HEADQUARTERS
U.S. STRATEGIC BOMBING SURVEY
(PACIFIC)
APO #234
C/O POSTMASTER, SANFRANCISCO

INTERROGATION NO. 66
(Obtain from G-2)

PLACE: TOKYO
DATE: 9 Oct. TIME: 0900

Division of Origin: Oil and Chemicals.

SUBJECT: South Sea Production of Oil.

Personnel Interrogated and background of each:

MORITA, K., Vice President, Chief Supply Bureau Navy Ministry.

1914	Naval Academy - Aboard Vessels.
1924	England - Language Officer.
1926-8	Navy General Staff
1928-31	Sectional Head, Military Affairs Bureau (GUNMU KOKYU)
1940-2	Chief Engineer Combined Fleet
1942-4	Rear Admiral, Borneo Chief of Fuel Refinery.
1944-5	Superintendent General, Osaka.
1945 May	Chief Supply Bureau, Navy Ministry.

Where interviewed: Room 749 Meiji Bldg.

Interrogator: Lt. Cdr. G.R. Williams.

Interpreter: Lt. Frank Turner.

Allied Officers Present: Capt. Purl Economic and Scientific Section G.H.Q.

Summary:

1. Organization of Supply Bureau Navy Dept.
2. Navy Oil Refineries.
3. Navy Stocks.
4. Oil Production and Transportation in Borneo, Sumatra, Java.
5. Effect of submarines, air raids and mines.
6. Underground facilities.
7. Planning board.
8. Pine root oil.

INTERROGATION

Q. Give us a brief discussion of the organization of the office of the Supply Bureau of the Navy Ministry?
A. Generally it is divided up into the following sections:
1. General Material Section.
2. Fuel Section.
3. Clothing and Food Section.
4. Construction Material, such as for the construction of factories and plants. It isn't called the fifth section as it is replenishment - Hikyu - It's functions is handling the work of Borneo refineries.

Q. What is the name of the officer in charge of the second section?
A. The officer in chargeof the second section is Rear Admiral Akishige.

Q. The fifth department?
A. The fifth department, one other section is considered rocket fuel however, both the fifth and sixth has been disbanded already. The fifth remains only to the extent that the Admiral in charge is winding up his affairs.

Q. How long has this particular organization been in existence.
A. This particular form was organized in May of this year, prior to that it was the General Affairs Section 1-2-3 then 4-5-6 were also included under two only.

Q. Are there three or four divisions if we take out the fourth and what are the general functions of the second section including 4, 5, 6?
A. Its primary function was refining and supplying of fuel. Transportation of fuel was taken care of by the transportation section.

Q. Were there any synthetic firms?
A. None, of course, you understand that prior to May it took care of the work done by four and five sections.

Q. What did the fifth do before the war and during the war?
A. According to the regulation of the Navy Department, there was no separate fuel section set up and was only reorganized as an independent section in May.

Q. Where did the Navy get its crude and refined oil - say in 1937?
A. Possibly, all except a very small part which came from Borneo and the rest from the states.

Q. Through what channels did the Navy purchase its oil and would they purchase it direct?
A. From the Navy Bureau direct, other through such organization as MITSUBISHI and MITSUI and other small organizations.

Q. Does the Navy have any records of the amount of oil it purchased during the years of the war?
A. On April 1 - he has it figures for the total amount and also the amount that the Navy took which figures around 1942 total amount brought from Borneo, 1,000,429 of which the Navy took 370,000. The last year the amount was 2,614,000 of which the Navy took 820,000. The three years the total amount was 1,350,000 of which the Navy took 580,000.

Q. Was Borneo the sole supply of the Navy's crude oil?
A. Part from the south, however, the other sorts of our fuel supply during the war came from that which had been piled up.

Q. What was the stock on hand of the Navy fuel at the beginning of the war?
A. Crude oil was 1,475,000, heavy oil was 3 624,000, aviation gas was 473,000, lubricating oil was 6,400, tonnage and ordinary lubricating oil was 13,600 kilolitres.

Q. How do you keep these records?
A. All records were destroyed by fire in May, and I obtained these figures from the officer in charge.

