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UNITED STATES STRATEGIC BOMBING SURVEY

APO 413

Minutes of Meeting with Reichsminister

Albert Speer

Flensburg, 19 May 1945

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Interrogation on 19 May 1945

To begin with I want to explain my principal point of view:

I want you to know that all information which is given by me is given unconditionally, so that it may be of value to you. I want to point out however, so that no wrong impression is created, that I do not need to put myself into better light. The political side of the picture will be investigated by some other agency. I give this information so freely, because I think that it is the proper thing to do under the present situation.

Q: Because of the character of this meeting, would it be possible to you to give us a summary of the effects of our aerial offensive, and that we concern ourselves with questions of the chemical sector later on, since these two gentlemen have only little time at their disposal, and will have to depart early?

Sp: Including criticism of the measures which were taken by you?

Q: Yes.

Sp: In 1942 we undertook a study of the possibilities of economic warfare through aerial attack. Unfortunately the results of these studies were never put into action. While making these studies, we discovered to our terror that it would be impossible in the case of Germany to paralyze our industry to such an extent in comparatively short time, that a continuation of the war would become impossible for us. The first attacks of the RAF, had no bad effects on the industry. The attacks were mostly aimed against Cities, and nearby industrial installations remained untouched. The morale of the population could not be broken. Labor reappeared short time after each attack, some considerable effect on armament and war production was achieved at that time. However, in the course of time the attacks of the Royal Air Force were extended to include industrial installations creating some damage here. However, the attacks of the Royal Air Force never appeared to be designed to attack one particular target system in all parts of Germany at the same time. When daylight attacks started we learned that a change from the British attacks had taken place in as much as the Americans tried to hit industrial targets. But even here we did not gain the impression at first that these attacks were being concentrated on individual economic target systems, as for instance was later the case with the chemical or ball bearing industries.

Q: Do you include hydrogenation plants within the chemical industry?

Sp: I include them within the chemical industry because the side products - methanol, nitrogen, etc., were just as urgently required and the effect of bombing on these side products was just as bad as it was on oil. Because of that the damage was suffered by the chemical industry while you only intended to hit the hydrogenation plants. These were always intergrated plants, for instance Leuna. The first time you bombed a bottleneck with considerable energy was when you attacked Schweinfurt in your first big daylight attack. This was the first time that in my opinion we were brought into extraordinary danger. I have to include here a criticism inasmuch as the further attacks were not carried out with the necessary energy. Had you repeated your attack within a short time reconstruction and dispersal would have been impossible and we might have been unable to continue armaments after three or four months. As it was we were able to carry out numerous dispersals partly in

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the immediate surroundings of Schweinfurt even as far as Bayreuth and partly to Upper Silesia, and thus we could bring back to some extent the production of ball bearings. The second visible attempt at economic destruction was the attack on airframe production in February 1944. In this case it was a mistake on your part that you attacked the airframe production for so many months and not the production of motors. It was our good luck that we had sufficient capacity in airframes while motors were a bottleneck. In this way we could stand a lack of production in airframes as long as the production of motors continued. At that time we made efforts to carry out underground dispersal to a great extent. I had objections to that plan for reasons which may be interesting to you. I wanted to continue to offer you finished armaments production as a target so that you would not get the idea of destroying our industries producing basic materials which could only exist above ground. In due time you would have been forced to attack the production of basic materials if the dispersal of the production of finished armaments underground had been successful. For that reason I doubted the actual value of underground dispersal - as a matter of fact I objected to them.

When you attacked several hydrogenation plants on 12 May 1944 it became clear to me that a continuation of these attacks would be the deadly danger to us. I flew to Poelitz on the same day in order to look at the bombed plants. I continued my journey the following night to Obersalzberg to get a special authorization which I transferred to Geilenberg who carried through the reconstruction of the hydrogenation plants with special effort. The happenings of the 12th of May had been a nightmare to us for more than two years. As a result of the first attacks on the hydrogenation plants we had to concentrate an enormous amount of labor for reconstruction of these plants. It was our good luck that you always gave us a little time between attacks than we needed for reconstructions so that it was possible for us to maintain production for a short time. Many times it was only a matter of fourteen days or three weeks production and certainly always only a part of the former production.

