Top Air Officials to Come Here for Lab Ceremony

Gen. Brett to Aid in Ground-Breaking as Work Starts at Airport

PD 1/13/41

By ED CLARKE
Aviation Editor

Maj. Gen. George H. Brett, acting chief of the Army Air Corps, will head the group of top-ranking aeronautical officials who will come from Washington on Jan. 23 to participate in a civic luncheon and ground-breaking ceremonies for the Government's new airplane engine research laboratory to be built on the Cleveland Airport.

In announcing plans for the ceremonies, Walter I. Beam, executive vice president of the Chamber of Commerce, said acceptances have already been received from Col. Donald H. Connolly, administrator of Civil Aeronautics; Dr. George W. Lewis, director of aeronautical research, and John F. Victory, secretary of the National Advisory Committee for Aeronautics; Dr. Edward Warner, Civil Aeronautics Board; Capt. Sydney M. Kraus, U. S. Navy, and other ranking Army officials.

Governor to Be Here

Gov. John W. Bricker, Mayor Edward Blythin and other public officials will also participate in the ceremonies, Mr. Beam said.

The visiting dignitaries will arrive by plane and train on the morning of Jan. 23. The luncheon will be held at the Hotel Cleveland at 12:15 p. m. At 2 p. m. the luncheon will adjourn to the airport for the ground-breaking ceremonies in automobiles with police escort.

Frederick C. Crawford, president, and other officials of the Chamber of Commerce will be hosts to the visitors at a private dinner at the Union Club at 6:30 p. m.

* * *

Sets Passenger Record

American Airlines carried its 3,000,000th passenger yesterday, thus becoming the first airline in the world to transport that many persons.

The rapid growth of air transportation is reflected in the fact that it took the company 10 years to carry its first million passengers, two years and seven months to carry its second million and just a little over a year to carry its third million.

* * *

Under the provisions of the new proposed CAA budget, the civilian pilot training program could train during 1942 approximately 20,000 beginners and approximately 8000 secondary students who already have graduated from the beginners' course.

At present the course is being given in 700 colleges and it is estimated that more than 70,000 individuals have received instruction. About 35,000 of these are students

Plane Engine Lab to Play Vital Part in U. S. Defenses

Williams Says Research Plant Here Will Contribute to Airplane Development

By MAJ. AL WILLIAMS

What logic and pleading could not accomplish for American aeronautical research two years ago, Congress now fearfully does—in expensive haste.

Williams

Better late than never, though, and the emergency is bringing us research facilities that have been and are today the real bottleneck of American air power.

The original research center of American aeronautics was at Langley Field, Virginia. Congress recently authorized and appropriated funds for another such center at Sunnyvale, Cal., and a third and more recent plant at Cleveland.

Until 1940, Congress—and the rest of the country, for that matter—held the idea that air power merely meant lots of planes, pilots and mechanics.

Research Is Chief Need

On the contrary, air power is a whole pattern—a great integrated machine, whose three major driving gears are research, mass production and the training of pilots and mechanics. These gears must be meshed to turn smoothly. Foremost is research. Its results teach us what kind of planes can be built and how to achieve maximum performance.

There's no earthly use in building a lot of planes until a complete aeronautical research job has been done. Lack of thorough research results in frequent attempted alterations after a given type of plane has gone into production. These, in turn, delay deliveries.

Research tells what kind of ships can be built, and further research

Cleveland Press: January 20, 1941

Cleveland Press TUESDAY, JANUARY 21, 1941

A Clevelander Climbs High

The name "Brett" once was a household word in Cleveland. It was a name made notable in the library world by William Howard Brett, who for 34 years was librarian of Cleveland.

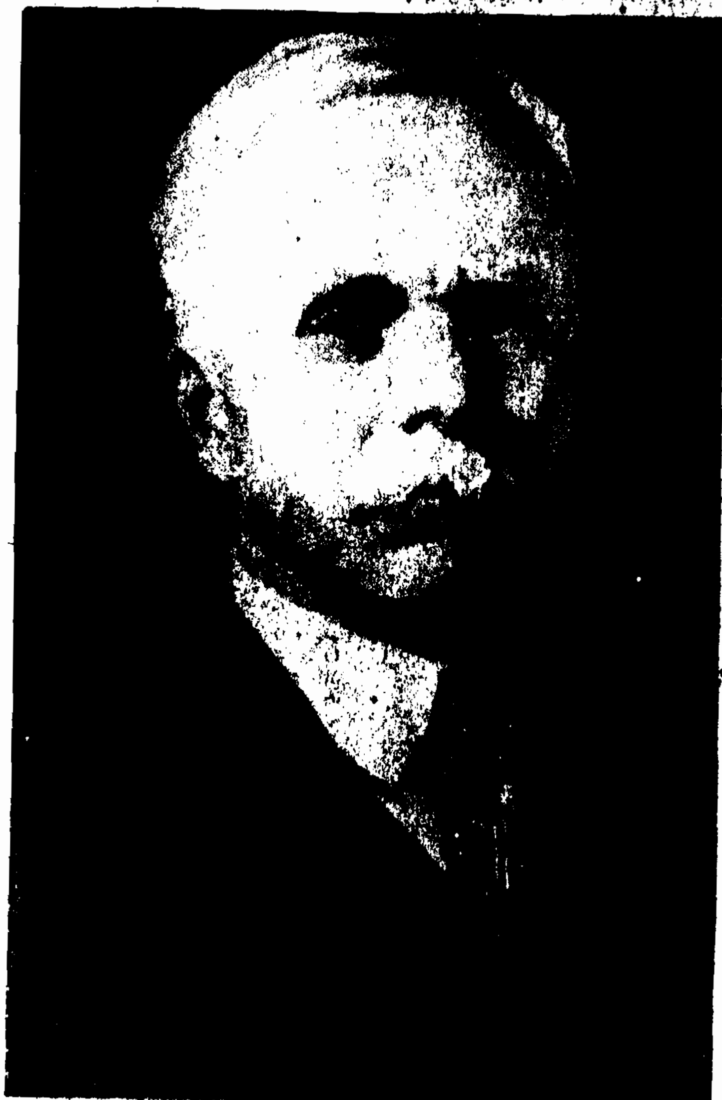
Today the Brett name has become distinguished in another field of endeavor. It is a field that, because of the parlous times, has become most vital. It is the military. And the Brett name has been carried high by Maj. Gen. George H. Brett, acting chief of the Army Air Corps, son of William Howard Brett. He returns to Cleveland Thursday.

By ROBERT SELTZER

EARLY in this century a matronly woman, diffident but determined, visited Central High School, from which numerous notable Cleveland citizens were graduated and whose story is a history of Cleveland.

Three of her four sons and a daughter had been graduated from Central. Another son had left a few months prior to commencement day. He had acquired sufficient credits to enter Virginia Military Institute and, impatient and ambitious to embark on a military career, he had quit school

The visitor was Mrs William Howard Brett, wife of the man whose name was synonymous with Cleveland's famed library system—



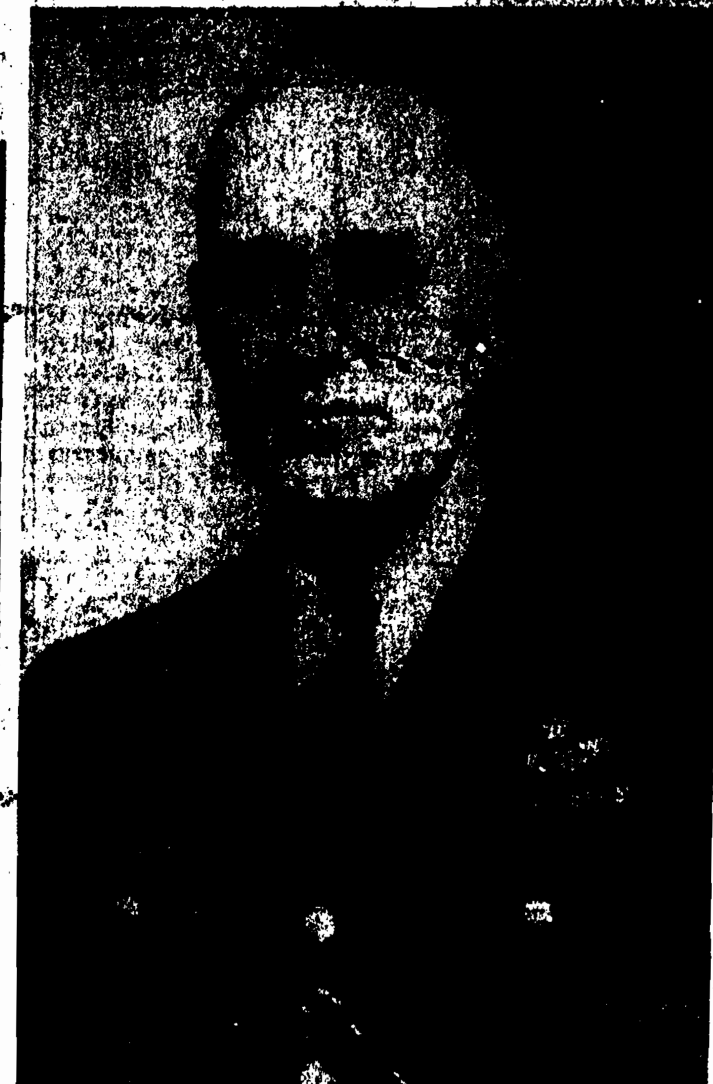
William Howard Brett . . . portrait in Public Library

tizing the Public Library and bringing it to the people.

