

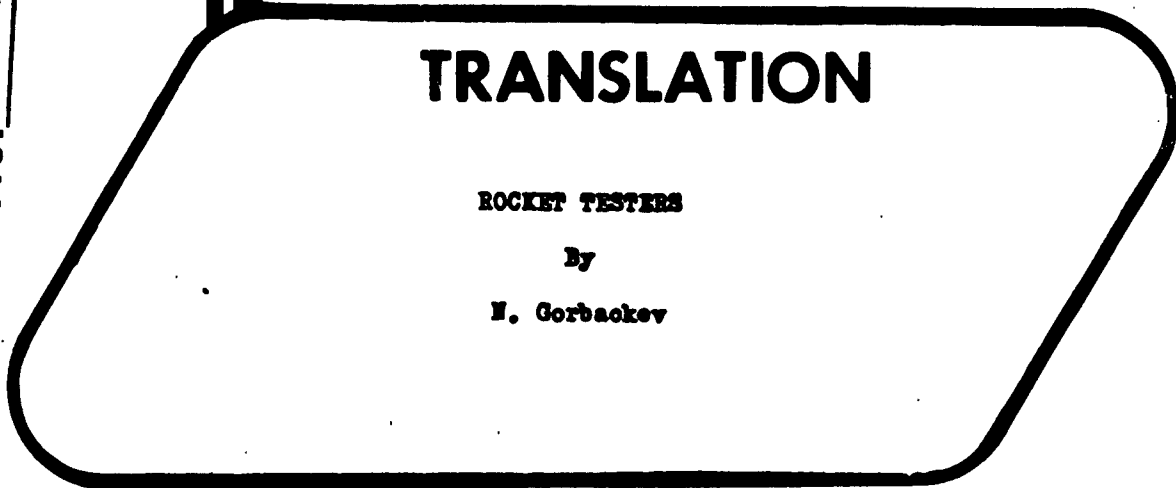
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TRANSLATION

ROCKET TESTERS

By

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WRIGHT-PATTERSON AIR FORCE BASE

OHIO



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ROCKET TESTERS

BY: N. Gorbackev

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Rocket Testers

by

M. Gorbachev

Two people are discussing heatedly;

* And I think, this was in the scheme of the previous rocket.

- This cannot be so; The unit is a brand new one.

Lets ask Zheludev. O.K. lets do it!

They are looking around for the engineer...

And here we see the testing of a rocket. A sudden difficulty originates. The young engineer, nervous, is studying the instrument, and listens in carefully:

What can it be? A hardly perceptible smile touches the mouth of Zheludev: that is how he actually was!

- Try open the hatch, check contacts on five plug terminals.

And Zheludev immediately goes over to another part of the task and after the expiration of fifteen minutes this young officer calmly, with a sign of bewilderment and charm says to another person: - Do you understand all well...now the "moving system"

...And this time everything was exactly as during previous startings. The constructor, a middle aged, stout with arm half bent in the elbow (a memory of the last war) inquired: - Who will work? Zheludev here? Here.

The rocket was in readiness on the launching pad. A tall azure frame, verbally the frame of a larger child, swaddled it.

The weather was unstable for many days. The sky revealed itself periodically in gray, foggy rain clouds for an hour or two and again was covered deafly. A rough penetrating wind blew. Encountering no hindrance in space, it became violent, gained force, and people at the launching area turned their faces aside and put their pro-

tective high fur collars up.

Meteorologists promised a "window" toward evening: in the wide scope of flight tests it is extremely important to have visual observation over the behavior of the rocket. At the blast off area everything was in a hurry. The tests were already lagging behind.

At the control panel Zheludev followed the indications of instruments and the multicolored relays. The ready signal should appear soon...

Suddenly what happened? Instead of a green, a red light went on - emergency signal light! Is it not the "law of meanness" - a failure in the last minute! ..Moving away from the control panel Zheludev threw a glance around the rocket: a web of cables ordinarily extended from it to machines and units. He threw a glance at the nose of the rocket. In the minute Zheludev was already being lifted (by spec.elevator) upwards. The wind cut his face, with a bass-like hum it howled in the metal cross beams of the frame. One after the other the engineer uncovered hatches, checked element connections.