In spite of that you can see out of the lists - I have not the figures in my memory - that we produced several tons through the process of hydrogenation until December 1944. Accordingly your attacks were not carried out in so quick a succession that they could have destroyed us completely but we were able to bring our production to 10% of our former daily production within a few weeks after the beginning of the attacks. In spite of this we were successful time and time again to bring our production to 30 to 40% of our former daily production. Your attacks were repeated approximately every eight weeks. I needed approximately six weeks for reconstruction. This may have been caused through the particular effects of the American bombs which had already been mentioned. Through delayed action the bombs penetrated deep in the ground and the blast effect carried upward and not to the side and it is this side effect which is especially important in the case of hydrogenation plants since these plants contain pipes and pressure containers which would collapse in the case where the blast carried to the side. Therefore the individual bomb hits affected only several square meters while everything on the outside of this area was undamaged.

We had considerable difficulty in the case of those hydrogenation plants whose pipelines were constructed underground. Other pipelines were above ground. In the case of those which were underground we had considerably greater dangers. After the first clearing work was done the dangers were never so extensive as appeared at first. Generally we were pleasantly surprised in several days. We already discussed, that several night attacks of the Royal Air Force with heavy mines, smaller high explosives and incendiaries had a devastating effect contrary to the American daylight attacks.

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Next started the great series of attacks on transportation. Without doubt you needed a great many more attacks to paralyze transportation to such an extent that you would have needed to destroy my armament bottlenecks. When transportation was badly hit in December and January 1944 and 1945, especially before that in the Ruhr area, the situation became unbearable as it was impossible for me to deliver coal to the enterprises and the production of the plant had to be curtailed. This situation was made considerably worse by the fact that these attacks came in winter when I needed additional coal for the plants. Summarizing the situation I have to say that seen from my side of the picture the American attacks with the effect as of May 1944 brought about the decision of the war, the attacks on the hydrogenation plants were so extensive that our troops on the front could not be supplied with the necessary amount of fuel. Even without the supply from Rumania we would have been in a position to keep the troops supplied with fuel, possibly this material would have been a little scarce. Without the attacks we could have maintained a constant flow of fuel to the front.

At the same time it has to be pointed out that the breakdown of the armament was brought about on a broad basis through the destruction of transportation as it is to be recognized in the memoranda which you have already gotten, and that with this the war was decided through attacks from the air.

We might argue as to whether or not to speed with which this destruction took place could not have been quicker. After the attacks on the chemical sector the method was absolutely right. I have often stated to the men that I had the impression that you wanted to keep the destruction of our industry down as to coordinate to resist in the east could be maintained until you reached your positions in the west. This was the only explanation as we knew that you had the potentiality on one side and also the economic experts who knew all problems mentioned.

Q: Mr. Speer, do you mean to state that it was in our interest to maintain your power to resist in the east or do you mean to state that our speed was to be coordinated according to the advances we made on the ground?

Sp: I was convinced that you had no interest to let the Russians advance to the Rhine. We had also allies but we did not completely trust their promises. I supposed that it was of value to you too that the Russians did not come to the Rhine with their armed forces in case of a sudden collapse of Germany. I like to emphasize that I do not want to repeat general rumors in order to show distrust between Russia and the western Allies. But that was the only explanation we had at the time and I repeat it in this discussion. You have to understand that such a concentration of bombers which was almost daily over Germany and with only one target you could have brought about the collapse of Germany within eight weeks so that further resistance would have been impossible either in the east or in the west.

Q: Do you mean that our attacks should have been more intensified but after the same plans?

Sp: No. For instance, in the attacks on the chemical plants only a part of the bomber formation attacked the chemical plants. As far as I know only 20 to 30% of the total amount of bombers. Had you concentrated 100% instead of 20%, reconstruction would have been impossible. No labor would have entered the plants because of the continued bomb danger. In that case the war would have practically ended within 6 to 8 weeks.

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Q: Do you only talk of the hydrogenation plants?

