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# 2. Indian National Group of the International Association for Bridge and Structural Engineering – a Note on its Activities

#### Introduction

Our participation at the recent FIP Congress on «Structural Concrete in the Developing World», New Delhi, 16–20 February 1986, afforded the opportunity to visit with the Indian National Group of IABSE, presently chaired by Shri L. S. Bassi. The group is the fourth biggest one in IABSE, with 238 members on January 1, 1986. It is among the most active groups of IABSE, holding regular national and international meetings and editing a quaterly publication.

As the national groups of IABSE are all organized differently, we thought it would be of interest to have a column introducing to the whole IABSE membership and readership some of the National Groups of IABSE. We are glad to be able to start this column with the Indian National Group and we look forward to other contributions.

> Alain Golay Executive Director, IABSE

#### **History and Organisation**

The Indian National Group of the International Association for Bridge and Structural Engineering was set up in May, 1957. The aim of this Group is similar to that of the Parent Body, promoting the science, engineering, planning and construction of structures of all kinds and has therefore, a very important responsibility in the field of relations between theory and practice. In fulfilling this rôle, the Indian National Group, as its Parent Body seeks to attract the researcher as well as the engineer engaged in design or construction. In order to attain its goal, the activities of the Indian National Group cover the promotion of knowledge of bridge and structural engineering, periodical discussions, publishing of technical papers, pooling of the available talent so that it is possible to keep pace with the developments that are taking place all over the world. In addition, it works as an agent of the Parent Body and it transmits to members the papers and other literature received from the body.

A Managing Committee consisting of the Chairman, Vice-Chairman, Honorary Treasurer, Secretary and representatives of the Central and the State Governments and other concerned interests manages the affaires of the Group. There is also an Executive Committee which looks after the day-to-day business of this Organisation.

The Group generally holds its Annual Meetings during the Annual Sessions of the Indian Roads Congress. At these meetings Annual Reports covering the activities of the Group are presented. Generally Papers on important aspects of Bridge and Structural Engineering are also discussed at these meetings. During the Annual Meeting of 1964, a Symposium on «Standardisation of the Types and Methods of Mass Construction of Culverts and Small Bridges for Highways» was arranged by the Group.

The Group publishes a regular quarterly Journal entitled «The Bridge & Structural Engineer». The Journal has interesting articles on the design and construction aspects of various types of structures in India and abroad and also research papers.

The Group has compiled a comprehensive report on Prestressed Concrete Works done in the country, covering bridges, buildings and other structures.

The Group has also brought out two special Publications, «Corrosion of Reinforced and Prestressed Concrete Highways Structures Located in Coastal Areas» and «Dynamic Response of Bridge Decks in R.C.C. & Prestressed Concrete with Special Reference to Vibration».

The Group is represented on the Permanent Committee of the Parent Body according to the strength of its membership. At present there are 5 delegates and 5 alternate delegates representing the Group on the Permanent Committee.

After the Indian National Group was set up, the participation of Bridge and Structural Engineers in the conferences organised by the International Association for Bridge and Structural Engineering has greatly increased. It is gratifying to note that the Government of India gives great consideration to the recommendations made by the Group for the various delegations to be sent abroad for International Conferences in the field of Bridge and Structural Engineering.

# Conferences organised by the Indian National Group of IABSE

A Seminar on «Problems of Prestressing» was held by the Group, in cooperation with some other bodies, for the first time in India at Madras, 1970 and it was attended by more than 200 experts in the field of Bridge and Structural Engineering from all over the country and also from abroad. Copies of the Preliminary Publication containing 41 Papers which formed the basis of discussion at the Seminar and copies of the Proceedings of this Seminar are still in great demand in India and many foreign countries.

A National Conference on Tall Buildings was organised by the Group at New Delhi in 1973, jointly with the cooperation of the National Buildings Organisations, Central Public Works Department and the Institution of Engineers (India). This Conference provided an unique opportunity to discuss the problems faced in India in the planning and design of tall buildings and also to have first hand knowledge of the new developments in the design and construction practices followed in other countries. This Conference also facilitated inclusion of additional material of interest in the monographs being prepared by the ASCE-IABSE Joint Committee on Tall Buildings. This Conference can also be considered unique in the sense that it afforded an opportunity to visitors to learn something of the significant needs of developing countries. Copies of the important publications pertaining to this Conference were in great demand amongst the members of the profession.