She appealed to Edward L. Harris, then principal of Central.

Somehow it wasn't fair; in fact

son, George, should be the only one of her children not to possess a cherished diploma from Central. Only a formality stood between him and a diploma



Maj. Gen. Brett . . . high in Army

son. A diploma was made out for George H. Brett.

On Thursday, George H. Brett returns to Cleveland. He returns as a major general and acting chief of the Army Air Corps.

His mother died six years ago. His father was the tragic victim, at the height of his achievements, of an automobile accident in 1918. Still living in Cleveland are a brother,

Point graduate.) And William H. Jr. was a first lieutenant in the Ordnance Department. Their brother-in-law, Ralph Spengler, served overseas as a captain in the Army. Defective eyesight barred their younger brother, Allen, from service.

Maj. Gen. Brett has been commanding officer at Wright Field, Dayton, and at Selfridge Field, Mt.

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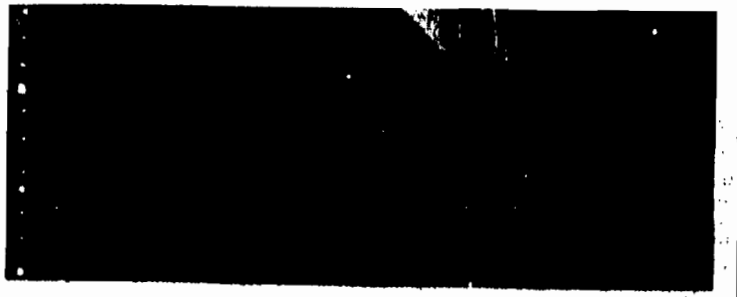
Three of her four sons and a daughter had been graduated from Central. Another son had left a few months prior to commencement day. He had acquired sufficient credits to enter Virginia Military Institute and, impatient and ambitious to embark on a military career, he had quit school.

The visitor was Mrs. William Howard Brett, wife of the man whose name was synonymous with Cleveland's famed library system—the man who pioneered in democratizing the Public Library and bringing it to the people.



William Howard Brett . . . portrait in Public Library

She appealed to Edward L. Harris, then principal of Central.

Somehow, it wasn't fair; in fact, it was a manifest injustice that her son, George, should be the only one of her children not to possess a cherished diploma from Central. Only a formality stood between him and a diploma.

Mr. Harris was amenable to reason. A diploma was made out for George H. Brett.

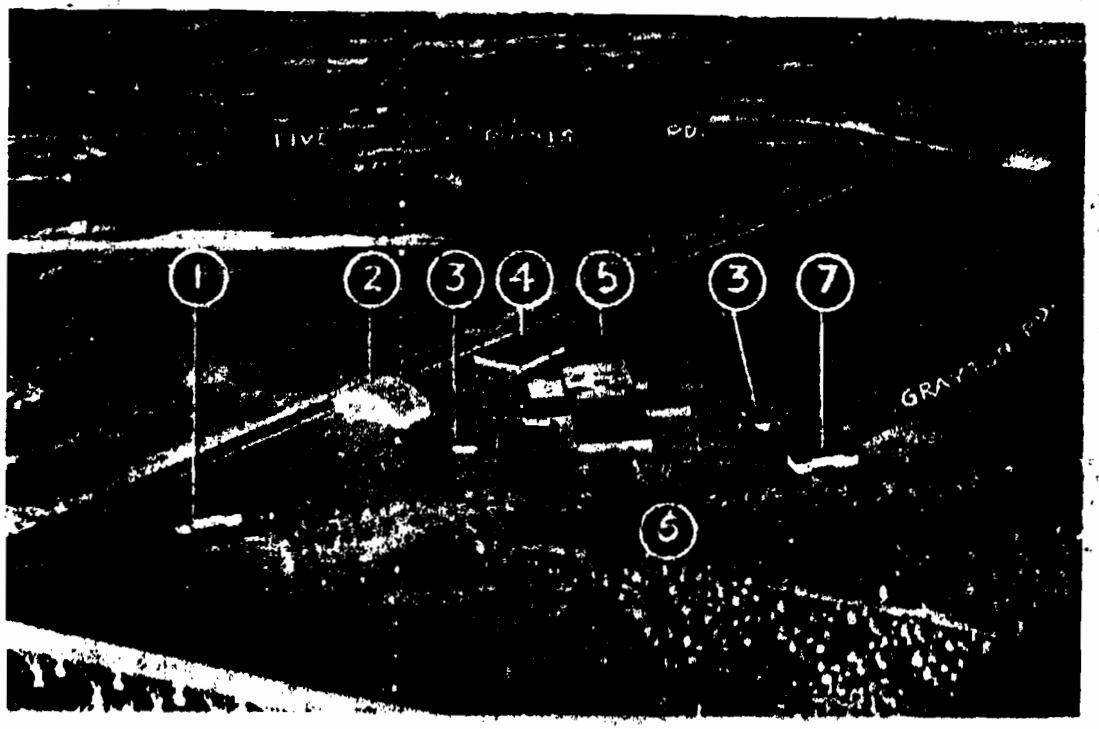
On Thursday, George H. Brett returns to Cleveland. He returns as a major general and acting chief of the Army Air Corps.

His mother died six years ago. His father was the tragic victim, at the height of his achievements, of an automobile accident in 1918. Still living in Cleveland are a brother, William H. Brett Jr., 3245 Chadbourne road, Shaker Heights, director-secretary of the Enamel Products Co., and a sister, Mrs. Ralph A. Spengler, 3312 Clarendon road, Cleveland Heights.

Col. Morgan Lewis Brett, U. S. Army, retired, lives in Tombstone, Ariz., in the summer and at Fallen Leaf Lake, Cal., in the winter. Another brother—the youngest—Allen, is in the construction business in Detroit.

Maj. Gen. Brett comes to Cleveland Thursday for a civic luncheon and the ground-breaking ceremonies for the Government's new airplane engine research laboratory at Cleveland Airport sponsored by the Chamber of Commerce. The luncheon will be at Hotel Cleveland.

High-ranking officials of the Navy Air Force and federal aeronautical agencies also will come here from Washington for the dedicatory program for the $8,400,000 research plant.



Here is an aerial view of Cleveland Airport, on which are superimposed miniatures of the buildings which will be constructed for the Government's new $8,400,000 airplane engine research laboratory. The units are as follows: (1) Administration building, (2) test hangar, (3) cooling towers, (4) service building, (5) wind tunnel, (6) engine laboratory, (7) fuels and lubricants laboratory. Off to the right—and off this picture will be the engine house. It will be built in the woods to muffle sound.

Maj. Gen. Brett . . . high in Army

Major in World War

Maj. Gen. Brett has had a varied and adventurous career since he was graduated from Virginia Military Institute. He served with the Philippine Scouts, a constabulary, then was commissioned in the Regular Army as a cavalry officer.

In 1914 he entered the Army Air Corps and was one of the earliest of the "Early Birds." During the World War he served in the Air Corps with the rank of major. At the same time two of his brothers were in service. Morgan was a colonel in the Army. (He is a West Point graduate.) And William H. Jr. was a first lieutenant in the Ordnance Department. Their brother-in-law, Ralph Spengler, served overseas as a captain in the Army. Defective eyesight barred their younger brother, Allen, from service.

Maj. Gen. Brett has been commanding officer at Wright Field, Dayton, and at Selfridge Field, Mt. Clemens, Mich. He served as brigadier general on a three-year detail in the Canal Zone. He has spent time at the Army War College in Washington and at the Army School at Fort Leavenworth, Kas., where he also was an instructor.

Stationed in Capital

Since the outbreak of the war in Europe Maj. Gen. Brett has been stationed in Washington.

