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CENTER FOR CREATIVE LEADERSHIP GREENSBORO NC
LOOKING GLASS, INC. VOLUME III. COMMERCIAL GLASS DIVISION. OPER--ETC(U)
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1 OF 2
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LEVEL

Operational Manual
Volume III

A063057



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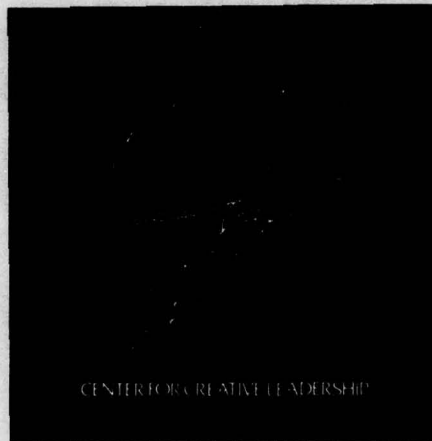
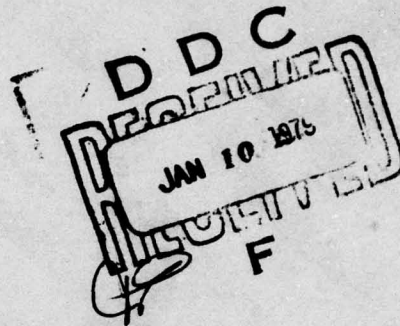
Morgan W. McCall, Jr.

SC

**Looking
Glass, Inc.
Commercial
Glass Division**

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LOOKING GLASS, INC.
COMMERCIAL GLASS DIVISION

MORGAN W. McCALL, JR.

OPERATIONAL MANUAL VOLUME III

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Research Program, Office of Naval Research (Code 452), under
contract No. N00014-76-C-0870; NR 170-825; and by the Center for
Creative Leadership.

The Center for Creative Leadership is a nonprofit, educational institution founded by the Smith Richardson Foundation. The Center's primary goal is to translate the knowledge of the behavioral sciences into useful applications for leaders. Toward this goal, the Center conducts and reviews relevant research and uses these findings in a variety of programs.

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DESCRIPTION OF VOLUMES

Looking Glass is a simulation of a glass manufacturing corporation. There are twenty positions, ranging across three divisions and four levels (plant manager, director, vice-president and president). The divisions face different environments, ranging from volatile to stable. Looking Glass is, in a word, typical--the organizational type, structure and environments are common. All problems contained in the simulation are based on actual events.

Volume I of the simulation materials is divided into four sections. Section I describes the development of Looking Glass. Included are the chronology of what occurred from original idea to final pretest run and a summary of assumptions and biases related to constructing a realistic management simulation. The next section discusses research issues such as the experimental modes built into the design, possible manipulations, limitations of the simulation, measurement strategies, and preliminary hypotheses. The third section outlines training uses of the simulation, including one detailed example of a training program. The final section explains the nuts and bolts of running the simulation. This section and the appendices that follow enables users to refer to staffing and administrative necessities.

Volumes II through IV contain the simulation materials. Volume II contains all memos relating to the Advanced Products Division, and also includes organization-wide corporate memos, and all memos to the President. Volume III contains all memos relating to the Commercial Glass Division, and Volume IV, all memos concerning the Industrial Glass Division.

Subsequent volumes will contain standardized responses to information requested by participants (Volume V) and a complete listing and analysis of all problems participants face (Volume VI).

NOTICE

The material contained herein relates to a simulation of managerial performance developed by the Center for Creative Leadership pursuant to a contract with the Office of Naval Research. The context of the simulation is a fictitious corporation in the American glass industry. Any points of similarity between the simulation and an existing glass company are purely coincidental.

The simulation is an intensive exercise, and users are cautioned that a risk to participants exists. The Center for Creative Leadership assumes no responsibility whatsoever for any injury that may result from the use of the simulation by any other organization or individual.

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CONTENTS

OPERATIONAL MANUAL VOLUME III

I. To All Roles From Corporate

CORP- 1 to CORP- 3

List of Abbreviations

II. Across Division Memos

A. To CGD From the President

PRES- 1 to PRES- 4

PRES- 9

PRES-14

B. To CGD From APD

APD-100

III. To CGD From Corporate

CORP- 8

CORP-33 to CORP-48

CORP-74 to CORP-75

IV. To/From Roles Within CGD

CGD-1 to CGD-107

VOLUME III

COMMERCIAL GLASS DIVISION

I. To All Roles From Corporate

CORP-1 to CORP-3

List of Abbreviations

HISTORY OF LOOKING GLASS

Looking Glass, Inc., was founded fifty years ago by A. J. Looking. Begun as a manufacturer of light bulb casings, Looking Glass has expanded into a major corporation with \$200 million in sales and over 4,000 employees.

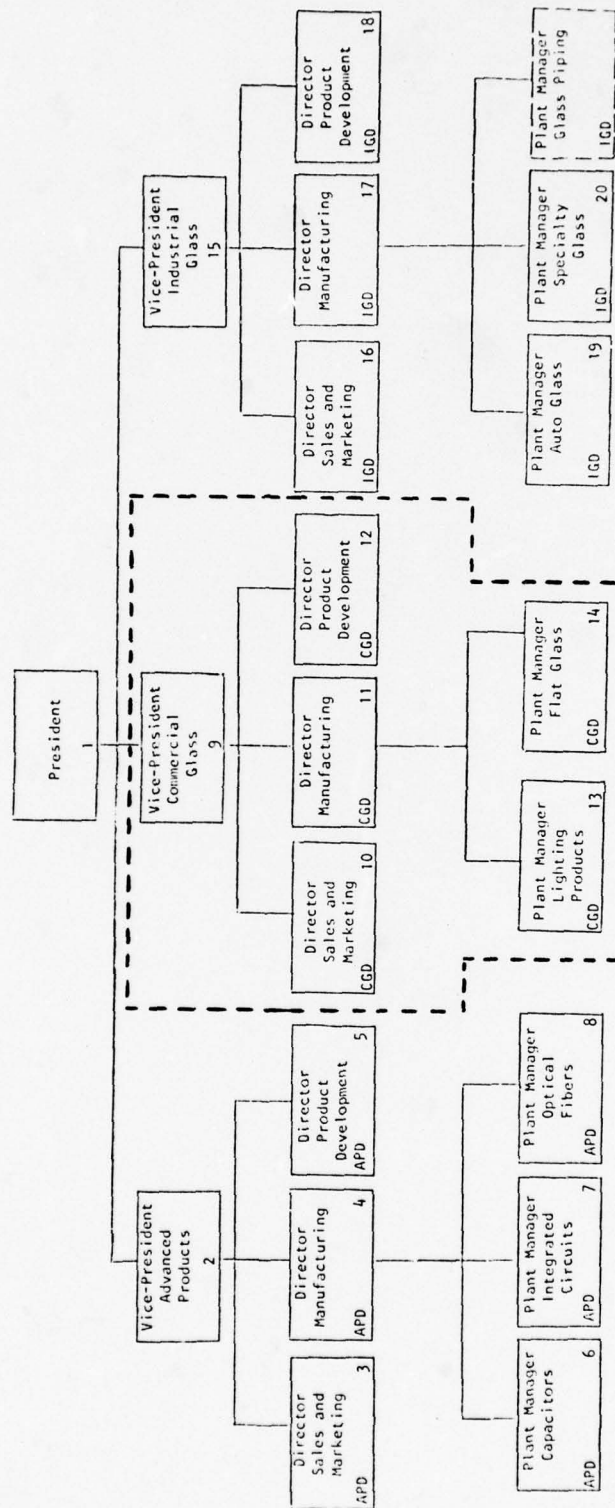
The Commercial Glass Division produces light bulb casings, tubes for fluorescent lights, and a variety of flat glass products.

The Industrial Glass Division produces automotive glass, specialty glass (for airplanes and assorted industrial uses), and glass piping and glass piping insulation (for use in industrial settings).

The Advanced Products Division uses glass in such high technology products as capacitors, integrated circuits, and optical fibers (for use in telecommunications).

All Looking Glass products are sold to manufacturers who make finished products from these components or to independent distributors.

LOOKING GLASS, INC.



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W-20

CORP-2

LOOKING GLASS, INC.

POSITION ABBREVIATIONS

ABBREVIATION	TITLE AND DIVISION
--------------	--------------------

ADVANCED PRODUCTS DIVISION

VP, APD	Vice-President
DIR-MFG, APD	Director of Manufacturing
DIR-S&M, APD	Director of Sales and Marketing
DIR-PD, APD	Director of Product Development
PM-CAPACITORS	Plant Manager, Capacitors
PM-INT CIRCUITS	Plant Manager, Integrated Circuits
PM-OPT FIBERS	Plant Manager, Optical Fibers

COMMERCIAL GLASS DIVISION

VP, CGD	Vice-President
DIR-MFG, CGD	Director of Manufacturing
DIR-S&M, CGD	Director of Sales and Marketing
DIR-PD, CGD	Director of Product Development
PM-FLAT	Plant Manager, Flat Glass
PM-LIGHTING	Plant Manager, Lighting Products

INDUSTRIAL GLASS DIVISION

VP, IGD	Vice-President
DIR-MFG, IGD	Director of Manufacturing
DIR-S&M, IGD	Director of Sales and Marketing
DIR-PD, IGD	Director of Product Development
PM-AUTO	Plant Manager, Auto Glass
PM-SPECIALTY	Plant Manager, Specialty Glass

LOOKING GLASS
Corporate Offices

To: All Executives of Looking Glass, Inc.
From: Corporate Controller
Re: Corporate Profits (In Thousands)

Copies to:

	NET SALES		NET PROFITS	
	LATEST YEAR	PREVIOUS YEAR	LATEST YEAR	PREVIOUS YEAR
Commercial	\$72,000	\$67,867	\$3,300	\$3,106
Advanced	39,400	35,100	3,600	2,700
Industrial	<u>87,000</u>	<u>73,600</u>	<u>4,600</u>	<u>3,018</u>
TOTAL	\$198,400	\$176,567	\$11,500	\$8,824

NET INCOME AS A % OF SALES

	LATEST YEAR	PREVIOUS YEAR
Commercial	4.6%	4.6%
Advanced	9.1%	7.7%
Industrial	<u>5.3%</u>	<u>4.1%</u>
TOTAL	5.8%	5.0%

CURRENT FINANCIAL RATIOS

	Commercial	Advanced	Industrial
Debt to Equity	37.6	58.2	32.6
Return on Equity	10.4	12.1	7.8
Return on Assets	5.6	7.5	5.4
Receivables Turnover	7.1	7.0	8.5
Cost of Goods Sold As a % of Sales	74.8%	70.9%	73.9%
R & D As a % of Sales	1.8%	5.1%	5.3%
Operating Profit Margin As a % of Sales	12.1%	18.3%	13.9%

W-20

CORP-3A

DEFINITIONS OF FINANCIAL RATIOS

DEBT/EQUITY RATIO: The proportion of capital supplied by creditors.

RETURN/EQUITY RATIO: Percentage return (net income) on stockholder's investment.

RETURN ON ASSETS: Net income divided by total assets. Percentage return on the book value of the resources of the firm.

RECEIVABLES TURNOVER: Measure of how quickly customers pay their accounts and of current credit policies. Net Sales divided by Accounts Receivable.

COST OF GOODS SOLD AS A % OF SALES: Measure of how efficiently goods are manufactured and sold.

R & D AS A % OF SALES: Investment in research on future products.

OPERATING PROFIT MARGIN: $\frac{\text{Net Income}}{\text{Net Sales}}$ before taxes and interest are paid.

VOLUME III

COMMERCIAL GLASS DIVISION

II. Across Division Memos

A. To CGD From the President

PRES- 1 to PRES- 4
PRES- 9
PRES-14

B. To CGD From APD

APD-100

LOOKING GLASS
Office of the President

To: All Executives of Looking Glass
From: President
Re: State of the Corporation Address

Copies to:

I will make a State of the Corporation address to all executives at 3:00 today, to be followed by a question and answer period.

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W-20

PRES-1

LOOKING GLASS
Office of the President

To: Those Listed
From: President
Re: Coordinated Sales Program

Copies to:

DIR-S&M, APD
DIR-S&M, CGD
DIR-S&M, IGD
VP, APD
VP, CGD
VP, IGD

The last meeting of the Management Committee addressed the increasing complexity of Looking Glass sales operations. It was the feeling of the Committee that the Sales and Marketing directors should get together to:

- identify common problems;
- coordinate solutions to these problems;
- plan for future problems.

The Committee took no position on specific actions, and no such decisions are contemplated at this level. It is up to you to decide what, if anything, should be done. Please keep my office informed.

LOOKING GLASS
Office of the President

To: Those Listed
From: President
Re: Security

Copies to:

VP, APD
VP, CGD
VP, IGD

We've been stung in the past by other glass manufacturers pirating our executives and key technical people. Because we pay relatively high salaries and otherwise take care of our own, we've been more fortunate than some other companies. Still, our competitive edge depends on our ability to maintain confidentiality on our key processes.

Some companies require their executives and technical people to sign an agreement of confidentiality as well as on not taking a job with a competitor. I'd like to get your ideas on this or other strategies that might be effective at Looking Glass.

LOOKING GLASS
Office of the President

To: Those Listed
From: President
Re: Low Expansion Furnace Linings

Copies to:

VP, APD
VP, CGD
VP, IGD

I've discussed this with each of you, and each of you thinks the others should do it. New England Furnace Company wants 200 tons of low expansion cellular glass for furnace linings, and we are going to give it to them. I don't care which plant produces it-- you decide among yourselves and let me know. A summary of the specifications is attached.

We can't expect to make anything on this, and we might even go into the red some. But if we do a good job, we stand to gain substantial future orders from them.

CELLULAR GLASS FOR FURNACE LININGS

(SUMMARY)

TECHNOLOGY:

To make cellular glass furnace linings, borosilicate glass is ground and mixed with a foaming agent. Borosilicate glass is made as follows:

Sand + Soda Ash + Boric Acid + Cullet + Arsenic +

Antimony heated to 1625°C (2957°F)

DELIVERY DATES:

50 tons: 6 weeks from today

100 tons: 8 weeks from today

50 tons: 10 weeks from today

DELIVERY LOCATION:

Willimantic, Connecticut

LOOKING GLASS
Office of the President

To: Those Listed
From: President
Re: Looking Foundation

Copies to:

VP, APD
VP, CGD
VP, IGD

Our proposal to form a foundation has been approved by the Board of Directors. Funding will depend upon the specific purpose for which the foundation exists. Let's meet soon to discuss that purpose.

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W-4

PRES-9

LOOKING GLASS
Office of the President

To: Those Listed
From: President
Re: Purchase

Copies to:

VP, APD
VP, CGD
VP, IGD

Over the past year, we have discussed terms with Cascade to purchase their operations in Battle Creek, Michigan, for \$42 million. The facility would maintain its present product mix of lime glass bottles, decorative bottles, and high quality lead crystal decanters and goblets.

Meet with me at 2:00 to discuss how we should allocate our resources. We obviously cannot follow through on all proposed investment opportunities, so should we choose this one or others? I think it's time to make a decision. We've discussed this long enough.

LOOKING GLASS
Advanced Products Division

To: Those Listed
From: Director of Product Development, APD
Re: Research Staff

Copies to:

DIR-PD, CGD
DIR-PD, IGD

It's no secret that staff are trying to switch from your division to mine. The reasons I've heard are:

- APD is where the action is;
- APD has the highest profit margin--let's go where we'll be rewarded.

Needless to say, this is causing hard feelings. We're being called pirates; you're being accused of damaging people's careers. Surely we can work out something to stop this. We're all in this thing together; these rumors are hurting us all individually and Looking Glass as an organization.

