V　付属資料

口上書

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EMBASSY OF JAPAN

MANILA

No. 205-84

The Embassy of Japan presents its compliments to the Ministry of Foreign Affairs and has the honor to refer to the recent discussions held between the representatives of the Government of Japan and of the Government of the Republic of the Philippines concerning the Feasibility Study on the Renovation of the Pulp and Paper Mills of the Paper Industries Corporation of the Philippines (hereinafter referred to as "the Study"), and to propose the following arrangements:

1. For the implementation of the Study, the Government of Japan will, in accordance with the relevant laws and regulations of Japan, take necessary measures:

(a) to dispatch Japanese survey teams;

(b) to provide machinery, equipment and other materials necessary for the implemenation of the survey project; and

(c) to provide on-the-job training to Philippine counterparts.

2. For the implementation of the Study, the Government of the Republic of the Philippines will, in accordance with the relevant laws and regulations of the Philippines, take necessary measures:

(a) to provide the survey teams resources (other than those to be provided by the Japanese Government), facilities and other such arrangements as are required for the implementation of the Study;

(b) to provide the necessary facilities to the Japanese survey teams for the remittances as well as utilization of funds introduced into the Philippines from Japan in connection with the implementation of the Study; and

(c) to exempt the Japanese survey team members from taxes, duties, fees and other charges on machinery, equipment and other materials brought into the Philippines for the conduct of the survey.

3. The Government of the Republic of the Philippines shall be responsible for dealing with claims which may be brought by third parties against the Japanese survey team members and shall hold them harmless in respect of claims or liabilities arising in the course of, or otherwise, connected with the implementation of the Study, except when such claims or liabilities arise from gross negligence or wilful misconduct of the abovementioned individuals. Should any questions arise in connection with the foregoing, both Governments shall immediately consult with each other.

4. The Government of the Republic of the Philippines shall take necessary measures to secure the safety of the survey teams.

5. The details and procedures for cooperation in these arrangements including the specifics of privileges, exemptions and other benefits to be accorded to the Japanese survey teams as mentioned in paragraphs 2,3 and 4 above, shall be provided for in the implementing arrangements agreed upon between the Japan International Cooperation Agency and the Board of Investments which forms an integral part of this cooperation.

6. The present arrangements shall remain in force until the completion of the Study which is scheduled to be on March 31, 1985. Either party may, however, terminate the

present arrangements with three months' advance written notice to the other party.

The Embassy of Japan has further the honor to propose that the present Note and the Ministry's Note in reply accepting on behalf of the Government of the Republic of the Philippines the foregoing proposal shall be regarded as constituting an agreement between the two Governments which will come into effect on the date of the Ministry's Note in reply.

The Embassy of Japan avails itself of this opportunity to renew to the Ministry of Foreign Affairs the assurances of its highest consideration.

Manila, 27 June 1984

EMBASSY OF JAPAN
PHILIPPINES
在フィリピン日本大使館

REPUBLIKA NG PILIPINAS

MINISTRI NG UGNAYANG PANLABAS

MAYNILA

No. 842437

The Ministry of Foreign Affairs presents its compliments to the Embassy of Japan and has the honor to acknowledge the receipt of the Embassy's Note No. 205-84, dated 27 June 1984, concerning the Feasibility Study on the Renovation of the Pulp and Paper Mills of the Paper Industrial Corporation of the Philippines. (145)

The Ministry has further the honor to accept on behalf of the Government of the Republic of the Philippines the proposal set forth in the abovementioned Note and to agree that the Embassy's Note and this Note shall be regarded as constituting an agreement between the two Governments.

The Ministry of Foreign Affairs avails itself of this opportunity to renew to the Embassy of Japan the assurances of its highest consideration.

Manila, 27 June 1984.

Implementing Arrangement

on

The Technical Cooperation

Between

The Japan International Cooperation Agency

and

The Board of Investments

for

The Renovation of the Pulp and Paper Mills

of

The Paper Industries Corporation of the Philippines

Agreed Between

The Japan International Cooperation Agency

and

The Board of Investments

June 29, 1984

YUKIO HARADA
Team Leader
Preliminary Survey Team
The Japan International
Cooperation Agency

EDGARDO L. TORDESILLAS
Dep. Min. & Vice-Chairman
Board of Investments

IMPLEMENTING ARRANGEMENT ON THE TECHNICAL COOPERATION BETWEEN THE JAPAN INTERNATIONAL COOPERATION AGENCY AND THE BOARD OF INVESTMENTS FOR THE RENOVATION OF THE PULP AND PAPER MILLS OF THE PAPER INDUSTRIES CORPORATION OF THE PHILIPPINES

I. INTRODUCTION

In response to the request of the Government of the Republic of the Philippines (hereinafter referred to as "GOP"), the Government of Japan (hereinafter referred to as "GOJ") has decided to conduct the survey on the Renovation of the Pulp and Paper Mills of the Paper Industries Corporation of the Philippines (hereinafter referred to as "the Study") within the framework of "The Plant Renovation Cooperation Program between Japan and ASEAN Countries" and exchanged the Notes Verbales with GOP concerning the implementation of the Study.

The Japan International Cooperation Agency (hereinafter referred to as "JICA"), the official agency responsible for the implementation of technical cooperation program of GOJ, will undertake the Study, in accordance with the relevant laws and regulations in force in Japan.

On the part of GOP, the Board of Investments (hereinafter referred to as "BOI") shall act as counterpart agency to the Japanese study team (hereinafter referred to as "the Team") and also as coordinating body in relation with other governmental and non-governmental organizations concerned for the smooth implementation of the Study.

The present document constitutes the implementing arrangement between JICA and BOI under the above-mentioned Notes Verbales exchanged between the two Governments.

II. OBJECTIVE OF THE STUDY

The objective of the Study is to diagnose the Pulp and Paper Mills of the Paper Industries Corporation of the Philippines (hereinafter referred to as "the Mill") and to investigate the possibility of the renovation from technical, financial and economic points of view and to formulate the renovation program in order to contribute to increasing production efficiency and improving products quality.

III. PRECONDITION OF THE STUDY

The study will be carried out in the following areas:

1. Modernization of the newsprint machine in Bislig
2. Improvement of the kraft machine in Bislig
3. Transfer and integration of Iligan Mill to Bislig

IV. SCOPE OF THE STUDY

In order to achieve the above objective, the Study will cover the following items:

1. Survey on present situation of and national policy on pulp and paper industry in the Philippines
2. Review on the related reports
3. Diagnosis of management of the Mill
   (1) operation and quality control
   (2) maintenance of machinery and equipment
   (3) cost control
   (4) administration
   (5) education and training
4. Diagnosis of machinery and equipment of the Mill
   (1) pulp
   (2) preparation
   (3) paper machine
   (4) finishing
   (5) chemical recovery
   (6) utility
5. Study on raw material
6. Survey of domestic market requirement through 1990
7. Formulation of renovation program

   The renovation program for the existing Mill and its management will be formulated, taking into account the improvement of environmental effects.

(1) renovation plan

(2) capital requirement

(3) training plan

(4) implementing schedule

8. Financial analysis

9. Economic evaluation

10. Conclusion and recommendation

V. STEPS AND SCHEDULE OF THE STUDY

1. Steps

Step 1	:	Preparatory office work in Japan
Step 2	:	Field work in the Philippines
Step 3	:	Home office work in Japan
Step 4	:	Presentation of and Discussion on the Draft Final Report

2. Schedule

As shown in Annex

VI. REPORTS

JICA will prepare and submit the following reports written in English to BOI

1. Inception Report at the start of the Step 2 : 10 copies

2. Progress Report at the end of the Step 2 : 10 copies

3. Draft Final Report and its summary within 4 (four) months after commencement of the Step 3 : 15 copies

4. Final Report and its summary within 2 (two) months after the receipt of comments on the Draft Final Report by BOI : 30 copies

VII. UNDERTAKING OF GOP

In accordance with the Notes Verbales exchanged between GOJ and GOP, GOP shall accord privileges, immunities and other benefits to the Team and, through the authorities concerned, take necessary measures to facilitate smooth conduct of the Study.

1. The GOP shall be responsible for dealing with claims which may be brought by the third parties against the members of the Team and shall hold them harmless in reppect of claims or liabilities arising in the course of, or otherwise connected with the discharge of their duties in the implementation of the Study, except when such claims or liabilities arise from the gross negligence or willful misconduct of the above mentioned members.

2. BOI shall, at no cost to the Team, provide the Team with the following, in cooperation with other agencies concerned, if necessary.

   (1) available data and information related to the Study

   (2) counterpart personnel

   (3) administrative and technical support staff

   (4) suitable office space at Metro Manila, Bislig and Iligan with necessary equipment including telephone

   (5) credentials or identification cards to the members of the Team

   (6) appropriate number of vehicles with drivers

3. BOI shall make necessary arrangements with other governmental and non-governmental organizations concerned for the following.

   (1) to secure the safety of the Team

   (2) to exempt the members of the Team from taxes, duties, fees and other charges on equipment, machinery and other materials brought into the Philippines for the conduct of the Study

   (3) to exempt the members of the Team from income tax and charges of any kind imposed on or in connection with the allowances remitted from abroad

   (4) to secure permission for entry into private properties or restricted area for the conduct of the Study

(5) to secure permission to take all data and documents related to the Study including photographs out of Philippines to Japan by the Team

(6) to provide medical facilities as needed and its expenses will be chargeable on the members of the Team

VIII. UNDERTAKING OF GOJ

In accordance with the Notes Verbales exchanged between GOJ and GOP, GOJ, through JICA, will take necessary measures for the implementation of the Study.

1. To dispatch, at its own expense, study teams to the Republic of the Philippines

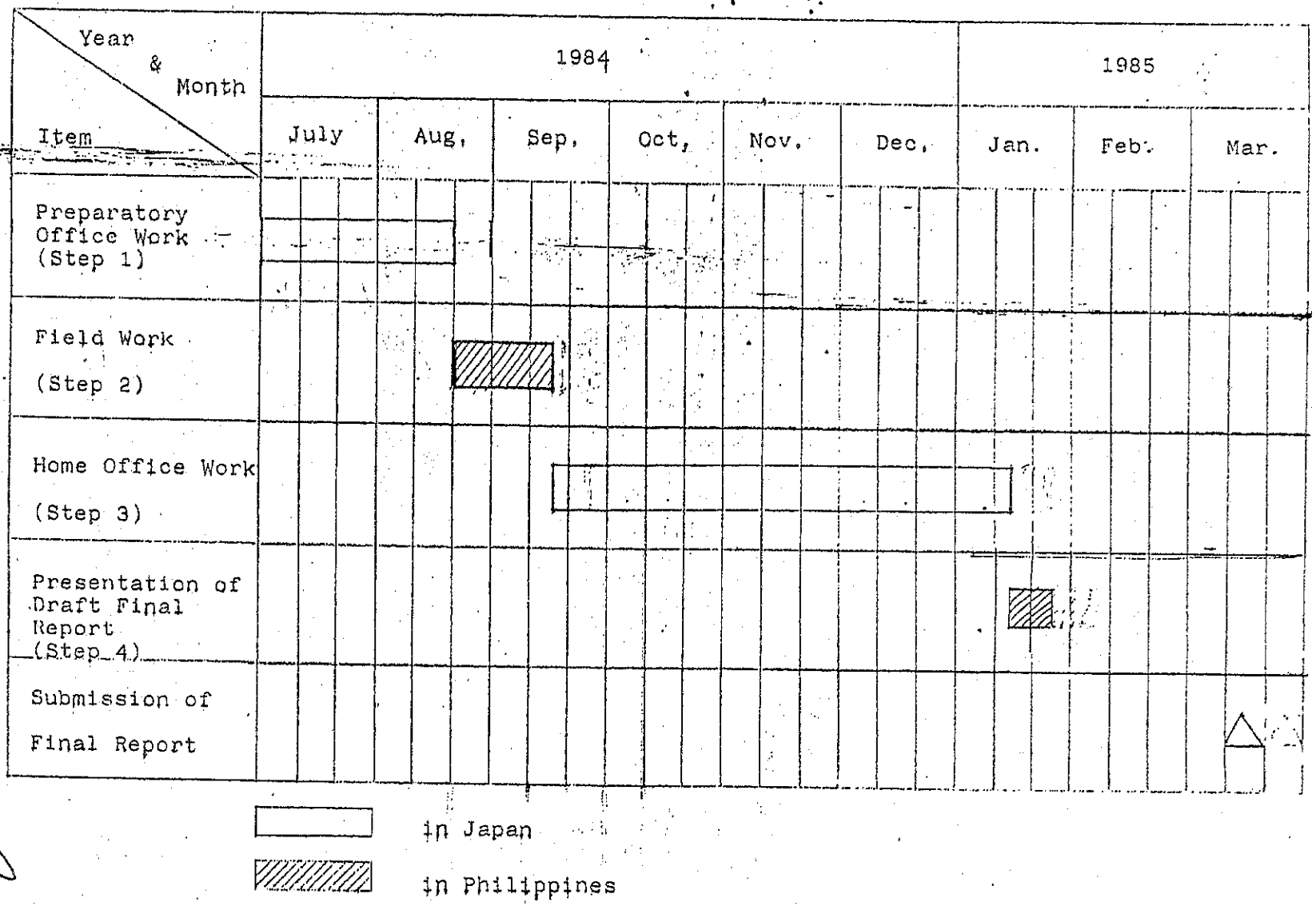
2. To pursue technology transfer to the Philippines counterpart personnel in the course of the study.

IX. CONSULTATION

JICA and BOI will consult with each other in respect of any matter that may arise in the interpretation or implementation of the present arrangement.

Annex

Tentative Schedule of the Study



LETTER - UNDERTAKING

KNOW ALL MEN BY THESE PRESENTS:

The PAPER INDUSTRIES CORPORATION OF THE PHILIPPINES (PICOP), a corporation duly organized and existing under and by virtue of the Laws of the Philippines, with principal Office Address at 389 Sen. Gil J. Puyat Avenue, Makati, Metro-Manila, represented herein by its President, ROBERT D. STRATTON, in conformity with the Implementing Arrangement on the Technical Cooperation between the Japan International Cooperation Agency and the Board of Investments for the Renovation of its Pulp and Paper Mills hereby ~~undertakes~~: assumes BOI obligations therein and undertakes:

1. PICOP shall be responsible for dealing with claims which may be brought by the third parties against the members of the Survey Team and shall hold them harmless in respect of claims or liabilities arising in the course of, or otherwise connected with, the discharge of their duties in the implementation of the Study, except when such claims or liabilities arise from the gross negligence or willful misconduct of the above mentioned members.

2. PICOP agrees to pay for taxes, duties and other charges on equipment and other materials brought into and/or out of the Philippines for use in the Study and/or income tax, if any, of the Team which are not exempt or which cannot legally be exempted under existing laws.

3. PICOP shall, at its own expense, provide the Survey Team with the following:

   (1) available data and information related to the study

   (2) counterpart personnel

   (3) administrative and technical support staff

   (4) suitable office space at Metro-Manila, Bislig and Iligan with necessary equipment including telephone

   (5) credentials or identification cards to the members of the team

   (6) appropriate number of vehicles with drivers

4. PICOP shall make necessary arrangement for the following:

   (1) to secure the safety of the Team.