Miss Linda A. Eastman, who retired last year as librarian, successor to William Howard Brett, today expressed hope of seeing Maj. Gen. Brett while he is in Cleveland. She last saw him in 1926 when he flew here from Wright Field for the unveiling of a portrait of his father at Public Library.

George Brett is 53. He has two daughters and a son. One daughter is married. Her husband is an Army Air Corps pilot at Wright Field.

George Brett's father was librarian in Cleveland from 1884 to his death, Aug. 24, 1918. During that 34-year span he was one of the best-known, best-appreciated men in the city.

He proved the wisdom and practicability of the open-shelf system. He perfected cumulative indexing of periodicals and applied it to library service. He developed the branch library system. He conceived, with broadest scope, a school and library co-operation.

Paradoxical for a man of such peaceful pursuits to have a militaristic son? No, for William Howard Brett's service in the Civil War influenced all his sons.

tells what military features can and cannot be incorporated in planes of a given type.

Performance is at a premium for air fighting. Rapid climb, high speed, and long cruising range are essential items which must be planned and earned in wind tunnels and experimental laboratories.

Superior Planes Win Dogfights

The courage of a pilot is a secondary factor when flight performance is weighed against it.

The winner of a race may or may not be braver than the fellow who finishes second or third. He may or may not be more skillful. If his ship has the performance, he should win and usually does, if he has only normal flying ability. And performance is predominantly important when two or more men meet in mortal combat in the air. And the only way to get this performance is to search for it.

The organization charged with national aeronautical research is the National Advisory Committee for Aeronautics. It was formed during the World War and has continued to report directly to the President.

Under the able leadership of Dr. George Lewis, the understaffed and underequipped NACA gallantly and doggedly kept America aware of the phenomenal advances in aeronautics and has contributed more than its share to progress.

Shortage of Engineers

Until this emergency awakening hit the United States, the NACA had about 400 scientific experts and aeronautical engineers at Langley Field to carry the entire burden of the major engineering, flight and accessory problems of commercial aviation (airline transportation forming the greater portion), and almost all the research for the Army and the Navy.

Compared to what has been going on abroad, this body of 400 men has accomplished wonders.

More than four years ago, Germany had some 7500 scientists and engineering specialists exclusively assigned to aeronautical research, and the facilities provided for them were of stupendous proportions.

It is with considerable relief, therefore, that American aviation welcomes the two additional research centers now being built.

Cleveland Lab Plays Part

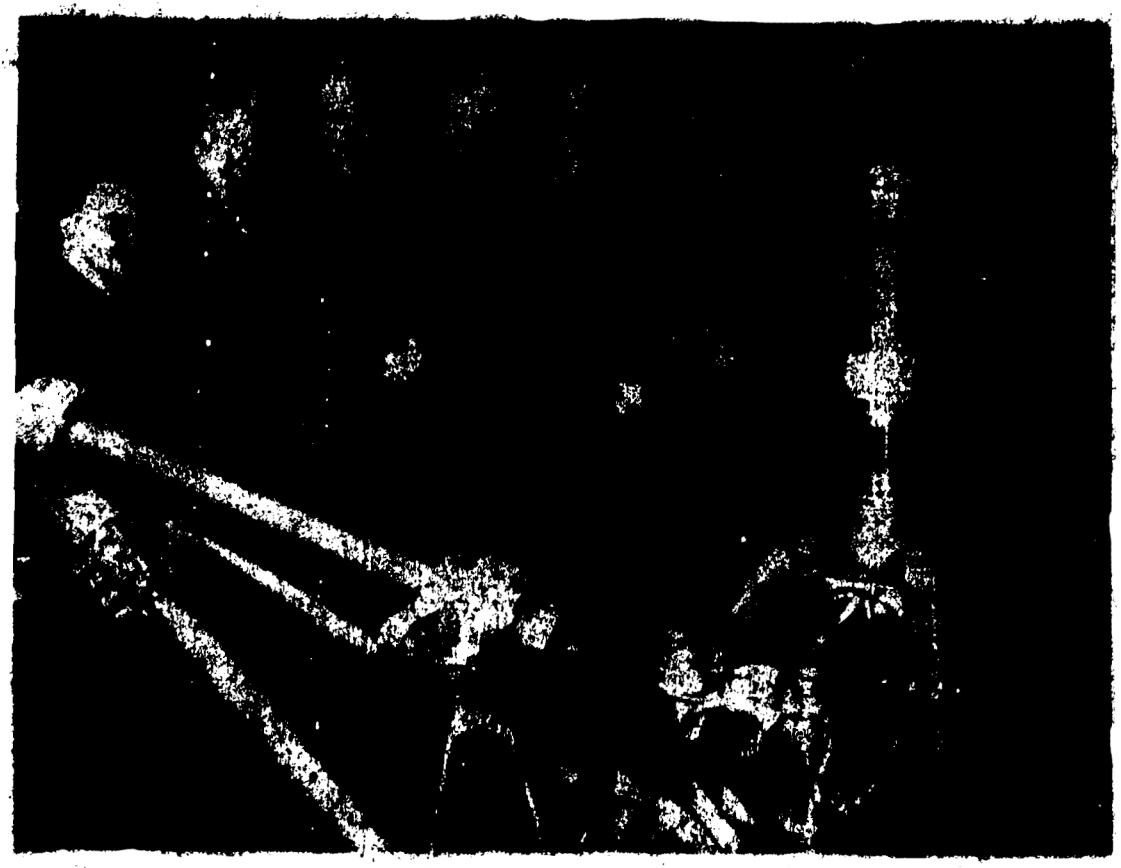
The new NACA center at Cleveland, designed for aircraft engine research, will play a most prominent and critical part in the types and efficiencies of American flying power plants in years to come.

An American aircraft engine of about 2000 horsepower has recently been placed in production. Time alone will eliminate the "bugs" from this new engine. What of the future?

We will soon need 3000 and 4000-horsepower engines. At this writing the United States would give its Army and Navy teeth for a streamlined, liquid-cooled, 3000-horsepower engine.

We are deficient in the liquid-cooled type at any horsepower. We have no Diesel, heavy, oil-burning engines. Never mind asking why. That's past and too late. The future lies in our three NACA research centers.

Inspect Defense Activities Here



Checking on progress in Cleveland's defense plants today were these officials from Washington, who also attended a civic luncheon and attended ground-breaking ceremonies for the new Aeronautics Laboratory at the Airport.

Shown inspecting a B-19 landing gear strut at Cleveland Pneumatic Tool Co., 2734 E. 79th street, are, left to right, Clifford Glidersleeve, Chamber of Commerce; A. B. Johnson, factory superintendent; George Lewis, National Advisory Committee for Aeronautics; Dr. Edward Warner, Civil Aeronautics Authority; Capt. S. M. Kraus, U. S. N.; Louis W. Grove, company president; Carlton Kemper and E. Thiel Johnson, both of the National Advisory Committee for Aeronautics.

Honor Hopkins Tomorrow as City Airport Founder

Chamber Holds Lunch as Work Starts on Air Research Center

By ROBERT SELTZER

Cleveland, an air-minded city, tomorrow will honor the man who made possible this town's acquisition of the Government's projected $6,400,000 airplane engine research laboratory. He made the laboratory possible for Cleveland because he made the Cleveland Airport possible.

He is William Rowland Hopkins, city manager of Cleveland from 1924 to 1930, the man who conceived and, overcoming many obstacles and obstructionists, brought into reality the airport—today the world's busiest air traffic center.

Mr. Hopkins will be the guest of honor at a civic luncheon at Hotel Cleveland sponsored by the Chamber of Commerce in conjunction with the ground-breaking ceremonies for the new research plant.

At the speakers' table will be high-ranking officials of the Army and Navy air forces and Federal aeronautical agencies from Washington, but top honors will go to the dark-haired Welshman who rose to prominence from the job of scale boy in the Newburgh steel mills.

Steel Mills a Springboard

The mills were a springboard for "Bill" Hopkins. He saved enough while working at the Cleveland Rolling Mills to enter Western Reserve University. He won Phi Beta Kappa honors and was graduated in 1896. Three years later he obtained his law degree at Reserve. He was elected to City Council from the Newburgh district while a freshman in law school, thus embarking on a spectacular career in Cleveland politics.

Attorney, big business promoter and real estate operator, Hopkins envisioned a belt line railroad to encircle the city and expedite freight movements for all the carriers. He doggedly surmounted all obstacles and achieved his purpose in five years. One of his vital interests was and still is transportation.

His story is interwoven with the history of Cleveland. He wrote the first 3-cent fare ordinance ever introduced in Cleveland. He was the first passenger to fly to New York in an air mail plane. While he was city manager, the Public Hall wings were built, the Stadium was started, welfare institutions were improved.

