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Pakistan. Technical Assistance  
in the Plastics Technology Centre,  
Karachi. Final report.

**FINAL REPORT**

**FOR**

**UNIDO CONTRACT**

**NO 90/034/MK**

**JULY 1991**

## **ABSTRACT**

This report covers the period May 1990 to July 1991 for a UNIDO contract requiring the London School of Polymer Technology London, U.K., to give technical support and advice to the Plastics Technology Centre, Karachi, Pakistan. It covers the preparation of a Work Plan comprising visits, testing and evaluation, and how this work was carried out. Problems that were encountered are also discussed.

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## **INTRODUCTION**

This project was originated by UNIDO in order to provide the Plastics Technology Centre (PTC), Karachi, Pakistan with a sister institution in a developed Western country who could provide technical backup and assistance when required. The London School of Polymer Technology (LSPT), at Polytechnic of North London accepted the role of sister institution and signed a one plus year contract and during this period have provided all the services requested by the PTC Karachi.

## **BACKGROUND INFORMATION**

This project is part of Phase II of a multiphase UNIDO plan to assist the development of the Pakistan plastics industry. In Phase I the PTC was built and equipped with some minimal items of testing and processing equipment. Phase II was started in July 1989 with the objective of completing the institutional building process, installing additional testing and pilot plant processing equipment to enable the centre to meet its objectives. As part of this phase, the PTC has the support of LSPT in three main areas of its work.

1. Up grading the scope and substantive quality of its services to industry, and specifically when it gives assistance in investigational work arising from industrial problems which are beyond the range of PTC resources.
2. Improving research and development on the chemical and physical properties of plastics materials.
3. Testing of plastics materials/products for ageing/weathering properties and establishing appropriate performance standards.

As a first step to setting up a working project the Head of LSPT, Mr. T.T. Healy visited the PTC with the specific aim of preparing and agreeing a work plan for the project. That work plan specified the following objectives for the contract.

## CONTRACT OBJECTIVES

1. To provide PTC, Karachi with an access to the leading edge of Plastics Technology.
2. To provide P.T.C., Karachi with up to date information and technical support in polymer processing technology.
3. To provide PTC, Karachi with advice and information on polymer product applications and the technology associated with those applications.
4. To provide PTC, Karachi with first class technical advice and technical service.

and the following work plan stages

## WORK PLAN

The plan will have the following stages.

1. June 1990, Head of LSPT to visit PTC Karachi to discuss and agree with General Manager how the contract will operate and details of how efficient liaison will work.
2. November 1990, visit by two members of PTC staff for a period of 2 weeks for purpose of acquiring information, training and discussions about equipment, training courses and visits to institutions and the International Plastics Exhibition, Birmingham, UK.
3. Throughout the 12 month period of this contract, LSPT will provide facilities for testing, analysis and advice on request from PTC, Karachi, such requests will normally be made by fax with the contact persons being the GM of the Plastics Technology Centre and Head of LSPT. Deputies will be nominated during periods of absence by either of the above persons.

4. When appropriate conferences are being held, an LSPT member of staff will join a PTC staff member to attend. This will ensure maximum benefit from technical discussions.
5. LSPT staff to visit PTC, Karachi to advise and assist with training courses and advice/guidance for industrial plastics users.

This particular stage of the contract will be left to the discretion of Head of LSPT and General Manager of the PTC, Karachi, since funds may be better used for items 2-4 above.

## WORK CARRIED OUT

### VISITS OF LSPT STAFF TO PTC, KARACHI, PAKISTAN AND PTC STAFF TO LSPT

This work carried out during the period of the project closely follows the agreed work plan. In June 1990, the Head of LSPT Mr. T.T. Healy did visit PTC, Karachi and did agree the work plan indicating above. This was an important step since it resulted in a friendly working business relationship being set up between the managers of the respective institutions. Relations between the parties and the UNIDO Chief Technical Advisor have been excellent throughout all of the work operations.

In addition to agreeing the work plan Mr. Healy gave a one day seminar to appropriately 50 industrialists and made visits to six plastics processors and one rubber processor.

