



The Hangar Saboteur

Grade 5 math · Addition, Fractions of a number, Order of operations, Multiplication, Division · Reading level grades 5-6

Detective: _____ **Date:** _____

The historical airfield is in a panic! Someone has stolen the supercharger blueprints for the famous B-17 Flying Fortress, 'The Lucky Lass', just hours before the big airshow. Follow the clues, solve the math, and identify the sneaky crew member who took them!

1. Solve each math problem. The answer is a number, and the letter beside it is what that number stands for.
2. In the clue boxes, write that letter in every box showing the same number, then read the secret clue.
3. Use each clue to cross suspects off the list. The one suspect left at the end is the culprit!

My answer: the saboteur is _____

Possible suspects

Cross off a row as each clue rules it out. The one left at the end is the culprit.

NAME	FLIGHT ROLE	FLIGHT GEAR	WRITING HAND	CAP EMBLEM	RATION SNACK
Eddie Rickenbacker	Bombardier	Flight Goggles	Right Handed	Silver Star	Peanut Butter Bar
James Doolittle	Co Pilot	Aviator Shades	Left Handed	Gold Propeller	Salted Pretzels
Chuck Yeager	Crew Chief	Leather Jacket	Left Handed	Gold Propeller	Peanut Butter Bar
Richard Bong	Crew Chief	Leather Jacket	Right Handed	Gold Propeller	Salted Pretzels
Harriet Quimby	Command Pilot	Sheepskin Vest	Left Handed	Silver Star	Peanut Butter Bar
Paul Tibbets	Bombardier	Aviator Shades	Right Handed	Gold Propeller	Peanut Butter Bar
Charles Lindbergh	Bombardier	Sheepskin Vest	Left Handed	Silver Star	Cherry Licorice
Benjamin Davis	Lead Navigator	Aviator Shades	Left Handed	Gold Propeller	Peanut Butter Bar
John Glenn	Co Pilot	Flight Goggles	Left Handed	Gold Propeller	Peanut Butter Bar
Alan Shepard	Lead Navigator	Khaki Cap	Right Handed	Silver Star	Salted Pretzels
Billy Mitchell	Crew Chief	Khaki Cap	Right Handed	Bronze Wings	Peanut Butter Bar
Gabby Gabreski	Co Pilot	Leather Jacket	Right Handed	Gold Propeller	Cherry Licorice
Neil Armstrong	Crew Chief	Khaki Cap	Right Handed	Bronze Wings	Salted Pretzels
Joe Foss	Bombardier	Khaki Cap	Left Handed	Gold Propeller	Cherry Licorice
Amelia Earhart	Crew Chief	Flight Goggles	Left Handed	Bronze Wings	Cherry Licorice
Bessie Coleman	Crew Chief	Khaki Cap	Left Handed	Gold Propeller	Peanut Butter Bar
Daniel James	Lead Navigator	Leather Jacket	Left Handed	Silver Star	Cherry Licorice
David McCampbell	Crew Chief	Flight Goggles	Right Handed	Bronze Wings	Cherry Licorice
Robert Morgan	Co Pilot	Aviator Shades	Left Handed	Bronze Wings	Peanut Butter Bar
Jacqueline Cochran	Bombardier	Aviator Shades	Left Handed	Gold Propeller	Peanut Butter Bar
Tex Hill	Bombardier	Sheepskin Vest	Right Handed	Bronze Wings	Salted Pretzels

CLUE 1 Addition

The hangar crew is counting the total number of spare metal rivets delivered this morning. Add up the shipments to find the first clue about the runaway B17 saboteur.

Solve each problem, then write its letter in every clue box that shows the same number.

T																	T
8429	6088	7115	7213	8712	6668	6668	5374	8712	5820	9899	9292	7115	3261	5820	9292	8429	

4001	7115	5374	4345	4325	6668	8712	7939	6088	8429	7939	9292	7939	7939	6668	7115	3261

$2805 + 5624 = \square \rightarrow \text{T}$	$3430 + 1944 = \square \rightarrow \text{A}$	$1078 + 2183 = \square \rightarrow \text{S}$
$2955 + 3133 = \square \rightarrow \text{H}$	$1811 + 4009 = \square \rightarrow \text{N}$	$2435 + 1566 = \square \rightarrow \text{W}$
$4509 + 5390 = \square \rightarrow \text{D}$	$4501 + 2167 = \square \rightarrow \text{L}$	$4830 + 2285 = \square \rightarrow \text{E}$
$5673 + 3619 = \square \rightarrow \text{O}$	$2186 + 2159 = \square \rightarrow \text{R}$	$4890 + 3049 = \square \rightarrow \text{G}$
$2814 + 1511 = \square \rightarrow \text{F}$	$4369 + 2844 = \square \rightarrow \text{V}$	$5210 + 3502 = \square \rightarrow \text{I}$

Scratch space:

Fractions of a number

The flight engineer must calculate how many gallons of aviation fuel remain in the backup tanks. Find this fraction of the total fuel supply to reveal the next clue.

