

*70 years from the largest ever  
counterfeiting of banknotes:*

# Operation Bernhard

(Part One)

by Martin Fürbach\*



Figure 1. Part of banknote bearing watermark "Bank of England" and code indicating production date.

*This article (going to be followed by second one in next issue) deals with the counterfeiting of British currency by Germany during World War II. In this issue the historical context is presented, while the second part (SPH Nr. 101) will address many of the interesting aspects of the analysis of counterfeiters, with the accent for the analysis of the paper and particularly their watermarks.*

Counterfeiting coins and banknotes has existed since the very beginning. Except in cases of clear economic profit we find few examples in history where the principal motivation was different - the destruction of a foreign economy (Cooley). In the first days of World War II, Germany's Nazi government decided to start counterfeiting British Pounds (Malkin). The initial idea was simple - to destroy the economy of England through hyperinflation, by flooding it with large quantities

of counterfeit bills thrown from aircrafts. This required the production of very good quality counterfeits and was done over the span of two operations, now nicknamed Operation Andreas and Operation Bernhard. It should be mentioned that both England and the U.S.A. considered counterfeiting the German mark during WWII, however this plan was rejected (Malkin).

In the 1930s many countries around the world printed banknotes using multiple printing techniques and coloured designs including a variety of security features to make counterfeiting difficult. This was not completely the case of England where the Bank of England issued two types of banknotes – modern 'coloured' notes and 'White notes' – that had designs (and security) that had hardly changed since the nineteenth century. White pounds were printed using a letterpress printing technique with black ink on handmade watermarked paper (Fig. 1, Fig. 6, Fig 7). The banknotes

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were printed in the Bank of England's printing works and the paper was produced by Portals (currently Portals is part of De La Rue, one of the largest private banknote printers and security paper producers). Ink was ordered from Germany as it was known for its production of quality black printing inks.

### Operation Andreas

For the production of the counterfeit currency, Alfred Naujocks commander of the security service's technical section (also known as 'the man who started the war' due to his involvement in the Gleiwitz incident which was a false flag operation by Nazi forces against a German radio station which was used as a pretext for invading Poland), used premises at Delbrückstrasse, in Berlin. Counterfeiting was supported with a budget of about 2'000'000 reichmarks - equivalent to 10'000'000 CHF today (Malkin). The first problem that counterfeiters had to face was the production of paper for the banknotes. According to the archive materials, this was the most difficult task and demanded the majority of their time. An analysis of paper used in genuine British Pounds was done at German chemical universities, involving multiple physical, optical and chemical tests (Burger). A paper mill in Spechthausen (Fig. 2) at Eberswalde produced the majority of the paper, while a small amount was produced by Hahnemühle in Dassel (Fig. 3). Due to the quantity of the counterfeits required, machine made paper was used in order to speed up the process (Malkin). It is not clear how Germans discovered that the genuine paper used by the British was made using raw materials produced in Turkey, but it led to their acquisition of them from the same source. Many authors claim as a fact that German spies found that Portals used rags or recycled mailbags in their production of the paper instead of using new materials. To imitate these properties the Germans used rags that had been used in factories for cleaning machinery and turned them to paper production (Burger). Malkin doubts this claim as there is no documentary evidence to support this theory (Malkin). The engraving of the copper plates for the letterpress

and galvanic reproduction took more than half a year, particularly the replication of Britannica (Fig. 6 - top left part of note). With the help of mathematician and cryptograph Langer, the system of numeration for the genuine notes was cracked. However despite the progress made, the counterfeiting done under the direction of Naujocks was not considered a success, moreover Naujocks was punished for his involvement in the spying on Heydrich and Operation Andreas was shut down after having printed around 200'000 ten-pound notes (Malkin).

### Operation Bernhard

Around July 1942, the responsibility for counterfeiting pounds was transferred to Bernhard Krüger, an SS officer from technical section VIF4. His background was in the textile industry and he worked in various counterfeiting related projects for the SS. He abandoned the use of paper from Spechthausen and continued using only paper from Hahnemühle. The most likely composition of the paper he used was 90 percent cotton and 10 percent linen (Byatt), while some scholars have said that only cotton was used (Burger), and that ramie was also used (Malkin, Bartsch).