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Y-3

APD-100

VOLUME III

COMMERCIAL GLASS DIVISION

III. To CGD From Corporate

CORP- 8

CORP-33 to CORP-48

CORP-74 to CORP-75

LOOKING GLASS
Corporate Offices

To: President
From: Corporate Controller
Re: Consolidated Balance Sheet

Copies to:

VP, APD
VP, CGD
VP, IGD

LOOKING GLASS

CONSOLIDATED BALANCE SHEET

(In Thousands)

<u>ASSETS</u>	<u>LATEST YEAR</u>	<u>PREVIOUS YEAR</u>
CASH	\$16,402	\$14,762
RECEIVABLES	29,910	26,919
INVENTORIES	16,501	17,370
PLANT & EQUIPMENT	86,835	75,544
OTHER ASSETS	<u>43,320</u>	<u>39,076</u>
TOTAL ASSETS	\$192,968	\$173,671
 <u>LIABILITIES</u>		
CURRENT LIABILITIES	\$18,332	\$19,104
LONG-TERM LIABILITIES	57,890	48,101
CAPITAL STOCK	26,051	26,051
RETAINED EARNINGS	<u>90,695</u>	<u>80,415</u>
TOTAL LIABILITIES	\$192,968	\$173,671

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LOOKING GLASS
Corporate Offices

To: President
From: Public Relations
Re: Press Releases

Copies to:

VP, CGD
DIR-MFG, CGD
DIR-S&M, CGD
DIR-PD, CGD
PM-FLAT
PM-LIGHTING

Attached are the press releases describing Flat Glass and Lighting Products. Please look them over and suggest any changes you'd like.

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FLAT GLASS

The Flat Glass plant at Looking Glass produces a variety of flat glass products for construction, furniture, and related industries. These products are of two basic types:

Trade glass (used in windows, display cases, sliding doors, picture and show windows, etc.)

Environmental glass (insulating, heat reflecting, and related glass products, valued for their energy efficiency and architectural beauty)

Flat glass can be made by three different processes, all of which begin by mixing precise amounts of sand, soda ash, limestone, salt, cullet, and any special materials. The ingredients are combined in a furnace where they are heated to over 2700°F.

About 1/4 of Looking's flat glass is produced by the sheet process. A simple iron bar is introduced into the molten glass, adheres to it, and draws a continuous sheet of glass across a series of rollers. The glass is cooled by long ovens (called lehrs) where the temperature is gradually reduced under carefully controlled conditions. The continuous sheet is then cut, packaged, and shipped to customers.

The remaining 3/4 of Looking's flat glass is produced by the newer and much more efficient float glass process. Molten glass is poured onto a bed of molten tin. The glass solidifies at a higher temperature than the tin and can be fed off for further cooling. Because no rollers touch the molten glass, the surface remains clear and undisturbed. The glass is then cut, packed, and shipped.

Simple adjustments allow glass made by either sheet or float processes to vary in width and thickness. Addition of chemicals to the raw ingredients, lengthened cooling periods, or various coatings applied to the glass after forming can affect its strength, light and heat transmittance qualities, and color. The use of patterned rollers can produce decorated glass of various kinds.

Finished glass is sold to distributors, furniture and cabinet makers, window and door producers, and construction firms. Looking's environmental glass products are featured in many new office buildings where their heat reflecting qualities make them energy efficient and attractive.

LIGHTING PRODUCTS

The Commercial Glass Division of Looking Glass produces light bulb casings and tubes for fluorescent lights. These are sold to fabricators of light bulbs and fluorescent lighting who manufacture finished products for consumers, lamp makers, and a variety of other users. The oldest and most established plant in Looking Glass, Lighting Products continues to be the backbone of the company.

Produced in hundreds of different sizes and shapes, both fluorescent tubes and incandescent envelopes are made from lime glass. About 90% of the world's glass is lime glass, a mixture of sand, soda ash, limestone, and other materials heated to 2640°F. Additional chemicals can be added to create colored glass.

For bulbs, molten glass is put into a mold and inflated like a balloon (a process called blowing). Tubing is made by drawing a stream of glass over a jet of air. This keeps the center hollow. In both processes, the shaped glass is cooled gradually (annealed) in specially designed oven (lehrs).

Lighting products are sold exclusively to manufacturers who turn the envelopes and tubes into working bulbs and fluorescent lights. Looking Glass is and has been a major supplier of lighting products for large manufacturers such as Sylvester, Major Electric, and Eastern Lights.

LOOKING GLASS
Corporate Offices

To: President
From: Public Relations
Re: Commercial Glass Division Description

Copies to:

VP, CGD
DIR-MFG, CGD
DIR-S&M, CGD
DIR-PD, CGD
PM-FLAT
PM-LIGHTING

Attached is a blurb about CGD for use in the visitors' brochure.
Please return it within two weeks if you see needed changes.

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LOOKING GLASS, INC.

COMMERCIAL GLASS DIVISION

The Commercial Glass Division, a primary producer of flat glass and lighting products, is the oldest part of Looking Glass. Over the past 50 years, this division has become a well established leader in its field, supplying the few major producers with a high volume of quality materials. Though affected by GNP, sales have held relatively stable even in hard economic times.

LOOKING GLASS
Corporate Offices

To: Director of Sales and Marketing, CGD
From: Public Relations
Re: Newspaper Clipping

Copies to:

Yesterday's paper had an article about the Lighting Products plant. Apparently pollution from the stacks is killing the trees in the area. The environmentalists are up in arms, threatening to sue, write congressmen, appeal to the media, etc.

Just thought you'd want to know.

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W-1

CORP-35

LOOKING GLASS
Corporate Offices

To: Plant Manager, Flat Glass
From: Corporate Personnel
Re: Plant Information

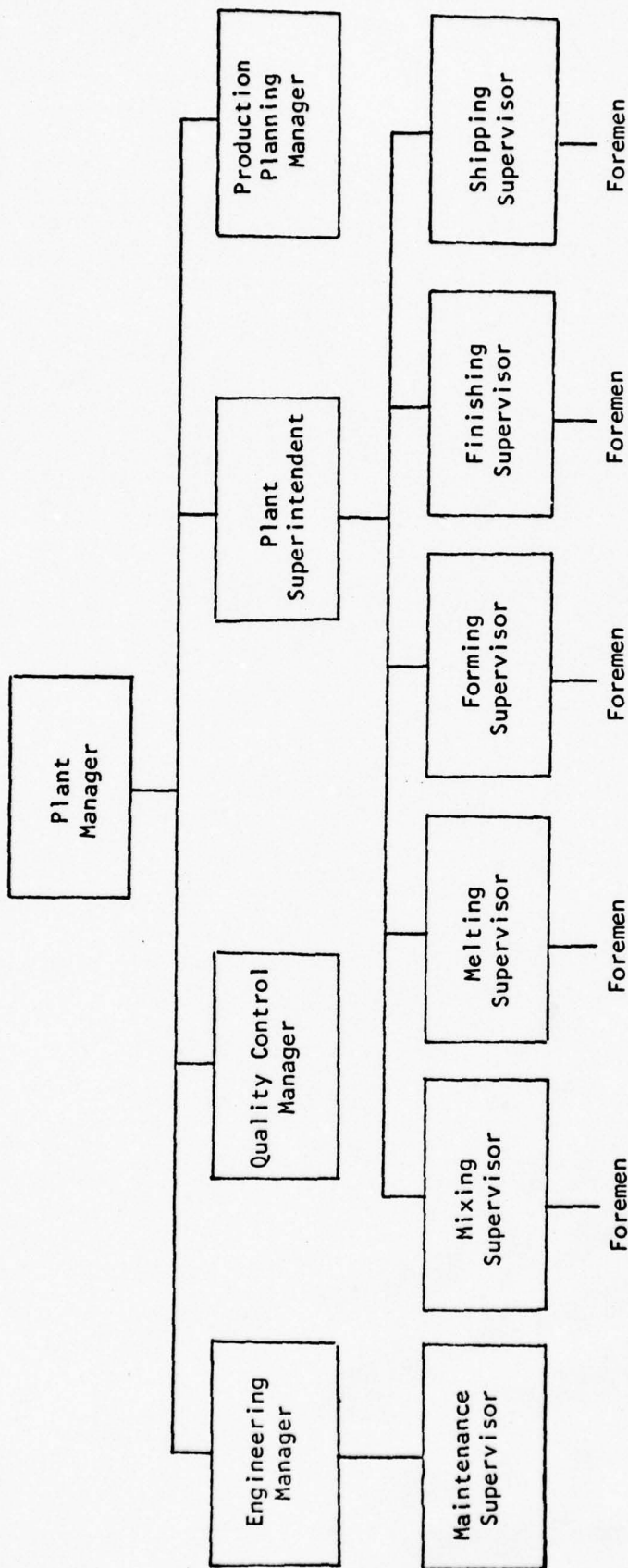
Copies to:

Attached are:

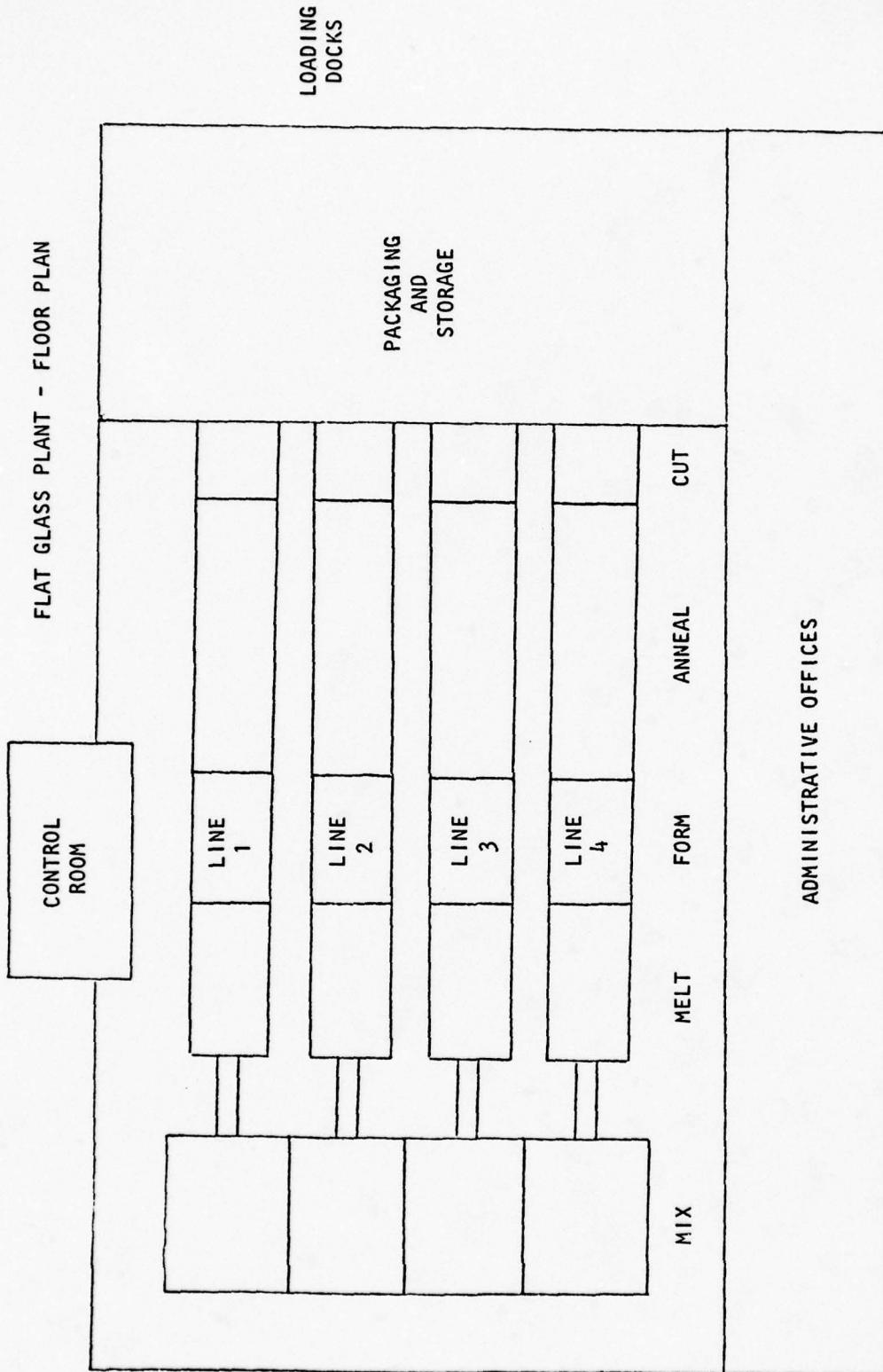
- 1) The most recent organization chart of personnel in your plant;
- 2) A floor plan and some descriptive data about the same.

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FLAT GLASS PLANT
ORGANIZATION CHART



LOCATION: CAIRO, ILLINOIS
 EMPLOYEES: 603 NONEXEMPT
 OPERATION: 21 SHIFTS
 UNION STATUS: NONUNION



LINE	PROCESS	PRIMARY PRODUCTS	MELTING FURNACE AGE
1	Sheet	Trade	5 Years
2	Float	Trade	3 Years
3	Float	Environmental	2 Years
4	Float	Environmental	2 Years

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LOOKING GLASS
Corporate Offices

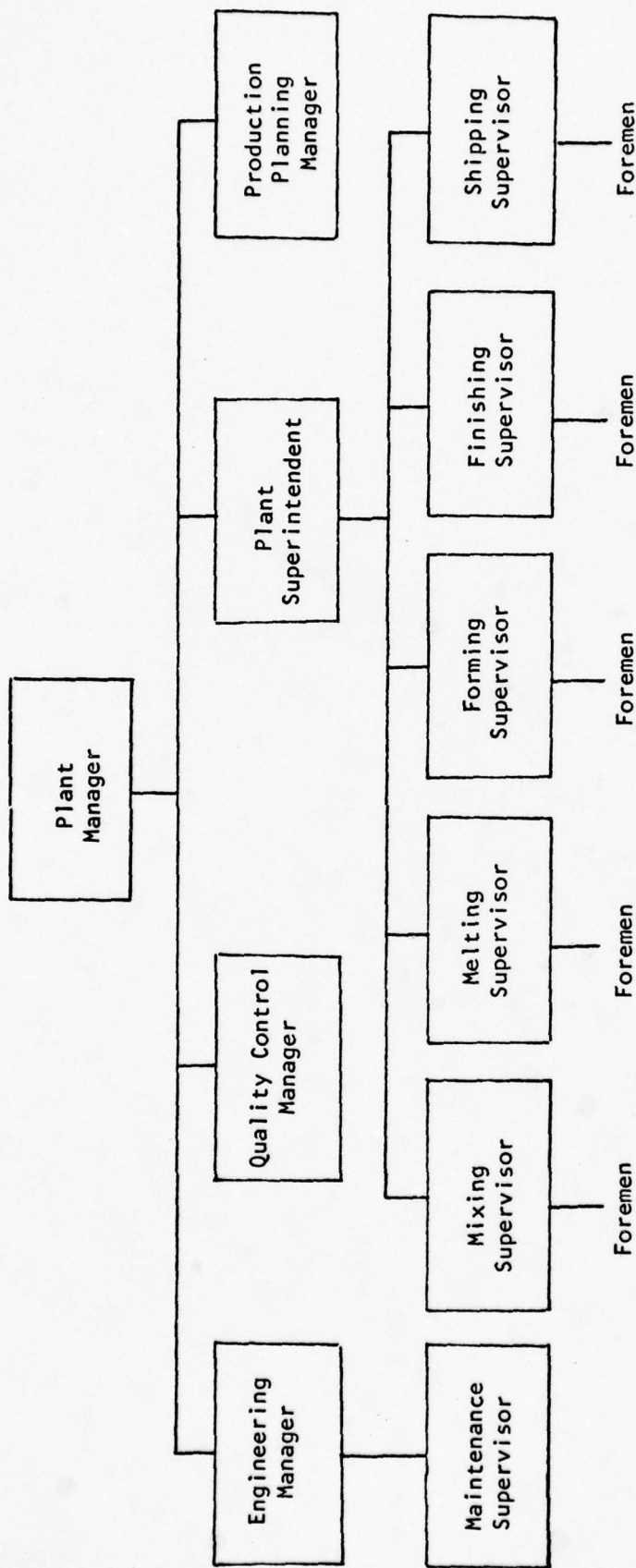
To: Plant Manager, Lighting Products
From: Corporate Personnel
Re: Plant Information

Copies to:

Attached are:

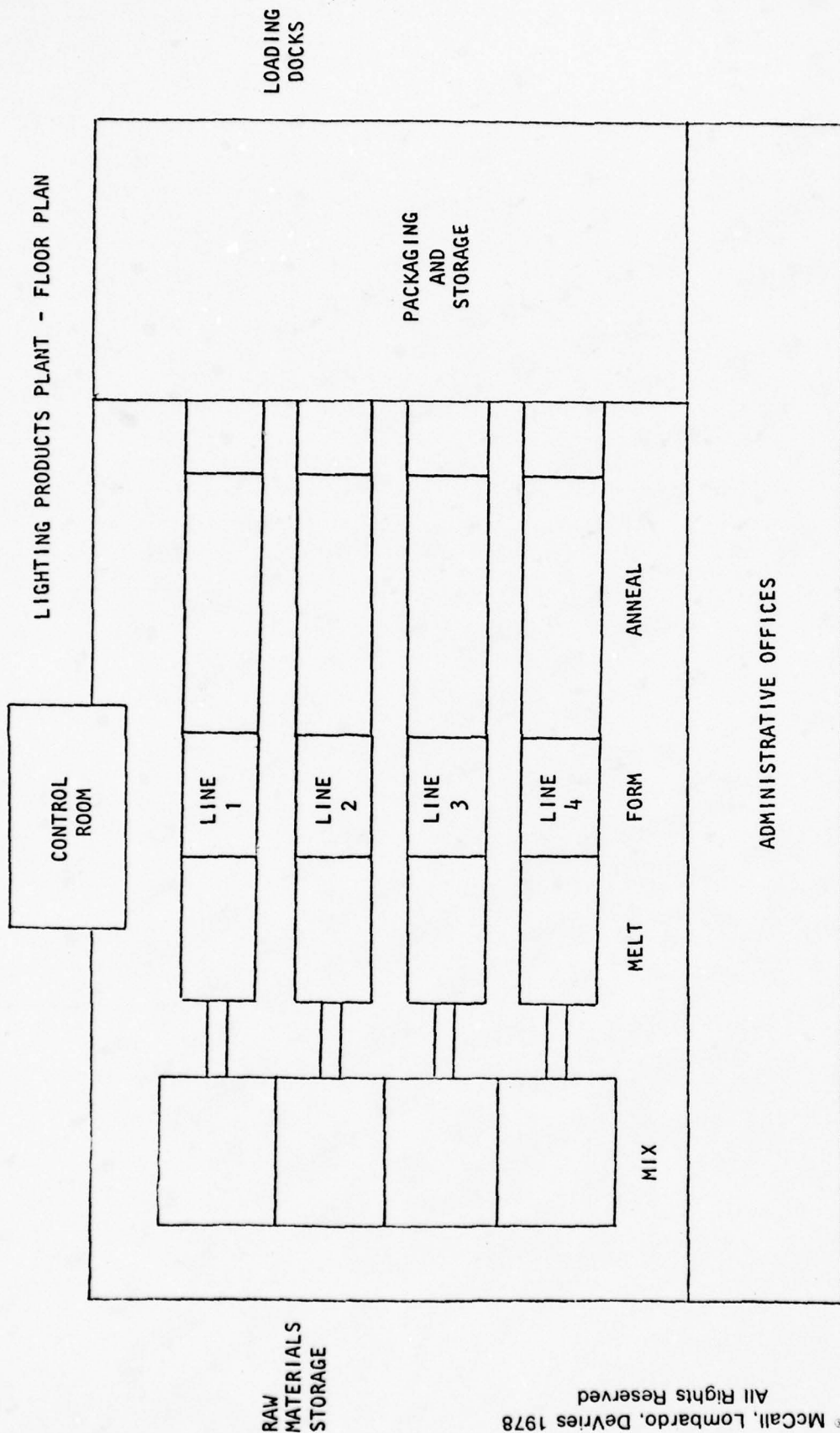
- 1) The most recent organization chart of personnel in your plant;
- 2) A floor plan and some descriptive data about the same.

LIGHTING PRODUCTS ORGANIZATION CHART



LOCATION: JOPLIN, MISSOURI
 EMPLOYEES: 750 NONEXEMPT
 OPERATION: 21 SHIFTS
 UNION STATUS: AMALGAMATED GLASS WORKERS UNION (AGWU)

LIGHTING PRODUCTS PLANT - FLOOR PLAN



LINE	PROCESS	PRIMARY PRODUCTS	MELTING FURNACE AGE
1	Drawing	Fluorescent Tubing	5 Years
2	Drawing	Fluorescent Tubing	3 Years
3	Blowing	Incandescent Bulbs	7 Years
4	Blowing	Incandescent Bulbs	1 Year

LOOKING GLASS
Corporate Offices

To: Vice-President, CGD
From: Corporate Personnel
Re: Performance Appraisal

Copies to:

You are scheduled to do a performance appraisal on the Director of Product Development. Three copies of the appraisal form are attached. Please return a copy of the form to this office as soon as possible, along with your salary recommendation.

Time in position:	3 years
Current salary:	\$65,000
Salary range for position:	\$60,000 to 80,000
Cost of living increase:	6.5%

LOOKING GLASS
CORPORATE OFFICES

NAME OF EMPLOYEE _____ DATE _____
JOB TITLE _____

IMPORTANT--Be sure you consider only one characteristic at a time, regardless of how good or poor he/she may be in the others. It is essential that every question be answered; if more space is needed to answer any item, please write on plain paper and attach to this form. Your overall rating on each factor should be shown by code symbol in the box to the right. Mark "O" for Outstanding; "E" for Excellent; "SP" for Satisfactory Plus; "S" for Satisfactory; "SM" for Satisfactory Minus; "U" for Unsatisfactory.

A. QUALITY OF WORK Insert Rating Code ☐
Comments:

B. QUANTITY OF WORK Insert Rating Code ☐
Comments:

C. ABILITY TO PLAN AND UNDERSTAND WORK Insert Rating Code ☐
Comments:

D. ABILITY TO GET ALONG WITH OTHERS Insert Rating Code ☐
Comments:

E. OVERALL PERFORMANCE RATING (ALL FACTORS) Insert Rating Code ☐
Comments:

If performance of any of above is below expectations, what should be done to bring about improvements?

PREPARED BY _____ DATE _____

REVIEWED AND
APPROVED BY _____ DATE _____
(Your immediate supervisor)

RECORD OF INTERVIEW:
This report was discussed with the employee on _____
(Date)

Signed _____
(Employee)

LOOKING GLASS

Corporate Offices

To: Director of Manufacturing, CGD
 From: Corporate Personnel
 Re: Performance Appraisal

Copies to:

Performance appraisals are due this month on both of your plant managers. Please return copies of the appraisal forms and your salary recommendations to this office as soon as possible.

	<u>PLANT MANAGER LIGHTING PRODUCTS</u>	<u>PLANT MANAGER FLAT GLASS</u>
Time in position:	3 years	2 years
Current salary:	\$49,500	\$48,900
Salary range for position:	\$40,000-70,000	\$40,000-70,000
Adjusted cost of living increase:	6.5%	6.5%

LOOKING GLASS
CORPORATE OFFICES

NAME OF EMPLOYEE _____ DATE _____

JOB TITLE _____

IMPORTANT--Be sure you consider only one characteristic at a time, regardless of how good or poor he/she may be in the others. It is essential that every question be answered; if more space is needed to answer any item, please write on plain paper and attach to this form. Your overall rating on each factor should be shown by code symbol in the box to the right. Mark "O" for Outstanding; "E" for Excellent; "SP" for Satisfactory Plus; "S" for Satisfactory; "SM" for Satisfactory Minus; "U" for Unsatisfactory.

A. QUALITY OF WORK
Comments:

Insert Rating Code ☐

B. QUANTITY OF WORK
Comments:

Insert Rating Code ☐

C. ABILITY TO PLAN AND UNDERSTAND WORK
Comments:

Insert Rating Code ☐

D. ABILITY TO GET ALONG WITH OTHERS
Comments:

Insert Rating Code ☐

E. OVERALL PERFORMANCE RATING (ALL FACTORS)
Comments:

Insert Rating Code ☐

If performance of any of above is below expectations, what should be done to bring about improvements?

PREPARED BY _____ DATE _____

REVIEWED AND
APPROVED BY _____ DATE _____
(Your immediate supervisor)

RECORD OF INTERVIEW:

This report was discussed with the employee on _____
(Date)

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Signed _____
(Employee)

LOOKING GLASS
Corporate Offices

To: President
From: Corporate Personnel
Re: Affirmative Action Distributions - Commercial Glass Division

Copies to:

VP, CGD
DIR-MFG, CGD
DIR-S&M, CGD
DIR-PD, CGD
PM-FLAT
PM-LIGHTING

% OF FULL-TIME EMPLOYEES BY
JOB CLASSIFICATION

	<u>MANAGEMENT</u>	<u>PROFESSIONAL</u>	<u>HOURLY</u>
MALE	94%	92%	75%
FEMALE	6%	8%	25%
WHITE	96%	93%	85%
MINORITY	4%	2%	15%

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LOOKING GLASS

Corporate Offices

To: Vice-President, CGD
From: Corporate Personnel
Re: Advanced Management Course

Copies to:

We have a spot in our advanced management course for one of your promising plant managers. The course is one week long, and covers financial analysis, leadership skills, and organizational development. Successful completion of this course qualifies the manager for our Executive Training program.

If you want to send someone, please let me know right away. The course begins in three weeks and we're trying to close the roster. The class is limited to 10 people.

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W-1
W-2

CORP-41
(CGD-33)

LOOKING GLASS
Corporate Offices

To: Those Listed
From: Corporate Controller
Re: Financial Summaries, Commercial Glass Division

Copies to:

VP, CGD
DIR-MFG, CGD
DIR-S&M, CGD
DIR-PD, CGD

Attached are the following financial summaries for the Commercial Glass Division:

- Income Statement, last fiscal year;
- Financial Ratios, last fiscal year;
- Division Assets and Current Liabilities.

Also attached are the Sales and Cost of Goods Manufactured summaries for the first quarter of this year.

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LOOKING GLASS
COMMERCIAL GLASS DIVISION

INCOME STATEMENT
(In Thousands)

	DIVISION		LIGHTING PRODUCTS		FLAT GLASS	
	Latest Year	Previous Year	Latest Year	Previous Year	Latest Year	Previous Year
NET SALES	\$72,000	\$67,867	\$37,000	\$35,520	\$35,000	\$32,347
COST OF GOODS SOLD	53,890	50,566	29,600	27,924	24,290	22,642
SALES, G & A	8,540	8,054	3,570	3,367	4,970	4,687
R & D	1,320	1,315	410*	410*	910*	905*
ASSIGNED TAXES & INTEREST	<u>4,950</u>	<u>4,826</u>	<u>1,820</u>	<u>2,274</u>	<u>3,130</u>	<u>2,552</u>
NET INCOME FROM PRIMARY OPERATIONS	\$3,300	\$3,106	\$1,600	\$1,545	\$1,700	\$1,561

*assigned to plants

LOOKING GLASS

COMMERCIAL GLASS DIVISION

CURRENT FINANCIAL RATIOS

	<u>DIVISION</u>	<u>LIGHTING PRODUCTS</u>	<u>FLAT GLASS</u>
DEBT TO EQUITY	37.6	----	----
RETURN ON EQUITY	10.4	----	----
RETURN ON ASSETS	5.6	6.7	4.7
RECEIVABLES TURNOVER	7.1	8.8	5.9
COST OF GOODS SOLD AS % OF SALES	74.8%	80.0%	69.4%
R & D AS % OF SALES	1.8%	1.1%	2.6%
OPERATING PROFIT MARGIN AS % OF SALES	12.1%	10.9%	13.2%

LOOKING GLASS
COMMERCIAL GLASS DIVISION

SELECTED BALANCE SHEET ACCOUNTS

Latest Year
(In Thousands)

CASH	\$5,273
RECEIVABLES	\$10,141
INVENTORIES	\$5,027
PLANT AND EQUIPMENT	\$32,615
OTHER ASSETS	\$6,244
CURRENT LIABILITIES	\$6,937

ASSETS ASSIGNED TO PLANTS:

FLAT GLASS	\$35.1 million
LIGHTING PRODUCTS	\$24.2 million

LOOKING GLASS
COMMERCIAL GLASS DIVISION

COST OF GOODS MANUFACTURED
(In Thousands)

LAST QUARTER

BUDGET	ACTUAL	VARIANCE
\$13,482	\$13,714	+1.7%

LOOKING GLASS
COMMERCIAL GLASS DIVISION

SALES
(In Thousands)

LAST QUARTER

FORECAST	ACTUAL	VARIANCE
\$17,940	\$18,003	+3.5%

LOOKING GLASS
Corporate Offices

To: Those Listed
From: Corporate Controller
Re: Financial Position

Copies to:
PM-FLAT
PM-LIGHTING

Attached are the financial summaries for the last fiscal year for the division and for each of the plants.

LOOKING GLASS
COMMERCIAL GLASS DIVISION

INCOME STATEMENT
(In Thousands)

	DIVISION		LIGHTING PRODUCTS		FLAT GLASS	
	Latest Year	Previous Year	Latest Year	Previous Year	Latest Year	Previous Year
NET SALES	\$72,000	\$67,867	\$37,000	\$35,520	\$35,000	\$32,347
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NET INCOME FROM PRIMARY OPERATIONS	\$3,300	\$3,106	\$1,600	\$1,545	\$1,700	\$1,561

*assigned to plants

LOOKING GLASS

COMMERCIAL GLASS DIVISION

CURRENT FINANCIAL RATIOS

	<u>DIVISION</u>	<u>LIGHTING PRODUCTS</u>	<u>FLAT GLASS</u>
DEBT TO EQUITY	37.6	----	----
RETURN ON EQUITY	10.4	----	----
RETURN ON ASSETS	5.6	6.7	4.7
RECEIVABLES TURNOVER	7.1	8.8	5.9
COST OF GOODS SOLD AS % OF SALES	74.8%	80.0%	69.4%
R & D AS % OF SALES	1.8%	1.1%	2.6%
OPERATING PROFIT MARGIN AS % OF SALES	12.1%	10.9%	13.2%

LOOKING GLASS
Corporate Offices

To: Director of Manufacturing, CGD
From: Corporate Personnel
Re: Monthly Personnel Report

Copies to:

VP, CGD
PM-FLAT
PM-LIGHTING

PERSONNEL USE, % VARIANCE AGAINST STANDARD

	<u>FLAT GLASS</u>	<u>LIGHTING PRODUCTS</u>
FULL-TIME HOURLY	+05%	-01%
PART-TIME HOURLY	+15%	00%
OVERTIME HOURS	+20%	-05%

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LOOKING GLASS
Corporate Offices

To: Vice-President, CGD
From: Legal
Re: Bulb Safety

Copies to:
DIR-MFG, CGD
DIR-PD, CGD

Recent government tests prove that our bulb casings will shatter under excessive heat or under normal heat conditions if subjected to sufficient jarring force. We, not the bulb manufacturer we sell to, will bear the brunt of any lawsuits resulting from injuries incurred as a result of our exploding bulbs. To forestall any such litigation, we recommend increasing the tolerances of the glass used in incandescent bulb manufacture.

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LOOKING GLASS
Corporate Offices

To: Plant Manager, Lighting Products
From: Legal
Re: EPA

Copies to:

EPA now has documentation that the stacks at your plant are killing large numbers of trees in the area. They have served notice that we have one week to present a plan for compliance with local pollution standards, and one year to fully comply.

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LOOKING GLASS

Corporate Offices

To: Director of Manufacturing, CGD

From: Purchasing

Re: Raw Materials Prices

Copies to:

PM-FLAT
PM-LIGHTING

These are the current price ranges for our two major raw materials:

Sand \$3.00 - 6.35/ton

Soda Ash \$32.00 - 36.50/ton

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W-3

CORP-47

LOOKING GLASS
Corporate Offices

To: Vice-President, CGD
From: Chairman of the Board
Re: Community Service Organization

Copies to:

I have worked closely with the Community Service Organization for years, and find it to be an active, valuable part of our community. I'd like to help them out financially and agreed to ask our division heads to help. Would you be willing to organize a fund raising campaign in CGD? Thanks.