(2) to allow the Survey Team access to PICOP facilities to gather data and documents related to their study.

(3) to provide medical facilities as needed, and its expenses will be chargeable on the members of the Team.

(4) to secure permission for entry into private properties or restricted area for the conduct of the Study.

(5) to assist and/or coordinate with BOI in securing permission to take all data and documents related to the Study including photographs out of the Philippines to Japan by the Team.

IN WITNESS WHEREOF, PICOP has caused this present to be signed by its President this 28th day of June, 1984 at Makati Metro-Manila, Philippines.

PAPER INDUSTRIES CORPORATION
OF THE PHILIPPINES

R. D. STRATTON
President

WITNESSES:

ACKNOWLEDGEMENT

REPUBLIC OF THE PHILIPPINES)
MAKATI, METRO-MANILA) S.S.

BEFORE me personally appeared Mr. Robert D. Stratton with Res. Cert. No. 1867818D, issued at Makati on February 16, 1984 who is known to me to be the person who executed the foregoing Letter-Undertaking in his capacity as President of the Paper Industries Corporation of the Philippines and who acknowledged to me that the same is his voluntary act and deed and the voluntary act and deed of his principal.

WITNESS my hand and seal this 28th day of June, 1984 at Makati, Metro-Manila, Philippines.

SALVADOR A. NAVARRO
Notary Public
Until December 31, 1985
PTR No. 7894402
January 13, 1984
Makati, Metro Manila

Doc. No. 49
Page No. 10
Book No. I
Series of 1984.

REPUBLIC OF THE PHILIPPINES
NATIONAL ECONOMIC AND DEVELOPMENT AUTHORITY
NEDA sa Pasig, Amber Avenue
Pasig, Metro Manila

Cable Address: NEDAPHIL
P.O. Box 419, Greenhills
Tels. 673-60-31 to 50

27 February 1984

Minister Masaaki Kuniyasu
Embassy Minister, Embassy of Japan
LC Building, 375 Buendia Avenue
Extension
Makati, Metro Manila

Attention: Mr. Joji Hashimoto
First Secretary and Commercial Attaché

Dear Minister Kuniyasu:

We are pleased to forward a copy of the Terms of Reference of Paper Industries Corporation of the Philippines (PICOP) regarding its request for Japanese Technical Assistance under the Plant Renovation Program.

We hope that this would provide your Office sufficient information pertaining to the proposed project of PICOP for Japanese assistance.

Very truly yours,

Vicente B. Valdepeñas Jr.

VICENTE B. VALDEPEÑAS, JR.
Minister for Economic Planning
Director-General

Enclosure: a/s

TERMS OF REFERENCE

I. Project Title

Proposed study on the renovation and modernization of the integrated pulp and paper mill complex of the Paper Industries Corporation of the Philippines (PICOP).

II. Background

1. PICOP is an integrated wood based complex, the largest in the ASEAN and a dominant company in the eastern Mindanao region providing direct employment to some 9,000 people earning substantial foreign exchange savings from timber product exports and dollar savings on otherwise imported paper products.
2. PICOP manufactures newsprint, kraft, containerboard, plywood, veneer and lumber products.
3. Production Facilities :

Pulp and paper production facilities subject of this project are:

1) Location: Bislig, Surigao del Sur

a) Newsprint paper machine - 86,000 MTPY
b) Kraft paper machine - 70,000 MTPY
c) Pulp Mill - 115,000 MTPY of chemical pulp and 42,000 MTPY of mechanical pulp.

2) Location: Iligan, Lanao del Norte

a) Kraft paper machine - 24,000 MTPY
b) Pulp Mill - 15,750 MTPY of lauan pulp

III. Need For Rehabilitation And Modernization

1. The Philippine government considers newsprint as a strategic commodity providing a vital social service as a carrier of information.
2. Because of the advantages offered by existing facilities, infrastructure and adequate wood resources, PICOP has been chosen as the corporate vehicle to undertake the government-sponsored pulp and paper expansion project.
3. There is a projected shortfall in newsprint supply vis-a-vis the demand starting 1986. In this regard, PICOP has to expand its production capacity to meet this shortfall.

4. The expansion will result in savings in foreign exchange as the country shall be forced to import should there be no increase in present capacities.

5. Because of the huge capital requirement in a major newsprint expansion, the modernization is a cheaper alternative. A major expansion program at this time would not justify the projected shortfall in supply.

6. The present Bislig kraft machine requires more steam. The renovation will not only reduce energy cost but will also reduce usage of expensive imported pulp and upgrade quality of lightweight linerboard grades.

7. The Iligan Mill is currently inactive primarily because it is not economically viable to operate. This is in turn due to the lack of raw materials in the area and low machine efficiency. The transfer and renovation of the mill to Bislig will result in higher production output by speeding up the machine and lower operating cost due to lower input cost and elimination of duplicate overhead cost.

8. The rehabilitation of the Iligan Mill will enable it to supply, primarily, the packaging requirements of exporters of agricultural products which are currencly imported.

IV. Project Objectives

1. To modernize the present newsprint machine located in Bislig, Surigao del Sur to increase its capacity to satisfy domestic newsprint demand through 1990 which is the projected year of the implementation of the major expansion program.

2. To improve the existing kraft machine in Bislig which would upgrade quality of lower basis weight containerboard and at the same time reduce imported softwood pulp content in the linerboard grades.

3. To relocate the presently inactive kraft machine located in Iligan City, Lanao del Norte and integrate it with the pulp and paper mill in Bislig.

V. Scope of the Project

1. Software

Technical assistance is requested in the following areas:

(1) Modernization of the newsprint machine:

(a) To increase the present speed of 700 MPM of the newsprint machine which will increase capacity

(b) To increase production efficiency.

(2) Improvement of the kraft machine (Bislig)

To convert existing single felted press to double-felted press which will increase production efficiency.

(3) Transfer and Integration of Iligan Mill to Bislig

(a) To relocate the paper machine to Bislig to take advantage of the available wood supply.

(b) To speed up the machine resulting in higher (economical) level of operation.

(c) To integrate the paper machine with the available wood processing and other auxiliary facilities in Bislig.

2. Hardware

The supply of machinery and equipment will be necessary to implement the modernization and renovation of the present facilities and to support the increased production capacity.

VI. Need For Assistance

1. Considering that the various equipment subject of this project were originally supplied by Japanese manufacturers and financed under Japanese Reparations Agreement and Supplier's credit, there is a need for Japanese technical assistance:

(a) To confirm the machine manufacturer's recommendation on the proposed modernization and rehabilitation.

(b) To assist in planning, programming and executing the above mentioned project.

2. Financial assistance in the form of liberal terms is needed for the project to insure its viability.

VII. Request

Considering the project timetable, it is hereby requested that a Japanese Diagnostic Survey team be dispatched not later than April 1984 and that they complete all their studies (including a feasibility study) not later than November 1984.

Questionaire 及びその回答(Ⅰ)

Questionnaire

I. General

1. Production and consumption of paper & paperboard by product in the Philippines (1979-1983)
2. Export and Import of paper & paperboard by product (1979-1983)
3. Number of pulp, paper & paperboard mill
4. Capacity of pulp & paper mill by product

II. Mill

1. Annual Report
2. Production capacity (t/y) by pulp & paper machine
3. Actual production in recent 5 years
4. Actual sales and inventories in recent 5 years
5. Consumption of raw material, water, electricity, steam and fuel, and unit consumption ratio
6. Sale price of each product and total amount sold in recent 5 years
7. Flow-sheet of production and capacity of main facilities
8. Condition of plant operation
   - working days a year
   - mixing ratio of raw material
   - operation speed
   - total efficiency (operating ratio, paper making ratio, finishing ratio)
9. Number of staffs, operators and workers
10. Problems of mill operation
11. Future plan of production and sales
12. Future plan of procurement of raw material
13. Production cost (price of raw material, utilities and total yield)
14. Location and mill estate

BRIEFING MATERIALS FOR THE JICA PRELIMINARY SURVEY TEAM UNDER THE JAPAN - PHILIPPINES PLANT RENOVATION PROGRAM

PAPER INDUSTRIES
CORP. OF THE PHILS.

JUNE 23&25, 1984

TABLE OF CONTENTS

PART I: GENERAL INFORMATION ABOUT PICOP

I. COMPANY BACKGROUND

A. BRIEF HISTORY

1934	Don Andres saw the need and the possibility of establishing a pulp and papermill in the Phils.
1950	Bislig Bay Lumber Co. Inc. (BBLCI) was founded to lay the groundwork for the establishment of an integrated timber and paper industrial complex. The company started as a logging and sawmilling business and later expanded to veneer and plywood manufacture.
1952	Bislig Industries Inc. (BII) was formed to continue research and development work on the manufacture of paper out of Philippine hardwoods. A year earlier, International Paper Co. (IPCO) accepted the invitation to participate in a joint venture to establish a pulp and paper mill in the Philippines.
1963	BII changed its name to Paper Industries Corporation of the Philippines (PICOP)
1968	PICOP was granted by the Board of Investments (BOI) Preferred Pioneer Status for its pulp and paper operations and Preferred Non-Pioneer Status for its integrated veneer and plywood mills.
1969	PICOP acquired BBLCI as its wholly-owned subsidiary.
1970	PICOP became a public corporation
1972	PICOP and BBLCI merged with PICOP remaining as the surviving corporation.
1977	PICOP acquired Rustan Pulp & Paper Mills, Inc. (RPPMI)
1982	BOI granted PICOP Preferred Pioneer Status as an integrated wood based industry.

B. OWNESHIP STRUCTURE

	Million Shares	Pesos In Millions
1. Authorized		
Common	240	₱ 1,200
Preferred	60	300
TOTAL	300	₱ 1,500
2. Issued & Outstanding		
Common	58.8	293.8
Preferred	52.8	263.9
TOTAL	111.6	₱ 557.7

3. Major Stockholders

		%
Development Bank of Phils.	18.8	16.8
National Development Co.	30.0	26.9
San Miguel Corp.	24.2	21.7
A. Soriano Corp.	23.4	21.0
International Paper Co.	2.9	2.6
Rustan Group	2.6	2.3
Others	2.0	1.9
Public	7.7	6.8
TOTAL	111.6	100.00%

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II. COMPANY RESOURCES

A. Natural Forest Concession within the provinces of Surigao del Sur, Davao Oriental, Davao del Norte and Agusan del Sur covered under Timber License Agreement Nos. 43 and 47 with a combined area of 182,682 has.

B. Concession road network totalling 2,102 kms. built to withstand 150 ton loads.

C. Manufacturing facilities & Woods equipment with combined net book value of ₱1,218 million.

C.1 Acquisition/Construction dates of major manufacturing facilities:

a.	Sawmill	1951
b.	Dry Kiln	1959
c.	Veneer Plant	1960
d.	Finishing Plant	1962
e.	Plywood Plant #1	1966
f.	Pulp & Paper Mill	1971
g.	Plywood Plant #2	1976
h.	Iligan Mill	1977

D. Industrial Tree Plantation with accumulated costs of ₱363 million.

E. Human resources and technological know-how.

P I C O P

MANPOWER SUMMARY

AS OF DECEMBER '31

	Woods	MPC.	Admin.	Finance	Total
1979					
Staff	130	257	177	47	591
Non-Staff	6.050	5.163	915	79	12.207
Total	6.180	5.400	1.092	126	12.798
1980					
Staff	184	235	224	46	689
Non-Staff	4,068	4.408	2.010	83	10,569
Total	4,252	4,643	2,234	129	11,258
1981					
Staff	165	215	211	64	655
Non-Staff	3,810	3.665	1,997	106	9,578
Total	3,975	3,880	2,208	170	10,233
1982					
Staff	153	208	136	54	551
Non-Staff	3,326	3,222	895	90	7,533
Total	3,479	3,430	1,031	144	8,084
1983					
Staff	143	213	142	61	559
Non-Staff	3,500	3,600	924	86	8,110
Total	3,643	3,813	1,066	147	8,669

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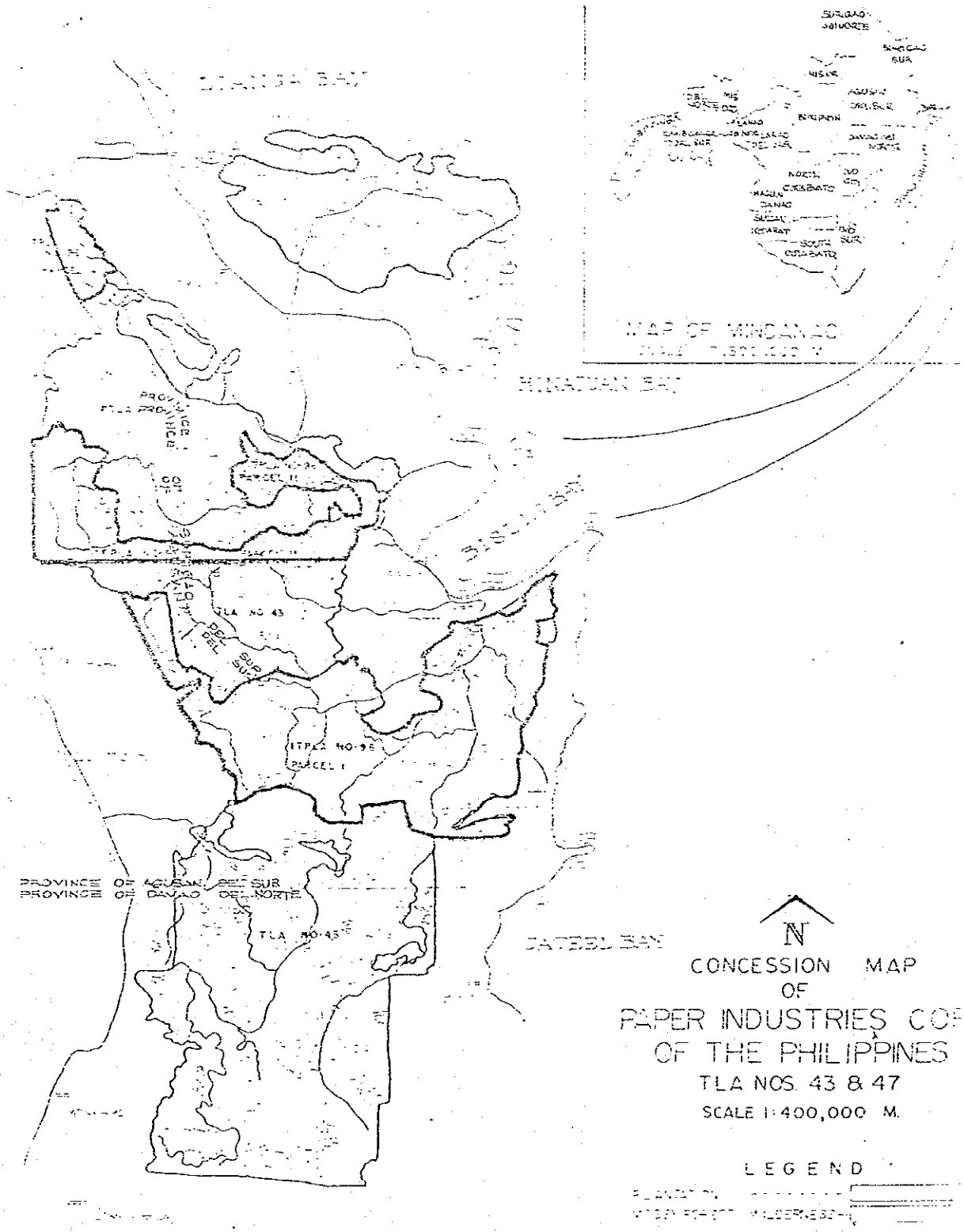
MAP OF MINDANAO
MINDANAO SEA
PROVINCE OF AGUSAN DEL SUR
PROVINCE OF DAVAO DEL NORTE
TLA NO. 43
TLA NO. 47
N
CONCESSION MAP
OF
PAPER INDUSTRIES CO
OF THE PHILIPPINES
TLA NOS. 43 & 47
SCALE 1:400,000 M.
LEGEND

