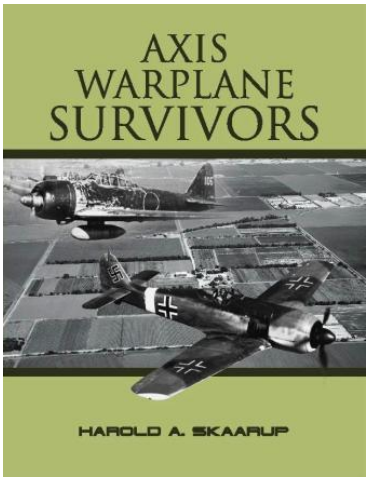
Axis Warplane Survivors (Book)



Axis Warplane Survivors

A guidebook to the preserved Military Aircraft of the Second World War Tripartite Pact of Germany, Italy, and Japan, joined by Hungary, Romania, Slovakia, Bulgaria, and Yugoslavia; the co-belligerent states of Thailand, Finland, San Marino and Iraq; and the occupied states of Albania, Belarus, Croatia, Vichy France, Greece, Ljubljana, Macedonia, Monaco, Montenegro, Norway, Cambodia, China, India, Laos, Manchukuo, Mengjiang, the Philippines and Vietnam.

The book may be ordered online at:

http://www.lulu.com/shop/harold-a-skaarup/axis-warplane-survivors/paperback/product-20360959.html

http://www.barnesandnoble.com/w/axis-warplane-survivors-harold-a-skaarup/1113763593?ean=9781300067443.

http://www.amazon.ca/s/ref=nb_sb_noss?url=search-alias%3Dstripbooks&field-keywords=axis+warplane+survivors&rh=n%3A916520%2Ck%3Aaxis+warplane+survivors&ajr=0.

http://www.amazon.com/s/ref=nb_sb_noss?url=search-alias%3Dstripbooks&field-keywords=Axis+Warplane+survivors&rh=n%3A283155%2Ck%3AAxis+Warplane+survivors&ajr=0.

http://www.chapters.indigo.ca/books/search/?keywords=axis%20warplane%20survivors&pageSize=12.

Data current to 12 Nov 2017.

Update

During the Second World the Royal Canadian Air Force faced a number of well-equipped enemy opponents, often paying the highest price in the engagements that took place in the air war. Canadian casualty statistics for the war amounted to 46,998 dead, including 17,974 who served with our Air Forces. Canadian Museums have done stellar work in preserving much of our military history, and for the aviation enthusiast, examples of most (but not all) of the aircraft flown by the RCAF and CF have been well taken care of for the public to see. I wanted to see more of the RCAF aircraft that fought in the Second World War but also examples of the opponents they faced in hostile skies. Where were the Focke-Wulf Fw 190s and the Messerschmitt Bf 109s? What about the Messerschmitt Me 262 Sturmvogel jets and Me 163 Komet rocket fighters, the Heinkel He 162 Volksjäger and the Mitsubishi A6M Zero-Sen? I began reading up on them. Two Me 262s did come to Canada in 1945. They were destroyed. So were many other types. A small handful of captured War Prizes survived, and we do have a Komet and a Volksjäger preserved in the Canada Air and Space Museum, but where did the rest go? Other countries must have lots of them, or so I thought, and so I began to hunt for them in earnest, and unfortunately discovered the same story elsewhere – most of them have been destroyed. The handfuls that exist make for a very short list of the survivors. A few are being recovered from crash sites and being put back together for display. You will need to carve a very long and exaggerated travel itinerary for yourself if you want to see the few that still exist. I must mention that in most cases a number of gifted restorers have done a wonderful service in preserving the handful of rare and historic warplanes described here. Dedicated museum staffs, researchers and technicians have provided a wonderful chance for the aviation enthusiast to see what those airplanes in the history book photographs actually looked like. You just need to know where to look. Many of the Axis aircraft listed here are or were located in Canada. Good hunting to you.

1 Canadian Air Group, Canadian Forces Europe
4 Canadian Mechanized Brigade Group, Canadian Forces Europe
Aircraft preserved in Canada 1: Warplanes in British Columbia
Aircraft preserved in Canada 2: Warplanes in Alberta
Aircraft preserved in Canada 3: Warplanes in Saskatchewan
Aircraft preserved in Canada 4a: Warplanes in Manitoba
Aircraft preserved in Canada 4b: Warplanes in Manitoba, CFB Winnipeg, Air Force Heritage Museum and Air Park
Aircraft preserved in Canada 4b: Warplanes in Manitoba, Western Canada Aviation Museum, Winnipeg
Aircraft preserved in Canada 5a: Warplanes in Ontario
Aircraft preserved in Canada 5b: Warplanes in Ontario, the Canada Aviation & Space Museum, Ottawa
Aircraft preserved in Canada 5c: Warplanes in Ontario, the National Air Force Museum of Canada, CFB Trenton
Aircraft preserved in Canada 5d: Warplanes in Ontario, the Canadian Warplane Heritage Museum, Mount Hope
Aircraft preserved in Canada 5e: Warplanes in









* Photos 1-4. Messerschmitt Me 262A-2a "*Sturmvogel*" (Wk. Nr. **500210**), coded "***Red 1***", painted *"Yellow 17",* 1./JG 7, surrendered at Fassberg, near Celle, Germany, and taken over by No. 616 Squadron, RAF. Designated **AM52**, it was flown to Lübeck on 29 May 1945, then ferried to Schleswig-Jagel, and then on to Farnborough on 9 June 1945. It was allocated RAF Serial No. **VH509** on 14 June, and made at least one test flight in July at Brize Norton. AM 52 was shipped to Canada from Ellesmere Port on board the SS *Manchester Shipper* on 23 August 1946, arriving at Montréal on 1 September. AM 52 was sold to Cameron Logan of New Scotland, Ontario, about 1947, with 300 other war-surplus RCAF aircraft, and was eventually scrapped by him at New Scotland. (RAF Photos)

Photos are by the author except where credited.

HLCol Harold A. Skaarup

www.SilverHawkAuthor.com

German, Italian and Japanese Warplane Survivors of the Second World War

During and after the end of the Second World War a number of Axis aircraft were captured and evaluated by the Allied forces. Most of these aircraft were scrapped or destroyed, and therefore only a handful have survived. This is a partial list of the Luftwaffe aircraft that were know to have been collected, with a few photos of the German aircraft in RAF and USAAF markings and additional photos of the survivors in their current livery in various museums. Hopefully there will be a few more to follow. Those of us who live in the free world need to remember how well equipped and often determined the adversaries our aircrews faced were, and how difficult and remarkable an achievement it was to have succeeded in the face of tremendous casualties.

The collection of Axis warplane survivor photos has grown too large for this one web page. For additional details and photos on captured Axis Warplanes visit the webpages on this site covering "RCAF War Prize Flights", "Canadian Warplane Trophies of the Second World War", "German Warplane Survivors", "Italian Warplane Survivors", and "Japanese Warplane Survivors" on this website.

