Louis D. Caplane and William G. Magee. Undated but apparently ca. August 1949. Source of certain funds held for Sammelkonto Accounts by the Austrian National Bank at Linz, Upper Austria. Records of the Property Control Branch of the U.S. Allied Commission for Austria (USACA), 1945–1950. [NARA RG 260, DN1929, Roll 0126, pp. 26 ff.]

[...] Shortly after the occupation, Hans Kammler appeared before the CIC in Gmünden and made a detailed statement on the operations and activities on the Baustelle Ebensee, as well as on the account, and his own authority and authority of Karl Engelhardt. None of the present American officers at the CIC, Gmünden, is familiar with his statement but it should be in the files there. Mr. Morrison of the CIC, Gmünden was requested by the team to send a copy of this statement to Mr. Loehr. [...]

[See document photos on pp. 5002–5003.]

APPENDIX D. ADVANCED CREATIONS IN NUCLEAR ENGINEERING

Declassified per Executive Order 12958, Section 3.5 NND Project Number: NND 785009 By: NND Date: 1978

TO: Mr. Hal Huston Chief, GEA Branch

> Albert Segat Head, Property Control

- FROM: Louis D. Caplane William G. Magee
- SUBJECT: Source of certain funds held for Sammelkonto Accounts by the Austrian National Bank at Linz, Upper Austria.

1. AUTHORITY: Decree No. 3 covering the blocking and control of enemy property in Austria was issued in Linz by the Military Government of Austria on or about 6 May 1945 and was reported to have become effective 13 May 1945. The article 1 of this decree states as follows:

- "1. All property within the occupied territory of Austria owned or controlled directly or indirectly, in whole or in part, by any of the following is hereby declared subject to seizure of possession or title, direction, management, supervision or otherwise being taken into control by Military Government:
- Austria, the German Reich, or any of the Länder, Gaue, or Provinces, or other similar political sub-divisions or any agency or instrumentality thereof, including all utilities, undertakings, public corporations or monopolies under the control of any of the above:

1

Figure D.975: 1949 memorandum from Louis D. Caplane and William G. Magee, proving that Hans Kammler was alive and being interrogated by the United States as of mid-1945 [NARA RG 260, DN1929, Roll 0126, pp. 26 ff].

5002

NARA RG 260, DN1929, Roll 0126, pp. 26 ff. Records of the Property Control

Branch of the U.S. Allied Commission for Austria (USACA), 1945--1950

Declassified per Executive Order 12958, Section 3.5 NND Project Number: NND 785009 By: NND Date: 1978

5003

Ebensee and about S 2,400,000 were authorized for payment to creditors. Payment, however, was stopped and this accounts for the large balance.Had this sum been paid the balance would have been 1,100,000. On the other hand some additional 3,000,000 was forwarded to this account by the Reichsbank in München but the sum was not credited to the account because it was stopped by the Military authorities before it left München.

Shortly after the occupation, Hans Kammler appeared before the CIC in Gmünden and made a detailed statement on the operations and activities of the Baustelle Ebensee, as well as on the account, and his own authority and authority of Karl Englehardt. None of the present American Officers at the CIC, Gmünden, is familiar with his statement but it should be in the files there. Mr. Morrison of the CIC, Gmünden was requested by the team to send a copy of this statement to Mr. Loehr.

CONCLUSIONS :

 Sammelkonto was established by the Financial Division of the Military Government in 31 July 1945.

2. Sammelkonto received monies belonging to the German Wehrmacht and its affiliated organizations.

3. The details of the account show that some of the funds could not be classified as direct Wehrmacht funds without a more thorough investigation. There were erroneously classified as Wehrmacht funds.

Although the subsidiary or anizations such as

Figure D.976: 1949 memorandum from Louis D. Caplane and William G. Magee, proving that Hans Kammler was alive and being interrogated by the United States as of mid-1945 [NARA RG 260, DN1929, Roll 0126, pp. 26 ff].

George C. McDonald to Ernst Englander. 2 November 1945. Subject: German Underground Installations. [AFHRA folder 570.6501A 1945–46, Special Projects—Current. Microfilmed as AFHRA C5098 frame 0886.]

HEADQUARTERS UNITED STATES AIR FORCES IN EUROPE Office of Asst. Chief of Staff A-2 APO 633

AAF Station 179 2 November 1945

SUBJECT: German Underground Installations.

TO: Major ERNST ENGLANDER, A.C., Headquarters USAFE, APO 633.

1. I have been instructed by the AC of S A-2, Headquarters Army Air Forces, Washington, D.C. to furnish detailed information from many aspects on enemy underground installations, techniques, etc.

2. In view of recent scientific developments, it is considered of the utmost importance for future planning and of the highest priority that we obtain all the benefit of the experience of German industry regarding the use of such facilities.

3. To implement the required study, you are directed to make the necessary arrangements to personally interrogate Speer, Kammler and Sauer and report your findings to me as soon as possible.

GEORGE C. McDONALD Brigadier General, U.S.A. Asst. Chief of Staff A-2.

[See document photo on p. 5005.]

AFHRA folder 570.6501A 1945–46, Special Projects—Current



Figure D.977: 2 November 1945 letter from General George C. McDonald to Major Ernst Englander, proving that Hans Kammler was alive and being interrogated by the United States as of November 1945 [AFHRA folder 570.6501A 1945–46, Special Projects—Current].

[By the end of the war, SS General (and Dr. Ing.) Hans Kammler controlled and knew the details of virtually all secret German weapons research and development. There are a number of reasons to believe that Kammler's authority and knowledge also included the nuclear program by the end of the war:

- In postwar interrogations, Skoda chief Wilhelm Voss stated that Kammler and his staff were in charge of the "most secret" weapons, including the atomic bomb (p. 4960).
- Heinrich Himmler's adjutant, Werner Grothmann, repeatedly said that Kammler was in charge of executing the nuclear program for Himmler and the SS, in direct association with Wilhelm Ohnesorge from the Reichspost [see for example pp. 3420 and 3899, and many other examples in Krotzky 2002].
- Surviving documents demonstrate that Kammler was indeed closely involved in technical discussions between Himmler at the SS and Ohnesorge at the Reichspost, and apparently directly responsible for implementing their programs (pp. 3403–3405).
- According to the 1962 interrogation of Heinz Wachsmut, written orders related to the March 1945 Thuringia nuclear test were signed by Hans Kammler, along with other SS and Reichspost offices (p. 4604).
- Kammler was in charge of all underground factories, including those where nuclear work apparently occurred, as well as the concentration camps that supplied the labor for those factories.
- Kammler was listed as a recipient for train shipments of supplies at the Gusen underground facility, alongside scientists such as the nuclear physicist Siegfried Flügge and the implosion bomb expert Hubert Schardin (p. 3916).
- Refugees from a nuclear facility in Lüneburger Heide seemed to indicate that Kammler was in charge of that and other similar facilities (p. 4218–4219).
- By the end of the war, Kammler controlled the potential delivery methods for nuclear weapons, including long-range rockets and jet aircraft.
- Kammler steadily amassed power over all types and aspects of advanced weapons development over the course of the war, apparently due to a combination of great political skill, extreme ambition, and ruthless efficiency. It would seem inevitable for the nuclear program to have eventually fallen under his control—he would not have let anything stop him.
- The documents on pp. 4977–5005 demonstrate that the United States concealed the fact that Kammler was alive after the war, shielded him from prosecution, and relied on his knowledge and assistance. Moreover, the United States has tried to keep that secret for 75+ years. Kammler must have offered the United States information that was especially useful—and especially damning—to have justified such extraordinary measures. Details of the German nuclear program would qualify as sufficiently important information.

The documents on pp. 4977–5005 prove that Kammler did not die in early May 1945, as was reported in various conflicting accounts, but rather that Kammler was alive, in U.S. custody, and available for interrogation at least as of November 1945. Apparently he surrendered to U.S. forces in early May, so he would have been in U.S. custody for approximately six months by the time of McDonald's memo, and perhaps for many more years afterward.

The U.S. government must possess lengthy transcripts or even audio/video recordings of Kammler's interrogations. It would also possess any documents and materials that Kammler had with him when he was captured, or that he was able to direct the Americans to afterward. Kammler's interrogations and documents would have provided the United States with considerable detail about the German nuclear program and other very advanced developments, such as the transcontinental rocket mentioned by Speer. (Albert Speer's own capture and interrogation, also referenced in McDonald's memo, resulted in many shelves full of documents.)

How can all of that Kammler material be located and declassified from U.S. government archives? For starters, where are:

- Kammler's detailed statement to the U.S. Counter-Intelligence Corps (likely in May 1945)?
- Ernst Englander's "as soon as possible" report to George McDonald about what he learned from interrogating Kammler (likely in November 1945)?

[For background information and more details, see Agoston 1985; Döbert 2015; Döbert and Karlsch 2019; Karlsch 2014; Michalski et al. 2019; Reuter et al. 2019; Sulzer and Brauburger 2014, 2019a.]]

D.14.7 U.S. Inspections of Possible Nuclear Facilities

[At the end of the war, investigators from the United States personally inspected many of the facilities where German nuclear work may have occurred. Reports on what they found have never been publicly released.]

German Underground Structures [AFHRA C5098 frames 0886–0890]

HEADQUARTERS UNITED STATES AIR FORCES IN EUROPE Office of Asst. Chief of Staff A-2

> AAF Station 379 APO 633, U S Army 29 August 1945

SUBJECT: German Underground Structures.

TO: Commanding General, U. S. Air Forces in Europe, APO 633, U S Army.

1. In compliance with your instructions, the following report on German underground structures is rendered.

2. This is based on the writer's personal observations during the period 14 May to 1 August 1945. It is of necessity in the nature of a preliminary report for an insufficient number of undergrounds were visited to make a complete report on so large a subject. Again, these installations were inspected primarily for their equipment installations of urgent ATI interests, rather than for the details of their construction. However, the main structural features were examined and noted.

3. A list of the undergrounds visited is attached hereto as Appendix 1. These varied in size from approximately five (5) to twenty-six (26) kilometers, lineal measure, of underground galleries. Dimensions of the galleries varied from four (4) to twenty (20) meters in width and five (5) to fifteen (15) meters in height, the floor space from twenty five thousand (25,000) to one hundred thirty thousand (130000) square meters.

4. All of the undergrounds examined are level entries driven into solid limestone, requiring drilling and blasting for excavation, to a soft, fine-grained sandstone which could be dug by pick alone. These last are all well supported by heavy masonry or concrete linings. Some of the solid limestone galleries are also lined. In all cases the workmanship (though chiefly done by slave labor) is excellent and the construction is of permanent nature for long endurance, rather than to meet temporary war construction.

5. All entries are in steep hillsides having slopes of thirty (30) degrees or more. In nearly every case an open cut was excavated in the hillside so that even the portals are under one hundred (100) feet, or more, of overburden. From the portals the rising slope of the surface increased the solid overburden rapidly to two hundred (200) to five hundred (500) feet.

CONCLUSIONS

6. Even though well drained, lighted and ventilated, these underground structures are, of necessity, inferior to surface buildings for housing industrial plants. Their only advantage is protection from bombing and they, therefore, have no place in a peacetime industry. Their continued existence is a military asset.

7. Well supported excavations under the protection of a deep solid rock overburden are extremely stable and are impervious to damage by attack from the air by any existing bomb. The future developments of the atomic bomb cannot now be predicted. However, to destroy the workings from the air, the entire overlying hill would have to be blown off, a matter of shattering solid rock, from above, to a depth of 200 feet or more. This is now considered impractical.

8. Neutralization of level entry undergrounds must include nearly complete destruction to be effective. Sealing the entrances only would be merely a short delaying action. However, where entry is by vertical, or inclined shaft, the destruction of the shaft may render reopening impractical under certain conditions. It would in any case cause a long delay.

9. So long as these undergrounds remain intact they are available for bombproof housings of important industries in any future war. It is recommended that careful consideration be given to their neutralization even though its accomplishment will be a difficult and costly work.

10. To approach this problem, it is recommended that all existing undergrounds be examined by personnel qualified to judge not only the strength of the supporting structures, but the character of the overlying rock, its structure, joints, bedding planes and other lines of weakness. Maps showing the underground galleries should also have the surface contours superimposed to show depth of overburden at all points. The above information is needed before any detailed plan of neutralization can be made.

11. It is believed that the most effective method will follow the general plan of blasting out the strategic supporting column of rock with explosive blasts strong enough to shatter the overlying rock along lines of natural weakness sufficiently to render its support impractical.

RECOMMENDATIONS

12. The overall problem can best be evaluated under the direction of a geologist with practical experience in underground development. He can correlated the primary factors:

a. the overlying rock structure and strength, with

b. its support.

With him should be associated men of extended practical experience in underground construction and an explosive expert.

13. It is recommended that this paper be forwarded to Headquarters, Army Air Forces, with the idea of selecting targets of above mentioned types for secret experiment of rocket propelled atomic bomb.

GEORGE C. McDONALD Brigadier General, U.S.A. Asst. Chief of Staff A-2.



Figure D.978: Map of Camp St. Georgen from General McDonald's report.

2 Incls: List of undergrounds. Map of Camp St. Georgen.

APPENDICES

1. List of undergrounds examined.

Camp Gusen	Aircra	aft compor	nent factory
Camp St. Georgen	"	"	"
Camp Ebensee	"	"	"
Kahla	"	"	"
Between Kahla and Jena	Optica	al lens gri	nding plant.
Redl-Zipf	Oxyge	en making	plant.

2. Attached is the map of the underground workings at Camp St. Georgen. This illustrates the general type of structure though it is more regularly laid out than the others.

This document demonstrates several important facts:

- There were a very large number of German underground installations (the six that McDonald visited were only an "insufficient number," Point 2 and Appendix 1).
- The German underground installations were massive (Point 3—up to 26 km of galleries each, with the galleries up to 15 m high and up to 20 m wide), built with "workmanship" that was "excellent... for long endurance" (Point 4) and "well drained, lighted and ventilated" (Point 6).
- The German underground installations that he described sounded fully functional during the war, not still under construction and unoccupied at the end of the war.
- Allied personnel conducted detailed inspections of the underground installations, yet (with only a few exceptions) the results of those inspections, or even the facts that they occurred at all, have not been made public.
- The Allies removed urgent war-critical materials from the underground installations (Point 2). What materials could have been so urgently needed by the United States in its continuing war with Japan—perhaps materials related to nuclear weapons development?
- After the war, the Allies expended great effort to destroy and prevent access to the many underground installations (Points 8–12).

- Underground installations that were so numerous, so large, and so advanced could have provided suitable locations not only for the aircraft, lens, and oxygen production that McDonald mentioned, but also potentially for producing large rockets, nuclear materials or weapons, or other advanced weapons systems or components.
- McDonald could only describe what he observed. It is possible that some German underground installations were evacuated and/or destroyed by German troops before Allied military forces even arrived.
- Point 13: Presumably McDonald was not suggesting nuclear test strikes on these facilities in postwar Austria and Germany, which would cause radioactive contamination of the area, not be a "secret experiment" at all, and likely provoke negative reactions from local countries and from the Soviet Union. Rather, he was apparently suggesting that the United States should build test structures similar to those he described (likely in the southwestern United States or on a Pacific island) and then detonate an atomic bomb on that test structure to see how much damage the bomb could do.
- Point 13: During the war, Heinrich Himmler apparently wanted German underground facilities to be so well built that they could even survive an Allied strike by an atomic bomb (see p. 4638). McDonald may have been aware of that intention, and may have wanted to put it to the test (but somewhere else where the test could be conducted safely and secretly, as already discussed).
- Point 13: In August 1945, the U.S. was apparently preparing "secret experiment of rocket propelled atomic bomb." However, the only atomic bombs that the United States officially possessed were more Fat Man bombs weighing 3000-4000 kg (depending on the casing), and the largest rockets that the United States officially possessed were captured German V-2 rockets, which could not carry a payload that heavy. Officially the United States did not develop its first rocket-propelled atomic bombs until the early 1950s [Chuck Hansen 1988, pp. 189–191]. In August 1945, how could the U.S. military have, or expect to soon have, a rocket-propelled atomic bomb for a "secret experiment"? Does that suggest that the United States larger than the V-2 that could carry a larger payload like the U.S. Fat Man? Does it suggest that the United States acquired a German atomic bomb (or plans thereof) that was smaller than the U.S. Fat Man? Or does it suggest that the United States acquired an advanced German rocket and atomic bomb that were already an integrated system? (There is also an earlier draft of this report with the comment about a rocket propelled atomic bomb added in handwriting [AFHRA C5098 frames 0990–0991].)
- McDonald was involved in preparing the U.S. Army Air Force's January 1945 "Evaluation of German Capabilities" that discussed existing German rockets larger than the V-2, as well as sites of possible German atomic bomb tests (see pp. 5404–5405). After the end of the war in Europe, he spent months visited highly secret German weapons production plants (Point 2 and Appendix 1). He knew that Hans Kammler survived the war, was in U.S. custody, and was being interrogated (see pp. 4977–5005). Thus McDonald was probably one of the best informed Americans in terms of his knowledge of the German secrets weapons programs.]



Figure D.979: Photos taken by U.S. soldiers at the "Bergkristall" tunnel complex at St. Georgen an der Gusen near Linz, Austria, in May 1945 [AFHRA 00043922 SQ-BOMB-34-HI 1–31 July 1945]. Where are the Allied reports on what was discovered by inspections and interrogations?





Figure D.980: More photos taken by U.S. soldiers at the Bergkristall tunnel complex at St. Georgen an der Gusen in May 1945 [AFHRA 00043922 SQ-BOMB-34-HI 1–31 July 1945].



Figure D.981: More photos taken by U.S. soldiers at the Bergkristall tunnel complex at St. Georgen an der Gusen in May 1945 [AFHRA 00043922 SQ-BOMB-34-HI 1–31 July 1945].



Figure D.982: Another photo of entrances to the Bergkristall tunnel complex at St. Georgen an der Gusen in 1945.



Figure D.983: U.S. Generals Dwight Eisenhower, Omar Bradley, George Patton, and Troy Middleton inspecting Ohrdruf on 12 April 1945. Where are the Allied reports on detailed inspections of the above-ground and underground facilities, equipment, technologies, and documents from that area, as well as interrogation reports?

5018	APPENDIX D. ADVANCED CREATIONS IN NUCLEAR ENGINEERING
t	WAR DEPARTMENT
170	INCOMING CLASSIFIED MESSAGE
LASSIF IND 9	ANGER WAR
DEC ority	URGENT
Auth	
	From: Supreme Headquarters, Allied Expeditionary Forces,
	Forward, Frankfurt, Germany
	To: War Department 31 May 1945
-{	Multiple address. 3112006 May GOSITINTREP nr 422. A st 1-Land, Section B. From HQ 12th Army Group from Bradley signed Eisenhower, ref nr QX 21736.
	1. Personnel.
	A. Status of disarch enemy personnel as of 2400 hours 30th May 1945:
)-22A, Dec. '45	 Number on hand: 1,214,677 (includes approximately 30,000 in hospitals over which Ninth Army has recently assumed control). Discharged previous 24 hours: 39,625. Evacuated or released previous 24 hours: 6,350. Transferred previous 24 hours: None. Cumulative discharged to date: 424,743. Cumulative evacuated or released to date: 138,491 Cumulative transferred to date: 162,698 (All to 21st Army Group). Concentration: 36 concentration areas are in operation at present.
y UD 45]	B. Reception of important German personalities: No information received.
DR.	2. Intelligence.
77, E ler A	CM-IN-441 (1 Jun 45)
RA RG 60, Fold	SECRET
NA Box 1	COPY NO. 76 THE MAKING OF AN EXACT COPY OF THIS MESSAGE IS FORBIDDEN

Figure D.984: Secret 31 May 1945 cable from Generals Bradley and Eisenhower to Washington reporting the discovery of "a laboratory containing equipment and documents related to experimental work on atomic bombs" in Austria [NARA RG 77, Entry UD-22A, Box 160, Folder APR 45–Dec. '45].

ALLIED BELIEF IN THE REALITY OF GERMAN NUCLEAR WEAPONS D.14

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D.14. ALLIED BELIEF IN T	HE REALITY OF GERMAN NUCLEAR WEAPONS 5019
A	WAR DEPARTMENT
10	INCOMING CLASSIFIED MESSAGE
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N/V	URIENI
D	Page 2
Auth	From: Supreme Headquarters, Allied Expeditionary Forces, Forward, Frankfurt, Germany
	Nr: 422 31 May 1945
	A. Discipline and obedience to orders of disarmed German forces: NTR. B. Capture of important enemy personalities:
	Gen D Artillery Jodst Von Duddenrosk, former Commanding General of 13th Arty Group of First German Army; and Gen Obst. Adolf Blumenroeder, G-2 of Army Group South, captured by Third US Army. Walter Riedel, who was in charge of V-2 con- ctruction at Peenebunde, on the Baltic, captured in Bad Aussee, V 5408 by Third US Army.
	Gen. Lt. Freiherr Neubronn von Eisenburg, former Representative of Field Marshal Von Runstedt at Vichy, captured by Seventh US Army. A body identified as Gen. Mej. Karl Decker was found southwest of Erunsrode, X 9921 by Ninth US Army.
	Investigation indicated that he had committed suicide.
	C. Elimination or reorganization of German Hqs or Staff Organization: NTR.
	D. Enemy sabotage activity and success of Allied countermeasures: WTR.
_	E. Dissolution German Para Military organization: NTR.
	F. Uncovering of new or improved enemy weapons and equipment:
l	A laboratory containing equipment and docu- ments related to experimental work on atomic bombs and AA
	CM-IN-441 (1 Jun 45)
44	SECRET
5. J	
)-2 De	
51	COPY NO. 76
y 44	THE MAKING OF AN EXACT COPY OF THIS MESSAGE IS FORBIDDEN
A K	CLASSIFIED MESSAGE CENTER
AP	INCOMING CLASSIFIED MESSAGE
7, er.	SECRET TOT
l di	URGENT
Fo	
V	Page 3
16 16	From: Supreme Headquarters, Allied Expeditionary Forces, Forward, Frankfurt, Germany
NA	Nr: 422 31 May 1945
ă -C	rockets was located near Lofer, E 7399 by Third US Army.

Figure D.985: Secret 31 May 1945 cable from Generals Bradley and Eisenhower to Washington reporting the discovery of "a laboratory containing equipment and documents related to experimental work on atomic bombs" in Austria [NARA RG 77, Entry UD-22A, Box 160, Folder APR 45–Dec. '45].

SHAEF to War Department. Cable 422. 31 May 1945 [NARA RG 77, Entry UD-22A, Box 160, Folder APR 45–Dec. '45] [See document photos on pp. 5018–5019.]

From: Supreme Headquarters, Allied Expeditionary Forces, Forward, Frankfurt, Germany

To: War Department

Nr: 422 31 May 1945

Multiple address. 3112000 May COSITINTREP nr 422, Part 1—Land, Section B. From HQ 12th Army Group from Bradley signed Eisenhower, ref nr QX 21736.

2. Intelligence. [...]

F. Uncovering of new or improved enemy weapons and equipment:

A laboratory containing equipment and documents related to experimental work on atomic bombs and AA rockets was located near Lofer, E 7399 by Third US Army. [...]

Royal Army Ordnance Corps. October 1946. R.A.O.C. Gazette 28:5:150. [U.K. Imperial War Museum LBY E. 14449. https://www.rlcarchive.org]

Many interesting discoveries were made by Ordnance representatives *en route*. D.D.O.S. of 8 Corps found a factory engaged in production work for the German atomic bomb. The ammunition for Germany's largest gun was also located. Two of these massive guns had been captured by the Russians, but this was the first time their ammunition had been seen. At Belsen [concentration camp], the Ordnance service found itself faced with an unprecedented task.

