

Don Hinz

and the

Red Tail Project

Don Hinz and the Red Tail Project

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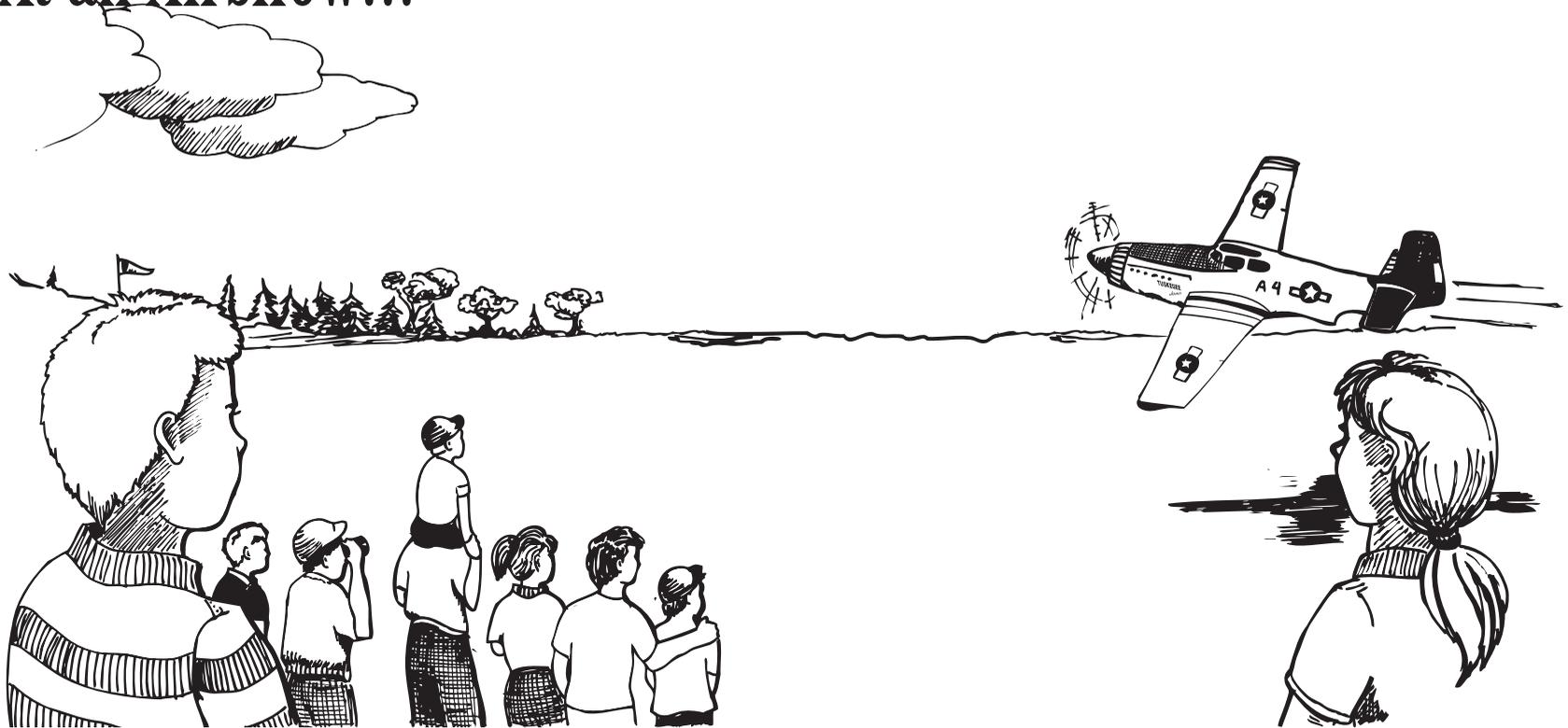
Special Thanks to the Family of Donald E. Hinz and the volunteers of the Red Tail Project

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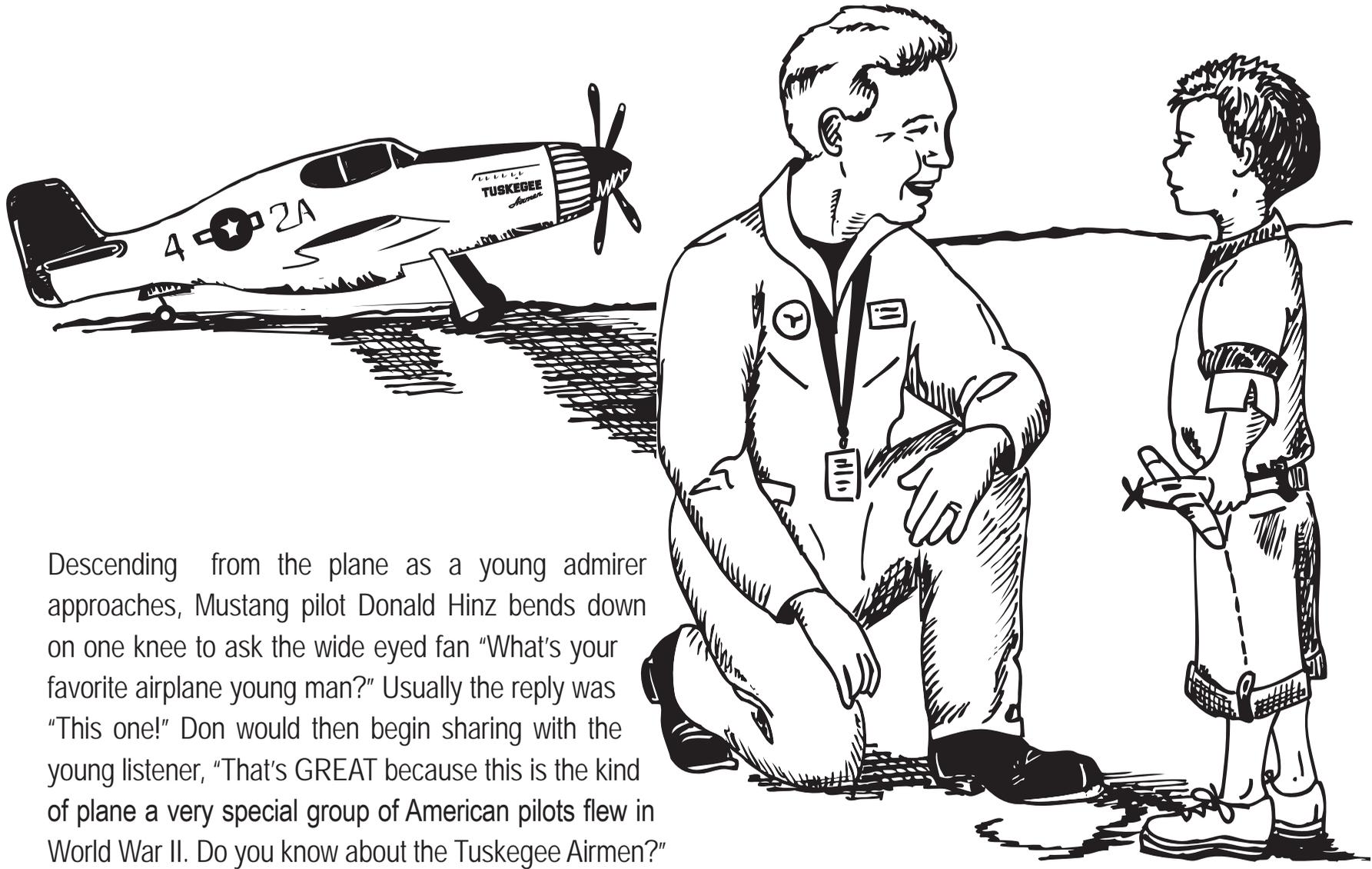
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At an Airshow...