He acquired land for the airport and the project was opened in 1925 as one of the first "fully equipped" night landing fields in the country. For this and other enterprises, he was denounced as a "visionary." Detractors sarcastically characterized him as "Superman." His capacity for making speeches earned for him the sobriquet "Chautauqua Bill."

Today, Mr. Hopkins sat in his office at the Belt & Terminal Realty Co., Society for Savings Building and told how the airport came into being.

Acted in 1924

A meeting of Mr. Hopkins with Capt. Eddie Rickenbacker, World War ace, was arranged in Detroit. Rickenbacker cited the future of commercial aviation, urged Mr. Hopkins to acquire land and build a port at least a mile square. This was in 1924.

Mr. Hopkins checked available property 20 minutes from Public Square, decided on the Brook Park acreage. Glenn L. Martin, the airplane builder; David S. Ingalls and Capt. Rickenbacker inspected all sites. They agreed the Brook Park location was best. Half of the land was owned by J. D. Perkins. He named a fair price, aided in negotiations with his neighbors.

At this juncture, the Postoffice Department requested 20 acres of the city farm at Maplewood for a landing field. Air mail then was flown only in the daytime. The planes landed in a small part of 30 acres near the Glenn L. Martin plant. Night flying was planned to start July 1, 1925.

Mr. Hopkins reported to City Council that he had optioned 800 acres and outlined his plans. The Council had no authority to acquire land and build an airport until the State Legislature enacted a law, effective July 1, 1925.

Workmen from the Postoffice Department and the city leveled the land. Jack Berry, then a field engineer for the Postoffice Department, was sent here to install lighting. Mr. Hopkins liked him so well he retained him as airport commissioner.

Price Will Led Opposition

When Cleveland took its place on the great trade routes of the air and the U. S. air mail service inaugurated regular night flights between New York and Chicago, completing night and day service from coast to coast passenger service was undreamed of.

"Scientists will blaze new trails in laboratories such as that being built here," said Mr. Hopkins. "The aircraft researchers will work for bigger and faster ships and inexpensive small ships. The airport is large enough to separate the types. They will get speeds higher and higher. Nobody can set a limit on what they can do."

Made Possible Engine Lab

William R. Hopkins as the flying city manager and Airport Commissioner Jack Berry.

Cleveland Press, Jan. 22, 1941

W. R. HOPKINS STARTED IT

ON Thursday, Cleveland will celebrate with appropriate ceremonies the start of construction of the $8,000,000 federal air laboratory on the west edge of the Cleveland Airport.

If Cleveland did not have a great airport, with a huge capacity for handling planes, the Government would not be building this laboratory here.

Time passes so rapidly that some people in Cleveland may forget the leadership of William R. Hopkins when he was city manager in establishing this airport.

At its civic luncheon Thursday, the Chamber of Commerce should see that Mr. Hopkins is a guest to be especially honored.

Cleveland Press - January 20, 1941

Honor W. R. Hopkins at Civic Luncheon

William R. Hopkins, former city manager and the man who conceived and brought into being Cleveland Airport, will be guest of honor Thursday at a civic luncheon in conjunction with ground-breaking ceremonies for the Government's new airplane engine research laboratory.

Attorney, business promoter and real estate operator, Mr. Hopkins will sit at the speakers' table with high-ranking officials of the Army and Navy air forces and federal aeronautical agencies at the luncheon at Hotel Cleveland, sponsored by the Chamber of Commerce.

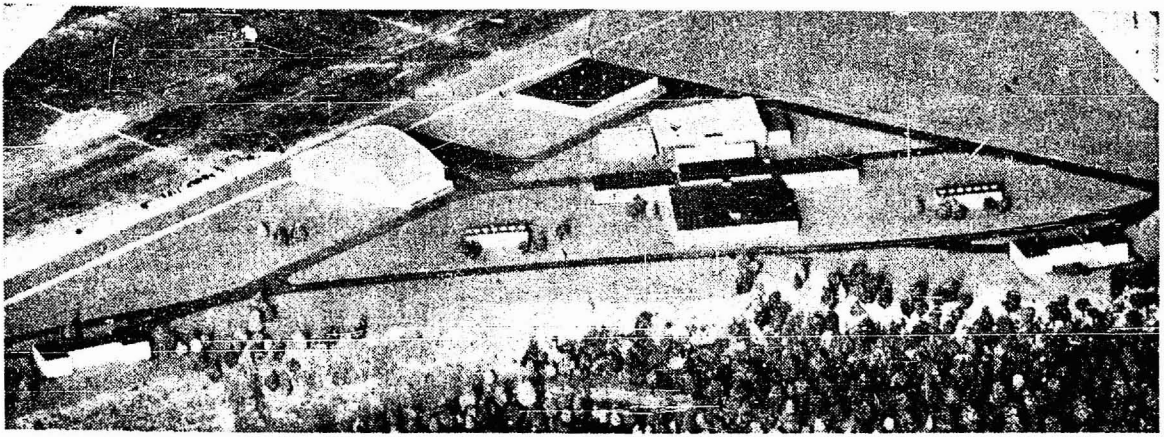
Mr. Hopkins, who overcame stout opposition to the airport project and saw it officially opened on July 1, 1925, will accompany the party to the airport for the dedicatory program for the laboratory.

Bakery Driver Robbed

While making an early morning delivery at E. 64th street and Quincy avenue today, Carl Koenig, 37, a driver for the Lasch Bakery of 1465 E. 63th street, was robbed of $7 by a holdup man.

Cleveland Press - January 21, 1941

Ready to Break Ground for $8,400,000 Air Laboratory



HOW THE LABORATORY WILL LOOK FROM THE AIR

MISS NORMA TOPLIFF

Using a chromium-plated pick and shovel, officials of the state of Ohio, the city of Cleveland, the Cleveland Chamber of Commerce and the National Advisory Committee for Aeronautics, with high officers of the United States Army Air Corps and navy aviation, will break ground at Cleveland airport tomorrow afternoon for the first unit of the $8,400,000 aviation engine research laboratory to be built and operated by the federal government.

Photographed yesterday with the pick and shovel, which were prepared and presented to the Chamber by the Geo. Worthington Co., was Miss Norma Topliff, secretary to Clifford Gildersleeve, industrial commissioner for the Chamber.

The other picture is the first to be released of the proposed layout of laboratory buildings. The road running across the foreground is Grayton Road on the far west side of the airport.

At the lower left is the administration building of the research center. At the lower right is the fuels and lubricants laboratory.

The large structure with wings, at the rear, is the engine research laboratory proper. In the same plot and on each side of that structure are water cooling towers.

Immediately behind the engine laboratory is the high-speed wind tunnel designed to permit research under temperature and pressure conditions existing at high altitudes.

To the left of the wind tunnel is the electrical substation, and to the right of the wind tunnel is the wind tunnel shop.

The structure with the curved roof is the flight research laboratory, generally referred to as the test hangar.

The square structure at the top of the photo is the service building.

A $306,000 contract for construction of the test hangar was awarded the R. P. Carbone Construction Co. of Cleveland yesterday.

Cleveland News - 1-23-41

Air Experts, Here to Help Launch New Airport Lab. Call City Aviation 'Key'

BY RANDALL BROWN 1-23-41

Cleveland today was hailed by five top airmen—here to break ground for the $8,400,000 aviation engine laboratory at Cleveland Airport—as a key force in America's battle to win world superiority in the air.

In Cleveland's new laboratory, the air men pointed out at a Cleveland Chamber of Commerce luncheon at Hotel Cleveland, will be fought the technical battles to give American military and civil aircraft speed and power unknown to the world of wings today.

Heading the delegation was Major General George H. Brett acting chief of the Army Air Corps to whom the occasion was somewhat of a homecoming.

Son of W. H. Brett

General Brett is the son of William Howard Brett, who for 35 years was Cleveland's librarian, and who was credited with building the library system up to one of the best in the country. The audience of 300 Cleveland business men and aviation parts manufacturers acknowledged General Brett's introduction with a rising ovation.

With the general were Captain Sydney M. Kraus of the Navy and three members of the National Advisory Committee for Aeronautics, Chairman Edward Warner, Secretary John F. Victory and Dr. George W. Lewis, research director.

"What we are doing here today," said Dr. Warner, "may mean the difference between America's survival and subjugation." He said the difference lies between such aeronautical statistics as 1,000-horsepower motors or 1,800-horsepower motors, 340 miles an hour or 390 miles an hour, planes with four guns or planes with 12 guns, planes that can fly 20,000 feet up or those that can climb to 30,000 feet."

Presents Pick, Shovel

George Worthington, head of the hardware company bearing his name, presented a chromium-plated pick and shovel to Victory which was used later in the day at the airport ground-breaking ceremony.

