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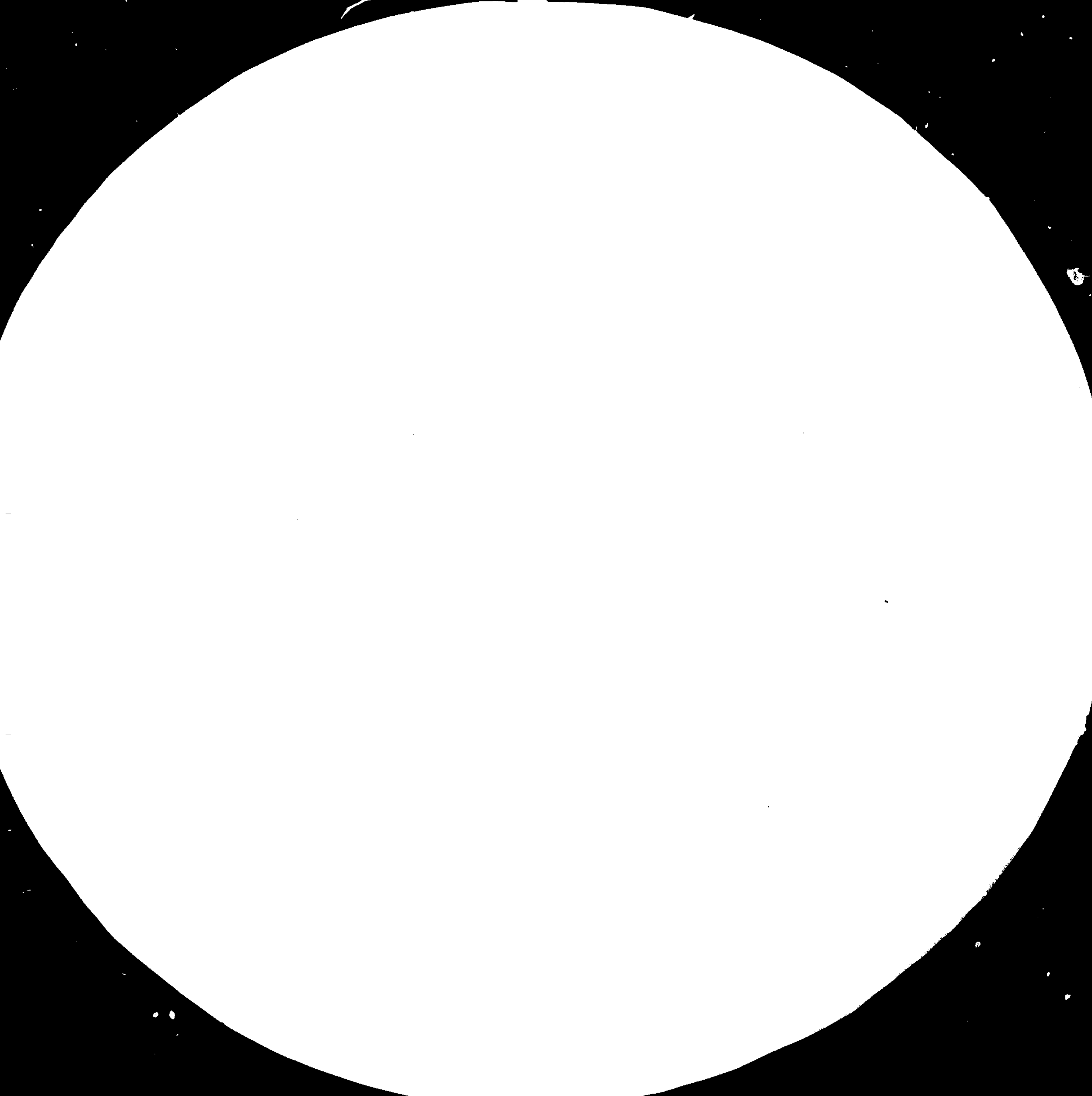

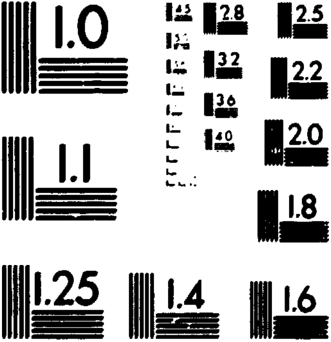

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The role of Engineering Societies in Continuing Education .

