

# エジプト繊維研究開発プロジェクト アフターケア調査団報告書

平成 4 年 12 月  
(1992年12月)

国際協力事業団

エジプト繊維研究開発プロジェクトアフターケア調査団報告書

平成四年十二月(一九九二年十二月)

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## 序 文

エジプト繊維研究開発センタープロジェクトは、1980年11月に討議議事録が調印され、これに基づき5年間にわたる協力が開始された。

しかし、エジプト国政府の財政事情の悪化による予算の大幅削減、建設資材の高騰等の理由により建物の整備が遅れたため、プロジェクトは一時中断され、その後、エジプト側の努力により建設の進捗があったことから協力期間を延長し、1990年3月31日まで技術協力が実施された。

その間、日本側は長期専門家を5名、短期専門家を24名派遣し、16名の研修員を受け入れ、2.7億円相当の機材供与を行った。

今回派遣したアフターケア調査団は、プロジェクト引き渡し後のエジプト側運営状況について調査するとともに、移転技術のより円滑な普及のための支援方策について協議を行うことを目的に、平成4年10月に派遣された。

この報告書は、その調査内容についてとりまとめたものである。

ここに、今回の調査実施にご協力いただいた関係各位に対し、心から感謝の意を表する次第である。

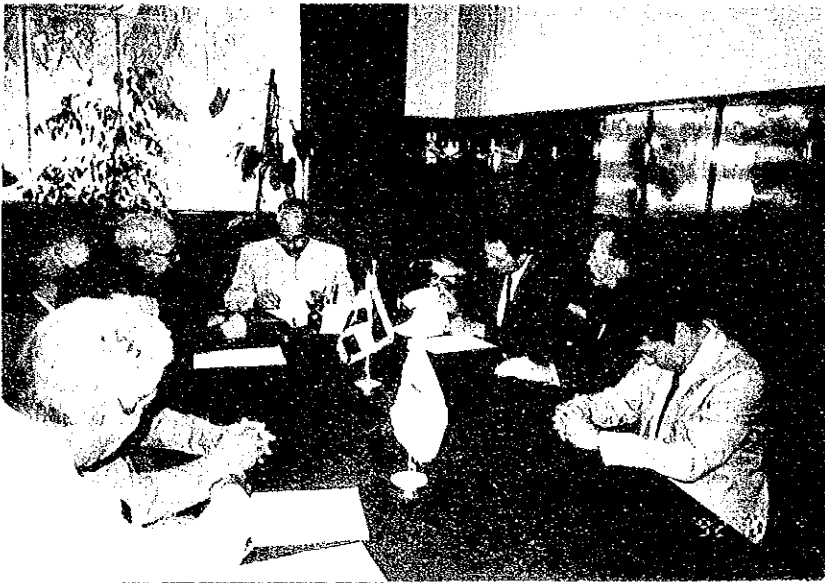
平成4年12月

国際協力事業団

鉦工業開発協力部

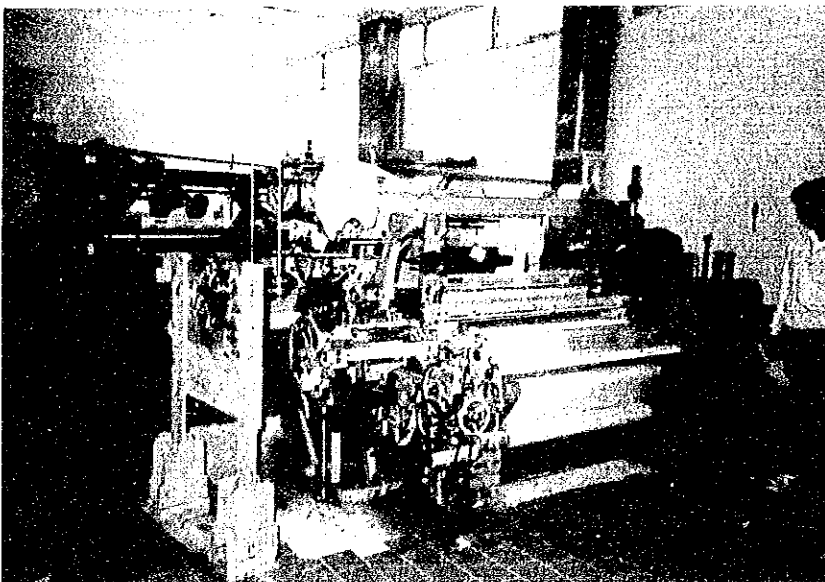
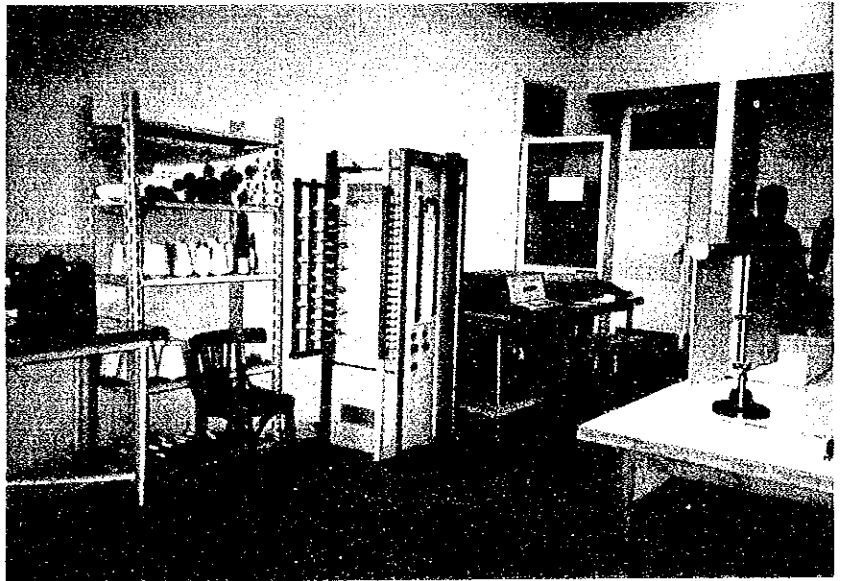
部長 内 仲 康 夫





◀ 議事録署名交換  
(1992年10月5日：於 カイロ)

▶ テスティング・ルーム



◀ シャトル織機





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## I. アフターケア調査団の派遣

### 1. 調査団派遣の経緯と目的

国立総合研究所繊維研究部は、生産技術の開発、品質管理技術の改善、企業の中堅技術者の育成等の課題をもつが、機器が不十分なため活動に支障をきたしているため、機器の設置を含めて我が国に同部門拡充の強化を要請してきた。

これを受けて我が国は、1980年11月7日、「エジプトアラブ共和国繊維研究開発協力センター事業」に関する討議議事録（R/D）に署名し、5か年の計画で協力を実施した。しかし、エジプト側の建屋工事が予定どおり進まない等の理由から、R/D期間を1987年3月31日まで延長、さらに、'90年3月31日まで延長し、基礎的な技術移転を終了した。

現在、自主運営は順調に行われているが、スペアパーツ不足、機材の故障のため、一部の機材運転に支障が出ている等の報告がある。本調査団は、プロジェクトの運営状況について調査し、今後プロジェクトの効果を一層高めるための協議を行った。

### 2. 調査団の構成

氏名	分野	所属
河合 恒二	団長・総括	国際協力事業団鉦工業開発協力部計画課課長代理
菊池 久	技術協力計画	通産省通商産業検査所総務部繊維管理課課長補佐
仮本 憲功	機材計画	東洋紡エンジニアリング株式会社繊維技術部長
小田切清治	運営管理	財団法人国際協力サービス・センター広報部情報化課課長代理

3. 調査日程及び訪問先

日	月日	曜	午 前	午 後	宿泊
1	9/28	月	移 動	成 田 → パリ	パリ
2	29	火	移 動	パリ → カイロ	カイロ
3	30	水	JICA事務所 打合せ	日本大使館・NRC表敬 大臣表敬 (Minister of Scientific Research)	カイロ
4	10/1	木	NRCとの協議 パイロットプラント視察	Chairman of Academy (ASRT) 表敬  団員打合せ	カイロ
5	2	金	資料整理・団員打合せ		カイロ
6	3	土	NRCとの協議	団員打合せ	カイロ
7	4	日	NRCとの協議	ドラフト作成 団員打合せ	カイロ
8	5	月	JICA事務所 NRCとの協議	M/D署名 日本大使館報告	カイロ
9	6	火	資料整理		カイロ
10	7	水	移 動	カイロ → パリ	パリ
11	8	木	移 動	パリ →	機中
12	9	金		→ 成 田	

#### 4. 主要面談者

##### 〈エジプト側〉

Dr.Alei EL-Dein El-Sherbeiny	N R C 総裁
Prof.Dr.Mona Kamel	N R C 繊維部部長
Dr.Abdel,A.Kantouch	N R C 繊維部顧問
Dr.Eng.Mahamed Abdalla Saad	N R C 繊維研究所 主任
Dr.Eng.Ibrahin Hanafy Mohamed	N R C 繊維研究所 主任

##### 〈日本側〉

東 俊夫	在エジプト日本国大使館一等書記官
岩口 健二	国際協力事業団エジプト事務所長
長澤 一秀	国際協力事業団エジプト事務所 担当職員

5. 対処方針

項 目	現状 — 事務所・調査団の報告等	対処方針・調査事項
<p>1. エジプト側の体制</p> <p>① 組織</p> <p>② 人員の配置状況及び教育レベル</p> <p>③ 予算</p> <p>④ 供与機材の状況</p> <p>⑤ 活動状況</p>	<p>エジプト国立研究センター（NRC）の研究開発部門の一つとして繊維研究部門は位置付けられていて、上部組織として、Academy of Scientific Research and Technology（ASRT）がある</p> <p>(1) プロジェクト終了時のスタッフは38名であったが、現在は44名になっている</p> <p>(1) エジプト側の乏しい予算の中で、本研究所を運営していくのは非常な努力が必要である</p> <p>(2) 人件費と運営費の予算が別々であり、運営費はASRTより年間予算として支給される</p> <p>(3) 1989年11月までにエジプト側は 3,017,000ポンドを支出して建屋建設に努力してきた</p> <p>(1) 供与機材の多くは順調に運転されているが、スペアパーツの不足や故障のため、幾つかの機械の運転に支障をきたしている</p> <p>(1) エジプト側としては、プロジェクト終了時より同国の繊維産業界との信頼関係を強化するための努力を続けてきている。また、できるかぎり原料の輸入を抑制し、外貨の流出を防ぐため、繊維業界のニーズを的確に捉えて信頼できる品質の原料を供給してきた</p>	<p>1. NRC における繊維研究部門の位置付けの調査及び組織図の入手</p> <p>1. 組織構成上の人員配置の確認及び氏名リストの入手</p> <p>2. 上記に関し、プロジェクト終了時との相違を確認する</p> <p>3. 人員の補充や体制強化、また、能力アップに関するエジプト側の姿勢</p> <p>4. カウンターパートの定着状況とポジションを確認</p> <p>1. 1992年度予算及びその内訳の確認</p> <p>① 運営予算確保の方策と見通しの確認（収支バランス・収入計画）をする</p> <p>② 特にアフターケア実施に必要な経費等の可能性につき調査</p> <p>1. 現地からの情報・要請をベースに現地のニーズや実情を視察し、機材の状況を的確に把握する</p> <p>1. 各部門の活動状況とエジプト側の体制の確認</p>

項 目	現状 — 事務所・調査団の報告等	対処方針・調査事項
⑤ 活動状況  2. 日本側協力 計画の検討	(2) 同センターは同国の繊維会社の抱える諸 問題の解決に貢献してきている (3) 過去2年間の主な研究・開発 ① Jacquard looms の開発 ② Sizing material の開発 ③ Sewing threadsの開発 (4) 定期的に外部のエンジニアやパイロット ユニットのエンジニアに研修を実施してい る。また、学生に対するテクニカル及びア カデミックコースも実施している	2. 研修コースの回数、内容、 期間、人選状況及び授業料の 用途等について確認する  上記結果を踏まえて、現地スタッ フと意見交換をし、予算状況等 を考慮しながら適切なアフター ケア計画を作成する
① 機材供与	—エジプト側の要請— (1) オープニング・クリーニングライン ・エアーポンプのファン ・エアコンの取付け (2) 紡績部門 ・金属性針布 (Metalic card clothing) の 補充 ・針布のための砥石 ・紡績機・フライヤーのラバーコット及び エプロンの補充 ・紡績機・フライヤーのWEIGH ARM 及 びリングの補充 ・電気機器部品の補充 ・梳毛ローラー及びローターの補充 ・高級糸のための粗紡機及び紡績機の供与 ・その他各種機材にかかわるスペアパーツ の補充及び付属部品の供給 (3) 織布部門 ・各種のギア、バルブ、ノズル、ガイド、 カム等スペアパーツの補充及び付属部品 の供給 (4) ニット部門 ・Flat Knitting M/C 及びSingle Jersey Knitting M/C のための部品及び機材 の補充 (ハリ、ベルト、ストレッチャー、フィー ダー、テープ等)	1. スペアパーツの補充、故障 機材の修理を最優先とする  2. 現地調達を優先し、困難な ものは日本で調達する 3. プライオリティの決定 第1：修理に必要な部品とス ペアパーツの補充 第2：追加機材 第3：新たな研究にかかわる 新規機材 4. 上記プライオリティ及び現 地事情を考慮して、予算の範 囲内で対応する 5. 現地調達・本邦調達の区分 け及び据付け専門家の必要性 を調べる 6. 供与予定機材・部品のリス トを作成し、コピーを取り付 けておく 7. 取付け時期及び納期を考慮 した機材供与時期を検討する

