing the lines of credit for L*AWT; if for no other reason, the project should be completed as expected. In turn, L*AWT has posted a $1.4-million bid bond (based on Portals financial backing) guaranteeing that it will enter into a contract, if so awarded. Performance bonds will also be required in due course. This is just another reason that L*AWT cannot be allowed by the Portals organization to default on this project. While the preceding arguments are not positive statements based on strength of staff and past experience, etc., they are practical statements based on the realities of

working in the business world. Considering the bonds and other financial commitments already made, L*AWT will be required by its parent owners to complete the project under any circumstance.

SECTION 3

FINANCIAL CAPABILITY

A. INTRODUCTION

Considering the magnitude of the proposed Provincial Cities Project (namely, almost $60 million) and the fact that this project has to be completed within a 3-year time span, the financial capability or resources of L*AWT are important. Requests were also made of the various subconsultants/contractors to obtain their financial reports. The only firm responding affirmatively was PDM, a public corporation. All others, we were informed by L*AWT, considered themselves to be private corporations and, as such, financial information was privileged and not available to JMM. This was specifically true of L*AWT, which declined to furnish companywide financial information.

We did receive (from L*AWT) a copy of the 1986 Annual Report of Portals Holdings PLC, the public company in England that holds 100 percent of Portals Water Treatment Limited, which in turn holds 100 percent of L*AWT. JMM was also given copies of published Annual Reports for the Water Treatment Corporation, dated 1965 and 1969, and for Chromalloy American Corporation, dated 1971 (see the Appendix for copies of these reports). In each of these reports, specific references are made to L*A Water Conditioning or L*AWT. Thus, L*AWT and Mr. Burns, the current President of L*AWT, can be traced back as a Company through these reports to 1965. Within Chromalloy American Corporation, the

organization became L*AWT Division. Chromalloy was incorporated in Delaware.

B. FINANCIAL CONSIDERATIONS

L*AWT has indicated that as a part of its ongoing work, it has a line of credit with Security Pacific National Bank, Los Angeles, California (see Figure 3). This is a $4.1-million line of credit which JMM confirmed via telephone with Ms. M. Perez, the Account Officer. The line of credit is without collateral, but is reported to be guaranteed by the Portals organization. Further, according to Ms. Perez, the line of credit is not solely identified to be used for the Provincial Cities Projects but, rather, is for L*AWT's general use.

In reviewing the method of bonding this project, JMM was informed by Mr. Herman Archer, L*AWT Vice President of Finance (see Figure 3), that the Bank of America had provided the $1.4-million bid bond and was also prepared to provide other bonds as requested or negotiated with L*AWT. The Bank of America, per Mr. Harry Kremling, states that a $16± million cumulative bond has been discussed. It would comprise the following:

Item	Amount ($million)
Bid Bond	1.4
Performance Bond	7.0
Advance Dollar Payment Guarantee	4.5
Advance Egyptian Pound Payment Guarantee	3.0
Total	$ 15.9million

FIGURE 3

May 4, 1988

ARCHER MEMO TO JMM

To: Mr. Allen Grunwald and Mr. Wilfried F. Langer of
James M. Montgomery Engineers, Inc.

Re: Financial Ability
Fund $23,000,000 to $50,000,000 Over a Two-Year Period

A. Bank references:

1. Security Pacific National Bank — $4,100,000 line of credit
Ms. Michele Perez - Account Officer
Telephone No. 213-345-5269

The $4,100,000 is our current line. Our banking relationship is such that after the proper arrangements are made, this line could be extended upward to the $10,000,000 range.

2. Bank of America — Limit (see attached letter)
Mr. Harry Kremling - Vice President
Telephone No. 213-228-5660

Bank of America issued the $1,400,000 bid bond that applies to the NOPWASD project. The attached letter states that the balance of the bonding required for the project is available upon L*AWT's issuance of a corporate resolution to borrow.

B. Cash Flow

1. Major assumption in the cash projection given to you is for FAS USA material content of $29,000,000. However, our actual commercial bid shows $30,102,000 for FAS deliveries for all tasks plus $1,505,100 spare parts plus $2,256,750 freight (see sheet attached).

2. Terms of payment to most subcontractors incorporate the same approvals and certifications as required for L*AWT's payment from U.S. AID and NOPWASD. The only significant exception would be Stanley Engineers.

Prepared by: Herman Archer
Vice President Finance

This set of bonds and guarantees would be supported by the backing of the L*AWT parent companies, per Mr. Kremling, and the bonds and guarantees would be issued from the Bank of America Egyptian banks or affiliates as appropriate.

In an attempt to locate other financial information relative to the various firms that make up the L*AWT team, JMM located the 1987 Engineering News-Record (ENR) list of the Top 500 Engineering Design Firms. That report, dated May 21, 1987, is attached as Figure 4 and lists Stanley Consultants as No. 93. It should be noted that the 1987 report reflects 1986 fees for the listed companies. The 1988 ENR report is due to be published within the next week or two and would provide 1987 financial data. The ENR dollar volume listing does not require submittal of an audited statement but normally requires only the submittal of unsubstantiated answers to a questionnaire. The other engineering firms are too small to be listed in this report and thus no data is available on them.

A similar report for construction contractors should list both PDM and Raymond International. A review of the "Annual Contractor" listing in the ENR issue, dated April 14, 1988, did not list PDM, even though its Annual Report showed revenues of $276 million for 1987 (see Appendix for the PDM Annual Report).

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C. L*AWT FINANCIAL INFORMATION

While JMM was not privy to detailed or audited financial information covering the period November 1983 to November 1986, the date of issuance of the Invitation for Bids, we were allowed access to project files. We were able to piece together, from originals or copies of supplemental orders/invoices (see Figure 1), a significant volume of work. Three or four of the larger projects were then examined in more detail and duplicates of the supplemental invoices for these projects were also found in the files, confirming the dollar volume of the work.

Each job or sales order has a job and invoice number, as explained in Section 2. During the period November 1983 to November 1986, approximately 3,700 invoices were processed utilizing JMM's manual checking; it was determined that about 116 involved "engineered" projects wherein L*AWT designed and fabricated the treatment components. In many cases, these are fully assembled as a complete unit, i.e., skid-mounted packages including treatment modules, piping, controls, electrical, pumps, motors, etc. In other cases, they may have been only a part of some larger facility. The original total dollar volume of the 116 projects (not escalated to 1988 dollars) was approximately $24 million. The reason for stating "approximately" is that some jobs extend over a year or two, so it is not apparent (from an invoice) during which year the substantial portion of a project may have been recorded as fees earned.

FIGURE 4

ENR – THE TOP 500 DESIGN FIRMS

Rank	Firm	Type of firm	Water supply	Power	Mfg.	Bldg.	Sewer, waste	Trans.	Haz. waste	Other	CM	Foreign billings
			Percent of billings									
67	R.W. Beck & Associates, Seattle, Wash.	CE	7	65	0	0	5	0	0	23	✓	✓
68	Midwest Technical Inc. (MTI) Cincinnati, Ohio	EA	0	0	94	5	0	1	0	0	–	–
69	The Smith Group, Detroit, Mich.	AE	0	0	30	56	0	2	0	12	✓	✓
70	BCM Engineers Inc., Plymouth Meeting, Pa.	CE	18	1	2	2	36	6	22	13	✓	–
71	C.E. Maguire Inc., Providence, R.I.	EAP	14	2	3	25	14	22	1	19	✓	–
72	The Earth Technology Corp., Long Beach, Calif.	CE	5	4	5	5	0	3	18	60	–	–
73	Golder Associates, Atlanta, Ga.	SE	4	10	5	8	3	10	50	10	–	✓
74	Kidde Consultants Inc., Baltimore, Md.	CE	4	1	4	55	10	20	0	6	✓	✓
75	Wilbur Smith & Assoc. Inc., New Haven, Conn.	EA	10	0	0	10	10	60	0	10	–	✓
76	McClelland Engineers Inc., Houston, Texas	SE	1	2	6	5	0	1	2	83	–	✓
77	Ellerbe Associates Inc., Minneapolis, Minn.	AE	0	2	2	95	1	0	0	0	–	–
78	Syska & Hennessy, New York, N.Y.	CE	0	0	0	85	0	0	0	15	–	✓
79	Tippetts-Abbett-McCarthy-Stratton, New York, N.Y.	EA	2	5	0	33	20	30	5	5	✓	✓
80	O'Brien-Kreitzberg & Assoc. Inc., Merchantville, N.J.	CE	5	10	10	20	25	30	0	0	✓	–
81	Heery Intl. Inc., Atlanta, Ga.	AE	0	0	4	86	9	0	0	1	✓	✓
82	Swanke Hayden Connell Ltd., New York, N.Y.	A	0	0	0	0	0	0	0	100	–	–
83	Leo A. Daly, Omaha, Neb.	AE	1	0	2	78	1	17	0	1	✓	✓
84	Boyle Engrg. Corp., Newport Beach, Calif.	EA	33	3	1	16	30	10	0	7	✓	✓
85	Harding Lawson Associates, Novato, Calif.	SE	10	10	10	25	0	10	25	10	–	–
86	Ecology & Environment Inc., Buffalo, N.Y.	CE	0	10	0	1	2	1	86	0	✓	✓
	Billings totaled $29.99 million to $20 million											
87	Lockwood, Andrews & Newnam Inc., Houston, Texas	EA	5	4	8	17	41	22	3	0	✓	✓
88	I.M. Pei & Partners, New York, N.Y.	A	0	0	0	100	0	0	0	0	–	✓
89	O'Brien & Gere Engineers Inc., Syracuse, N.Y.	CE	13	0	0	11	31	0	34	11	–	✓
90	Amman & Whitney, New York, N.Y.†	CE	3	3	5	20	2	55	0	12	✓	✓
91	Southwestern Laboratories, Houston, Texas	SE	10	10	10	25	10	25	10	0	–	–
92	3D/Intl., Houston, Texas	AE	2	0	0	88	0	10	0	0	✓	✓
93	The Stanley Consultants Group, Muscatine, Iowa	EA	20	17	1	40	6	15	0	1	✓	✓
94	Hansen Lind Meyer Inc., Iowa City, Iowa	AE	0	0	2	95	0	0	0	3	–	✓
95	SSOE Inc., Toledo, Ohio	EA	0	0	78	22	0	0	0	0	–	✓
96	Cygna Corp., San Francisco, Calif.	CE	0	78	1	16	0	2	0	3	✓	✓
97	ATEC Associates Inc., Indianapolis, Ind.	SE	5	10	20	30	10	10	15	0	–	–
98	The Hillier Group, Princeton, N.J.	A	0	0	0	100	0	0	0	0	✓	–
99	The Kleinfelder Group, Walnut Creek, Calif.	SE	0	0	0	0	0	0	40	60	–	–
100	STS Consultants Ltd., Northbrook, Ill.	CE	0	10	10	50	0	0	15	15	–	–
101	Kimley-Horn & Associates Inc., Raleigh, N.C.	CE	3	0	0	2	5	70	0	20	–	–
102	P&D Technologies Inc., Orange, Calif.	EP	20	0	0	60	5	15	0	0	✓	✓
103	Burgess & Niple Ltd., Columbus, Ohio	EA	11	3	1	15	45	8	0	17	✓	–
104	Wilidan Associates, Anaheim, Calif.	CE	0	0	0	0	0	0	0	100	–	–
105	GPA Technical Consultants Inc., Cincinnati, Ohio	EA	0	15	70	15	0	0	0	0	✓	–
106	Welton Becket Associates, Santa Monica, Calif.	AE	0	0	0	100	0	0	0	0	–	✓
107	Bernard Johnson Inc., Houston, Texas	AE	4	0	11	31	1	53	0	0	–	✓
108	E.C. Jordan Co., Portland, Maine	EA	2	18	15	0	0	1	54	0	✓	–
109	Kennedy/Jenks/Chilton, San Francisco, Calif.	EA	20	5	0	5	30	10	20	10	–	–
110	Simons • Eastern Consultants Inc., Atlanta, Ga.	EA	1	15	45	12	2	0	0	25	✓	✓
111	The Benham Group, Oklahoma City, Okla.	EA	10	15	35	25	5	5	0	5	✓	–
112	HLW (Haines Lundberg Waehler) New York, N.Y.	EA	0	0	0	95	0	0	0	5	–	✓
113	Dannenbaum Engrg. Corp., Houston, Texas	EA	19	1	1	2	15	41	1	20	✓	–
114	The Kober Group, Los Angeles, Calif.	A	0	0	0	99	0	0	0	1	–	✓
115	Envirodyne Engineers Inc., Chicago, Ill.	CE	0	0	0	5	0	40	20	35	✓	–
116	Edwards and Kelcey Inc., Livingston, N.J.	CE	5	0	0	0	5	60	0	30	–	✓
117	Carlson Associates, Cochituate, Mass.	EA	0	0	40	55	5	0	0	0	–	–
118	Flack + Kurtz Consulting Engineers, New York, N.Y.	CE	0	2	5	85	0	0	0	8	–	✓
119	Gresham, Smith & Partners, Nashville, Tenn.	AE	0	0	3	78	3	14	0	2	–	–
120	Greeley & Hansen, Chicago, Ill.	CE	5	0	0	0	95	0	0	0	✓	✓
121	The Kuljian Corp., Philadelphia, Pa.	EAP	7	63	12	6	5	0	0	7	✓	✓
122	Geotechnical & Environmental Inc., Newton, Mass.	CE	0	0	0	0	0	0	0	100	–	–
123	Sasaki Associates Inc., Watertown, Mass.	A	0	0	0	64	0	1	0	35	–	–
124	Albert Kahn Associates Inc., Detroit, Mich.	AE	0	0	65	35	0	0	0	0	–	✓

44

The remaining orders, some 3,600 invoices, are reported to range from $10 parts orders to $200-$300,000 resin replacement orders for earlier projects or equipment only orders (see Table 9). At an average assumed volume of $1,000 per order, the remaining 3,600 orders would generate $3.6 million. At $10,000 per order, the dollar value could be $36 million. If it is assumed that $15 million were generated, the total fee volume would be $39 million for the 3-year period, or $13,000,000 per year on average.

Of this dollar volume, the great majority of projects are package units. A limited number have been totally turnkey. Table 4 in Section 2 provides details of the more significant turnkey projects.

In order to finance the cash flow of the proposed Provincial Cities Project, a $4.1-million line of credit has been established with Security Pacific National Bank, Los Angeles, California, as noted previously. It should be recognized that the work, as planned, will be largely handled by subcontractors and subconsultants. Table 10, attached, approximates the bid breakdown by L*AWT of major subcontractors for areas of work or materials. As can be seen, the major items in the list reflect Pittsburg Des Moines Steel (PDM), and materials such as pumps, generators, and equipment. The balance of the work would be done by many smaller subcontractors, with their work spread out over a one- to two-year time period. It can be assumed that PDM and other major suppliers will be paid from letters of credit, rather than by L*AWT cash flow. Thus, the magnitude of the cash flow would be reduced significantly, from $59 million to $19 million ($59 - 14.7 - 16.3 - 9 = $19).

TABLE 9

Typical Large Parts Orders:

F-6733	TVA	$ 200,000
F-6854	7-Up	$ 20,000
F-7000	Tenneco Oil	$ 15,000
F-7960	Illinois Power	$ 12,000
F-7351	Ismailia	$ 35,000
F-8238	Ismailia	$ 10,000
F-9407	Ismailia	$ 17,000
G-744	So. Cal Edison	$ 100,000
G-1094	Chevron	$ 320,000
G-1109	Texaco	$ 40,000

TABLE 10

APPROXIMATE BREAKDOWN OF PROJECT COSTS

Subcontractor - Item of Work		Million $
1. PDM		
Elevated Water Storage		
A. FAS Dock Side; Steel, Mths.	10.0	
B. Welding	4.0	
C. Foundations - Misc. Civil	0.7	
Subtotal		14.7
2. Pacific Sewer Maintenance	2.0	2.0
A. Infiltration Survey		
3. Stanley Consultants, Inc.		
A. Engineering and Quality Control	---	
B. Resident Inspections	---	
	3.0	3.0
4. Operations and Maintenance		
Land Training (L*AWT)	3.5	3.5
5. West Coast Leak Detectors	0.5	0.5
6. Raymond International Cement Lining Demonstrations	1.5	1.5
7. Major Equipment Pumps, Diesel Generators, Switch gear, etc.	16.3	16.3
8. L*AWT Site Mgr. each site, vehicles, Engineering	4.0	4.0
9. Freight	1.5	1.5
10. Spare Parts	1.5	1.5
11. Egyptian Prestressed Pipe, Rebar	1.5	1.5
12. Egyptian Construction		
Civil Contractor	6.0	
Mechanical Contractor	3.0	
Subtotal		9.00
Grand Total		59.0

L*AWT has stated that it anticipated a mobilization-startup fee of close to $2.9 million, based on 10 percent of the FAS USA materials content of $29 million. With this sum deducted from the total, most cash flow problems are somewhat tempered; but, even so, a cash flow projection prepared by L*AWT (see Figure 5) shows a slight negative cash flow for the first quarter after the startup of the project. It should be noted that any cash flow projection assumes or estimates turnaround time for payment of bills and progress or completion of work. JMM has not attempted to prepare this cash flow projection for this project. It is L*AWT's projection that less than $1 million negative cash flow will occur and, that, only during the early startup of the project.

Based on the available data noted above, L*AWT is a going concern which generates Total Fees of $9 to $13 million per year on average. There is no information on equity or net current assets or on available working capital, except that the L*AWT's parent companies have guaranteed a $4.1 million line of credit. If the cash flow projections for the project were off by a factor of 2 and the deficit were $2 million and if the normal operating expenses for existing work required a $2 million line of credit, the operation would still be workable. However, we should again note that having given L*AWT a guarantee for $4.1 million, the Portals organization, in all probability, would not abandon its investment but, in fact, would probably have to support it further and thus guarantee the financial viability of L*AWT and the project.

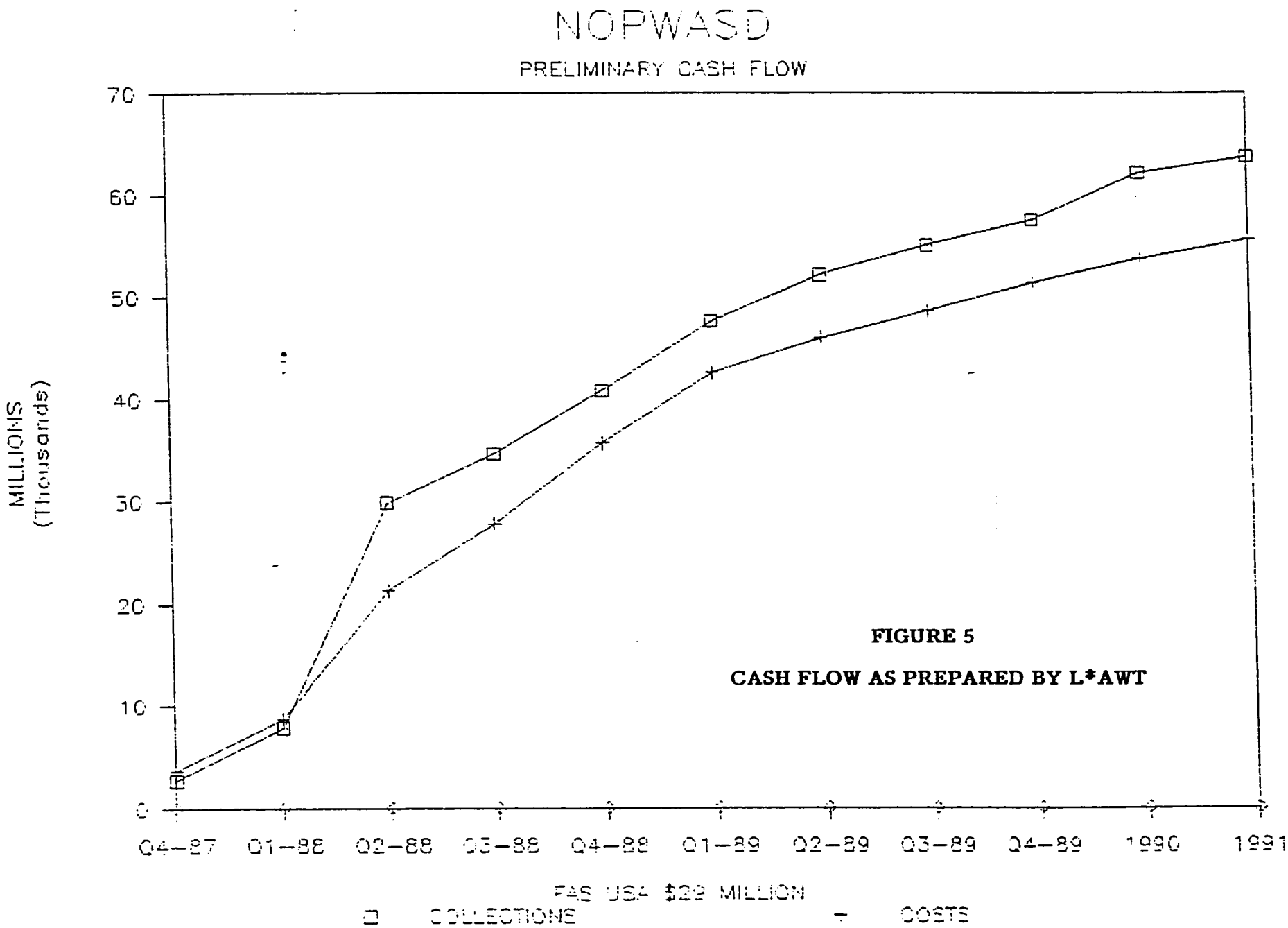


FIGURE 5

CASH FLOW AS PREPARED BY L*AWT

D. CONCLUSION

L*AWT and all of its private company subcontractors have declined to reveal financial information to JMM. Only PDM, a public corporation, has forwarded an annual audited report. Stanley Consultants, by means of an ENR annual list of engineering firms, was identified as No. 93 in size in the top 500 Firms with fees in the range of $20 to $30 million. Copies of the reports and documents are included in the Appendix.

L*AWT, as a subsidiary of the Portals holding companies, furnished an Annual Report of that organization which explains that L*AWT is 100 percent owned by Portals Water Treatment, Ltd., and that firm is in turn 100 percent owned by the holding company. No L*AWT financial data other than that report was available to JMM.

Review of a number of engineering project files allowed JMM to manually extract 116 project files with $24 million of work completed during 1983-86. This exceeds the computer printout from L*AWT covering more or less the same time interval. JMM's manual extraction method included eaerlier and later projects. With allowances for other direct purchases ranging from $3.6 million to $36 million, a factor not confirmable by JMM, an assumed value of $15 million of other work has been used. When added to the $24 million, a total of $39 million of fees over 3 years translates to $13 million per year. This $13 million of fees is less than $20 million, the average of each year in the $60-million 3-year project. However, almost $39 million of the project are identified as equipment or a major

subcontractor and Egyptian Pound costs. Thus, only $19 million of project costs are assumed to be funded through L*AWT for an average of $6± million per year. That dollar cash flow is probably within L*AWT's ability to finance.

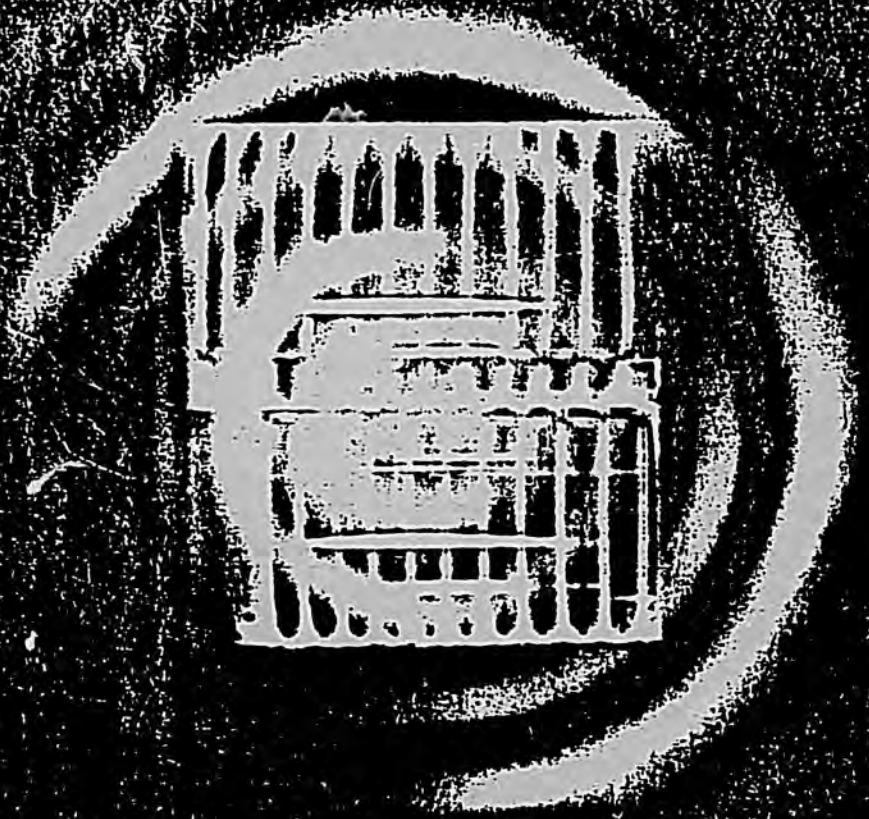
It should be noted that L*AWT does have the financial backing of the Portals organization, which has already guaranteed the bond and a line of credit; therefore, the organization, no doubt, would continue to guarantee the L*AWT project.

APPENDIX 1

COMPANY HISTORY AND FACILITIES

This Appendix contains the following:

- Water Treatment Corporation 1965 Annual Report
- Water Treatment Corporation 1969 Annual Report
- Chromalloy American Corporation 1971 Annual Report
- Portals Holdings PLC 1986 Report and Accounts
- Portals Water Treatment Limited Organization Chart



WATER TREATMENT CORPORATION ANNUAL REPORT 1969

S8

WATER TREATMENT CORPORATIO

COVER PHOTO

The distinctive blue glow of corona is created by electrical discharge field in the PUROgen System. When oxygen passes through the field, O_2 molecules become "excited" and some of them recombine into O_3 or ozone.

ANNUAL MEETING NOTICE

The Annual Meeting of Shareholders will be held at eleven o'clock a.m. Central time on Thursday, April 16, 1970 at the offices of Industrial Testing Laboratories, Inc., a subsidiary of the Company, 2350 Seventh Boulevard, St. Louis, Missouri.

Shareholders of record at the close of business on March 13, 1970 will be entitled to vote.

BOARD OF DIRECTORS

Thomas C. Allan
James M. Ballengee
Wesley J. Barta
Raymond W. Burman
William C. Burns
G. Bradford Cook
A. James de Mayo
Joseph Friedman

Robert Haslett
Harold Lipchik
John Miner
Frank P. Nykiel
Richard P. Seelig
Allan M. Siegel
Sidney Traurig

OFFICERS

Frank P. Nykiel

Harold Lipchik
William C. Burns

John G. Kelly

James M. Ballengee
Richard P. Seelig
Edwin W. Hyland
G. Bradford Cook

EXECUTIVE COMMITTEE

TRANSFER AGENT and REGISTRAR

TO OUR SHAREHOLDERS:

It is a great pleasure to report to you the progress made by Water Treatment Corporation in 1969.

Revenues and earnings for the year established substantial new records. 1969 revenues reached $32,950,000 compared to $9,629,000 reported in 1968. Net earnings were $1,173,000 compared to $324,000 in 1968. The increases in revenues and earnings resulted from both internal growth and by addition of new companies through mergers. The results for 1968 are not adjusted for poolings during 1969. The Company's financial statements in the report have been restated to reflect the poolings.

The company's financial position at December 31, 1969, was the strongest in history. Net working capital was $7,861,000 and net worth was $12,077,000.

The expansion program started in 1968 proceeded in 1969 as programmed. Companies were selectively acquired to strengthen our capabilities in the anti-pollution field and to consolidate and expand in the glass and industrial service field. Each company acquired, added to the Company's technical and research capability and also to our earnings base.

With the progress made in 1969 which resulted in the substantial improvement in our earnings and financial position, your management looks forward confidently to further growth in the decade of the 70's. The Company's immediate program is to strengthen its position in the anti-pollution field through further research and product development.

In these areas great progress was made in 1969. The development of applications for the PUROGEN® Activated Oxygen System were numerous. Outstanding applications were: (1) a Mobile Water Purification System. This system was presented to the industry at the Water Pollution Control Federation Convention in Dallas; (2) a Shipboard Waste Treatment System under full test on board a river towboat on the Mississippi River; and (3) a Bottled Water Purification System for use by bottled water manufacturers. Other applications were developed for cooling towers, sewage treatment plants and special odor control problems.

The L★A Water Conditioning Division showed

substantial progress in 1969. Revenues and earnings sharply increased and backlog of orders at January 31, 1970, were a record $7,500,000, almost double the amount at January 1, 1969. Most important for the future of your Company, the division unveiled two new proprietary processes in the treatment of industrial water which reduce industrial plant pollution problems and improve the plant's efficiencies. Substantial orders have been obtained for these systems and future increases are anticipated. Further progress has been made in providing industry with systems for treatment of radioactive waste, nuclear fuel wastes and acid wastes.

Recognizing the immediate need for anti-pollution devices and technology in the decade of the 70's, your Company has formed a joint anti-pollution Technical Advisory Board with Chromalloy American Corporation. The purpose of this board is to combine the technical and facility strengths of both companies to accelerate the program for the development of anti-pollution devices and systems. We are confident the combination will be of great benefit to the program. As you know, Chromalloy American is a major stockholder of your Company and has a substantial financial stake in your Company's progress and success.

Our 1970 program for expansion in the glass and industrial service field is designed to add to our capabilities in the present product areas. This will be accomplished through expansion of present facilities and selective acquisition of companies in these industries.

To provide for the further expansion and development of the Company, your management has proposed to the shareholders to increase the authorized shares of common stock from 5,000,000 to 10,000,000 shares, and the authorized shares of preferred stock from 200,000 to 500,000 shares.

The board of directors of your Company has authorized $1,300,000 in 1970 to finance the facility expansion and research and development programs upon which the Company has embarked. Due to the need for funds for this important purpose, your management feels that continued conservation of cash is in the Company's best interests. However, as you know, a 5% stock dividend was declared in 1969 and distributed to the shareholders on January 12, 1970. It is the present intention to review the Company's progress and needs annually and make additional distributions as conditions warrant.

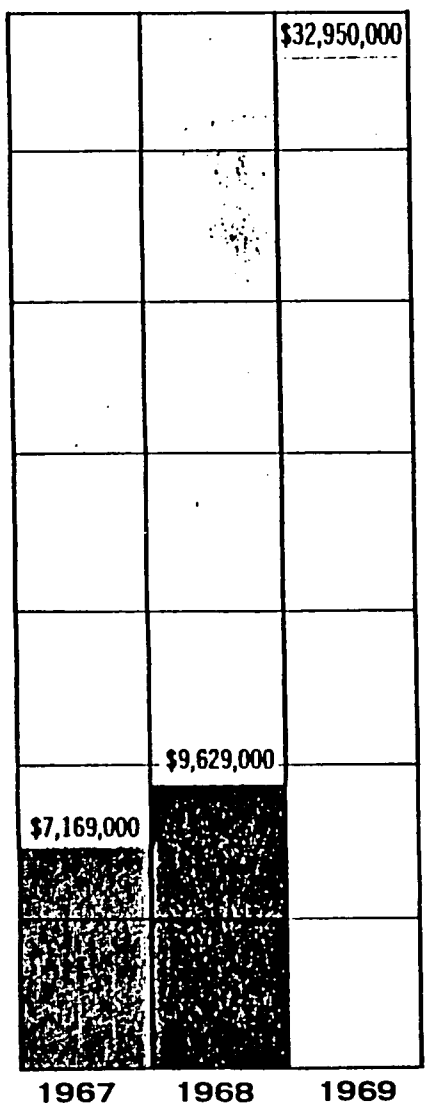
We look to 1970 for further progress in earnings and growth. With the strength provided by our growth in 1969, we face not only 1970 but also the decade of the 70's with enthusiasm, confident of success. We wish to thank our employees, our dealers and representatives, and our shareholders for their continued loyalty and support.

FRANK P. NYKIEL
Chairman of the Board

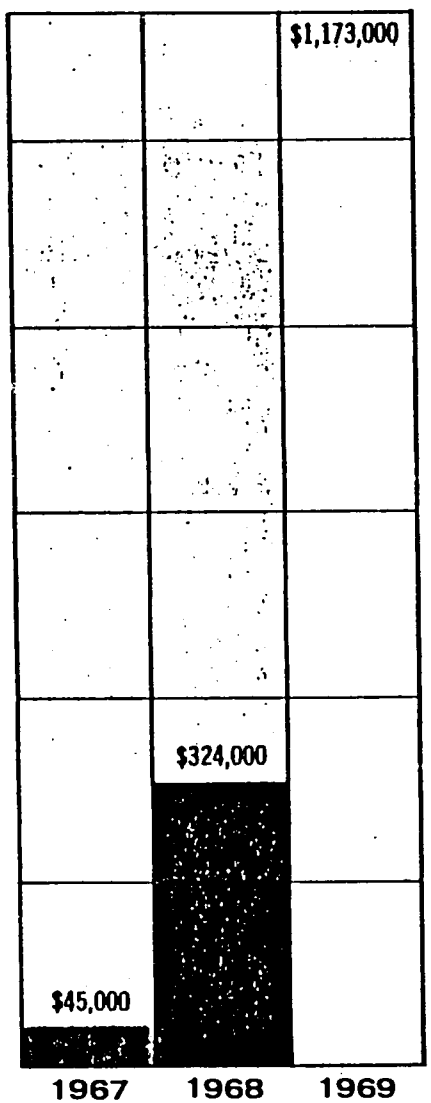
HAROLD LIPCHIK
President

WATER TREATMENT CORPORATION

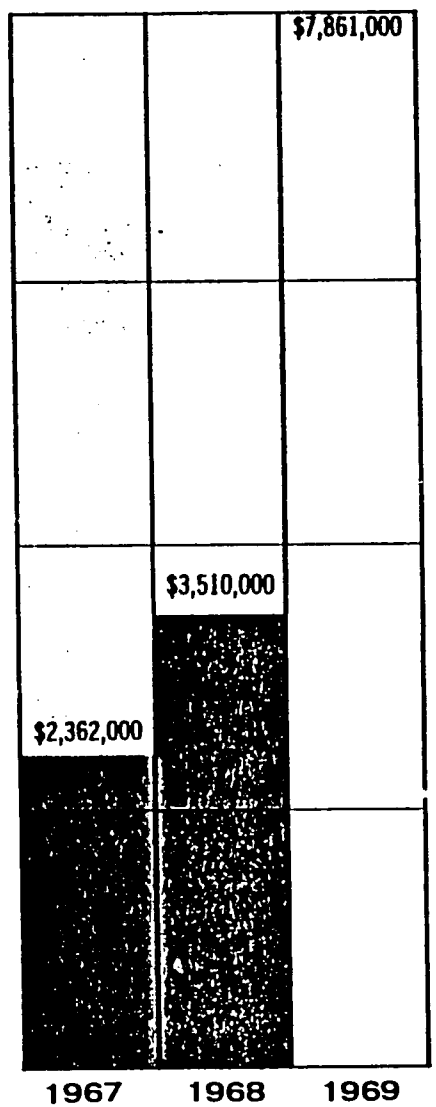
NET REVENUES



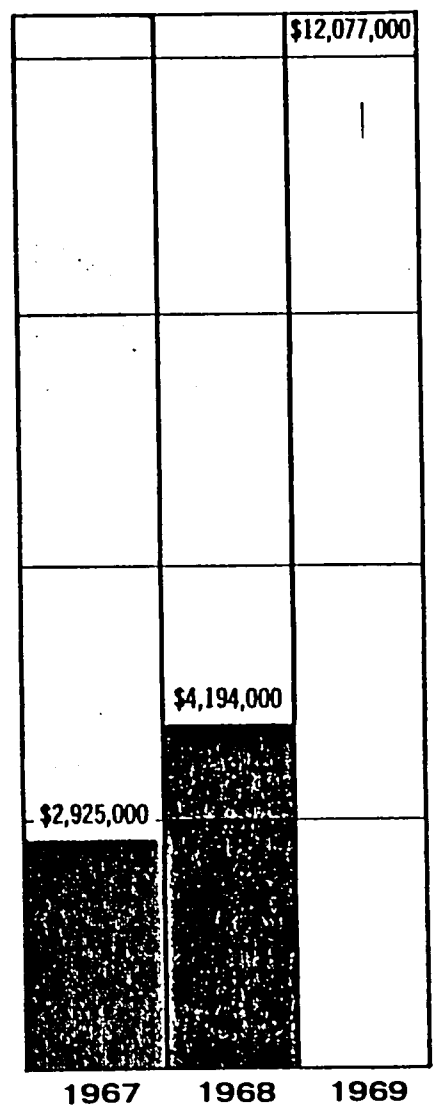
NET INCOME AFTER TAXES

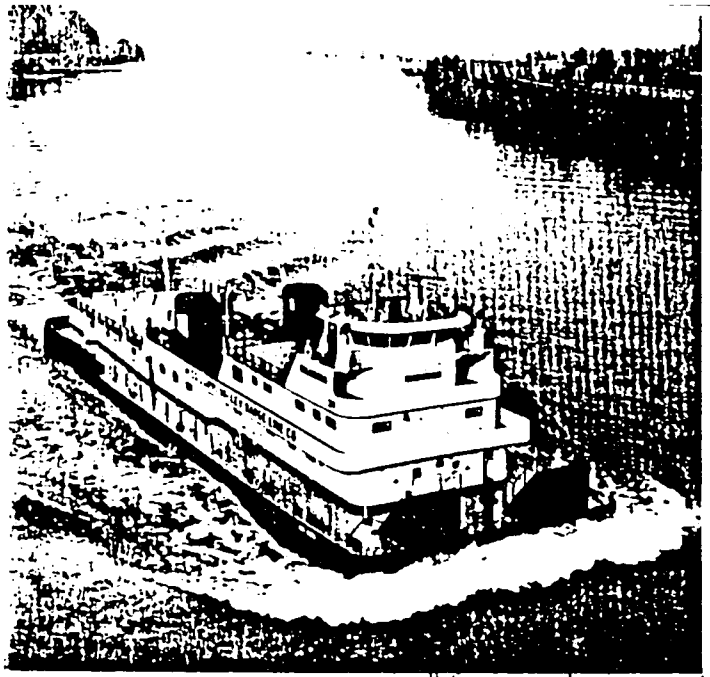


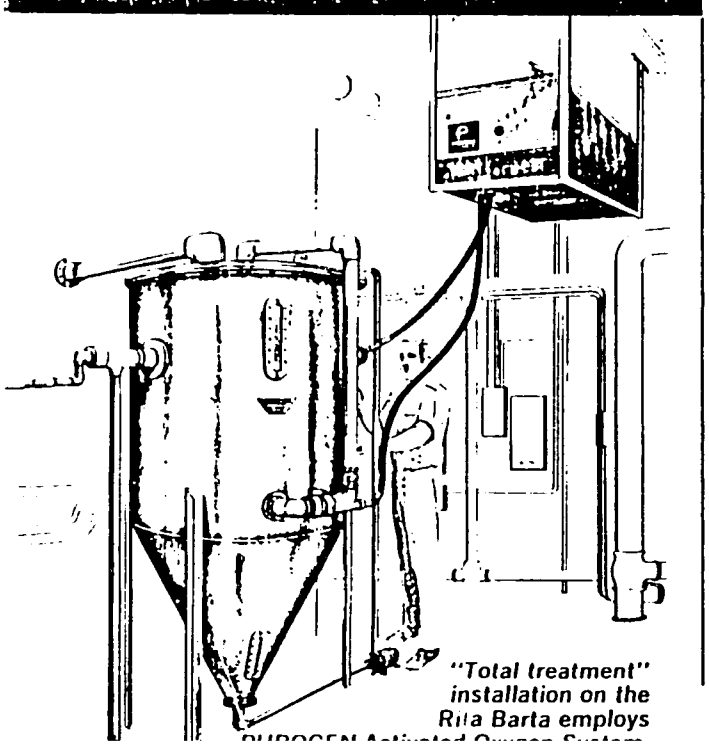
NET WORKING CAPITAL



NET WORTH







"Total treatment" installation on the Rita Barta employs PUROGEN Activated Oxygen System

POLLUTION ABATEMENT

To protect our natural surroundings and our people's health, strict criteria for waste effluent is being proposed. Wastes discharged from sewage plants, ships, and from manufacturing plants must be made pure before going into our oceans, lakes and rivers. Odor problems, too, have become an important phase of environmental control.

In these, and many other areas of pollution abatement, Water Treatment Corporation equipment and technical know-how are hard at work.

Sewage waste treatment systems covering a number of different applications are being developed—among them, revolutionary new PUROGEN Systems for treating sewage wastes to provide absolute protection against contaminable effluent. Sewage treatment plants using these systems will meet the highest standards of safety, and effluent from these plants will be reusable for recreation areas or for irrigation purposes.

A unique system for treating shipboard wastes is under test on the Rita Barta—flagship of The Valley Line, a subsidiary of Chromalloy American Corporation with whom Waterco is affiliated.

This "total treatment" installation which employs the PUROGEN Activated Oxygen System, converts shipboard toilet wastes into effluent safe for discharge directly back into the water.

Early test results from operation on the Mississippi River show that this system produces effluent purer in quality than the raw river water itself. The compact treatment system can be adapted for use in marinas, as well.

Thousands of manufacturing plants are adding their toll to the many types of pollution problems this country faces. Waterco's total capability can apply almost any technique required to reduce and eliminate these environmental hazards.

Plating processes used by many manufacturers require chemical treatment controls. Waterco chemicals and know-how, together with custom-designed equipment, neutralize cyanide and chromic acid wastes generated in the course of plating metals. After treatment, the effluent discharged into local sewer systems is totally free of toxic materials. The pH is adjusted, too, so that the sewage plants have no difficulty in handling the wastes.

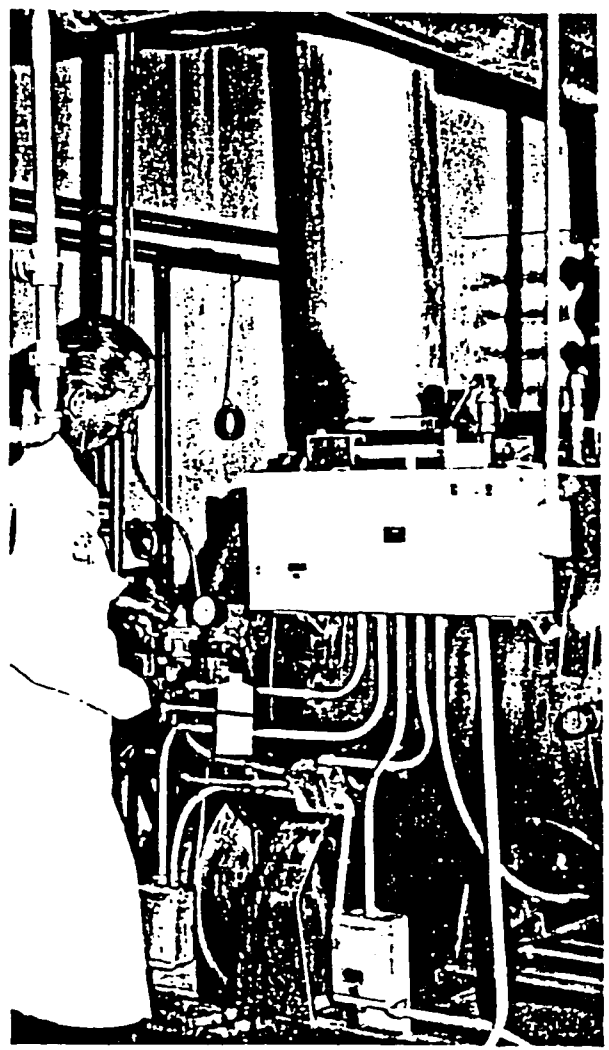
Pollution has still other facets. For instance, oil field "produced" waste water is now being reclaimed and used in secondary oil recovery. It must be expertly treated to permit reuse since it is usually quite contaminated and would otherwise be a source of severe pollution to surrounding areas. Waterco's Deoxygenating Equipment, Vacuum Deaerators, and Micro Softeners are among the finest and most well-accepted products for this purpose, and

are used by many of the largest oil companies throughout the world.

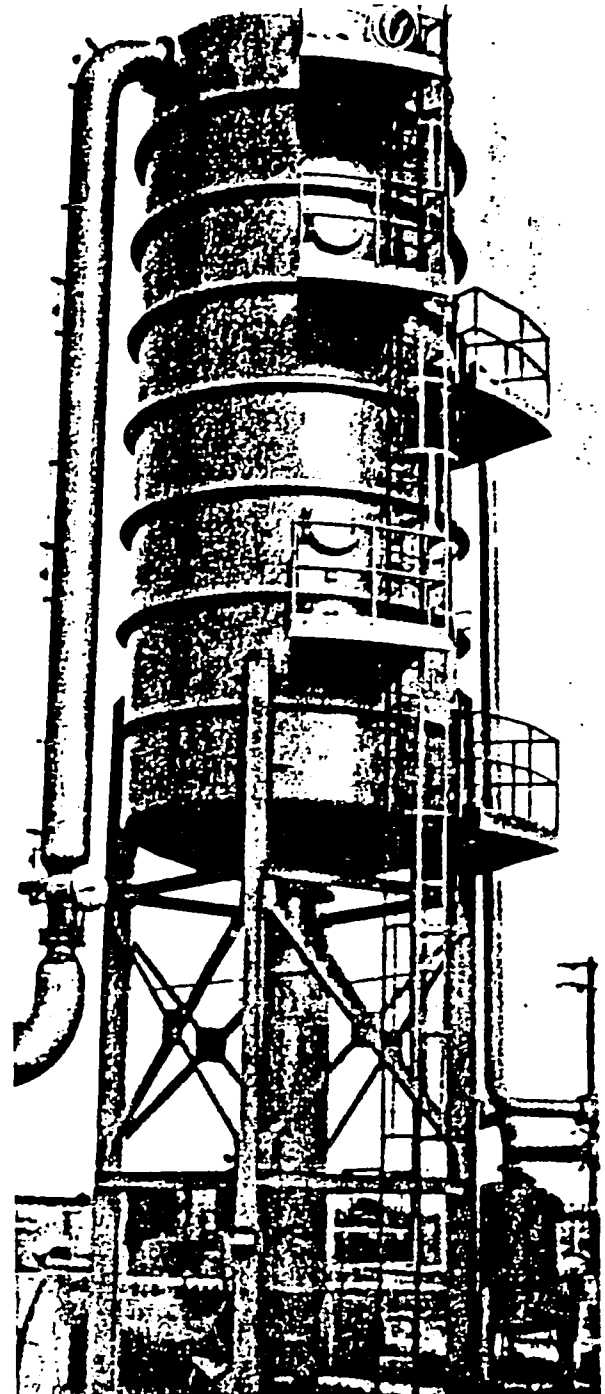
While nuclear power plants are growing in use, they can create dangerous pollution problems if radioactive materials are not handled with exacting precautions. Waterco has built complete treatment systems for many major nuclear power plants. These systems process radioactive waste materials, making them pure and suitable for re-use or discharge directly into lakes and rivers.

Other specialized Waterco systems are in use at the National Reactor Test Site in Idaho. Here, spent nuclear fuel elements from power plants throughout the country are reprocessed. Incoming shipments are deposited into huge pits of water. Special Waterco lead-covered and shielded filter and ion exchange systems make the environment safe for workmen.

Odor control is still another broad area of pollution abatement. One Waterco system was developed for a manufacturer of pharmaceutical products. There, a holding pond for chemically-treated fiber waste, created a serious odor problem in a nearby city. The Waterco PUROGEN System, deposits a layer of activated oxygen over the pond. Instead of masking the odor as some other types of treatment would do, the Waterco system kills odors before they escape, thereby eliminating the problem.

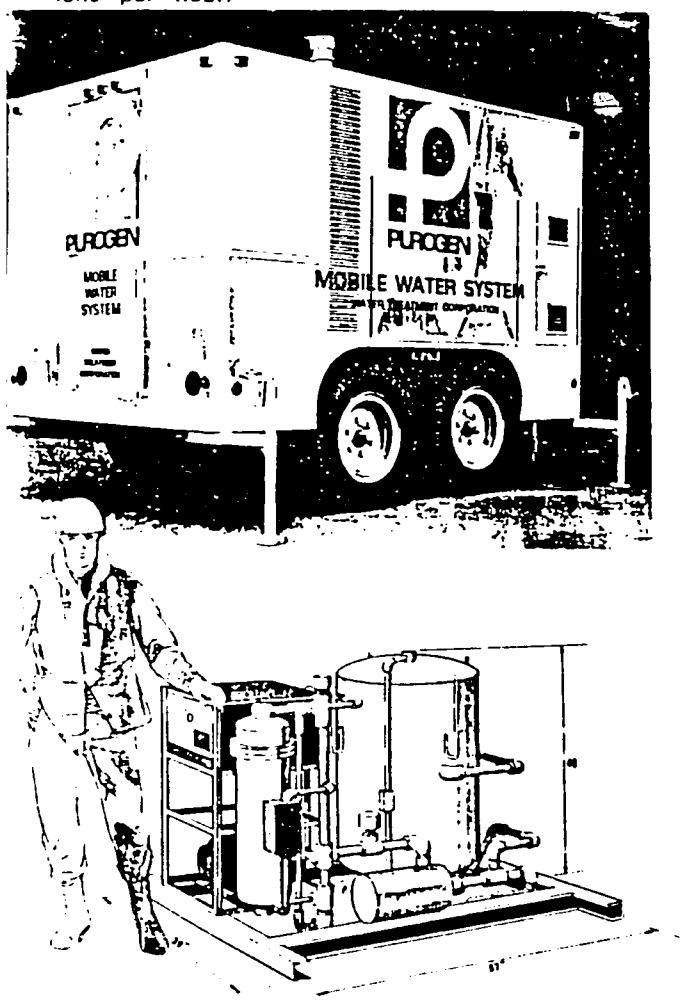


Waterco chemicals and equipment keep effluent from plating processing facilities free of toxic materials and adjusted in pH for easy handling by sewage plants.



Many major oil companies throughout the world use Water Treatment Corporation equipment to safely reclaim oil field "produced" waste water for secondary oil recovery.

The self-contained PUROGEN Mobile Water Purification System allows polluted water to be converted into potable water at the rate of 3,000 gallons per hour.



Lightweight portable

A PUROGEN Activated Oxygen System to treat swimming pool water without chlorine is now available.

Waterco's SERVISOFT Division is one of the leaders in residential filters, purifiers and water softeners

Waterco has pioneered many new approaches to water purification problems. Sophisticated systems for drinking water purification have been developed. Bottled water plants use Waterco Ion Exchangers, Filters, and Zeolite Softeners for purification, and PUROGEN Activated Oxygen Systems for sterilization.

Mobile emergency water systems have been designed to convert polluted and contaminated water into potable water in quantities large enough to supply the minimum daily needs of 15,000 people. The PUROGEN Mobile Water Purification System produces crystal clear, pure drinking water from almost any raw water source. These units will have application by municipalities for emergency use and for use in national parks and at campsites. Demonstrations have been made to the Marine Corps and the Department of the Interior, and proposals for portable field units are under active consideration by the military.

Quality water is needed by many food products manufacturers. Beverage bottlers in particular require large quantities of pure water. Waterco supplies a wide range of such systems, and new systems are under development. A pilot project that will provide demineralized, bacteria-free water for carbonated soft drinks is being evaluated at the Dad's Root Beer Bottling Plant in Ottumwa, Iowa. The system not

only reduces manufacturing costs, but improves the quality and taste of the end product. The Ottumwa plant, a subsidiary of Waterco, provides a perfect location for extensive testing of the complete system.

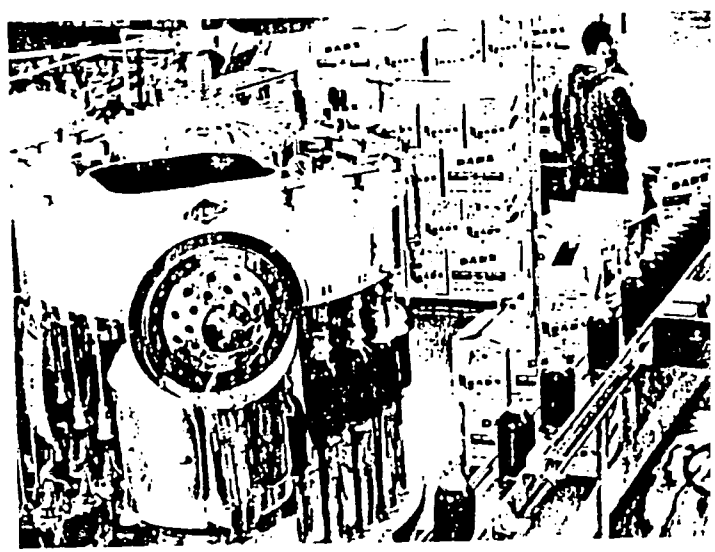
Water for uses other than drinking also requires highly specialized equipment. Systems for car washes, hotels and motels, municipal steam generating stations, cooling towers, and many other uses are designed and manufactured by Waterco.

Applications of the PUROGEN System itself are many and varied. Now, a PUROGEN System for treating swimming pool water is available. The first installation will be on an indoor/outdoor hotel pool. The system will maintain the water at the highest standards of safety, and prevent the discomfort of eye-reddening and smarting which accompanies swimming in chlorine-treated water. The unpleasant odor normally found around indoor pools will also be eliminated.

In the home, quality water is a must for many, many Americans. Waterco's SERVISOFT water softeners are one of the oldest and most popular brands in the field. With increasing demands on the nation's water supplies, water quality is deteriorating and the need for water treatment is increasing dramatically.

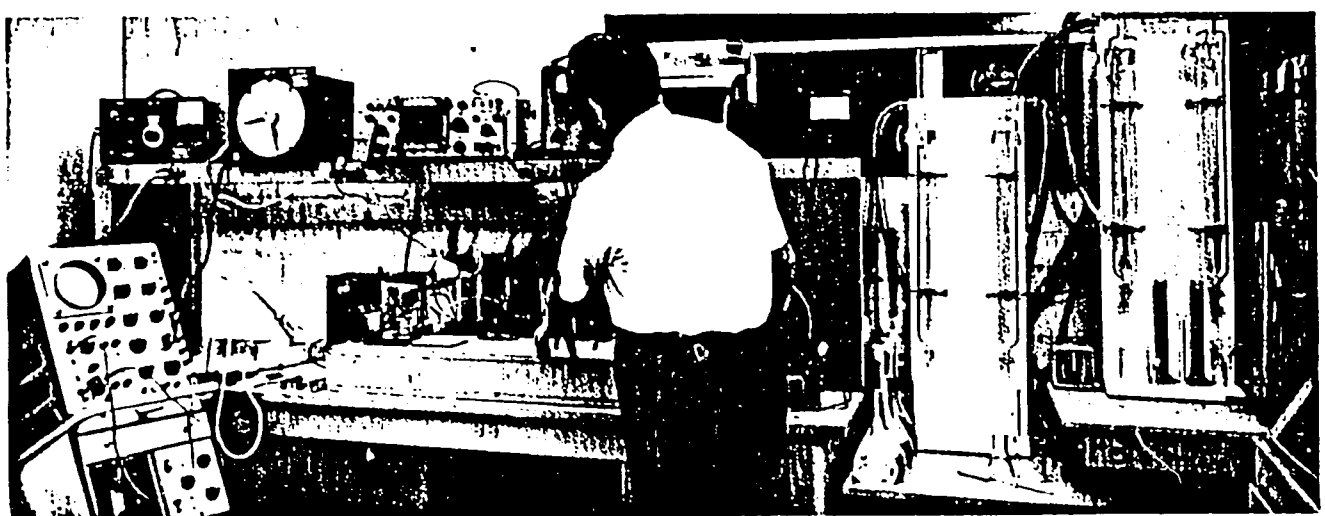
Many types of Waterco equipment are available for high purity commercial and industrial water.