PARAGRAPHS 8, 9, 10 of MFIU/HQ/CSDIC/12. Undated but apparently late 1944. [NARA RG 77, Entry UD-22A, Box 171, Folder 32.7003-3 GERMANY: US Wartime Positive Int. (Nov. 44–June 45)] [See document photo on p. 3727.]

PARAGRAPHS 8, 9, 10 of MFIU/HQ/CSDIC/12

I. <u>"SECRET WEAPONS"</u>

8. <u>Factory nr: Pilsen</u>. (No date). A P/W, who lives near Pilsen, supplies the following information which he had only at second-hand from friends working in Pilsen.

9. A large underground factory is being constructed in the woods within 8–9 km of Pilsen and was said to be finished shortly. Workers of many nationalities were employed in this construction work and were confined to the site of the plant at all times.

10. Rumour has it that one of the secret weapons is to be produced there.

[Where are the Allied reports on detailed inspections of the facilities, equipment, technologies, and documents from these areas, as well as interrogation reports?]



Figure D.986: U.K. Field Marshal Bernard Montgomery accepting the German surrender at Lüneburger Heide on 4 May 1945. Where are the Allied reports on detailed inspections of the above-ground and underground facilities, equipment, technologies, and documents from that area, as well as interrogation reports? See pp. 4214–4220, 4446, 5033–5034.



Figure D.987: U.S. General George Patton and American soldiers in Pilsen in May 1945. Where are the Allied reports on what was discovered by inspections and interrogations?



Figure D.988: Location of the former Skoda R&D complex in Pilsen.

COPY



I and Davis entered Czechoslovakian target yesterday morning and spent three hours with Dr. Patzochke, German director of the mines.

There has been intensive exploratory and development work at two out of three mines directed at increasing the production of uranium, bismuth, cobalt and nickel. The shaft of one mine has been extended to about twice its original depth, and a new underground shaft has been added to the other mine. Plans for sinking a shaft on a new site are prepared.

Uranium ore production has been increased from the equivalent of about one and one-half grams radium per year before the war to three and one-half grams per year in 1943 - 1944. From 1939 to 1944 inclusive ore equivalent to about fourteen grams radium was mined and concentrated at the mine site. These concentrates contain 60 per cent U 308 and were sent to Germany and Austria for radium extraction, and were divided equally between Auer, Buchler at Brunswick, and Goldschmidt at Tribach in Austria. Dr. Patzochke informed us that exploratory work indicates that mine could be maintained at present output for at least five years, and probably for at least ten years. It might even be possible to increase output to the equivalent of five grams of radium per year.

Radium and uranium refinery at site has been closed down since 1939, and only the concentration plant has been worked. This can handle ten tons of crude ore per day. Stocks consist of about four tons of 60 per cent concentrates, twenty tons of 10 per cent crude ore and three thousand tons of residues having a U 308 content not exceeding one per cent.

The mines used to be the property of the town until they were taken over by Auer. They will now presumably return to Czechoslovakian ownership. At present all directors are German, and most technical staff are Germans. We asked for and were given copies of some of the mine plans.

The town has not yet been occupied either by the United States or the Russian armies, and we were the first Allied soldiers to enter. The Russians were expected hourly from Carlsbad which made it necessary to reduce time spent in target area to minimum. There was a provisional Czechoslovakian Military Government in the town with whom we did not come into contact.

The mine shafts lend themselves to destruction, but we do not, repeat do not, recommend such an action in view of tactical and other general considerations. It would doubtless be possible to place contract for output of mines at a later date when ownership has been re-established, provided, of course, that we are not forestalled by our eastern Allies.

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E.O. 11652,

Authority MINSD

3(E) and 5(D) or (E)

76013.

NARS, Date

Figure D.989: David Gattiker and George C. Davis. 16 May 1945. Report on visit to Joachimsthal/Jáchymov [NARA RG 77, Entry UD-22A, Box 160, Folder APR 45–Dec. '45].

Authority MMD 917017

DECLASSIFIED



Figure D.990: H. S. Lowenhaupt to A. E. Britt. 22 October 1945. Joachimsthal Mines, Czechoslovakia [NARA RG 77, Entry UD-22A, Box 163, Folder Czechoslovakia].

NARA RG 77, Entry UD-22A, Box 163, Folder Czechoslovakia David Gattiker and George C. Davis. 16 May 1945. Report on visit to Joachimsthal/Jáchymov. [NARA RG 77, Entry UD-22A, Box 160, Folder APR 45–Dec. '45] [See document photos on pp. 5024–5025.]

I and Davis entered Czechoslovakian target yesterday morning and spent three hours with Dr. Patzochke, German director of the mines.

There has been intensive exploratory and development work at two out of three mines directed at increasing the production of uranium, bismuth, cobalt and nickel. The shaft of one mine has been extended to about twice its original depth, and a new underground shaft has been added to the other mine. Plans for sinking a shaft on a new site are prepared.

Uranium ore production has been increased from the equivalent of about one and one-half grams radium per year before the war to three and one-half grams per year in 1943–1944. From 1939 to 1944 inclusive ore equivalent to about fourteen grams radium was mined and concentrated at the mine site. These concentrates contain 60 per cent U_3O_8 and were sent to Germany and Austria for radium extraction, and were divided equally between Auer, Buchler at Brunswick, and Goldschmidt at Treibach in Austria. Dr. Patzochke informed us that exploratory work indicates that mine could be maintained at present output for at least five years, and probably for at least ten years. It might even be possible to increase output to the equivalent of five grams of radium per year.

Radium and uranium refinery at site has been closed down since 1939, and only the concentration plant has been worked. This can handle ten tons of crude ore per day. Stocks consist of about four tons of 60 per cent concentrates, twenty tons of 10 per cent crude ore and three thousand tons of residues having a U_3O_8 content not exceeding one per cent.

The mines used to be the property of the town until they were taken over by Auer. They will now presumably return to Czechoslovakian ownership. At present all directors are German, and most technical staff are Germans. We asked for and were given copies of some of the mine plans.

The town has not yet been occupied either by the United States or the Russian armies, and we were the first Allied soldiers to enter. The Russians were expected hourly from Carlsbad which made it necessary to reduce time spent in target area to minimum. There was a provisional Czechoslovakian Military Government in the town with whom we did not come into contact.

The mine shafts lend themselves to destruction, but we do not, repeat do not, recommend such an action in view of tactical and other general considerations. It would doubtless be possible to place contract for output of mines at a later date when ownership has been re-established, provided, of course, that we are not forestalled by our eastern Allies.

A WWII smuggler helped Cambridge get its new ice rink. *Cambridge News.* 7 November 2017. [https://www.cambridge-news.co.uk/news/wwii-smuggler-helped-cambridge-new-13863896]

[...] David Gattiker, who studied chemistry from 1929 to 1931, bequeathed £1 million to the university to build a permanent ice hockey facility in the city. [...]

During the Second World War, Gattiker was involved in smuggling uranium ore out of Germany, as recounted in his book 'The Uranium Trail', which he wrote under a pseudonym.

He moved to Canada after the war and became an agricultural chemist. [...]

Cordell Richardson [David Gattiker]. 1977. Uranium Trail East pp. 8, 104.

Some names have been altered where otherwise embarrassment might occur. [...]

Dr. Fischer [Patzochke] was surprised to see that his visitors were British and American officers. "Gentlemen, I am delighted to see you. I was expecting the Russians. They are reported to be already at Carlsbad, only ten miles south. Does your presence mean that the Sudetenland and my mine will come under British and American control?" His eyes were bright at the thought. [...]

"During the war the mine has produced to capacity," he explained with pride, "nearly fifteen grams of radium, a record. It was all sent to Germany. And it is interesting to note that the Germans suddenly wanted the uranium waste product as well! For the first time! Nearly 500 tons but I don't know what for..."

Vladimir L. Rychly. Czechoslovakia—Jachymov Uranium Mines—General Information. 5 December 1946. [NARA RG 38, Entry 98C, Box 12, Folder TSC # 3301–3400]

Czechoslovak miners, formerly employed in the Pribram area, and now resettled with their families at Jachymov, Czechoslovakia, furnished the following general information on the pitchblende deposits in Jachymov: [...]

There are three individual uranium mines at Jachymov. [...]

(a) "Werner" Mine is located about 2 km northeast of Jachymov. The "Werner" mine contains two vertical shafts which at present are in full operation. During the German occupation of Czechoslovakia, the Germans continued operations in this mine to the very last moment.

(b) "Stalin" Mine (formerly "Rovnost" Mine) is located in the southwest outskirts of Jachymov. This mine, now in operation, has only one entrance for both miners and bogietrucks.

(c) "Svornost" Mine is located in the northern section of the city of Jachymov. During the German occupation of Czechoslovakia, the Germans abandoned this mine and claimed it was unproductive. However, the Svornost mine kept on supplying most of Jachymov's Health Institutions with radioactive water at a depth of 530 meters—radioactivity of 500 Mache units with temperature of 28°C. It might be for this reason that the Soviet geologists are so keenly interested in starting operation in this mine. The difficulties encountered by the Soviets are greater than expected as most tunnels are flooded. [...]

RING



5028	APPENDIX D. ADVANCED CREATIONS IN NUCLEAR ENGINEERING
054	ISSUED BY THE INVELLIGENCE DIVISION OFFICE OF CHIEF OF NAVAL OPERATIONS NAVY DEPARTMENT
12	TOP SECRET INTELLIGENCE REPORT
E	CReference to this report must specify Serial No., Piece and Date)
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Aut	Signature Contractive, correspondence, previous related report, etc., if applicable)
	Source As Indicated Evaluation Ball
	Subject CZECHOSLOVAKIA - Jachymov Uranium Mines - General Information
	Bit (Nation reported on) (Main title as per index guide) (Subtitles) (Make separate report for each title) BRIEF. (Here enter careful summary of report, containing substance succinctly stated; include important facts, names, places, dates, etc.) Image: Contract facts and the summary of report, containing substance succinctly stated; include important facts, names, places, dates, etc.)
	Enclosure: (A) Two views of Svornost Mine. (B) Photograph of Miners at work in Jachymov. (C) Photograph of sample of Uranium Ore from Jachymov Mines.
	1. Czechoslovak miners, formerly employed in the Pribram area, and now Farmerly employed in the Pribram area, and now F
	E DESCRIPTION OF URANIUM MINES, JACHYMOV.
	There are three individual uranium mines at Jachymov. None of these fall under the supervision of the Czechoslovakia Ministry of Mines, nor the Czechoslovak Foreign Office. According to estimates made by the Soviet geologists the largest pitchblende deposits are in:
	(a) "Werner" Mine or "Stola Bratrstvi" (b) "Stalin" Mine formerly "Rovnost" Mine (c) to a lesser extent in "Svornost" Mine
→	(a) "Werner" Mine is located about 2 km northeast of Jachymov. The "Werner" mine contains two vertical shafts which at present are in full operation. During the German occupation of Czechoslovakia, the Germans continued operations in this mine to the very last moment.
	(b) "Stalin" Mine (formerly "Rownost" Mine) is located in the southwest outskirts of Jachymov. This mine, now in operation, has only one entrance for both miners and bogietrucks.
3400	of Jachymov, During the German occupation of Czechoslovakia, the Germans abandoned this mine and claimed it was unproductive. However, the Svornost mine kept on supplying most of Jachymov's Health Institutions with radio-
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Figure D.991: Vladimir L. Rychly. Czechoslovakia—Jachymov Uranium Mines—General Information. 5 December 1946. [NARA RG 38, Entry 98C, Box 12, Folder TSC # 3301–3400]



TCP SECRET

Alusna Belgrade Intel. Rpt. R-36-TS-46, dated 5 December 1946, continued.

active water at a depth of 530 meters - radio activity of 500 Mache units with temperature of 28°C. It might be for this reason that the Soviet geologist are so keenly interested in starting operation in this mine. The difficulties encountered by the Soviets are greater than expected as most tunnels are flooded.

NUMBER OF EMPLOYEES AT JACHYMOV.

The total number of miners at Jachymov is still alaimed to be between 235 and 250. Out of this total, 200 employees are German prisoners of war. These are generally on midered as laymen. The remainder is composed of expert Czechoslovak miners lured into the Jachymov area by high wages, special rewards and a title to a former Sudeten German home.

The total number of miners now employed at Jachymov exceeds the number of miners employed by the Czechoslovak Ministry of Mines during the peak pre-war days. As explained, the Soviet demand for increased output cannot be met as most tunnels are very narrow and the streaks of pitchblende ore are very irregular. Thus the operation of one vein is limited to one or two workers. For this reason it is also difficult to ascertain just how many miners are employed in one individual mine.

GENERAL CONDITIONS OF JACHYMOV MINES

The Czechoslovak uranium miners met at the Jachymov week-end resort in Boal Dar (north of Jachymov) bitterly complained against the Soviet destructive policy at Jachymov. In their enthusiasm and impatience to increase the output of pitchblende ore, the Soviet engineers completely disregarded all safety precautions. The tunnels not properly reinforced with lumber make mining more complicated and hazardous. In order to increase the individual productivity of the expert miners, the Soviets use Soviet food, cigarettes, liquor and luxury items as inducements. One miner summed up the present situation in the Jachymov mines as follows: "They (the Russians) will not need 99 years time to get all we've got down here".

LOCATION OF JACHYMOV URANIUM MINE OFFICES

The main offices of Jachymov mines formerly under Ministry of Mines were located in Praha, Czechoslovakia. Now all personnel and documents are at Jachymov under the supervision of the Soviets.

FOREIGN PERSONNEL AT JACHYMOV

The Czechoslovak miners claimed all work conducted in the Werner and Stalin mines is under the supervision of 8 or 10 Soviet Engineers who are only responsible to their superior Chief Engineer. The Soviet Geologists who conduct the search for additional uranium deposits in the vicinity of Jachymov north to the German border are billeted in Karlovy Vary. Only in emergencies do they remain in Jachymov. All roads leading to Jachymov are guarded from concealed positions by Soviet Security Agents. No road blocks or checking points are encountered, upon entry to fachymov, but the number of every car approaching the area is recorded. Foreign tourists visiting Jachymov are under constant surveillance. They usually do not run into any difficulties unless they disclose special interest in the uranium deposits or develop a walking habit that would take them into the vicinity of the mines.

The mines are guarded by the Soviets. Recently, several Czechoslovak soldiers appearing dangerously close to the mines became the targets of Russian bullets. In order to avoid unnecessary embarrassment to the Soviets, should this incident be unduly publicized, the Czechoslovak soldiers were immediately transferred.

COMMENT

The Jachymov Uranium mines are the subject of many conflicting reports. Official visitors taken into Jachymov for the "Cooks' Tour" are convinced that

the abandoned concentration plant and flooded tunnels are a definite proof that the mines are not in operation. The submitted details originating from the Czechoslovak miners are herewith presented to submit additional verification that the Jachymov mines, completely out of control of the Czechoslovak Ministry of Mines and the Czechoslovak Foreign Office, but under special Czechoslovak - Soviet agreement are producing pitchblende ore for the Soviets without a single ounce of ore remaining in Czechoslovakka. Attempts are being made to determine the exact production capacities and the details of the Czechoslovak-Soviet agreement.

Prepared by: Forwarded by: Madinin Lilych Guest Belin VLADIMIR L. RYCHLY, ERNEST ISELIN, Jr., Lieutenant, USNR. Commander, USNR.

Figure D.992: Vladimir L. Rychly. Czechoslovakia—Jachymov Uranium Mines—General Information. 5 December 1946. [NARA RG 38, Entry 98C, Box 12, Folder TSC # 3301–3400] Joachimsthal or Jáchymov uranium mine



Uranium ore from Jáchymov mine



Figure D.993: Joachimsthal or Jáchymov uranium mine and uranium ore circa 1945. [NARA RG 38, Entry 98C, Box 12, Folder TSC # 3301–3400. Vladimir L. Rychly, 5 December 1946]

NARA RG 38, Entry 98C, Box 12, Folder TSC # 3301-3400, Vladimir L. Rychly, 5 December 1946

Underground Factories in Europe [AFHRA C5098 frames 0931-0932]

Underground Factories in Europe

Commanding General, Air Material Command, Wright Field, Dayton, Ohio. Attn: TSDIN

1. In compliance with Restricted letter, Subj: Request for Information on German Underground Plants, dated 19 Oct 1945 (Incl. 1), a report has been prepared entitled "Preliminary Report on Underground Factories and Facilities in Germany and Austria" (Incl. 2).

2. The completed survey disclosed a considerably larger number of German underground factories than had hitherto been suspected. In addition to Germany and Austria, the Germans built underground factories in France, Italy, Hungary and Czechoslovakia. Although the Germans did not go underground on a large scale until March, 1944, they managed to get approximately one-hundred and forty three (143) underground factories into production by the last few months of the war. Statistics are as follows:

a. Number of factories in production by the end of the war	143
b. Number of factories being built, being excavated, and planned	107
c. Number of factories reported, and potential sites (mines and caves)	<u>600</u>
Grand Total	860

3. In summarizing the results of the survey three facts are outstanding:

a. The tremendous advantages of placing factories under ground are <u>concealment</u> and <u>protection</u>. Of these two concealment is at least of equal importance as protection, since more underground factories remained undetected during the war than were discovered prior to the termination of hostilities. This is especially true of those located in old mines and natural caves where the presence of the mine or cave was not known to the Allies.

b. Self-contained underground factories are practical for any industry with the possible exception of those classified as heavy industries. All technical problems, mainly ventilation and air conditioning, appear to have been solved by the Germans by the end of the war.

c. The Germans initiated the movement of industry under ground so late that the program did not have an opportunity to seriously affect the outcome of the war. It is a matter of conjecture as to what would have occurred if the Germans had gone under ground before the beginning of the war.

[Where are detailed reports on what was in all of these facilities?

How much work in these facilities was buried, overlooked, and forgotten?]

[850?]

FOREWORD

In March 1947, the Office of the Chief of Engineers prepared and submitted to the War Department General Staff for approval, a program to develop data on the design, construction, operation and maintenance of underground installations.

The program was referred to the Army-Navy Munitions Board for review and was approved.

In May 1947, War Department Contract W-49-129-Eng-59 was negotiated with this firm to investigate the feasibility and cost of construction and operation of underground plants. Specific phases of the investigations include foreign installations, geological formations, construction methods, equipment and working conditions.

The major part of the report which follows deals with German installations since 16.6 million of the 22 million square feet of all foreign underground floor space actually constructed was in greater Germany.

Installations in most other countries, while advanced in specific instances + particularly in Sweden and England were not sufficiently comprehensive in scope to yield important data pertaining to this study. Investigation of Swiss installations was impossible because of military restrictions. Data from other countries have been combined with the German information wherever such data extended the material of the specific field under discussion.

Statements are based on factual information for known plants. In each country, there are a few underground installations on which data could not be collected, but since they represent only a small percentage of the total, they are unimportant to the overall findings.

Besides field inspections of foreign installations by engineers in this office, data were obtained from Doctor Franz Riedl, German engineer, and Doctor Karl Fiebinger, Austrian authority on underground installations, who were brought to the United States by the Corps of Engineers.

Figure D.994: Excerpts from a postwar report written with the assistance of Karl Fiebinger (p. 5039) and Franz Riedl. PB 123064. *Underground Installations: Foreign Installations*. 31 October 1948. U.S. Department of Commerce [Library of Congress].



Figure D.995: This map and the following tables provide a small amount of information about a fraction of the underground installations that were in German-controlled territory, yet they are still quite enlightening. PB 123064. *Underground Installations: Foreign Installations.* 31 October 1948. U.S. Department of Commerce [Library of Congress].

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Figure D.996: PB 123064. Underground Installations: Foreign Installations. 31 October 1948. U.S. Department of Commerce [Library of Congress]. For Lüneburger Heide, see pp. 4214–4220, 4446, 5021.

APPENDIX D. ADVANCED CREATIONS IN NUCLEAR ENGINEERING

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Figure D.997: PB 123064. Underground Installations: Foreign Installations. 31 October 1948. U.S. Department of Commerce [Library of Congress]. For Ödenburg/Sopron, Hungary, see p. 3781.

NAE	LOCATION	ORTGINAL USE OF SPACE	PRODUCTS	GEOLOGICAL	OVER COVER FT. LINING	ROOM SIZES	AREA 3Q. FT.	TYPE	ACCESS	TPANS- PORTA- WE	CHANI CAL	REWARKS	REF.
				M.E.T.A.L.	EABRICATI	N. I. N. D. U. S. T. R. I.	8 3						
Gottan	Numata Lapan	Now	Alroraft					Tunnels 600' L.	Drift		-	lé tunnela eronvated by Chinese Jaborers. 200 machine toola in-	53
Yoshimatau	Matsuvaaa	CAVER	Air Engine	A Volcanic A	th Bome Conce	ete -	353-P	Tunnelr	Drift			POS completed. Excevation started	53
Tabutauka	ota		Alreraft		140	30 Tuninele	257-A	30 Tunnel	g	Narrow		1445. Nakalima. Ndt inspected. Entrance caved in.	23
Yasenji	Komatsu Japan	Stone	Air Franes	Rock		11201	214-P	Irregula: Caverna	DILLI	Railroad		Making and atarted 2/45, few parts construction started 2/45, few parts completed. Construction stopped	23
Tunenji	Komatau Japan	Stone	Ammo.	Rock				Irregula		R.R.		8/15/45. 70% complete. Nakajima. Network of caverns which housed great	53
Katnura	Mameda Japan	Railroad Viaduct	Alreraft Engines				25-A	Bunker	Drift		ell	Shace under viaduct enclosed with mud walls, efficient & clean, 72	53
Yeleura	Hachloj1 Janan	New	Aircraft				d-14					Construction started 5/45, 10% comp- 2	
0tan1	Oteu Japan	Tunnel	Alreraft			1-2100 L.		2 Tunnel	Drift			Jesed. Mitaka.	63
Klyotaki	Kyoto	Street Car	Aircraft			1970 L.			Drift			120 machine tools. Mitaubishi.	23
Kakuri	Hironi	New	Alreraft	Sed1mentary	60- None	23000 6 16x	360-P	98	Drift	Road		Dry Walls, smooth floors, better	10
WIEoda	Japan	Now	Alroratt	VDOV	3hort ne	1-01x21	¥-012	Tunnela	Drift	Road		Construction 40% complete. Planned 1 Construction 40% complete. Planned 1	62
Atnueoto	Japan	New	AIr Frames		Extendive Tim.Shor.		X-252	Tunnels	Drift	Poor		Cons. started 2/25.20% complete. No 2 production	Ki
URANT.	Takaoka Japan	New	AIT Frames			13×10 M×.L.	-	Tunnela				Excavation 30% complete. No machine 1 toola installed. Mitsubishi.	53
Nukatani	Kanatawa Japan	Priok Mine	Engines		155 None-Good Max. Rock	20712-20		Tunnela	Drift	750'		NAVY REALED excerention an Denot	23
Bhakutanl	Pukul	Stone	Alrerate	"REAKUTANI		12-15 H.		Tunnels	Drift	HIGHWAY		Construction started 2/45.90% com- 2	2
Babae	Japan	Abrasive	Alrenate	Stone	140 Rone	25x18x75 20x10x300	Y=84	Grid	Drift	Road B		2 sections: 1-gr1d other atone a quarry. Concrete floor in sections.	23
HIAI	Hisai	Abranive Sand	Framen	Band-	ab Little			Tunnels 2 Levels	Drift	αŬ	R. Cable	Several Areas Jangerris, Cavelins, Damp: Mar. 2	2
Bogro	Onaka Japan	Dent. Store	Parts Parts					Bunker		Pord		Used 2nd and 3rd basement.very efficient dent.store. Production strifed-3 months. Sumitumo	
Handa	Japan	Abrastve	Parts		Cenent Spr			Tunnela	Drift	Road		Cons. REArted 3/45 few parts finish- 2 ed. Adjoined Himal. Prod. started.	
TARATAURI	TAKAteuk!	Now	Engine		Tabar She	HE TUNNELS		PL-9		Rond Pron		Sumituno. SERTED 11/44 For Army warehouse. A/C Bant construction started 2/45.	53
Seto	3eto	Now	Alf-		132 Timber	6 Tun. Conet.		Trregular	- Britte	Road	4	Kawagakt . Production started 8/45. Few parts 2	
Mire	HITO	Road	Frames	Rock	MAX. Shoring	7 Planned		Tunnels	Drift	Road		Cons. started 11/42, 11th Naval Air 2	-
	Japan	Tunnel	Enginer	C H A	CESSING I	DUSTRIES						Denot. Prod. started 1/45.	
Daoha I	Porta Westphalla (Minden) Germany	New	Refinery	Sand-	250- Steel & W	25-50 H x	4-09	6114	Drift	RIVer R	- M - H	Construction 90% comminated. Cons. 1 Atomped 3/45. Production started. 1	119.
Dachs IV - Rhenania 085AG	Onterode/Bad Herzburg	Row	Gasoline	Gypaum		T 000		Comb.	DELFE	R.R.	O HER	Vant shafte to surface. Approv. 305	6.9.
Daoha VII - A.G.	Alte Poste near		Ganoline.	Bolomite Band-	380 Fondrete		Est. 54-1	Tunnels	Drift	1	ome	BOX complete. Installation of equip-	86.11
Kuckuk T, Hau II of Mittelbau Project In the Kohnstein	Riedersachswerfen	New	Hydro-Ren-	Gypaum	135	H 021-02 . 0F	544-P	Grid	Drift	R.R. R	.н.	20 AIT CHARREN ART. MAX IO to 20 AV. P. 55% committe. Equip. install. started.	21.11
Bohwaltw I, Rheinische Westelsteche Kaltwante	Ronnetal Uber Rodinghausen near	Clmestone	Hydro-Ren-	Limentone	240 None	300 L 30 W 70	4-09		Drift		8-4	Excavation 50% committee.	1.22
Bohwalba	Berga near Gera on	New Slate	Plant Hydro.			23 • 20 H	Est.90-A		Drift	R. R. R.	.R.	Excernition 30% complete, 200,000 cu. Pt.	K'HL .
Steinbock If Walle & D. Salle/Locustra	Unterloquitz near	BIAte Mine	Paration	SIAT.		10 # 11.5 H Some 60 H	Ent. 80-A		Drift		-p.	No equipment installed. 3 locomotives planned to furnish nower.	8,14
Inlare A	Austria	Gasoline Refinery	Limentone		None	33 T X 35 R	7-249 642-P	Grid	Drift	Road	8-90-A	Production started. Oil refinery in- stalled. Water flow in limestone. Seconde in gutter, rihs, mesh in over	1.9.14 36
Schlier-Texting Station 72 & Liguid Orygen Plant	Vocklabruch, Austria	Cellar		Sandatone		20 0 20-35 R	01	Comb.	Drift	R.R.	Dd-H-A	Construction completed 5/44. Prod.	86.3
Dacha III	Deutach-Brod	New	Garoline				EAE. 54-A		Drift			Started an R.R.Tunnel changed to	11.38
Liduid Oxygen Plant & Testing Station V2 Rockets	Saalfeld (Thuringen) Germany	BIATO MINO	Liquid Oxygen &	BIAte	than 100 for Subma	1 Nets 60x80 - 60 H	09		DETPE	Cog- wheel R.R.	N-Htg-B	Started 7/43. Production started end of 1945. Completed 5/44.	

