Spreewerk "cvq" Code Analysis

From Jan Balcar:

First of all I would like to say thank you to everyone that has contributed a photograph of their “cvq” marked pistol on the previous post and especially to Ron for his assistance.

First a little about myself: I graduated as an engineer/technician from Western Bohemian University. For many years I was an employee of Skoda works in Plzen in a machine tool factory (which was a former armory). Among other things, I am skilled in die production. Currently my brother and I are co-owners of a small company. The main focus of our business is milled steel products and welded frameworks.

The cyq vs. cvq battle has fascinated me for a long time, and I was a “code change guy”. I found the “Broken Die Theory” (BDT) unbelievable, because no single factory anywhere in the world is based on one die! I also found the “Rathgeber production theory” unbelievable as well, because the other markings on these pistols are the same as regular Spreewerk production. And a late war pistol that was stolen from the factory in late April 1945 had mixed markings of cyq and cvq.

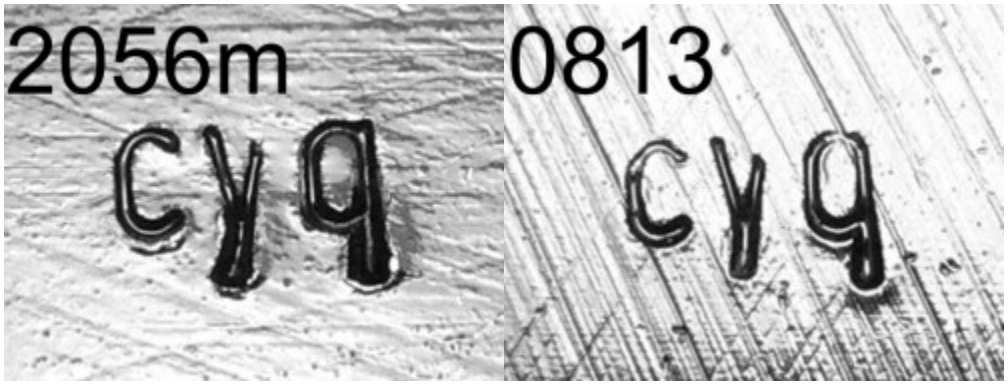
Watching TV can become a bad habit. The impulse for this “forensic analysis” probably comes from my wife. She watches the TV series CSI Miami, and CSI Las Vegas. Yes, my inspiration comes from Horatio Caine and Bill Grissom…….

And how we find out:
Early production pistols have the cyq code that is done with a pantograph machine. Dies were not used. The pantographic engraving machine is a device which is based on the principle of parallelogram, coupled with a rotating ball end milling cutter. The characteristic signs that a pantograph engraver has been used, are that the bottom of the engraved letters show the evidence of tool marks, and the margin of the letters are not raised. Example pistols are: 1149b, 3897b, and 9725b.

The vast majority of the pistols from the first alphabet series (a-z suffix) are marked with the cyq die. Pistols from the second alphabet series (a&b pre-fix) and the zero series have the mixed markings-cyq and cvq (some of each appear). The stamp was applied by hand with a copper hammer to prevent it from bouncing and causing a double strike. Because it was done by hand, the position of each stamp varies from slide to slide. The characteristic sign that a die has being used, is that the margins of the letters are raised.

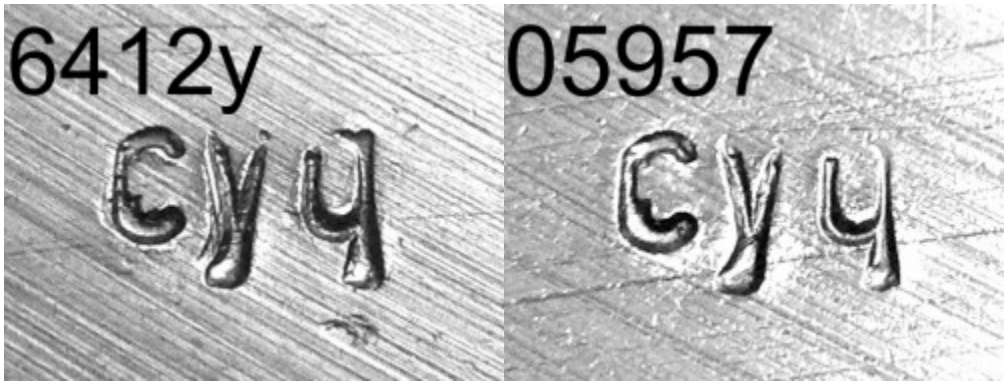
A little bit about die production:
The older method of die production (also during WW2) was based on an engraved plate with a hand engraved positive image. This was the matrix or "master" plate. This matrix is made of steel, and after it is engraved, it is then hardened. The die is also made of steel. It is then heated to an "orange glow" and pressed into the matrix. This steel stick with the desired negative image is cooled gradually to prevent it from becoming hard. The die is in a "soft state" at this time and the final tapering and correcting of the details can be done with a file. After this the die is then hardened. From one matrix many dies can be made. The matrix is expensive to produce, the dies are not. I have never seen a situation where just one die was made from one matrix. All dies made from the same matrix would be similar, but not exactly the same because they are hand corrected with a file.