Our specialized systems for bottled water production are extensively used by manufacturers.



A pilot project that will provide demineralized, bacteria-free water for carbonated soft drinks is under

Waterco's scientific testing laboratories provide almost any testing service.



The PUROGEN lab performs extensive research and development work on new PUROGEN Systems.

RESEARCH

Research and development facilities of Waterco are strategically located across the country to provide the finest facilities and scientific know-how to all Waterco divisions and subsidiaries. The great depth of knowledge of our glass group, for instance, is being applied to the development and fabrication of PUROGEN ozone generating tubes for use in our pollution abatement work. Other Waterco R&D labs are at work on sophisticated electronic control systems for process control, automatic machinery, and PUROGEN ozone generators.

A number of Waterco testing labs are heavily engaged in new product development and special analysis and study for industrial clients and government pollution abatement agencies.

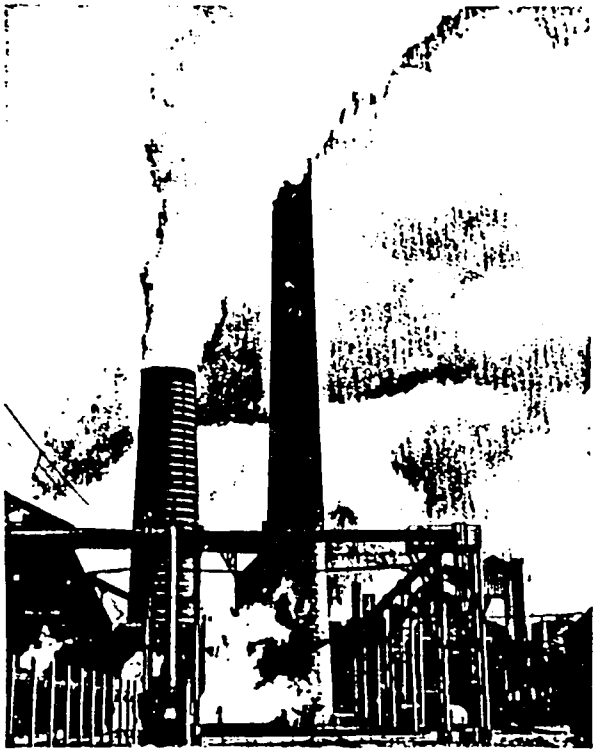
Scientific testing and analysis covers chemical, microbiological, pharmacological and medical areas. And a reputation in mechanical, physical, metallurgical, metallographic, chemical, trace metal, spectrographic, chromatographic and non-destructive testing among others, makes Waterco one of the most well-rounded testing and analysis organizations in the entire country.

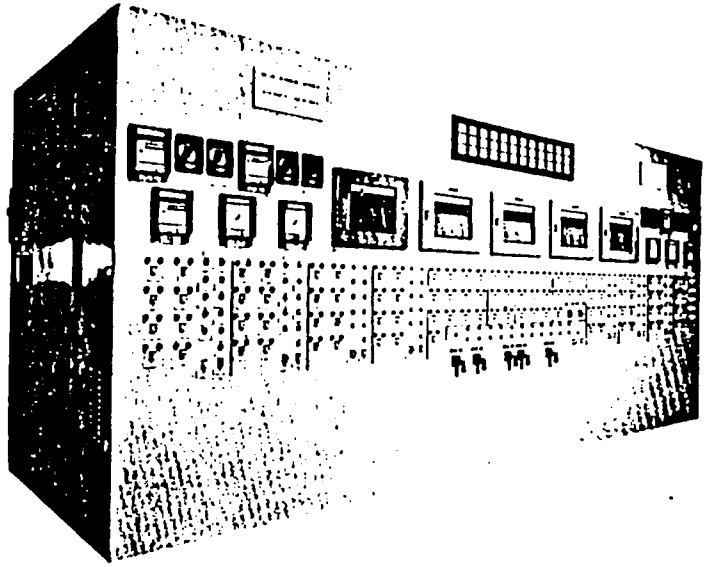
Agricultural agencies and manufacturers of farm products rely heavily on Waterco investigations into the effect of pesticides and on the effects of chemical combinations for treating plant diseases.

DEVELOPMENT

Waterco studies of St. Louis waste effluent into the Mississippi were used to design suitable waste treatment facilities for the city.

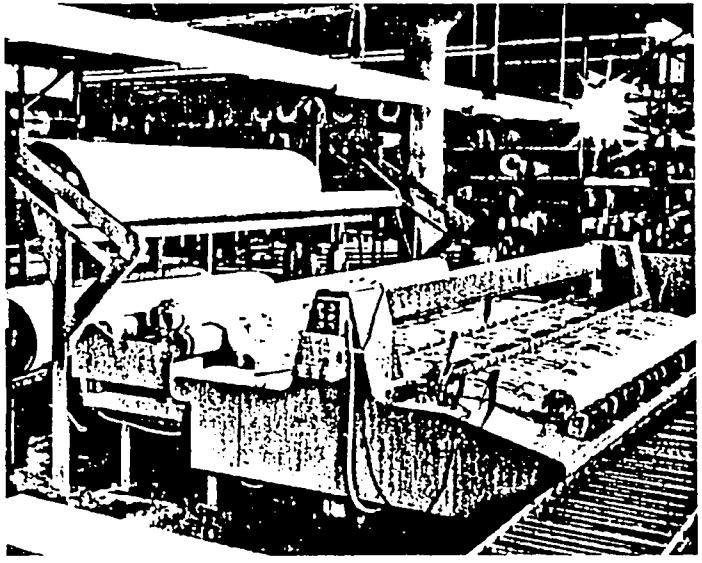
Smokestack studies for industrial firms provide assurance that no more than the regulated amount of sulphur content and other offensive materials go into the air.



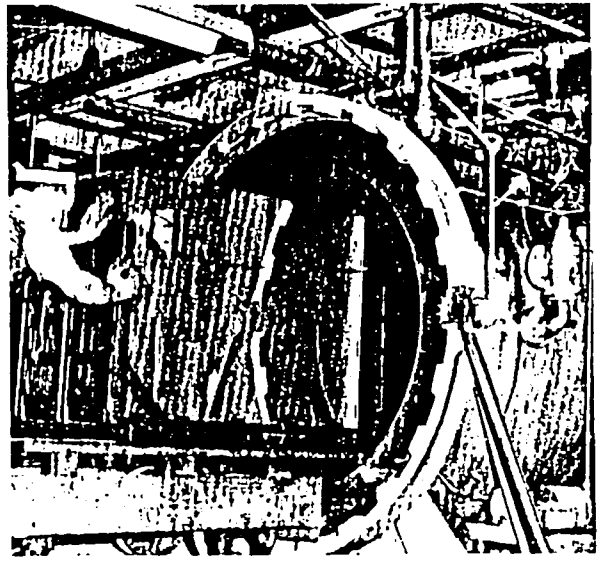


Engineering of sophisticated automatic control systems call upon many different talents.

Glass piping for use in laboratories and industries where corrosive fluids are used, is just one phase of our broad capabilities in glass manufacturing.



One example of Waterco's heavy automated equipment is this system used by many carpet mills and wholesalers.



Waterco pioneered laminated glass in this country. Here a rack of pre-pressed glass is prepared for autoclave processing. High temperature and pressure are applied to complete laminating process.

INDUSTRIAL PRODUCTS GROUP

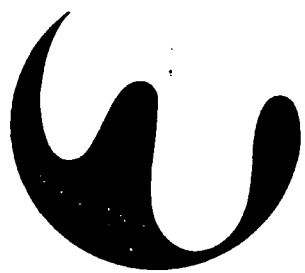
Manufacture and marketing of specialized automatic machinery and glass components are other aspects of Waterco's activities.

Using the most advanced techniques, Waterco engineers have designed equipment systems that reduce labor and provide accurate and consistent control of costs. We are enjoying a growing reputation for design, manufacture and distribution of specialized machines where a high degree of automation is sought.

Our scope in glass manufacturing and distribution is most extensive. Through a glass complex of some 23 units throughout the east and midwest, Waterco has pioneered many new innovations in this versatile substance, including safety glass for the transportation industry, and "Riotglas" for protection against pilfering and impact of any type. Waterco is also a major factor in flat glass for construction, glass piping systems for laboratories and industries where corrosive fluids are used, and glass for glare, sound, and heat reduction.

	1969	1968 (note 1)
Current liabilities:		
Loans payable to banks, secured (note 2)	$ 3,464,300	3,245,200
Current maturities of long-term notes payable (note 4)	785,700	570,900
Accounts payable and accrued expenses	3,480,000	2,650,000
Federal and State income taxes	1,003,700	922,900
Total current liabilities	8,733,700	7,389,000
Long-term notes payable, less current maturities (note 4)	2,756,700	3,351,300
Subordinated convertible debentures (note 5)	1,853,000	2,001,000
Stockholders' equity (notes 1, 5, and 6):		
Preferred stock without par value. Authorized 200,000 shares; issued—none		
Common stock of $0.10 par value per share. Authorized 5,000,000 shares; issued 2,762,924 shares (2,534,070 in 1968) including shares held in treasury	276,300	253,400
Capital in excess of par value	7,241,500	3,738,600
Retained earnings	4,559,300	5,361,300
	12,077,100	9,353,300
Less shares held in treasury, at cost	—	42,100
Total stockholders' equity	12,077,100	9,311,200
Contingent liabilities and commitments (notes 7, 8 and 9)		
	$25,420,500	22,052,500

ee accompanying notes to consolidated financial statements.



WATER TREATMENT CORPORATION & SUBSIDIARIES

The Board of Directors
Water Treatment Corporation:

We have examined the consolidated balance sheet of Water Treatment Corporation and subsidiaries as of December 31, 1969 and the related statements of earnings and stockholders' equity and the statement of consolidated 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.

The financial statements of H. Perilstein and subsidiaries which are included in the consolidated statements, were examined by other independent public accountants whose report has been furnished to us. The assets and net earnings of this subsidary constitute 32% and 35%, respectively, of the related consolidated figures.

In our opinion, based upon our examination and the aforementioned report of other independent public accountants, the accompanying consolidated balance sheet and statements of consolidated earnings and stockholders' equity present fairly the financial position of Water Treatment Corporation and subsidiaries at December 31, 1969 and the results of their operations for the year then ended, in conformity with generally accepted accounting principles applied on a basis consistent with that of the preceding year. Also, in our opinion, the accompanying statement of consolidated source and application of funds for the year ended December 31, 1969 presents fairly the information shown therein.

Peat, Marwick, Mitchell & Co.
Los Angeles, California
February 21, 1970, except as to
the second paragraph of note 1

Year ended December 31, 1969
with comparative figures for 1968

	1969	1968 (note 1)
Net sales, service, lease and franchise income, etc. (note 2)	32,949,900	30,543,200
Costs and expenses:		
Materials, labor and other costs	23,680,700	22,162,300
Selling, administrative, and general expense	6,984,900	5,839,500
Depreciation and amortization (note 2)	466,000	427,800
Interest expense, net	106,200	445,500
	31,237,800	28,875,100
	1,712,100	1,668,100
Other—gain (loss) on sale of securities and real estate	400,100	(400)
Earnings before income taxes	2,112,200	1,667,700
Income taxes	939,300	727,900
Net earnings	$ 1,172,900	939,800
Earnings per share, based on average number of shares outstanding during the year (notes 1 and 5)	$0.44	0.36

See accompanying notes to consolidated financial statements.

STATEMENT OF CONSOLIDATED STOCKHOLDERS' EQUITY

Year ended December 31, 1969 with comparative figures for 1968	1969	1968 (note 1)
Common stock:		
Balance at beginning of year	$ 253,400	188,600
647,088 shares issued in connection with 1969 "poolings of interests" acquisitions reflected as of January 1, 1968 (note 1)	—	64,700
83,600 shares issued in connection with 1969 purchase acquisitions	8,400	—
14,627 shares issued on conversion of debentures during 1969 (note 5)	1,400	—
111,844 shares issued as a stock dividend	11,200	—
18,783 shares issued in 1969 upon exercise of stock options (exclusive of 5,268 treasury shares issued) (note 6)	1,900	100
Balance at end of year	276,300	253,400
Capital in excess of par value:		
Balance at beginning of year	3,738,600	2,430,400
Adjustment to reflect 1969 "poolings of interests" acquisitions as of January 1, 1968 (note 1)	—	1,332,800
Excess of fair value of net assets acquired in transactions accounted for as "purchases" over par value of common stock issued, net of acquisition costs, $105,000	1,436,100	—
Excess of fair market value over par value of common stock issued as a stock dividend	1,890,100	—
Excess of face value over par value of common stock issued in conversion of debentures, net of unamortized discount and costs, $21,800	124,800	—
Stock options exercised, net of adjustment for excess of cost over exercise price of treasury shares issued (note 6)	51,900	(24,600)
Balance at end of year	7,241,500	3,738,600
Retained earnings:		
Balance at beginning of year	5,361,300	1,363,200
Adjustment to reflect 1969 "poolings of interests" acquisitions as of January 1, 1968 (note 1)	—	3,130,100
Adjustment resulting from inclusion of balance sheets of "pooled" subsidiaries dated between October 31, 1967 and February 28, 1968 instead of December 31 whose earnings are included on a calendar year basis	(27,600)	(45,300)
Transfer to common stock and capital in excess of par value resulting from 5% stock dividend payable January 12, 1970 to stockholders of record on December 12, 1969	(1,901,300)	—
Cash dividends paid by acquired subsidiaries	(46,000)	(26,500)
Net earnings	1,172,900	939,800
Balance at end of year	4,559,300	5,361,300
Less shares held in treasury:		
Balance at beginning of year	(42,100)	(100,800)
Cost of 5,268 shares issued upon exercise of stock options (7,331 in 1968) (note 6)	42,100	58,700
Balance at end of year	—	(42,100)
Total stockholders' equity at end of year	$12,077,100	9,311,200

Parentheses denote red figures.

See accompanying notes to consolidated financial statements.

This report is issued solely for the purpose of providing information as to the financial condition of the company. It is not a representation, prospectus or circular in respect of any stock or security of this corporation and is not submitted in connection with any sale or offer to sell or buy any stock or security now or hereafter to be issued or with any preliminary efforts of such sale.

STATEMENT OF SOURCE AND APPLICATION OF FUNDS

Year ended December 31, 1969
with comparative figures for 1968

	1969	1968 (note 1)
Funds provided:		
Net earnings	$ 1,172,900	939,800
Depreciation and amortization charged to earnings not requiring expenditure of funds	466,000	427,800
	1,638,900	1,367,600
Less adjustment resulting from inclusion of balance sheets of "pooled" subsidiaries dated October 31, 1967 and February 28, 1968 instead of December 31 whose earnings are included on a calendar year basis	27,600	45,300
	1,611,300	1,322,300
Proceeds from sale of common stock	1,540,400	184,100
Proceeds from sale of convertible debentures	—	750,000
Decrease in investments	359,200	280,200
	$ 3,510,900	2,536,600
Funds applied:		
Cash dividends paid by acquired subsidiaries	$ 46,000	26,500
Additions to plant and equipment, less net book value of disposals	944,300	288,100
Additions to other assets, principally license agreements and product development costs	1,422,300	234,300
Decrease in long-term notes payable	594,600	1,159,300
Increase in working capital	503,700	828,400
	$ 3,510,900	2,536,600

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

December 31, 1969

(1) Principles of Consolidation and Acquisition

The financial statements include the accounts of Water Treatment Corporation and its subsidiaries. All significant intercompany transactions, profits and balances have been eliminated in consolidation.

During the year the Company issued 293,095 shares of common stock, as adjusted for the 5% stock dividend payable January 12, 1970, in exchange for the outstanding stock of Industrial Testing Laboratories, Inc., Dad's Clicquot Bottling Co., Inc., Safetee Glass Company, Inc., Scientific Associates, Inc. and Broadloom Speedbinder, Inc. and in March 1970 issued 367,950 shares of common stock in exchange for the outstanding common stock of H. Perilstein and its subsidiaries. These transactions have been accounted for as "poolings of interests" and accordingly, the accounts of these companies are included in the consolidated financial statements for each of the years 1969 and 1968. The 1968 financial statements, therefor, have been restated to give effect to these acquisitions.

In addition to the common stock issued as explained in the preceding paragraph, a maximum of 576,900 additional shares may be issued dependent upon the market value of the Company's common stock as follows: 116,025 in August, 1970; 40,425 in July, 1971; 52,500 in November, 1971; and 367,950 in March, 1972.

In February 1969 the Company issued 7,875 shares of its common stock, as adjusted for the stock dividend payable January 12, 1970, in connection with its acquisition of Pure Water Products, Inc. The transaction has been accounted for as a "purchase".

Effective June 30, 1969, Water Treatment Corporation purchased the Advanced Products Division of Chromalloy American Corporation in exchange for 79,905 shares of the common stock of Water Treatment Corporation valued by the parties to the agreement at $18 per share, as adjusted for the 5% stock dividend payable January 12, 1970. The Chairman of the Board is a Director and Executive Vice President of Chromalloy American Corporation and the President is also a Vice President of Chromalloy. Chromalloy owns 33% of the outstanding common stock of Water Treatment Corporation (exclusive of 225,000 shares which would be issuable upon conversion of debentures held by The Valley Line Company, a subsidiary of Chromalloy) and recorded a gain in its accounts upon consummation of the sale. To the extent that Water Treatment Corporation incurs defined research and development costs relating to licensed ozone generators known as PUROGEN, Chromalloy has agreed to make the following contributions for such costs:

(a) up to $100,000 between June 30, 1969 and December 31, 1969;

(b) up to $200,000 during 1970;

(c) up to $200,000 during 1971; and

(d) thereafter during any calendar year the greater of 50% of the first $400,000 of royalties paid to Chromalloy under the terms of the agreement or 25% of such royalties paid.

Water Treatment Corporation has deferred a portion of the excess value of its stock exchanged over the underlying net assets received (as they relate to a patent license on the aforementioned PUROGEN) in the amount of $428,300. In addition, the Company has deferred PUROGEN product development costs of $399,700 to future periods. Such amounts are included in the balance sheet under the caption "Other Assets." It is the present intention of management to amortize the license cost over approximately 16 years and the product development cost over a 5 year period.

(2) Accounting Policies

The Company uses the financing method of accounting for equipment leases entered into with its dealers. Under this method, the total amount of rentals to be received by the Company during the lease period is recorded as an asset and the cost of the related leased equipment, net of residual value, is eliminated from the accounts. The excess of aggregate rentals over the cost of the leased equipment is reflected in earnings during the term of the lease.

Lease contracts and conditional sales contracts are

pledged to secure bank loans payable. In accordance with general practice for reporting instalment receivables arising from such contracts and the related indebtedness, current assets and current liabilities include amounts due after one year.

The Company generally follows the completed-contract method of accounting for revenues from contracts for the manufacture and sale of custom made water treatment equipment except that, with respect to contracts which require a relatively long period of time to complete, a percentage-of-completion accounting method is employed.

Depreciation is based on the estimated useful lives of the various items of plant and equipment and is computed using the straight-line, sum-of-the years digits, and declining balance methods.

(3) Long-term Notes Receivable

The long-term notes were received by the Company as part of the proceeds from the sale of certain assets, bear interest, and are secured by a pledge of the assets sold.

(4) Long-term notes payable

Long-term notes payable as of December 31, 1969 consisted of the following:

	Current Maturities	Long-Term Portion	Total
Notes and purchase agreements payable secured by land, buildings and equipment, due in varying instalments to 1988 with interest at rates ranging from 3¾% to 7%	$182,600	$2,227,400	$2,410,000
Notes payable to banks, due in varying instalments to 1985 with interest at rates ranging from 6% to 7%	522,300	165,000	687,300
6¾% subordinated note payable due in semi-annual instalments of $37,500 with final maturity in 1971	75,000	75,000	150,000
4% subordinated note payable due October, 1993	—	145,800	145,800
Other	5,800	143,500	149,300
Totals	$785,700	$2,756,700	$3,542,400

(5) Subordinated Convertible Debentures

The Company has outstanding $1,500,000 of 6¾% subordinated convertible debentures (held by The Valley Line Company, a subsidiary of Chromalloy American Corporation) and $353,000 of 6½% subordinated convertible debentures. The debentures mature October 31, 1986 and February 1, 1983 respectively, and are convertible (prior to maturity) into shares of common stock at approximately $7 and $10 per share. Accordingly, 261,280 shares of common stock have been reserved for this purpose. Under the terms of the loan agreements, the Company has agreed not to pay dividends or make any distributions on its common stock after May 31, 1966, except to the extent of net earnings accumulated since May 31, 1966, plus $500,000. Conversion of these debentures will result in no dilution to earnings per share.

(6) Stock Option Plan

The stockholders have authorized the granting of options to officers and key employees to purchase shares of the Company's common stock at the fair market value of such shares at the date of grant. At December 31, 1969, there were exercisable 41,861 shares of the outstanding options described in the following summary:

Date Granted	Shares Optioned at Dec. 31, 1969	Shares Exercisable at Dec. 31, 1969	Option Price Per Share	Option Price Total
Sept. 17, 1963	13,125	13,125	$ 3.33	$ 43,750
Feb. 12, 1965	6,300	6,300	8.46	53,280
Apr. 14, 1966	5,250	5,250	5.48	28,750
Nov. 15, 1966	5,601	5,601	2.86	16,002
Apr. 11, 1968	735	35	6.25	4,592
June 12, 1968	26,775	8,925	10.24	274,125
Oct. 9, 1968	7,875	2,625	15.71	123,750
Apr. 17, 1969	16,275	—	15.12	246,140
Sept. 4, 1969	6,038	—	16.55	99,935
Oct. 2, 1969	4,725	—	13.70	64,710
	92,699	41,861		

At December 31, 1969, there were 77,962 shares of common stock reserved for the granting of future options.

(7) Profit Sharing and Retirement Plans

The Company and several of its subsidiaries have profit sharing and retirement plans under which the Company contributed approximately $211,000 for the year ended December 31, 1969.

(8) Contingent Liabilities

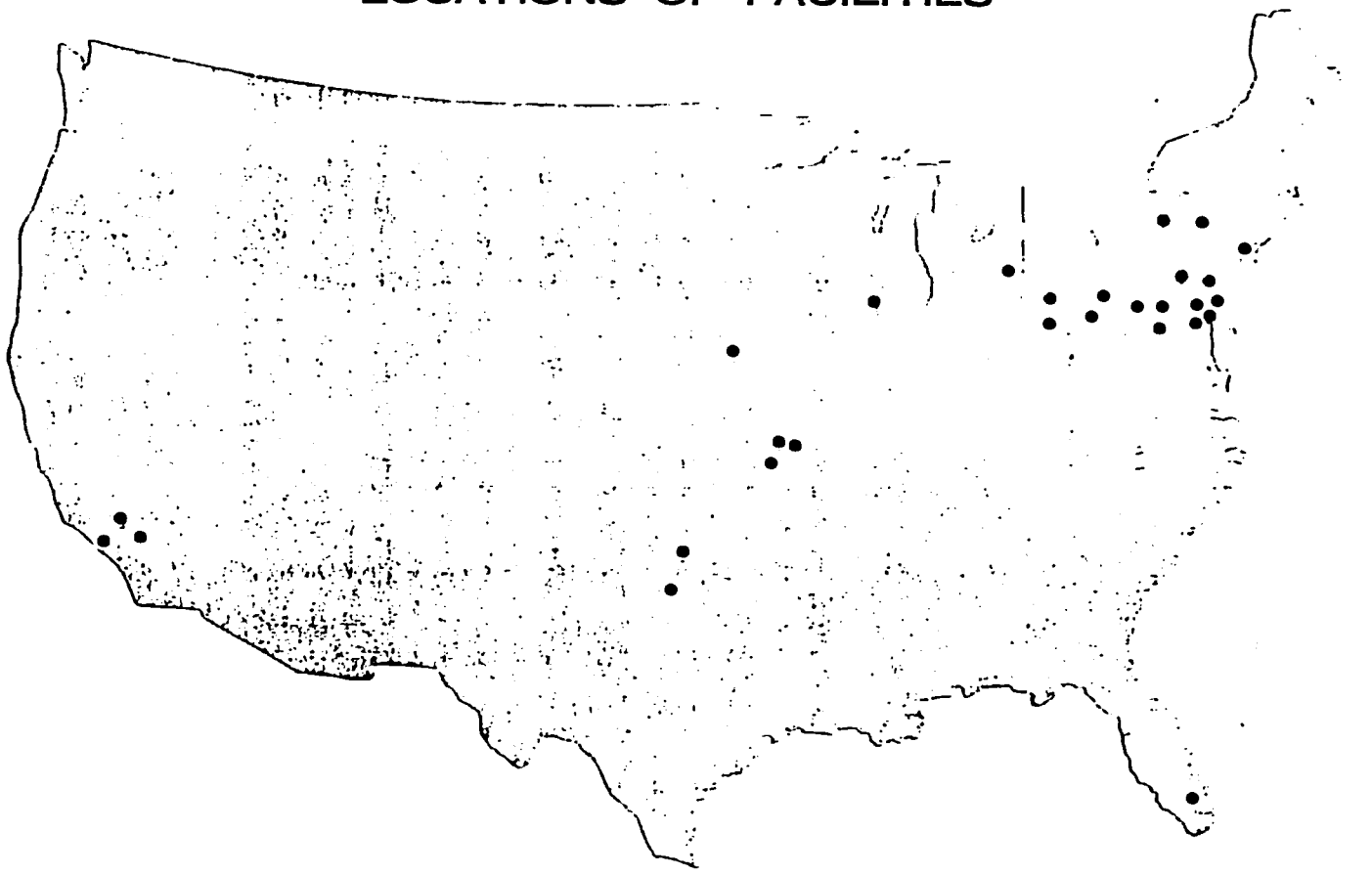
A subsidiary of the Company is obligated under certain conditions to repurchase a portion of the common stock owned by stockholders for an aggregate maximum amount of $933,000. These obligations have been funded by life insurance policies on the lives of the specific stockholders and by marketable securities.

(9) Commitment

The Company has long-term leases for manufacturing, office, and warehouse facilities. The leases provide for annual rentals approximating $75,000 and expiring at various dates through 1979.

WATER TREATMENT CORPORATION

LOCATIONS OF FACILITIES



These Waterco operating units are backed by over 500 dealers and industrial representatives.

CONSOLIDATED BALANCE SHEET

December 31, 1969
with comparative
figures for 1968

	1969	1968 (note 1)
Current assets:		
Cash	$ 1,444,100	1,600,400
Receivables (note 2):		
Accounts receivable	5,507,900	4,766,000
Lease contracts and conditional sales contracts	3,818,400	4,179,000
	9,326,300	8,945,000
Less unearned finance charges ($628,000 in 1969 and $732,000 in 1968) and allowance for doubtful receivables	862,400	921,800
Total receivables	8,463,900	8,023,200
Current maturities of long-term notes receivable (note 3)	287,900	158,500
Inventories, at the lower of cost (first-in, first-out) or market	6,034,100	4,744,500
Prepaid expenses	364,700	219,700
Total current assets	16,594,700	14,746,300
Investment in convertible debentures, at cost	—	600,000
Long-term notes receivable, less current maturities (note 3)	1,392,100	1,151,300
Total investments	1,392,100	1,751,300
Investment in plant, equipment and dealer franchises, at cost:		
Land, buildings, improvements and equipment	7,726,500	6,782,200
Less accumulated depreciation (note 2)	2,655,800	2,322,800
	5,070,700	4,459,400
Dealer franchises, less amortization of $920,000 and $845,000, respectively	338,800	413,800
Total investment in plant, equipment and dealer franchises	5,409,500	4,873,200
Other assets, principally license agreements and product development costs	2,024,200	681,700
	$25,420,500	22,052,500

WATER TREATMENT CORPORATION

ANNUAL REPORT FOR 1965 • YEAR ENDED MAY 31

BOARD OF DIRECTORS

THOMAS C. ALLAN	*President and Chairman of the Board, Quality Industries*
JAMES M. BALLENGEE	*President, Philadelphia Suburban Water Co.*
WALTER P. BETO	*President, Water Treatment Corporation*
G. BRADFORD COOK	*Winston, Strawn, Smith & Patterson*
BERT A. GETZ	*Vice President, Globe Corporation*
JOHN G. KELLY	*Executive Vice President, Water Treatment Corporation*
THOMAS W. MOSES	*President, Interoceanic Industries, Inc.*

EXECUTIVE COMMITTEE

JAMES M. BALLENGEE	*Chairman*
WALTER P. BETO	
BERT A. GETZ	

OFFICERS

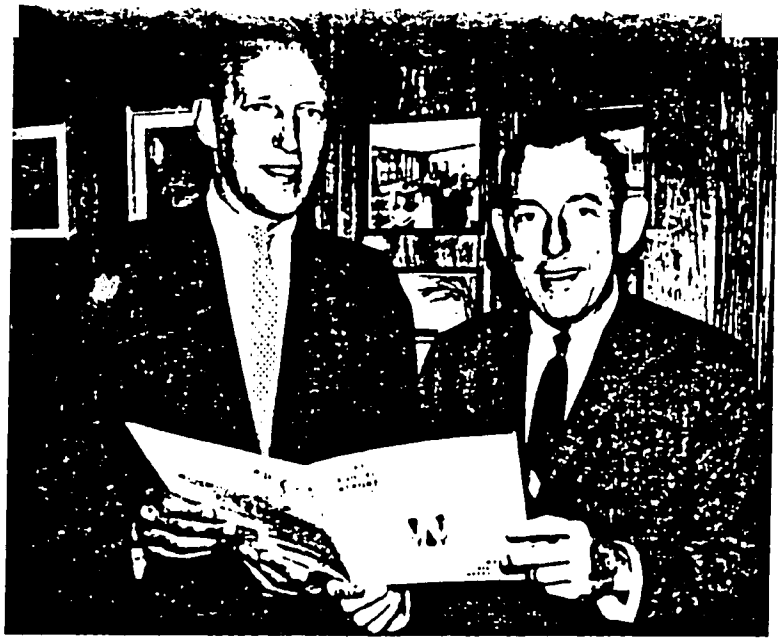
JAMES M. BALLENGEE	*Chairman of the Board*
WALTER P. BETO	*President*
JOHN G. KELLY	*Executive Vice President*
IRVIN R. REIGLE	*Vice President, Sales*
L. A. REDAY	*Vice President and General Manager, SERViSOFT Western Division*
WILLIAM C. BURNS	*Vice President and General Manager, L★A Water Conditioning*
RAYMOND T. ANDERSON	*Secretary-Treasurer*

TRANSFER AGENT AND REGISTRAR

The First Pennsylvania Banking & Trust Co., Philadelphia, Pennsylvania

ANNUAL MEETING NOTICE

The Annual Meeting of Stockholders will be held at eleven o'clock a.m. central daylight saving time, on Tuesday, September 21, 1965 at the offices of the company, 2316 Twenty-third Avenue, Rockford, Illinois. Stockholders of record at the close of business on August 10, 1965 will be entitled to vote. Stockholders' notice of meeting and request for proxies will be mailed separately.



Walter P. Beto—James M. Ballengee

To the Stockholders of Water Treatment Corporation.

Dear Fellow Stockholders:

The year 1964-65 demonstrated the ability of Water Treatment Corporation to secure a substantial increase in sales, both in the SERViSOFT Division and at L★A Water Conditioning, while maintaining profits in the face of acquisition expenses and the exhaustion of our tax loss carry-forward. The combined revenues for the year ending May 31, 1965 increased from $5,929,000 to $8,606,000, while net income was off slightly from $375,000 to $339,000 or 2c per share from 28c last year to 26c this year. During the year net working capital increased $794,000 for a year-end total of $2,739,000, resulting in a current ratio of 1.7 to 1, the same as last year.

The year saw a continuation of our program of acquisition and consolidation. In July of 1964 we acquired the assets of Tanks, Inc. at Franklin Park, Illinois. At that time we commenced the manufacturing of our own service exchange tanks, and centralized our warehousing operations at Franklin Park. In May we purchased the SERViSOFT retail operation at Newport Beach, California, which brings to five the number of company-owned and operated dealerships.

At the annual meeting of SERViSOFT dealers in May we presented an ambitious advertising program which is now under way on a cooperative basis with our SERViSOFT dealers. It is the conviction of your management that it is essential for us to support our dealer organization with a national advertising campaign if we are to increase our share of the growing market for home water conditioners. While more information about this advertising program is set forth in this report, it should be noted that the advertising expense that will be incurred during the current fiscal year is an investment for growth and profit in future years.

Our commercial and industrial division, L★A Water Conditioning, has made extremely rapid strides during the past year. We have completed, or almost completed, water treatment installations for such prominent customers as: Commonwealth Edison, Philadelphia Electric Company, North American Aviation, American Cyanamid, Anheuser-Busch, Interstate Power, Phillips Petroleum, Hawkeye Chemical and Michigan State University. The Commonwealth Edison installation is the largest condensate polishing system for water

MAKE UP REVIEW . . .

treatment that has been designed to date. Our backlog of orders at L*A Water Conditioning is at an all-time high and now exceeds $2,500,000.

Just following the close of our fiscal year, we completed negotiations with Water Refining Company, the manufacturer of our MILADY and HOME-MAKER domestic water conditioners for the SERViSOFT Division. We have received a long-term commitment from our supplier on a basis that will protect our competitive position and that of our franchised dealers. We have thus acquired an attractive investment in the amount of $600,000 for which we received Convertible Subordinated Debentures from Water Refining, giving us security for both our investment and our contract of supply.

During this year we welcomed more than 3,000 new shareholders, as a result of the dividend of Water Treatment stock by Mississippi Valley Barge Line Company to its shareholders. Due to the wide distribution of our more than 6,000 stockholders across the country, our application has been accepted by the National Association of Security Dealers, so that we now appear on the national listing of Over the Counter Securities in the leading financial journals.

During the course of the year Mr. Thomas C. Allan, who for many years was the Chief Executive Officer of SERViSOFT of California, (now Chairman of Quality Industries) and Mr. John G. Kelly, our Executive Vice President, were elected as members of your Board of Directors.

On October 1, 1964 we were saddened by the death of Mr. Sidney C. Solomon, Vice President of the Company and General Manager of L*A Water Conditioning. Mr. Solomon was succeeded by Mr. William C. Burns, formerly Sales Manager of L*A Water Conditioning. Mr. Raymond T. Anderson, formerly Controller, was elected Secretary-Treasurer of the corporation.

The year ahead will see us faced with the fact that we have exhausted our operating tax loss carry-forward and the effect that this may have on profits obviously cannot be minimized. Nevertheless, your management believes that our growth is assured and we expect significant increases in sales in all divisions of Water Treatment Corporation with corresponding profits that will overcome the effects of our new tax burden.

We express our sincere appreciation for the confidence expressed by our investors, and the loyal and devoted service demonstrated by our dealer organization and our fellow employees throughout the year.

Sincerely,

James M. Ballengee
Chairman of the Board

Walter P. Beto
President

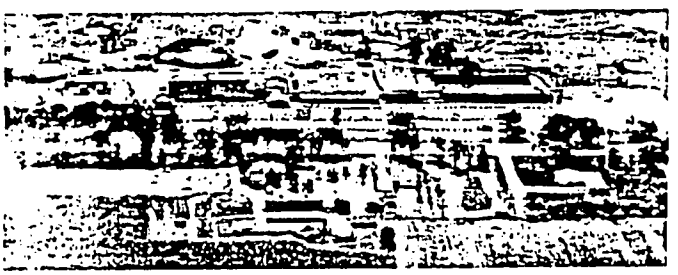
HIGHLIGHTS

For the Year Ended May 31

		1965	1964
FINANCIAL	Net Revenues	$ 8,606,000	$ 5,929,000
	Net Earnings	339,000	375,000
	Earnings Per Share	.26	.28
	Depreciation & Amortization	372,000	276,000
	Cash Flow	711,000	651,000
	Working Capital	2,739,000	1,945,000
	Current Ratio	1.7 to 1	1.7 to 1
GENERAL	Shares Outstanding	1,311,216	1,322,015
	Number of Stockholders	6,304	3,725
	Number of Employees	330	249

The photo sequence on this page portrays scenes from the largest national dealer convention in SERViSOFT's history. More dealerships were represented at the Pheasant Run Lodge outside St. Charles, Illinois than have ever been assembled previously. A new advertising and sales promotion program was unveiled to about 350 dealers, their wives, and salesmen. Dealer enthusiasm was generated to an all time high by a professionally produced show of New York theater and TV talent, special musical numbers, songs and skits.

NATIONAL DEALER CONVENTION / "THE BIG PLUS"

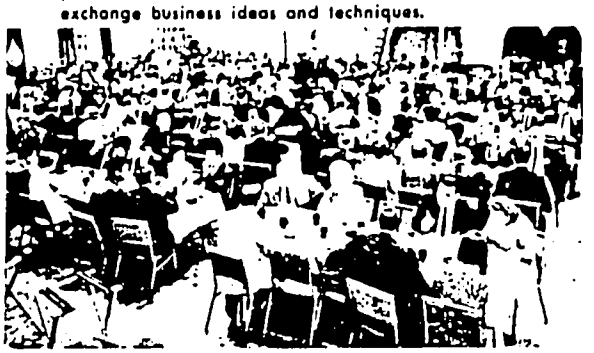


Pheasant Run Lodge and golf course, site of 1965 national SERViSOFT dealer convention.

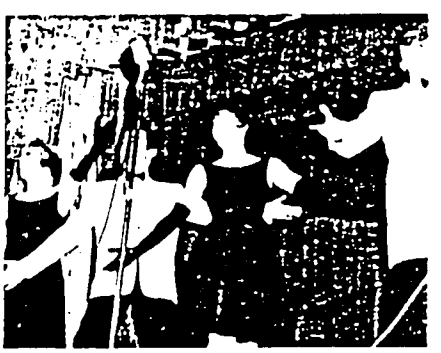
Trio from the New York theater cast engaged to put on a professional presentation of SERViSOFT's dynamic advertising program.

Cast introduces the features and details of the Sales Incentive Program. Hundreds of fabulous prizes are made available to energetic salesmen.

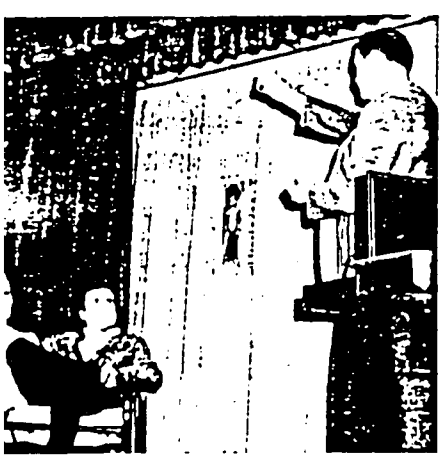
Largest SERViSOFT family in history gathered from all parts of the nation to absorb valuable information and exchange business ideas and techniques.



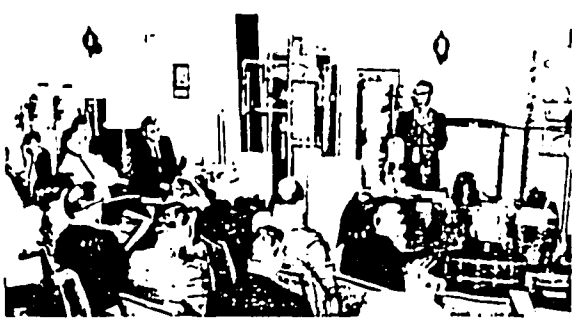
Over 350 SERViSOFT dealers and wives enjoy banquet final evening of convention.



New York cast during a song and dance number of a specially composed tune — "Let's Shoot The Works With SERViSOFT."



Practical and instructive skits demonstrating proper selling techniques were part of the BIG PLUS PRESENTATION.



SERViSOFT Engineers held refresher classes on many technical aspects of equipment and operation.

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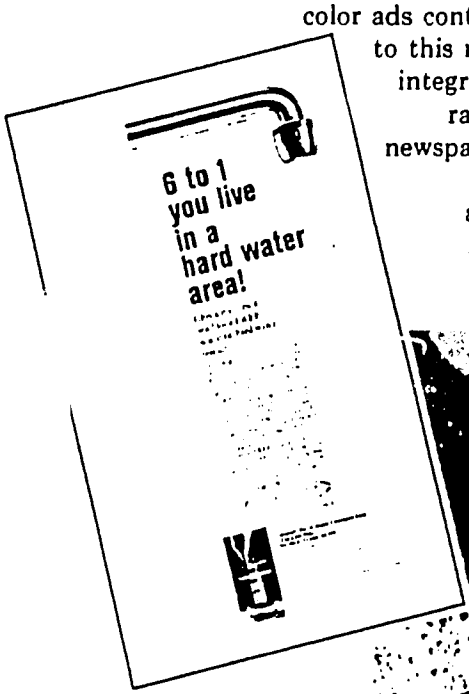
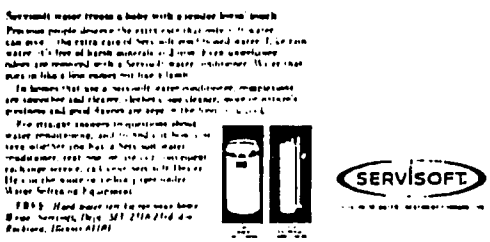
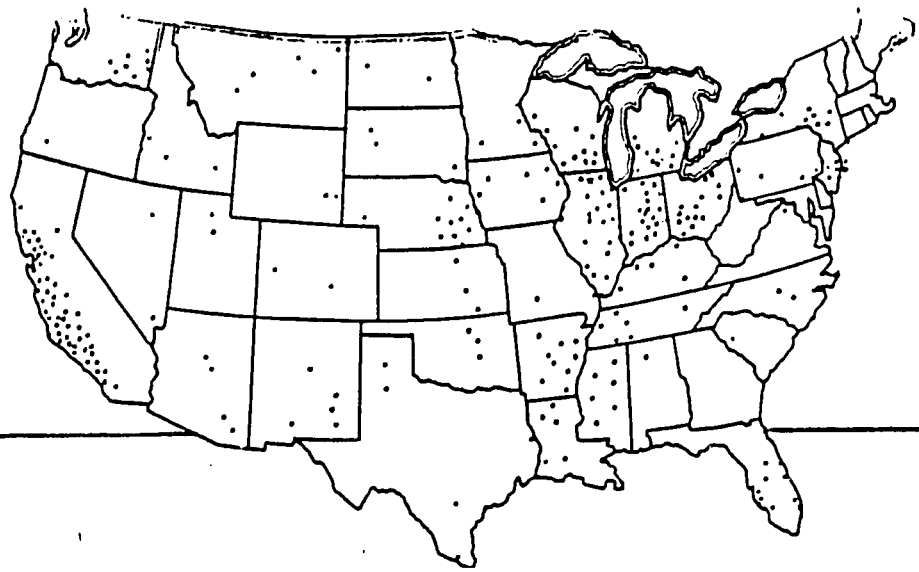
ADVERTISING / *SERViSOFT WATER—the only water nicer comes from clouds*

1965 launched SERViSOFT advertising into the largest and most comprehensive program that had been offered to the dealers. Development of the SERViSOFT name into a nationally recognized name brand is one of the major objectives. Far reaching mass circulation, magazines like McCalls, Good Housekeeping and Ladies Home Journal, will be carrying the SERViSOFT story in four color ads continuously in the months ahead. In addition to this national advertising umbrella, a completely integrated program of direct mail, television and radio commercials, billboards, a full range of newspaper ad mats, salesmen's incentive program and a co-operative advertising plan are available to dealers for their local advertising and promotion efforts.



SERViSOFT water–
the only water nicer comes from clouds



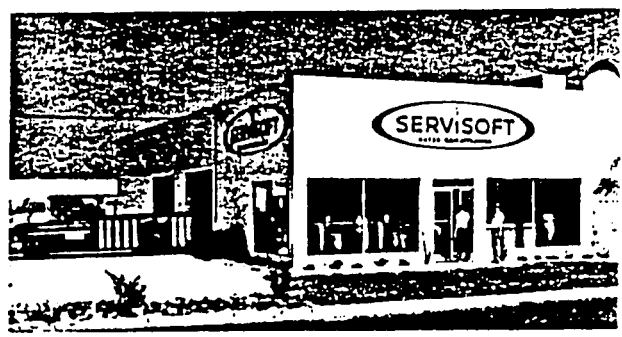


NATIONAL DEALER ORGANIZATION

SERVISOFT is represented nation-wide by almost 350 franchised dealerships. With 85% of the United States presenting a hard water problem and only 7% of the homes using conditioned water, the growth potential for present dealers is tremendous. Continuing efforts are being made to establish and train new dealerships in areas where the need represents the greatest potential. The opportunities are unlimited and we are continuing to aggressively push for new growth and development.

Presentation of award to outstanding SERVISOFT salesman of the year.

GRAFTON, WISCONSIN

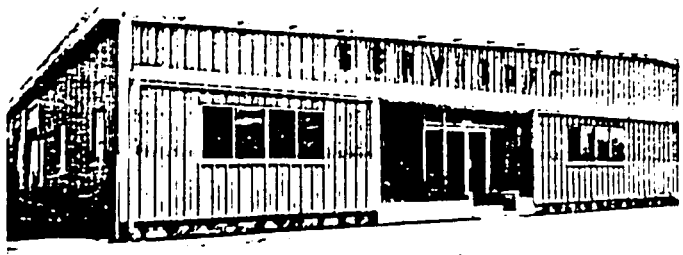


SARASOTA, FLORIDA

SERVISOFT dealer with a net increase of 1063 new customers last year receives "Crying Towel" award inscribed "He gives his competitors ample cause to weep."

FULLERTON, CALIFORNIA

SAN DIEGO, CALIFORNIA



SERVISOFT

SERVISOFT

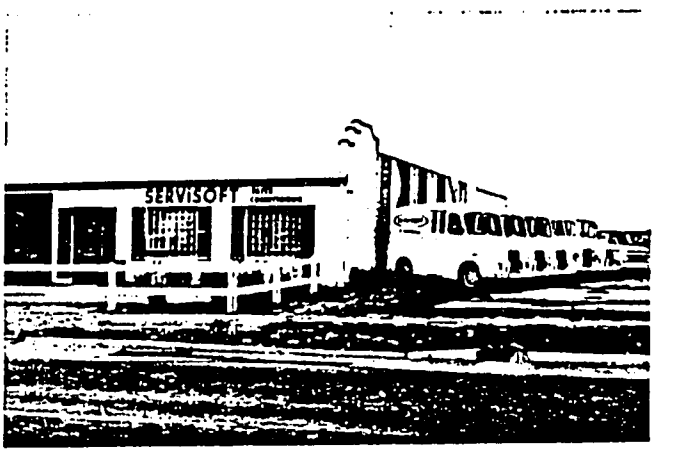
The first of the present company owned dealerships was purchased in October of 1962. In addition to contributing importantly to corporate profits, these operations produce first hand operating knowledge and experience that is utilized by management in the training of new franchised dealerships. The parent company presently owns five operations servicing almost 26,000 soft water customers.

COMPANY OWNED RETAIL OPERATIONS

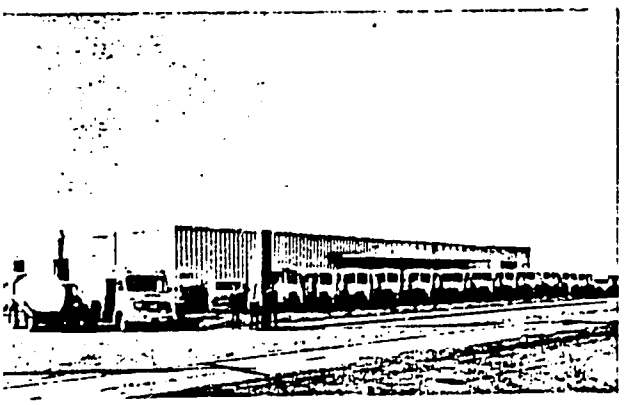
OUR NEWEST ADDITION—

ORANGE COAST, CALIFORNIA,
adjacent to Newport Beach, the center of a rapidly growing area with plenty of opportunity for conditioned water applications.

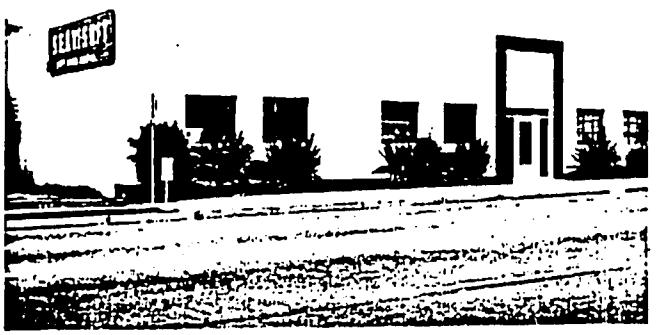
DeKalb, Illinois



Indianapolis, Indiana



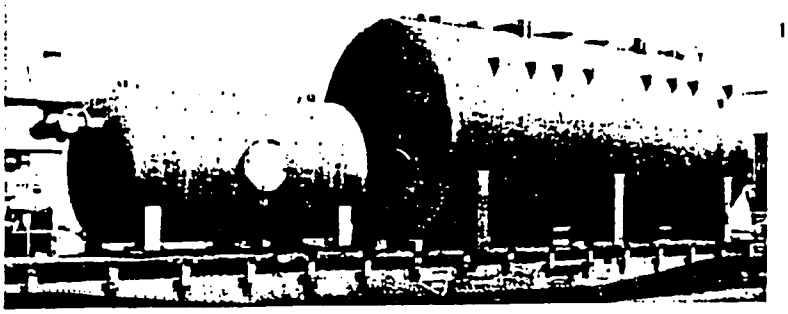
Rockford, Illinois



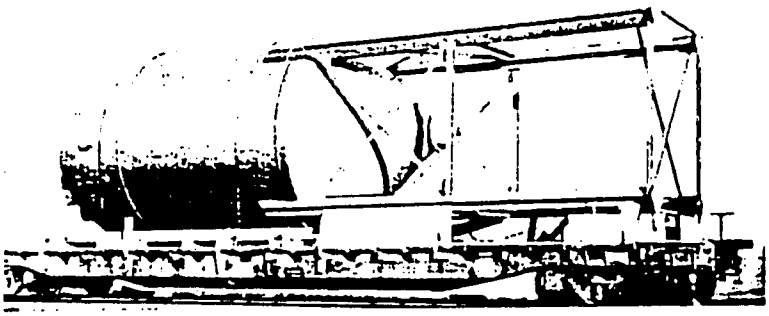
Inglewood, California

The largest engineering-manufacturer of water treating equipment on the west coast, L★A Water Conditioning, is a substantial contributor to Waterco in total sales revenues and profits. Their product applications reach into a variety of fields with new applications and areas opening up constantly. The future for this division continues to look extremely bright and rewarding.

COMMERCIAL / INDUSTRIAL / MUNICIPAL



1



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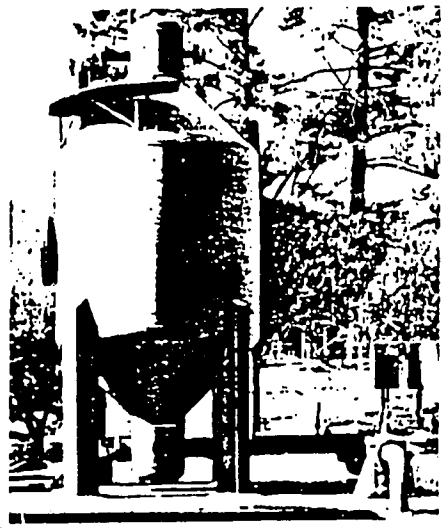

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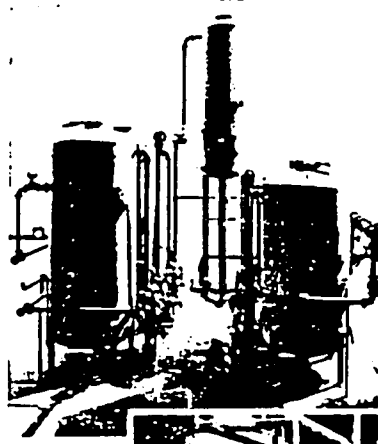
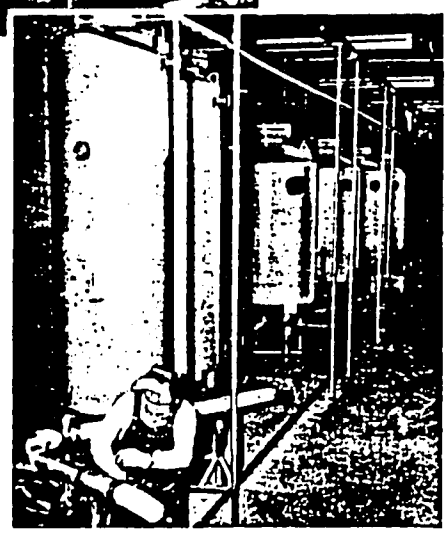


4



5

1. This goliath is a deaerating Feedwater Heater on its way to a Midwest Central Station Power Plant. The unit has a capacity of well over 1,000,000 pounds of water per hour. Such Deaerators serve as efficient preheaters in power plant feedwater cycles and most important prevent oxygen corrosion in the steam generator by producing a water containing less than 0.005 cc per liter of dissolved oxygen. This is less than one tenth of an ounce of oxygen per one million pounds of water.

2. By accepted standards the Hot Process Softener pictured above is big! Actually it is small as Hot Process units go. L★A has designed such vessels up to 40'-0" diameter. Of course, such large tanks must be shipped knocked down to the job site. The above unit is significant because it is being shipped completely set up to an important L★A customer. Special rail and road clearances were necessary to accomplish this, but L★A met the problem head on — Result: a most happy customer.

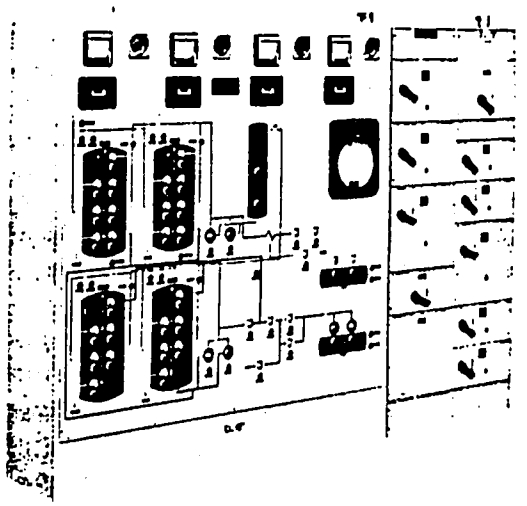
3. It looks like a moon rocket on the launching pad. It isn't — it's a lot more down to earth. It is another L★A first — the Aqua Filter. This new unique carbon tower permits highly efficient removal of turbidity, taste, odor, color, and excess chlorine residual in a *single process*. It should have wide application and appeal particularly for medium and small municipal water companies. Several systems are now in operation and the process has the approval of the Public Health Department of the state of California.

4. Just plug it in and begin making 1,000 GPM Demineralized water over one thousand times more pure than the average drinking water supply. Sounds easy? No it isn't, but such requirements don't phase our L★A people. This large fully automatic plant was engineered, fabricated, delivered, and put into operation in less than four months. Besides removing all traces of ionized dissolved solids, the equipment delivers virtually gas free water. The tall tower in the background accomplishes this by cold water vacuum Deaeration.

5. L★A has pioneered the art of factory prefabrication and packaging of water treatment plants regardless of size or complexity. This is a large high rate condensate Demineralizer being assembled for the United States Atomic Energy Commission. The tanks in the foreground receive spent and exhausted resin and reprocess it. After this, the fresh resin is sluiced back to one of the four main exchange units (shown in the background) for further duty.

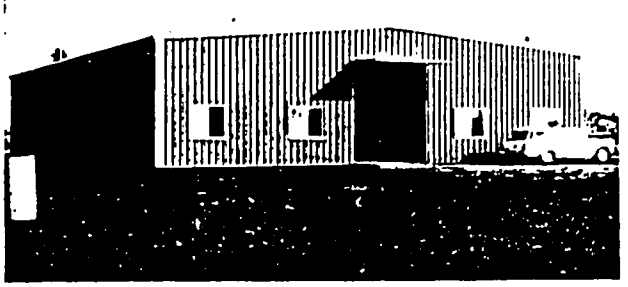
All piping is 304L stainless and was factory prefabricated and assembled. Each welded joint was x-rayed, dye tested, and inspected to ASME Nuclear Code Cases. Over 1,000 welds were required to complete the job.

