

# Fuel Spending

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## 越冬期間中の燃料関係報告

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### 要 旨

第3次越冬は空輸によったため、越冬開始に当り226本の発電機用軽油の消費規正を行い、予備46本とし、年間使用量を180本と決め、各部門の電力使用量、時間等を規正して1日当り使用量を夏85 l、春秋95 l、冬110 lと決めたが、隊

員の協力により夏平均76.5 l、冬平均83.1 l、年平均80.7 l、年間使用量157本の実績であった。

雪上車用ガソリンの低温対策としては旅行出発前に全燃料中に含まれる氷晶を厚手ナイロン地でフィルトし、飛雪の混入を防止して解決した。ソ連ガソリンに比較して日本製ガソリンには氷晶の混入がはるかに多い。

Kind of fuel	Total amounts at Jan. 1959.	amounts spent in a year
Low temp. gasoline for Antarctic expeditions	2,785 L	2,785 L
Regular gasoline	600 L	700 L
No. 2 aviation gasoline	190 L	190 L
CCCP aviation gasoline	200 L	200 L
Mixed fuel for 2 cycle Gasoline engine	825 L	420 L
Mixed fuel for pioneer Gas oil	495 L 45,200 L (226 C)	90 L 31,400 L (157 C)
Dusty gas oil for furnace	800 L	
Engine oil	1,400 L	800 L
Gear oil	80 L	40 L
Brake oil	4 L	1 L
Torque convertor oil	20 L	20 L
Grease*	120 L	35 L
Anti freese oil	300 L	65 L
Kerosine	2,004 L	594.4 L

\* Remaining 85 L of grease for the Antarctic transported by the first party are found to separate and cannot be used.

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### 1. The regulation of gas oil spending

We scheduled to use gas oil for the electric generator 180 cans (36,000 litres) in a year, reserving 46 cans for next years and emergency, and 85 L a day in summer, 95 L in spring and autumn and 110 L in winter. In practice, the spending amounts to 157 cans in a year and in average 76.5 L a day in summer, 83.1 L in winter and 80.7 L a day throughout a year by the cooperation of the members of our party.

### 2. Counterplans for failures at low temperatures

(especially to the gasoline for snow cars)

Main reason for the failures of the engine at low temperature is that the fuel system is blocked on account of ice crystals into which water in the fuel freezes. As counter plans for it, we adopted following methods with great success;

1) Before the trip all the fuel used should be filtered by filters made of thick nylon cloth.

2) A tap of the petrol tank should be arranged in a car lest drift snow should merge into the fuel when it is supplied into the tank.

Used for ?	Remaining at 18, Jan. 1960	Remarks
for trips; 3,164 L for workings; 201 L	0 L	
Harman Nelson heater	20 L 190 L	
1KVA, 450W, 350W engine drive electric generator for field for cleaner	0 L 405 L (9 cans)	45 L can
Generator	405 L (9 cans)	45 L can
Webast heater	13,200 L (66 cans)	Loss; 3 cans, Water mixed; 2 cans, Dusty; 1 can.
for cleaner		
loss		
Furnace	2,672 L	
	800 L 600 L (3 cans)	
	40 L	
	3 L	
	20 L	
	(85 L) 0 L	see this
	235 L	
for cooking at base	400 L	
for cooking at trips	194.4 L	
	1,409.6 L	

3) Then the fuel should be again filtered.

4) The fuel should be supplied directly from a drum can by a pump.

5) The petrol tank should always be kept full if possible.

### 3. In general

By use of regular gasoline a little worse starting of engine and a little increase of fuel spending were found as compared to gasoline specially made for the Antarctic party, and it was found that regular gasoline would do for the almost all purposes. Ice crystals were found in the drum can immediately after the opening, but not in that made in U.S.S.R and this point should be reflected upon.