A very successful Seminar on «Prestressed Concrete Structures» organised by the Group, at Bombay, 1975, in cooperation with the Government of India, Ministry Shipping and Transport, Bombay Port Trust, Government of Maharashtra Government of Tamil Nadu, Department of Atomic Energy, Indo-French Technical Association and STUP (Paris) was yet another step forward in technological development in the field of bridge and structural engineering, resulting in guidelines which could be used in subsequent programmes for achieving better performance and economy. The use of prestressed concrete has completely revolutionised the economics of design and construction of large civil engineering structures. This technique was introduced in India in 1955 first in the field of bridge structures and is now being extensively used in this field, especially for large spans. Its application in the field of buildings, marine structures, long span roof structures has been rather recent but quite significant. The philosophy of Prestressed concrete design and constructions is undergoing rapid changes. New concepts and applications are emerging making it necessary for the profession to keep abreast with latest developments so as to exploit the opportunity offered to the maximum. The engineer who does not periodically pause to take a good look at the changes taking place in international design and construction techniques and at new research findings, is bound to lag behind professionally.

Practical experiences, results of systematic research and special design theories discussed in the Seminar will provide a reliable knowledge on the behaviour and the load carrying capacity of the Prestressed Concrete Structures. By now it is well established that future construction market of prestressed concrete will have a lot to do in the field of long span bridges, long span roofs, mass transit structures, sea structures and even ships. The emphasis will now be on optimization which calls for a clear understanding of design principles and comparative efficiency of systems for each situation.

The Indian National Group held a Seminar on «Pile Foundations, Corrosion, Detailing and Ground Anchors» at Madras, 1979 which was attended by about 450 delgates and they included some eminent experts from abroad. Later, a Seminar on «Tall Structures and use of Prestressed Concrete in Hydraulic Structures» was organised by the Indian National Group of the International Association for Bridge and Structural Engineering in cooperation with Government Departments/Undertakings at Srinagar, 1984 and was attended by more than 350 delagtes including some eminent experts from abroad.

#### **Future activities**

The Group now proposes to hold a National Symposium on «Premature Deterioration of Concrete Bridges causes and cures» sometime towards the end of 1986 and an International Seminar in Bangalore on «Cable-Stayed Bridges» covering the following themes sometime in October, 1987:

- Geometrics and dimensioning
- Dynamic stability including wind tunnel tests
- Fatigue loads and strength
- Structural detailing and other practical aspects

The Indian National Group is actively engaged with the problem of enlarging the scope of its activities in order to make the membership of the Group more useful and effective not only its members but to the bridge and structural engineering profession as a whole. It also aims at providing leading members of the profession a forum where they could find appropriate opportunities to express their viewpoint freely and have an interaction amongst various disciplines an indeed important objective for the growth of knowledge in any professional field. One of the important means of achieving its aims is to organise Seminars and Conferences, Colloquia and Workshops. This will also provide an opportunity for the researcher and the potential user to discuss research findings. The attendance and participation of such conferences and seminars by representatives both of the Government and the private sector covering suppliers, designers and contractors, greatly contributes towards getting research findings implemented. The attendance by the members of the faculty of various technical institutions helps them to come in close contact with the eminent field engineers and learn about their difficulties and experience in the field. The field engineer in turn is able to brush up his knowledge by coming into close association with members of the engineering faculty. The mutual discussions also go a long way in pin-pointing the problems and evolving the most efficient and economical solutions.

The members of the Indian National Group automatically become members of the Internatinal Association for Bridge and Structural Engineering and they can attend the meeting of that organisation held abroad at different places and also of the Group held at different places in our own country.

Some of the future areas being probed to enhance the usefulness of the National Group to professionals are:

- Establishing a Professional Group to identify areas of transfer or application of technology in the field of structural engineering as applicable to developing countries,
- Holding of Regional Workshops on subjects of topical interest. This work will also help in making the members of the profession more aware of the activities of the Group and thus act as a catalyst in enlarging the membership of the Group,
- Liaising with the Working Committees of the Parent Body,
- Identifying the likely future developments in the next decade with a view to having an open house discussion through Seminars on topics of interest.

Om Parkash Adminstrative Director, ING/IABSE