We are living in the era of automation. Water Treatment Plants are becoming more and more sophisticated. Witness the graphic design control board, at right, designed and built by our L★A engineers for a large central power plant Demineralizer. The board features continuous process variable readout, automatic monitoring with local and remote alarms, complete sequential program control over complex regeneration cycles, and other advance concepts.



CITY OF INDUSTRY/EXPANSION

A $100,000 addition was completed early in 1965 to the City of Industry, California plant housing L★A Water Conditioning and SERVISOFT Western Division. This added space allows for much needed manufacturing and warehouse expansion and also provides for future plant enlargements that are anticipated in the next 3 to 5 years.



City of Industry warehouse contains 7,000 square feet for inventory and increased assembly capacity.

SERVISOFT

BALANCE SHEET

ASSETS

	May 31 1965	
Current assets:		
Cash	$ 325,710	$ 462,844
Receivables (note 1):		
Accounts receivable	1,663,369	1,346,239
Lease contracts	1,088,220	829,310
Conditional sales contracts	3,227,937	1,995,030
	5,979,526	4,170,579
Less:		
Unearned finance charges	1,111,369	702,492
Allowance for doubtful receivables	107,459	82,979
	1,218,828	785,471
	4,760,698	3,385,108
Inventories, at the lower of cost (first-in, first-out) or market	1,296,001	704,570
Prepaid expenses	215,740	153,201
Total current assets	6,598,149	4,705,723
Investment in plant, equipment, and dealer franchises and customer installations, at cost:		
Land and buildings	442,598	346,098
Equipment	1,602,000	1,334,519
	2,044,598	1,680,617
Less allowance for depreciation	456,316	314,040
	1,588,282	1,366,577
Dealer franchises and customer installations, less amortization of $726,837 and $534,858, respectively	1,529,605	1,613,955
	3,117,887	2,980,532
Other assets	181,465	195,557
	$9,897,501	$7,881,812

See accompanying notes to financial statements.

LIABILITIES

	May 31 1965	May 31 1964
Current liabilities:		
Loans payable to banks, secured (note 1)	$2,668,827	$2,053,866
Current maturities of long-term notes payable (note 2)	124,878	130,238
Accounts payable and accrued expenses	1,065,219	576,300
Total current liabilities	3,858,924	2,760,404
Long-term notes payable, less current maturities (note 2)	2,809,853	2,131,534
Subordinated convertible debentures (note 3)	1,200,000	1,200,000
Stockholders' equity (notes 3, 4, 5, and 6):		
6% noncumulative preferred stock, $100 par value per share. Authorized, 50 shares; none outstanding in 1965	—	5,000
Common stock, 10¢ par value per share. Authorized 5,000,000 shares; issued 1,323,815 shares and 1,322,015 shares, respectively	132,382	132,202
Capital in excess of par value	1,848,045	1,842,408
Retained earnings (deficit)	149,089	(189,736)
	2,129,516	1,789,874
Less common stock held in treasury, at cost— 12,599 shares	100,792	—
Stockholders' equity, net	2,028,724	1,789,874
	$9,897,501	$7,881,812

FINANCIAL STATEMENTS

STATEMENT OF EARNINGS

	Year ended May 31	
	1965	1964
Net sales, service, lease, and franchise income, etc.	$8,606,495	$5,928,940
Costs:		
Materials, labor, and other costs	5,431,520	3,680,609
Selling, administrative, and general expenses	2,187,698	1,420,197
Depreciation and amortization	372,436	275,527
Interest	263,016	177,286
Federal income taxes (note 9)	13,000	—
	8,267,670	5,553,619
Net earnings for the year	$ 338,825	$ 375,321

STATEMENT OF RETAINED EARNINGS (Deficit)

	Year ended May 31	
	1965	1964
Balance at beginning of year	$ (189,736)	$ (629,986
Net earnings for the year	338,825	375,321
Retained earnings of L★A Water Conditioning, Inc. at June 1, 1963 (acquired in a pooling of interests)	—	64,929
	338,825	440,250
Balance at end of year	$ 149,089	$ (189,736)

See accompanying notes to financial statements.

ACCOUNTANTS' REPORT

The Board of Directors
Water Treatment Corporation:

We have examined the balance sheet of Water Treatment Corporation as of May 31, 1965 and the related statements of earnings and retained earnings 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.

In our opinion, such financial statements present fairly the financial position of Water Treatment Corporation at May 31, 1965 and the results of its operations for the year then ended, in conformity with generally accepted accounting principles applied on a basis consistent with that of the preceding year.

PEAT, MARWICK, MITCHELL & CO.

Chicago, Illinois
July 2, 1965

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NOTES TO FINANCIAL STATEMENTS

May 31, 1965

(1) *Lease Contracts and Conditional Sales Contracts*

The company uses the "finance method" of accounting for equipment leases entered into with its dealers. Under this method, the total amount of rentals to be received by the company during the lease period is recorded as an asset and the cost of the related leased equipment, net of residual value, is eliminated from the accounts. The excess of the gross amount receivable over the net cost of the related equipment is reflected in earnings over the period of the lease contract.

All lease contracts and conditional sales contracts in the amount of $2,669,959 are pledged to secure bank loans payable. In accordance with general practice for reporting installment receivables arising from such contracts and the related indebtedness, current assets and current liabilities include amounts due after one year.

The balance sheet as of May 31, 1964 has been restated to reflect the total conditional sales contracts receivable and the liability to the banks, rather than the net equity.

(2) *Long-Term Notes Payable*

Long-term notes payable as of May 31, 1965, bearing interest of 5% to 6%, consist of the following:

	Current maturities	Long-term portion	Total
Notes payable to Mississippi Valley Barge Line Company:			
Due June 30, 1966	$ —	$1,100,000	$1,100,000
Due January 20, 1969	—	1,400,000	1,400,000
Notes payable in annual installments of $48,474 each to 1967	48,474	48,474	96,948
Notes payable in semiannual installments of $24,248 each to 1968	48,496	121,242	169,738
Notes payable in monthly installments of $574 each to 1973	6,890	45,357	52,247
Mortgage note payable in semiannual installments of $5,833 each to 1974	11,666	91,669	103,335
Other notes	9,352	3,111	12,463
	$124,878	$2,809,853	$2,934,731

(3) *Subordinated Convertible Debentures*

The 5-1/2% subordinated convertible debentures become due in the amount of $600,000 in 1973 and $600,000 in 1974 and are convertible into shares of common stock at $2.00 and $7.00 per share, respectively. Accordingly, 385,714 shares of common stock have been reserved for this purpose. Under the terms of the debenture agreements the company has agreed not to pay dividends or make any distributions on its common stock except to the extent of net earnings accumulated since January 20, 1964; the entire balance of retained earnings was unrestricted as to dividends at May 31, 1965.

Notes to Financial Statements, Continued Next Page

NOTES TO FINANCIAL STATEMENTS (Continued)

(4) *Capital Stock and Capital in Excess of Par Value*

Changes during the year ended May 31, 1965 are accounted for as follows:

	Common stock		Capital in excess of par value
	Issued	Treasury (debit)	
Balance May 31, 1964	$132,202	$ —	$1,842,408
13,171 shares acquired upon sale of interest in Mexican affiliate	—	(105,368)	—
572 shares issued to retire all of the 6% noncumulative preferred stock	—	4,576	417
1,800 shares issued under stock option plan	180	—	5,220
Balance May 31, 1965	$132,382	$(100,792)	$1,848,045

It is presently contemplated that the Directors will authorize, prior to the annual stockholders' meeting, a new issue of 15,000 shares of 6% cumulative, convertible preferred stock, $80.00 par value. This stock will be issued to Mississippi Valley Barge Line Company in exchange for $1,200,000 of the company's outstanding long-term notes. Dividends on the preferred stock will not begin to accrue until October 1, 1967. The shares will be convertible into the company's common stock at a price of $8.00 per share of common stock.

The authorization of the new preferred stock is subject to ratification by the stockholders.

(5) *Stock Option Plan*

On September 15, 1964 the stockholders approved a qualified stock option plan which replaced a restricted plan then in effect. The plan authorized the granting of options to officers and key employees to purchase up to 150,000 shares of the company's common stock, including options previously granted under the old plan, at the fair market value of such shares at the date of grant. At May 31, 1965 options were outstanding for the purchase of 66,500 shares (51,500 under the old plan at $3.00 and $3.50 per share, expiring 1973, and 15,000 at $8.88 and $9.25 per share, expiring 1969 and 1970); 1,800 shares had been issued under options exercised.

(6) *Stock Warrants*

Warrants entitling the holders to purchase 60,000 shares of the company's common stock at $7.00 per share and 60,000 shares at $9.00 per share are outstanding at May 31, 1965. The warrants expire in part in 1969 and the balance in 1974.

(7) *Sale and Leaseback*

During the year ended May 31, 1965 the company acquired a manufacturing and warehousing facility located in Franklin Park, Illinois which was concurrently sold and leased back. The lease provides for annual rentals of $40,850 for 15 years with options to renew for three consecutive terms of ten years each at annual rentals of $21,500, $17,200, and $12,900, respectively. All taxes, insurance, ordinary repairs, and assessments are paid by the company.

(8) *Contingent Liabilities*

The company is defendant in several suits arising in the normal course of business. Counsel for the company reports that it is his opinion that these suits can be defended successfully.

(9) *Federal Income Taxes*

The company's tax returns for prior years are subject to review by the Internal Revenue Service. The provision for federal income taxes gives consideration to use of loss carryforwards from prior years; there are no unused loss carryforwards at May 31, 1965.

[illegible]

SERVISOFT

America's First and Finest Water Conditioning Service

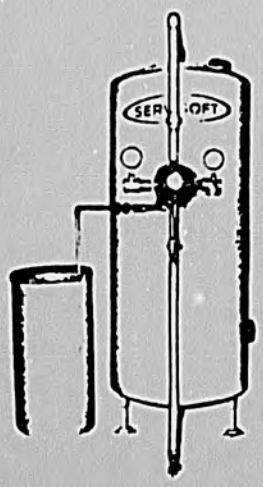
CHOOSE FROM THESE PLANS:

- HOME-OWNED
- RENTAL
- EXCHANGE SERVICE
- COMMERCIAL

The SERVISOFT "Homemaker", truly the choice of homemakers everywhere. Trim, compact, trouble free. All plastic resin and brine tanks are fully guaranteed for 10 years against rust or corrosion.

Sophisticated "Milady" fully automatic water conditioners are the "Top" of the SERVISOFT line. Beautiful in design, compact and trouble free. Dealer and consumer acceptance of this product has been outstanding.

SERVISOFT Service Exchange system offers complete home water conditioning without ownership or investment by the customer. SERVISOFT was the originator of this "backbone" of the water conditioning industry.



COMMERCIAL UNITS

Commercial water conditioners and filters for many applications . . . coin-op laundries, motels, hotels, apartments, restaurants, car washes are just a few areas SERVISOFT provides a broad range of top quality water conditioning equipment.

Chromalloy American Corporation 1971 Annual Report

Chromalloy American Corporation is an Equal Opportunity Employer.

Directors

Wesley J. Barta*
A. J. de Mayo*
Carl Ferenbach
Joseph Friedman*
Dominick J. Giacoma*
Peter J. Giacoma
Malcolm E. Henning
Harry H. Kessler
E. H. Newman*
Frank P. Nykiel*
F. Van S. Parr
D. W. Rhea
Richard P. Seelig*
Irving A. Shepard*
Craig Stevenson
Sidney Traurig
W. Stanley Walch

Member of Executive Committee

Chief Executive Officers

Joseph Friedman, *Chairman of the Board—Chief Executive Officer*
Wesley J. Barta, *Vice Chairman of the Board—Administrative*
Frank P. Nykiel, *Vice Chairman of the Board—Finance*
Richard P. Seelig, *Vice Chairman of the Board—Corporate Development*
Irving A. Shepard, *President—Chief Operating Officer*

Executive Vice Presidents

Patrick J. Ducey, *Treasurer*
Dominick J. Giacoma, *Transportation Operations*
William L. McGavock, *Controller*
E. H. Newman, *International Operations*
Richard L. Wachtell, *Technology*
W. S. Walch, *General Counsel*
Herbert Zlotnick, *Corporate Project Development*

Vice Presidents

A. J. de Mayo, *West-Administration*
John L. Ellis, *International*
Irvin Goldfarb, *Administration*
Herschel C. Loveless, *Washington Bureau*
Lawrence J. Manning, *Administration*

Secretary

William B. Roberts, *Associate General Counsel*

Executive Offices
120 Broadway, New York, N. Y. 10005

Administrative Offices
111 S. Meramec Ave., St. Louis, Missouri 63105

Transfer Agents
Irving Trust Company
1 Wall Street, New York, N. Y. 10015
Mercantile Trust Company
National Association
721 Locust, St. Louis, Missouri 63101

Registrars
Chemical Bank
20 Pine Street, New York, N. Y. 10015
St. Louis Union Trust Company
510 Locust, St. Louis, Missouri 63101

Counsel
Whitman & Ransom
522 Fifth Avenue, New York, N. Y. 10036

Independent Auditors
Peat, Marwick, Mitchell & Co.
Certified Public Accountants
720 Olive Street, St. Louis, Missouri 63101

Shares listed on New York Stock Exchange (Symbol-CRC.

Five Year Condensed Earnings Summary

	(In thousands except for per share data)				
	1971	1970	1969	1968	1967
Net sales and operating revenues	$453,433	$413,130	$400,072	$335,597	$283,611
Net earnings (1)	16,922	13,886	16,665	16,812	14,679
Primary earnings per share of common stock (2)	1.61	1.27	1.64	1.77	1.60

(1) Adjusted for change in method of accounting for research and development and patent costs in 1968; applied retroactively to all prior periods.

(2) Adjusted (a) for 3 for 2 stock splits in 1967 and 1968, and (b) to give effect to shares issued and issuable to former shareholders of acquired companies based on their earnings performance, and in some cases the market value of the Company's common stock.

(3) The above summary has been restated to give effect to including pooled companies for years prior to their affiliation.

Condensed Financial Position

December 31, 1971 (in thousands)

Current assets	$156,091
Current liabilities	63,791
Working capital	92,300
Property and equipment—net	161,049
Other assets	34,145
	287,494
Other liabilities and deferred credits	145,918
Stockholders' equity	$141,576

1971 was derived by directly or indirectly providing goods and services to the consumer. An example of the breakdown of the groups of companies which make up the Chromalloy family, shows one entitled "Consumer Products & Services". However, for the purpose of making this report more meaningful in other respects, certain consumer products and services units are not so identified. As an example, all of Chromalloy American's pharmaceutical items are truly consumer products. Another case in point would be the significant contribution to sales and earnings of the Leon-Ferenbach subsidiary's production of dyed and texturized synthetic yarns. (See "Textile Products & Processing" page 10). While Chromalloy owns no knitting mills or carpet mills, our yarns are produced for almost immediate consumption in the form of hosiery, double-knit fabrics and carpeting. Certainly our direct involvement in the petroleum industry through the Natural Resources Group is yet another example of our participation in this area.

In addition to the confidence the Company places in the base level of consumer spending in the U.S., there is the conviction that the mature and very rapidly growing European community will increase its proportionate participation in the world economy. Heretofore, the highly civilized, vast and rapidly growing population of some 350 million West European souls was extremely nationalistic. The increasing awareness of the interdependence of peoples on that continent for survival in the highly competitive area of global commerce, the attendant relaxation of trade barriers between those nations and the adjusting of currencies among those nations vis-a-vis the U.S. dollar, have all set the stage for great financial opportunities within that community and also between ourselves and them.

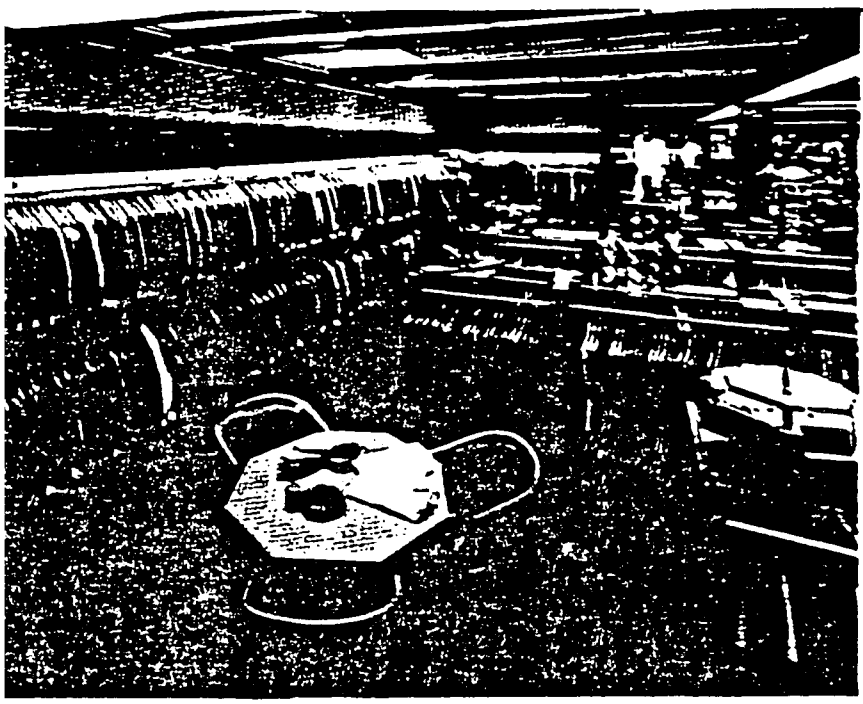
To all this must be added the potential which is inherent in the rapid development of the economics of the Eastern nations, all of whom are now doing a brisk and substantial amount of business with the West European nations bloc. Therefore, during 1971, Chromalloy Europa was established for the purpose of implementing the plans the Company has developed for taking advantage of these opportunities. It is projected that the same careful guidelines of the acquisition program, which have worked so successfully for Chromalloy American Corporation, will be applied to Chromalloy Europa on a continuing basis, so that its contribution to earnings by 1973 should be significant.

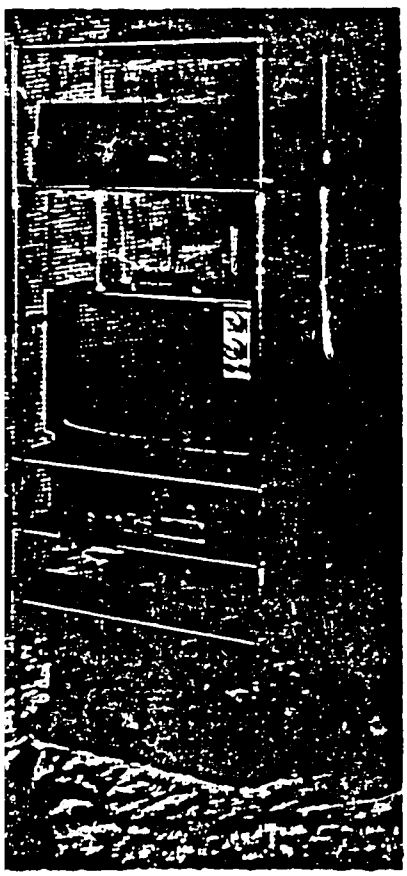
Substantial headway was made in 1971 in each of the new technologies in which the Company has a proprietary position. Although briefly described in the body of this report, most significant for notice here are the activities of our affiliate, Laser Link Corporation.

In May, the Laser Link Corporation completed an offering of 500,000 shares of common stock at $10 per share to the public. Shortly thereafter, three basic patents relating to the Airlink™ System whereby as many as 18 TV channels can be sent through the air simultaneously on a single transmitter were granted.

Soon after the distribution of this report the first installation of this remarkable breakthrough in communication technique should be completed in Colorado Springs, Colorado. Expectations are that the CATV system in that city will be able to double its subscriber list in about one year by sending its full complement of 12 TV channels simultaneously on one transmitter in three directions to outlying sections of the area. Not only will the Laser Link Airlink System provide the most economical way of getting the pictures to the desired locations, but it will solve a problem of picture quality which now restricts expansion of that CATV operation. Other installations are expected to be made in other cities following this momentous "first."

We also suggest your examination of references made to the new development of Laser Link's advanced electronic "Theatre VisioN™" System on page 20. This system for Pay-TV entertainment is a natural marketing adjunct to the Airlink System. We welcome the well-known producer, Mr. Dore Schary, to our executive team as president and chief operating officer of Tele-Premiere International. This is a new joint-venture



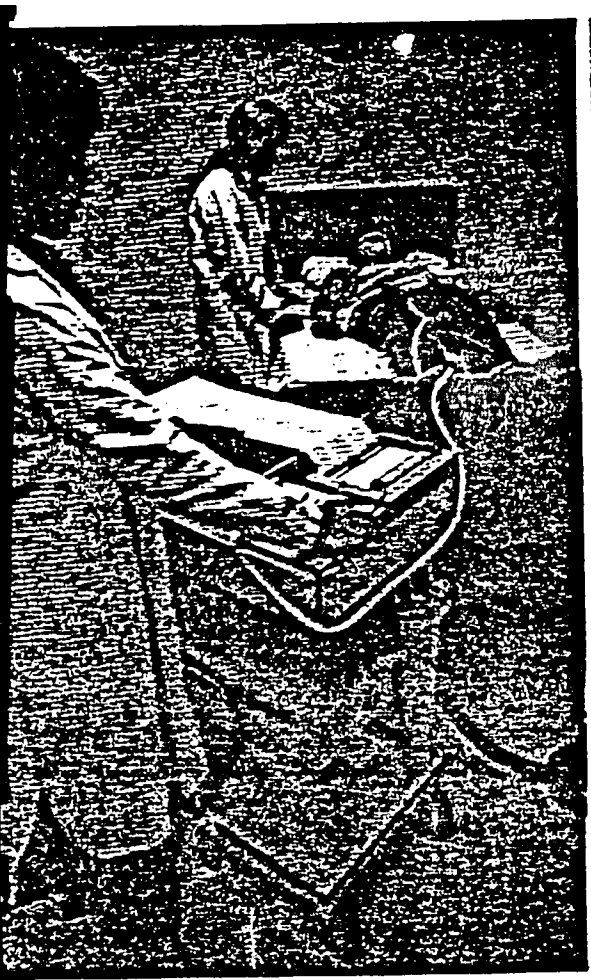


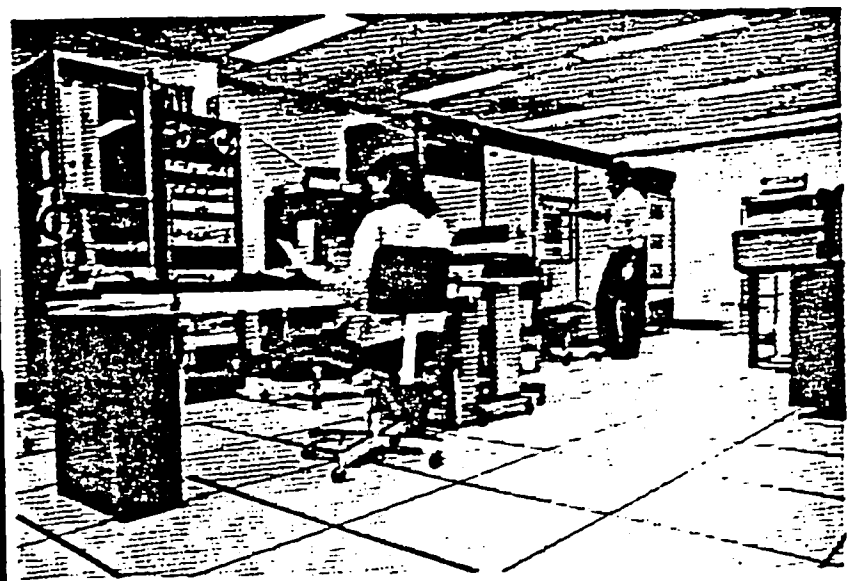
Chromalloy's K-G apparel chain (*upper left*) has become a familiar sight at western shopping centers.

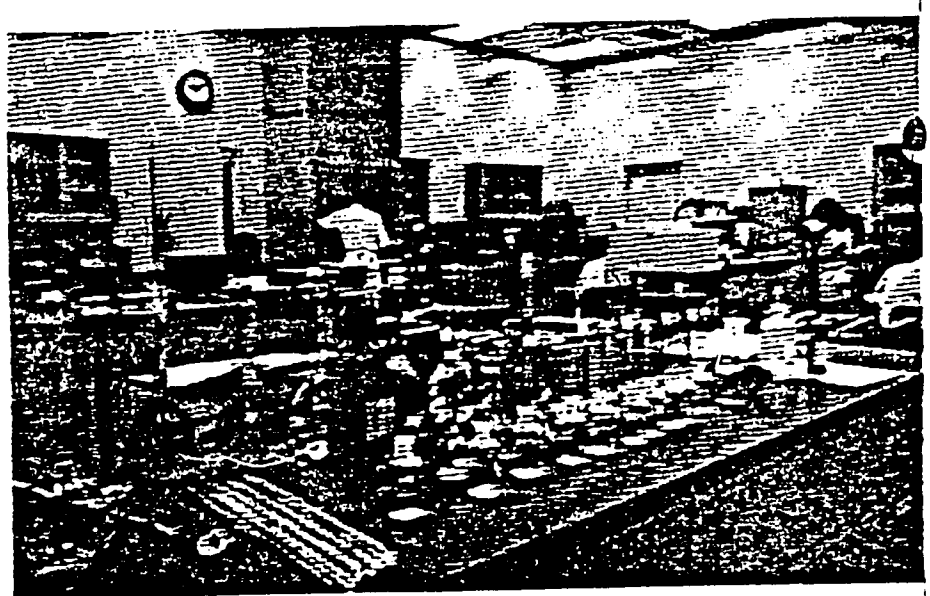
Assemble it yourself home entertainment centers (*left*). The modular furniture components are manufactured by Chromalloy-Aurora.

Seven League Boots (*upper right*), attractive waterproof vinyl footwear by National Transparent Plastics, a division of the Servus Rubber Co.

Arrow's attractive line of decoratively finished utility buildings (*lower right*) has received widespread consumer acceptance.



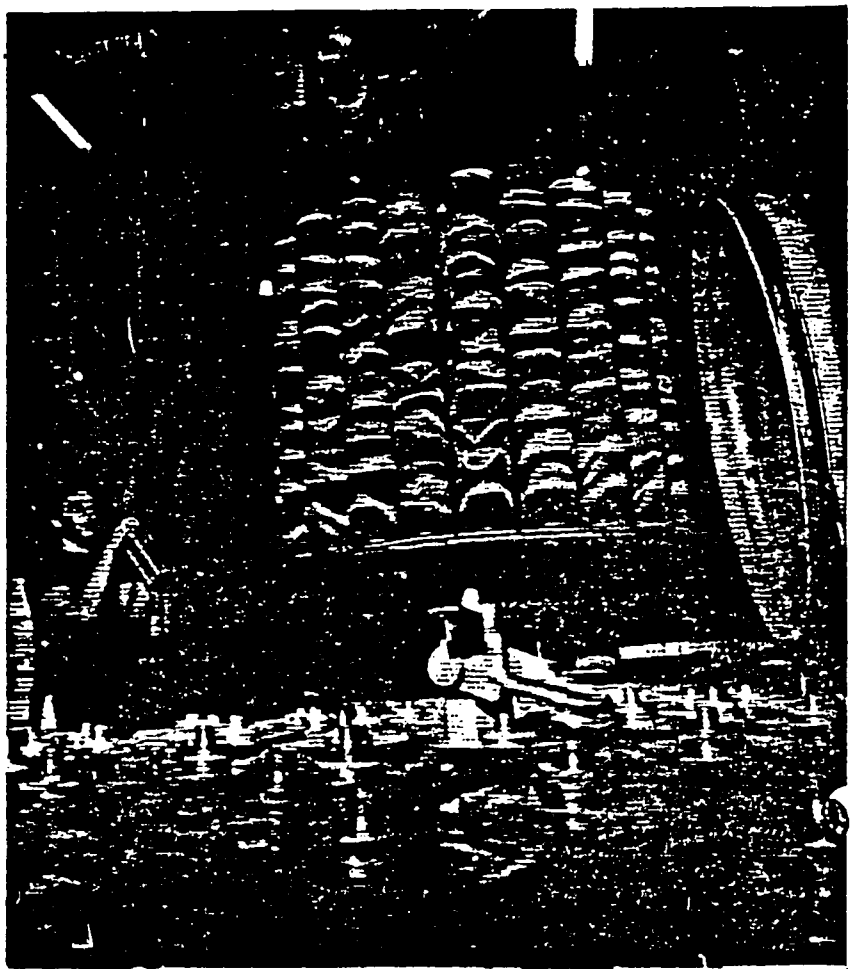




Cro-Med Compu-Consoles (*above*) are coupled to a computer center at New York's Mt. Sinai Hospital via telephone lines, (*above right*) providing a complete electrocardiogram readout within minutes.

Modern pharmaceutical quality control laboratories (*right*).

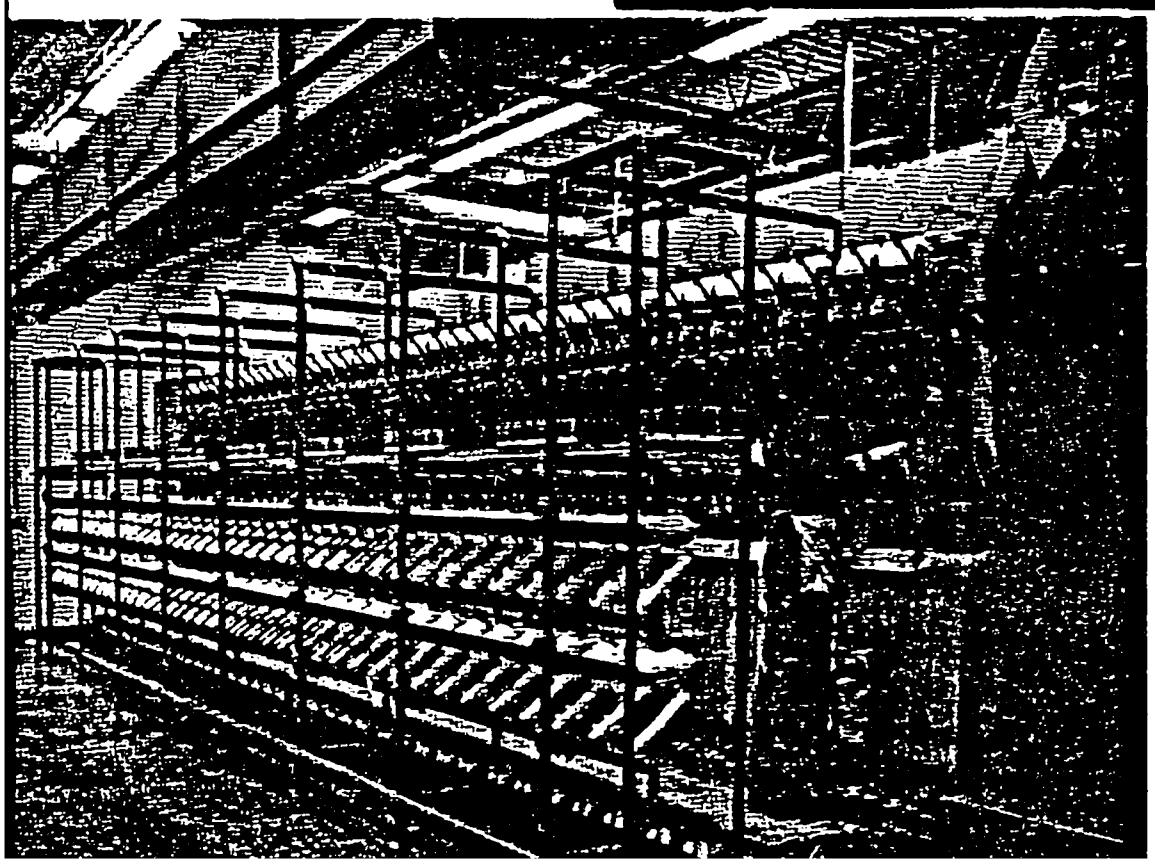
Vialing sterile injectable medicines at Myers-Carter Laboratories (*bottom*).

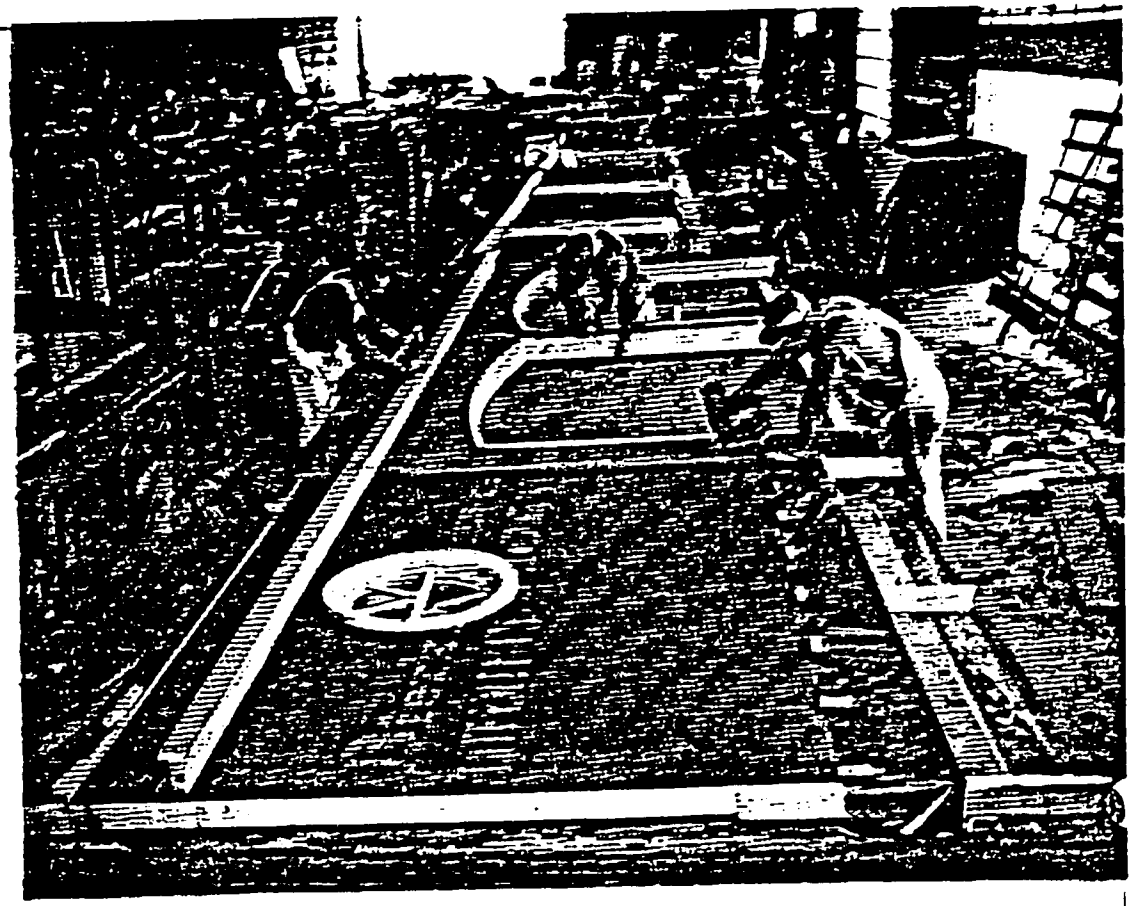


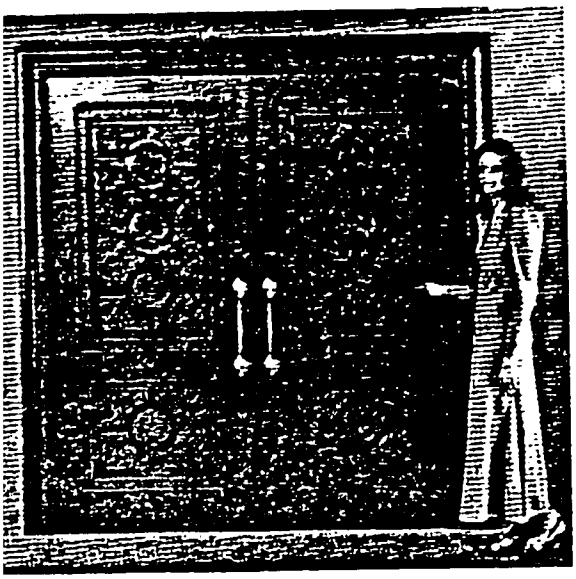
allation is noted for its innovations in carpet finishing.
ting is printed in a wide variety of patterns *(above)*.

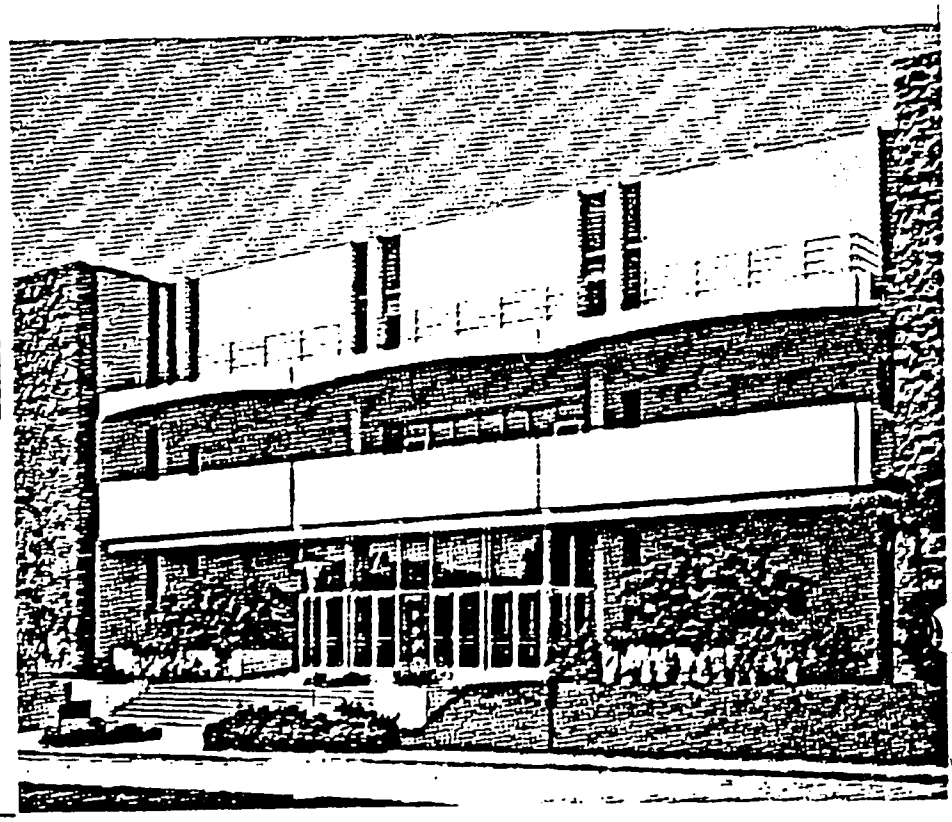
booming knit goods industry looks to Chromalloy's
Ferenbach subsidiary for quality filament yarns.
d of dyed texturized polyester yarn is moved *(right)*.

exturizing *(below)*.





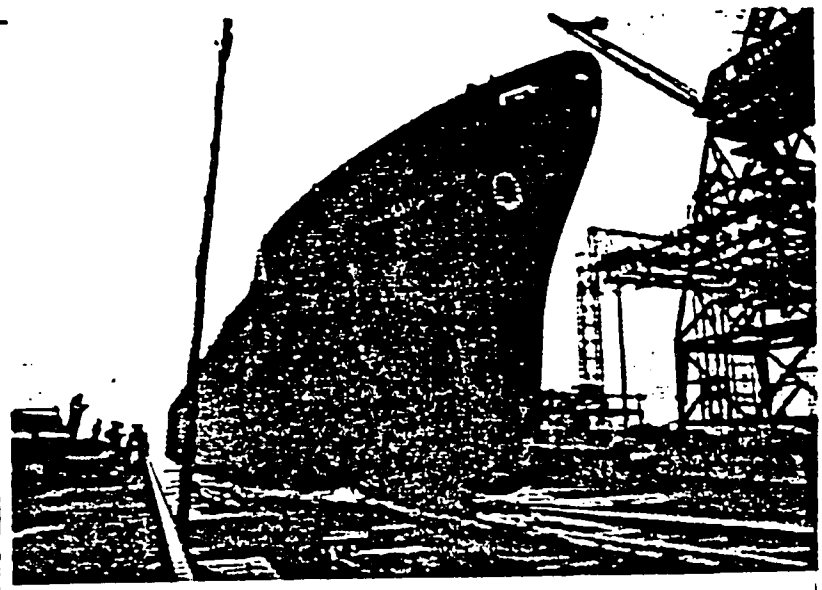




Chromalloy manufactures prefabricated building components for the booming homebuilding market. Prefabrication cuts on-site construction costs *(top)* A prefabricated wall section is assembled on one of Southern Cross' four wall production lines.

Attractive reproductions of wood grain entry doors, another Chromalloy innovation *(above)*.

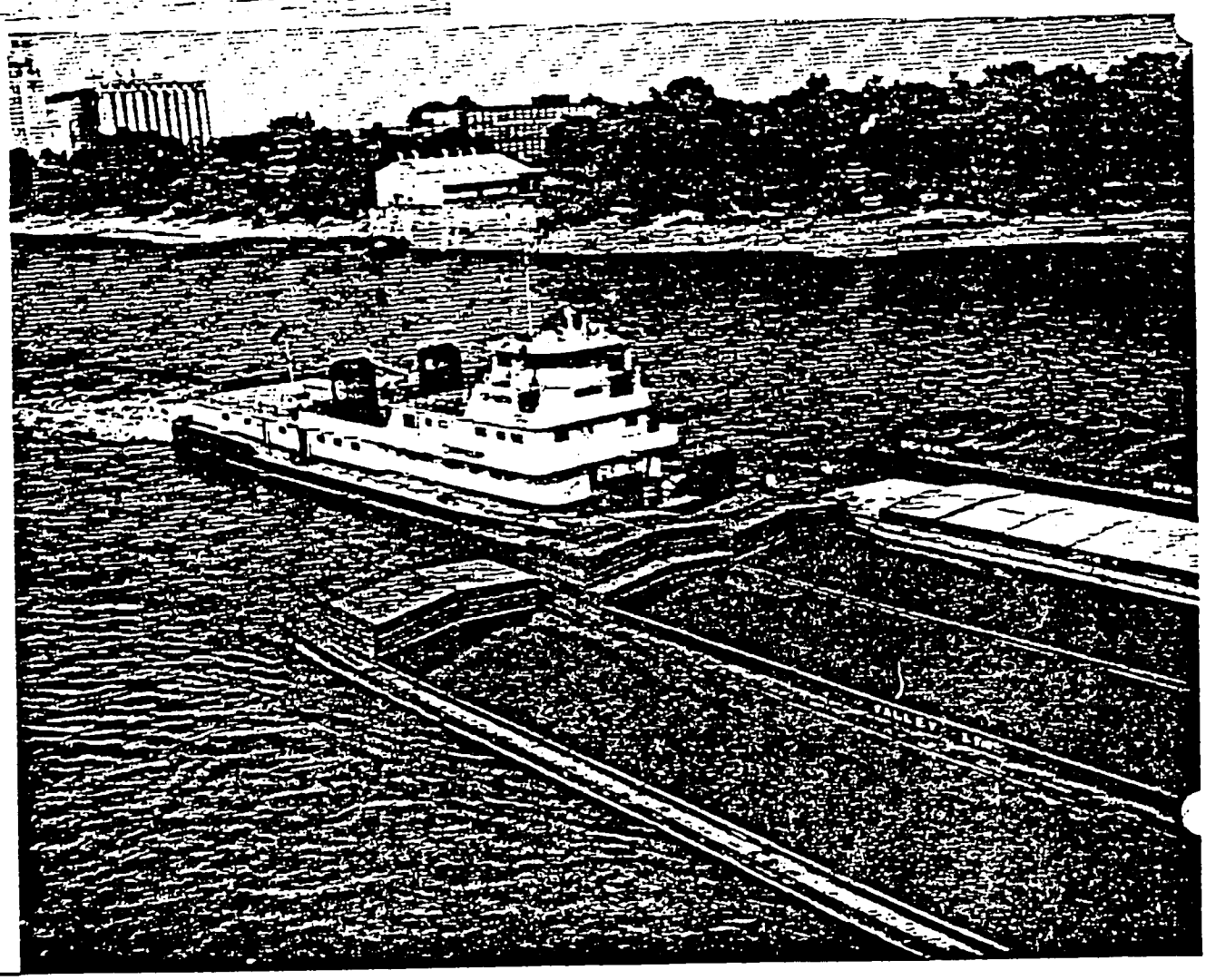
Aluminum and glass combination building entries by Aldora *(right)*.



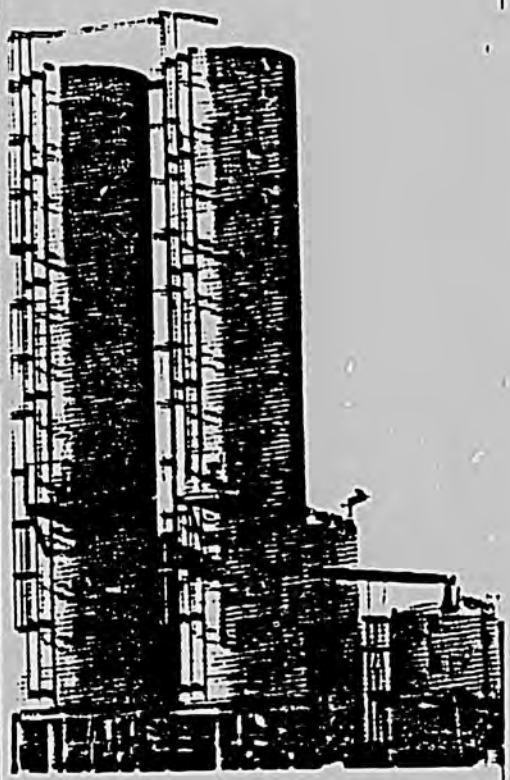
Jumbolizing the SS Colorado (*upper right*). The enlarged vessel will join our growing tanker fleet.

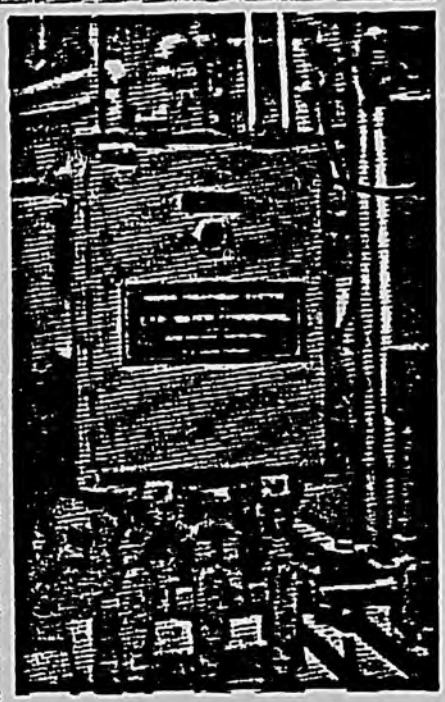
Chromalloy's transit lines provide leisure time activities with sightseeing buses and charter services (*left*).

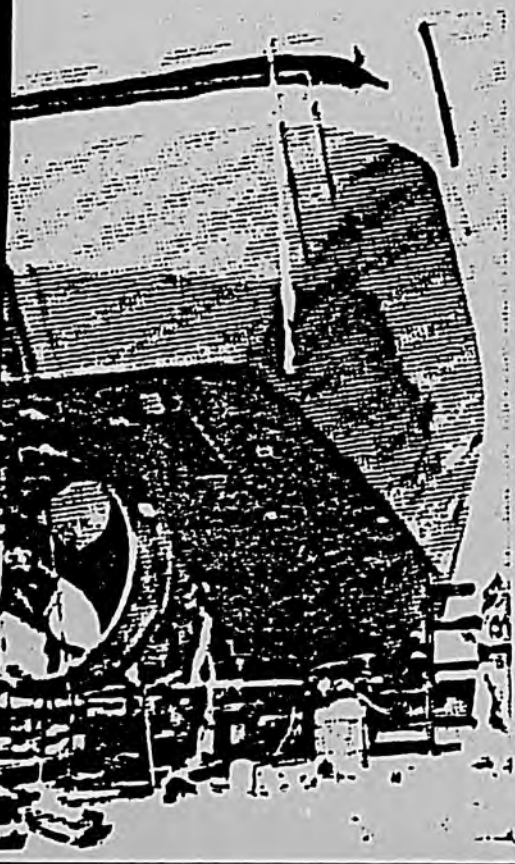
Chromalloy's Marine Group moves freight economically, an important anti-inflation factor (*below*).



Resources and Pollution Control







Swimming pool water clean and pure enough to drink. That's what Chromalloy's Purogen System has produced at the Four Season's resort, Lake of the Ozark, Missouri (*top*).

Ongoing services to offshore oil, gas and chemical industries are based at the Chromalloy-Delta complex at Houma, Louisiana. The Delta complex boasts complete shipyard services (*left*). Drilling fluids for the offshore industries are available at a number of Gulf Coast locations (*above right*).

Properly conditioned and treated water is provided by L'A/Water Treatment (*above*).

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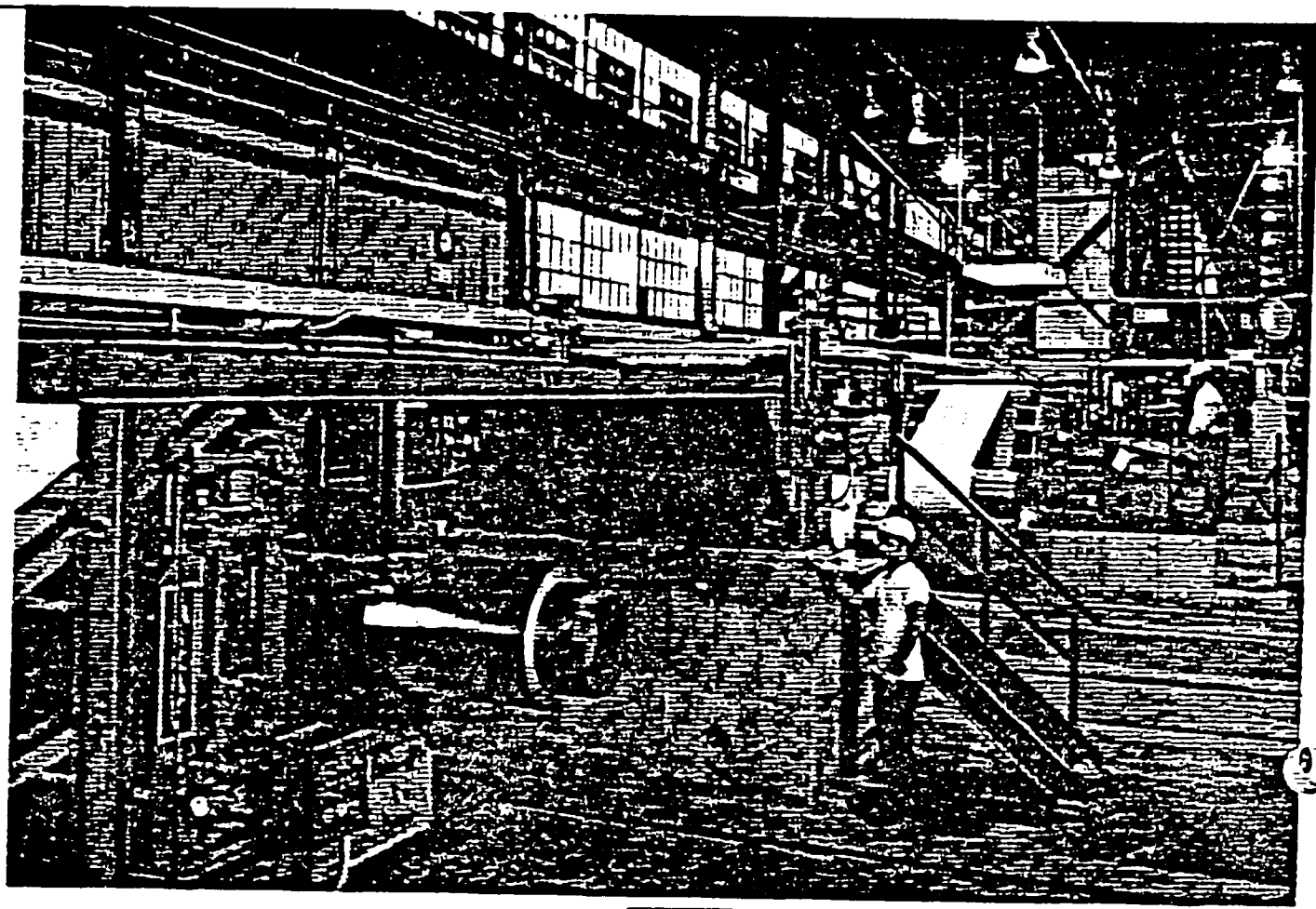
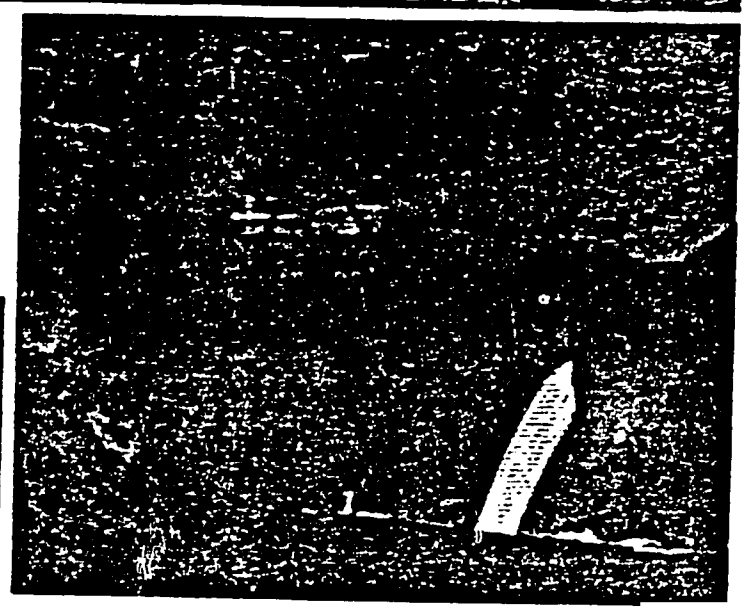
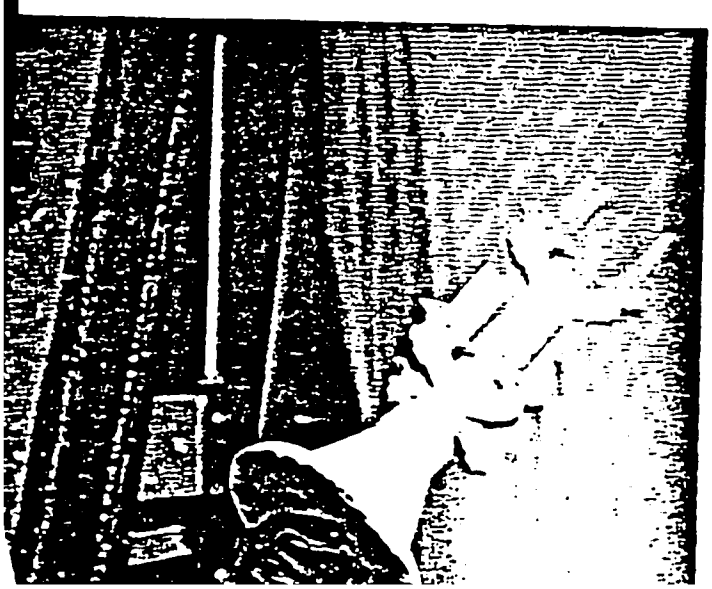


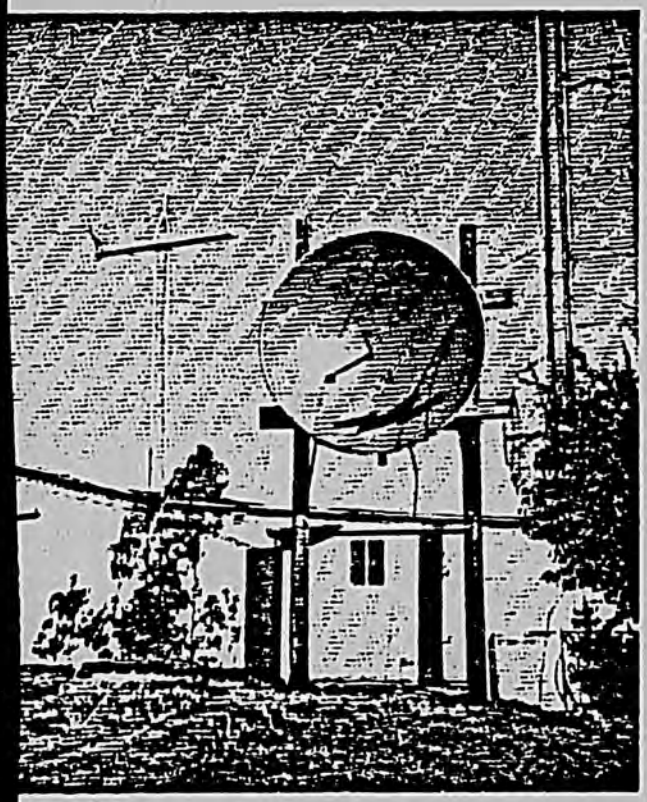
ecoratively finished precoated steel, produced by the mile at e giant new Precoat Metals facility (*above*).