FOREST RESOURCE BASE
AS OF DECEMBER, 1983
AREA (HECTARE)

PARTICULAR	TLA-43	PMLA-47	SUB-TOTAL	TMPLA-96	TOTAL
I. OPERABLE AREAS					
1. Virgin Forest	4723	5296	10019	-	10019
2. Second Growth Forest	53949	14693	68642	19678	88320
3. Industrial Tree Plantation					
Falcata			2476	8875	11351
Bagras			1165	4342	5507
Pines			164	738	902
Ipil-ipil			1140	-	1140
Mixed			2467	500	2967
For Development			3406	12921	16327
Sub-Total	4446	6372	10818	27376	38194
4. Kaingin/Clearings	1520	3748	5268	2500	7768
Total Operable	64638	30109	94747	49554	144301
II. INOPERABLE AREAS					
1. Subdivided lands	-	3089	3089	-	3089
2. Kainigin/Clearing	651	5623	6274	-	6274
3. FORI Experiment/Areas	-	3258	3258	-	3258
4. Roads	2608	1368	3976	1010	4986
5. NPC Transmission Lines	-	-	-	130	130
6. PNOC Areas	-	-	-	350	350
7. Ecological Areas					
-Protection Areas	4537	3450	7987	3336	11323
-Mossy Forest	5720	-	5720	-	5720
-Rocky Areas	491	2670	3161	-	3161
-Water Shed	-	90	90	-	90
Total Inoperable Areas	14007	19548	33555	4826	38381
Total Concession Areas	78645	49657	128302	54380	182682

FOREST MANAGEMENT

PICOP manage its forest concession on a sustained-expanding-yield basis, blending successfully for the first time in the Philippines two silvicultural systems:selective logging and plantation forestry.

a) Selective Logging - A technique which the company helped pioneer with the Bureau of Forest Development in 1954 where only mature trees of 60 cm diameter (at breast height) and over are cut and the young, healthy trees are left to mature for the next harvest cycle, usually after 25 to 35 yrs.

b) Plantation Forestry - This is practiced on forest lands with poor commercial stands and where the application of the selective logging technique will not leave adequate residuals for the next timber harvest. Here, the vegetation is clearcut and the land planted with fast growing species (Albizia falcataria,Eucalyptus deglupta,Casia mangium, ipil-ipil, etc.)

In six to eight yrs. , these are ready for harvest as pulpwood. Left to grow further, the trees will grow to sawtimber sizes for veneer and lumber use.

PICOP's HEAVY EQUIPMENT COMPLEMENT

A. COMPANY	NO. OF UNITS
Mobile Spars/Yarders	52
Skidders	34
Tractors	32
Loaders	71
Rock Crushers	5
Graders	16
Dump Trucks	35
Cranes	10
Logging Trucks	23
Road Rollers	6
Excavator	3
TOTAL	287

B. CONTRACTOR	
Logging Trucks (6 + 10 wheelers)	188
Dump Trucks	9
Loaders	10
Skidders	6
TOTAL	213

AGRO FORESTRY

As part of the Company's desire to augment the income of the people in the region, PICOP launched an agro-forestry development program in 1968.

Under the program, the Company assists small farmers and individual land owners improve the raising of farm crops on the fertile portion of their land and at the same time, encourage and teach them (for free) to raise fast growing pulpwood trees on the marginal and sub-marginal parts. The Company also provides the falcata seedlings at cost, payable at harvest 6 to 8 yrs. later, and guarantees to buy all the wood produced, up to 5 cm in diameter.

To date, there are some 5,300 farmers involved in the program covering an area of about 20,000 hectares.

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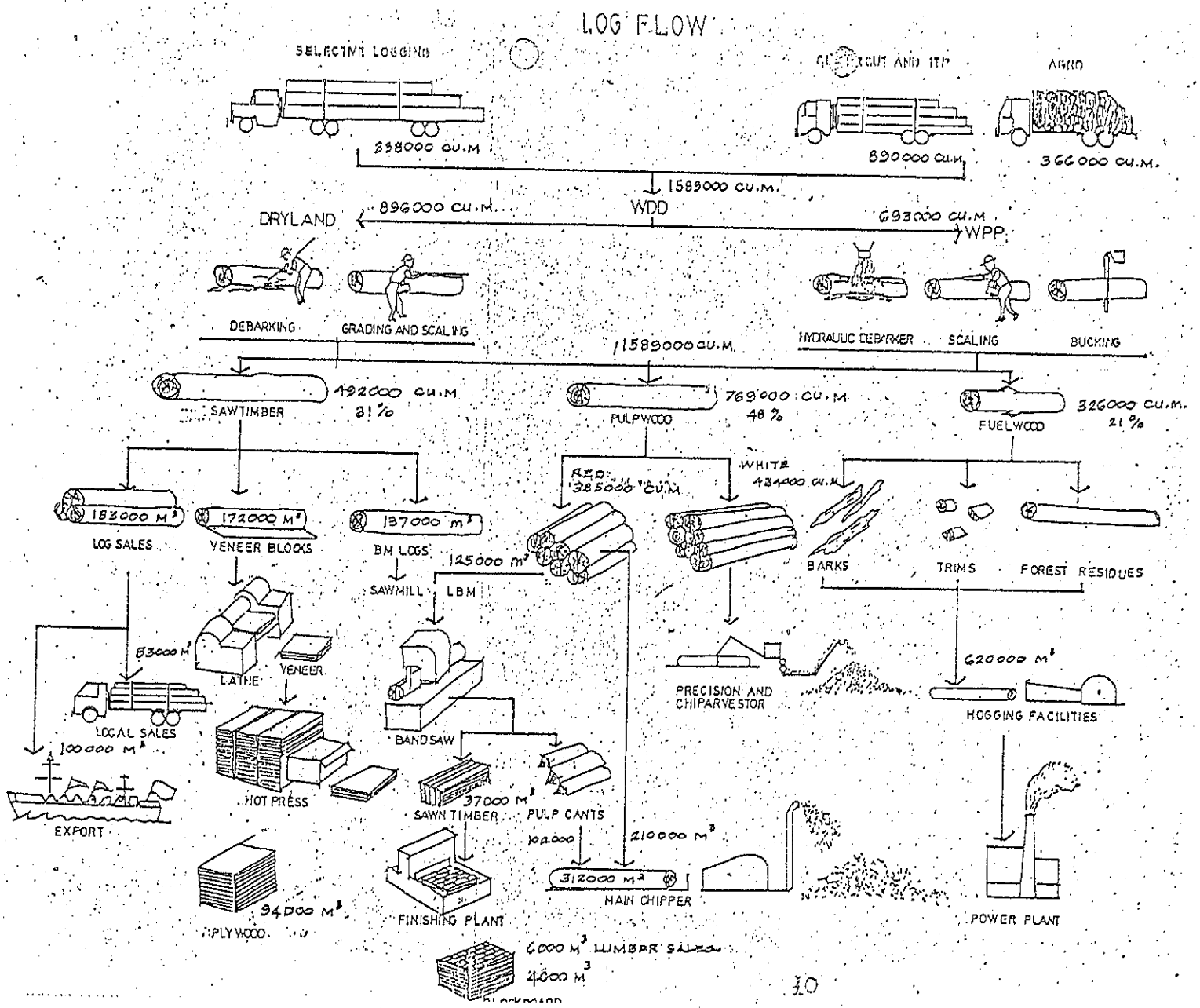
LOG FLOW
SELECTIVE LOGGING
CLEAR CUT AND ITP
AGRO
338000 cu.M
890000 cu.M
366000 cu.M.
1589000 cu.M.
DRYLAND
896000 cu.M.
WDD
693000 cu.M
WPP
DEBARKING
GRADING AND SCALING
HYDRAULIC DEBARKER
SCALING
BUCKING
1589000 cu.M
SAWTIMBER
192000 cu.M
31%
PULPWOOD
769000 cu.M
48%
FUELWOOD
326000 cu.M.
21%
RED
385000 cu.M
WHITE
484000 cu.M
183000 M³
172000 M³
137000 m³
LOG SALES
VENEER BLOCKS
BM LOGS
125000 m³
BARKS
TRIMS
FOREST RESIDUES
SAWMILL
LBM
83000 M³
LATHE
VENEER
PRECISION AND CHIPARVESTOR
620000 M³
LOCAL SALES
100000 M³
BANDSAW
HOGGING FACILITIES
EXPORT
HOT PRESS
37000 M³
SAWN TIMBER
PULP CANTS
102000
210000 M³
312000 M³
MAIN CHIPPER
94000 M³
PLYWOOD
FINISHING PLANT
POWER PLANT
6000 M³ LUMBER SALES
4000 M³

PRODUCT LINES & CAPACITIES

	ANNUAL CAPACITY
FINISHED PRODUCTS:	
NEWSPRINT (MT)	86,000
KRAFT: (MT)	
a. Bistig	68,000
b. Iligan	30,000
ABACA PULP (MT)	3,000
PLYWOOD: (CU.M.)	
a. Plywood Plant No.1	50,000
b. Plywood Plant No.2	100,000
LUMBER (CU.M.)	50,000
BLOCKBOARD (CU.M.)	10,000
LOGS: (CU.M.)	
a. Yarding/Skylining/Skidding	903,000
b. Loading and Hauling	506,000
INTERMEDIATE PRODUCTS:	
PULP: (MT)	
a. Mechanical Pulp	43,000
b. Chemical Pulp	112,000
c. Bleached Chemical Pulp	40,000
VENEER: (CU.M.)	
a. Plywood Plant No. 1.	55,000
b. Plywood Plant No. 2	110,000

UTILITIES & PRESENT CAPACITIES

STEAM (500 MTPH) 3,700,000 MTPY

BOILER COMPLEMENT:

- 1 X 182 MTPH (OIL FIRED)
- 2 X 114 MTPH (WOODFIRED)
- 3 SMALL-30 MTPH (WOODFIRED)
- 1 X 60 MTPH (CHEMICAL RECOVERY)

ELECTRIC POWER (103 MW) 865,000 MW-HR/YR

ELECTRIC GENERATORS:

- 1 X 30 MW STEAM TURBINE
- 1 X 20 MW STEAM TURBINE
- 2 X 11.5 MW I.C.E. (OIL-FIRED)
- 1 X 30 MW NPC

MILL WATER

MILL USAGE: 18,000,000, CU.M./YR.

SOURCE: BORBOANAN RIVER
300,000 CU.M./DAY

PART II: PULP & PAPER DATA

PHILIPPINES

RATED CAPACITIES OF EXISTING PULP AND PAPER MILLS
(Metric Tons Per Year)

	PULP	PAPER AND PAPER-BOARD
Integrated Pulp and Paper Mills		
1. Bataan Pulp and Paper Mills, Inc.	29,325	25,875
2. Central Azuc. de Bais-Paper Div.	8,980	13,175
3. Menzi Development Corporation	2,740	7,300
4. Paper Industries Corp. of the Phils.	166,630	184,335
5. United Pulp and Paper Co., Inc.	15,200	30,930
	223,875	261,615
Non-Integrated Mills		
A. Pulp Mills		
1. Albay Agro-Industrial Development Corporation	1,090	-
2. Canlubang Pulp Mfg. Corp.	7,485	-
3. Cellophil Resources Corp.	66,000	-
4. Isarog Pulp & Paper Co., Inc.	4,950	-
	79,525	-
B. Paper Mills		
1. Aclem Paper Mills, Inc.	-	16,500
2. Asgard Corrug. Box Mfg. Corp.-PD *	-	9,900
3. Container Corp. of the Phils.	-	13,960
4. Eastern Paper Mills, Inc.	-	18,000
5. Globe Paper Mills	-	8,980
6. Kimberly-Clark Philippines Inc.	-	15,000
7. Liberty Paper Mills, Inc.	-	4,490
8. Manila Paper Mills, Inc.	-	72,600
9. Manila Press, Inc.-PMD	-	4,490
10. Massive Paper Mills	-	6,600
11. Paperland, Incorporated	-	10,000
12. Paragon Paper Industries, Inc.	-	24,750
13. People's Paper Mills, Inc. *	-	6,000
14. Philippine Paper Mills, Inc.	-	11,970
15. Premier Paper Corporation	-	3,960
16. Scott Paper Philippines, Inc.	-	27,390
17. Utility Enterprises Corp.	-	13,200
18. Vanson Paper Industrial Corp.	-	6,600
19. Worldwide Paper Mills, Inc.	-	14,190
	-	288,580
TOTAL	303,400	550,195

Source: PULPAPER
5.21.84

* Not yet in operation.