Figure D.998: PB 123064. Underground Installations: Foreign Installations. 31 October 1948. U.S. Department of Commerce [Library of Congress].

APPENDIX D. ADVANCED CREATIONS IN NUCLEAR ENGINEERING
Interest Opposition 311 Min 911 Min	International Operational State International Operational	TTERFE TTERFE TTERFEX FARAN TO TERFEX FARAN TERFEX TERFE		PRODUCTS	GEOLOGICAL FORMATIONS	COVER FT. LINING	ROOM SIZES FT.	AHEA Sq. FT. X. M.	TYPE PLAN ACCE	POHTA-	NECHANI CAL EQUI PNENT	RMAKS
Interfact mean Openand		КТ ГА МантТра Пакал Органия Оптантории Солонии Солонии Солонии Солонии КТ актории Солонии Соло К разва К Мактории Солонии Солон	SAIT BING	Storage		1400- No	50×72×8	Eat 521-	46. 6 Level 4.	Pta Rarrow	5	
G Out Out Constraint Spectral Month Constraint Spectral Spectra Spectra Spectral	$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	ATO OF A DEPARTOR OF A DEPARTOR OF A DEPARTOR OF A DEPARTOR A DE A D							Tunner			pulnal German of Atorape Aerot.
Market for the first of the state of the	Test Name District Market Ma	AE SAIE MING DIARGAUT NAAT Borake Denot Doad Funnel Ferbach. Denot To Mattroad Funnel	CAVe	Storage		20 No	10051	EAT. 260	T.Cevel _2 Dr	FER None	A	Stennely damp.
During in Matterial Total Total Action Team <	Desire in Marianti Privation Marianti Marianti Privation <t< td=""><td>A Dump In Railroad Tunnel Febrbach</td><td>SATE BING</td><td>Storage</td><td></td><td>700 - Rone</td><td></td><td></td><td>G_Levels 2 3h</td><td>ATTA NALTON</td><td>TRV - RICOD - RR - 1</td><td>Duffment - Excellent condition.</td></t<>	A Dump In Railroad Tunnel Febrbach	SATE BING	Storage		700 - Rone			G_Levels 2 3h	ATTA NALTON	TRV - RICOD - RR - 1	Duffment - Excellent condition.
ORTENDER Safe Targe	Induction Only and the second secon	Germany	Tunnel	Ammo.		Yea			Tunnels Drift	1414	1	nortion used as Pactory - Other
M.G. Gentani Safat M.G. Staras Safa M.G. Staras Safa M.G. 100 - 90.1 M.G. 1	a. A.D. General 311 Mich 100 0.047 V_G10101 Y [Go112] 0.010001 Y [Go112] 0.0100000 0.0100000 0.0100000 0.0100000 0.0100000 0.0100000 0.0100000 0.01000000 0.01000000 0.01000000 0.01000000 0.01000000 0.010000000 0.010000000000 0.010000000000000 0.010000000000000000000000000000000000	Kohlenwerke Germany	SALT BIL	Storage	BAT 6	1624 - Some Brick			9 Levels 2 Sh	ATTA NALTON	UTELETERT	and by Army af nce 1939 for Ammo.
Image: Constraint of the second of the se	Lot Under the stand many basis Under the st	In A.G. Germany	SATE BIRS	Storage	SATE	1150 - No	Vary 36-135 V		S-Levela - Shar	Narrow .	N	o nillar, shoring or lining
Dust Lift and the fact into a fact i	Date Contract Transmit Transmit<	Coccum Germany		Storage		Referenced				RR ON		unstruction started 1939. 18 oil
Nate and a service	Mailt friction Tests Mailt friction Define Optimize Mailt friction Define Optimize Mailt friction Define Optimize Mailt friction Define Optimize Mailt friction Define Mailt friction <t< td=""><td>a Dump</td><td>ny Storage</td><td>Concrete</td><td></td><td>90H</td><td>10×20×200_C</td><td></td><td>2 Tunnels Drit</td><td>None</td><td>dD-AN.</td><td>o installation.</td></t<>	a Dump	ny Storage	Concrete		90H	10×20×200_C		2 Tunnels Drit	None	dD-AN.	o installation.
Mills History Factors	Mile for Wire GAT Winst, Teach Main for Wire GAT Main for	Marke Blumberg, Raden,	Iron Ore	Storage	Bandatone	Brick and	Tennut NTVOT	Fat.	Tunnels Drift	RATTON	B	Cored sur-lus plaxiglass - T-shape
Rest Bortuk Altricki Nature Strate Nature Stra	Constraint North All Train Nort	UTHIN TO THE TANK THE TO THE TO THE TO THE	Ger. Tunnel	Storer.				7-10-0		914	ЯЯ	omnietery demotrahed by bomba. No
Anteredytig Ante	Antistic Antis	T Germany		Storage		Mortar			TO Levels Drift	NALTON	U BR DBR-W	ad Ath level for storage
Weitenberg Main Stores Stores<	Waterstrat <td>The second secon</td> <td>ATTReter</td> <td>Storape</td> <td>Saftneter-</td> <td></td> <td></td> <td></td> <td>R Levels - 2 3h</td> <td>Tta Rarrow</td> <td>WTROD-RR-UN</td> <td>red for rubber storage 1938.</td>	The second secon	ATTReter	Storape	Saftneter-				R Levels - 2 3h	Tta Rarrow	WTROD-RR-UN	red for rubber storage 1938.
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arial E-arian Erite 91, Present and fair fair fair fair fair fair fair fair	Undel Extended to the state of the state	APREADER POTER GOTER GOTER DOTER	Line		Strata (Ore)	No		750 ml.	Tunnel Driv	A RR	T_RA_00-8-98-	925 addit tunnels started by German
Arrost St. (1004) Total St. (2014) St. (Under Str (150) Under	Tunnel Torition Think The Torition Torition	Tunnel	Ammo.		Yen			P Tunnels Drift	914.	T-RR-GD-R-VE	tunnel used by railroad.
Nr. Les D'valariant St. Lu D'Stancial Uni-ry Stanting Uni-ry Stanting Uni-ry Stanting Lu D'Stanting Uni-ry Stanting Lu D'Stanting Uni-ry Stanting Lu	Mail Lab Drassent Data of the reserved <thdata of="" reserved<="" th="" the=""></thdata>	Danot Stand	Tennul	U-15		190 TITe	75×1500	041	Single Drift	Truck	5 A8	free and VI's.
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Alf the Control Control of the Contr	Malt Wise Goodening mast Malt Wise Wait Wise <thw< td=""><td>National Control Control</td><td>Tunnel</td><td>Storage</td><td></td><td></td><td></td><td></td><td>Drift Bth</td><td>RR</td><td>00</td><td>and stely demolifacies by bombs. No</td></thw<>	National Control Control	Tunnel	Storage					Drift Bth	RR	00	and stely demolifacies by bombs. No
	P = Planned AUV - Air Conditioning 00 - Gravity Davinge B - Electric nower - outside mources Elevator A - Actual NV - Mechanical Vantilation PD - Devinance PV man Ducket Mig- Hanting RB - Anitroad NV - Matural Vantilation PD - Seawer by hand Ducket Hig- Hauting	Salt Tine Godenau near John Alfeld, Germany	SALE BIRG	Storage		1400- Ro 2530	75 [x90 #	Eat.119	S Levels - 2 3h	ATTA MATTON	RV-B-RR-B-VE	initions stored on 2200 level in a specially constructed rooms.

Figure D.999: PB 123064. Underground Installations: Foreign Installations. 31 October 1948. U.S. Department of Commerce [Library of Congress].

D.14.8 German and Austrian Scientists in the United States

[Many German and Austrian scientists who appear to have been involved in the nuclear program visited the United States and/or United Kingdom after the war, and may have provided information about wartime German work. See p. 5039 for a few examples. Files for some scientists are still not available to the public. For example, almost the complete file of nuclear physicist Otto Haxel has been redacted (p. 5040), and Wernher von Braun's file is missing entirely [NARA RG 330, Entry A1-1B].

How much influence did information, scientists, and materials from the German nuclear weapons program have on the U.S./U.K. nuclear programs, both during and after the war? Detailed information, scientists, and materials from the German program began arriving in the United States and United Kingdom no later than late 1944, and continued for several years after the war.

The late-wartime and postwar influx of scientists and engineers who were from or at least had knowledge of the German nuclear program included:

Karl-Friedrich Bonhoeffer	Gottfried Guderley	"Dr. Niels" (Walter Nielsch?)
Wernher von Braun	Paul Harteck	Edgar Petersen
Rudolf Brill	Otto Haxel	Heinz Schlicke
Adolf Busemann	Richard Herzog	Erich Schumann
Walter Dornberger	Johannes Hans Jensen	Otto Schwede
Rudolf Edse	Willibald Jentschke	Edmund Sorg
Krafft Ehricke	Ulrich Jetter	Kurt Starke
Wilhelm Eitel	Georg Joos	Wolfgang Steurer
Gerhard Falck	Hartmut Kallmann	Ernst Stuhlinger
Karl Fiebinger	Hans Kammler	Hans Suess
Wolfgang Finkelnburg	Gerald Klein	Herbert Wagner
Rudolf Fleischmann	Stanley Kronenberg	Wilhelm Westphal
Siegfried Flügge	Heinz Maier-Leibnitz	Friedwardt Winterberg
Walter Glaser	Werner Maurer	Karl Wirtz
Wilhelm Groth	Hugo Neuert	Gernot Zippe

This list is by no means exhaustive. Furthermore, countless other scientists were interrogated in Europe. See also Section D.14.9 for examples of additional people. The complete files on all of these scientists and engineers should be sought and released.

A number of the above scientists appear to have been closely tied to German work on H-bombs, and may have especially aided the U.S. H-bomb development program between 1945 and 1954. Some of the scientists may have also been able to contribute to improvements in U.S./U.K. fission bombs (e.g., smaller sizes and higher efficiencies) and fission fuel production (such as the uranium centrifuges of Groth, Harteck, and Zippe).

There is a great need for archival researchers and historians to investigate this area in much more detail in the future.]



Figure D.1000: Examples of scientists who were apparently involved in the German nuclear program and were brought to the United States to work after the war [NARA RG 330, Entry A1-1B].

APPENDIX D. ADVANCED CREATIONS IN NUCLEAR ENGINEERING

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Figure D.1001: Virtually the entire "foreign scientist case file" on Otto Haxel remains classified, with the documents removed or completely blanked out [NARA RG 330, Entry A1-1B, Box 66].

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N.	ARA RG 319, Entry A1-134B, Folder E301420 Haxel. Otto	On 26 September 1960, the m Resident's hegistration Office), He were clecked and discreet physical of place of employment were and and at 2 Nonchofstrasse, Heidelberg, W Enysics Institute, University of He Leidelberg, Sest Gormany, as listed	ecords of the Ein idelberg(MV 7073) hecks of SUBJECT vealed that SUBJE st Germany, and w delberg, 7 Albert	wohnerweldeamt , West Germany, S residence and CT is residing orking at the Ueberlestrasse,
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Figure D.1002: Otto Haxel was closely monitored by the U.S. Army Counter Intelligence Corps until at least 1960 [NARA RG 319, Entry A1-134B, Box ??, Folder XE301420 Haxel, Otto].

DECLASSIFIED Authority <u>NND 013039</u>

NARA RG 330, Entry A1-1B, Box 43, Folder Flügge, Siegfried

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EXOS: ONR: N421:UL: kom

Serial No. 14654

NAVY DEPARTMENT Office of Naval Research Washington 25, D.C.

July 18, 1947

From: Chief of Naval Research To: Chief of Naval Intelligence

Subj: Foreign Scientists, Request for assistance on.

1. Professor Edward Teller, Physics Department, University of Chicago, is supervising under contract to this Office a research program on various phases of research in physics of the solid state. This program is of interest and importance to the national security. Professor Teller is very desirous to obtain the services of the German physicist, Dr. Siegfried Flugge, who can be of marked assistance in carrying out the aforementioned program.

2. Professor Teller has requested the Office of Technical Services, Department of Commerce, to obtain Dr. Flügge from Germany. It is requested that the Joint Intelligence Objectives Agency be informed of the Navy's interest in this case, and asked to provide such assistance as is possible to Professor Teller in aiding Dr. Flügge to come to this country.

> /s/ C.M. Bolster Capt., USN Acting Chief of Naval Research

co: Mr. Robert Frye, OTS, Dept. of Commerce Professor Edward Teller, Physics Dept. University of Chicago

Figure D.1003: After the war, Edward Teller made a highly unusual, specific, and urgent request for Siegfried Flügge to help him with a "physics... program... of interest and importance to the national security," stating that Flügge would "be of marked assistance in carrying out the aforementioned program" [NARA RG 330, Entry A1-1B, Box 43, Folder Flügge, Siegfried]. Flügge was brought to the United States to work during 1949–1950 and 1953, which were critical periods for the development of the first H-bomb and the first dry (lithium deuteride) H-bomb.

D.14. ALLIED BELIEF IN THE REALITY OF GERMAN NUCLEAR WEAPONS 5043fending 20 EUCOM SPECIAL PROJECTS TEAM OFFICE OF MILITARY GOVERNMENT FOR HESSE 633 APO Wiesbaden 17 Sep 47 SUBJECT: Information on (F 1 u g g e, Siegfried, Dr. Hq., EUCOM, O.D.D.I., Special Projects Sec., Control Br. (Attn: Mr. Horn) TO Regarding your request for information on F 1 d g g e, Siegfried, Dr., attached report is forwarded. ROBERT A. Shankman Incls: a/s cav. lst I.t. Tel: Wiesbaden 8341-7 Ext: 298 Fiel to WD by cable on 24/9, liels DECLASSIFIED Authority NND00 NARA RG 319, Entry A1-134B, Box 202, Folder XE196681 Siegfried Fluegge

Figure D.1004: At the specific request of Edward Teller, Siegfried Flügge was brought to the United States to work during 1949–1950 and 1953. Those were critical periods for the development of the first H-bomb and the first dry (lithium deuteride) H-bomb. [NARA RG 319, Entry A1-134B, Box 202, Folder XE196681 Siegfried Fluegge]

APPENDIX D. ADVANCED CREATIONS IN NUCLEAR ENGINEERING



NARA RG 319, Entry A1-134B, Box 202, Folder XE196681 Siegfried Fluegge

The following information was received by phome from L&S Office Marburg, Wednesday, 17 Sept 47, thru Mrs. Steinbacher:

Fldgge, Siegfried, Dr.

Date of birth:	16 Merch 1912	
Place of Birth:	Dresden, Saxony, Gern	nany
Present address:	Marburg/Lahn, Wilhelm	n Roser Str. 33 A
Present employment:	as professor at Unive (ordentlicher Profess	ersity of Marburg sor)
Special Field:	Nuclear Physics (St:	ruktur dor Materia)
Background information:	from 1918 - 1921:	attended elementary school, Dresden
	" 1921 - 1929:	" high school (Gymnasium)
		in Dresden
	" 1929 - 1930:	attended Technical High School, Dresden.
	" 1930 - 1933:	at University in Göttingen
	X 1933	Doctor of Physics at University of Göttingen.
	" 1933 - 1935:	worked at University of Frankfurt as Scientific Assistant.
	" 1935 - 1937:	lectured at University of Leipzig
	1937	to Berlin
	" 1937 – 1942:	worked in chemical department of the Kaiser-Wilhelm-Institute in Berlin, Dahlem.
	" 1942 - 1944:	assistant at the Institute of Scienti- fic Research of the Reichspost, Berlin
~	" 1940 - 1944:	lectured at the University of Berlin
	" 1944	eppointed professor (ausserordentlicher at the University of Königsberg.
	After the surrende employed as Profes from 1945 p 1947.	er, he went to Göttingen, where he was sor for History of Physical Science

Figure D.1005: During the war, Flügge worked for the Reichspost, Heereswaffenamt (also listed as University of Berlin since Erich Schumann was at both), Kaiser Wilhelm Institutes, Reichsforschungsrat, and University of Königsberg in East Prussia (said to have fission reactors, pp. 3962, 4624) [NARA RG 319, Entry A1-134B, Box 202, Folder XE196681 Siegfried Fluegge]. He also apparently worked at St. Georgen an der Gusen (p. 3916), another suspected nuclear facility.

D.14. ALLIED BELIEF IN THE REALITY OF GERMAN NUCLEAR WEAPONS

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NARA RG 319, Entry A1-134B, Box 202, DECLASSIFIED Authority NND 0070 Folder XE196681 Siegfried Fluegge he was appointed "ordentlicher" professor. 1 May 1947 before 1933: no member of any party Security Background: after 1933: he became a member of the NS Dozentenbund in 1942, until the end of the War. He was a member of the "Physikalische Gesellschaft" (INTIL Society for Physics) since 1933, after 1945, he became a member again of the Physikalische Gesellschaft in the British Zone, and also chairman of the Committee for Bio-Physics at Göttingen. He was not called to Military Service during the War, because he worked as a Scientist of Physics for the "Heereswaffenamt", Berlin, and was later exempted of any Army Service by the Reichsforschungsrat ih Berlin, no member of any patty of NSDAP, but: BDC Check: Member of NS Lehrerbund since 11 June 1934 Horn Off hand, with a few particulars iroued out the man would accept employment in the U.S. Shankeman

Figure D.1006: During the war, Flügge worked for the Reichspost, Heereswaffenamt (also listed as University of Berlin since Erich Schumann was at both), Kaiser Wilhelm Institutes, Reichsforschungsrat, and University of Königsberg in East Prussia (said to have fission reactors, pp. 3962, 4624) [NARA RG 319, Entry A1-134B, Box 202, Folder XE196681 Siegfried Fluegge]. He also apparently worked at St. Georgen an der Gusen (p. 3916), another suspected nuclear facility.

APPENDIX D. ADVANCED CREATIONS IN NUCLEAR ENGINEERING



NARA RG 77, Entry UD-22A, Box 167, Folder 202.3-2 LONDON OFFICE: Combined Oper Ger Group

22nd December, 1947.

SECRET

Memorandum to Colonel L. E. Seeman

from D. C. G. Gattiker

German scientists:

With reference to the points you raised with me the other day Welsh gives me the following information:

1) GROTH is definitely in Hamburg.

2) FLUEGCE is still at Marburg. His removal by the U.S. authorities to the University of Chicago would be acceptable to the British.

3) The list of scientists submitted by Welsh was intended to include scientists in the British and U.S. zones only: FISCHER and FUNFER, both believed to be in the French zone, were included in the list in error, although the exact whereabouts of FUNFER is notcertain.

SECRET

Col. Halet Show By: Ryan

C/R 204.0

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Figure D.1007: At the specific request of Edward Teller, Siegfried Flügge was brought to the United States. Another potential recruit named in this memo was Wilhelm Groth, who was also involved in the German H-bomb program (e.g., p. 4405). Flügge and Groth were being requested and discussed by Allied officials specifically in charge of nuclear work: Teller, Gattiker, Seeman, Welsh, etc. [NARA RG 77, Entry UD-22A, Box 167, Folder 202.3-2 LONDON OFFICE: Combined Oper Ger Group].