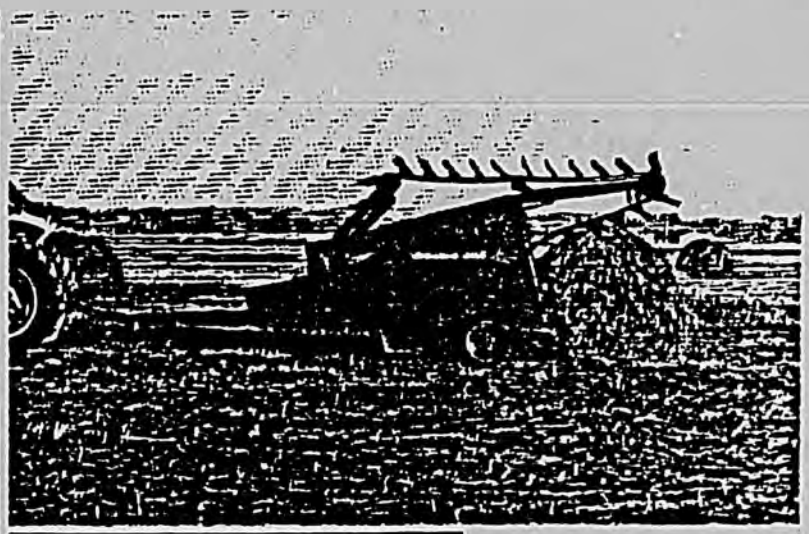
romalloy foundries produce a wide variety of industrial stings (*right*).

rfoil castings for turbine engines are engineered at Jet-apes (*below*).







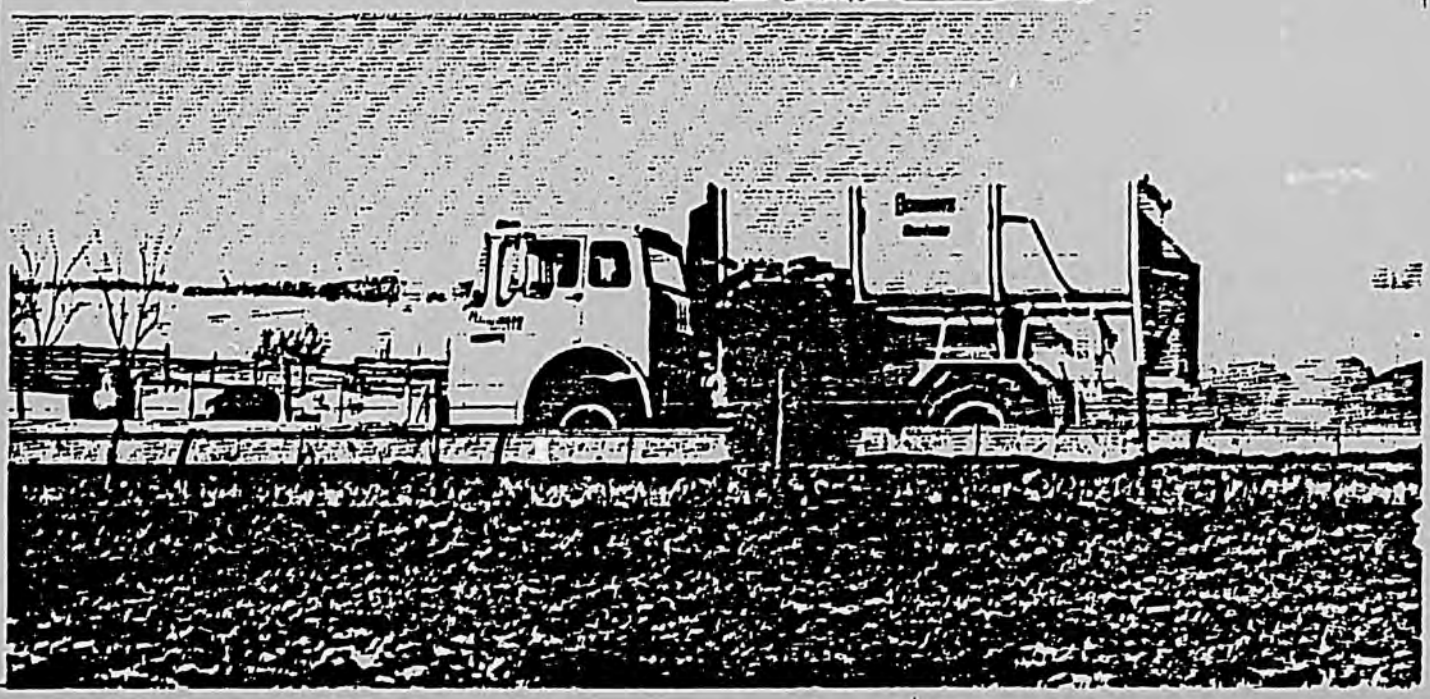


Link Airlink System transmitters have been type ac- by the Federal Communications Commission. The first rcial installation, similar to the one demonstrated atop ledad recently *(upper left)*, will be completed shortly.

volutionary Hawk Bilt hay baler (*upper right*) takes the che out of baling hay.

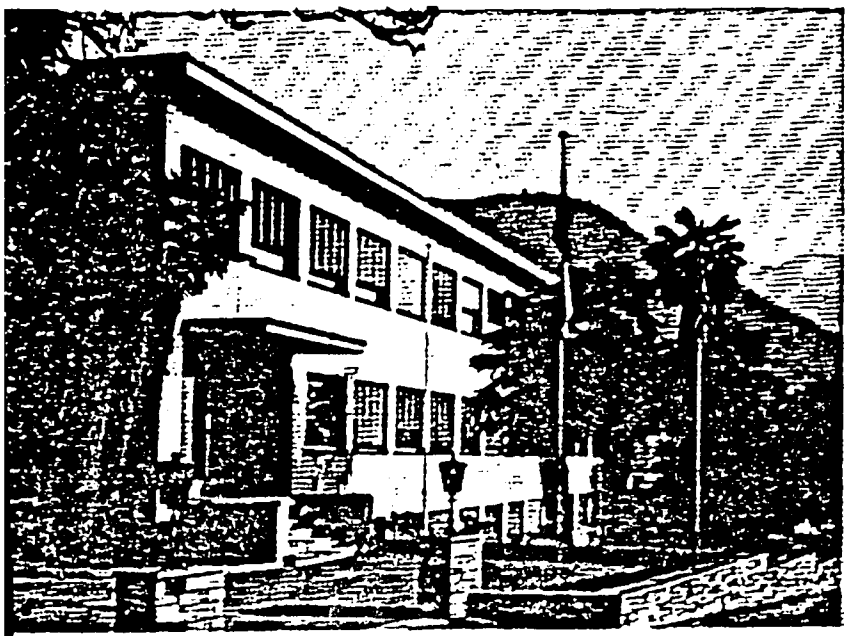
y and General manufacture quality automotive radiator for both original equipment and replacement markets .

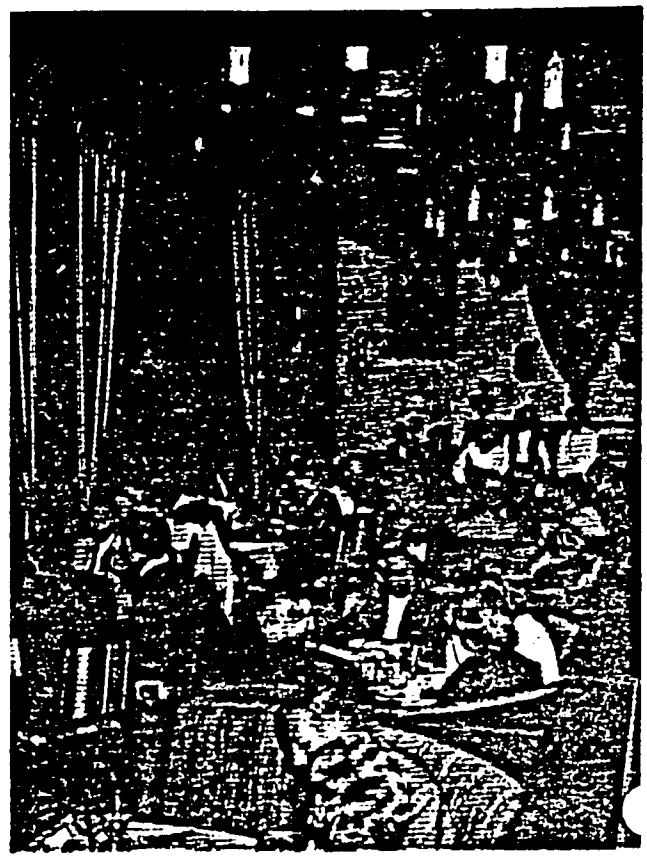
nwartz mixer feeder, designed for large beef feeding tions *(below)*.



ign Operations

›malloy Europa

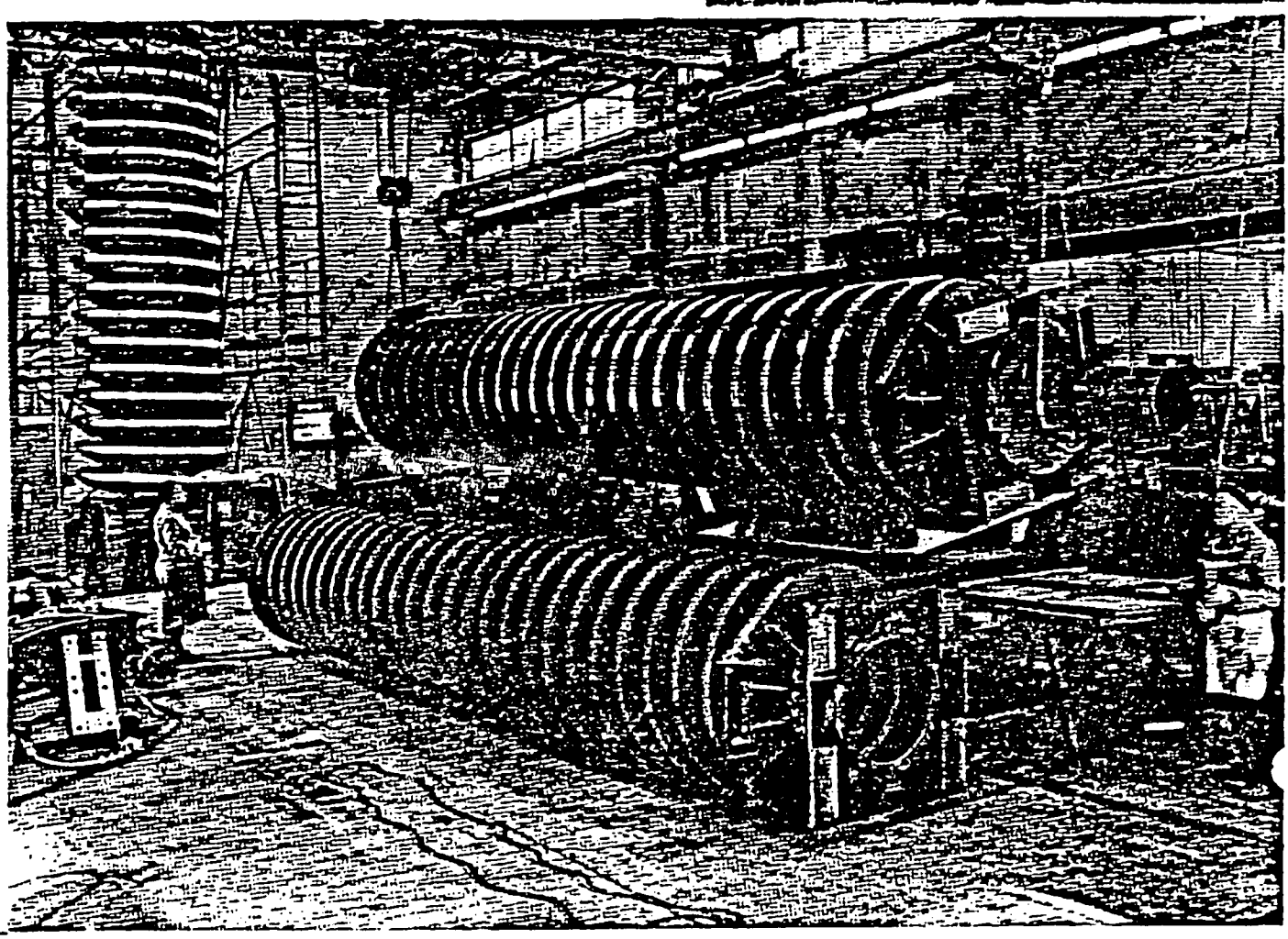




Albe of Lugano, Switzerland (*upper left*). The world renowned precision machinery manufacturer joined Europa in 1971.

Elegant dining at the recently opened Palm Springs, California Hostaria dell 'Orso (*right*).

Construction of spiral elevator-driers for synthetic rubber by Vibrazioni (*below*).



Consolidated Balance Sheet

December 31, 1971 and 1970

Assets

	1971	1970
Current assets:		
Cash	$ 14,562,465	$ 21,930,781
Receivables, less allowances of $1,502,455 and $1,392,486, respectively	62,292,986	58,950,403
Inventories, principally at lower of cost (first-in, first-out) or replacement market	73,667,049	66,007,000
Prepaid expenses, deposits, etc.	5,568,318	4,077,212
Total current assets	156,090,818	150,965,396
Non current receivables	5,096,041	6,990,045
Investments, at cost:		
Foreign subsidiaries	6,294,975	2,812,825
Other	6,701,023	6,680,323
Property and equipment, at cost:		
Land and improvements	7,089,663	7,087,350
Buildings and improvements	38,546,265	34,092,859
Machinery and equipment	81,703,745	71,722,083
Transportation equipment	118,787,947	110,354,037
Transportation operating facilities	12,147,666	11,829,902
Construction in progress	8,764,615	7,111,629
	267,039,901	242,197,860
Less accumulated depreciation	105,990,716	99,331,845
	161,049,185	142,866,015
Deferred charges and intangibles:		
Excess of cost over fair value of net assets acquired	10,066,547	6,413,452
Other, at cost less applicable amortization	5,985,930	4,717,889
	$351,284,519	$321,445,945

See accompanying notes to consolidated financial statements.

Consolidated Statement of Earnings

Years ended December 31, 1971 and 1970

	1971	1970
Net sales and operating revenues	$453,433,146	$413,130,013
Other income	3,253,021	4,633,441
	456,686,167	417,763,454
Costs and expenses:		
Cost of sales and operating expenses	329,164,516	302,947,039
Selling, administrative and general expenses	72,489,350	65,279,744
Depreciation	15,038,220	14,307,572
Interest	9,557,741	9,713,207
Other deductions	1,821,994	1,287,929
	428,071,821	393,535,491
Earnings before Federal income taxes	28,614,346	24,227,963
Federal income taxes:		
Current	9,764,356	9,205,505
Deferred	1,927,593	1,136,794
	11,691,949	10,342,299
Net earnings	$ 16,922,397	$ 13,885,664
Per share of common stock:		
Primary earnings	$1.61	$1.27
Fully diluted earnings	$1.48	$1.23

See accompanying notes to consolidated financial statements

Consolidated Statement of Changes in Financial Position

Years ended December 31, 1971 and 1970

	1971	1970
Working capital provided:		
Net earnings	$ 16,922,397	$13,885,664
Depreciation and amortization	15,637,242	14,907,117
Increase in deferred Federal income taxes	1,927,593	1,136,794
Working capital provided from operations	34,487,232	29,929,575
Issuance of long-term debt	106,153,668	60,702,267
Disposal of property and equipment, net of accumulated depreciation	3,133,667	4,252,396
Market value of common and preferred stock issued in connection with:		
Agreements relating to certain previously purchased companies	2,061,465	—
Formation of Chromalloy Europa, N.V.	1,364,720	—
Purchase of companies	982,851	268,047
Proceeds from stock options exercised	4,000	456,177
Other changes, net	—	443,145
	$148,187,603	$96,051,607
Working capital used:		
Cash dividends	$ 9,281,447	$ 6,244,083
Reduction of long-term debt	94,605,576	31,894,390
Acquisition of treasury stock	28,476	427,074
Additions to property and equipment	34,696,869	31,539,669
Property and equipment of purchased companies	1,640,736	3,071,076
Additions to deferred charges and intangibles	5,520,158	1,680,426
Additions to investments and non current receivables	1,608,846	9,608,120
Other changes, net	426,625	—
Increase in working capital	378,870	11,586,769
	$148,187,603	$96,051,607
Changes in working capital:		
Increase (decrease) in current assets:		
Cash	$ (7,368,316)	$ (1,519,559)
Receivables	3,342,583	(1,076,362)
Inventories	7,660,049	4,996,129
Prepaid expenses, deposits, etc.	1,491,106	285,859
	5,125,422	2,686,067
(Increase) decrease in current liabilities:		
Notes payable	(2,561,311)	5,978,022
Current maturities of long-term debt	846,990	(1,873,923)
Accounts payable and accrued expenses	(1,007,861)	758,447
Dividends payable	(2,045,304)	—
Federal income taxes	20,934	4,038,156
	(4,746,552)	8,900,702
Increase in working capital	$ 378,870	$11,586,769

See accompanying notes to consolidated financial statements.

On December 30, 1971, the Company entered into note agreement with an insurance company which vided for an unsecured borrowing of $85,000,000. e proceeds of the borrowing were used primarily to ire the bank revolving credit agreement and the other urance company loans.

The aggregate amounts of long-term debt maturing each of the four years after 1972 are: 1973—1,238,038; 1974—$7,467,827; 1975—$7,419,863; 1976 $4,093,492.

The Company's various loan agreements contain venants which restrict the payment of cash dividends d purchase, redemption or retirement of capital stock. ider the most restrictive of the covenants, the unstricted portion of consolidated retained earnings December 31, 1971 available for these purposes nounted to $14,000,000. The loan agreements also ntain restrictive covenants which, among other ings, require the Company to maintain certain minium amounts of working capital and not exceed stiputed ratios of liabilities to capitalization. Property and quipment having a net carrying value of approximately 31,446,000 at December 31, 1971 is pledged as colteral under various loan agreements.

The Company is contingently liable for the guarantee bank loans payable by Chromalloy Europa or its ubsidiaries in an aggregate amount of $4,200,000 ee note 1).

Federal Income Taxes—Deferred Federal income xes result principally from deducting depreciation llowances for tax purposes in amounts greater than e allowances determined on the straight-line depreiation method generally used for financial reporting urposes.

Investment tax credits of approximately $1,351,000 1971 and $427,000 in 1970 have been reflected in e consolidated statement of earnings as a reduction f Federal income taxes in the respective years. Of hese amounts, $321,000 in 1971 and $331,000 in 1970 epresent amortization of investment tax credits that ertain transportation subsidiaries had deferred in prior ears and are amortizing over a period of eight years. During 1971, the Company and all of its subsidiaries elected to account for the investment tax credit provided in the Revenue Act of 1971 under the flow-through nethod. The effect of adoption of this method of accounting for the investment tax credit by the aforementioned transportation subsidiaries was to increase net earnings for the year ended December 31, 1971 by approximately $574,000 (per share—$.07 primary, $.05 ully diluted).

4. Preferred Stock—The Company's preferred stock is ssuable in series and is entitled to one vote per share. The outstanding $5 Cumulative Convertible Preferred Stock, which is the only designated series, is convertible at the rate of 3.888 shares of common for each share of preferred stock and is redeemable beginning July 1, 1973 at $105 per share, decreasing after June 30, 1976 to $100 after June 30, 1988. During the year, 160 shares of preferred stock were converted into 622 shares of common stock.

5. Common Stock Options—Under the 1968 Qualified Stock Option Plan approved by the stockholders, certain officers and employees have been given the opportunity to purchase shares of the Company's common stock. Options under the plan are granted at market value on date of grant and are exercisable one-fourth each year beginning one year from date of grant and expire five years from date of grant. At December 31, 1971, 59,143 shares of common stock were reserved for granting of future options.

Certain options granted prior to 1969 under a previous plan were exercised prior to their expiration in 1970. In connection with the merger of Water Treatment Corporation, the Company assumed Water Treatment Corporation's employee stock option plans by granting options with respect to 44,911 shares.

Stock option activity is summarized as follows:

	Shares	Average Price
Options outstanding December 31, 1969	311,198	$31.62
Add (deduct) options:		
Granted	23,450	20.58
Exercised	(44,948)	10.15
Cancelled	(42,725)	35.89
Options outstanding December 31, 1970	246,975	33.75
Add (deduct) options:		
Assumed	44,911	22.32
Granted	15,700	21.67
Exercised	(700)	5.71
Cancelled	(21,818)	25.20
Options outstanding December 31, 1971	285,068	31.83
Options exercisable	133,203	

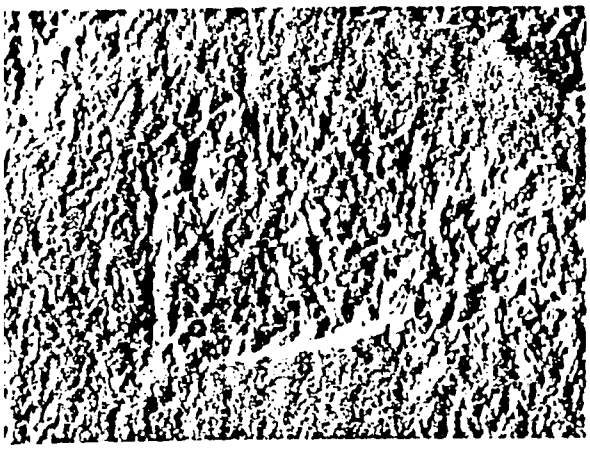
In February 1972, the Company gave all employees holding options under the 1968 plan an opportunity to exchange their outstanding options for new five-year options at current market levels, covering two-thirds of their option shares surrendered. No portion of any new options granted pursuant to this exchange offer can be exercised until after the expiration date of the options surrendered. Although this exchange has not been finalized as of March 3, 1972, no dilutive effect on earnings per share is anticipated as a result of the Company's exchange offer.

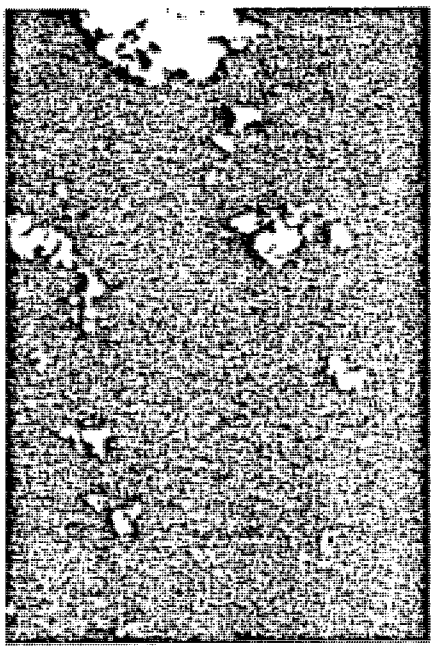
A Corporate Family of Creative Companies

Chromalloy American Corporation

120 Broadway, New York, N.Y. 10005

Portals Holdings PLC





Water treatment

Engineering

Report & Accounts 1986

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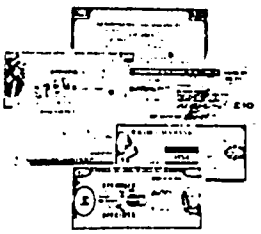
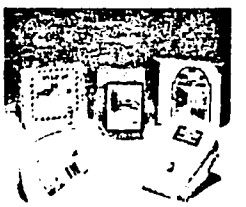
Credits	48

About Portals Holdings

Portals Holdings is a group of businesses originating from an enterprise started two hundred and seventy-five years ago in the South of England by a Huguenot refugee from France – Henri Portal. Since 1712 Portals has come a long way. It is now a major multi-national trading group with around 4,000 employees worldwide and a turnover exceeding £200 million a year. Nearly 70% of this business is generated from overseas. Portals' activities are separated into four divisions:-



Portals (Bathford) manufactures paper for a wide range of security documents, including travellers' cheques.



Pre-packed cheese is weighed and labelled on Deltord 700 weigh price labelling machines

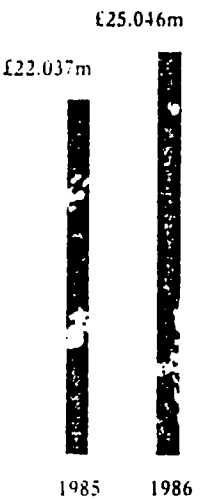
Papermaking
Water Treatment
Engineering
Property

whose products and services are valued for their contribution to

In hospitals, Portals Water Treatment provides high purity water for many specialist services.

Security
Technology
Environmental Protection
Health Care

Portals Holdings was incorporated in 1920 and took over the business which by then had already been in existence for over 200 years. In 1947 Portals Holdings became a public company. Today it has over 3,000 shareholders. Nearly 90% of its shares are held by financial institutions such as insurance companies and pension funds, together with the Bank of England.



Profit before taxation

116

Security

The Papermaking division is the world's largest producer of banknote paper, supplying over one hundred and twenty countries. It is also a major producer of high security paper for passports, travellers cheques and similar documents. Its task is to thwart the counterfeiter and the forger with features such as mould made three-dimensional watermarks, security threads and other special characteristics.

Environment and Health

The Water Treatment division is outstanding in the world water and effluent treatment industry in the range of services it offers. This runs from speciality chemicals through "design-and-construct" packages for municipal and industrial water and effluent applications to advanced membrane technology. These are all marketed through the division's worldwide spread of subsidiaries.

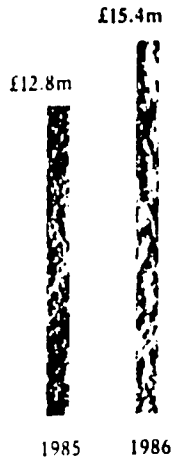
Technology

The Engineering division is a world leader in certain specialist binding and paper-counting machinery for magazine and book production and labelling, weighing and filling machines for the retail food and drink trade.

Property

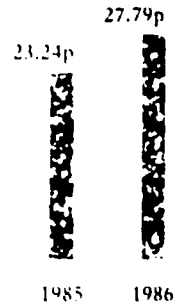
The Property division holds and develops industrial, commercial and agricultural property.

Financial Highlights



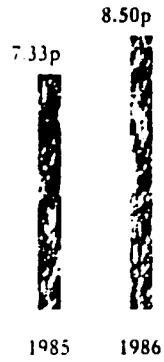
Profits after taxation

	1986	1985
Turnover	**£212.8m**	£239.9m
Profit on ordinary activities before taxation	**£25.0m**	£22.0m
Profit on ordinary activities after taxation	**£15.4m**	£12.8m
Earnings per ordinary share	**27.79p**	23.24p
Dividend payments per ordinary share	**8.50p**	7.33p
Dividend cover	**3.2 times**	3.2 times
Retained profit for the year	**£8.0m**	£1.0m
Net assets	**£89.3m**	£80.5m



Earnings per share

Net assets



Ordinary dividend

About Papermaking

This division recorded an excellent performance in 1986.

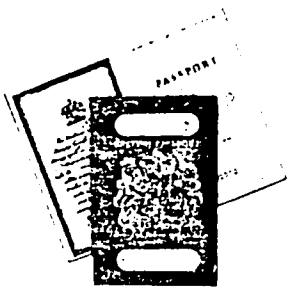
Overton Mill, which produces banknote paper, started with a strong order book and was busy throughout most of the year. In the last quarter, order rescheduling and some general easing of demand led to the decision to close some older papermaking equipment and to reduce the work force by ten percent. Improved productivity, stable raw material prices and lower energy costs produced good margins. The mill enters 1987 with an adequate order book and is expected to hold its market share albeit at the somewhat reduced levels of demand currently prevailing. Encouraged by evidence of the growing value of paper based security features – most notably cylinder mould watermarks – as anti-counterfeiting devices, considerable emphasis will be placed during 1987 on product and process development.

At the smaller Bathford Mill, which supplies high security watermarked paper for other valuable documents, a record result was again achieved. The sustained performance of this business is most encouraging and derives from a combination of good marketing and progressive technical response to the needs of existing and new customers. The prospects for 1987 remain good. Demand in North America is expected to recover after a quiet year in 1986, which together with an extended sales effort elsewhere should allow the mill to take advantage of all available capacity.

Hawkinsville Mill remains mothballed and unlikely to reopen for the production of security paper. Some possibilities exist for exploitation or realisation of this investment and these are being actively pursued.

Profit

Portals Papermaking manufactures cylinder mould paper which is specified for all important denominations of currency of nearly every country in the world



Portals (Bathford) manufactures the paper substrate which is recognised as being a prime element in security against counterfeiting of security documents

Right, Part of the watermark from the Portals Holdings PLC letterhead greatly enlarged.

F A C T

Every day one third of the world's population handles paper made by Portals.

ıt Water Treatment

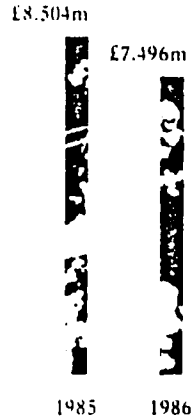
This division enjoyed mixed fortunes in 1986. Of the speciality chemical companies, Houseman (Burnham) increased its sales and produced an excellent profit; Wright Chemical's problems are taking longer than expected to solve and this company suffered continued losses. The new products such as those introduced by our water pipe fittings company, F.W. Talbot, sold well and further growth is expected. Both the Dutch companies enjoyed a strong year and contributed good profits.

Throughout 1986 attention was focused on improving sales of standard plant and products and some good performances were recorded. Efforts in this area will be intensified in 1987.

The large contracts in Australia, New Zealand and the Middle East continue to perform well and produce good profits. The worldwide shortage of new large water treatment schemes remains a frustrating feature although there are some signs that this market may be improving. The notably international nature of the division is an asset envied by many of its competitors and, by making better use of this, an improvement is expected in its market position.

All operating companies have development groups with the task of working on new ideas, processes and products to keep the division in the front rank of technical competence. The division will also continue to take technology under licence where this is appropriate.

1986 has seen some restructuring within the division. During 1987 this process will be extended with the objective of removing weak profit performances and of reshaping the division to reflect the nature and level of the businesses in which the division intends to compete. The cost of the restructuring is the principal component of the extraordinary item in the 1986 accounts.



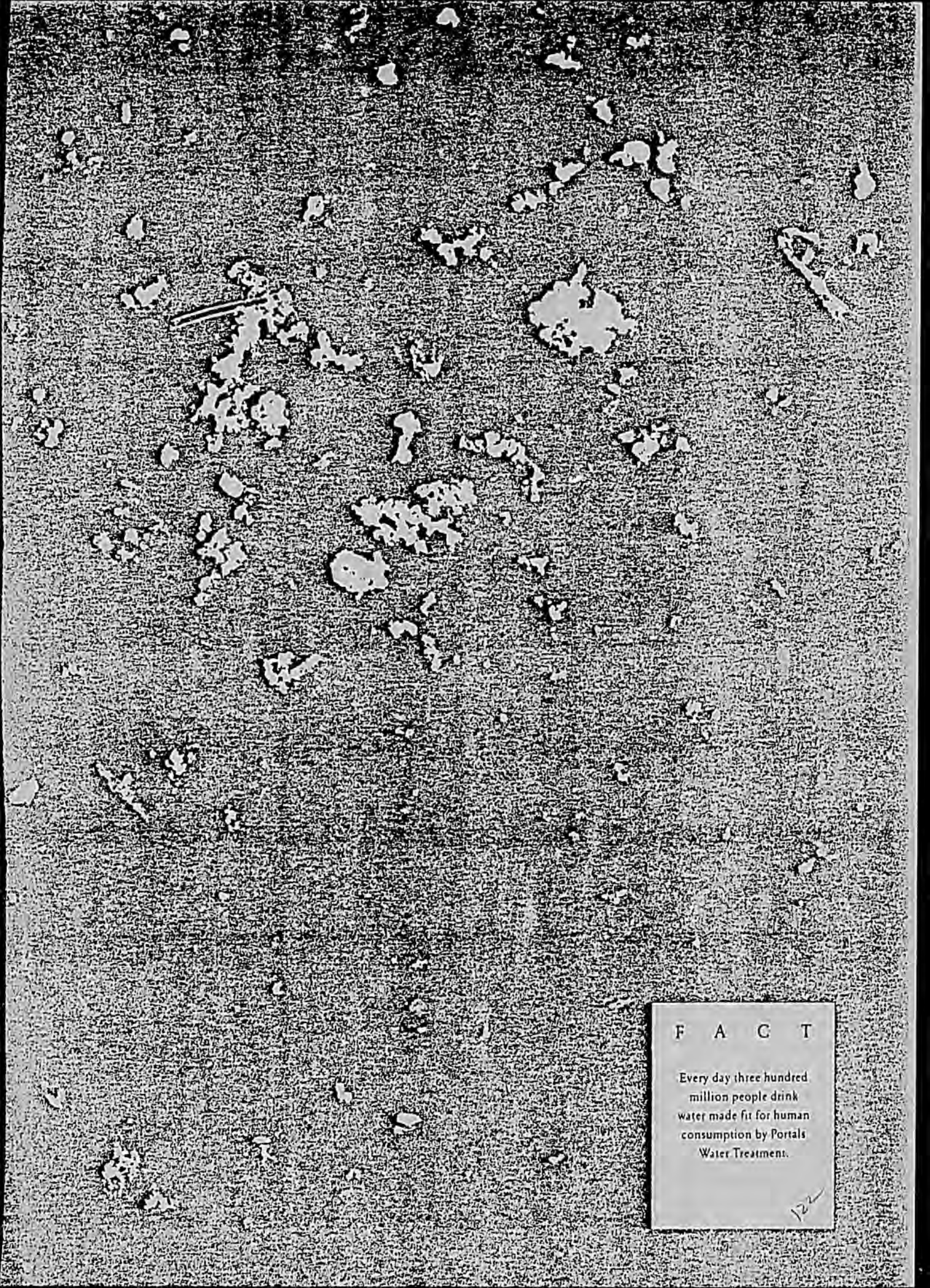
Profit

The use of tubular reverse osmosis systems concentrates tomato and many other fruit and vegetable based juices

ıals Water Treatment supplies t stations with their total water treatment requirements

Right, a droplet of tapwater greatly enlarged.

12



F A C T

Every day three hundred million people drink water made fit for human consumption by Portals Water Treatment.

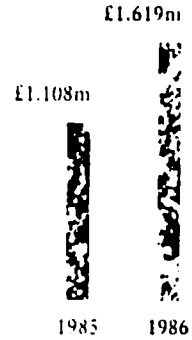
About Engineering

This division produced a splendid performance in 1986.

Harwich, which supplies labelling and powder filling equipment, achieved an excellent performance with noteworthy results from the Delford fresh food packaging machinery range. The financial returns from Harwich are now justifying the product development programme of earlier years. This progress will be carried further in 1987 and the introduction of interesting new products will continue.

Sulby Vacuumatic, which produces binders and paper counting machines, returned a higher profit than in 1985 and achieved an acceptable return on assets employed. Satisfactory progress continued on the product development programme. The sales subsidiary in West Germany again made good profits.

A planned capital expenditure programme in 1987 should raise the operating effectiveness of the division and produce improved margins in the years beyond.

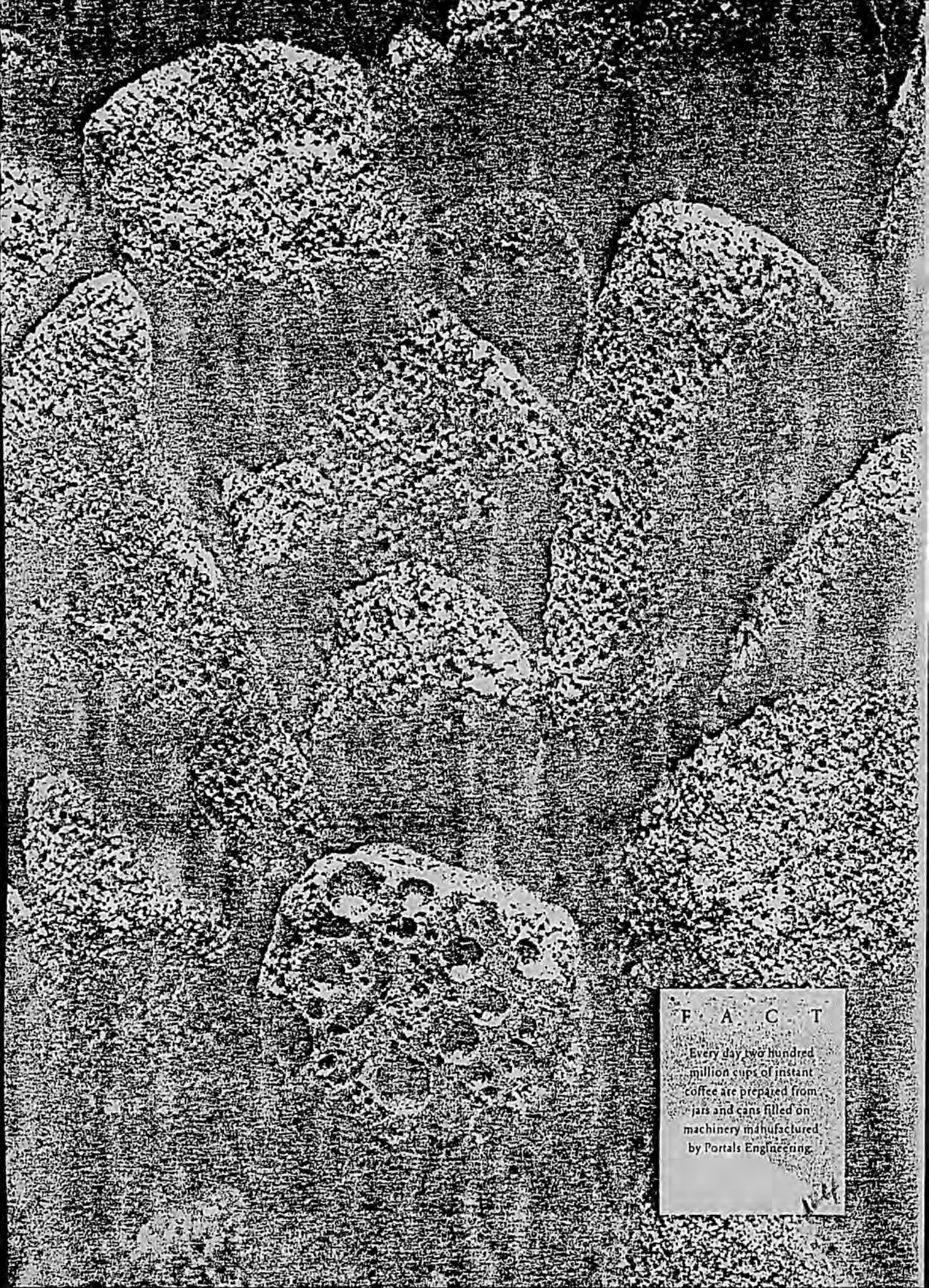


Profit

ottee jar being filled with instant
ray dried coffee from a filling
ozzle manufactured by Portals
Engineering

A selection of adhesive bound books produced on Sulby binding equipment.

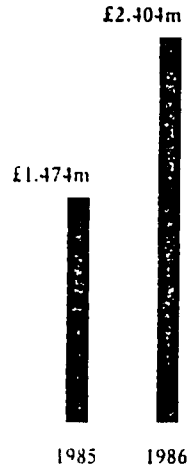
Right, granules of instant coffee greatly enlarged.



F A C T

Every day two hundred million cups of instant coffee are prepared from jars and cans filled on machinery manufactured by Portals Engineering.

About Property

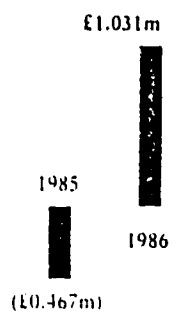


Profit

This division has had a good year with profits increasing by 63%. This reflects both rent increases and development profits.

Industrial rents rose in 1986 but are likely to remain stable in 1987. Farm rents did not go up last year and are not moving at present. However, property development projects have run well, both to time and on budget. Prospects for developments in hand and planned are promising.

About Finance



Net interest receivable less central costs

In 1986 net interest earned at the centre went up by £1.5m consequent upon the increase in the Group's cash. Interest received exceeded central costs, which were kept at the same level as those of the previous year.

Secretary and Advisers

Secretary

Andrew Pike

Registered Office

Laverstoke Mill, Whitchurch, Hampshire RG28 7NR

Telephone (025682) 2360, Fax (025682) 3398

Telex 858059 PORHOL G

Auditors

Peat Marwick McLintock

Bankers

Bank of England

Midland Bank

National Westminster Bank

Brokers

Rowe & Pitman Limited

Merchant Bankers

Morgan Grenfell & Co. Limited

Solicitors

Richards Butler

Registrars and Transfer Office

Ravensbourne Registration Services Limited

34 Beckenham Road, Beckenham, Kent BR3 4TU

Telephone (01) 650-4866

Directors

Left. J Julian L G Sheffield
Right. Sir Jasper Hollom, KBE

J Julian L G Sheffield

Chairman. Julian Sheffield, 48, joined the Group in 1962, became a Director in 1969 and has been Chairman since 1979. He is also Deputy Chairman of Norcros p.l.c., Chairman of Oceana Development Trust p.l.c. and a Director of Guardian Royal Exchange plc and Tex Holdings PLC.

John E F Lloyd

Group Managing Director. John Lloyd, 43, joined the Group in 1971, became a Director in 1985 and was appointed Group Managing Director in 1987.

Lindsay C N Bury

Non-Executive. Lindsay Bury, 48, became a Director in 1973. He is Chairman of Apricot Computers p.l.c., Sharp Technology Fund PLC, and Fuel Tech PLC and a Director of Electra Management P.L.C., South Staffordshire Waterworks Company and Albert E. Sharp Fund Management Limited.

B James F Dewson

Executive Director responsible for Engineering Division. James Dewson, 58, joined the Group in 1972 and became a Director in 1979.

Left. James A Hamilton
Right. B James F Dewson

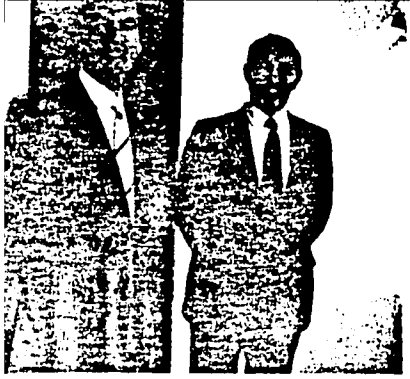
James A Hamilton

Executive Director responsible for Personnel. Jim Hamilton, 57, joined the Group in 1969 and became a Director in 1979.

Sir Jasper Hollom, KBE

Non-Executive. Sir Jasper Hollom, 69, became a Director in 1980. He was Deputy Governor Bank of England 1970-1980. He is Chairman of the Panel on Take-overs and Mergers and of Eagle Star Holdings PLC and a Director of B.AT Industries PLC.

Left. John E F Lloyd
Right. Lindsay C N Bury



Left, A Philip Conway
Right, Edward W Jackson

A Philip Conway

Executive Director responsible for Papermaking Division. Philip Conway, 47, joined the Group in 1971 and became a Director in 1986.

The Earl De La Warr, DL

Non-Executive. Lord De La Warr, 65, became a Director in 1974. He is also Deputy Chairman of Windsor Television Limited, a Director of Courier Printing and Publishing Co. Limited and Essex Chronicle Series Limited.

Simon F Every

Executive Director responsible for Finance. Simon Every, 57, joined The Permutit Company in 1957 which came into the Group in 1970. He became a Director in 1976.

Edward W Jackson

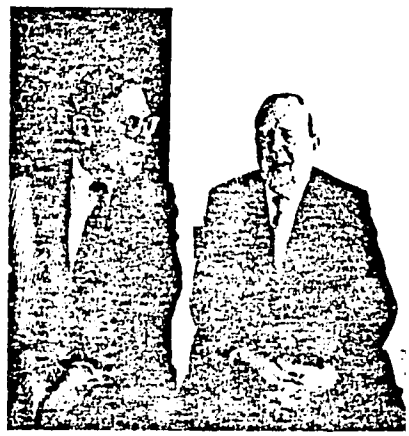
Executive Director responsible for Water Treatment Division. Ted Jackson, 47, joined the Group in 1971 and became a Director in 1985.

John W Mather

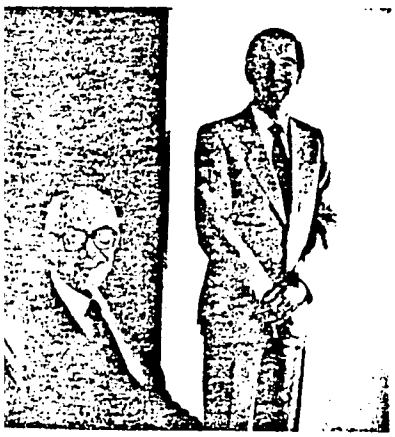
Executive Director responsible for special projects. John Mather, 57, joined the Group in 1966, became a Director in 1969 and was Group Managing Director from 1972 to 1986.

Sir Richard Meyjes, DL

Non-Executive. Sir Richard Meyjes, 68, became a Director in 1976. He is also Deputy Chairman of Foseco Minsep PLC.



Left, Simon F Every
Right, The Earl De La Warr, DL



Left, Sir Richard Meyjes, DL
Right, John W Mather

Report of the Directors

The directors submit their report and the audited accounts for the year 1986

Activities

Holding Company

As holding company of the Group, Portals Holdings PLC exercises overall responsibility for the formulation of group policy, together with the supervision and organisation of the financial requirements of the Group.

Papermaking Division

The principal activity of Portals Papermaking Limited and subsidiary companies is the manufacture of cylinder mould made watermarked security paper. Overton Mill specialises in the production of banknote paper while Bathford Mill is devoted to the production of paper for other value documents.

Water Treatment Division

The principal activity of Portals Water Treatment Limited and subsidiary companies is the provision of a total water treatment service based upon the design and supply of equipment for the treatment of water and other liquids. Contracts are undertaken for large schemes to supply cities with potable water plants, sewage and effluent plants and to supply industrial and other users with ion exchange plant and filters. Standard products include softeners and deionisers, chlorinators and sterilisation plant, water treatment chemicals, water distribution pipe fittings and membrane separation systems.

Engineering Division

The principal activity of Portals Engineering Limited is the manufacture and sale of specialised proprietary equipment for the paper, printing and packaging industries. Standard products include counting machines, weigh price labelling machines, filling machines for liquid and powder products, labelling equipment and book-binding and section gathering machines.

Property Division

The property division owns and manages United Kingdom industrial and residential properties used by the group companies. Further activities include farming and the ownership and maintenance of first class farming properties let to tenant farmers and property development.

view of the Business

The Group traded successfully in the year 1986. Turnover decreased by £27,098,000 (1985 an increase of £38,191,000) to £212,790,000 (1985 £239,888,000) and profit on ordinary activities before tax increased by £3,009,000 (1985 £4,488,000) to £25,046,000 (1985 £22,037,000).

Details of performance of the divisions and an overall view of the Group's business are given on pages 4 to 12.

Dividends and Appropriations

The net profit for the year after taxation, minority interests and extraordinary items was £12,784,000 (1985 £5,075,000). Preference dividends absorb £32,000 (1985 £32,000). An interim ordinary dividend of 2.75p (1985 2.50p as restated for the capitalisation issue in May 1986) per share was paid in December 1986. The directors recommend a final ordinary dividend of 5.75p (1985 4.83p as restated for the capitalisation issue in May 1986) per share payable 1st July 1987. The total ordinary dividend for the year amounts to 8.50p (1985 7.33p as restated for the capitalisation issue in May 1986). After ordinary dividends of £4,743,000 (1985 £4,019,000) there is a balance of £8,009,000 (1985 £1,024,000) to be added to retained profit.

Share Capital

By an ordinary resolution passed on 22nd May 1986, each Unit of £1 of the then existing issued and fully paid 6% Cumulative Preference Stock was converted into fully paid 6% Cumulative Preference Shares of £1 each, and each Unit of 25p of the then existing issued and fully paid Ordinary Stock was converted into one fully paid Ordinary Share of 25p.

By a further ordinary resolution passed on the same date, the authorised share capital of the company was increased from £7,250,000 to £18,000,000 by the creation of an additional 43,000,000 Ordinary Shares of 25p each, and reserves were capitalised and applied in paying up in full new ordinary shares of 25p each which were distributed amongst ordinary shareholders in the proportion of 2 new Ordinary Shares for every 1 Ordinary Share held at the close of business on 16th May 1986. The new Ordinary Shares did not rank for the final dividend in respect of the year ended 31st December 1985, paid on 1st July 1986, but in all other respects rank pari passu with the previously issued Ordinary Shares.

SAYE Stock Option Scheme

The Finance Act 1986 permits the rules of a savings-related share option scheme approved under the Finance Act 1980, such as the Portals Group SAYE Stock Option Scheme, to provide that employee participants who have held options for less than three years may exercise them, if the company or business which employs them is sold or otherwise leaves the group operating the scheme. The directors consider that it would be appropriate to amend the Rules of the Scheme to take advantage of this concession, and the necessary resolution is contained in the Notice of Meeting.

Post Balance Sheet Events

In January 1987 the Group purchased a 45% interest in El-Car Paterson Candy Italiana s.r.l., an Italian water treatment company, for a cash consideration of Lire 376,000,000 (£180,000).

arch and Development

The Group is committed to continuing programmes of product innovation and process development. These programmes are carried out within the operating subsidiaries of each division assisted in appropriate cases by the specialised expertise and resources of universities, polytechnics, research associations and other organisations.

Pension Funding

An actuarial valuation at 1st April 1986 of the Portals Group 1978 Pension Plan in the U.K., the major pension scheme in the Group, disclosed a surplus of assets over liabilities. In the light of this, improved benefits have been agreed for members and pensioners and the rate of employers' contributions to this fund has been reduced from 1st April 1986 for a period of three years. The reduction in contributions in the nine months to 31st December 1986 benefited trading profit by £900,000.

Charitable and Political Contributions

The Group donated £16,000 to charitable organisations, £1,500 to the British United Industrialists and £1,000 to the Conservative Board of Finance.

Substantial Shareholders

The company has been notified that the Bank of England has an interest in the ordinary shares of the company. At 2nd April 1987 the extent of this interest was reported to be 15,593,808 shares, representing 28% of the shares issued.

Directors

The names of the present directors of the company are shown on pages 14 and 15. Mr G Blunden was a non-executive director until his resignation on 15th July 1986. Mr IGR Adams was a director until his retirement on 31st December 1986. Mr AP Conway was appointed a director on 1st June 1986 and in accordance with the Articles of Association retires and, being eligible, offers himself for re-election. Mr LCN Bury, Mr BJF Dewson and Mr JW Mather are the directors retiring by rotation and, being eligible, offer themselves for re-election. Mr Mather has a service contract expiring on 1st October 1989, Mr Conway and Mr Dewson have service contracts terminable within one year, and Mr Bury does not have a service contract.

Employees

Particulars of the number of group employees in the United Kingdom and their aggregate remuneration are given in note 6 to the accounts on page 26.

For many years, the Group has recognised the need to ensure effective communication and consultation with employees. As is common practice in large groups with diverse interests, policies and procedures have been developed to suit the needs of each subsidiary company, taking into account factors such as numbers employed and location. These policies and procedures are designed to ensure an awareness on the part of all employees of the financial and economic factors affecting the performance of their company and the group. Since 1975, an employee report has been published each year. The effectiveness of our policy and practice is constantly under review to ensure that the process works satisfactorily.

The Group recognises the need to develop and train employees at all levels to ensure the provision of able management and the fullest use of skills.

The Trustees of the Group Pension Plan in the United Kingdom include membership and independent representatives. The Group also operates divisional pension consultation committees to ensure full communication and discussion on pension matters.

During 1986, eligible employees were again invited to participate in the Portals Group SAYE Stock Option Scheme.

The Group operates a policy to recruit disabled people into posts suitable for such persons. The Group's policy for training, career development and promotion of disabled people is to disregard the disability as far as is practicable.

Companies Act 1985

For some years, the directors have been authorised annually, under the provisions of companies legislation, to allot and grant rights over shares of nominal amount equal to the then available unissued share capital of the company and, in certain circumstances, to allot or grant rights over ordinary shares without first making a strict pro rata offer to all existing ordinary shareholders. These authorities expire on the day preceding the forthcoming annual general meeting and accordingly shareholders will be asked to renew the authorities for another year. The necessary resolutions are contained in the Notice of Meeting.

Company Provisions

To the best of the knowledge of the directors, the company is not a close company.

Auditors

Peat Marwick McLintock, chartered accountants (who, until 31st March 1987, practised as Peat, Marwick, Mitchell & Co) have agreed to continue in office and a resolution for their re-appointment will be submitted to the annual general meeting.

By order of the board
Andrew Pike, Secretary
Laverstoke Mill, Whitchurch, Hampshire RG28 7NR
2nd April 1987

Report of the Auditors

Report of the auditors to the members of Portals Holdings PLC

We have audited the accounts on pages 20 to 39 in accordance with approved Auditing Standards.

In our opinion the accounts, which have been prepared on the basis of the accounting policies described in Note 1, give a true and fair view of the state of affairs of the Company and of the Group at 31st December 1986 and of the profit and source and application of funds of the Group for the year to that date and comply with the Companies Act 1985.

