

SECRET**The Motor Fuel Supply of Denmark (1940-1944)**

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4 June 1940: Further restrictions on permitted motor vehicle traffic have ensured the motor fuel supply for 5 months. Of about 110,000 passenger cars, only 3,450 are permitted to be operated. This is a stiffer cutback than in Germany, where about 10 percent of the total peacetime number of passenger vehicles are still in operation. It was possible to effect a considerable saving of fuel by limiting the operation of small trucks. All trucks of less than 2-ton capacity may not be operated.

3,000 generator gas driven vehicles are permitted to operate. With the delivery of the requisite iron and metals, the production of generators should get underway.

19 August 1940: The motor fuel supply of Denmark is considered secure until November 1940. The conversion of liquid-fuel powered motor vehicles to generator gas operation continues at a steady pace.

15 August 1940: Germany is to deliver 2,500 tons of gasoline and 2,000 tons of coal oil to Denmark.

The Copenhagen Streetcar Company already has some generator-gas fueled buses in operation.

It is hoped that Denmark's gasoline supply may be stretched by mixture with fuel alcohol to be delivered from Germany.

15 October 1940: The gasoline situation in Denmark has become much worse. Deliveries from Germany are far behind schedule. The present monthly quota of about 5,700 tons is, according to the Danish Government, inadequate; they claim that it must be raised to at least 6,800 tons.

Coal oil deliveries from Germany also are behind schedule. This affects the population and fishing, rather than industry.

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The situation as regards other mineral oils is, as before, very critical, as there have been no shipments from Germany since April 1940. It has been a knotty problem to provide the industries considered for producing German orders with oil. There will be outbacks and, in some cases, shutdowns in production by plants working on German orders on this account, unless the supply situation is improved.

15 November 1940: Denmark's gasoline supply is again ensured for a while. Nonetheless, it has not been possible to permit the use of more liquid-fuel powered motor vehicles.

Inquiry made of the Danish authorities in Jylland as to the stocks showed that there have been considerable losses. For example, in the Thisted district, where there are 196 tanks, 88 were not in order; the loss was 60,521 liters. In the Hurup district, 59 tanks out of 96 were not in order; the loss was 43,618 liters. It is assumed that the losses are not due to any technical deficiency, but due to unauthorized withdrawals from the tanks.

On the basis of negotiations with the Reichswirtschaftsminister, the coal oil supply is considered secure until the end of 1940. 550 tons of oil-mixture were released for the filling of German armament orders placed with Danish firms. Conversion measures are being pushed, and it is expected that Burmeister and Wain, the largest oil consumer, will be able to effect a monthly saving of 100-150 tons from January 1941 on.

700 tons of oil-mixture for industry and 3,500 tons of gas oil for the fishing industry have been promised for the period up to the new year. 750 tons of gas oil per month from Danish stocks have been placed at the disposal of the fishing industry.

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About 6,000 generator gas powered trucks (burning wood) are currently in operation. The Danish government has granted permits for about 3,000 more. This should represent about the top limit, in view of the shortage of beech wood which is becoming perceptible. It had originally been planned to grant licenses for 3,000 peat generator gas powered vehicles, but this figure cannot be attained, as Danish peat is not suitable for that purpose. The use of natural gas for automotive power has progressed in northern Jylland.

15 December 1940: There is sufficient gasoline to cover the most urgent requirements.

In consequence of the conversion program, the liquid-fuel requirement to be satisfied by Germany should be smaller.

As a step in reducing the liquid fuel requirement, fishing cutters have been satisfactorily operated using generator gas as fuel. This is still in the experimental stages.

15 January 1941: The motor fuel requirement of the Danish industries engaged in German armament production will be 350 tons for the month of January, as compared to 400 tons for the previous month.

1,500 light trucks have been authorized to operate, 1,000 wood-generator-gas-powered and 500 electrically driven.

15 February 1941: Danish industries producing German armament orders are to be provided with a monthly allotment of 350 tons of liquid fuel provisionally until April 1941. This should cover the most urgent need.

Burmeister and Wain, the largest liquid fuel consumer, has cut down its consumption of these fuels by conversion to others. However, numerous quarries and gravel pits have received orders from the Germans, but because of the nature of their business, they have not yet undertaken conversion.

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About 8,000 generator-gas driven motor vehicles are currently in operation. Another 1,000 such vehicles are scheduled to be placed in operation. The 9,000 vehicles will require about 540,000 cubic meters of wood. There are not enough drying installations for the wood.

The shortage of steel cylinders for compressed gas limits the use of natural gas (methane) as an automotive fuel. The source of the gas is in the vicinity of Frederikshavn. The natural gas has been used successfully for several months as a bus fuel.

Carbide generators have come out on the Danish market. It is estimated that there is sufficient carbide for 1,500-1,600 generators.