USAAF Air Technical Intelligence

Ontario, CFB Borden

Aircraft preserved in Canada 6: Warplanes in Quebec

Aircraft preserved in Canada 7: Warplanes in New Brunswick

Aircraft preserved in Canada 8: Warplanes in Prince Edward Island

Aircraft preserved in Canada 9a: Warplanes in Nova Scotia

Aircraft preserved in Canada 9b: Warplanes in Nova Scotia, Shearwater Aviation Museum

Aircraft preserved in Canada 9c: Warplanes in Nova Scotia, Greenwood Military Aviation Museum

Aircraft preserved in Canada, 10: Warplanes in Newfoundland & Labrador; 11: Northwest Territories; 12: Nunavut; 13: Yukon Territory

Armoured Fighting Vehicles and Tanks preserved in Canada 1: British Columbia

Armoured Fighting Vehicles and Tanks preserved in Canada 2: Alberta

Armoured Fighting Vehicles and Tanks preserved in Canada 3: Saskatchewan

Armoured Fighting Vehicles and Tanks preserved in Canada 4: Manitoba

Armoured Fighting Vehicles and Tanks preserved in Canada 5: Ontario

Armoured Fighting Vehicles and Tanks preserved in Canada 5a:

The air intelligence organization of the US Army Air Forces (USAAF) was built up from a small nucleus that existed at Wright Field, Ohio, before the entry of the United States into the Second World War. The Wright Field unit drew on the experience of the RAF, whose organization and procedures had been studied in detail by USAAF personnel.

The first Axis aircraft to be flown at Wright Field in the USA was the Messerschmitt Bf 109E-3 (Wk. Nr. 1304), RAF AE479, acquired by the RAF in May 1940.[1] Transferred by the RAF to the USAAF in January 1942, this aircraft arrived at Wright Field in May 1942.



(RAF Photo)

* Photo. Messerschmitt Bf 109E-3, (Wk. Nr. 1304), White 1 before being painted with RAF roundels and designated AE479.







Ontario, Ottawa, Canadian War Museum

Armoured Fighting Vehicles and Tanks preserved in Canada 5b: Ontario, CFB Borden

Armoured Fighting Vehicles and Tanks preserved in Canada 5c: Ontario, CFB Petawawa

Armoured Fighting Vehicles and Tanks preserved in Canada 5d: Ontario, CFB Kingston

Armoured Fighting Vehicles and Tanks preserved in Canada 6: Quebec

Armoured Fighting Vehicles and Tanks preserved in Canada 7: New Brunswick

Armoured Fighting Vehicles and Tanks preserved in Canada 7a: New Brunswick, 5 Canadian Divison Support Base Gagetown

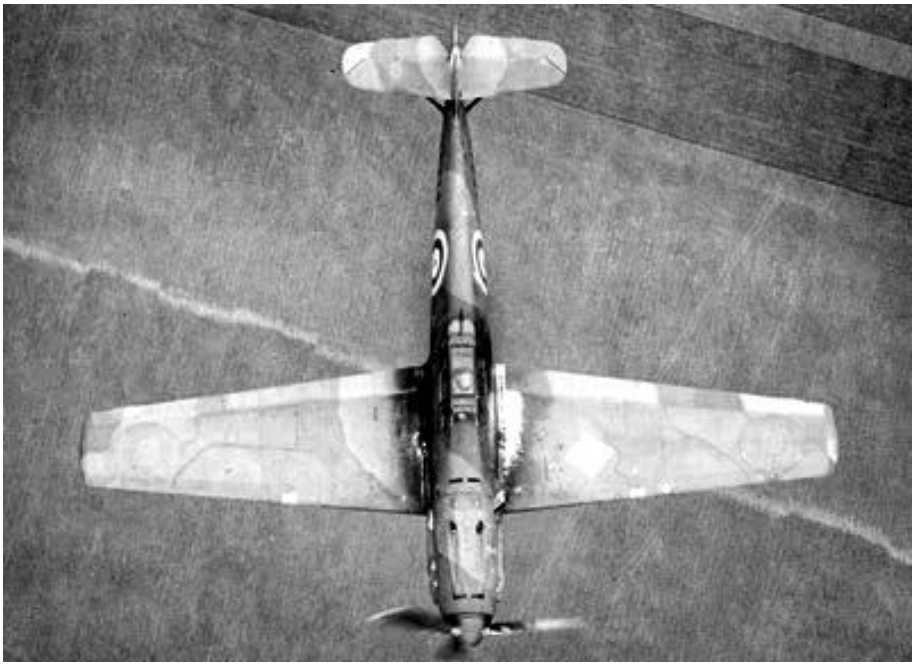
Armoured Fighting Vehicles and Tanks preserved in Canada 8: Prince Edward Island

Armoured Fighting Vehicles and Tanks preserved in Canada 9: Nova Scotia

Armoured Fighting Vehicles and Tanks preserved in Canada, 10: Newfoundland and Labrador, 11: Northwest Territories, 12: Nunavut, and 13: Yukon Territory

Armoured Fighting Vehicles and Tanks preserved in Canada, 14: MASTER LIST (no Photos)

Armoured Fighting Vehicles and Tanks preserved overseas used by Canadians



(RAF Photos)

* Photos 1-4. Messerschmitt Bf 109E-3, (Wk. Nr. 1304), "White 1" from JG76, RAF AE479. This aircraft was acquired by the RAF in May 1940. It was transferred by the RAF to the USAAF in January 1942. Phil Butler, *War Prizes*, p. 12.

During the Second World War, the most active practitioner of ATI was probably the United Kingdom. The first Luftwaffe aircraft flown and evaluated by the British was a Messerschmitt Bf 109E-3, (Wk. Nr. 1304), RAF AE479, coded White 1 of JG76, that made a forced landing at Woerth in the Bas-Rhin Department of France on 22 November 1939.

AE479 was studied and flown by the French and then given to the British in May 1940. It was promptly ferried to Boscombe Down, England on 3 May 1940, and assigned to Royal Aircraft Establishment (RAE) Farnborough on 14 May, where it was flown and tested extensively. In 1942 it was transferred to the US Army Air Forces (USAAF) and on 7 April 1942 it was shipped to the United States on board the SS *Drammesfjord*, consigned to Wright Field, Dayton, Ohio. It arrived there on 14 May 1942, but was damaged beyond repair in a forced landing at Cambridge, Ohio, on 3 November 1942.