Q. The figures that you gave, are they monthly figures or annual?
A. He has all annual figures.

Q. Could we copy those rates or could you give us a copy?
A. He will have a copy made and send it to you.

Q. You have what five Navy refineries in Japan?
A. Four oil refineries, of these, the first was an experimental refinery. Refinery numbers 6, 7 and 4 were in the process of construction and have not been completed. The reason for those being called 1, 2, 3, 6 was because 4 and 5 are the coal mines.

1. Ofuna - Oil refinery
2. Yokkaichi - Oil
3. Tokuyama - Oil
4. Fukuoka - Coal
5. Heijo - Coal
6. Taiwan - Oil - (Not yet completed)

Of course we also operated two refineries in Borneo during the war. That is not correct, only one. Balikpapan, Tarakan, Sangan oil refiners. Sagan was not included.

Q. Do you have production records for the various refineries?
A. I will have to look into that.

Q. How about the production records of the Japan refineries?
A. The figures covering the Navy productions were destroyed by fire.

Q. Do you have an idea of the percentage of the Navy?
A. It would be a very wild guess, I think that the capacity. The production was reduced because the air raids destroyed their supply line which reduced the amount of fuel oil considerable more.

Q. Do you have any records of the loss of oil caused by the submarines.
A. No records.

Q. When did the submarine attacks begin to effect the crude oil?
A. They began to feel it around the summer of 1943. I was in charge of the refinery at Borneo at that time.

Q. Did you have stores piled up at Borneo?
A. Yes, but not to the extent to discontinue the operation of the refinery, and it was operating until I left which was August 1944.

Q. Was the submarine punch continuous through 1943 and 1944 or were there peaks?
A. Continuous and gradually getting worse.

Q. Compared to the air raids, which do you consider the more important?
A. Looking from the stand point of tankers, the submarines were, but from the stand point of refineries, the air raids were.

Q. When did you begin to feel the effect of air raids at Balikpapan?
A. First raid against Balikpapan was made in August 1943, but they did not critically effect the refinery until August of last year. Serious damage was received subsequent to August of last year.

Q. About what percentage of production was effected since August 1944?
A. Normally our annual capacity was 1,800,000 and believe that towards the end that was cut down to about 300,000. That is merely guessing on his part as he has no particular figures.

Q. Does he have any idea of the figure regarding the tonnages of transportation that was cut down by submarines?
A. He would guess about 1/3 lost by submarine activities.

Q. As early as 45?
A. Through the whole period the submarine became a very essential part in the war. He would add that in the air raids which began in August 1943, your planes didn't confine their action to the refineries, but dropped mines which proved very efficient against our tankers.

Q. These mines about Balikpapan, were they also prohibitive, and have you any idea of how many tankers were lost?
A. We lost many tankers. I would say we lost at least 10 tankers.

Q. What was the approximate production of the refineries in Borneo?
A. They were operated at full capacity which was 1,800,000 tons of which about 20% was turned to aviation gasoline.

Q. Where would you use this refinery aviation gasoline?
A. Local area unit was supplied from this and the rest from Japan and all the southern region.

Q. What percentage went to Japan?
A. I would say less than 10%.

Q. Did you send more crude oil or refined oil?
A. Only part of the production at Tarakan was shipped to Japan. The amount produced there was enough for local demands.

Q. Was there any difficulty in keeping the supply of gasoline to the South Sea Island Bases?
A. No, at least during the period that I was stationed at Borneo and that it would be explained partly by the fact that submarine activities increased.

Q. Is it the Admirals opinion that the oil fields in Borneo were an important part of the major war program?
A. Yes.

Q. Was the supply of the combined fleet curtailed for the lack of oil for the ships?
A. His section here began to feel shortage of Bunker Oil and that their combined fleet could have operated more efficiently if it wouldn't have been for the shortage of Bunker Oil.

Q. Would the shortage of Bunker Oil have had anything to do with the fleet being kept at the Singapore anchorage?
A. Yes, that explains it in part but another explanation is that it thought that they were hiding there.