項 目	現状 — 事務所・調査団の報告等	対処方針・調査事項
② 短期専門家	<ul style="list-style-type: none"> <li>• Inter Lock M/Cのための部品の補充 (ハリ、テープ等)</li> <li>• 実験、研究のための各種測定機材の供給</li> <li>• その他各種機材にかかわるスペアパーツの補充及び付属部品の供給</li> </ul> <p>(5) 研究・試験関係機器</p> <ul style="list-style-type: none"> <li>• 各種試験機器に対する部品の補充及びカタログの供与</li> <li>• 測定機器の供与及び部品の補充 (Tube Tester 装置、マイクロスコープ測定器、マグネティックスタンド、ダストメーター、バキュームクリーナー等)</li> </ul> <p>(5) その他各種機器、テスター及び付属部品等</p> <p>※エジプト側の要請の詳細については別添参照</p> <p>(1) 織布における技術指導、コンピューター関係及びデザインの指導、Filtration Media、産業用繊維、Fine cotton yarns の紡績技術、Hollows fibresの製造/検査等 (3週間)</p> <p>(2) Weaving Preparation に関する技術指導 (2週間)</p> <p>(3) エンジニア及びテクニシャンに対する技術指導と講義 (3週間)</p> <p>(4) 紡績・織布・ニットの各分野における産業化プロジェクトの調査・計画 (2週間)</p>	<p>1. (1)~(4)に関して詳細内容、実施可能性、実施体制につき調査する</p> <p>2. 既供与機材の修理・調整また、スペアパーツ据付け等にかかわる案件を優先する</p> <p>3. 機材の活用に関する技術指導を中心としてセンター事業の活性化につなげる</p> <p>4. ①及び②に関しA-1及びA-4フォームの提出を平成5年2月末日とするようミニッツに記載する</p>
③ 研修員受入れ	<p>(1) 研修員3名—期間：2週間—</p> <p>各分野にかかわる研修と下記分野の視察</p> <ul style="list-style-type: none"> <li>• Electronic Jacquard</li> <li>• Hollow Fibre Technique</li> <li>• Filtration Media</li> <li>• Coated Fabrics</li> <li>• その他関連分野</li> </ul>	<p>1. 予算的状況、受入先の見込等を踏まえ検討後、回答する</p> <p>2. 現状の活動に関連する研修を優先する</p> <p>3. 研修内容、時期、期間、人選状況を確認する</p>
3. 将来計画	<p>(1) 現在新しい製品の開発に向けて研究を行っている</p> <ul style="list-style-type: none"> <li>• Sewing threadsの開発</li> </ul>	<p>1. アフターケアのスキームを超えた協力は基本的に不可能と回答</p>



項 目	現状 — 事務所・調査団の報告等	対処方針・調査事項
	<ul style="list-style-type: none"> <li>• 血液透析用のHollow fiberの生産</li> <li>• 用途に合わせた繊維の開発 (自動車の内装用) (農業に使用するCoated fabric) (その他)</li> <li>• 他分野の製品(セラミック、アルミニウム等)へ応用できるFilter fabricsの開発・製造</li> <li>• Polypropelene fibresの開発と応用</li> </ul>	<ol style="list-style-type: none"> <li>2. エジプト側の運営能力、運営予算確保及びスタッフの能力・確保等への努力がどのくらい期待されるか確認する</li> <li>3. 現体制の事業としての運営計画と方針の確認</li> <li>4. NRC の繊維研究部門に対する期待度、取組み等の姿勢についての調査</li> <li>5. 人材育成及び研究開発効果等の現状調査</li> </ol>

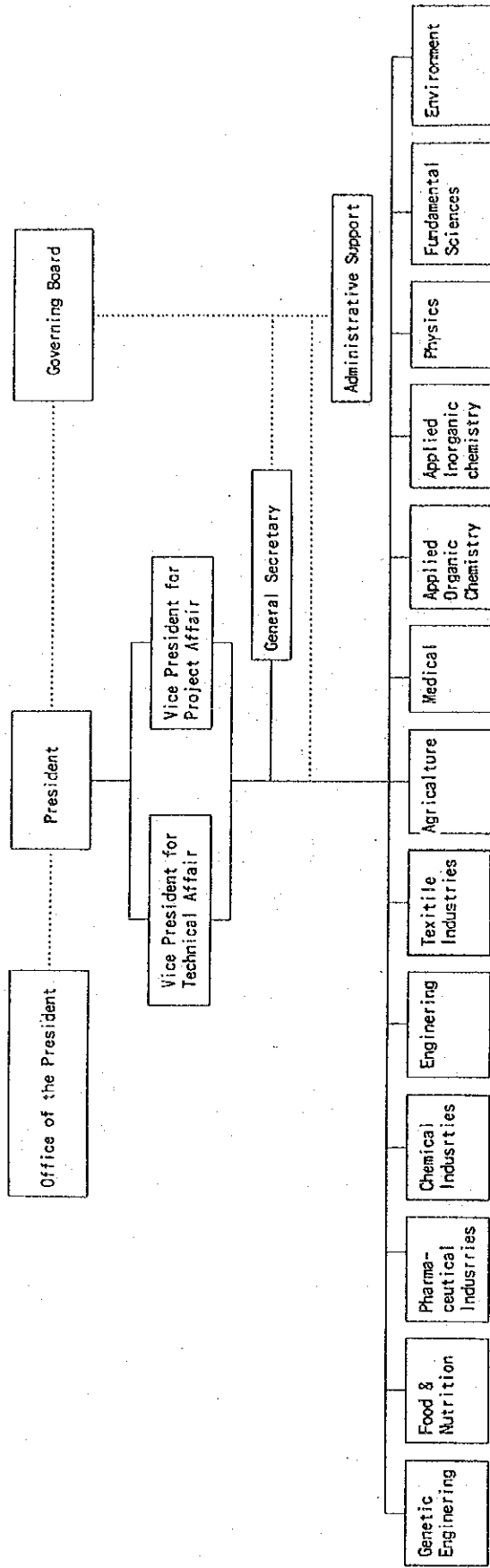
## II. 調査・協議結果の概要

項 目	調 査 結 果 概 要
(1) エジプト側の体制	
① 組織	NRCの位置付けは変化なく、組織の構成も評価調査時点とほぼ同様である。現在は2名の Vice Presidents が新たに配置されていて、繊維部門は四つの departments から構成されている。(別添-I)
② 人員	スタッフの数は所長以下43名(所長1名・主任3名)で、人員構成は評価調査時点と差違なく、主なカウンターパートも定着している。(別添-II)
③ 予算	<p>繊維部門の人件費に関しては、一定の予算として計上されているが、研究所等の運営費は予算として確保されておらず、NRC及びASRTが外部から請け負う調査・研究プロジェクトの契約金で賄われている。現在までの調査・研究プロジェクトの内訳は下記のとおりであるが、運営費は不足している。</p> <p>Research Projects:</p> <ul style="list-style-type: none"> <li>① In-House Project Contracts <ul style="list-style-type: none"> <li>-Improving the efficiency of weaving looms.</li> <li>-Blending of polyester with cotton.</li> </ul> </li> <li>② Local Projects Contracts <ul style="list-style-type: none"> <li>-Development and Production of filter fabrics for various engineering and production processes.</li> <li>-Spinnability of Egyptian cottons.</li> </ul> </li> <li>③ Contracts with Foreign Agencies <ul style="list-style-type: none"> <li>-Development of sizing materials(Germany)</li> <li>-Development of electro-mechanical jackard looms(USA)</li> </ul> </li> </ul>
④ 供与機材の状況	供与機材の保管状況は、全体として良好と認められる。しかし、NRCの予算手当てが十分でないため材料不足となり、十分に活用されていない機材も見受けられた。また、空調設備の一部が故障しているため稼働していない状況にあったので、協議した結果、現地サービス店で、できる範囲で対応し、対応困難なことにつき、別途、事務所を通し連絡することとなった。
⑤ 活動状況	エジプト側からは別添-IIIの回答があったが、調査団滞在中は研究・開発の活動は見られず、機器の保守・点検のための運転や研究員自身の研究活動(学位修得等)が行われていた。
⑥ 建屋	建屋はほぼ完成しているが、外壁の塗装は一部終了していない。パイロットプラントのレイアウトは別添-IVのとおり。

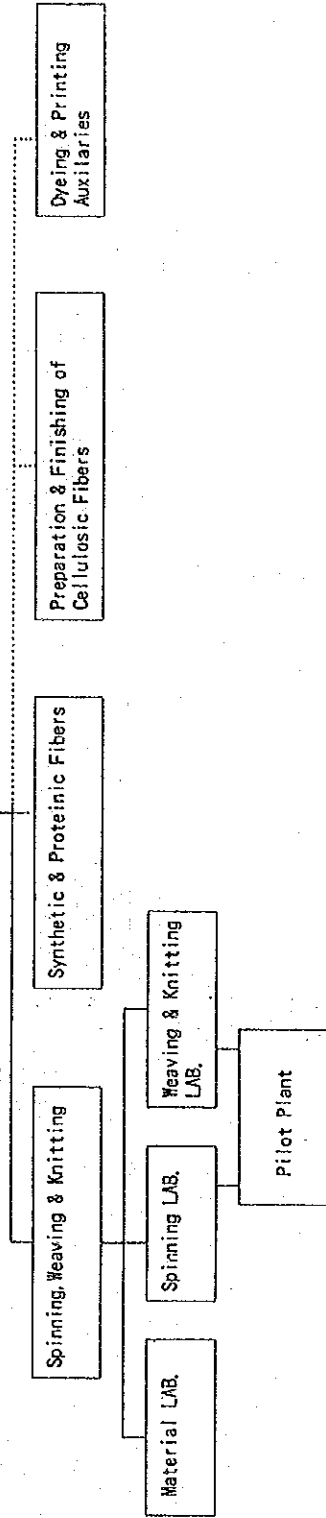
項 目	調 査 結 果 概 要						
<p>⑦ 研修コース</p> <p>(2) 日本側の対応</p> <p>① 機材の供与</p> <p>② 短期専門家派遣</p> <p>② 研修員受入れ</p>	<p>繊維分野に在職する理学士資格者を対象に下記の4コースが設定されている。期間は1及び2週間で、受講料は各300と600エジプトポンドである。</p> <p>① Textile Raw Materials (1週間)  ② Technology of Ring Spinning (2週間)  ③ Technology of Material Blending (1週間)  ④ Technology of Open End Spinning &amp; Modern Spinning System (2週間)</p> <p>エジプト側との協議のうえ、要請リストの中からスペアパーツと故障機器の修理に必要な部品の調達を最優先としたプライオリティを決定し、供与予定機材及び部品のリストをミニッツに添付した。(別添-V)  追加機材の供与について強い要請があったが、予算状況を考慮し、可能であれば供与する方向で合意した。  現地調達が可能な機材に関しては、その旨、供与予定リストに記載した。</p> <p>エジプト側からは下記分野の技術移転にかかわる専門家派遣の要請があった。</p> <table border="0"> <tr> <td>1. Knitting</td> <td>Knitting single Jurgey Flat Knitting (デザインの変更) Fabic design</td> </tr> <tr> <td>2. Spinning</td> <td>Fine yarn 製造にかかわる技術</td> </tr> <tr> <td>3. Sizing</td> <td>全般的なKNOW-HOW (過去に専門家が来ていない)</td> </tr> </table> <p>上記要請に対し、修理・調整またはスペアパーツ据付けにかかわる専門家の派遣が最優先であることを説明し、理解を求めた。また、派遣人数は1～2名で、期間は2週間程度である旨を伝えた。</p> <p>エジプト側からは、日本の繊維産業にかかわる品質管理や先端技術の視察要請があった。  研修員の受入れ人数・期間・時期については、上記要請を考慮し、後日連絡する旨、伝えた。</p>	1. Knitting	Knitting single Jurgey Flat Knitting (デザインの変更) Fabic design	2. Spinning	Fine yarn 製造にかかわる技術	3. Sizing	全般的なKNOW-HOW (過去に専門家が来ていない)
1. Knitting	Knitting single Jurgey Flat Knitting (デザインの変更) Fabic design						
2. Spinning	Fine yarn 製造にかかわる技術						
3. Sizing	全般的なKNOW-HOW (過去に専門家が来ていない)						