(USAAF Photos)

Artillery and Armoured Fighting Vehicles preserved in Louisiana: New Orleans and the National Museum of WWII

Artillery and Armoured Fighting Vehicles preserved in Louisiana: New Orleans, Jackson Barracks Military Museum

Artillery and Armoured Fighting Vehicles preserved in New England 1: Maine

Artillery and Armoured Fighting Vehicles preserved in New England 2: New Hampshire

Artillery and Armoured Fighting Vehicles preserved in New England 3: Vermont

Artillery and Armoured Fighting Vehicles preserved in New England 4: Massachusetts

Artillery and Armoured Fighting Vehicles preserved in New England 5: Rhode Island

Artillery and Armoured Fighting Vehicles preserved in New England 6: Connecticut

Artillery and Armoured Fighting Vehicles preserved in Texas: Austin

Artillery and Armoured Fighting Vehicles preserved in Texas: Camp Mabry, Texas Forces Military Museum

Artillery and Armoured Fighting Vehicles preserved in Texas: Fort Hood, 1st Cavalry Museum

Artillery and Armoured Fighting Vehicles preserved in Texas: Fort Hood, 3rd Cavalry Museum

Artillery of Canada, Library and Archives

* Photos 1-2. Messerschmitt Bf 109F-4, (Wk. Nr. 7640), USAAF EB-1, later EB-100. This aircraft was presented to the USA by the USSR in November 1942 as a goodwill gesture after a visit to Moscow by Wendell Wilkie, the US Secretary of State. It arrived at Eglin AFB, Florida on 21 March 1944, where it was flown on a number of test flights.



(USAAF Photo)

* Photo. Messerschmitt Bf 109 G-14/AS of the Croatian air force after it surrendered in Italy, marked with an American flag.



(USAAF Photo)

* Photo. Messerschmitt Bf 109, coded "White 4", captured by US forces and numbered 6316 at Fieseler Field, Germany, May 1945.



(USAAF Photo)

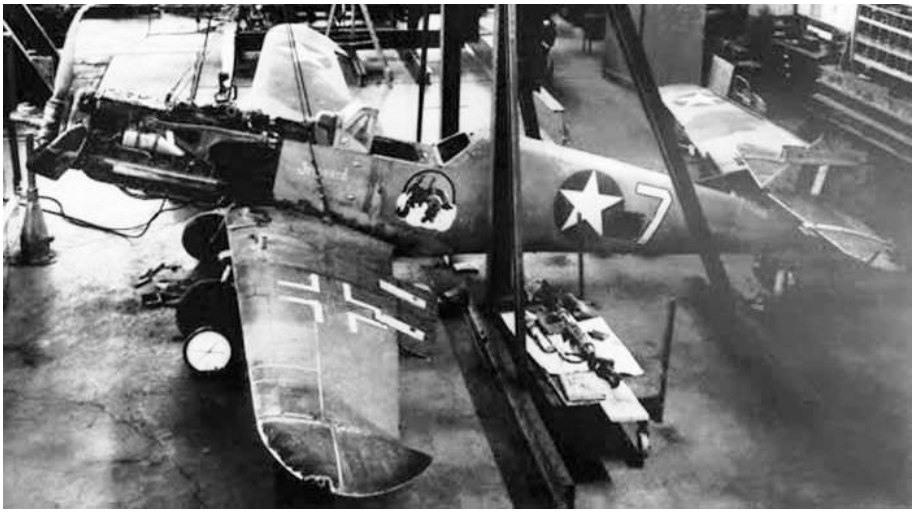
* Photo. Messerschmitt Bf 109G-2 “Gustav”, (Wk. Nr. 14329 or 14629), "Black 14" from 2(H)14 before it was painted in USAAF markings X8-7 and the name “*Irmgard*” painted in Germanic lettering on the side. This aircraft was captured by airmen of the 87th FS, 79th Fighter Group, and shipped to the USA where it was used for structural tests before being scrapped.



Canada Photos
Artillery preserved in Canada 1: British Columbia
Artillery preserved in Canada 2: Alberta
Artillery Preserved in Canada 3: Saskatchewan
Artillery preserved in Canada 4a: Manitoba
Artillery preserved in Canada 4b: Manitoba, CFB Shilo, Royal Canadian Artillery Museum
Artillery preserved in Canada 5a: Ontario, Alexandria to Halton Hills
Artillery preserved in Canada 5b: Ontario, Hamilton to Niagara Falls
Artillery preserved in Canada 5c: Ontario, Norfolk to Picton
Artillery preserved in Canada 5d: Ontario, Port Colborne to Woodstock
Artillery preserved in Canada 5e: Ontario, CFB Borden
Artillery preserved in Canada 5f: Ontario, CFB Petawawa
Artillery preserved in Canada 5g: Ontario, City of Kingston
Artillery preserved in Canada 5h: Ontario, City of Ottawa, The Canadian War Museum
Artillery preserved in Canada 5i: Ontario, City of Toronto
Artillery preserved in Canada 5j: Ontario, Fort Erie
Artillery Preserved in Canada 5k: Ontario, Fort George
Artillery preserved in Canada 5l: Ontario, Fort Henry









Artillery preserved in Canada 6a: Quebec

Artillery preserved in Canada 6b: Quebec City

Artillery preserved in Canada 6c: Quebec Citadel

Artillery preserved in Canada 7a: New Brunswick

Artillery preserved in Canada 7b: New Brunswick, 5 CDSB Gagetown

Artillery Preserved in Canada 8: Prince Edward Island

Artillery preserved in Canada 9: Nova Scotia

Artillery preserved in Canada 9a: Nova Scotia, Annapolis Royal

Artillery preserved in Canada 9b: Nova Scotia, City of Halifax

Artillery preserved in Canada 9c: Nova Scotia, Halifax, Fort George, Halifax Citadel

Artillery preserved in Canada 9d: Nova Scotia, Halifax, Naval Museum of Halifax

Artillery preserved in Canada 9e: Nova Scotia, Halifax, Royal Artillery Park

Artillery preserved in Canada 9f: Nova Scotia, Halifax, York Redoubt

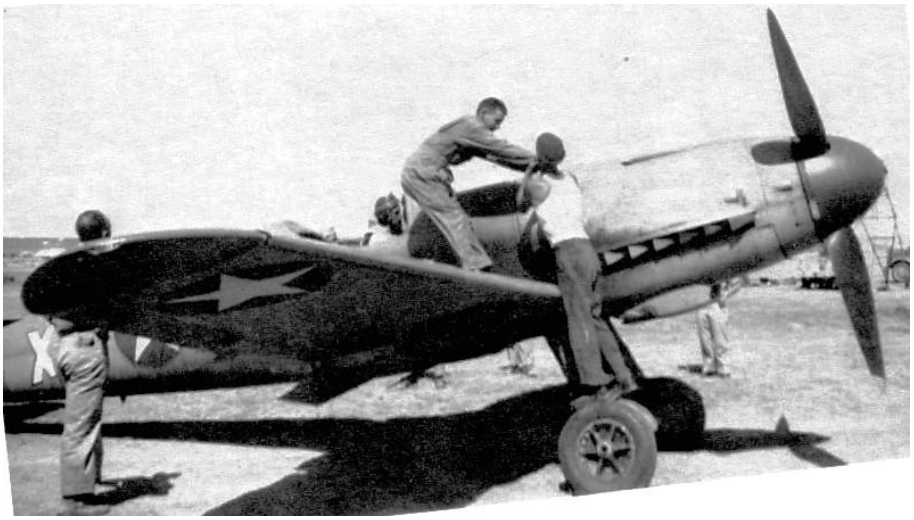
Artillery preserved in Canada, 10: Newfoundland & Labrador

Artillery preserved in Canada, 11: Yukon Territory, 12: Northwest Territories & 13: Nunavut

Artillery preserved in Canada, 14: MASTER LIST (no Photos)

Artillery preserved in Canada, French Guns

Artillery preserved in Canada, German First



(USAAF Photos)

* Photos 1 & 2. Messerschmitt Bf 109G-2 “Gustav”, (Wk. Nr. 14329 or 14629), "Black 14" from 2(H)14 before and after it was painted in USAAF markings X8-7 and the name “*Irmgard*” (named after the German crew-chief’s girlfriend) painted in Germanic lettering on the side. This aircraft was captured by airmen of the 87th FS, 79th Fighter Group, and shipped to the USA where it was used for structural tests before being scrapped.