Q. Where would most of the Bunker Fuel Oil come from?
A. From Borneo, Sumatra, Java.

Q. Were your stocks in Japan sufficient for Bunker Oil stock?
A. Yes. until 1944.

Q. When did you first feel the pinch in Japan?
A. Not having been in Japan at the time, I couldn't give you any statement, but guess that they began to feel the shortage as early as 1943.

Q. How many tankers did you lose in the battle of Saipan?
A. He doesn't know, he can look into it.

Q. And to what does he contribute this shortage of Bunker Oil?
A. Destruction of shipping from the south.

Q. Was their production of Bunker Oil sufficient, and was the shortage of shipping due from submarines?
A. Yes, it was produced but it couldn't be brought in.

Q. Was there any shortage of aviation gasoline during the Philippines Battle?
A. Not until August of last year.

Q. At any time were there a shortage of any type of fuel during the island warfare in the South Sea?
A. Not until August of last year.

Q. How did the Army and Navy work with the division of Fuel?
A. Local, and that was in Borneo and was not fully arranged. In Japan I think there was a definite arrangement for the supply.

Q. Did the Army have enough oil fields at Borneo?
A. Yes.

Q. Did they have the same system of filling up the first tanker that came whether it was Army or Navy?
A. Yes.

Q. Does the Admiral have any knowledge about the arrangements of fuel in Japan or can he give that information?
A. As a matter of general principal, oil brought in Army tankers would go to the Army and visa versa, and I think that the tankers were about half divided between the two services.

Q. Wasn't there anyone who had over-all charge to see that the Army and Navy got what they needed?
A. There is no such organization and when he took over his position there he felt the necessity of such an organization and started establishing this organization, but the war came before the idea materialized.

Q. In Borneo did he have any definite instruction how to allocate the oil?
A. Only to the extent that as soon as the supply at Borneo wasn't sufficient there that he knew that orders had been insured for certain part of th/pProduction to be sent to Borneo.

Q. Who in the Navy allocated the fuel to the various users?
A. The amount of distribution was for the Navy General Staff, and the actual distribution is effected jointly by the section of Bureau of Supply and Transportation Section.

Q. Did the Admiral receive an allocation for oil periodically?
A. He was in Borneo and he received no such plan from Japan and he didn't feel the need for any such plan to be set up. The contacts were good.

Q. Did the Admiral have control over the allocation of the fuel in his area?
A. He acted on his initiative in filling request from the Commander in Chief of the Combined Fleet. The actual situation there was that their capacity of 1,000,000 (kilolitres annually) of fuel oil for Borneo Island which only 1/2 of the amount they need in order to keep the refineries running full speed the balance had to be brought in from Java and Sumatra.

Q. Were there any refineries in Java and Sumatra?
A. There was a refinery at Java, but it has almost been completely destroyed. There were two refineries on Sumatra, but the oil production in Sumatra was more than the two refineries could handle.

Q. What was their capacity?
A. About one million and a half, and the one in Java was about 400,000.

Q. Was it able to operate at 400,000 after the Japanese took it over.
A. No, that was its normal capacity.

Q. What capacity were you able to get out of it?
A. With all particular bombing, I think it could be said that they got no use out of it.

Q. What was the approximate production of crude oil in Java?
A. I believe that annual production was about 1,000,000 tons.

Q. And in Sumatra?
A. I think about 4,000,000 tons, but believe that in time to come the annual production would have increased to 5,000,000 tons.

Q. In general opinion, was the scorched earth policy of the Dutch more efficient than the British?
A. Yes, the Dutch policy was far more efficient and thorough than that of the British. Balikpapan was completely damaged whereas the two refineries in Sumatra, one was not damaged at all and the other only about half destroyed and the fact that one was not touched at all might be explained because it was captured by our parachute troops and the one at Java completely destroyed.

Q. Are there any records that the Admiral knows of which shows the air raid damage for each raid for the South Sea Oil Refineries?
A. The two refineries at Sumatra, he believes, received no air raid damage worth mentioning. The one at Miri was completely raided from August of 1943 to August of 1944, though the raids being effect partly against the refineries and partly against the port facilities. He couldn't give you any estimate amount of damage effected on each.