NARA RG 319, Entry A1-134B, Box 202, DECLASSIFIED Authority NND0070 Folder XE196681 Siegfried Fluegge HEADQUAR TERS 7970TH COUNTER INTELLIGINGS CORPS GROUP FUROPEAN O MMANA S: 10 February 1949 X-12368 APO 757 7 December 1948 D: 196681 M-2368 REGRADED. BJECT: FLUEG Siegfried CONFIDENT au JAN 195 : Commanding Officer TO (Date or Event) CIC Sub-Region MARBURG APO 872, US Army 1. Subject is listed on JIOA Special (hot) List (see letter, this headquarters, file D-219210, dated 21 September 1948 and letter, this headquarters, file D-247540, dated 5 October 1948). 2. As outlined in above referenced letters, it has become increasingly important that CIC be aware of every movement and activity of persons residing in the U.S. Zone or the U.S. Sector of BERLIN, who are listed on the JICA Special (hot) List. Every effort to prevent subject from leaving his area of residence without this organization's knowledge must be made. The following are the minimum requirements: a. The placing of the subject on intermittent mail and telephone watch list. Donr b. The obtaining of subject's schedule of daily habits (regarding time he goes to work, to lunch, etc.), including addresses frequented and persons contacted. Recording of this schedule is necessary to definitely ascertain subject's location at any time. 959 c. Description and, where possible, pictures of subject's residence and place of business or employment. d. Names and descriptions of persons occupying or frequenting subject's residence or place of business. (For use as informants.) e. All evailable background information on subject. 3. It is desired that a report on the above requirements and your comments regarding the use of the persons described in sub-paragraph d, above, be forwarded to this headquarters by 10 February 1919. BY ORDER OF LT. COLONEL ECKMAN: TS-LOG CIC 330 NO. C -Cor Director, Plans, Operations Lt CARTER/goa/7250 and Training Distribution: S/R Marbing - 3 copies page 1 of 1 page copy 1 of 4 copies

Figure D.1008: When not in the United States, Flügge was placed on the Top Secret JIOA K "hot list" and constantly monitored for at least a decade after the war, on the direct orders of Lt. Col. George R. Eckman, formerly of the Alsos Mission [NARA RG 319, Entry A1-134B, Box 202, Folder XE196681 Siegfried Fluegge].

APPENDIX D. ADVANCED CREATIONS IN NUCLEAR ENGINEERING

NARA RG 319, Entry A1-134B, Box 202, DECLASSIFIED Authority NND007C Folder XE196681 Siegfried Fluegge HEADQUARTERS SUB-REGION MARBURG 81 JAN 1957 INTEIAIGENCE CORPS REGION III (Date or Event) III-M-2368 APO 872 27 January 10 49 D-1.96681 Professor Dr. Siegfried FLUEGGE SUBJECT: 19668 TO See Distribution : 1. The attached Agent Report is forwarded in compliance with the request made by your Headquarters in Top Secret letter, Subject and File as above, dated 7 December 1943. 2. In view of the impossibility of maintaining a continued surveillance of the SUBJECT due to his habits, the nature of his neighborhood, and the location of his dwelling, it is planned to check his activities mainly through his maid, DOENGES. As is indicated in the inclosed report, it is impossible for a stranger to be in the neighborhood for any length of time without exciting suspicion. 3. This office has been informed by Military Government, Land Hesse through Sub-Region Wiesbaden, that on one of his trips to WIESBADEN (K51/M36), the SUBJECT complained to MG that he was being surveilled, possibly by CIC. In the opinion of this office, the SUBJECT's suspicions do not reflect on the handling Agent, but may be taken as additional proof of the difficulty of the requested surveillance. FOR THE COMMANDING OFFICER: WROBLESKT ALBERT L. Special Agent, CIC Operations Officer Incl: Agent Report dtd 27 Jan 49 OPS Telephone: Marburg 31.64/BURR/ahw DISTRIBUTION 5 - 7970th CIC, EUCOM -2 - Region III 1 - File CIC-TS-LOG HI 3-29 NO. C -

Figure D.1009: When not in the United States, Flügge was placed on the Top Secret JIOA K "hot list" and constantly monitored for at least a decade after the war, on the direct orders of Lt. Col. George R. Eckman, formerly of the Alsos Mission [NARA RG 319, Entry A1-134B, Box 202, Folder XE196681 Siegfried Fluegge].

NARA RG 319, Entry A1-134B, Box 202, DECLASSIFIED Authority NND 0070 Folder XE196681 Siegfried Fluegge FLUEGGE, Siedfried Wilhelm (Dr.) 25 April 1952 Vile D-196681 MARBURG, Wilhelm Roserstrasse 33a Res: Priority 1, (JIOA Personality on the "K" List) REF: D-137899 "ecret ltr dtd 31 Jan 52 file X-272 SUB: Custodial Detention CS FLUEGGE. S. Professor) 4 Nov 54 Employed by subject. Now in MARBURG. Ref: D-284237 BfV Report dtd 26 Aug 53 File: BR53-11-91 Sub:German Academy of Sciences of BERLIN F-3 Re: Nuclear Physics Institute CS GERNAND

Figure D.1010: When not in the United States, Flügge was placed on the Top Secret JIOA K "hot list" and constantly monitored for at least a decade after the war, on the direct orders of Lt. Col. George R. Eckman, formerly of the Alsos Mission [NARA RG 319, Entry A1-134B, Box 202, Folder XE196681 Siegfried Fluegge].

Edward Teller's request for Siegfried Flügge's assistance. [NARA RG 330, Entry A1-1B, Box 43, Folder Flügge, Siegfried]

EXOS:ONR:N421:UL:kcm Serial No. 14654

NAVY DEPARTMENT Office of Naval Research Washington 25, D.C.

July 18, 1947

From: Chief of Naval Research

To: Chief of Naval Intelligence

Subj: Foreign Scientists, Request for assistance on.

1. Professor Edward Teller, Physics Department, University of Chicago, is supervising under contract to this Office a research program on various phases of research in physics of the solid state. This program is of interest and importance to the national security. Professor Teller is very desirous to obtain the services of the German physicist, Dr. Siegfried Flügge, who can be of marked assistance in carrying out the aforementioned program.

2. Professor Teller has requested the Office of Technical Services, Department of Commerce, to obtain Dr. Flügge from Germany. It is requested that the Joint Intelligence Objectives Agency be informed of the Navy's interest in this case, and asked to provide such assistance as is possible to Professor Teller in aiding Dr. Flügge to come to this country.

C. M. Bolster Capt., USN Acting Chief of Naval Research

cc: Mr. Robert Frye, OTS, Dept. of Commerce Professor Edward Teller, Physics Dept. University of Chicago

[See document photo on p. 5042.

In 1947, Edward Teller was arguably the leading theoretical physicist of the U.S. nuclear weapons program, since most of the other prominent physicists from the Manhattan Project returned to civilian projects after the war. Throughout the 1940s, Teller was obsessed with creating a working fusion (hydrogen or H) bomb that would be much more powerful than the Manhattan Project's fission bombs. In 1946, a panel of other U.S. physicists concluded that Teller's proposed "classical Super" design for an H bomb was unlikely to work and that they did not know how to improve upon it, so in 1947 Teller would have been especially desperate for advanced nuclear weapons design solutions.

Siegfried Flügge was arguably the leading theoretical physicist of the wartime German nuclear weapons program, although apart from two very early and introductory publications (p. 3384), that was far from public knowledge at that time (or even today).

Some German-speaking scientists who had already settled in the United States, such as Hermann Mark and Theodore von Kármán, actively worked to bring many other German-speaking scientists to the United States after the war. However, I am not aware of other examples of Edward Teller actively recruiting German-speaking scientists from Europe after the war.

Thus this letter shows an extraordinary degree of interest and a singular focus. The leading physicist of the U.S. nuclear weapons program was "very desirous to obtain the services" of the leading physicist of the wartime German nuclear weapons program, who could "be of marked assistance in carrying out" an unspecified physics program "of interest and importance to the national security."

If the United States had discovered, sometime after the war, that Germany had actually had an advanced nuclear weapons program, it would have needed a particular type of person to help interrogate people who were most closely associated with that program and who could provide the most detailed technical information about it. Specifically, the United States would have needed someone (the fewer people the better, for security reasons) who:

- Was a physicist with an intimate knowledge of nuclear weapons designs from the Manhattan Project. (Many potential candidates, such as Theodore von Kármán and Samuel Goudsmit, did not have that knowledge, so this criterion rules them out.)
- Was fluent in German, including very technical German.
- Was extremely close to the U.S. military, and could be trusted to strongly advocate for its interests and to religiously keep its secrets.

There would have been a number of possible candidates for that position (see p. 1560), but those best matching the above three qualifications probably would have been Edward Teller, Hans Bethe, J. Robert Oppenheimer, and John von Neumann. Of those four, after the war only Teller was still truly focused on nuclear weapons designs. Teller would have been the ideal physicist to help interrogate top scientists from the German nuclear program such as Flügge, or top administrators from the program such as Hans Kammler (if he was indeed in U.S. custody), in order to learn as many technical details as possible about the German program's weapons designs, production methods, and results.

Flügge did eventually visit the United States in 1949–1950 and 1953. It is probably no coincidence that those were critical periods for the development of the country's first (cryogenic) H-bomb and its first dry (lithium deuteride) H-bomb, respectively. It seems virtually certain that even before those visits, while he was in Europe, Flügge was also interrogated in detail by U.S. scientists (perhaps Teller himself) and intelligence officials; otherwise Teller would not have known to make this specific request.

Can the details of Flügge's U.S. visits, work, and interrogations be located in archives and released?

As shown on pp. 5043–5049 and in a number of other declassified documents in that same file [NARA RG 330, Entry A1-1B, Box 43, Folder Flügge, Siegfried], when not in the United States, Flügge was placed on the Top Secret JIOA K "hot list," and very closely and constantly monitored

for at least a decade after the war. The U.S. official who issued those orders was none other than Lt. Col. George R. Eckman, who had been the Executive Officer of the Alsos Mission [p. 3351 and https://www.ikn.army.mil/apps/MIHOF/biographies/Eckman,%20George.pdf]!

Importantly, these files on Flügge (pp. 5044–5045) also prove that this leading physicist of the German nuclear weapons program worked with the:

- Reichspost (Post Office).
- Heereswaffenamt (Army Ordnance Office).
- Kaiser Wilhelm Institutes.
- Reichsforschungsrat (Reich Research Council).
- University of Königsberg in East Prussia (said to have fission reactors, pp. 3962–3963, 4624–4625).
- He also apparently worked in Austria at St. Georgen an der Gusen (p. 3916), another suspected nuclear facility.

This appears to demonstrate high-level scientific coordination of the nuclear activities among many different organizations throughout the Reich.

How much did the United States know about the German nuclear weapons program's structure (e.g., that Flügge was its leading physicist) and accomplishments (e.g., that it had successfully developed fission bombs and had conducted advanced work on H-bomb designs, lithium deuteride, fusion boosting, etc.) prior to Teller's request? How much did it ultimately learn?

Teller's highly specific and urgent request, presumably based on his own or other classified postwar U.S. intelligence on the wartime German nuclear program, strongly suggests that Flügge was involved not only in the design of German fission bombs (see p. 3384 and Section D.8), but also in the design of German H-bombs (Section D.9).

Although the Soviet Union detonated its first known fission bomb in August 1949, Flügge was kept on the JIOA K "hot list" and closely monitored by the United States until at least the end of 1954. Even the documents mentioning the U.S. surveillance of Flügge (with no military or scientific details) were classified Top Secret, which seems extraordinary. Moreover, those files were finally downgraded to Confidential in January 1957. All of that is further evidence that Flügge had detailed knowledge of not just fission bombs but also H-bombs, which the Soviet Union did not fully perfect until November 1955 (RDS-37). The United States kept Flügge on a very tight leash, and even classified any mention of that leash as Top Secret, until the Soviet H-bomb program had reached a level of technological maturity at which it no longer would have needed Flügge's knowledge about H-bomb design.

Georg Stetter and his fellow Austrian nuclear scientists were also deeply involved in the wartime German H-bomb program (pp. 4368–4383). Just as they did with Flügge, the United States kept Stetter under very close supervision until the 1950s, presumably until he too would no longer have been helpful for the Soviet H-bomb program (pp. 4834–4846). And like Flügge, some members of Stetter's team were brought to the United States after the war to work temporarily or permanently.]



NARA RG GOUDS, Entry UD-7420, Box 3, Folder

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۲ ۵	G. A. Kolstad, Physics Branch, Division of Research
	PROCUREMENT OF SERVICES OF W. GROTH FROM THE AIR FORCES
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	I Spoke with Col. Harmie Home APDC 5 West Paltimore Paltimore.
£.	Mayland, this morning concerning the transfer of W. Groth to an Atomic Energy Commission contractor Wards her ber wohld to track
3r 4	down any information on whether Groth is actually being brought into
lde	his coming. He did indicate, however, that should Groth be brought
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Figure D.1011: G. A. Kolstad to Samuel Goudsmit et al. 24 August 1951. Procurement of Services of W. Groth from the Air Forces [NARA RG GOUDS, Entry UD-7420, Box 3, Folder "Historian's Office Inventory Control Job Goudsmit Box 4 Folder 4"]. "...concerning the transfer of W. Groth to an Atomic Energy Commission contractor. Harris has been unable to track down any information on whether Groth is actually being brought into this country or not... [S]hould Groth be brought in by the Air Forces they would be willing to release him to us."

Project No. NFE-1 NFE-2 NFE-3 NFE-4 NFE-5 NFE-6	Subject Suggestions for Research and Develop- ment work to be done in U.S. with reference to Experience in Germahy Heat Transmission on Bodies in Rapidly. Flowing Gases Combustion of Solid Carbon	Authority It. Schwandt Capt. Tribus	Responsibility Lt. Largen	Telephone
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NFE-2 NFE-3 NFE-4 NFE-5 NFE-6	Heat Transmission on Bodies in Rapidly Flowing Gases Combustion of Solid Carbon	Capt. Tribus		
NFE-2 NFE-3 NFE-4 NFE-5 NFE-6	Heat Transmission on Bodies in Rapidly. Flowing Gases Combustion of Solid Carbon	Capt. Tribus		
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NPE-5	Athodyd Report	Col. Wassell	Lt. Larsen	2-0271
NFE-6	Possibilities to Work on Atomic Research at Wright Field	Gen. Craigie	Lt. Larsen	2-0271
WFF_0	Equilibrium Composition of Dissocia-	Col. Wassell	Lt. Larsen	2-0271
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NEB-16	Stabilization of Parachutes	DLD dtd & Now	Cant Faller	2-6190
	Statility in Hansonite wange	TSRCO-TSDIN	vape. retter	2-)109
NFE-16	Interference Schlieran Apparatus	R&R dtd 8 Nov	Capt. Feller	2-5189
	We have been a second as a second	TSECO-TSDIN		1.000
NFE-17	Feurlilie	R&R dtd 8 Nov TSECO-TSDIN	Capt. Feller	2-5189
NFE-18	Survey of Work for MPN	Capt. Boesch	Lt. Upton	2-3281
NFE-19	Miscellaneous Activities and	Col. Putt	- Capt. Barnett	2-3172
NFE-20	Evaluation of Wright Field High	Capt: Hensel	Lt. Upton	2-3281
	Alttinde Wind Tunnel	Talkets the Miles	State and the second second	
MPB-21	ALVANUU BALLY AMERICA	and the second se	The survey of the second se	S. S. S. S. S.
NIE-22	Test of a Jet Engine Intake Scoop	Mr. Kramer	Pfc Youts	2-3281

	07				•	
12	20	NAME	SPECIALTY	LOCATION	AGENCI	AWAILANILITY
V.1 Part	IRIS 14	KLEIST, Dr. Karl	Professor of Neurology Psychistry at Johann- Holfgang Goethe University Frankfurt A/M	Preside Durb	USEPAT	After allo- cation by JICA
ler 201-56	Mar 1947,	BUXBANN, Dr. Sertold	Prior to 36, engineer for A.S.G. in charge of tools & tool-making.During way, developed & manufactured spec graphite oil for berin & grinding	Berlin		After allo- cation by JICA
A fold	451	ISCHIRNT, Dr.Hens Heins	Specialist in radio navig radar tochnique, supersoni (Plendl Group)	ation, Landshut cs Germany	, USPET	After ello- cation by JIOA
AFHR	[ay 19	HUSTER, Theodor F.	Physicist, specialist in m wayes, radar technique, & supersonics (Piendi Group	icro- Landshut Gernasy	, USYET	After allo- cation by JIOA
7	↓ 1 M	SCHNEDE, Dr. Otto Cantav	Fechnical physicist, rada Centimater waves, radar for distances, remote control rockets & pilotless A/C. Separation of isotopes	r. Genany r great. of	USPET, Flat	After allo- cation by JIOA
		BEYHAMM, Dr. Hans	Research scientist-oscill. & vibration in technics & Steering of rockets with vibration,torpedo steerin Prior to 33, industrial & Urals and Siberia	ation Gerusay medicine. acoustic g deparatus. ng. in	USPET	After allo- cation by JIOA

Figure D.1012: German scientists who worked for the U.S. military were capable of leading research projects to advance the state of U.S. nuclear programs, including isotope separation [AFHRA folder 201-56 V.1 Part 2 1 May 1945–1 Mar 1947, IRIS 142007] Top: Foreign Exploitation Section Projects. 28 February 1946 [AFHRA A2055 Frame 1173]. Bottom: R. F. Ennis. 27 January 1947 [AFHRA A2055 Frame 1362].

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G. H. Morrison. How Adolf Hitler Lost the Atomic Bomb. *The Argus* (Melbourne). 6 October 1945, p. 2. https://trove.nla.gov.au/newspaper/article/12145557/631795

When Hitler learned that two German scientists had at last discovered a method by which it would ultimately be feasible to split uranium atoms when and as required, he imagined that Germany would soon hold a weapon whose mere possession would force her enemies to capitulate unconditionally. Hence his mysterious reference in the first days of the war to "a secret weapon" which, he said, he hesitated to use because of its deadliness. [...]

Again and again, Goebbels proclaimed the coming of the secret weapon that was to give Nazi Germany immediate and decisive victory. Over and over again Goebbels urged that "time was on the side of Germany." Just how far German atomic research had gone we were unable to discover. But it was quite certain the Germans were on the right track. [...]

On the laboratory scale U 235 was isolated for the first time in Germany in 1940. Even that, however, was far from being the end of the job of unravelling the skein of theoretical enigmas. Each problem solved raised some new problem. But German scientists stuck frantically to the task; and, as Professor Westphal, principal of the Berlin Technical High School, has since revealed, the Germans had solved the last laboratory problem in atom-splitting by 1944. That was about the time Goebbels began to assure his compatriots that the secret weapon would soon be in use.

[George H. Morrison (U.S., 1921–2004), an analytical chemist, worked on uranium purification and enrichment for the Manhattan Project: https://paw.princeton.edu/memorial/george-h-morrison-48

What exactly did Wilhelm Westphal do in Germany during the war and in the U.S. after the war?]

Dieter Hoffmann and Mark Walker, eds. 2007. Physiker zwischen Autonomie und Anpassung. Weinheim: Wiley. p. 340.

Ein Brief von Rudolf Ladenburg an Max von Laue, unmittelbar nach Erhalt dieses Artikels verfasst, führt uns zu einer weiteren Pointe:

"Otto Hahn's Artikel in der Göttinger Universitätszeitung bringt die Entlassung deutscher Professoren mit dem amerikanischen Angebot Professoren nach USA einzuladen in Zusammenhang. Wissen Sie von Kollegen, die erst entlassen + nun nach USA abgereist sind? Ich weiss nur, daß Westphal in USA ist + dass Joos hierher Anfang Juni abgereist ist [...] Westphal war, soweit ich weiss, nie abgesetzt + Joos ist nach kurzer Zeit wieder eingesetzt worden. In seinem Fall war die Absetzung, wie ich gehört habe, durch eine (unentschuldbare) Namensverwechslung verursacht."93)

93) Ladenburg an Laue, 30.7.1947, MPGA, II. Abt., Rep. 50, Nr. 1158, zit. nach: Klaus Schlüpmann, Vergangenheit, S. 426 f. A letter from Rudolf Ladenburg to Max von Laue, written immediately after receipt of this article, leads us to another point:

"Otto Hahn's article in the Göttingen University newspaper connects the dismissal of German professors with American offers to invite professors to the USA. Do you know of any colleagues who were first dismissed + have now left for USA? I only know that Westphal is in USA + that Joos left here at the beginning of June [...] Westphal, as far as I know, was never dismissed + Joos was reinstated after a short time. In his case, the removal, as I have heard, was caused by an (inexcusable) confusion of names."93)

93) Ladenburg to Laue, 30 July 1947, MPGA, II Dept, Rep. 50, No. 1158, quoted in: Klaus Schlüpmann, Vergangenheit, p. 426 f.

D.14.9 Other Intelligence Services

[There is evidence that other U.S. investigators, as well as intelligence services from other countries, found information about the German nuclear program.

For U.S. involvement in a postwar shipment of five tons of zirconium that apparently came from the wartime German nuclear program, and that indicates a deeper U.S. understanding of the German nuclear program, see p. 4184.]

Ernest K. Lindley, Chief of Washington Bureau of *Newsweek*. Men and Secret Weapon for 1944 Invasion. *The World's News* (Sydney). 5 February 1944, p. 3. https://trove.nla.gov.au/newspaper/page/14771447

Rumors concerning Germany's "secret weapon" continue to trickle through neutral capitals.

Recently a United Press despatch from Lisbon attributed to travellers arriving from the Reich the statement that the weapon is an explosive based on the release of atomic energy.

According to this report, small atomic bombs of tremendous explosive force would be dropped by "super-stratosphere" planes.

In both London and Washington, there are several degrees of reaction to the "secret weapon" talk.

- That it is partly propaganda, chiefly for German internal consumption, partly "nerve warfare" against the Allies.
- That the Germans may have something of nuisance value, but probably not in sufficient quantity to do much damage.
- That the weapon, even if dangerous, can be knocked out of enemy hands by such preventive measures as the bombing of the so-called Rocket Coast of Northern France.
- That the threat is serious enough to require every precaution possible and preparation for severe counter-action, such as air-borne gas attacks.

Bombing the "Rocket Coast" would not, for example, interfere with the use of an atomic bomb dropped from high-flying planes.

If the Germans have been able not only to perfect a super explosive but to produce it in quantity, it would be logical to expect them to use it on Britain when they think the invasion armies are about ready to jump off, hoping to disorganise the assault on Europe and stave off defeat in 1944.

Churchill, as his published comments indicate, regards reports of the "secret weapon" with respect, but not with alarm.

Other informed sources are braced for a vengeful, hurtful attack on Britain.

[By the end of the war, Ernest Lindley or his colleagues at *Newsweek* seem to have found high-ranking Allied officials who corroborated this early report. See p. 5068.]

Nazis' Atom Bomb Plans: Britain Ready a Year Ago. Daily Telegraph and Morning Post. 11 August 1945.

Britain prepared for the possibility of an atomic bomb attack on this country by Germany in August, 1944.

It can now be disclosed that details of the expected effect of such a bomb were revealed in a highly secret memorandum which was sent that summer to the chiefs of Scotland Yard, chief constables of provincial forces and senior officials of the defence services.

An elaborate scheme was drawn up by the Ministry of Home Security for prompt and adequate measures to cope with the widespread devastation and heavy casualties expected if the Germans succeeded in launching atomic bombs on this country.

Reports received from our agents on the Continent early last year indicated that German scientists were experimenting with an atomic bomb in Norway. According to these reports the bomb was launched by catapult, and had an explosive radius of more than two miles.

In view of our own progress in devising an atomic bomb, the Government gave the reports serious consideration. Thousands of men and women of the police and defence services were held in readiness for several months until reliable agents in Germany reported that the bomb had been tested and proved a failure.

[Allied intelligence reports confirmed that Germany was developing an atomic bomb. A blast radius of over 2 miles or over 3200 meters corresponds to an explosive energy of approximately $(3200/85.5)^3 \approx 50,000$ tons of TNT, definitely nuclear and over twice the explosive energy of the first U.S. fission bombs.

Allied intelligence also confirmed that there was at least one attempted test of the German atomic bomb. It was reported to have been a failure and to have been associated with Norway (as the development and/or test location?). Was that the same failed atomic bomb test that Werner Grothmann mentioned in the North Sea in late 1943 (p. 4480)? The German nuclear program was producing heavy water at several sites in Norway (pp. 4061–4075), so were there other important aspects of the program in Norway? Dwight Eisenhower mentioned some sort of mysterious nuclear work at Trondheim that is otherwise unknown in publicly available documents (p. 5080). See also p. 4444.