Dr Warner said the Cleveland laboratory would be devoted to the development of more compact and higher-powered engines for new high speeds, to improvement of economy for long-distance flights and to increasing high altitude engine performances and safety durability and reliability

The government officials were introduced by Fred H. Crawford, president of the chamber and president of Thompson Products, Inc., manufacturers of aviation engine parts. They were to be his guests at a private dinner tonight at the Union Club.

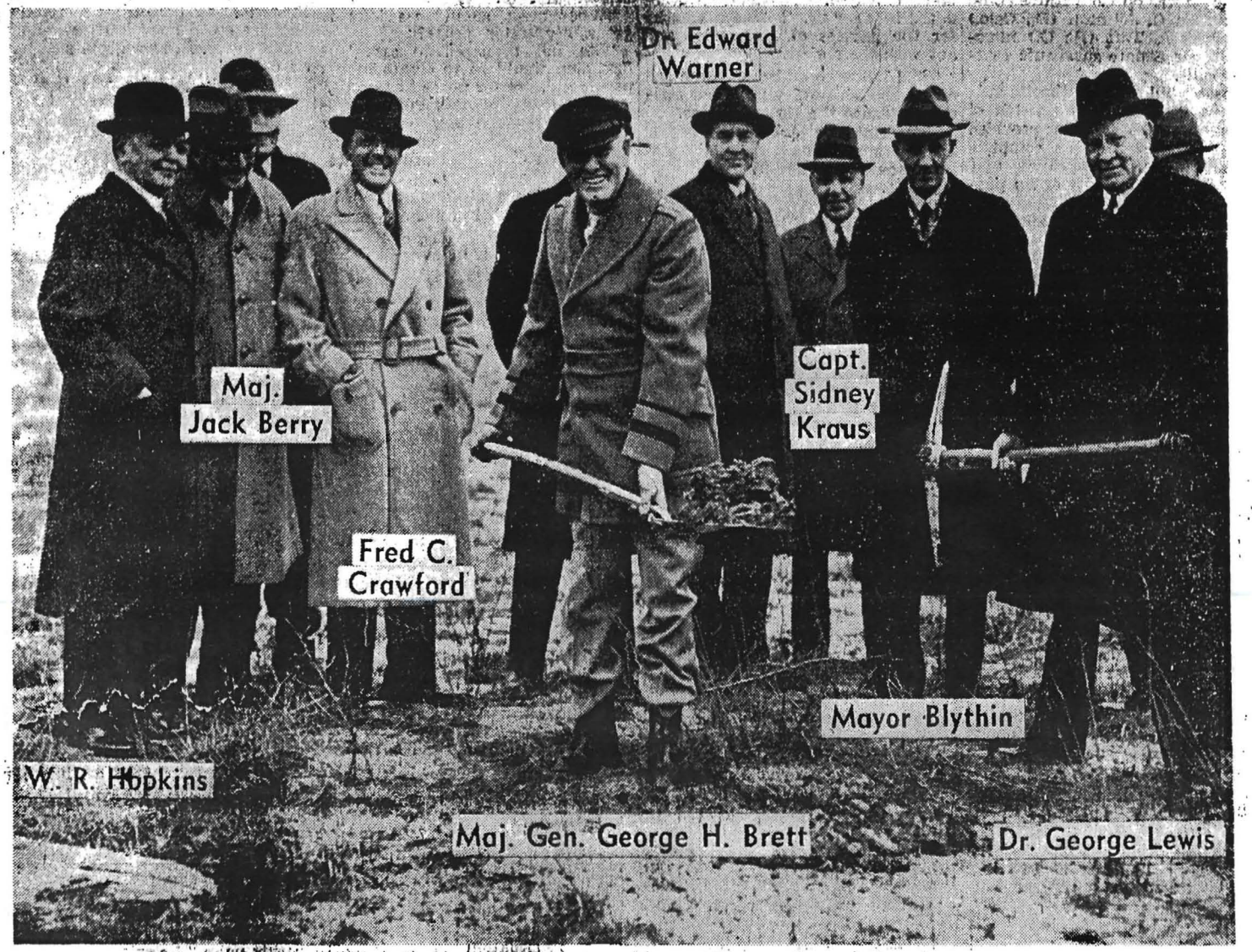
Visit Two Plants

The Washington delegation visited the Cleveland plants of the Aluminum Co. of America and the Cleveland Pneumatic Tool Co.

Guest of honor at the luncheon was William R. Hopkins, who, as city manager, was largely responsible for the establishment of Cleveland Airport in a way which would permit large expansion.

The laboratory will be built on the mammoth parking lot which formerly was used in connection with the National Air Races at the airport.

Break Ground for Airplane Laboratory Here



Maj. Gen. George H. Brett, acting chief of the Air Corps, is pictured above lifting the first shovel of dirt in the ground-breaking ceremonies for the Government's new airplane engine research laboratory at Cleveland Airport. Assisting him with the pick is Dr. George W. Lewis, director of research, National Advisory Committee for Aeronautics. Others in the group, left to right, are: W. R. Hopkins, former city manager; Major Jack Berry, airport manager; F. C. Crawford, president of the Chamber of Commerce; Dr. Edward Warner, Civil Aeronautics Board; Capt. Sydney M. Kraus, Bureau of Aeronautics, U. S. Navy and Mayor Edward Blythin.

Cleveland Press: January 23, 19414

Says World's Finest Planes in Production

U. S. Aeronautic Aid Speaks at Laboratory Ground-Breaking

The finest airplanes in the world are on the production lines in the United States, Dr. George W. Lewis, director of aeronautical research for the National Advisory Committee for Aeronautics, said here today.

Dr. Lewis was one of the group of high ranking officials of Army and Navy air forces and governmental aeronautical agencies in Cleveland today from Washington to participate in a civic luncheon and ground-breaking ceremony for the Government's new $8,400,000 airplane engine research laboratory at Cleveland Airport.

The visiting officials toured the Aluminum Corp. of America and the Cleveland Pneumatic Tool Co., before the Chamber of Commerce sponsored noon luncheon at Hotel Cleveland.

They inspected the B-19 landing gear strut under construciton at the latter plant on E. 78th street for use in the world's largest bomber plane.

Foreign Edge Wiped Out

"Through efforts of our own research laboratories, we have today the finest planes in the world on our production line," Dr. Lewis asserted. "There was a difference in American and foreign ships, with the foreign ones having the edge in armor and armament, but that has been changed on the production lines.

"In our research work we are driving for speed and economy in fighting ships."

S. Paul Johnson, co-ordinator of research for the N. A. C. A. also said that this country was now producing planes "superior to any in the world."

Bring Equipment

At the noon luncheon, Dr. [illegible] said that all of the engine [illegible] material from Langley Field, Virginia, would be moved to Cleveland's "finest laboratory in the world."

"Engine research is the chief factor in development of military aviation today," he added.

Maj. Gen. George H. Brett, chief of the U. S. Army Air Corps, said that it costs $2,000,000 [illegible] engineering research to the [illegible] actual development of an [illegible]

Maj. Brett expressed [illegible] that England has been [illegible] maintaining quality [illegible] in its military planes. "[illegible] names of quality against [illegible] is reflected in the [illegible] Germany and England," he said.

Presents Freedom

[illegible] Warner of the C[illegible] Aeronautics Authority told the [illegible] crowd:

"The difference between freedom and subjugation is the difference between 400 miles per hour and 200 miles per hour; the difference between flying at 30,000 feet and 20,000 feet; the difference between 20 guns and four guns; the difference between a good engine and one that is not good."

R. C. Crawford, president of the Chamber of Commerce, presided at the luncheon. A welcome address was delivered by Mayor Edward Blythin.

Mr. Crawford said the new laboratory would be a "real asset to aviation in the present defense program and in the future development of commercial aviation."

"Already an important center in the aviation industry, Cleveland will become even more so on completion of the laboratory," he said.

Selected On Merits

John A. Victory, secretary of the National Advisory Committee for Aeronautics, was presented with a chrome-plated pick and shovel which was later used to break ground for the new labboratory.

The presentation was made by George Worthington, grandson of the original founder of the George Worthington Co.

"Cleveland was selected on its merits as the site of this project," Mr. Victory said. "It was the best location because of its accessibility to the engine and tool industry."

Following the luncheon the group went to the airport for the ground-breaking ceremony.

Among the other visiting officials were Capt. Sidney Kraus, Bureau of Aeronautics, U. S. Navy; Col. Donald H. Connelly, administrator of Civil Aeronautics, and Carlton Kemper, in charge of engine research at Langley Field, Va.