PRODUCTION AND SALES OF PULPAPEL MEMBERS
(In Metric Tons)

PAPER	1983 PROD.	1983 SALES	1982 PROD.	1982 SALES	1981 PROD.	1981 SALES	1980 PROD.	1980 SALES	1979 PROD.	1979 SALES
Newsprint	71,047	70,254	63,145	59,902	81,876	80,611	79,460	77,100	80,818	87,005
Bond	21,927	19,139	27,726	20,386	28,373	23,509	30,270	23,075	39,905	30,818
Bookpaper	11,859	10,876	5,230	5,185	4,687	4,893	4,725	4,410	4,066	4,034
Mimeo	4,553	4,049	4,300	3,469	5,219	4,849	4,770	3,830	6,406	5,837
Tissue/Crepe	16,662	15,943	14,455	14,634	20,358	17,394	15,935	14,080	15,044	16,679
Onion Skin	788	830	785	710	2,122	2,351	2,795	2,540	1,803	2,695
Linerboard	36,611	40,435	30,152	30,325	39,677	39,856	55,050	50,281	53,368	60,149
Corrugating Medium	32,796	32,895	31,532	32,632	31,944	31,364	36,120	32,230	39,368	40,199
Wrapping kraft	14,434	8,908			19,382	11,326	19,005	12,070	23,017	20,203
Multi-wall/Sackkraft	7,494	8,598	11,604	10,631	21,288	23,009	24,715	24,315	28,743	27,690
Specialty			866	611	2,611	3,053	6,847	6,473	7,615	7,200
TOTAL	218,171	211,927	206,795	186,967	257,537	242,215	279,692	250,404	330,153	302,509
PAPERBOARD										
Coated (Greyback)	11,391	10,264	3,295	2,966						
Solid/Glosscote	6,194	5,617								
Boxboard	7,196	8,026	7,698	7,532	12,321	11,610	12,325	9,395	10,309	10,034
Chipboard	2,446	3,421	6,861	5,454	9,544	8,730	12,420	9,593	12,583	10,989
Matchbox Wrapper	1,406	1,647								
Tagboard	907	297								
Clayfilled	832	916								
Bristol	754	708	887	892	543	210	620	565	267	196
Newsboard	4,335	2,785	1,424	286	7,038	6,666	2,535	2,190	6,562	4,532
Specialty			522	598	3,198	3,095			1,015	913
Kraftboard					121	117			352	198
TOTAL	35,461	33,681	20,687	17,812	32,675	30,428	27,900	21,743	31,088	26,862
GRAND TOTAL	253,632	245,608	227,482	204,779	290,212	272,643	307,592	272,147	361,241	329,371

Source of Data: PULPAPEL ANNUAL REPORTS

PAPER IMPORTATION

	1979	1980	1981	1982	1983
A. NEWSPRINT	19,312	20,012	4,895	2,671	1,192
B. PRINTING - WRITING PAPER					
Bond	-	2,945	-	-	-
Bookpaper	488	4,799	1,477	10,456	4,095
Mimeo	-	-	-	-	-
Onion skin	144	118	51	84	75
Other Printing-Writing	7,946	4,078	7,561	8,913	15,138
C. OTHER PAPER					
Tissue Crepe	88	14	40	106	738
Others Paper Nes.	5,130	2,170	2,343	3,911	12,205
D. CONTAINERBOARD					
Linerboard	64,162	71,199	70,047	85,482	68,535
Corrugating Medium	27,069	29,673	29,129	30,243	25,688
E. KRAFT PAPER					
Wrapping paper	72	111	53	254	125
Multiwall Sackkraft	-	-	-	-	-
F. PAPERBOARD					
Claycoated Board	4,849	5,893	7,487	8,000	4,025
Solid gloss cote	-	-	-	-	-
Boxboard	-	-	-	-	-
Chipboard	167	-	-	21	-
Matchbox Wrapper	476	354	172	177	515
Tagboard	123	579	896	774	1,520
Clayfilled	-	-	-	-	-
Bristol	184	-	-	62	59
Newsboard	-	-	43	90	31
Other Paperboard	47,765	38,693	50,210	43,454	29,398
T O T A L IMPORTATION	177,975	180,638	174,404	194,698	163,339

GENERAL SPECIFICATIONS

PICOP NEWSPRINT & KRAFT MACHINE

		No.1 Paper Machine	No.2 Paper Machine
Type of machine	:	Fourdrinier with multi-cylinder dryer	Fourdrinier with multi-cylinder dryer
Wire width	:	6,650 mm	4,470 mm
Paper Grade	:	Newsprint	Linerboard and corrugating medium
Basis weight	:	49 g/m^2	Linerboard; 181-230 g/m^2
Design Speed	:	760 m/min	381 m/min
Operating speed	:	700 m/min	265 m/min
Theoretical production on reel @100% eff.	:	300 MT/24 hrs.	245 MT/24 hrs.

06.24.84

PAPER INDUSTRIES CORPORATION OF THE PHILIPPINES
PAPER PRODUCTS PRODUCTION VOLUME
In Metric Tons

	1979	1980	1981	1982	1983
Bislig					
Paper					
Linerboard	30,519	38,947	32,908	21,745	34,660
Corr. Medium	30,120	30,181	22,332	25,747	29,548
Sub-Total Kraft	60,639	67,126	55,235	47,492	64,208
Newsprint	78,183	73,222	77,398	56,912	74,803
Total	138,822	140,350	132,633	104,404	139,011
Pulp					
Mechanical Pulp (RGP)	34,234	33,656	36,428	29,674	37,227
Bleached Kraft Pulp	40,496	38,471	37,432	25,229	32,450
Unbleached Kraft Pulp	49,497	49,195	42,793	41,201	50,935
Iligan					
Paper					
Linerboard	23,027	13,285	-	-	-
Pulp					
Abaca Pulp	1,029	714	1,138	1,236	

NOTES:

1980 - Installed 4 additional dryers in Sept. and spent the rest of the year on debugging. This was done because inventories were running high.

1981 - Mill was slowdown and finally shut down on December because of weak market.

1982 - Deliberate slowdown due to low demand

1983 - Was on shutdown half of January again because of market.

PAPER INDUSTRIES CORPORATION OF THE PHILIPPINES
1979 to 1983 SALES VOLUME AND INVENTORIES
(In Metric Tons)

	1979	1980	1981	1982	1983
SALES VOLUME					
Linerboard	57,740	45,836	33,986	29,509	34,452
Corr. Medium	33,389	25,223	22,367	31,095	29,118
Sub-Total Kraft	91,129	70,864	56,353	60,604	63,570
Newsprint	91,674	91,629	79,795	60,125	74,861
T o t a l	182,803	162,493	136,148	120,729	138,431
INVENTORIES AT DECEMBER 31					
Linerboard	1,685	5,781	6,887	1,968	10
Corr. Medium	1,912	4,360	4,537	3,216	6
Sub-Total Kraft	3,597	10,141	11,424	5,184	16
Newsprint	5,258	4,251	3,732	143	169
T o t a l	8,855	14,392	15,216	5,327	185

PAPER INDUSTRIES CORPORATION OF THE PHILIPPINES
PAPER PRODUCTS SALES AND SELLING PRICES
1979 TO 1983

Sales Value (In ₱1000)	1979	1980	1981	1982	1983
Linerboard	₱228,844	₱229,188	₱171,410	₱151,688	₱194,990
Corr. Medium	102,908	98,788	90,540	127,591	130,932
Sub-Total Kraft	331,752	327,976	261,950	279,279	325,922
Newsprint	328,085	429,428	493,455	380,966	518,433
Total	₱559,837	₱757,404	₱755,405	₱660,245	₱844,355

Ave. Selling Prices (Per MT)						Projected 2nd Sem.1984
Linerboard	₱	3,963	5,022	5,044	5,140	5,660	14,424
Corr. Medium	₱	3,082	3,916	4,048	4,103	4,497	13,464
Newsprint	₱	3,579	4,687	5,912	6,336	6,925	12,582

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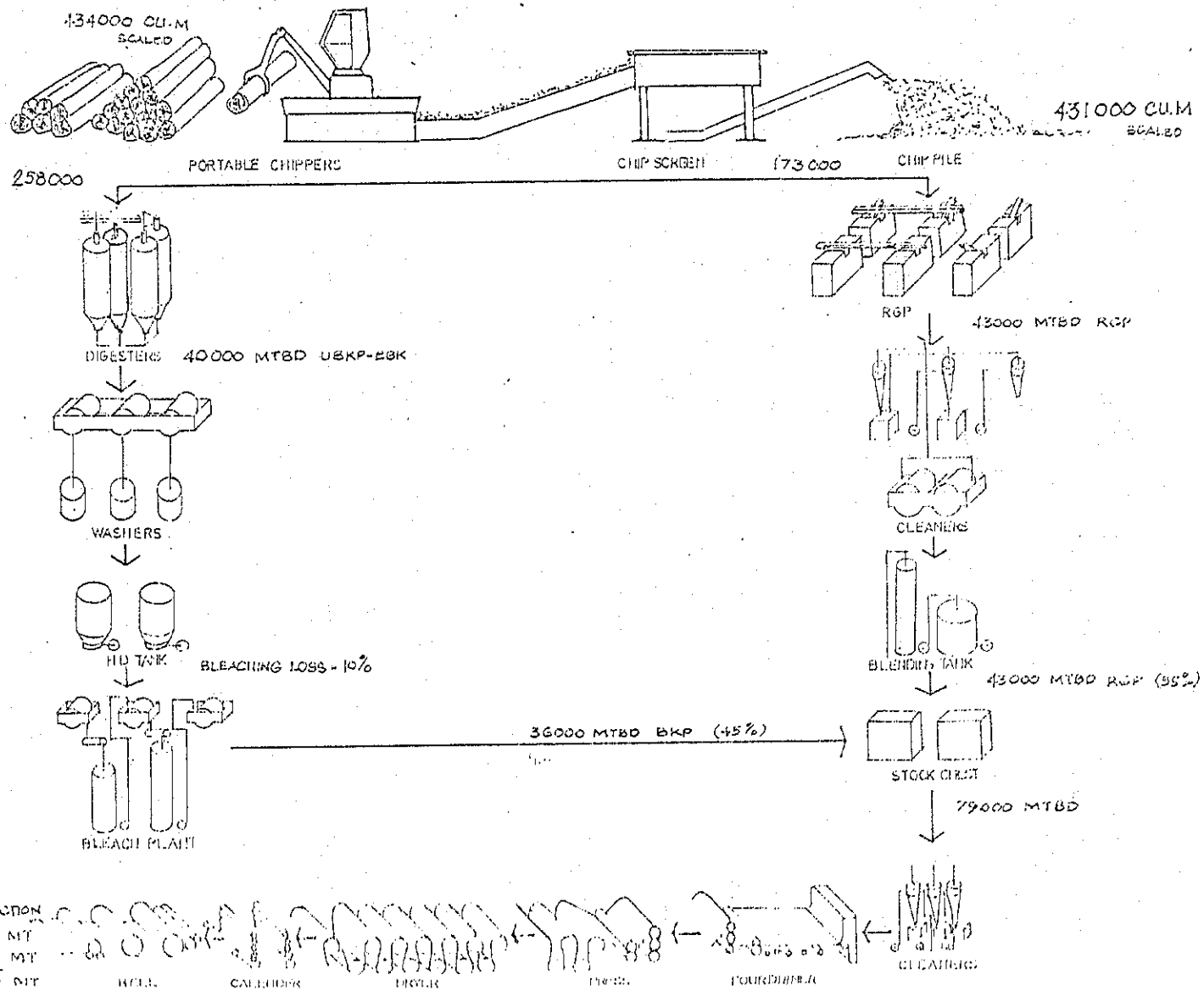
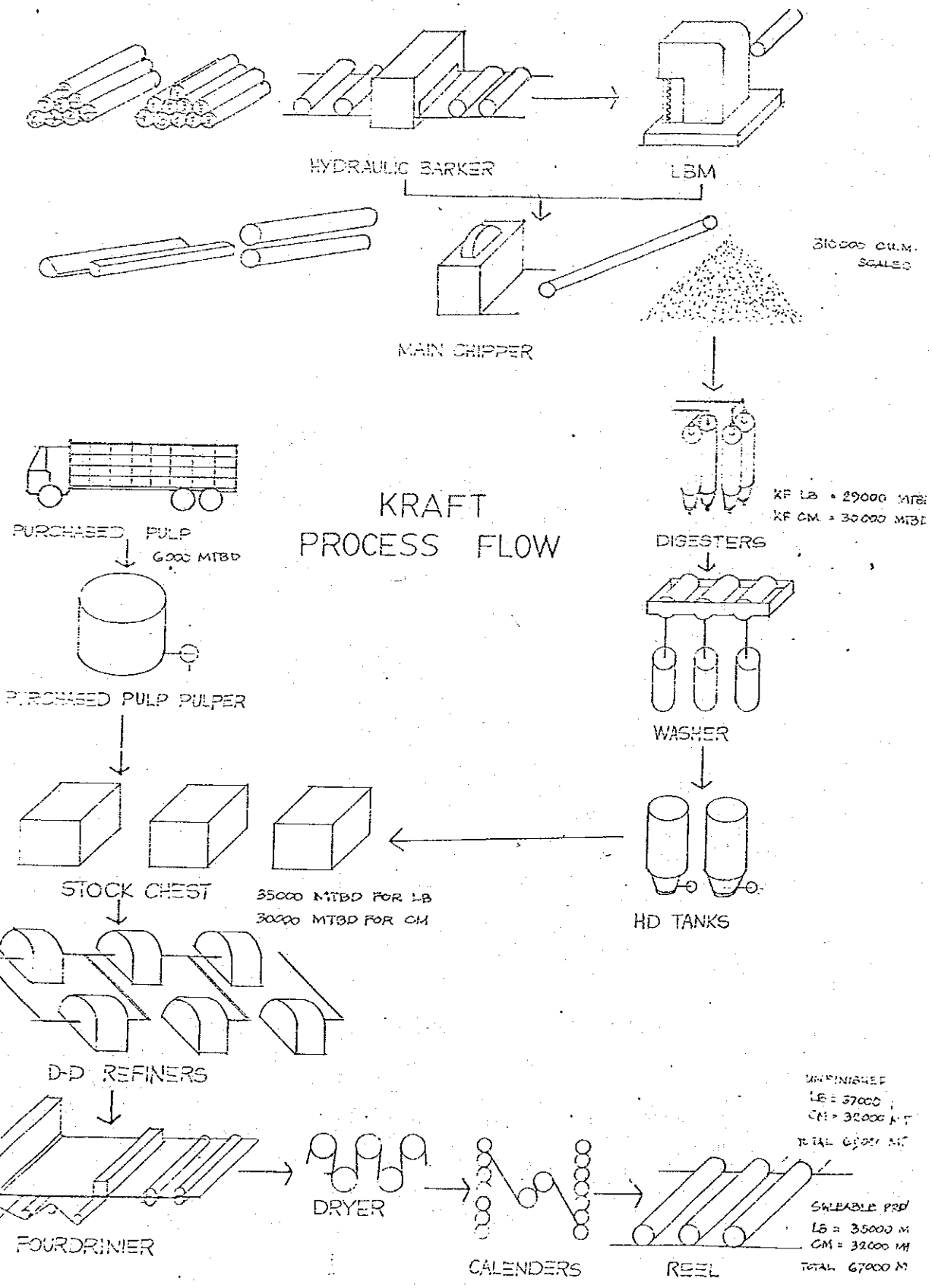
NEWSPRINT PROCESS FLOW




KRAFT
PROCESS FLOW
HYDRAULIC BARKER
LBM
MAIN CHIPPER
DIGESTERS
WASHER
HD TANKS
STOCK CHEST
35000 MTBD FOR LB
30000 MTBD FOR CM
D-D REFINERS
FOURDRINIER
DRYER
CALENDERS
REEL
PURCHASED PULP
6000 MTBD
PURCHASED PULP PULPER

PAPER INDUSTRIES CORPORATION OF THE PHILIPPINES
OPERATING PARAMETERS

A. No. of Working Days per year — 350 days average

B. FURNISH RATIO

a. Standard Newsprint

RGP - 55%
BKP - 45%

b. LB Grades

LUKP - 84%
NUKP - 16%

c. CM Grades

LUKP - 100%

C. WOOD TO PULP RATIO

KF - CM	=	4.7 cu.m. (scaled)/MTBD
KF - LB	=	5.2 cu.m. (scaled)/MTBD
RGP	=	4.0 cu.m. (scaled)/MTBD
BKP	=	7.6 cu.m. (scaled)/MTBD

D. FIBER DENSITY

Lauan (for CM & LB) = 360 - 390 kg/cu.m.
Palcata (for newsprint) = 250 - 270 kg/cu.m.