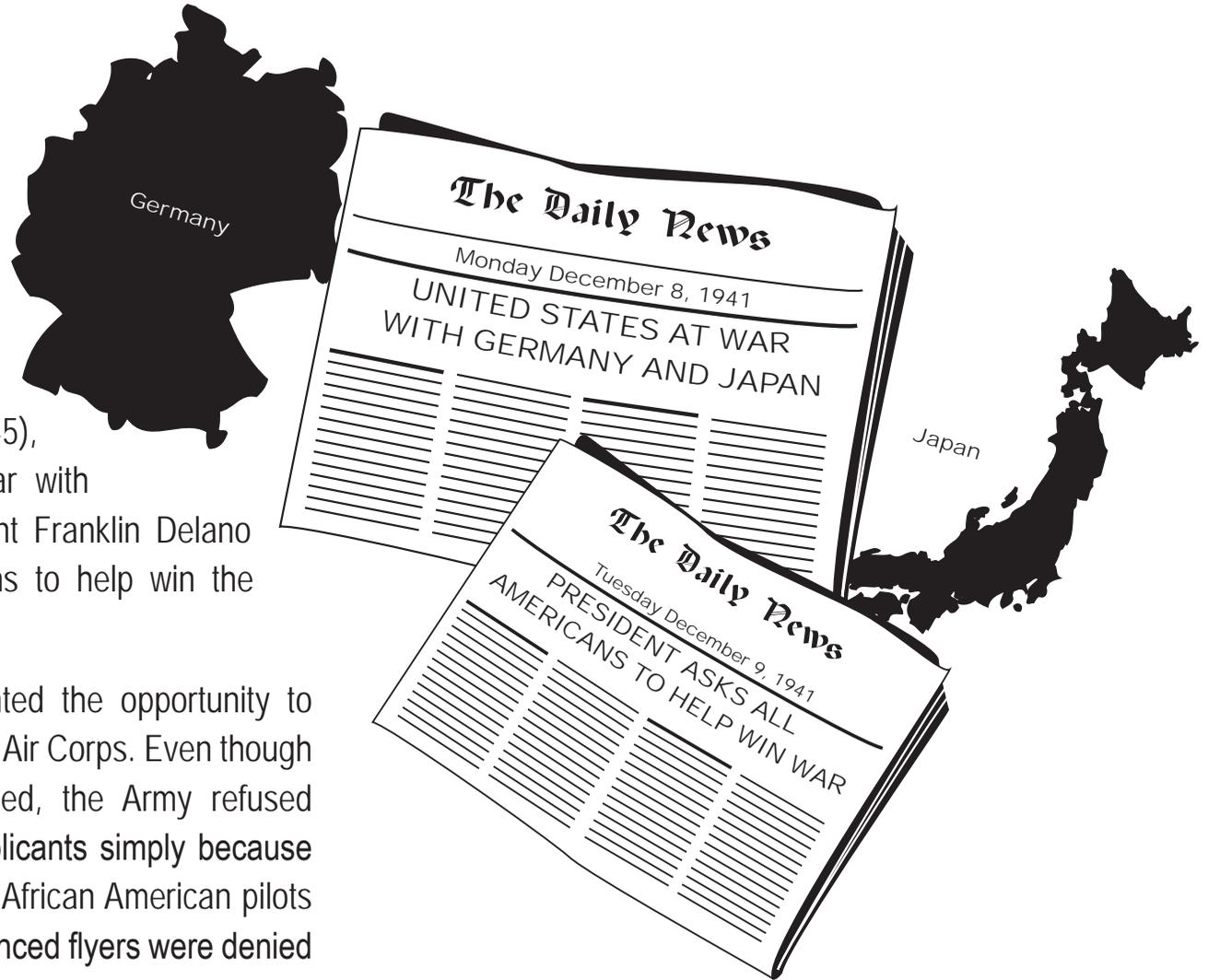
The loudspeakers crackle with the eager voice of a seasoned air show announcer; "Watch to your right, ladies and gentlemen as the Commemorative Air Force's Red Tail Mustang representing the Tuskegee Airmen comes by for one more photo pass. Get your cameras ready because this one will be over 350 miles per hour!"

The roar of the Rolls Royce V-12 Merlin engine sends shivers throughout the crowd as it flies by at a dramatic angle and circles to land. As the airplane taxis to a stop, the crowd gathers around to watch while the pilot removes his helmet and asks with his trademark ear-to-ear grin, "Well, how'd we do?" (Always "we" never "I".)



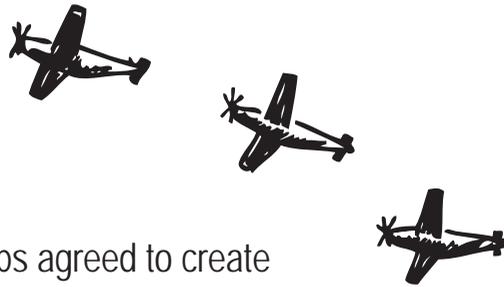
Descending from the plane as a young admirer approaches, Mustang pilot Donald Hinz bends down on one knee to ask the wide eyed fan "What's your favorite airplane young man?" Usually the reply was "This one!" Don would then begin sharing with the young listener, "That's GREAT because this is the kind of plane a very special group of American pilots flew in World War II. Do you know about the Tuskegee Airmen?"

How it all Started ...



During World War II (1939—1945), the United States was at war with Japan and Germany. President Franklin Delano Roosevelt asked all Americans to help win the war.

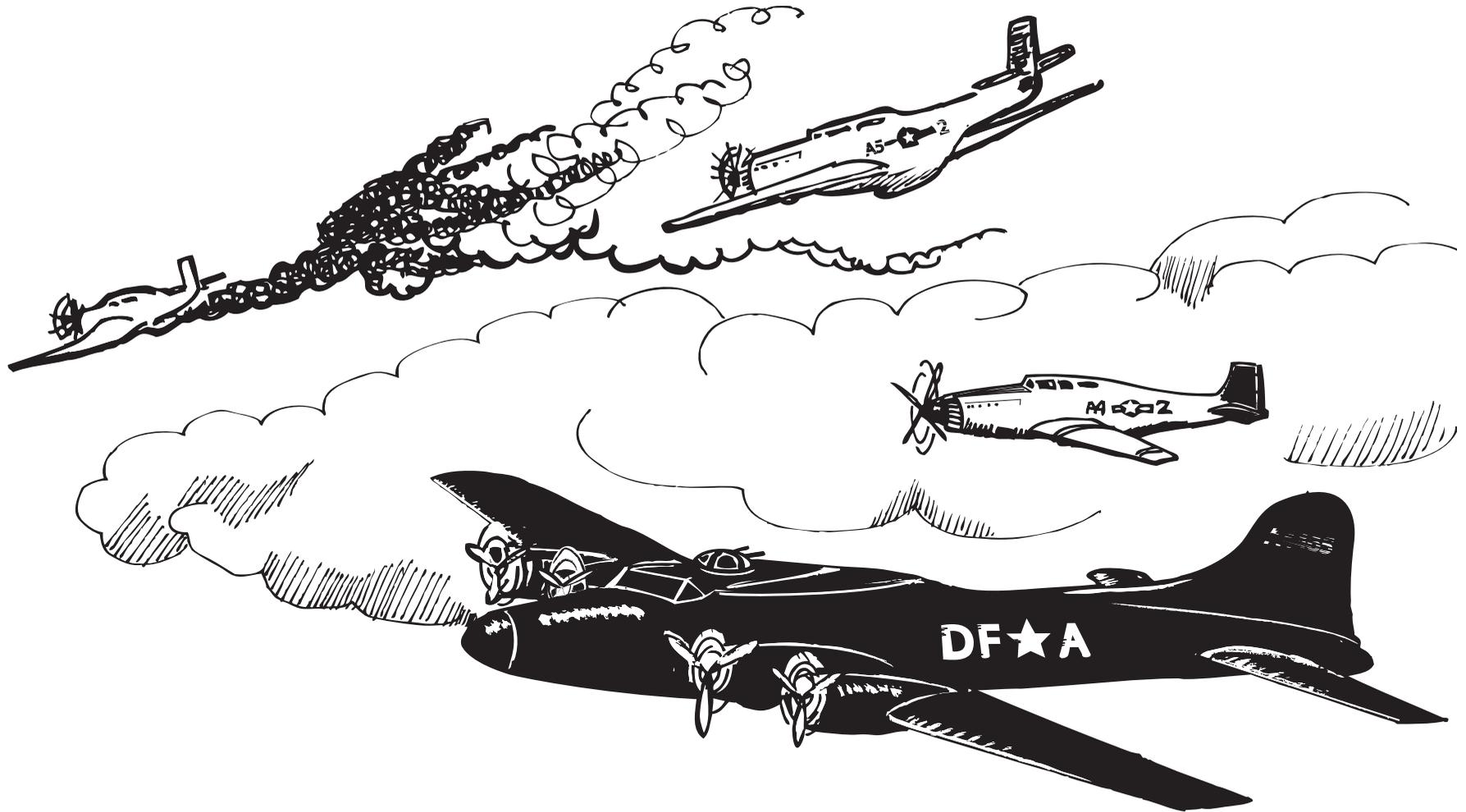
Some African Americans wanted the opportunity to help by being pilots in the Army Air Corps. Even though pilots were desperately needed, the Army refused qualified African American applicants simply because of the color of their skin. Even African American pilots who were licensed and experienced flyers were denied the opportunity to enlist in the Army Air Corps.