ORGANIZATION OF IMPLEMENTATION OF THE PROJECT

(I) ORGANIZATION OF NRC



(II) ORGANIZATION CHART OF THE TEXTILE RESEARCH AND DEVELOPMENT DIVISION



STAFF OF TEXTILE DEPARTMENT

Prof. Dr. Samy Mansour            Head of Textile Dept.  
 Prof. Dr. Mohamed Saad        Super Visor  
     Dr. Abdel Aziz Sharoof     Super Visor  
     Dr. Ebahim Hanafy         Super Visor

	NAME	JOB	DEGREE
1	Camal EL Noubi	Blow Room	Research Assist.
2	Magdi A Hadeed	Blow Room	Technician
3	Atef EL Sersawy	Spinning	B. S 1968
4	Mona Mahmoud Salem	Spinning	Assist. Researcher
5	El Seieid EL Hawary	Spinning	Research Assist.
6	Hosni Abdel Hakeen	Spinning	Technician
7	Mohamed Ali Keshk	Spinning	Technician
8	Mamdouh Shaaban	Spinning	Technician
9	Mohamed Kasen	Weaving Preparation	Assist. Researcher
10	Ahmad Shehata	Weaving Preparation	Technician
11	Mohamed Afifi	Weaving Preparation	Technician
12	Robeia Hassan	Weaving Preparation	Technician
13	Moha Mohamed Kamel	Weaving	Assist. Researcher
14	Mohamed Mostafa	Weaving	Research Assist.
15	Mahmoud EL Shakankiri	Weaving	Research Assist.
16	Shereif Abdel Hafeez	Weaving	Technician
17	Mostafa Ragab	Weaving	Technician
18	Mohamed Abolkasem	Weaving	Technician
19	Mohamed Ezat	Knitting	Research Assistant
20	Nehal El Ghandour	Knitting	Research Assistant
21	Raafat El Saied Mohamed	Knitting	Technician
22	Zeinab Kenawy	Knitting	Technician
23	Magda Mostafa	Knitting	Technician
24	Nabila Abdel Razek	Knitting	Typest
25	Yosri Fattor	Garment	Research Assistant
26	Nabila Yousef	Garment	Technician
27	Afaf Abdel Hafeez	Garment	Technician
28	Tahani Abdallah Ali	Garment	Technician
29	Mohamed EL kadi	Testing Lab.	Research Assistant
30	Abdel Raheim El Hammadi	Testing Lab.	Research Assistant
31	Talaat El Sharkaw	Testing Lab.	Technician
32	Ahmad Mosalam	Testing Lab.	Technician
33	Sadia Ahmad Hanafi	Testing Lab.	Technician
34	Saied Kenawi	Work shop	Technician
35	Emad Eldeen Mohamed	Air Conditioning	Technician
36	Ebrahim	Services	Labor
37	Mohamed	Services	Labor
38	Mostafa	Services	Labor
39	Ashraf	Services	Labor

## Activities of the Department of Spinning and Weaving:

The activities of the staff of the department of spinning and weaving (~~NSC~~) correspond as well as the general policy of the other ~~or~~ departments of the National Research Centre to the country's key production and services sector. The main objectives of the department are:

- Conducting research in the fields of spinning, weaving, knitting and quality control
- Provision of technical services and scientific consultations to public and private sector of textile industry.
- Training of industrial engineers, ~~young~~ junior researchers and technical institutes <sup>under</sup> graduates. (see attached sheets)

### Research Projects :

#### A. In-House Projects Contracts

- Improving the efficiency of weaving looms
- Blending of polyester with cotton

#### B. Local Projects Contracts:

- Impro Development and production of filter fabrics for various engineering and production processes.
- Spinnability of Egyptian cottons

#### C - Contracts with Foreign Agencies

Development of sizing materials (Germany)

- Development of electro-mechanical jacquard looms (USA)

#### Academic Research Studies:

- 1- Development of industrial fabrics (Ph.D)
- 2- Effect of weaving system on fabric properties (M.Sc.)
- 3- Effect of take-down tension on circular knitted fabric properties (M.Sc.)
4. Influence of welt insertion of weaving machines on some fabric properties (M.Sc)
5. Optimization of weaving parameters for air jet loom (M.Sc)

#### Testing Laboratory :

Regular testing and quality control is performed on different textile materials such as fibres, yarns and fabrics upon request of public and private sectors. (see attached sheet).

#### 11. Public Sectors

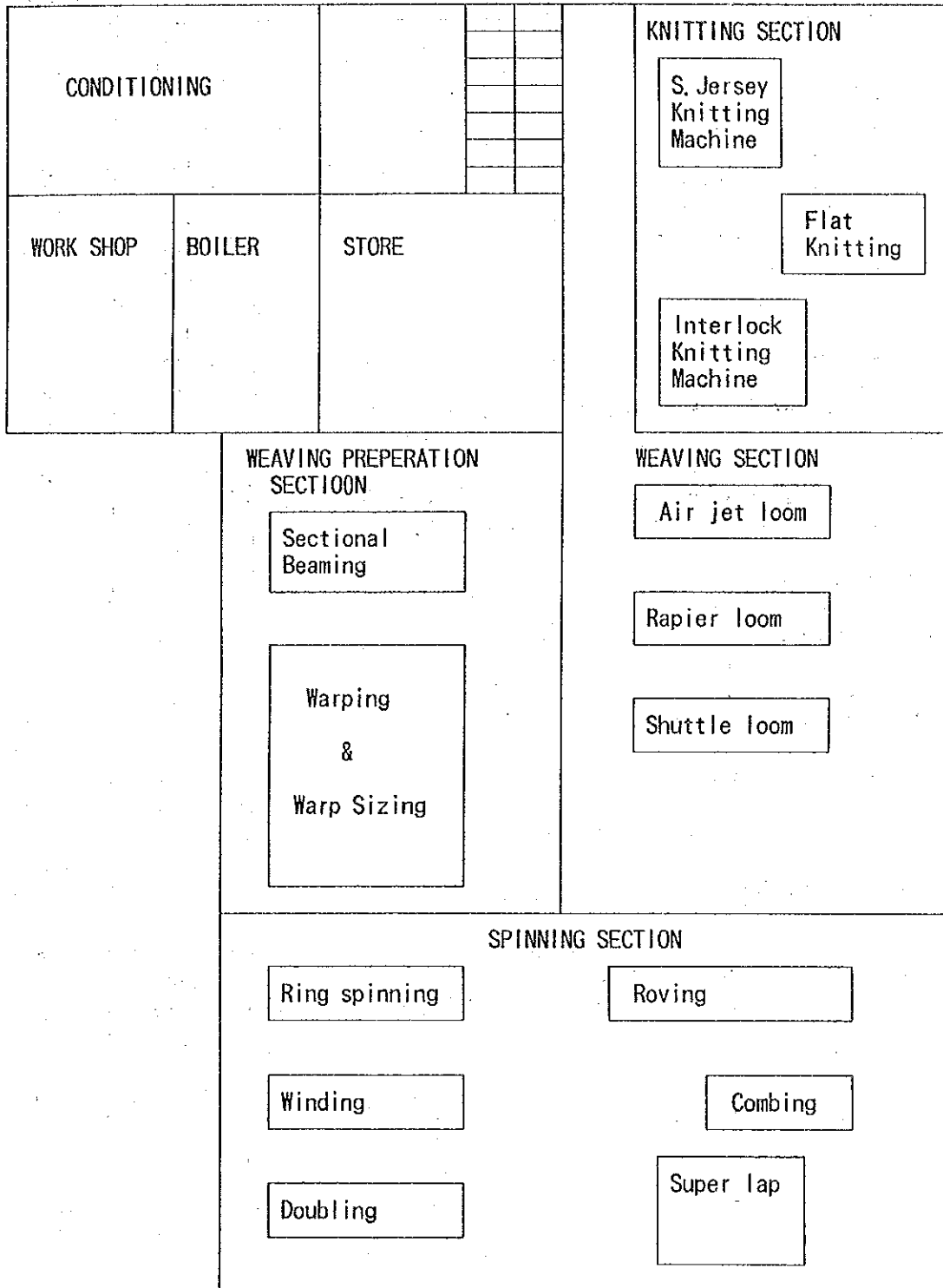
1. Sea Shore Protection authority
2. Portland Helwan Cement Works Co.
3. EL. Kaimia " " Co.
4. Tora " " Co.
5. General Company for Ceramic production
6. Aluminium Co. of Egypt.
7. Starch and Glucose Co.
8. Ministry of Culture Agriculture
9. Ministry of Defence
10. Arab Contractors.
11. Shebien EL-Kom for spinning

#### B. Private Sector

1. EL Nile Elbi Co.
2. Diemtex Co.
3. EL. Hakiem Co.



LAYOUT OF THE PILOT PLANT



LIST OF EQUIPMENT & PARTS/ACCESSARIES

Name of Equipment & Parts/ Accessories	Quantity	Priority
1. SPARE PARTS AND ACCESSARIES		
[Spinning Section]		
Spare parts for:		
(1) Carding machine(CMK3)	1 lot	A
(2) Drawing frame(DYH500)	1 lot	A
(3) Drawing frame(DYH500P)	1 lot	A
(4) Sliver lap machine(SK4A)	1 lot	A
(5) Combing machine(CM10)	1 lot	A
(6) Roving frame(FL16)	1 lot	A
(7) Ring spinning frame(RY)	1 lot	A
(8) Open-end spinning frame(HS5-5T)	1 lot	A
(9) Ring twisting frame(RYG)	1 lot	A
(10) Steam boiler(FH-100S)for thermo setter	1 lot	A
(11) Gears for FL16,RY and RYG	1 lot	A
(12) Gauges for setting for all spinning machinery	1 lot	A
(13) Greasing guns for each spinning machinery	1 lot	A
[Weaving Section]		
Spare parts for:		
(14) Sectional warp sizing machine(CQ-2)	1 lot	A
(15) Shuttle change automatic loom(LKS)	1 lot	A
(16) Rapier loom(TAV-H)	1 lot	A
(17) Air jet loom(ZA202-C10-150)	1 lot	A
(18) Accessories for LKS	1 lot	A
(19) Accessories for TAV-H	1 lot	A
(20) Accessories for ZA202-C10-150	1 lot	A
[Knitting Section]		
Spare parts for:		
(21) Single jersey knitting machine(NSQ-3)	1 lot	A
(22) Interlock knitting machine (NHI-D)	1 lot	A
(23) Flat knitting machine (MSF-100)	1 lot	A
[Others]		
(24) Recording/printing paper and ribbon tape,etc	1 lot	A
(25) Spare parts for air conditioning system	1 lot	B

Name of Equipment & Parts/ Accessories	Quantity	Priority
<b>2. AUXILIARY AND ADDITIONAL EQUIPMENT</b>		
(1) Cleaning and lubricating device for spindle (SPI-RA-CLEAN)	1 set	A
(2) Revolving cleaner for waste (Polival picker)	3 sets	A
* (3) Positive storage feeder "CONI" replacing "IRO" type	1 set	A
* (4) Positive storage feeder (MPF20-G1, Memminger) replacing "IRO" type for NHI-D	1 set	A
* (5) Fabric spreader CADRATEX	2 set	A
(6) Starfish " Quality control kit"	1 set	B
* (7) Passap knitting machine	1 set	B
(8) Vacuum cleaner for fiber industry (FC125-A2)	1 set	A
(9) Dust meter (Air sampler: HVS-500-5)	1 set	A
(10) Oil & air filter performance test equipment	1~2set	A
* (11) Platform scale balance (Capacity 300kg)	1 set	B
* (12) High speed sewing machine	1 set	B
* (13) Singer sewing machine	1 set	B
* (14) Overlock machine (3 threads)	1 set	B
* (15) Orlait sewing machine	1 set	B
* (16) Machine for sewing rubber	1 set	B
* (17) machine for formation stitch	1 set	B
* (18) Brochi machine (Tajima)	1 set	B
(19) Automatic washing machine (for shrinkage test)	1 set	B
* (20) Tumble dryer (for shrinkage test)	1 set	B
(21) Automatic winder with air splicer	1 set	B

Name of Equipment & Parts/ Accessories	Quantity	Priority
<b>3 .TESTING EQUIPMENT &amp; OTHERS</b>		
(1) Single fiber strength tester(UTM II -5H)	1 set	A
(2) Instrument for measuring weft speed on loom (Loom strobo: SD-8 & SD-10)	2 sets	A
(3) Warp tension meter(k X b)	1 set	A
(4) Digital thickness gauge(SMD-550)	1 set	A
(5) Knittability tester(TN-21-26)	1 set	A
(6) Shop measuring microscope (3 X ,6X and 130,70mmdia)	4 sets	A
(7) Magnetic stand For convenient use & handling of different measuring tools	1 set	B
* (8) Stitch length meter (Yarn metex DECOTEX,Memminger)	1 set	A
(9) Take down tension measuring device for circular knitted fabric(Esotex 2,Schmidt)	1 set	A
* (10) Measureing device for knittde fabric weight per unit (Sample cutter and precision balance,Schmidt)	1 set	A
* (11) Mechanical force gauge tester(10,200 & 100N)	1 set	B
* (12) Pressure oiler(pulsonic 3&4,Memminger)	2 sets	A
(13) Water repellency tester	1 set	A
(14) Carpet tuft pulling force tester	1 set	A
(15) Fabric tear strength tester(renge:up to 15kg)	1 set	A
* (16) Text books & periodical journal for texistile	1 lot	A
<b>REMARKS:</b>		
* Item marked with * is to be procured in the local market.		
* Item of priority "A" is to be supplied preferentially. Item of priority "B" is to be decided in consideration of the limited budget for the Aftercare Project.		

