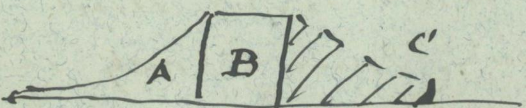
2

apply it but calculates the
~~[illegible]~~ efficiency of a
[illegible] engine by
a totally different rule.
Let me show you graphically
what I mean.



In any steam engine A
is the work done in the
Boiler in raising the temperature
of the feed to boiling point, the
part marked B is done in
the cylinder during the time
the steam port is open. It is
also done in the boiler. The
part marked C is done during
expansion in the cylinder, and
is the only part to which the
$\frac{T-t}{T}$ rule can be applied.
Of course you won't agree
to this, but I can't help that.

As I have answered your letter paragraph by paragraph I return it that you may see to what I am replying

19/58

Oct 18/89

My dear Sir

(1st) I am not changing
the meaning of a word.
I only say that there are
two standards of efficiency
One the scientific, the other
the commercial.
(2) I never said that it
had.
(3rd) I never said that
the efficiency of a steam
fire engine is zero, I did
say that by the $\frac{T-t}{T}$ rule
it is zero, and that
therefore it is absurd to
apply that rule to it. I
note that Ewing does not

The steam jet engine has no expansion, and consequently the fall in temperature by a sharp line does not represent work.

4° You are quite right, and I have already said that something must be added for the full pressure part of the stroke, which you in a former letter said was not right.

(5) I do not see what algebraic formula want more than that given by Ewing or Clausius.

Now let me put a question to you.

Remembering by the indicated horse power the work done by the steam in the low pressure cylinder of the motor is exactly one half the total power expended in it.

How do you apply the $\frac{T-t}{T}$ rule to this cylinder?

Regarded from the Clausius standard, the efficy is just twice the commercial efficy.

My standard of efficy is the total work done by the fluid. Yours is only a part of that work. Neither Carnot nor any other authority ever took indicated horse power into consideration, why the very difference between the net and the total is one of the reasons why the efficy of a real engine is less than that of a perfect engine.

Yours
Bramwell

Desmond FitzGerald

19/58