World War Trophies
Artillery preserved in Ireland
Artillery preserved in Mexico
Artillery preserved in Portugal
Axis Warplane Survivors (Book)
Canadian Aerospace Artists Association, Harold A. Skaarup Artwork
Canadian Airborne Regiment on a Training Operation (1988)
Canadian Airborne units before 1968
Canadian Forces Parachute Team, The Sky Hawks, 1977-1979
Canadian Intelligence Corps (C Int C). "Acorn"
Canadian MiG Flights (Book)
Canadian Military Motorcycles
Canadian Provost Corps (C Pro C)
Canadian War Trophies (Book)
Canadian Warbirds 1: The Biplane Era, Fighters, Bombers and Patrol Aircraft (Book)
Canadian Warbirds 2: The Biplane Era, Trainers, Transports and Utility Aircraft (Book)
Canadian Warbirds 3: The Second World War, Fighters, Bombers and Patrol Aircraft (Book)
Canadian Warbirds 4: The Second World War, Trainers, Transports and Utility Aircraft (Book)
Canadian Warbirds 5: The Post War Piston Era (Book)
Canadian Warbirds 6: Jets (Book)







(USAAF Photos)

* Photos 1-6. Messerschmitt Bf 109 G-6/Trop, (Wk. Nr. 16416), captured 8 May 1943, Soliman airfield, 4. Staffel , JG 77, USAAF EB102.

Later aircraft obtained by Wright Field from the British were Bf 109G-6/Trop (Wk N .16416), EB-102; Me 410A-2/U1 (Wk Nr. 0018), EB-103; Focke-Wulf Fw 190-3, EB-101; Fw 190G-3 (Wk Nr. 160016), EB-104; Henschel Hs 129B-1/R2, EB-105; Junkers Ju 88D-1/Trop (Wk Nr. 430650), FE-1598; Junkers Ju 88A-4 (Wk Nr. 4300227), FE-1599; and a Gotha Go 242B-4 cargo glider, FE-2700. Messerschmitt Bf 109F-4 (Wk Nr. 7640), EB-100, was presented to the US by the USSR in November 1942 as a goodwill gesture after a visit to Moscow by Wendell Wilkie, the US Secretary of State. It arrived at Eglin AFB, Florida on 21 March 1944, where it was flown on a number of test flights.[2]



(USAAF Photo)

* Photo. Messerschmitt Bf 109 wreck examined by Americans in Bavaria at war's end.

Canadian Warbirds 7: Helicopters (Book)
Canadian Warplanes (Books and Illustrations)
Castles and Fortresses
Congreve Rockets - Canadian Connections
Dream Sayer: New Visions (pending) (Book)
Dream Seeker: Old Wisdoms Revisited (Book)
Dream Seer: Old Wisdoms (Book)
Estabrooks, Frederick W. Canadian Provost Corps
Estabrooks, Walter R. Whiz Bangs and Woolly Bears (Book)
German Second World War Aggregat A-4/Vergeltungswaffe-2 (V-2) Rockets preserved
German Second World War Guns and War Trophies preserved in Canada
German Warplanes of the First World War preserved (Luftstreitkräfte 1914-1918)
German Warplanes of the Second World War preserved in Canada
German Warplanes of the Second World War preserved, (Luftwaffe 1939-1945), Arado to Dornier
German Warplanes of the Second World War preserved, (Luftwaffe 1939-1945), Fieseler to Fock-Wulf
German Warplanes of the Second World War preserved, (Luftwaffe 1939-1945), Gotha to Junkers
German Warplanes of the Second World War preserved, (Luftwaffe


(USAAF Photo)

* Photo. Messerschmitt Bf 109 (Wk. Nr. TBC), 5F+12, on a captured airfield in Germany with a USAAF North American P-51D Mustang in the background.

Luftwaffe aircraft found on airfields in the British and American sectors post war:


(Kriegsmarine Photo)

* Photo. Arado Ar 196A-3 being loaded onto the Graf Spee.

Arado Ar 196A

The Arado Ar 196A was a Luftwaffe two-seat coastal patrol and light attack aircraft powered by one BMW 312K nine-cylinder radial air-cooled piston engine. It had a top speed of 194-mph, a cruising speed of 166-mph, service ceiling of 22,965', and a range of 497 miles. Loaded, it had a weight of 7,282 lbs. It had a wingspan of 40' 10", a length of 35' 11-1/2" and a height of 14'7". It was armed with two wing-mounted 20-mm MG FF cannon with 60 rpg plus one 7.9-mm MG 17 machinegun in the starboard side of the forward fuselage and one 7.9-mm MG 15 on a flexible mounting with 525 rpg; plus one ETC 50/VIII rack underneath each wing for a single 110-lb SC 50 bomb.[1]

The Ar 196A was loved by its pilots, who found it handled well both in the air and on the water. The first Arado Ar 196A to fall into allied hands was an example belonging to the German heavy cruiser KMS *Admiral Hipper* captured in Lyngstad by a Norwegian Marinens Flyvebaatfabrikk M.F. 11 seaplane of the Trødelag naval district on 8 April 1940 at the beginning of the Norwegian campaign. It was flown against its former owners with Norwegian markings. On 18 April 1940 it was flown to the UK by a Royal Norwegian Navy Air Service pilot. Not long afterwards the plane crashed while being flown by a British pilot while in transit to the Helensburgh naval air base for testing. At the end of the war, at least one other Ar 196A was left at a Norwegian airfield and kept in use as a liaison aircraft by the Royal Norwegian Air Force for a year on the West Coast.[2]



* Photo. Arado Ar 196A-5 (Wk. Nr. 514), ship-borne reconnaissance/coastal patrol floatplane, captured at Schleswig. Designated RAF AM92, this aircraft was scrapped at Felixstowe in 1947. (RAF Photo)

One of the captured Ar 196A seaplanes was flown by RCAF S/L Ian Somerville.

Arado Ar 196A, (Wk. Nr .unknown), captured at Schleswig. Designated RAF AM90, this aircraft was scrapped at Schleswig.