Q. Are there any records?
A. He believes there were shipment records in the Tokyo Office but completely destroyed by fire on 26 May. He has some idea of the result on these raids, so if you have any particular question you have he may be able to answer it. In the raid of August of last year we lost 15,000 tons and he recalls when the port facilities were badly damaged.

Q. What was the longest period for the plants to be shut down prior to October of last year?
A. Yes, more permanent.

Q. Would the commander in chief of the combined fleet have the say as to what type of oil was to be produced such as gasoline or crude oil and/where it was to be distributed?
A. Was within the area of the administration of the commander in chief of the South West Fleet which had three sub-divisions/under him - but 1, 2, 3, and there was another one head of the 4th. The 2nd fleet had actually charge of it but the final order would come from the commander in chief of the fleet to be passed up to him from the commander of the 2nd fleet.

Q. When they would ship supply to the base would the Commander in Chief have charge of that?
A. The commander in chief of the Combined Fleet/has set down to the figure for the supply which each base should normally have and as that supply ran lower and lower the Commander of the respective base would go direct to Balikpapan to get a new supply to keep his supply up to the minimum and he would not have to ask permission each time. Since the refineries at Balikpapan had a large capacity, it was able to supply very much without difficulty until August 1944.

Q. Was any program instituted for underground facilities in Borneo?
A. Beginning with August 1943 when they received their first air raid we began to move their machinery and other parts that could be moved of the refineries to the jungles.

Q. This machinery you speak of was that operating machinery?
A. Spares.

Q. Was the major part of your storage in tanks or in drums?
A. The greater part in tanks which capacity was about 800,000.

Q. Your shipment was that mostly in tanks or in drums?
A. Until we lost so many tankers the greater part was carried in tankers but as the tankers became less they were taken by drums.

Q. Did you ship aviation gasoline in tankers?
A. Considerable quantity in tankers.

Q. How many tankers did the Navy have at the beginning of the war?
A. I'll have to look into that.

Q. Was there any shortage of drums?
A. We had plenty of them in Balikpapan which had a capacity of 3,000.

Q. Where did you get the iron?
A. We first used what the Dutch left and when we ran out of that then we took from Japan. Towards the end we started to work on a steel mill and which was nearly completed but it was completely destroyed by air raids about 2 to 3 months before it was completed.

Q. At the beginning of the war did you have enough tankers?
A. He thought they had plenty.

Q. Did you get some from the Civilian Merchant Fleet?
A. Yes, they did.

Q. How did the Army and Navy work out the question who should have what and what would the Merchant Fleet get?
A. That was quite simple, the Navy had charge of the requisition of civilian shipping and they would turn over to the Army what they wanted.

Q. Would the Army say that they wanted so much?
A. The matter was discussed between the representative of the two services but at times it was in the hands of the General Staff.

Q. Would the Navy make any effort to move the refineries in Japan by putting them underground?
A. Yes, at the time of the turning point of the war, parts of the 2nd and 3rd refineries were taken down and the tanks, a considerable number of them were already underground tanks.

Q. Are there any underground tanks in the Tokyo Area that I could see?
A. One near Yokosuka.

Q. Where abouts in Yokosuka?
A. It is partly in Yokosuka and Yoshia. I believe that the crude oil underground tanks had a capacity of about 50,000. The present situation is this, the tanks underground had a capacity of 1,880,000 and those on the surface 930,000.

Q. What was the original capacity of those on the surface?
A. Total including underground tanks was 5,210,000 that is Navy tanks.

Q. Doesn't the Navy have any synthetic oil plants in Japan?
A. The use of this practice is to obtain the mixing with Hydrogration under high pressure in order to produce high grade gasoline. In Yokina, 2 and 3 refineries, they have a capacity of 40,000, but suffered considerable damage.

Q. Are there any similar plants at Tokuyama which has a capacity of 30,000 that have been damaged also?
A. Yes, but these have been damaged also.

Q. During the war the local production of fuel was inadequate for local consumption and understand that the Army service turned over crude oil for civilian use?
A. The total amount was 5,393,000 tons through the period of the war, of which the Navy used, 1,770.000. He believes that a small amount was allocated to the army and the remaining was given to the civilians.