Finest Planes in Production

U. S. Aeronautic Advisor Speaks at Laboratory Ground-Breaking

Pictures on Page 14

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Following today's luncheon the group went to the airport for the ground-breaking ceremony.

Other Officials Here

Among the visiting officials were Maj. Gen. George H. Brett, acting chief of the U. S. Army Air Corps; Capt. Sidney Kraus, Bureau of Aeronautics, U. S. Navy; John F. Victory, secretary of the National Advisory Committee for Aeronautics; Dr. Edward Warner of the Civil Aeronautics Authority.

Col. Donald H. Connelly, administrator of Civil Aeronautics, and Carlton Kemper, in charge of engine research at Langley Field, Va.

Attend Air Lab Party

Cleveland Press, January 23, 1941

Below are pictured some of the men who played a prominent part in the civic luncheon at Hotel Cleveland sponsored by the Chamber of Commerce in conjunction with ground-breaking ceremonies for the new airplane engine research laboratory at Cleveland Airport. Maj. Gen. Brett, a native Clevelander, is acting chief of the U. S. Army Air Corps. Mr. Crawford is president of the Thompson Products Co. and head of the Chamber. Dr. Lewis is director of aeronautical research of the National Advisory Committee for Aeronautics. Mr. Hopkins is former city manager of Cleveland and the man who made possible Cleveland Airport. Dr. Warner is associated with the Civil Aeronautics Authority. Mr. Victory is secretary of the N. T. C. A. Mr. Kemper is in charge of engine research at Langley Field, Virginia. Capt. Kraus is with the Bureau of Aeronautics, U. S. Navy.

Cleveland Press, Jan. 23, 1941
(1-23-41)

Says U. S. Producing World's Best Planes

The finest airplanes in the world are on the production lines in the United States, Dr. George W. Lewis, director of aeronautical research for the National Advisory Committee for Aeronautics, said here today.

Dr. Lewis was one of the group of high ranking officials of Army and Navy air forces and government aeronautical agencies in Cleveland today from Washington to participate in a civic luncheon and ground breaking ceremony for the Government's new $8,400,000 airplane engine research laboratory at Cleveland Airport.

The visiting officials toured the Aluminum Corp. of America and the Cleveland Pneumatic Tool Co. before the Chamber of Commerce luncheon.

They inspected the B-19 landing gear strut under construction at the latter plant on E. 78th street for use in the world's largest bomber plane.

"Through efforts of our own research laboratories, we have today the finest planes in the world on the production line," Dr. Lewis asserted. "There was a difference in American and foreign ships, with the foreign ones having the edge in armor [illegible] been [illegible] the production lines.

"In our research work we are striving for speed and economy in fighting ships."

S. Paul Johnson, co-ordinator of research for the N. A. C. A. also said that this country was now producing planes "superior to any in the world."

Bring Equipment

At the noon luncheon, Dr. Lewis said that all of the engine research material from Langley Field, Virginia, would be moved to Cleveland's "finest laboratory in the world."

"Engine research is the chief factor in development of military aviation today," he added.

Maj. Gen. George H. Brett, acting chief of the U. S. Army Air Corps, said that it costs $2,000,000 for engineering research to the point of actual development of an engine.

Maj. Brett expressed the opinion that England has been successful in maintaining quality construction in its military planes. "The maintenance of quality against production is reflected in the casualty lists of Germany and England," he said.

Represents Freedom

Dr. Edward Warner of the Civil Aeronautics Authority told the large crowd:

"The difference between freedom and subjugation is the difference between 400 miles per hour and 350 miles per hour; the difference between flying at 30,000 feet and 20,000 feet; the difference between 20 guns and four guns; the difference between a good engine and one that is not good."

P. C. Crawford, president of the Chamber of Commerce, presided at the luncheon. A welcome address was delivered by Mayor Edward Blythin.

Mr. Crawford said the new laboratory would be a "real asset to aviation in the present defense program and in the future development of commercial aviation."

"Already an important center in the aviation industry, Cleveland will become even more so on completion of the laboratory," he said.

Selected On Merits

John A. Victory, secretary of the National Advisory Committee for Aeronautics, was presented with a chrome-plated pick and shovel which was later used to break ground for the new laboratory.

The presentation was made by George Worthington, grandson of the original founder of the Geo. Worthington Co.

"Cleveland was selected on merits as the site of this [illegible] Mr. Victory said. "It was [illegible] location because of its [illegible] to the engine and [illegible]

Following the lunc[illegible] went to the airport [illegible] breaking ceremo[illegible]

Among the o[illegible] were Capt. [illegible] of Aeronau[illegible] Donald [illegible] of Civi[illegible] Ken[illegible]

THE CLEVELAND PLAIN DEALER, FRIDAY, JANUARY 24, 1941

Another Citadel of Defense Is Started

Wide World Photo

"Many an army rookie would like to see this," said Frederick C. Crawford (left), president of the Cleveland Chamber of Commerce, as Maj. Gen. George H. Brett, acting chief of the army air corps, wielded a shovel at ground-breaking ceremonies on the site of the aviation engine research laboratory at Cleveland Airport yesterday afternoon. In the picture are (left to right) . Crawford; former City Manager William R. Hopkins; E. R. Sharp, laboratory construction administrator; Maj. John Berry, airport manager; Gen. Brett; S. P. Johnson, research co-ordinator for the National Advisory Committee for Aeronautics; Mayor Edward Blythin; Dr. E. P. Warner, chairman of the N. A. C. A.; Dr. George W. Lewis (with pick), N. A. C. A. director of research, and Capt. S. M. Kraus, in charge of navy procurement.

SHOVEL FIRST DIRT FOR NEW AIR LAB

U. S. Aviation Chiefs Take Part in Ceremony

BY JAMES D. HARTSHORNE

While the contractor's equipment stood by waiting the word to start making the dirt fly, ground was broken at Cleveland Airport late yesterday in a ceremony marking the actual start of construction of the federal government's $8,400,000 aviation engine research laboratory.

Maj. Gen. George H. Brett, acting chief of the army air corps and a former Clevelander, turned the first shovelful of earth after Dr. George W. Lewis, director of research for the national advisory committee for aeronautics, had loosened the muddy soil with a pick.

The first unit of the research center, an engine test hangar, will soon begin to take shape. Construction of other buildings will be started within a few months.

At a luncheon preceding the airport ceremony, held in Hotel Cleveland under the auspices of the Cleveland Chamber of Comerce, the research center was described by Gen. Brett as of "tremendous importance to military aviation."

"Much has been said about quality as opposed to production," Gen. Bett said. "England has maintained quality as against production. A comparison of the air casualty rates of Britain and Germany revolves around the question of quality. Quality is built on research.

"The War Department asks the greatest co-operation from the citizens of Cleveland in seeing that this research laboratory accomplishes its mission."

Dr. Edward P. Warner, chairman of the N. A. C. A., the government agency which will operate the laboratory, told the luncheon audience that the basic reason for the laboratory was that "the consequences of the work done here may mean continuance of our ability to exist."

Indebted to Researchers

"In Great Britain now, as it would be in the United States under like circumstances, the debt is not only to those who battle in the air, but also to those who produce and who carry on research," Dr. Warner said. "The laboratory, however, is not merely concerned with military problems. Every job undertaken in relation to defense will be useful in commercial aviation."

The research laboratory, Dr. Lewis said, will be "the finest in the world" and will be "a most important factor in the further development of military and commercial aviation."

Other speakers, including Capt. Sidney M. Kraus, chief of navy procurement, and John F. Victory, secretary of the N. A. C. A., said the selection of Cleveland Airport from among the 72 sites offered by 65 cities, had been strictly on merit and was a compliment to the facilities available here and to the diversity of Cleveland's industries.

Site Best Offered

"Cleveland's site was the best offered us," Victory said. "This location also was the most accessible to the engine industry, while your community offered us everything we wanted without going beyond the borders of the city.

"You can take pride in the fact that politics or pressure had nothing to do with selection of the site."

Frederick C. Crawford, president of the Chamber, pledged the government officials the fullest co-operation on the part of the city and its industries in the work of the laboratory.

William R. Hopkins former city manager of Cleveland, was introduced by Crawford as the man whose foresight "secured us the fine airport we have today and who got us Maj. Jack Berry, manager of that airport."

OBLIGATION ON CLEVELAND

DR. EDWARD WARNER reminded us yesterday that our national existence may depend on our ability to produce a better aircraft engine than our potential enemies can produce.

Dr. Warner is director of aeronautical research for the National Advisory Committee for Aeronautics. He was speaking at the luncheon preceding the breaking of ground on the Government's new air engine laboratory at the airport.

