



GREENWOOD MILITARY AVIATION MUSEUM



Flight Education Reference Manual

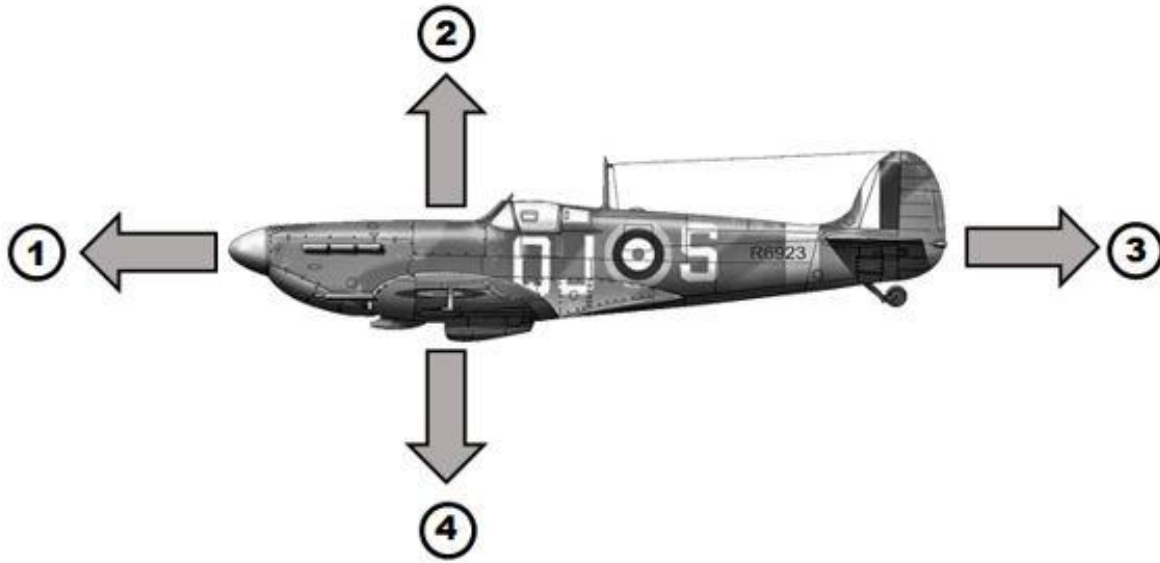
**ANSWER TO QUIZ
THE FORCES OF FLIGHT**

**GMAM FltEd Program
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**Rev 1.1
11 Jan 2022**

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(Forces of Flight)



1. Using the illustration above, print the name for one the four (4) forces of flight next to each number.

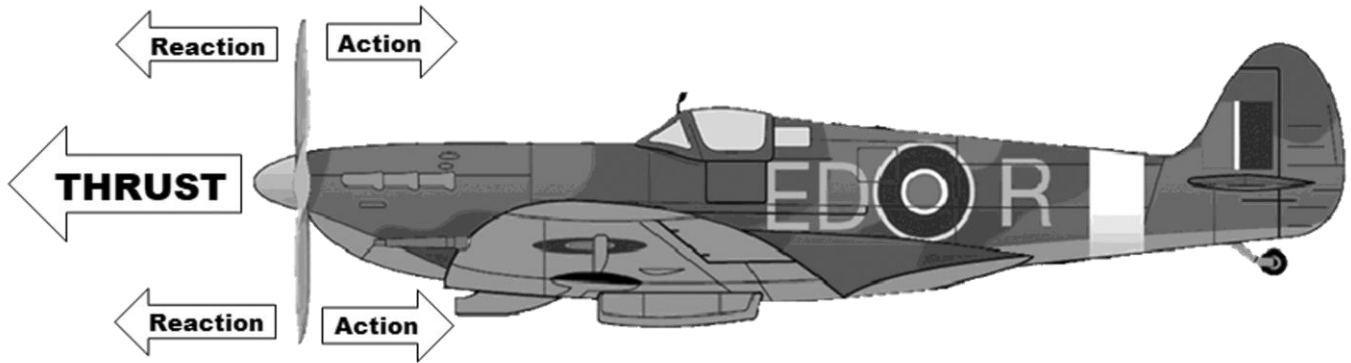
- | | |
|------------------|-----------------------------|
| 1. <u>Thrust</u> | 2. <u>Lift</u> |
| 3. <u>Drag</u> | 4. <u>Weight or Gravity</u> |

For the following questions, use the name(s) of the four (4) “Forces of Flight” to fill in the blanks.

- For an airplane to take-off and fly, it needs to increase Thrust so that the wing can produce Lift as air flows over the curved top surface.
- When an airplane climbs (goes higher) Lift becomes the stronger of the four (4) forces of flight.
- When an airplane is descending (coming down) to land, both Drag and Gravity become stronger than Lift and Thrust.
- Lowering the airplane’s wheels will increase Drag.
- When the pilot lowers the flaps, it will create even more Drag while providing a little more Lift.
- If an airplane loses engine power (engine quits) Weight can become the source for Thrust to keep air flowing over the wings to produce Lift as the airplane descends safely (glides) back to earth.

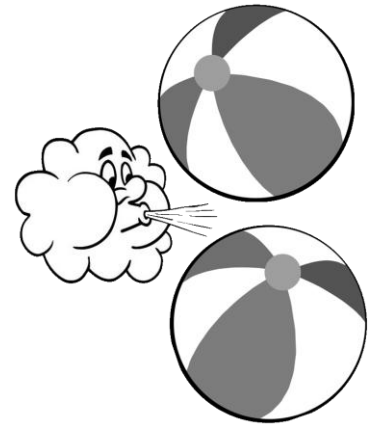
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(Basic Aerodynamics)



For the following statements, choose the correct answer from the box below and enter it in the space provided.

- The “*Third Law of Motion*” is that “*for every action, there is an equal and opposite reaction*”. This was discovered by Sir Isaac Newton
- When air blows between two (2) beach-balls, they will move toward each other instead of flying away from each other. This principle was discovered by some guy named Bernoulli



Choose the correct answers to fit in the blanks above: *Donald Trump, Justin Bieber, Sir Isaac Newton, Elvis Presley, Isadore Weinstein, Will Smith, John Wayne, Mr. Bernoulli*

True or False: For the following statements, place a “T” (if true) or an “F” (if false) in the blank space.

- All airplanes can glide but some glide much better than others. T
- The distance that an airplane can glide is known as a “Glide Ratio” T
- At top speed, it would take the CF-18 jet fighter 15 minutes to fly from Greenwood to Halifax F
- A speed of “Mach 1.8” is nearly three (3) times faster than the speed of sound. F
- The first powered airplane was built and flown by the Smith brothers in the year 1909. F
- The pilot of the first powered airplane did not have a seat to sit in. T
- The “Argus” aircraft set a record by staying in the air for almost a day and a half. T
- Airplane designers are always looking for ways to increase “thrust” and reduce “drag”. T