E. PULP TO PAPER RATIO

Newsprint = 0.945 $\frac{\text{MTBD PULP}}{\text{MT PAPER}}$

Kraft = 0.950 $\frac{\text{MTBD PULP}}{\text{MT PAPER}}$

F. SALEABLE PAPER TO REEL PRODUCTION RATIO

CM = 0.993 NP = 0.993
LB = 0.946

G. OPERATING SPEED (Bislig Paper Machine)

a. PM-1 :	Std. NP	-	700 mpm
b. PM-2 :	CM	-	315 mpm
	LB	-	220 mpm

H. PRODUCTION EFFICIENCY (1983 Data)

	News Machine PM-1	Kraft Machine PM-2
Mill Efficiency	75.3%	82.1%
Machine Efficiency	77.8%	89.3%

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DEFINITION OF TERMS USED IN PAPER MACHINE OPERATING DATA

Total Available Time (t_1) – is equal to total calendar time less downtime imposed by Top Management decision due to lack of orders, rebuild or other similar work classified as capital improvements, scheduled outages of power/steam generators/supply, etc.

Planned Maintenance Downtime (t_2) – is the time set aside purposely to do maintenance work, clothing changes, clean up, boil out, etc. This time represents machine downtime that has some degree of advanced planning and not lost time brought about by any breakdown. Duration of normal planned maintenance downtime is less than 24 hrs. per occurrence. Roll change, wire/felt change, scheduled repair/replacement/ servicing of equipment, boil out, wash-up, etc. fall under this category provided these activities do not happen as a result of emergency or unplanned shutdowns.

Scheduled Operating Time (t_3) – is equal to total available time less planned maintenance downtime.

Operating Lost Time (t_4) – is time lost when the machine is supposed to be running and producing. It includes time lost due to sheetbreaks, grade changes, unscheduled equipment repairs, unscheduled downtime due to deficiency in supply of steam/power/air/water/pulp, etc.

The only allowable lost time allowances are sheet breaks and grade change time.

Net Operating Time (t_5) – is equal to the time paper is produced at the reel.

Machine Gross Operating Time (t_6) – equals net operating time plus sheet breaks plus grade change time.

Machine Gross Available Time (t_7) – equals net operating time plus sheet breaks plus grade change.

plus operating lost time due to boil outs/ wash-up/clothing changes and the like.

plus operating lost time due to mech'l/ elect'l/instrument failures within the machine system.

- plus planned maintenance downtime on the machine. Factors external to the machine system (steam/power/air/water/pulp, etc.) are excluded here.

$$\text{Machine Availability} = \frac{t_6}{t_7} \times 100\%$$

$$\text{Mill Availability} = \frac{t_6}{t_1} \times 100\%$$

$$\text{Machine Time Utilization} = \frac{t_5}{t_6} \times 100\%$$

$$\text{Recovery Factor} = \frac{\text{Saleable Production}}{\text{Net Reeled Prodn.}} \times 100\%$$

Machine Eff. = (Recovery Factor) x (Mach. Time Utilization) x (Mach. Avail.)

Mill Efficiency = (Recovery Factor) x (Mach. Time Utilization) x (Mill Avail.)

PAPER INDUSTRIES CORPORATION OF THE PHILIPPINES

MANPOWER STRENGTH OF PULP AND PAPER MILL

Category	Pulp Mill	Paper Mill	Chemical Plants	Finishing Department	Sub-Total Pulp & Paper Mill	Support Dept.	Total
Staff	10	11	7	6	34	124	158
Non-Staff	64	81	34	108	287	891	1,178
Operators	25	35	23	12	95	-	95
Office Workers	1	1	1	4	7	16	23
Total	100	128	65	130	423	1,031	1,454

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PAPER INDUSTRIES CORPORATION OF THE PHILIPPINES
UNIT CONSUMPTION RATIO
PER METRIC TON OF PRODUCT

Paper Manufacturing

Utilities:	Unit	Std NP	CM	LB
Electric Power	KWH	700.00	456.72	445.12
Steam - 145 PSIG	MT	0.75	3.044	2.951
Steam -145-45 PSIG	MT	-	2.00	2.00
Steam - 45 PSIG	MT	1.95	0.20	0.20
Millwater	CU.M.	36.00	30.22	29.49

Pulp Manufacture

Utilities:	Unit	RGP	BKP	KF-CM	KF-LB
Electric Power	KWH	2,800.00	60.00	185.00	185.00
Steam - 145 PSIG	MT	-	-	1.04	1.13
Steam - 45 PSIG	MT	0.45	0.35	0.45	0.45
Millwater	CU.M.	80.00	70.00	28.00	28.00

PAPER INDUSTRIES CORPORATION OF THE PHILIPPINES
CONSUMPTION OF RAW MATERIALS AND UTILITIES
BASED ON 1983 CONSUMPTION DATA

Red Chips	234,668 cu. m.
White Chips	399,235 cu. m.
Softwood Pulp	5,661 MT
Millwater	17,903,406 cu. m.
Electric Power	322,713,858 KWH
Steam	2,498,362 MT
Bunker Fuel Oil	94,720,051 liters
Fuelwood	545,360 cu. m.

CURRENT PRICES	1st Semester	Projected 2nd Semester
A. RAW MATERIALS:		
White Chips	₱ 281/ Cu.m.	₱ 351/ Cu. m.
Red Chips	243/ Cu.m.	289/ Cu. m.
NUKP	5,928/ MT	9,603/ MT
B. UTILITIES:		
Electric Power	0.62947/KWH	0.82468/ KWH
Steam 145 PSIG	245/ Cu. m.	334/ Cu. m.
Steam 45 PSIG	227/ Cu. m.	309/ Cu. m.
Mill Water	0.75890/ Cu. m.	0.97356/ Cu. m.

A. FALCATARIA & E. DEGLUPTA PROPERTIES

- CHEMICAL PULP PROPERTIES VS. AGE

TYPICAL 12 YR.-OLD BEATING CURVE

KAPPA 35.5 BRIGHTNESS 22.2

C S F	500	400	300
TEAR FACTOR	77	82	82
TEAR INDEX	7.55	8.04	8.04
BURST FACTOR	62	72	77.5
BURST INDEX	6.08	7.06	7.6
BR. LENGTH	10594	12000	12700
TENSILE INDEX	1039	1177	1245
BEATING TIME	34	54	73

KAPPA 26.7 BRIGHTNESS 27.0

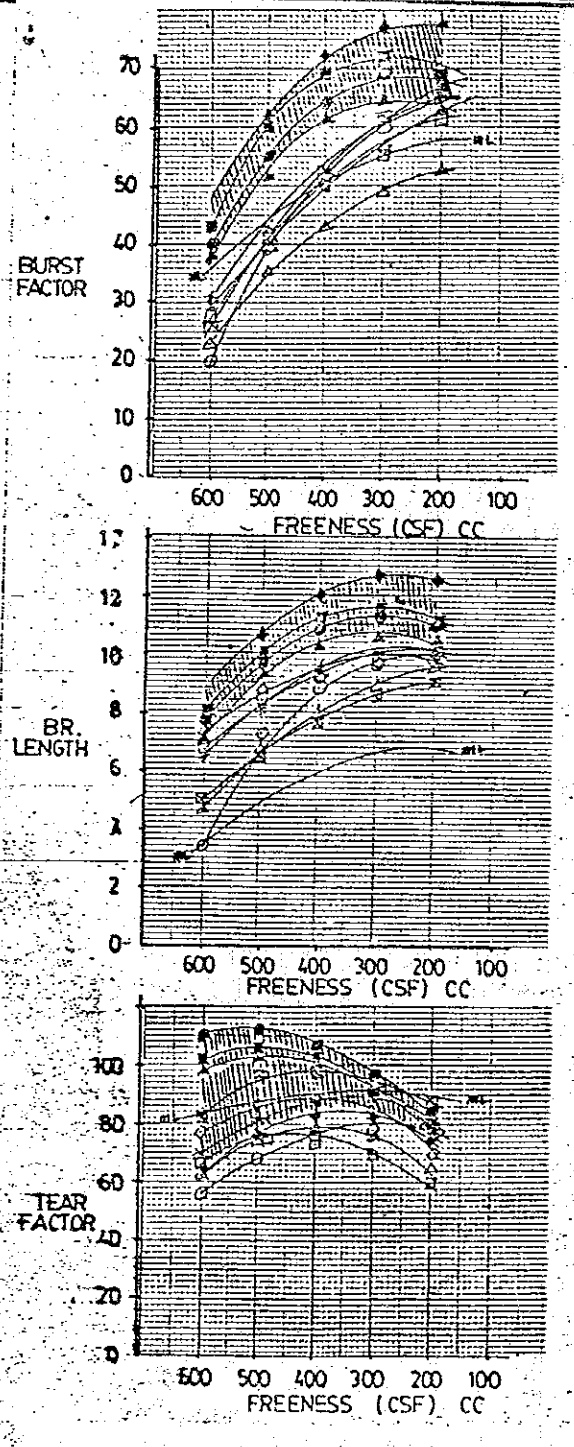
C S F	500	400	300
TEAR FACTOR	89.73	87.7	84.6
TEAR INDEX	8.8	8.6	8.3
BURST FACTOR	55	67.3	73
BURST INDEX	5.4	6.6	7.16
BR. LENGTH	10197	11400	11604
TENSILE INDEX	1000	1118	1138
BEATING TIME	31	50	70

LEGEND:

A. FALCATARIA
- 12 Yrs old
- 2 Yrs old
- 5 Yrs old
- 7 Yrs old

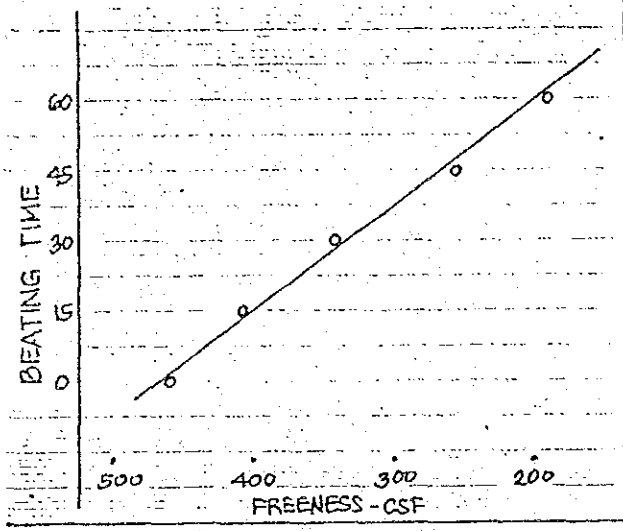
E. DEGLUPTA
- 2 Yrs old
- 5 Yrs old
- 6 Yrs old
- 8 Yrs old
- 9 Yrs old
- 10 Yrs old

M. LAUAN

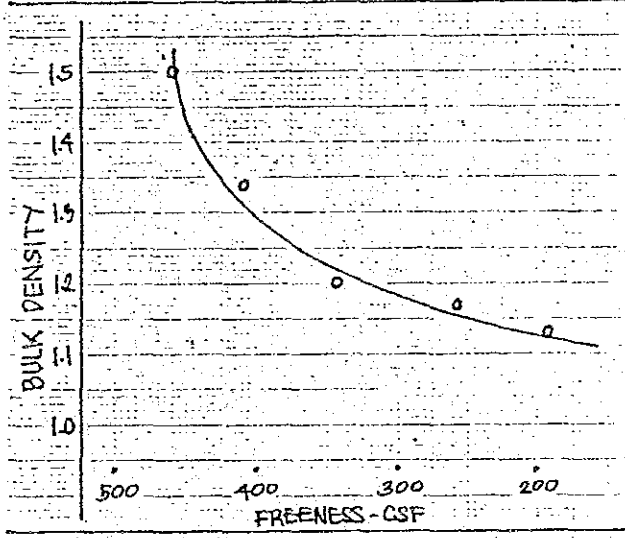


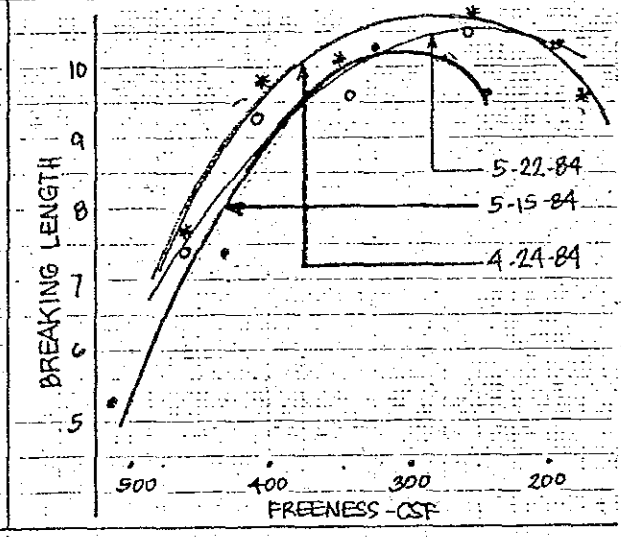
BLEACHED KRAFT PULP BEATER CURVE

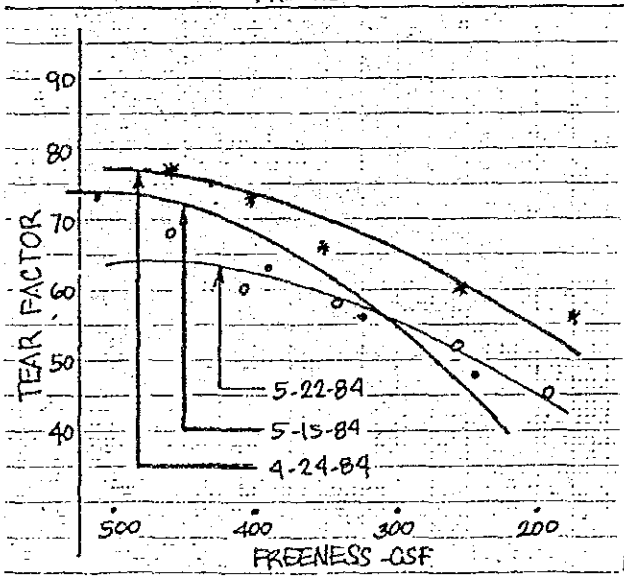
DATE SAMPLED: 5-22-84 (1:35 PM) DATE TESTED: 5-22-84 R.H.-49.0 %
DATE BEATEN: 5-22-84 DATE REPORTED: 5-23-84 TEMP.-23.91 °C

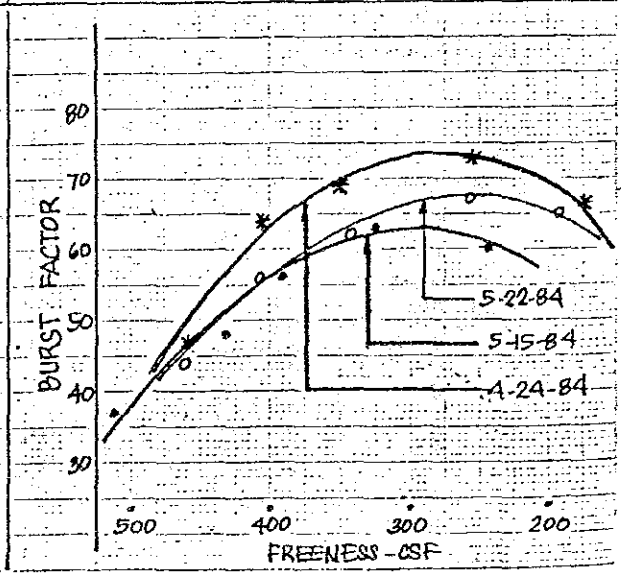


BEATING TIME (MINUTE)	0	15	30	45	60
FREENESS (CSF)	466	415	345	256	191
BULK DENSITY	1.50	1.34	1.20	1.17	1.13
BURST FACTOR	44.83	56.02	62.31	67.73	65.43
TEAR FACTOR	68.20	60.65	58.31	52.95	45.69
BREAKING LENGTH (km)	7.4	9.3	9.6	10.5	10.3