My analysis shows that there was more than one die used. In the production of pistols that lasted almost three years, some dies became worn. These produced non-specific stampings with different identifiable defects. From the pictures I have taken it is clear that one die has a normal letter "c", and another die (or dies) have a defect on the letter "c". The SN of the pistols with the **normal letter "c"** are: 2056m, and 0813.



The examples of the cyq stamping with the **defect in the letter "c"** are: 6412y, and 05957. These two are VERY IMPORTANT! Note: that these two codes both have (besides the defect in the "c") a wider lower portion of the letters "y" and "q". It is a sign of wear, and it is my conclusion that this particular die was made of defective steel, or was not hardened

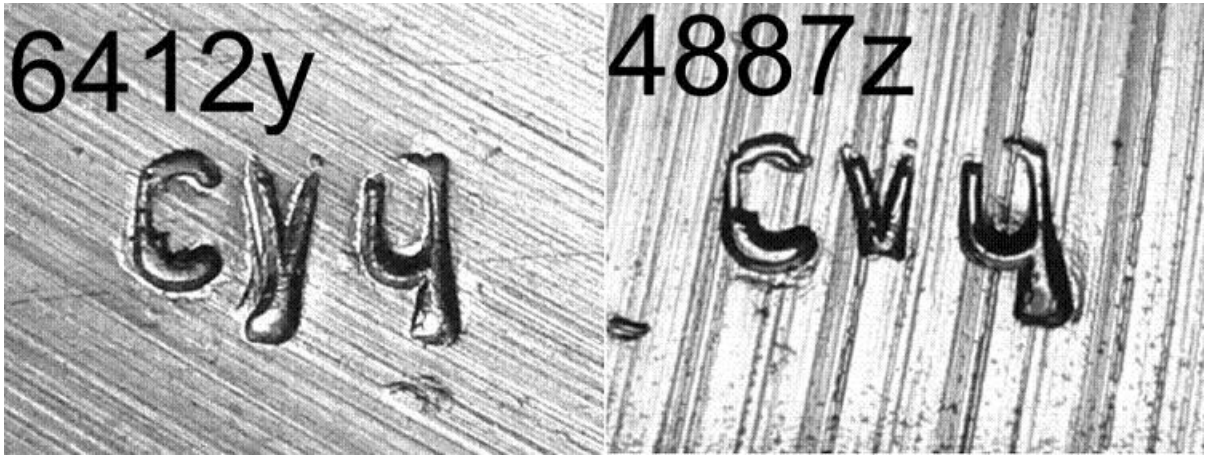
properly. **THIS WAS THE SPECIFIC DIE THAT LATER WAS BROKEN!** I am confident you can find in your collections a lot of pistols from the end of the first alphabet code that will have the cyq code with the defective letter “c”, although this may not be visible with the naked eye. You may have to use magnification to observe this.