Peat Marwick McLintock
Chartered Accountants
London
2nd April 1987

Consolidated Profit and Loss Account

For the year ended 31st December 1986

Portals Holdings PLC and Subsidiary Companies

		1986 £000	1985 £000
Note 2	Turnover	212,790	239,888
	Cost of sales	142,053	168,386
	Gross profit	70,737	71,502
	Marketing, selling and distribution expenses	(21,249)	(21,123)
	Administration expenses	(25,236)	(27,930)
	Income from fixed asset investments	24	39
Note 3	Other interest receivable and similar income	2,909	2,057
Note 4	Interest payable	(2,139)	(2,508)
Note 5	Group profit on ordinary activities before taxation	25,046	22,037
Note 9	Taxation on profit on ordinary activities	9,645	9,229
	Group profit on ordinary activities after taxation	15,401	12,808
	Outside shareholders' interests in results of subsidiaries	8	34
	Group profit before extraordinary items	15,393	12,774
Note 10	Extraordinary loss after taxation	2,609	7,699
	Group profit for the financial year	12,784	5,075
	Preference dividends	32	32
	Group profit attributable to ordinary shareholders	12,752	5,043
Note 11	Ordinary dividends	4,743	4,019
	Group profit retained	8,009	1,024
Note 12	Earnings per ordinary share of 25p		
	Basic	27.79p	23.24p*
	Fully diluted	25.25p	21.14p*

**Restated for May 1986 capitalisation issue*

A statement of movements on reserves is shown in Note 21 to the accounts.

onsolidated
d Company
ance Sheets

at 31st December 1986

Portals Holdings PLC and Subsidiary Companies

		The Group		The Company	
		1986 £000	1985 £000	1986 £000	1985 £000
	Fixed assets				
Note 13	Tangible assets	61,111	60,081		
Note 14	Investments	244	145	29,190	40,589
		61,355	60,226	29,190	40,589
	Current assets				
Note 15	Stocks	30,624	31,271		
Note 16	Debtors	73,685	75,921	13,892	10,013
	Certificates of deposit	11,932	8,441	11,932	8,441
	Money at call and short notice and on deposit	18,472	12,260	5,288	2,700
	Cash at bank and in hand	2,155	2,403	1	82
		136,868	130,296	31,113	21,236
Note 17	Creditors: Amounts falling due within one year	73,862	74,577	11,581	9,097
	Net current assets	63,006	55,719	19,532	12,139
	Total assets less current liabilities	124,361	115,945	48,722	52,728
Note 18	Creditors: Amounts falling due after more than one year	25,563	29,395	9,135	23,463
Note 19	Provisions for liabilities and charges	9,513	6,064	147	205
	Net assets	89,285	80,486	39,440	29,060
Notes 20 & 21	Capital and reserves				
	Called up share capital	14,673	5,331	14,673	5,331
	Share premium account	1,128	8,129	1,128	8,129
	Revaluation reserve	17,213	17,347		
	Profit and loss account	56,263	49,332	23,639	15,600
		89,277	80,139	39,440	29,060
	Interests of outside shareholders in subsidiaries	8	347		
		89,285	80,486	39,440	29,060

J Julian LG Sheffield Director

John EF Lloyd Director

The accounts were approved by the board of directors on 2nd April 1987

Source and Application of Funds

For the year ended 31st December 1986

Portals Holdings PLC and Subsidiary Companies

	1986 £000	1985 £000
Source of funds		
Group profit on ordinary activities before taxation	25,046	22,037
Extraordinary items (before tax)	(3,867)	(8,063)
(Profit) Loss arising in related company	(8)	3
	21,171	13,977
Adjustments for items not involving the movement of funds		
Depreciation of tangible assets and amortisation of intangible assets	4,758	11,212
Unrealised gains (losses) on exchange (note below)	88	(6,210)
Minority interests	(13)	(204)
Total generated from operations	26,004	18,775
Funds from other sources		
Sale of fixed assets	634	2,331
Bank and other loans after exchange adjustments (note below)	567	–
Issue of ordinary shares	895	217
	28,100	21,323
Application of funds		
Dividends paid	4,225	3,589
Tax paid	4,429	5,179
Expenditure on fixed assets after exchange adjustments (note below)	6,575	889
Purchase of additional shares in subsidiary	284	–
Goodwill arising on acquisitions	229	324
Repayment of bank and other loans after exchange adjustments (note below)	1,881	3,103
	17,623	13,084
Increase (Decrease) in working capital after exchange adjustments (note below)		
(Decrease) in stocks and work in progress	(647)	(2,041)
(Decrease) in debtors	(2,236)	(549)
Decrease (Increase) in creditors, advance payments from customers and provisions	3,252	(1,242)
	17,992	9,252
Increase in short term net liquid funds	10,108	12,071

Note *The effect of unrealised gains (losses) arising from exchange rate variations has been to:*

(Decrease) the investment in fixed assets by	(55)	(4,527)
Increase (Decrease) the working capital by	270	(3,733)
(Increase) Decrease bank and other loans by	(127)	2,050

Note 1 Accounting Policies

Accounting convention

The consolidated accounts incorporate the accounts of the company and its subsidiaries and have been prepared under the historical cost accounting rules, modified by the translation into sterling of fixed assets denominated in foreign currencies at year end rates of exchange and by the inclusion of revaluations of land and buildings in 1984.

Turnover

Group turnover comprises the amounts derived from the provision of goods and services, royalties received and, in the case of long term contracts, the value of work performed during the year.

Stock and work in progress

Stock and work in progress has been consistently valued at the lower of cost and estimated net realisable value. Cost includes the direct cost of materials and labour and an appropriate proportion of production overheads. Long term contracts include a proportion of estimated profit. Full provision is made for anticipated future losses on unprofitable contracts.

Depreciation

Depreciation has been provided on freehold and long leasehold commercial and industrial properties calculated at 2% p.a. on a straight line basis on the value of the properties (exclusive of site values) as assessed in 1984 by independent surveyors and on subsequent additions at cost. No depreciation is provided in respect of freehold and long leasehold land, residential and agricultural properties. Leasehold properties under 50 years unexpired are amortised over the remaining periods of the respective leases. Depreciation of other fixed assets is provided on a straight line basis over the estimated economic lives of individual assets, based on their cost and the rates generally applied range from 10% to 25% p.a. Whilst the US mill is held on a care and maintenance basis its economic life is not being reduced and any depreciation would not be material and is therefore not provided.

Research and development

Research and development expenditure is written off in the period during which it is incurred.

Contributions to pension schemes

Contributions to pension schemes are charged to profit and loss account at rates recommended by independent actuaries.

Leases

Income from finance leases is allocated to accounting periods to give a constant periodic rate of return on the net cash investment in the lease in each period. The total net investment in finance leases included in the balance sheet represents total future lease payments net of finance charges.

Goodwill

Goodwill is written off to reserves in the period in which it arises.

Interest

Interest payable is normally written off to profit and loss account as it is incurred except:
a) that relating to monies borrowed to finance specific long term contracts is included in the cost of long term contract work in progress;
b) that relating to fixed assets under construction where interest payable on monies specifically borrowed to finance major projects is added to the cost until the projects become operational. Interest receivable from the temporary investment of these monies is credited to the cost of long term contract work in progress and to fixed assets under construction respectively.

Note 1 Accounting Policies *continued*

Deferred taxation

Deferred taxation has been calculated on the liability method on:
a) the excess of the cost less depreciation of those fixed assets qualifying for taxation allowances, other than agricultural buildings allowance, over their written down value for taxation purposes in respect of those timing differences which are expected to crystallise in the foreseeable future.
b) expenditure charged in the accounts not immediately allowable for taxation and income assessable to taxation in future years.
No provision is made in respect of unrealised revaluation surpluses.

Rates of Exchange

Assets and liabilities in foreign currencies have been translated into sterling at rates of exchange ruling at 31st December. The results of overseas subsidiary companies have been translated at average rates of exchange ruling during the year and the differences arising in relation to the closing rates and from the restatement of opening balance sheets of overseas subsidiary companies at closing rates are dealt with through reserves together with exchange differences on the translation of foreign currency borrowings funding such investments.

Note 2 Group Turnover and Profit

	Turnover		Profit	
	1986 £000	1985 £000	1986 £000	1985 £000
Activity:				
Papermaking	61,416	74,922	12,496	11,418
Water Treatment	134,797	149,892	7,496	8,504
Engineering	15,180	13,713	1,619	1,108
Property	4,911	3,846	2,404	1,474
	216,304	242,373	24,015	22,504
Less Interdivisional sales and rents	3,514	2,485		
	212,790	239,888		
Holding company:				
Net interest receivable less central costs			1,031	(467)
			25,046	22,037
Geographical distribution by market:				
United Kingdom	60,438	61,899	8,247	7,305
Continental Europe	20,354	19,945	3,228	2,710
Americas	16,620	19,852	(232)	(424)
Africa	20,794	20,129	1,807	2,238
Australasia	28,018	31,236	2,369	2,293
Asia	66,566	86,827	8,596	8,382
	212,790	239,888	24,015	22,504

Note 3 Other interest receivable and similar income

	1986 £000	1985 £000
On bank and money market deposits, certificates of deposit and similar income	3,187	2,411
Less interest on temporary investment of funds credited to long term contract work in progress	278	354
	2,909	2,057

Note 4 Interest payable

	1986 £000	1985 £000
On 9½% convertible unsecured loan stock	817	854
On bank loans and overdrafts	853	1,157
On other loans wholly repayable within five years	198	234
On all other loans	522	569
	2,390	2,814
Less interest charged to long term contract work in progress	251	306
	2,139	2,508

Note 5 Group Profit Particulars

	1986 £000	1985 £000
Group profit on ordinary activities before taxation is stated after charging:		
Directors' remuneration (note 7)	860	688
Depreciation and diminution in value of tangible fixed assets	4,758	4,772
Lease rentals:		
Hire of plant and machinery – finance leases	132	138
– operating leases	1,084	1,352
Other operating lease rentals	1,092	1,066
Auditors' remuneration	400	434
and after crediting:		
Rents receivable under finance leases	677	765

No separate profit and loss account is presented for the holding company. The group profit for the financial year includes a profit of the holding company of £13,873,000 (1985 £807,000) dealt with in its accounts.

Note 6 Employees

	Average Number		Aggregate payroll costs	
	1986	1985	1986 £000	1985 £000
Papermaking	1,097	1,167	12,863	13,732
Water Treatment	2,334	2,448	30,651	30,652
Engineering	453	457	5,071	4,831
Property	43	44	404	402
Holding company	33	32	867	698
	3,960	4,148	49,856	50,315
Aggregate payroll costs comprise:				
Wages and salaries			44,193	44,111
Social security costs			3,145	2,950
Contributions to pension schemes			2,518	3,254
			49,856	50,315

The group operates pension schemes for the benefit of employees. All schemes are funded by contributions partly from the employees and partly from the companies. The rates of contribution are determined by independent actuaries and full actuarial valuations are made at regular intervals. The assets of all schemes are held independent of the group's finances.

The major scheme is the Portals Group 1978 Pension Plan in the U.K. which has approximately 2,800 contributing members and 1,100 pensioners with defined benefits on a final salary basis. The last actuarial valuation of the Plan at 1st April 1986 showed a surplus of assets over liabilities. The actuarial surplus is being applied in improvement to benefits to contributing members and pensioners and to a reduction in contributions by the companies in the three years from 1st April 1986. A further actuarial valuation of the Plan will be made at 1st April 1989.

The number of employees, excluding directors of Portals Holdings PLC, in the United Kingdom whose emoluments, excluding pension contributions, fell within the following ranges were:

	1986	1985
£30,001 to £35,000	14	6
£35,001 to £40,000	4	8
£40,001 to £45,000	8	1
£45,001 to £50,000	2	2
£50,001 to £55,000	1	-

Note 7 Directors' Remuneration

	1986 £000	1985 £000
The emoluments of the directors of Portals Holdings PLC:		
Fees	31	33
Contributions to pension scheme	187	149
Other emoluments	627	506
Payment to a former director	15	-
	860	688
Emoluments excluding pension contributions:		
Chairman	£97,393	£80,432
Highest paid director	£109,566	£91,182

	1986	1985
Number of directors within the following ranges of emoluments excluding pension scheme contributions:		
Up to £5,000	1	-
£ 5,001 to £ 10,000	4	5
£ 25,001 to £ 30,000	-	1
£ 30,001 to £ 35,000	1	-
£ 35,001 to £ 40,000	-	2
£ 50,001 to £ 55,000	-	2
£ 55,001 to £ 60,000	1	-
£ 60,001 to £ 65,000	2	1
£ 65,001 to £ 70,000	1	-
£ 70,001 to £ 75,000	1	1
£ 80,001 to £ 85,000	1	1
£ 90,001 to £ 95,000	-	1
£ 95,001 to £100,000	1	-
£105,001 to £110,000	1	-

Note 8 Directors' Interests

The interests of the directors in the share capital of the company were as follows:

	1st January 1986 Ordinary Shares of 25p each	31st December 1986 Ordinary Shares of 25p each
J J L G Sheffield	191,880	189,701
I G R Adams	3,003	3,003
L C N Bury	135,000	100,000
S F Every	44,598	44,598
Sir Jasper Hollom	2,250	2,250
Sir Richard Meyjes	3,750	3,750

The holdings at 1st January 1986 have been restated for the capitalisation issue made in May 1986.

Note 8 Directors' Interests *continued*

Interests also arise from the grant of options to directors to subscribe for ordinary shares under the Portals Group Senior Executive Stock Option Schemes 1980 and 1984 as follows:

	Number of ordinary shares	
	1st January 1986 or date of appointment if later	31st December 1986
J J L G Sheffield	185,904	73,596
I G R Adams	23,199	10,182
A P Conway	62,724	46,454
B J F Dewson	38,613	28,816
S F Every	52,995	59,379
J A Hamilton	40,653	37,175
J W Mather	55,371	63,063
E W Jackson	89,124	62,436
J E F Lloyd	92,574	119,650

The interests at 1st January 1986 reflect the restatement of option rights following the capitalisation issue in May 1986.

Interests also arise from the grant of options to directors to subscribe for ordinary shares under the Portals Group SAYE Stock Option Scheme, as follows:

	Number of ordinary shares	
	1st January 1986	31st December 1986
J J L G Sheffield	4,326	4,326
B J F Dewson	4,482	4,482
S F Every	4,326	4,326
J W Mather	4,326	4,326

The interests at 1st January 1986 reflect the restatement of option rights following the capitalisation issue in May 1986.

The interests of the directors in the convertible unsecured loan stock of the company were as follows:

	1st January 1986 Loan Stock £1 units	31st December 1986 Loan Stock £1 units
J J L G Sheffield	19,500	12,000
L C N Bury	2,855	2,855

There have been no changes in the directors' holdings of, or interests in, ordinary or loan stock between 31st December 1986 and 2nd April 1987, the date of the preliminary announcement of the Group's results for 1986.

All the interests of the directors are beneficial, apart from Mr Sheffield's interest in 13,000 ordinary shares. On 2nd April 1987, no director had any interest (beneficial or non-beneficial) in the preference capital of the company.

This information relating to directors' interests is as shown in the company's statutory register.

Shares held in subsidiary companies by directors are held purely as nominees for the holding company.

There subsisted during the year options granted to Mr I G R Adams in 1973 and to Mr J A Hamilton in 1980, under which they were entitled to purchase properties occupied by them belonging to certain subsidiaries at the market values of such properties at the dates on which the options were respectively first agreed upon. Mr Adams' option is valid for 21 years from the date of grant, and Mr Hamilton's is valid for 15 years from the date of grant.

Note 9 Taxation on Profit on Ordinary Activities

	1986 £000	1985 £000
Based on ordinary activities of the year:		
United Kingdom		
Corporation tax at 36.25% (1985 41.25%) including net transfers from deferred taxation account £144,000 (1985 £769,000)	8,854	8,974
Less double taxation relief	347	557
	8,507	8,417
Overseas taxation including net transfers from deferred taxation account £602,000 (1985 £65,000)	1,374	839
	9,881	9,256
Adjustment of prior years	(236)	(27)
	9,645	9,229

Note 10 Extraordinary Loss after Taxation

Loss and provisions arising from reorganisation and disposal of businesses less taxation relief £1,258,000 (1985 £364,000)	2,609	875
Amounts written off and provided for arising from placing US mill on to a care and maintenance basis	–	6,824
	2,609	7,699

Note 11 Ordinary Dividends

Additional 1985 final arising from exercise of share options	15	–
Interim of 2.75p (1985 2.50p as adjusted for capitalisation issue in May 1986) per share paid 31st December 1986	1,529	1,370
Final proposed of 5.75p (1985 4.83p as adjusted for capitalisation issue in May 1986) per share payable 1st July 1987	3,199	2,649
	4,743	4,019

Note 12 Earnings per ordinary share

The earnings per ordinary share are calculated on earnings of £15,361,000 (1985 £12,742,000) and 55,280,836 (1985 54,816,222) ordinary shares being the weighted average in issue. The fully diluted earnings per ordinary share is calculated on adjusted earnings of £16,077,000 (1985 £13,416,000) after adding back interest (less corporation tax) on the 9½% convertible unsecured loan stock 1994/2000 and allowing for appropriate adjustments in respect of outstanding options granted to subscribe for ordinary shares. The maximum number of ordinary shares of 25p into which the convertible unsecured loan stock may be converted is 6,448,177 and the maximum number of ordinary shares which may be issued pursuant to options granted under the Portals Group Senior Executive Stock Option Schemes and the Portals Group SAYE Stock Option Scheme and extant at 31st December 1986, is 1,577,796 (1985 1,904,802) making a total of 63,669,202 (1985 63,459,567) ordinary shares issued and deemed issuable. Comparative figures have been restated for the capitalisation issue made in May 1986.

Note 13 Tangible Assets

The Group	Cost and valuations £000	Depreciation £000	Net Book Value 1986 £000	Net Book Value 1985 £000
Land and buildings	37,223	1,150	36,073	35,841
Plant and machinery etc.	50,059	19,792	30,267	29,469
	87,282	20,942	66,340	65,310
Less Provision for diminution in value of investment in U.S. mill			5,229	5,229
			61,111	60,081

Movements during the year Land and buildings	Freeholds at valuation £000	Freeholds at cost £000	Leaseholds over 50 years unexpired £000	Leaseholds under 50 years unexpired £000	Total £000
Cost and valuations					
31st December 1985	27,684	7,361	973	759	36,777
Exchange adjustments	148	(135)	(14)	(2)	(3)
Additions at cost	-	826	-	15	841
Disposals	(179)	(213)	-	-	(392)
At 31st December 1986	27,653	7,839	959	772	37,223
Being balance remaining of:					
1984 Valuation	27,653	-	944	-	28,597
Cost	-	7,839	15	772	8,626
	27,653	7,839	959	772	37,223
Aggregate depreciation					
31st December 1985	230	398	15	293	936
Exchange adjustments	3	(7)	-	-	(4)
Provided during year	182	10	14	46	252
Disposals	(1)	(33)	-	-	(34)
At 31st December 1986	414	368	29	339	1,150
Net book value subject to provision for diminution					
At 31st December 1986	27,239	7,471	930	433	36,073
At 31st December 1985	27,454	6,963	958	466	35,841

Note 13 Tangible Assets *continued*

Movements during the year *continued* Plant and machinery etc.	Plant and Machinery £000	Motor Vehicles £000	Fixtures fittings and equipment £000	Plant under construction £000	Total £000
Cost 31st December 1985	36,065	4,640	5,344	642	46,691
Exchange adjustments	(52)	(6)	56	-	(2)
Additions at cost	2,215	1,793	1,161	529	5,698
Reclassifications	920	9	2	(931)	-
Disposals	(750)	(1,181)	(397)	-	(2,328)
At 31st December 1986	38,398	5,255	6,166	240	50,059
Aggregate depreciation					
31st December 1985	12,367	2,135	2,720	-	17,222
Exchange adjustments	19	6	29	-	54
Provided during year	2,410	1,103	993	-	4,506
Reclassifications	11	-	(11)	-	-
Disposals	(695)	(915)	(380)	-	(1,990)
At 31st December 1986	14,112	2,329	3,351	-	19,792
Net book value subject to provision for diminution					
At 31st December 1986	24,286	2,926	2,815	240	30,267
At 31st December 1985	23,698	2,505	2,624	642	29,469

The group's security paper mills in the United Kingdom were valued at 31st December 1984 by independent surveyors on a depreciated replacement cost basis. The group's security paper mill in the United States and related plant is stated at cost less depreciation and less a provision for diminution in value. All other freehold and long leasehold properties were valued at 31st December 1984 by independent surveyors at open market value on an existing use basis.

All the group's freehold and leasehold properties are occupied by group companies with the exception of freehold agricultural properties in the United Kingdom stated at £6,547,000 (1985 £6,531,000) which are held for investment.

The value of freehold and leasehold buildings upon which depreciation has been provided is £10,308,000 (1985 £22,527,000).

The group has previously valued all or some of its land and buildings in 1947, 1968, 1972, 1975, 1978, 1980 and 1981. In the opinion of the directors unreasonable expense would be incurred in obtaining the original cost of the assets valued in those years. If the group's land and buildings had not been valued at 31st December 1978, they would have been included at the following amounts:-

	1986 £000	1985 £000
At valuation at 31st December 1975	**9,413**	9,456
At cost	**15,118**	15,251
At 31st December 1986	**24,531**	24,707
Aggregate depreciation	**2,385**	2,169
	22,146	22,538

Note 14 Investments

The Group	Unlisted at cost £000	Related company £000	Total £000
Cost or valuation at 31st December 1985	109	36	145
Additions	91	–	91
Share of results for the year	–	8	8
Cost or valuation at 31st December 1986	200	44	244

Unlisted

The directors are of the opinion that the unlisted investments have a value of £200,000 (1985 £109,000).

	1986 £000	1985 £000
Related company		
Shares at cost	30	30
Share of post acquisition retained profits	14	6
	44	36

The interest in related company comprises 100 ordinary B shares in Portals Sihl A.G., a papermaking company incorporated and operating in Switzerland with an issued share capital of 100 ordinary A shares and 100 ordinary B shares of Swiss Francs 1,000 each.

The Company	£000
Investment in subsidiary companies	
Cost or valuation at 31st December 1985	40,589
Liquidation of subsidiaries	(725)
Net reduction in loans	(10,174)
Net increase in provisions	(500)
Cost or valuation at 31st December 1986	29,190

	1986 £000	1985 £000
Comprising:		
Shares at cost	462	1,187
Loans, less provisions of £17,000,000 (1985 £16,500,000)	28,728	39,402
	29,190	40,589

Particulars of principal subsidiaries are shown on pages 40 and 41.

Note 15 Stocks

The Group	1986 £000	1985 £000
Raw materials and consumables	**11,336**	12,542
Work in progress	**11,362**	11,829
Finished goods and goods for resale	**7,926**	6,900
	30,624	31,271
Work in progress includes:		
Long term contracts	**143,710**	113,365
Less progress claims made	**(150,279)**	(117,808)
	(6,569)	(4,443)
Representing:		
Carrying value of contracts in excess of progress claims made (included above)	**7,952**	8,389
Progress claims made in excess of carrying value of contracts (included in notes 17 and 18)	**(14,521)**	(12,832)
	(6,569)	(4,443)

Section 228(3) of the Companies Act 1985 contains an overriding requirement for the accounts to give a true and fair view. For this reason, the attributable margin in long term contract work in progress has been included in accordance with Statement of Standard Accounting Practice No. 9 although it constitutes a departure from the statutory valuation rules. As progress payments cannot be allocated between cost and margin, it is not possible to determine the effect of the departure on the balance sheet carrying value of long term contract work in progress.

Note 16 Debtors

	The Group		The Company	
	1986 £000	1985 £000	1986 £000	1985 £000
Trade debtors	59,702	65,141		
Bills of exchange receivable	2,823	540		
Amounts owed by group companies			12,329	8,544
Amounts owed by related companies	236	360		
Taxation recoverable	1,902	1,052	1,201	1,095
Net investment in finance leases	5,334	5,471		
Other debtors	1,704	1,184	4	56
Prepayments and accrued income	1,984	2,173	358	318
	73,685	75,921	13,892	10,013
Amounts included above which are receivable after more than one year:				
Trade debtors	5,259	2,189		
Bills of exchange receivable	–	135		
Advance corporation tax recoverable			1,190	1,089
Deferred taxation in overseas subsidiaries	1.345	541		
Net investment in finance leases	5,092	5,334		

Note 17 Creditors *Amounts falling due within one year*

	The Group		The Company	
	1986 £000	1985 £000	1986 £000	1985 £000
Bank loans and overdrafts	4,121	4,830	1,204	–
Other loans	756	692		
Progress claims and advance payments	19,950	19,200		
Trade creditors	22,811	29,312	27	38
Bills of exchange payable	28	42		
Taxation	13,851	7,588	1,933	1,802
Amounts owed to group companies			5,017	4,366
Amounts owed to related companies	–	206		
Social security contributions	424	386		
Other creditors	2,413	2,472		
Accruals and deferred income	6,293	7,184	185	226
Proposed dividend	3,215	2,665	3,215	2,665
	73,862	74,577	11,581	9,097

Note 18 Creditors *Amounts falling due after more than one year*

	The Group		The Company	
	1986 £000	1985 £000	1986 £000	1985 £000
9½% convertible unsecured loan stock 1994/2000	8,598	8,985	8,598	8,985
Bank loans	1,320	1,714		
Other loans	6,609	7,537		
Progress claims and advance payments	2,810	2,964		
Trade creditors	-	398		
Amounts due to group companies			117	14,478
Corporation tax (payable 1st January 1988)	5,638	7,222	420	-
Deferred income	231	202		
Other creditors	357	373		
	25,563	29,395	9,135	23,463

Borrowings

9½% convertible unsecured loan stock 1994/2000.
The stock is, at the holder's option, convertible on 14th June in each of the years 1987 to 1994 inclusive at the rate of three ordinary shares of 25p for every £4.00 nominal of stock. The holders of stock totalling £387,160 nominal exercised their conversion rights on 14th June 1986. The remaining stock will be redeemed at par on 31st December 2000 if not previously redeemed, converted or purchased by the company.

	The Company	
	1986 £000	1985 £000
Bank loans and overdrafts:		
Repayable:		
After 5 years	330	808
Between 2 and 5 years	784	713
Within 2 years	4,327	5,023
	5,441	6,544
Less:		
Bank overdrafts repayable on demand (note 17)	3,026	3,679
Bank loans due within one year (note 17)	1,095	1,151
	1,320	1,714
Other loans:		
Repayable:		
After 5 years	3,495	4,393
Between 2 and 5 years	2,350	2,371
Within 2 years	1,520	1,465
	7,365	8,229
Less:		
Other loans due within one year (note 17)	756	692
	6,609	7,537

Note 18 Creditors *Amounts falling due after more than one year continued*

The loans are repayable between 1987 and 2011 and bear rates of interest varying between 7% and 12%. Other loans include £5,338,000 (1985 £5,470,500) which are wholly or partly repayable after 5 years. Of the total group loans £8,270,000 (1985 £9,385,000) are in overseas currencies. The group's secured loans amounting to £7,618,000 (1985 £8,438,000) are mainly secured by a specific charge on the buildings, plant and machinery of the group's US mill.

Note 19 Provisions for Liabilities and Charges

The Group	Deferred taxation £000	Other provisions £000	Total £000
At 31st December 1985	2,923	3,141	6,064
Exchange adjustments	65	(16)	49
Release of provisions no longer required	(127)	(1,277)	(1,404)
Utilised during the year	(364)	(1,025)	(1,389)
Provided during year	(513)	6,706	6,193
At 31st December 1986	1,984	7,529	9,513

The provision for deferred taxation calculated on the liability method is:

	Amount provided		Amount not provided	
	1986 £000	1985 £000	1986 £000	1985 £000
Excess of capital allowances over depreciation	3,766	4,231	5,545	5,617
Expenditure charged in the accounts not immediately allowable for taxation and income assessable to tax in future years	(606)	(219)		
Realised surpluses on disposal of properties			331	111
Unrealised surplus arising on revaluation of properties and investments	14		5,222	4,505
	3,174	4,012	11,098	10,233
Advance corporation tax recoverable in future years	1,190	1,089	–	–
	1,984	2,923	11,098	10,233

The liability for UK deferred taxation relating to the excess of capital allowances over depreciation has been calculated at the rate of 35% (1985 35%).

Other provisions mainly comprise estimated costs to completion on closed long term contracts and reorganisation costs.

The Company

Provisions for liabilities and charges comprise deferred taxation.

Note 20 Share Capital

	Authorised		Allotted, called up and fully paid	
	1986 £000	1985 £000	1986 £000	1985 £000
6% (now 4.2% plus tax credit) cumulative preference shares of £1	763	763	763	763
Ordinary shares of 25p	17,237	6,487	13,910	4,568
	18,000	7,250	14,673	5,331

The company issued 36,753,850 ordinary shares of 25p by way of a two-for-one capitalisation issue to holders of ordinary shares at the close of business on 16th May 1986.

During the period 1st January 1986 to 16th May 1986 the company issued 314,553 ordinary shares of 25p (as adjusted for the capitalisation issue in May 1986) under the Portals Group Senior Executive Stock Option Scheme 1980 and the Portals Group SAYE Stock Option Scheme. During the period 17th May 1986 to 31st December 1986 the company issued a further 222,084 ordinary shares of 25p under these schemes.

In June 1986 290,370 ordinary shares of 25p (as adjusted for the capitalisation issue in May 1986) were issued as a result of the conversion of £387,160 of 9½% convertible unsecured loan stock.

Of the unissued shares, 1,067,016 ordinary shares of 25p were at 31st December 1986 reserved for the Portals Group Senior Executive Stock Option Schemes 1980 and 1984. Options under those schemes are exercisable at various dates up to 1996 at prices between 134p and 260p per unit.

A further 510,780 ordinary shares of 25p were at 31st December 1986 reserved for the Portals Group SAYE Stock Option Scheme. Options under that scheme are exercisable at various dates between 1989 and 1992 at prices between 165p and 306p per share.

Note 21 Reserves

	Share premium account £000	Re-valuation reserve £000	Profit and loss account £000
The Group			
At 31st December 1985	8,129	17,347	49,332
Applied in paying up in full capitalisation issue of 36,753,850 ordinary shares of 25p each	(8,129)		(1,059)
(Deficit) Surplus arising on translation of overseas companies accounts		(72)	160
Goodwill arising on acquisitions			(179)
Surplus on property revaluations relating to realisations during the year		(62)	
Premium arising on issue of ordinary shares	1,128		
Retained profit for the year			8,009
At 31st December 1986	1,128	17,213	56,263
The Company			
At 31st December 1985	8,129		15,600
Applied in paying up in full capitalisation issue of 36,753,850 ordinary shares of 25p each	(8,129)		(1,059)
Premium arising on issue of ordinary shares	1,128		
Retained profit for the year			9,098
At 31st December 1986	1,128		23,639

Note 22 Contracts for Capital Expenditure

The Group

Capital expenditure contracted for, and authorised but not contracted for, at 31st December 1986 for which no provision has been made in these accounts was:

	1986 £000	1985 £000
Contracted	797	1,015
Authorised but not contracted for	1,677	988
	2,474	2,003

Note 23 Leasing Commitments

	1986			1985
	Land and Buildings £000	Other Leases £000	Total £000	Total £000
Operating leases				
Amounts payable within one year	1,067	1,015	2,082	1,535
Commitments expiring:				
Within one year	98	225	323	249
Between one and five years	341	790	1,131	1,054
More than five years	628	–	628	232
	1,067	1,015	2,082	1,535

	1986 £000	1985 £000
Finance leases		
Gross amounts payable:		
Within one year	123	151
Between two and five years	183	287
More than five years	16	40
	322	478
Less finance charges relating to future periods	75	123
Net commitments	247	355

Net commitments incorporate hire purchase liabilities included in creditors of £12,000 (1985 £12,000) under amounts falling due within one year and £16,000 (1985 £29,000) under amounts falling due after more than one year. Except for hire purchase liabilities no provision has been made for the above commitments in these accounts.

Note 24 Contingent Liabilities and Guarantees

The holding company has guaranteed the overdrafts and loans of certain subsidiaries up to a maximum of £28,039,000 (1985 £34,386,000). The corresponding overdrafts and loans at 31st December 1986 totalled £9,727,000 (1985 £10,404,000). The holding company has also guaranteed contract bonding on behalf of certain subsidiaries amounting, at 31st December 1986, to £21,726,000 (1985 £24,097,000).

The Group has entered into recourse liabilities under export credit arrangements amounting at 31st December 1986 to £23,833,000 (1985 £25,643,000). There are also contingent liabilities in respect of guarantees as to plants installed or under construction and engagements in the ordinary course of business. No security has been given for any contingent liability. No contingent liability is expected to result in any material financial loss.

No provision has been made for taxation which would arise if profits retained by overseas subsidiary companies were distributed, nor in respect of differences arising on the translation into sterling of assets and liabilities of overseas subsidiaries.

Group Structure

Key

Name of Company
Nature of Business
Country of Incorporation and Principal Operation
tion owned directly or indirectly by Portals Holdings PLC
Address

Papermaking Division

Portals Papermaking Limited
Management Company.
Great Britain
100%
Overton Mill, Overton,
Basingstoke, Hants RG25 3JG
Tel: Basingstoke (0256) 770770
Telex: 858217 PORTAL G
Telefax: (0256) 770937

Portals Limited
Mould made banknote paper.
Great Britain
100%
Overton Mill, Overton,
Basingstoke, Hants RG25 3JG
Tel: Basingstoke (0256) 770770
Telex: 858217 PORTAL G
Telefax: (0256) 770937

Portals (Bathford) Limited
Mould made high security paper.
Great Britain
100%
Bathford Mill, Bath,
Avon BA1 7QG
Tel: Bath (0225) 858243
Telex: 44127 PORBAT G
Telefax: (0225) 852128

Portals, Inc.
Mould made high security paper and banknote paper.
USA
100%
500 Northridge Road,
Suite No. 835, Atlanta,
Georgia 30338, USA
Tel: (404) 642 1830
Telex: 804517 PORTAL VS ATL
Telefax: (404) 642 1829

Property Division

Portals Property Limited
Ownership of group property.
Great Britain
100%
Laverstoke Mill, Whitchurch,
Hants RG28 7NR
Tel: Whitchurch (0256-82) 2360

Laverstoke Estates Limited
Management of group property.
Great Britain
100%
Laverstoke Mill, Whitchurch,
Hants RG28 7NR
Tel: Whitchurch (0256-82) 2360

Engineering Division

Portals Engineering Limited
Great Britain
*100%**

Delford Division
Weigh price labelling equipment and wrapping machines.

PPM Albro Division
High speed roll fed labelling machines, liquid and powder filling machinery and ancillary equipment for the beverage, pharmaceutical and toiletries industries.

Component Manufacturing Division
Piece parts plus specialised machines for the engineering and other industries.
Dovercourt, Harwich,
Essex CO12 4LP
Tel: Harwich (0255) 503101
Telex: 98215 PELHAR G
Telefax: (0255) 508547

Sulby Vacuumatic Division
Book-binding and section gathering machines, paper counting machines and specialised equipment for the printing industry.
Lombard Road,
London SW19 3XN
Tel: 01-540 9782
Telex: 8955041 SULBCO C

Vacuumatic Maschinen GmbH
Sales and service company for specialised equipment for the printing industry.
West Germany
100%
4230 Wese-am-Rhein 1,
Kaiserring 6-8, West Germany
Tel: (0281) 22363
Telex: 812779 VACWE D

Water Treatment Division

Portals Water Treatment Limited
Management company.
Great Britain
100%
Oldfield Lodge,
156 Bridge Road, Maidenhead,
Berks SL6 8DG
Tel: Maidenhead (0628) 34334
Telex: 849067 PWTMHD G
Telefax: (0628) 781481

Houseman (Burnham) Limited
Chemicals for corrosion, scale and biological control in boiler and recirculating water systems. Chemical cleaning. Dosage and control equipment together with chemical and microbiological laboratory facilities.
Great Britain
100%
The Priory, Burnham,
Slough, Bucks SL1 7LS
Tel: Burnham (06286) 4488
Telex: 848252 HOUSMN G
Telefax: (06286) 66381

Paterson Candy International Limited
Municipal water and sewerage system design contractors, equipment suppliers and project managers, covering all aspects of water supply and sewage disposal schemes, including initial source and demand studies, financing, treatment, storage, pumping, collection and distribution, instrumentation and control, operation and maintenance of schemes and plant automation and upgrading, containerised plant for instant drinking water supplies.
Great Britain
100%
Candy House, 21 The Mall,
Ealing, London W5 2PU
Tel: 01-579 1311
Telex: 27239 PCIEAL G
Telefax: 01-840 6180

Membrane Division
Membrane separation systems for the food, pharmaceutical, biotech and process industries.
Laverstoke Mill, Whitchurch,
Hants RG28 7NR
Tel: Whitchurch (0256-82) 2360
Telex: 858128 PCILAV G
Telefax: (0256-82) 3835

Directly owned by Portals Holdings PLC

The Permutit Company Limited
The Company has four trading divisions: the Permutit Division sells and services pre-engineered standard products and systems for the industrial and household markets, the Permutit-Boby Projects Division is a design contractor for industrial water treatment projects and waste water treatment plant; the Stella-Meta Filters Division specialises in fine filtration systems, solids/liquid separation plant and mobile water-treatment equipment; Eta Process Plant Limited is a wholly owned subsidiary and specialises in mass transfer systems and deaeration plant.
Great Britain
100%
Permutit House,
632/652 London Road,
Isleworth, Middlesex TW7 4EZ
Tel: 01-560 5199
Telex: 24440 PERM G
Telefax: 01-568 5479

Portacel Limited
Gas and electrolytic chlorinators, residual controllers, detectors and associated products.
Great Britain
100%
Tannery Road, Tonbridge,
Kent TN9 1PR
Tel: Tonbridge (0732) 364411
Telex: 95467 PORTAC G
Telefax: (0732) 362575

F. W. Talbot & Company Limited
Couplings and fittings for underground water mains and service connections, water meters and under-pressure mains drilling and tapping equipment.
Great Britain
100%
nnall Valley Road,
nchester, Hants SO23 8LL
. Winchester (0962) 63311
ex: 47246 TALBOT G
efax: (0962) 52373

ouseman BV
emicals for corrosion, scale and logical control in boiler and rculating water systems. emical cleaning. Pre-engineered ndard industrial water treatment nt. Dosing equipment.
e Netherlands
0%
Konijnenburgweg 141,
2 PL Bergen op Zoom
stal: Postbus 190,
00 AD Bergen op Zoom,
therlands
01640-55000
ex: 78376 PWT NL
efax: 01640-59587

Houseman NV
Chemicals for corrosion, scale and biological control in boilers and cooling systems. Consulting and analytical services.
Belgium
100%
Rostockweg dok nr. 304
2000 Antwerpen, Belgium
Tel: (03) 542 4140

Home Waterbehandeling BV
Standard and specially engineered industrial water treatment plants. Plating industry effluent treatment. Portable demineralisation plants.
The Netherlands
100%
Wattstraat 64, 2723
RD Zoetermeer
Postal: Postbus 30,
2700 AA Zoetermeer, Netherlands
Tel: 079-314100
Telex: 34039 HOMEE NL
Telefax: 079-423707

The Permutit Company of Australia Pty Limited
Design contractors for ion exchange and industrial water treatment plant. Chemicals for corrosion, scale and biological control in boiler and recirculating water systems. Cooling towers. Automatic strainers and heat exchangers.
Australia
100%
Cnr. Wattle Road & Short Street,
Brookvale, Sydney
Postal: PO Box 117, Brookvale,
N.S.W., Australia 2100
Tel: (02) 938 4666
Telex: PERMUT AA 24742
Telefax: (02) 938 4202

William Boby & Company (Australia) Pty Limited
Design contractors for municipal water, sewage, industrial effluent treatment and incineration plants.
Australia
100%
44 Koornang Road, Scoresby,
Victoria, Australia 3179
Tel: (03) 763 8988
Telex: BOBY AA 31868
Telefax: (03) 763 2493

Portals New Zealand Limited
Process design engineers and contractors of fluid treatment plants for potable water, effluent, ion exchange, sludge handling and chemical plants for industry and municipalities. Specialty chemical suppliers. Design of microprocessor control systems. Manufacturing and installation of electrical panels.
New Zealand
100%
Candy House, 11 Spring Street,
Onehunga, Auckland
Postal: PO Box 13-558,
Auckland 6, New Zealand
Tel: (09) 641-079
Telex: PORTALS NZ 21175
Telefax: (09) 640-782

Portals Water Treatment South Africa (Pty) Limited
Design contractors for municipal and industrial water treatment plant. Stella-Meta filters for precoat filtration of water and process liquors. Chemicals for corrosion, scale and biological control in boiler and recirculating water systems.
South Africa
100%
Nevada Centre, Voortrekker Road,
Alberton, Johannesburg
Postal: PO Box 61188,
Marshalltown 2107, South Africa
Tel: (011) 869 7200
Telex: 4-22749 SA
Telefax: (011) 869 1741

Paterson Candy (Malaysia) Sdn. Bhd.
Design contractors for municipal, industrial and waste water treatment plant.
Malaysia
100%
No. 11 & 13, Jalan 17/45,
46400 Petaling Jaya
Postal: P.O. Box 1107,
Jalan Semangat PO,
46870 Petaling Jaya, Malaysia
Tel: (03) 7572111
Telex: PWT MA 37437

Paterson Candy International (Nigeria) Limited
Installation and maintenance of municipal potable water treatment plant.
Nigeria
60%
55 Isaac John Street, GRA,
Ikeja, Lagos,
Postal: PO Box 2802,
Ikeja, Lagos, Nigeria
Tel: Lagos 961383
Telex: 26039 PCILTD NG

Portals Water Treatment (Singapore) Pte Limited
Design contractors for municipal, industrial and waste water treatment plant. Boiler and cooling water treatment chemicals.
Singapore
100%
25 Gul Avenue, Jurong,
Singapore 2262
Tel: 8612121
Telex: PORTAL RS 25996
Telefax: 8612015

Portals Water Treatment (Hong Kong) Limited
Design contractors for municipal, industrial and waste water treatment plant.
Hong Kong
100%
Fleet House, 38 Gloucester Road,
Wanchai, Hong Kong
Tel: 5-274525
Telex: 73204 DODCO HX
Telefax: 5-292592

Wright Chemical Corporation
Chemicals for corrosion, scale and biological control in boiler and recirculating water systems. Consulting services. Polymeric dispersants. Packaged control systems.
USA
100%
4328 N. United Parkway,
Schiller Park, Illinois 60176,
USA
Tel: (312) 678-4806
Telefax: (312) 678-9934

L*A Water Treatment Corporation
Custom designers and fabricators of industrial water treatment systems featuring processes of clarification, filtration, deaeration, reverse osmosis, electrodialysis and ion exchange.
USA
100%
17400 East Chestnut Street,
City of Industry,
California 91749, USA
Tel: (818) 912-5411
Telex: 670482
LAWATCOND COID
Telefax: (818) 913-1034

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Year Review

	1986 £000	1985 £000	1984 £000	1983 £000	1982 £000
Group Results					
Turnover	**212,790**	239,888	201,697	179,242	156,960
Group profit before taxation	**25,046**	22,037	17,549	16,605	14,794
Taxation	**9,645**	9,229	8,614	6,558	6,494
Minority Interests	**8**	34	92	7	(34)
Profit before extraordinary items	**15,393**	12,774	8,843	10,040	8,334
Extraordinary items	**(2,609)**	(7,699)	(972)	42	(754)
Dividends	**4,775**	4,051	3,414	3,153	2,829
Retained profit	**8,009**	1,024	4,457	6,929	4,751
Capital employed					
Ordinary Shareholders' funds	**88,514**	79,376	84,965	73,298	65,882
Preference capital	**763**	763	763	763	763
Minority interests	**8**	347	517	386	629
9½% Convertible loan stock	**8,598**	8,985	8,996	9,024	9,024
8% Convertible loan stock	**–**	–	–	–	–
Term loans	**7,929**	9,251	12,200	8,422	8,154
Deferred taxation	**1,984**	2,923	3,632	1,027	964
	107,796	101,645	111,073	92,920	85,416
Employment of Capital					
Fixed assets	**61,355**	60,226	73,190	63,730	56,955
Net current assets	**46,441**	41,419	37,883	29,190	28,461
	107,796	101,645	111,073	92,920	85,416
Ratios	Pence	Pence	Pence	Pence	Pence
Earnings per ordinary share Basic*	**27.79**	23.24	16.12	18.48	15.33
Fully diluted*	**25.25**	21.14	15.00	16.86	14.08
Dividends per ordinary share*	**8.50**	7.33	6.17	5.75	5.17
Ordinary shareholders' funds per ordinary share*	**159**	145	155	135	122

**After restatement for the capitalisation issue in 1986*

	1981 £000	1980 £000	1979 £000	1978 £000	1977 £000
Group Results					
Turnover	143,429	126,528	100,616	82,944	77,369
Group profit before taxation	13,317	12,031	11,002	9,566	8,753
Taxation	1,185	2,167	4,823	5,006	4,551
Minority Interests	(1)	58	35	68	58
Profit before extraordinary items	12,133	9,806	6,144	4,492	4,144
Extraordinary items	(359)	2,632	609	(1,498)	(217)
Dividends	2,559	2,243	2,017	1,589	1,369
Retained profit	9,215	10,195	4,736	1,405	2,558
Capital employed					
Ordinary Shareholders' funds	63,112	49,724	38,210	33,257	24,670
Preference capital	763	763	763	763	763
Minority interests	587	260	210	144	108
9½% Convertible loan stock	9,024	–	–	–	–
8% Convertible loan stock	–	–	–	510	1,559
Term loans	5,987	5,081	726	587	623
Deferred taxation	526	4,180	7,939	8,437	6,606
	79,999	60,008	47,848	43,698	34,329
Employment of Capital					
Fixed assets	45,532	34,998	29,122	26,179	16,665
Net current assets	34,467	25,010	18,726	17,519	17,664
	79,999	60,008	47,848	43,698	34,329
Ratios	Pence	Pence	Pence	Pence	Pence
Earnings per ordinary share Basic*	22.35	18.05	11.29	8.40	8.07
Fully diluted*	20.31	–	–	8.31	7.73
Dividends per ordinary share*	4.67	4.08	3.67	2.73	2.63
Ordinary shareholders' funds per ordinary share*	117	92	71	63	48

**After restatement for the capitalisation issue in 1986*

Group Management

ecutive Committee	J J L G Sheffield	*Chairman*
	J E F Lloyd	*Group Managing Director*
	A P Conway	*Papermaking Managing Director*
	B J F Dewson	*Engineering Managing Director*
	S F Every	*Finance Director*
	J A Hamilton	*Personnel Director*
	E W Jackson	*Water Treatment Managing Director*
	J W Mather	*Special Projects Director*

rectors of Principal
sidiary Companies

Papermaking Companies

T F Burleigh	R A Gardener	D Q Milligan
C P Cardiff	J W Lapsley	G A Stobart
M P Dawes	G Markey	G D F Wilson
J S Fuller	R J Melling	

Water Treatment Companies

J L Aldridge	J E Droll	D J Palmer
G Alexander	P L Evans	F L Pawley
C P Anderson	C Frayne	D Peate
H Archer	J M van Galen	R J Pollock
L Baboolal	P Giacoletti	V K Rao
D L Banfield	M H Goss	P W Renouf
D Bird	L C Hale	G B Reynolds
M T Briggs	P D Johnson	A E Risson
J R Brown	R J Kinsella	J S Roberts
T C Bull	D M A Knowles	A C W Robertson
W C Burns	D J Lamont	M J Rowe
D J Burton	Lee Sian Kiat	D G Sayers
M R Cavanaugh	A A Lemon	G Sethuraman
J K Cheetham	S E J Lindsey	R Smith
A C Clark	C W Looman	E P Sorensen
H K H Claxton	M S McLean	W J Stead
M J Collins	B A Metz	A Sutherland
I A Crossley	A D Munro	T E Uphill
W A N Darkin	R A Nelberg	L Williamson
J G W Davies		

Engineering Companies

D Ashmore	A G Foulkes	B D Oliver
R S Bridges	D A Humphreys	A J Orr
P Burnett	T A Joscelyne	P Roman
R D S Cole	S H Law	

Property Companies

D C L Oldroyd	P J Denee	A Oxenham

p Central Services

Legal	A Pike	J K Workman
Personnel	P Toombs	W A Green
Finance	A Oxenham	
Planning	K N Brown	

Portals Group Trustees Limited

J J L G Sheffield	W A Green	D Reed
S F Every	R G Phillips	R L Robertson
T G B Franklin	A Pike	P Toombs

Notice of Meeting

Notice is hereby given that the sixty-eighth annual general meeting will be held at The Savoy Hotel, Strand, London WC2R 0EU on 14th May 1987 at 12.30 pm for the following purposes:

1. To receive the report and accounts for the year ended 31st December 1986.

2. To declare a dividend.

3. To elect directors.

4. To re-appoint the auditors.

5. To authorise the directors to fix the remuneration of the auditors.

As special business to consider the following resolutions which will be proposed as to the resolutions numbered 6 and 7 as ordinary resolutions and as to the resolution numbered 8 as a special resolution:

6. That, subject to the approval of the Board of Inland Revenue, the Rules of the Portals Group SAYE Stock Option Scheme be amended by deleting all words in sub-paragraph 7(c) after the end of sub-paragraph 7(c) (ii) and substituting the following:

> *"(iii) cease to hold an office or employment by virtue of which he is eligible to participate in the Scheme by reason only that such office or employment is in a company of which the Company ceases to have control, or such office or employment relates to a business or part of a business which is transferred to a person who is neither an associated company (within the meaning of Section 302 of the Income and Corporation Taxes Act 1970) of the Company nor a company of which the Company has control;*

then the Participant may at any time during the period of six months after the date of that event exercise every Option which is then held by him. Sub-paragraph 7(c)(iii) as written above shall have retrospective effect to the extent permitted by section 25 of the Finance Act 1986 or any other relevant statutory provision."

7. That;

> *(a) the directors be generally and unconditionally authorised for the purpose of Section 80 of the Companies Act 1985 to exercise any power of the company to allot, and to grant rights to subscribe for or to convert securities into, shares of the Company up to a maximum amount of £1,324,240.50; and*
>
> *(b) this authority shall expire on the day before the date for which the annual general meeting of the Company is convened in the year 1988 provided that the Company be allowed to make any offer or agreement which will or might require any such shares to be allotted, or any such rights to be granted, after the expiry of this authority and the directors may, notwithstanding such expiry, allot any such shares and grant such rights in pursuance of any such offer or agreement made by the Company before the expiry of this authority.*

8. That the directors be empowered to allot any equity securities under the authority conferred by resolution number 7 above before the expiry of that authority as if section 89(1) of the Companies Act 1985 did not apply to:

(a) any allotment of equity securities which are offered for cash to all the holders (at a date selected by the directors) of issued ordinary shares and, if the directors think fit, convertible unsecured loan stock, of the Company (as nearly as practicable in proportion to the numbers of ordinary shares which are then held by them respectively or, in the case of holders of convertible unsecured loan stock, to which they would be respectively entitled had their conversion rights been exercisable and exercised in full on the said date at the conversion rate then applicable) other than any of those holders resident outside the United Kingdom to whom an offer would, in the opinion of the directors, be impracticable or unlawful in any jurisdiction relevant to an offer to such holders;

(b) any allotment of equity securities which are not offered to any holders of ordinary shares or convertible unsecured loan stock of the Company pursuant to any such offer as aforesaid by virtue of their being resident outside the United Kingdom or which may represent fractional interests arising in connection with any such offer; and

(c) any other allotment for cash of, and the grant of rights to subscribe for or to convert securities into, equity securities up to a maximum nominal amount of £861,869, the expression "equity securities" having for the purpose of this resolution the same meaning as in Section 94 of the Companies Act 1985.

By order of the board
Andrew Pike, Secretary
Laverstoke Mill, Whitchurch, Hampshire RG28 7NR
16th April 1987

Notes

1. A member entitled to attend and vote at the meeting is entitled to appoint a proxy or proxies to attend and vote in his stead. A proxy need not be a member of the company. A form of proxy is enclosed, enabling members to vote for or against the motions.

2. This report is sent to the holders of 6% cumulative preference shares and 9½% convertible unsecured loan stock for information only.

3. Dividend warrants will be posted on 29th June 1987 to ordinary shareholders on the register at 15th May 1987.

4. There will be available for inspection during business hours at the registered office, and on the date of the annual general meeting at the Savoy Hotel, Strand, London WC2R 0EU from 12.15 pm until the conclusion of that meeting, copies of all service contracts (unless expiring or determinable within one year by the employing company without payment of compensation) of any director of the Company with the Company or any of its subsidiaries.

Financial Calendar

Accounting year ends
31st December

Half-year results and interim dividend announced
September

Year's results and final dividend announced
April

Report and accounts posted to shareholders
Mid April

Annual General Meeting
May

9½% Convertible unsecured loan stock 1994/2000
Interest payable
30th June
31st December

Preference Dividends payable
1st January
1st July

Ordinary Dividends payable
Interim *December*
Final *July*

Credits

Design

Michael Peters Literature

Photography

George Bernard *front cover, pages 7, 9 and 11*

Katharina Rieppel *pages 5, 14 and 15*

Pictor International *page 1– bottom left*

Mantis Studio *page 1– top right*

Ace Photo Agency *page 6*

The Image Bank *page 8*

Illustrations

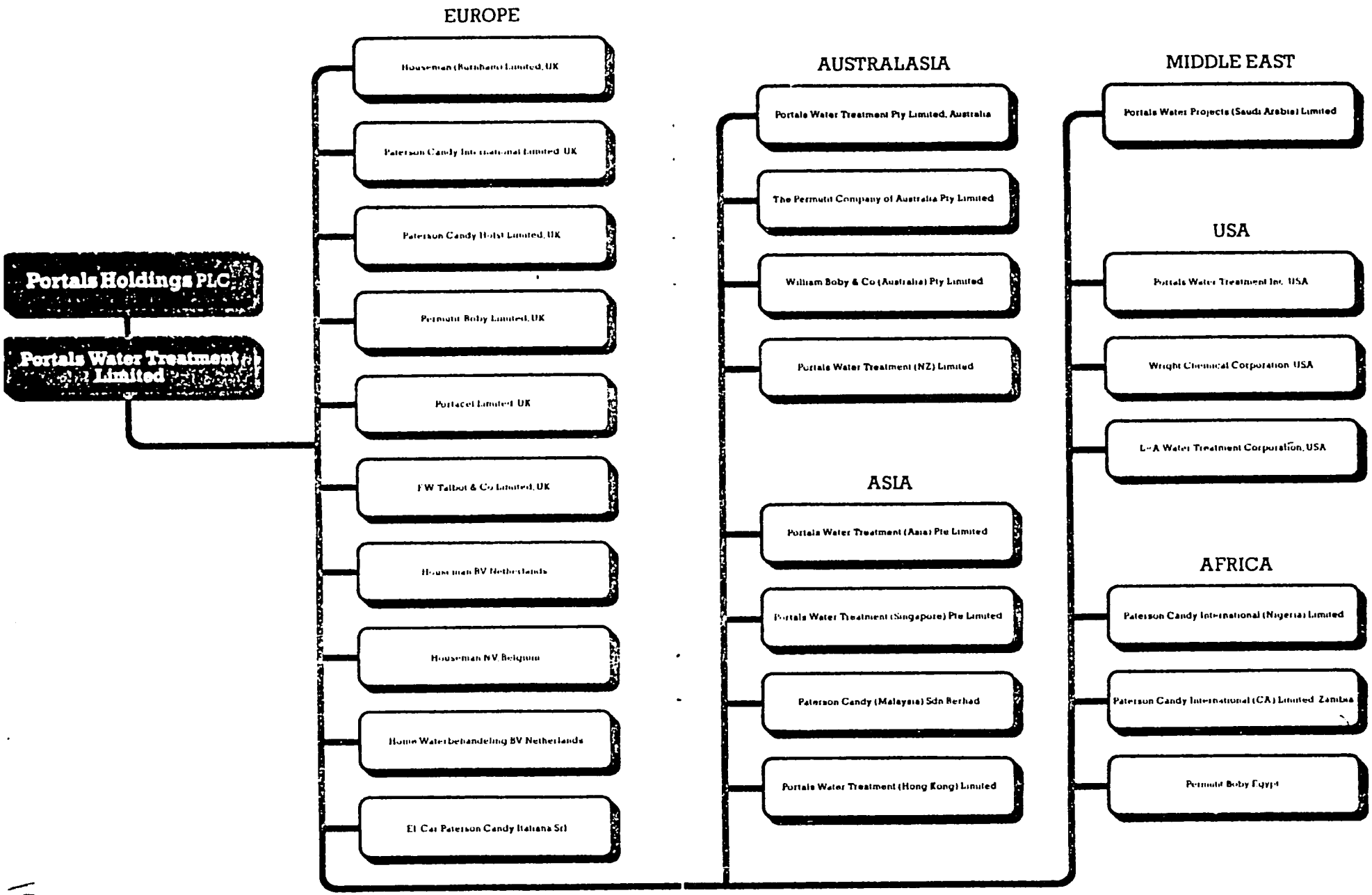
Clifford Harper

Print

Ideal Printers, Uxbridge

Perfect bound on a Sulby binder

Portals Holdings PLC
Laverstoke Mill, Whitchurch,
Hampshire RG28 7NR.
Telephone Whitchurch (0256-82) 2360.
Fax (0256-82) 3398, Telex 858059.



