

Subject: GAF Aviation Gasoline Supplies

1. It has been directed that this office prepare estimates of stocks, production and consumption of aviation gasoline in Germany. It has further been directed that these figures be related to the consumption of aviation gasoline per one hundred GAF single engine fighter sorties.

2. In answer to a similar directive this office prepared a memorandum under date of 12 September 1944 stating that it is not possible to make any precise tentative estimate of the GAF gasoline position, the reason being that such an estimate would require a great many basic assumptions each of which would involve so large a margin of error that the final results would be meaningless. This view is still held.

3. In an effort to present the problems more clearly there are set forth below a series of assumptions which lead to an answer. This answer should under no circumstances be regarded as an estimate; it is perhaps a reasonable hypothesis which contains so many loopholes that it is of no value. An infinite number of calculations could be made on different basic assumptions.

4. Stocks - Information on the GAF aviation gasoline stock situation is completely lacking except in the form of evidences of shortage. It is assumed for the purposes of these calculations that stocks are adequate to maintain the distribution system, and that GAF supplies will exactly equal production.

5. The calculations set forth below are based on the following assumptions:

a. Production of the German oil installations will be held to approximately the figure estimated for October.

b. Fifty percent of the production of the Bergius Hydrogenation Plants is aviation gasoline. This places the production of aviation gasoline on a high priority basis and very likely may assume a denial to the ground forces which is not justifiable.

c. Additions of aviation gasoline from other sources such as the natural oil refineries are taken at an arbitrary figure likewise on a high priority basis for aviation gasoline.

d. The total of aviation gasoline available amounts to 50% of total gasoline production.

e. Use of aviation gasoline for combat sorties is taken at 25% of total available, the remainder going into transport flights, training, ferrying, experimental, engine tests, etc. It is felt that it is entirely unrealistic to assume that combat sorties will consume more than 25% of supplies; even on this basis, at the current low rate of consumption, transport and training are assumed to be cut further than is justified if the German plans contemplate the maintenance of an air force in being.

f. It is assumed that the average sortie will consume 0.5 tons of gasoline per sortie. This compares with 0.3 tons per sortie for single engine fighters and compares with 0.8 tons per sortie estimated for the full year 1943. It is felt that this basis makes sufficient allowance for the increased use of single engine fighters at the expense of bombers.

6. Calculations on this basis are as follows:

	Metric Tons per Month
<u>Total Bergius Synthetic Plant production</u>	60,000
Aviation Gasoline at 50%	30,000
Additions from other sources	20,000
<u>Total aviation gasoline</u>	<u>50,000</u>
25% for combat sorties	12,500
Sorties - at 0.5 tons per sortie	25,000
Sorties per day -- all fronts	800 +

Conclusion - Subject to the qualifications outlined above the GAF can fly slightly more than 800 sorties per day, of which 70% would be single engine fighter sorties.