### Ⅲ. 今後の留意点

#### 1. 運営費の確保（点）

運営費が、予算として定期的に供与されていない現状では、安定的な財源を如何に確保するかが最も考慮すべき課題である。

現時点では、機材の保管状態が比較的良好なので、研究のための日常的活動には支障はない。しかし、今後、このプロジェクトが自立発展していくには、機材及びスペアパーツ類等の購入費等の財源の確保が肝要なので、そのために、エジプト繊維産業における本研究所の役割を明確にし、より積極的に活動を推進させる必要がある。



## 附 属 資 料

1. 協議議事録
2. トレーニングコース・パンフレットとその日本語訳
3. JICAからエジプト側に対する質問状
4. 質問状に対するエジプト側の回答





## 1. 協議議事録



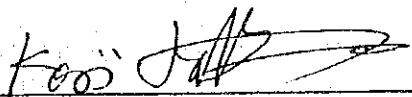
THE MINUTES OF DISCUSSIONS BETWEEN THE JAPAN  
AFTERCARE SURVEY TEAM AND THE AUTHORITIES CONCERNED OF THE GOVERNMENT  
OF THE ARAB REPUBLIC OF EGYPT ON THE JAPANESE TECHNICAL  
COOPERATION FOR ESTABLISHMENT OF PILOT PLANT AND UPGRADING THE  
TEXTILE RESEARCH AND DEVELOPMENT DIVISION OF THE  
NATIONAL RESEARCH CENTRE

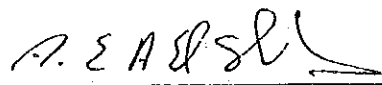
The Japanese Aftercare Survey Team (hereinafter referred to as " the Team " ) organized by the Japan International Cooperation Agency ( hereinafter referred to as " JICA " ) and headed by Mr.KOJI KAWAI Deputy Director of Planning Division of Mining and Industrial Development Cooperation Dept., JICA, has visited the Arab Republic of Egypt from September 29 to October 7, 1992 for the purpose of working out the details of the aftercare program for the Project on the Establishment of Pilot Plant and Upgrading the Textile Research and Development Division of the National Research Centre( hereinafter referred to as " the Program " ).

During its stay in the Arab Republic of Egypt, the Team has conducted a field survey and held a series of discussions with the authorities concerned of the Government of the Arab Republic of Egypt in respect of the desirable measures to be taken by both Governments for the successful implementation of the above-mentioned Program.

As a result of the survey and discussions, the Team and the authorities concerned of the Government of the Arab Republic of Egypt agreed to recommend to their respective Governments the matters referred in the document attached hereto.

Cairo, October 5, 1992

  
\_\_\_\_\_  
Mr.KOJI KAWAI  
Leader,  
After Survey Team,  
Japan International Cooperation  
Agency, JAPAN

  
\_\_\_\_\_  
Dr.Alei El-Dein El-Sherbeiny  
President  
National Research Centre  
The Arab Republic of Egypt

THE ATTACHED DOCUMENT

I. COOPERATION BETWEEN BOTH GOVERNMENTS

1. The Government of Japan and the Government of the Arab Republic of Egypt cooperate with each other in implementing the Program, for the purpose of furthering the effect of the Project on the establishment of Pilot Plant and Upgrading the Textile Research and Development Division of the National Research Centre ( hereinafter referred to as " the Project " ) through the Program of technical cooperation and thus contributing to the promotion of the textile industries in the Arab Republic of Egypt
2. The Program will be implemented in accordance with the Tentative Schedule of Implementation which is given in Annex I.

II. MEASURES TO BE TAKEN BY THE GOVERNMENT OF JAPAN

1. If necessity arises, in accordance with the laws and regulations in force in Japan, the Government of Japan will take necessary measures through JICA to provide at its own expense services of the Japanese experts ( in the field repair and maintenance of the equipment ) as listed in Annex II through the normal procedures under the Technical Cooperating Scheme of the Government of Japan.
2. The Japanese experts referred to in 1. above will be granted in the Arab Republic of Egypt the privileges, exemptions and benefits no less favorable than those accorded to experts of third countries or of other international organizations performing similar missions in the Arab Republic of Egypt.
3. In accordance with the laws and regulations in force in Japan, the Government of Japan will take necessary measures through JICA to provide at its own expense such equipment, spare parts and other for the implementation of the Program as listed in Annex III through the normal procedures under the Technical Cooperation Scheme of the Government of Japan.
4. The Equipment will become the property of the Government of the Arab Republic of Egypt upon being delivered c.i.f. to the Egyptian authorities concerned at the port of Alexandria and/or airport of Cairo for disembarkation, and will be utilized exclusively for the implementation of the Program in consultation with JICA office in Egypt.

K.S

A. Elsh

5. The possibility of acceptance of counterpart personnel for the Program and its number will be decided and informed through the proper channel.

III. MEASURES TO BE TAKEN BY THE GOVERNMENT OF THE ARAB REPUBLIC OF EGYPT.

1. The Government of the Arab Republic of Egypt will make necessary arrangement for requesting the dispatch of Japanese experts and the provision of the Equipment as mentioned in II. above by submitting the application forms ( A-1 Form and A-4 Form) through the proper channel to reach Japan by the end of February, 1993.
2. In accordance with the laws and regulations in force in the Arab Republic of Egypt, the Government of the Arab Republic of Egypt will take necessary measures to provide at its own expense facility necessary for the implementation of the Program other than those provided through JICA under II. above.
3. In accordance with the laws and regulations in force in the Arab Republic of Egypt, the Arab Republic of Egypt will take necessary measures for tax exemption, custom clearance, and internal transportation of the Equipment as mentioned II. above as soon as it arrives at the port of Alexandria and/or airport of Cairo disembarkation.
4. In accordance with the laws and regulations in force in the Arab Republic of Egypt, the Government of the Arab Republic of Egypt will take necessary measures to meet all running expenses necessary for the implementation of the Program.
5. The Government of the Arab Republic of Egypt will allocate the necessary numbers of suitably qualified personnel corresponding to each Japanese expert to be dispatched by the Government of Japan as specified in Annex II for the effective and successful transfer of the technology under the Program.
6. The Government of the Arab Republic of Egypt will make any other necessary arrangement for the successful implementation of the Program.

*A. Elsl*

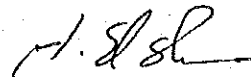
*Km*

IV . CLAIMS AGAINST JAPANESE EXPERTS

The Government of the Arab Republic of Egypt undertakes to bear claims, if any arises, against the Japanese experts mentioned in II. above engaged in the Program resulting from, occurring in the course of, or otherwise connected with the discharge of their official functions in the Arab Republic of Egypt except for those arising from the wilful misconduct or gross negligence of the Japanese experts.

V . TERM OF COOPERATION

The technical cooperation for the Program mentioned in this Attached Document will be completed before the end of March 1994 (within the Japanese fiscal year 1993 )



ANNEX I TENTATIVE SCHEDULE OF IMPLEMENTATION

CALENDER YEAR	1992	1993												1994	
MONTH	10 11 12	1 2 3 4 5 6 7 8 9 10 11 12	1 2 3												
DISPATCH OF THE SURVEY TEAM	*														
DISPATCH OF JAPANESE EXPERTS	*****														
ACCEPTANCE OF EGYPTIAN COUNTERPART PERSONNEL IN JAPAN	*****														
PROVISION OF THE EQUIPMENT. (1) Local Acquisition (2) Acquisition in Japan	***** *****														
※ Preparation of A1 form and A4 forms	*														

Note :

1. A few Japanese experts on repair and maintenance of the Equipment will be dispatched if necessity arises.
2. The dispatch of the Japanese expert and the provision of the Equipment are subject to the recruitment of the expert and the budgetary condition of JICA.

*A. El sl*

*K.S.*

ANNEX II JAPANESE EXPERTS

If necessity arises, a few Japanese experts will be dispatched to render such technical guidance as follows.

1. Short-term experts in the field of :

Repair and maintenance of the Equipment provided by the Government of Japan

2. Scope of technical guidance :

Repair and maintenance

To train the Egyptian counterpart personnel and to transfer necessary technology for the operation, maintenance, check-up and repair and effective application of the Equipment provided by the Government of Japan.

3. Egyptian side strongly requested for dispatch of Japanese experts not only for repair and maintenance but also for the additional technology transfer for more effective operation of equipment in the field of spinning, sizing and knitting.

ANNEX III PROVISION OF THE EQUIPMENT

The Equipment to be provided by the Government of Japan through JICA is shown in the Equipment List attached hereto.

The Equipment will be provided within the budgetary limitation of JICA according to the priority indicated in the Equipment List, and will be subject to the procurement condition in Japan.

*A. S. S.*

*MS*



LIST OF EQUIPMENT & PARTS/ACCESSARIES

Name of Equipment & Parts/ Accessories	Quantity	Priority
<b>1. SPARE PARTS AND ACCESSARIES</b>		
[Spinning Section]		
Spare parts for:		
(1) Carding machine(CMK3)	1 lot	A
(2) Drawing frame(DYH500)	1 lot	A
(3) Drawing frame(DYH500P)	1 lot	A
(4) Sliver lap machine(SK4A)	1 lot	A
(5) Combing machine(CM10)	1 lot	A
(6) Roving frame(FL16)	1 lot	A
(7) Ring spinning frame(RY)	1 lot	A
(8) Open-end spinning frame(HS5-5T)	1 lot	A
(9) Ring twisting frame(RYG)	1 lot	A
(10) Steam boiler(FH-100S)for thermo setter	1 lot	A
(11) Gears for FL16,RY and RYG	1 lot	A
(12) Gauges for setting for all spinning machinery	1 lot	A
(13) Greasing guns for each spinning machinery	1 lot	A
[Weaving Section]		
Spare parts for:		
(14) Sectional warp sizing machine(CQ-2)	1 lot	A
(15) Shuttle change automatic loom(LKS)	1 lot	A
(16) Rapier loom(TAV-H)	1 lot	A
(17) Air jet loom(ZA202-C10-150)	1 lot	A
(18) Accessories for LKS	1 lot	A
(19) Accessories for TAV-H	1 lot	A
(20) Accessories for ZA202-C10-150	1 lot	A
[Knitting Section]		
Spare parts for:		
(21) Single jersy knitting machine(NSQ-3)	1 lot	A
(22) Iterlock knitting machine (NHI-D)	1 lot	A
(23) Flat knitting machine (MSF-100)	1 lot	A
[Others]		
(24) Recording/printing paper and ribbon tape,etc	1 lot	A
(25) Spare parts for air conditioning system	1 lot	B

pr

A. El sl -

Name of Equipment & Parts/ Accessories	Quantity	Priority
2. AUXILIARY AND ADDITIONAL EQUIPMENT		
(1) Cleaning and lubricating device for spindle (SPI-RA-CLEAN)	1 set	A
(2) Revolving cleaner for waste (Polivel picker)	3 sets	A
* (3) Positive storage feeder "CONI" replacing "IRO" type	1 set	A
* (4) Positive storage feeder (MPF20-G1, Memminger) replacing "IRO" type for NHI-D	1 set	A
* (5) Fabric spreader CADRATEX	2 set	A
(6) Starfish " Quality control kit"	1 set	B
* (7) Passap knitting machine	1 set	B
(8) Vacuum cleaner for fiber industry (FC125-A2)	1 set	A
(9) Dust meter (Air sampler: HVS-500-5)	1 set	A
(10) Oil & air filter performance test equipment	1-2 set	A
* (11) Platform scale balance (Capacity 300kg)	1 set	B
* (12) High speed sewing machine	1 set	B
* (13) Singer sewing machine	1 set	B
* (14) Overlock machine (3 threads)	1 set	B
* (15) Orlait sewing machine	1 set	B
* (16) Machine for sewing rubber	1 set	B
* (17) machine for formation stitch	1 set	B
* (18) Brochi machine (Tajima)	1 set	B
* (19) Automatic washing machine (for shrinkage test)	1 set	B
* (20) Tumble dryer (for shrinkage test)	1 set	B
(21) Automatic winder with air splicer	1 set	B

*ms*

*A. E. d.*

Name of Equipment & Parts/ Accessories	Quantity	Priority
<b>3 .TESTING EQUIPMENT &amp; OTHERS</b>		
(1) Single fiber strength tester(UTM II -5H)	1 set	A
(2) Instrument for measuring weft speed on loom (Loom strobo: SD-8 & SD-10)	2 sets	A
(3) Warp tension meter(k X b)	1 set	A
(4) Digital thickness gauge(SMD-550)	1 set	A
(5) Knittability tester(TN-21-26)	1 set	A
(6) Shop measuring microscope (3 X ,6X and 130,70mmdia)	4 sets	A
(7) Magnetic stand For convenient use & handling of different measuring tools	1 set	B
* (8) Stitch length meter (Yarn metex DECOTEX, Memminger)	1 set	A
(9) Take down tension measuring device for circular knitted fabric(Esotex 2, Schmidt)	1 set	A
* (10) Measuring device for knitted fabric weight per unit (Sample cutter and precision balance, Schmidt)	1 set	A
* (11) Mechanical force gauge tester(10,200 & 100N)	1 set	B
* (12) Pressure oiler(pulsonic 3&4, Memminger)	2 sets	A
(13) Water repellency tester	1 set	A
(14) Carpet tuft pulling force tester	1 set	A
(15) Fabric tear strength tester(renge:up to 15kg)	1 set	A
* (16) Text books & periodical journal for textile	1 lot	A
 <b>REMARKS:</b>		
* Item marked with * is to be procured in the local market.		
* Item of priority "A" is to be supplied preferentially. Item of priority "B" is to be decided in consideration of the limited budget for the Aftercare Project.		