1939-1945), Klemm to Siebel

Ironsides, Canadian Armoured Fighting Vehicle Museums and Monuments (Book)

Italian Warplanes of the Second World War preserved (Regia Aeronautica 1939-1943), 1 Aeronautica to Douglas

Italian Warplanes of the Second World War preserved (Regia Aeronautica 1939-1943), 2 Fiat to Macchi

Italian Warplanes of the Second World War preserved (Regia Aeronautica 1939-1943), 3 Messerschmitt to Savoia-Marchetti

Japanese Warplanes of the Second World War preserved (1), Aichi to Kawanishi (Imperial Japanese Army Air Service and Imperial Japanese Navy Air Service)

Japanese Warplanes of the Second World War preserved (2), Mitsubishi (Imperial Japanese Army Air Service and Imperial Japanese Navy Air Service)

Japanese Warplanes of the Second World War preserved (3), Nakajima to Yokosuka (Imperial Japanese Army Air Service and Imperial Japanese Navy Air Service

Japanese Weapons and Artifacts of the Second World War preserved in Canada

Kite Balloons over Canadians during the First World War

Labyrinth and Rock Wall, Fredericton

Arado Ar 196A-5, (Wk. Nr. 127), captured at Schleswig. Designated RAF AM91, this aircraft was scrapped at Felixstowe in 1947.

Arado Ar 199A-0, (Wk. Nr. unknown), captured at Schleswig. Designated RAF AM93, this aircraft was scrapped at Schleswig.


(1GonZosft Photo)

* Photo. Arado Ar 196A-3, ship-borne reconnaissance/coastal patrol floatplane. This aircraft was operated by the Bulgarian Air Force. It is displayed at the Bulgarski Vozdushni Voiski Muzeum (Museum of Aviation and the Air Force), Plovdiv, Bulgaria.

Only three Ar 196A floatplanes still exist from the total production run of 526 aircraft, excluding the prototypes and pre-production aircraft. Ar 196A-3 (Werk-Nummer 75526)[3], coded as "White 3" (Serial No. 0219), is on display in the Bulgarski Vozdushni Voiski Muzeum in Plovdiv, Bulgaria, with Bulgarian insignia. This Ar 196A-3 is one of twelve the Bulgarian Navy operated during the Second World War from Varna on the coast.

Ar 196A-5, (Wk. Nr. 623167) coded +HG, T3+BH, belongs to the National Air & Space Museum. The Allies recovered two Ar 196A-5s found on board the German battlecruiser *Prinz Eugen* when she surrendered at Copenhagen, Denmark.

Ar 196A-5, (Wk. Nr. 623183) coded T3+CH is the second of these two aircraft, and is being restored by the U S Naval Aviation Museum in Pensacola, Florida.

The Norwegian Historical Museum in Sola, Norway, has the fuselage frame of an Ar 196A-2 raised from the sunken German battleship Blücher.[4]

When the US Navy took custody of *Prinz Eugen*, they were more interested in the catapult system used to launch the floatplane rather than the Ar 196A-5 but they saved the two aircraft anyway. The Ar 196A-5, (Wk. Nr. 623167) in the NASM has only 14 hours of operational flying time and U S Navy pilots added just four more hours during testing and evaluation at the Naval Air Materiel Center in Philadelphia, Pennsylvania. The US Navy evidently repainted the airplane with markings copied from a different aircraft. That floatplane bore the code letters GA+DX (Wk. Nr. 68967). Today, the National Air & Space Museum's Ar 196A-5 still carries the bogus paint and markings of GA+DX. After years in storage, the Navy transferred the airplane to the Museum in 1961, where it is now preserved.[5]

Both of the Arado Ar 196A-5 floatplanes were recovered from the German cruiser Prinz Eugen by American forces survive. Arado Ar 196A-5 (Wk. Nr. 623167) is in storage at the Paul E. Garber Facility of the Smithsonian's National Air and Space Museum, and awaiting restoration. Ar 196A-5 (Wk. Nr. 623183) was stored with the National Museum of Naval Aviation (NMNA) at Pensacola, Florida. This aircraft is currently on loan to the Aeronauticum Museum at Nordholz, Germany.


(Luftwaffe Photo)

* Photo. Arado Ar 234B V9 prototype seen with a 1,000-kilogram bomb on 15 Mar 1944. (Note: the aircraft lacks a cockpit periscope).

Arado Ar 234B

The Arado Ar 234B-2 Blitz was the world's first operational jet-powered bomber, built by the German Arado company in the closing stages of the Second World War. It was powered by two Junkers Jumo 004B-1 axial-low turbojets, each with 1,984-lb thrust. The Ar 234 was produced in very limited numbers and was used almost entirely in the reconnaissance role, but in its few uses as a bomber it proved to be nearly impossible to intercept. It was the last *Luftwaffe* aircraft to fly over England during the war, in April 1945.

The Ar 234 was commonly known as *Blitz* (lightning), although this name refers only to the B-2 bomber variant and it is not clear whether it derived from the informal term *Blitz-Bomber* (roughly, "very fast bomber") or was ever formally applied. The alternate name *Hecht* ("pike") is derived from one of the units equipped with this aircraft, *Sonderkommando Hecht*.[1]

The Blitz had a maximum speed of 461-mph, a cruising speed of 435-mph, a service ceiling of 32,810, and a range of 967 miles with a 1,100-lb bomb load. The aircraft weighed 11,464 lbs empty and 21,605 lbs with maximum bomb load. It has a wing span of 46'3", a length of 41'5" and a height of 14'1". It was armed with two fixed aft-firing 20-mm Mauser MG 151/20 cannon with 200 rpg.[2]

In July 1944 the fifth and seventh prototypes of the Ar 234 were subjected to operational evaluation in the reconnaissance role by 1/Versuchsverband Oberbefehishaber der Luftwaffe at Juvincourt, near Reims. Fitted with Walter RATO equipment, they defied interception during numerous sorties

Mobile Support Equipment, RCAF
New Brunswick - the picture province
New Brunswick Military Museums
New Brunswick units, The 8th Canadian Hussars (Princess Louise's)
New Brunswick units, The Carleton and York Regiment
New Brunswick units, The New Brunswick Rangers
New Brunswick units, The North Shore (New Brunswick) Regiment
New Brunswick units, The Royal New Brunswick Regiment
New Brunswick units, The Royal Rifles of Canada (New Brunswick elements)
Nursing Sisters, Canada
Out of Darkness - Light, A History of Canadian Military Intelligence, Volume 1, Pre-Confederation to 1982 (Book)
Out of Darkness - Light, A History of Canadian Military Intelligence, Volume 2, 1983 to 1997 (Book)
Out of Darkness - Light, A History of Canadian Military Intelligence, Volume 3, 1998 to 2005 (Book)
Out of Darkness - Light, A History of Canadian Military Intelligence, Volume 4, 2006-2011 (Book pending)
RAF, No. 125 (Newfoundland) Squadron
RCAF War Prize Flights, German and Japanese Warbird Survivors (Book)

over Allied territory and were joined later by some Ar 234B-ls which, in small detachments, equipped experimental reconnaissance units designated Sonderkommandos Gotz, Hecht, Sperling and Sommer. Two other units, 1.(F)/33 and 1.(F)/100, were still operational at the war's end. The bomber version first became operational with the Stabstaffel of KG 76, deployed during the Ardennes offensive, but at that stage of the war the number of sorties that could be mounted was limited severely by fuel shortage. Among the most noted bomber operations were attempts to destroy the Ludendorff Bridge over the Rhine at Remagen, which was held by US troops. For 10 days from 7 March 1945 almost continuous attacks were made on this target until finally the bridge collapsed, but within two more weeks bomber operations had virtually come to an end for lack of fuel. The Ar 234 was also flown by Kommando Bonow, an experimental night-fighter unit which operated until the end of the war under the control of Luftflotte Reich.