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LOOKING GLASS

Corporate Offices

To: Director of Sales and Marketing, CGD
 From: Corporate Personnel
 Re: Staff and Budget

Copies to:

BUDGET: \$3.2 million

STAFF:

Sales 96

DISTRICT

	I	II	III	IV
District Sales Managers	1	1	1	1
Area Sales Managers	3	3	3	3
Sales Representatives	7	10	11	6
Technical, Clerical & Administrative	11	12	13	10

Marketing 11

Marketing Manager	1
Market Analysts	2
Market Research Specialists	2
Research Assistants & Clerical	6

LOOKING GLASS
Corporate Offices

To: Director of Product Development, CGD
From: Corporate Personnel
Re: Staff and Budget

Copies to:

BUDGET: \$1.32 million

STAFF: 30

Project Managers	3
Senior Research Specialists	3
Research Specialists	4
Documentation Specialist	1
Technical Specialists	10
Clerical and Administrative	9

VOLUME III

COMMERCIAL GLASS DIVISION

IV. To/From Roles Within CGD

CGD-1 to CGD-107

COMMERCIAL GLASS DIVISION

VICE-PRESIDENT

You are the Vice-President of Looking Glass, responsible for all activities in the Commercial Glass Division. You report directly to the President of Looking Glass, as do the Vice-Presidents in charge of the Advanced Products and the Industrial Glass Divisions.

Reporting to you are three directors in the Commercial Glass Division: Sales and Marketing, Manufacturing, and Product Development.

Your division has two plants, one manufacturing lighting products in Joplin, Missouri, the other producing flat glass in Cairo, Illinois. Each plant is a multimillion dollar operation headed by a highly paid and important plant manager. All sales, marketing, manufacturing, and product development connected with CGD products are handled within your division.

You and the President have the final word on matters of executive hiring and firing, new products, plants, and research developments. Although you do not concern yourself with the day-to-day activities of the directors who report to you, you have operational responsibility for all financial, legal, and government matters which affect your division.

You are a member of the Management Committee, which consists of the three Vice-Presidents and the President. This committee decides all matters of corporate policy and makes all important decisions affecting more than one division.

Salary range: \$90,000 to \$130,000

Current salary & bonus: \$105,000

COMMERCIAL GLASS DIVISION

DIRECTOR OF MANUFACTURING

You are the Director of Manufacturing for the Commercial Glass Division of Looking Glass. You have overall responsibility for the manufacturing operations of the Flat Glass plant (in Cairo, Illinois) and the Lighting Products plant (in Joplin, Missouri). Most of the machinery used to manufacture glass in the Commercial Glass Division was designed in-house by Product Development.

Each of your plants has a Plant Manager who reports to you. These managers, who are highly paid and responsible for major production operations in multimillion dollar plants, visit headquarters every two months to brief you on the status of their plants. Both are at headquarters today and expect to meet with you.

Because these plants are geographically distant from your office at corporate, you do not intervene in the day-to-day activities of the plant managers who report to you. You still have overall responsibility for all financial, legal, governmental, and employment matters within the manufacturing arm. Sales and marketing of your products are the responsibility of the Director of Sales and Marketing. Design and modification of equipment and technologies, as well as development of new products, are the responsibility of the Director of Product Development.

You report directly to the Vice-President of the Commercial Glass Division. Also reporting to the Vice-President are the Directors of Sales and Marketing and Product Development.

Salary range: \$60,000 to \$90,000

Current salary: \$75,200

COMMERCIAL GLASS DIVISION

DIRECTOR OF SALES AND MARKETING

You are the Director of Sales and Marketing for the Commercial Glass Division of Looking Glass. You have overall responsibility for both the sales and the marketing functions of the division. These responsibilities include market forecasting, maintaining and generating customers (both domestic and foreign), for the lighting and flat glass products manufactured by your division.

Sales of products manufactured by the Commercial Glass Division to other divisions within Looking Glass are also handled by your department.

You report directly to the Vice-President of the Commercial Glass Division. Also reporting to the Vice-President are the Directors of Manufacturing and Product Development.

As a director, you are responsible for all financial, legal, governmental, and personnel matters within your arm of the division.

Salary range: \$60,000 to \$90,000

Current salary: \$74,000

COMMERCIAL GLASS DIVISION
DIRECTOR OF PRODUCT DEVELOPMENT

You are the Director of Product Development for the Commercial Glass Division of Looking Glass. You have overall responsibility for the design, modification, and improvement of machines and technologies used for producing glass products in your division. You are also responsible for all phases of product development and modification, including analyzing the feasibility of new products and making design changes on existing products.

As a director, you are also responsible for all financial, legal, governmental, and personnel matters within your arm of the division. The Director of Manufacturing is responsible for all manufacturing operations, and all sales and marketing functions are the responsibility of the Director of Sales and Marketing.

You report directly to the Vice-President of the Commercial Glass Division. Also reporting to the Vice-President are the Directors of Sales and Marketing and Manufacturing.

Salary range: \$60,000 to \$80,000

Current salary: \$65,000

Time in present position: 3 years

COMMERCIAL GLASS DIVISION

PLANT MANAGER, FLAT GLASS

You are in charge of a large plant which produces flat glass. Your plant makes two categories of flat glass: trade glass (glass for windows, picture windows, display cases, sliding doors, etc.) and environmental glass (insulating, heat reflecting and absorbing glass used in new homes and office buildings). Your products are sold primarily to fabricators (people who make finished products, such as furniture, window, and door makers) and to construction wholesalers.

Yours is one of two plants in the Commercial Glass Division of Looking Glass. You report directly to the Director of Manufacturing of CGD, whose office is in the corporate headquarters. Every two months you travel to corporate to meet with your boss and take care of any business you may have with divisional or corporate officers. Today you are at corporate and should plan to brief your boss on the status of your plant.

All sales for products made in your plant are the responsibility of the Director of Sales and Marketing. All design or modification of equipment, technology, or products is the responsibility of the Director of Product Development.

Your plant, located in Cairo, Illinois, employs over 700 people. You are responsible for the entire operation, which runs seven days a week, 24 hours a day, on 21 shifts (the third shift each day is normally run by a skeleton crew).

Salary range: \$40,000 to \$70,000

Current salary: \$48,900

Time in present position: 2 years

COMMERCIAL GLASS DIVISION
PLANT MANAGER, LIGHTING PRODUCTS

You are in charge of a large plant in Joplin, Missouri, which produces glass envelopes for incandescent light bulbs and glass tubing for fluorescent lights. The casings you make are sold to fabricators who put in the innards and sell completed lights to consumers.

Yours is one of two plants in the Commercial Glass Division of Looking Glass. You report directly to the Director of Manufacturing of CGD, whose office is in the corporate headquarters. Every two months you travel to corporate to meet with your boss and take care of any business you may have with divisional or corporate directors. Today you are at corporate and should plan to brief the Director of Manufacturing on the status of your plant.

All sales for products made in your plant are the responsibility of the Director of Sales and Marketing. All design or modification of equipment, technology, or products is the responsibility of the Director of Product Development.

Yours is a large and important plant, employing 850 people. The plant operates 24 hours a day, seven days a week on 21 shifts per week (the third shift each day is run by a skeleton crew). The entire operation is your responsibility.

Salary range: \$40,000 to \$70,000

Current salary: \$49,500

Time in present position: 3 years

LOOKING GLASS
Commercial Glass Division

To: Director of Sales and Marketing, CGD
From: Sales Manager, District III
Re: Late Shipments at National

Copies to:

National Building Supply is still screaming. They claim that over 35% of their orders for environmental glass are 4 days to 3 weeks late.

I checked with our shippers, and they are averaging 1 to 2 days from plant to National. They are on schedule.

Delays are at our Flat Glass plant. The manager says they are behind and that some of our shipments intended for National are being diverted to bigger customers.

Is there something I can tell National to placate them? They are a growing company and represent an even larger future market.

LOOKING GLASS
Commercial Glass Division

To: Plant Manager, Flat Glass
From: Plant Superintendent, Flat Glass
Re: Shipment Delays

Copies to:

As you requested, here's a summary on delayed shipments of environmental glass:

- We seem to have levelled out at around 25%.
- Sales has diverted several orders intended for National to a larger customer (Apex), resulting in extended delays for National.
- We are currently exceeding normal capacity, but orders from sales are still running 15% ahead of us.
- By reducing routine maintenance and beefing up the third shift, we have increased output. We can't keep up the maintenance reduction for long.
- Morale in Shipping is rock bottom. They liked the overtime at first, but now they aren't so happy. They are especially upset about diverted orders and are making some mistakes. One shipment went to Phoenix instead of Memphis.

LOOKING GLASS
Commercial Glass Division

To: Vice-President, CGD
From: Director of Sales and Marketing, CGD
Re: Sylvester Electric

Copies to:

About 85% of our lighting products is spread across our three major customers--Sylvester, Major, and Eastern. Our salespeople have found out that Sylvester has made inquiries into a.) purchasing a small plant from one of our competitors, and b.) building their own facility for producing fluorescent tubes and incandescent envelopes.

Since the technology is simple, they might be able to manufacture their own slightly less than we currently sell for. I think we ought to discuss some ways of forestalling their vertical integration before their thinking gets too far along.

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LOOKING GLASS
Commercial Glass Division

To: Director of Sales and Marketing, CGD
From: Sales Manager, District IV
Re: Sylvester Electric

Copies to:

Following our phone conversation of last week, I tried to find out why Sylvester is considering making their own envelopes and tubes. Here's what I've come up with so far:

- A slight decline in quality. Apparently the percentage of our tubes and envelopes with slight glass excess is very gradually going up. Their new machines won't join sockets to an even slightly rough edge, so all excess must be filed by hand or the pieces returned to us.
- Trouble with APD. The space division of Sylvester buys integrated circuits from our Advanced Products Division. They've apparently had some trouble with quality and service, and seem to think it represents a general decline in Looking Glass.

LOOKING GLASS
Commercial Glass Division

To: Director of Manufacturing, CGD
From: Plant Manager, Flat Glass
Re: Internal Transfer

Copies to:

While I'm at headquarters, I'd like to discuss further the glass blanks we make for the Capacitor plant in our Advanced Products Division. Providing these blanks has been included in our normal capacity, but the increased demand for environmental glass has put us well above capacity already. Making these blanks is extremely time consuming and costly because we have to a.) interrupt runs of environmental glass, b.) reset the machinery, c.) mix a new batch of ingredients, and d.) clean up and reset to resume production. The margin on our internal transfer has always been small, but the opportunity costs now make it really a loss for us.

The Auto Glass plant in Industrial Glass could make the blanks, and they aren't as pressed as we are. Or, APD could purchase outside--better they absorb these costs than we.

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LOOKING GLASS
Commercial Glass Division

To: Vice-President, CGD

From: Director of Sales and Marketing, CGD

Re: Internal Transfer

Copies to:
DIR-MFG, CGD

As you requested, here are the figures on our sales of glass blanks to the Capacitor plant in the Advanced Products Division. Figuring our costs, overhead, etc., we are barely pulling in 2%, while Advanced Products is saving 10% over the cost of going outside.

From what Manufacturing tells me, our division would be a lot better off devoting full capacity to environmental glass (where the margin is close to 15%). At a minimum we should recalculate our standard costs and raise the price of the blanks--say by 7%.

LOOKING GLASS
Commercial Glass Division

To: Vice-President, CGD
From: Director of Sales and Marketing, CGD
Re: Forecasts

Copies to:
DIR-MFG, CGD

Here's what we've come up with:

- Flat glass markets will continue to grow an average of 8.2% annually for at least the next 8 years.
- Environmental glass with insulating qualities will grow even faster. Trends in construction are listed below:

	<u>2 Years Ago</u>	<u>Last Year</u>	<u>Projected Next Year</u>
% increase in new construction	7.1%	10.2%	12%

Not only will new construction increase, but use of insulating glass per unit will increase with the push for energy conservation.

- Environmental glass will slowly eat into the trade glass market. It looks like about a 5% decline in trade glass sales next year.
- It is reasonable to plan for a 9% increase in shipments of flat glass this year.
- Lighting products markets will continue to grow at the same moderate pace, approximately 3 to 4% annually. As in the past, these markets should hold even in a mild recession.

LOOKING GLASS
Commercial Glass Division

To: Director of Manufacturing, CGD
From: Plant Manager, Flat Glass
Re: Float Glass Conversion

Copies to:

I've gotten the figures on the effects of conversion from sheet to float processes (3/4 of our plant is now float, 1/4 sheet). Using the float process has resulted in:

- 19.9% reduction in energy use in the last 2 years;
- 50% increase in daily tonnage in the last 2 years;
- 23% reduction in price of float glass (over a 3-year period);
- 37% decrease in employment (3-year period).

These numbers should provide some ammunition to get the remaining 1/4 converted soon.

LOOKING GLASS
Commercial Glass Division

To: Vice-President, CGD
From: Director of Manufacturing, CGD
Re: Energy

Copies to:
PM-FLAT
PM-LIGHTING

In spite of increased efficiency in our flat glass operation, energy remains a problem. Not only do we face the threat of interrupted energy supplies (as happened a few years ago), but costs continue to rise. Our current energy situation is as follows:

	<u>Natural Gas</u>	<u>Electric</u>
Current Use	60%	40%

Oil, augmented by propane, can replace electricity as an energy source, but it 1.) costs more, 2.) reduces glass quality slightly, 3.) shortens the life of the furnace, and 4.) tends to leak. We don't currently have enough capacity to replace electricity entirely.

Energy use can only be cut 30% before production is seriously affected (i.e., the plant shuts down).

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LOOKING GLASS
Commercial Glass Division

To: Director of Manufacturing, CGD
From: Director of Product Development, CGD
Re: Energy

Copies to:

In response to your concern over energy switchover, I've had my staff look at some options:

- Electric furnaces are three times as efficient as gas melters.
- Gas and oil storage facilities at the plants could prevent temporary supply interruptions and allow stockpiling at favorable prices, but would tie up a lot of money and give us additional environmental headaches.
- One of our competitors has purchased 39% of an energy supplier and is now drilling its own wells.

LOOKING GLASS
Commercial Glass Division

To: Plant Manager, Flat Glass
From: Plant Superintendent, Flat Glass
Re: Standard Costs

Copies to:

As you suspected, our actual costs are exceeding the standard costs by quite a bit.

The standard cost estimates were based on average raw material price. The range is broad, and our production push on environmental glass has caused us to use the higher end of the range to ensure continued supply.

Further, freight can cost as much or more than materials when we have it shipped from far away. Again, increased production has caused us to use remote suppliers more often.

If we continue these patterns, we're going to look bad unless standard costs are adjusted.

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LOOKING GLASS
Commercial Glass Division

To: Director of Manufacturing, CGD
From: Director of Product Development, CGD
Re: Machine Guards

Copies to:
PM-FLAT
PM-LIGHTING

As you know, the new OSHA standards on machine guards apply to both the Lighting Products and Flat Glass operations. The necessary modifications will require two days per line, not including shutdown and start-up time. Please let me know as soon as possible when you want to start and whether you want to stagger the changes or hit them all at once.

LOOKING GLASS
Commercial Glass Division

To: Director of Manufacturing, CGD
From: Plant Manager, Lighting Products
Re: Machinery

Copies to:

Being the oldest plant at Looking Glass has allowed us to establish a solid reputation. Unfortunately, it also means we have the oldest equipment. Maintenance costs have risen considerably and we're beginning to have some problems with excess glass around bulb and tube openings. I know the technology hasn't changed in fifty years, but we really need to start thinking about modernizing the plant. Can we get together to plan something? I'm facing another battle with EPA over emissions, and some kind of plan might keep them off of us for a while.

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LOOKING GLASS
Commercial Glass Division

To: Plant Manager, Lighting Products
From: Maintenance Supervisor, Lighting Products
Re: Maintenance Costs

Copies to:

Last month, total maintenance costs in hours, parts, and materials rose 3% at the Lighting Products plant. In spite of this increased effort, we're still getting a slight excess on bulbs and tubes. This is not serious and is probably not worth the time to correct. We've got about 90% of it, but that last 10% gets expensive. Until we update the drawing and blowing equipment, we can expect this sort of thing.

LOOKING GLASS
Commercial Glass Division

To: Plant Manager, Flat Glass
From: Engineering Manager
Re: Capacities, Flat Glass Plant

Copies to:

Here are the figures you asked for to take to Corporate:

- 3/4 of the plant has been converted to the float glass process (capacity, 300 million square feet annually);
- 1/4 of the plant is using the sheet glass process (capacity, 50 million square feet annually);
- Current capacity, 350 million square feet annually;
- If all of the plant were converted to the float glass process, capacity would be 400 million square feet annually.

LOOKING GLASS
Commercial Glass Division

To: File

From: Director of Product Development, CGD

Re: Status of Product Development in the Commercial Glass Division

Copies to:

1. Over the last year, 70% of our energy has been devoted to improving existing equipment and plants or refining existing products. Little support has been given to developing new products.
2. The development budget has gradually decreased in absolute dollars over the last five years.
3. Product Development in Advanced Products has raided three of our most promising scientists in as many years.
4. Most new staff I've been able to get have been line transfers, lacking the up-to-date technical skills to work on new products.