Finally, in 1940, the Army Air Corps agreed to create an aviation training program for African Americans. Hundreds of African American men volunteered to serve. Those who were qualified became part of the new 99th Pursuit Squadron, which were later called the 99th Fighter Squadron. Those selected to be pilots would train at the Tuskegee Institute in Tuskegee, Alabama. This is how the airmen became known as “The Tuskegee Airmen”.

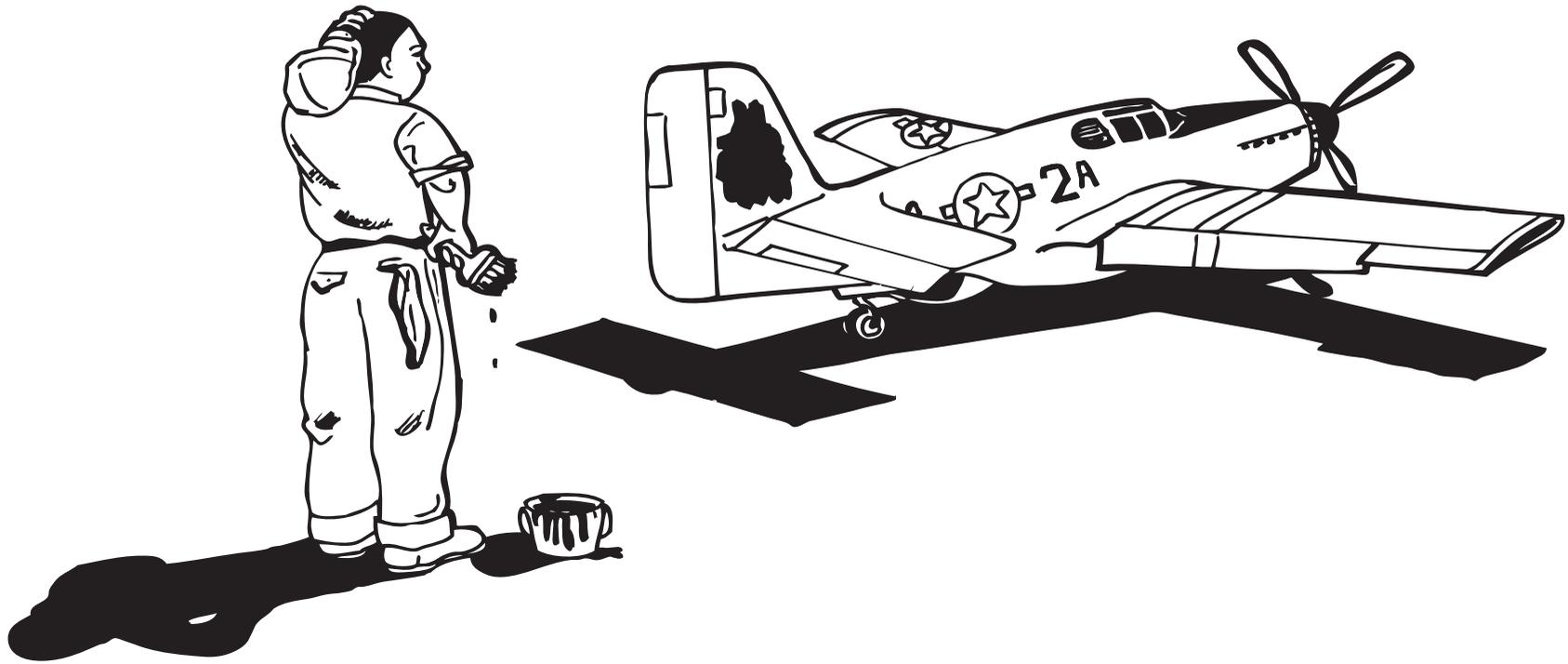
In 1942, the first class of the Tuskegee Airmen pilots earned their wings. Benjamin O. Davis Jr. was a member of this class and he later became the commander of the 99th Fighter Squadron. They were based at Moton Field in Tuskegee, Alabama. Many days were spent flying training missions while waiting for orders that would send them into battle in Europe, the Mediterranean, and North Africa.





In the spring of 1943, the Tuskegee Airmen saw their first action against enemy planes and proved themselves as brave and capable pilots. Their first missions were to destroy ammunition truck convoys and storage depots. They were also assigned to escort

bomber planes as the bombers went on their missions. The bomber planes were larger and slower than the enemy aircraft, and therefore, needed smaller and faster escort planes like the Mustang to protect them when they flew their missions.



At that time, the P-51 Mustang was the most effective fighter used by the Army Air Corps. It could fly faster, higher, farther, and was more maneuverable than any other plane. The Mustang was a favorite escort plane of bomber crews because it had the range to escort them on their missions all the way to the target and back to their home base. Previous escort planes were not able to go this far, leaving the bombers exposed to enemy fire.

Although several models of the P-51 Mustang existed, the P-51C model became the signature plane of the Tuskegee Airmen. They painted the airplanes' tails bright red and became known as the "red tails." The red colored tails were easy to identify for the bomber crews and German airmen. The Germans called them "Black Birdmen." The bomber flight crews called them the "Red Tail Angels," and requested them as escorts. They knew the "Red Tails" would get them home safely.

Mustang Model Numbers ...

All aircraft have model numbers which distinguish them from other aircraft. The manufacturer of the Mustang, North American Aviation, gave their Mustang its number P-51.

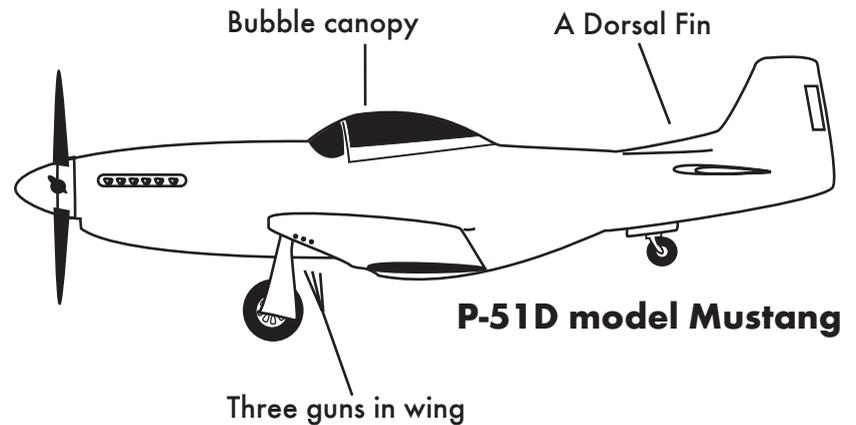
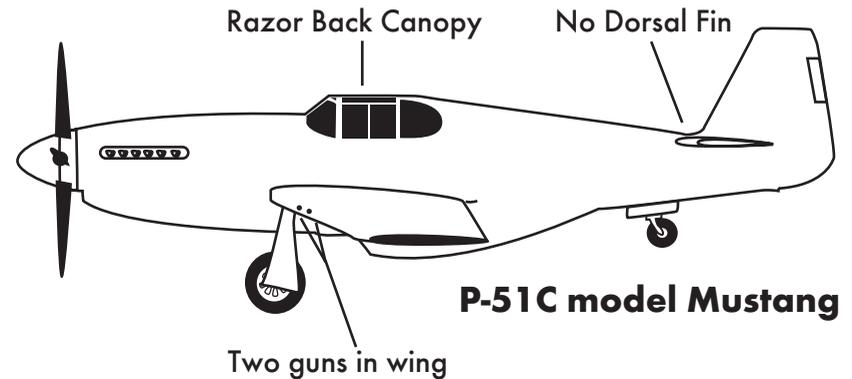
Although the P-51C was the signature aircraft of the Tuskegee Airmen, other models of the Mustang were also made. Here are some simple ways to tell a P-51C model from a P-51D model Mustang.

- The P-51C

- Razor back canopy
- Two guns in each wing
- No dorsal fin

- The P-51D

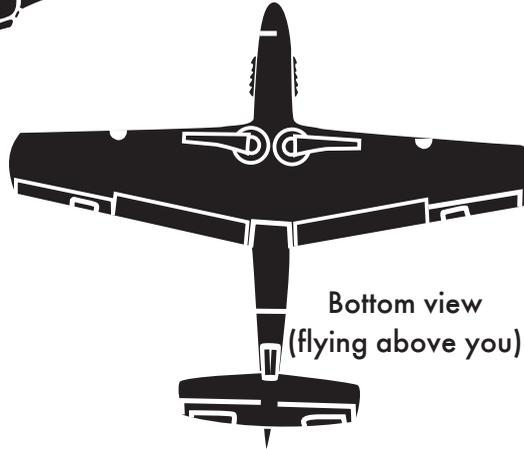
- Bubble canopy
- Three guns in each wing
- Dorsal fin added to the tail



Who's Who in the Sky?



