

EDITORIAL

First thing first. We wish our readers and their families a very happy Eid Mubarak. The first issue of Vignette was out before we realised that a few bugs had succeeded in finding their way in the text. So we are at it once again, with a "No More Bugs" resolution. It is a matter of satisfaction that despite the shortcomings, the premiere issue was a success.... much more than we had anticipated. We are thankful to our readers, to have acknowledged our efforts. This has given us a lot of confidence and reassurance and hope. We needed all these elements.

We had pleaded to our colleagues, co-workers and readers beyond EC circle, to come forward and give us a hand to help improve not only the quality but also the quantum of material for publication. There has been a fair response and we have received a few articles. Some of these will have to await their turn and appear in the next issue.

Generally speaking, we all have a peculiar tendency to feel shy or think that somehow it requires a special acumen to write, irrespective of what the subject may be. And then, if at last we do gather courage and develop an intention to write, we are beaten at it by what is known as procrastination. The entire space of one page is therefore being reserved for readers contributions. Rest assured that your name will appear in the print prominently. It will gladden your heart and you will want to write more.

So, beware of the negative tendencies which inhibit our productive but possibly latent capabilities. The trick is to pick up a pen and let your imagination run riot. You will soon discover that you can write, maybe not as well as you might wish. But remember *practice makes a man perfect*. EC is one of the largest consultancy firms in private sector. What better opportunity can you have to project your views on technical matters than through EC's newsletter!

NOTES FROM THE MP: NEW HORIZONS

Engineering Consultants' phenomenal growth has always conformed to the good old maxim which says "Nothing succeeds like success". Notwithstanding this, the fact remains that there is always room for improvement, and there is really no end to this process in human endeavors. So EC's Directors, engineers, technicians and all the support staff are constantly on the look out for new opportunities to improve their performance, through state of the art technology. A team of EC engineers has now specially been assigned the task of performance improvement for rendering better service to their valued clients. One of the main objectives, set for itself by EC, is to develop, propagate and inculcate among EC's work force and beyond, the ideal of achieving self reliance in the field of engineering. For this, it would be necessary to evolve and promote appropriate technology and imbue in them, the quest for new practical ideas and approaches for solving problems of technical character, on national level. This is a must for our young generation, to ensure a bright future for themselves and for the generations to come. In this connection EC plans to address itself for taking the following actions:-

- Transfer more and more workload to a sister company, Engineering Consultants International (Pvt) Ltd, during a few years time. This would promote and institutionalize EC.
- EC is establishing a "Resource Development Foundation" to undertake research in developing manpower and material resources in Pakistan and to identify how to exploit these to the optimum advantage of national progress and prosperity.
- Training of engineers is already underway and its scope shall continue to expand.
- A special High-Tech Division will soon be established to help develop appropriate technology in various fields; not only engineering, but other related fields as well.
- More and more work shall be shared with specialist consultants holding the membership of ACEP, and attracting Pakistani Experts currently working in Developed Countries with a view to plugging and reversing the "Brain Drain".
- Initiate actions to help ACEP and PEC to implement the regulations for consulting engineers. EC's dedicated team has a commitment to develop Pakistan through Engineering Knowledge. What we need is the blessing of Almighty Allah and the cooperation of our clients and the Government, to succeed in our efforts to contribute towards National Self Reliance to the best of our ability and to set the tradition of the late John F Kennedy's famous saying "Ask Not What Your Country Can Give You. Ask Yourself What You Can Give To Your Country". Our country naturally being Pakistan.

SHEIKH ZAID AIRPORT AT RAHIM YAR KHAN

Civil aviation in Pakistan has developed at a fast pace over the last ten years. All the major airports have been expanded and a number of Feeder Service Airports (10 were managed by EC) have been added to promote air travel in remote areas of Pakistan. The new airport at Rahim Yar Khan has a special significance as it is not only the newest but the best among the new. The project was initiated on the direction of His Highness Sheikh Zayed Bin Sultan Al Nahyan, President of UAE and the ruler of Abu Dhabi.

It goes to the credit of Engineering Consultants that they were selected by the Department of Private Affairs (DPA) of His Highness to plan, design and get the airport constructed. The designs of Runway, Taxiway and Apron were made in close liaison with the Civil Aviation Authority (CAA). The contract for constructing the airport was awarded to M/s Technical Associates of Pakistan (Pvt.) Limited. The contractor gave a commendable performance by completing the project not only on time but by producing high quality work.

The Airport has been in operation for the last one year, used by PIA for their regular commercial flights. Aircraft from UAE have also been making frequent landings on the airfield. The construction of the Airport has been a great service to the people of Pakistan in general and to



the region of Rahim Yar Khan in particular. The project will always be remembered as a token of friendship and cooperation between Pakistan and the UAE. The salient features of the airport complex are as follow:-

DESIGN OF BELA-AWARAN-TURBAT ROAD

Written By

Engr Fazal K. Malik, Engr Mansoor Rao & Engr Khalid Mirza

Balochistan, undoubtedly a province with untapped resources, is apparently the least developed province of Pakistan. However, both the federal as well as the provincial governments are very keen to develop this part of Pakistan, utilizing all possible resources. In our last issue you were given some information about our Project on Pasni Fisheries Harbour on the Makran Coast which was one of the numerous projects initiated by the government in association with international financing agencies in Balochistan. In this issue we highlight yet another such project; Design of Bela-Awaran-Turbat Road.

This Project was sponsored by the United States Agency for International Development (USAID). The total length of the project road is 275 km which was divided in two sections, i.e., First 35 km from Bela to Awaran and 240 Km from Awaran to Turbat. The design contract was awarded to the Joint Venture (JV) comprising of STV/Lyon Associates Inc. (STV) of USA and Engineering Consultants (EC) of Pakistan.

From the very beginning, the project posed a challenge to the Engineers and Surveyors of the JV. The proposed road, located in a remote area of Balochistan, passing through difficult terrain, had to be completed in a very short period of time. The design had to be developed bearing in mind the need for maximum safety and efficiency at minimum cost.