LOOKING GLASS
Commercial Glass Division

To: Vice-President, CGD
From: Director of Product Development, CGD
Re: Current Projects

Copies to:

<u>PROJECT</u>	<u>STATUS</u>	<u>DEADLINE</u>
1. Machine change, blowing process (excess glass on bulbs)	Project team formed, background research completed	Recommendations next month
2. Machine change, drawing process (excess glass on tubes)	Project team formed, background research underway	Recommendations in six weeks
3. Modification of sheet glass operation to increase production	Research indicates that current process is at maximum; conversion to float cheaper than modification	Just completed
4. Design of pollution equipment for Lighting Products plant	Project team formed, consultants retained	Project deferred by projects 1 & 2
5. Packaging changes, Lighting Products	Three cheaper alternatives identified so far; currently investigating suppliers	Recommendations in two weeks
6. Mercury and sodium lamp development	Technology available; applications awaiting personnel and go-ahead from corporate	Six months from approval to production

LOOKING GLASS
Commercial Glass Division

To: Director of Sales and Marketing, CGD
From: Sales Manager, District I
Re: Product Diversification

Copies to:

As you know, Major Electric is putting increasing emphasis on the production of mercury and sodium lamps. These lamps are used in high theft and personal danger areas like parking lots and storage areas because they are much brighter and more efficient than ordinary lights. All indications are that such lighting will continue to grow, especially in large urban areas. While this is not reducing the volume of incandescent and fluorescent production, it may have indirect effects on us.

Since we do not make casings for these lamps, Major has been purchasing them in increasingly large numbers from our competitors. This activity has led to an effort by one competitor to sell Major more incandescent and fluorescent products by offering a combined volume discount.

My contacts at Major are putting pressure on us to match our competition's slightly lower prices. Our margins are already tight enough, so I suggest we too offer mercury and sodium lamps. Our service and quality assure us of a chunk of that market, and our Lighting Products plant can produce the items.

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LOOKING GLASS
Commercial Glass Division

To: Director of Manufacturing, CGD
From: Plant Manager, Lighting Products
Re: Product Development

Copies to:
PM-FLAT

The Plant Manager of Flat Glass and I had a long talk recently about the policy of Looking Glass assigning Product Development costs to the individual plants. Last year \$1,320,000 in Product Development costs were assigned to Flat Glass and Lighting Products collectively. Most of their activities concerned machine, packaging, and plant design, issues that our own engineering groups can handle. We feel that our costs for such activities could be substantially reduced if we handled them ourselves. Frankly, we think our own people have better knowledge of our needs and are more responsive to the pressures we face.

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LOOKING GLASS
Commercial Glass Division

To: Director of Product Development, CGD
From: Staff Research Specialist
Re: Bulb Shatter

Copies to:

As you requested, I reviewed the government study of our bulb casing shatter characteristics. I found:

- The heat applied was by far higher than any to which our bulbs would be exposed under normal conditions. Unless someone is planning to use ordinary light bulbs in a blast furnace, it is highly unlikely that anyone is endangered.
- The "jarring force" test again far exceeded any reasonable approximation of normal circumstances. It "proved" that the equivalent of hitting a bulb with a baseball bat will shatter the bulb.
- The differences among different bulb cases, based on such extreme tests, are irrelevant. Ours are statistically less resistant, but not practically.
- Finally, the probability of a shattering bulb actually hurting someone is remote unless the person's face is close to the bulb at the time. Test conditions of heat and force would do much more damage than the bulb.

In short, the laboratory tests have no practical significance.

LOOKING GLASS
Commercial Glass Division

To: Director of Sales and Marketing, CGD
From: Vice-President, CGD
Re: Sales Award Banquet

Copies to:

Please send me an outline of your planned talk for tomorrow's sales banquet. I want to gear my remarks around yours.

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LOOKING GLASS
Commercial Glass Division

To: President
From: Vice-President, CGD
Re: National Construction Suit

Copies to:
DIR-S&M, CGD

I've tried to keep this out of your hair, but it's escalated to the point where you need to be informed and some decisions must be made. Briefly, this is what has happened:

- Two years ago a large, heavy reflective glass panel fell from the upper story of a high-rise apartment building. Fortunately no one was hurt, but the panel fell through the roof of a building below causing extensive damage to the structure and bursting the sprinkler system pipes.
- The apartment owner's insurance company investigated and found a.) that winds had created a vacuum that caused the panel to fall, b.) that National had installed the window improperly, which contributed to its fall, and c.) that the glass panel (made by us) had a slight imperfection that caused it to crack and contributed to the fall.
- The insurance company is willing to pay the \$300,000 in damages but not the additional \$300,000 the building owner wants for lost business. The insurance company wants to recover its loss from National because they installed the window improperly. National claims the window was poorly installed because of the flaw in the glass but that the installation was adequate had the glass not actually cracked. So they are threatening to sue us. We have countered that the imperfection was not serious and would not have caused a problem had the panel been installed properly. Further, National has the responsibility for inspecting materials before installation.
- National is a major customer of ours. This whole thing is getting nasty.
- National filed against us several weeks ago, and the case will come up soon.

Here are the options I've investigated:

- 1) Go to court. Legal and I have reviewed the case thoroughly. Their position is to go to court. Under the Uniform Building Standards Act we are not liable in this case. If we do go to court, however, we risk a lot of bad publicity and the loss of National as a customer.

LOOKING GLASS
Commercial Glass Division

To:

From:

Re:

Copies to:

- 2) Settle. I've been negotiating with National, and they'd probably settle with us for about 50%, approximately \$300,000, if the building owner recovers the full amount. If we settle, we run the risk of others trying to get us to "buy back their business." Similar incidents have happened in the past and we've been lucky until now.

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LOOKING GLASS
Commercial Glass Division

To: Director of Product Development, CGD
From: Project Manager, Mercury and Sodium Lamps
Re: Project Budgets

Copies to:

This is to confirm our conversation of yesterday. We have expended the budget on the mercury and sodium lamps development project and have shown the technical feasibility of producing such lamps in the Lighting Products plant. Development to the operational stage will require an additional \$150,000 plus freeing key staff from the drawing machine project. We can be ready to produce lamps in six months.

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LOOKING GLASS
Commercial Glass Division

To: Director of Manufacturing, CGD
From: Plant Manager, Lighting Products
Re: Threatened Strike

Copies to:

It seems highly probable now that Cyborg in Koshkonong, Missouri, our primary supplier of soda ash, is not going to meet its union demands and will have a strike. I have tried to arrange alternate sources, but freight will be more expensive than the material. We have also begun to stockpile and build inventories, but it's unlikely we can maintain our current level of shipments more than six weeks into a strike.

I'd like to meet with you and the Director of Sales while I'm at Corporate to take a look at our options. This might be a good time to shut down and refurbish the drawing and blowing machines. I doubt the strike will last more than three months. We could stagger downtime on the lines and probably get 50+% of normal production out.

LOOKING GLASS
Commercial Glass Division

To: Director of Manufacturing, CGD
From: Vice-President, CGD
Re: Student Interns

Copies to:

We'd like to hire about 15 promising MBA students for a 6 to 8 week period. We feel that this will give them a chance to learn about our business while at the same time giving us a chance to look them over as potential management personnel. Besides, it is a contribution to the university and a good experience for the students. Can you place 10 of them under good people in your plants?

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LOOKING GLASS
Commercial Glass Division

To: Director of Sales and Marketing, CGD
From: Vice-President, CGD
Re: Student Interns

Copies to:

We'd like to hire about 15 promising MBA students for a 6 to 8 week period. We feel that this will give them a chance to learn about our business while at the same time giving us a chance to look them over as potential management personnel. Besides, it is a contribution to the university and a good experience for the students. Can you place 5 of them with good sales managers in some of the local districts?

LOOKING GLASS
Commercial Glass Division

To: Director of Manufacturing, CGD
From: Vice-President, CGD
Re: Advanced Management Course

Copies to:

Attached is a notice I received from Corporate Personnel about a spot for a plant manager in CGD in the advanced management course. It's an important experience for our up-and-coming executives, and a real plum for them.

There is apparently a real deadline for nominations, so let me know right away who, if anyone, you'd like to send.

LOOKING GLASS
Corporate Offices

To: Vice-President, CGD
From: Corporate Personnel
Re: Advanced Management Course

Copies to:

We have a spot in our advanced management course for one of your promising plant managers. The course is one week long, and covers financial analysis, leadership skills, and organizational development. Successful completion of this course qualifies the manager for our Executive Training program.

If you want to send someone, please let me know right away. The course begins in three weeks and we're trying to close the roster. The class is limited to 10 people.

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W-1
W-2

CORP-41
(CGD-33)

LOOKING GLASS
Commercial Glass Division

To: Vice-President, CGD
From: Director of Sales and Marketing, CGD
Re: Customers and Volume

Copies to:

Here's the report you requested:

<u>SALES DISTRICT</u>	<u>PRIMARY CUSTOMERS</u>	<u>PRIMARY PRODUCT</u>	<u>% OF TOTAL PRODUCT SALES</u>
I	Major Electric	Lighting Products	30%
	Eastern Lights	" "	18%
	Others	" "	4%
			<u>52%</u>
II	Forstan	Flat Glass	15%
	Apex Distributors	" "	29%
	Others	" "	3%
			<u>47%</u>
III	National Building	Flat Glass	21%
	Construction Trades	" "	22%
	Others	" "	10%
			<u>53%</u>
IV	Sylvester Electric	Lighting Products	35%
	Others	" "	13%
			<u>48%</u>

LOOKING GLASS
Commercial Glass Division

To: Director of Sales and Marketing, CGD
From: Sales Manager, District I
Re: New Product Request

Copies to:

Eastern Lights, one of our long-standing lighting products customers, has asked if we can produce 100,000 heat resistant bulb casings for use in ovens. Simple substitution of a few ingredients would add the needed heat resistance to our current bulbs, so I see no reason not to agree--they will accept our price because they're in a hurry (they need 25,000 in three months, the balance over the next six months). Okay to go ahead?

AD-A063 058

CENTER FOR CREATIVE LEADERSHIP GREENSBORO NC
LOOKING GLASS, INC. VOLUME III. COMMERCIAL GLASS DIVISION. OPER--ETC(U)
OCT 78 M W MCCALL

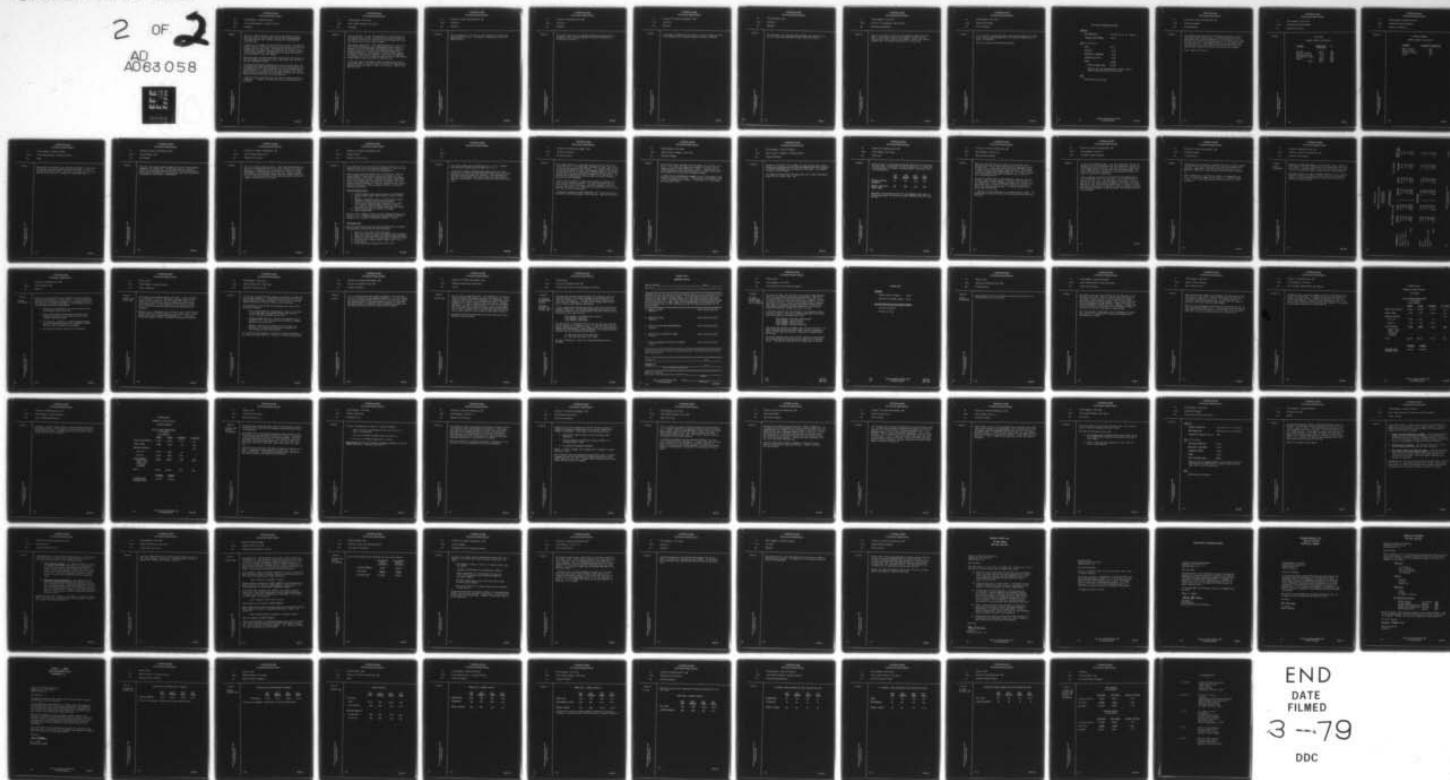
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N00014-76-C-0870

NL

UNCLASSIFIED

2 OF 2
AD
A063 058



END
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DDC

LOOKING GLASS
Commercial Glass Division

To: Plant Manager, Lighting Products
From: Plant Superintendent, Lighting Products
Re: Grievance

Copies to:

One of our female operators was fired for negligence last week. She came to see me, claiming that she was discriminated against and would take her case to EEOC if she was not reinstated and given back pay.

I talked to her foreman, who said she has never been a satisfactory worker, that he's talked to her several times before, and this last incident was the final straw. She apparently got involved in a conversation with another employee and failed to notice a slippage in her drawing machine. Two hundred feet of tubing flew across the plant before it could be stopped.

She claims she's not been warned about anything specific before and that she stopped the machine as soon as she could. She says she was not distracted by anyone.

I checked her performance appraisals for the last three years, and sure enough she's been rated satisfactory every time and there are no notations of prior low performance. Her current foreman has not rated her before. I talked to her previous foremen and all said she has been a problem ever since she came to Looking, but none had wanted the hassle of giving her a bad appraisal.

I think we should let her go, but she's quite serious about filing a complaint. I thought I'd better check with you before taking any action.

LOOKING GLASS
Commercial Glass Division

To: Plant Manager, Flat Glass
From: Plant Superintendent, Flat Glass
Re: Grievance

Copies to:

Here we go again. We just promoted Adams to Section Supervisor and Johnson is up in arms. He claims he was denied because of his age--he believes he's entitled to the job because he's been here longer and is just as good as Adams.

The section managers and I chose Adams because he's clearly more able to deal with people and is knowledgeable about the job. Naturally, both men have been rated above average in their appraisals, so we can't document the difference between them. Johnson threatened to file an age discrimination claim against us unless we give him the promotion. Last time this happened we offered a nice raise in place of promotion and it was accepted. Johnson doesn't seem interested--he wants the job.

I can't see taking the promotion away from Adams since he'd be justifiably angry. And there aren't any other Section Supervisor openings now or even soon, at least in this plant. What do you want me to do?

LOOKING GLASS
Commercial Glass Division

To: Director of Sales and Marketing, CGD
From: Secretary
Re: Reminder

Copies to:

You are scheduled to talk to the local Association of Sales Managers tonight at 8 p.m. Your topic is "Coordinating Sales and Manufacturing."

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LOOKING GLASS
Commercial Glass Division

To: Director of Manufacturing, CGD

From: Secretary

Re: Reminder

Copies to:

The monthly meeting of the regional Manufacturing Association is tonight at 7:30. Have you decided to accept the nomination to be Secretary-Treasurer?