Front view



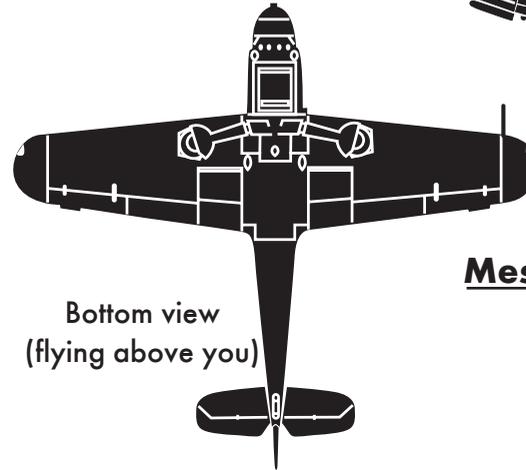
Bottom view
(flying above you)



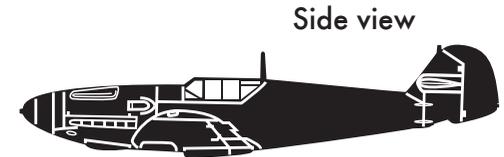
Side view



Front view



Bottom view
(flying above you)



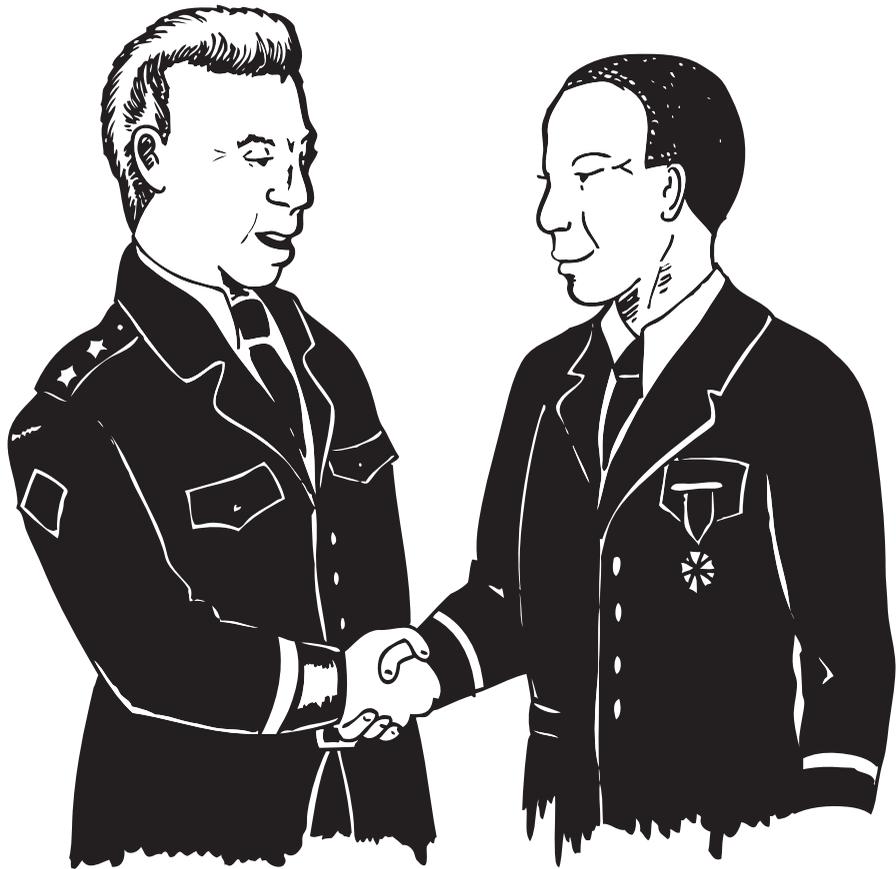
Side view

P-51C Mustang

Messerschmitt 109F



When looking up into the sky from the ground, or the deck of a ship, soldiers needed to be able to tell the difference between enemy aircraft and their own planes. The soldiers on the ground could only make out the basic shape (silhouette) of a plane. Soldiers would study pictures in special recognition books that taught them how to tell the differences between various war planes. Can you find the differences between the P-51C Mustang pursuit plane on the left and the German Messerschmitt 109F fighter plane on the right?



There were 993 pilots and 10,000 ground crew that graduated from the Army Air Corps' Tuskegee Airmen program. They flew their airplanes over 15,000 times to complete 1,500 combat missions. They earned over 850 combat medals including a Legion of Merit, a Silver Star, numerous Purple Hearts, Distinguished Flying Crosses, and various air medals. Most importantly, they never lost a bomber to enemy aircraft.

Distinguished
Flying Cross



Purple
Heart



Legion of
Merit



Silver
Star



The Tuskegee Airmen exhibited the personal qualities that led to success when they sought and accepted the challenge of fighting racism at home and in the military. They worked hard and persevered until they were allowed to fight for their beliefs and their country. In that fight, they were disciplined and courageous patriots.

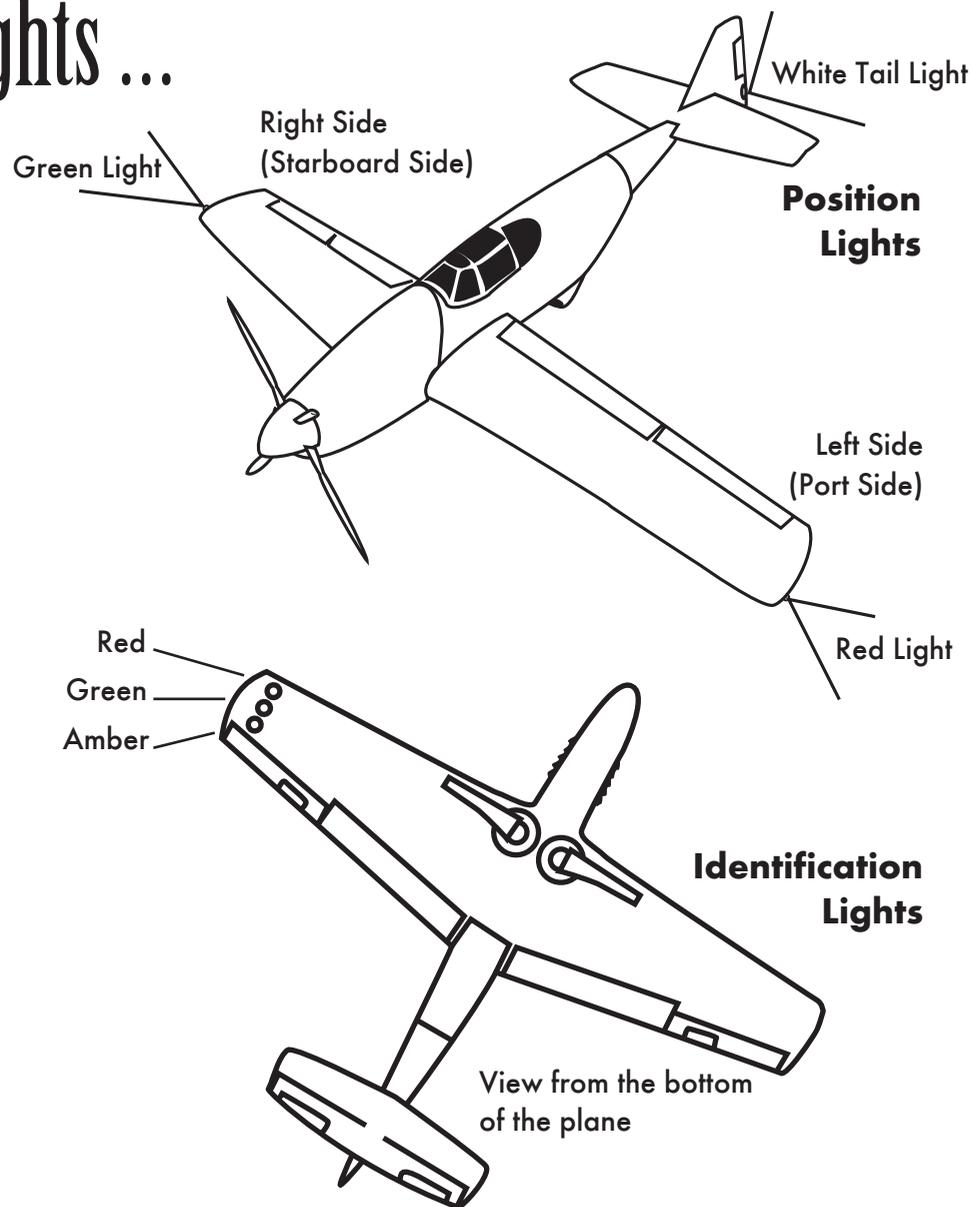
Position and Navigation Lights ...