The catapult launch suggests that the bomb may have been designed to be carried on a V-1 cruise missile, which was launched by catapult, or by some other aircraft or rocket that had been designed or modified to be launched by catapult. The Sänger-Bredt Silbervogel space plane would have been launched by catapult, and some versions of the A-9 rocket were designed to be launched by catapult. V-1 launch catapults were installed on German submarines in 1944 in order to attack Allied targets from offshore (pp. 5712–5721). There were major German submarine bases at Trondheim and other locations in Norway. And there were plans to arm the V-1 with a nuclear warhead (e.g, pp. 4942–4943). Could that have been the connection among these several mysterious pieces of intelligence?

Allied fears that the German bomb was nearly ready for deployment heightened in summer and autumn 1944. The Royal Air Force went to extreme lengths to bomb what appears to have been a German fission reactor and fuel reprocessing complex near Königsberg during the period 26–30 August 1944 (pp. 3962–3963). The first successful German nuclear test may have occurred in October 1944 (p. 4428).]

Big Projectile Reported New Hitler Weapon. Los Angeles Times. 30 September 1944. p. 3.

SOMEWHERE IN FRANCE, Sept. 23 (Delayed.) (AP)—American 3rd Army troops have obtained information indicating that a 14-ton projectile with an explosive radius of three kilometers—almost two miles—is scheduled as the third in Hitler's series of vengeance weapons.

V-1 is the robot bomb launched from a platform.

V-2 is the long-range rocket fired from a carrier plane, for which the Germans are reported using the Heinkel 111.

V-3, so far as is known here, has not yet been used against either England or the attacking Allied armies.

Information disclosed the projectile is just short of 60 feet in length, is five feet five inches in diameter and weighs 14 tons at the take-off. Propelled by a mixture of liquid air and alcohol, it is shot into the air vertically, then is controlled by radio.

[Germany had many secret weapons in development, and the "V" number would simply indicate the order in which they happened to be publicly announced. The V-1 cruise missile or "robot bomb" had been fired at London since June 1944 and was well known by the time of this article. However, the existence of the V-2 or A-4 rocket was not publicly known when this article was released. V-2 or A-4 rocket attacks on Allied countries began on 8 September 1944 but were not publicly admitted by Germany until 8 November 1944, and by the United Kingdom until 10 November 1944. The aircraft-fired rocket referred to as "V-2" in this article was not the large A-4 rocket that ultimately gained the V-2 name, but rather a different weapon. It was likely the air-launched version of the V-1, which was indeed fired from Heinkel He 111 carrier planes (p. 1853). Alternatively, it might have been some other large, long-range air-to-ground missile, perhaps similar to the RASCAL liquid-propellant rocket that Walter Dornberger began creating (or recreating?) in the United States in 1946.

The V-3 rocket specifications given in the article closely match those of the A-4 rocket that became the real V-2. The diameter was indeed five feet five inches (1.65 meters), the launch weight was indeed 14 tons, the propellant was indeed liquid oxygen ("liquid air") and alcohol, and the rocket was indeed controlled by radio. The one specification that does not match is the stated length of "just short of 60 feet," or approximately 18 meters. The actual A-4 rocket length was approximately 14 meters. This could simply be a mistake in the Allied intelligence or reporting, or it could indicate that 18-meter-long extended versions of the A-4 rocket were being developed or built. The 14meter A-4 rocket could carry a 1-ton payload of conventional explosives to a maximum range of approximately 350 km. An 18-meter extended version of the A-4 rocket (very similar to the postwar

Soviet SS-2 or R-2 missile that was produced using captured German technology) would have been able to accommodate more propellant, and therefore would have been able to carry a significantly heavier payload, such as a nuclear bomb.

A blast radius of 3000 meters corresponds to an explosive energy of approximately $(3000/85.5)^3 \approx 40,000$ tons of TNT, definitely nuclear and approximately twice the explosive energy of the first U.S. fission bombs. This suggests that Germany had been developing and was close to deploying a nuclear bomb, and that its large rockets had been intended from the beginning to be delivery systems for that bomb, not merely for conventional explosives.

What exactly did the Third Army discover that formed the basis of this article? Where was "somewhere in France"?

Note that the AP report was delayed for a full week by Allied censors. What details did the censors not allow to be included?

Similar versions of this AP news report were also published in:

Americans Get Hint of New German Bomb. New York Times. 30 September 1944 p. 3.

Hitler's V-3 Said to Blast 2-Mile Area. Washington Post. 30 September 1944 p. 5.

Radio Controlled, 14 Ton Projectile New Nazi Weapon. *Blood and Fire* (Journal of U.S. Army 63rd Infantry Division). 30 September 1944 p. 1.]

U.K. House of Lords. 29-30 May 1945.

https://hansard.parliament.uk/lords/1945-05-29/debates/ba5ca4d2-43bd-4623-aa9c-33247efe9a93/LordsChamber

https://hansard.parliament.uk/Lords/1945-05-30/debates/12e7a0c3-87ba-413f-bee6-56c963d90dec/FutureOfDirectedMissiles

29 May 1945 [...]

LORD VANSITTART

had the following Notice on the Paper: To ask His Majesty's Government whether they will take the initiative in proposing to the Allied Governments the inclusion in the terms imposed upon Germany of an Article providing that a permanent Inter-Allied Committee of Scientists should be established to examine and control, and if necessary to prohibit the use by Germany of, any scientific discovery or invention considered dangerous to the safety of mankind; and to move for Papers.

The noble Lord said: My Lords, I venture to think that this Motion speaks for itself. I would suggest that the Prime Minister's last war review speaks for it even more loudly. In the last war the ingenious barbarians sprang gas upon us. That was a prelude. There was an insufficient answer to that. In this war we have had the V1 and the V2. There was only a still more insufficient answer to the V1, and the V2 found no answer at all, or rather it would be fairer to say that the answer was the same as for V3, the multiple long-range artillery described by the Prime Minister which was destined to endow us with five shells per minute. The remedy found was the old-fashioned one of conquering the sites—that is to say, the answer of infantry and not of science. Even that remedy will not always be available, because ranges increase and sites recede. Indeed, the ranges, in a very short while, may be almost unlimited. Even with short ranges we were very nearly too late. If the V1 and the V2 had been brought into action one year sooner they would probably have made an end of this island, and if they had been brought in some years sooner, that is at the beginning of the war, they might well have meant the end of civilization. Therefore, in dealing with a nation that is periodically homicidal, I think no precaution is excessive.

All precautions are indispensable, because without them I think the end might well be the end of an American fairy story which we read when we were very young. No doubt that story was written with an inkling of Reno because they lived happy ever after for quite a little while. I say that because destructive science has got out of hand. German science, like German religion, German economics, German pedagogy, has been very largely militarized and unless we keep a firm hand on it we shall very likely have the V10 in less than ten years. It is not my purpose to paint lurid pictures of cities dissolved by pressing a button, though I suppose that is now within the bounds of possibility. We have had one lesson and it will be our own fault if we have another. [...]

What exactly does all this involve? It involves a good deal, and I submit that a good deal is a good deal better than another raw deal. It involves control of all German laboratories, both industrial and university. That in turn involves the use of an extensive and intensive intelligence service which must be drawn from all the Allies. [...]

30 May 1945 [...]

LORD BRABAZON OF TARA

[...] The V2 was a very different machine altogether, and I want to draw attention to some of

the possibilities of the V2 before we forget it altogether. Your Lordships must remember that this propelling power is entirely in its infancy. This projectile goes up forty or fifty miles in its flight. There is no limit at all to the range it can go to because the resistance is so small at those heights. I want your Lordships to remember that although the charge was only about a ton in the case of the V2, in the future the effect of the power of explosives is going to be very much bigger than that which we have to-day. The noble Lord who is to reply is a physicist and I should like him to tell us, if he can, what are the possibilities of explosives of an atomic type, because there are absolutely frightening possibilities. Consequently this weapon is one which is bound to be developed. It is the physicist's dream or nightmare that he can produce these terrible explosives. [...]

I can well imagine some people, with mischief in their hearts, planning what they can do. And what can they do: They can rope off a few miles of their own hilly country, they can sink shafts, nominally mining shafts, they can make the parts of this instrument all over their country, assemble them in the mine, and be all ready for a really efficient V2 attack upon their selected enemy. I want you Lordships to remember this, that you will see no apparent Army, you will see no apparent Air Force, you will see no apparent Navy, but they will have the power latent to launch an attack on the great cities of their enemies and the power to devastate them the moment they declare war. Before Armies can possibly assembled, let alone march, the great cities of the enemy will be destroyed. I hope you will not think for a moment that I am wrong when I say that these weapons, with the new power of the explosives which are possible and with the new accuracy of direction, are not only things which can be directed against this county. They can be directed against America and if the resources in manufacturing power of a great country like America are destroyed, as they could be in twenty years' time, we must look upon the fact that we are tied up to America and if she goes we go. Consequently this power of attack, which might be developed quietly in any part of the world, is a danger we must face. [...]

THE EARL OF DARNLEY

[...] This method of warfare may possibly in the future not only destroy humanity but also destroy the globe on which humanity resides. That sounds fantastic but from the information I have been able to get I believe it is not as fantastic as it sounds. The atomic bomb, so the Press tells us, was in a state of three-quarters preparation at the end of the war and may possibly in a generation accomplish even this.

But before discussing what must be the final fatuity of mankind, it is necessary to look a little, as the noble Lord has done, into the future of the flying bomb and the rocket. As he told us so ably and humorously, it only needs a little imagination to see what might happen from the enlargement and perfection of these two missiles. He has told us that the war of the future may last only a few minutes, and as it is now the fashion to make war without any warning the whole thing would be over before anybody is even aware that it has taken place. The first man to touch the trigger will achieve possibly the complete paralysis of his adversary by methods against which there can be no possible defence. Navies and Armies and Air Forces will be completely useless and even the other defences of Press and propaganda will be similarly completely useless. The fighters of the future will be a band of troglodytic alchemists living in catacombs in hidden valleys who will deal out inhuman death to millions and destruction to a world whose beauties and whose interests they have long since given up the art of appreciating. The machinations of these people will remove the last vestige of the so-called romance and chivalry from the original war which the noble Lord so amusingly described. And then as to the atomic bomb. I am not speaking as an expert, I am merely passing on what I have seen described in the Press, as others of your Lordships have seen it, and perhaps the noble Lord who is going to answer will be able to give me some further information upon it. It was stated in the Press that a bomb as big as a man's hand was ready, or almost ready, for use at the end of the war, and that it could have destroyed the whole of a city as large as London. When this atomic bomb is added to these brainless horrors of metal and explosives, which we have heard about to-day, I believe—and again I ask for information from the noble Lord who is going to reply—that it may possibly be a fact that the release of the cohesive particles of the atom, which at present can only be released through intensive bombardment by great electric force, may cause such a violent reaction that the force engendered may be sufficient to release the coherence in the atoms contiguous to the explosion. If this is the case, every atom in the world might disintegrate and the whole globe disappear. Is this, then, the frightful possibility envisaged by the marriage of force and science and their use as a method of settling human disputes?

[Although the theoretical possibility of atomic bombs had been publicly known for many years, in May 1945 the Manhattan Project had not yet produced an operational atomic bomb. The fact that the United States (with British assistance) was trying to produce an atomic bomb was highly classified and probably unknown to the members of the House of Lords, and they certainly would not have publicly discussed that program if they had known of it.

The repeated references by the members appear to be to German atomic bombs. They even stated that "a bomb [with a fission pit] as big as a man's hand was ready, or almost ready, for use at the end of the war, and that it could have destroyed the whole of a city as large as London," and they repeatedly pointed out the viability of German rockets as a delivery system for such a bomb. They spoke of devastating attacks against numerous British and American cities.

Although the members attributed that information to "the Press," media mentions of atomic bombs were heavily censored until August 1945, and there do not appear to have been any newspaper articles that provided this detailed information by May 1945.

The most straightforward explanation is that these members of the House of Lords had received information from wartime and early postwar Allied investigations of German programs to develop atomic bombs and advanced rockets to carry them. Can any relevant information be located among the archived papers of these members?]

Germany Calls on Allies to Turn the Other Cheek. Toronto Daily Star. 30 June 1945 p. 6. https://news.google.com/newspapers?id=O7E7AAAAIBAJ&sjid= KisMAAAAIBAJ&pg=719,18615434

London, June 30—(BUP)—The Germans came within six months of splitting the atom and possibly destroying the world in the process, Herbert Agar, special assistant to the U.S. ambassador, said in a speech last night.

"If the war had gone on another six months, it was quite possible that this planet would have ceased to exist, because it was probable that someone would have learned to break the atom without controlling it," Agar said.

"There was a danger that the Germans would learn how to split it first, and our scientists gave the date as Aug. 6 of this year. I sincerely believe that in a very few years human beings will know how to destroy the human race."

[In June 1945, Agar appeared to suggest that Germany planned its first nuclear attack for 6 August 1945. If that information was correct, the planned date may have been determined both by the production schedule of the weapon and its delivery system and also by the historical significance of that date for Germans. On 6 August 1870 Germany (still in the process of uniting under Prussia) won decisive battles against France, and on 6 August 1914 Germany launched its first U-boats to fight World War I. Later, 6 August 1945 turned out to be the actual date that the United States launched its first nuclear attack, on Hiroshima. Was that simply an extraordinary coincidence, or was the Hiroshima date chosen in part to send a political message to anyone who knew about the earlier German plans? See also:

- Atomic Bomb Discovery of Germans Told. Los Angeles Times. 20 July 1945 p. 5.
- Description of New Bomb Called 'Leak.' Syracuse Herald-Journal. 21 July 1945 p. 7.
- Germans Aimed to Split the Atom. The Scotsman. 30 June 1945 p. 5.
- Splitting of Atom within Grasp. The Mercury (Hobart, Tasmania). 2 July 1945 p. 2.
- World Saved by 6 Months. *The Courier-Mail* (Brisbane, Queensland). 2 July 1945 p. 1.]

G. Verner Edlund to Leslie Groves. 2 July 1945. Cable 44165. [NARA RG 77, Entry UD-22A, Box 160, Folder APR 45–Dec. '45]

From: US Military Attaché, London, England

To: War Department

Nr: 44165 2 July 1945

To MILID from Edlund for Davis to Groves for Smith serial number 44165. TOP SECRET.

London papers 30 June mention speech here by Commander Herbert Agar, Special Assistant to American Ambassador to the effect that someone would have learned TA [tubealloy—nuclear technology] without controlling it if war had continued another six months, danger that Germans would have learned first and our scientists gave the date as 6 August. Will interview subject and transmit clippings and report forthwith.

End

5064 APPENDIX D. ADVANCED CREATIONS IN NUCLEAR ENGINEERING

Monthly Intelligence Summary. April–June 1945. [NARA RG 77, Entry UD-22A, Box 168, Folder 202.3-1 LONDON OFFICE: Combined Intell Rpts.]

XII CENSORSHIP.

The period covered by this report has been marked by an increase in the problem of keeping newspapers in the U.K. from printing stories undesirable from a TA standpoint. An increasing tendency on the part of both the press and the censorship authorities to excuse stories on grounds of previous publication has been noted. A system is now in effect in U.S. whereby stories on TA, which are submitted to Censorship, are passed on to editors with a note asking that they not be published. Admiral THOMPSON, Chief Press Censor of the Ministry of Information, remains firm in his opposition to sending a circular to editors asking them not to print any reference to TA.

Colonel WARDEN, Chief Press Censor, SHAEF issued a directive to all SHAEF Censors ordering them to stop all TA stories regardless of previous publications.

The most embarrassing incident from the Censorship standpoint occurred when British papers carried a story reporting a speech by Commander AGAR, Special Assistant to the American Ambassador to Great Britain, in which AGAR stated that, "Had the war gone on a little longer, our scientists believed the Germans would have perfected TA." This story resulted in several inquiries from the Press as to whether they would still be expected to refrain from printing stories on this subject. All such inquiries were answered in the affirmative.

Stories dealing with the sabotage of the heavy water plant at Norsk Hydro (Norway) also appeared in print during the period.

A party of SHAEF correspondents was taken to Norsk Hydro on a facility visit as a result of which fifteen stories were submitted to censorship authorities. These stories were all stopped.

Patrick S. Washburn. 1988. The Office of Censorship's Attempt to Control Press Coverage of the Atomic Bomb during World War II. https://files.eric.ed.gov/fulltext/ED295201.pdf

Yet, several days later, another "very bad bust," as it was labeled by the Office of Censorship, originated in London. Cmdr. Herbert Agar, assistant to the U.S. ambassador to Great Britain, gave an address at an English college on June 29 that made no mention of atom splitting. However, three London newspapers obtained copies of his speech which contained some remarks that were deleted. These included the fact that American scientists estimated the Germans might have been able to split the atom by August 6, and thus if the war had lasted another six months, the Germans may have dominated the world.

The London newspapers rushed Agar's written comments about atom splitting into print without checking with the government to see if they should be used, and then every American wire service filed stories. Since these were based solely on the newspaper stories, the English censor could not stop them because of prior publication. Agar was severely reprimanded by both the Navy and the American ambassador for being careless, but the Office of Censorship refused to try to get the wire services to suppress copy that had been approved by a foreign censor. However, it did discourage attempts by the United Press and others to further develop Agar's remarks.

Charles A. Crowley to W. F. Heimlich. 31 August 1945. Headquarters United States Air Forces in Europe (Main). Berlin Intelligence Party. German V-1 and V-2 Personnel. [AFHRA folder 570.6191, IRIS 241182; AFHRA C5094 frames 0957–0958]

1. In view of the fact that the wants of USAFE on V-1 and V-2 personnel have been satisfied, I am inclosing information on those men whose evacuation we have recommended. My memory of the conversation which we had a few weeks ago is to the effect that USFET was still anxious to either exploit or to know the exact location of these individuals. The list follows:

[...] g. Gerald Klein (Dr.), Dipl.-Eng., Manager of LGW.

Address: Berlin-Dahlem, Hohe Ahren 10b.

Specialty: Electrical flying control, V-2 control. A very efficient electrical engineer. Developed V-2 control devices. Worked at Peenemünde and later became group director of atomic devices in RLM. At present being used by the British. Evacuated by "T" Force.

[See document photo on p. 5066.

Dr. Gerald Klein was listed as the manager of "LGW," which was the Luftgerätewerk Hakenfelde A.G., part of the huge Siemens electrical company. If wartime Germany never had atomic devices or even serious plans to make them, as maintained by official histories, why did the RLM or Reichsluftfahrtministerium (Ministry of Aviation) have an entire group dedicated to atomic devices, of which Dr. Klein was the director? Note that Dr. Klein was evacuated by T-Force and "used by the British" after the war. Where are the reports on his interrogations? Where are the reports on his postwar work for the United Kingdom, or perhaps for other countries after that?

The Halstead Exploitation Centre is an example of a case where there seems to have been an especially large overlap between the interrogation of German-speaking scientists and collection of German-language reports on one hand, and the postwar development of British nuclear weapons on the other hand. See pp. 2139–2141 and 4204–4207. Just exactly what role did German-speaking scientists and information play in the British nuclear program?

The U.S. Army Air Forces officers writing and reading this memo seemed to casually understand what it meant that the Reichsluftfahrtministerium had an entire group on atomic devices, with no further explanation required in this memo. They also appeared to know about Dr. Klein from American interrogations of him. Where are the U.S. reports on American interrogations of Dr. Klein? Where are the U.S. reports explaining exactly what the atomic device group of the Reichsluftfahrtministerium was, what it accomplished during the war, and how it related to other nuclear-related work during the Third Reich?] 5066 THIS PAGE IS DECLASSIFIED IAW E0 13526 **AFHRA folder 570.6191, IRIS 241182**

3	APPENDIX D. ADVANCED CREATIONS IN NUCLEAR ENGINEERING
	UNITED STATES AIR FORCES IN EUROPE (MAIN) Berlin Intelligence Party
	APO 755, U.S. Army. 31 August 1945.
	SUBJECT: German V-1 and V-2 Personnel.
	TO : Lt.Col. W.F. Heimlich, Executive, G-2, Berlin District Command, APO 755, U.S. Army.
	1. In view of the fact that the wants of USAFE on V-1 and V-2 personnel have been satisfied, I am inclosing information on those men whose evacuation we have recommended. My memory of the convers- ation which we had a few weeks ago is to the effect that USFET was still anxious to either exploit or to know the exact location of these individuals. The list follows:
	a. <u>Hermann Wahlhausen, Engineer</u> . Address: Mariendorf, Prühstrasse 67. Specialty: V-1, V-2, and rockets. Did V-weapon design and research work and developed rockets. Appears to be a competent and well educated engineer.
	b. Fritz Schultz, Shop Superintendant. Address: (Business) Argus Motorenbau, Berlin-Reinicken- dorf, Flottenstr. 39-42. (Home) Berlin-Lichtenberg, Plouzstrasse lb. Specialty: Regulators for V-1 power plants (argus tubes).
	c. Erich Osterkamp, Engineer. Address: Mariendorf, Prühstrasse 67. Specialty: V-1, V-2, and rockets. Did V-weapon design and research work and developed rockets. A competent and well educated engineer.
	d. <u>Hugo Maier, Inspector all Plants</u> . Address: (Business) Argus Motorenbau, Berlin-Reinicken- dorf, Flottenstr. 39-42. (Home) Spandau am Südpark 10c (Eng.Zone) Specialty: V-1 power plants.
	e. <u>Gunther Hellwer, Specialist</u> . Address: Berlin-Wilmersdorf, Hanauerstr. 22. Specialty: Electric three axis auto-pilots. Did re- search on a combination automatic pilot and radio dir- ection finder for blind landing devices.
	f. <u>Franz Bernard, Civil Engineer</u> . Address: Falkensee, 45 Reichenhaller Str., Berlin. BOIC (Wannsee) Specialty: Experience with combustion chamber of V-2. Appears to have valuable practical knowledge in connect- ion with V-1 and V-2 modification and construction.
	1-
{	g. Gerald Klein (Dr.). DiplEng., Manager of LGW. Address: Berlin-Dahlem, Hohe Ahren 10b. Specialty: Electrical flying control, V-2 control. A very efficient electrical engineer. Developed V-2 control devices. Worked at Peenemunde and later became group director of atomic devices in RLM. At present being used by the British. Evacuated by "T" Force.
	CHARLES A. CROWLEY, Major, AC.

Figure D.1013: Why did the RLM (Reichsluftfahrtministerium, Ministry of Aviation) have an entire group dedicated to atomic devices, of which Dr. Gerald Klein was the director? Where are the U.S. and U.K. reports on Klein's interrogations, wartime work, and postwar work? [AFHRA folder 570.6191, IRIS 241182; AFHRA C5094 frames 0957–0958]

Nazis Really Had Atom Bomb Almost Ready. Baltimore Sun. 8 August 1945, p. 4.

London, Aug. 7 (AP)—Allied sabotage and bombing of experimental stations and plants along the Baltic coast and in southern Norway upset a German timetable to use atomic bombs against Britain last spring, an authoritative informant said today.

"But Nazi scientists had been carrying out experiments along this line for many years and if the war had not ended when it did they likely would have been able to launch attacks," said the informant, who throughout the war maintained contact with underground sources inside Germany.

He said the German super weapon was labeled the V-3 and was planned to follow the softening up work done by the V-1 and V-2.

[This AP story was also carried by other newspapers, for example: Nazis Planned to Use Atomic Bombs. *Daily Colonist* (Victoria, Canada). 8 August 1945, p. 8. https://ia800207.us.archive.org/0/items/dailycolonist0845uvic_5/dailycolonist0845uvic_5.pdf]

 $\label{eq:states} Future of the Atomic Bomb: Power for Peace or Chaos. $U.S. News. 17 August 1945, pp. 20-23. www.usnews.com/cmsmedia/94/76/07545cb1465e8d8f022bea2bfc5d/19450817-future-of-the-atomic-bomb-power-for-peace-or-chaos.pdf$

The Germans had planned to use the atomic bomb in the warhead of a V-type winged torpedo such as they fired upon England across the Channel. With such a bomb, they might have devastated England. [...]