Sp: That does not make any difference. You only needed to attack the hydrogenation plants or the ball bearing plants or steel. Any one of the three would have been sufficient. The distribution of your bombers on a broad basis was waste. With one target you could have created the same situation, but in a shorter time, and you would have saved bombs.

Q: In the beginning you were talking about statistics regarding economic warfare through aerial warfare.

Sp: Out of the fact that we had no great possibility to carry through extensive bomb attacks I formed an economic committee consisting of Krauch, Voegler and others in 1942. This economic committee had the task to recommend targets to the air force. But no close contact could be established. The air force refused to cooperate. In our studies we learned the following: In the whole of Europe there was only one economic target which could have been destroyed through our power. These were the Russian electricity plants in the Ural Mountains, in the area of Moscow Rybinsk, Gorki. Through the unique geographic location of Russia, which has wide spaces the connection of the individual electricity plants with one another has not been carried out to the same extent as in other countries of Europe. Besides, through the fast construction of the Russian industry during the last five years plans the Russians have concentrated to build large electricity plants so that entire industrial regions are dependent on one electricity plant, without having the possibility to fall back on other electricity plants. According to our knowledge the Russians have approximately six large power plants in the Ural Mountains region which supplied the entire industry. In the area Moscow, Rybinsk and Gorki were ten to twelve large power plants. It was a matter of destroying 18 objects. The destruction of these objects would have meant that Russian industry would have been paralyzed for long periods of time. One can say had we been successful the war with Russia would have ended a short time thereafter. The whole affair would have been so much more difficult for Russia as Russia has no extensive industry for turbines and heavy electro-aggregates. They were dependent to import these things from America and Germany, and only tried to rebuild such items to a limited extent. Besides that, the other expected destructions, even if only one hit is made on the turbine house, through natural elements would have been so great that a complete destruction would have been caused. - We had our experiences through the attacks on the Moehne Valley Dam. These demands of mine were not seriously considered by the air force and all interventions which I tried to make with Hitler, Goering, the General staff of the Army, Air force, were without success. On the contrary during the following winter the Corps "Meister" was mobilized with the mission to destroy these power plants, but through the new operative movements of the Russians this corps was utilized to destroy rail installations in the near of the operational area. This naturally had no considerable effect. In the winter of 1944 I met Baumbach, who was the only one who understood me and went all out for the idea. In a private industry-action we took up this project again. It would have been possible to carry out this action with the use of Mistelflugzeugen (plane loaded with high explosive launched from another plane?) even from Prenzlau or Rechlin.

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We had concentrated here approximately 200 Mistelfugzeuge which should have been flown into the turbine houses each loaded with a hollow high explosive charge of three to four tons.

When the war situation became hopeless in the middle of March we get together and decided to stop this action which could have been carried through until March 1945. After that time it would have been too expensive.

We then secured the documents and removed them from the area which was to be occupied by the Russians. This was the only attempt we made to carry out economic warfare through bomb attacks. It was a complete failure.

Q: Do you blame the scarcity of all armament materials as the cause for your retreat from Russia, or was it the enormous Russian superiority which forced you to retreat?

Sp: This is difficult to answer. The first part of our retreats was caused because we advanced too far. After the winter of 1941-42 we should not have made any further offensives. These offensives cost us enormous amounts of men and materials and this weakened us considerably. We should have never felt strong enough to advance across the Caucasus to the Caspian Sea and to the Volga. This should have taken place after a breathing spell of one to two years. If this had been connected with economic-aerial warfare, and if only the same bombers would have been used against the bottlenecks of Russian industry which were otherwise used for the support of ground troops, then our offensive action would have been more successful after a certain period of time. After this principle mistake the Russians started an offensive when we were considerably weakened in manpower and especially officers. At that time it was still possible to supply the army groups with sufficient material.

However this could only take place to a limited extent in 1942. There was sufficient material in 1943 and 1944 because of the rapidly increasing armament production. In 1942 there was a scarcity of ammunition in Russia, in 1943 it still actually existed but only through the bad steering of the supplies. This was caused through stocking of enormous quantities should have been enough to cover our requirements.