Preamble: The present decade is watching a new revolution if not similar to the Industrial revolution, it may be more effective on the humanity since we are facing a very quick development in all fields of Science and Technology. We see and hear every day but may be within every day new discoveries, Space, Medicine, Chemistry etc. Following these discoveries new technologies are developped in every area of Human activity in Industry, in Communication in Transportation in Agriculture and following these technologies, new means and ways of applying these technologies had to be developped and applied. Consequently in Engineering Engineers have to keep pace with all these developments each in his field of Specialisation. The introduction of new machine tools NC Machines CNC Machines the application of Computers, television, new systems of Controls applying Micro processors, computers, new systems of Material Handling etc. .. necessitate that every Engineer should be updated on the nature of these innovations and to acquire the necessary knowledge from the Engineering point of view as to the theory and the applications of these innovations as related to his field of specialisation. And since faculties of Engineering qualify graduates only for Basic Engineering which actually cannot qualify the graduated Engineer to handle all these technologies nonetheless to qualify him to handle the ever developping techniques and new technologies taking place in each Aspect of Engineering whether in Industry or Energy or Chemical Engineering etc. The role of updating Engineers fall on the various Societies of Engineers which have to develop programs for continuing education of Engineers.

The Egyptian Society of Mechanical Engineers was faced with this problem and had to undertake the responsibility of updating Engineers working in Industry with new techniques adopted in Industry with view to improve their performance and to raise their efficiency and ultimately to improve productivity.

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The Egyptian Experience of the Society of Mechanical Engineers

We cannot claim that has lasted for a long time since it only started ten years ago when the Society of Mechanical Engineers was established as a seperate entity from the Egyptian Society of Engineers and consequently other societies: Society of Civil Engineers, Chemical Engineers etc. were also formed. At this time the Society of Mechanical Engineers undertook to improve the scientific and technical standard of qualified Engineers by adopting Continuing Education in the fields which is felt necessary.

Preliminary Trials: Since the Society of Mecahnical Engineers is a non profit and Scientific Organization, no member of the board was entitled to be paid for any assignment he undertakes and so the board of Directors of the Society had to study and plan the various courses and delegate to Senior qualified Engineers both from the Universities and the Industry to develop each course according to a curriculum which is prepared by the board and elaborated by the specialists.

Amongest the courses which were carried out:

The Maintenance of Mechanical Equipment, The optimum design of Machinery, Lubrication of Moving items, Welding of Metallic surfaces, Treatment and Surface Hardening of Metals etc. These courses were more or less given in form of lectures aided by slide projections but mainly in lecture rooms and each course was carried in a period of two to 3 weeks and mainly in free hours i.e. in the afternoons in order not to prevent the Engineers of carrying out their daily work since they mostly come from factories belonging to the public sectors.

The Conference of the Society of Mechanical Engineers.

The society board found that it was necessary to bring the Mechanical Engineers together at least once every two years to discuss problems confronting the Mechanical Engineers and which has a general bearing on the Mechanical Engineers from a national aspect the theme of each conference was selected by the board of the Society and specialists were selected from universities, Institutes, Industry and Ministers and Highly qualified Experts were also called upon to prepare papers and make presentations during the conference which generally lasts about four days and whe recommendations are made and submitted to the Ministers concerned.

These conferences were very successful because they discussed National problems such as "the Industrial Development in Egypt" and the public sector companies having felt the effort and the contribution of the society to the Engineering profession were convinced of the importance of financial contribution to the society of Mechanical Engineers through subscriptions of 1000 L£ yearly by each company. About fourty companies started this subscription followed by others coming to about 60 companies thus promoting the financial potentials of the society which was mostly run by volunteering with the improvement of the financial status of the society a paid technical staff was formed from retired Experts of Mechanical Engineers to form the neuclus and base and to have the necessary time to prepare the subjects of the Educational courses and to approach the Experts in each field to prepare and deliver the course. Having established this base within the Society a major progress in the system of continuing education was achieved.

The present ways and means

The society found that it was necessary that the courses should be full time and not part time.

The system was based on workshops rather than only lectures and took place in one of the factories and in direct contact with the Mechanical Equipment and machinery. It also comprise of theoretical and applied practice.

It covered new technologies including NC machines, CNC machines, application of Computers in various phases of Industry etc.

Codes of Practice. As a result of these courses evolved the preparation of codes of practice in the field and subject of the course which in fact will be the basis for the Egyptian Industrial code of practice.

Recommendations of Improvement

The nature of the system of education and environment lead to the formation of groups of the Engineers to discuss a specific problem and make a complete survey and recommend the method of solving this problem.

This work is studied by the supervising professors and if applicable the society presents it to the Management of the concerned company.

It is quite clear that the courses prepared by the Egyptian Society of Mechanical Engineers and its subjects are now regarded with great esteem from the public sector and the private sector.

Tailored Courses

Some of the companies who have certain subjects in which they need certain training call on the society to study and prepare certain courses to train their young Engineers for example in transportation or in sugar Manufacture etc.

The Egyptian Experience has been enriched during the last 10 years with the aim of updating many of the Egyptian Engineers.

I hope that this quick presentation gives an idea of our system and approach.

24/10/1984

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