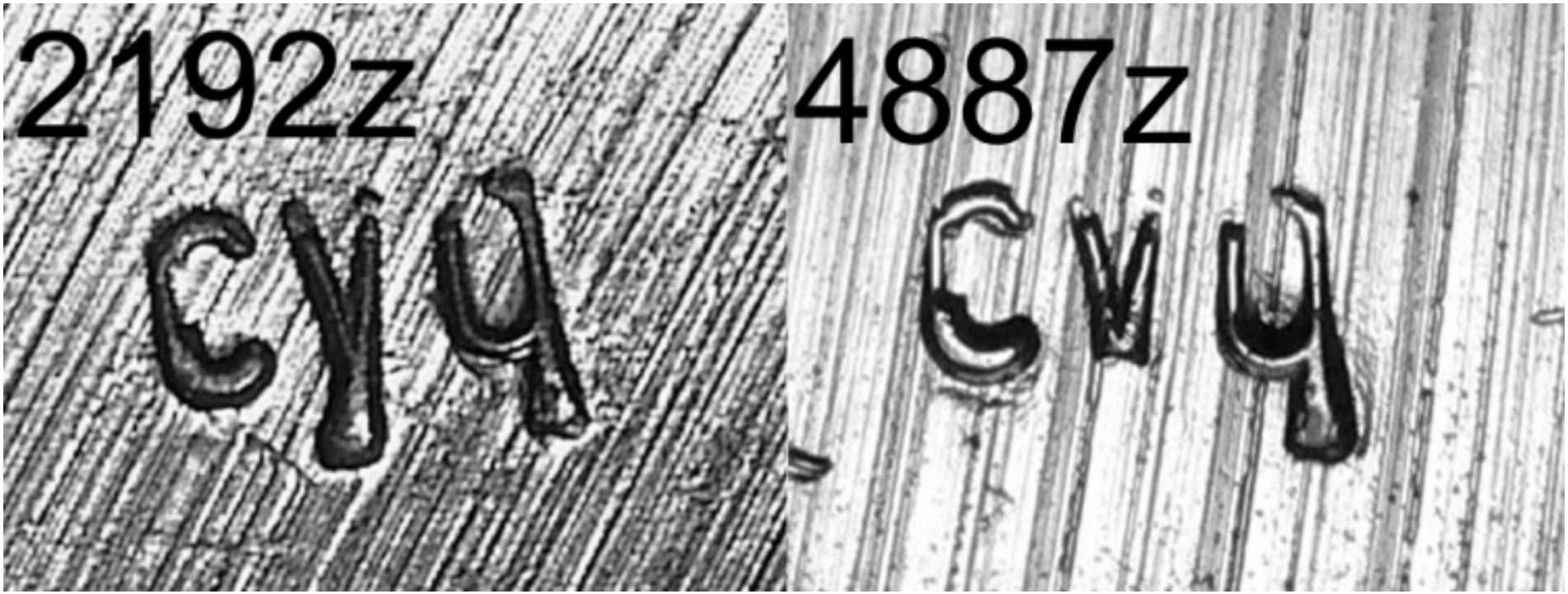
From the middle of the “z” suffix in the first alphabetical series there are some pistols marked with the cvq code. The same situation is present in the second pre-fixed alphabetical series as well as the zero series. You will see here 9 examples of the cvq code: 4887z, a394, a818, a1462, a5597, a8208, b3464, 05729, and 0066. All of these have the cvq code stamps that have the defect in the letter “c”, similar defects on the upper part of the letters “v” and “q”, and also the widened lower part of the letter “q”. This same die that produced this cvq code shows further wear as time goes on. The progression of SN’s now also shows that the lower part of the “q” is fading. The only exceptions are two pistols from zero series production. SN 05957 has the cyq marking done with the same die that has the defective letter “c”, and the marking seems to be done from an earlier time such as around the same time as SN 4887z. My explanation it that both pistols have mismatched barrels, and the frames are not numbered. Both of these pistols were stolen from the factory in the last days of the war.

And now the final analysis:
The Spreewerk factory had more then one cyq die.
Dies were used together side by side.
Worn dies were substituted.
One cyq die was made incorrectly, either with defective steel or was not hardened properly.
Sometime in January 1945 the die with the defect in the letter “c” was broken and the letter “y” then looks like a “v”
Slides were further stamped with a few different dies, of which one of these was broken.