One more phase that is the attack of the Baranow Bridge head. We had utilized here approximately 1200 tanks for the defense and here it was for the first time that the troops had only one or two sets of supplies of fuel so that the tanks were practically unable to move when the Russian attack started. To the best of my knowledge tanks were not utilized again in battle, but this should be studied at the General Staff level. The Baranow attack was directed against upper Silesia in February or March 1945. In this phase one can say that your attacks in the chemical sector have considerably influenced the defense against this offensive. We could notice on the basis of all other information which we got from that this offensive could have been stopped for very long, had it not been for the lack of fuel. The quick breakthrough came only because of insufficient supplies of fuel. The quick loss of upper Silesia, which was practically the last push to break the neck of the entire armament industry was therefore caused through the attacks on the hydrogenation plants.

Q: We understand out of your report that the collapse of the army was not caused through any shortening of the armament production.

Sp: The following has to be said to that. Unfortunately, a principle mistake was made in the distribution of weapons and implements produced by us. We discussed this once before.

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- Q: I should like to repeat our discussion with the example of the 2000 machine guns in Italy and the comparison of the 90% to "green" troops and 10% for normal replacement. Here results a further question whether the percentage of waste of armament products went parallel with the increase of production or did the waste increase in the course of the war.
- Sp: It was a battle which I fought together with the quartermaster general that these new mobilizations should be stopped. The new mobilizations became worse from month to month as there was not sufficient battle experienced personnel available. The waste was increased from month to month through these new mobilizations and to their utilization at the front. I have mentioned already a moving picture which shows in comparison that the balance of light field howitzers was not considerably increased on all fronts while my production was constantly rising. In spite of the fact that the production was increased six to eight times the balance on guns increased only very slowly. I believe that the balance of light field howitzers with the troops was no more than approximately five to six month production, that with a previous armament of many years.
- Q: Can one say that until the beginning of the attacks on the chemical sector, if there had been intelligent use of the stocks, there would have never been a critical shortage?
- Sp: I would like to set down the answer to these questions in writing as these questions can not be answered with yes or no. On the whole one can say that our troops could have been sufficiently supplied. The two-front war naturally changed the matter somewhat. Until then it was possible to supply the requirements of the front. To hold out such a two front war was not thought possible not even from the point of view of manpower. For the number of available soldiers our achievements in armaments production were sufficient which is shown by the following example. Theoretically I completely equipped 225 divisions and 40 Panzer divisions in 1944. This practically is equipping the entire field armies twice over. The field armies consisted of 130 divisions. Normally, I believe it is hardly practiced to equip an army twice a year.
- Q: We have one special question:- Could you tell us something about the wear and tear of material in a panzer division? Is the normal wear and tear approximately between two to four, that means, does a tank have to be replaced two, four, five or six times?
- Sp: That I cannot say. It is the only interesting that the number of tanks with the troops came only to four to five production; out of that we can see approximate wear and tear. One thing has to be added to that. Until now you have only known wear and tear while you were retreating. While advancing, repairs of several hours can always be carried out, the tank just remains behind and catches up later on. When retreating every tank, even if it has only minor damage, has to be demolished, and sometimes it is only the matter of a faulty carburetor. The wear and tear, when retreating is many times higher, because the deliveries of spare parts were insufficient. I remember something interesting to the first point of our discussion regarding the effect of aerial attacks, - these were the very important attacks on the truck production which made a mobilization of tanks

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and motorized infantry extremely difficult, but here too it has to be pointed out that the same result could have been achieved with attacks on the fuel production.

Q: These attacks were already before? Opel?

Sp: That was in the summer of 1944. In the example of Buna - Continental, the attacks were very disturbing in spite of the fact that we had fuel reserves.

Q: One other question which you probably can also answer with rough estimates. How many percent of your production was underground at the end?

Sp: We have attempted to bring the production of airplanes underground, as it would have been impossible to disperse the production of armaments underground to the extent to which they were required by the armed forces. The airplane production was only partly dispersed underground approximately 30 to 50% of individual types. At that time I gave out the slogan, One cannot win aerial warfare through cement and tunnels.

Sp: The gentlemen want to express their appreciation, - it was especially interesting and enlightening.