Documentary evidence supports the view that the paper for British Pounds in Hahnemühle was produced by machine (Malkin, Byatt) while other sources, such as the technical report of the late director of Hahnemühle Mr. Bartsch, (in Burger),



Figure 2. Paper mill Spechthausen (Photo: archive Burger)



Figure 3. Paper mill Habnemühle (Photo: archive Burger)

indicate handmade production. Nonetheless, the paper used was developed during 1942, it was 40 g/m<sup>2</sup> and each sheet of paper could be used for printing of eight counterfeited notes. 110 sheets of paper were pressed and stocked in stacks of 500. Paper was left to age for a few weeks and then sorted according to quality. About 1'461'000 sheets were produced from 1943 to 1945. The complex watermark of a counterfeit can be seen in transmitted light in Fig. 1 and Fig. 7. Under the nominal value in the centre there is a code that consists of one letter and 4 numbers. While the meaning of the letter is not known, the four numbers bear date information: the first two numbers indicate the week of production and third and fourth numbers indicate the year.

In July 1942 Krüger started to search for counterfeiters to employ, and he scoured the concentration camps for prisoners with knowledge of the art of printing and photography and for those who were manually skilled. Those who met his criteria were transported to Sachsenhausen. This project was kept completely secret and two buildings (Blocks 18 and 19) were held under maximum security where the team of prisoner-counterfeiters grew from an initial number of a few dozen to eventually number 144. These prisoner-counterfeiters were kept separate from the other prisoners and even the director of Sachsenhausen camp had no idea what was happening in those two buildings. The counterfeiters were better treated than the other prisoners with regard to their food and leisure time provisions as they were able to listen to the radio and later ping-pong table was installed as gift to reward their success in counterfeiting the British notes.

Preparation of the plates was done by the employees of the technical section and took place on the Castle Friedenthal which were close to Sachsenhausen. It is not clear the extent of the prisoners' involvement in the preparation stage – for example plate correction. The main task of the prisoners was printing. This process involved separating an original sheet of paper (as produced by the paper mill) into two parts and on those sheets (which would bear four notes) the printing was done in two steps: printing of principal part of note followed by numbering. Tearing the paper by hand with the use of a ruler was done to imitate the appearance of the edges of genuine notes. To imitate the appearance of used notes, the counterfeits were folded, wrapped and modified by either folding or tearing. Some notes were also perforated, however the justification for this is unknown. Certain sources claim that this was done to imitate the perforation found on genuine notes (at that time in England, due to the large size of the notes, they were sometimes folded and held together with safety pins, hence the holes) (Burger), while other sources claims that this was done to hide printing defects. Burger later claims that most of the notes were perforated through part of Britannica in order to mark them as fake and it was hoped that this information could be passed on and used for their identification (Burger).

Counterfeits were classified according to their quality and this was the most difficult task as it consisted of a careful visual inspection of the printing details and watermarks both under reflected and transmitted light. In various sources, some four



Figure 4. Concentration camp Sachsenhausen

or five classes of notes are mentioned (McNally, Malkin, Burger). The best qualities were used for the payments made to spies and for military materials, while the lower qualities were reserved for later 'inflation floods' when they were thrown from aircraft, and the lowest category was recycled in Hahnemühle.

In all aspects of a counterfeiting operation, the weakest point is not found in the manufacturing of the materials, but in their distribution. It is not easy to circulate millions of counterfeit notes without attracting attention. Surveillance of the criminals putting the notes into circulation usually results (sooner or later) in the localisation of production. This was not the case of Operation Bernhard, however. While notes were printed in Sachsenhausen, Friedrich Schwend did the distribution from a place 1'000 km away in Castle Labers, Merano, Italy (Fig. 5). From here, fake banknotes were sent worldwide. The distribution network included hotel managers, bank clerks and businessmen (Malkin, Elam). Many of the notes passed into circulation in Switzerland and after having been warned about this at close of 1942, Swiss banks had stopped accepting pounds by May 1944. After the war, counterfeit notes were found all around Europe and also in South America. During various transactions counterfeits were 'laundered' (and their value was deflated) by subsequent transactions, involving the acquisition of gold, Italian lira and other currencies and commodities (Elam).