Total construction of the Arado Ar 234 amounted to 274 aircraft, of which 30 were prototypes and 244 production aircraft.[3] A total of 210 Ar-234Bs and 14 Ar-234Cs were delivered to the Luftwaffe, but with Germany in chaos, only a handful ever got into combat. A final inventory taken on 10 April 1945 listed 38 in service, including 12 bombers, 24 reconnaissance aircraft, and 2 night fighters.[4]

On 24 February, an Ar-234B suffered a flameout in one of its engines and was forced down to a hard landing by an American Republic P-47 Thunderbolt fighter near the village of Segelsdorf. The jet was captured by the advancing Allies the next day. It was the first example of the type to fall into Allied hands largely intact. Ar 234s "continued to fight in a scattered and ineffective fashion until Germany surrendered on 8 May 1945. Some were shot down in air combat, destroyed by flak, sometimes their own, or bounced by Allied fighters when they came in to land. Others performed their missions and then fled too fast for enemy fighters to follow, to land and then wait for scarce fuel to be found so they could fly other missions."[5]



(USAAF Photo)

* Photo. Arado Ar 234B-2, (Wk. Nr. 140173), F1+MT, III./KG76, brought down near Segelsdorf, Germany on 24 Feb 1945. This was the first of its type to be captured by the Allies. Fate unknown.





Royal Canadian Armoured Corps
Royal Canadian Electrical and Mechanical Engineers (RCEME)
Royal Canadian Engineers (RCE)
Royal Canadian Navy (RCN), Warships
Shelldrake, Canadian Artillery Museums and Gun Monuments (Book)
Siegecraft - No Fortress Impregnable (Book)
Skaarup, Aage C. Warrant Officer (Retired), RCAF & CF
Skaarup, Harold J. G753, 5th Armoured Regiment (8th Princess Louise's New Brunswick Hussars) (Book)
Skaarup, Sergeant (Unteroffizier) Frederick C. Westfälische Feldartillerie-Regiment Nr. 22 and Reserve Feldartillerie-Regiment Nr. 45
Small Arms in the New Brunswick Military History Museum
Steam Locomotives and Trains of Canada
Ticonderoga Soldier - Elijah Estabrooks, 1758-1760, A Massachusetts Provincial Soldier in the French and Indian War (Book)
Visitors: Questions and Answers (Book)
Warplane Survivors USA: Alabama
Warplane Survivors USA: Alaska
Warplane Survivors USA: Arizona Warplanes
Warplane Survivors USA: Arkansas
Warplane Survivors USA: California Warplanes


(RAF Photos)

* Photos 1-3. Arado Ar 234B-1 (Wk. Nr. 140476), 8H+HH, captured at Grove, Denmark. This aircraft was designated RAF AM26, later VK877. It was scrapped at Farnborough.

Arado Ar 234B-2 (Wk. Nr. 140466), captured at Grove, Denmark. This aircraft was designated RAF AM24. It crashed at Farnborough on 27 Aug 1945.

Arado Ar 234B (Wk. Nr. 140608), captured at Grove, Denmark. This aircraft was designated RAF AM25, later VK880. It was scrapped at Brize Norton in 1948.

Arado Ar 234B (Wk. Nr. 140113), captured at Schlesweg. This aircraft was designated RAF AM54, later VH530. It was scrapped at Brize Norton in 1948.

Arado Ar 234B (Wk. Nr. 140356), captured at Stavanger, Norway. Designated RAF AM226, this aircraft was scrapped at Farnboough, England.

Arado Ar 234B (Wk. Nr. 140141), captured at Stavanger, Norway. Designated RAF AM227, this aircraft was scrapped at Brize Norton, England.


(RAF Photo)

* Photo. Arado Ar 234B (Wk. Nr. 140493), captured at Stavanger, Norway. Designated RAF AM228, this aircraft was scrapped at Brize Norton, England.

Arado Ar 234B (Wk. Nr. 140581), captured at Stavanger, Norway. Designated RAF AM229, this aircraft was scrapped at Brize Norton, England.

Arado Ar 234B (Wk. Nr. 140107), captured at Schleswig. Shipped to Oxfordness, England this aircraft was used as a ballistic target at Oxfordness, England.


(RAF Photo)

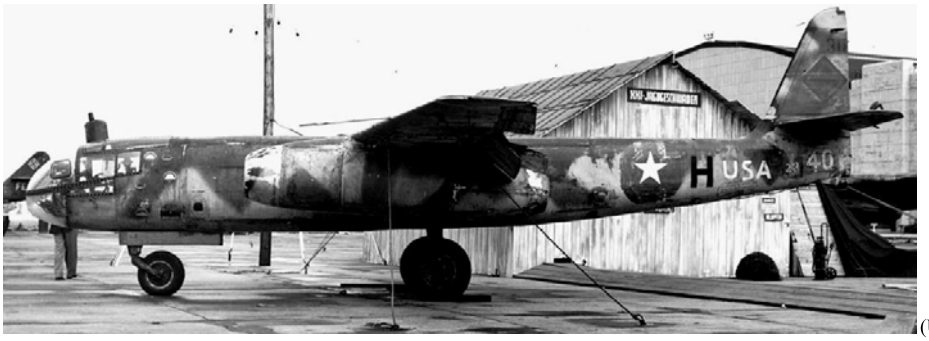
* Photos 1 & 2. Arado Ar 234B, (Wk. Nr. 140581) captured at Sola Airfield, Stavanger, Norway, still wearing Luftwaffe markings, being examined by RAF personnel.

Warplane Survivors USA: California, Atwater, Castle Air Museum
Warplane Survivors USA: California, San Diego, Flying Leatherneck Aviation Museum
Warplane Survivors USA: California, San Diego, USS Midway
Warplane Survivors USA: Colorado
Warplane Survivors USA: Connecticut
Warplane Survivors USA: Delaware
Warplane Survivors USA: Florida Warplanes
Warplane Survivors USA: Florida, NAS Pensacola, National Museum of Naval Aviation
Warplane Survivors USA: Florida, Polk City, Fantasy of Flight, Kermit Weeks Collection
Warplane Survivors USA: Georgia
Warplane Survivors USA: Hawaii
Warplane Survivors USA: Idaho
Warplane Survivors USA: Illinois
Warplane Survivors USA: Indiana
Warplane Survivors USA: Iowa
Warplane Survivors USA: Kansas
Warplane Survivors USA: Kentucky
Warplane Survivors USA: Louisiana
Warplane Survivors USA: Maine
Warplane Survivors USA: Maryland
Warplane Survivors USA: Massachusetts


(RAF Photo)

* Photo. Arado Ar 234B, (Wk. Nr. 140581) 8H+CH captured at Sola Airfield, Stavanger, Norway, being ground run. The aircraft wears RAF markings and was one of ten Ar 234Bs surrendered at Stavanger, Norway. Two of these went to the USAAF and one survives in the Steven F. Udvar-Hazy Museum, Chantilly, Virginia. Four of the remaining Ar 234s were flown to Farnborough.