A carefully selected team of engineers and surveyors was mobilized, spearheaded by STV/Lyon Project Manager, Mr. Joe O Smith. Most of the team members were EC Personnel who had proven their worth time and again on various challenging jobs in the past decade. From EC, Engr F K Malik, Engr M H Rao, Engr B A Abro, Engr K Mirza, Engr Yusuf Ahmed, and Engr S R Haidri were responsible for the coordination and execution of activities concerning highway design, structural design, geotechnical engineering, computer applications in design, traffic engineering, and construction contract documentation works respectively. They were well supported by a highly motivated team of junior engineers who were very keen to learn the art of highway design.

Like any engineering enterprise, the design of this highway depended heavily on the availability of timely and accurate field survey data and field investigations. This formidable task was accomplished by only two topographic survey parties, working in almost unknown countryside and under severe weather conditions, in less than five months. It was possible due to sustained effort put in by EC Surveyors, under the guidance of Mr M Azizullah Siddiqui. The experienced and objective oriented surveyors turned the odds in their favor through proper organization, sustained logistics and sheer motivation, to complete the job as scheduled.

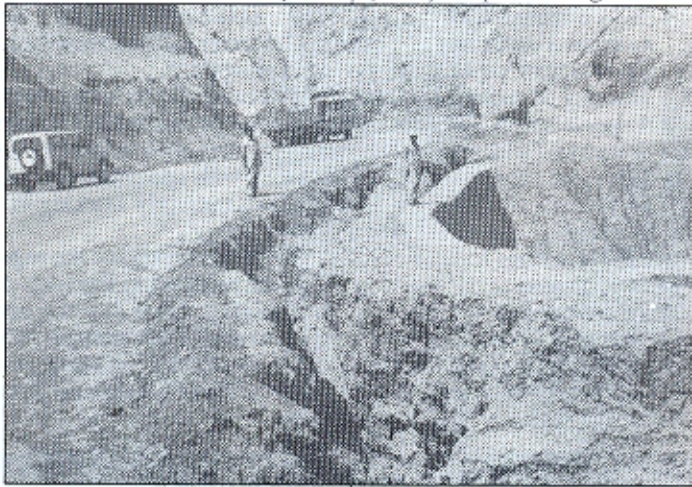
After reconnaissance, the engineers team finalized the corridor of interest and gave a green signal to survey parties to go ahead with the survey work. The proposed alignment traversed through mountainous terrain, undulating stony wastes, rolling and flat topography; crossing deep gorges, rivers, karez and seasonal streams. A new concept of "One-Step" survey was therefore introduced by the expatriate surveyor Mr Richard Rector. The concept focussed on recording of comprehensive information, plus a little more beyond the corridor of interest all in the first go. This minimized the need of going back to the field for any rechecking or recollecting of survey information. The technique facilitated inter-linking of surveys of adjacent stretches of the road, thereby making it easier for the designer to gather and interpolate information and finalize the road alignment instead of

waiting for the survey party to go back and gather data.

The alignment was divided into four sections to make the surveyor's task easy. One can imagine the extent of data collected for the entire road and the difficulty in managing the huge amount of information supplied by the surveyors in the design office. In order to manage the data, computer technology was brought into play to develop an extensive databank of survey information. This was a great help to everyone in the design office, specially the Engineers. Survey work was checked and minor adjustments were made by using a computer program developed by EC.

After checking the accuracy of survey data, the project was handed over to the designers for designing and preparation of construction drawings. When the draughtsmen were producing the topographic details on the mylar sheets, engineers were busy trying to devise an efficient and effective methodology to complete the formidable task of design within the scheduled time.

To simplify the Highway Design, EC Engineers developed computer programmes to verify and optimize the horizontal and vertical alignments. In addition, routines were developed to estimate the quantity of materials involved in a particular design option. This programme, named Highway Design Software (HDS), helped the engineers to study different alternatives just by



making minor changes in the input files and obtaining the results in hours instead of weeks. Unlike other computer programmes available in the market, the only limitation of the program was computer disk space. There was no limit to the number of stations and number of observations per station which other programmes have. Since the programme was designed for Network Environment, unlimited number of hands could use and share information at the same time, limited only by the number of terminals! It was a monumental development for EC as HDS paved the way for

engineers to use it on other projects as well, and with high degree of confidence.

Hydrological studies and Structural appraisal and evaluation activities commenced as the alignment began to take shape. In the first 35 km stretch, the road alignment passes over five bridges. Two of these were found to be adequate. However, the superstructure of remaining three had to be redesigned. In addition to that, 67 culverts were to be provided for the cross drainage along the alignment. On the remaining 240 km length of the road, 24 bridge and 300 culvert locations were identified as a result of the hydrological studies. The bridge lengths varied from 25 to 225 meters. The culverts were either single or multiple cell configuration as per hydrological requirements of the particular location. All the bridges were designed using SAP 80 computer programme, based on standard spans, integrated with Lotus spreadsheets to facilitate analysis and design of structures. Application of Computer Aided Drafting ushered EC into CAD arena as most of the structural drawings were produced on plotter using AutoCAD, which is a commercially available software. In order to facilitate drawing operations, a number of LISP routines were written, exclusively to make things easier for the draughtsmen using AutoCAD, thereby enabling them to produce a large number of drawings in a very short span of time. It can be said that without the help of computer aided design and drafting facilities, the job would have taken much longer than it did to complete the assignment.

The procedure described above, helped EC Engineers to develop a design which was economical as well as functionally

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efficient. Due to proper application of technology, the entire design exercise was completed in a record time of 12 months. The foreign consultants, expert in their particular field in design, paid only incidental visits to check the accuracy and progress of work and were satisfied with the results.

An important aspect was **Project Monitoring & Coordination** which played a significant role in successful completion of the project. A system was devised to keep a close track of every activity to ensure timely action and apply corrective measures, where necessary. Thus frequent changes in fixing the final alignment were avoided due to proper coordination and vigilance of the Team Leader. We must appreciate the effort put in by our client on this project, USAID. Mr Gene George and Mr Perwaiz Gani paid frequent visits to design office as well as site to review the progress and discuss problems arising. Prompt decisions were made by the client to enable the designers to get on with their job with constant pace which was a great gesture on their part.

The project was a success in every respect. The time allowed to complete the design was 11 months (including preliminary and final design phase) and it is a matter of satisfaction, in retrospect, that it took only one month over and above the contract period for which the client readily agreed to grant extension.