Position Lights

All airplanes have position lights that allow other pilots to tell what direction the aircraft is flying. The lights are located on each wingtip and the tail. A red light is positioned on the left wingtip, a green light on the right wingtip, and a white light on the tail. This arrangement allows the viewer to determine the direction that the plane is moving. If a red and green light are observed, the plane is flying toward you. If only a red light is seen, the plane is traveling from right to left, and if only a green light is seen it's traveling from left to right.

Identification Lights

Some planes also have lights that help to identify them. The P-51C Mustang had a red, green, and amber light positioned on the underside of the right wingtip that identified it as the Tuskegee Airmen's Red Tail Mustang.



Lighting a Plane ...

Question:

How much power (watts) does it take to light the three position lights? Using the information in the chart, and the formulas provided, fill in the electrical chart to get the answer. (Answers are on page 22.)



Information You Will Need:

$$E = I \times R$$

$$P = I \times E$$

$$I = E \div R$$

E = Voltage (volts)

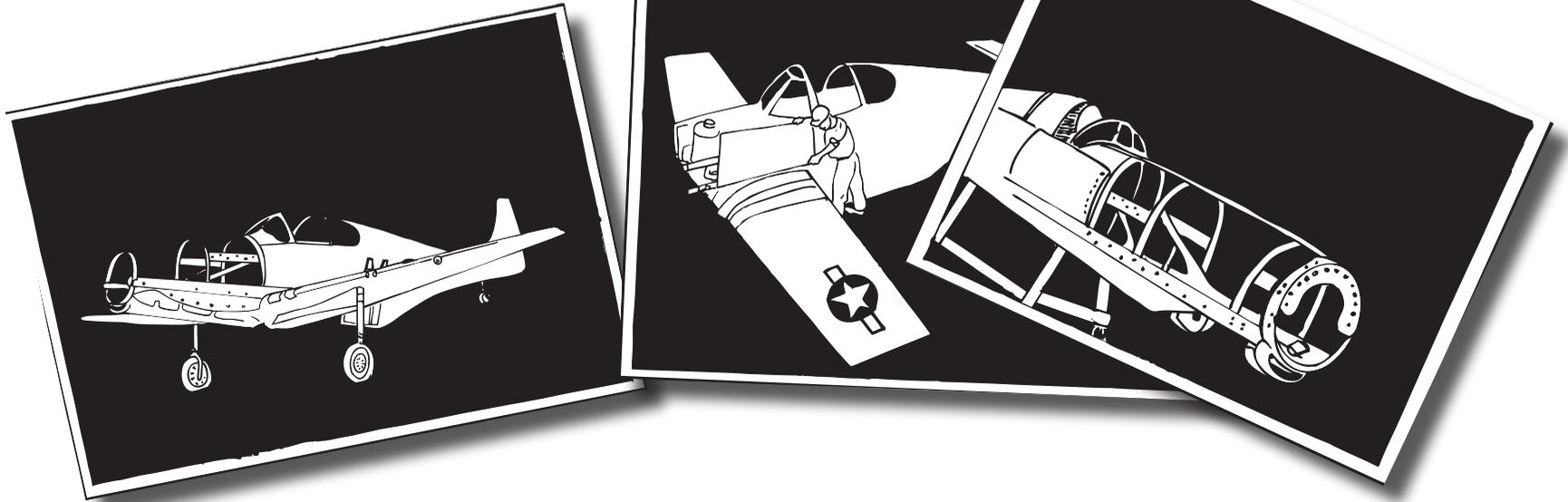
I = Current (amps)

R = Resistance (ohms)

P = Power (watts)

	Nose	Right Wing	Left Wing	Total
E volts	12	12	12	12
I amps				
R ohms	4.8	4.8	4.8	1.6
P watts				90

Don's Part in the Story...



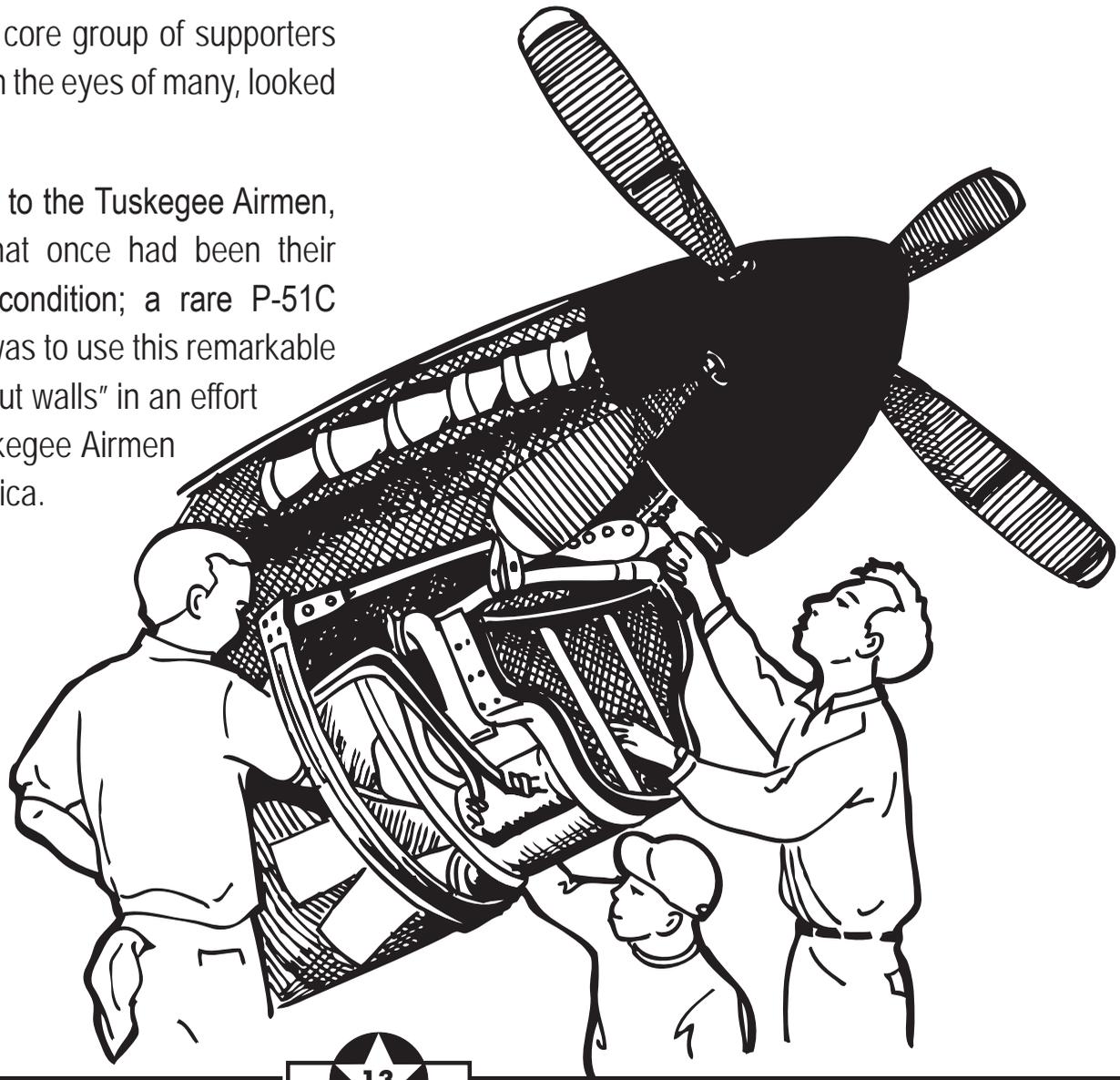
Donald E. Hinz was a pilot in the Navy when he first heard about the Tuskegee Airmen. From air shows to classrooms to museum tours and beyond, Don was always ready to share the amazing story of the Tuskegee Airmen.

