

NUMBER EACH MEMO OR REPLY IN LEFT BORDER. DRAW LINE UNDER EACH AND INITIAL IN RIGHT BORDER.
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No.	TO	FROM	DATE	SUBJECT: Request for Grade 100/150 1.5 T Aviation Fuel for Eighth Air Force Fighter Units on Continent. Enter File Classification AG: 463.7 V/WGT/FM
1	CG ASC USSTAF	D/Supply	5 Feb 45	<p>1. The Eighth Air Force has initiated an inquiry as to whether Aviation Fuel Grade 100/150 can be made available for Eighth Air Force Fighter Groups operating from Continent. (Copy of General Doolittle's cable attached).</p> <p>2. The question of supply of Grade 100/150 fuel on the Continent was considered previously when the Ninth Air Force wanted this fuel. It was then decided that Grade 100/150 fuel would not be supplied to U.S. Air Forces on the Continent either <u>in part</u> or whole. (See copy of cable UAX-50662, 17 November 1944, attached hereto)</p> <p>3. General Doolittle's initial request is for only 800,000 gallons per month of Grade 100/150 1.5 T Fuel for a probable three month period. With present stock production U.K. refineries and with present barrel and jerrican availability in U.K. this initial demand could be met. This involves the loading and shipment to the Continent, against allocated Air Force tonnage of 18,000 tons per month of approximately 20,000 drums per month or 3,280 odd tons per month.</p> <p>4. It likewise appears that at some future indefinite date that from two to four additional groups of Eighth Air Force Fighters might be moved to the Continent. This would augment the demand for Grade 100/150 1.5 T fuel at the rate of 400,000 gallons or 10,000 drums or 1,640 tons per group per month. This is a very indefinite factor, however, but should be considered as well as the possibility that the Eighth may want to move more than four additional groups to the Continent. Any increase over the initial Eighth Air Force demand of 800,000 gallons per month will require consideration in each instance since the availability of containers is limited and supply in bulk may not be practicable, especially if the air strips are widely dispersed and unsuitably located.</p> <p>5. As stated in paragraph 3 above, the initial demands can well be met yet from a foresighted supply standpoint, especially with any rapid forward push beyond the Rhine with subsequent moves of air strips into German territory, the same reasons which prompted the original decision not to introduce Grade 100/150 on the Continent still exist, augmented by a few others. These reasons are:</p> <p>a. With the appearance of Grade 100/150 1.5 T fuel on Eighth Air Force Strips adjacent to Ninth Air Force Fighter Strips, the immediate reaction of General Vandenburg's people would be, "If you can do it for one, you can do it for all. We want it too". This could not be done as production of 100/150 1.5 T fuel is not sufficient to supply fully both Eighth Air Force and Ninth Air Force demands. U.S. production of essentials for 150 fuel have ceased as a result of the previous decision of Ninth Air Force not to use this type fuel. A demand from the Ninth Air Force would probably be followed by a like demand from the First Tactical Air Force (Prov).</p>

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b. The bulk aviation gasoline program on the Continent was built on the premise of one grade aviation fuel. From port, through the pipe line system, in rear and forward bulk plants, at storage facilities on air strips, there is a one-product system established.

c. Even though Ninth Air Force and First Tactical Air Force (Prov.) demands for 150 fuel would be for their fighters only it would represent about 45% of their demand and consumption. This would mean complete replacement of approximately 45% of the present aviation fuel stock pile on the Continent today. At the present time we have approximately 35,000,000 gallons of aviation grade 100/130 overall on the Continent. A replacement of 45% of this would mean a dual distribution system to replace and supply 15,750,000 gallons for Ninth Air Force and First Tactical Air Force (Prov.) alone.

d. Additional tank truck units would doubtless be needed to insure proper segregation of the two type fuels.

6. Maintenance factors involved as furnished by the Director of Maintenance are as follows:

a. The preliminary work for the use of grade 100/150 fuel in the U.K. began in May 1944. Many experimental tests had been run in the U.S. and this theater was advised of the following:

(1) A reduction of service life of engines can be expected, however, the reduction does not make the use of grade 150 fuel prohibitive.

(2) Maintenance problems are increased but are not prohibitive.

(a) Deterioration of rubber gaskets and seals.