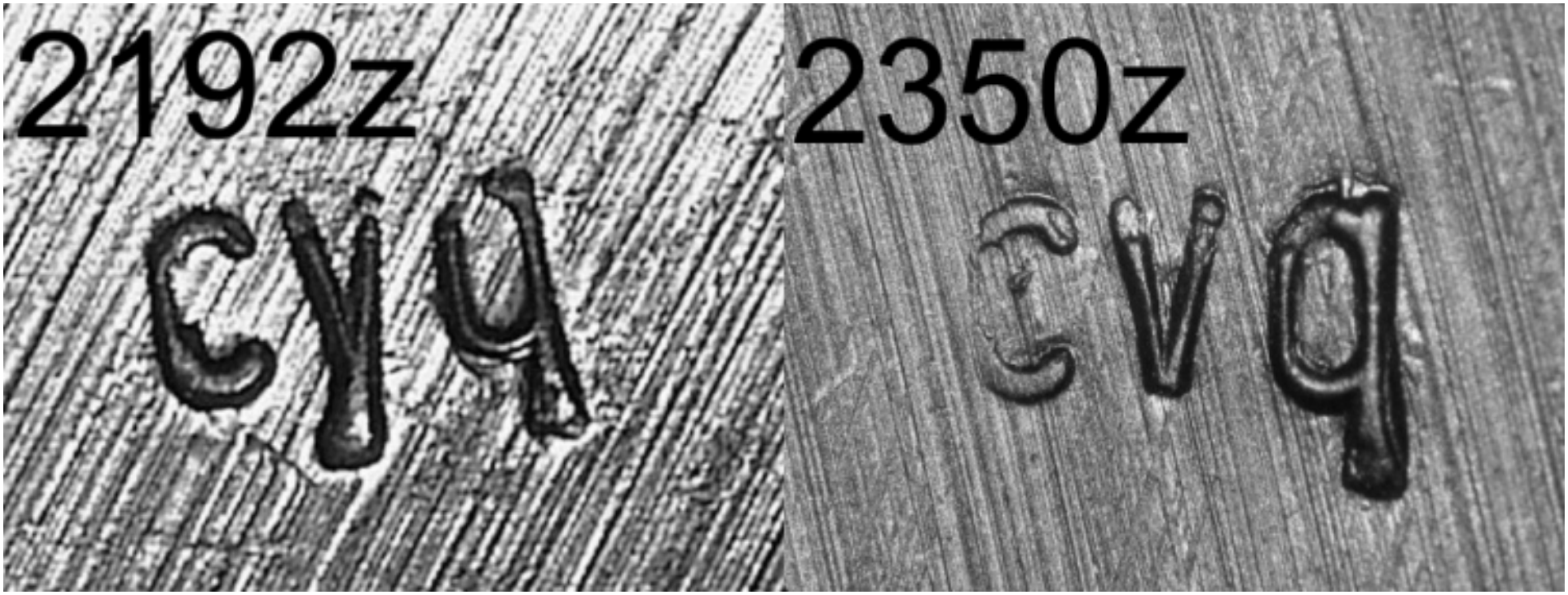
It is not easy for a former “code change guy” to say I was mistaken. The broken die theory is correct. To any critics: If you are still of the opinion we do not have enough examples to come to this conclusion- please send more pictures.



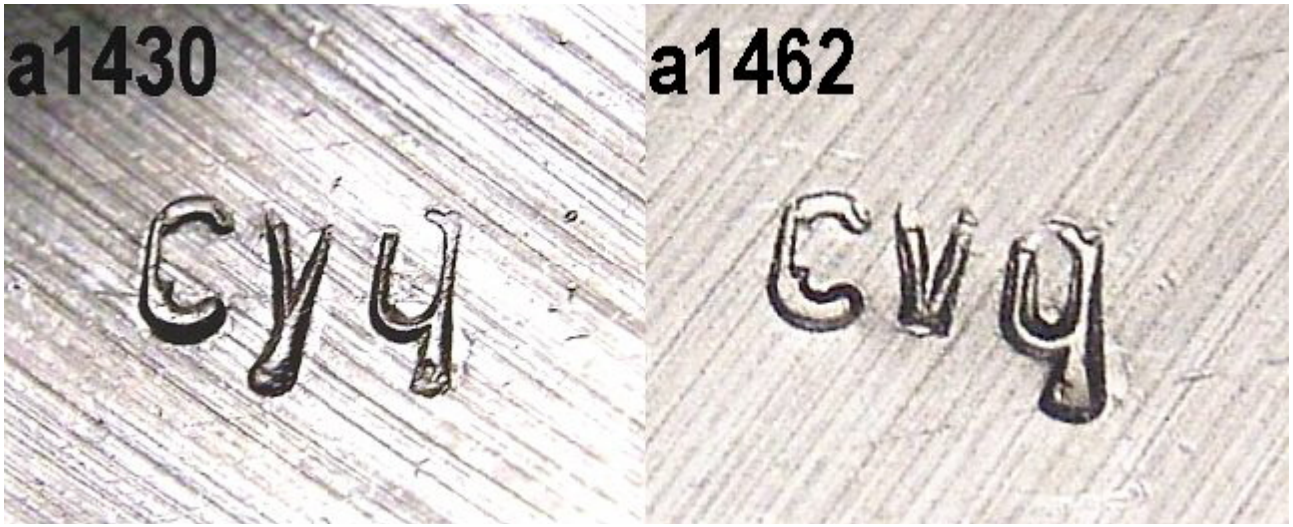
And now we have a smaller gap in-between these stamps.