Design of Bela Awaran Turbat Road brought valuable experience to the design team of EC. An experience they were never exposed to in terms of magnitude of work and time given to complete the job. EC is now keen to get the opportunity of supervising the construction of this road which will certainly be a landmark in the annals of the history of Balochistan. When constructed, it is going to be the first ever scientifically designed road in this part of the world and therefore will usher in a dawn of a new era of progress and prosperity in its area of influence and beyond, for the people of Balochistan. Things will change much sooner than may be anticipated and standard of living is bound to undergo a dramatic change for the better.

PERSONALITY PROFILE

Intelligence, hard work, professional skill, complete dedication to his assignments and above all his pleasant disposition, have built up the distinguished career of Dadu born Engr. Bux Ali Abro.

Born in 1953, he did his matriculation from his village school, passed intermediate from Dadu Government Degree College and then went to University of Sindh, Jamshoro (now Mehran University of Engineering & Technology) for his graduation, which he qualified with flying colours in 1974. He served for some time with the then Indus Highway Board and Mehran University, before proceeding to Asian Institute of Technology, Bangkok, for his Master's Degree in 1976.

As a young man with innovative ideas and cherished ambitions, he joined Engineering Consultants (EC) as Senior Geotechnical & Pavement Engineer in 1978, where he now heads the Geotechnical Division with 8 Material Engineers and 26 Soil and Laboratory Technicians working under his guidance.

During his 14 years of outstanding career with EC, he has mobilised his optimum energy and pursued his goals with zeal, sincerity and dedication. His untiring efforts in getting the assignments completed on time and with accuracy have won him the approbation from the Clients as well as the company's management.

Mr. Abro served in Libya for about three & half years with a sister organization of Engineering Consultants, known as Consultants International Ltd (CIL) and designed a network of highways & four air bases for Libyan Armed Force. Most of these projects have already been completed and are giving efficient performance.

On behalf of National Highways Board (now designated as Authority), Mr Abro twice undertook visits to Singapore in connection with the selection of bitumen for use in the construction of highways in Pakistan. He visited Italy on behalf of EC to inspect the roads constructed with a new material known as Pavital Catalyzed Pavement Mixture to explore the possibility of



applying it in Pakistan.

The new airport at Rahim Yar Khan is the latest outstanding example of his dedicated work. This project was designed and constructed under his supervision. The Runway, Taxiway and Apron at this airport have been acclaimed by the users as the best in Pakistan.

Mr Abro has deep insight and complete grasp over modern methods of design and usage of materials in the construction of roads, highways, airports, buildings and drainage structures. His knowledge, approach and working methodology have always been appreciated by the clients as well as expatriate consultants, working with EC on Joint Ventures. Be it Lowari Tunnel project or Pasni Fisheries Harbour Project his presence was essentially needed along with his team of geotechnical engineers everywhere. Some of the clients including USAID have ranked him as one of the most outstanding Engineers in his field in Pakistan, which in itself is a high honor for him and EC.

**Some Clients,
Including
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Outstanding Geotechnical
Engineers In Pakistan**

Mr Abro has designed numerous roads and highways, airports, harbour, and building structures. He has to his credit the production of many technical reports and manuals on pavements and geotechnical aspects of the various projects. He has significant experience of handling salt infested soils in water logged areas and difficult clayey soils for heavy pavements and foundations. His frequent visits to project sites, sound advice and guidance on the quality control methods, and specifications have proved to be very helpful to EC's Construction Supervision Staff.

Mr. Abro is a man of very pleasant and friendly personality, loved and respected both by his friends and colleagues. His dealings with clients have won the confidence of clients and repute for himself as well as for EC. He continues to be one of the principal architects of EC's fast expanding organisation.

- **An Experienced Transportation/geotechnical Engineer** to manage training courses in road construction technology. Must have done *MS from an American or Foreign university* in related field of Specialization and at least three years experience in roads and highway construction in the capacity of Resident Engineer. The applicant should have good command over spoken English. Teaching background, communication and presentation skills will draw particular consideration for selection. Attractive remuneration will be offered to deserving candidates who will be stationed either in Karachi or Islamabad.
- **Structural Design Engineers** who are well versed in design of hydraulic structures associated with irrigation system with relevant experience of 10 to 15 years. Computer Knowledge, a must. Postgraduate degree holders preferred.
- **System Analyst** with B.S in Computer Science having 5-7 years experience in System Design. Working knowledge of dBase required.
- **Mechanical Engineer** with BS degree and 7-8 years experience or Diploma Holder in Mechanical Engineering with 12-15 years experience in the running & maintenance of Workshops and Mechanical installation dealing with automobile, boring rigs, pumps, primary level water supply & sanitation facilities. The candidate shall impart knowledge in the above field to the selected trainees by vocational training in the form of on-the job training at office & in the field.

LANGUAGE OF FLOWERS

By: Engr Atiya Azmat

Flowers are amongst some of the most beautiful things created by Almighty Allah. The first thing which catches the eye is their colour and as one moves closer it is possible to admire their form and texture whilst their fragrance appeals when one is in close proximity. People from different parts of the world speaking varying languages or with differing taste, habits, and culture are often admirers of the same flower for they have no national boundary.

To discerning individuals every flower denotes a specific idea and with careful selection one can convey much through a bouquet or a single bloom. Greetings to a friend or relation upon his/her birthday might be suitably conveyed by presenting a bouquet of:

☼ Sweet Sultan	Congratulations
☼ White Lupin	May you always be happy
☼ Roses	Love
☼ Sweet Pea	Delicate pleasures
☼ Ivy	True friendship

It may be noted that the Foxglove or African Marigold should never be included as the former conveys in insincerity while the latter one is the sign of a vulgar mind. Following are the names of some flowers through which any thought or sentiment can be conveyed.

☼ Red Rose Bud	Pure and Lovely
☼ Water Lily	Purity of Heart
☼ Purple Lilac	Emotions of Love
☼ Mignonette	Health
☼ Snowdrop	Hope
☼ Daffodil	Regard
☼ Cornflower	Delicacy
☼ Gardenia	Refinement
☼ Violet	Modesty

The following flowers should be avoided as they convey unpleasant thoughts:

☼ Begonia	Deformity
☼ Candytuft	Indifference
☼ Lavender	Distrust

Flowers bring a message to them that heed it. It is the eternal message of birth, death and re-birth. It brings a lesson as well. A lesson this war-weary world would do well to take to heart, for it is the lesson of peace, the lesson of giving. The lesson that matters most in life - it is not what we receive from this world that matters as much as what we are willing to give to it.