*A.S.L*

*ms*



## 2. トレーニングコース・パンフレットとその日本語訳





المركز القومي للبحوث  
القاهرة جمهورية مصر العربية

مركز التدريب

دورة تدريبية

في

TECHNOLOGY

OF RING SPINNING

هندسة وتكنولوجيا الغزل الحلقي

من ١٤ / ١٠ / ١٩٩٠ إلى ٢٥ / ١٠ / ١٩٩٠

رسم الاشتراك : ٦٠٠ جنيه مصري / دولار للاسيويين

شاملا الرسوم الدراسية

وتكاليف استهلاك مواد واستخدام أدوات تدريبه بالإضافة إلى وجبة

غذائية .

علما بأن اليوم التدريبي ٦ ساعات ..

\* في حالة ترشيح أكثر من ثلاثة متدربين من الجهة الواحدة يتم

خصم

١٠٪ من قيمة الاشتراك

ترسل طلبات الالتحاق إلى :

مركز التدريب - المركز القومي للبحوث

شارع التحرير - الدقي

تليفون : ٧٠١٦١٥ - ٧٠١٢١١ فاكس : ٧٠٠٩٣١

تلفارنيا : بحوث القاهرة تلكس : ٩٤٠٢٢

١١٠٠ / مسر / ١١٠٠

الطبيب عبد الباقى  
من سيقوم بالتدريس

أ.د سامي عبد القادر منصور

استاذ بقسم الغزل والنسيج

حاصل على الدكتوراه من جامعة لينز النمسا ١٩٧٥ - له نشاط

علمي وإشرافي متنوع إلى جانب الخبرة الصناعية الطويلة . ساهم في

إنشاء مختبرات قسم الغزل والنسيج بكلية الهندسة جامعة بغداد

وقسم الغزل والنسيج بالمركز القومي للبحوث

له العديد من المؤلفات والبحوث العلمية

الفاخرة بالحرير

ويقوم بالتدريس أيضا في هذا الدورية

يشترك في التدريب فريق متكامل من المركز وستعان إذا

لزم الأمر ببعض الكفاءات من خارج المركز .

أولاً: كيف يتم تقييم هذه الدورة؟  
من حيث المحتوى والهدف

الحاصلين على البكالوريوس من العاملين في مجالات الفزول  
والنسج

### هدف الدورة

رفع مستوى العاملين في كل ما يتعلق بهندسة  
وتكنولوجيا الفزول الخلقى في جميع المراحل بدءاً من  
عمليات الملمج والتقييم والتنظيف ومروراً بمراحل الفزول  
المختلفة مثل الكرد وتخصيرات التمشيط والسحب والريم  
والفزول الخلقى

### المحتوى العلمي البرنامج الزمني

المحتوى العلمي للدورة :-

1. الخبي وأنواع
  2. الخبي من الملمج والتنظيف
  3. الخبي من الملمج والتنظيف
  4. الخبيات الملمج والتنظيف
  5. الخبيات الملمج والتنظيف
  6. الخبيات الملمج والتنظيف
  7. الخبيات الملمج والتنظيف
- ثانياً : مرحلة الكرد
1. نظرية النسج والعرض من عملية الكرد
  2. عمليات أزا، ماكينة الكرد
  3. أنواع السحب بماكينة الكرد
  4. عمليات ماكينة الكرد
  5. جهاز تكبير شريط الكرد
  6. عمليات الملمج بماكينة الكرد
- ثالثاً : مرحلة التمشيط
1. العرض من التمشيط
  2. السحب من ماكينة التمشيط

- عاشراً : مرحلة السحب
1. العرض من عملية السحب
  2. اداة ماكينة السحب
  3. ثابت السحب
  4. موجات السحب
  5. إنتاج ماكينة السحب
- سادساً : مرحلة الريم
1. العرض من ماكينة الريم
  2. اسن الريم وثابت الريم
  3. تدوير الادارة بماكينة الريم
  4. عمليات الإنتاج لماكينة الريم
- سابعاً : تعريفات في مجال تكنولوجيا الفزول
1. النسج ونظم حساباتها
  2. نظم الخيط وطريقة حسابية وقياسة علمياً
  3. الريم وحسابات الريم في الخيطوط
  4. الاستطامية في الخيطوط وطرق حسابها وقياسها
- ثامناً : الفزول الخلقى
1. نظرية الفزول بنظام الفزول الخلقى
  2. سرعة الفزول وادارته
  3. أجهزة السحب وادارتها
  4. ثابت السحب والريم
  5. أنواع السحب بماكينة الفزول الخلقى
  6. شكل عملية الفزول وطريقة بنائها
  7. حسابات الإنتاج لماكينة الفزول
  8. نسبة الاكماش وكيفية التخلص على النسج والمطلوبه
  9. جودة الخيطوط النسيجه والموامل التي تؤثر عليها
- تاسعاً : مثال عملية فزول غرة ممجته بصنع الفزول



エジプト・アラブ共和国国立研究所  
トレーニングセンター  
パイル紡績技術トレーニングコース  
(1990年10月14日～10月25日)

参加費用：600エジプトポンド／米ドル（2週間）

これには、授業料・使用する材料・教材及び食費が含まれる。

毎日の授業時間は6時間

\* 1団体より3人以上の受講者が参加する場合は10%割引されます。

申込書の送付先：国立研究所トレーニングセンター

ドッキータハリール通り

電話：701211-701615

ファックス：700931

CABLE：RESEARCH CAIRO

テレックス：94022

トレーニング：サーミー・アブドゥル・カーディル・マンスール博士

コース指導者 織物学科教授

1975年イギリス・リーズ大学より博士号取得

多くの科学分野で活動し、監督する責任者を務め、産業界でも長い経験をもつ。

バクダッド大学工学部、織物学科内の織物研究室及び国立研究所織物科の設立に参加。

教 官： トレーニングコースの教官は、センター内の専門チームからと、必要に応じて外部から招聘する。

トレーニングコースの参加資格：

織物分野に在職する理学士資格保有者

トレーニングコースの目的：

綿繰り、ルーズニング、洗滌から始まり、カーディング、コーミング、撚糸と

紡績の準備を含めて、あらゆる段階でのパイル紡績の工学上、技術上のレベル向上を図ること。

## 研究内容及び時間割

### 当コースの研究内容

#### その 1. 収穫及び綿繰り

#### その 2. 混合、ルーズニング及び洗滌

- 1 - 混合及びルーズニングの目的
- 2 - 混合の方法
- 3 - ルーズニング及び混合機械
- 4 - ルーズニングの種類
- 5 - 混合及びルーズニングの過程の計算
- 6 - 糸巻きの長さ調整機
- 7 - 製品の鑑定

#### その 3. カーディングの理論と段階

- 1 - カーディングの理論と目的
- 2 - カーディング機の調整
- 3 - カーディング機による梳綿の方法
- 4 - カーディング機の鑑定
- 5 - カーディング方法作成機
- 6 - カーディング機による製品の評価

#### その 4. 紡績の準備と実施

- 1 - 紡績の目的
- 2 - 紡績機による梳綿

#### その 5. 梳綿の段階

- 1 - 梳綿過程の目的
- 2 - 梳綿機の操作
- 3 - 梳綿の定着
- 4 - 梳綿によるちぢれ
- 5 - 梳綿機

その 6. 撚糸の段階

- 1 - 撚糸機の目的
- 2 - 撚糸機の基盤と定義
- 3 - 撚糸機のギア操作
- 4 - 撚糸製品の鑑定

その 7. 織物技術分野における定義付け

- 1 - 強度とその鑑定法
- 2 - 織物径、その鑑定と実際的測定法
- 3 - 撚糸の鑑定
- 4 - 織物の均一性（強度）、その鑑定と測定法

その 8. パイル紡績

- 1 - パイル紡績の理論
- 2 - 紡錘の操作とその速度
- 3 - 梳綿機とその操作
- 4 - 梳綿及び撚糸の定義
- 5 - パイル紡績機による梳綿の種類
- 6 - 紡績機での糸巻きの形態とその形成法
- 7 - 紡績機での製品の評価法
- 8 - 縮み比率と必要な強度の求め方
- 9 - 製品の品質とそれに作用する要素

その 9. 紡績工場における特定の強度での紡績方法の例



### 3. JICA からエジプト側に対する質問状



QUESTIONNAIRE FOR THE AFTERCARE PROGRAM  
ON THE TECHNICAL COOPERATION PROGRAM  
FOR THE ESTABLISHMENT OF PILOT PLANT  
AND UPGRADING THE TEXTILE RESEARCH  
AND DEVELOPMENT DIVISION OF THE NATIONAL RESEARCH CENTER

July 23, 1992

To : the Authorities Concerned of the Government of the Arab Republic of  
Egypt

From : the Authorities Concerned of the Government of Japan

I. Concept of the Aftercare Program

The Aftercare Program is one of the Technical Cooperation Programs implemented by the Japan International Cooperation Agency (hereinafter referred to as "JICA ") in order to promote the effects of the projects which already finished by extending supplementary technical cooperation within the following scope.

1. Taking additional care of the machinery and equipment already provided by the Government of Japan

- (1) by dispatching short-term experts for repair and maintenance
- (2) by providing necessary spare parts and consumables

2. Supplementary technical cooperation within the scope of the Record of Discussions (hereinafter referred to as "R/D")

- (1) by dispatching short-term experts
- (2) by providing necessary machinery and equipment

3. The duration of the Aftercare Program for the Project is two Japanese fiscal years ( April 1, 1992 - March 31, 1994).

JICA plans to implement the Aftercare Program on the Technical Cooperation for the Establishment of Pilot Plant and Upgrading the Textile Research and Development Division of the National Research Center (hereinafter referred to as "the Project" ) from the Japanese fiscal year 1992 to 1994, and to send an Aftercare Survey Team within the Japanese Fiscal year 1992.

The purpose of the Team is to survey the present situation of the Project and to work out the details of the Aftercare Program on the Project through a series of discussions with the authorities concerned of the Government of the Arab Republic of Egypt.

In order to make the activities of the Survey Team as effective as possible, JICA needs to get relevant data and information on the present situation of the Project by asking some questions mentioned below. It would be much appreciated if the authorities concerned of the Government of the Arab Republic of Egypt prepare the answers by the middle of August 1992.

## II. Questions for the Implementation of the Aftercare Program on the Project

1. Request for obtaining additional care of machinery and equipment provided by the Government of Japan
  - (1) Request for repair of the machinery and equipment provided by the Government of Japan and that for providing spare parts and consumables.
    - a. Present condition of the machinery and equipment provided by the Government of Japan.



- b. Name of the machinery and equipment needed to be repaired by the Japanese experts.
- c. Name of the spare parts and the consumables needed to be provided;  
\*Please make sure whether these equipments could be purchased in the Arab Republic of Egypt or not.
- d. Other relevant information:

(2) Request for the supplementary technical cooperation

- a. Themes within the scope of R/D which need supplementary technical cooperation by the Japanese short-term experts and the detailed contents of the task for the said experts.
- b. Name of the machinery and equipment needed to be provided in order to transfer the technology on the theme.  
Please make sure whether these equipments could be purchased in the Arab Republic of Egypt or not.

2. Organization in charge of implementation of the Aftercare Program

- (1) Present activities of the Center
- (2) Present organization chart, function and staff assignment of the Center
- (3) Relations with other governmental organizations, which will support the Aftercare Program

3. Other Related Items

- (1) Budgetary condition of the Center and perspective of its defrayal of local cost expenses for the implementation of the Aftercare Program

e.g. \* expenses for the internal transportation for the machinery and equipment to be provided by the Government of Japan  
\* expenses for the supply of the machinery, the equipment and other materials necessary for the Aftercare Program other than those provided by the Government of Japan

- \* all the other running expenses for the Aftercare Program
- (2) Present positions and activities of the former counterpart personnel and major changes since completion of the Project

#### 4. 質問状に対するエジプト側の回答



## AFTER-CARE PROJECT OF THE TEXTILE PILOT PLANT.

### Introduction:-

During the past two years, the staff of spinning and weaving department has been exerting efforts to establish themselves in order to build reliable relationship with industry in Egypt.