In November, Mr. Ahsan Siddiqi and the newly appointed manager of PTC, Karachi, Mr. Zaidi, visited London and Birmingham U.K. in a programme which covered visits to

London School of Polymer Technology London

Interplas 90, Birmingham

The Plastics Processing Industry Training Board, Telford, Nr Birmingham

Yarsley Testing Facility, Redhill, Surrey and

Demag Hamilton, Aylesbury.

This programme involved several days discussions at most venues and was carried out over a period of 15 days. Its purpose was to allow our guests from Pakistan see and discuss at first hand the latest developments in processing, process equipment, testing and test equipment, to look at training facilities in the U.K. and to discuss the best ways of operating training courses and training facilities in Pakistan.

The final visit under the current contract is currently being arranged for a member of LSPT staff to visit the PTC. This visit is to give technical advice and guidance on material formulation and compounding of plastic film and in particular for film intended for use in agricultural applications. The visit is planned to take place end July - early August 1991.

### TESTING UNDERTAKEN BY LSPT

To date two series of tests have been completed and a third test is under way. The main problem concerning the tests has been the transmission of samples from Pakistan to London. However, it is now hoped that as conditions improve this will be a matter of history.

The tests carried out are reported on separately in test reports PAK/001/002 and/003. These reports have been forwarded to UNIDO, Vienna, with copies to PTC, Karachi and Mr. D. Clarke as they become available. However, in the interest of efficiency the results of tests are sent by fax to Pakistan, as soon as they are known and confirmed.

The three series of tests have been as follows:

Report	PAK/001 -	Investigation and analysis of plastic moulding to ascertain how the product could be duplicated and produced by industry.
	PAK/002 -	Investigation and analysis of two samples of thermoplastic dry blend powder to ascertain potential uses.



PAK/003 - Investigation and analysis of plastic extrusion for specified metals and non metals.

## **WORK PENDING**

In collaboration with Mr. D. Clarke an outline plan has been prepared for a detailed study of the weathering of plastic film in Pakistan. This study will clearly be undertaken in the period following on from the existing contract. The project plans to look at details of polymer type and composition and how the weathering properties of films are affected and can be generally predicted by compound changes.

## **PERSONNEL INVOLVED IN THE PROJECT**

The principal personnel involved in this project were:

Mr. D. Clarke UNIDO, Vienna  
Mr. A. Siddiqi FCCCL, Karachi  
Mr. Zaidi PTC, Karachi  
Mr. T. Healy LSPT, London

Mr. Zaidi was appointed manager of PTC part way through the period of the project, so before that time, Mr. Siddiqi played a greater role in the management of PTC

Throughout the project relations between the parties has been excellent with considerable goodwill being exercised particularly on international visits.

## **OPERATING PROBLEMS**

Problems have arisen however, the most significant being the Gulf War, the Pakistan general election and their effects on the working of FCCCL, PTC and its principal officers.

Due to hold ups in communication and transmission of work during this period a request was made to extend the completion of current project from May 1991 to end July 1991. This was duly agreed by UNIDO.

Communications have been a problem until very recently. The PTC have a telephone only, FCCCL have a telex and fax, but the fax can only receive and the post to and from Pakistan has been very erratic until very recently. However, we now find that samples sent by post are being received in London 10 days after leaving Pakistan. Letter post is now even faster than this.

During the project, the hoped for flexibility concerning PTC staff making international visits did not materialise. It is important that the PTC staff can react quickly to international invitations and this did not prove possible during the past year. Clearly, this is a matter which the PTC will have to resolve as soon as possible.

## CONCLUSIONS

The work required to meet contract objectives was defined by an agreed work plan which has been fully detailed. All the described work, carried out in accordance with the plan, has been successfully completed and generally followed the detail of that plan with only minor diversions. Some on going work on the weathering of plastic film is to proceed and overlap into an extension or new project.

Only minor problems have been encountered and these have been dealt with, with the exception of the ability of PTC staff to leave the country at relatively short notice.

In view of the fact that PTC consider that this first year of the sub-contract has worked well, consideration should soon start for terms of reference of a future contract.

T.T. HEALY  
July 1991.