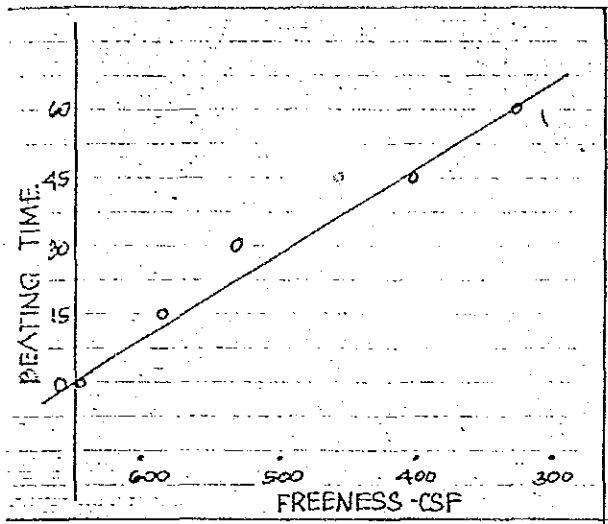




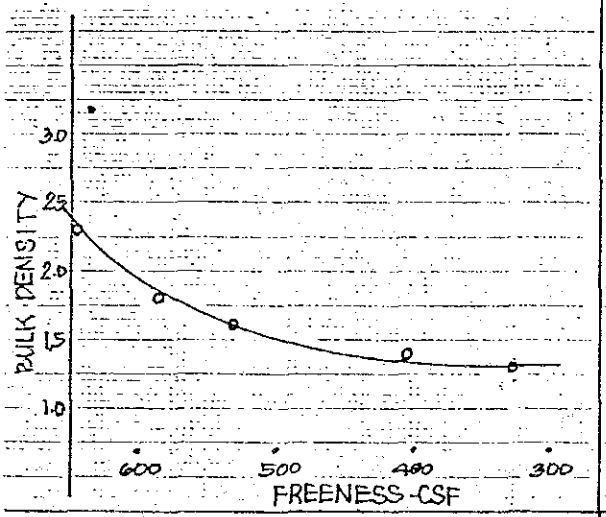
IRY RAW STOCK PULP BEATER CURVE (CM RUN)

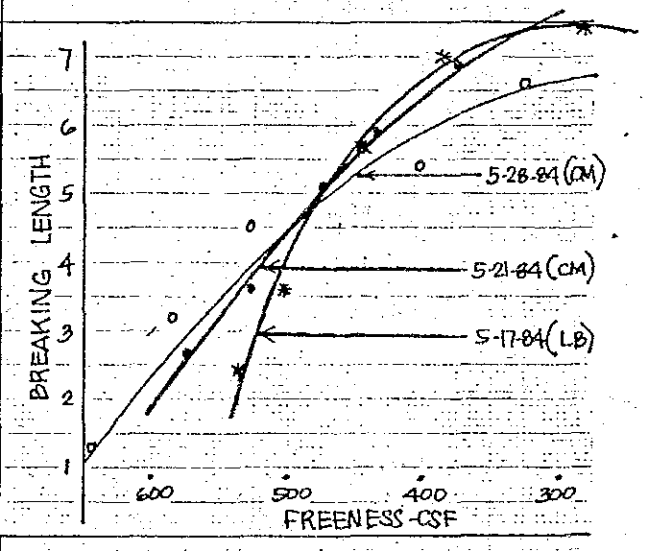
KAPPA # - 72.8
R.H. - 56.0 %
TEMP. - 23.35 °C

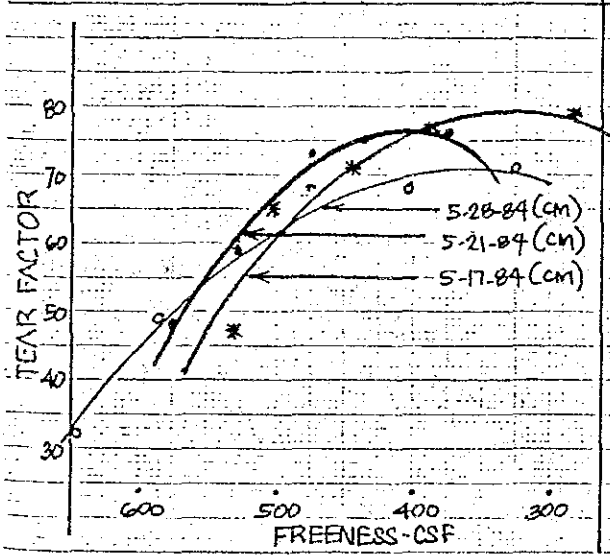
DATE SAMPLED: 5-28-84
DATE BEATEN: 5-28-84
DATE TESTED: 5-29-84
DATE REPORTED: 5-29-84

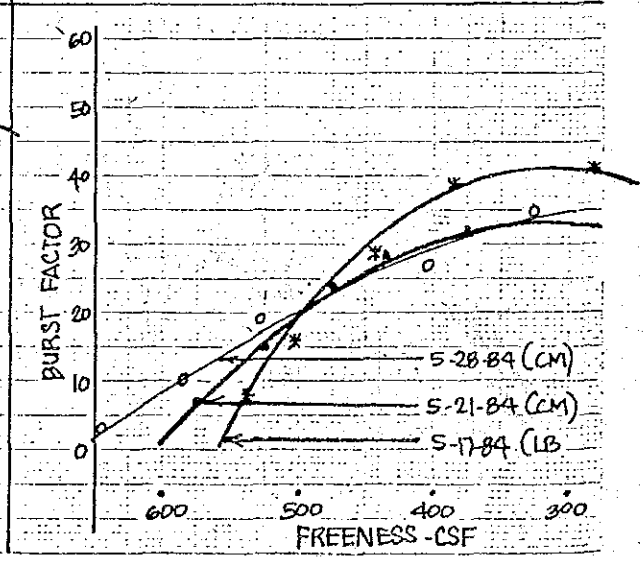


BEATING TIME (MINUTE)	0'	15'	30'	45'	60'
FREENESS (CSF)	650	583	529	401	325
BULK DENSITY	2.33	1.82	1.69	1.45	1.32
BURST FACTOR	3.16	10.42	19.03	27.14	35.86
TEAR FACTOR	32.60	49.44	60.81	68.94	71.16
BREAKING LENGTH (km)	1.3	3.2	4.5	5.4	6.6



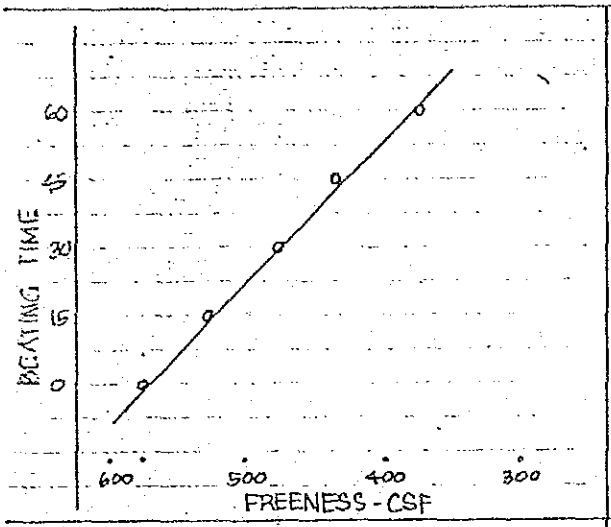




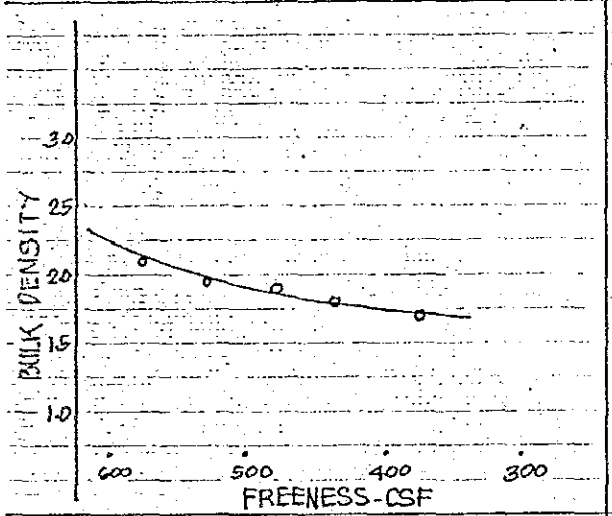


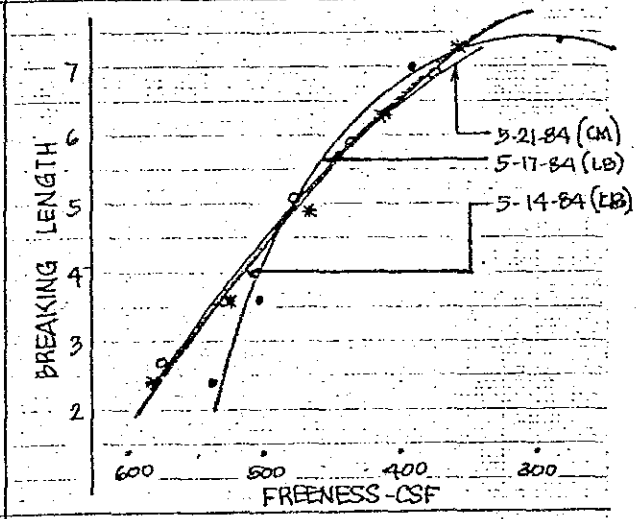
IRY RAW STOCK PULP BEATER CURVE (CM RUN) KAPPA # - 57.6

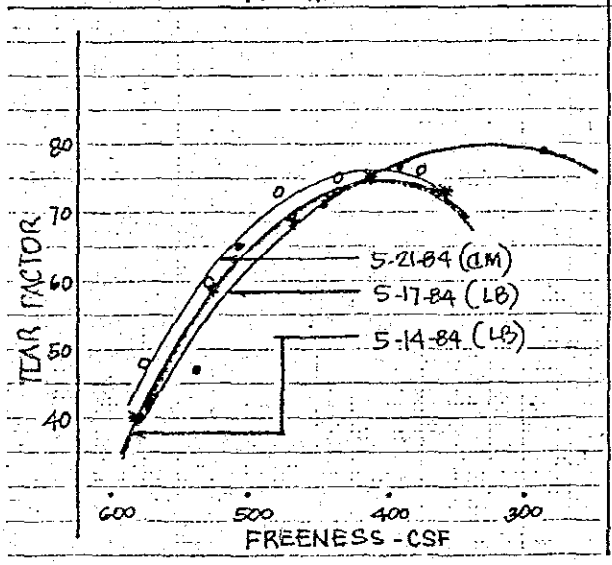
DATE SAMPLED: 5-21-84 (12:45 PM) DATE TESTED: 5-22-84 R.H.- 51.0 %
DATE BEATEN: 5-21-84 DATE REPORTED: 5-22-84 TEMP.- 24.46 °C

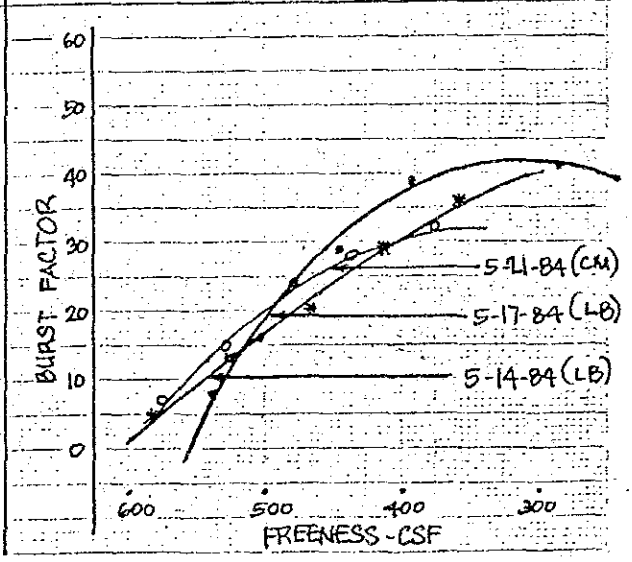


BEATING TIME (MINUTE)	0'	15'	30'	45'	60'
FREENESS (CSF)	570	529	478	445	375
BULK DENSITY	2.29	1.96	1.82	1.68	1.47
BURST FACTOR	7.86	19.53	24.83	28.55	32.96
TEAR FACTOR	48.30	60.84	73.48	75.96	76.23
BREAKING LENGTH (KM)	2.7	3.6	5.1	5.9	6.9









FOREIGN NEWSPRINT QUALITY
PICOP TEST

		U.S.		AUSTRALIAN		SWEDISH		CANADIAN	PICOP	
		BEAR IS.	McMILLAN BLOEDEL	A N M	TASMAN	GLOZED NP	STORA	ONTARIO	STD. NP	RGNP
GRAMMAGE	g/m^2	47.4	47.8	43.6	46.2	48.5	47.8	46.2	49.8	49.3
THICKNESS	um	100.0	82.1	83.7	89.1	77.5	82.8	78.4	87.4	78.4
DENSITY	g/cm^3	0.47	0.58	0.81	0.52	0.63	0.58	0.59	0.57	0.63
BRIGHTNESS	% GE	61.5	55.3	55.9	60.2	64.7	54.5	61.6	47.0	63.3
OPACITY (TAPPI)	%	93.8	92.7	88.9	92.2	94.6	92.2	91.2	96.5	
HUNTER L, a, b COLOR SCALE										
L		-	79.2	80.5	82.3	84.4	85.9	81.0	72.5	79.0
a		-	1.7	1.3	1.7	-0.8	0.3	1/4	1 .0	-0.72
b		-	6.5	7.8	6.4	5.4	7.5	3.5	5.3	-0.45
BURSTING STRENGTH	KPa	38.2	56.6	21.0	34.5	71.5	46.0	25.0	66	102
TEARING RESISTANCE MD	mN	-	-	-	202	204	183	173	242	-
CD		333	333	324	320	256	246	239	302	291
TENSILE STRENGTH MD	KN/m	2.0	2.9	1.6	2.0	-	2.4	1.8	3.2	3.8
CD		-	1.2	-	-	1.2	1.1	0.8	1.3	1.4
STRETCH MD	%	1.0	1.5	1.0	1.5	-	1.5	1.0	1.5	1.5
CD		-	1.9	-	-	1.9	2.0	1.7	2.2	2.1
FOLD (MIT) MD		-	45	179	148	-	148	49	277	594
CD		94	245	19	-	37	37	19	96	197
PICK RESISTANCE(IGT)										
T	Pa.m.	-	97.8	-	97.8	-	99.1	75.2	87.0	86.7
B		-	89.9	-	105.6	-	89.9	59.0	91.6	74.1
SMOOTHNESS(BEKK) T	s	15.0	22.8	24.2	36.8	60.3	60.7	52.2	35.0	43.8
B		-	22.8	23.9	38.2	59.0	43.0	46.8	32.2	38.4
INK PENETRATION T	m^{-1}	-	-	-	-	-	-	-	20.7	20.8
B		-	-	-	-	-	-	-	23.4	22.6
AIR RESISTANCE (GURLEY)	$s/100\ cm^3$	8	28.6	12.8	35.4	65.0	60.7	19.6	51.4	47.1
WATER DROP T	s	13.0	49.0	18.3	41.5	93.3	133.3	11.5	41.4	56.6
B		-	51.0	14.7	34.5	42.3	12.7	8.5	42.0	51.7
FURNISH	%									
MECH'L SWD/HWD		-/-	42/-	16/-	26/-	-/-	40/-	18/-	/	/
CHEM'L. SWD/HWD		-/-	58/-	84/-	74/-	-/-	60/-	75/7	/	/