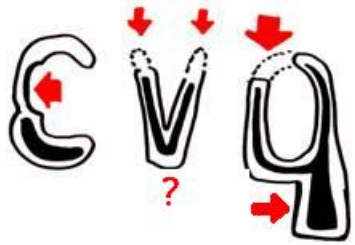
And finally perhaps the smallest gap we can expect. Only 158 pistols separate these two. The photo of pistol 2350z was submitted by Dietrich Jonke of Germany. This pistol is important because it is the earliest "cvq" pistol we can document with our research that was stamped with this broken die. It had been speculated that the "cvq" code started showing up around the middle of the "z" block of pistols. But now of course we can prove that it was earlier.



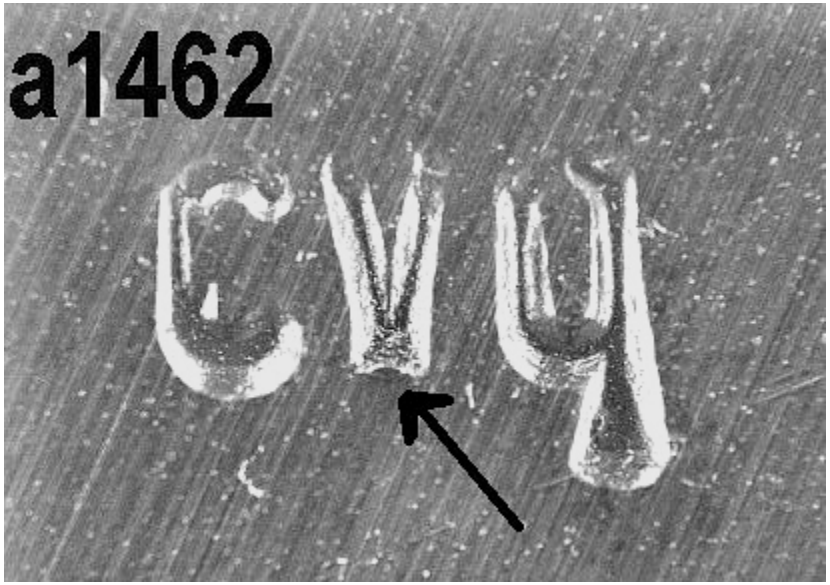
UDATE 1/28/08:
These two pistols are very close in SN, however we can see that the slide on SN a1430 was code stamped before the damage occurred to the die. As of now it appears that the damage to this die occurred at about SN2300 of the "z" block of pistols. So we can see that these earlier "cyq" slides were assembled onto later SN'd pistols.



And here we see a better drawing that points out these key indicators or "identifiers" of this die. Although the above photos were taken from slightly different distances, angles, and with different cameras and lighting. I believe these "identifiers" are quite noticeable.



So far in this research: Every photo that has been submitted where the detail has been usable for this research on the late war "cvq" pistols, has shown these "identifiers" from this die are present. They are all stamped with this same die!



Also please note in the above photo submitted by Leon, that the bottom of the letter "v" is quite jagged in appearance. It is neither a flat bottom or a pointed bottom. And it is quite obvious that it is broken. Again, the stamp has all the other "identifiers" associated with this same die.

More Discussion:

For more discussion on this topic, see the links below:

http://forums.p38forum.com/forums/viewtopic.php?t=14246&start=0&postdays=0&postorder=asc&highlight=

http://forums.p38forum.com/forums/viewtopic.php?t=14211&start=0&postdays=0&postorder=asc&highlight=

Research and theory conducted and presented by Jan Balcar and Ron Clarin. January 2008.