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LOOKING GLASS
Commercial Glass Division

To: Director of Product Development, CGD
From: Secretary
Re: Reminder

Copies to:

The Chamber of Commerce called to ask if you will accept the chair
on the committee for improving community-industry relations.

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LOOKING GLASS
Commercial Glass Division

To: Vice-President, CGD
From: Secretary
Re: Reminder

Copies to:

You promised to tell American National Bank today whether or not
you will accept the nomination to their Board of Directors.

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LOOKING GLASS
Commercial Glass Division

To: Plant Manager, Flat Glass
From: District 11 Salesperson, Apex Account
Re: Redirecting Shipments

Copies to:

Apex has increased its order for environmental glass again this month. Please divert part of the shipments for National and Construction Trades to fulfill the request. Apex is our biggest customer and I've promised them we won't let them down.

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LOOKING GLASS
Commercial Glass Division

To: Plant Manager, Flat Glass
From: Engineering Manager
Re: Plant Expansion

Copies to:

It is feasible to expand the plant into the undeveloped area to the north. We could add enough lines to increase our capacity by 1/3, as per the attached.

The lot is owned by American National Bank.

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FLAT GLASS EXPANSION ESTIMATES

CAPACITY

NEW PRODUCTION	116 million sq. ft. annually
INCREASE OVER CURRENT	33.1%

COST (in millions)

LAND	\$0.12
BUILDING	2.18
MACHINERY & EQUIPMENT	8.00*
STORAGE FACILITIES	0.46
OTHER	<u>0.32</u>
TOTAL ESTIMATED COST	\$11.08

*based on cost of standard melter; latest electric
melters would add \$1.5 to \$2.0 million

TIME

37-49 weeks from contract

LOOKING GLASS
Commercial Glass Division

To: Director of Sales and Marketing, CGD
From: Marketing Manager
Re: Foreign Markets

Copies to:

Our research shows conclusively that foreign markets are ripe for lighting products and flat glass. Plants in England or France could supply most of Western Europe on a highly competitive basis. We expect that margins on lighting products will be slightly higher overseas than here. Environmental glass is growing faster here than overseas, but by the time a plant could be operational the overseas market should be similar to the current U.S. growth.

A full report will follow.

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LOOKING GLASS
Commercial Glass Division

To: Plant Manager, Flat Glass
From: Production Planning Manager
Re: Capacity Allocation

Copies to:

FLAT GLASS

CURRENT CAPACITY ALLOCATIONS

<u>CUSTOMER</u>	<u>SQUARE FEET</u> (millions)	<u>%</u>
Forstan	52.5	15%
Apex Distributors	101.5	29%
National Building	73.5	21%
Construction Trades	77.0	22%
Others	<u>45.5</u>	<u>13%</u>
TOTAL	350.0	100%

LOOKING GLASS
Commercial Glass Division

To: Plant Manager, Lighting Products
From: Production Planning Manager
Re: Capacity Allocations

Copies to:

LIGHTING PRODUCTS
CURRENT CAPACITY ALLOCATIONS

<u>CUSTOMER</u>	<u>ALLOCATED % PRODUCTION</u>
Major Electric	30%
Eastern Lights	18%
Sylvester Electric	35%
Others	17%

LOOKING GLASS
Commercial Glass Division

To: Plant Manager, Lighting Products
From: Plant Superintendent, Lighting Products
Re: Theft

Copies to:

Why the hell would anyone steal light bulb casings? I don't have the foggiest idea what anyone would want with them, but we're losing several cases a week. The loss is so small it isn't worth beefing up security, but I thought you should know about it.

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LOOKING GLASS
Commercial Glass Division

To: Director of Sales and Marketing, CGD
From: Vice-President, CGD
Re: Sales Award

Copies to:

There will be a special awards banquet for district sales managers throughout the corporation. The President wants to present a plaque to the top sales manager from each division and asked me to send a name from Commercial. Would you pick your best and send me a paragraph on that person's achievements?

LOOKING GLASS
Commercial Glass Division

To: Director of Product Development, CGD
From: Senior Research Specialist
Re: Request for Transfer

Copies to:

This is a difficult memo to write. I have nothing but respect for you and I've enjoyed working for you, but I feel my skills aren't being used in Commercial and I've heard of an opening in Product Development in the Advanced Products Division. Here we've been more concerned with equipment design than with product innovation. I think I can contribute more to the latter and would like you to support my application for transfer.

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LOOKING GLASS
Commercial Glass Division

To: Director of Product Development, CGD
From: Research Staff
Re: Product Diversification

Copies to:

You requested that we look into the technical feasibility of the Commercial Glass Division producing new products. This is a preliminary report of our findings and recommendations.

Glass is one of the most versatile of all materials. There are over 100,000 different formulas that can be turned into over 60,000 products. Variations in formula and process can produce glass with enormous strength, corrosion resistance, shock resistance, light conductance, and electrical insulation. We have examined potential products in light of Commercial Glass' primary existing technologies. Below, grouped by plant, are the most feasible new products:

Lighting Products Plant

1. Vapor-discharge light casings (mercury + sodium lamps)
2. Colored signal lenses (for airports, traffic signals, etc.)
3. Automobile headlamps (there is a particularly strong need for a special type of these in Europe)
4. Glass shades, lenses, globes, reflectors, etc. (used to control the direction and intensity of natural and artificial light in offices, factories, and homes)
5. Specialized globes (for lanterns and lamps)
6. Glass storage tanks

With only minor changes in plant, we could immediately begin producing 1, 4, 5. Slightly more extensive modification would be necessary for 2 (primarily ingredient changes), 3, and 6.

Flat Glass Plant

We are already making a wide variety of products here, including heat absorbing, reflecting, and insulating glass.

1. Specially tinted (for office buildings)
2. Heavy duty plate (for areas with special safety problems)
3. Opaque (for modern external and internal building design)
4. Vehicular glass (some is already made in Industrial Glass)
5. Patterned glass (room dividers, shower stalls, etc.)
6. Mirror glass
7. Conducting glass (to keep glass free of ice)

LOOKING GLASS
Commercial Glass Division

To:

From:

Re:

Copies to:

Only minor changes would be required for 1, 3, 5, 6. Somewhat more extensive changes would be needed for 2, 4, 7.

In addition to these straightforward product lines, we could focus our R & D effort on solar collection panels (for satellites and solar heating in homes and industry). This represents the most exciting challenge to us and we could solve the technical problems in 6-8 months. We could be ready for production by next year.

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LOOKING GLASS
Commercial Glass Division

To: Director of Product Development, CGD

From: Technical Specialist

Re: New Float Process

Copies to:

We currently operate our float glass process under license from a firm in Britain. I've always been interested in float, and I think I see a way to develop our own version. I've already worked out the theoretical problems and think, with adequate support, I could make it operational in two to three years. We would then be free of paying for the license and could sell licenses on our own process. It would be only slightly more efficient than the current procedure, but would be more automated.

To carry out the project, I would need a mechanical engineer full-time and three chemists halftime. I'd need to be freed from all other projects for the duration. Funds for equipment, personnel, testing, consultants, etc., would be on the order of \$4 to 5 million over the next two to three years.

I know this represents a major commitment, but I'm sure we can do it. The benefits could be enormous in the long run. What do you think?

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LOOKING GLASS
Commercial Glass Division

To: Plant Manager, Flat Glass

From: Quality Control Manager, Flat Glass

Re: Returned Shipment

Copies to:

Construction Trades returned a 15-ton shipment and they want us to eat it. They claim the shipment was damaged on our end, but our inspection reports show everything in order. I checked with the freight company and they have signed delivery tickets stating that the shipment was received with no apparent damage.

I suspect that the shipment was damaged either in unloading or warehousing at Construction Trades. I know we want their goodwill, but I can't see accepting this return. If you okay it, I'll go ahead and have them billed.

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LOOKING GLASS
Commercial Glass Division

To: Plant Manager, Lighting Products
From: Quality Control Manager, Lighting Products
Re: Returned Shipment

Copies to:

Sylvester returned our last shipment of light casings (250 cartons). Shipping was experimenting with the new packaging materials suggested by Product Development and the separators came loose. The shipment arrived in lots of pieces.

I'd suggest we discontinue this experiment until Product Development comes up with a better idea. OK?

LOOKING GLASS
Commercial Glass Division

To: Director of Manufacturing, CGD
From: Plant Manager, Flat Glass
Re: Lead Times

Copies to:

Since we talked I've gone back and gotten some data on the decreasing lead times. As you know, we like to operate on a six-week lead to ensure optimal run length. Anything shorter runs up our reset time unnecessarily.

	<u>LAST YEAR</u>	<u>LAST QUARTER</u>	<u>LAST MONTH</u>	<u>THIS MONTH</u>
PERCENT EXPEDITED SHIPMENTS	5%	15%	14%	16%
PERCENT LEADS LESS THAN 6 WEEKS	10%	25%	27%	28%

Admittedly the increasing orders for environmental glass have inflated percentages, but we've got to work something out with sales, and fast.

LOOKING GLASS
Commercial Glass Division

To: Director of Sales and Marketing, CGD
From: Sales Manager, District IV
Re: Potential New Customer

Copies to:

While the vast majority of our sales in this district are to Sylvester Electric, my people are continually searching for new possibilities. I just got a field report that Rasmussen Lamps is about to go into the camping lantern business. They project a need for 25,000 lantern globes next year. If they are successful, they anticipate an annual increase of 10%, as well as a solid replacement market.

They plan to market four to eight different lanterns, requiring an equal number of globe shapes. They have a bid from one of our competitors to make the globes at \$0.75, and I'm pretty sure we can beat that. If we do, we stand a chance to get part of their neon light business as well. I think we can work out a pretty good package deal.

It wouldn't be much trouble for us to produce lantern globes. Let me know what you think--we have to act fast before they take the other bid.

LOOKING GLASS
Commercial Glass Division

To: Director of Sales and Marketing, CGD
From: Sales Manager, District II
Re: Personnel Transfer Request

Copies to:

It seems to be happening again. Our top salesperson, the one who handles the bulk of the Apex account, has requested a transfer to the Advanced Products Division. She says that she's enjoyed working in Commercial but that now she's not challenged enough. She thinks that Advanced's customers are more dynamic and that she's ready for that kind of experience.

If we let her go, this will be the third top salesperson we've lost to Advanced in the last two years. It will be difficult to replace her--but I can. I'm just worried that there is a trend and I'm not sure that "dynamic customers" is all APD is offering. Needless to say, losing our best people hurts in terms of recruitment and training costs, as well as in terms of customer relations. Do we need to rethink our incentive plans? Are we that far out of line with APD?

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G-1

CGD-56

LOOKING GLASS
Commercial Glass Division

To: Director of Sales and Marketing, CGD
From: Marketing Manager
Re: TV Sponsorship

Copies to:

Looking Glass is not exactly a household word, and it hasn't needed to be since most of our business is with original equipment manufacturers. Nonetheless, the recent pollution publicity hasn't helped our image and I think we should take some steps to balance it.

Public Broadcasting is working on a special on endangered wildlife. Our name will appear in the credits if we donate \$20,000 or more. It's a good cause and certainly won't hurt us. Will you OK it?

LOOKING GLASS
Commercial Glass Division

To: Director of Manufacturing, CGD
From: Director of Sales and Marketing, CGD
Re: Quarterly Sales Report

Copies to:
PM-FLAT
PM-LIGHTING

Attached is a detailed summary of first quarter sales. Sales for both product lines have increased over the same quarter last year. This quarter, Lighting Product sales were 2% below forecast largely due to an unexpected drop in orders from our small customers.

Flat Glass sales, as a whole, exceeded forecast by 3.0%. Notably, National increased its orders by 22.5%. Most of the increased demand is for environmental glass, a market which continues to grow faster than predicted.

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LOOKING GLASS

COMMERCIAL GLASS DIVISION

SALES REPORT (In Thousands)

LIGHTING PRODUCTS

CUSTOMER LIST	SAME QUARTER LAST YEAR		LAST QUARTER		PERCENT OF TOTAL SALES
	FORECAST	ACTUAL	FORECAST	ACTUAL	
Major Electric	\$2,620	\$2,664	\$2,760	\$2,775	30%
Eastern Lights	1,600	1,598	1,650	1,665	18%
Sylvester Electric	3,000	3,108	3,300	3,238	35%
Others	<u>1,510</u>	<u>1,510</u>	<u>1,730</u>	<u>1,573</u>	<u>17%</u>
TOTAL	\$8,730	\$8,880	\$9,440	\$9,251	100%

FLAT GLASS

Forstan	\$1,300	\$1,460	\$1,400	\$1,313	15%
Apex	2,000	2,271	2,500	2,538	29%
National	1,100	1,298	1,500	1,838	21%
Construction Trades	2,000	2,108	2,000	1,925	22%
Others	<u>900</u>	<u>973</u>	<u>1,100</u>	<u>1,138</u>	<u>13%</u>
TOTAL	\$7,300	\$8,110	\$8,500	\$8,752	100%

LOOKING GLASS
Commercial Glass Division

To: Director of Manufacturing, CGD
From: Vice-President, CGD
Re: Security

Copies to:
PM-FLAT
PM-LIGHTING

As you well know, maintaining our production secrets regarding formulas and technology is a top priority. The following procedures and rules have been formulated by the Management Committee and approved by the Board of Directors. They replace the existing code and are effective immediately.

1. No cameras are permitted in any plant without written authorization from this office.
2. Glass professionals not employed by Looking are not allowed in production areas without written authorization from this office.
3. All suppliers, customers, or other outsiders needing access to production areas will be carefully screened and must sign a confidentiality agreement.
4. Any breach of security rules will be prosecuted.

LOOKING GLASS
Commercial Glass Division

To: Those Listed
From: Plant Manager, Lighting Products
Re: Safety Inspection

Copies to:

DIR-MFG, CGD
DIR-PD, CGD

The inspectors from OSHA were here last month. I just received a list of (believe it or not) 148 things to change before we will comply with the standards. The list ranges from requiring 10' risers on the steps to installing noise-reducing shells around the trimming area. The vast majority of the items are trivial, which is kind of surprising given the age of the building and equipment.

Needless to say, responding to this list will cost a small fortune. Not only that, but we don't have sufficient staff to do all these things within the six months OSHA has given us. I think we'd better get together to plan a strategy for solving this problem.

LOOKING GLASS
Commercial Glass Division

To: Plant Manager, Flat Glass
From: Shipping Supervisor, Flat Glass
Re: Potential Trucking Strike

Copies to:

I'm sure you've heard that the truckers are unlikely to accept the new contract conditions. If they do go out on strike, we can continue production for about two weeks. At that time, our storage capacity would be full and we'd have to close the plant.

In anticipation of the strike, we can pursue one or more of the following strategies:

- Try to lease additional storage space. We will still have to find some means of transporting the glass from the plant to whatever warehouse we can find.
- Arrange shipments by rail. Most of our customers can be reached by rail, but we always have considerable breakage whenever we ship this way.
- Develop incentives for customers to pick up their own shipments. We could give a discount to customers if they arrange for their own delivery.

I'll need your authorization to pursue any of these strategies, or any others you might think of. I think we'd be wise to get ready.

LOOKING GLASS
Commercial Glass Division

To: Director of Product Development, CGD
From: Director of Manufacturing, CGD
Re: Sulfate Discharge

Copies to:
PM-FLAT

It is my understanding that sulfate discharge at the Flat Glass plant is in excess of environmental standards. It's only a matter of time before EPA catches us on this one. Could you have some of your people sketch out the modifications that will be required? The plant manager is scheduled to be at headquarters today, and I was hoping you could brief us on what will be involved.

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LOOKING GLASS
Commercial Glass Division

To: Director of Product Development, CGD
From: Research Documentation Specialist
Re: Library

Copies to:
DIR-PD, APD

Our file room is completely full. The accumulation of technical reports and books has reached the point where things are lying around in piles on top of file cabinets. We desperately need to reorganize this material and find additional space. Advanced Products has a library, complete with work rooms and systematic cataloging. We need a similar facility. As it is, our people have to go deep into the bowels of the building, plough around in this small, crowded room to find what they need, and then go back to their offices or try to find an empty room to read in.

Any chance of getting authorization to create the kind of documentation center we need?