Solve each problem, then write its letter in every clue box that shows the same number.

5 27 36 8 19 8 18 36 12 5 9 38 16 5 36 8

5 27 36 16 38 37 36 14 5 27 24 22 3

5/6 of 6 = → **T**

$$\frac{1}{8} \text{ of } 152 = \boxed{} \rightarrow \boxed{\text{U}}$$

$4/8$ of $6 = \boxed{} \rightarrow \mathbf{D}$

9/10 of 10 = → **W**

$\frac{1}{3}$ of 72 = $\rightarrow$ **A**

$$3/6 \text{ of } 76 = \boxed{} \rightarrow \boxed{\text{R}}$$

$$\frac{3}{8} \text{ of } 72 = \boxed{} \rightarrow \boxed{\text{H}}$$

4/10 of 90 = → **E**

$$\frac{1}{4} \text{ of } 88 = \boxed{} \rightarrow \boxed{\text{N}}$$

8/10 of 10 = → **S**

5/10 of 28 = → **F**

6/10 of 20 = → **C**

$$\frac{1}{4} \text{ of } 148 = \boxed{} \rightarrow \boxed{\text{L}}$$

$1/8$ of 128 = $\rightarrow$

$$1/2 \text{ of } 36 = \boxed{} \rightarrow \boxed{\text{P}}$$

Scratch space:

CLUE 3
Order of operations

The navigator is calibrating the heavy bomber's altitude instruments using a multi-step flight equation. Solve the steps in the correct order to uncover a new detail.

Solve each problem, then write its letter in every clue box that shows the same number.

P															
80	70	7	10	59	14	8	59	14	14	70	39	8	7	39	
			P	P											
12	39	7	80	80	70	39	43	12	70	39	70	27	70	6	14
8	70	42	72	10	31										

$9 \times 11 - 19 = \square \rightarrow \text{P}$

$55 + 3 \times 5 = \square \rightarrow \text{E}$

$6 \times 9 - 27 = \square \rightarrow \text{L}$

$16 + 8 \times 7 = \square \rightarrow \text{I}$

$7 \times 8 - 14 = \square \rightarrow \text{H}$

$11 \times 3 - 2 = \square \rightarrow \text{D}$

$6 \times 6 - 26 = \square \rightarrow \text{N}$

$7 \times 4 - 20 = \square \rightarrow \text{B}$

$4 + 5 \times 2 = \square \rightarrow \text{T}$

$10 + 7 \times 7 = \square \rightarrow \text{U}$

$25 + 2 \times 7 = \square \rightarrow \text{R}$

$4 \times 2 - 2 = \square \rightarrow \text{F}$

$31 + 3 \times 4 = \square \rightarrow \text{S}$

$1 + 3 \times 2 = \square \rightarrow \text{A}$

$4 + 2 \times 4 = \square \rightarrow \text{W}$

Scratch space:

CLUE 4
Multiplication facts (1-12)

The maintenance team is checking rows of spare oxygen masks packed into the wooden storage crates. Multiply the rows by the masks per row to unlock another clue.

Solve each problem, then write its letter in every clue box that shows the same number.

A																	
11	50	27	77	18	49	108	27	49	20	77	77	20	108	49	28	2	
	A																
72	11	120	54	27	44	2	18	27	2	10	132	20	72	28	2	50	

$11 \times 1 = \square \rightarrow$ A	$7 \times 7 = \square \rightarrow$ P	$5 \times 10 = \square \rightarrow$ G
$4 \times 11 = \square \rightarrow$ U	$4 \times 5 = \square \rightarrow$ E	$7 \times 11 = \square \rightarrow$ L
$1 \times 10 = \square \rightarrow$ T	$9 \times 3 = \square \rightarrow$ O	$9 \times 6 = \square \rightarrow$ F
$10 \times 12 = \square \rightarrow$ S	$4 \times 7 = \square \rightarrow$ I	$11 \times 12 = \square \rightarrow$ H
$9 \times 12 = \square \rightarrow$ R	$1 \times 2 = \square \rightarrow$ N	$9 \times 2 = \square \rightarrow$ D
$6 \times 12 = \square \rightarrow$ W		

Scratch space:

CLUE 5**Division facts (1-12) - the last clue**

The ground crew needs to divide the emergency rations evenly among the active bomber squadrons. Split the ration boxes up to discover the final clue about our suspect.

First solve each problem. Then find each answer in the numbered list below and cross that sentence out. One sentence will be left - that is exactly what the villain did!

