SIDESLIP V. ZERO-SIDE SLIP
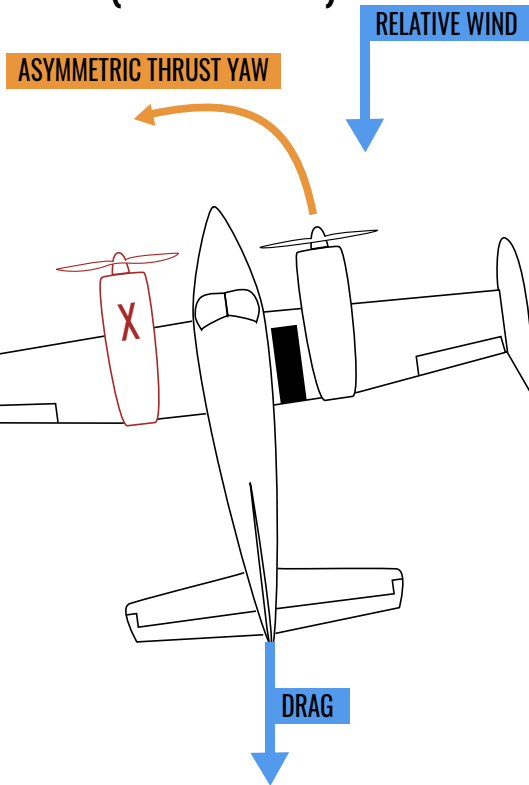
ENGINE FAILURE (MOST DRAG)

RELATIVE WIND

ASYMMETRIC THRUST YAW
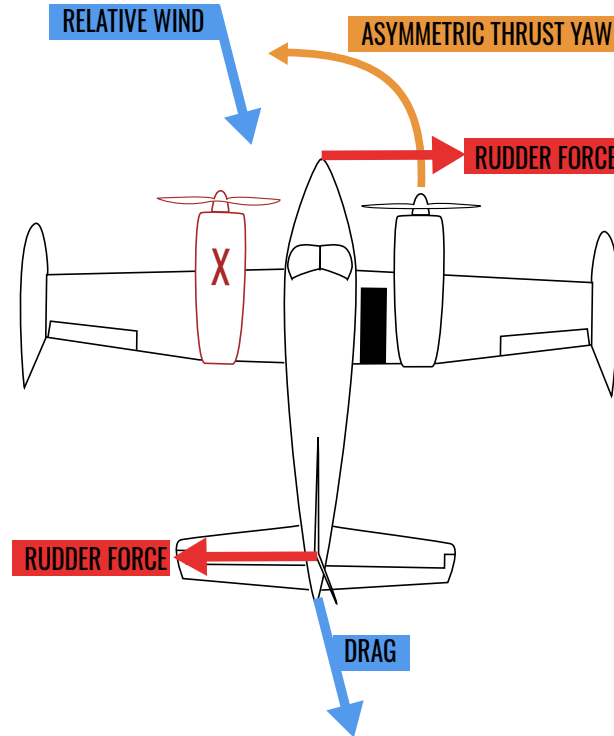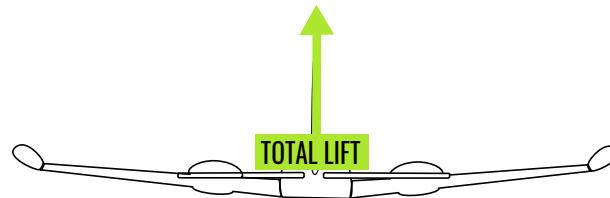
X

DRAG

ENGINE FAILS, CAUSING A YAWING AND ROLLING FORCE TOWARDS THE DEAD ENGINE. THIS CREATES A SIDESLIP TOWARDS THE OPERATING ENGINE

TOTAL LIFT
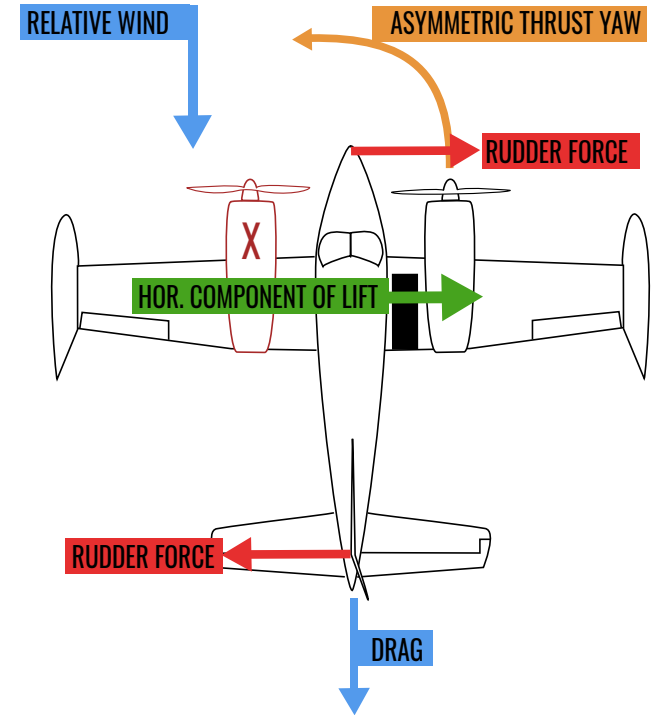
SIDESLIP (LESS DRAG)

RELATIVE WIND

ASYMMETRIC THRUST YAW

RUDDER FORCE

X

RUDDER FORCE
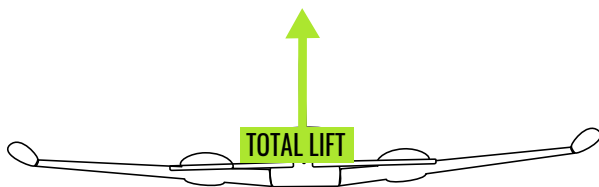
DRAG

IF A PILOT MAINTAINS HEADING STRICTLY WITH THE RUDDER, IT CREATES A SIDESLIP TOWARDS THE DEAD ENGINE

TOTAL LIFT

ZERO-SIDESLIP (LEAST DRAG)

RELATIVE WIND

ASYMMETRIC THRUST YAW

RUDDER FORCE

X

HOR. COMPONENT OF LIFT

RUDDER FORCE

DRAG

TO MINIMIZE DRAG CAUSED BY A SIDESLIP, THE PILOT WILL BANK INTO THE OPERATING ENGINE 2°-5°. THE HORIZONTAL COMPONENT OF LIFT WILL COUNTERACT THE ROLLING MOTION AND CREATE A ZERO SIDESLIP CONDITION

TOTAL LIFT

HOR. COMPONENT OF LIFT

FLIGHT APPRENTICE