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LOOKING GLASS
Commercial Glass Division

To: Listed Below

From: Director of Manufacturing, CGD

Re: Internal Task Force on Plant Manager Performance

Copies to:

PM-LIGHTING
PM-CAPACITORS
PM-AUTO

PRESIDENT
DIR-MFG, APD
DIR-MFG, IGD

Corporate has long been concerned about how to measure plant manager performance. At the last corporate planning meeting, the issue was raised again. It was decided to form a corporate-wide task force to investigate: 1) what a plant manager does, and 2) how to evaluate plant manager performance.

It was a general feeling that the place to start was with the plant managers themselves. The President authorized the formation of a task force consisting of a plant manager from each of the divisions. Appointed to this task force are:

Plant Manager, Lighting Products (chair)
Plant Manager, Capacitors
Plant Manager, Auto Glass

The chairperson is responsible for getting this task force started and for reporting its progress to me. I'd like for you to get together sometime during your visit today to lay out a plan of attack. Through the Plant Manager, Lighting Products, let me know basically what you need to do to answer the questions:

- 1) What resources will be required?
- 2) How long you think it will take?

For your information, a copy of our current appraisal form is attached.

LOOKING GLASS
CORPORATE OFFICES

NAME OF EMPLOYEE _____ DATE _____

JOB TITLE _____

IMPORTANT--Be sure you consider only one characteristic at a time, regardless of how good or poor he/she may be in the others. It is essential that every question be answered; if more space is needed to answer any item, please write on plain paper and attach to this form. Your overall rating on each factor should be shown by code symbol in the box to the right. Mark "O" for Outstanding; "E" for Excellent; "SP" for Satisfactory Plus; "S" for Satisfactory; "SM" for Satisfactory Minus; "U" for Unsatisfactory.

A. QUALITY OF WORK
Comments:

Insert Rating Code ☐

B. QUANTITY OF WORK
Comments:

Insert Rating Code ☐

C. ABILITY TO PLAN AND UNDERSTAND WORK
Comments:

Insert Rating Code ☐

D. ABILITY TO GET ALONG WITH OTHERS
Comments:

Insert Rating Code ☐

E. OVERALL PERFORMANCE RATING (ALL FACTORS)
Comments:

Insert Rating Code ☐

If performance of any of above is below expectations, what should be done to bring about improvements?

PREPARED BY _____ DATE _____

REVIEWED AND
APPROVED BY _____ DATE _____
(Your immediate supervisor)

RECORD OF INTERVIEW:

This report was discussed with the employee on _____
(Date)

LOOKING GLASS
Commercial Glass Division

To: Those Listed

From: Plant Manager, Flat Glass

Re: Internal Task Force on Heat and People

Copies to:

VP, CGD
PM-SPECIALTY
PM-OPT FIBERS
PM-INT CIRCUITS

As we are all aware, the furnaces in our plants produce enormous heat (the working area around them averages 950). Each of us has had problems with heat prostration, etc., among our people. In spite of the best ventilation systems we can devise, it's always going to be hot. We don't have a general policy regarding the rights of the people who work around these furnaces; each plant seems to handle the problem differently, some allowing unlimited breaks while others just play it by ear.

I have been asked by the Vice-President of the Commercial Glass Division to chair a task force to develop some policy guidelines. Task force members, including myself, are:

Plant Manager, Flat Glass (chairperson)
Plant Manager, Specialty Glass
Plant Manager, Optical Fibers
Plant Manager, Integrated Circuits

Jobs around the furnaces are tough, high turn-over positions. We should develop some notions about breaks, special dispensation, water, or other possible means for reducing the unpleasantness of the work.

Can we get together later today to start working on the problem? At a minimum, we should lay out what we need to do to develop a policy. Attached are some figures that should get us started.

FURNACE HEAT

TURNOVER

Overall hourly turnover: 12.3%

Turnover of furnace workers: 40.1%

TRAINING REQUIRED FOR NEW FURNACE WORKERS

16 hours classroom

24 hours on-line

LOOKING GLASS
Commercial Glass Division

To: Those Listed
From: Director of Manufacturing, CGD
Re: Plant Briefing

Copies to:
PM-FLAT
PM-LIGHTING

Can you meet at 1:30 in my office to bring me up to date on how things are going at your plants?

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LOOKING GLASS
Commercial Glass Division

To: Plant Manager, Lighting Products
From: Plant Superintendent, Lighting Products
Re: Ideas from the Floor

Copies to:

Our people are pretty sharp and most of them have been in the business a long time. Over the last few years they have had any number of good ideas for improving efficiency through relatively simple equipment changes. Some of these ideas have been implemented by our own engineers, others have gotten to Product Development through me or you. However, I suspect that the vast majority of these ideas are lost because we have no system for soliciting, recording, or judging them.

Last time you and I talked about this, you asked me to remind you to meet with the Director of Product Development about devising such a system.

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LOOKING GLASS
Commercial Glass Division

To: Plant Manager, Flat Glass
From: Quality Control Manager
Re: Sales Specifications

Copies to:

Sales specification changes are infrequent, but when they do occur they tend to create havoc. Copies of the changes are getting to the production people but not to me. On several occasions my inspectors have pulled products that failed to meet the specs we had, only to find the specs had been changed.

While you're at headquarters would you mind asking the Director of Sales and Marketing about this? If the Director would just ask the sales force to be sure changes get to us as well as to the production crew, I'm sure we could save a lot of time and grief.

LOOKING GLASS
Commercial Glass Division

To: Director of Manufacturing, CGD
From: Plant Manager, Flat Glass
Re: Cost of Goods Manufactured, Last Quarter

Copies to:

Attached is the last quarter summary of Cost of Goods Manufactured by the Flat Glass plant. Increased raw materials and labor costs reflect continued increase in demand, particularly for environmental glass products. Inventories are significantly down. Variance in costs would have been even higher had demand for trade glass not decreased slightly over the same period.

LOOKING GLASS
COMMERCIAL GLASS DIVISION
FLAT GLASS

COST OF GOODS MANUFACTURED
(In Thousands)
LAST QUARTER

	<u>BUDGET</u>	<u>ACTUAL</u>	<u>VARIANCE</u>	<u>% OF COSTS</u>
DIRECT RAW MATERIALS	\$1,500	\$1,580	+5.3%	25%
DIRECT LABOR	1,565	1,718	+9.8%	27%
VARIABLE OVERHEAD				23%
utilities	1,010	1,011	0%	
benefits	420	430	+2.4%	
FIXED OVERHEAD	<u>1,580</u>	<u>1,580</u>	<u>0%</u>	<u>25%</u>
(depreciation, taxes, rent, allocated overhead)				
TOTAL	\$6,075	\$6,319	+4.0%	100%
	<u>STANDARD</u>	<u>CURRENT</u>		
FINISHED GOODS INVENTORY LEVEL	31 days	20 days		

LOOKING GLASS
Commercial Glass Division

To: Director of Manufacturing, CGD
From: Plant Manager, Lighting Products
Re: Cost of Goods Manufactured

Copies to:

Attached is the last quarter report on Cost of Goods Manufactured by Lighting Products. Our total cost was down 0.2%, well within normal variance limits. Inventories are up very slightly, due to 2% variance in sales last quarter.

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LOOKING GLASS
COMMERCIAL GLASS DIVISION
LIGHTING PRODUCTS

COST OF GOODS MANUFACTURED
(In Thousands)

LAST QUARTER

	<u>BUDGET</u>	<u>ACTUAL</u>	<u>VARIANCE</u>	<u>% OF COSTS</u>
DIRECT RAW MATERIALS	\$1,500	\$1,479	-1.4%	20%
DIRECT LABOR	1,880	1,875	0%	25%
VARIABLE OVERHEAD				33%
utilities	1,400	1,405	0%	
benefits	1,000	1,009	+1.0%	
FIXED OVERHEAD (depreciation, taxes, rent, allocated overhead)	<u>1,627</u>	<u>1,627</u>	<u>0%</u>	<u>22%</u>
TOTAL	\$7,407	\$7,395	-0.2%	100%

	<u>STANDARD</u>	<u>CURRENT</u>
FINISHED GOODS INVENTORY LEVEL	31 days	32 days

LOOKING GLASS
Commercial Glass Division

To: Those Listed
From: Engineering Task Force
Re: Melting Furnace Life

Copies to:
DIR-MFG, CGD
PM-FLAT
PM-LIGHTING

Two months ago a cross-divisional task force consisting of representatives from IGD and CGD was formed to examine melting furnace life expectancy.

The average life of large melting furnaces (such as those in the Flat Glass and Lighting Products plants) is 7.6 years. Replacing a worn furnace has historically involved four phases: cool down, tear down, rebuilding, and start up. The figures we could find established the following minimum times: cool down, seven days; tear down, seven days; rebuilding, three weeks; start up, seven days.

The whole process involves a minimum of 6 weeks to a maximum of 15 weeks. Using current technology and current prices, the total cost is \$3,000,000. Incorporating new technologies, such as the new electric melters, will add \$1.5-2.0 million.

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LOOKING GLASS
Commercial Glass Division

To: Plant Manager, Flat Glass
From: Shipping Supervisor
Re: Packaging Costs

Copies to:

The cost of packaging flat glass is increasing because:

- every piece has to be handled by hand (and the cost of labor is increasing);
- the costs of lumber and metal bands are going up;
- the cost of corrugated separators is rising.

Glass Digest described new automatic packaging equipment put out by Stacker Industries. Should we consider it?

LOOKING GLASS
Commercial Glass Division

To: Director of Sales and Marketing, CGD
From: Sales Manager, District II
Re: Complaint from Forstan

Copies to:

Confirming our phone conversation of yesterday, Forstan has asked to renegotiate their environmental glass contract. They argue that removing the packaging materials (lumber and metal bands) is extremely time consuming and costly for the site contractors. This represents an unanticipated cost that they want deducted from the contracted price. They would also accept an alternate packaging design that is less difficult to remove.

They have asked for an immediate adjustment of \$5,500 plus a new contract or a written guarantee for alternate packaging.

LOOKING GLASS
Commercial Glass Division

To: Director of Product Development, CGD
From: Staff Research Specialist
Re: Flat Glass Packaging

Copies to:

Prompted by an article appearing in one of the glass journals, I looked into packaging alternatives for our current lumber-metal-cardboard arrangement. There seem to be three alternatives:

1. Substitute a special powder for the corrugated sheet separators;
2. Ignore separators altogether by stacking sheets in a triangular metal frame;
3. Use automated packaging equipment.

Powder is slightly cheaper than cardboard but is awkward to handle and messy to use.

The triangular frame and automated equipment both result in greater breakage and limit our flexibility in packing alternating sized sheets coming off the line. It appears that lumber and metal bands remain the most practical approach.

LOOKING GLASS
Commercial Glass Division

To: Plant Manager, Flat Glass
From: Plant Superintendent, Flat Glass
Re: Small Tool Theft

Copies to:

This is turning out to be a stickier problem than we anticipated. It is virtually impossible to get exact figures on what is missing, but I suspect a loss of about \$200 worth of small tools each week. These include hand drills, files, gloves, protective glasses, screwdrivers, metal cutters, etc. Our current sign out system is not preventing "lunch pail walkout."

I've chatted informally with the toolroom attendants, but they aren't volunteering any information. I suspect that they are looking the other way, so are naturally reluctant to discuss it. I doubt it's worth pursuing further because it may fuel the growing desire for unionization. If you feel it's justified, I'll dig deeper.

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LOOKING GLASS
Commercial Glass Division

To: Director of Sales and Marketing, CGD
From: Marketing Manager
Re: Auto Glass Products

Copies to:

The market for automotive glass extends far beyond automobiles. It includes vehicular windshields for trucks, busses, subways, and even tempered glass for windows in ships and boats. While the Industrial Glass Division has a reasonable market share in vehicular, I think CGD could do well in the marine and recreational vehicle markets. The standards for such glass are higher than much of what we make, but so are the profit margins. IGD uses the same technology as we do, so we could back each other up.

Entering these markets seems a reasonable strategy for supplementing the declining trade glass business. Should I go ahead with the prework?

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LOOKING GLASS
Commercial Glass Division

To: Director of Product Development, CGD
From: Technical Specialist
Re: Laser Cutting

Copies to:

I was assigned to the project team working on the glass excess problem. We have been focusing on traditional methods for solving the problem, but a friend of mine in Product Development over in the Advanced Products Division had another suggestion: laser cutting machines. They are working with laser technologies and the results are promising. I think it would be useful to put one of our staff on their project team or vice versa. Since this would represent a cross-divisional assignment, you and the Director of Product Development in APD must authorize it.

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LOOKING GLASS
Commercial Glass Division

To: Director of Sales and Marketing, CGD
From: Sales Manager, District I
Re: Personnel Problem

Copies to:

Sharon LeBlanc, one of our most successful new regional sales supervisors, has requested to be downgraded. She is now making more than her husband (an IGD salesperson) and claims that this is creating problems at home. I think she has high potential for upper management, and am reluctant to grant her request. On the other hand, she may quit if I don't. Maybe if you would talk to her, she could be persuaded.

LOOKING GLASS
Commercial Glass Division

To: Plant Manager, Flat Glass
From: Plant Superintendent, Flat Glass
Re: Union Vote

Copies to:

The final results are in on the last union vote. This time 42% voted in favor (as opposed to 21% last time).

Two major forces seem to be at work:

- 1) Our average wage has dropped below union average (\$7.82 versus \$8.86) and fringes are considerably less than in union shops;
- 2) There is some fear that conversion to all float will result in job layoffs.

LOOKING GLASS
Commercial Glass Division

To: Plant Manager, Flat Glass
From: Engineering Manager
Re: Estimates on Conversion of Line 1

Copies to:

CAPACITY

CURRENT PRODUCTION	50 million sq. ft. annually
NEW PRODUCTION	100 million sq. ft. annually
PRODUCTION INCREASE (Line 1)	100%

COST (in millions)

BUILDING ALTERATION	\$1.25
MACHINERY & EQUIPMENT	5.11*
INCREASED STORAGE	0.34
OTHER	0.25
TOTAL ESTIMATED COST	\$6.95

*based on cost of standard melters; latest electric melters would add \$1.5 to \$2.0 million. Current melter could be used, but is over five years old.

TIME

25-30 weeks from contract

LOOKING GLASS
Commercial Glass Division

To: Plant Manager, Lighting Products
From: Ted Garvey, Melter
Re: Soccer

Copies to:

You may have heard that some of us have been playing soccer on weekends. We think we're pretty good and would like to start up a soccer league in Joplin. We've talked with some people from other companies, and they're excited. I'm sure we could get 10 or 12 teams together. I was asked to request that Looking Glass help fund the League and our team. We figure we'd need about \$2000 to get it going (stadium rental, referees, uniforms, equipment, etc.). We might also need to trade some work time since shifts would never coincide all the time.

Thanks for considering our request.

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LOOKING GLASS
Commercial Glass Division

To: Plant Manager, Lighting Products
From: Plant Superintendent and Production Planning Manager
Re: Price Increase

Copies to:

As per your request, we have tried to outline the primary factors supporting a price increase for all lighting products. Many of these have been outlined in previous memos, so this represents a summary of our current situation.

1. Actual and anticipated cost increases. Costs of raw materials, energy, salaries, maintenance, shipping, and compliance with government regulations have all increased and will continue to do so. We anticipate a minimum of 8% and a maximum of 10% over-all cost of production increase over the next 12 months.
2. Previous price increases. Over the last three years, annual price increases have kept pace with cost increases.
3. Anticipated competitive price increases. Since our competitors face virtually the same economic conditions, yet are slightly lower price-wise than we are, we anticipate dramatic price increases on their part. This would make an increase by us look quite reasonable.

Recommendation: Raise prices an average of 10% this year. Any less will result in a significant erosion of our margin. With such an increase we can cope with increasing costs, as well as anticipate union pressure to increase our salary and benefits package.

LOOKING GLASS
Commercial Glass Division

To: Director of Sales and Marketing, CGD
From: Market Analyst
Re: Lighting Products Prices

Copies to:

A thorough analysis of our current market position in the lighting products business indicates that a substantial price increase at this time would be unwise for the following reasons:

1. Service/Quality premium. Our lighting products are priced an average of 2% higher than those of our competitors--a premium permitted by our long-standing reputation for quality of service and product reliability. Recent complaints reflect some erosion of that reputation, though not serious. Until such complaints have been resolved, however, further price increases would only exacerbate them.
2. Competitive price conservatism. Our competitors have been price conservative over the last few years, while our increases have more closely paralleled cost increases. This has added slightly, though not dramatically, to the cost differences between us and our two major competitors. While the competition will sooner or later have to compensate by raising prices, we should follow rather than precede such action.