RDP:lgaw
6-23-84

FOREIGN LABORATORY TEST ON PICOP NEWSPRINT

			AUSTRALIAN NEWSPRINT MILL (1981)		GREAT NORTHERN PAPER (US)		DOMTAR (US) (1983)		PICOP TEST May, 1984
			PICOP	TYPICAL ANM NEWSPRINT	PICOP	TYPICAL 30 # CN NEWS	PICOP	AVE. OF 3 DOMATAR MILLS	PROD'N.
BASIS WEIGHT		g/m^2	52.6	48.8	53.7	49.5	49.0	50.0	49.8
THICKNESS		µm	94.1	85.0	94.0	84.1	91.0	93.0	87.4
APPARENT DENSITY		g/cm^3	0.56	0.57	0.57	0.59	0.54	0.54	0.57
BRIGHTNESS		% CE	48.5	57.0	44.8	57.0	48.0	58.0	47.0
OPACITY		%	98.6	-	91.4	89.5	96.0	92.3	96.5
BURST		KPa	67.8	66.0	-	-	117	66	66
TEAR	MD	mN	213	210	-	-	-	-	242
	CD		238	345	281	272	245	236	302
TENSILE	MD	KN/m	1.84	1.73-1.87	3.16	2.41	3.03	2.34	3.17
	CD		0.88	0.80-0.84	-	-	1.35	0.82	1.26
STRETCH	MD	%	1.0	0.97-1.00	1.68	1.37	1.60	0.93	1.49
	CD		2.0	1.80-2.00	-	-	3.10	1.83	2.18
SMOOTHNESS (BEKK)	T	s	-	-	20.8	63.5	18.1	30.0	35.0
	B		-	-	17.9	54.8	7.2	19.9	32.2
AIR RESISTANCE (GURLEY)		$s/100\ cm^3$	-	-	24.1	27.0	-	-	51.4
WATER DROP	T	s	-	-	-	-	-	-	41.4
	B		-	-	-	-	-	-	42.0

RDP:lga*
6-22-84

COMPARATIVE PROPERTIES
115 g/m^2 CORRUGATING MEDIUM

			FAR EAST KAUKO		PICOP SPECS
Basis Weight		g/m^2	109.5	116.8	109 - 121
Thickness		mm	0.18	0.22	0.20-0.22
Apparent Density		g/cm^3	0.61	0.53	-
Concora		N	288	247	167 (mm)
Edgewise Compression		N	238	275	
Tearing Strength	MD	mN	424	784	
	CD		588	1,255	
Water Drop	T	S	43	79	25 - 100
	B		40	104	
Air Resistance		S/100 cm^3	8	23.2	
Furnish					
Softwood			8*		
Hardwood			92*		100%

* Semi-chemical pulp.

06.24.84

COMPARATIVE PROPERTIES
200-205 g/m^2 LINERBOARD

MANUFACTURER		SPECS	PICOP	JAPAN	U.S. A	U.S. B
GRAMMAGE	g/m^2	190 - 210	205.8	196.5	213.5	211.1
THICKNESS	mm	0.302 -0.308	0.198	0.296	0.303	0.320
LUM.REFLECTANCE	%	-	24.0	29.4	26.9	-
BURST	kPm	690 (min)	729	549	596	817
TEAR (CD)	mN	-	2583	-	2184	3510
RING CRUSH:						
MD	N	-	497	-	466	504
CD	N	-	338	-	264	290
COBB:						
TOP		40(max.)	29.9	-	19.7	36.1
BOT		60(max.)	50.4	-	20.3	42.9
DIRT COUNT		-	-	227	303	-
CHEM.ADDITIVE		-	-	starch	Rosin	-
FIBER FURNISH:						
SWD	%	-	-	27.8±3	61.2±3	86.3±2
NWD	%	-	-	72.2±3	37.8±3	13.7±2
BAGASSE	%	-	-	-	Trace	-

06.24.84

PART III: EXPANSION PLANS

I. PROJECT TITLE

Renovation and modernization of the integrated pulp and paper mill complex of the Paper Industries Corporation of the Philippines (PICOP).

II. RATIONALE

1. The Philippine government considers newsprint as strategic commodity providing a vital social service as a carrier of information.

2. Because of the advantages offered by its existing facilities, infrastucture and adequate wood resources, PICOP has been chosen as the corporate vehicle to undertake the government-sponsored pulp and paper expansion project.

3. Newsprint demand is projected to exceed supply capacity as early as 1986. Because the alternative of importing the shortfall is unacceptable, there has got to be corresponding increase in the local production capacity to meet the demand.

4. On the other hand, the shortfall comes in small incremental volumes that makes it difficult to justify the huge capital requirement of a major expansion.

A modernization program seem to be the most logical and viable solution.

5. The Iligan kraft mill is currently inactive because of
   1) lack of raw material in the area,
   2) low operating efficiency
   3) limited demand for heavy weight linerboard which the Ultra-Former is best suited for and
   4) high production cost primarily because of excessively high steam consumption.

- over -

6. We are convinced that the first two problems can be solved by relocating the Iligan mill and integrating it with the facilities here in Bislig.

Furthermore, Kobayashi Engineering Works Ltd. the makers of our Iligan kraft machine, tells us that the machine can be renovated to take higher speeds and be able to produce lightweight containerboard at reasonable cost and efficiency.

7. The potential foreign exchange from being able to supply the now imported fruit boxes with the reactivation of the Iligan mill, makes this program very encouraging.

III. PROJECT PROPOSAL

1. Modernize the present newsprint machine (PM-1) located in Bislig, Surigao del Sur to be able to satisfy domestic newsprint demand through 1990 or until such time that the major expansion program becomes viable.

2. Relocate and renovate the presently inactive kraft machine located in Iligan City, Lanao del Norte and integrate it with the pulp and paper mill in Bislig.

The Bislig kraft machine (PM-2) will likewise be modernized to improve its efficiency and reduce its cost.

IV. SCOPE

1. The modernization of PM-1 will involve:
   a) Rebuilding the Press
   b) Installing a Top Former
   c) Changing the Headbox
   d) Increasing the Drive Capacity (from 700 to 950 mpm)

- over -

e) Increasing the Stock Approach Capacity
f) Increasing the Cleaning System
g) Installing PB Rolls
h) Rebuilding the Calender
i) Rebuilding the Winder

Furnish will be 85% ownmade mechanical pulp and 15% purchased bleached softwood pulp made possible by:

a) a new 160 MTBD/day additional mechanical pulping facilit
b) a new 60 MTBD/day repulper.

2. Rebuild the PM-2 press section by double felting and installing a profiler as the 2nd press. The modernization will include additional pump, a transformer and stock prep refiners.

3. Transfer to Bislig the Iligan board machine and change the present Ultra Former Model VI (UF VI) to High Speed Ultra Former (HUF). The renovation will also include:

a) Drive Rebuild
b) Press Section Rebuild
c) Stock Prep. Rebuild
d) Transfer of Iligan waste pulping system to Bislig.

CAPACITIES	Before Modernization	After Modernization
PM-1	86,000 MTPY	118,000 MTPY
PM-2	68,000 MTPY	78,800 MTPY
Iligan Machine	28,000 MTPY	41,200 MTPY
RGP/TMP Mill	45,500 MTBD/Yr.	101,500 MTBD/Yr.
Kraft Bleach Plant	42,000 MTBD/Yr.	0
Kraft Pulp Mill	112,000 MTBD/Yr.	112,000 MTBD/Yr.

- over -

. . .

V. ESTIMATED INVESTMENT COST

1.	Modernization of PM-1	=	₱ 640 million
2.	Transfer and Renovation of Iligan Board Machine	=	200
3.	Press Rebuild of PM-2	=	60
	Total		₱ 900 million

DOMESTIC MARKET FORECAST

	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
A. NEWSPRINT (MT)												
1. STD. NP												
Publisher	53,600	55,200	56,900	58,600	60,300	62,800	65,300	67,900	70,600	73,400	76,300	79,400
Non-Publisher	14,600	15,000	15,400	15,900	16,300	17,000	17,700	18,400	19,100	19,900	20,700	21,500
Sub-Total	68,200	70,200	72,300	74,500	76,600	79,800	83,000	86,300	89,700	93,300	97,000	100,900
2. NSP												
Publisher	2,500	2,600	2,700	2,800	2,900	3,000	3,100	3,200	3,400	3,500	3,600	3,800
Non-Publisher	52,500	54,100	55,700	57,300	59,100	61,400	63,900	66,500	69,100	71,900	74,800	77,800
Sub-Total	55,000	56,700	58,400	60,100	62,000	64,400	67,000	69,700	72,500	75,400	78,400	81,600
3. G S P	88,200	8,500	8,800	9,100	9,300	9,700	10,100	10,500	10,900	11,400	11,800	12,300
4. G M P	3,400	3,500	3,600	3,700	3,800	4,000	4,100	4,300	4,500	4,600	4,800	5,000
5. T D P	1,500	1,500	1,600	1,600	1,700	1,800	1,800	1,900	2,000	2,100	2,100	2,200
GRAND TOTAL	136,300	140,400	144,700	149,000	153,400	159,700	166,000	172,700	179,600	186,800	194,100	202,000
PROJECTED GROWTH RATE		3%	3%	3%	3%	4%	4%	4%	4%	4%	4%	4%

06.21.84

DOMESTIC MARKET FORECAST

	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
B. CONTAINERBOARD (MT)												
1. LOCAL SALES												
LB	48,900	50,400	52,000	53,500	54,500	56,400	58,200	59,900	61,700	63,600	65,500	67,400
CM	36,800	37,900	39,100	40,100	41,500	42,800	43,900	45,300	46,700	48,100	49,500	51,100
Sub-Total	85,700	88,300	91,100	93,600	96,000	99,200	102,200	105,200	108,400	117,700	115,000	118,500
PROJECTED GROWTH RATE		3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
2. Domex Sales												
Non-Fruit												
LB	2,400	2,500	2,600	2,700	2,800	2,900	31,000	3,300	3,600	3,800	4,000	4,200
CM	900	1,000	1,100	1,200	1,300	1,400	1,500	1,600	1,600	1,700	1,800	1,900
Sub-Total	3,300	3,500	3,700	3,900	4,100	4,300	4,600	4,900	5,200	5,500	5,800	6,100
PROJECTED GROWTH RATE		6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%
3. Domex Sales												
Fresh Fruit												
LB	58,500	58,500	58,500	58,500	58,500	58,500	58,500	58,500	58,500	58,500	58,500	58,500
CM	31,500	31,500	31,500	31,500	31,500	31,500	31,500	31,500	31,500	31,500	31,500	31,500
Sub-Total	90,000	90,000	90,000	90,000	90,000	90,000	90,000	90,000	90,000	90,000	90,000	90,000
GRAND TOTAL	17,900	181,800	184,800	187,500	190,100	193,500	196,800	200,100	203,600	213,200	210,800	214,600

06.24.94

NEWSPRINT MODERNIZATION PROGRAM
SALES PLAN (MT)

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
LOCAL MARKET										
STD-NP										
Publishers	56,900	58,600	60,300	62,800	65,300	67,900	70,600	73,400	76,300	79,400
Non-Publishers	15,400	15,900	16,400	17,000	17,700	16,600	12,700	11,900	12,400	12,900
Sub-Total	72,300	74,500	76,700	79,800	83,000	84,500	83,300	85,300	88,700	92,300
NSP										
Publishers	2,700	2,700	2,800	2,900	3,000	3,200	3,300	3,400	3,600	3,700
Non-Publishers	16,700	17,200	17,700	18,400	19,100	19,900	20,700	18,300	14,400	10,400
Sub-Total	19,400	19,900	20,500	21,300	22,100	23,100	24,000	21,700	18,000	14,100
GSP	6,200	6,400	6,600	6,800	7,100	7,400	7,700	8,000	8,300	8,600
GMP	1,800	1,900	1,900	2,000	2,800	-	-	-	-	-
TDP	1,600	1,700	1,700	1,800	-	-	-	-	-	-
TOTAL LOCAL	101,300	104,400	107,400	111,700	115,000	115,000	115,000	115,000	115,000	115,000
EXPORT MARKET										
STD NP*	13,700	10,600	7,600	3,300						

BASIC ASSUMPTIONS:

Market shares (unless otherwise constrained by production)

STD-NP Publishers	- 100%
Non-Pub.	- 100%
NSP Publishers	- 100%
Non-Publishers	- 30%
GSP	- 70%
GMP	- 50%
TDP	- 100%

* Asean export market to be used as filler volume.
Estimated market size is 573,000 MT in 1987 with a growth rate of 5% per annum.