Arado Ar 234B, (Wk. Nr. 140486), captured at Grove, Denmark. Designated RAF USA 7, this aircraft may have been sent to France.



(USAAF Photo)

* Photo. Arado Ar 234B, (Wk. Nr. 140311), USA 40, FE-1011, Wright Field, Oct 1945.





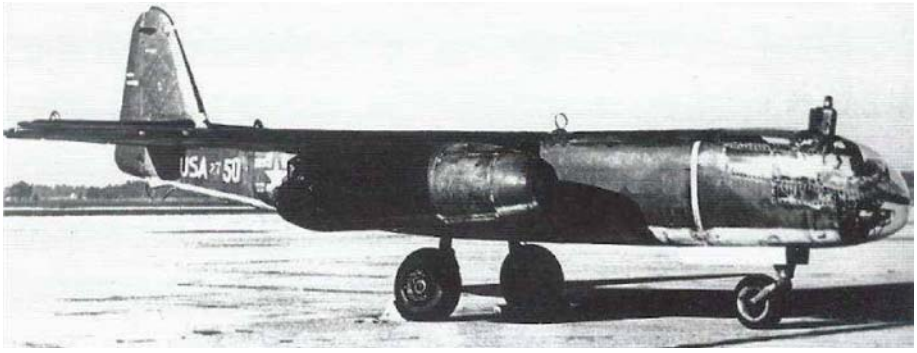


Warplane Survivors USA: Michigan
Warplane Survivors USA: Minnesota
Warplane Survivors USA: Mississippi
Warplane Survivors USA: Missouri
Warplane Survivors USA: Montana
Warplane Survivors USA: Nebraska
Warplane Survivors USA: Nevada
Warplane Survivors USA: New England Warplanes
Warplane Survivors USA: New Hampshire
Warplane Survivors USA: New Jersey
Warplane Survivors USA: New Mexico
Warplane Survivors USA: New York
Warplane Survivors USA: North Carolina
Warplane Survivors USA: North Dakota
Warplane Survivors USA: Ohio
Warplane Survivors USA: Ohio, Dayton, National Museum of the USAF
Warplane Survivors USA: Oklahoma
Warplane Survivors USA: Oregon
Warplane Survivors USA: Pennsylvania
Warplane Survivors USA: Rhode Island
Warplane Survivors USA: South Carolina
Warplane Survivors USA: South Dakota
Warplane Survivors USA: Tennessee
Warplane Survivors USA: Texas



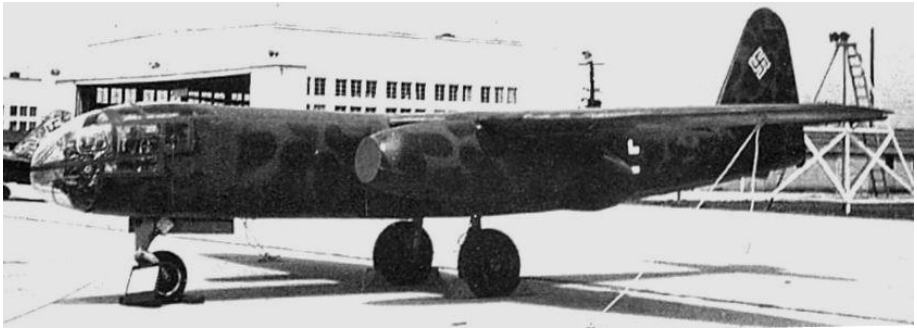
USN Photos)

* Photos 1-4. Arado Ar 234B-1, (Wk. Nr. 140489), Watson's Whizzers 202, USA 5, USN (Bu No. 121445), *Jane I*. This aircraft was scrapped at the Naval Air Test Center (NATC) Patuxent River, Maryland.








(USAAF Photos)

* Photos 1-3. Arado Ar 234B-2, (Wk. Nr. 140312), allocated to the USA by the RAF as USA 50, redesignated FE-1010, later T2-1010.

Warplane Survivors USA: Utah
Warplane Survivors USA: Vermont
Warplane Survivors USA: Virginia
Warplane Survivors USA: Virginia, Chantilly, Steven F. Udvar-Hazy Center
Warplane Survivors USA: Washington
Warplane Survivors USA: Washington, D.C.
Warplane Survivors USA: West Virginia
Warplane Survivors USA: Wisconsin
Warplane Survivors USA: Wyoming
Warplanes of the Second World War preserved in Australia
Warplanes of the Second World War preserved in Canada
Warplanes of the Second World War preserved in France
Warplanes of the Second World War Preserved in Germany (other than Luftwaffe)
Warplanes of the Second World War preserved in New Zealand
Warplanes of the Second World War preserved in South Africa
Warplanes of the Second World War preserved in the United Kingdom
Warplanes of the Second World War preserved in the USA (NMUSAF, NMNA & NASM)
Warplanes preserved in the Kabul Aviation Museum, Afghanistan
Author









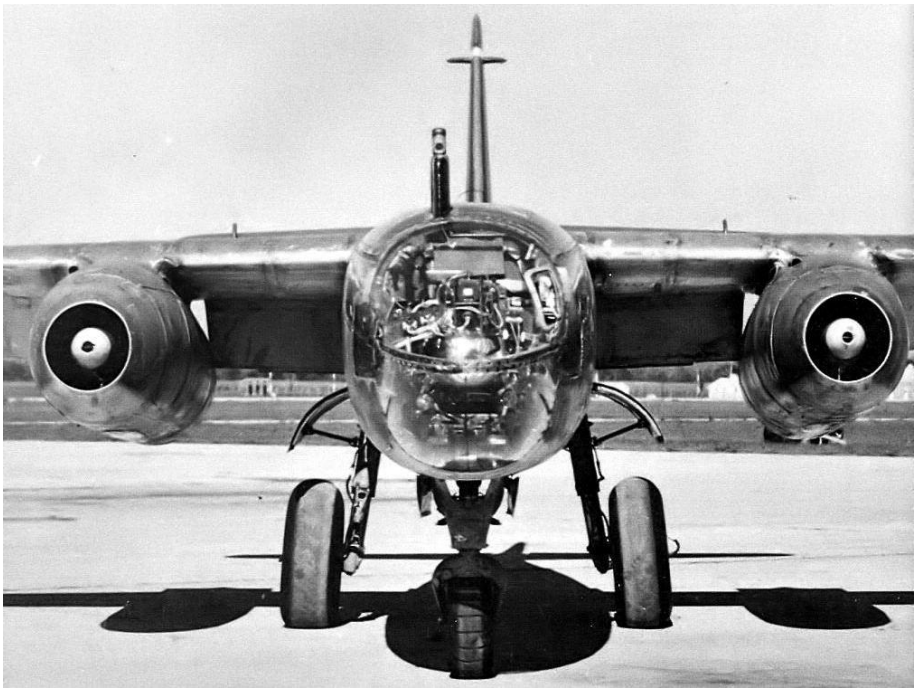
(USAAF Photos)