At the moment, the only defense that military men can think of is to destroy the source of production for atomic bombs. High officials recognize that, if such a weapon were put into the hands of a madman like Hitler, civilization could be destroyed or held in pawn at will.

Awesome Force of Atom Bomb Loosed to Hasten Jap Surrender. *Newsweek.* 13 August 1945, p. 30.

On Sunday morning, August 5 (Washington time), an American airplane flew over Hiroshima, a Japanese army base on the Inland Sea. It dropped a single, small bomb. [...]

Thus the Allied nations had won what the President called "The Battle of the Laboratories" against the Axis. [...]

Metal of the Millennium: German scientists nearly succeeded in solving it. Since the surrender of the Nazi armies, Allied officers have revealed that Germany would have been able to strike with atomic bombs by January 1945, if the invasion had not come six months before. The highest Allied officials knew that such explosives could have won the war for the Axis.

The United States had begun research on them in late 1939. [...]

[This is an astounding public admission that the German nuclear weapons program existed, was actually ahead of the U.S. nuclear program, and drove the timetable for the Allied invasion of Europe during the war. See p. 5056. See also p. 5077 for a very similar admission from General George Marshall, the Chief of Staff of the U.S. Army, in his final public report on the war. That same fact was confirmed by a formerly Top Secret U.S. CIC document on p. 4451, paragraph 15. See also the written statement of Col. George Woods on p. 5119.

What is the true history of the German programs for developing nuclear weapons as well as methods to deliver them to Allied targets? What is the true history of Allied knowledge about those programs, both during and after the war? Where is all of the corresponding evidence stored now?] Press release, Office of War Information, Franklin-2994, NB-3297, Technical Industrial Intelligence Committee. 25 August 1945. [NARA RG 40, Entry 75, Box 62 (Old 158); NARA RG 208, Entry 198, Box 1042]

Germany's inner war secrets ranged from experiments with the atomic bomb, anti-radar devices, and piloted rocket missiles that they expected to cross the Atlantic in 17 minutes, to butter made from coal, the Office of War Information reported today. [...]

CIOS teams combed Germany for Germany's hidden secrets on weapons, oil production, raw materials, synthetics, new engineering and chemical processes, inventions, patents, finance, economics, and German machinations in the political field.

Already more than 2,000 visits to German "intelligence targets" have been made by CIOS and 3,000 preliminary assessment reports have filtered through military channels to Washington, where they are made available to appropriate agencies. The agencies are authorized to translate the findings into projects useful to the allied cause and for post-war purposes.

Many of the German secrets, at the time CIOS uncovered them were considered of great potential value in the war against Japan and many of them were being adopted for use in the Pacific when the war ended. However, they are also of real value in the long-range control of Germany and also will facilitate technological advances in many industrial fields in peacetime, OWI reported on the basis of information provided by military authorities.

The secrets, it is conservatively estimated, would have saved the Allies many millions of dollars for research and scientific development, if the war had continued to the end of 1945 or longer. They indicate that German invention was far ahead of her capacity to translate theory into industry. The rapid advances of the Allied armies prevented her from putting into practice many of the technological advances evolved in the laboratories of her scientists. These same secrets, in some cases may shortly make some American technical processes obsolete and outmoded.

While German Government files yielded many of the secrets, the intelligence teams, which began to go into action on the heels of General Eisenhower's troops, soon after D-Day, often found vital clues through casual conversation with individuals, through close observation of physical facilities of war plants, in interviews with technical personnel and through meticulous and thorough search for hidden documents. [...]

Some of the more startling of the secrets that may be disclosed at this time, show that not only had Germans made significant progress in the development of an atomic bomb and in the production of "heavy water" but they:

1. Had contemplated a piloted missile with a possible range of 3,000 miles. The designer envisaged commercial applications for trans-Atlantic passenger crossing in 17 minutes.

2. Were working on a formula for new war gases that they hoped would prove more deadly than any chemical agent yet developed.

3. Had specifications and construction details for naval vessels of advanced design, including submarines with high underwater speeds and apparatus for sustained underwater operations. 4. Had developed a system of radar camouflage consisting of anti-radar coverings and coatings to be employed on submarines and other weapons.

5. Had highly advanced jet engine, rocket assisted take-off and aero-dynamics designs.

6. Had found new uses for many staples, as for example, coal. From coal the Germans were making a synthetic butter as well as alcohol of both beverage and industrial types, aviation lubricants, soap, and gasoline.

7. Had designs for various secret types of guns and gun sights, novel gear and transmission construction and air-cooled diesel engines.

Other German war secrets ranged from records on the location of German capital in neutral countries, and the status and composition of German cartels, to specifications of long-range rocket developments that scientists describe as "sensational." In addition to the missile that they expected to have a range of 3,000 miles, the Germans had plans for V-type weapons much more advanced than those which they directed against the British Isles last year. [...]

The numerous German medical and pharmaceutical developments included the production of a "froth" clothing compound. This was designed to insulate and protect aviators lost in arctic waters.

Although many of the synthetics devised by the Germans are pronounced inferior to American products, a number of others are highly advanced. Processes used in their synthetic rubber industry, for example, are being made available to United States war manufacturers.

Similarly, synthetic gasoline and lubricants provide important keys for United States industry; some of the German methods already have been made available to United States produces, and will result in improved products for peacetime use.

Gasoline from coal, eventually to cost little more than the standard petroleum product of today, is also a possibility based on a German war formula. Technological improvements that may result from adaptation of the techniques in United States plants, scientists say, may make this and many other products envisioned by the Germans highly practical from a commercial standpoint.

Designs of long-range German smooth-bore guns that fire rocket-assisted finned projectiles, a "squeeze" gun that obtained higher velocities and longer range through use of a tapered bore, a device for reducing the wear on gun barrels, and data on the substitution of steel cartridge cases for both small and large calibre weapons (thus reducing requirements for copper and other critical materials), are now Allied possessions. Still other German developments range from improved acoustic, magnetic and non-magnetic anti-tank and anti-personnel mines to the use of salt water in electric torpedo propulsion. [...]

CIOS investigations were carried out in the field in two ways. First, Combined Advanced Field Teams, groups of technically qualified men who followed the combat forces, gave a rapid preliminary assessment of the technical value of the targets. More than 200 expert United States and British assessors were continuously in the field during the period of rapid military advance.

Second, following up plans already made and the reports coming back from the assessors, teams of expert scientists and technologists carried out detailed investigations. The number of such visits by July 1945 had exceeded 2,000.

Both the assessments and the investigations were carried out by teams, combining U.S. and British representatives. Government leaders, scientists, industrialists, economists and historians were represented in the groups. The small teams, each made up of experts in a particular field, were attached to the intelligence staff of all the major army commands on the Western Front.

Some of the industrial fields covered were: aeronautics, automotive production, building materials, chemicals, communications, food, forest products, general industrial equipment, liquid fuels and lubricants, machinery, medical wares, metals and materials, railroad equipment, rubber, safety and technical equipment, shipbuilding, solid fuels, textiles and utilities. [...]

The German processes, it was realized, not only would reduce research work in British and United States laboratories, releasing them for other scientific ventures, but would save millions of manhours in war production and on the fighting fronts and, additionally, might alleviate shortages of some types of war materials. [...]

[See document photos on p. 5072.

The U.S. Office of War Information publicly stated that Germany had conducted "experiments with the atomic bomb," which is an extraordinary statement that cannot (or at least should not) be ignored.

This Office of War Information press release, as well as any related discussions of reporters with officials, prompted numerous newspaper articles such as the following examples, which stated, "The Germans... had reached the experimental stage with the devastating atomic bomb," "an atomic bomb, on which... the Germans had made considerable progress," and "Not all the secrets have been disclosed."]

James E. Chinn, Nazis Almost Had Rocket for Atlantic Hop. *Washington Post.* 27 August 1945.

God blessed America.

Just before the European war ended the Nazis were experimenting with a piloted rocket missile designed to span the Atlantic in 17 minutes, the Office of War Information revealed yesterday as it unveiled a variety of Germany's inner war secrets.

The Germans also, according to OWI, had reached the experimental stage with the devastating atomic bomb, devices to destroy the sight of the all seeing eyes of radar, and new war gases they hoped would prove more deadly than any chemical agent yet developed. And that's not all.

Many More "Up Sleeve" [...]

APPENDIX D. ADVANCED CREATIONS IN NUCLEAR ENGINEERING

NB-3297

DECLASSIFIED Authority <u>NND 968018</u> By **JR** NARA Date <u>8-20-05</u>

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P.M., EWT, Sunday, August 26, 1945 Germany's inner war secrets ranged from experiments with the atomic bomb, anti-radar devices, and piloted rocket missiles that they expected to cross the Atlantic in 17 minutes, to butter made from coal, the Office of War Information

OFFICE OF WAR INFORMATION

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reported today. .

ADVANCE RELEASE

Franklin-2994

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Not for use by Press or Radio before

How these German war secrets began to be unlocked by American and British experts long before V-E Day was officially revealed today. The announcement included a statement on the scope and value of some of the secrets disclosed. Many of them were being adapted by United States and British technologists for use against the Japanese when the war ended, OWI reported. The thoroughness of the search for German war secrets foreshadows a similar probe for the secrets now locked in Japan, OWI added.

Some of the more startling of the secrets that may be disclosed at this time, show that not only had the Germans made significant progress in the development of an atomic bomb and in the production of "heavy water" but they:

1. Ead contemplated a piloted missile with a possible range of 3,000 miles. The designer envisaged commercial applications for trans-Atlantic passenger crossing in 17 minutes.

2. Were working on a formula for new war gases that they hoped would prove more deadly than any chemical agent yet developed.

3. Had specifications and construction details for naval vessels of advanced design, including submarines with high underwater speeds and apparatus for sustained underwater operations.

4. Had developed a system of radar camouflage consisting of anti-radar coverings and coatings to be employed on submarines and other weapons.

5. Had highly advanced jet engine, rocket assisted take-off and aero-dynamics designs.

6. Had found new uses for many staples, as for example, coal. From coal the Germans were making a synthetic butter as well as alcohol of both beverage and industrial types, aviation lubricants, soap, and gasoline.

7. Had designs for various secret types of guns and gun sights, novel gear and transmission construction and air-cooled diesel engines.

Other German war secrets ranged from records on the location of German capital in neutral countries, and the status and composition of German cartels, to specifications of long-range rocket developments that scientists describe as "sensational". In addition to the missile that they expected to have a range of 3,000 miles, the Germans had plans for V-type weapons much more advanced than those which they directed against the British Isles last year.

Figure D.1014: Excerpts from press release, Office of War Information, Franklin-2994, NB-3297, Technical Industrial Intelligence Committee. 25 August 1945 [NARA RG 40, Entry 75, Box 62].
17-Minute Oversea Rocket Plane Among Germany's War Secrets. New York Times. 27 August 1945 p. 10.

American and British technicians, closely and quickly following the Allies' military advances across France and Germany, have taken possession of a wealth of information about German "secret weapons" on which the enemy counted so much but that he did not have time enough to develop.

Besides an atomic bomb, on which, as has been made known, the Germans had made considerable progress, German scientists and engineers had developed a defense against radar and experimented on piloted rocket missiles that it was thought would be capable of crossing the Atlantic in seventeen minutes. These and many other German war secrets were disclosed today by the Office of War Information in reporting on the operations of a combined American and British intelligence organization that made daring forays on targets containing vital war information. [...]

They concentrated on the "targets" believed to be richest in vital information on weapons, oil production, raw materials, synthetics, new engineering and chemical processes, inventions, patents and machinations in finance, economics and politics.

More than 2,000 missions to such "targets" have already been made, and the information obtained was estimated by the receiving authorities as being worth "millions of dollars" in research and scientific development. The findings indicated, the OWI reported, that "German invention was far ahead of her capacity to translate theory into industry.

The rapid advances of the Allied armies prevented her from putting into practice many of the technological advances evolved in the laboratories of her scientists," the OWI said. It added that some of the unlocked secrets might soon make some American technical processes "obsolete and outmoded."

Some Secrets Unrevealed

Not all the secrets have been disclosed, but the most startling ones were said to pertain to the development of the atomic bomb and the production of "heavy water," used in one method of making the bomb. The defense against radar was a system of radar camouflage consisting of antiradar coverings and coatings. It would be employed, presumably, on submarines and other weapons.

The Germans contemplated a piloted missile with a possible range of 3,000 miles. The designer envisioned for it a commercial application for flying passengers across the Atlantic in a little more than a quarter hour.

[Also reported in:

The Times (London). 27 August 1945.

Nazis Had 10,000 mph Atom Plane—In Theory. Eighth Army News. 28 August 1945.]

Interview with Brig. Gen. Thomas J. Betts by Dr. Maclyn Burg, Oral Historian. 18 October 1973. Dwight D. Eisenhower Library. pp. 277–289, 294–295, 297–298. https://www.eisenhowerlibrary.gov/sites/default/files/research/oral-histories/oralhistory-transcripts/betts-thomas.pdf

BETTS: Well, we got to this office of Stalin's, which was a long, narrow room with a rather small desk at one end. And between the desk and the door was a long, green beige-covered table. And there was Stalin. He came to see us, very pleasantly, and his first remark was, "Well, I'm happy to tell you that I responded to your pleas and have started an offensive to take the pressure off you in the Bulge." [...A]t the onset of the Bulge, Churchill had sent a personal message to Stalin saying, in effect, "We're in dire peril and will you please exert all possible pressure on the eastern front until we solve this Bulge problem." [...I]t took us from the 1st of January to the 14th to get to the Kremlin. [...]

BURG: So he was not alone in the room when you entered.

BETTS: No, he had an interpreter and he had a General [A.I.] Antonov, A-n-t-o-n-o-v[....] Who was the deputy chief of staff. The chief of staff, I think, at that time was—I think it was Malenkov, but I'm not sure. But the story in Russia, in Moscow, at the time was that the way Stalin really ran the war was that he sent the chief of staff out to inspect the armies and the army groups and shoot whatever generals were necessary, and Antonov was the office man who kept the papers going and worked out the policy. Stalin himself, apparently, did not inspect troops. He did not go out to the front. [...]

BURG: [...] Now was Air Marshal Tedder, in effect, presenting the allied case?

BETTS: [...] Tedder then just made the pitch that I described at the beginning here: mainly, that we were hoping that—we were expecting to close the Rhine, of course, in March—and we were hoping that even if the Russians could not put on an offensive at that time, that they would create enough of a disturbance so that the Germans would not reinforce the front. And Stalin shook his head and agreed. He said that they, that he understood, that, in effect, they had already started their offensive, which they had. They had started on the, I think the 13th or 14th, and at that time their armies were well into Poland. They had not reached German soil yet anywhere.

[Stalin and General Antonov were the recipients of the very best Soviet intelligence on the German nuclear weapons program (4525–4537). In particular, by the time of this January 1945 meeting they had already received the November 1944 intelligence report on p. 4525.

General Thomas J. Betts appears to have played an important role in many world events from the 1920s through at least the 1950s, and he deserves far more study from historians than he has received. For the barest overviews, see:

https://www.washingtonpost.com/archive/local/1977/05/26/retired-army-officer-served-in-intelligence/aac29316-adc0-469d-b194-c015297f360e/

https://generals.dk/general/Betts/Thomas_Jeffries/USA.html

Since August 1944, General Betts had been the chair of the Combined Intelligence Objectives Subcommittee (CIOS) in charge of investigating and transferring Germany's most advanced technologies. He was also the Assistant Chief of Staff for Intelligence (G-2) at Supreme Headquarters Allied Expeditionary Forces (SHAEF) under Eisenhower. He appears to have been closely connected to the OSS and continued to work for the CIA until at least 1958. Thus he was in ideal positions to receive the best western Allied intelligence on the German nuclear weapons program. Indeed, he wrote some astonishing details about the German program to develop nuclear weapons and delivery vehicles for them (p. 5076) while admitting that some information could not be publicly disclosed, and he concluded that the U.S. Alsos Mission had failed to properly investigate that program (p. 3305).

The fact that someone with the position and knowledge of General Betts was sent all the way to Moscow to meet with Stalin and Antonov in January 1945 is truly extraordinary, and virtually unknown apart from his remarks in this obscure interview. From Betts's description of his mission, the U.S./U.K. and the Soviet Union were desperate to overrun German territory as soon as possible. At the very least, the U.S./U.K. intelligence and the Soviet intelligence on the German nuclear program would have been an unstated yet fundamental motivation for that strategy and for the meeting. Is there any archival evidence that something actually was stated, that the U.S./U.K. and the Soviet Union shared any intelligence on the German program during this January 1945 meeting or in other ways and times?

What more did General Betts learn about wartime German work when he served as the U.S. military attaché in Poland after the war, and in his other postwar positions?]

R. P. Linstead and T. J. Betts. 15 September 1945. The Intelligence Exploitation of Germany. Report of Combined Intelligence Objectives Subcommittee. G-2 Division, SHAEF. Ch. 4, pp. 37, 47–51. [See pp. 5516–5529 for photos. AFHRA folder 506.620 1945, IRIS 207538; AFHRA A5186 frames 0920–1044]

Certain items have been omitted because of security considerations. [...]

United States and British specialists have obtained complete information covering all German directed missiles from the pioneer model "A sub-o", which employed oxygen and alcohol fuel in attaining a range of 18 miles, to the latest model of the A-9 which was capable of a 3400 mile per hour speed and a range of 2400 miles. The A-9 was an improved development of the V-2 or A-4, and was equipped with wings thereby enabling it to level off at a height of 70,000 feet. One model of this missile was equipped with a Lorin tube which provided propulsion at the peak of the trajectory, the missile was expected to result in a maximum range of 2400 miles. Other variations of this model were capable of attaining altitudes 60 miles above the earth's surface and speeds in excess of 7300 feet per second. Improved radio controls were developed to supercede the "integrating accelerometer" used in early V-weapons. Some measure of the accuracy which could be achieved with these controls is evidenced by the fact that the radio controlled models were capable of an accuracy of plus-or-minus 150 feet in contrast to a plus-or-minus 50 mile error inherent in the V-2.

German scientists engaged in directed missiles envisaged important commercial applications of the long range missile. Experiments had already been conducted on piloted models. Missiles capable of trans-Atlantic crossings in approximately 40 minutes were found on design boards and scale models were undergoing wind tunnel tests. Amazing performances were considered practical because of the lessened atmospheric resistance and gravitational pull in stratospheric regions. [...]

Of particular significance were the statements, made by German experts in the rocket and controlled missile field, that much of the priority accorded their work by the German High Command was in anticipation of the use of atomic explosives. These authorities stated that KWI had repeatedly assured Hitler that an atomic explosive would be available for use within a comparatively short time. During the last months of work by the Peenemünde staff, V-weapons were designed with much smaller war-heads. Quite possibly this trend was in anticipation of the successful development of a German atomic explosive.

[This report was written by the CIOS chairs, U.S. General Thomas Jeffries Betts, Deputy G-2 of SHAEF (pp. 3305, 5074–5075), and U.K. Ministry of Supply chief advisor and F.R.S. Professor Reginald Patrick Linstead. Based on specific discoveries by their CIOS investigators, these high-ranking officials reported that "the latest model of the A-9 ... was capable of a 3400 mile per hour speed and a range of 2400 miles," and that "experiments had already been conducted on piloted models." That statement sounds like a description of completed hardware, not a mere drawing board design. What specific hardware and information were discovered that are not discussed in the presently unclassified reports? Can any reports that are still classified be located and released?

The CIOS chairs also reported that Hitler, the German High Command, and the leading experts in the rocket programs had been "repeatedly assured ... that an atomic explosive would be available for use within a comparatively short time." Thus the CIOS chairs contradicted the public statements of the Alsos Mission and confirmed that there was indeed a German program to develop an atomic bomb, and that it was far more than a paper design program—its hardware had passed through sufficient development, production, and testing by the end of the war that it was ready or nearly ready to be used in combat.] General George C. Marshall. 1 September 1945 (publicly released 10 October 1945). Third and Final Biennial Report to the Secretary of War. In George C. Marshall. 1996. Biennial Reports of the Chief of Staff of the United States Army to the Secretary of War: 1 July 1939–30 June 1945. Washington, D.C.: U.S. Government Printing Office. pp. 132, 210. https://history.army.mil/html/books/070/70-57/CMH_Pub_70-57.pdf

Victory in this global war depended on the successful execution of OVERLORD. That must not fail. Yet the Japanese could not be permitted meanwhile to entrench in their stolen empire, and China must not be allowed to fall victim to further Japanese assaults. Allied resources were searched through again and again, and strategy reconsidered in the light of the deficiencies. These conclusions seemed inescapable: France must be invaded in 1944, to shorten the war by facilitating the advance westward of the Soviet forces. At the same time German technological advances such as in the development of atomic explosives made it imperative that we attack before these terrible weapons could be turned against us. In addition, the pressure on the Japanese in the Pacific must not be relaxed. Communications with China must be reopened. Resources were allocated accordingly. The balance was extremely delicate but we had to go ahead. [...]

Between Germany and America in 1914 and again in 1939 stood Great Britain and the USSR, France, Poland, and the other countries of Europe. Because the technique of destruction had not progressed to its present peak, these nations had to be eliminated and the Atlantic Ocean crossed by ships before our factories could be brought within the range of the enemy guns. At the close of the German war in Europe they were just on the outer fringes of the range of fire from an enemy in Europe. Goering stated after his capture that it was a certainty the eastern American cities would have been under rocket bombardment had Germany remained undefeated for two more years. The first attacks would have started much sooner. The technique of war has brought the United States, its homes and factories into the front line of world conflict. They escaped destructive bombardment in the second World War. They would not in a third.

[See also p. 5068 for a very similar public admission.

The same facts were confirmed by a formerly Top Secret U.S. CIC document on p. 4451, paragraph 15.

See also the written statement of Col. George Woods on p. 5119.

George Marshall was the Chief of Staff of the U.S. Army during World War II, responsible for the overall conduct of the war in both Europe and the Pacific. From that lofty position, he received reliable intelligence that:

- 1. "German technological advances such as in the development of atomic explosives made it imperative that we attack before these terrible weapons could be turned against us," thus necessitating his decision to launch Operation Overlord in early June 1944. The statement and decision suggest a potential timeline:
 - (a) The United States received intelligence reports of an advanced German nuclear weapons program no later than late 1943.
 - (b) Those intelligence reports indicated that Germany could have a functional nuclear weapon as soon as summer or autumn 1944.

- 2. "At the close of the German war in Europe," American cities "were just on the outer fringes of the range of fire from an enemy in Europe." That statement suggests that:
 - (a) No later than April 1945, Germany had developed one or more methods of delivering a payload to the United States: intercontinental jet bombers, intercontinental ballistic missiles, and/or submarine-launched missiles.
 - (b) No later than April 1945, Germany had developed a payload so destructive that it justified the enormous expense of delivering it to the United States: presumably a nuclear weapon.

Where did Marshall's wartime intelligence come from? Where are those reports now?

What did the United States discover after the war that apparently confirmed that intelligence? Where are those reports and any collected materials now?

Marshall's statements suggest that there were profound reasons behind the ways that Germany and the Allies prosecuted the war that have been omitted from history books ever since.

Marshall's statements also appear to contradict the public conclusions of the Alsos Mission.]

George C. Marshall. Text of Marshall's Address Warning of Peril in Loss of Concept of World Responsibility. *New York Times* 30 October 1945 p. 6.

