therefore, that in order to load the plane
with a person on the front seat, the rear
seat will also have to be occupied. The
second and third line of your calculation
will be as follows:
    Pilot   170 lbs.   36   6120.00
    Passenger 170 "   9   1530.00
The fuel tank is located on an arm of -18.
When the maximum amount of fuel is carried
(12 gals), the moment moving the CG for-
ward will be the greatest. The fourth line
of your calculation will be:
    Fuel (max) 12 gals. 72   -18   -1296.00
Oil must be included, because regardless
whether the moment of the oil moves the
CG forward or aft, the engine must have oil.
The fifth and last line of your calcula-
tion will be:
    Oil (1 gal.)   7.5   -29   -217.5
Grouping the lines together and adding
the column of weights and the column of
moments we have the following:

	Wt. (lbs.)	Arm (in.)	Moment (in.lbs.)
AEW	650.0	16	10400.0
Pilot	170.0	36	6120.0
Passenger	170.0	9	1530.0
Fuel (max) 12 gals	72.0	-18	- 1296.0
Oil 1 gal.	7.5	-29	- 217.5
	1069.5		16536.5

    To find the CG Forward Extreme we
divide the moment by the weight:
      $16536.5 \div 1069.5 = 15.46$
The CG Forward Extreme is 15.46, which
is within the limits a ccording to the
specifications.

PROBLEM:
    Find Forward CG Extreme of a Piper
J3 L-65 which has an empty weight of
667 lbs. and an empty CG 16.58.
Pertinent aircraft specifications are:
  CG Range   10.6 to 22.7
  Standard weight   1100 lbs.
  No. of seats 2 (one $\neq$ 9, one $\neq$ 36)
  Fuel capacity 12 gals. (-18½)
  Oil 5 Qts. (-39)

                Ans. 15.66