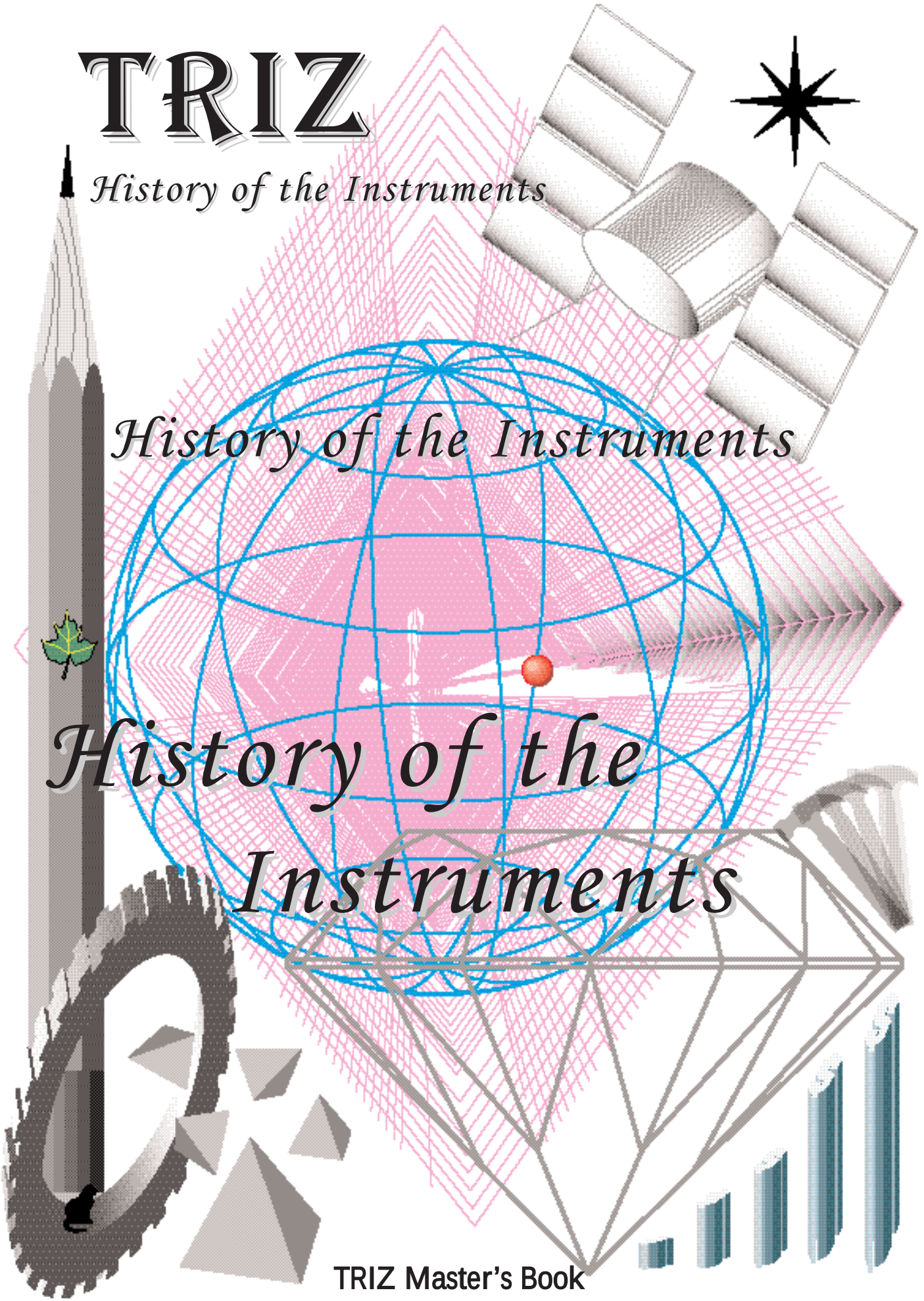
# TRIZ

History of the Instruments



History of the Instruments

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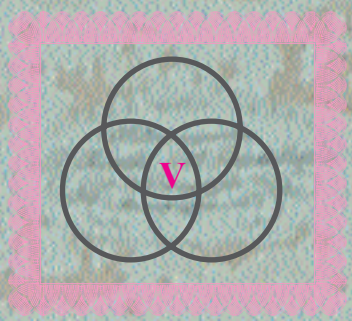
TRIZ Master's Book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Nataliya N. Narbut
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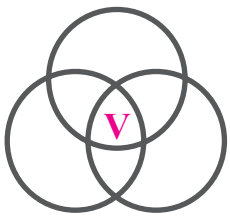
# TRIZ