Down below he was being awaited impatiently. The time of blast was drawing closer, the meteorologists announced: the "window" will appear for two hours only. The rain clouds, have actually began parting somewhat, revealing blue streaks of the sky. As Zheludev came down to the ground he was immediately surrounded, everyone looked at him with confidence and expectation.

- Connection is normal, but apparently one of the circuits is at fault..

He took the chart, began checking it. Then he rose up:

- The instrument control circuit is out. In the blast off scheme are made provisions for controlling their readiness, and the rocket has no such lead out. Now take a look! -the officer opened a hatch.

But the instruments have been checked before, and there is not the slightest doubt that they are ready.

So spoke Zheludev, and in his head thoughts began originating: "What should be

done"? In accordance with the disagreeable case the tests should be postponed. Some resoldering has to be done on board the rocket? this will last not one hour...and after that...who knows how the weather will behave? But the main thing is the labor of the people, part of it will be wasted. We must find a way out...It is easy to say! And if this signal would come from the rocket, it is necessary to assemble the equivalent of the missing circuit?.. Within two hours, toward the end of the "window" we may succeed.

I propose to assemble the equivalent circuit...I shall do this myself.

- Very well- said the constructor.

The engineers headed by Zheludev, locked in the cabin have not seen, have not seen that the weather decided to surprise the testers: the sky over the blast off area cleared up, only some sporadic fragments of the clouds moved impatiently over the Earth and disappeared into the cloudy dark-ashy strip. The people standing at the blast off area and looking expectantly at the door of the cabin began acting nervously from minute to minute - the second hour has slowly drawn to an end..

The cabin door has finally swung open, the contended face of engr. Zheludev appeared. Everything is OK.

...The rocket with a roar, in flame and smoke rose upwards, climbed into the blue of the sky, and from the Earth the onlookers have for a long time watched its sharp flaming edge: it kept on climbing and climbing, higher and higher.

The designer shook the hand of the engineers:

- Thank you!

Zheludev's gray eyes were, as always, somewhat wider and as if astonished.

In January of this year one of the testers has gained the degree of candidate of technical sciences. Before the dissertations have been presented among the members of the scientific council, sitting in the hall in one of the capitals military academies was one highly intensive figure of an officer, who attentively listened to the deafening

speech. But this was only at the beginning. The result of the voting showed: in all bulletins the members of the council crossed out the word "not in agreement" and left the word "in agreement". An unanimous decision!

And no wonder. The tester expressed his opinion, in a field, upon which the hitting accuracy of the rocket depends entirely.

And there are many such testers, about which it can be said - that they are outstanding scientists for which the business of the state, party and scientific solutions is above anything else. In the practice of constructors and testers not all-rose colored smoke is sweet, there are also failures, it is sometimes necessary also to swallow the bitter pill. Every new pathway is not free of errors. But they can be reduced especially where they are very important - skill is necessary. And in this respect testers assume very great responsibility: each blast off of a rocket is connected with enormous labor of many people, greater material expenditures. It is understood that the acknowledgment of all this compels them to be very strict with themselves with out any trivialities.

Officer Agin - a large man, with larger head and attentive keen look. His comrades joked with him! What to you Agin snoop around rockets? Everything has long been discovered here. Are you trying to discover America for the second time. Improvement of rockets is necessary. He always met these jokes with silence. And as before not one launching was accomplished without his aid. In his actions and in his works there was something similar to witchcraft. All the time he was busying himself about the rocket, he climbed the platform at the time of adjusting (setting), he measured, calculated. It has been his conviction that adjustment of the rocket prior to blast off is an excessive, unnecessary operation. But conviction alone is not sufficient, exact proof is necessary, proof which would confirm beyond any doubt, that this will not reduce the firing quality, and mainly, its accuracy. And the elimination of adjustment (laying) will offer a greater gain in a field of such importance as tactical readi-

ness. The game was worth its candle !