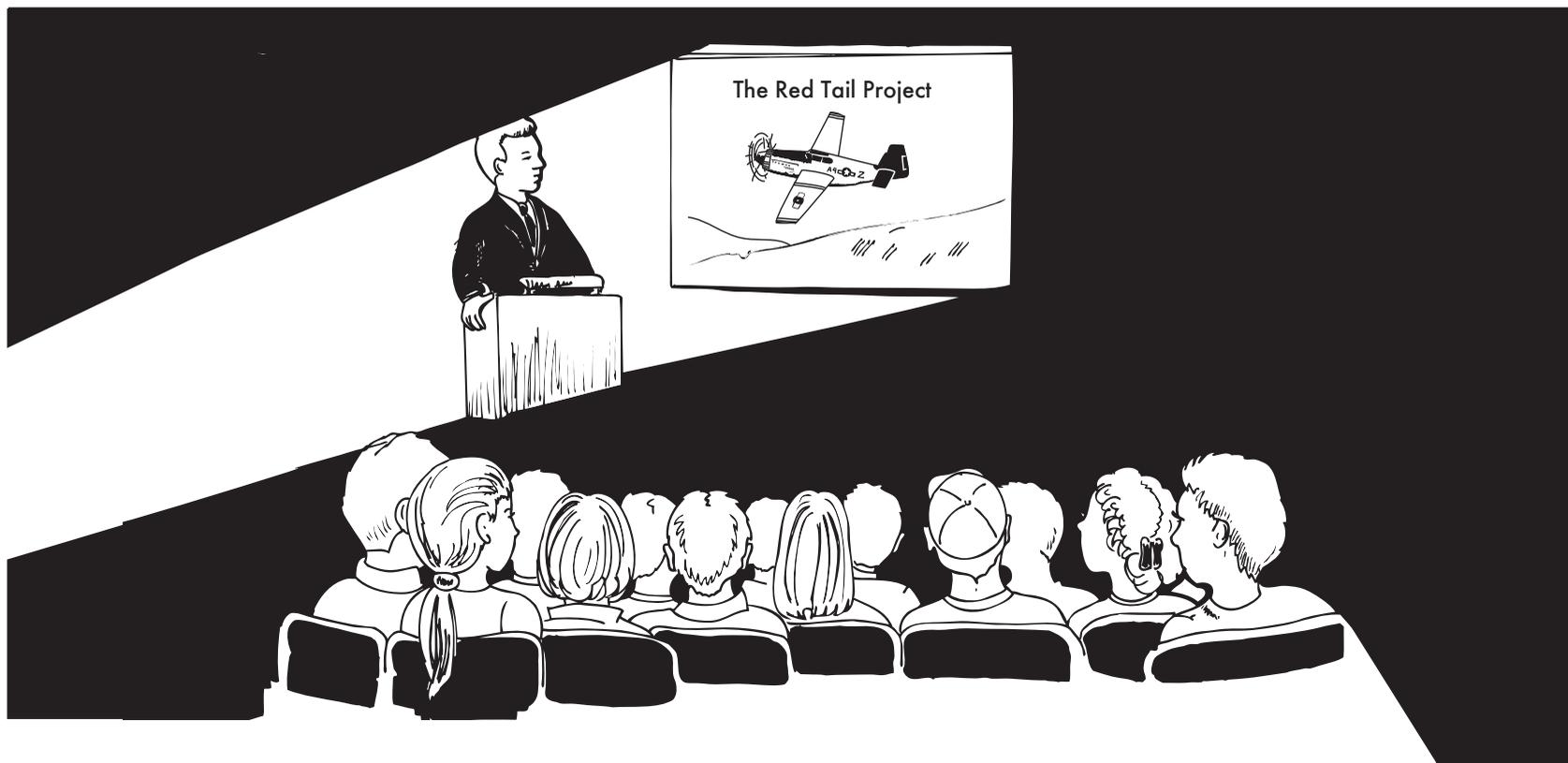
He was an inspired visionary who saw a great American history lesson being ignored. He refused to sit quietly, but chose to take action to prevent this important story from being lost.

From the dusty corners of an old wooden hangar at a former World War II Naval training base in South Saint Paul, Minnesota, an idea was launched that would grow into a national treasure. This idea was destined to touch the lives of thousands of America's unheralded veterans, as well as the children and adults who go to air shows seeking out great flying machines and hoping to meet legendary heroes from years ago. This idea came to be known as "The Red Tail Project."

Don, who was a member of the Commemorative Air Force, assembled and led a core group of supporters and staff to undertake what, in the eyes of many, looked to be an impossible task.

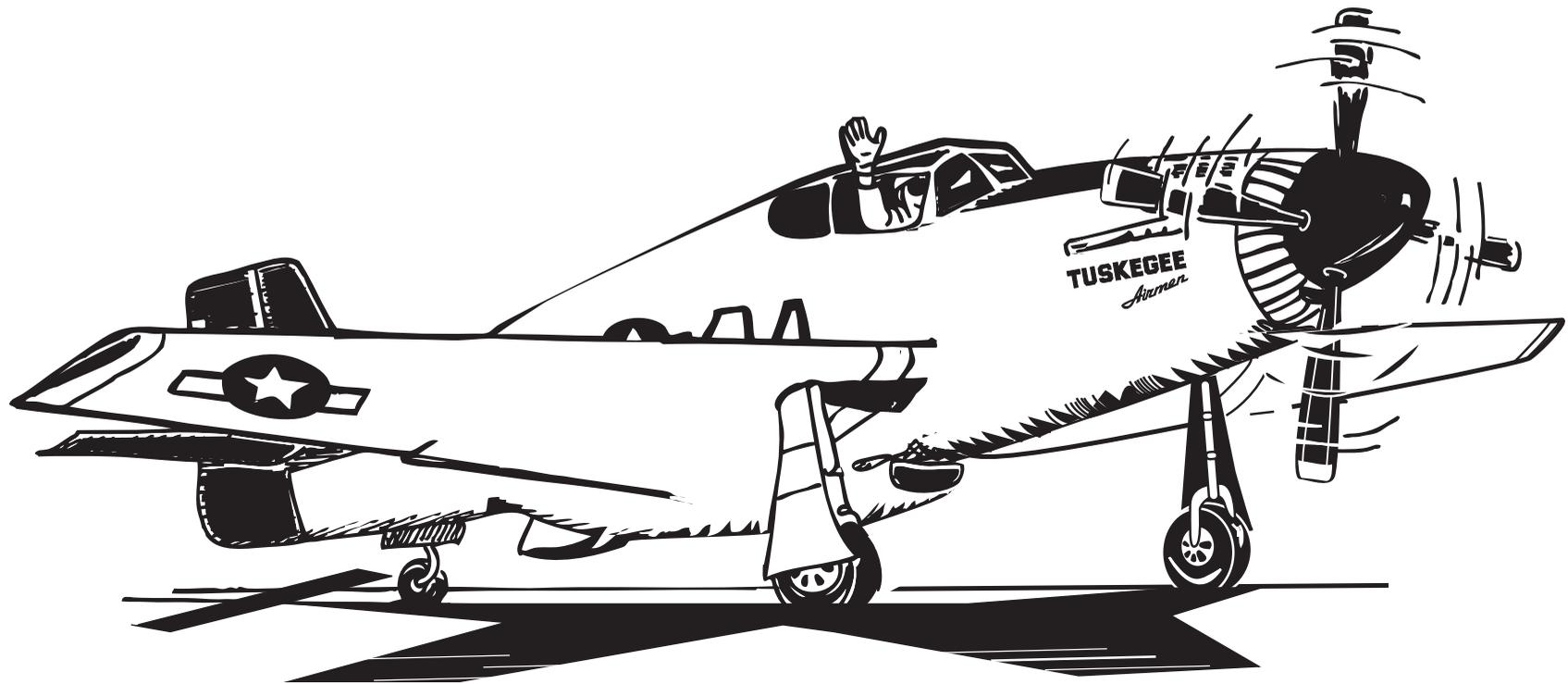
Conceived as a flying tribute to the Tuskegee Airmen, the task was to restore what once had been their signature aircraft to flying condition; a rare P-51C model Mustang. Don's idea was to use this remarkable airplane as a "museum without walls" in an effort to bring the story of the Tuskegee Airmen into every classroom in America.





In relentless pursuit of his dream, Don Hinz spent thousands of hours in research, fundraising, lectures, and appearances around the nation to gain approval for the Red Tail Project from both the Commemorative Air Force (CAF) and the Tuskegee Airmen. Approval was received from the airmen and endorsed by the Red Tail Project's first spokesperson, actress and singer, Lena Horne.

The CAF acquired a rare P-51C from a technical school in Montana. Financial support was hard to achieve because people were concerned about the poor condition of the aircraft. Its wings had been cut off and it was missing many parts.



Through Don's unwavering determination to see America right an historical injustice from years ago, success was achieved. The P-51C Mustang was named "Tuskegee Airmen" and finally flew again in 2001, after being rebuilt by Don and the Minnesota Wing of the CAF.