Step 1 - solve these:

$42 \div 7 = \boxed{}$

$72 \div 9 = \boxed{}$

$2 \div 1 = \boxed{}$

$24 \div 6 = \boxed{}$

$1 \div 1 = \boxed{}$

$81 \div 9 = \boxed{}$

$50 \div 10 = \boxed{}$

$63 \div 9 = \boxed{}$

$120 \div 10 = \boxed{}$

$66 \div 6 = \boxed{}$

$60 \div 6 = \boxed{}$

Step 2 - cross out the sentence with each answer:

1. The villain tampers with the supercharger dials, then climbs down the landing gear struts.
2. The villain pockets the vintage radio knobs, then sneaks past the nose cone exit.
3. The villain pockets the vintage radio knobs, then flees through the bomb bay doors.
4. The villain hides the navigator's flight maps, then sneaks past the nose cone exit.
5. The villain pockets the vintage radio knobs, then climbs down the landing gear struts.
6. The villain messes with the rudder cables, then climbs down the landing gear struts.
7. The villain swaps out the spark plugs on engine three, then scrambles out of the waist gunner window.
8. The villain hides the navigator's flight maps, then climbs down the landing gear struts.
9. The villain swaps out the spark plugs on engine three, then sneaks past the nose cone exit.
10. The villain pockets the vintage radio knobs, then slips down the tail gunner hatch.
11. The villain hides the navigator's flight maps, then slips down the tail gunner hatch.
12. The villain pockets the vintage radio knobs, then scrambles out of the waist gunner window.

Answer Key

The Hangar Saboteur

Culprit: Chuck Yeager

Crew Chief · Leather Jacket · Left Handed · Gold Propeller · Peanut Butter Bar

Trail: Start 21 → Clue 1 17 → Clue 2 10 → Clue 3 6 → Clue 4 4 → Clue 5 1

Clue 1 (Addition): "THE VILLAIN DOES NOT WEAR FLIGHT GOGGLES"

$2805 + 5624 = 8429$ (T) · $3430 + 1944 = 5374$ (A) · $1078 + 2183 = 3261$ (S) · $2955 + 3133 = 6088$ (H) · $1811 + 4009 = 5820$ (N) · $2435 + 1566 = 4001$ (W) · $4509 + 5390 = 9899$ (D) · $4501 + 2167 = 6668$ (L) · $4830 + 2285 = 7115$ (E) · $5673 + 3619 = 9292$ (O) · $2186 + 2159 = 4345$ (R) · $4890 + 3049 = 7939$ (G) · $2814 + 1511 = 4325$ (F) · $4369 + 2844 = 7213$ (V) · $5210 + 3502 = 8712$ (I)

Clue 2 (Fractions of a number): "THE SUSPECT WRITES WITH THEIR LEFT HAND"

$5/6$ of 6 = 5 (T) · $1/8$ of 152 = 19 (U) · $4/8$ of 6 = 3 (D) · $9/10$ of 10 = 9 (W) · $1/3$ of 72 = 24 (A) · $3/6$ of 76 = 38 (R) · $3/8$ of 72 = 27 (H) · $4/10$ of 90 = 36 (E) · $1/4$ of 88 = 22 (N) · $8/10$ of 10 = 8 (S) · $5/10$ of 28 = 14 (F) · $6/10$ of 20 = 12 (C) · $1/4$ of 148 = 37 (L) · $1/8$ of 128 = 16 (I) · $1/2$ of 36 = 18 (P)

Clue 3 (Order of operations): "PEANUT BUTTER BAR WRAPPERS WERE LEFT BEHIND"

$9 \times 11 - 19 = 80$ (P) · $55 + 3 \times 5 = 70$ (E) · $6 \times 9 - 27 = 27$ (L) · $16 + 8 \times 7 = 72$ (I) · $7 \times 8 - 14 = 42$ (H) · $11 \times 3 - 2 = 31$ (D) · $6 \times 6 - 26 = 10$ (N) · $7 \times 4 - 20 = 8$ (B) · $4 + 5 \times 2 = 14$ (T) · $10 + 7 \times 7 = 59$ (U) · $25 + 2 \times 7 = 39$ (R) · $4 \times 2 - 2 = 6$ (F) · $31 + 3 \times 4 = 43$ (S) · $1 + 3 \times 2 = 7$ (A) · $4 + 2 \times 4 = 12$ (W)

Clue 4 (Multiplication facts (1-12)): "A GOLD PROPELLER PIN WAS FOUND ON THE WING"

$11 \times 1 = 11$ (A) · $7 \times 7 = 49$ (P) · $5 \times 10 = 50$ (G) · $4 \times 11 = 44$ (U) · $4 \times 5 = 20$ (E) · $7 \times 11 = 77$ (L) · $1 \times 10 = 10$ (T) · $9 \times 3 = 27$ (O) · $9 \times 6 = 54$ (F) · $10 \times 12 = 120$ (S) · $4 \times 7 = 28$ (I) · $11 \times 12 = 132$ (H) · $9 \times 12 = 108$ (R) · $1 \times 2 = 2$ (N) · $9 \times 2 = 18$ (D) · $6 \times 12 = 72$ (W)

Clue 5 (Division facts (1-12)): surviving statement is box 3 → Chuck Yeager

$42 \div 7 = 6$ · $72 \div 9 = 8$ · $2 \div 1 = 2$ · $24 \div 6 = 4$ · $1 \div 1 = 1$ · $81 \div 9 = 9$ · $50 \div 10 = 5$ · $63 \div 9 = 7$ · $120 \div 10 = 12$ · $66 \div 6 = 11$ · $60 \div 6 = 10$