

## **My journey, area of work and passion in the field of structural engineering and how I came about writing my book "Handbook of Turbo Generator foundation"**

*By Sukanta Adhikari*

I started my carrier as Assistant design Engineer in one of the leading consultants in India since 2004. As a young aspirant in the field of Structural Engineering, I tried to pursue knowledge diligently and honestly. My field of interest include Reinforced concrete design, Structural Dynamics, Earthquake resistant design of structure and foundations for vibrating machines. I have designed various types of Civil Engineering structures for Power Plant, Steel plant, Defence project and space sector throughout our nation.

As a structural Engineer my passion is to unfold the unexplored areas in the field of structural Engineering, which in earlier days was difficult due to lack of technology and resources. With the advent of powerful computational technique using software's and the development of advanced Finite element technique, the field of Structural Engineering has progressed in such a manner that the complicated structures can be solved with ease.

My first experience in writing was as a coauthor for a technical paper "Review of critical seismic analysis provisions in IS 1893 part 4 for the design of industrial structure " along with my friends Shri Yogesh Pisal & Shri Prashant Ambulkar, which I presented in 14th Symposium of Earthquake Engineering (2010) at IIT Roorkee. Later we authored one more technical paper "Sign assignment to Absolute Response quantities from Response spectrum analysis" which was selected in 15th World conference in Earthquake Engineering (2012) " held at Lisbon.

My zeal of learning the subject "Turbo Generator foundation " developed when I started working with a leading Power Company in Pune. I started collecting books, technical papers, but to my surprise could not find a fully fledged book exclusively on the above subject and in many books the chapter of Turbo Generator foundation was included as a routine topic. More I tried to learn the subject, the subject was getting away from me, just like the horizon. Appreciating my effort of learning my boss Shri Vijay S Kanagi (my mentor) taught me the basic of the subject This is how the journey began.

The textbooks " Dynamics of Bases and Foundations by D.D Barkan", " Dynamics in Civil Engineering " by Alexander Major and DIN 4024 have been valuable references in developing my concept. Sooner there was paradigm shift, as I realized that a more holistic and interdisciplinary approach is required in understanding the subject in totality. So I started understanding the subject from Mechanical Engineer's point of view. Mechanical Engineering is a vast ocean and therefore I concentrated on relevant areas only. Knowing about turbine, generator, its working principles and its accessories, my understanding of the subject was getting better. During these nascent stage of my career, I authored an article on Turbo Generator

foundation, which I uploaded in Structural Engineering forum of India (an epitome of learning for me). So vociferous was the response, that my mail box was flooded with queries exclusively on Turbo generator foundation from all over the globe. Solving their problems helped me in better understanding the subject in detail and problem faced during practical design. I also guided a Mtech thesis of parametric study of Turbo Generator foundation. My moral was boosted to an extent that I decided to write a full fledged book.

The book is also an outcome of stimulating discussion, constructive ideas and support received from friends and colleagues. Help received from Shri Vijay S Kanagi, Shri Yogesh Pisal, Shri Wriddhi Pratim Roy and Shri Abhijit Bandyopadhyay were especially useful. This kind of research sort of work ended with solutions and methods of design which I followed in ongoing projects in different Power Plants and Steel Plants. This was real application of my design approach in many construction sites. At the end of the day I realize the more we learn, the more will be our curiosity about newer things and learning never ends. An inquisitive mind of an Structural Engineer always want to be assigned to the challenging ,complex and unexplored areas of expertise.

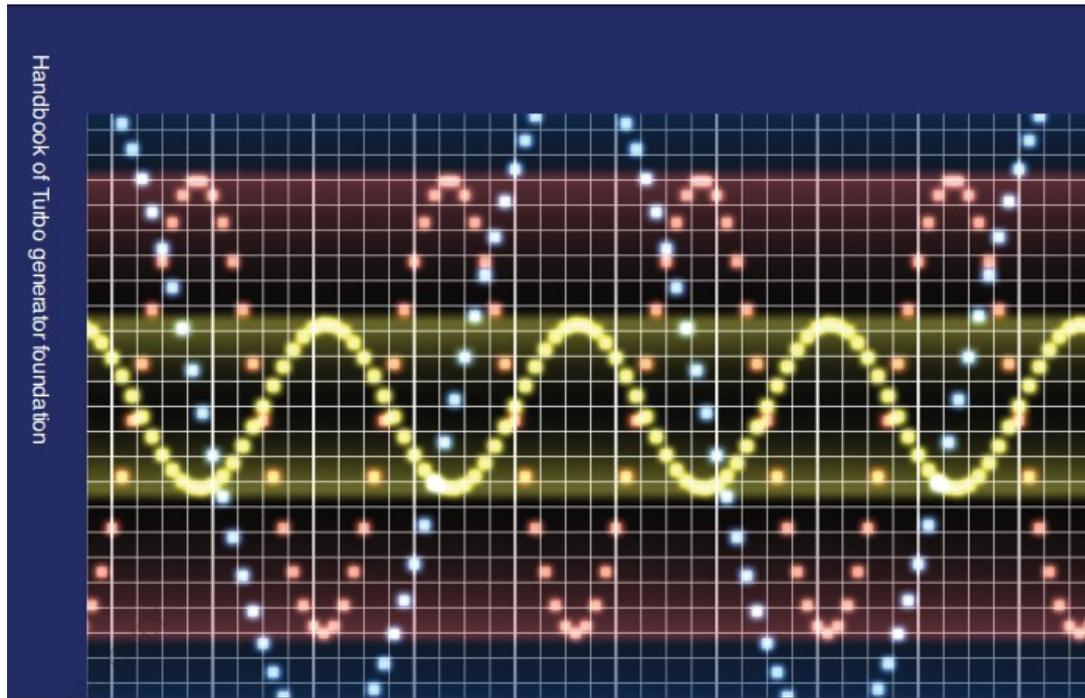
It took almost a decade to complete the book. Writing a book involves lot of time, patience and hard work, but publishing technical book on offbeat topic and author with unknown face is a herculean task especially in our country, where publisher opts to publish technical book that are syllabus focussed. Finally with no option left, I published my work with one I could find.



## DETAILS OF BOOK

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Handbook of Turbo generator foundation

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# Handbook of Turbo generator foundation

Dynamic Analysis

Adhikari



## BLURB

"Handbook of Turbo generator foundation" is developed for the learners having minimum background of the subject. The author has attempted to keep a balance between fundamental theory, design procedure and technical computation in a way that is accessible for every reader. The mathematical illustration is limited to what is strictly necessary. Topic covered includes model generation, loading ,dynamic analysis procedure using computer aided design(CAD). The book brings the subject fully up to date, including the latest trend & techniques. Reference has been made to code of practice like DIN code, ACI code, Euro code, IS code etc. Understanding of subject from Civil Engineering point of view, albeit a good one, does not suffice for complete understanding of the subject . Keeping this aspect in mind , the author has introduced a chapter on " Know about Turbine, Generator, its Auxiliaries and foundation" to provide better insight of the subject. This book is primarily meant for designing table top foundation for turbine-generator machinery. However the provision of the book can be suitably used for design of foundation for other machines of similar types.