Following is a survey of the liquid fuel supply of Denmark during January 1941:

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	Aviation gasoline (tons)	Automobile gasoline (tons)	Coal oil (tons)	Gas-oil and light heating oil (tons)	Heavy heating oil (tons)	Special gasoline (tons)	Test gasoline (tons)	Total (tons)
Stock as of 1 January 1941	1,351	11,541	7,899	7,230	828	316	261	29,426
Imports from Germany	- - -	4,097	2,917	1,434	-	-	-	8,448
Secured from elsewhere	- - -	6,688	- - -	853	-	-	-	7,541
Total	1,351	22,326	10,816	9,517	828	316	261	45,415
Consumed in Denmark	60	2,744	2,448	3,510	4	60	228	9,054
Correction	-	- - -	- - -	- - -	824	-	-	824
Total of Loss	60	2,744	2,448	3,510	828	60	228	9,878
Stock as of 31 Jan 1941	1,291	19,582	8,368	6,007	0	256	33	35,537
Stock as of 1 Oct 1940 for comparison purposes	1,556	10,201	8,122	12,787	1,540	112	262	34,580

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15 March 1941: There was no cause for serious complaint over the fuel situation.

Burmeister and Wain has converted an oil-fired Siemens-Martin furnace, used for heating chrome-molybdenum casting steel, to coal dust firing.

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23 February 1943: The German troops charged with the construction of fortifications along the west coast Denmark have requested 150,000 hectoliters = 13,000 cubic meters of generator wood. The German Army was not in a position to provide it, so they turned to the Armament Staff Denmark, which negotiated with the Danish government. Denmark's generator wood reserves were far too small to meet its own needs, but 10,000 hectoliters were obtained.

Generator wood from the Gulf of Riga was placed at the disposal of Organisation Todt.

5 March 1943: The Danish government is no longer in a position to provide generator wood for the operation of Danish trucks hired by the Organisation Todt and the Fortifications Engineering Staff. The Fortifications Engineering Staff requires about 15,000 cubic meters of generator wood for the work on fortifications on Jylland. Moreover, the Commander of the German troops in Denmark requires 5,000 cubic meters for rented preparedness trucks. 1,000-1,500 cubic meters from the Baltic will be provided for the operation of the trucks.

Source: GMDS Doc No W1/IE 1.24

3 April 1943: It has been very difficult to provide the trucks used on Jylland for fortification work with generator wood. The Danes cannot supply it, and cannot match the 20,000 cubic meters = 225,000 hectoliters provided by Germany. The Danish government did, however,

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provide 1,150 cubic meters = 13,000 hectoliters as a "tiding over" quantity of generator wood.

1,200 cubic meters = 14,000 hectoliters of generator wood will be shipped from the Gulf of Riga to Denmark.

The Danish government also provided 5,000 cubic meters = 60,000 hectoliters of generator wood for the 300 trucks rented by the Germans for preparedness purposes.

21 June 1943: The Danish government will provide 20,000 cubic meters = 225,000 hectoliters of generator wood monthly for a period of 6 months. The wood will power trucks used by the Organisation Todt and Special Construction Staff of the Air Force for fortification work on Jylland.

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30 October 1943: No difficulties in the fuel supply occurred. 1,680 liters of gasoline and 181,320 kilograms of diesel oil were requested, and after examination of the applications by the Armament Staff Denmark, 920 liters of gasoline and 178,320 kilograms of diesel oil were provided. The increased allocation of diesel oil is conditioned by the requests of the Hansa Program.

30 November 1943: No difficulties in the liquid fuel supply occurred. Of the 560 liters of gasoline and 234,240 kilograms of diesel oil requested, 520 liters of gasoline and 161,840 kilograms of diesel oil were allotted.

31 December 1943: No difficulties in the liquid fuel supply occurred. 2,400 liters of gasoline and 18,050 kilograms of diesel oil were requested and allotted.

The reason for the decrease in requests for diesel oil is that there was no allotment for the Hansa Program in November and that the firm Burmeister and Wain had already received its quarterly quota in October.

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23 February 1944: The situation with respect to generator wood is as follows:

The Danish government has declared itself temporarily prepared to provide the German troops with 60,000 hectoliters per month from its own stocks.

The 60,000 hectoliters currently offered by the Danish government contrasts with the following requests: Fortifications Engineering Staff 31 and the Organisation Todt, 70,000 hectoliters per month; Office of New Construction of the Air Force, 80,000 hectoliters per month; 30,000 hectoliters for the Armed Forces Commander of Denmark for mobilization supplies (the Danes have already provided 60,000 hectoliters for this). This means a total request for about 1,230,000 hectoliters for the months January - August. The total possible yield of the Danish forests is estimated at 8,000,000 hectoliters annually. However, the Danes have not pushed this production to a sufficiently high level. Added to this is the fact that the existing drying installations are far too inadequate to process such quantities in such a short time.

Furthermore, most of the smaller sawmills are not close to the main highways, which poses difficulties as regards transportation. Thus, the planned deliveries for January - late February.

A special office, besides the Organisation Todt, has been set up to arrange for the transport of generator wood.