And now to the questions of Chemicals:

Q: The list of Evacuation addresses you gave us did not show who worked on the problems of Chemicals including fuel and rubber, and where the important people, handling the complete problems, are to be found.

Sp: There are several parallel offices, first of all the Rohstoffamt, where Kolb handled the chemicals, and Geilenberg, or Krauch, from I.G. Farben, Krauch was also in charge of the economic advances. If Krauch is not available Dr. Bütetfisch coordinated the total fuel production for me.

Q: We have several questions concerning the statistics. It was not clear whether Rumania was included in the imports of aviation fuel.

Sp: Practically no aviation fuel was imported from Rumania, as there was no hydrogenation there. Besides Rumania is not listed in the statistics as an occupied territory. We had normal trade contracts and agreements with Rumania.

Q: Do you know whether any statistical data exists on imports subdivided into countries?

Sp: Dr. Fischer has these records; he worked for both me and the Ministry of Economics on those problems and crude oil in particular, therefore I sent him to Switzerland. But you can call him back. He is really harmless.

Q: Can you give us a brief description how the German synthetic fuel production was extended during the first years of the war 1939-1941?

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- Sp: I can only say what is apparent from the figures, because I only took that over toward the end of 1943.
- Q: Did you have any considerable imports from Russia, first by trade agreements and then by the occupation of certain territories?
- Sp: I cannot say what was imported before my time. As far as I know it was about to be increased, as transfer points had to be built first. In my district I only interested in the oil around Lemberg, but it wasn't much. Ohterwise we had Maikop for a short time and had tools there already. We might have got something there in a few months. Our tools went along with the advance and the so-called raw oil brigade marched right along. But Dr. Fischer should be able to give you more information on that.
- Q: You probably have the same answer to the question on refineries newly to be constructed?
- Sp: We had an excess of refineries as we had gotten the Belgian and French refineries which used to process American oil. These were dismantled. One of them had been rebuilt in Russia; another was supposed to be erected during the period of my construction work in Russia. We did not need new refineries; up to the end we had an excess of refineries.
- Q: Do you know whether the policy for increasing crude oil production was to pump the oil wells dry or which policy was followed?
- Sp: We had the only large oil field outside of Hungary at Zistersdorf. We were able to increase production at Zistersdorf by drawing irregardless of result. The oil experts said that the field would recede sharply in a few years. It was to have been tried to extend their life by compression with air or similar methods. I don't know whether or not this was done. Hungary was kept up by a similar process. We had to shut down many wells in Zistersdorf to keep up the production. Our oil experts were not willing to further increase production. They rather wanted to have "the gold under the earth that the paper marks above earth."
- Q: A technical question which you might not be able to anser: Why was such a small percentage made by the Fisher-Topsch process and why so much by hydrogenation?
- Sp: The attacks on Floesti shock us severely because Rumania made trouble about the reconstruction. The Rumanians had no interest to get the field working again quickly because they feared being subjected to new attacks. But we found that refineries are comparatively easy to patch up again as they do not require any special chemical process. But the Rumanians delayed the work. Fischer was down there and reported that the help which we planned to give would not be gladly accepted. Despite that Rumania soon started producing again.

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More disturbing than the attacks on the refineries, was the minning of the Danube, which caused the Danube shipping to stand still so the bottle neck was not the oil but the lack of transport facilities. This is another vulnerable target where attempts were made to hit the same thing from two sides; it must be said time and time again that it would be more effective to attack one thing more intensely.

Another thing must be added. An attack on a refinery loses much of its effect if the warning can be given one hour in advance and the process can be stopped in time. Then the chambers could be emptied so that no fires could break out. In the case of refineries fire was much more dangerous than the bombs.

Q: Did you send both specialists and unskilled workers to Rumania to reconstruct the factories?

Sp: No they were at hand. We just sent technical leadership personnel who were there only for control purposes; we wanted to send also materials out of what had been dismantled in France to replace the missing parts as quickly as possible.

Q: We know that there was an extensive machine repair shop with the refineries in Rumania. Do you think it possible that it would have had a decisive effect on the production of the whole work if we had repeatedly attacked that shop?