# *History of the Instruments*

*Survey lecture*
*Short version*



TRIZ Master's Book

2005

# Introduction

*I was not going to entertain proud people...*
*(A.S.Pushkin, «Eugeny Onegin»).*

Science was created in antique Greece. The great, but modest Aristotle considered the person by name  Thales as the first among all scientists. This is the same Thales from Miletus who turned philosophy, mathematics and astronomy into real sciences. Certainly, many things were known hundreds of years before Miletus Ionian School, but Thales and his students started using not only observations and not only reasonings to apply to reception of new knowledge. They were the first who used ***proofs.***

The new approach, new techniques for intellectual work not only allowed to discover something new, but also permitted to accurately evaluate, determine and sometimes even predict new events. Thales was the one to teach his friends sailors to use the Polar Star as an orientation point. He was the one to find out how to measure the distance from the ship to the shore. Even the solar eclipse was for the first time predicted by Thales.

Thales' main interest was the science itself and the process of justifying it. He also discussed the justification process with his own students. For the science and for his students, whose number grew with each year, Thales left all other activities, such as traveling, structural design and military art, although in all these areas he achieved excellent results.

As it commonly happens, the new work was not immediately recognized. Exercising ***pure science***, which is what Thales was doing, often causes misunderstanding and calls forth mockery and even hostility from others. New students, who were only starting their studies, had the hardest time. It was difficult for them to prove to others and to themselves that what they were doing really was time worthy. Under such conditions, it was hard to think about science. Eventually, it got to a point when scolding went too far…

When the time came, Thales successfully solved that problem. He proved that exercising science might indeed be very useful; moreover, it could give a financially profitable result. But more about this later.

This book talks about one of many sciences. Of course, it does not cover all of it, for no science can be fully covered with just one book. Here, we only talk about ***history of basic instruments of TRIZ***.

The title of the theories is an abbreviation for ***Theory*** for ***Solving Innovative Problems***. Then came the difficulties present in every science. What is a ***mechanic***? Fixing a bike is job for a specialized mechanic. To design plans of a big ship is also a job for a mechanic. Calculating the flight trajectory from Earth to Saturn is practically pure mechanics. Nevertheless, it is clear that these jobs are very different from one another. In each case, a high order qualification is required, but they are all different kinds of qualification.

TRIZ also requires different kinds of qualification. There are many types of innovative problems whose solutions depend on relatively simple instruments. But ***a hard problem can be understood only after its solution is known***. Thus, it is impossible to identify the necessary instruments and their use right away. Moreover, many problems change halfway through the solution process, – and often enough they do not become easier.

There is one solution: You must prepare yourself for hard work from the very beginning. ***Every Student can become a Master.***

This does not mean that every Student must become a Master. Moreover, it is simply not possible, because there is plenty of work for every level of qualification. It is not possible to create a strong army consisting of only generals. There must be officers, even more sergeants and the most privateers. Yet, a good soldier must understand his general, because only then he can accomplish what is required of him. This is the way any group functions. This is the way of life.

Thales from Miletus took a very trivial approach. Together with his students, he developed a plan in order to justify the value of science. And then he followed it.

At first, it started with astronomical observations and calculations. They showed that next year will have very rich crops of olives. After that, the science team mobilized all the financial resources and purchased almost all the machines for producing olive oil from Miletus and its surrounding areas. Of course, there was a high risk factor associated, but in less than a year these machines were overloaded with daily work, and Phales with his students became some of the richest people in Asia Minor.

There was nothing non-trivial with this plan. All it required was to do exactly what the science predicted. Also, one must discover, understand and learn to properly use this science. It is not important what task you have at hand, what is important is how accurately, skillfully and professionally you are doing it.

TRIZ – is the theory for the practical work. This is new chance for you.

***The science can not be useless.***