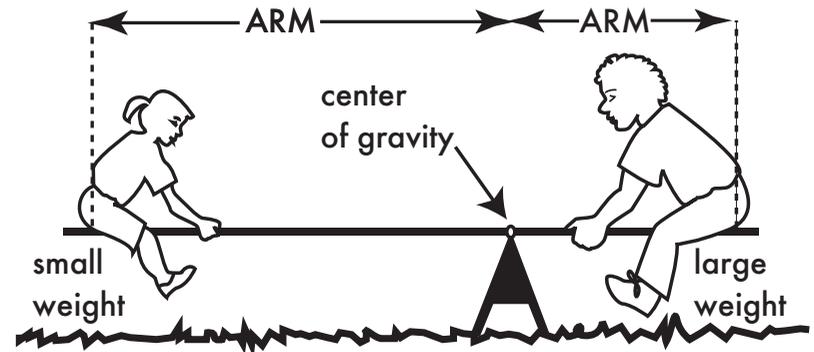
From coast to coast and back, the Red Tail Mustang flew and greeted admirers and dignitaries around the nation.

Thousands of people, including school age children and veterans, were presented with the heroic lessons of those great African American patriots. Now, people could hear the story, from the heroes themselves, about defending a nation that was unwilling to share with them the most basic rights of all human beings.

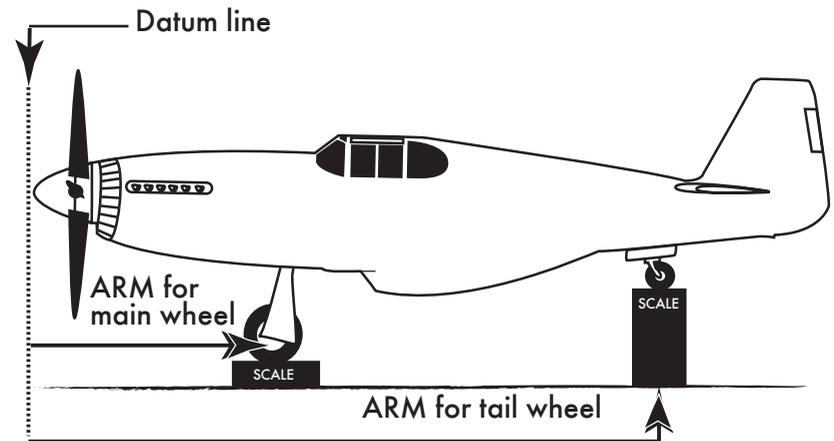
Keeping a Plane in Balance ...

Every airplane has a "Center of Gravity" or CG. The CG is the place an airplane would balance if it were placed on a fulcrum, which is like a seesaw. For the aircraft to fly safely, its calculated CG must be located within a certain range. Adding different passengers, cargo, fuel, or pilots of different weights will change the CG, so the CG must be determined before each flight.

All measurements for determining the CG are taken from an imaginary line called the Datum. For a plane, the distance from the datum to any spot on the airplane is called the ARM, and is measured in inches. The weight is taken at each wheel and then multiplied by the ARM. This is called the MOMENT. Using the chart and the aircraft diagram on the next page, you can find the moment for each wheel by multiplying the weight at the wheel by its arm. You can find the Total Moment by adding all the moments together. To get the CG, you take the Total Moment and divide it by the Total Weight.



The weight of the small child on the long ARM balances the weight of the larger child on the short ARM. Just like these children, a plane needs to be balanced in order to fly safely.



Using the formulas and diagram on this page, calculate the CG for an empty P-51C Mustang.

The formulas for finding the CG are:

Moment = Weight x ARM

CG = Total Moment ÷ Total Weight

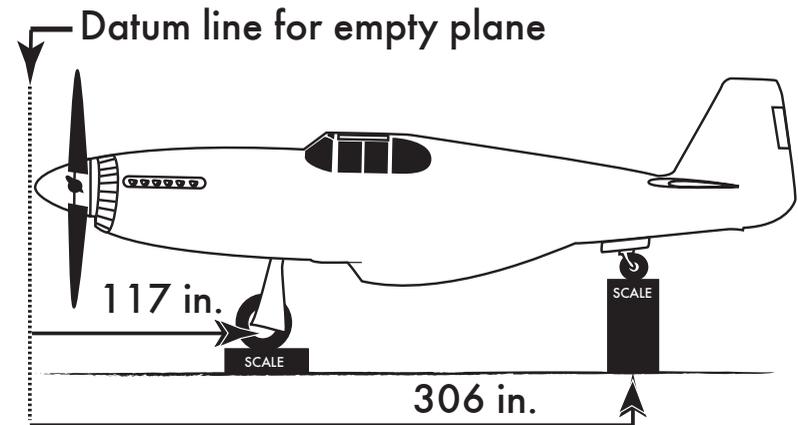
Scale Readings:

Scale reading at the Tail Wheel = 975 lbs.

Scale reading at the Right Main Wheel = 3,500 lbs.

Scale reading at the Left Main Wheel = 3,500 lbs.

Item:	Weight	x	Arm	=	Moment
Tail Wheel:		x	306 in.	=	
Right Main Wheel:		x	117 in.	=	
Left Main Wheel:		x	117 in.	=	
Total Weight:			Total Moment =		



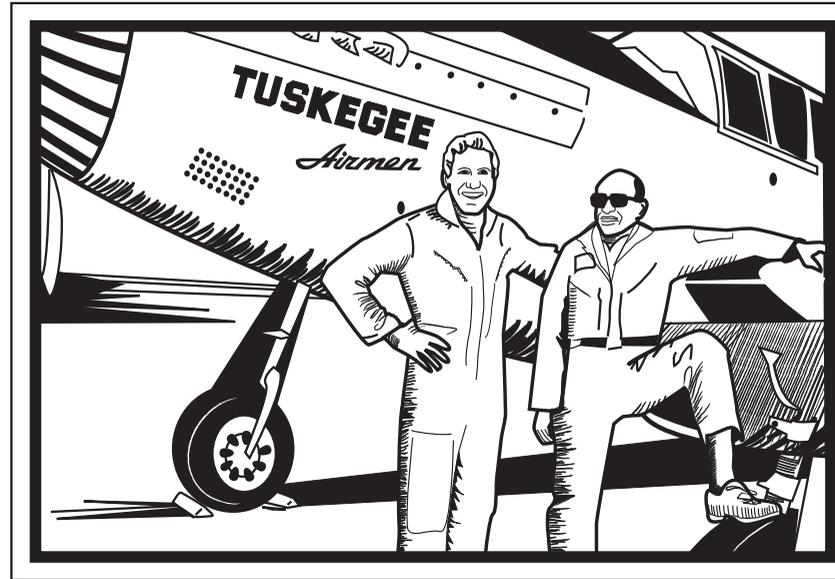
Total Moment ÷ Total Weight = _____

This is the empty plane's Center of Gravity, the location at which the airplane would balance.



Question:

The CG range for safe flight in a P-51C is 137 to 152 inches from the datum. If 2000 lbs. of fuel, 1500 lbs. of weapons, and a 210 lb. pilot add 1480 lbs. to each main wheel and 750 lbs. to the tail wheel, is the aircraft safe to fly? (Answers on page 22.)



Donald Hinz was always ready to share the story of the Tuskegee Airmen with children around the country, with the aviation enthusiasts at airshows, dignitaries and people of influence in business and politics. One of his favorite things was to see original Tuskegee Airmen climb aboard "their" plane to take photos and occasionally fly the plane that they had flown to victory in World War II.

