

Chapter 2 Question #2

An airplane engine is 30% efficient meaning that 30% of the fuel energy goes to produce useful work (thrust x distance). The remaining 70% of the energy ends up as waste heat in the engine exhaust.

Since energy is supposed to be conserved, where does the energy that goes to produce useful work go?

- 1) Energy is not always conserved**
- 2) Acoustic energy**
- 3) Light**
- 4) Waste heat in the atmosphere**
- 5) Waste heat in the airplane**

Chapter 2 Question 2 Answer:

(4) Waste heat in the atmosphere

All of the energy ends up as waste heat transferred to the atmosphere. It can be divided into two parts: a) that which is contained in the engine exhaust, b) that which goes into the thin layer of the air all around the airplane. The latter part is equal to the drag times the distance flown.

Class Response (2002):

Question 3 : Question 3