Recognizing that some increase is inevitable, I strongly recommend that it not exceed 4%. Anything higher would represent a significant threat to our market position.

LOOKING GLASS
Commercial Glass Division

To: Plant Manager, Flat Glass
From: Shipping Supervisor, Flat Glass
Re: A Rock and a Hard Place

Copies to:

Last year, OSHA ordered us to install back up beepers on all our fork lift equipment. EPA has just informed us that the beepers exceed EPA allowable noise levels. What next?

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LOOKING GLASS
Commercial Glass Division

To: Public Relations Manager
From: Research Specialist, CGD
Re: Changing the Properties of Glass

Copies to:
DIR-PD, CGD

Your request for information for the visitors' center display was forwarded to me. Many different things can be done to basic glass to increase its heat resistance, strength, conductivity, etc. The best way to condense and summarize this information would be for you or one of your people to meet with me. With a clearer idea of what you have in mind, I can give you all the detail you want. Together I'm sure we can come up with an effective display.

As an example of what can be done, consider the issue of increasing heat resistance of glass. Regular lime glass, such as that used in the light bulb casings made in CGD, consists of:

sand + soda ash + limestone + cullet.

These materials are heated to 1450°C (2640°F) to make common glass. Uneven expansion of lime glass when exposed to heat causes it to break even under relatively small temperature changes.

To increase heat resistance for cookware, test tubes, surgical lights, etc., when high temperatures or quick temperature changes are common, boric acid is substituted for limestone. Called borosilicate glass, the formula is:

sand + soda ash + boric acid + cullet.

These materials are heated to 1625°C (2957°F).

When temperatures are to be extreme, such as with spacecraft windows, power tubes, or resistors, aluminosilicate glass is used. The formula is:

sand + anhydrous borax + dolomitic limestone + others.

These are heated to 1650°C (3002°F).

Glass can be chemically strengthened through immersion in hot potassium, colored through addition of chemicals like cadmium, sulfur, etc. The permutations are almost endless. Let's meet next Tuesday for lunch to explore the issue further.

LOOKING GLASS
Commercial Glass Division

To: Vice-President, CGD
From: Director of Sales and Marketing, CGD
Re: This Quarter Forecasts

Copies to:

DIR-MFG, CGD
PM-FLAT
PM-LIGHTING

Here are the updated sales forecasts for the current quarter.

	LAST QUARTER ACTUAL (thousands)	THIS QUARTER FORECAST (thousands)
LIGHTING PRODUCTS	\$9,251	\$9,375
FLAT GLASS	<u>\$8,752</u>	<u>\$8,952</u>
DIVISION TOTAL	\$18,003	\$18,327

LOOKING GLASS
Commercial Glass Division

To: Director of Product Development, CGD
From: Project Manager
Re: Assessment of Future Energy Situation

Copies to:

As part of our recent study on modification of the sheet glass operation, we looked into issues related to energy use. We found:

- the demand for energy in the U.S. is growing faster than the supply;
- stoppages and shortages will become more frequent;
- energy consumption is rising by about 10% per year (1.6 trillion kilowatt hours barely met demand as long ago as 1969);
- 250 power plants must be built over the next 20 years to keep up with demand;
- the cost of power will increase greatly due to shortages of coal and oil.

Since these facts were not directly relevant to the modification project, they were not included in that report. Since they have implications for Looking Glass, I thought I should pass them on to you separately.

LOOKING GLASS
Commercial Glass Division

To: Director of Sales and Marketing, CGD

From: Sales Manager, District III

Re: Local Cash Register

Copies to:

We've been providing glass cover plates for LCR office equipment for several years. While a small consumer of our flat glass products, they use a lot of integrated circuits and capacitors in their equipment. One of my salespeople heard that LCR is having trouble with their current supplier--something about increased defects. This might be a good time for someone from APD to look into LCR's needs.

I started to call the APD salespeople directly, but I've heard there have been some customer problems in APD (particularly regarding integrated circuits). Do you know what the story is? I don't want to recommend APD products if it will come back to haunt us. If I do suggest APD, Local may ask some embarrassing questions I can't answer.

LOOKING GLASS
Commercial Glass Division

To: Plant Manager, Flat Glass
From: Secretary
Re: Reminder

Copies to:

The monthly meeting of the Community Development Association of Cairo is scheduled for tomorrow evening at 8:30. You agreed to talk on possible ways Looking Glass can contribute to the community.

LOOKING GLASS
Commercial Glass Division

To: Plant Manager, Lighting Products
From: Secretary
Re: Reminder

Copies to:

The Jaycees called. They are expecting you to serve as a judge in tomorrow night's exhibit. The meeting is in the Joplin Recreation Center from 6:30-10:00.

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LOOKING GLASS
Commercial Glass Division

To: Director of Sales and Marketing, CGD
From: Market Research Manager
Re: Energy Savings

Copies to:

We have some interesting projections on energy savings resulting from use of our environmental glass in office buildings. For instance, the Equal Bank and Trust building will save about 230 million cubic feet of gas and about 30 million kilowatt hours of electricity over the next 15 years. Bay Life has been able to reduce its air conditioning load by over 100 tons.

Figures like these would make a super story line for a national advertising campaign. What do you think?

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RESEARCH SYSTEMS, INC.

10 PARK AVENUE
NEW YORK, NEW YORK

Director of Sales and Marketing
Commercial Glass Division
Looking Glass, Inc.

Dear Director:

Our final report will be to you in a month, but I thought you'd like to see some of our early conclusions re competitive moves:

- 1) High entry costs associated with new float glass technology make it unlikely that any new major competitors will emerge in the flat glass business in the foreseeable future. A plant capable of producing 500 tons daily will cost in excess of \$30 million.
- 2) Lighting products will remain stable. The handful of major consumers and suppliers are already well balanced and the market is likely to continue its slow, steady growth.
- 3) The shortage of insulating glass is driving prices up artificially. Several producers are expanding capacity or switching quickly to the more efficient float process. While no new producers are expected, market share of the old line will probably be determined by who gets there first, cheapest. If all continue to increase capacity, anticipate a vicious price war when consumption stabilizes.
- 4) There is some trend for major consumers of flat glass to build their own source of supply. One major automotive manufacturer, for example, can supply 50% of its own needs in window glass. This is not true for auto headlamps, where technology is prohibitively expensive.
- 5) Unless prices are kept low, and quality high, producers of incandescent and fluorescent lights are likely to investigate producing their own tubes and envelopes.

Sincerely,

Joe Davis

Joe Davis
Research Systems, Inc.

Vice-President
Commercial Glass Division
Looking Glass, Inc.

Dear Vice-President:

This is a difficult letter to write; so much so that I want to remain anonymous.

One of your District II salespeople is having an affair with the purchasing manager of Apex. I try to believe that what people do with their personal lives is their own business, but this looks bad for both Apex and Looking. It's been going on for a while and a lot of people know about it. It's only a matter of time until it becomes a big scandal.

I thought you'd want to know.

ASSOCIATION OF TRAINING OFFICERS

Director of Product Development
Commercial Glass Division
Looking Glass, Inc.

Dear Director:

The Association of Training Officers invites distinguished speakers to its monthly meetings. Several of our members have requested that a session be devoted to "special training needs in professional organizations." I thought you would be able to do a first class job and would like to invite you to join us next month for drinks, dinner, and about a one-hour talk.

If you are unable to participate, could you recommend someone else?

Thanks in advance,



Jim James
Vice-President
Association of Training Officers

AMERICAN MATERIALS, INC.
SODA ASH DIVISION
SCOTTSVILLE, KENTUCKY

Plant Manager, Flat Glass
Commercial Glass Division
Looking Glass, Inc.
Cairo, Illinois

Dear Plant Manager:

As you may have heard, American Materials has been fighting the tightened pollution requirements at its Scottsville plant. It now appears that the new standards will apply to our operation. After careful analysis, American has decided that it is financially infeasible to continue soda ash production in the state of Kentucky. All operations will be moved to our plants in Wyoming, which will be updated and expanded. We anticipate only minor disruption of supplies to your operation during the transition period.

We are sorry to be leaving this section of the country but will be happy to continue supplying your soda ash needs.

Sincerely,

M. Travers

M. Travers
General Manager

CHANTELLE DISTRIBUTORS

NEW YORK, NEW YORK

Director of Sales and Marketing
Commercial Glass Division
Looking Glass, Inc.

Dear Director:

There is nothing like a fine wine to show your customers that you appreciate their business. We would be happy to assist you in selecting a connoisseur's collection from our outstanding stocks. We carry, for example, the following:

Côte D'or

Les Hervelels
Clos du Chapitre
Clos de la Perrière
Clos Napoléon

Chablis

Vaudésir
Les Clos
Grenouilles

Beaujolais

Cercié
Fleurie
St. Amour - Bellevue

Very Special Selections

Chateau Ausone	St. Emilion	1949
Chateau Margaux	Margaux	1959
Chateau Mouton Rothschild	Pouillac	1959
Chateau Lafite-Rothschild	Pouillac	1947
Chateau Haut-Brion	Graves	1947

We do, of course, offer quantity discounts to our large customers. One of our representatives will gladly meet with you to plan a truly tasteful selection. Neither you nor your customers will ever regret it!

With warm regards,

Charles Mellesime

Charles Mellesime
President

COLONEL W. L. DOBBS
NAVAL DEVELOPMENT OFFICE
WASHINGTON, D.C.

Director of Product Development
Commercial Glass Division
Looking Glass, Inc.

Dear Director:

Procurement informs me that Looking Glass has provided many special standard glass items to the Navy.

We are developing a new generation of nuclear submarines capable of diving deeper and faster than previous submarines. Simultaneously, we are developing sophisticated periscopes and other equipment that will require highly specialized glass components, including lenses, cover plates, and high-pressure observation ports.

During the development stages, we need to contact some of your specialists regarding our proposed specifications and the feasibility of certain devices. Whomever we work with must have Navy top secret clearance, an in-depth knowledge of glass manufacture of the type discussed above, and the authority to relay time-frame and cost information.

This letter does not bind the Navy or this office in any way to purchase any items. On completion of development and approval by Congress, bids will be solicited in the usual manner.

Sincerely,

W.L. Dobbs

W. L. Dobbs
Manager, Development

LOOKING GLASS
Commercial Glass Division

To: Those Listed
From: Quality Control, Lighting Products
Re: Rejection Rates (Summary)

Copies to:

PM-LIGHTING
DIR-MFG, CGD

REJECTION BY IN-PLANT QUALITY CONTROL*

	<u>LAST YEAR</u>	<u>LAST QUARTER</u>	<u>LAST MONTH</u>	<u>THIS MONTH</u>
LIGHTING PRODUCTS	20.2%	20.6%	20.8%	20.8%

*Loss due to breakage, imperfections, machine malfunctions

LOOKING GLASS
Commercial Glass Division

To: Those Listed
From: Quality Control, Flat Glass
Re: Rejection Rates (Summary)

Copies to:

PM-FLAT
DIR-MFG, CGD

REJECTION BY IN-PLANT QUALITY CONTROL*

	<u>LAST YEAR</u>	<u>LAST QUARTER</u>	<u>LAST MONTH</u>	<u>THIS MONTH</u>
FLAT GLASS	13.4%	13.1%	13.6%	13.4%

*Loss due to breakage, imperfections, machine malfunctions

LOOKING GLASS
Commercial Glass Division

To: Vice-President, CGD
From: Director of Sales and Marketing, CGD
Re: Sales

Copies to:
DIR-MFG, CGD

% QUOTA ACHIEVED

	<u>LAST YEAR</u>	<u>LAST QUARTER</u>	<u>LAST MONTH</u>	<u>THIS MONTH</u>
FLAT GLASS				
Trade	87.5%	94%	91.5%	93%
Environmental	105%	110%	112%	113%
LIGHTING PRODUCTS				
Incandescent	98%	99%	101%	100%
Fluorescent	96%	98%	97%	99%

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LOOKING GLASS
Commercial Glass Division

To: Plant Manager, Lighting Products
From: Plant Superintendent, Lighting Products
Re: Production Report

Copies to:

PRODUCTION, % NORMAL CAPACITY

	<u>LAST YEAR</u>	<u>LAST QUARTER</u>	<u>LAST MONTH</u>	<u>THIS MONTH</u>
INCANDESCENT	100%	99%	98%	100%
FLUORESCENT	96%	101%	100%	101%
OVERALL AVERAGE	98%	100%	99%	101%

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LOOKING GLASS
Commercial Glass Division

To: Plant Manager, Flat Glass
From: Plant Superintendent, Flat Glass
Re: Production Report

Copies to:

PRODUCTION, % NORMAL CAPACITY

	<u>LAST YEAR</u>	<u>LAST QUARTER</u>	<u>LAST MONTH</u>	<u>THIS MONTH</u>
TRADE GLASS	97%	98%	96%	95%
ENVIRONMENTAL GLASS*	105%	120%	125%	126%
OVERALL AVERAGE	101%	109%	110.5%	110.5%

*Production in excess of normal capacity achieved by increasing manpower on graveyard shifts (the third shift is normally skeletal).

LOOKING GLASS
Commercial Glass Division

To: Director of Manufacturing, CGD
From: Administrative Assistant
Re: Production Report

Copies to:
VP, CGD

Here are the totals you requested on production capacities at our two plants.

PRODUCTION, % NORMAL CAPACITY

	<u>LAST YEAR</u>	<u>LAST QUARTER</u>	<u>LAST MONTH</u>	<u>THIS MONTH</u>
FLAT GLASS	101%	109%	110.5%	110.5%
LIGHTING PRODUCTS	98%	100%	99%	101%

LOOKING GLASS
Commercial Glass Division

To: Plant Manager, Lighting Products
From: Plant Superintendent, Lighting Products
Re: Delayed Shipments Report

Copies to:

% SHIPMENTS THREE OR MORE DAYS PAST PROMISED DELIVERY

	<u>LAST YEAR</u>	<u>LAST QUARTER</u>	<u>LAST MONTH</u>	<u>THIS MONTH</u>
INCANDESCENT	7%	8%	8%	7%
FLUORESCENT	9%	8%	6%	9%
OVERALL AVERAGE	8%	8%	7%	8%

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LOOKING GLASS
Commercial Glass Division

To: Plant Manager, Flat Glass
From: Plant Superintendent, Flat Glass
Re: Delayed Shipments Report

Copies to:

% SHIPMENTS THREE OR MORE DAYS PAST PROMISED DELIVERY

	<u>LAST YEAR</u>	<u>LAST QUARTER</u>	<u>LAST MONTH</u>	<u>THIS MONTH</u>
TRADE	7%	8%	10%	10%
ENVIRONMENTAL	9%	20%	24%	25%
OVERALL AVERAGE	8%	14%	17%	17.5%

LOOKING GLASS
Commercial Glass Division

To: Those Listed
From: Director of Manufacturing, CGD
Re: Delayed Shipments Report

Copies to:
VP, CGD
DIR-S&M, CGD

% SHIPMENTS THREE OR MORE DAYS PAST PROMISED DELIVERY

	<u>LAST YEAR</u>	<u>LAST QUARTER</u>	<u>LAST MONTH</u>	<u>THIS MONTH</u>
FLAT GLASS	8%	14%	17%	17.5%
LIGHTING PRODUCTS	8%	8%	7%	8%

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LOOKING GLASS
Commercial Glass Division

To: President
From: Vice-President, CGD
Re: Net Sales/Income Statement

Copies to:

DIR-MFG, CGD
DIR-S&M, CGD
DIR-PD, CGD
PM-FLAT
PM-LIGHTING

LAST QUARTER
(In Thousands)

	<u>Net Sales</u>	<u>Net Income</u>	<u>Income (% Sales)</u>
Lighting Products	\$9,251	\$399.6	4.3%
Flat Glass	<u>8,752</u>	<u>425.3</u>	<u>4.9%</u>
DIVISION	\$18,003	\$824.9	4.6%

PREVIOUS QUARTER
(In Thousands)

	<u>Net Sales</u>	<u>Net Income</u>	<u>Income (% Sales)</u>
Lighting Products	\$9,150	\$393.5	4.3%
Flat Glass	<u>8,581</u>	<u>437.6</u>	<u>5.1%</u>
DIVISION	\$17,731	\$831.1	4.7%

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