Few have known, what efforts the engineer paid with for the idea of mastering it. Persistent calculations, thorough analyzes, have taken away all free time , quite of ten he had to spend sleepless nights. But he knew that the way to knowledge is not an easy and beaten one , the path to its peak is a difficult one and a twisted one. Patiently, fragment by fragment scientists are gathering facts. And only then, during the remelting of the golden tinsels do in their minds form the very same ingots which help build the strong walls of our science.

A year has passed, Agin has given proof. Even the most outspoken critics could find no doubt in its indisputability.

And although the engineer-tester has not presented his findings in form of a dissertation for the purpose of attaining a scientific degree, his efforts appear to be scientific in the highest meaning of the word. This is not because he spent a whole year of self-denying investigations. It is first of all because his effort has immediately given a serious practical gain for the military.

Perhaps, like nowhere else, you can feel here a high effort and devotion to duty of our times: each new day confronts the testers with problems ,which are in no way similar to the problems of the day before- rocket technology is making rapid advances. It is said here in a joke : "with the theory of relativity we are already on friendly terms " We are dealing in unheard of velocities. This has a double meaning: greater velocities of rockets, the path of which is being constructed by the testers, and simultaneously - a high tempo of their truly titanic efforts.

But life does not stand still also in an another respect. There is a natural process of "desertion of oldsters ". They climb the service ladders, fill in and occupy the central apparatus, military, scientific institutions - such cadres are necessary everywhere, their rich experience is in favor of the common task covering many fields. One tester is now gainfully working at a military institution, another one is getting

ready for departure for studies at an academy. Recommending him as a candidate, and leaving their group the testers said: He brought great gains here, but he will become more useful as a future pedagog, instructor of engineers.

And there is still another detail, the future prof.assistant has done everything possible here and nothing, as it appears, can keep him here any longer - "a free man" but every morning as before he will board the bus together with others going toward the launching area.

Youth is replacing the "oldsters", youth graduating from scientific institutions. Capable, saturated with rich theoretical knowledge that becomes ill with the disease of testers.

Not a year has expired from the time when young engineer Karpov became a member of the family of testers. It so happened, that before he arrived he has been already entrusted with a responsible task: to participate in the testing of one of the complex installations. And although all this took place in accordance of a preset arrangement, the slogan reads: "from the boat into the sea, - and swim", but the young engineer has proven himself resourceful and full of initiative. The interesting job has all gotten him. He was rather satisfied with himself. A good thing that already back at school (scientific institute) he took the task of studying the control system with seriousness. Karpov had to devote his personal time, he had to give up entertainment, and for youth this is a tough job. But he overcame all the difficulties by saying to himself: "What kind of an engineer will I be if I only know from here to there"? and what comes after it - a blind kitten? He then specialized and received a diploma closely connected with the control system. Now everything is highly useful.

Karpov was christened as a tester on the very same year at the time of autonomous testing of equipment. Yes, he has then demonstrated a thorough knowledge, skill of penetrating into the secrets of the new technology. His remarks and conclusions, weighty proof at commission meetings have made many persons happy. He was then told: Well done Karpov, you have passed the exam.

Right now the young officer was blessed with the birth of a new daughter Lena. Far away from here in one the cities his wife Tamara is taking state exams. She will become a doctor MD and soon together with the daughter will join her husband for permanent domicile.

The acquaintance with rocket testers, people of the leading edge of our time, has come to an end. I carried away the conviction that they are people who made one step into the future, for which the difficult, uneasy job has become not only a necessity but also a requirement of soul and heart. In here lies the secret of their "illness". You cannot be here and work here if you are not affected by that disease. During these years there was here such a fact. One of the testers fell victim to another type of illness, he thoroughly prepared a heap of problems and placed them all on the table. And without even looking at all these strips of paper, they all scampered away from him. When he showed genuine surprise, he was told:

- Any job requires inclination, and the job of testers - three times as much.

Yes, the testers have their higher, main inclination and purpose: the military should receive only perfect rockets !

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