It was an impressive occasion, with an important group of the company's foremost technicians and research men at the speaker's table, along with Cleveland-born Maj. Gen. George H. Brett, commander of the Army Air Corps, and others.

Several members of the N. A. C. A. explained how Cleveland had been selected for the great new airplane engine laboratory. Pressure and politics played no part in their decision. It was made solely on the merits of our geographical and industrial situation. The concentration of manufacture related to airplane part production and our general industrial diversity were leading considerations.

The confidence shown in this community by the National Government imposes serious obligations on the members of the community.

Fred C. Crawford, president of the Chamber of Commerce, urged Cleveland manufacturers to make good his assurances that they would produce for the laboratory anything it needs more promptly, more cheaply, more accurately and more satisfactorily than it can be produced anywhere else.

This is a sizeable undertaking, but Cleveland industry should, so far as it is able, perform it.

ALL FEATURE SECTION

CLEVELAND PLAIN DEALER

ALL FEATURE SECTION

SUNDAY, FEBRUARY 23, 1941

MORE POWER TO US!

New Aircraft Laboratory Here Will Tackle Knotty Problems Now Baffling Research Engineers

By Lawrence J. Hawkins

AMERICA wants a fighting plane for combat in the frigid, cloudless spaces of the sub-stratosphere.

An engine to drive such a plane at 400 to 500 miles an hour is a primary objective of the $8,400,000 research laboratory under construction just west of the airport here for the National Advisory Committee for Aeronautics.

The war in Europe today is a high altitude war, and it is going higher. Bombers and their bodyguards of pursuit ships have been driven up and up by the increasing range and accuracy of anti-aircraft guns, and further yet by the necessity of keeping above enemy ships. In air battle the top plane is top dog.

Air fighting in the World War occurred usually around the 10,000-foot level between 100-mile-an-hour planes armed with one or two machine guns synchronized to fire between propeller blades. Those battles really were visible from the ground.

The fighting overseas today generally occurs above the clouds at the 20,000-foot level, where the air is too thin and cold for cloud formation. Pursuit ships fly at a speed of about 400 miles an hour and can climb 4,000 feet a minute. They are armed with eight heavy machine [illegible] mounted in the wings and a [illegible] rapid-fire cannon firing [illegible] the propeller shaft.

[illegible] now we want a fighting machine for a war at 30,000 feet—nearly six miles up. This does not mean that today's planes cannot reach such heights. They can and do. But it does mean that the perfect stratosphere engine hasn't been built yet.

Engines efficient at ordinary altitudes won't do. You know what happens to your car on a sub-zero day. At 20,000 feet the "standard atmosphere" is 12.3 degrees below zero, and the air pressure is 465.3 millibars (unit of force) as compared to 1,103.2 at sea level. At 30,000 feet the temperature drops to 47.9 below zero and the pressure is 300.8 millibars, or less than one-third sea level air density.

This means, for one thing, that engines must be equipped with superchargers to compress the rarefied air. The development of an efficient supercharger (three types are being studied now at Langley Field, Virginia) will be one of the primary concerns of the new Cleveland laboratory.

So important is this problem of stratosphere flight—urgently important from the immediate military standpoint and commercially important later—that $3,100,000 is being spent on a single item of research equipment. This is a wind tunnel larger than any of its kind in the world today. It will have a throat diameter of 25 feet, six feet more than a similar tunnel at Langley Field.

The air in the tunnel can be refrigerated and evacuated to approximately the climate and density of the stratosphere. Giant electric propellers will create a wind of 300 miles an hour at normal air density, 490 miles an hour at substratosphere density. Thus, flight conditions at 30,000 feet and even higher (the stratosphere begins at 36,000 feet) may be duplicated.

The tunnel will accommodate engines of 3,000 horse power with propeller operating, and so the most efficient combination of engine, supercharger, propeller and nacelle installation may be studied without the time wasting and dangerous necessity of actual flight tests. Because of the enormity of the investment it is unlikely that any private commercial company would ever have provided such experimental equipment.

The lab at all times will consume enough electrical power to service a fair-sized city. The exact quantity needed has not yet been determined, but it is authoritatively reported that the demand will be in excess of 10,000 kilowatts and may reach 20,000 when the wind tunnel is in operation. The minimum requirement of 10,000 kilowatts is considerably more than the normal power demand for a whole city the size of Elyria or Massillon.

The laboratory is not merely a place to test engines. It is a place for scientific research in fundamental principles. It replaces costly groping with exact science.

"Why a government laboratory?" Dr. Edward P. Warner, a member of the N. A. C. A. and vice chairman of the Civil Aeronautics Board, said at the ground-breaking ceremonies here Jan. 23:

"The difference between winning a war and losing it may be the difference between an 1,800 and a 2,000-horse power motor, or the difference between ability to fly at 20,000 feet or 30,000 feet.

"The building of better planes powered by better engines is not merely a military problem. Every single job undertaken will have its eventual influence in the paths of commerce. If we build an engine efficient at 30,000 feet we will also have built an engine efficient in stratosphere planes."

No short-lived child of defense is the new laboratory. It will stay here long after the Battle of Britain is over, although the emphasis is all on defense now.

John F. Victory, who has been secretary of the N. A. C. A. ever since it was formed in 1915, takes this slant:

"What is worse than the second best hand in a poker game? The second best hand is worse than the worst hand, because the worst hand will pass while the second best will call and lose. If America is going to be forced into an international poker game it wants to be sure it holds the best hand. If we are going to invest billions in defense we want the very best. It takes research to find the best."

It is considered appropriate that the laboratory is located here, only an hour's flight from Dayton, O., where the Wright brothers built the first airplane in their old bicycle workshop.

The engine which powered the first Wright plane developed 16 horse power and weighed 12 pounds to the horse power. The celebrated Liberty motor of World War days, which we hailed as the motor which would revolutionize air transport, weighed 785 pounds and developed 437 maximum horse power. That means it weighed slightly more than two pounds per horse power. Engines used in the present war weigh between one and one-half pounds per horse power and develop up to 2,000 horse power.

The whole aim of engine research is, in general, to develop an engine which gives more power for less weight.

No responsible expert will predict what the future holds in the way of speed, size or power of planes. While the cruising speed of automobiles was going up from 25 to 50 miles an hour, largely because of better roads, airplane speeds went from 90 to 400 miles an hour.

A large share of the credit for these great strides in aviation goes to the N. A. C. A.'s aeronautical research laboratory at Langley Field, whose engineers contributed a cowling design which materially decreased air resistance, pioneered in the location of engines in plane wings, and recently redesigned the finning of air-cooled motors so as to triple the engine ability to throw off heat. Those are only a few of its achievements.

Langley was the only government air research lab in the country until Congress, disturbed by the menacing situation in Europe just prior to the actual outbreak of conflict in 1939, authorized research facilities in California and the engine lab here.

An engine research division was set up at Langley six years ago. All of its engine equipment and research brains will be moved to Cleveland as buildings are completed.

Included in the equipment is a camera capable of taking 40,000 pictures a second. It is a "camera" only in the sense that it takes pictures, for no shutter could work at that terrific speed nor could a film stand the pace. The instrument is one of the secret devices developed to enable engineers to peek inside motors.

Slow motion movies can be made of gas entering the engine cylinder, undergoing compression and being ignited. Engineers have watched burning gas bounce around inside cylinder walls producing the "knock" so familiar to all motorists who push their cars too hard going up hill.

Suppose this 40,000-pictures-a-second camera was used to photograph a baseball batter from the time he hit a ball to the time he reached first base. If the picture were projected at the normal movie speed of 16 pictures a second, the film would run three and one-half hours.

Yet this camera is "too slow." A faster one is expected to be in use before the laboratory here is completed.

The engine division personnel at Langley numbers about 85 men, and that number here will increase three to four times, according to Dr. George W. Lewis, director of all N. A. C. A. research activities. This is not a large total in comparison to the numbers employed by huge industrial plants, but the quality of these men is far above the average. Fifty per cent of the staff is composed of technically trained college graduates—mechanical, aeronautical and electrical engineers, physicists and chemists.

Directing the work of all these engine experts is Carlton Kemper, a quiet, retiring sort of chap who holds his big job at the age of 41. He was here, all smiles, last month when he inspected the magnificent setting for his new plant.

Kemper specialized in automotive engineering at the University of Pennsylvania and after graduation worked on research for Packard at Detroit.

In the early days of the air mail he was airport manager for fields at Bellefonte and College Park, Pa. The end of the World War found him in training as a cadet flyer. Soon afterward the N. A. C. A. discovered him and Dr. Lewis recognized his unusual talents. Kemper is married and has one son, who loves horses as much as his father loves horses' power wrapped up in a humming motor.