Besides, the department has contributed in solving many processing problems and difficulties upon request of textile mills.

At present, there are some research projects on the national scale such as, improving of sewing threads, production of hollow fibres for hemodialysis, improving fabrics for filterations, and production of special end uses fabrics.

There have been some difficulties in running some of our pilot machines due to lack of spare parts as well as maintenance and mechanical defects.

### Present Condition of Machinery And Equipment:-

All machines and equipment already provided are functioning well and in good condition except few due to electric defects and inadequate experience with some others.

### Present Activities of the Centre:-

Varieties of research and development activities are conducted in relevant subjects of specialities in all divisions of the National Research Centre (NRC) given in the following section:-

## THE NATIONAL RESEARCH CENTRE

The National Research Centre (NRC) of Egypt is the major multidisciplinary R & D institution in the country. Most of its organisational research departments were created purposely to correspond to the country's key production and services sectors. NRC possesses an impressive scientific and technological infrastructure and manpower resources, the experience of which allow their participation in the process of technology transfer. The research staff (Ph. D holders) includes about 900 research professors, associate research professors and researchers who are assisted by 2000 research and technical assistants; the administrative staff totals 2500. The NRC started operating in 1956 and has since then passed through three evolutionary stages. The initial stage extending to 1968 concentrated on basic sciences and staff development. The second stage (1968 - 1973) was characterized by a growing interaction with the production and services sectors. The third stage (1973 to the present) emphasized on orienting research activities to serve the specific needs of end users.

### MANAGEMENT

NRC is governed by a board of directors and managed by the President and assisted by two Vice-Presidents and a Secretary General. In addition to the elected Heads of Research Divisions (15), the board includes 5 experienced members who are selected on the basis of personal merit.

His Excellency  
the State Minister for Scientific Research  
is the Higher President of the NRC

During the history of NRC, the following institutes have emerged from it; and are located now outside its premises: Petroleum Research Institute, Theodor-Bilharz Research Institute and Central Metallurgical Research Institute.

### OBJECTIVES

- Conducting research in different areas of science and technology to serve the national economy and knit together with the overall developmental plans.
- Provision of services and scientific consultations to the national development sectors; in order to assist in solving pressing problems related to the economic and social development; and to promote the commercialisation of generated technologies in the local production enterprises.
- Guiding the national economy sectors for the requisite transfer of technology and stimulating efforts for rapid assimilation of imported technologies and spreading of their benefits.
- Training of university graduates and young researchers in various scientific disciplines as a basis for balanced growth of national technological capabilities.

### RESEARCH PROGRAMS

NRC is marked by a basic orientation of its activities to customer oriented research in order to address the national needs more effectively through scientific and technical research. So, it organises its development related activities into 8 major multidisciplinary programs: Rural Development, Food & Agriculture, Health & Environment, Technology Transfer, Natural Resources, Energy, Genetic Engineering & Biotechnology and Computers.

## RESEARCH PROJECTS MANAGEMENT

The NRC research activities are managed through contracts :

### • In - House Projects Contracts

These projects run through contracts between NRC administration and research teams and financed from its budget. These are planned in an integrated approach to orient NRC community towards projects work of priority importance to national development. Certain criteria are established for project selection, approval of team members and budget. A follow up on project extension through evaluation is made before approval of reports.

### • Local Projects Contracts

These contracts run between NRC administration and Academy of Scientific Research and Technology as well as with the various industrial, production and services sectors. In this connection, NRC aims to strengthen the link between the research community and the needs of various sectors of production and services, to sharpen the focus of R & D work on major problems; and to improve the formulation of tasks by both users and researchers. The partnership with end users is stimulated through offering consultancy and advisory services with market oriented management.

### • Contracts with Foreign Agencies

Within this context, joint research work run between NRC scientists and researchers from other parts of the globe mainly developed countries. This cooperation strengthens the link between local and foreign scientists, stimulate research and urge the display of capabilities and thoughts on the international level. Progressive open - relations with several developed countries - is a major item in the policy of NRC.

## TRAINING

The training center affiliated with NRC organises an annual program of training courses in various scientific and technological areas and at different levels. The program is mainly concerned with the transfer of specially tailored experience to those who work in sectors of industry, production and services in Egypt, Arab World and African Continent. The experience attained by those trainees is essential as a basis to keep up with the fast moving developments of science.

Joint training courses with foreign and international organisations are often organised in some areas. R & D management training courses are offered as well to researchers and administrators in universities, ministries and public sector enterprises.

## GENERAL SERVICES

NRC has different units that serve its activities and those of production and services sectors, these are :

- Central Services Laboratory which conducts organic analysis, chromatography, infra-red, NMR, X - ray analysis and electron microscopy... etc.
- Materials Testing Laboratory is provided for six industrial applications : pharmaceuticals, textiles, polymers, ceramics, paper and leather in addition to biological fluids.
- Experimental Animals Breeding Laboratory.
- Medical Services Unit.
- Agricultural Experimental Research Stations for plant production, animal production and medicinal plants.
- Systems and Information Research Laboratory.

- Central Data Processing Unit.
- Textile Pilot Unit.
- Food Industries Pilot Unit.

Within the campus of NRC, which occupies an area of 12 acres, there exists also a Library, National Information and Documentation Centre, Scientific Instrumentation Centre which serve the centre activities. These institutions are affiliated with the Academy of Scientific Research and Technology.

### RESEARCH DIVISIONS AND DEPARTMENTS

At present, the NRC consists of 15 Research Divisions and 62 Departments.

- Textile Industries : Dyeing and Finishing - Spinning and Weaving - Pretreatment and Finishing of Cellulosic Fibres - Protein and Synthetic Fibres.
- Food Industries and Nutrition : Food and Dairy Industries - Fats and Oils - Food and Nutrition.
- Pharmaceutical Industries : Pharmaceuticals - Therapeutic Chemistry - Natural and Microbial Products.
- Chemical Industries : Paper and Cellulose - Tanning Materials and Protein Chemistry - Polymers and Pigments - Chemistry of Pesticides - Glass, Refractories and Building Materials.
- Agriculture and Biology : Botany - Pests and Plant Protection - Soil and Water Use - Animal Production - Animal and Poultry Nutrition - Parasites and Animal Diseases - Agricultural Economy.
- Medical Sciences : Basic Medical Sciences - Pharmacology - Community Medicine - Child Health - Hormones.
- Environmental Sciences : Water Pollution - Air Pollution - Occupational Health and Industrial Medicine.
- Engineering : Mechanical Engineering - Solar Energy - Chemical Engineering and Pilot Plant.
- Applied Organic Chemistry: Organic Chemistry - Biochemistry - Chemistry of Flavoring Agents and Related Substances.
- Applied Inorganic Chemistry : Physical Chemistry - Inorganic Chemistry.
- Physics : Solid State - Spectroscopy - Microwave - Theoretical Physics - Electron Microscopy and Thin Films.
- Basic Sciences : Microbial Chemistry - Cytology and Genetics - Earth Sciences - Photochemistry - Flora and Plant Taxonomy.
- Genetic Engineering and Biotechnology : Cellular Biology - Human Genetics - Molecular Biology - Plant Cell and Tissue Culture - Microbial Biotechnology - Microbial Genetics.
- Electronics : Microwave Engineering - Computers and Systems - Microstrip Circuits - Power Electronics and Energy Conversion - Scientific Consultation for Computation and Statistics - Photovoltaic Cells.
- Ophthalmic Diseases : Basic Medical - Clinical Medical.

Sh. El-Tahrir, Cairo - Dokki  
Tel: 701211 - 701615 - 701433

Cable : Research Cairo  
Telex : 94022 NAREC - UN

NRC, 5000/ Nov., 1980

Al-Ahram Press, Cairo



### Relation of (NRC) with Other Governmental Organizations:-

All research centres in Egypt together with the mother one (NRC) are working under the umbrella of the Academy of Scientific Research and Technology (ASRT) which represents the administrative side of the Ministry of Scientific Research and High Education.

All divisions and departments of NRC are in joint contact with different industrial and production sites. Some researches conducted by members of NRC are applied in industry and some topics for the purpose of development are considered upon request of production sites in different fields.

### Budgetary Conditions:-

Apart from the payment salary budget provided by the government, NRC receives annually a budget for national projects in different fields by the ASRT. Also, some project contracts with international organizations provides another budget through the ASRT as an official channel.

Staff of The Spinning & Weaving Department :-

Number	position
1	Research Professor.
1	Assistant professor.
2	Researcher.
3	Assistant lecturer.
10	Research assistant
21	Technicians.
1	Secretary.
1	Liberarian.
4	Labours

## Spare Parts And Accessories For Machine.

### A. Spinning Line:-

#### Spare Parts For Carding Machines:-

2 Carding Machines (CMK-3) one for Cotton and  
One for polyester.

- Metallic wire for cylinder & roller 2 sets one for each.
- L Wire 2 sets.
- Fillet wire for flats 2 sets.
- Gauge for setting for all spinning line.
- Greasing guns (- different types) for all spinning line.
- Complete greasing system.

#### Spare parts For High Speed Drawing frame (DYH.500)

- B-7F Timing belt 900.H-100 2 PCS.
- L-815S Timing belt 240.H-150 2 PCS.
- L-797P(B) Cleaner cloth 2 PCS.
- B-505 Electronic digital auto counter 1 PCS.
- FC-10 Plug fuse (AFC) 2 PCS.
- 1ZAP2, B520 Door switch 2 ~

#### Spare parts For High Speed Drawing frame (DYH.500 P).

- B-7F Timing belt 900.H-100 1 PCS.
- L-815S ~ ~ 240.H-150 1 PC.
- L-797 P(B) Cleaner cloth 1 PC.
- FC-10 Plug fuse (AFC) 2 PCS.
- 1ZAP2, B520 Door switch 2 ~

#### Spare parts For Sliver Lap Machine Model (SK4A):-

- VB-0-A-27 V Belt 2 PCS.
- VB-0-A-43 V Belt 2 ~.

- YY441 H5-10N101	Solenoid	1	PC.
- YY321 F2-11311	Micro Switch	2	PCS.
- YY311 F2-28112	Limit switch 2C-022	1	PC.
- YY312 F2-29213	Limit switch	1	"
- YY313 F2-10101	" "	1	"
- YY379 55-MRR235	Reed Switch	1	"
- YY271 A4-PA05SLB	Time relay	1	"
- YY241 A4-40	Thermal relay	1	"
- YY241 A4-10	" "	1	"
- YY241 A4-20	" "	1	"

### Spare parts For High production Comber (CM10):-

- YY311 F2 - IVAP2-6	Limit Switch	1	PC.
- YY321 F2-11311	Micro Switch	3	PCS.
- CM942 F2-VV152 A	" "	3	"
- YY261 A4-113311B	Auxiliary relay	1	PC.
- YY261 F2-1612A9K	" "	1	"
- YY271 F2-1201M1B	Time relay	1	"
- YY321 F2-20111	Limit Switch	1	"
- CM40239	Bruck Complete	8	PCS.
- VB-D-A	V Belt	2	"
- VB-R.A	V Belt	2	"
- TB-11075	Timing belt	1	PC.
- YY241 A4-40	Thermal relay	1	"
- YY241 A4-20	" "	1	"

### Spare parts For Roving Frame (FL16):-

- FLK 1030 C-00	Presser	5	PCS.
- FLK 1110 H	Flyer Cap	10	"
- TB-900 H200 - BD	Timing belt	1	PC.

- TB-700 H200-RD	Timing belt	1	PC.
- TB-540 H150-BD	" "	1	PC.
- YY-251 A4-113311B	Auxiliary relay	1	PC.
- YY-251 A4-113621B	" "	1	"
- YY-251 A4-113221B	" "	1	"
- YY-271 F2-121051B	Time relay	1	"
- YY-271 F2-123051B	" "	1	"
- FLD-135 NR	Rubber Cat	50	PCS.
- FLD-140	Top Apron	50	"
- FLD-141	Bottom Apron	50	"
- Top Clearer cloth		3	"
- Bottom " "		3	"
- YY-240 A3	Thermal relay (OL1)	1	PC.
- YY-241 A4	" " (OL4)	1	"
- YY-241 A4	" " (OL2,3)	1	"

### Spare parts For Ring Spinning Frame (RY).

- VR-R-B54-MR	V Belt	2	PCS.
- RY-20382-13x60M	Spindle tape	1	set.
- RY-61720-A1621G01	Top apron band	20	PCS.
- RY-51820-A1502G01	Bottom Apron band	20	"
- YY-44LH5-30-N401	Solenoid	1	PC.
- YY-311 F2-28112,76-022	Limit Switch	1	"
- YY-240 A3-06000164	Thermal relay	1	"
- YY-241 A4-2029	" "	1	"
- YY-271 F2-121051B	Time relay	1	"
- YY-311 F2-1UAP2.6	Limit Switch	1	"

Spare Parts For Open End Spinning Frame (HS5-S.T).