Sp: Certainly in Rumania, because one had to expect a quiet sabotage of the government there, not at the factories. In Germany and other highly industrial countries it would have had no effect because the parts could have been supplied from the outside.

Q: It always was our idea that pressure tanks are the most vulnerable spot of the whole plant and also the parts most difficult to repair?

Sp: Yes, but also most difficult to hit. They have been hit very seldom, not even at the hydrogenation plants, as they had comparatively strong walls, due to the pressure produced in them; when alarms could be given in time, they had no excess pressure. Splinters hitting from the side just slipped off.

Q: What was the most vulnerable part of the Ploesti refineries?

Sp: Refineries are only vulnerable if one can get them to burn. Fires can cause great damage. Bombardment therefore has little effect because outside of the pressure containers the pipe system can be repaired comparatively rapidly. This is the reason why it would have been most important to fake the attack on Rumania up to the last 15 to 30 minutes, then a great effect would have been gotten. It is commonly believed that an advance warning of 50 minutes to 1 hour prior to attack is necessary but I believe that one half hour is sufficient time for the factory to close down proceedings. If it is not possible to carry out the attack within that time and to cause fires, the the attack is of little value.

Q: Do you believe that in this case you have just stated the use of heavy bombs which would destroy subterranean cables and pipes, would have more effect?

Sp: Without any doubt. As we could notice in the case of heavy bombs and mines

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on hydrogenation plants the pressure tanks were often thrown out of their foundations. To erect them again very heavy cranes are needed.

Q: In the middle of 1944 the total German production of crude oil was 650,000 tons later it dropped to 624,000 tons. First of all we would like to know whether the 650,000 tons were sufficient to fill all needs.

Sp: I must say to this: 650,000 tons is a theoretical figure. This figure was given to me when I requested a total figure of natural and synthetic production. We wanted to agree on one denominator which would contain the direct synthesis of fuel with the raw oil. The experts said that was difficult because the raw oil could have different values. How this figure was computed is not known to me. For practical purposes it is just a percentage development. Therefore if one wants to see the results of air attacks on the Chemicals industry one has to consider the different groups of production instead of the total figure: Hydrogenation, Synthesis, and the sulfur process. Then the air attacks can be practically read off.

Q: This figure represents the amount at Germany's disposal? Doesn't this figure represent the amount of raw oil at the disposal of Germany at that time?

Sp: The figure 624,000 represents the amount of all fuel units, figured in raw oil, but excluding imports.

Q: Was the fuel situation in good shape at the beginning of the American offensive or was it then already critical?

Sp: It was sufficient. On the contrary a fuel reserve was formed in the winter 1943/44. We had a small over production due to sharp curtailments.

Q: Do you know where we might get figures on the reserves and on supplies on hand?

Sp: These supplies were not controlled by us. We turned them over to the Wehrmacht. There they were distributed to the so-called Fuehrer or OKW reserve. The Fuehrer reserve could only be distributed by the Fuehrer, the OKW reserve could only be distributed by Keitel. About 150,000 tons of aviation fuel were probably stored until May. We never got any information on it, it was a subject outside of my interests anyway.

Q: Who keeps the statistics for the S-book?

Sp: I don't know. As far as I know, Keitel. A Capt. Griebel worked on those things for Keitel.

Q: When did the crisis in the field of Chemicals reach its climax; after the attacks of April, May had started? Just after the beginning or at the end?

Sp: The biggest crisis was naturally toward the end. With each attack the factories were more and more shaken up so that the time period in which reconstruction was possible was increased more and more, because the muffs (Muffen) were then damaged, torn apart or not tight anymore. This became more and more apparent even when there were no hits in the immediate vicinity. The situation became more and more critical. It might be interesting to you that after the fifth or sixth attack the situation becomes critical. Then a point is reached when reconstruction becomes extremely difficult.