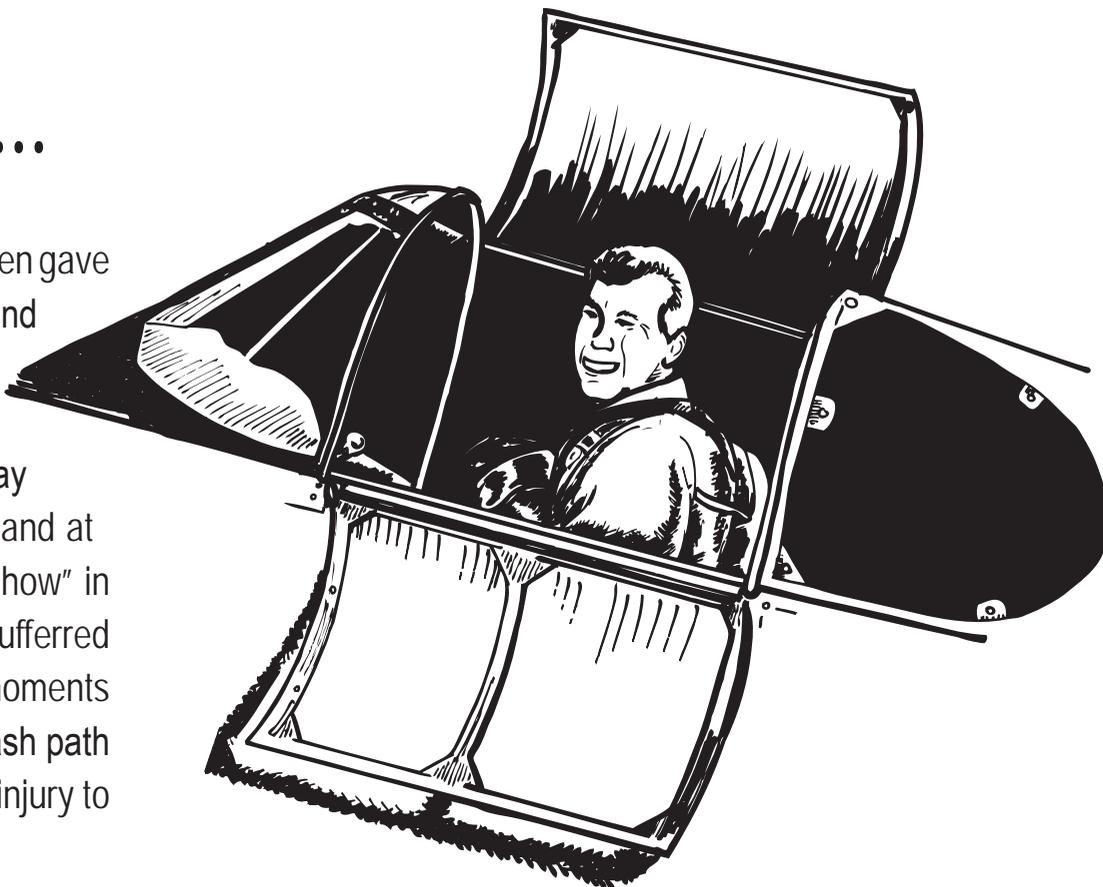
Don had the unique ability to reach out to anyone who showed the slightest interest in the Red Tail Project.

He always made everyone feel valued and the center of his attention. One of the greatest lessons he shared was that you can learn something from every single person, and that everyone has something to contribute. And like the Tuskegee Airmen whose story he told, he also set an example of hard work, constancy of purpose, and perseverance as the way to achieve his goals.

Don's Legacy Lives on...

Just as so many of the young Tuskegee Airmen gave their lives in combat fighting for freedom and justice, Don gave his life working to bring their stories to the world. In May 2004, Don had just finished flying a tribute to the D-Day invasion and was making his approach to land at the Memorial Day "Wings of Freedom Airshow" in Red Wing, Minnesota, when the Mustang suffered a catastrophic engine failure. In his last moments of flight, Don Hinz made certain that the crash path of the Red Tail Mustang would prevent any injury to those on the ground.

Don Hinz' mission was to present the living legacy of the Tuskegee Airmen to the world. His vision was to have their story in every classroom in America. The Red Tail Project is the result of Don's vision to restore an inspirational symbol representing the contributions of African Americans during World War II, and preserve this history through an



aviation education program. Because of Don's and many volunteers' dedication to the Red Tail Project, the Red Tail Mustang "Tuskegee Airmen" will be rebuilt to fly again.

To learn more about the Red Tail Project, visit their website at www.redtail.org.

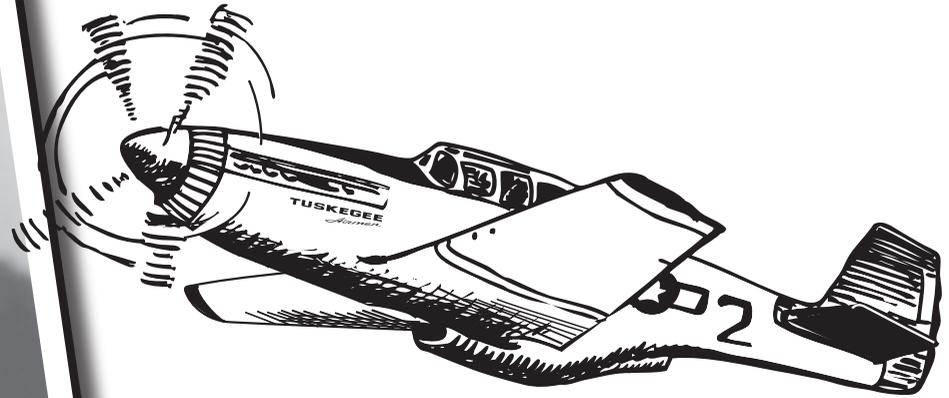
Word Puzzle

Find and circle the words and phrases listed below. (Answers on page 22.)

SILHOUETTE
MUSTANG
TUSKEGEE AIRMEN
REDTAIL
ARMY AIR CORPS
SILVER STAR
PURPLE HEART
NAVIGATION
DATUM
MOMENT
ARM
DON HINZ
LEGION OF MERIT
PILOT
ROLLS ROYCE

AIRSHOW
MOTON FIELD
TAKEOFF
AIRPLANE
C MODEL
WATTS

S I L V E R S T A R W N A T
A I R P L A N E V S A R M U
R A L E D O M C W V D E O S
M I S H D F K Z I P N D M K
Y R S B O S I G Z E H T E E
A S T V N U A M U S T A N G
I H T O H T E S I E F I T E
R O A T I D A T U M W L A E
C W W O N F C P T W T D K A
O H N L Z S J E D E Q U E I
R M S I E C Y O R S L L O R
P U R P L E H E A R T B F M
S M O T O N F I E L D F F E
L E G I O N O F M E R I T N



This book is dedicated to
the memory of Donald E. Hinz,
and the many individuals who helped
make the Red Tail Project a reality.

Lighting A Plane:

	Nose	Right Wing	Left Wing	Total
E volts	12	12	12	12
I amps	2.5	2.5	2.5	7.5
R ohms	4.8	4.8	4.8	1.6
P watts	30	30	30	90

Keeping A Plane in Balance:

Empty P51-C

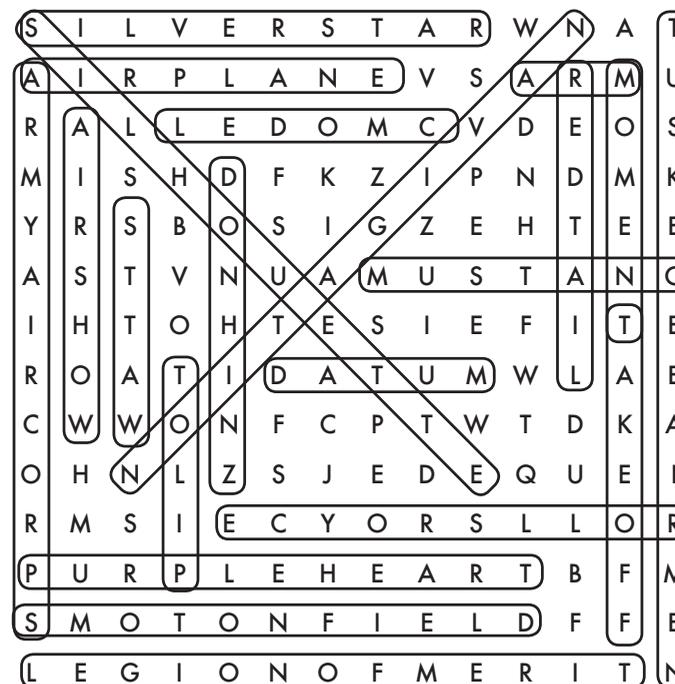
Item:	Weight	x Arm	= Moment
Tail Wheel:	975 lbs.	x 306 in.	= 298,350 in/lbs.
Right Main Wheel:	3,500 lbs.	x 117 in.	= 409,500 in/lbs.
Left Main Wheel:	3,500 lbs.	x 117 in.	= 409,500 in/lbs.
Total Weight:	7,975 lbs.	Total Moment =	1,117,350 in/lbs.
		The CG =	140.11 inches

P-51C loaded with a pilot, fuel, and weapons

Item:	Weight	x Arm	= Moment
Tail Wheel:	1,725 lbs.	x 306 in.	= 527,850 in/lbs.
Right Main Wheel:	4,980 lbs.	x 117 in.	= 582,660 in/lbs.
Left Main Wheel:	4,980 lbs.	x 117 in.	= 582,660 in/lbs.
Total Weight:	11,685 lbs.	Total Moment =	1,693,170 in/lbs.
		The CG =	144.9 inches, yes it is safe to fly.

Answers Page

Word Puzzle:



**For more aviation information and learning activities,
please visit our website at www.mndot.gov,
then click on the airplane icon.**



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