- NB-57-3311900-NT	Flat belt for motor	1	PC.
- NB-L7-2511800-NT	" " " Combing roller	1	"
- NB-L7-2500830-NT	Combing roller drive belt	1	"
- NB-L1-5001910-NT	Flat belt	1	"
- NB-M1-12W1145-NT	" " "	1	"
- TS-530H150-NT	Timing belt	1	"
HS333-5311	Yarn pipe	3	PCS
HS2886-633	Pressing nozzle	3	"
HS3400-531	Feller hand Complete	3	"
Cleaning Brush		20	"
- Suction nozzle (HS3925-132).		2	"
BS956 A4-HH54P1B	Relay	1	PC.
YY240A4-TR50274	Over current relay	1	"
YY241A4-2044A	Thermal relay	1	"
YY241A4-2029A	" " "	1	"
BS999E2-LY4242	Relay	1	"

Spare parts For Ring Twisting Frame (RYG).

- RY401J3-LB7386	Lifting belt for Lappet angle	1	PC.
- RY401J3-LBT224A	" " " " " "	1	PC.
- VB-Y-857-MB	V Belt	1	"
- RY20382-KX50mt	Spindle tape	50	PCS.
- YY331A4-11632PRR	push bottom switch	1	PC.
- YY240A3-05000164	Thermal relay	1	"
- YY261A4-11331LR	Auxiliary relay	1	"
Solenoid (YY441HS-30N401)		1	"
- YY311E2-28112	Limit switch (ZC-022)	1	"
- YY311E2-1U.A2-6	limit switch	1	"
- YY212A3-NF50750	Circuit breaker	1	"

## Required accessories For Spinning line

### 1- High Speed Simplex fly frame Model FL16, Toyoda :-

Gears :-

T.D.C	32, 28, 26
P.C	31, 28, 22, 16
R.C	62, 48, 43, 40, 36

### 2- Ring Spinning Model RY, Toyoda :-

Gears :-

G	44, 48, 47
DC	36, 32
H	32
D	35, 75, 65
L	50, 45, 40
M	40, 35, 30

### 3- Ring Twisting Frame, Model RY6, Toyoda :-

Gears :-

D	85, 75, 65
T.C	66, 60, 54, 32

### 4- For Carding (CMK-3) :-

Complete grinding system.

### 5- General :-

- Gauges for different settings for all spinning line machines.
- Greasing guns of different types ~ ~ ~ ~ ~
- Revolving cleaners for waste (short and long).

B - List of spare parts For BABA Sectional Warp  
Sizing Machine Model CD-2

Spare parts list

1	Porcelain compensator	10 pcs.
2	Lamp for stop motion (8V)	10 pcs.
3	Electric stop motion (L.R)	each 2 set
4	Yarn guide	10 pcs.
5	Squeezing roller	2 pce
6	Packing for bellfram roller	4 pcs.
7	Oil seal for bottom roller	8 pcs.
8	Metal for immersion roller	2 pcs.
9	Packing for size pump	4 pcs.
10	Size pump	1 set
11	Electric magnetic valve TEN20	2 pce
12	Electric magnetic valve TEN 25	2 pce
13	Magnetic valve VT-301	2 pcs.
14	Rotary joint (L.R.)	each 2 pce.
15	Carbon metal for rotary joint	2 sets
16	Flexible tube 3/4" B, 300 L	2 pce
17	Flexible tube 1/2" B, 300 L	2 pce.
18	Bearing UC-205	2 pce.
19	Bearing UC-207	2 pce.
20	Bearing UC-208	2 pce
21	Bearing UC-213 HT	2 pcs.
22	Bearing No. 6000Z	2 pcs.
23	Bearing No. 6001ZZ	2 pce.
24	Bearing NO. 6003ZZ	2 pce.
25	Bearing NO. 6004ZZ	2 pcs.
26	Bearing NO. 6202ZZ	2 pce.
27	Bearing No. 6204ZZ	2 pcs.
28	Bearing No.6205	2 pcs.
29	Bearing NO.6206ZZ	2 pce
30	Bearing NO.6207ZZ	2 pcs
31	Front comb	4 pcs
32	V-belt A-31"	2 pcs.
33	V-belt A-41"	2 pcs.
34	V-Belt A-43"	2 pcs.
35	V-belt A-90"	2 pcs.
36	Auto counter	2 pce
37	Powder for powder coupling	5 kgs



## C- Spare parts For Looms:-

### TSUDAKOMA "LKS" TYPE Shuttle Change Automatic Loom

1	Stick cap spring	104333	2	pce.
2	Cam nose C	105176C	1	pce.
3	Cam nose D	105177C	1	pcs.
4	Side shaft set	105183-02	1	set
5	Stick bumper	105428B	1	pce.
6	Stick receiver	105475-01	1	set
7	Stick bumper	105478	1	pce.
8	Picking ball	105495B	2	pce.
9	Stick band	105806	2	pce.
10	Stick band	105708	2	pce.
11	Stick receiver	105729-02	1	set
12	Buffer stopper	1203808Z	1	pcs.
13	Buffer stick	120413-01	1	set
14	Bush rubber	120419	1	pce.
15	Picker	128495B	3	pcs.
16	Picker	128919	3	pcs.
17	Spindle buffer	129512	1	pce.
18	Swell set	129546-05	1	set
19	Feeler head	142146	1	pce.
20	MF-700A Printed board	148324	1	pce.
21	Auxiliary printed board	148365AA	1	pce.
22	Rubber strip (100M)	162088	1	pce.
23	Slay mocket (25 M)	166143	1	pce.
24	Swell leather	BR837260	1	pce.
25	Puch button switch	EA01006	1	pce.
26	Z-15G M22-B Switch	EB01007	1	pce.
27	Contact point	EB14001	1	pce.
28	Contact point	EB14002A	1	pce.
29	Switch	EB19001-01	1	set
30	Magnet switch	EF01081	1	pce.
31	Thermal relay	EF13175	2	pce.
32	Magnet contactor	EF15040	1	pce.
33	Magnet contactor	EF15049	1	pce.
34	Auxiliary relay	EF28022	1	pce.
35	Auxiliary relay	EF28038	2	pce.
36	6V, 25W Lamp	EL06004	2	pcs.
37	28V, 25W Lamp	EL28003	2	pcs.
38	VBelt	L007763	2	pce.
39	3A Cartridge fuse	Q646030	2	pcs.
40	PE Wire	Q993315-15	1	set

ESUDAKOMA "TAV-H" TYPE Rapier Loom

1	Leaf Tensor plate	915125	1	pce.
2	Cable pin	BA205011	1	pce
3.	Rod end joint	BL902006	1	pce.
4	Needle joint	BL9020088	1	pce.
5.	Copper pipe	BM604200	1	pce
6	Bearings (for Torsion metal)	BN306046	1	pce.
7	Open roller	BT508010A	1	pcs.
8	Rotary spring	BU404042C	1	pce.
9	Ratchet pawl spring	BU406082	1	pce
10	Finger spring	BU408074	1	pce
11	Return spring	BU410092	1	pce.
.	Flow unit HSA-03	BZ946000	1	pce
13	Flow unit HSA-02	BZ946001	1	pce.
14	Flow unit HSA-1	BZ946003	1	pce.
15	Flow unit HJB-0	BZ946009	1	pce.
16	Flow unit HJB-1	BZ946010	1	pce.
17	Flow unit HTU-1	BZ946074	1	pce.
18	Compression nut	BZ946251	1	pcs.
19	Compression bushing	BZ946252	1	pcs.
20	Compression sleeve	BZ946254	1	pcs.
21	Clouser plug	BZ946255	1	pce.
22	Pipe insert	BZ946271	1	pcs.
23	10 Inch hose	BZ946771	1	pce.
24	Nylon Pipe	BZ946840	1	pce.
25	Button switch	EA01087	2	pce.
26	Button switch	EA01090	2	pce.
27	Button switch	EA01091	2	pce.
28	Contact point	EB14002A	1	pce.
29	Magnet switch	EF01075	2	pce.
30	Magnet Contactor	EF15040	1	pce.
31	CR relay	EF26006	2	pce.
32	CR relay	EF26007	2	pce.
33	Lamp	EL28003	2	pcs.
34	Grease nipple	M302010	1	pcs.
35	Ratchet pawl spring	MT00399-70	1	set
36	Oiling band	MT027588	1	pcs.
37	Printed board	MT039098	1	pce.

38	Catch	MT04941	1	pce.
39	Catch	MT04941AA	1	pce.
40	Catch	MT04941AB	1	pce.
41	Catch	MT04941AC	1	pce.
42	Catch	MT04941AD	1	pce.
43	L needle connector	MT05807C	1	pce.
44	R needle connector	MT05808C	1	pce.
45	Cam ball set	MT05875-90	1	set
46	Stick slide set	MT09019-02	1	set
47	Whipping stick	MT09320D	1	pce.
48	Slide piece set	MT09520-03	1	set
49	Slide piece set	MT09521-01	1	"
50	Leno guide holder	MT11777-90	1	set
51	Leno guide holder	MT11778-90	1	set
52	Control cable	MT11937	1	pce.
53	Yarn catch plate	MT13510-70	1	set
54	Insert rapier	MT60214-70	1	set
55	Carrier rapier	MT65114-70	1	set
56	Feeler spring	MT91037	2	pce.
57	Connecting rod pin	MV00788	1	pce.
58	Cutter holder plate	MV00928-70	1	set
59	Rapier set spring	MV01879-70	2	sets
60	Cushion	MVD2402-70	1	sets
61	Oiling band	MV02405	1	pcs.
62	Cutter opening	MV02509-01	1	set
63	L temple bracket	MV02606JA	2	pce.
64	R temple bracket	MV02607GJ	2	pce.
65	Guide roller set	MV02923-07	1	sets
66	Torsion shaft metal	MV03323DA	1	pce.
67	L Whipping guide	MV04411E	1	pce.
68	R Whipping guide	MV04412E	1	pce.
69	Connecting rod bush	MV04667	1	pce.
70	L Crank metal	MV04732BC	1	pce.
71	R Crank metal	MV04732BD	1	pce.
72	Leno spring	MV05164	1	pce.
73	Needle guide	MV05575C	1	pce.
74	5A Fuse element	Q646050	2	pce.
75	1A Fuse element	Q672010	2	pce.
76	3A Fuse element	Q672930	2	pce.

TSUDAKOMA ZA202 -C10-150 Air Jet Loom

1	Encoder Gear B	602606	/	pcs.
2	Cap	604417	/	pcs.
3	3/16 nut three	604569	/	pcs.
4	Mechanical valve	604695-17	/	sets
5	Mechanical valve	604697-06	/	set
6	Clutch	612151-01	/	set
7	Clutch	612153-01	/	set
8	Cloth roll gear	612214B	/	pcs.
9	Gear protector	612215B	/	pcs.
10	Outpin	616556C	/	pcs.
	Arm	616899-01	1	sets
12	Bobbin holder	620160-01B	2	sets
13	Bobbin shaft	620169B	2	pcs.
14	Planetary pin B	620249-01	1	sets
15	Cutter edge	624154-70	1	set
16	Cutter edge	624247-71	/	set
17	Selvage cutter	624311-71	1	set
18	SU-300 Printed board	626321AB	1	pcs.
19	Feeler head H1	626372	1	pcs.
20	H1 feeler cable	626374AD	1	pcs.
21	H2 feeler cable	626375AD	1	pcs.
22	FU-203 Printed board E	626507AB	1	pcs.
23	Bush	630429	1	pcs.
24	Upper hook set	630450-70	1	sets
25	Lower hook set	630451-70	1	sets
26	Wire connector assy	630453-01	1	sets
27	Rod end	BL9020068	1	pcs.
28	Rod end	BL902006C	1	pcs.
29	Timing belt	BL903057C	2	pcs.
30	Timing belt	BL903068D	2	pcs.
31	Timing belt	BL903069	2	pcs.

32	Timing belt	BL903076C	1	pcs.
33	Timing belt	BL903127	1	pce.
34	Timing belt	BL903137	1	pce.
35	V Belt	BL904101	1	pce.
36	V Belt	BL904134A	1	pce.
37	Multi wedge bell	BL904170C	1	pcs.
38	3/16 Stop valve	BP403105	1	pcs.
39	One touch fit in	BP406506	1	pcs
40	Tension spring	BV403041B	1	pcs.
41	Synflex tube	BZ820500	1	pce.
42	Synflex tube	BZ830500	1	pcs.
43	Synflex tube	BZ881000	1	pcs.
44	Proximity switch	EB16003A	2	pce.
45	Proximity switch	EB16003B	2	pcs.
46	28V 2.5W Lamp	EL28003	5	pcs.