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- Q: How far did the reserves drop after this offensive? Do you have any information about the Fuehrer and OKW reserves?
- Sp: No, I have no idea.
There was another factor which made us hold on longer and that was the curtailment of fuel circulation. I don't know how large the circulation was. At the end it was practically nil. Fuel was only obtainable by chance and not at the places where it would be produced. Normally the amount circulated must have been considerable. It has never been computed.
- Q: Could you give us some leads as to the size of the amount in circulation?
- Sp: That could be at most be a production of four weeks, probably less. The running time of trains was comparatively long. No more than four weeks production were in circulation. Even at the very end we still had the tank cars which were on the road. Without them one could not do anything anyhow, maybe the sum of additionally useable units could be figured in the following way: Let us assume that the turn-over quantity theoretically represents three weeks of production, and that even at the end still three weeks of decreased production are turnover quantities. The difference could represent additional stocks.
- Q: But there would be still a certain stock in the factories, the refineries, the hydrogenation, etc. Can that be regarded the same way?
- Sp: No, that burned during the first attacks. Unfortunately we had so much storage facilities at the Hydrogenation plants that we had usually 3-4 week's production in them. But those tanks burned out and at the end we had a lack of storage facilities. We had difficulties to get up enough so that the tank cars could be serviced as quickly as possible.
- Q: Was there a quality reduction of aviation fuel due to the air attacks?
- Sp: No, that was impossible to do. If it passes through the Hydrogenation process the same product results always. But we did, as far as I know, lower acceptance standards.
- Q: Were there attempts to convert aerial motors that they could run with a lower grade of gasoline?
- Sp: No, because we were forced to increase the performances of our motors, because we were in arrears with them. That conversion would have set us back still further. We had not reached the RHM which you have in your planes. Fuel "J2" for jets, which was composed of simple gas line and diesel oil was of considerable importance.
- Q: Could you give us some suggestions on how the reconstruction work was handled ~~addition~~ regard to manpower, building materials, etc.?
- Sp. I will tell you about the organization of Geilenberg, as this is the most appropriate answer. As we suffered the first attacks on the Hydrogenation Plants and noticed that the technical direction of the Chemicals industry was not able

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to repair the damages, as they were pure scientist, technicians, but not practical people. For that reason it was necessary to appoint one man for each factory, a man with special energy who came out of the construction industry. For Hydrogenation plants: The Geilenberg organization developed out of this idea. Geilenberg appointed one deputy for all reconstruction work. These deputies were mostly chemists out of the construction industry. We gave Geilenberg and his associates the possibility to get the labor needed out of a large territory, even out of the armament industry. He could get pipe welders, which constituted a bottleneck, out of the locomotive plants, he could get men from the tank production, etc. He had practically the power of administer up until all his needs were met, to get the large number of specialists required for repair of a hydrogenation plant. I said to myself that if the tanks had been attacked these men would have been idle anyhow. So one factory can be laid still temporarily if their workers came to the hydrogenation plants.

- Q: An irrevelant question which is of interest though-
What was Geilenberg's education? Is he an industrialist or technician?
- Sp: Geilenberg studied engineering, and was the head of the steel work Brunswick of the Hermann Goering works, also "Industriefuehrer" and had previously worked with me on ammunition. He was just free at the time the attacks started on the hydrogenation plants which I had feared for a long time and the danger of which were immediately clear to me.
- Q: Did he also work on evacuation plans for the Chemicals industry or were there none?
- Sp: He worked on them in connection with Professor Krauch. Krauch was also responsible for long-term planning, new constructions, final shut downs of installation which we had undertaken in the west for dismantling and reconstruction. Geilenberg was responsible for the reconstruction and the carrying out of new installations, as far as Arauch thought them necessary. If they could reach no agreement I stepped in.
- Q: Yesterday you gave us an approximation that about 300-400 men were employed at one time on the reconstruction of the airplane industry. Could you tell us how many were used on the reconstruction of the Chemicals industry?
- Sp: Although I can only approximate the number working on the airplane industry I can tell you fairly exactly about hydrogenation plants, as these were only a few. We employed at the end 250-300 people on reconstruction. Geilenberg should give you the growth month by month.
- Q: Towhat extent would you say was the reconstruction of the Chemical industry a special danger to the steel production?
- Sp: None. As the first attacks on hydrogenation plants came I stopped all construction unless they could be complete in the next three months. I did this against the wishes of the Chemical Industry. It was planned to increase the aviation fuel production from 180,000 tons to 210,000 tons in December 1944. I stopped that because I recognized that the attacks were a planned

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affair. Those half-finished works could contribute toward supplying the damaged ones out of the stream of materials which came out of the steel industry. That is the reason why I was able to rebuild the industry meaning that I could take the iron to patch up the old plants.