Counterfeits were not only used for multiple anonymous acquisitions of secrets and military materials, but were also used in at least two major



Figure 5. Castle Labers Merano, Italy (Photo: archive Burger)

international transactions. The first was in the purchase of British secrets from Elyesa Bazna, the valet of the British ambassador in Ankara (so-called Agent Cicero). Thanks to him Germany received photographs of dozens of top-secret documents for which it paid around £300'000 in counterfeit notes. The story of Agent Bazna/Cicero became the subject of books and movies (*Wires*). The second remarkable use of the counterfeit currency was used in the rescue of Mussolini from Gran Sasso as fake pounds were used to pay informants and other expenses related to his rescue (Burke, Malkin).

As the large quantity of notes produced in high nominal values started to raise suspicions, the main efforts of the counterfeiting project shifted to focus on the production of lower nominal values, in particular the £5 notes which eventually accounted for half of the overall production. Later Germany realised that there were too many counterfeits of British notes and even via the use of a large and sophisticated network had become increasingly difficult to put the total number of banknotes into circulation. At the same time Turkey had ceased to deliver rag materials to Germany for its paper production and replacement materials were inferior and could not produce paper of the same high quality. This led to the counterfeiting of the U.S. dollar, with the help of Sally Smolianoff – the only person in the team who was a professional banknote counterfeiter both before and after the war (Bloom). Due to difficulties and time consuming nature of the preparation of the intaglio plates that were used in the production of genuine dollars it was decided to imitate the process by collotype instead (McNally). However dollar production was delayed, and it resulted in the production of only a few hundred notes. Counterfeiting in the Sachsenhausen was not limited to banknotes – it included the preparation of fake documents of all types – from the letterhead papers of the Red Cross, to passports, birth certificates, stamps, etc.

As the US and Russian forces advanced, the decision was made to move the printing workshop to another location – Redl-Zipf in Austria, which





Figure 6. British 5£ note in reflected light in original size.

was an underground military complex with dozens of kilometres of tunnels used for construction of V-2 rockets. In the last days of war the decision was made to again move prisoners to the Ebensee concentration camp. Despite the original plan to kill the prisoners, the chaos of the last days of war taken together with the complicated and

partial transport of the prisoners meant that the prisoners survived. The lowest quality fakes were burned, while the better quality counterfeit notes were thrown into local rivers around the Nazi naval testing station located in Toplitzsee regions. Millions of fake pounds were thrown into a lake Toplitzsee in wooden boxes.



Figure 7. British 5£ note in transmitted light in original size.

The overall quantity of the production of counterfeit British banknotes is well documented and according to various sources the total number of all denominations (£ 5, £ 10, £ 20, £ 50) in all the categories of quality was 8'965'085 pieces which valued £ 132'610'945. During the period of production, 671'622 notes with a total value

£ 10'368'445 were sent to the Reich Central Security Office in Berlin. What is not clear is how many of the finished notes actually entered circulation. Various sources indicate that values in the millions were burnt at the end of the war, and notes in value of about £ 21'000'000 were found in the first days after the war (CIA). Many sources



wrongly estimate that the number of fake notes in circulation constituted 40 percent (for example Burger, *Die Fälscher* movie). On the contrary, the above mentioned estimate that left Sachsenhausen seems to be low, because for example notes in the value of £ 5 million were found in the organ of the San Valentino Church in Merano. It is possible that this is not an isolated example and that other caches existed (or perhaps still exist) elsewhere.

### Investigation after war

The extent of German counterfeiting was not only a concern for the Bank of England which joined with Scotland Yard to begin an extensive investigation and produced the Reeves report (Byatt). Tentative counterfeiting of the US Dollar led to an investigation made by Captain McNally from the United States Secret Service as well (McNally). Only a few days after the end of the war Burger visited the National Bank in Prague and informed it of its participation in the counterfeiting (Burger), which led to an investigation of the Czech police concerning the possible use of the counterfeits and the possibility that some of the released prisoners from Sachsenhausen had continued to engage in counterfeiting after they were freed (Sem). Swiss police officer Andre Amstein wrote another very extensive report (Bloom, Burke) however no report related with Amstein has been found in the archives.