Accessories For TSUDAKOMA "LKS" Type  
Shuttle Change automatic Loom.

<u>Part</u>	<u>Number</u>
1- Let-off weight -----	1
2- Flexible oil tube -----	2
3- Temple -----	6
4- Shuttle -----	12
5- Wire for heald shaft lever -----	2 sets
6- Different change gears	
50, 65, 75, 85, 95, 105, 110, 115 T -----	1 each.
7- Different pulleys to change r.p.m in the range (from 88 to 172 r.p.m). -----	5
8- Heald shaft winds -----	10,000

Accessories For "TAV-H" Type Rapier Loom

Part	Number
1- Cards for dobby device	5 Sets
2- Pick finding mechanism	3 pcs
3- held shaft wire	10,000 "
4- Motor pulleys to change speed from 135-280	5 "
5- Spare parts for dobby device	2 Sets

Accessories For TSUBAKOMA Z/A 202-C10-150

Air Jet Loom.

<u>Part</u>	<u>Number</u>
1- heald shaft wire -----	10,000
2- Main nozzle -----	10
3- Auxiliary nozzle -----	50
4- Nozzle clamp - -----	50
5 Measuring drum -----	1
6- Spring for warp tension - - - - -	2
7- Cams & gears for twill fabric	1 Set
8- Cams & gears for Satin fabric	2 Sets.
9- Motor pulleys change r.p.m.	5
10- Complete set of gears.	1 Set.



D - Knitting Machines Spare parts  
and Requirements

A - Single Jersey Knitting Machine Spare parts :- Model (NSD-3).

Name	Number	
1- Needle	10,000	PCS
2- Sinkers	3,000	PCS
3- Feeding pulley	2	PCS
4- Cam for sinker	3	PCS
5- Cam for cylinder	4	PCS
* Operating manual & Parts Catalogues (English)	3	Copies.

B - Interlock Knitting Machine Spare parts :- Model NHI-D  
M/N O H 70602

Name	Number	
1- Needle for dial	10,000	PCS
2- Needle for cylinder	3,000	"
3- Stop motion, top	2	"
4- Stop motion, middle	2	"
5- Needle protector	6	"
6- IRO tape	2	"
7- Feeding pulley	2	"
8- Timing belt for IRO tape	2	"
9- Cam for dial	2	"
10- Cam for cylinder	2	"
* Operating manual & parts Catalogues (English)	3	Copies.

C - Spare parts for MATSUYA full automatic Knitting Machine, Model MSF-100 :-

Name	Number	
1- 301 A stitch density scale	1	PCS
2- 301 B " " "	1	"
3- 444 Brush	4	PCS
4- S 5045 Screw	10	PCS
5- S 1714 Spring	4	PCS

## D. Requirements :-

### For Flat knitting machine :-

- \* - Supplying the parts required to enable production of a complete garment with different designs.
- \* - Catalogue for different designs.

### For Single jersey Knitting machine :-

- \* - Replacing the "IRO" tape with positive feed device provided with a tension regulator "CONI" or Memminger (MPF 20-61).
- \* - Replacing expansion device (stretcher) by Cadratex.
- Mounting movable feeder instead of stationary one.

### For Interlock knitting machine :-

- Replacing "IRO" tape by "CONI" device. (Complete set), or Memminger, etc (MPF 20-61).
- Replacing expansion device (stretcher) by Cadratex.

Papers Sheets or Rolls Required For The Equipments

Equipments	Number.
	Colour ribbon Cassettes      80 ribbon
1- Uster Evenness } printer Wenger III. . . . .	50 package
2- Tensorapid      "      "      III. . . . .	50      "
3- F. Index tester, printer SEIKOSHA Sp-800F . . . . .	50      "
4- Electronic Tensiometer, printer oscillograph, Type 8K } NEC San-Ei Instruments, LTD, chart N20511-1226 }	200      "
5- For Hygrometers . . . . .	package ribbon
6- For printer of NEC Computer [PC-8023 B-C] . . . . .	30 & 20
"      "      " NEC      " [PC-PR201 F2] . . . . .	30 & 20
7- OHARA Openingline, lap scale chart No 32148 . . . . .	100 roll
8- Sensitive paper for Drape tester SEISAKU, SHU } LTD, Type A 221401101 }	50 package
9- Friction papers, different density for fabric abrasion } resistance TOYOSEIKI A 121605102 }	1000 Sheets from each sensit.
11- Uster classimat II on winding machine } CH-8610 . . . . . }	5 boxes 50 ribbon

## Request For providing Machinery

- 1- Rowing frame for super fine rowing (8<sup>s</sup>).
- 2- Spinning frame for super fine yarns (up to 200<sup>s</sup>).
- 3- Sulzer weaving loom.
- 4- 6 Knitting machines (circular) small sizes for underwear and Lingerie for men, women and children.

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\* May be found in the local market.

## Request For Providing Equipment

- 1- Air conditioning unit suitable for opening and cleaning  
line (about 600 mt<sup>3</sup> <sup>space</sup>).
- 2- Electronic lap uniformity tester.
- \* 3- Plat-form scale balance (Capacity 300 Kg).
- 4- Fibre blender, Spincab (Model 338).
- 5- Warp tension meter (Type KXb).
- 6- Crimp rigidity tester.
- 7- Tube tester pp apparatus for textured yarns.
- 8- Magnetic steno - Type YM3 (for luminant use and  
- Landing of different measuring tools (15 units needed).
- 9- Spindle cleaning and lubricating machine.
- 10- Vacuum cleaner for fibre industry.
- \* 11- Stitch length meter (Yarn meter Decotex).
- 12- Instrument for measuring weft speed on the loom.
- 13- Take down tension measuring device for circular  
knitted fabric (Esotex 2).
- 14- Measuring device for knitted fabric weight per unit  
area, (Sample cutter and precision balance).
- 15- Device for finishing relaxation of knitted fabric.
- 16- Knitability tester (Model TN-21-25 or TN-0F).
- 17- Shop measuring microscope.
- 18- Dust meter.

- \* 19. High speed sewing machine.
- \* 20. Passap Knitting machine.
- \* 21. Singer serger machine.
- \* 22. Overlock machine (3 threads).
- \* 23. Onfoot serger machine.
- \* 24. m/c for sewing rubber.
- 25. m/c for formatosa stitch.
- \* 26. Brother m/c (Tajima).
- \* 27. Mechanical force gauge tester. (10, 200 & 100 N).
- \* 28. Starfish "Quality Control Kit" for knitting.
- 29. Dust, oil, gasoline Filters Performance Test Equipment  
(Source: Texib 14 S.A. Box 142 6830 Chiasso 1 Switzerland)
- 30. Kawabata Comfortability System (Japan).
- 31. Thermal Conductivity tester for textiles.
- 32. Electric Conductivity tester " " "
- \* 33. Automatic Washing machine (for shrinkage test).
- \* 34. Tumble Dryer (for shrinkage test).
- 35. Digital fabric thickness.
- 36. Single fibre strength tester.

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\* May be found in the local market.

## Request For Technical Cooperation

### I- Dispatch of The Japanese Experts:-

Periodically for short periods for training and technology transfer.

#### a) Training:-

- Spinning of fine counts.
- Weaving preparation and weaving of different designs.
- Knitting and ready made garments.

#### b) Technology Transfer:-

- Production and inspection of hollow fibres.
- Technology of microfibres and very fine yarns.
- Spinning of very fine cotton yarns.
- Computer programming in textile applications.
- Industrial fabrics.
- Filter fabrics.

## II - Dispatch of Egyptian Counterpart :-

### a) Observation Tour and Training :-

- Electronic Jacquard Looms.
- Production and inspection of hollow fibres.
- Production and inspection of different fillet fabrics.
- Production and inspection of different industrial fabrics.
- Production and inspection of three dimensional fabrics.
- Production and end uses of Carbon fibres and Composites.

### b) Training :-

- Spinning.
- Weaving.
- Knitting.

### Request for upgrading the Library :-

The research team suffer from lack of reference books and scientific journals. The library need a push to upgrade it to the suitable standard.



Request of Repairing machines and Equipment

1. Central Conditioning Unit

2. Boiler,

3. Draw frame.

Missing (Unreceived) Manuals For Testing  
Equipments And Machines.

<u>a) Testing Equipments</u>		<u>Needed Copies</u>		
1- Electronic Tension Meter.		3	English	Copies
2- Hygrometers.		"	"	"
3- Viscometer.		"	"	"
4- Kringl Factor Meter.		"	"	"
5- Drap Tester.		"	"	"
6- Fabric Shrinkage Tester.		"	"	"
7- Double Sorter (Fibre).		"	"	"
8- Control Unit (Nikon LFX-II).		"	"	"
 <u>b- Machines :-</u>				
1- <u>Single Jersey Knitting m/c Model (NSD-3)</u>		3	English	Copies.
Operating Manual.		"	"	"
Spare parts Manual		"	"	"
2- <u>Interlocks Knitting m/c (Model NHE-D. M/No</u>		3	English	Copies
Operating Manual <u>H 70502)</u>		"	"	"
Spare parts Manual		"	"	"
3- <u>MATSUDA Knitting M/c Model MSF-100</u>		3	English	Copies
Operating Manual		"	"	"
Parts Cataloge.		"	"	"
Pattern Chain design.		"	"	"
4- <u>Manuals for Knitting m/c Compressors.</u>		3	English	Copies
a) Kuroda rotary (KR55) Serial No 12471		"	"	"
b) ZO 8517-3 Mitsui, Seiki, Model 2-0851086		"	"	"
5- <u>TSUDAKOMA "LKS" Shuttle Loom:-</u>		3	English	Copies
Operating Manual		"	"	"
Spare part Manual		"	"	"

<u>Machine</u>	<u>Needed Copies</u>
6- <u>TSUDAKOMA "TAV-H" Rapier loom</u>	
Operating Manual	3 English Copies
Spare part Manual	" " "
7- <u>TSUDAKOMA ZA 202-C10-150</u>	
<u>Air Jet loom.</u>	
Operating Manual	3 English Copies
Spare part Manual	" " "



REPORT  
on the activities and operation  
of the Textile Pilot plant  
of N . R . C .

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NATIONAL RESEARCH CENTRE  
TAHRIR ST. DOKKI, CAIRO, EGYPT

المركز القومي للبحوث  
القاهرة جمهورية مصر العربية



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First Activities & Accomplishments :

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of  
During the past two years , the staff/spinning and weaving Dept. of NRC has been exerting efforts to establish themselves and build reliable relationship with industry in Egypt. Through exchange of thoughts it was possible to manifest the needs of various engineering industries from textile manufactures in order to minimize importation and save foreign currency through affording a satisfactory local materials . This effort has come out with a number of industrial project, these are as follows :

A ) Projects already started :

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- 1 - Development of Jacquard looms with a device to translate designs stored on magnetic discs to mechanical actions that control looms movements ( started 1990 - end 1992 )  
- End User = Oriental weavers Company and other weaving mills  
Grant number T - Comp - 001 - 008 of the STC project secretariat of the Academy of scientific Research and Technology .
- 2 - Development of sizing materials - STC .
- 3 - Development of sewing threads Academy of Scientific Research and Technology .

B ) Projects due to commence in 1992

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- 1 - Development and production of hollow fibres for hemodialysis - STC - USA fund .



NATIONAL RESEARCH CENTRE  
TAHRIR ST. DOKKI, CAIRO, EGYPT  
00000000000000000000000000000000

المركز القومي للبحوث  
الدقي القاهرة جمهورية مصر العربية



- 2 - Development and production of filter fabrics  
for different engineering sites such as ceramics,  
cement works , alluminium , etc ...)
- 3 - Development and production of fabrics for special  
end - use such as ; car interiors - coated fabrics  
for agricultrual sector and military use
- 4 - Development and applications of polypropelene  
fibres .

gk Second ; - Operation of the Textile pilot unit

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Difficulties of running some machines have been  
experienced such as ;

- 1 - Air conditioning machines ; only cool conditioning  
is obtainable and no technician was trained for  
maintinance or operation .
- 2 - Steam boiler ; The softening unit was not connected  
when the boiler was primarily installed which caused  
operating problems at present . Also , no technician  
was trained for this job .
- 3 - Drawing frames ; Problem with the electricity circuit  
of the two machines is frequently happening even during  
the stay of Japense experts .
- 4 - Oil come out of the air compressor of air - jet loom  
after changing or feeding another quantity of oil .
- 5 - Some manual catalouges were not recieved suchas ;  
- fabric shrinkage tester .



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- photography unit of polarized microscope .
- Standard photographs of fabric pilling tester .
- 6 - Spare parts for the testing equipments . Also more chart papers are required for some of them .

Third ; Training scheme ;-

Different training programmes for industrial engineers and engineering staff of the textile pilot unit are conducted periodically.

Also , technical and accademic courses are given to high institute students .

Forth ; Technical Services ;-

Scientific consultations as wellas technical and laboratorial services are offered to pullic and private sector companeis upon request .

Head of Textile Dept .

*Sami Mansour*

Prof . Dr. Sami Mansour .





JICA