Q: One more question: was it a high grade steel that you used for that?

Sp: That was steel intended for new construction, which is nearly always high grade steel; our bottleneck was not in steel but in reserve containers. This was the item which determined the construction of hydrogenation plants. Otherwise the construction of hydrogenation plants did not interfere with other bottlenecks of armament.

Q: Could you tell us some more about the extension program as we do not know very much about it. How did it develop?

Sp: At first, let us conclude the steel. After we had stripped the new constructions we started to tear down all factories near the front. That was the reason why we laid still the factories in the Ruhr (Wesseling and Hamborn). We had to strip them to have the necessary spare parts for the reconstruction work. At that stage the industry was not able to get us the necessary spare parts in a short time. To the second question the following must be said:

In the opposition to the Fuehrer it was the opinion, that the extension of our industry for the future must be stopped in the fall of 1943 or at the latest in 1944. The question was, should I extend the basic production so that I could carry on the war for years, or should I put the materials used in basic production in the real armament? I was of the opinion that every thing necessitating long-term planning in the mining construction, chemicals and iron producing industry would have to be stopped immediately. Doubtlessly I would have gotten something for the armament. My ideas were always refused so that plans for extension kept on costing me tremendous sums of iron.

Q: Could you tell us something about the problems coming up from evacuations or subterranean evacuations of the chemical industry? You indicated already that great problems about evacuations of the product as well as subterranean storage cropped up.

Sp: To that I would like to add: In 1916 when the Leuna works were built in middle Germany Ludendorf insisted that the works be put underground, which shows the real greatness of that man. Our chemical industry learned nothing but built their whole industry very carelessly in regard to their attacks. One could have given them much more protection against air attacks if just some parts could have been protected by cement. That never happened. When the heavy attacks started the industry maintained that it would be impossible to move hydrogenation plants underground because the problem of getting rid of the gases, which mixed a small amount of air have highly explosive qualities, had not been solved yet. The solution to that problem was very simple. One found that the room into which the mixture could escape should be filled beforehand with another gas which would cause it to lose its explosive qualities.

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- Q: Is that nitrogen?
- Sp: Maybe. We then started planning subterranean hydrogenation plants and the figures which we planned are in the memorandum.
- Q: To what extent did you construct underground storage facilities?
- Sp: How many were made I don't know in detail. We were short of tanks.
- Q: After the new project with nitrogen, did any one of the underground factories really start producing?
- Sp: No they were to start in the next few weeks, I cannot say sure whether we remained with the same principle. Anyway Krauch told me that they had found the solution. It might be possible that they found another solution in time.
- Q: Where were those works planned?
- Sp: At Oynhausen near Porta Westfalica, in the Salzkammergut and in the vicinity of the Ruhr.
- Q: Now one more question on the extension program of the chemical industry. When did it come up and when it was considered for the first time?
- Sp: That was a continuous program that was pushed continually. The position was that the GAF put in its demand on the basis of the theoretical programs - I for example demanded Toluel powder and explosives on the basis of curves which I imagined for munitions. That was the produced by the chemicals industry which fell behind because they are much more difficult to enlarge than the armament industry which on the basis of our rationalization measures could get going sooner. The choice to attack the chemicals industry really caused a decisive bottleneck. Something else about the bad effect of your bombs which I would like to tell you. Last fall I saw a bomb cluster which had fallen into an apple orchard. The bombs had dropped with a distance of about 20-30 m from each other. The fruit trees standing between the crates still had their leaves and apples. That was the most amazing I have ever seen. There I remembered: with such a system one can determine the shock waves. One should erect scaffolds of light steel and hang up the "apples". Bombs dropped in that wood would show the shock waves of the bombs. One could measure that similarly to the aerodynamic experts with their small strings. That is singular but not uninteresting. It also happened that in one attack a bomb dropped 10 m from our house and did not break the windows.

signed: Speer.