CONCLUSION

(Concluding notes)

The mechanism of forming the fatigue life is too complicated and inscrutable. This provides a possibility to every researcher to propose his own CCA method (model) for fatigue life assessment which contains some partial truth and is experimentally confirmed in some limited scope. Another researcher, under different experimental data and different loadings, does not find confirmation of the previous method and, in his turn, also proposes his own model. After all, there is not any uniform, all-acknowledged and universal CCA method but there are many disputable methods comparing to each other, each one with its partial truth and that is why they tolerate each other.

Now, something radically different is proposed: not to have loading cycle as the basic notion but to have it as a particular notion, and, instead of searching for disputable cycles, to follow the indisputable differentials (Fig. 1.1-3b) of any loading and directly compute the damage differentials per the loading differentials.

Thus, it is not simply about a serial new method in expectation of a tolerant attitude. Now, a united skeptical or negative reaction is possible: considering that many thousands of fatigue life researchers in the world had searched for cycles in every loading, the IDD concept and the author's IDD method could make a lot of opponents. They could even state that IDD rejects all the accumulated fatigue life knowledge built on the basis of the notion of loading cycle. On this occasion it is to pay attention again to the contributions 2.3 and 13.4: IDD rejects nothing of the existing knowledge. This thesis has entirely been built on the basis of the existing knowledge and the main idea is to use it in another way.

It is understandable that the colleagues would express skepticism and jealousy after they have devoted theirs investigations and careers to CCA and received acknowledgements and degrees for that. It is understandable that they would look for weak points of the IDD concept and of the author's IDD method, and would raise controversial questions since the complicated and inscrutable mechanism of forming the fatigue life leaves a large place for a lot of disputation.

However, there is a possibility which leaves no place for disputation on whether IDD should be acknowledged or not, as follows.

Let any IDD opponent verify any other fatigue life evaluation method by using the same experimental data files used also by the author in the IDD verifications done in Chapter 5. Let the verification in Chapter 3 be also added. Let the verification or verifications continuing in Volume II be added, as well. All the experimental data are not of the IDD author but of other authors and therefore a partial selection of one's own experimental data is excluded. And if the IDD opponent proves that the other method is always applicable in all the mentioned

cases and categorically excels the IDD method, then the disputation ends: the IDD method should withdraw. Moreover, the other method will prove to be that missed one which can claim for general validity now. But if the other method yields, the disputation ends again: the IDD method should be given the right of way. Moreover, resetting and canalizing the world investigations to IDD should be recommended.

If the other method and the IDD method turn out to be approximately tantamount, again the IDD method should be given the right of way to continue comparing and proving itself in next and next verification (Volume II). With that, the oscillograms should purposefully be diversified as much as possible: to be of both the first and second practical category of non-proportional loadings, and of mixed loading with various trajectory ratios t_r, t_c and t_τ, and of various trajectory's forms, and of both cyclic and non-cyclic loadings, and of both deterministic and random loadings, and of pure r-loadings, pure c-loadings, pure $\mathrm{d}\tau$-loadings, and so on.

Hereby the author closes and lets the colleagues and the scientific jury members take the scientific responsibility for the evaluation of this thesis.