ARRIVING AT A DECISION

By: Engr Wajahatullah Khan Lodi

One of the most sought after human qualities is the ability of a person to make decisions. This faculty is the symbolism of leadership and mental health.

AIM: Be absolutely sure about the goal. Keep your cool and consider that the decision closest in your mind does not violate rules of business. When in a deadlock, leave the problem for a while. Human mind works best when the body is relaxed.

IMAGINATION: Small matters need a quick mental appraisal. Where decisions are required on daily, weekly or on basis of intervals, the remedy lies in planning and programming. Major decisions require an appraisal of advantages and disadvantages. Weigh these well, you will soon realise which way to move. If necessary do this exercise on a piece of paper.

DON'T CODDLE: The basic element which helps one to take decisions, is maturity. Modern research shows that workers who take time off for every sniffle, every little ache and pain, are not so healthy mentally, as those who refuse to pamper themselves and who report to work regardless of slight sickness. This takes mature thinking.

CONCENTRATE: Decision making demands attention. True, some problems are taken care of by time but others must be faced with resolution. While making decisions we must distinguish between impulse and reason. Exceptions apart, as far as possible keep emotions out of your decision making process.

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SPORTING ACTIVITIES

A PROMISING START

By: Engr Shahab Raza

Considering the fact that EC Cricket Team comprised mostly inexperienced and young lads having little or no practice, there wasn't much hope for them to win against a team such as Mott McDonald Pakistan (MMP). They were a formidable side, having some expatriates and the advantage of being more experienced. It is surprising that they underestimated their opponents and paid the price in terms of a convincing defeat, on the lush green outfield of Defence Stadium. The match was played on the 1st of February 1991. Concerted effort on the part of EC's team got them a well deserved victory.

A combination of some excellent fast and spin attack by EC bowlers, restricted Mott McDonald to a modest total of 136 runs in 30 allotted overs. Captain Sohail Akhtar proved to be most economical bowler by conceding only 2.5 runs per over. Other wicket takers were Amir Siddiqui, Shahab Raza, Shahid Matloob & Shahab Yar Khan who took 3, 3, 2 & 1 wickets respectively.

Set to achieve a target of 137 runs in 30 overs, EC made a flying start with a 51 run opening wicket partnership between Javed Hasan & Farooq Ahmed. This released the pressure from the later order batsmen. A hard hitting knock of 61 runs by Javed Hasan with the help of 9 magnificent boundaries, paved the way for a comfortable 6 wickets win for EC. Javed Hasan was judged *Man Of The Match*.

Chief Patron of Engineering Consultants Cricket Team Mr. Khalid Mirza, Team Manager Mr. Wajahat Lodi, Chief Selector Mr. Siddiq Sulemany and Senior Selector Mr. Abu Qamar witnessed the performance of their team. All members of EC's team wish to extend their thanks to all of them for their moral support.

EC's team included ; Sohail Akhtar (C), Shahab Raza (VC), Shahid Matloob, Amir Siddiqui, Javed Hasan, Farooq Ahmed, Waheed Aziz, M. Asghar, Shahab Yar Khan, M. Ghayas, M. Irfan & M. Mehboob.



PERSONALIA

- ☐ **HAPPY TIDINGS:** Mr Khalid Mirza and Mr Naved Zaheer have got engaged during the month of March. They are due to be married in May and December next respectively. We take this opportunity to offer them our hearty congratulations and wish the best of married life to come. We also felicitate the happy parents, Mr and Mrs Zaheer Mirza on this joyous occasion.
- ☐ **HAPPY BIRTHDAY:** Last quarter, many EC personnel celebrated their birthdays. These included, Mr Zafar H Siddiqui, Mr S M Hassan, Sheikh Ijaz Ahmed, Mr Amin Khemani, Mr Mohammad Afzal, Mr Asim Hussain, Mr Aamir Siddiqui, Mr Anwarul Huda, Ms Alia, Ms Amna Farooqi, Mrs Farida Essa, and Mr Munir Ahmed. We extend hearty congratulations to all of them.
- ☐ **HOME COMING:** After availing a two months vacation in France, General Manager (North), Sheikh Ijaz Ahmed returned home recently. We hope that he enjoyed the trip thoroughly !

DISTINCTION

It was a difficult proposition to select a person of the quarter, who fulfilled the criteria set forth by the Directors of the company. A number of personnel qualified for this honor and we faced a difficult situation. Therefore, after considerable thought, it was decided to change the title heading of this column from "Person of the Quarter" to "DISTINCTION". Under this column, we would try to explore singular achievements and honors of the personnel working in the organization. For example, this column will highlight personnel with longest service, personnel with high appreciation from the client, personnel who excel in their respective field of operation etc. etc.

The point to make here is that it is a column dedicated to appreciate and recognize the service rendered by ANY member of EC's staff, may it be an engineer, an architect, a planner, a draughtsperson, an administrator, a clerk, or a peon. If anyone of these achieves a distinction or a unique feat, he or she will qualify for a place in this column.

In this issue, we have checked our records, to find who has the distinction of having the **Longest Service** in EC.

On the basis of our findings, we are pleased to announce that **Mr. Mohammad Saleem, Chief Accountant**, qualifies for this distinction.

Mr Mohammad Saleem joined Engineering Consultants in 1973 as an Account Clerk. At that time he was a second year student. He continued to earn and learn and obtained his B.A and B.Com degrees. On attaining these qualifications, he was promoted, first as accounts assistant and later as senior accountant. In consequence of his dedication and hard work, he now heads EC's accounts department.

In recognition of his devotion and loyalty to EC, over such a long period of time, the management are pleased to announce a special bonus to Mr Mohammad Saleem. We fervently hope that Mr Saleem would continue to display the same zeal that he has demonstrated over the past 18 years.