Application for 200,000 hectoliters from Generatorkraft AG, Berlin, was turned down, and it may prove necessary to confiscate the needed quantity from Danish stocks, regardless of the effect it may have on the Danish economy.

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31 March 1944: The threatening generator wood supply reported on 23 February 1944 will be ameliorated somewhat by the 30,000 hectoliters from Germany for fortification work and the promised 50,000 hectoliters from Finland.

30 April 1944: 145 tons of diesel oil and 2,770 liters of gasoline were allocated; this included 130 tons of diesel oil for the Hansa Program.

The allocation of 500 tons of diesel oil and 3,000 liters of gasoline temporarily covers the most urgent requirement of the Hansa Program.

15 May 1944: Generator wood, as reported in previous months, is in short supply. The Danish government is delivering, as before, 50,000 hectoliters per month for fortification work on Jylland. In late April, the first carloads of the 30,000 hectoliters promised for fortification work arrived from Germany. Examination of the wood, however, showed it to be of poor quality and requiring further processing, which resulted in a 40-50% loss.

In March 1944, the automotive fuel situation was satisfactory.

31 May 1944: No difficulties in the supply of diesel oil and gasoline occurred in May.

122 tons of diesel oil and 1,400 liters of gasoline were allocated, including 20 tons of diesel oil for the Hansa Program.

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31 June 1944: In the month of June, 64,455 tons [sic] of diesel oil, 120 tons of diesel oil for the Hansa Program, and 191 liters of gasoline were allocated.

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15 August 1944: The monthly delivery of 50,000 hectoliters of generator gas by the Generatorkraft AG is no longer possible, as

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the wood supply from Eastern Europe has been jeopardized by the military developments there. Moreover, the requirements of the troops on the East front and in the Reich itself have increased, as their liquid fuel supply has been cut. Only the fuel requirement of the occupation troops in Denmark (30,000 hectoliters) will be covered by shipments from Germany. Thus, the shortage of 40,000 hectoliters reported on 15 July 1944 should be upped to 60,000 hectoliters. The cut in the allotment of liquid fuel has resulted in an increased use of wood generators to the tune of about 10,000 hectoliters, so the monthly shortage runs about 70,000 hectoliters. Savings through the addition of peat should amount to 20 percent of the total requirement, or 30,000 hectoliters. This, however, is contingent upon the availability of dry, usable generator peat.

Of the 48 tons of charcoal for the heating of generators requested, a maximum of 30 tons can be delivered. A special allotment of 10 tons from Danish stocks has been arranged, so the most urgent needs are nearly covered.

500 tons of generator coal-coke have been guaranteed for the operation of trucks in fortification work.

31 August 1944: In the month of August, 58 tons of diesel oil and 2,000 liters of gasoline were applied for, of which 23.7 tons of diesel oil and 350 liters of gasoline were allocated.

These cuts were unavoidable, as Denmark received no liquid fuel in July and August. Serious cutbacks in operation can still be avoided.

15 September 1944: The difficulties mentioned in the situation report of 15 August 1944 still obtain. The reported shortage of 7,000 m = 70,000 hectoliters of generator wood have not been

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promised, so the continuance of work on the ordered fortification construction is seriously threatened. It is exceedingly difficult to procure suitable generator peat in Denmark.

In the month of September, 74 tons of diesel oil and 1,390 liters of gasoline were applied for, of which 45 tons of diesel oil and 726 liters of gasoline were allocated.

There was no serious limitation of operations because of a liquid fuel shortage.

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15 September 1944: It is considered absolutely necessary that the monthly purchases of 60,000 hectoliters of generator wood continue, as the requirement of 130,000 hectoliters required for fortification construction cannot be covered by shipments from Germany.

The 30,000 hectoliter monthly requirement of the troops will be covered by the German Armed Forces shipments.

15 October 1944: As in previous months, 60,000 rm of generator tank wood were delivered in September from Danish stocks. The transport of this wood to Fyn and Jylland, which formerly was by boat, must now be by rail, as there is a shortage of diesel oil for the ships. The procurement of the requisite 200 railroad cars for this is very difficult because of the tight transportation situation. There is a monthly shortage of 3,000 liters of diesel oil for ship transport.

A shipment of 10,000 rm of generator tank wood per month is coming from Germany for the troops and for fortification work. Of this 10,000 rm, the troops require 4,500 and the Organisation Todt gets 5,500 rm, which besides the monthly 6,000 rm from Danish stocks, amount to 11,500 rm for fortification work. 13,000 rm are needed, however, and the difference is made up by purchases.

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25 November 1944: The generator wood situation is getting tighter from month to month, as the deliveries from the East and from Finland have ceased. As before, the Danish government is providing only 60,000 hectoliters per month. 100,000 hectoliters per month are coming from Germany, 45,000 hectoliters of this being required by the Armed Forces. With a total requirement of 130,000 hectoliters for fortification construction, there is a shortage of 15,000 hectoliters which must be obtained by purchase.

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