In the current emotionalism of the hour we turn for relief from positive action to new theories, new discoveries—the supersonic rocket, of atomic power or explosion. If these remarkable products of our science are merely to turn us from action to inaction on one plea, one theory or another, they may well have a more tragic influence on the destiny of the United States than the most pessimistic fear they will have on civilization. I have been considering the military ramifications of atomic explosion for more than two years, since my job placed me in the middle of the grim race toward this scientific power. I think I have—if only because of my head-start—spent much more time than most Americans thinking about such bombs and what they will mean to military operations as well as to civilization at large.

I cannot escape the conclusion that the possibilities of atomic explosion make it more imperative than ever before that the United States keep itself militarily strong—and use this strength to promote cooperative world order.

No one can foresee unerringly into the future but it is not hard to predict that supersonic atomic rockets will have a profound influence on any war that ever again has to be fought. But, rather than decrease the necessity for our preparation, both in manpower and materiel, this terrible new weapon will tremendously increase it.

The present public apathy regarding our military obligations for the future comes as no surprise to me. [...]

Eisenhower to See Bomb: He Tells California Group He Will Watch Tests in Pacific. *New York Times.* 23 February 1946 p. 14.

Gen. Dwight D. Eisenhower, Army Chief of Staff, will witness the atomic bomb tests in the Pacific in May[...]

There was no thought of using the atomic bomb on Germany, General Eisenhower said.

"My main concern was that the Germans did not get the atomic bomb to use on us," he asserted.

Dwight D. Eisenhower. 1948. Crusade in Europe. Ch. 13-14, pp. 229, 258-260.

Alarming Intelligence reports concerning the progress of the Germans in developing new long-range weapons of great destructive capacity also indicated the advisability of attacking [launching D-Day] early.

From time to time during the spring [1944] months staff officers from Washington arrived at my headquarters to give me the latest calculations concerning German progress in the development of new weapons, including as possibilities bacteriological and atomic weapons. These reports were highly secret and were invariably delivered to me by word of mouth. I was told that American scientists were making progress in these two important types and that as a result of their own experience they were able to make shrewd guesses concerning some of the details of similar German activity. All of this information was supplemented by the periodic reports of Intelligence agencies in London. In addition, aerial photographs were scrutinized with the greatest care in order to discover new installations that would apparently be useful only in some new kind of warfare.

The finest scientific brains in both Britain and America were called upon to help us in evaluation and in making estimates of probabilities. Our only effective counteraction, during the preparatory months of 1944, was by bombing. We sent intermittent raids against every spot in Europe where the scientists believed that the Germans were attempting either to manufacture new types of weapons or where they were building launching facilities along the coast.

During this long period the calculations of the Intelligence agencies were necessarily based upon very meager information and as a consequence they shifted from time to time in their estimates of German progress. Nevertheless, before we launched the invasion, Intelligence experts were able to give us remarkably accurate estimates of the existence, characteristics, and capabilities of the new German weapons.

[...]

On June 12, 1944, the first flying bomb, known as V-1, reached London. The V-1 [...] contained a large amount of explosive which detonated upon contact, and the blast effect was terrific. The first V-2 was not used until early August. [...]

The V-2 bomb was particularly destructive when it fell directly into a structure of some kind. Owing to its speed, it penetrated deeply into the ground and its great explosive effect was exerted directly upward. As a consequence, when it fell into open spaces it was relatively ineffective, but so great was its explosive charge when it hit a building that destruction was almost complete.

The development and employment of these weapons were undoubtedly greatly delayed by our spring bombing campaign against the places were we suspected they were under manufacture. Peenemünde, in Germany, was known to be one of the largest of the German experimental plants and periodically we sent large formations of bombers to attack that area. There were other places indicated to us as suspicious. One was Trondheim, in Norway, where we thought that the Germans were engaged in atomic development. We also bombed the suspected launching sites along the coast of northwestern Europe, where our reconnaissance photography showed numerous facilities and installations that could not be interpreted in terms of any known weapon. These areas were continuously hammered.

The effect of the new German weapons was very noticeable upon morale. [...]

It seemed likely that, if the German had succeeded in perfecting and using these new weapons six months earlier than he did, our invasion of Europe would have proved exceedingly difficult, perhaps impossible. I feel sure that if he had succeeded in using these weapons over a six-month period, and particularly if he had made the Portsmouth-Southampton area one of his principal targets, Overlord might have been written off.

[Eisenhower's statements seem to agree with Marshall's statements about the very real and very urgent nuclear danger from Germany.

According to Eisenhower, U.S. intelligence information about the German nuclear program was so secret that it was only given to him in oral presentations, not in writing. That can help explain the absence of surviving documents in U.S. archives. Just how much did top U.S. intelligence officials know about the German nuclear program, and how did they know it? The time period that Eisenhower described was in early-mid 1944, long before the Alsos Mission, which in any event reported negative findings.

What German nuclear weapons development was being conducted at Trondheim? According to official histories, the only significant nuclear-related work in Norway was heavy water production in the Vemork area (pp. 4061–4075), but that was hundreds of kilometers to the south of Trondheim, so it seems unlikely that Eisenhower confused the two locations. For another report of German nuclear weapons development in Norway, see p. 5057. For two other sources that may be related, see pp. 4480 and 4444.]

5080

Army To Use V-2 Bombs To Test Radar As Atom-Rocket Defense. New York Times. 1 March 1946 p. 1.

WASHINGTON, Feb. 28—The Army Air Forces disclosed today that it was seeking a means of protecting the United States against possible future atomic bombardment by experimenting with techniques for radar detection of captured German V-2 rockets.

Brig. Gen. William L. Richardson, chief of the Air Staff's Guided Missiles Division, explained that the idea was to devise a means of detecting and "tracing" by radar the enemy rockets as they came whizzing through the stratosphere at 3,000 miles an hour. [...]

General Richardson said that it was important that a means be found "as quickly as possible" to defend the United States against "a sudden enemy rocket attack."

He stated that the Air Forces had been working on rocket defense since 1943, and also stressed that, through the recently activated First Experimental Guided Missiles Group, it was conducting "extensive research" in offensive uses of rockets.

[General Richardson's desperation to find a means "as quickly as possible" to defend against "a sudden enemy rocket attack" by nuclear-armed German rockets suggests that some other nation already had that capability. Did he know that Germany had already developed that capability, prompting him to worry that German engineers would confer that capability on the Soviet Union?

The next article strongly suggests that General Richardson did indeed know that wartime Germany had developed, or at least nearly finished developing, both nuclear weapons and intercontinental rockets capable of carrying them.]

Reveal Nazis Planned Rocket to Blast N.Y. at 6000 MPH. Indianapolis Times. 2 August 1947, p. 4. https://newspapers.library.in.gov/?a=d&d=IPT19470802.1.4

A-9 Was Designed to Employ Booster Weighing 190,000 Pounds for Acceleration

By Science Service

WASHINGTON, Aug. 2—The Germans planned a bomb to cross the Atlantic and blast New York. It was a rocket to be started on its long journey by another rocket which detached itself when its job was done.

This was revealed today by Brig. Gen. William L. Richardson of the U.S. Army Air Forces.

Gen. Richardson, chief of the A.A.F. Guided Missiles and Air Defense Division, spoke as a guest of Watson Davis, director of Science Service, on "Adventures in Science," heard over the Columbia network.

The Germans, he said, developed several rockets known as the "A" series. The V-2, used against London, was one of these. Although it was the only one of this series to be used operationally in the last war, it is not hard to visualize what might have been in store for the Allies had the Germans been given sufficient time to complete developments.

Acid Used in Fuel

Each of the "A" series was developed primarily for research, with the exception of the A-4, later known as the V-2. The A-10 was the end result toward which this whole program was directed. This is the weapon which the Germans expected to use in bombing New York.

The A-10 was described by him as a booster rocket placed behind the A-9, giving it two-step cooperation to secure ranges of 3000 miles. The A-9 was much like the A-4, more familiarly called the V-2, with wings added to give increased range and using acid as an oxidizer in its fuel.

The A-10 was never actually constructed. However, all design studies and computations had been completed. It appears that it could have been built and used if the Germans had been given another year of development and production.

Speed Put at 6000 M. P. H.

The total weight of the A-10 was to have been 190,000 pounds. The weapon was nearly 12 feet in diameter and 25 feet long. The 29,000-pound A-9 was to have been accelerated to a speed of 2500 miles per hour by the use of the A-10 as a launching rocket, which detached itself and would drop free after serving its purpose.

It was the A-9 that would reach the target. Its rocket motor would be turned on when the A-10 dropped. This would increase its speed to about 6000 miles an hour. It would have carried a warhead of about 2000 pounds. This is a payload of only 1 per cent of the starting weight of the weapon, but there is evidence to believe, he stated, that the Germans intended to utilize an atomic warhead which would have made this weapon extremely deadly.

[The same article was also published as:

Nazis Planned Bomb to Blast New York. *Brooklyn Daily Eagle*. 2 August 1947, p. 3. https://bklyn.newspapers.com/image/52866650/

General William L. Richardson would have been a highly knowledgeable and very sober source for this information. For more information on him, see:

https://www.af.mil/About-Us/Biographies/Display/Article/105809/major-general-william-l-richardson/

https://media.defense.gov/2020/Apr/29/2002290975/-1/-1/0/200429-F-XX123-2007.JPG

As General Richardson would have known very well, it would take many years of large-scale work to go from the paper design of an intercontinental rocket to an operational and mass-produced system. Likewise it would have taken many years of work to go from the paper design of a nuclear weapon to a deployable nuclear warhead suitable for launching on the rocket. He told Science Service that Germany would have soon possessed both intercontinental rockets and nuclear warheads for them if the war had not ended when it did. Therefore he must have had considerable evidence that production and testing of intercontinental rockets and nuclear warheads were in the final stages when the war ended.

What evidence did General Richardson have, and where is that evidence stored now?]

Charlotte Knight. 1946. German Rocketeers: German Rockets and Guided Missiles Almost Won the War for the Nazis. *AAF Review* (July) 29:6:24–26, 48.

That the Allies won the war in Europe by a terrifyingly narrow margin is a fact now accepted by almost all military leaders who have seen at first hand Germany's progress in the guided missiles field. Just how narrow that margin really was will probably be a matter of considerable debate for a long time to come, but many guided missile experts who should know whereof they speak say that it was relatively small.

It was too close for comfort, and simply serves to underline even more emphatically the substantial edge the Nazis had in this field. Most Allied rocket experts will now concede that edge to have been at least a 10-year lead in the research and development of guided missiles. [...]

At war's end, in spite of her defeat, Germany's scientists and technicians had nevertheless left behind them at Peenemunde, Brunswick, Wiener Nieustadt and elsewhere the signposts of future air wars. From the captured results—some in production lines, some in stages of near-completion, and others on paper—we have since learned much that is enlightening, much that is disquieting. [...]

With the hindsight we now have as a result of our discoveries, several things become clear. One is that the Nazis' oft-repeated threats concerning the "secret weapons" they would shortly direct against the Allies were far from being purely "propaganda." Hitler had boasted that England and the whole world would soon feel their effect. Examination of Germany's missiles at war's end left very little doubt that Der Fuehrer had come uncomfortably close to making good his boast.

Also understandable now on the basis of our present knowledge is Germany's almost suicidal lastditch stand after Allied forces had crossed the Rhine in overwhelming numbers. Assuming that the Nazis were completely whipped, the Allied populace could not understand why they would not give up and put an end to senseless, wholesale slaughter. But German commanders, it now appears, were aware that if they could hold out for just a short time longer they could very well effect at least a stalemate, if not a short-cut victory, on the European battlefront.

It is now also fairly generally known that the atomic bomb race was close—again, closer than we care to think about. And paralleling the Nazis' research on atomic explosives was their accelerated development of the V-2 program. Linking these two projects together makes credible another theory which is current among Allied guided missile groups: namely, that it was the intention of Nazi technicians to put some sort of atomic device in the warhead of the V-2.

This, they point out, would then have made the V-2s economical beyond question. One of the facts which has puzzled observers is that the V-2, with its small-sized warhead permitting only one ton of conventional explosives, did not justify the tremendous cost of each missile. The damage achieved—actually less than that of the V-1 which was many times cheaper and took only 800 man-hours to make—did not begin to compensate for the 12,950 man-hours required for the manufacture of every V-2. But if, as they now believe it had been originally planned, even a few of these supersonic V-2s could have carried atomic warheads, there is little doubt that they could have wiped our invasion ports off the map and reduced England to the shambles that are Nagasaki and Hiroshima.

It is thought that the only reason the Germans did resort to their uneconomical use of the V-2s

with ordinary explosives is the obvious one that the atomic warhead devices simply were not yet ready, and Nazi military leaders, with their backs against the wall, were forced to throw at the Allies any weapon they had available, regardless of cost. Actually, however, the terrorizing effect of these 3,500 mph missiles—against which there was absolutely no defense—on London and Antwerp that winter of 1944–45 must certainly have made the Nazis feel that the V-2s had a psychological value alone far in excess of their actual dollars and cents cost for amount of damage inflicted.

Allied bombings of the Nazi heavy-water plants in Norway quite obviously retarded her atomic development, as did also the consistent sabotage on the part of many Norwegian scientists. But it is still a matter of scientific conjecture just how many weeks—or days—it might have taken Germany to be ready with her atomic devices for the V-2s.

And continue this same subject of Hitlerian threats, the Nazi claim that Germany had rockets which could bombard the US was not too far removed from actual achievement. Long-range missiles were in the design stage when Allied troops moved into Germany. Larger than the V-2s, these winged rockets, carrying smaller rockets which would take off on their own at a specific point, attain speeds up to 5,800 mph, and finish their trajectories in a long glide, were predicted to be capable of ranges up to 3,000 miles.

[...] Even now, more than a year after V-E Day it is still frightening to imagine what *might have* happened had we not halted Germany when we did. We now know that it was later than we thought. It is not enough to concede that the call was close unless, in that closeness, we have learned one of the war's most valuable lessons.

[This article was based on Donald Putt's March 1946 presentation (see p. 5554), as well as other information from him and from other Allied inspectors. Published in the official U.S. Army Air Forces Review, it stated that:

- German scientists had "at least a 10-year lead" over Allied countries in the field of guided missiles.
- Hitler's promised new secret weapons were not simply propaganda or paper designs, but missiles that were subjected to "examination... at war's end."
- At the war's end, the German military was fiercely defending territory that held those secret weapons in the expectation that they would be used.
- It was "fairly generally known that the atomic bomb race was... closer than we care to think about," and it was just a matter of scientific conjecture whether it was weeks or days that separated Germany from deploying rocket-launched nuclear weapons at the end of the war.
- These statements officially published by the U.S. Army Air Forces completely contradicted the claims of Samuel Goudsmit and the Alsos Mission that Germany was not even close to having nuclear weapons.

- In fact, this Army Air Forces publication seemingly admitted details that demonstrate the German nuclear program was many years ahead of the U.S. program. At the beginning of May 1945, the United States was still trying to complete its first fission bomb, and that weapon was so cumbersome that it would need to be delivered by a large plane. According to the Army Air Forces, by that time Germany apparently had multiple nuclear weapons ("rockets with nuclear warheads"), they were small enough to deliver via rockets, and Germany had developed suitable rockets with which they were integrated and on the brink of deployment. The United States would not reach that level of technology for over a decade—in the late 1950s—and even then only with large amounts of assistance from German-speaking scientists.
- "Almost all military leaders" accepted "that the Allies won the war in Europe by a terrifyingly narrow margin." This conclusion by contemporary observers best positioned to know all the facts is quite different than the conventional historical view that has been propagated for 75+ years.
- For many more references to nuclear-armed rockets that were intended to attack Allied targets during the war, see the list of documents on p. 5923.

Charlotte Knight, the author of this article, was a staff journalist who had been working full-time for the U.S. Army Air Forces for several years. She had flown around the world covering events during World War II, and she was the only woman to witness the Operation Crossroads fission bomb tests at Bikini Atoll from the air in 1946. Thus she would have written this article in a very sober fashion, without any embellishment, and exactly as Donald Putt and the Army Air Forces wanted it. For more information on Knight, see:

Utah Woman Tells of Work with Air Force. *Deseret News* (Salt Lake City, Utah) 17 June 1947, p. 20. https://news.google.com/newspapers?nid=336&dat=19470617&id=F9s0AAAAIBAJ&sjid=kXcDAAAAIBAJ&pg=5662,5995342

Other journalists repeated much of this information in various publications from summer 1946 through 1947. See for example:

Nazis Worked on Plane to Bomb U.S. Hartford Courant 15 July 1946, p. 1.

Hitler Planned Supersonic Bomber to Hit New York. *Los Angeles Times* 15 July 1946, p. 2.

List of Terror Weapons of Nazis Revealed by AAF. *Plattsburgh Press-Republican* (Plattsburgh, New York) 15 July 1946, p. 1.

Nazi Scientists Worked on 136 Secret Weapons. *Times Record* (Troy, New York) 15 July 1946, p. 3.

Transatlantic Roller Coaster Designed to Bomb U.S.A. *Popular Science* October 1947. https://neverwasmag.com/2018/09/wonder-weapons-of-the-third-reich/transatlantic-roller-coaster-designed-to-bomb-usa/

For more information on German and Allied threats and counter-threats to use nuclear, chemical, and biological weapons of mass destruction during the final years of the war, see pp. 2644–2663.]

Heinrich Himmler's chief adjutant Werner Grothmann on nuclear technology transfer to the United States [Krotzky 2002]. For a discussion of the background and reliability of this source, see pp. 3414–3415.

[S. 32] Die zweite Schwierigkeit bestand darin, dass die Zünder für die Waffe nicht so funktionierten, wie man sich das ursprünglich dachte. Die haben mit allem möglichen experimentiert. Es war, glaube ich, erst im Herbst 1944, dass jemand bei Diebner eine praktikable Lösung fand, die aber immer noch sehr aufwendig war. Und ungefähr zur selben Zeit hat dann bei uns jemand in Zusammenarbeit mit..., glaube ich, und noch ein Unternehmen war beteiligt, oder dort ein Experte, mit Infrarot-Zündern einigen Erfolg. Wir nannten, die Dinger damals Ultrarot-Zünder.

[S. 45] Die Zünderentwicklung muß für alle Beteiligten eine richtige Nervensache gewesen sein. Ich bin ja kein Technik-Sachverständiger gewesen, aber im Laufe der Zeit bekam man doch etwas mit. Deshalb kann ich wenigstens sagen, dass Himmler wiederholt Fehlschläge gemeldet worden sind. Dabei hatte man ja wirklich die erste Garnitur von Experten damit beauftragt und außerdem ist an verschiedenen speziellen Zündern für die Atombombe gearbeitet worden. Wenn ich jetzt überlege, was mir dazu noch einfällt, ist es die Ultra-Rot-Sache. An Zündern die auf dieser Basis funktionieren sollten, ist nach meiner Erinnerung von ganz wenigen Leuten bei einer Optik-Firma in Zusammenarbeit mit einem Elektro-Unternehmen gearbeitet worden. Den Auftrag haben wir aber nicht vergeben, so weit ich weiß, der ist wahrscheinlich von Ohnesorge weitergegeben worden. Dieser Zünder soll noch kurz vor Kriegsende als Laborgerät für die ersten Funktionsprüfungen vorbereitet worden sein, mehr weiß ich dazu nicht. [...]

[p. 32] The second problem was that the fuse for the weapon was not working as originally intended. They experimented with all kinds of things. I believe it was first in the autumn of 1944 that someone with Diebner found a viable solution, which was still very elaborate. And about the same time, someone with us [SS] who worked in collaboration with ..., I believe, and another company was involved, or there was an expert, with infrared detonators some success. We called the things then infrared igniters.

[p. 45] The ignition development must have been a real problem for everyone involved. I was not a technical expert, but in the course of time one learned something about it. That is why I can at least say that Himmler had repeatedly received reports of failed tests. Therefore the first set of experts had been commissioned, and out of that a number of special detonators for the atomic bomb had been worked on. If I think what else I can remember now, then it is the infrared thing. According to my memory, a very small number of people at an optics company, cooperating with an electrical company, worked on detonators that were supposed to function on this basis. We did not give the assignment, however, as far as I know, it was probably passed on by Ohnesorge. This detonator is said to have been prepared shortly before the end of the war as a laboratory device for the first functional tests, more I do not know. [...]

Dann gab es Vorschläge, das Atom-Sprengmaterial mit einem ganz unkonventionellen Zünder auszulösen. Der Vorschlag ist bei dem Treffen bei Innsbruck schon bekannt gewesen. Man muß sich das so vorstellen: es war die Rede davon, dass man für die Zündung sehr viel Energie benötigt, um das Material zu zünden. Da hatte ein Ingenieur von einer Technischen Hochschule in anderem Zusammenhang vorgeschlagen, so eine Art Radarstrahlen einzusetzen, weil man die wohl auf ganz kurze Entfernung sehr gut bündeln konnte und weil die Energie enthalten würden oder selbst Energie sind. Das weiß ich nicht genauer.¹⁸ Jetzt gab es ja das Problem, dass wir im Frühjahre von den Physikern ganz klar hörten, die Entwicklung der Bombe ist auf gutem Weg, also das heißt erst mal, das Sprengmaterial wird man für die notwendigen Versuche erzeugen können und dann muß man sehen, wie viel davon für die richtige Bombe, erzeugt werden kann. Ohnesorge machte da mächtig Druck mit dem Argument, wenn wir die Bombe mit so viel Aufwand hinbekommen und dann fehlt der Zünder, ist der Krieg trotzdem verloren. Das war auch Himmlers Ansicht. Wir konnten den Krieg nicht mehr anders gewinnen als mit einer durchschlagenden Waffe. Deshalb sind ja solche Forschungsaufträge auch sofort weitergegeben worden und man hat auch mit einzelnen Firmen darüber gesprochen, dass die ihre besten Leute an diese Sache setzen sollten. Rausgekommen ist nach meiner Kenntnis auch bei dem Zünder nichts.

Then there were proposals to trigger the nuclear explosive material with a completely unconventional detonator. The proposal was already known at the meeting near Innsbruck. You have to imagine it like this: there was talk about the fact that you need a lot of energy to ignite the material. In another context, an engineer from a technical university had suggested to use some kind of radar beams, because they could be focused very well at a very short distance and because they would contain energy or are energy themselves. I do not know that more exactly.¹⁸ Now there was the problem that in the early years we heard quite clearly from the physicists that the development of the bomb is well on the way, so that means first of all that the explosive material will be able to be produced for the necessary tests and then we must see how much of it can be produced for the real bomb. Ohnesorge put on a lot of pressure, arguing that if we could make the bomb with so much effort and then the fuse was missing, the war would still be lost. That was also Himmler's view. We could no longer win the war any other way than with a breakthrough weapon. That is why such research contracts were passed on immediately, and they also talked to individual companies about putting their best people to work on this. As far as I know, nothing came of that [particular] detonator.

 $^{^{18}}$ [Grothmann was not a scientist; his nonscientific description here seems to be referring to the use of a compact betatron as a neutron initiator. Grothmann would not be expected to understand the physics details of betatrons, but they use an electron beam and a magnetic field, as does a cavity magnetron for radar, with which Grothmann was probably much more familiar. Thus Grothmann was describing "a completely unconventional" device that used an electron beam and magnetic field to "focus" a "beam" over a "very short distance" "to trigger the nuclear explosive material." A betatron mounted on the outside of a fission implosion bomb could fire a high-energy electron beam toward the center of the bomb at the moment of implosion. The energy of the electrons would be converted to gamma rays via the bremsstrahlung process. Gamma rays absorbed by some ²³⁵U or ²³⁹Pu nuclei could release neutrons, which could initiate a fission chain reaction in the rest of the ²³⁵U or ²³⁹Pu fuel. The United States successfully demonstrated a betatron neutron initiator in a fission bomb on 1 June 1952 in the George test of Operation Tumbler-Snapper [https://nuclearweaponarchive.org/Usa/Tests/Tumblers.html].