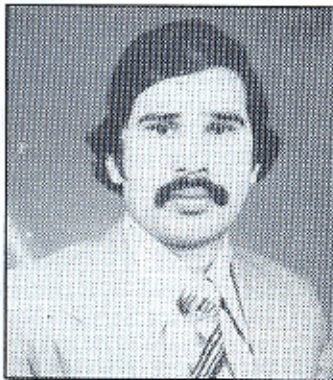


PHOTO FROM FILE

This is one of the many memorable photographs from 1980-81 album. The picture was taken at an informal gathering in which all EC Personnel working at the Head Office, participated. Many people in the picture, are still working with EC. Some have left us as friends but their sweet memories linger on in our minds. To name a few who can be seen in the picture, are Mr Hafiz Fayyaz, Mr. Babar, Mr Zubair Jan, (Late) Khan Mohammad Khan, Mr B A Abro, Mr Yawar Hussain, Mr Liaqat Sheikh, Mr Zaheer Mirza, Mr Mansoor H Rao, Mr Moinuddin, Mr Azeez Kuraishi, Mr Abdul Razzak, Mr Aslam and Mr Kazim Mirza. Can you recognize some others?



ACHEIVEMENTS & HONORS

✳ **DELEGATE FOR THE UNITED NATIONS:** Engr Zaheer Mirza travelled to UK, Zimbabwe and Tanzania as a delegate of United Nations (UN) mission in November 1990 on Reverse Transfer of Technology Programme of International Trade Center, UNCTAD/GATT of United Nations. Delegation held meetings with British Consultancy Bureau and Prominent British Consultants working in Africa. The mission was very successful and provided an opportunity for consultants to work in a third world country.

✳ **TECHNOLOGY & SCIENCE POLICY:** On 18th August 1990 a meeting was convened by the Secretary, Federal Ministry of Science & Technology for constituting several Study Groups, each covering one sector of the proposed National Technology. EC earned the distinction of participating in the workshop for Technology and Science Policy for the Government of Pakistan. On the basis of decisions taken in this meeting, several Study Groups were constituted for the Consultancy Services sector. Mr Amjad Agha MD Nespak was appointed the Group Convener, Mr. Zaheer Mirza, Managing Partner EC was nominated as a Member and Mr. Abul Kalam, Special Advisor EC, as the Report Author. The Consultancy Services Group was the first to complete its assignment. All its unanimous recommendations have been included in the draft National Technology Policy which is under submission by the Ministry of Science and Technology to the Federal Cabinet, for approval.

✳ **MODEL STUDIES FOR KABUL RIVER BRIDGE:** Engr Ahmed Sulamaney, Engr Mansoor Rao, Engr Naseeruddin Siddiqui and Hydrologist S Yawar Hussain have been involved in the Design of Bridge over River Kabul, which is a part of Peshawar-Mardan-Takhtbai Motorway Project. The Hydraulic Model Study of the Bridge was carried out at Nandipur Hydraulic Laboratories. The study confirmed the bridge site as proposed by the EC design team though it altered the orientation of the bridge only by 5 degrees. The designers team deserve a high commendation on their accomplishment of this professional feat in the field of Structural Designing, Highway Engineering and Hydrology.

✳ **OPERATIONAL PLAN FOREXPORT OF TECHNICAL SERVICES:** As President of the ACEP, Engr. Zaheer Mirza was the Convener of the Technical Service Exports Committee (TECSEC), commissioned to prepare and present a comprehensive operational plan and action plan, for the Export of Technical Services i.e., Engineering, Construction, Banking and Insurance, and other professional skills to the Gulf and other friendly countries. The report submitted by the committee was much appreciated by the ACEP and Export Promotion Bureau and was adopted for implementation.

✳ **PROMOTIONS:** Engr Shakir Khan and Engr A K Memon were promoted as Chief Engineers, in Electrical/Mechanical Engineering Division and Highway Division respectively. They earned their laurels through hard work, dedication to their professional responsibilities, devotion and loyalty to EC.

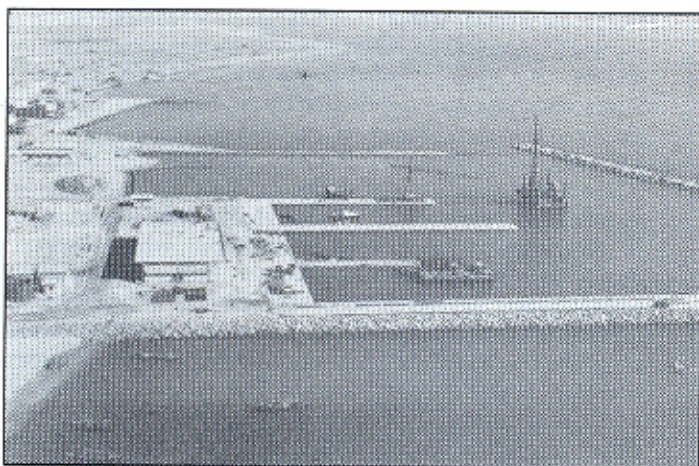
✳ **YUSUF AT IT AGAIN:** It seems that we have a Jahangir Khan amidst ourselves in shape of Yusuf Ahmed, the only difference is that British Open is Jahangir's domain, Asian Institute of Technology is Yusuf's. We are indeed very happy to announce that he again secured the first position in Transportation Engineering Department at AIT. We extend our hearty congratulations to him and hope that he will repeat the performance next quarter to make it three times in a row. Wish you a happy Hat Trick Yusuf!

✳ **ADMISSION TO FULL MEMBERSHIP OF ITE:** Engr Naseeruddin Siddiqui has recently been awarded *full membership* grade of the Institute of Transportation Engineers (ITE), USA. He is one of the few full members of the institute in Pakistan. Engr Naseer also serves as an ITE Technical Council Committee member on "Transportation Planning for Small Urban Areas".

A CLOSER LOOK AT PASNI FISHERIES HARBOUR

In our last issue we gave you a general outline of the development activities along the Makran coast, specially the establishment of a fish harbour at Pasni. It would be appropriate to now provide, for the information of our readers, some interesting statistics about the project. It may be noted that Pasni Fisheries Harbour is the first ever scientifically and professionally designed and constructed facility of its kind on Makran coast. The quality of the work on this port project has been acclaimed to be as good as anywhere in Pakistan. **The Prime Minister of Pakistan awarded a special memento to EC on their performance as consultants on the project.**

- ✓ An area of 35,000 Sq meters was reclaimed for constructing the harbour.
- ✓ Project cost for civil works was Rs 350,000,000.
- ✓ Contracted design period was 20 months but it was completed in 12 months.
- ✓ Time allowed for construction was 32 months, the project was completed in 28 months.