(b) Increased spark plugs leading (this is being partially corrected at the present time by using additional ethylene dibromide. Additional ethylene dibromide increases piston, piston ring and cylinder wall corrosion).

(3) Incorporation of modification parts permit use of grade 150 fuel in high powers.

(4) Increased performance is indicated with all affected airplanes, most notably with the P-51.

b. Eighth Air Force decided to use 100/150 fuel in their fighters even though it was realized some maintenance difficulties would be encountered. However, it was felt the advantages outweighed the disadvantages. By using this fuel the fighters speed increased approximately from five to fifteen miles per hour. (The speed increase varies with different types of aircraft). The following power operating limits show some of the gains when using grade 150 fuel:

Must remain with attached papers

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NO.	TO	FROM	DATE	SUBJECT: Request for Grade 100/150 1.5 T Aviation Fuel for Eighth Air Force Fighter Units on Continent Enter File Classification AG: (Con't)
				<p>(1) <u>P-47 Aircraft - Grade 100/130 Fu</u></p> <p>Without Water Injection 52" MAP With Water Injection 58" MAP Using PPF Kit and #18 Water Je With Water Injection 61" MAP.</p> <p style="text-align: right;"><u>Grade 100/150 Fu</u></p> <p>Without Water Injection 62" MAP Takeoff. War Emergency Without Water In- jection 62" MAP. War Emergency with Water Injecti 67" MAP.</p> <p>(2) <u>P-51 Aircraft - Grade 100/130 Fu</u></p> <p>Take-off power 61" MAP. War Emergency 67" MAP.</p> <p style="text-align: right;"><u>Grade 100/150 Fu</u></p> <p>Take-off power 61" MAP/ War Emergency 72" MAP.</p> <p>g. All of the replacement fighter aircraft being processed by Base Air Depot Area for Eighth Air Force, are being equipped with all necessary modification for use of grade 150 fuel. During the month of January, the modification of F-6 Aircraft for use of 150 fuel was discontinued in the Base Air Depot Area because some of these aircraft were being received by the Ninth Air Force and these aircraft had to be remodified by Ninth Air Force prior to putting them into service with grade 100/130 fuel here on the Continent.</p> <p>7. The above disadvantages far outweigh the only advantage which Grade 100/150 fuel offers, namely an increase of ten to fifteen miles per hour in speed and climb. It does not appear that our fighters are in dire need of this advantage against German propellor driven fighters. As against German jet fighters, Grade 150 does not begin to offer enough increase in speed or climb to make appreciable difference. Hence, it appears that the existing policy on the Continent of not supplying Grade 100/150 either in part or whole should stand.</p> <p>8. SHAFF has also evidenced interest in the request from General Doclittle by pointing out orally to this Division that the U.S. Air Forces on the Continent are presently using 100/130 Grade aviation fuel an</p>

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				<p>that the RAF on the Continent are using 100/150 fuel with one (1) Theory of Etheline Dibromide and that should the Eighth Air Force's request be granted, it would mean the advent of still a third grade of aviation fuel through continental ports of entry, namely, 100/150 with 1.5 T Etheline Dibromide. SHAEF indicates that before a final affirmative answer be given that their overall planning supply staff be permitted to interject a word as to availability and usage of cross-channel tonnage and shipping space.</p> <p>9. In view of the various factors listed herein and the long range possibilities involved, it is requested that a command decision be rendered and direction given to this Division as to the supply course to be followed in the matter.</p> <p>(Sgd) ? Colde J. H. HOUGHTON, Brigadier General, USA, Director of Supply.</p> <p>3 Incls: Incl 1 - TWX fr Eighth AF, D-66015 dtd 27 Jan 45. Incl 2 - TWX fr USSTAF to SHAEF Air (Main), UAX-50662, 17 Nov 44. Incl 3 - TWX fr SHAEF (Main) Air to Hq Com Z, A/POL/2 dtd 18 Nov 44.</p>
2	DC/Ops	CG, ASC	5 Feb 45	<p>It is recommended that this request be not favorably considered. This action approved by Gen. Knerr.</p> <p>(Sgd) C.P. Kane C. P. KANE Brigadier General, USA, Commanding.</p>
3	D/Supply thru DC/Ops	D/Ops	5 Feb 45	<p>Concur in comment 2.</p> <p>(Sgd) ARM ALFRED R. MAXWELL, Colonel, Air Corps, Director of Operations.</p>