Q. Who determined how much the civilians should have?
A. We had what was known as the planning board attached directly to the Cabinet and on this board were representatives of the Army and the Navy and the Munitions Ministry and they both determined the subdivision.

Q. Would the Navy make an estimate what its consumption would be and submit to the board?
A. Yes, the Navy of course estimated the amount it would need and submit to the planning board and when the supply was adequate the Navy and the Army were able to obtain all it felt it needed up to the beginning of March or April of this year. After I came into my present office in May, one of the most serious problems was to give the civilians the maximum amount that they needed and it was in order to solve that problem angle which the Navy started production of fuel from refinery.

Q. Did the Navy actually commence operating on pine roots?
A. Yes.

Q. How much oil did you get from pine roots?
A. By the end of June the Navy had produced about 30,000 tons.

Q. Crude Oil?
A. Yes.

Q. When did it begin?
A. The production of January was zero and then rose to 30,000 in June and he believes that it stayed at 20,000.

Q. Where was this pine root oil produced?
A. All over the country and the Navy had a total of about 3 ,000 kettles through the country.

Q. Was th processing of the pine root in the kettle?
A. No, wood is put in with pine root to burn, it is put under the kettle about 12 hours and the amount of crude oil contained was about 20% and by ordinary processing of refinery that was obtained was about 20% of aviation gasoline. (Interrogator) Note: Believed 20% figure was 50%.

Q. How high octane was that about to get?
A. About 91% and by using high pressure they obtained 94%, they first obtained 91% by ordinary and the final production which was 51. Throughout the country he has had confidence that by the end of August we could produce monthly 20,000 tons of this kind of oil, crude oil from which in turn would obtain 10,000 of the refineries which would be aviation gasoline.

Q. Would the fuel board or some other representative of the crude oil give an estimate of civilian consumption?
A. He thought that the figures were combined and submitted by representative to the Munitions Ministry. Many of the users were already Naval Officers in active service.

Q. Did the service review the total figure in order to see if they could reduce them by saying that the set figure wasn't necessary?
A. Yes that was a very difficult question for the planning board to answer. As a result, the figures that we turned in wouldn't be determined until the quarter was nearly half over. As in the fiscal year, the first quarter would be April, May, and June and the figure for these first three months could not be decided until the middle of May.

Q. Did that cause any difficulty to the war effort?
A. I don't believe that was any serious effect on the war because there was a shortage in the quantity anyway.

Q. Does the Admiral feel that with the facilities at hand for obtaining their refined oil and with the destruction due to bombing, that the Navy could have continued the war effort?
A. He believes that with its equipment for production of pine root oil which was distributed throughout the country so widely, that your air force could not have possibly have destroyed them all. He believes that their equipment could have operated the 7,000 plants which the Navy had for the deciding battle of the defense of Japan proper.

Q. What stock on hand did you have in April of this year?
A. The stock of aviation gasoline of April of this year was 86,000 kilolitres.

Q. Your gasoline supply for aircraft would have been sufficient for the suicide defense and after this defense was completed you would have little gasoline left?
A. They would have had some air force fuel, but they would not have any air force.

Q. In the Admirals opinion did the shortage of fuel play an important part in the final discussion to the surrender?
A. Yes, looking at the situation from that reason it comes to that you might say that fuel shortage was one of the important reasons for our decision to give up the war. Besides from that, the discussion was made to save the planes for the final defense for Japan proper. If those planes were sent out to attack your task force, he believes they would have suffered less damage.

Q. Does the Admiral believe that the decision not to send out the planes to attack our fleet was made because of the shortage of fuel?
A. He believes in the mind of those who planned the operation that the shortage of airplanes was a greater factor than the shortage of fuel. Also the lack of trained pilots and those pilots that they had would not have succeeded in their effort against your task force when they were 300 miles of the mainland. It is possible that the last factor was more important than the shortage of planes.

Q. Was there any shortage of fuel in Saipan and Tinian when the first Carrier Raid was made on them in June 1944?
A. At that time he considers there was no shortage at all because they were being supplied from Japan and Borneo.