- ✓ Development of 80,000 Sq metres of calm water pond for mooring of 570 fishing boats and trawlers.
- ✓ Provision of 700 units of marine engines.
- ✓ Provision of 1,560 units of improved fishing gears.
- ✓ Increase in the quantum of fish catch at Pasni, to 38,000 tonnes as against the present a catch of 16,000 tonnes per year.
- ✓ The overall annual increase of fish catch along the entire coast to the extent of 30%, taking the gross catch to 96,000 tonnes.
- ✓ The project to benefit 9,400 fishermen, increasing their annual per capita income from Rs 9,280 to Rs 11,840.
- ✓ The new harbour provides marketing, storage and transport facilities given below:-
 - Ice plants to produce 60 tonnes of ice per day.
 - Ice storage facility for 100 tonnes per day.
 - Chilled storage capacity for 200 tonnes per day.
 - Fish meal plants 2 Nos.
 - Fish carriers.
 - Insulated trucks 2 Nos.
 - Import capacity for 35,000 tonnes of general cargo.
- ✓ Maximum draft available 4 meters.
- ✓ Maximum allowable dead weight of cargo vessels 1,200 tonnes.
- ✓ Berthing length available 570 meters.
- ✓ Fish market hall area 1,300 Sq meters.
- ✓ Workshop and repair facility area 840 Sq meters.
- ✓ Power House to generate 1,200 KVA of electric power.
- ✓ Fenced cargo area 8,000 Sq meters.
- ✓ Overhead water storage facility for 75,000 gallons.
- ✓ Underground water storage tank for 230,000 gallons.
- ✓ Fuel oil storage capacity for 175,000 gallons.

To maintain the coastal hydraulic equilibrium and to protect the port area from the adverse effects of geomorphological changes, a scheme of shore protection works has been undertaken by Frederic R Harris in association with EC.

NEWS & COMMENTS

✓ COURSE ON ENVIRONMENTAL ENGINEERING:

Two Engineers of EC's "Green Team" will be participating in the course organised by the Institute of Environmental Engineering, NED University, Karachi. Engr Agha Manzoor Ali, and Engr Fazlul Haque have been nominated to attend. The course will focus on "Low cost treatment processes and designs of treatment plants for the disposal of industrial & municipal waste water". We wish both engineers all the best and hope that they will make the best of the opportunity and gain useful and beneficial for planning future projects and prove an asset to the EC's Green Team.

✓ MEETINGS WITH AACET:

As President of Association of Consulting Engineers Pakistan, Engr Zaheer Mirza travelled to Turkey in the first week of March. There he held meetings with the President of the Association of Architects and Consulting Engineers Turkey, Mr Usman Ozkar at Ankara. Discussions took place for future cooperation among members of the two associations, resulting in the possibility of joint ventures among them for taking consultancy assignments in third world countries. Now that the Gulf war is over emphasis was laid on the potential of construction projects in that region. The mode of financing the Turkish Associations budget was also discussed. Important activities for the benefit of the members were reviewed. Engr Zaheer Mirza extended an invitation to Mr Ozkar to visit Pakistan. This was accepted for a date in near future.

✓ REVERSE TRANSFER OF TECHNOLOGY:

EC has been invited as a participant, to exhibit its capabilities in Engineering Services for export to developed countries. The exhibition is to be held in Europe this year.

✓ PROJECT EXTENDED:

IVth IBRD Highway Project, Section I from Karachi to Nooriabad has been extended for a period of one year. The extension became necessary due to additional works, comprising the construction of 2 overhead bridges and one interchange. The expected date of completion of the project is now March 1992.

✓ ANTICIPATED USE OF GEOTEXTILE:

EC has always endeavored to incorporate new materials and technology in planning and designing projects entrusted to them. In pursuit of this policy, use of geotextile has been proposed on IVth IBRD Highway Project. The product is available in the shape of chemically treated fabric rolls and is used as a water proofing medium. It will be used as impermeable membrane between the median and the pavement structure. Currently various products are being tested so that most effective and economical solution can be found and implemented.

✓ EXPANSION OF COMPUTER BUREAU:

EC Computer Bureau (ECCB) started functioning in October 1984 with only one IBM PC bearing all the workload. By the grace of Almighty Allah, ECCB is now equipped with 25 computers in the Head Office and regional offices which are loaded with most modern and technologically advanced hardware available today in the Personal Computer industry. In order to improve the efficiency, the ECCB at the Head Office has been reorganized. A Computer Aided Drafting (CAD) section will start functioning soon under the guidance of Architect Naved Zaheer. Today this CAD section is functioning as part of the Central Computer Section where the CAD Operator cannot concentrate effectively due to sonorous activities all around. We are confident that this department will grow swiftly to meet the challenges of not only the 90s but of the twentyfirst century as well.

✓ FRESH RESPONSIBILITIES:

Engr Imran Ullah Imran has now been given the responsibilities as Resident Engineer on Farm-to-Market Road project in NWFP. He is stationed at Peshawar.

✓ VIGNETTE APPRECIATED:

First issue of Vignette has been appreciated by many people include our clients, our foreign associates and our fellow consultants. It has also been observed that following the trend, set by EC, some other Consulting Concerns are also bringing out their newsletters, which would be an excellent activity for Pakistani Consulting Engineers.