One whole section of the new laboratory will be devoted to fuels and lubricants, and to the development of instruments to determine the best fuel-air ratio under actual flight conditions. Stratosphere engines are going to need something special in the way of lubricant.

Fuel consumption is so high now that long range aircraft must be virtual "flying fuel tanks." An improvement of only 1/100 per cent. in fuel consumption—for example, the reduction of .51 pounds of fuel per horse-power hour to .50 pounds—would permit Atlantic Clipper planes to carry four more passengers.

Waste engine heat and ways to reclaim it form another major research problem. Approximately 60 per cent. of the energy in motor fuel is now lost in even our most efficient engines. A part of this waste energy is being recovered in one design of a supercharger which is driven by the engine exhaust.

Possibility of recovery of lost energy by using it to inject fuel into cylinders will be investigated. Your automobile engine sucks in gas. Engineers see advantages in forcing it in under pressure. Out of such researches may emerge a two-cycle engine, which theoretically would almost double the power of the usual four-cycle engine.

This may have been one of the things Dr. Vannevar Bush, chairman of the N. A. C. A., had in mind when he told the House appropriations committee recently that the Cleveland laboratory would investigate "non-orthodox" types of airplane engines.

"We want to investigate engines off the beaten path," he said. "Private engine companies cannot afford to step way out on a radical design and see what is in it. It may cost $1,250,000 to develop a new engine. It takes years."

Everyone who has been reading the papers is familiar with the controversy raging over the relative merits of liquid-cooled, in-line engines and radial air-cooled engines.

Most American manufacturers have been concentrating on the production of light and powerful air-cooled engines. The objection voiced against them is that they must of necessity present the flat side of their pancake shape to the wind, and that their great power cannot overcome the drag created at extremely high speeds.

The Allison division of General Motors at Indianapolis had experimented with a liquid-cooled engine of 1,000-h. p. which can be hooked together for 2,000-h. p. When the war came along, Allison was ready to fill British orders, liquid-cooled, in-line engines being what Britain wants. The plant is turning out 10 to 12 engines a day now. Recently completed plant expansion looks to a production schedule of 1,000 a month.

The great advantage of the liquid-cooled, in-line engine is that it is no wider than the pilot's shoulders, permitting the plane to be streamlined for minimum air resistance.

Almost everyone in the country has jumped into this engine controversy except the persons who probably know more about the relative merits of the two types than anyone else. The N. A. C. A. and its research men have been silent, and you may depend upon it they will remain publicly silent.

Newsmen need not expect much scientific news from the laboratory here. The most revolutionary discovery may be made, but the more revolutionary it is, the more closely guarded a secret it will be.

Nor should Clevelanders look upon the air lab as an interesting sight-seeing place to take their Painesville cousins when they come to town. During the present world emergency, at least, no visitors will be allowed.

The laboratory is located on a 200-acre site southwest of the old National Air Races grand stand and is bounded on its western extremity by Metropolitan Park. Go out to these once wide open spaces any work day now and you will find it swarming with construction crews. First of the five buildings to be started is a "flight research laboratory," which Construction Administrator Edward R. Sharpe describes as a "glorified hangar." This building is slated for completion in August or before.

Next is the engine prop test house, then the service building which will house all the technical services the laboratory needs. Then comes the fuels and lubricants laboratory and last of all the administration building. The wind tunnel, which presents technical problems without precedent, will be started as soon as designs can be worked out.

Since Sharpe is with us now and will remain in Cleveland as the laboratory's administrative officer, we better get acquainted. He is a pleasant addition to our community, a man of 48, heavy-set with a thin mustache, graying hair and hearty, straight-forward manner. He holds a commission as lieutenant commander in the naval reserve, and was a chief petty officer in the navy during the World War.

A knowledge of law is one of the necessities of his position. Sharpe was educated in law at William and Mary College, and he is a member of the Virginia bar. He came to the N. A. C. A. in 1921 to become what he refers to as "hangar boss" at Langley Field. For the past 15 years he has been administrative officer there.

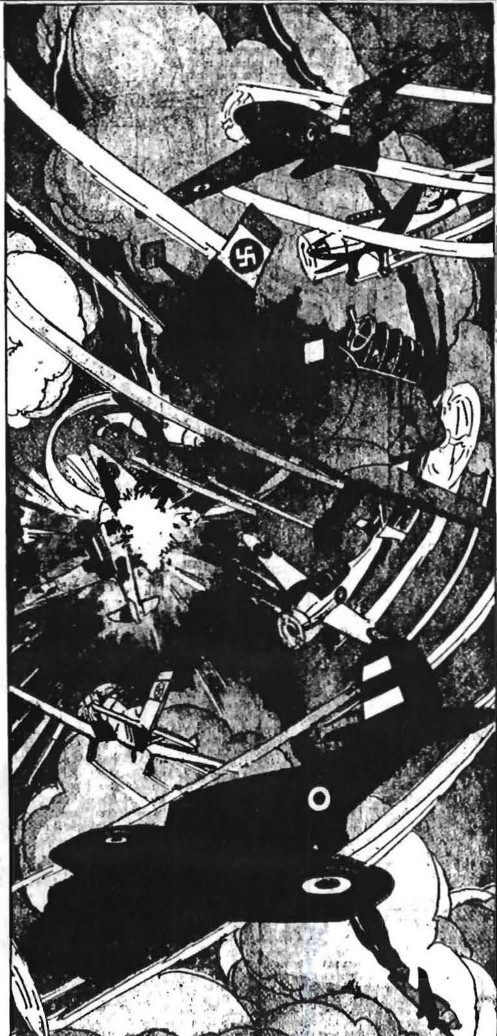
The Chamber of Commerce, through its industrial commissioner Clifford Gildersleeve, was after the engine lab for Cleveland soon after the N. A. C. A. dreamed it. So were 61 other cities. Cleveland was picked strictly on its merits. One big factor in the selection of the site was its location adjacent to the busy 1,280-acre municipal airport (312,700 passengers last year). Another big factor was its accessibility to technical supplies, scientific and industrial activity.

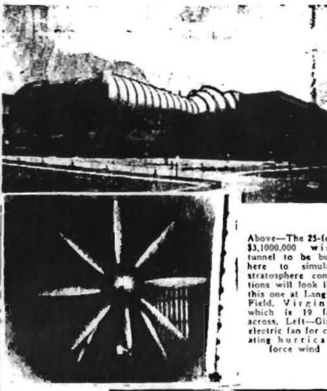
President William E. Wickenden of Case School of Applied Science is alert to the golden opportunity which the laboratory presents. He has already offered the services of Case mathematicians and other exact science brains, for aid in solving any special problems which may arise. He is also looking to the lab as a possible career for Case graduates. All of which will be mutually beneficial.

Such aviation authorities as Glenn L. Martin believe this war will mark the birth of big scale commercial flying. Plane plants are experiencing a mushroom growth now to build for Britain and our own defense. When the war effort is over the plants will remain, all tooled for mass production of private aircraft.

Cleveland will likely find itself a center of this great new industry. The engine laboratory will be a magnet for aeronautical manufacturing. Was it just a coincidence that Thompson Products (airplane parts) announced an $11,000,000 expansion; Cleveland Pneumatic Tool (plane undercarriages) a $5,000,000 expansion and Ohio Crankshaft another $5,000,000 expansion immediately after Cleveland was chosen for the N. A. C. A. research? Last month industrial expansion here totaled 1,250,000 square feet of factory space, more than the entire year of 1939.

War is hell and all that, but it certainly has given industry—particularly aviation—a shot in the arm. That sounds something like "Our house burned down but we had fun toasting marshmallows." It's a fact, though.

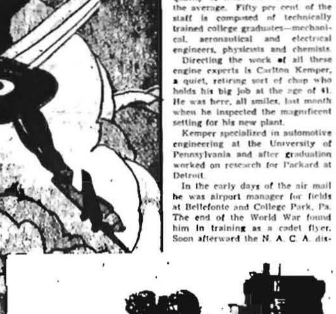




Above—The 25-foot $3,1000,000 wind tunnel to be built here to simulate stratosphere conditions will look like this one at Langley Field, Virginia, which is 19 feet across. Left—Giant electric fan for creating hurricane force wind

Carlton Kemper, 41-year-old chief of the engine research division at Langley Field, who will become research director of the Brookpark laboratory. All engine research personnel at Langley will be moved to Cleveland

Dr. George W. Lewis (left) director of all aeronautical research for the National Advisory Committee for Aeronautics, talks it over with Edward R. Sharpe, construction administrator, who will remain in Cleveland as the laboratory administrative officer



Glass cylinder engine setup for studying airflow in engines. This is part of the research equipment at Langley Field which will be moved to Cleveland