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APPENDIX 2

EXPERIENCE

This Appendix contains the following:

- ENR Top 500 Design Firms
- Form 254 for Stanley Consultants, Inc.
- L*AWT Turnkey Projects During Last Six Years
- Typical Large Parts Orders
- Egyptian Firms Which May Give Assistance (Customs Clearance)
- Previous L*AWT Work in Egypt that Required Customs Clearance
- L*AWT Contractors License
- Project Organization Chart
- Resumes

Francis Albia	Patrick Landree
Herman Archer	Jerry McCormick
William Burns	Elizabeth Heigel
Richard Cox	William Parsons
Sami Gabr	H.G. Romines
Peter Giacoletti	Ralph Wagner

- List of Major Subcontractors
- PBM Annual Report
- Orascom Report
- Kolaly Brochures

Rank	Firm	Type of firm	Water supply	Power	Mfg.	Bldg.	Sewer, waste	Trans.	Haz. waste	Other	CM	Foreign billings
			Percent of billings									
67	R.W. Beck & Associates, Seattle, Wash.	CE	7	65	0	0	5	0	0	23	✓	✓
68	Midwest Technical Inc. (MTI) Cincinnati, Ohio	EA	0	0	94	5	0	1	0	0	-	-
69	The Smith Group, Detroit, Mich.	AE	0	0	30	56	0	2	0	12	✓	✓
70	BCM Engineers Inc., Plymouth Meeting, Pa.	CE	18	1	2	2	36	6	22	13	✓	-
71	C.E. Maguire Inc., Providence, R.I.	EAP	14	2	3	25	14	22	1	19	✓	-
72	The Earth Technology Corp., Long Beach, Calif.	CE	5	4	5	5	0	3	18	60	-	-
73	Golder Associates, Atlanta, Ga.	SE	4	10	5	8	3	10	50	10	-	✓
74	Kidde Consultants Inc., Baltimore, Md.	CE	4	1	4	55	10	20	0	6	✓	✓
75	Wilbur Smith & Assoc. Inc., New Haven, Conn.	EA	10	0	0	10	10	60	0	10	-	✓
76	McClelland Engineers Inc., Houston, Texas	SE	1	2	8	5	0	1	2	83	-	✓
77	Ellerbe Associates Inc., Minneapolis, Minn.	AE	0	2	2	95	1	0	0	0	-	-
78	Syska & Hennessy, New York, N.Y.	CE	0	0	0	85	0	0	0	15	-	✓
79	Tippetts-Abbett-McCarthy-Stratton, New York, N.Y.	EA	2	5	0	33	20	30	5	5	✓	✓
80	O'Brien-Kreitzberg & Assoc. Inc., Merchantville, N.J.	CE	5	10	10	20	25	30	0	0	✓	-
81	Henry Intl. Inc., Atlanta, Ga.	AE	0	0	4	86	9	0	0	1	✓	✓
82	Swanke Hayden Connell Ltd., New York, N.Y.	A	0	0	0	0	0	0	0	100	-	-
83	Leo A. Daly, Omaha, Neb.	AE	1	0	2	78	1	17	0	1	✓	✓
84	Boyle Engrg. Corp., Newport Beach, Calif.	EA	33	3	1	16	30	10	0	7	✓	✓
85	Harding Lawson Associates, Novato, Calif.	SE	10	10	10	25	0	10	25	10	-	-
86	Ecology & Environment Inc., Buffalo, N.Y.	CE	0	10	0	1	2	1	86	0	✓	✓
	Billings totaled $29.99 million to $20 million											
87	Lockwood, Andrews & Newnam Inc., Houston, Texas	EA	5	4	8	17	41	22	3	0	✓	✓
88	I.M. Pei & Partners, New York, N.Y.	A	0	0	0	100	0	0	0	0	-	✓
89	O'Brien & Gere Engineers Inc., Syracuse, N.Y.	CE	13	0	0	11	31	0	34	11	-	✓
90	Amman & Whitney, New York, N.Y.†	CE	3	3	5	20	2	55	0	12	✓	✓
91	Southwestern Laboratories, Houston, Texas	SE	10	10	10	25	10	25	10	0	-	-
92	3D/Intl., Houston, Texas	AE	2	0	0	88	0	10	0	0	✓	✓
93	The Stanley Consultants Group, Muscatine, Iowa	EA	20	17	1	40	6	15	0	1	✓	✓
94	Hansen Lind Meyer Inc., Iowa City, Iowa	AE	0	0	2	95	0	0	0	3	-	✓
95	SSOE Inc., Toledo, Ohio	EA	0	0	78	22	0	0	0	0	-	✓
96	Cygna Corp., San Francisco, Calif.	CE	0	78	1	16	0	2	0	3	✓	✓
97	ATEC Associates Inc., Indianapolis, Ind.	SE	5	10	20	30	10	10	15	0	-	-
98	The Hillier Group, Princeton, N.J.	A	0	0	0	100	0	0	0	0	✓	-
99	The Kleinfelder Group, Walnut Creek, Calif.	SE	0	0	0	0	0	0	40	60	-	-
100	STS Consultants Ltd., Northbrook, Ill.	CE	0	10	10	50	0	0	15	15	-	-
101	Kimley-Horn & Associates Inc., Raleigh, N.C.	CE	3	0	0	2	5	70	0	20	-	-
102	P&D Technologies Inc., Orange, Calif.	EP	20	0	0	60	5	15	0	0	✓	✓
103	Burgess & Niple Ltd., Columbus, Ohio	EA	11	3	1	15	45	8	0	17	✓	-
104	Willdan Associates, Anaheim, Calif.	CE	0	0	0	0	0	0	0	100	-	-
105	GPA Technical Consultants Inc., Cincinnati, Ohio	EA	0	15	70	15	0	0	0	0	✓	-
106	Welton Becket & Associates, Santa Monica, Calif.	AE	0	0	0	100	0	0	0	0	-	✓
107	Bernard Johnson Inc., Houston, Texas	AE	4	0	11	21	1	53	0	0	-	✓
108	E.C. Jordan Co., Portland, Maine	EA	2	18	15	0	0	1	54	0	✓	-
109	Kennedy/Jenks/Chilton, San Francisco, Calif.	EA	20	5	0	5	30	10	20	10	-	-
110	Simons • Eastern Consultants Inc., Atlanta, Ga.	EA	1	15	45	12	2	0	0	25	✓	✓
111	The Benham Group, Oklahoma City, Okla.	EA	10	15	35	25	5	5	0	5	✓	-
112	HLW (Haines Lundberg Waehler) New York, N.Y.	EA	0	0	0	95	0	0	0	5	-	✓
113	Lannenbaum Engrg. Corp., Houston, Texas	EA	19	1	1	2	15	41	1	20	✓	-
114	The Kober Group, Los Angeles, Calif.	A	0	0	0	99	0	0	0	1	-	✓
115	Envirodyne Engineers Inc., Chicago, Ill.	CE	0	0	0	5	0	40	20	35	✓	-
116	Edwards and Kelcey Inc., Livingston, N.J.	CE	5	0	0	0	5	60	0	30	-	✓
117	Carlson Associates, Cochituate, Mass.	EA	0	0	40	55	5	0	0	0	-	-
118	Flack + Kurtz Consulting Engineers, New York, N.Y.	CE	0	2	5	85	0	0	0	8	-	✓
119	Gresham, Smith & Partners, Nashville, Tenn.	AE	0	0	3	78	3	14	0	2	-	-
120	Greeley & Hansen, Chicago, Ill.	CE	5	0	0	0	95	0	0	0	✓	✓
121	The Kuljian Corp., Philadelphia, Pa.	EAP	7	63	12	6	5	0	0	7	✓	✓
122	Geotechnical & Environmental Inc., Newton, Mass.	CE	0	0	0	0	0	0	0	100	-	-
123	Sasaki Associates Inc., Watertown, Mass.	A	0	0	0	64	0	1	0	35	-	-
124	Albert Kahn Associates Inc., Detroit, Mich.	AE	0	0	65	35	0	0	0	0	-	✓

STANDARD FORM (SF) 254

Architect Engineer and Related Services Questionnaire

1 Firm Name / Business Address
Stanley Consultants, Inc
Stanley Building
Muscatine, Iowa 52761

1a Submittal is for [ ] Parent Company [X] Branch Office

2 Year Present Firm Established: 1961

3 Date Prepared: October, 1988

4 Specify type of ownership and check below if applicable: Corporation
[ ] A Small Business
[ ] B Small Disadvantaged Business
[ ] C Women-owned Business

5 Name of Parent Company, if any
SC Companies, Inc
Stanley Building
Muscatine, Iowa 52761

5a Former Firm Name(s), if any, and Year(s) Established
Central States Engineering Company (1913)
Young and Stanley (1932)
Stanley Engineering Company (1939)

6 Names of not more than Two Principals to Contact: Title / Telephone
1) Lloyd J Larson, Vice President, 319/264-6249
2) Gregs G Thomopulos, Senior Vice President, 319/264-6845

7a. Total Personnel 297 (508)*

7 Present Offices: City / State / Telephone / No Personnel Each Office

Chicago, Illinois — 312/693-9624 - 12
Denver, Colorado — 303/694-4754 - 5
Muscatine, Iowa — 319/264-6600 - 262
Tampa, Florida — 813/621-9450 - 1
Washington, D C — 202/331-7770 - 2
Various Project Sites - 15

Stanley Consultants, Inc., is a member of The Stanley Consultants Group of companies with additional offices and staffing listed below:

Fort Myers, Florida — 813/337-3525 - 1
Orlando, Florida — 305/644-2229 - 12
Phoenix, Arizona — 602/279-0901 - 53
West Palm Beach, Florida — 305/967-1100 - 135
Monrovia, Liberia, West Africa — 231-222210 - 10

*Numbers in parentheses indicate The Stanley Consultants Group personnel total

8 Personnel by Discipline

83 Administrative (116)
5 Architects (6)
3 Chemical Engineers (3)
20 Civil Engineers/Designers (56)
0 Construction Inspectors (3)
60 Draftsmen/Technicians (113)
2 Ecologists/Env Analysts (2)
1 Economists (1)
25 Electrical Engineers (25)
4 Estimators (6)
0 Geologists (0)
6 Hydrologists (7)
0 Interior Designers (0)
2 Landscape Architects (4)
17 Mechanical Engineers (20)
0 Mining Engineers (0)
0 Oceanographers (0)
3 Planners: Urban/Regional (5)
10 Sanitary Engineers (12)
0 Soils Engineers (0)
** Specification Writers
13 Structural Engineers (13)
3 Surveyors (14)
5 Transportation Engineers (8)
19 Data Processing Experts/CADD (22)
9 Construction Experts (10)
3 Value Engineers (3)
4 Instrumentation Engineers (4)
0 Survey Technicians (55)

** Counted with each discipline

9 Summary of Professional Services Fees Received (insert index number)

Last 5 Years (most recent year first)

	1985	1984	1983	1982	1981
Direct Federal contract work, including overseas	6	5	6	6	6
All other domestic work	8	7	8	8	8
All other foreign work*	7	6	7	7	6

*Firms interested in foreign work, but without such experience, check here [ ]

Ranges of Professional Services Fees

Index	
1	Less than $100,000
2	$100,000 to $250,000
3	$250,000 to $500,000
4	$500,000 to $1 million
5	$1 million to $2 million
6	$2 million to $5 million
7	$5 million to $10 million
8	$10 million or greater

Experience Profile Code Numbers

for use with questions 10 and 11

001 Acoustics, Noise Abatement
002 Aerial Photogrammetry
003 Agricultural Development; Grain Storage, Farm Mechanization
004 Air Pollution Control
005 Airports, Navaids; Airport Lighting; Aircraft Fueling
006 Airports, Terminal & Hangars; Freight Handling
007 Arctic Facilities
008 Auditoriums & Theatres
009 Automation, Controls; Instrumentation
010 Barracks, Dormitories
011 Bridges
012 Cemeteries (Planning & Relocation)
013 Chemical Processing & Storage
014 Churches, Chapels
015 Codes, Standards; Ordinances
016 Cold Storage, Refrigeration; Fast Freeze
017 Commercial Buildings (low rise); Shopping Centers
018 Communications Systems; TV; Microwave
019 Computer Facilities; Computer Service
020 Conservation and Resource Management
021 Construction Management
022 Corrosion Control; Cathodic Protection; Electrolysis
023 Cost Estimating
024 Dams (Concrete, Arch)
025 Dams (Earth, Rock); Dikes; Levees
026 Desalinization (Process & Facilities)
027 Dining Halls; Clubs; Restaurants
028 Ecological & Archeological Investigations
029 Educational Facilities; Classrooms
030 Electronics
031 Elevators; Escalators; People-Movers
032 Energy Conservation; New Energy Sources
033 Environmental Impact Studies, Assessments or Statements
034 Fallout Shelters, Blast Resistant Design
035 Field Houses, Gyms; Stadiums
036 Fire Protection
037 Fisheries, Fish Ladders
038 Forestry & Forest Products
039 Garages; Vehicle Maintenance Facilities; Parking Decks
040 Gas Systems (Propane; Natural, Etc.)
041 Graphic Design
042 Harbors; Jetties; Piers; Ship Terminal Facilities
043 Heating; Ventilating; Air Conditioning
044 Health Systems Planning
045 Highrise; Air-Rights-Type Buildings
046 Highways; Streets; Airfield Paving, Parking Lots
047 Historical Preservation
048 Hospitals & Medical Facilities
049 Hotels; Motels
050 Housing (Residential; Multi-Family; Apartments; Condominiums)
051 Hydraulics & Pneumatics
052 Industrial Buildings; Manufacturing Plants
053 Industrial Processes; Quality Control
054 Industrial Waste Treatment
055 Interior Design; Space Planning
056 Irrigation; Drainage
057 Judicial and Courtroom Facilities
058 Laboratories; Medical Research Facilities
059 Landscape Architecture
060 Libraries; Museums; Galleries
061 Lighting (Interiors; Display; Theatre, Etc.)
062 Lighting (Exteriors; Streets; Memorials; Athletic Fields, Etc.)
063 Materials Handling Systems; Conveyors; Sorters
064 Metallurgy
065 Microclimatology; Tropical Engineering
066 Military Design Standards
067 Mining & Mineralogy
068 Missile Facilities (Silos; Fuels; Transport)
069 Modular Systems Design; Pre-Fabricated Structures or Components
070 Naval Architecture; Off-Shore Platforms
071 Nuclear Facilities; Nuclear Shielding
072 Office Buildings; Industrial Parks
073 Oceanographic Engineering
074 Ordnance; Munitions; Special Weapons
075 Petroleum Exploration; Refining
076 Petroleum and Fuel (Storage and Distribution)
077 Pipelines (Cross-Country — Liquid & Gas)
078 Planning (Community, Regional, Areawide, and State)
079 Planning (Site, Installation, and Project)
080 Plumbing & Piping Design
081 Pneumatic Structures; Air-Support Buildings
082 Postal Facilities
083 Power Generation, Transmission, Distribution
084 Prisons & Correctional Facilities
085 Product, Machine & Equipment Design
086 Radar, Sonar, Radio & Radar Telescopes
087 Railroad; Rapid Transit
088 Recreation Facilities (Parks, Marinas, Etc.)
089 Rehabilitation (Buildings, Structures; Facilities)
090 Resource Recovery, Recycling
091 Radio Frequency Systems & Shieldings
092 Rivers; Canals, Waterways, Flood Control
093 Safety Engineering, Accident Studies; OSHA Studies
094 Security Systems; Intruder & Smoke Detection
095 Seismic Designs & Studies
096 Sewage Collection, Treatment and Disposal
097 Soils & Geologic Studies; Foundations
098 Solar Energy Utilization
099 Solid Wastes; Incineration; Land Fill
100 Special Environments, Clean Rooms, Etc
101 Structural Design; Special Structures
102 Surveying; Platting, Mapping; Flood Plain Studies
103 Swimming Pools
104 Storm Water Handling & Facilities
105 Telephone Systems (Rural; Mobile, Intercom, Etc.)
106 Testing & Inspection Services
107 Traffic & Transportation Engineering
108 Towers (Self-Supporting & Guyed Systems)
109 Tunnels & Subways
110 Urban Renewal; Community Development
111 Utilities (Gas & Steam)
112 Value Analysis, Life-Cycle Costing
113 Warehouses & Depots
114 Water Resources, Hydrology, Ground Water
115 Water Supply, Treatment and Distribution
116 Wind Tunnels, Research/Testing Facilities Design
117 Zoning; Land Use Studies
239 Military Facilities, Armory
257 Value/Engineering
204 _____
205 _____

Standard Form 254 July 1975
Prescribed By GSA Fed. Proc. Reg. (41 CFR) 1-18.601

10 Profile of Firm's Project Experience, Last 5 Years

Profile Code	Number of Projects	Total Gross Fees (in thousands)	Profile Code	Number of Projects	Total Gross Fees (in thousands)	Profile Code	Number of Projects	Total Gross Fees (in thousands)
1) 004	54	3,061	11) 042	14	6,375	21) 089	17	805
2) 005	6	7,353	12) 043	49	801	22) 092	21	4,795
3) 006	5	6,955	13) 046	38	12,358	23) 096	72	14,912
4) 009	44	1,698	14) 052	54	18,631	24) 099	34	1,294
5) 011	16	1,464	15) 054	40	7,654	25) 104	31	3,557
6) 018	10	351	16) 063	16	354	26) 111	36	8,791
7) 021	65	25,242	17) 076	7	203	27) 114	36	1,938
8) 025	29	1,735	18) 079	30	1,425	28) 115	57	12,598
9) 032	26	3,480	19) 083	655	52,962	29) 239	6	412
10) 033	57	3,316	20) 088	50	806	30) 257	14	660

11. Project Examples, Last 5 Years

Profile Code	"P", "C", "JV", or "IE"	Project Name and Location	Owner Name and Address	Cost of Work (in thousands)	Completion Date (Actual or Estimated)
004 052 015	P	1 Perform air quality modeling and analysis to support a prevention of significant deterioration permitting request. Evaluate potential impact on designated nonattainment areas using dispersion modeling analyses	Archer Daniels Midland Corn Sweeteners 1350 Wacoma Avenue, Southwest Cedar Rapids, Iowa 52404	$78*	1986
005 026 046 074 113	P	2 Design and planning of airport RDF facilities at Masirah Island, Seeb, and Thumrait, Sultanate of Oman. Included runways and taxiways, airfield lighting, POL storage, buildings, munitions maintenance and storage, roads and site work, and utilities	Middle East Division U.S. Army Corps of Engineers P.O. Box 2250 Winchester, Virginia 22601	$400,000	1985
006 005 021 023	P	3 Planning, design, and construction supervision of new airport including site work, taxiways, aircraft aprons, utilities, buildings, and support facilities. Puerto Plata International Airport, Dominican Republic	Central Bank of Dominican Republic Santo Domingo, Dominican Republic	$15,800	1982
009 023 032 111	P	4 Design of programmable controllers and distributed digital control systems for four boilers. Base system allowed implementation of a plantwide energy management system	Georgia Institute of Technology Physical Plant Division 915 Atlantic Drive, Northwest Atlanta, Georgia 30318	$1,300	1984
018 043 080 108	P	5 Design and construction documents for a communication broadcasting system including four regional remote centers and administrative and maintenance areas. Liberia, West Africa	U.S. Agency for International Development Monrovia, Liberia, West Africa	$4,500	1985
021 004 009 063 083	P	6 Engineering design and construction management services for installation of three 40,000 lb/hr coal-fired boilers and support facilities. Work also includes demolition of three installed steam boilers. Hanford 300 Area	U.S. Department of Energy Richland Operations Office Richland, Washington 99352	$11,000	1985
032 023	P	7 Energy Engineering Analysis Program (EEAP) of more than 800 buildings representing approximately 28 different types of usage. Aschaffenburg, Schweinfurt, and Wuerzburg, West Germany (U.S. Army military communities)	Department of the Army European Division, Corps of Engineers APO New York 09757	$1,100*	1984

033 004 009 063 080	P	8 Environmental impact statement and PSD application and engineering design, central coal fired high-temperature water central heating plant and distribution system Malmstrom Air Force Base, Montana	Sacramento District U S Army Corps of Engineers 650 Capitol Mall Sacramento, California 95814	$40,000	1983
042 021 023 079	P	9 Economic and technical feasibility report detailed design, and construction management for a new deepwater port providing LNG facilities and general cargo facilities Bintulu Deepwater Port, Sarawak Malaysia	Economic Planning Unit Government of Malaysia Kuala Lumpur, Malaysia	$165,000	1983
046 023 102 104 107	P	10 Topographic and land surveys, detailed roadway and drainage designs utility relocations and signalization, traffic handling, and preparation of contract documents and cost estimates for three-lane urban Phoenix-Casa Grande Highway	Arizona Department of Transportation 206 South 16th Avenue Phoenix, Arizona 85007	$12,000	1989
052 021 053 063 111	P	11 Design and fast-track construction management of complete process facilities, numerous buildings, all utilities, and site development for new corn processing plant including corn sweeteners, fuel alcohol, and other coproducts Loudon, Tennessee	A E Staley Manufacturing Company 2200 Eldorado Street Decatur, Illinois	$250,000	1982
054 015 022	P	12 Engineering and technical services for updating/revising NAVFAC DM-5 8, Domestic Wastewater Control, DM-5 9, Industrial and Oily Wastewater Control, and DM-5 11, Groundwater Pollution Control	Department of the Navy Naval Facilities Engineering Command 200 Stovall Street Alexandria, Virginia 22332-2300	$200*	1985
063 023 054 089	P	13 Conceptual design and final design (military) of two 100,000 lb/hr boilers and support equipment for main heating plant improvement includes coal handling and storage, fly ash disposal, wastewater treatment, and building renovation Iowa Army Ammunition Plant, Middletown, Iowa	Omaha District U S Army Corps of Engineers 6014 U S Post Office and Court House Omaha, Nebraska 68102	$10,000	1985
076 005 006 023	P	14 Design of POL storage (504,000 BBL), POL pump stations, POL filter stations, POL distribution piping, and diesel and mogas storage and dispensing Airport improvements, three air bases, Sultanate of Oman	Middle East Division U S Army Corps of Engineers P O Box 2250 Winchester, Virginia 22601	$30,000	1985
079 083 096 115 117	P	15 Master planning services to include preparation of necessary plans surveys, maps, and utility system studies at designated installations Garmisch, Germany	European Division U S Army Corps of Engineers APO New York 09757	$515*	1985
083 004 021 033 063	P	16 Steam Electric Generation Design and construction services for 165 MW coal fired power generating station including environmental studies Muscatine, Iowa	Muscatine Power and Water 3205 Cedar Street Muscatine, Iowa 52761	$186,000	1984
083 007 023	P	17 Diesel Electric Generation Studies and design of improvements to power generation and distribution system at U S Naval Station, Adak, Alaska Included design for installation of six 3,000 kW diesel generating units with waste heat recovery boilers on five of the six units	Western Division Naval Facilities Engineering Command P O Box 727 San Bruno, California 94066	$11,000	1982
083 023 025 114	P	18 Hydroelectric Generation Conduct minihydro feasibility studies for sites in the eastern half of the Malaysian Peninsula and prepare tender documents for 41 viable projects Plant capacities range from 50 to 1,000 kW	Economic Planning Unit Government of Malaysia Kuala Lumpur, Malaysia	$15,000	1982
083 033 108	P	19 Electric Transmission -- Design of six miles of double circuit 345 kV transmission line crossing the Mississippi River Line design included steel pole H-frame and steel lattice structures supporting a bundle of two 795 kcmil ACSR self damping conductor	Interstate Power Company 1000 Main Street Dubuque, Iowa 52001	$2,600	1986

088 020 023 078	P	20 Preparation of integrated regional recreation plan for Youghiogheny River Lake based on an environmental, recreational, and cultural resources profile, identification of development and management constraints, and computation of demand	Pittsburgh District U S Army Corps of Engineers Federal Building 1000 Liberty Avenue Pittsburgh, Pennsylvania 15222	$100*	1982
089 032 043 055 072	P	21 Structural, electrical, mechanical, and civil engineering and architectural design for two building projects 1) renovation of existing administrative building including light machine shop, and 2) replace existing coal yard service building with new maintenance, locker, and office facility	Virginia Electric & Power Company P O Box 26666 Richmond, Virginia 23261	$287*	1986
092 024 033 088 257	P	22 Design of 6 500 cfs Lake Chicot pumping plant and associated dams and facilities located near Lake Village, Arkansas Project includes pumping plant, two concrete dams, 12 miles of channel improvement, five recreation areas, two access roads, and a slurry trench dewatering system	Vicksburg District U S Army Corps of Engineers P O Box 60 Vicksburg, Mississippi 39180	$50,000	1985
096 009 021 023	P	23 Design and construction administration including update of O & M manual for 50 MGD expansion to activated sludge portion of 180 MGD East Battery-Secondary Treatment Facilities	Metropolitan Waste Control Commission 350 Metro Square Building St Paul, Minnesota 55101	$20,000	1983
099 020 083 090 111	P	24 Update of previous feasibility study for incineration of municipal solid waste with energy recovery in the form of steam and electricity	City of Iowa City City Hall Iowa City, Iowa 52240	733*	1986
104 023 059 092 114	P	25 Preparation of flood control feasibility study and preliminary design including hydraulic and hydrologic analyses, cost estimates, development of alternatives and financing options and impacts for flood area in Cook County, Illinois	Illinois Department of Transportation Division of Water Resources 2300 South Dirksen Parkway Springfield, Illinois 62764	$162*	1986
111 004 033 063 089	P	26 Study, total engineering design, and construction management for modernization of campus central heating and power plant Fluidized bed combustion boilers were recommended following analysis of fuel and combustion alternatives, environmental aspects, and permitting requirements	University of Iowa Physical Plant Department Iowa City, Iowa 52240	$28,500	1989
114 025 056 092 .	P	27 Feasibility study, design, and construction management for 4 5 km long earth and rock fill flood water impounding dam to recharge ground water aquifer, Sultanate of Oman	U S Agency for International Development Washington, D C and Ministry of Agriculture and Fisheries Sultanate of Oman	$15,000	1985
115 021	P	28 Design to convert municipal water system from well-supply to a system supplied with Lake Michigan water Facilities include three new pump stations and additions to two existing stations, five storage tanks, seven miles of main, chlorination facilities, and central control system Palatine, Illinois	Village of Palatine Village Hall Palatine, Illinois 60067	$9,000	1984
239 009 023 083 101	C	29 Multipurpose range complex consisting of range operation and control area and a down range maneuver area Fort Hood, Texas	Fort Worth District U S Army Corps of Engineers P O Box 17300 Forth Worth, Texas 76102	$3,000	1984
257 023 239	P	30 Value Engineering Services for various military projects Eight workshops were completed ranging from recreation centers, barracks, and administrative facilities to runway extensions and a fuel controls test facility	Tulsa District U S Army Corps of Engineers 224 South Boulder Tulsa, Oklahoma 74103	$195*	1986

12. The foregoing is a statement of facts

Signature: Lloyd J. Larson Typed Name and Title: Lloyd J. Larson, Vice President

Date: October, 1986

C. Experience

1. L*AWT turnkey projects during last six years:

a. In U.S.A.

F-7332	Chevron	$60,000
F-7339	Ford Motor Co.	$300,000
F-7476	Tenneco Oil	$50,000
G-148	Kaiser Aluminum	$102,000
G-296	So. Cal. Edison	$85,000
G-623	Commonwealth Edison	$1,330,000
G-608	Ford Motor Co.	$652,000

b. Outside U.S.A.

F-7913	Ismailia #4	(Egypt)	$600,000
F-8254	Fed. Min. of Ind.	(Nigeria)	$1,100,000
F-8808	EEA	(Egypt)	$2,400,000
F-9280	EEA	(Egypt)	$792,000
F-9700	Ford Motor Co.	(Canada)	$437,000

2. Completed plants - 4 MGD or larger capacity:

F-5853	Carolina Power & Light	21.6 MGD
F-6766	Central & So. W. Services	5.3 MGD
F-8426	AMOCO	6.3 MGD

A. Supplement to Project Performance

Typical Large Parts Orders:

F-6733	TVA	$200,000
F-6854	7-Up	$20,000
F-7000	Tenneco Oil	$15,000
F-7960	Illinois Power	$12,000
F-7351	Ismailia	$35,000
F-8238	Ismailia	$10,000
F-9407	Ismailia	$17,000
G-744	So. Cal. Edison	$100,000
G-1094	Chevron	$320,000
G-1109	Texaco	$40,000

The Egyptian firms who may give assistance on this project are -

1. Morgan International Transport Marine
   29 Alexander The Great Street Azarita
   Alexandria, Egypt
   Telephone: 482-3542 and 482-6417
   Telex: 55447 and 54508
   Telefax: 203-842-8981

   Volume of Yearly Business: $10,000,000 to $20,000,000

   Why qualified:

   A. It is their own office.
   B. Been in Egypt on U.S. A.I.D. and Government Projects for seventeen (17) years.
   C. Personnel have handled A.I.D. contracts and extensive customs clearance for a large number of projects in Egypt.

   See attached telefax of May 4, 1988.

2. Daher Egypt Branch
   c/o Fast Freight Services
   9 Bagdad Street
   Heliopolis, Cairo
   Telephone: 202.661949
   Telefax: 202.2910616
   Telex: 20287 FFS

   Volume of Yearly Business: Estimated between $7,000,000 and $11,000,000.

   Why qualified:

   A. They maintain a daily dialog with their Egyptian office.
   B. Been in Egypt about nine (9) years.
   C. They like the other customs clearance agent have learned that the only way to move things through Egyptian customs quickly is to have the paperwork hand carried and, as a result of this practice,they are able to expedite customs clearance.

3. Panalpina World Transport
   c/o Egytrans
   (Egyptian Transport & Commercial Services Co., Ltd.)
   11, Kamel Morsey Street, El-Shatby
   Alexandria, Egypt
   Telephone: 03/5964696, 5963374, 5963379
   Telex: 54044 EGYT UN
   54682

   Volume of Yearly Business: $18,000,000.

   Why qualified:

A. They developed the Egyptian office in 1973 to participate in many of the large projects being processed in Egypt.
B. They currently are handling four (4) very large A.I.D. projects into Egypt. One of the projects is the Cairo Waste Water, East/West Treatment Plant, Alexandia, Egypt--Volume: 8,000 freight tons; number of USA vendors: 200 plus.
C. The employees at the Egyptian office have been trained on a rotational basis in all of the aspects of A.I.D. and government document processing in Egypt, the U.S.A., and several other countries in the world.

4. JAGRO
10 Executive Business Center
NKE Hilton Hotel
Cairo
Telephone: 740777/7506666 (Ext. 227)
Telex: 94354/92222

Volume of Yearly Business: Estimated between $6,000,000 and $13,000,000.

Why qualified:

A. These people work very closely through LPC Trading Company, Ltd
30 Moheikiki, Aboul Ezz St., Dokki, Giza, Egypt
Telephone: 3487000/3486600
Telex: 22851 GACAI LIN
Telefax: 3492986

They are both Egyptian-owned through the LPC Trading Company and American-owned through JAGRO.
B. They have the customs clearance capabilities and use the hand carry philosophy to get documents through customs. Based on their partial Egyptian ownership are able to closely coordinate materials movements resulting in expedited cargo delivery to jobsite.
C. Due to their inter-relationship with various Egyptian offices, they are able to minimize transportation and paperwork difficulties.

5. Permutit Egypt Ltd.
Cairo P. O. Box 1457
9 El Toomir Street, Nasr City
Cairo, Egypt
Telephone: (2) 605578/606978
Telex: 93883
Telefax: 011-20-2-2601136

Volume of Yearly Business: Estimated between $5,000,000 - $7,000,000.

Why qualified:

A. Coordination with various Egyptian firms, Egyptian customs, jobsites, and employer, and L*AWT in U.S.A. has been provided through our Egyptian office on prior jobs and would occur on a daily basis by telephone, telefax, and courier.
B. This office is not a customs agent but a coordination point to resolve problems and cure minor details before they become problems.
C. They have an excellent working relationship with U.S. A.I.D. Cairo, the employer, and Egyptian government offices. Personnel are available on a 24 hours a day basis to assist in customs and other problems.

The above reflects current Egyptian firms who are qualified and why they are in the matter of customs clearance; additional firms affiliated with U.S.A companies like Myers Group, Los Angeles, Schenkers International Forwarders, Inc., El Segundo, California; among others are under evaluation and could well be used as well.

Should any questions exist relevant to the above response, please feel free to contact Mr. Richard Cox.

MORGAN

L.A.Water Treatment Corp.
P.O. Box 1467
City of Industry, Ca.91749

Attn. Mr. R.A. Cox

Morgan Overseas Service Ltd.
90, Broad Street, Suite 23
New York, N.Y. 10004
F.M.C. Licence No. 2872
Telephone (212) 809 5100
Telex (ITT) 42 92 89 Morgan
Telefax (212) 809 7232

New York May 4th, 1988

Dear Mr. Cox,

Further to our telephone conversation of this afternoon following is the information you requested, pertaining to our Egyptian offices, main office being in Alexandria;

A. MORGAN INTERNATIONAL TRANSPORT & MARINE
29 ALEXANDER THE GREAT ST., AZARITA
ALEXANDRIA, EGYPT

Telefax No. (203)842-8981
Phone Nos.482-3542 & 482-6417
Tlx. 55447 & 54508

B. VOLUME OF BUSINESS (YEARLY) - U.S.$10,000,000. - ~~15~~ 20,000,000.

C. CURRENT AND PREVIOUS PROJECTS AND REFERENCES:

1. Aswan Tourist village for Aswan Developement Board
2. Cairo Wastewater Contract for; Lilley Int'l.,Glasgow
3. Cairo Wastewater Contract for: Weslur/Harrison Western (incomplete)
4. Helicopter Plant in Helwan
5. Mapso, Cairo (all the equipment for this job, ex-Mack Truck & Clark)
6. Safaga Grain Silos
7. Suez Canal extension
8. U.S. Embassy & office tower, Garden City, Cairo

The above are few of the most recent jobs. Please let us know if you require any further corporate or personal references. Please note that all our employees, both here and in Egypt are experienced in handling A.I.D. contracts/complying with all necessary operational and documentational requirements/thus assuring the proper use of the United States Government funds.

Should you require any further information please do not hesitate to contact us.

Sincerely yours

E. Previous Work which L*A Water Treatment has done in Egypt that required customs clearance:

L*A JOB NO.	CUSTOMER	CONTRACT	SITE	U.S. DOLLAR
F-8808	EEA	P.O. 27/85	4 D.I. Plants	$2,381,665
F-9280	EEA	P.O. 91/85	1 D.I. Plant	791,918
G-722	EEA	LOC 263-K-607.G9	Spares - Abu Sultan	287,481
E-1593	EEA	830880 Make Up	Ismailia Power Station	499,000
E-1594	EEA	833880 Pretreat.	Ismailia Power Station	591,320
F-4549	EEA	833880 Demin.	Ismailia Power Station	450,980
F-4550	EEA	833800 Pretreat.	Ismailia Power Station	441,475
F-7913	EEA	840750 Demin.	Abu Sultan Ismailia Unit 4	578,347
F-4912	EEA	830880 Parts	Abu Sultan Ismailia Unit 4	4,700
F-5084	EEA	830880 Parts	Abu Sultan Ismailia Unit 4	20,085
F-5394	EEA	830880 Addtl.Equip.	Abu Sultan Ismailia Unit 4	41,697
F-6178	EEA	830880 Spare Parts	Abu Sultan Ismailia Unit 4	2,650
F-7627	Ismailia	833800	Parts	1,980
F-7627-B	Ismailia	833800	Parts	1,792
F-7351	Ismailia	833800	Parts	35,010
F-7730	Ismailia	833800	Parts	1,487
F-7882	Ismailia	830800	Parts	5,866
F-7891	Ismailia	833800	Parts	2,068
F-8206	Ismailia	830880	Parts	2,311
F-8212	Ismailia	830881	Parts	3,618
F-8335	Ismailia	830881	Parts	3,360
F-8238	Ismailia	830881	Parts	10,347
F-8712	Ismailia	830886	Parts	1,336
F-9041	Ismailia	830886	Parts	4,295
F-9147	Ismailia	830886	Parts	1,160
F-9407	Ismailia	841120	Parts	17,140
F-9576	Ismailia	840750	Parts	3,264
F-9575	Ismailia	840750	Parts	1,333
F-9601	Ismailia	840750	Parts	11,645
F-9601-B	Ismailia	840750	Parts	1,200
				$6,200,530

THIS IS YOUR POCKET IDENTIFICATION CARD – KEEP WITH YOU

DETACH AT PERFORATION

AND FOLD ➡ | ⬅

Audit No. 488934

STATE OF CALIFORNIA
DEPARTMENT OF CONSUMER AFFAIRS

CONTRACTORS STATE LICENSE BOARD

EXPIRES ON		
MO	DAY	YR
03	31	88

ANY CHANGE OF BUSINESS ADDRESS MUST BE REPORTED TO THE REGISTRAR WITHIN 90 DAYS.

LICENSE NO.	
453667	L★A WATER TREATMENT CORPORATION 17400 EAST CHESTNUT STREET CITY OF INDUSTRY CA 91749

CLASSIFICATIONS			
C55			

3L-22 (REV. 8-86) SIGNATURE

FOLD➡ | ⬅FOLD

RECEIPT NO. 038007

INVOICE DATE	DESCRIPTION		
	RENEWAL OF LIC 453667		200.00

3 308

INV DESC	JOB NO	PO NO	REGISTER NO	DUE DATE	INV AMT	C	H

AMOUNT	G/L ACCOUNT NO	C	AMOUNT
00			

Ret to Herman

	EXT	PRICE	OK PAY	AUDIT

PAID MAR 1988

Thank You!

ACH AND RETAIN THIS STATEMENT
CHECK IS IN PAYMENT OF ITEMS DESCRIBED ABOVE.
PLEASE NOTIFY US PROMPTLY, NO RECEIPT DESIRED.

16-4
1220

L☆A WATER TREATMENT CORPORATION

17400 EAST CHESTNUT STREET, CITY OF INDUSTRY, CALIFORNIA 91749

PAID

CHECK DATE	CHECK NUMBE
3-8-88	51487

PAY THIS AMOUNT

$:::::200.00::::

SECURITY PACIFIC NATIONAL BANK
700 PUENTE HILLS MALL
CITY OF INDUSTRY CA 91748

CONTRACTORS STATE LICENSE BOARD

AUTHORIZED SIGNATURE
NON NEGOTIABLE
AUTHORIZED SIGNATURE

⑈051487⑈ ⑆122000⑆ ⑈50⑈ 077758⑈

REQUESTED BY: H-A

APPROVED BY: H-A

,DATE AND CONSUMER SERVICES AGENCY

CONTRACTORS STATE LICENSE BOARD
3132 BRADSHAW ROAD, SACRAMENTO, CALIFORNIA
RENEWALS MAILING ADDRESS: P.O. BOX 26999, SACRAMENTO, CA 95826
Telephone (916) 366-5153

FOR OFFICE USE ONLY

Del. Date

LICENSE EXPIRES 03/31/88-THIS RENEWAL APPLICATION IS FOR:
ACTIVE RENEWAL PERIOD 04/01/88 TO 03/31/90
Active $200 INACTIVE RENEWAL PERIOD 04/01/88 TO 03/31/92

Inactive ~~$60~~X $75

*IF NAMESTYLE HAS CHANGED, READ ITEM 10 ON THE REVERSE SIDE. PRINT IN INK OR TYPE CHANGE OF NAME OR ADDRESS HERE.

NEW NAMESTYLE

STREET AND NUMBER

CITY STATE ZIP

DAYTIME TELEPHONE No.:

Federal I.D. Number (Partnerships Only)

Number:

All others provide Social Security Number(s) for all personnel-See Item #6 on reverse for explanation.

e No.
3667 L*A WATER TREATMENT CORPORATION
17400 EAST CHESTNUT STREET
CITY OF INDUSTRY CA 91749

	CLASSES
ORPORATION	C55

E	TITLE	SOCIAL SECURITY NUMBER
RNS WILLIAM C	RMO/P	193-20-8526
~~LLY JOHN G~~	S/T	312-44-9436
RCHER HERMAN		

R OFFICE USE ONLY
BESTOS OPEN BOOK
EXAM RECEIVED

THIS BOX MUST BE COMPLETED

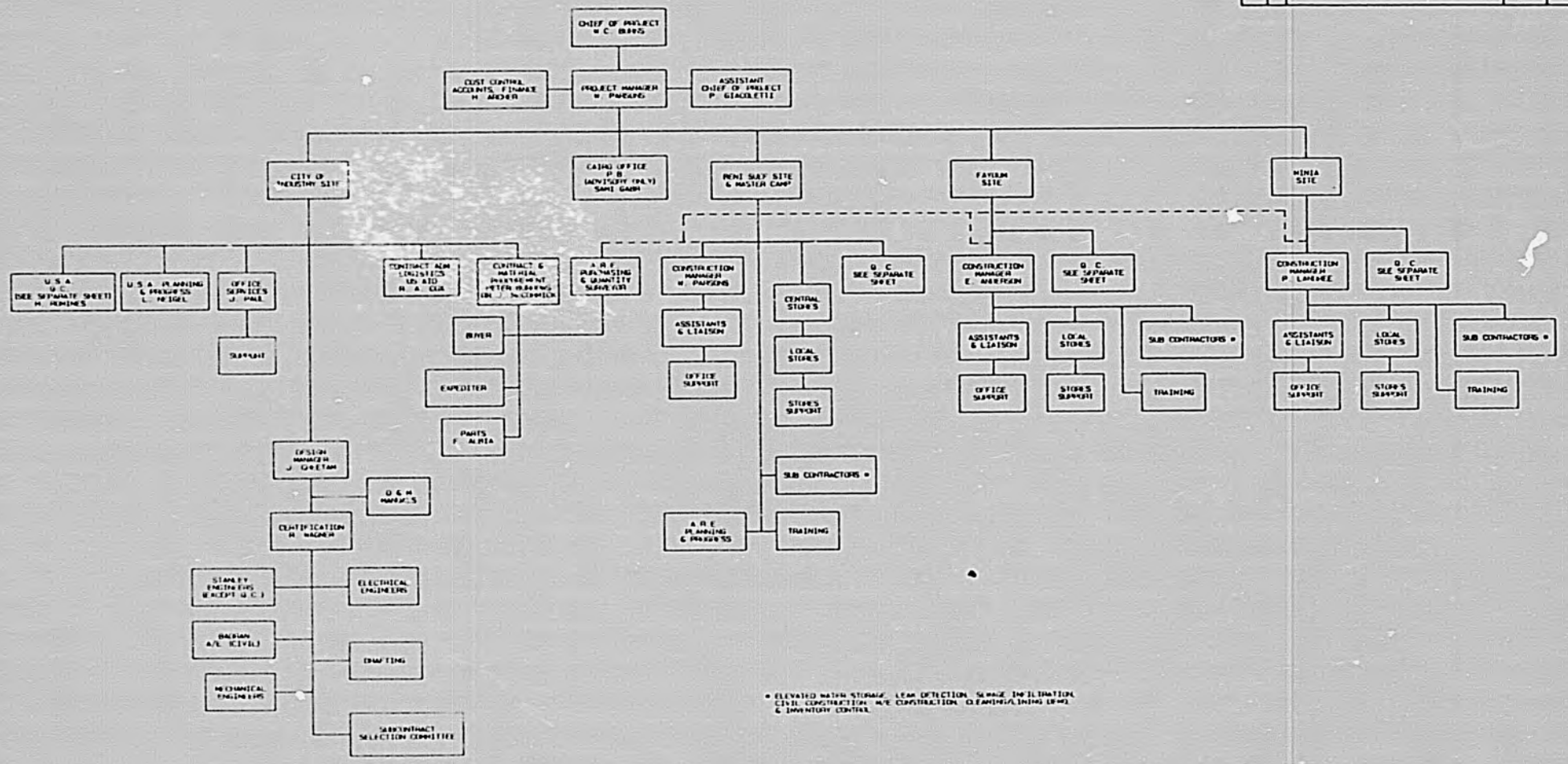
TRAVELERS INSURANCE COMPANY
Name of Compensation Insurance Company

ID-UB-255-F018-1-88 1-1-89
Policy Number Expiration Date

☐ Check Box If You Do Not Hire Employees (If this changes, you must notify the Board within 90 days. Failure to do so may result in disciplinary action.)

PLEASE READ THE INSTRUCTIONS ON THE REVERSE SIDE BEFORE COMPLETING THIS APPLICATION
PLEASE RETURN ENTIRE FORM, DO NOT DETACH BOTTOM PORTION

ORTANT— THE FOLLOWING CERTIFICATION MUST BE SIGNED BY:
OWNER—if a sole ownership license; PARTNER—if a partnership license; CORPORATE OFFICER—if a corporate



* ELEVATED WATER STORAGE, LEAK DETECTION, SEWAGE INFILTRATION, CIVIL CONSTRUCTION, M/E CONSTRUCTION, CLEANING/LINING (PM), & INVENTORY CONTROL

L-A WATER CORP. - PROJECT ORGANIZATION
PROVINCIAL CITIES PROJECT - N.O.P.W.A.S.D.
U.S.A.I.D. GRANT NO. 263-0161.3

L-A Water Treatment Corporation

DRAWN BY	CHECKED BY	APPROVED BY	SCALE NONE	DRAWING NUMBER
NM			DATE 5-6-86	D-14117

FRANCIS C. ALBIA

PARTS MANAGER

Education
Philippine College of Commerce - B.S., Marketing, 1975.
Cal Poly University, Pomona - Additional courses in effective supervision

Nationality: USA

Language: English
Filipino

Born: [redacted]

L*AWT Employment: 7 years

Personal
Married with one (1) child.

Experience
Parts Manager since February 16, 1984, to present. Also held the position of Parts Sales Estimator for three (3) years prior to current designation.

Responsible for all parts orders received either by phone or mail and processes same. Prepares parts proposals for domestic and foreign customers. Records daily sales and maintains records of all sales orders. Coordinates with different departments such as Purchasing, Engineering, Production, etc. Contacts local suppliers for price and availability of parts. Prepares recommended spare parts lists for every new job completed.

ELMER KENDALL ANDERSON

SUMMARY

Over twenty years of experience in architecture and engineering, of which the last fifteen were spent in the field, including two years in Iran and three years in Saudi Arabia. During career, progressed from drafting, specification writing, construction administration and coordination to project management. Projects have included hotels, schools, housing, governmental/commercial/industrial facilities, an atomic energy plant, a copper mine in Iran, and a new city in Saudi Arabia.

EXPERIENCE

1985-Present

NORTHVIEW CORPORATION, San Diego, CA
Project Manager
Responsible for monitoring construction of a $24 million 238-room hotel in Costa Mesa, CA. Coordinated construction activity to ensure compliance to plans and specifications, assisted in resolving errors, omissions and changes in order to assure timely completion with minimal change-order delays. Included coordination between the architect and consultants/design firms for restaurant, kitchen and interiors, from site work to installation of furnishings.

Reviewed pay requests and all change orders in working with the general contractor and specialized contractors.

1975-1985

THE RALPH M. PARSONS COMPANY, Pasadena, CA
Field Project Manager/Senior Field Project Manager, Saudi Arabian Parsons Limited, Yanbu, Saudi Arabia
Responsible for the management of seven design and construction contracts in excess of $300 million for construction of 1,500 housing units, 7 schools, and all attendant facilities such as mosques, shopping centers and all infrastructure. Directed the projects from proposal to final presentation to the Saudi Arabian Government. Supervised two field project managers, two resident construction managers, and a staff of 20 in all contract pre-award and post-award activities including preparation of requests for proposal and worldwide bid lists, review of proposals and award of contracts. Also responsible for fiscal and technical outcome of the contracts during construction, including all revisions and change orders.

During the 1984 Olympics, was assigned to the Los Angeles Olympic Operating Committee as Project Architect on the Gymnastics and Tennis venues at UCLA.

Other positions included Principal Designer and Supervising Designer for in-house projects, as well as Senior Field Architect/ Engineer. In this latter position, provided architectural engineering control for all major buildings of an $800 million copper mine project in Iran.

1972-1975 **WILLIAM BLUROCK & PARTNERS**, Newport Beach, CA
Construction Administrator
Responsible for monitoring construction of numerous municipal, governmental, institutional and school projects throughout Orange County. Included the State Building in Santa Ana Civic Center, several phased facilities at Orange Coast College, and other school plants at the secondary and elementary levels.

1969-1972 **ADRIAN WILSON ASSOCIATES**, Los Angeles, CA
Project Manager/Construction Administrator
Construction administration of various institutional, commercial and industrial projects including assignment as Construction Project Manager for the 22-story, one-million-square-foot Criminal Courts Building for the County of Los Angeles.

Prior assignment was as Construction Administrator for two AWA projects, the Downey Theatre, and a major addition to Santa Ana College. Included responsibility for contractual coordination between contractor and owner.

Also acted as inspecting architect for various major construction lenders on projects which included 100-400 unit apartment complexes, hotels, a hospital, industrial buildings, a church, a major shopping center, and a number of high-rise office buildings with adjacent parking structures.

[illegible]-1969 **C. F. BRAUN & CO.**, Alhambra, CA
Construction Administrator
Construction Administrator on a $70 million Atomic Energy Commission project at Rocky Flats, Colorado, comprised of 20 separate buildings. Prior assignments: Designer, specification writer, material surveys and reports for several major processing facilities.

EDUCATION

University of Southern California
School of Architecture
Los Angeles, CA

Orange Coast College
Costa Mesa, CA
Various courses in management and construction administration

[illegible]ICE

Secret Clearance - Q Clearance (inactive)

HERMAN ARCHER

VICE PRESIDENT - CONTROLLER

Education
Indiana State University - B.S., Business, 1965.
Fullerton College - 20 credits in the area of finance.

Nationality: USA
Born: [redacted]

Language: English
L*AWT Employment: 3 years

Personal
Married with one (1) child.

Military Service
1. Indiana National Guard 1965 to 1969.
2. California National Guard 1970 to 1971.

Professional Societies
National Association of Accountants; Notary Public, State of California.

Experience
Cost Accountant for L*A Water Treatment from April of 1984 to July of 1986. Formerly served as Business Manager for San Clemente Ford from June of 1983 to January of 1984. Prior to that, employed by GM Assembly Division, General Motors Corporation, for eighteen years in various finance positions.

Thoroughly familiar with cost accounting techniques associated with construction turnkey projects including percent completion techniques and tax consequences thereof.

Skilled in application of computers to business problems in checking inventory, scheduling, ledgering, project delineation, etc.

Conversant with U.S.A.I.D. regulations and United States government policies related to EEO, ERISA, Social Security, 401(k), etc.

WILLIAM C. BURNS

PRESIDENT - PROJECT DIRECTOR

Education
Villanova University - B.S., Chemical Engineering, 1950.
Western States University - Juris Doctor, 1975.

Nationality: USA
Born: [redacted]

Language: English
L*AWT Employment: 27 years

Personal
Married with ten (10) children.

Military Service
1. U.S. Navy Amphib Group 1945 to 1946.
2. U.S. Navy Air Force 1950 to 1953, service in Korean war zone with multiple decorations.

Publications and Patents, etc.
1. U.S. Patent No. 3,692,670 - Condensate Purification System.
2. U.S. Patent No. 3,642,616 - "CF" Continuous IX Process.
3. Technical water treatment articles have appeared in:
   - AWWA Journal
   - Power
   - Journal of Petroleum Technology
   - The Plant
4. Lectures and presentations on water and waste treatment have been given at national and/or regional conventions of:
   - American Society for Testing Materials
   - American Society of Mechanical Engineers
   - M.I.T. Engineers Club
   - Society of Petroleum Engineers
   - American Institute of Executive Engineers

Professional Societies
Industrial Water Conditioning Institute, Society of Petroleum Engineers (American Petroleum Institute), and Southern California Contractors.

Experience
President and Chief Operating Officer of L*A Water Treatment Corporation. Also served on Board of Directors of Water Treatment Corporation and was technical advisor to Philadelphia Suburban Water Company (a former shareholder of L*A Water Treatment).

Instrumental in establishing L*A Water Treatment as a national name in the field of water treatment. Maintains personal interest in technical and sales details of large engineered projects as well as post order execution.

Formerly Technical Sales Manager for L*A Water Treatment and for seven years prior to that served as Technical Leader and Project Manager for Cochrane Division of Crane Company. Many notable clarification, filtration, deaeration, reverse osmosis, iron removal, and ion exchange projects were completed under his direction including support auxiliaries and turnkey construction.

RICHARD A. COX

U.S.A.I.D. AFFAIRS &
CONTRACT ADMINISTRATION

Education
U.C.L.A. - B.S. School of Business Admin. - Major: Accounting
1961 Minor: Geology
Thomas Jefferson College of Law - Candidate for Juris Doctorate - 1987

Notary Public - State of California - 1958-present

Nationality: USA
Born: [redacted]

Language: English
L*AWT Employment: 18 years

Personal
Married - no children.

Military Service
U.S. Army - 5th Special Forces - MACV

Publications and Patents, etc.
Author and co-author of various mining and diving articles for California Mining Association - articles have appeared in The California Mining Journal, Desert Magazine, Skin Divers Magazine; revisions to the decompression tables on temperature pressure altitude in NAUI handbook; and worked on wording used by U.S. Congress in revisions to U.S. Mining Laws.

Professional Societies
American Bar Association - Law Student Division
- Committee on International Law & Practice -
Registered with Committee of Bar Examiners as a California law student, Delta Nu Alpha, National Transportation Society, National Notary Association, Society of Global Trade Executives.

Experience
Manager of Special Facilities & Projects, Assistant Manager of Production & Materiel, and Export Administrator for L*A Water Treatment Corporation. Responsible for complex negotiations; intergovernmental liaison, appointed legal representative for settlement of disputes at law, arbitration, shipping tariff negotiations, export licensing documentation and letter of credit negotiations. Have worked consistently with large detailed sub-contract activities, overseas procurement and delivery, overseas quotations, scheduling and maintenance of CPM and PERT reporting systems. Hands on experience in scheduling, expediting contract negotiation and administration, compliance with OSHA and other governmental regulatory agencies in safety and security fields.

Negotiation and coordination of difficult transport moves of oversized or export-packed materials for projects in the U.S.A. and overseas; special shipboard, rail, truck movements including tariff filing, determination, rates, and delivery schedules, drawback proceedings with U.S. Treasury Dept., customs and clearance of cargos at all U.S. and world ports.

Formerly employed for some 15 years in various multidisciplined managerial positions as EDP Liaison specialist and Import/Export Manager for Ampex Computer Products, Project Manager on Naval projects for Conductron Missouri, Production & Methods and Operation Planner for Hycon Mfg., Program Planner & Production Control Manager for Conroc Corp., Field Auditor and Site Administrator for Austin International, and Customer Service Manager with Cornell Dublier Electronics.

These positions provided in-depth experience in management of large government and commercial projects, adherence to tight budgets and development and presentation of detailed analyses by PERT and CPM reporting systems on necessary schedules. Working exposure to export trade, AID, EXIMBANK, IBRD projects and on hand control of small and large projects. Throughout this experience was called upon repeatedly to guide projects and management to successful and timely completion and performance.

R E S U M E

NAME : SAMI M. GABR

PRESENT POSITION : MANAGER - PERMUTIT BOBY BRANCH OPERATION IN EGYPT.

EDUCATION :
- MBA - AMERICAN UNIVERSITY IN CAIRO IN 1983
- MANAGEMENT DIPLOMA - AMERICAN UNIVERSITY IN CAIRO, IN 1980.
- B.Sc. MECHANICAL POWER ENGINEERING, AIN SHAMS UNIVERSITY, CAIRO, IN JUNE 1964.

PERSONAL : MARRIED, WITH THREE CHILDREN.

PROFESSIONAL MEMBERSHIPS:

1) FELLOW OF THE INSTITUTE OF SALES AND MARKETING MANAGEMENT, THE UK.