In March 1945, Ivan Ilyichev reported that this method was one of the neutron initiators used in German atomic bombs (p. 4531: "Bomb ignition": "Ahead of this, before the explosion, the uranium sphere is irradiated with gamma-rays, the energy of which does not exceed 6 million electron volts, which many times increases its explosive qualities."). Compact, light-weight 6- and 7-MeV betatrons ideally suited for this particular application were manufactured during the war by Siemens-Reiniger Werke in Erlangen (pp. 3100–3101, 3991–4004).]

Dann gab es einen Vorschlag, der kam aus Österreich und war sehr gut begründet. Der schien ganz pfiffig. Mir war er nur als Netzzünder bekannt geworden. Im Versuch funktionierte er aber nur wie ich hörte, wenn die Position bestimmter Zünderteile ganz genau, also wirklich millimetergenau eingehalten werden konnte. Gab es eine winzige Lageveränderung war alles umsonst. Den konnte man natürlich so nicht einsetzen. Diebner hat übrigens selbst Zünder-Experimente angeregt, aber erst im Herbst 44 bekam man ein einigermaßen funktionierendes Ding hin.

[S. 34] Für das hier verbürge ich mich aber: Aus unseren Forschungs- und Entwicklungslabors in Thüringen sind Teile des Materials verbracht worden, aber nicht alles. Warum das so geschah, weiß ich nicht. Zumindest das wenige radioaktive Material für die erste Bombe und einen Teil des Zündmechanismus sollen dann die Amerikaner mitgenommen haben. Die von den Amerikanern erbeuteten Prototyp-Teile für unsere erste richtige Atombombe sind sofort von ihnen zum "Adlerhorst" gebracht worden. Ab da weiß ich nichts mehr dazu. Es gibt noch vielleicht, noch jemanden, der das bestätigen kann.

[S. 40] Die Sieger haben die Beute mitgenommen und spater der Öffentlichkeit ihre glänzende Rüstung vorgeführt. Bei Flugzeugen war das so, bei der U-Boot-Technik, in der Chemie und auch so manchen unserer tüchtigen Atomphysiker haben sie dann für sich arbeiten lassen, genauso wie die Raketenleute. Then there was a proposal from Austria, which was justified very well. It seemed quite clever. I only knew it was called network ignition. In the experiment, however, it only worked as I heard, if the position of certain detonators was very exact, that is, precise to the millimeter. If there was a tiny change of location, all was in vain. Of course you could not use it that way. By the way, Diebner himself suggested detonator experiments, but it was not until autumn 44 that a well-functioning thing was discovered.

[p. 34] For this, however, I can vouch myself: Parts of the material had been removed from our research and development laboratories in Thuringia, but not everything. Why this happened, I do not know. The Americans are supposed to have taken at least the small amount of radioactive material for the first bomb and a part of the ignition mechanism. The prototype parts for our first real atomic bomb that were captured by the Americans were immediately taken to the "Eagle's Nest." I do not know any more about it, there may be someone who can confirm it.

[p. 40] The winners took the booty and later presented their shining armaments to the public. That was true for airplanes, with submarine technology, in chemistry, and with many of our capable nuclear physicists, who worked for them [Allied countries], just like the rocket people. [In the first four quoted paragraphs, Grothmann told how German and Austrian engineers invented and tested several different detonation timing systems to allow the spherical implosion bomb (which he described elsewhere) to create a detonation with "millimeter-exact" accuracy across all of the ignition points around the bomb. As examples, he recounted a sophisticated optical method using infrared signaling to the detonators, and another system called "network ignition," likely an electrical network of exploding bridgewire detonators. Erich Schumann appears to have referred to exploding bridgewire detonators in his description of German implosion bombs (p. 4279).

Adlerhorst or Eagle's Nest was located near Bad Nauheim, and should not be confused with the better known Eagle's Nest or Kehlsteinhaus near Berchtesgaden. Adlerhorst was captured by the U.S. Army on 30 March 1945, and subsequently was used by the Allies as "Operation Dustbin" to imprison and interrogate high-value German intelligence targets, including Albert Speer, Wernher von Braun, and many others.

If the United States captured German atomic bomb components and immediately took them to Adlerhorst, those components could have been captured no earlier than April 1945. Since the United States could have taken the components to many other sites that were equally or more secure, Grothmann's statement that they were taken to Adlerhorst suggests that those components were shown to high-value German detainees so that they could not deny the existence of the German nuclear program. Furthermore, that would suggest that the United States had not captured a satisfactory amount of information about the nuclear program, and was desperate to learn more from the detainees. Is it possible to locate and declassify any U.S. records on what German atomic bomb components were found, or what the United States learned from German detainees?

If precisely timed implosion detonators or other sophisticated nuclear weapons components were captured in Europe in April–May 1945 or on the U-234 or other surrendered German submarines, those components may have been used to make final improvements to the U.S. fission bombs before they were detonated in New Mexico and Japan (p. 4926).

See p. 5038 for a very incomplete list of some German and Austrian nuclear-related scientists and engineers who temporarily visited or permanently moved to the United States or United Kingdom after the war, just as Grothmann said.]

From Office of Strategic Services Shepardson to Amzon. 10 September 1945. [NARA RG 226, Entry A1-134, Box 219, Folder 1371: OUT AZUSA Nov. '43 Sept. '45]

#3567. AZUSA. Wisner and Rositzke from 154 and Dix. Reur #2417 (IN 23590).

Any information gained concerning German scientists on AZUSA send <u>only</u> to Lt. Col. Horace K. Calvert care U. S. Embassy, London, and do not pass to G-2 USFET. This also applies other fields. Send copies Washington.

H. W. Dix to Francis J. Smith. 13 September 1945. Office of Strategic Services memo AA-217. [NARA RG 77, Entry UD-22A, Box 171, Folder 32.7003-3 GERMANY: US Wartime Positive Int. (Nov. 44–June 45)]

Cable from our German office reads in accordance with the two following paragraphs:

1. Referring further our recent exchange cables RE handling Azusa material, General Sibert who has just returned here from Washington has informed us (A) that when in Washington he was given full information concerning this subject and all matters pertaining to it including U.S. policy (B) that he was designated as coordinator all such information in this theater and (C) that we are to disseminate all our information this subject to him and no one else in theater.

2. As OSS Germany is under direction command USFET, we consider General Sibert's instructions this subject as an order which we cannot ignore. If you disapprove we suggest as only solution that you approach War Department Washington with request that Sibert's instructions be altered.

This is different than our instructions to our office in Germany. The instructions we forwarded were from your office.

Please advise which way you desire our office in Germany to handle

- (a) the information about the search for German scientists
- (b) all information on this topic.

From Office of Strategic Services Shepardson to Berlin via Amzon. 14 September 1945. [NARA RG 226, Entry A1-134, Box 219, Folder 1371: OUT AZUSA Nov. '43 Sept. '45]

WASH 6437. AZUSA. To 110 Berlin from 154 and Dix. Information: Wisner Amzon.

RE BERL 1059 (IN 23766), please see WASH 3567 to Wisner. Our work on this subject is to correlate and cooperate with specially appointed general who has charge of the whole AZUSA situation and has overall responsibility.

In order that he may make decisions we pass our information to him, and thereby proceed as he may direct.

On present sub feature of AZUSA about assisting locating German scientists, special general asked to have the information sent only to Calvert, London Embassy, or to Washington.

RE your AMZO 4437 (IN 240370); our WASH 1167 and WASH 3567 were special general's instructions until he could talk with Sibert here. This now done and all AZUSA information obtained by OSS in ETO and applicable in ETO situations now to be coordinated only between you or Wisner Sibert and Calvert and advising OSS Washington of resulting decisions or information. This insures desired maximum security with fewest number persons involved. Copies of any reports to be sent OSS Washington without delay and showing action taken.

This subject so tight at this time we are playing very close with special general.

Phrase "other fields" from your BERL #2417 interpreted here as within scope AZUSA matters only and not applicable to all technical matters. WASH 3567 repeated the words "other fields" thereby trying to eliminate misunderstanding. This answers AMZO 3917.

[See document photo on p. 5094. Do these OSS cables show that the U.S. started to really appreciate the extent of the wartime German nuclear program by September 1945, and took steps to limit that knowledge to the "fewest number persons"? Is that why Zinsser's report of a German atomic bomb test was upgraded from Secret to Top Secret in early October 1945 (p. 4462)? Who was the "special general"—Leslie Groves or someone else?]

Captain Hugh T. Cunningham, Strategic Services Unit, to Brigadier General Edwin L. Sibert, U.S. Army, 6 May 1946. Subject: German Atomic Research [NARA RG 226, Entry A1-215, Box 6, Folder WN26150-26164]

1. One of our reliable sources is in contact with a certain Chef-Chemiker Sallie, at present employed in a chemical industry in Constance, who claims to be able to give detailed information on German atomic research as of February 1945. Sallie was in Berlin when the Russians blew up the Treasury Building in which the documents on German atomic research were stored, and claims to know exactly what documents thereby fell into the hands of the Russians.

2. If this man is of interest for further exploitation we can instruct our source accordingly.

APPENDIX D. ADVANCED CREATIONS IN NUCLEAR ENGINEERING

DECLASSIFIED Authority NND 917017 NARA RG 77, Entry UD-22A, Box 171, Folder 32.7003-3 GERMANY: US Wartime Positive Int. (Nov. 44-June 45)

AA-217

SECRET

germ. Res.

OFFICE OF STRATEGIC SERVICES

WASHINGTON 25, D. C.

13 September 1945

To : Maj. Francis J. Smith, Engrs. 5116 New War Dept. Bldg.

From: Technical Section

Cable from our German office reads in accordance with the two following paragraphs:

1. REFERRING FURTHER OUR RECENT EXCHANGE CABLES RE HANDLING AZUSA MATERIAL, GENERAL SIBERT WHO HAS JUST RE-TURNED HERE FROM WASHINGTON HAS INFORMED US (A) THAT WHEN IN WASHINGTON HE WAS GIVEN FULL INFORMATION CONCERNING THIS SUBJECT AND ALL MATTERS PERTAINING TO IT INCLUDING U.S. POLICY (B) THAT HE WAS DESIGNATED AS COORDINATOR ALL SUCH INFORMATION FOR THIS THEATER AND (C) THAT WE ARE TO DISSEMINATE ALL OUR INFORMATION THIS SUBJECT TO HIM AND NO ONE ELSE IN THEATER.

2. AS OSS GERMANY IS UNDER DIRECT COMMAND USFET, WE CONSIDER GENERAL SIBERT'S INSTRUCTIONS THIS SUBJECT AS AN ORDER WHICH WE CANNOT IGNORE. IF YOU DISAPPROVE WE SUGGEST AS ONLY SOLUTION THAT YOU APPROACH WAR DEPARTMENT WASHINGTON WITH REQUEST THAT SIBERT'S INSTRUCTIONS BE ALTERED.

This is different than our instructions to our office in Germany. The instructions we forwarded were from your office.

Please advise which way you desire our office in Germany to handle

(a) the information about the search for German scientists (b) all information on this topic.

Figure D.1015: H. W. Dix to Francis J. Smith. 13 September 1945. Office of Strategic Services memo AA-217. [NARA RG 77, Entry UD-22A, Box 171, Folder 32.7003-3 GERMANY: US Wartime Positive Int. (Nov. 44–June 45)]

5092

Authority MMD 917017 DECLASSIFIED

NARA RG 77, Entry UD-22A, Box 171, Folder 32.7003-3 GERMANY: US Wartime Positive Int. (Nov. 44-June 45)

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Figure D.1016: 14 September 1945. [NARA RG 77, Entry UD-22A, Box 171, Folder 32.7003-3 GERMANY: US Wartime Positive Int. (Nov. 44–June 45)]

DECLASSIFIED NARA Authority NND 857134 Folder 13	RG 226, Entry A1-134, Box 219, 71: OUT AZUSA Nov. '43 Sept. '45
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# WASH 6437. AZUSA. TO 110 BE	ERLIN FROM 154 AND DIX.
RE BERL 1059 (IN 23766), PLEASE SEE WASH 3567 TO WISNER. OUR WORK OIL THIS SUBJECT IS TO CORRELATE AND COOPERATE WITH SPECIALLY APPOINTED GENERAL WHO HAS CHARGE OF THE WHOLE AZUSA SITUATION AND HAS OVERALL RESPONSIBILITY.	
IN ORDER THAT HE MAY MAKE DECISIONS WE PASS OUR INFORMATION TO HIM, AND THEREAFTER PROCEED AS HE MAY DIRECT.	
ON PRESENT SUB FEATURE OF AZUSA ABOUT ASSISTING LOCATING GERMAN SCIENTISTS, SPECIAL GENERAL ASKED TO HAVE THE INFORMATION SENT ONLY TO CALVERT, LONDON EMBASSY, OR TO WASHINGTON.	
RE YOUR AMZO 4437 (IN 24037); OUR WASH 1167 AND WASH 3567 WERE SPECIAL GENERAL'S INSTRUCTIONS UNTIL HE COULD TALK WITH SIBERT HERE. THIS NOW DONE AND ALL AZUSA INFORMATION OBTAINED BY OSS IN ETO AND APPLICABLE IN ETO SITUATIONS NOW TO BE COORDINATED ONLY BETWEEN YOU OR WISNER SIBERT AND CALVERT AND ADVISING OSS WASHINGTON OF RESULTING DECISIONS OR INFORMATION. THIS INSURES DESIRED MAXIMUM SECURITY WITH FEWEST NUMBER PERSONS INVOLVED. COPIES OF ANY REPORTS TO BE SENT OSS WASHINGTON WITHOUT DELAY AND SHOWING ACTION TAKEN.	
THIS SUBJECT SO TIGHT AT THIS TIME WE ARE PLAYING VERY CLOSE WITH SPECIAL GENERAL.	
PHRASE "OTHER FIELDS" FROM YOUR BERL #2417 INTERPRETED HERE AS WITHIN SCOPE AZUSA MATTERS ONLY AND NOT APPLICABLE TO ALL TECHNICAL MATTERS. WASH 3567 REPEATED THE WORDS "OTHER FIELDS" THEREBY TRYING TO ELIMINATE MISUNDERSTANDING. THIS ANSWERS AMZO 3917.	
TOD: 1218 15 SEPT 45	WHS AND , HWD JDW INITIALS OF "RELEASING" OFFICER
IT IS FORBIDDEN TO COPY OR REPRODUCE THIS CABLE WITHOUT AUTHORIZATION FROM THE SECRETARIAT CORDER TO THE	

Figure D.1017: Does this OSS cable show that the U.S. started to really appreciate the extent of the wartime German nuclear program by September 1945, and took steps to limit that knowledge to the "fewest number persons"? Who was the "special general"—Leslie Groves or someone else? [NARA RG 226, Entry A1-134, Box 219, Folder 1371: OUT AZUSA Nov. '43 Sept. '45].

5094

DECLASSIFIED Authority <u>んいう ショフ ロク</u>

WAR DEPARTMENT WAR DEPARTMENT GENERAL STAFF MILITARY INTELLIGENCE DIVISION G-2 WASHINGTON

25 October 1945

SUBJECT: Collection of Intelligence on Muclear Physics.

To:

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The Assistant Chief of Staff, G-2, U. S. Forces, European Theater, APO 757, o/o Postmaster, New York, New York

1. The questions raised on your recent visit regarding the responsibility of G-2, USFET, to gather information on nuclear physics and what agencies are authorized to send field intelligence investigators on nuclear physics into the theater are answered as follows:

a. The responsibility for the gathering of intelligence in the European Theater (Chart, War Department Administrative Boundaries, Appendix B, 25 April 1945) is considered the duty of G-2, USFET. The Chief of the Manhattan Engineer District desires, however, that all information on nuclear physics obtained byyour office be channelized to the representatives of his office who are designated as advisory and liaison officers to USFET Headquarters. The dissemination of information on atomic energy within USFET Headquarters must be restricted to as few persons as is practicable for its proper handling.

b. Since the dissolution of ALSOS, there is no agency that is authorized to send investigators into the field on nuclear physics, except those persons specifically designated by the office of the Chief of the Manhattan Engineer District. This policy is necessary because of certain directives of the Secretary of War and of certain international commitments of the United States.

2. On matters concerning this subject it is requested that, where appropriate, coordination be effected between your office and the Military Attache of the respective countries within the European Theater. In this connection the essential elements of information for the countries within the European Theater will be sent to G-2, USFET, and the Military Attache to the country involved.

3. Instructions regarding the responsibility of G-2, USFET, in the general field of scientific military intelligence collection, other than nuclear physics, are being covered in a separate letter.

4. A copy of this letter is being furnished all Military Attaches in the European Theater for their information and guidance.

CLAYTON BISSELL Major General, GSC C. of S., G-2 /s/ John Weckerling JOHN WECKERLING Brigadier General, GSC Depaty A.C. of S., G-2

Figure D.1018: Clayton Bissell and John Weckerling. 25 October 1945. Subject: Collection of Intelligence on Nuclear Physics [NARA RG 77, Entry UD-22A, Box 168, Folder 202.2 LONDON OFFICE: Combined Intell Disc.].

APPENDIX D. ADVANCED CREATIONS IN NUCLEAR ENGINEERING 5096WAR DEPARTMENT CLASSIFIED MESSAGE CENTER INCOMING CLASSIFIED MESSAGE Authority NND91-10 DECLASSIFIED TOT-PRIORITY From: US Military Attache London England : War Department To INT 43778 19 May 1945 . To MILID sr nr 43778 TOP SECRET LOCO personal from Calvert for Davis to Groves for Smith. Sgd Van Voorst. 1. Berg arrived today. Says on mission for Eugene to determine what scientists in hands of Boris friends. Advise as to nature of Eugene's talk with him for our guidance in dealing with him. 2. All material from Hildesheim nov on docks at Ostend. 600 tons already loaded. End NARA RG 77, Entry UD-22A Box 160, Folder Apr 45-Dec. ACTION: Gen Groves CM-IN-18220 (19 May 45) DTG 191505Z rel DECLASSIFIED E.U. 11652, Sec. 3(E) and 5(D) or (E) Author (NND 760135 NARS, Date 1/14/7/

Figure D.1019: After the war, OSS agent Moe Berg was sent on a mission by "Eugene" (probably a code name for a high-ranking person in the OSS or Manhattan Engineer District, or possibly Eugene Wigner?) to determine which German-speaking nuclear scientists had been recruited or captured by the Soviet Union ("Boris"). The "material from Hildesheim" included German uranium from Stassfurt [NARA RG 77, Entry UD-22A, Box 160, Folder Apr 45–Dec. '45].

THE MAKING OF AN EXACT COPY OF THIS MESSAG

Moe Berg. 1952. Handwritten notes. [Princeton University Library, Special Collections, Moe Berg Papers (C1413), Box 20, Folder 3—Loose Notes: Central Intelligence Agency.]

[See excerpts on pp. 5098–5109.

Moe Berg's 1952 notes reveal how extensively the postwar Soviet nuclear weapons program depended on scientists, companies, and resources from the wartime German nuclear weapons program.

Berg's notes appear to draw heavily upon a 1951 version of a CIA document, National Intelligence Survey (NIS) 26 (U.S.S.R.), Chapter VII, Section 73 (Atomic Energy). I have not been able to find that version, but a later 1955 version is available at:

https://www.cia.gov/readingroom/document/0000198124

https://www.cia.gov/readingroom/docs/DOC_0000198124.pdf

However, that 1955 version omits most of the information in pp. 5098–5109, probably because it was "old news" by then.

See pp. 3486–3489 for excerpts from the 1955 version that discuss postwar Soviet use of uranium sources from the wartime German nuclear weapons program.

If Moe Berg and his CIA colleagues knew this much about the highly secretive Soviet nuclear weapons program during the early Cold War, how much did Berg and his OSS colleagues know about the highly secretive German nuclear weapons program during World War II?

Among many other relevant details in Berg's notes, notice that:

Leftover wartime factories in Neustadt an der Orla, East Germany, were perfectly set up to make high-quality nickel membrane filters for gaseous diffusion uranium enrichment plants (pp. 5098, 5101–5103). Manufacturing the filters was so difficult that even years after the war, Soviet plants could not make comparable items. What exactly did these German factories do during the war? Did wartime Germany build gaseous diffusion uranium enrichment plants (Section D.4.4)?

Ludwig Bewilogua (p. 5105) was extremely important for the postwar Soviet fission reactor program. What exactly did he do during the war? Note that another postwar U.S. intelligence report stated that Bewilogua was a "wartime expert on uranium piles" (p. 4025).

Wartime plants at I.G. Farben's Bitterfeld site were able to produce enough calcium for most of the huge postwar Soviet nuclear weapons program (pp. 5098, 5100). Calcium is used for key steps in purifying uranium metal (pp. 4170–4174). How much nuclear-weapons-related work did those plants do during the war? During the war, the Bitterfeld facility also produced heavy water (p. 4086), graphite (p. 4148), aluminum (p. 4166), and perhaps other potentially nuclear-related materials.

Czech manufacturers such as Skoda and Brünner were making significant contributions to the postwar Soviet nuclear weapons program (p. 5099), just as they apparently had for the wartime German nuclear weapons program (e.g., p. 4960).

Several Swiss factories were manufacturing and selling nuclear-related components to the postwar Soviet nuclear weapons program (p. 5099). Did they do the same for the wartime German program?]

Princeton University Library, Special Collections, Moe Berg Papers (C1413), Box 20, Folder 3–Loose Notes: Central Intelligence Agency (25 30 the Mayflower HILTON HOTEL WASHINGTON . D. C. USSK Inchon le × u the al re end u mos as will us l * 20 purd are a A loones 00 EMIL 14EG GUSTADT uality il The works 1 BITTERFELD the 1 otype se 0

Figure D.1020: Moe Berg's 1952 notes reveal how extensively the postwar Soviet nuclear weapons program depended on scientists, companies, and resources from the wartime German nuclear weapons program [Princeton University Library, Special Collections, Moe Berg Papers (C1413), Box 20, Folder 3—Loose Notes: Central Intelligence Agency].

26 Princeton University Library, Special Collections, Moe Berg Papers (C1413), Box 20, Folder 3–Loose Notes: Central Intelligence Agency The Mayflower TON HOTEL WASHINGTON . D. C. e Lu # n Boksi WUM h. Falm

Figure D.1021: Moe Berg's 1952 notes reveal how extensively the postwar Soviet nuclear weapons program depended on scientists, companies, and resources from the wartime German nuclear weapons program [Princeton University Library, Special Collections, Moe Berg Papers (C1413), Box 20, Folder 3—Loose Notes: Central Intelligence Agency].

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Princeton University Library, Special Collections, Moe Berg Papers (C1413), Box 20, Folder 3–Loose Notes: Central Intelligence Agency

43 The Mayflower HILTON HOTEL WASHINGTON . D. C. alcun pupiance & to get metallic I pruse in reactors, must educe le salts inthe etter calcum or u much heghe 1 nu rodes. il on on caleur for prod. of USSK > plant early in ussR ule R lasted for to produce in SOVZONE Jemean d selected TAGBEN @ Gillerfe cule. plant how the '45' ; mall oplein Cullerfeld work calc. pu : sperif's - calcum sween : to of this fueld copper calcum alloy & bottom of barn of molten chlow M ed in calc. y electro-deposet y hen de ann of & excess calc. eworld di hl

Figure D.1022: Moe Berg's 1952 notes reveal how extensively the postwar Soviet nuclear weapons program depended on scientists, companies, and resources from the wartime German nuclear weapons program [Princeton University Library, Special Collections, Moe Berg Papers (C1413), Box 20, Folder 3—Loose Notes: Central Intelligence Agency].