06.24.84

KRAFT EXPANSION PROGRAM
SALES PLAN (MT)

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
LOCAL SALES										
LB	42,600	43,900	46,100	47,400	48,900	50,300	51,800	53,400	55,000	56,600
CM	33,600	34,500	35,700	36,800	37,800	39,000	40,200	41,400	42,600	44,000
Total	76,200	78,400	81,800	84,200	86,700	89,300	92,000	94,800	97,600	100,600
DOMEX SALES										
Non-Fruit										
LB	2,600	2,700	2,800	2,900	3,100	3,300	3,600	3,800	4,000	4,200
CM	1,100	1,200	1,300	1,400	1,500	1,600	1,600	1,700	1,800	1,900
Sub-Total	3,700	3,900	4,100	4,300	4,600	4,900	5,200	5,500	5,800	6,100
Fruit										
LB	26,100	24,500	22,200	20,500	18,700	16,800	14,800	12,800	10,800	8,600
CM	14,000	13,200	11,900	11,000	10,000	9,000	8,000	6,900	5,800	4,700
Sub-Total	40,100	37,700	34,100	31,500	28,700	25,800	22,800	19,700	16,600	13,300
GRAND TOTAL	120,000	120,000	120,000	120,000	120,000	120,000	120,000	120,000	120,000	120,000

BASIC ASSUMPTIONS:

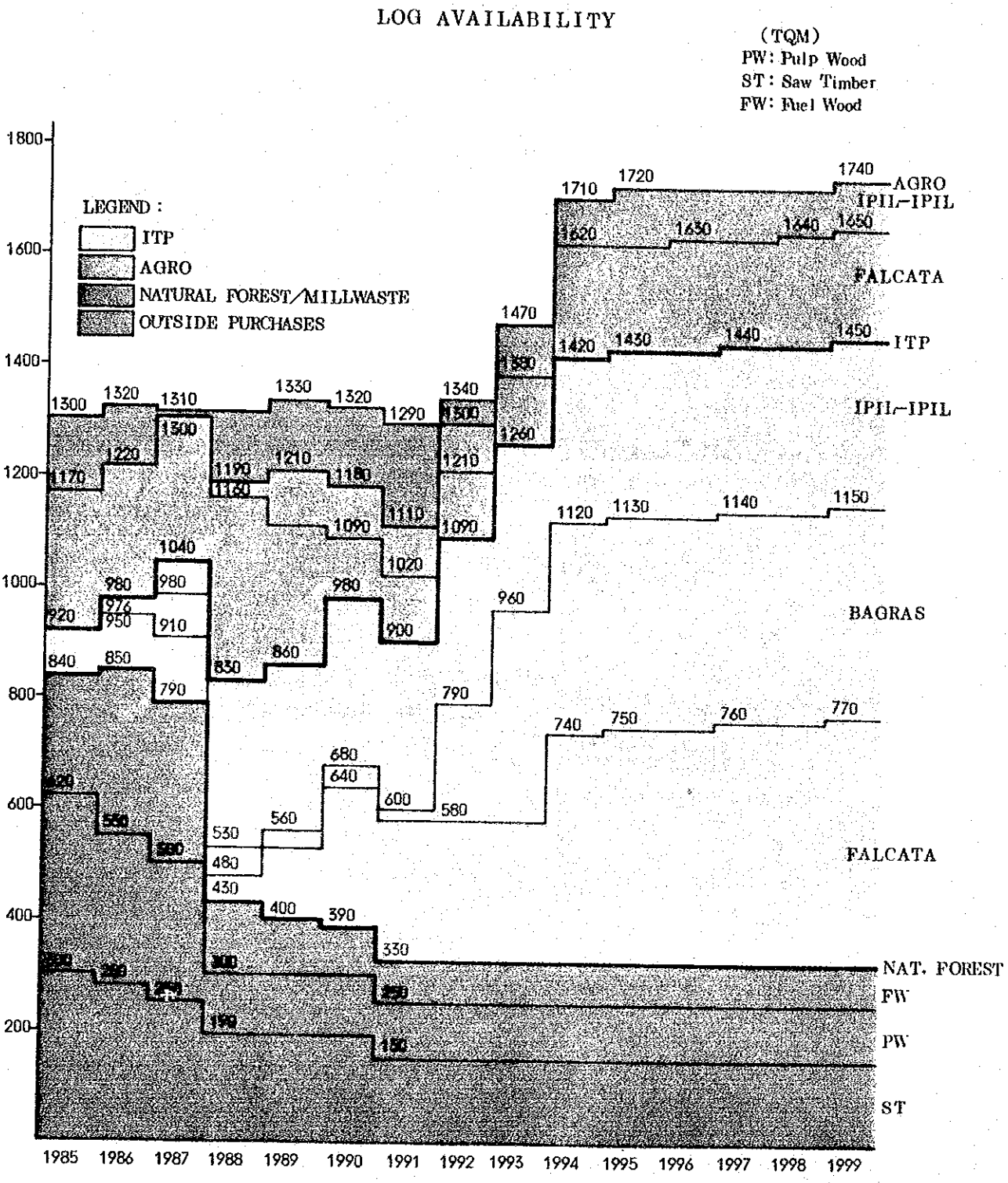
LOCAL MARKET = market shares: 1987-1988 - CM 86%; LB 82% TOTAL 84%
1989-1996 - CM 86%; LB 84% TOTAL 85%

DOMEX N-F = 100% share because of quality requirements

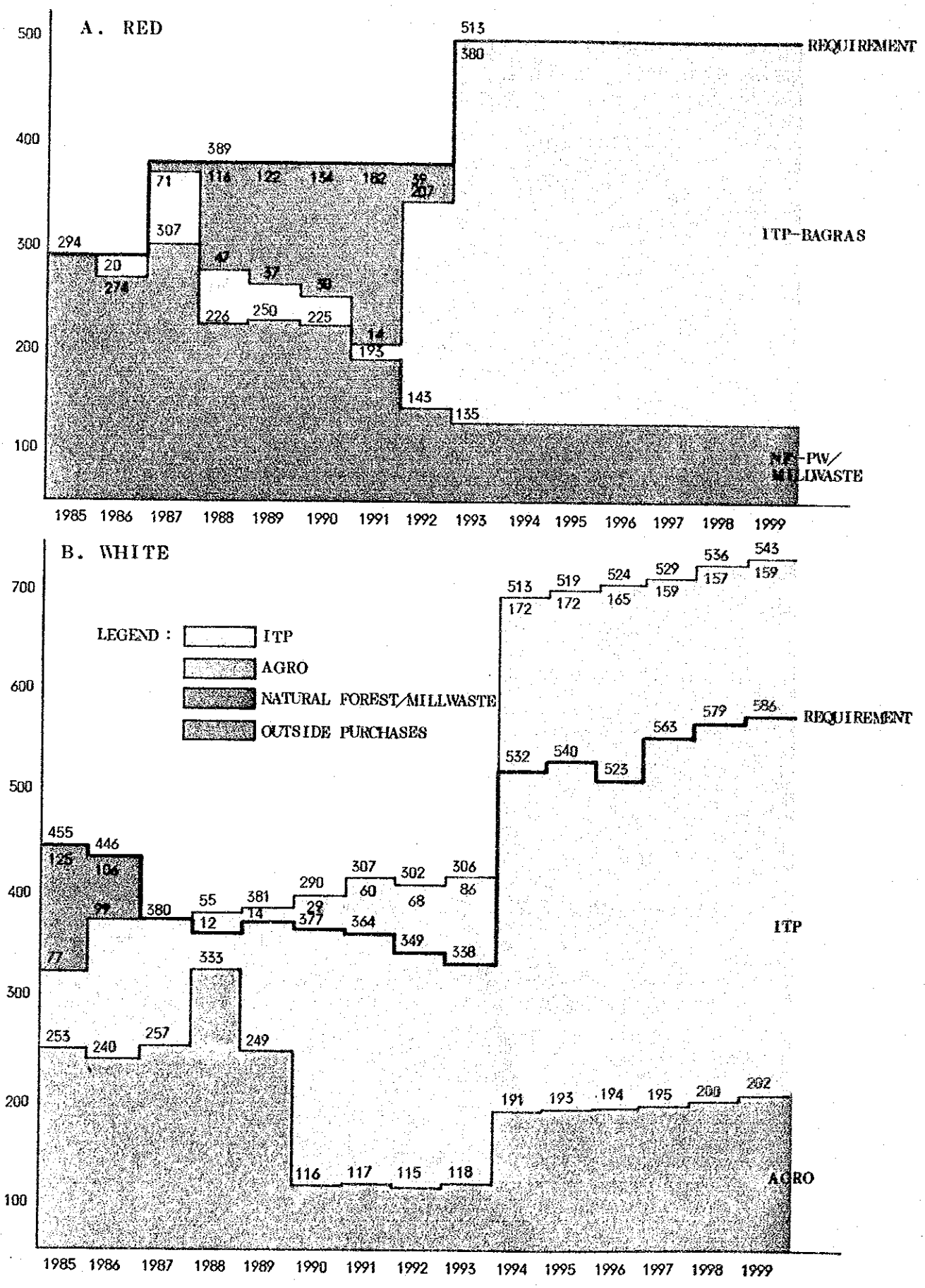
DOMEX F = to be used as filler volume

06.24.84

4. 関連資料


LOG AVAILABILITY
(TQM)
PW: Pulp Wood
ST: Saw Timber
FW: Fuel Wood
LEGEND :
ITP
AGRO
NATURAL FOREST/MILLWASTE
OUTSIDE PURCHASES
AGRO
IPIL-IPIL
FALCATA
ITP
IPIL-IPIL
BAGRAS
FALCATA
NAT. FOREST
FW
PW
ST
1800
1600
1400
1200
1000
800
600
400
200
1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999

PULPWOOD BALANCE



回　答　Ⅱ

ADDITIONAL INFORMATION
ASKED BY THE JICA TEAM
JUNE 25 MEETING

1. TIMBER LICENSE AGREEMENT (TLA) DATA:

	Area Coverage	Tenure	Year Granted	Year Renewed	Due for Renewal
TLA 43	116,519 has.	25 yrs.	1952	1977	2002
PTLA 47	66,163	25 yrs.	1957	1981	2006
TOTAL	182,682 has.				
ITPLA 96	54,380 has.*	25 yrs.	1982	-	2007

*30% of total Concession; within the TLA 43 and PTLA 47 area.

2. PULP YIELDS

	WOOD TO PULP RATIO	AVE. FIBER DENSITY	MTBD PULP / MTBD WOOD	KAPPA NO.
2.1 Lauan: KF-CM	4.7 cu.m scaled/MTBD	387 kg/cum	61.8%	71
KF-LB	5.2 "	387 "	55.9	52
2.2 Bagras: KF-CM	4.7 "	390 "	61.8%	71
KF-LB	5.2 "	390 "	55.9	51
2.3 Falcata: RGP	4.0 "	260 "	96.2	-
BKP	7.6 "	260 "	50.6*	26

*Net of 10% bleaching loss

PAPER IMPORTATION

	1979	1980	1981	1982	1983
A. NEWSPRINT	19,312	20,012	4,895	2,671	1,192
B. PRINTING - WRITING PAPER					
Bond	-	2,945	-	-	-
Bookpaper	488	4,799	1,477	10,456	4,095
Mimeo	-	-	-	-	-
Onion skin	144	118	51	84	75
Other Printing-Writing	7,946	4,078	7,561	8,913	15,138
C. OTHER PAPER					
Tissue Crepe	88	14	40	106	738
Others Paper Nes.	5,130	2,170	2,343	3,911	12,205
D. CONTAINERBOARD					
Linerboard	64,162	71,199	70,047	85,482	68,535
Corrugating Medium	27,069	29,673	29,129	30,243	25,688
E. KRAFT PAPER					
Wrapping paper	72	111	53	254	125
Multiwall sackkraft	-	-	-	-	-
F. PAPERBOARD					
Claycoated Board	4,849	5,893	7,487	8,000	4,025
Solid gloss cote	-	-	-	-	-
Boxboard	-	-	-	-	-
Chipboard	167	-	-	21	-
Matchbox Wrapper	476	354	172	177	515
Tagboard	123	579	896	774	1,520
Clayfilled	-	-	-	-	-
Bristol	184	-	-	62	59
Newsboard	-	-	43	90	31
Other Paperboard	47,765	38,693	50,210	43,454	29,398
T O T A L IMPORTATION	177,975	180,638	174,404	194,698	163,339

PRODUCTION AND SALES OF PULPAPEL MEMBERS
(In Metric Tons)

PAPER	1983 PROD.	1983 SALES	1982 PROD.	1982 SALES	1981 PROD.	1981 SALES	1980 PROD.	1980 SALES	1979 PROD.	1979 SALES
Newsprint	71,047	70,254	63,145	59,902	81,876	80,611	79,460	77,100	80,818	87,005
Bond	21,927	19,139	27,726	20,386	28,373	23,509	30,270	23,075	39,905	30,818
Bookpaper	11,859	10,876	5,230	5,185	4,687	4,893	4,725	4,410	4,066	4,034
Mimeo	4,553	4,049	4,300	3,469	5,219	4,849	4,770	3,830	6,406	5,837
Tissue/Crepe	16,662	15,943	14,455	14,634	20,358	17,394	15,935	14,080	15,044	16,679
Onion Skin	788	830	785	710	2,122	2,351	2,795	2,540	1,803	2,695
Linerboard	36,611	40,435	30,152	30,325	39,677	39,856	55,050	50,281	53,368	60,149
Corrugating Medium	32,796	32,895	31,532	32,632	31,944	31,364	36,120	32,230	39,368	40,199
Wrapping kraft	14,434	8,908			19,382	11,326	19,005	12,070	23,017	20,203
Multi-wall/Sackraft	7,494	8,598	11,604	10,631	21,288	23,009	24,715	24,315	28,743	27,690
Specialty			866	611	2,611	3,053	6,847	6,473	7,615	7,200
TOTAL	218,171	211,927	206,795	186,967	257,537	242,215	279,692	250,404	330,153	302,509
PAPERBOARD										
Coated (Greyback)	11,391	10,264	3,295	2,966						
Solid/Glosscote	6,194	5,617								
Boxboard	7,196	8,026	7,698	7,532	12,321	11,610	12,325	9,395	10,309	10,034
Chipboard	2,446	3,421	6,861	5,454	9,544	8,730	12,420	9,593	12,583	10,989
Matchbox Wrapper	1,406	1,647								
Tagboard	907	297								
Clayfilled	832	916								
Bristol	754	708	887	892	543	210	620	565	267	196
Newsboard	4,335	2,785	1,424	286	7,038	6,666	2,535	2,190	6,562	4,532
Specialty			522	598	3,198	3,095			1,015	913
Kraftboard					121	117			352	198
TOTAL	35,461	33,681	20,687	17,812	32,675	30,428	27,900	21,743	31,088	26,862
GRAND TOTAL	253,632	245,608	227,482	204,779	290,212	272,643	307,592	272,147	361,241	329,371

Source of Data: PULPAPEL ANNUAL REPORTS

PHILIPPINES

RATED CAPACITIES OF EXISTING PULP AND PAPER MILLS
(Metric Tons Per Year)

	PULP	PAPER AND PAPER-BOARD
Integrated Pulp and Paper Mills		
1. Bataan Pulp and Paper Mills, Inc.	29,325	25,875
2. Central Azuc. de Bais-Paper Div.	8,980	13,175
3. Menzi Development Corporation	2,740	7,300
4. Paper Industries Corp. of the Phils.	166,630	184,335
5. United Pulp and Paper Co., Inc.	16,200	30,930
	223,875	261,615
Non-Integrated Mills		
A. Pulp Mills		
1. Albay Agro-Industrial Development Corporation	1,090	-
2. Canlubang Pulp Mfg. Corp.	7,485	-
3. Cellophil Resources Corp.	66,000	-
4. Isarog Pulp & Paper Co., Inc.	4,950	-
	79,525	-
B. Paper Mills		
1. Aclem Paper Mills, Inc.	-	16,500
2. Asgard Corrug. Box Mfg. Corp.-PD *	-	9,900
3. Container Corp. of the Phils.	-	13,960
4. Eastern Paper Mills, Inc.	-	18,000
5. Globe Paper Mills	-	8,980
6. Kimberly-Clark Philippines Inc.	-	15,000
7. Liberty Paper Mills, Inc.	-	4,490
8. Manila Paper Mills, Inc.	-	72,600
9. Manila Press, Inc.-PMD	-	4,490
10. Massive Paper Mills	-	6,600
11. Paperland, Incorporated	-	10,000
12. Paragon Paper Industries, Inc.	-	24,750
13. People's Paper Mills, Inc. *	-	6,000
14. Philippine Paper Mills, Inc.	-	11,970
15. Premier Paper Corporation	-	3,960
16. Scott Paper Philippines, Inc.	-	27,390
17. Utility Enterprises Corp.	-	13,200
18. Vanson Paper Industrial Corp.	-	6,600
19. Worldwide Paper Mills, Inc.	-	14,190
	-	288,580
TOTAL	303,400	550,195

Source: PULPAPEL
5.21.84

* Not yet in operation.

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