2) MEMBER IN THE EGYPTIAN SYNDICATE OF ENGINEERS (GRADE A), EGYPT.

LECTURES AND TECHNICAL PAPERS :

TECHNICAL PAPERS WRITTEN ON :-

* BOILER FEED WATER TREATMENT - RECENT TRENDS.
* CLARIFIER DESIGNS TO MATCH NILE WATER CHARACTERISTICS.
* PERMUTIT BOBY IN EGYPT.

LECTURES ON WATER AND SEWAGE TREATMENT PROCESSES AND EQUIPMENT GIVEN AT THE FACULTY OF ENGINEERING, AIN SHAMS UNIVERSITY AS WELL AS SIX SEMINARS ATTENDED BY MEMBERS FROM POWER, PETROCHEM, FOOD AND TEXTILES INDUSTRIES, IN EGYPT.

EXPERIENCE :

HAVE WORKED DURING PERIOD 1964 - 1972 IN CONSULTANCY IN THE FIELDS OF HEATING, REFIGERATING AND AIR CONDITIONING. INVOLVEMENT IN DESIGN AND SITE WORK OF A.C.PROJECTS IN EGYPT, KUWAIT AND LIBYA.

STARTING FROM 1972 TILL PRESENTLY, INVOLVEMENT IN THE DESIGN, SELLING, CONTRACTING AND SERVICING OF WATER AND SEWAGE TREATMENT PLANTS IN EGYPT, LIBYA AND TUNISIA.

.....

PETER GIACOLETTI

VICE PRESIDENT OPERATIONS
ASSISTANT CHIEF OF PROJECT

Education

Mt. San Antonio College	- Degree, Water Technology, 1979.
Capitol Radio Engineering Institute	- Degree, Electrical Engineering, 1974.

Nationality: USA
Born: [redacted]

Language: English
L*AWT Employment: 14 years

Personal
Married with two (2) children.

Military Service
U.S. Air Force 1967 to 1973

Experience
Vice President of Operations for L*A Water Treatment Corporation. Responsible for post order operations including engineering, purchasing, manufacturing, traffic management and quality assurance.

Formerly Engineering Manager and Project Engineer for L*A Water Treatment. Responsible for all engineering phases of Water Treatment Systems projects. Functions included general administration and overall coordination of design, drafting, specification approval, equipment selection, procurement and production scheduling, and all other matters pertaining to assigned projects.

Past projects have had capabilities as great as 75,000,000 gpd and have included clarifiers, gravity filters, carbon filters, demineralizers, counter flow demineralizers, pretreatment chemical feed systems, chemical dilution systems, water heating systems, and decarbonators.

PATRICK E. LANDREE
[redacted]
Message (312) 843 8686

EDUCATION
Purdue University B.A. 1963
Major: International Relations
Minor: Civil Engineering
Post Graduate: CPM - Construction Management

OBJECTIVE

Senior Management career position in the engineering, construction or services field.

SUMMARY

*Twenty four years of experience in the engineering, construction, petroleum and support services field. A balance of management achievements both domestic and international.

*Multiple commercial/hospital construction management.

*Developed open shop division to provide double breasted capabilities.

*Managed petrochemical and heavy industrial projects from conceptual estimates through construction completion.

*Negotiated major contracts with U.S. and foreign government entities.

*Directed multinational proposals for major projects.

*Direct line management and supervision of industrial, civil, and commercial projects.

DETAILED EXPERIENCE

February 1986 to Present

Construction Development Corporation
951 N. Delaware
Indianapolis, Indiana 46202

Assistant Vice President: Manager of the Health Care Division: Direct activities including estimating, negotiating, scheduling, value engineering, and construction of hospital projects. Projects are lump sum with penalties based on schedules. Responsibility has included direction of up to ten projects at one time, including negotiation and buy out of all subcontracts.

October 1985 to January 1986

Patrick E. Landree & Associates

Part time Management Consulting in Estimating, Proposal Preparation, Organization Development and Construction Management.

December 1984 to
September 1985

Reading & Bates Construction Co.
Sudan Operation

General Manager: Called back to Sudan on an emergency basis. Successfully started two new projects and maintained existing programs. Negotiated and implemented two additional projects with a major oil Company and USAID.

November 1983 to
December 1984

Green Holdings, Inc./The Agree Corporation
Des Moines, Iowa/Anchorage, Alaska

Vice President/Alaska: Transferred from Reading & Bates to a wholly owned subsidiary shortly after acquisition. Initial duties as manager to the International Division. Then responsible for establishment and successful operation of the Alaskan Division of the Agree Corporation. Primary activities included marketing, establishment of operating procedures, obtaining personnel and preparation for operation.

October 1980 to
November 1983

Reading & Bates Construction Company
Sudan Operations (Transfer to Green Holdings, Inc.)

General Manager: Developed primary company base in Sudan. Expanded heavy civil operation from less than three million dollars per annum to exceeding twenty million dollars per annum in three years. Maintained governmental contact and developed working relationships throughout top levels of local Government. Negotiated defense oriented contracts with the U.S. Corps of Engineers. Maintained full responsibility for profitability and expansion.

June 1979 to
October 1980

Hydrocarbon Research, Inc.
Miami, Florida

Proposal Manager/Chief Estimator: Conceptual and detailed estimating for domestic and international projects; synthetic fuels, refineries and miscellaneous petrochemical plants. Managed proposals from conceptual phases through presentation to domestic and overseas clients. Acted in an advisory manner relative to project viability and risk.

August 1978 to
June 1979

Morrison-Knudsen
Boise, Idaho

Senior Estimator/Project Manager: Provided expertise in estimating heavy steel and mechanical work. Estimated successful projects worth over 45 million dollars.

July 1977 to
May 1978

Parson-Jurden International Corporation
Sar Chesmeh, Iran

Manager Construction Services: Directed all functions other than construction and engineering for a six-hundred fifty million dollar copper mining complex. Reorganized Facilities (Six-thousand man camp and two town sites), Subcontracts, Purchasing and Security Departments.

Directed Personnel, Accounting & Finance, Safety, Medical, Insurance, Warehousing and Local Labor Department.

October 1972 to June 1977 — Alyeska Pipeline Service Company

Manager Support Services: Developed logistical and support services for Pipeline Operations Department. Directed a staff of fifty engineers in support for Alyeska Pipeline Camps. Responsible for maintenance and operations in eighteen camps, (16,000 beds). Managed completion of two-hundred million dollars worth of camp construction. Coordinated Task Force, establishing initial demobilization procedures and cost.

As Senior Projects Engineer, supervised staff of Project Engineers and Engineering Specialists for construction of a segment of the Trans-Alaskan Pipeline. Task Force Manager in development of environmental and construction programs and presentations to federal and state authorities.

1970 to 1972 — Lago Oil & Transportation Company Ltd. (EXXON) Aruba, Netherlands Antilles (Consulting Contract)

Maintenance and Construction Supervisor: Estimated, planned and supervised execution of major facilities revamp and maintenance work. Responsible for maintenance and new construction within the hydro-desulfurization division of the refinery. Supervised process unit turn-arounds.

1969 to 1970 — Arthur G. McKee Barranquilla, Colombia

Subcontract Administrator: Responsible for developing construction subcontracts with Colombian and European firms for the erection of a caprolactumnitrophosphate plant. Included contract development, evaluation of bidders, and administration of contracts let. Subcontracts exceeded two million manhours in field labor.

1963 to 1969 — Chicago Bridge & Iron Company Oak Brook, Illinois

Senior Construction Estimator/Project Engineer: Training Responsibilities for new estimators and contracting engineers.

Estimated, planned and was Project Engineer for three-hundred thousand manhour 50 MBD Refinery Unit revamp. As Superintendent, was responsible for estimating and carrying out miscellaneous work being conducted in the Caribbean area: plant layout, soils testing, tankage, vessel and pipe work. Acted as Field Engineer for various cryogenics and nuclear contracts. Initial responsibilities were as a Design Engineer/Draftman.

References will be furnished upon request.

JERRY McCORMICK

MANUFACTURING MANAGER
PURCHASING & EXPEDITING

Education
Los Angeles State College - Degree, Business Administration

Nationality: USA
Born: [redacted]

Language: English
L*AWT Employment: 24 years

Personal
Married with three (3) children.

Military Service
U.S. Navy - 1952-1957 - Served in Korea War Zone

Professional Societies
Professional Purchasing Management Association.

Experience
1957-1962 - Warehouse Foreman and Buyer for Southern Pipe & Casing Company.

Started at L*A Water Treatment January 1963 as Purchasing Agent. Worked with all phases of Production, Purchasing, Expediting and Facility Engineering.

Promoted to Manufacturing Manager in 1974 with direct responsibility for all Purchasing, Production, Traffic and Plant Security.

ELIZABETH A. NEIGEL

[redacted]

GENERAL BACKGROUND:

Experienced Mechanical Project Engineer with over ten years in water treatment systems design.

PRESENT RESPONSIBILITIES:

Coordinate, adminster, and control one or more projects with dollar values up to $2.5 million. Act as liaison between company, client and contractors on all matters pertaining to the project. Present design modifications and negotiate with client for cost revisions where warranted.

Initiate production schedule and maintain document control, advising client and company executives of progress. Coordinate all activities of design, manufacturing and procurement relating to the project.

Supervise and train designers in custom and industrial standard design methods. Check and approve specifications, drawings and selection of equipment.

SPECIAL PROJECTS:

Coordinated CAD system development; initiated CAD departmental and documentation standards; integrated CAD system usage with company application requirements.

EMPLOYMENT HISTORY:

L*A Water Treatment Corporation
A Member of the Portals Group
City of Industry, California
Equipment Manufacturer
Positions:
Mechanical Project Engineer 1979 to present
Designer 1976 to 1979

The Ralph M. Parsons Company
Pasadena, California
Architects and Engineers
Position:
Piping Drafter 1974 to 1976

EDUCATION:

Bachelor of Science in Business Administration
University of Redlands, Redlands, California
3.5 average - 4.0 basis
Additional course studies:
Physics, Calculus, Computer Science

PERSONAL:

U.S. citizen

Per telecon regarding Project manager Position

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L. A. WATER

WILLIAM J. PARSONS

[redacted]

XPERIENCE:

Extensive embracing responsible positions in Construction Management for various firms in Iran, Saudi Arabia, Indonesia and Muscat, Oman.

Construction Management has covered Design, Structures, Structures Contract Management Administration, Housing, Waste Treatment Plants, Highways, Construction Personnel Development and training which includes Safety Management for all of the aforementioned.

MPLOYMENT:

1975 - present
Advisor/Civil Engineer - Overseas Construction Management.
Full responsibility for Civil Engineering services that relate to the development of Housing, Airports, Highways, Utility, Waste Treatment Plants, Maintenance Mgmt. and the teaching of foreign nationals.
Thoroughly experienced in all phases of international operations, related planning construction and liaison.
Degree and extensive education in Civil Engineering, Construction Management and Business Administration. Fluent in Arabic and Indonesian.
Adept at market development, financial management techniques including PERT, Management by Objectives, computer applications, etc.

1970 - 1975
Resident Engineer - New York State Urban Development Corp.
Responsible for all phases of construction, Contract Administration, Housing Field Inspections, Utility, Waste Treatment Plants and heavy construction.

1965 - 1970
Senior Engineering Contract Administrator - Defense Contract Administration Services Region.
Complete charge of Engineering Contract Administration and administered construction contract documents from inception to completion of construction projects. Projects consisted of Housing, Airports, Schools, Hospitals, Dams, Bridges, Water Collection and Sewer Systems.

1959 - 1965
Resident Engineer - Federal Aviation Agency.
Airport development and construction as to Design, Structures, Runways and Administrative expertise such as contracts, specifications and drawings. Supervised a large staff of engineers and inspectors.

UCATION: A.S.CIVIL ENGINEERING, Mohawk Valley Tech Institute - 1957
B.S.CIVIL ENGINEERING, Jackson State University, Tenn. - 1959

Professional Seminars include but not limited to;
Construction Quality Assurance - 1974- New York State Urban Development Corp.
Construction Structural - 1975 - New York State Urban Development Corp.
Construction Safety - 1975 - New York State Urban Development Corp.
Concrete Seminar - 1984 - National Concrete Inst.
Building Design and Engineering - 1984 - National Academy of Sciences.

FILIATIONS: American Academy of Consultants
American Society of Civil Engineers - International Division
Member - Encore Consultants Registry

FERENCES: Furnished upon request

H. G. ROMINES

QUALITY ASSURANCE MANAGER

Education
Taft College - Industrial Engineering
Nondestructive Testing (NDT) Certification

Industrial X-Ray Technician	Level II
Ultrasonic Inspector	Level II
Liquid Penetrant Inspector	Level II
Magnetic Particle Inspector	Level II
Radiographer	Level II

Nationality: USA
Born: [redacted]

Language: English
L*AWT Employment: 7 years

Personal
Married.

Professional Societies
Instrument Society of America (ISA) and American Society of Nondestructive Testing (ASNT)

Experience
Quality Assurance Manager for L*A Water Treatment Corporation. Responsible for all operations regarding quality assurance, including purchase order review, physical testing, verification of specification compliance and document reviews.

Prior employment included nine years' service as General Manager and Quality Assurance Director for Sun-Ray Testing, Inc., a well known testing and quality surveillance company.

[redacted]

Home Address
[redacted]
(714) 337-7231 (office)

[redacted]
Height - 6'2"
Weight - 185
Marital Status- Married

Education: Stanford University, 1952, BSCE, Hydraulics Option
University of Southern California, 1959, MSCE, Sanitary Option

Registration: California, C 10900, 1956
Florida, P.E. 15314, 1970
Massachusetts, C 30016, 1980
Utah, C 5592, 1981

"Certified Professional Soil Erosion and Sediment Control Specialist" by the American Registry of Certified Professionals in Agronomy, Crops, and Soils, and by the Soil Conservation Society of America.

Recipient of "Soil Conservation Service 50th Anniversary Award" in July 1985 for work in erosion control.

Professional Memberships: American Society of Civil Engineers (Past Chairman, Sanitary Group, Los Angeles Section)

Water Pollution Control Federation
American Water Works Association
California Water Pollution Control Association
National Water Well Association
North American Lake Management Society
International Erosion Control Association
American Society of Agronomy

Work Experience:

1952-1954 United States Navy. Active duty as Deck Division Officer on attack cargo ship in Alaska, Korea, Japan, Vietnam.

1954-1955 United States Navy. Active Duty, Civil Engineering Corps. Assistant Public Works Officer at Oakland Naval Hospital with responsibilities for utilities and structures including coordination and supervision of maintenance, repairs, and new construction. Retired in 1964 from active participation in naval program with rank of Lieutenant Commander, USNR.

1955-1957 Daniel, Mann, Johnson & Mendenhall. As project engineer, had responsibility for the design of large storm drain facilities,

including basin hydrology studies, hydraulics, structures, routing, and right-of-way, and for overall civil engineering design for several large industrial complexes and missile test facilities.

1957-1960 Pomeroy and Associates. Vice President and Project Manager. Research Assistant to Dr. Richard Pomeroy. Designed and supervised construction of sewage treatment plant expansions for Ojai, California and Beaumont, California. Designed and supervised construction of completely new plants and sewerage systems for Poway, California and Palm Springs, California. Played an active role in the gathering, analysis, and interpretation of field information, leading to the publication of criteria and standards relative to the generation, build-up, and control of hydrogen sulfide in both gravity and pressure sewers. Was closely associated with the West Coast's leading authority on ocean outfall design and construction in a project to secure field data relative to currents, bottom profile and character, and subsequent data interpretation and application to actual design and construction. Performed a great deal of applied research into odor control at sewage pumping and treatment plants and devised many practical odor control measures.

1960-1970 Walker Process Equipment. Managed factory branch office of Walker Process Equipment Division of Chicago Bridge & Iron Company at Pasadena, California, designers and manufacturers of process equipment for the treatment of water, sewage, and industrial wastes. Was intimately involved in the conceptual phases, actual design, construction, and operation of well over 100 water, sewage, and industrial waste treatment projects ranging from the simplest to the most complex including industrial "turnkey" or unit responsibility type contracts in Southern California, Nevada, Arizona and Hawaii.

1970-1971 WED Enterprises. Project Engineer for design arm of Walt Disney Productions in charge of coordinating, planning and managing all utility and environmental system design for the Walt Disney World recreation complex in Florida, including construction and management. The system included water supply, treatment, storage, and distribution; sewage collection, pumping, treatment, effluent disposal, and reuse for golf course irrigation; 12-kV power distribution; high-temperature hot water and chilled water distribution; natural gas and compressed air distribution; telephone service; clarification of recreation waters and prevention of cultural eutrophication; pest and insect control and abatement; and solid waste management and disposal including the unique use of a vacuum system utilizing 20-inch diameter high-velocity pneumatic refuse collection lines from stations throughout the Theme Park area. Also project engineer responsible for design and construction of two (2) golf courses, and the Jungle Cruise Ride.

1971-1972 Perliter & Ingalsbe Consulting Engineers. Vice President and Director of Enviromental Engineering. Responsible for preparation of several sewerage master plans, one small sewage treat-

ment plant modification, and operational consulting. Served as operational consultant to Las Virgenes Municipal Water District, Calabasas, California on EPA sponsored pure oxygen research and demonstration project.

1972-1980 VTN Corporation. Vice President and Chief Sanitary Engineer. Responsible for all sanitary engineering marketing, and design and construction management of sewage treatment systems for Seal Beach, California; Aliso Water Management Agency, Laguna Beach, California; Bass Lake, California; San Bernardino, California; Victorville Sanitary District, California; Big Bear Lake, California; Irvine Ranch Water District, Irvine, California; Crescenta Valley County Water District, California; Vacaville, California; Lowell, Massachusetts; Lynn, Massachusetts; and Gloucester County Sewerage Authority, New Jersey.

Special consultant on the operation and maintenance of sewage treatment plants at Gloucester County Sewerage Authority, New Jersey, and the City of San Bernardino, California.

Dec. 1980 to Jan. 1982 S.O.C.I. Engineers, Inc., President. In responsible charge of the investigation and design of modifications and improvements at sewage treatment plants operated and maintained under contract by Sanitation & Operation Consultants, Inc. at Acapulco, Mexico; Auburn, California; Southampton, Bermuda; Colton, California; Pismo Beach, California; Rialto, California; Santa Margarita Water District, Mission Viejo, California; and S.E.R.R.A., Dana Point, California.

Responsible for operation of local branch of water and sewage testing laboratory.

Provided sewage treatment plant operational consulting services to Sanitation & Operation Counsultants, Inc.

Sept. 1980 to Present Ralph Wagner, Consulting Engineer, Inc., President. Located at Lake Arrowhead, the firm provides specialized consulting engineering services to a variety of governmental agencies and the private sector relative to water resources, water quality, and water rights. Design and supervise construction of water, sewerage, and drainage facilities. Provide consultation to the legal profession relative to construction contract disputes, professional liability, water quality, and erosion control, and serve as expert witness.

As permittee, formerly engaged in developing and completing two small hydroelectric projects, under preliminary permits granted by Federal Energy Regulatory Commission.

Serve as erosion and sediment control consultant to Arrowhead Lake Association; also as special consultant on water resources management, including water rights, and water quality

Author of comprehensive study of "The State of the Urbanized Forest Watershed" for the Lake Arrowhead Communities Forest Management Program.

Chairman of a County Ad Hoc Committee on Erosion and Sediment Control and principal author of the erosion and sediment control ordinance for the Lake Arrowhead Communities General Plan area.

Served as technical advisor and project engineer on an 80-acre recreational guest ranch development in the Running Springs area with respect to erosion control and water quality

Prepare erosion and sediment control plans for many clients for individual residential lots as well as larger scale developments.

Actively engaged in sampling, analysis, and interpretation of acid precipitation in the Lake Arrowhead area.

Routinely design and consult on the operation and maintenance of water and sewerage systems. Recognized as a practical authority in the control of odors in sewerage systems. Consult and author articles on water and sewer rate making processes.

Provide consulting services for site evaluations, assessments, and development of remedial action plans for cleanup and abatement of ground water contamination problems.

Local Affiliations:

Vice Chairman, California Regional Water Quality Control Board, Lahontan Region

Chairman, Zone 5 Advisory Commission, County Flood Control District

Chairman, County Ad Hoc Committee on Erosion and Sediment Control (including Tree Conservation)

Former Member, Lake Arrowhead Municipal Advisory Council

Former President, Mountains Community Hospital Foundation

Founder and Former President, Board of Directors, Lake Arrowhead Community Services District

Founder and Former President, Board of Directors, Arrowhead Lake Association.

Former President, Lake Arrowhead Property Owners Association

Former Member, Lake Arrowhead Incorporation Study Commitee

Member of Consulting Team on Lake Arrowhead Communities Urban Forest Management Plan

Member, former County Ad Hoc Slope Density Committee

Chairman, former Ad Hoc Committee to Develop Revised Budget for Lake Arrowhead Sanitation District

Founder, Giardia HOTLINE

Member, Giardia HELPLINE Committee

PARTIAL LIST OF ARTICLES, REPORTS AND PUBLICATIONS

AUTHORED BY RALPH WAGNER

General

"DAM Facts About Lake Arrowhead" (1st Ed. 1974; Rev.Ed. March 1980)

"The State of the Urbanized Forest Watershed" prepared for The Lake Arrowhead Communities Forest Management Program (8-27-82)

"Proposition 13 - 1982 Style" (10-82)

"Destratification and Thermal Inversion (Reservoir Turnover)" (10-3-79)

"Water and Sewer Rate Structures" (12-82)

"The Budget Making Process" (1-83)

"Water Rate Design for Fire Protection" (1-83)

"Water and Sewer Rate Structure Alternatives" (2-83)

"Waterless Sewage Disposal Systems" (1975)

"Infrastructure" (8-83)

"Our Breathing Sewers" (10-83)

" And 3 to Go" (12-83)

"What a Difference a Year Makes" (3-84)

"A Thoughtful Look at Year's Ending" (12-84)

Water Quality

"Significance of Coliform Concentrations in Selected Water Bodies" (1975)

"A Water Quality Testing Program for Lake Arrowhead" (1981)

Concerning Lake Arrowhead (1981-1983)

"The Quality of Lake Arrowhead Water"
"The Mineral Quality of Lake Arrowhead Water"
"Miscellaneous Qualities of Lake Arrowhead Water"
"The Organic Chemicals in Lake Arrowhead Water"
"What About Radioactivity in Lake Arrowhead Water"
"What are Trihalomethanes Doing in Lake Arrowhead Water?"
"Is Lake Arrowhead Water Naturally Corrosive?"
"Acid Rain"
"Lake Turnover and its Affect on Lake Water Quality"
"Water Quality - A Matter of Taste"
"Acid Precipitation at Lake Arrowhead"

"Big Bear Lake Water Quality Monitoring Program (1974, 1975, 1976)

Several news articles for local newspapers in 1982 on Giardia lamblia.

"Water Quality - A Matter of Taste" (5-83)

"Water Quality and Land Use" (1-85)

"Parts per Million" (3-85)

Water Conservation

"Water Conservation Techniques Each Family Can Employ" (1976)

"What Does a Water Leak Cost?" (2-78)

"Water Conservation = Wastewater Reduction" (9-83)

"Waste Reduction Makes Sense For All" (10-83)

"Tips on Wastewater Reduction" (10-83)

"It's Working" (10-83)

"Water (Not Food) for Thought" (3-84)

"A Bridge Over Receding Water" (8-84)

Lake Management

"Big Bear Lake Management Plan" (1974)

"Lake Restoration Plan for Big Bear Lake" (1985)

"Weed Abatement Plan for Big Bear Lake" (1975)

"Bay Lake Restoration Plan" for Walt Disney World, Orlando, Florida (1970)

"Lake Level Forecasts - Lake Arrowhead" (1976-1977)

"Lake Level Augmentation Program for Big Bear Lake" (1975)

"Let's Put Lake Level Into Perspective" (4-84)

Erosion and Sediment Control

"Proposed Sediment Control Measures for Village Cove" (11-21-82)

Three (3) Soil Loss Prediction reports on various water-courses in Lake Arrowhead drainage area (12-82 thru 2-83)

"Erosion and Sediment Control Plan" for Walt Disney World, Orlando, Florida (1970)

"The State of the Urbanized Forest Watershed" (8-27-82)

"Erosion: Its Causes and Cures" (8-84)

"Watch Your Dripline" (10-84)

"The Power of a Raindrop" (1985)

Eutrophication

"Eutrophication" (1976)

"The State of the Urbanized Forest Watershed" (8-27-82)

Hydraulic Engineering

"Lake Arrowhead Spillway" (12-31-81)

"Hydraulic Capacity of Lake Arrowhead Tower Outlet Works" (2-5-82)

"Maintaining Constant Water Levels in Waterways of Walt Disney World by Use of Automatic, Flotation Gates" (1970)

"Papoose Lake Small Hydroelectric Project" (1982)

"Lake Arrowhead Waste Water Hydroelectric Project" (1982)

"Sweetwater Ranch Hydroelectric Project" (1982)

"Let's Put Infiltration/Inflow Into Perspective" (4-83)

Giardia Lamblia

"Giardiasis: A Blessing in Disguise?" (6-85)

"Giardia: Enough to Make You Sick" (6-85)

"Water Treatment for the Removal of Giardia lamblia" (6-85)

"UBIQUITOUS Giardia" (7-85)

"Giardia HOTLINE Seminar" (7-85)

"Ridiculous" (7-85)

"Giardia HOTLINE Continues" ((8-85)

"Time for a Giardia Review (8-85)

"Time for a Change" (8-85)

Water Watch

A bi-weekly column in the Mountain News on a variety of subjects, all related, however, to water: clean, dirty, and storm.

LIST OF POTENTIAL MAJOR SUBCONTRACTORS

A. Elevated Storage Tanks

1. Pittsburgh Des Moines Steel, Fullerton, California
2. Chicago Bridge & Iron - NA CON, Fontana, California

B. Civil Contractors

1. Allam Sons, Cairo, Egypt
2. Bonian, Cairo, Egypt
3. ORASCOM, Cairo, Egypt
4. Modern Contractors, Cairo, Egypt
5. Egicon & Delma, Cairo, Egypt
6. Trimco Egypt, Cairo, Egypt

C. M&E Contractors

1. Kollaly, Cairo, Egypt
2. ORASCOM, Cairo, Egypt
3. Bonian, Cairo, Egypt
4. Hawari, Cairo, Egypt
5. Trimco Egypt, Cairo, Egypt

Note: Subcontractors underlined are those L*AWT has selected or is negotiating with.

D. Engineering

1. Stanley International (drawing review, site QC inventory control, etc.), Muscatine, Iowa
2. Badran & Associates (Egyptian civil and architectural engineering), Cairo, Egypt

E. Service Lines Leak Detection Survey

1. West Coast Leak Detectors, San Jose, California

2. Heath Consultants, Stoughton, Massachusetts

3. Leak Tek Inc., Murfreesboro, Tennessee

F. Sewer Lines Infiltration Survey

1. Empire Pipe Cleaning & Equipment Co., Inc., Anaheim, California

2. Pacific Sewer Maintenance Corp., Anaheim, California

3. J. Stephens, Riverside, California

4. L. Penunuri, Baldwin Park, California

G. Pipe Main Cleaning & Lining Demonstration Program

1. Raymond International of Delaware, Houston, Texas

2. Professional Piping Services, Inc., Land O' Lakes, Florida

3. Rodding Cleaning Services, San Leandro, California

H. Two-Year Maintenance and Training

1. Stanley International, Muscatine, Iowa

2. Modasco, Inc., Hinsdale, Illinois

3. L*A Water Treatment Corporation, City of Industry, California

4. I&CS Co., Newton, Pennsylvania

es Moines, Inc.

Office 2600 E. Nutwood Avenue Suite 750 P.O. Box 4216 Fullerton, CA 92634 714/871-1811

TELECOPY TRANSMITTAL COVER SHEET

DATE: May 5, 1988

PLEASE DELIVER THE FOLLOWING PAGES TO:

NAME: Mr. Allen Grunwald

THIS TELECOPY IS BEING SENT BY:

NAME: R.C. Robinson

NUMBER OF PAGES: 16 (INCLUDING COVER SHEET)

REMARKS:

Enclosed are selected pages from our current Annual Report.

Please note the following:

1) PDM was the first company to build a steel elevated water storage tank in 1893.

2) The Hydropillar® is a registered patent and trademark of Pitt-Des Moines, Inc.

3) We have approximately $14,000,000 in ready cash.

4) The elevated part of our business is approximately 25% of the total.

If you require any further information, please do not hesitate to call me at this office.

Very truly yours,

Robert C. Robinson

NEFAX SYSTEM III-SE (714) 871-9715

TO VERIFY: (714) 871-1811 (Dana)

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Nineteen Eighty Seven
Pitt-Des Moines, Inc.
Annual Report

Description of the Business Highlights

Description of the Business

Pitt-Des Moines, Inc. and its subsidiaries (hereinafter referred to as PDM® or the "Company") provide a wide range of heavy custom engineered products, structures and facilities for industrial, municipal and governmental customers on a worldwide basis. Business activity comprises design, engineering, fabrication and construction of these products. Materials used include steel, steel alloys and aluminum.

Highlights	*1987*	*1986*
Revenue from Completed Contracts	$276,283,817	$232,388,933
Income/(Loss) from Operations	(10,862,101)	(915,238)
Net income/(Loss)	(2,286,059)	693,365
Dividends Declared	-0-	-0-
Backlog (Uncompleted Contracts)	$254,718,000	$204,698,000
Working Capital	50,836,971	50,135,381
Stockholders' Equity	62,213,501	64,414,574
Per Share: Net Income/(Loss)	$ (.91)	$ .28
Dividends Declared	-0-	-0-
Book Value	24.35	25.22
Stockholders of Record at Year End	577	638
Employees at Year End	2,333	2,339

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BEST AVAILABLE COPY

To Our Stockholders

arch 4, 1988

1987 concluded a difficult period for the Company. While revenues increased to $276 million from $232 million 1986, a significant loss from operations was recognized. This resulted primarily from cost overruns on contracts ompleted during the year, reserves for anticipated cost overruns on contracts in progress, and provision for a plant losing.

At the same time, 1987 was a key year in setting the stage for the Company's future growth. On April 15, 1987, e Company acquired Chicago Steel Corporation, a structural steel fabricating company located in Melrose Park, inois. As a part of the acquisition, three key individuals from Chicago Steel, P. O. Elbert, W. W. McKee, and R. V. sica, joined PDM®. Messrs. Elbert, McKee and Jasica bring with them extensive experience in our industry. With em joining PDM® there is a renewed level of enthusiasm and optimism about the future.

The Company then was organized into the PDM® Plate Group, the PDM® Structural Group, and the existing DM® Service Centers. Mr. Elbert was elected President of the newly established PDM® Structural Group with r. Jasica as Executive Vice President. Mr. McKee was elected President of the PDM® Plate Group. At the ebruary 11, 1988 Meeting of the Board of Directors, Mr. E. Halecky was elected President of the PDM® Service enters. This reorganization, along with decentralization and streamlining, is making our operations less costly and ore efficient.

Other significant steps were taken to return the Company to profitability. We reevaluated the majority of our siness units and, as a result, the Company has:

- Disposed of one of its wholly-owned domestic construction subsidiaries, Pittsburgh-Des Moines Corporation;
- Announced the permanent closing of its Neville Island fabrication facility;
- Entered into an agreement to lease a modern fabrication facility in Stockton, California. This plant will enable PDM® to capitalize on the western structural steel market. Our recent award for the fabrication and erection of a fifty-two story office building in Los Angeles, California is indicative of our ability to serve this market;
- Curtailed its operation in Australia. PDM® plans to participate in the international market on a project-by-project basis with emphasis on consulting and license agreements;
- Settled various outstanding claims and legal proceedings against the Company arising from the normal course of business, with no adverse effect on the results of operations.

As discussed in previous reports to shareholders, the litigation initiated against PDM® by the Washington Public wer Supply System (WPPSS) is being appealed by WPPSS as a result of a decision in our favor.

We will continue to evaluate our business units, expanding the profitable segments and disposing of or idating the non-profitable.

For the fourth quarter of 1987, a profit from operations of $2.0 million was recognized after providing a $2.8 ion reserve for anticipated cost overruns on contracts in progress. Particularly encouraging is the domestic ndard plate contracting activity. The PDM® Service Centers continue to perform well with improved 1987 results excellent 1988 prospects.

PDM®'s potential for growth has improved dramatically. New orders booked in 1987 were at record levels, and entered 1988 with a backlog of $255 million in uncompleted contracts. Management expects that 1988 will w a strong improvement over this year.

Customer satisfaction is one of our primary goals. Quality workmanship, with on-time delivery, at a competitive e, is necessary for the Company to be a leader in our industry. These essential ingredients are of primary cern to our senior management team.

We wish to express our appreciation to our employees for their understanding of our evaluation process during past year and their devotion to PDM®. The capability and dedication of our people is of the utmost importance e success of our business.

Sincerely,

W. R. Jackson
Chairman
Board of Directors

J. H. Long
President and Treasurer

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Financial

TOCK PRICES—PDM's common stock is traded on the merican Stock Exchange (symbol PitDsm). The following bles show the stock price range and cash dividends eclared during 1987 and 1986. There were 2,554,518 hares outstanding as of March 4, 1988.

	1987		
Quarter Ended	Stock Prices High	Stock Prices Low	Cash Dividends Declared
arch 31	21¾	17½	-0-
ne 30	24½	21¼	-0-
pt. 30	24¼	21¼	-0-
c. 31	25	17	-0-

	1986		
Quarter Ended	Stock Prices High	Stock Prices Low	Cash Dividends Declared
rch 31	19¾	15¾	-0-
e 30	19⅞	17½	-0-
pt. 30	21¼	18⅝	-0-
c. 31	20¼	17	-0-

TE. Refer to "Liquidity and Capital Resources" section of nagement's Discussion and Analysis" and "Long-Term gations" note accompanying the consolidated financial ements.

ULTS OF OPERATIONS—A loss from operations of 9 million was primarily the result of cost overruns on racts completed during the year, reserves for anticid cost overruns on contracts in progress, and a pro- n for a plant closing. This loss when combined with income of $7.1 million, resulted in a pre-tax loss of million.

uring 1987, PDM acquired Chicago Steel Corpora- "Chicago Steel"). This acquisition was accounted for pooling of interests and, accordingly, the consolidated s of operations for PDM include Chicago Steel as nuary 1, 1987. In addition, the Company sold Pitts- -Des Moines Corporation, a wholly-owned domestic uction subsidiary, to EAAK, Inc. Although the Com- sold the stock of Pittsburgh-Des Moines Corpora- he agreement entered into specified that the con- in progress at the date of closing would be rged by EAAK, Inc. on behalf of PDM. Therefore, ancial position and results of operations for the ny include the ongoing activities associated with mpletion of these contracts.

986, the Company obtained controlling interest in corporated. This acquisition was accounted for as hase and the results of operations have been con- ed with the Company for 1987 and 1986.

Revenues for 1987 were 18.9% above 1986 and 18.3% above 1985 levels. Approximately 7.0% and 7.4% of the 1987 revenues are related to Chicago Steel and CVI, respectively. Revenue from completed contracts included approximately $.3 million, $.3 million, and $3.3 million for 1987, 1986, and 1985, respectively, received in settlement of certain claims related to contracts which had been closed, and related costs recognized in prior years.

In 1987, new bookings aggregated $328 million compared to $254 million and $272 million for 1986 and 1985, respectively. Approximately 6.0% of the bookings for 1987 are attributed to the acquisition of Chicago Steel.

Total selling, general and administration costs as a percentage of revenue decreased slightly from 1986 and 1985 levels as management continued to pursue various cost reduction efforts. Idle facility costs included in selling, general and administration expenses in 1987 totalled $68,000 compared to approximately $223,000 in 1986 and $35,000 in 1985.

During 1987, permanently and temporarily closed facilities represented about 3.4% of the Company's manufacturing capacity, compared to 2.0% and 5.0% in 1986 and 1985, respectively. Utilization of plant capacity remains level in comparison to prior years. During 1987, the Company permanently closed the Sacramento fabrication facility and temporarily closed the Baltimore facility. The Company entered into an agreement to lease a structural fabrication facility in Stockton, California. The Company announced its intention to permanently close the Neville Island fabrication facility in 1988. Accordingly, a $2.2 million provision for plant shutdown costs was recognized in 1987.

Interest income decreased in 1987 due to a lower level of invested funds. Interest expense increased approximately $500,000 resulting from the acquisition of Chicago Steel. A gain of approximately $7.3 million was realized on the sale of foreign marketable equity securities. In 1987, PDM wrote-off its investment in PDM Saudi Arabia Ltd. totalling approximately $1.3 million. In 1986 PDM wrote-off its remaining investment in its Mexican affiliate.

The effective income tax rate for 1987 was 40% as compared to an effective income tax rate of 64% in 1986 and an effective income tax rate of 21% in 1985. A reconciliation of reported income taxes (credits) to that based on the statutory federal income tax rate is included in the "Income Taxes" note included in the notes to the consolidated financial statements.

The Tax Reform Act of 1986 provides for a reduction in corporate income tax rates beginning July 1, 1987 resulting in an effective tax rate of 40% in 1987 and 34% in succeeding years. The current year's refundable federal income taxes were decreased by approximately $1 million due to changes in the method of accounting for contracts

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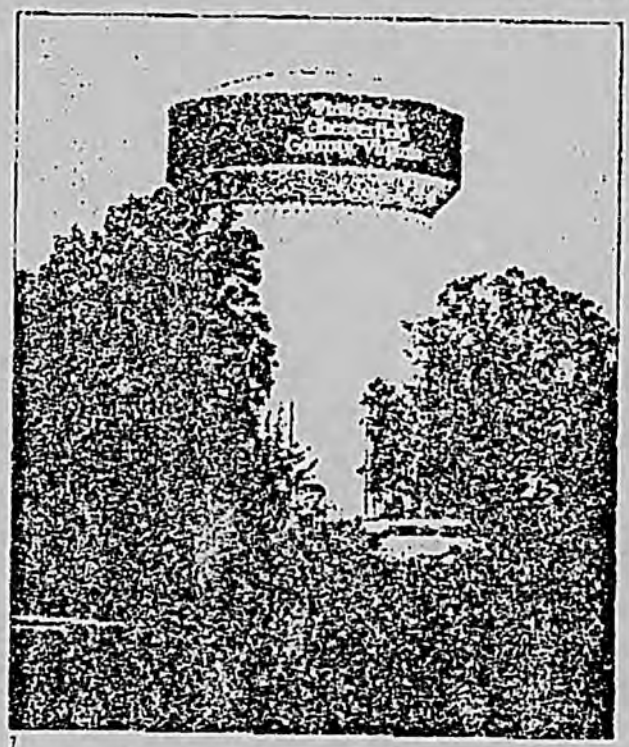
Management's Discussion and Analysis, Review of Markets, Summary of Operations, and Financial Comments

PDM® PLATE GROUP—The PDM® Plate Group, consisting of three profit center divisions—Standard Products, Technical Products & Services, and International—was formed in 1987.

The Standard Products Division includes municipal elevated and flat bottom water storage facilities, and all industrial design and construction of processing, refining and storage facilities.

PDM® continues to be regarded as a world leader in the design and construction of water storage tanks. Sales volume in 1987 increased over 1986 levels and the market potential for water storage facilities is anticipated to be good in 1988.

Continuing low oil prices depressed sales in 1987 for industrial processing, refining and storage facilities. A major turnaround is not expected in this market in 1988. Despite low crude oil pricing, sales above 1987 levels are



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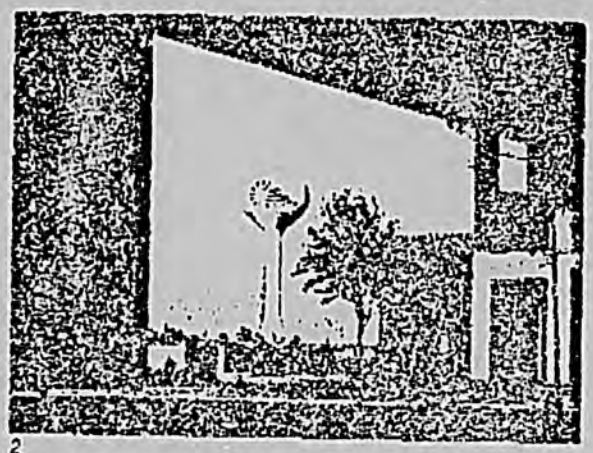

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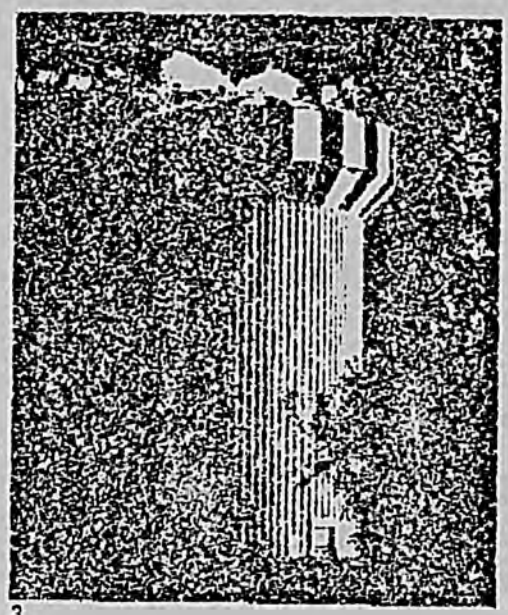

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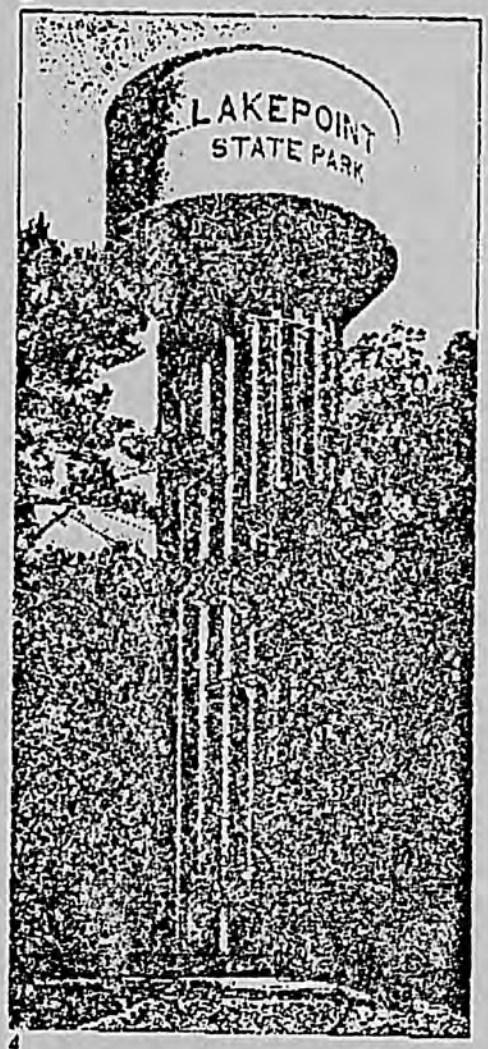

4

1. Hydropillar
2 million gallons
Chesterfield County, Virginia

2. Pedestal Sphere
500,000 gallons
Missouri City, Texas

3. Hydropillar
100,000 gallons
Eufaula, Alabama

4. Hydropillar
3 million gallons
Montgomery, Alabama

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Financial Data

Year Selected Financial Data	1987	1986	1985	1984	1983
		(Thousands of dollars, except per share data)			
evenue from Completed Contracts	$276,284	$232,399	$232,600	$320,218	$238,959
et Income/(Loss)	(2,286)	694	(479)	590	(4,089)
tal Assets	145,144	151,347	128,092	136,185	157,685
ong-Term Obligations	19,491	20,328	10,782	11,865	13,662
edeemable Preferred Stock of Consolidated Subsidiary	-0-	1,300	-0-	-0-	-0-
er Share					
et Income/(Loss)	$ (.91)	$ .28	$ (.19)	$ .23	$(1.65)
vidends Declared	-0-	-0-	.10	.40	.40
mployees					
Year-End	2,333	2,339	1,776	2,039	2,513

OTE: Refer to Acquisitions, Pensions, Long-Term Obligations, and Claims and Contingencies notes accompanying the onsolidated financial statements.

Year Quarterly Results of Operations

he following is a tabulation of the quarterly results of operations for the two years ended December 31, 1987.

	1987			
	Three Months Ended			
	Mar. 31	June 30	Sept. 30	Dec. 31
	(Thousands of dollars, except per share data)			
evenue from completed contracts	$ 33,579[1]	$70,380	$68,026	$104,299
ost of completed contracts	32,170[1]	64,803	61,590	95,417[4]
come/(loss) from operations	(6,532)[1]	(2,578)	(3,774)[3]	2,002[4]
et income/(loss)	(4,138)[1]	521[2]	(1,913)[3]	3,244[4][5][6]
et income/(loss) per share	(1.70)[1]	.20[2]	(.76)[3]	1.26[4][5][6]

	1986			
	Three Months Ended			
	Mar. 31	June 30	Sept. 30	Dec. 31
	(Thousands of dollars, except per share data)			
evenue from completed contracts	$62,166	$63,819	$50,978	$ 85,426
st of completed contracts	29,574	57,055	44,993	73,488
come/(loss) from operations	(4,069)	(793)	(937)	4,884
t income/(loss)	(2,022)	(489)	(532)	3,736
t income/(loss) per share	(.83)	(.20)	(.22)	1.53

Restated to include the acquisition of Chicago Steel Corporation.
Other income includes a gain on the sale of foreign marketable equity securities of $2.9 million.
Loss from operations includes a $2.5 million provision related to the future closing of the Neville Island fabrication facility.
Cost of completed contracts includes $2.8 million provided for anticipated cost overruns on contracts in progress.
Other expense includes a writedown in the investment in FDM Saudi Arabia Ltd. (an affiliate) of $1.3 million and a writedown of the CVI goodwill of $.5 million.
Other income includes a gain on the sale of foreign marketable equity securities of $3.4 million.

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as a result of the enactment of the Tax Reform Act of 1986. The Company has not adopted Statement of Financial Accounting Standards No. 96, "Accounting for Income Taxes", however, the adoption of Statement 96 is not expected to have an adverse impact on the Company's financial position.

LIQUIDITY AND CAPITAL RESOURCES—At December 31, 1987, the Company's cash and marketable securities position totalled $14.3 million, a decrease of $8.5 million from the previous year's balance. Cash requirements for continuous operations of the Company were provided by internally available funds, particularly cash reserves and the sale of long-term investments. The net retirement of $7.5 million in total debt represented the most significant nonoperating use of cash in 1987.

Operationally, cash requirements continued to be affected by the product mix, primarily reflecting a rapid increase in sales and production of fabricated steel for bridge construction and for water storage vessels. During 1987, backlogs increased from $29.0 million to $53.2 million for bridge activity while growing from $69.3 million to $92.1 million for water storage.

Payment terms for these product classes are defined by statute in each state regulating municipal and department of transportation contracting activity and generally provide for payments only after the completion of fabrication or erection. At December 31, 1987, approximately $15.0 million was invested in bridge and $15.1 million in water storage contracts in progress. In addition to product mix and contractual progress payment terms, other factors affecting sources and uses of funds include the level and progress of long-term contracts, actual payment performance by customers, and interest rates.

During 1987, the Company's long-term debt decreased $.8 million over the level reported in 1986, even though December 31, 1987 figures included a net addition of $2.7 million for debt assumed with the acquisition of Chicago Steel and a $.3 million increase in liabilities under a deferred compensation program. During 1987, the Company made payments of $500,000 representing the fifth installment on $12.0 million in senior notes the Company placed with an insurance company in 1979 and additional net payments of $.6 million, $1.3 million, and $1.2 million relating to CVI's Industrial Development Revenue Bond, term loan, and term loan and revolving credit, respectively. The maximum limit of the revolving credit facility, partially secured by the shares of Barnebey-Cheney, a wholly-owned subsidiary of CVI, was reduced from $5.0 million to $3.5 million when Barnebey-Cheney was sold. At December 31, 1987, $1.1 million additional borrowing capacity was available under the CVI revolving line of credit.

Payments of $.5 million on a promissory note and $.1 million on a term loan provided a reduction of Chicago Steel's $6.8 million year-end 1986 short-term debt prior to an April 1987 restructuring of that debt. At the time of its acquisition by the Company, the promissory note had been replaced by an expanded revolving credit and term loan agreement with $2.8 million outstanding under the revolver and $3.4 million outstanding under the term loan. After the acquisition, payments throughout 1987 of $2.8 million provided funding for the scheduled retirement of the revolver in November. An additional $.2 million was provided to reduce the term loan portion of the agreement. The term loan, carried as short-term debt throughout most of 1987, was rescheduled to mature in 1989 and reclassified as long-term debt. The Company's debt agreement for the senior notes does include separate restrictions relating to the payment of dividends and maintenance of working capital. As of December 31, 1987, approximately $522,000 of retained earnings was free from restrictions under the agreement.

The Company's capital resource flexibility was maintained at year end through the availability of a domestic $5.5 million short-term bank line of credit. The Company is currently pursuing greater levels of credit through negotiations with various banking institutions.

IMPACT OF INFLATION AND CHANGING PRICES—The effect of inflation has decreased significantly over the past several years as material, labor and equipment costs have shown only moderate increases.

Margins on new sales continued to increase, however, they remain below historical averages. Although sales volume expanded for certain markets, such as water storage and bridges, margins remained tight due to excess capacity within the fabrication and construction industry.

The Company uses the LIFO method of accounting for substantially all domestic inventories, thereby approximating current costs in the income statement and reflecting the impact of changing prices on current operating results.

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Contracts Summary

3-Year Contracts Summary	1987	1986	1985
The following tables summarize, by product class, the new and completed contracts for the last three years			
New Orders			
Class Elevated TKS			
Water Storage Facilities	26.9%	29.1%	23.7%
Process, Refining and Storage Facilities	9.6	7.9	15.0
Low Temperature and Cryogenic Facilities	4.6	4.3	.5
High Tech Facilities	6.2	11.1	9.6
Bridges and Structural Products	33.2	21.3	19.8
Miscellaneous Plate and Other	.8	2.1	4.6
Service Centers and Culvert Pipe	18.7	24.2	26.8
	100.0%	100.0%	100.0%
Completed Orders			
Class			
Water Storage Facilities	22.3%	22.0%	23.4%
Process, Refining and Storage Facilities	9.6	6.8	20.7
Low Temperature and Cryogenic Facilities	5.5	2.7	3.3
High Tech Facilities	13.5	20.9	10.2
Bridges and Structural Products	23.6	18.6	13.6
Miscellaneous Plate and Other	3.1	3.8	4.2
Service Centers and Culvert Pipe	22.4	25.2	24.6
	100.0%	100.0%	100.0%

Backlog--Uncompleted Contracts

The Company had a backlog of uncompleted contracts as of December 31, 1987 of $254,718,000 compared to $204,698,000 at the end of 1986. Approximately 23.1% of the backlog as of December 31, 1987 is not expected to be completed during the calendar year 1988.

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Consolidated Statements

Assets	December 31 1987	1986
Current Assets		
Cash	$ 4,355,593	$ 3,635,178
Marketable securities	9,927,878	18,982,114
Accounts receivable including contract retentions (less allowances: 1987—$953,000; 1986—$1,052,920)	58,957,054	54,573,538
Inventories	15,141,234	13,010,483
Contracts in progress with costs exceeding related billings:		
Costs	38,426,773	41,201,742
Billings (deduction)	(20,801,741)	(23,676,089)
Deferred income tax benefits	3,546,515	3,405,568
Refundable income taxes	1,023,833	-0-
Prepaid expenses	1,428,019	509,360
Total Current Assets	112,105,158	111,841,894
Investments and Other Assets	3,915,817	5,162,369
Property, Plant and Equipment		
Land	5,521,267	6,098,240
Buildings	28,599,095	29,458,971
Machinery and equipment	58,122,717	57,227,584
	90,243,079	92,784,795
Allowances for depreciation (deduction)	(61,120,462)	(58,442,280)
Net Property, Plant and Equipment	29,122,617	34,342,515
	$145,143,592	$151,346,778

See notes to consolidated financial statements.

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Financial Condition

Liabilities and Stockholders' Equity	December 31 1987	1986
Current Liabilities		
Notes payable to banks	$ -0-	$ 6,886,696
Accounts payable	24,720,502	17,375,708
Accrued payrolls and payroll taxes	5,307,693	5,458,692
Other accrued expenses	7,216,546	8,277,956
Contracts in progress with billings exceeding related costs:		
Billings	42,024,286	36,319,945
Costs (deduction)	(23,665,277)	(20,973,154)
Income taxes	1,753,515	3,998,317
Current portion of long-term obligations	2,630,920	2,362,343
Redeemable preferred stock of consolidated subsidiary	1,300,000	-0-
Total Current Liabilities	61,268,187	61,706,513
Long-Term Obligations		
Debt	19,450,949	20,288,471
Capital leases	40,297	39,255
	19,491,246	20,327,726
Deferred Income Taxes	895,796	1,602,769
Minority Interest	1,274,362	1,995,196
Redeemable Preferred Stock of Consolidated Subsidiary	-0-	1,300,000
Stockholders' Equity		
Common Stock—no par value		
Authorized—5,000,000 shares		
Issued —2,982,156 shares at stated value of $11.25 per share (including shares in treasury: 1987—427,638; 1986—428,480)	33,549,255	33,549,255
Additional Capital	152,074	152,074
Retained earnings	35,388,016	37,681,750
Cumulative translation adjustments (deduction)	68,083	(10,904)
	69,157,428	71,372,175
Cost of treasury stock (deduction)	(6,943,927)	(6,957,601)
Total Stockholders' Equity	62,213,501	64,414,574
	$145,143,592	$151,346,778

See notes to consolidated financial statements.

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Report of Ernst & Whinney, Independent Auditors

To the Stockholders
Pitt-Des Moines, Inc
Pittsburgh, Pa.

We have examined the consolidated statements of financial condition of Pitt-Des Moines, Inc. and subsidiaries as of December 31, 1987 and 1986, and the related consolidated statements of income, stockholders' equity, and changes in financial position for each of the three years in the period ended December 31, 1987. Our examinations were 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.

As discussed in the notes to the consolidated financial statements, the complaint brought against the Company by Washington Public Power Supply System (WPPSS) was dismissed in a 1986 court action, following a jury verdict favorable to the Company. However, the ultimate outcome of this matter is still uncertain and cannot be presently determined, since WPPSS has filed a notice of appeal to the United States Court of Appeals.

In our opinion, subject to the effects on the financial statements of such adjustments, if any, as might have been required had the outcome of the uncertainty referred to in the preceding paragraph been known, the financial statements referred to above present fairly the consolidated financial position of Pitt-Des Moines, Inc. and subsidiaries at December 31, 1987 and 1986; and the consolidated results of their operations and changes in their financial position for each of the three years in the period ended December 31, 1987, in conformity with generally accepted accounting principles consistently applied during the period except for the change, with which we concur, in the method of accounting for pensions as described in the Pensions note to the consolidated financial statements.

Pittsburgh, Pa.
March 4, 1988

Ernst & Whinney

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x: 966-434

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CR 38171

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905/565-0255

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714/966-0731

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515/244-6000

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PDM STROCAL, Inc.

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WASHINGTON CULVERT
P.O. Box 729
Tenino, Washington 98589
206/264-5605

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right 1988 Pitt-Des Moines, Inc.

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We have completed 90 Hydropillars since 1983 in the 1,000M GAL size and above!