PROJECTS IN HAND

TRANSPORTATION

- **Peshawar-Mardan-Takhtbai Motorway (61 Km):** A feasibility and design study for a 4-lane controlled access highway with 450 m bridge over Kabul River and 4 interchanges and 6 overpasses. (C&W Deptt NWFP)
- **FMR Phase II NWFP (134 Km):** Design and Construction Supervision of 9 roads in Mansehra, NWFP under Farm-to-Market Roads, project financed by ADB. (C&W Deptt NWFP)
- **Bund Road Project (12.6 Km):** Feasibility of a 12.6 Km sub urban facility along the right bank of Malir River Protection Bund which connects Baloch Colony with National Highway at Malir River Bridge with a grade separated intersection. (KDA)
- **Provincial Roads Improvement Project (1274 Km):** Feasibility and Design of major roads in four provinces of Pakistan. The project is financed by ADB. (NHA)
- **FMR Phase I:** General Consultancy Services for the entire Phase I of the project along with Construction Supervision of the FMR in the Provinces of Balochistan, Sindh & NWFP. The project is financed by ADB. (MLGRD)
- **Fourth IBRD Highway Project (160 Km):** Construction Supervision of Karachi-Hyderabad Super Highway which is part of N-5. Two sections are under construction. The project is funded by the World Bank. (NHA)
- **Hassanabdal-Abbottabad Road (70 Km):** Construction Supervision of overlay on the Hassanabdal-Abbottabad road which is divided in two sections. Project is partly financed by Islamic Development Bank. (NHA)
- **Gurumander Flyover:** Planning and Designing of a Flyover at Gurumandar. Its a complex 6-way intersection in Karachi. (KMC)

PUBLIC HEALTH

- **Karachi Sewerage Project-Sewerage Component (K-1 & K-2):** K-1 is an ADB aided project to upgrade sewage treatment plants #1 & #2. K-2 is an ODA financed scheme for development of Karachi's sewerage system. (KWSB)
- **Karachi Water Supply Project, Construction Supervision of Syphon 19&20:** A World Bank aided project for laying 3rd standby syphon for Karachi's water supply system. (KWSB)
- **Hyderabad Water Supply and Sewerage Project:** An ADB financed project. EC's staff is seconded to Balfours team working on the project. (HDA)
- **Waste Water Treatment Plant:** Design of Waste Water Treatment Plant for Lahore Development Authority. The project is in association with Balfours International, and financed by ODA. (WASA)
- **Auxiliary Pumping Station:** Design of auxiliary pumping station at Karachi. (KWSB)
- **Ormara Water Supply System:** Design of Ormara Water Supply System for the port at Ormara.

IRRIGATION

- **Pat Feeder Canal:** Detailed Design and Construction Supervision of about 200 Km Pat Feeder Canal in Balochistan. This project is in Association with Halcrow and Zaheeruddin Consultants. The project is financed by ADB and OCEF. (WAPDA)

- **Kotri Barrage Rehabilitation:** Design and Construction Supervision of Rehabilitation works at Kotri Barrage. The project is in association with Coode Blizard, and financed by ODA.
- **BIAD Water Supply and sanitation System:** The scheme envisages the provision of elementary infrastructure for the uplift of masses, living in the rural areas of Balochistan, in the shape of small clusters of basic amenities.
- **Ground Water Trickle Irrigation:** Feasibility study and design of Trickle Irrigation system in Balochistan. The project is in association with M/s Wakuti of Germany, and financed by the ADB.

ARCHITECTURE & STRUCTURES

- **Lowari Tunnel Portal Facilities:** Design of terminals, civic, residential, and support facilities at North & South portals of Lowari Tunnel.
- **Port at Ormara:** Architectural design of civic facilities as part of on-shore facilities at Port Ormara.
- **National Stadium Complex:** Feasibility of the urban development and sports facilities around National Stadium, Karachi.
- **KDA Outfall Drains:** Construction supervision of outfall drainage structure into Malir River.
- **Sindh Alkalies:** Detailed design & construction supervision of civil works.
- **Matiari Sugar Mills:** Detailed design and construction supervision.
- **Housing Colony of Matiari Sugar Mills:** Architectural design of housing colony for officers of Matiari Sugar Mills.
- **Telephone & Telegraph Buildings:** Design & construction supervision of 21 telephone exchange buildings at various locations in Punjab for Lahore Telecomm Regions-I and II respectively.
- **Heavy Electrical Complex:** Design of officer's and worker's housing colony at Taxila & Kot Najecebullah respectively.
- **Multan Gymnasium:** Detailed design of gymnasium at Multan for Multan Development Authority.
- **Specialists Eye Clinic:** Architectural drawings for an eye clinic at Karachi.
- **CAF Computer Head Office Building:** Detailed design of building accommodating head office and CAF computer assembly plant at Karachi.

PORTS & TUNNEL

- **Port at Ormara:** Planning and detailed design of a harbour at Ormara. The project is in association with Frederic R Harris.
- **Lowari Tunnel:** Feasibility and construction documentation of Lowari Tunnel with Piggy-back shuttle service.

ENVIRONMENTAL

- **Environmental Impact Studies for following projects:**
 - Provincial Roads Improvement Project.
 - Development Project around National Stadium.
 - Coastal Roads Development in Yemen.
 - Lowari Tunnel Development.
 - Malir River Bund Road.

SPECIAL PROJECTS

- **Sindh Katchi Abadis Improvement Project.**
- **Low Cost Shelter Study.**

PROJECTS COMPLETED LAST QUARTER

- **Design of Kitab-Assada Road in North Yemen (41 Km).** (HA)
- **Design of Ras Essa Al-Salif Road in North Yemen (60 Km).** (HA)
- **Construction Supervision of 4th IBRD Highway Project Section 3A from Hyderabad to Hala.** (NHA)
- **Construction Supervision of Taxiway and Apron at Rahim Yar Khan Airport.** (PDA)
- **Oil Pollution Control Study on Karachi Sea Port.**
- **Planning & Design of Engineer's Base Camp for Bela-Awaran-Turbat Road Project.** (US AID)
- **Design & Construction Documentation of Treatment Plants 1&2 for KW&SB**
- **Design & Construction Documentation for K2 (ODA) project of Karachi Sewerage system including three treatment plants.** (KWSB)
- **Design of Container Terminal at Port Qasim, Karachi.** (ALGHURAIR)
- **Design of PICIC Building at Peshawar.**

NEW PROJECTS LAST QUARTER

- **Treatment Facilities for Oily Wastes and Garbage at Karachi Sea Port.** Project in association with Frederic R Harris.
- **Engineers Training Program under Road Resource Management Programme (RRMP) as part of Indefinite Quantity Contract for Construction Control Supervision Corporation for imparting training to C&W Officials in Highway Construction Technology.** Project is in association with N.M.C.
- **Feasibility Studies, Design and Soil Investigations of Chanda Fateh Khan Dam in NWFP.**
- **Feasibility Studies, Design and Soil Investigations of Kandar Dam in NWFP.** (Director Small Dams NWFP)
- **Design & Construction Supervision of Various T&T Buildings in Punjab under LTR-I&II.**
- **Specialists Eye Clinic and Hospital Building at Karachi.**
- **CAF Computers Head-quarter Building at Karachi.**

DECISION MAKING (Contd...)