The magazine *Die Stern* received permission to dive in Toplitzsee lake in 1959 and a huge quantity of banknotes was recovered (Löhde). This was followed by multiple 'independent' and illegal searches, and was finished by the 'cleaning' of the lake by Austrian authorities in 1963. Toplitzsee still attracts divers, not only because of the banknotes and rumours about gold being in the lake, but because it has a unique biology as it is composed of salt water, hydrogen sulfide and absence of oxygen, making it an area of interest for biologists (CBS, Fricke).

Despite the publication of many books and articles, we still lack a complete understanding of the counterfeiting project that took place in Germany. This can be explained in part by the following:

1. Counterfeiting banknotes is in general a very secretive practice. Nobody involved in the implicated institutions has any interest in discussing their privileged information as they fear it could be of use to future potential counterfeiters. It is unlikely that there are any conspiracies to explain the missing information; it is simply that no country would communicate more about it than England. However it is suspicious that several of the principal reports made after the war have left no traces - Interpol does not have the so-called Amstein report and the Bank of England claims that the Reeves report is not in its archives (Byatt).

2. Missing information does not mean that the necessary classified or secret information is being hidden in the archives - it is very probable that many of the documentation and materials have been lost or destroyed over time. Burger describes the burning of the counterfeit notes in the first days of May 1945 and it is probable that similar acts of destruction were taken in other places in last hectic days of war. Other items may remain undiscovered at the bottom of lakes in the Toplitzsee region.

3. Information and materials could have been seized by the US or Soviet armies' forces and remain in archives as classified information - or perhaps they have yet to be discovered by researchers because they are held far from their points of production. This was the case of the technical information and dozens of photographs related to the production of watermarks and printing plates that stayed classified in FBI archives until 2000.

4. Counterfeits were used in intelligence operations and those operations were subject to national security measures and were therefore considered secret. Among those who could have profited from fake notes is mentioned for example



Figure 8. Adolf Burger during interview in 2008.

Alan Dulles, who worked for the Office of Strategic Services in Bern during the WWII and later he became the first director of the CIA (Elam). The CIA officially released the files related to the counterfeiting of banknotes and their distribution in 2007 (Ruffner).

5. Similar counterfeiting operation took place after the war (Cooley).

6. Eastern countries ‘modified’ the story and used Operation Bernhard for propaganda purposes on account of the fact that the principal perpetrators had not been punished.

7. For the Bank of England, the extent of the counterfeiting was bad publicity and threatened the UK’s economic stability and shook the public’s trust in their currency. There had been good reason to underestimate the extent of Operation Bernhard. British authorities preferred not to discuss it publicly and issued a new generation of banknotes. Certain information was declassified in 2012 from the archives of MI5. From declassified documents it is apparent that Britain profited from

the information communicated to them from foreign banks and police, however the extent of information shared by the Bank of England with other countries was limited (Malkin).

8. England is one of a few countries where all the banknotes ever issued remain legal tender, so it is still possible to exchange withdrawn genuine ‘White pounds’ for valid ‘new pounds’ (however, the banks will reimburse them only at face value, while the value for collectors can be hundreds of times higher). Thus the Bank of England has good reason to keep certain information secret as it helps them to determine whether the notes in question are genuine or not.

## Publications

Burger, (Fig 8) wrote his first publication a few months after his release (Burger); later other prisoners followed (Krakowski, Nachtstern, Groen, Edel). Despite that, Operation Bernhard received the most media attention when reporters of Der Stern searched for the lost pounds in Toplitzsee in 1959 (Löhde).



Burger's memoirs formed the basis of the movie 'Die Fälscher' which in 2008 received the Oscar for the best foreign film. The most comprehensive book concerning the production of counterfeit notes during the war was written by the American journalist Malkin. Elam, an investigative journalist in Switzerland, focused on various aspects of the distribution and laundering of counterfeits.

Counterfeiting of British Pounds during Operation Bernhard remains an interesting topic, not only for historical researchers, but also for the thousands of visitors to Albrecht Syen's Fisherman's Hut in Topłitzsee. As a result of his interest in the search of the lake, he has amassed an incredible collection of articles and photographs documenting the process – all of which is displayed on the walls of his restaurant. This demonstrates that pertinent information can not only be found in archives, but in private possession as well as local places and people are the custodians of their history. Unfortunately, it is too late to verify a recently declassified files with the original participants in the events as the people who participated in this enormous act of counterfeiting are mostly deceased, with only three of the original 144 prisoner-counterfeiters still alive.

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