

Conclusion

It is appropriate to conclude this book with an analysis of diagram (Fig. A.10) presenting the total problem of the machine vibration diagnostics. In order to be successful in the creation and application of diagnostic methods, we should have an understanding of the problems of construction, manufacturing, and the use of the diagnosed objects. These problems are discussed in Chapters 1 and 2. Chapter 2 gives the bases of the generation of tribovibroacoustical phenomena and without knowing them it is impossible to make a selection and decision regarding the questions: What; Where; and: How to measure?, according to Fig. A.10. Chapter 3 gives an answer to the question referring to the processing of signals, the selection of measures and symptoms colinear with the investigated mode of machine wear. Chapter 4 answers the question referring to inference about the present and future condition of the diagnosed machine. More recent methods referring to the problems of the processing of signals and symptoms (i.e. in general terms the diagnostic information) are presented in Chapter 6 which shows already confirmed conceptions or those being under development and aiming at the improvement of the relation between signal and noise.

The vibroacoustical problems of machine diagnostics presented in this way seem to be coherent and complete in the sense that each problem has at least one solution method. The state of knowledge in the field of diagnostics is at the beginning of its development, which means that many problems are still far from having more than one solution. Progress will be achieved with the natural effect of the accumulation of mature considerations of experimental facts and trials of theoretical explanation. It is an illustration of the known fact that first we have an invention and then follow its scientific justifications. This state should be an incentive for wide implementations of vibroacoustical diagnostics. Feedback will lead to the extension of the diagnostic knowledge. The fulfilment of both these objectives is hopefully expected by the Author and other researchers in this growing field of engineering.