SEEK HELP: Some answers are best left to an expert in the field, for he knows his ground well. Do not allow your pride to keep you from counselling with someone who knows better.

TAKE THE RISK: In absolutely a safe world, greatness would have no place because it takes the taking of risks. If safety were to be the slogan of the mankind, there would be no world worth living in today. So never forget "Where There Is No Risk There Is No Game".

WHAT SHOULD AN ENGINEER BE!

By: Engr W K Lodi

It is by no means enough that an engineer should be a capable person. He must be that of course, but also a great deal more. He should be as well a gentleman of liberal education, refined manners, punctillious courtesy and the nicest sense of personal honour.

He should be the soul of tact, patience, justice, firmness and clarity. No meritorious act of a subordinate should escape his attention or be left to pass without reward, even if the reward is only a word of approval. Conversely, he should not be blind to a single fault in any subordinate, though at the same time he should be quick and unflinching to distinguish error from malice, thoughtless and well meaning shortcoming from heedless or stupid blunder.

**EDITORIAL
STAFF OF
VIGNETTE
WISHES ALL
THE READERS
A VERY HAPPY
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LAHORE IN LIMELIGHT

EC's team at Lahore, led by Mr. Sultan Muhammad Khan have been pretty active in getting and pushing business in Punjab Region. During the past year they secured the jobs of construction supervision of 14 telephone exchange buildings, spread all over the province and that of redesigning a gymnasium at Multan. They have also been providing valuable support to the Head Office, in the way of collecting, collating and providing all the data required for the "Provincial Roads Improvement Project". In addition to that, Lahore Office has organised well, the project office of WASA in association with BALFOURS.

Since January 1991, another lot of seven telephone exchange buildings have been added to the tally of jobs secured by Lahore office, now being supervised by EC. It may be added that our Lahore office has kept a vigilant eye on new business and is independently handling the following projects under senior engineers and architects working there:-

- WASA sewage treatment plant.
- Gymnasium for MDA at Multan.
- Design and supervision of 21 telephone exchange buildings in Punjab.
- Provincial Roads Improvement Project. Covering activities such as physical surveys, collection of economic data, Benkleman Beam tests, traffic surveys, soil and material Surveys, road inventory, structural Inventories, pavement evaluation, and hydrology. These activities are being carried out in close coordination with Engr F K Malik.

UPCOMING TENDERS

It is anticipated that in the coming quarter, tenders may be floated by the respective clients for construction of the following projects:

- CAF Computers Head Quarters Building and Assembly Plant in Karachi.
- N-5 Southern Contract 3B for additional carriageway 37 km.
- N-5 Southern Contract 3C for additional carriageway 37 km.
- N-5 Southern Contract 4 for additional carriageway 40 km
- FMR Phase II Mansehra 134 km.
- On-shore port works at Ormara.
- Water Supply Scheme for Ormara port.
- Rehabilitation of Kotri Barrage.
- Remodelling of Pat Feeder canal.
- Housing Colony for Matiari Sugar Mills.
- 10 nos. Telephone and Telegraph (T&T) Buildings in various parts of Lahore Region.

EC FACTOID

Some interesting facts have been collected by Vignette's Editorial Panel, covering the period from 1 January, 1991 to 31 March, 1991. We would like to share these with the our readers. We hope that you would find them interesting too!

- Personal records of EC Engineers revealed that their average age is 43.76 years and their average experience is 16.24 years. This makes a fairly fine blend of age and experience. Isn't it?
- During the last quarter average number of employees in EC were 536 per month. Practically speaking, they produced work equivalent to 2,050 Technical man-months during the last quarter.
- During the last quarter every 20th hour, an EC engineer was landing or taking off in some part of the country either to inspect some work site or to attend a meeting with a client. A total of 155 trips were undertaken by EC engineers covering a total of 51,902 km in the past quarter, i.e., 17,301 Km per month, within the country. As far as travelling by car, van or

jeep was concerned, a total of 295,145 Km were travelled all over Pakistan which means an average of 98,382 Km per month.

- EC was commissioned to prepare the feasibility and detailed design of 1,284 Km of Provincial Roads all over Pakistan. It may be noted here that no consultant has ever been awarded this quantum work in Pakistan on highway design and/or feasibility study Projects in Transportation Engineering Sector.

- A commemorative stamp was issued by Pakistan Post Office on the inauguration of Container Terminal at Port Qasim, in February 1989. EC and Frederic R Harris were the Design Consultants on the project. The project envisaged the establishment of a container handling facilities at Port Qasim.

RYK Airport (Contd...)

- Flexible Runway is 9,000 ft long, 100 ft wide with 25 ft shoulders on either side.
- **Overrun** is 500 ft long on either end of the runway.
- **Rigid Taxiway** is 955 ft long, 75 ft wide with 25 ft shoulders on either side.
- **Rigid Apron** is 525 ft by 295 ft (area=154,875 sqft) with 25 ft shoulders on all sides.
- Simple Approach lights.
- Chain Link Fencing all around the acquired land.

The Runway has been designed as Flexible, the Taxiway and Apron as Rigid Pavements. Because of the non availability of construction materials at Rahimyar Khan, in particular the aggregates and bitumen, they had to be transported over long distances either from Sindh, Balochistan or Punjab Provinces.

Foreign as well as Pakistani pilots have expressed high appreciation for the Runway at Rahim Yar Khan and have ranked it as "THE BEST" in Pakistan.

The pavement was designed for Boeing 737 aircraft but some Air Bus operations have also been taking place. The upgradation of the runway for wide body aircraft is under active consideration of the authorities concerned. However, a decision in this regard is still awaited!

When angry, count 10 before you speak. If very angry 100!