HYDROPILLAR EXPERIENCE LIST

3/88

LOCATION	DESCRIPTION		OWNER	YEAR COMP
FAIRFAX, VA	2,000 MG/185' LCL ON 2,300 MG STANDPIPE		COUNTY OF FAIRFAX	1985
MONTGOMERY, AL	3,000 MG/163.5'	HCL	WATER & SEWER BOARD	1989
CARROLLTON, TX	3,000 MG/122'	LCL	CITY	1988
WASHINGTON TWP, NJ	3,000 MG/94'	HCL	TOWNSHIP MUA	1988
AUSTIN, TX	3,000 MG/65.5'	LCL	CITY	1987
MONTGOMERY, AL	3,000 MG/140'	LCL	CITY	1986
AUSTIN, TX	3,000 MG/162'	LCL	CITY	1984
ARLINGTON, TX	2,500 MG/100'	LCL	CITY	1984
IRVING, TX	2,500 MG/85'	LCL	CITY	1980
COLUMBUS, OH	2,000 MG/94.5'	LCL	CITY	1988
PEACHTREE CITY, GA	2,000 MG/136'	HCL	BOARD OF COMMISSIONERS	1988
HENRICO CO, VA	2,000 MG/101'	HCL	COUNTY	1988
DUBLIN, OH	2,000 MG/161.5'	HCL	VILLAGE	1987
MOBILE, AL	2,000 MG/144.5'	HCL	WATER & SEWER BOARD	1987
ALLEN, TX	2,000 MG/100'	LCL	CITY	1987
COLUMBUS, MS	2,000 MG/156'	HCL	CITY	1987
BROWNSVILLE, TX	2,000 MG/100'	LCL	BROWNSVILLE PUBLIC UTILITIES	1987
CULLMAN, AL	2,000 MG/156'	HCL	CITY	1987
AUSTIN, TX	2,000 MG/69.5'	LCL	CIRCLE C M.U.D.	1987
DUBLIN, OH	2,000 MG/138.6'	HCL	CITY OF COLUMBUS	1987
DEKALB, IL	2,000 MG/129'	HCL	CITY	1987
DEKALB, IL	2,000 MG/148'	HCL	CITY	1987
MOBILE, AL	2,000 MG/107.5'	LCL	CITY	1987
DOLTON, IL	2,000 MG/70'	LCL	VILLAGE	1987
GURNEE, IL	2,000 MG/100'	LCL	VILLAGE	1987
BAYTOWN, TX	2,000 MG/88.6'	LCL	CITY	1986
HOUSTON, TX	2,000 MG/108'	LCL	CITY	1986
CAMDEN, NJ	2,000 MG/74'	LCL	CITY	1985
MORAIN, OH	2,000 MG/87'	LCL	MONTGOMERY COUNTY	1985
CHESTERFIELD, VA	2,000 MG/89'	LCL	CHESTERFIELD COUNTY	1985
COLUMBUS, OH	2,000 MG/65.5'	LCL	CITY	1985
COLUMBUS, OH	2,000 MG/91.5'	LCL	CITY	1984
CULLMAN, AL	2,000 MG/123'	LCL	CITY	1984
COLLEGE STATION, TX	2,000 MG/153'	LCL	WHALEN CORP.	1984
EULESS, TX	2,000 MG/116'	LCL	CITY	1984
HUNTSVILLE, TX	2,000 MG/77.3'	LCL	CITY	1984
MAPLE GROVE, MN	2,000 MG/116'	LCL	CITY	1983
WESTCHESTER, IL	2,000 MG/82'-6	LCL	CITY	1982
COLUMBUS, OH	2,000 MG/96.25'	LCL	CITY	1982
EVESHAM TWP, NJ	2,000 MG/129'-9	LCL	EVESHAM TWP.	1982
TULLAHOMA, TN	2,000 MG/110'	LCL	CITY	1982
CHESTERFIELD, VA	2,000 MG/117.2'	LCL	CHESTERFIELD COUNTY	1982
MESQUITE, TX	2,000 MG/110'	LCL	CITY	1982
BOSSIER, LA	2,000 MG/130.9'	LCL	CITY	1982

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HYDROPILLAR EXPERIENCE LIST

3/88

LOCATION	DESCRIPTION		OWNER	YEAR COMP
HALTOM CITY, TX	2,000 MG/94'	LCL	CITY	1981
PLANO, TX	2,000 MG/88'	LCL	CITY	1981
EL PASO, TX	2,000 MG/90'	LCL	EL PASO WATER UTILITY	1980
ALBANY, GA	2,000 MG/95'	LCL	WATER, GAS & LIGHT COMMISSION	1980
PLANO, TX	2,000 MG/129'	LCL	CITY	1980
MENDOTA HTS., MN	2,000 MG/138'	LCL	CITY	1980
FORT DODGE, IA	2,000 MG/26'	LCL	CITY	1980
COLUMBUS, OH	2,000 MG/93.5'	LCL	CITY	1976
COLUMBUS, OH	2,000 MG/85.5'	LCL	CITY	1975
COLLEGE STA., TX	2,000 MG/130'	LCL	TEXAS A & M UNIVERSITY	1974
RICHMOND, VA	2,000 MG/71.5'	LCL	CITY	1973
FREEMONT, OH	2,000 MG/107'-6	LCL	CITY	1970
COLUMBUS, OH	2,000 MG/94'	LCL	CITY	1970
COLUMBUS, OH	2,000 MG/91'-6	LCL	CITY	1968
PENN HILLS, PA	2,000 MG/84'	LCL	WILKINSBURG-PENN JT.WATER AUTH.	1968
COLUMBUS, OH	2,000 MG/65.5'	LCL	CITY	1968
ADDISON, IL	1,500 MG/80.5'	LCL	VILLAGE	1988
KUTZTOWN, PA	1,500 MG/148'	HCL	KUTZTOWN UNIV.	1988
GREER, SC	1,500 MG/162'	HCL	COMMISSION OF PUBLIC WORKS	1988
AMHERST, NY	1,500 MG/162'	HCL	ERIE COUNTY	1987
CATONSVILLE, MD	1,500 MG/125'	HCL	BALTIMORE COUNTY	1987
ST. PAUL, MN	1,500 MG/151'10"	HCL	CITY	1987
COPPELL, TX	1,500 MG/114'	LCL	CITY	1986
ROUND ROCK, TX	1,500 MG/70'	LCL	THE BILL MILBURN COMPANY	1986
OAKDALE, MN	1,500 MG/116'	LCL	CITY	1985
DUNCANVILLE, TX	1,500 MG/96'	LCL	CITY	1985
ERIE, PA	1,500 MG/43'-8	LCL	CITY	1985
FT. WAYNE, IN	1,500 MG/105'	LCL	CITY	1985
FAIRFIELD, OH	1,500 MG/80.5'	LCL	CITY	1984
WOODRIDGE, IL	1,500 MG/41'	LCL	VILLAGE	1984
SHOREVIEW, MN	1,500 MG/144'	LCL	CITY	1983
WHEELING, IL	1,500 MG/96'	LCL	VILLAGE	1983
SMYRNA, TN	1,500 MG/45'	LCL	CITY	1983
KALAMAZOO, MI	1,500 MG/70'-6	LCL	CITY	1982
SCOTTSBLUFF, NEB	1,500 MG/83'-92'	LCL	CITY	1982
CARROLLTON, TX	1,500 MG/89'	LCL	CITY	1981
KEARNY, NE	1,500 MG/55'	LCL	CITY	1980
NO. CANTON, OH	1,500 MG/100'	LCL	CITY	1980
SHAKOPEE, MN	1,500 MG/120'-6	LCL	CITY	1980
BROADVIEW, IL	1,500 MG/96'	LCL	VILLAGE	1980
EAST BRUNSWICK, NJ	1,500 MG/76'	LCL	TOWNSHIP	1979
McPHERSON, KS	1,500 MG/81'	LCL	CITY	1979
WESTERVILLE, OH	1,500 MG/91.5'	LCL	CITY	1979
LITTLE CANADA, MN	1,500 MG/127'-6	LCL	CITY	1978
MAPLEWOOD, MN	1,500 MG/64'-14'	LCL	CITY	1978
AUROPA, IL	1,500 MG/76.5	LCL	CITY	1976
VALHALLA, NY	1,500 MG/80'	LCL	COUNTY OF WESTCHESTER	1975

HYDROPILLAR EXPERIENCE LIST

3/88

LOCATION	DESCRIPTION		OWNER	YEAR COMP
NORMAN, OK	1,500 MG/81'-7	LCL	CITY	1975
ST. CLOUD, MN	1,500 MG/37'-6	LCL	CITY	1974
MAPLE GROVE, MN	1,500 MG/97'-6	LCL	VILLAGE	1974
BROOKLYN CENTER, MN	1,500 MG/121'	LCL	CITY	1974
SHOREVIEW, MN	1,500 MG/96'-6	LCL	VILLAGE	1974
TULSA, OK	1,500 MG/136'	LCL	CITY	1973
BLOOMINGTON, MN	1,500 MG/58'	LCL	CITY	1972
FARMER'S BRANCH, TX	1,500 MG/115'-6	LCL	CITY	1970
CEDAR FALLS, IA	1,500 MG/70'-6	LCL	CITY	1969
NEW HOPE, MN	1,500 MG/84'-6	LCL	VILLAGE	1968
PISCAH, OH	1,000 MG/58.5'	HCL	BUTLER COUNTY	1988
DACONO, CO	1,000 MG/130'	LCL	CITY	1988
BILOXI, MS	1,000 MG/165'	HCL	CITY	1988
TIPP CITY, OH	1,000 MG/121'	HCL	CITY	1988
APPLETON, WI	1,000 MG/91'	LCL	CITY	1988
MARSHALL, MN	1,000 MG/100'	LCL	MARSHALL MUN. UTIL.	1988
MONROE TWP, NJ	1,000 MG/84'	LCL	TOWNSHIP MUA	1988
MAYSLANDING, NJ	1,000 MG/102.5'	LCL	HAMILTON TWP MUA	1988
ZANESVILLE, OH	1,000 MG/64'	LCL	CITY	1988
PRIOR LAKE, MN	1,000 MG/96.5'	LCL	CITY	1988
MAPLEWOOD, MN	1,000 MG/87.5'	LCL	CITY	1987
SHIPPENSBURG, PA	1,000 MG/100'	LCL	SHIPPENBURG U. PA	1987
ARDEN HILLS, MN	1,000 MG/101'	LCL	CITY	1987
WICHITA FALLS, TX	1,000 MG/134'	HCL	CITY	1987
OAK MEADOWS, FL	1,000 MG/95'	LCL	ORANGE COUNTY	1986
DALE CITY, VA	1,000 MG/66'	LCL	VA-AMERICAN WATER CO.	1986
BOWLING GREEN, OH	1,000 MG/144'-6	HCL	CITY	1986
GRAPEVINE, TX	1,000 MG/137'	LCL	CITY	1986
ELK RIVER, MN	1,000 MG/43'	LCL	CITY	1986
YONKERS, NY	1,000 MG/116'	LCL	CITY	1986
ST. CHARLES, IL	1,000 MG/72'	LCL	CITY	1986
ERIE, PA	1,000 MG/70.1'	LCL	CITY	1985
OWENSBORO, KY	1,000 MG/101'	LCL	CITY	1985
ORLANDO, FL	1,000 MG/94'	LCL	ORANGE COUNTY	1985
MT. LAUREL, NJ	1,000 MG/73'	LCL	CITY	1985
WHITE BEAR LAKE, MN	1,000 MG/105'	LCL	CITY	1985
WHEELING, IL	1,000 MG/96.5'	LCL	VILLAGE	1984
HIGH RIDGE, MO	1,000 MG/55'	LCL	PUB. WATER SUPPLY DIST. #2	1984
MARS, PA	1,000 MG/88'	LCL	CRANBERRY TWP.	1984
CHAMPLAIN, MN	1,000 MG/107'	LCL	CITY	1984
TALLAHASSEE, FL	1,000 MG/165'	LCL	CITY	1984
KERNERSVILLE, NC	1,000 MG/71'	LCL	TOWN	1984
IRVING, TX	1,000 MG/126'	LCL	CITY	1984
LAKEHURST, NJ	1,000 MG/125'	LCL	MANCHESTER TWP.	1984
PERU, IL	1,000 MG/116'	LCL	CITY	1983
THE WOODLANDS, TX	1,000 MG/100'	LCL	THE WOODLANDS DEVELOPMENT CORP.	1983
RALEIGH, NC	1,000 MG/87'	LCL	CITY	1983

CLIVE PLANT
Clive, Iowa

Open Area Under Crane	98,400 sq. ft.
Plant Area Under Crane	145,950 sq. ft.
Other Plant Area	12,000 sq. ft.
Total Plant Area	256,350 sq. ft.

Certifications:

ASME - U Stamp, U2 Stamp
AISC - Category I, II, III
National Board - R Stamp
Factory Mutual - Fire Protection Tanks

Cranes:

(1) Overhead Crane, Bldg. A, cab and radio control, 15-ton (7½/7½) maximum capacity, 90' - 0 span, 22' - 3 maximum vertical clearance, 15-ton maximum lift

(1) Overhead Crane, Bldg. B, radio control, 10-ton (5/5) maximum capacity, 80' - 0 span, 22' - 11 maximum vertical clearance, 10-ton maximum lift

(1) Overhead Crane, Bldg. 7, radio control, 15-ton maximum capacity, 80' - 0 span, 23' - 5 maximum vertical clearance, 15-ton maximum lift

(1) Overhead Crane, Craneway C, cab and radio control, 15-ton maximum capacity, 90' - 0 span, 35' - 2 maximum vertical clearance, 15-ton maximum lift

(2) Overhead Cranes, Bldg. 8, cab and radio control, 15-ton maximum capacity, 80' - 0 span, 25' - 7 maximum vertical clearance, 30-ton maximum lift

Cutting:

(1) Plate Shear, Cincinnati, mechanical, maximum capacity of 12' - 0 long x ½" thick

(1) Beam Band Saw, maximum capacity of 12" beam

(1) Band Saw, maximum capacity of 8" x 16"

Automatic plate and pipe flame cutting and plasma torch capabilities, 400 amp

October 1, 1986

Cutting (cont'd):

(1) NCG Shape Cutter, optical tracer, maximum capacity of 10' - 0 x 25' - 0, 6 torch capacity

(1) Burning Machine, Airco 3000, numerical control, maximum capacity of 11' - 11 x 88' - 6, 2 gas torches, 1 continuous bevel head, plasma torch capability @ 400 amp

(1) Heath Shape Cutter, optical tracer, capacity 5' x 6'-6", 4 torch

Forming:

(1) Plate Roll, pyramid, maximum capacity of 12'-0 wide x 7/8" thick maximum thickness of 1-1/4". Optional capacity of 10' x 1" and x 1-1/8"

(1) Plate Roll, initial pinch, maximum capacity of 12' - 0 wide x 3/ thick, maximum thickness of 1 7/8"

(1) Angle Roll, maximum capacity of 6" x 6" x 1" leg out, 5" x 5" x leg in

(1) Press, "C"-type, hydraulic, maximum capacity of 600 ton, maximum vertical daylight of 6' - 0, maximum horizontal daylight of 10' - 0½

(1) Press, Portal, hydraulic, maximum capacity of 1650 tons, maximum vertical daylight of 6' - 0, maximum horizontal daylight of 20' - 0

(1) Offsetting Machine, maximum capacity of 7/16" thick x 6' - 0 diameter plate

(1) Bulldozer, maximum capacity of 125 ton

(1) Rod Bender, PDM, maximum capacity of 1 1/4" deformed, 1 1/4" diameter

Fitting and Welding:

(1) Steel Floor, capacity of 20' - 0 x 60' - 0

(1) Steel Floor, capacity of 30' - 0 x 30' - 0

(1) Steel Floor, capacity of 30' - 0 x 45' - 0

(1) Steel Floor, capacity of 30' - 0 x 60 ' - 0

Fitting and Welding (cont'd):

(1) Steel Floor, capacity of 30' - 0 x 120' - 0

(8) Sets Turning Rolls, drive/idler, capacity of 3½ ton to 20 ton

(2) Manipulators, capacity of 12' - 0 x 12' - 0 x 90' - 0

(1) Manipulator, capacity of 5' - 6 x 3' - 6 x 150 ' - 0

(10) Weld Positioners, capacity of ½ ton to 20 ton

Portable Welding machine capabilities

Machine Tools:

(1) Lathe, engine type, maximum capacity of 18" diameter x 72", 5 HP

(1) Edge Planer, Sellers, maximum capacity of 38' - 6 x 6"

(1) Milling Machine, vertical travel 39", horizontal travel 39"

(1) Radial Drill, maximum capacity of 59" arm, 14" column dia., #5 taper, 10 HP

(1) Vertical Boring Mill, maximum turning dia. 62", maximum height 25-1/2"

Punching:

(1) Buffalo Ironworker, #2½, max. capacity of 6" x 6" x ½" angle

(1) Punch, maximum capacity of 96 ton

(1) Punch, maximum capacity of 77 ton

Other Equipment:

(2) Compressors, Ingersoll-Rand, SSR-EP75, 330 cfm capacity

(1) Compressor, Worthington, reciprocating, maximum capacity of 240 cfm

(1) Compressor, Champion, reciprocating, maximum capacity of 30 cfm, 5 HP

Annealing and Stress Relieving:

None

Cleaning and Painting:

(1) Roto Blast, 4 wheel, maximum capacity of 7' - 0 x 10' - 0, serviced by a 10-ton (5/5) gantry w/ 24' - 9 span and 18' - 6 vertical clearance

(1) Portable Sand Blast units

Portable airless and spray painting capabilities

Shipping and Transportation:

Rail Shipment - 2 sidings

Truck Shipment - PDM fleet and common carrier

ORASCOM

ONSI SAWIRIS & Co.

F A X M E S S A G E

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ay 5, 1988.

'O : LA* WATER.

ATT : MR. BILL BURNS.

'lease find attached the brief data of our contracting division, ›ur up-to-date brochure will be couriered to you from our Washington ›ffice.

Best Regards,

Nassef Sawiris.

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ORASCOM

ONSI SAWIRIS & Co.

BRIEF DATA

CONTRACTING DIVISION

ORASCOM founded in 1950 by Onsi Sawiris, is primarily involved in the industrial construction field. It is a privately held corporation headquartered in Cairo, Egypt with offices in the Middle East, London, and Washington D.C.

Today, ORASCOM is well known for its heavy involvement in undertaking turnkey projects and the supply of related goods and services. Among its internationally reputed associates are VOLVO in Sweden, KRUPP in Germany, and ARMCO in the U.S.A. ORASCOM's wide range of services has been used by more than 400 clients throught the Middle East.

In 1986, ORASCOM's work force reached 400 employees comprising civil and mechanical engineers, mechanics, salesmen, and after sales maintenance staff. They serve major government and private organizations.

The concept behind ORASCOM is simple: to serve the client's best interest. ORASCOM combines overseas expertise and knowledge of products and services with in-depth experience in local conditions. By providing adequate local forces that can increase competitiveness and decrease problems faced by international contractors and suppliers. ORASCOM jobs are completed to the satisfaction of all parties concerned.

ORASCOM

ONSI SAWIRIS & Co.

HISTORICAL DEVELOPMENT

1950	Founded by Onsi Sawiris
1961	Nationalized by the government ; ORASCOM had been one of the largest contracting firms in Egypt.
1964	Operations transferred to Libya. Main line of business : construction and import.
1976	Libyan operations terminated and ORASCOM reestablished in Egypt.
1981	ORASCOM restructured into four main divisions : Construction, Projects, Imports, Services and Maintenance.
1982	Established NATIONAL MARINE.
1985	Established ORASCOM OF AMERICA, INC., Washington DC.
1986	Established UNITED SUPPLIERS & CONTRACTORS, London UK.
1986	Established Orascom Health Care Division.

CURRENT STATUS AND ORGANIZATION

Ownership: Privately held by the Sawiris Family

Legal form: Partnership.

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ORGANIZATION

Over the years ORASCOM created an organizational structure, under which it succeeded in the major projects throughout Egypt.

At the head of this organization is Eng. ONSI SAWIRIS as the Chairman of the Board.

Mr. NASSEF SAWIRIS as Vice President and head of the Construction Department.

Eng. Fawzi Fahmi as the Civil Department Manager.

Eng. Wafik Shaker as the Electrical & Mechanical Department Manager.

In addition to the following Technical Personnel :

Qualification	Number of Personnel
Civil Engineers	90
Architects	8
Mechanical & Electrical Engineers	40
Management & Accounting	80
Technicians	64
Skilled Labourers	280
Unskilled Labourers	(according to requirements)

The experience of the personnel varies between 3 and 25 years in major civil projects.

Construction Management Procedures

To achieve a successful and timely completion of projects and yet maintain their profitability to the company, skillful coordination of all construction operations is necessary. For managing and controlling the interfacing relationships amongst owners, architects, engineers, general and speciality subcontractors, suppliers, and government bodies,ORASCOM has developed and utilized over the years a system of construction management, some elements of which are briefly described in this section.

Estimating

Detailed estimates of the various elements of work are prepared by experienced engineers, quantity surveyors and cost specialists.

Although estimates are prepared using data and information collected by the company from prior experience, our specialists keep continuous monitoring of new equipment, new construction methods and new cost saving techniques, as well as the particular requirements of each tender.

Budgeting and Cost Control

If a contract is awarded, the detailed estimate and the accompanying work schedule and plan with a detailed mobilization planning will form the basis and framework for the project budget and cost control.

Mobilization

As soon as a contract is awarded, a work planning team is assigned to prepare detailed programmes of work including personnel, material requirement, equipments, site temporary facilities...etc to provide the project with all its needs to start efficiently.

ORASCOM

ONSI SAWIRIS & Co.

List of major Plant and Equipment which ORASCOM owns :

* 1 Potrain Travelling Tower Crane
* 2 Jones 15 Ton Mobile Cranes
* 1 Jones 10 ton Mobile Crane
* 1 Poclain Mobile Crane 25 ton
* 1 Krupp Crane 60 GMT-AT - 60 ton capacity - all train.

* 2 Aveling Barford Wheel Loader 2.3 m3
* 2 Wheel Loaders capacity 1.3 m3
* 1 Wheel Loader TCM 1.5 m3

* 2 Concrete Pumps
* A complete set of Dewatering Pumping units 02",04" & 06

* 15 Aveling Barford Concrete Dumpers
* 2 GMK Dumper Trucks
* 6 Mazda Trucks 4 ton
* 4 Bedford Trucks 4 ton
* 18 Chevrolet Pick Up Trucks
* 6 Bedford Trucks

ORGANIZAITON

Over the years Orascom created an organizational structure, under which it succeeded in the major projects throughout Egypt.

MANAGING OFFICE

Main managing office is situated in Cairo. It has an organisation that provides support guidance, monitoring and expertise in the engineering, estimating, construction equipment, legal, financial and administrative fields to projects and area managements at various locations.

Orascom has representatives offices in Washington D.C. London, and Alexandria. These offices facilities procurement, supplies, custome clearance ....etc. of Orascom operations.
Orascom offices are connected with an efficient network of communication system.

Plant, Machinery and Vehicles

Orascom's policy of plant management and operation is one of its keys of success. Orascom's equipment is supported by a central maintenance centre over more than 2000 SQM of land. With the available facilities, maintenance is performed from small periodecal repairs up to major overhauls. Accordingly equipment is operated with a high degree of availability , by virtue of the familiarity our personnel have with the equipment and the availability of essential spare parts.

Throughout the duration of projects, equipment performance and availability are monitored at the main office with frequent site visits by experts to inspect the equipment and give support where necessary.

ORASCOM

ONSI SAWIRIS & Co.

PERFORMANCE RECORDS

Over Orascom's experience , the performance of the company has been demonstrated by a timely completion of all its projects. Information on all the various projects that the company executed is contained in the following list :

ORASCOM'S ACTIVITIES INSIDE EGYPT SINCE OCTOBER 1978

PROJECT	CLIENT	STATUS	AMOUNT
1. Civil work 3 pumping station Upper Egypt.	Agriculture Upper Egypt Co./pumps supplied by Games Mavag Hangary	completed	2.000.000,- L.
2. Shoubra El Kheima Power Station Offices and Warehouses	Bechtel Overseas Inc.	completed	1.400.000,- $
3. Cairo Sewage Authority Water Treatment Plant, 9 Offices & Warehouses	Howard Harbert & Sadelmi	completed	2.000.000,- $
4. Seed Cleaning Plants, Water Reservoirs.	EMCIP (Egyptian Major Cereals Improvement Project)	completed	800.000,- $
5. Factory 135 Helwan Engines Workshops	Kirby Building Systems	completed	190.000,-
6. Water Treatment Plant at Tanta Yard	Tanta Governorate	completed	600.000,- L.E
6. Ice Factory at Ghamra	El Nasr Co. for Civil Works	completed	150.000,- $
7. Hoses Warehouses at SUMED + Sidi Kreir	Arab Petroleum Pipelines Co.	completed	530.000,- $
8. Warehouses for E.G.	Beni Sweif Power Station	completed	
9. Warehouses	Metra Co.	completed	

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PROJECT	CLIENT	STATUS	AMOUNT
10. Warehouses and Office Buildings Shoubra El Kheima Power Station	J.A.Jones	completed	200.000,- $
11. EMCIP Project II Joint Venture Armco/Orascom	EMCIP (Egyptian Major Cereals Improvement Project	completed	14.000.000,- $
12. 8 Health Centers Joint Venture Armco/Orascom	Ministry of Health / AID	completed	11.000.000, $
13. Water Treatment Plant & Civil Works for Wadi Hof Gas Turbine Power Station	Brown Boweri Co.	completed	1.800.000,- LE
14. Center for Social and Preventive Medicine	Ministry of Health / AID	completed	5.600.000,- $
15. Erection of Armco Steel Blg./ Beni Suef Air Base			
16. Rice seed cleaning plant Sakha	Ministry of Agriculture	completed	980.000,- LE
17. 2 Repair Workshops & 1 Water Treatment plant, Krupp / Orascom	Egyptian National Railways	completed	3.500.000,- LE
18. 30,000 Grain Silos/ Sohag	Ministry of Supplies / Australian wheat board.	completed	3.000.000,- LE
19. 66/11 kv.Substation Abu Sultan	EEA/Mitsubishi Electric Netherland	90% complete	1.200.000,- LE
20. 220/66/11 KV. Substations	EEA/Mitsubishi Electric Netherland	90% complete	2.000.000,- LE
21. Abu El Rish and Tourah Flyovers (erection of Steel structure)	ENR/PONCIN	completed	450,000,- LE

PROJECTS IN WHICH ORASCOM ACTED AS LOCAL ASSOCIATE & SUBCONTRACTOR

	PROJECT	CLIENT	STATUS	AMOUNT
1.	Nag Hammadi Bridge	Egyptian National Railways	completed	13.000.000,- $
2.	Renewal of Railway Tracks El Manashi - Etay El Baroud Line	Egyptian National Railways	80% complete	15.000.000,- $
3.	Ashtoum El Gamil Barrage Zschokke Wartmann/Orascom	General Nile Company for Roads & Bridges	completed	2.000.000,- SF
4.	Safaga Diesel Power Plant	Egyptian Electricity Authority / Bechtel	awarded	6.000.000,- US
5.	Baharia line	Egyptian National Railways	awarded	24.000.000,- DM
6.	C - 130 Maintenance Hanger	Egyptian Air Force / Taylor Woodrow/Ebasco/Orascom	awarded	12.000.000,- US

ORASCOM

HISTORICAL DEVELOPMENT

1950 Founded by *Onsi Sawiris*.

1961 Nationalized by the government: **ORASCOM**—one of the largest contracting firms in *Egypt*.

1964 Operations transferred to *Libya*.
Main lines of business: construction and import.

1976 Libyan operations terminated and **ORASCOM** re-established in *Egypt*.

1981 **ORASCOM** restructured into four main divisions: Project Marketing, Construction, Product Sales, Support and Service.

1985 Established **ORASCOM OF AMERICA INC.**, *Washington, D.C.*

ORASCOM

ORASCOM, a privately held corporation headquartered in Cairo, Egypt, is a leader in the industrial construction field. **ORASCOM** has offices located in the Middle East, London and Washington, D.C.

Today, **ORASCOM** is well known for its extensive involvement in supplying goods and services for turnkey projects. **ORASCOM's** wide range of services has been utilized by clients throughout the Middle East.

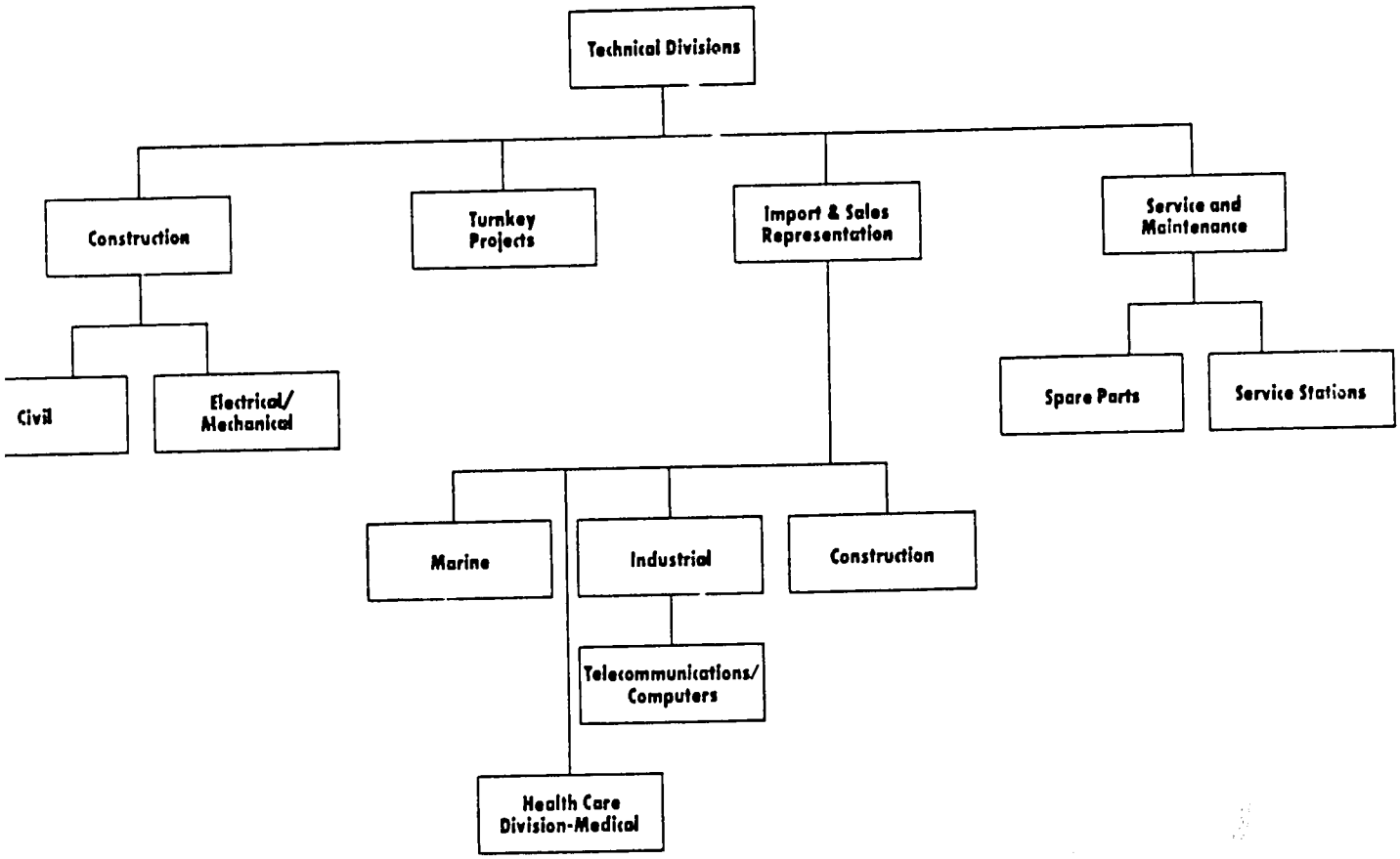
In 1986, **ORASCOM** counted over 400 professionals of numerous civil and mechanical engineers, salesmen, after-sales maintenance staff, and mechanics who serve major governments and private organizations.

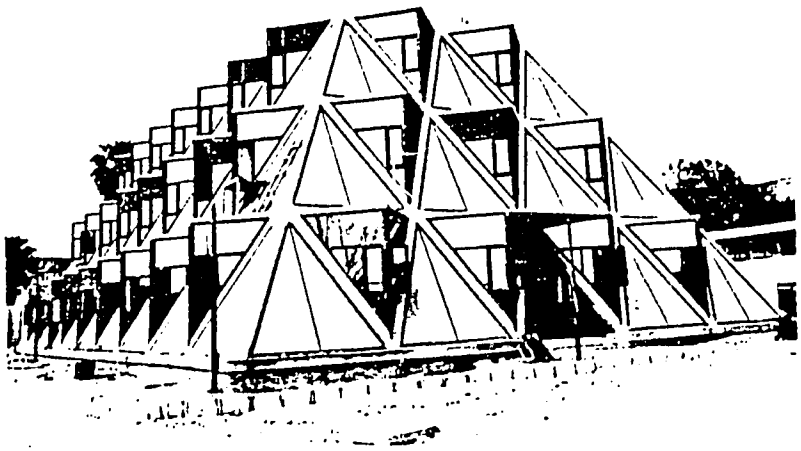
ORASCOM combines worldwide experience with expert knowledge of products and services to compete successfully in the international market.

The underlying philosophy of **ORASCOM,** which is the basis of its strength, is to exert every effort to insure the successful completion of a project.

ONSI SAWIRIS – President

CURRENT STATUS AND ORGANIZATION





3 HEALTH CENTERS——Ministry of Health/AID

AREAS OF EXPERTISE

PROJECT MARKETING

ORASCOM actively participates in bid preparation turning to its professionol staff to:

1. Gather relevant information
2. Research available data
3. Identify competitors
4. Target potential problems
5. Secure necessary financial arrangements
6. Review technical specifications
7. Establish contact to customers

PROJECT OPPORTUNITIES

For those clients who have a need for a commodity or service, **ORASCOM** will provide project development and technology evaluation assistance.

ORASCOM's marketing successes include rehabilitation of 170 km of railroad tracks valued at 22 million U.S. dollars. **ORASCOM** orchestrated the formation of a consortium of Korean, Polish and Egyptian contractors to combine suitable suppliers of track materials with erection experts. In addition, **ORASCOM** has coordinated the construction/execution of a $20 million railway bridge over the Nile River. This steel bridge was furninshed by Krupp of Germany. Civil works and execution were performed by **ORASCOM** and local contractors.

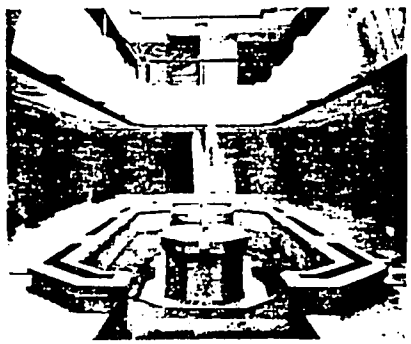
Nagac Hamadi Steel Bridge over the Nile — Egyptian National Railways

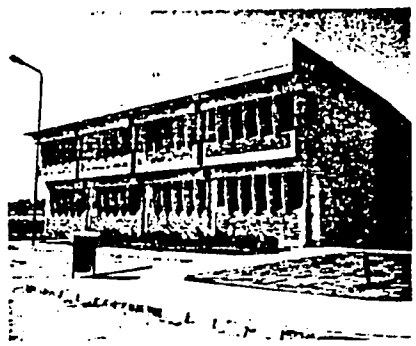
CONSTRUCTION

ORASCOM undertakes a wide variety of turnkey projects. Civil, mechanical, and electrical work is carried out effectively through efficient correlation between the technical divisions within the organization.

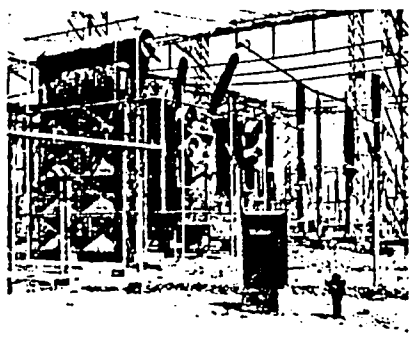
ORASCOM's engineers design and erect sophisticated structures, including grain silos, steel housings for warehouses and factories, and industrial, institutional, and health facilities. In addition, **ORASCOM** has extensive experience in the construction of energy related products, such as electrical power and transformer stations as well as diesel and gas turbine power stations.

To better meet the challenges of today's complex construction projects, **ORASCOM's** Contracting Division was organized in 1983 into the Civil and Electromechanical Construction Departments, thus increasing in-house capabilities. As general contractor, **ORASCOM** has the flexibility to construct entire projects or contract to erect specific work packages. In 1987, the total construction volume exceeded $25 million.

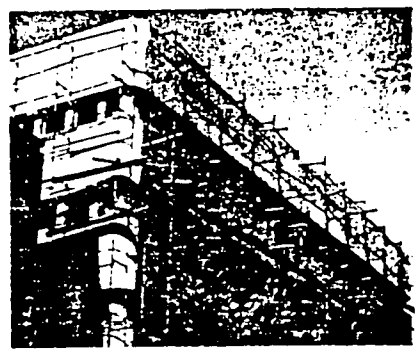




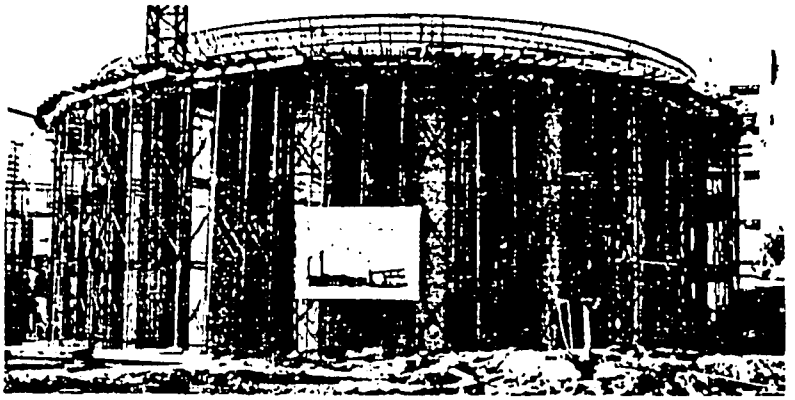
EMCIP PROJECT II — Ministry of Agriculture EMCIP (Egyptian Major Cereal Improvement Project)
Joint Venture Armco/Orascom

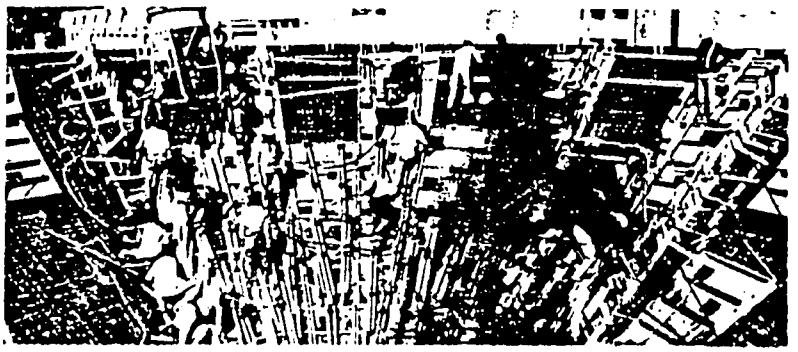


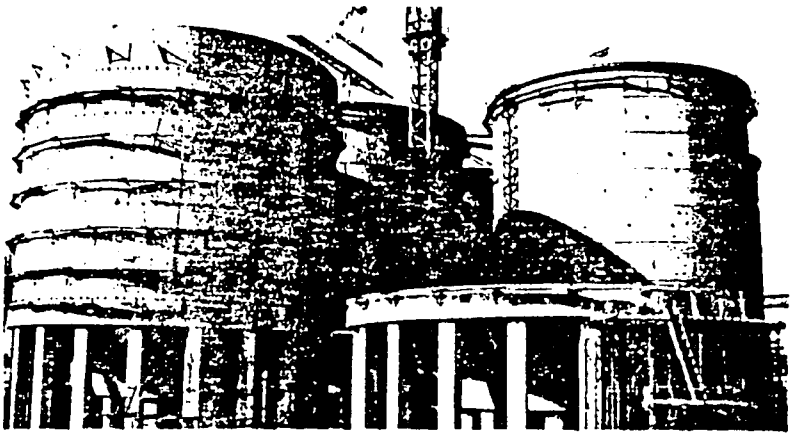
BROWN BOVERI – WADI – HOF Gas-Turbine
Power Station

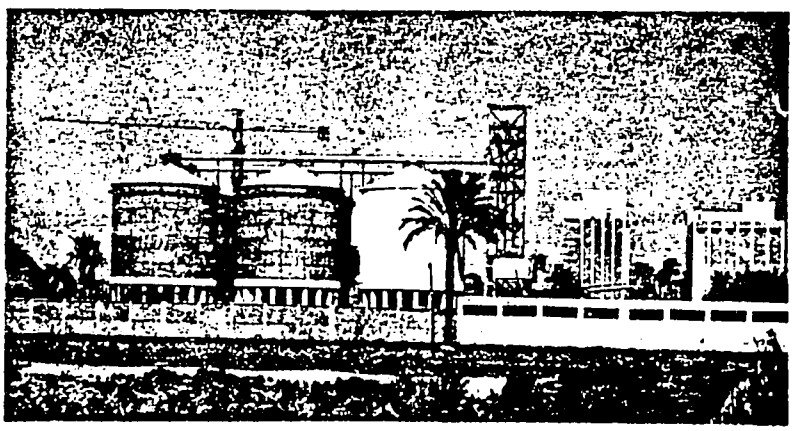


Abu El Rish Childrens Hospital
Center of Social and Preventive Medicine









Ministry of Supplies – Egypt
Financed by the Australians Wheat Board
Grain Storage Silos

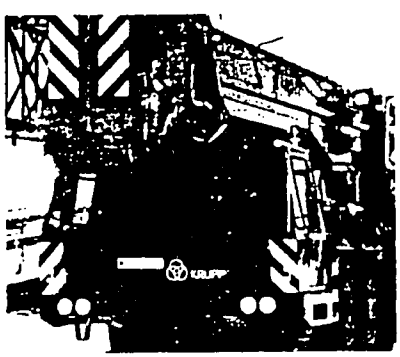
PRODUCT SALES

ORASCOM is the sales representative for a variety of reputable and reliable international firms for various equipment.

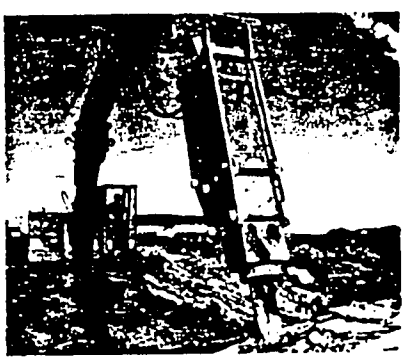
Through its Alexandria and Cairo offices, **ORASCOM** manages all commodity movement activities through their clearance and inland transportation staff who are experienced in shipping, customs clearance, transportation procedures and regulations.

ORASCOM's SALES INCLUDE:

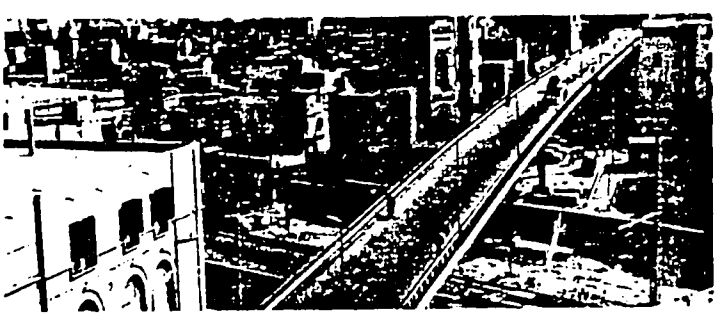
- *Construction Equipment:* Loaders, bulldozers, graders, fork-lifts, excavators, dumptrucks, cranes, asphalt and batching plants, crushers, and finishers.
- *Industrial & Irrigation Equipment:* Diesel engines, centrifugal pumps, irrigation equipment, drip systems, sprinkler systems and power generators.
- *Railway Products & Equipment:* Mobile and railway cranes, excavators, rail and rail accessories and wooden sleepers.
- *Marine Equipment:* From outboard motors and pleasure boats to large diesel engines for commercial applications.
- *Telecommunications & Computers:* Full support representation for Hewlett-Packard computers and peripherals.



Krupp — Mobile Crane



Krupp — Hydraulic Hammers



Egyptian National Railways Erection of Steel Flyover-bridge supplied by Poncin — Belgium

ORASCOM's MAIN PRINCIPALS INCLUDE:

Construction Equipment

- *Krupp Industrietechnik (W Germany)*
- *Kalamar LMV (Sweden)*
- *TCM (Japan)*
- *Aveling Barford Int'l (UK)*
- *Jones Cranes (UK)*
- *Atlas (W Germany)*
- *Marion Dresser (USA)*
- *Engineering Equipment (USA)*

Industrial

- *Volvo Penta (Sweden)*
- *Krupp-Mak (W Germany)*
- *Janmar (Japan)*
- *Peabody Group (USA)*
- *Auto Diesels (UK)*
- *Samsung (S. Korea)*
- *Layne & Bowler (USA)*

Marine

- *Volvo Penta (Sweden)*
- *Mercury Marine (USA)*
- *Zodiac (France)*

Computer & Telecommunication

- *Hewlett-Packard (USA)*
- *ITS CITA (France)*
- *Krupp Atlas Electronic (W Germany*

Medical

- *St Judes (USA)*
- *BARD (USA)*
- *AMSCO (USA)*

SUPPORT AND SERVICE

Maintenance and spare parts for all products are available at **ORASCOM's** maintenance centers or in the field. **ORASCOM's** computer support organization is headed by qualified Hewlett-Packard engineers.

ORASCOM maintains large inventories to support its clients. Our central service station near Cairo airport has a large storage facility for spare parts for all diesel and heavy equipment. More than 50 engineers and technicians are at work for customer satisfaction.

ORASCOM — Diesel Maintenance Facility

Volvo - Diesel Generating Sets

ORASCOM OF AMERICA, INC.

ORASCOM OF AMERICA, INC. is an international trading and contracting firm. It promotes sales of American and European goods between the United States, Europe and the Middle East.

AREAS OF EXPERTISE INCLUDE:

- *WORKSHOP EQUIPMENT AND TOOLS*
- *CONSTRUCTION MATERIALS*
- *DIESEL GENERATORS, PUMPS AND INDUSTRIAL MACHINERY*
- *MEDICAL EQUIPMENT AND SUPPLIES*
- *GENERAL CONTRACTING*

To effectively track and secure projects, **ORASCOM** utilizes a worldwide network of contacts with governmental and private funding agencies. In addition, our metropolitan Washington, D.C. location provides immediate access to such agencies as the World Bank and the U.S. Agency for International Development (USAID).

ORASCOM's affiliation with several leading and highly competitive American and European associations is invaluable to agencies and firms desiring to secure excellent commodities at the lowest competitive cost.

Procurement Services

To assure procurement in the most cost effective manner possible, **ORASCOM OF AMERICA, INC.** has extensive experience in projects of technical and logistic complexity. Its ability to support as well as field and maintain cohesive, effective long-term technical assistance teams enables **ORASCOM OF AMERICA, INC.** to execute services throughout the entirety of a project.

Embassy protocol, client customs and requirements, U.S. export regulations, shipping methods and tariffs are all centrally addressed at one location. Our staff, experienced in international trade, processes all requirements to ensure timely delivery to our clients. Warranties are administered by **ORASCOM OF AMERICA, INC.** on behalf of the client with customer satisfaction guaranteed on every item or system sold.

ORASCOM has furnished electrical equipment to the U.S. Army Corp. of Engineers, warehouse trucks to the Uganda Food Support Program, silicon steel to an Egyptian transformer manufacturer, and specialty trucks to West Germany.

ORASCOM

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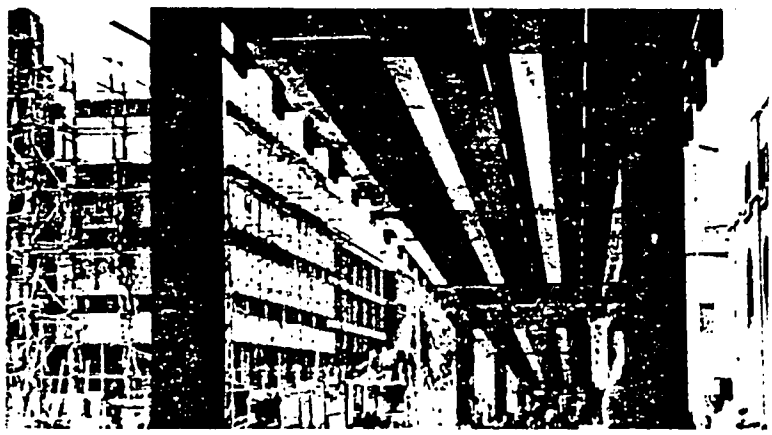
Fax 1 491 3720

CAIRO
National Marine
5 Hassann Radwan Street
Cairo Egypt

BANK REFERENCES

Cairo – Chase National Bank, Credit Lyonnais
Washington – Abu Dhabi International Bank
New York – Chase Manhattan Bank, NA



Two sites in the heart of Cairo at Abou El Rish. The Turnkey construction of a Hospital and the erection of a steel flyover

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TEL: 3471148

ORASCOM OF AMERICA, INC.
1667 K STREET NW, WASHINGTON DC 20006
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KOLALY

ANNEX (A)

LIST OF MAIN PROJECTS CARRIED OUT BY CONTRACTING DEPARTMENT OF KOLALY ENGINEERING

Client's Name	Projects Description
1. Nile Automotive Repair Co.	Electrical network for workshop including distribution panels.
2. Ministry of Defence	Project no. 401/G Civil works & electromechanical installations.
3. Alexandria Governorate	Abbis Refuse Composting Plant, Alexandria. Civil works & electrical and mechanical installations.
4. Ministry of Defence	Project no. 7251/T Civil works & electrical installations.
5. National Bank Main Stores in Alexandria	Installation of automatic fire fighting systems.
6. Giza Governorate	Abu Rawash Refuse Composting Plant, Giza. Civil, mechanical & electrical installations.
7. Misr Spinning and Weaving co. Mehalla	Installation of automatic fire fighting and sprinkler systems for new steam power station.
8. Cairo Governorate	El Salam Refuse Composting Plant Cairo. Civil, mechanical and electrical installations.
9. Ministry of Reconstruction & State Ministry of Housing & Land Reclamation, Joint Housing Projects	Sub-contractor for GENERAL ELECT for civil & electrical works to construct a 66/11 KV substation at Helwan New Community.
10. Cairo Cleansing & Beautifying Authority	Al Sayyeda Nafissa Garage & Workshop (under execution). Civil, mechanical and electrica installations.

../..

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11.Cairo Cleansing & Beautifying Authority	Al Zawya El Hamra Garage & Workshop (under execution). Civil , mechanical and electrical installations.
12.Cairo Cleansing & Beautifying Authority	Al Moqattam Garage & Workshop (under execution). Civil ,mechanical and electrical installations.

ANNEX (B)

PERSONNEL

For each category of personnel shown below, number of permanent staff of the company.

1. Electrical

   a. University graduate engineers 12
   b. Technicians 23

2. Mechanical

   a. University graduate engineers.....10
   b. Technicians 20

3. Civil (Construction)

   a. University graduate engineers 6
   b. Technicians 11
   c. Foremen.....19

N.B.Enclosed data relative some of Kolaly's engineers.

ANNEX (C)

1) List of Equipment Owned by Kolaly:

a- one Liebherr bulldozer, 190 HP
b- one 2.5 m^3 front end loader Hanomag
c- one 3.0 m^3 front end loader Faun
d- 3 dump trucks Mercedes 1628
e- one vibratory roller of 9 tons static weight Bomag
f- one 20 tons mobile crane Grove
g- two concrete mixers
h- concrete vibrators
i- pipe threading m/cs
j- concrete power trowels
k- welding equipment including welding transformers
l- metal scaffoldings
m- different hand tools and equipment

2) Scope of Works which can be executed by Kolaly:

a- electric installations (high, medium and low tension)
b- mechanical installations
c- installation of automatic fire fighting and fire alarm network
d- concrete works
e- site preparation works (cut & filling,transportation & compaction)
f- road base making
g- asphalt & concrete road construction
h- Steelworks.

N.B.The company can carry out all a/m works, as an integrated project, or part of them within the limits of L.E. 20 000 000.-/year.

APPENDIX 3

FINANCIAL CAPABILITY

This Appendix contains the following:

- Letter: Financial Ability, Dated May 4, 1988
- Letter: Bank of America, Dated December 8, 1987
- Letter: Bank of America, Dated January 6, 1988

May 4, 1988

To: Mr. Allen Grunwald and Mr. Wilfried F. Langer of
James M. Montgomery Engineers, Inc.

Re: Financial Ability
Fund $23,000,000 to $50,000,000 Over a Two-Year Period

A. Bank references:

1. Security Pacific National Bank — $4,100,000 line of credit
Ms. Michele Perez - Account Officer
Telephone No. 213-345-5269

The $4,100,000 is our current line. Our banking relationship is such that after the proper arrangements are made, this line could be extended upward to the $10,000,000 range.

2. Bank of America — Limit (see attached letter)
Mr. Harry Kremling - Vice President
Telephone No. 213-228-5660

Bank of America issued the $1,400,000 bid bond that applies to the NOPWASD project. The attached letter states that the balance of the bonding required for the project is available upon L*AWT's issuance of a corporate resolution to borrow.

B. Cash Flow

1. Major assumption in the cash projection given to you is for FAS USA material content of $29,000,000. However, our actual commercial bid shows $30,102,000 for FAS deliveries for all tasks plus $1,505,100 spare parts plus $2,256,750 freight (see sheet attached).

2. Terms of payment to most subcontractors incorporate the same approvals and certifications as required for L*AWT's payment from U.S. AID and NOPWASD. The only significant exception would be Stanley Engineers.

Prepared by: Herman Cochran
Vice President Finance

Bank of America

HA
Let's get started early.
HA

DEC

L.A.W.

Harry Kremling
Vice President

North America Division
Construction (Los Angeles) 5187

December 8, 1987

Mr. Herman Archer
Vice President - Controller
LA Water Treatment Corp
17400 East Chestnut Street
City of Industry, CA 91749

Dear Mr. Archer,

Enclosed are an Application for Standby Letter of Credit and Corporate Resolution to Borrow. These documents will need to be completed prior to issuance of the credit. I have also enclosed a reference book which details various international trade credit instruments. Page thirty highlights standby letters of credit and maybe of some interest to you.

In completing the application it may be easiest to record "refer to attached" in the documents required section of the form. Then you can attach the requested wording to the application.

The Corporate Resolution to Borrow can be approached two ways. You may wish to complete the form for only the amount of the bid bond. An alternative would be to complete the resolution for the total amount of possible bonding. This will eliminate the need for another resolution for additional bonding needs.

Should you have any questions please give Harry or myself a call.

Sincerely,

Harry

TG:djt:2212v

Bank of America

From Harry Kremling, VP
Construction #5187

Date January 6, 1988

Classification Internal

To Tarek Amer, AVP
Cairo Branch #6031
Egypt

cc: Ian Maclennan, AVP
London Branch #6008

Subject LA Water Treatment Corp. (California) Proposed Bid for Provincial Cities (Fayoum, Beni Suef & Minia) Water Development Project

It looks as if the bid date is now definite -- January 31st. LA Water Treatment in order to ensure all the documents, including bid bond are assembled well in advance wants you to issue the bid bond on January 26th for delivery to their local agent, same day. Your charges will therefore accrue as of January 26th.

LA Water Treatment Corp. (ultimately owned by UK Portals Holdings PLC) has asked us to arrange for the bid bond and follow-up bonding, if required.

Attached are the following:

- Cover letter from LA Water indicating who will pick-up the actual bid bond in Cairo (local contact).
- Standard completed Standby L/C application including final text.
- Copy of Corporate Resolution to Borrow (as required in U.S.).

Please review the text, which should be acceptable since it is based on the required text with minor amendments suggested by Cairo in earlier communication (late last year).

Will provide Cairo Branch with the necessary allocation to cover this $1.4MM bid bond. Our credit in turn is to be supported by Portals Holdings PLC continuing guarantee.

The SBLC fee will be 3/16% per quarter or part therefore (or 3/4% p.a equivalent).

Please review all this material and then make contact with the local agent to work out the exact timing needs for the bid bond. Please telex me once contact has been made and this material is received by you.

Harry Kremling
Vice President
(7) 228-5660

HK:djt:2273v

Place the Customer First