* Photos 1-4. Arado Ar 234B-1, (Wk. Nr. 140312), coded F1+DR, USA 50, FE-1010, T2-1010, Wright Field, Ohio, ca 1945. This aircraft is now on display in the Steven F. Udvar-Hazy Center. This Ar 234 B-2 was F1+DR, a detail not known when it was restored and painted as F1+GS.

After the war ended, a race began to collect advanced technology. Ar 234s were scattered all over Western Europe, and the British obtained about a dozen of them. The Soviets apparently only recovered one. For whatever reasons, the Ar 234 had been primarily used in the west.

The Ar 234C was equipped with four BMW 003A engines to free up Junkers Jumo 004s from use by the Me 262. The utilization of four engines improved overall thrust, especially in take-off and climb-to-altitude performance. 15 prototypes of the AR 234C were completed before the end of the conflict. Although Hauptmann Dieter Lukesch was preparing to form an operational test squadron, the Ar 234C was not developed in time to participate in actual combat operations.[6]

Four Ar 234s along with an assortment of other advanced Luftwaffe aircraft and shipped to the USA on the “jeep” carrier HMS *Reaper*. Three were given to the US Army Air Force and one to the US Navy, though the Navy’s aircraft turned out to be in permanently unflyable condition. One of the three obtained by the USAAF, (Wk. Nr. 140312), was put through intensive tests at Wright-Patterson Air Force Base, and ultimately handed on to the Smithsonian Institution’s National Air & Space Museum, where it is now prominently on display.[7]


(USAAF Photo)

* Photo. Arado Ar 234B-2, (Wk. Nr. 140312), USA 50, FE-1010, later T2-1010.

Only one Ar 234 survives today. The National Air & Space Museum's Arado Ar 234B-2 Blitz bomber (US Navy Bu 140312), and coded F1+GS, is on display in the Steven F. Udvar-Hazy Center, Virginia.[8] The aircraft is an Ar 234B-2 bomber variant carrying *Werknummer* (manufacturer's serial number) 140312, and was one of nine Ar 234s surrendered to British forces at Sola Airfield near Stavanger, Norway. The aircraft had been operating with *9. Staffel* III./*Kampfgeschwader 76* (later reorganised as *Einsatzstaffel*) during the final weeks of the war, having operated previously with the 8th squadron, carrying the full-four-character *Geschwaderkennung* military code of "F1+GS" on the fuselage sides.





* Photos 1 & 2. Arado Ar 234B-2, (Wk. Nr. 140312), USA 50, FE-1010, T2-1010, Steven F. Udvar-Hazy Center. This Ar 234 B-2 was F1+DR, a detail not known when it was restored as F1+GS. (Kogo Photos)


(Kogo Photo)

This aircraft and three others were collected by the famous "Watson's Whizzers" of the USAAF to be shipped back to the United States for flight testing. Two aircraft were given freely but a further two had been traded to Watson by Eric "Winkle" Brown (test pilot and CO of the Enemy Aircraft Flight at the RAE) in exchange for an interview with Hermann Göring who was then being held by the Americans.

The aircraft was flown from Sola to Cherbourg, France on 24 June 1945 where it joined 34 other advanced German aircraft shipped back to the USA aboard the British aircraft carrier HMS *Reaper*. *Reaper* departed from Cherbourg on 20 July, arriving at Newark, New Jersey eight days later. Upon arrival two of the Ar 234s were reassembled (including 140312) and flown by USAAF pilots to Freeman Field, Seymour, Indiana Indiana for testing and evaluation. 140312 was assigned the foreign equipment number FE-1010. The fate of the second Ar 234 flown to Freeman Field remains a mystery. One of the remaining two was reassembled by the United States Navy at Naval Air Station Patuxent River, Maryland, for testing, but was found to be in unflyable condition and was scrapped.

After receiving new engines, radio and oxygen equipment, 140312 was transferred to Wright Field near Dayton, Ohio and delivered to the Accelerated Service Test Maintenance Squadron (ASTMS) of the Flight Test Division in July 1946. Flight testing was completed on 16 October 1946 though the aircraft remained at Wright Field until 1947. It was then transferred to Orchard Place Airport in Park Ridge, Illinois, and remained there until 1 May 1949 when it, and several other aircraft stored at the airport were transferred to the Smithsonian Institution. During the early 1950s the Ar 234 was moved to the Smithsonian's Paul Garber Restoration Facility at Suitland, Maryland for storage and eventual restoration.

The Smithsonian began restoration of 140312 in 1984 and completed it in February 1989. All paint had been stripped from the aircraft before the Smithsonian received it, so the aircraft was painted with the markings of an aircraft of 8./KG 76, the first operational unit to fly the "Blitz". The restored aircraft was first displayed at the Smithsonian's main museum building in downtown Washington D.C. in 1993 as part of a display titled "Wonder Weapon? The Arado Ar 234". In 2005 it became one of the first aircraft moved to the new Steven F. Udvar-Hazy Center near Dulles International Airport. Today, (Wk. Nr. 140312) is displayed next to the last surviving Dornier Do 335, an aircraft that had accompanied it on its voyage across the Atlantic Ocean aboard the *Reaper* over 60 years earlier.

This aircraft is displayed with a pair of Hellmuth Walter designed, liquid-fueled RATO units mounted under its wings. These RATO units may be the only surviving examples to be mounted on an aircraft.





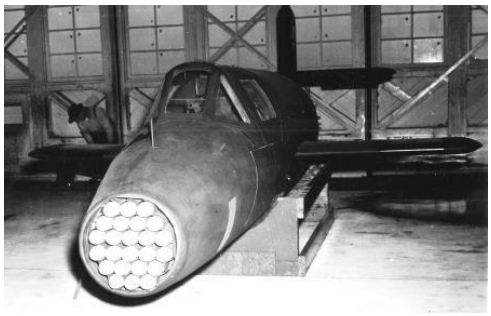
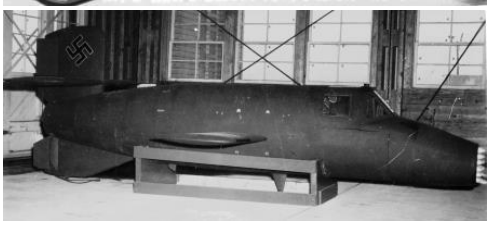


(US Army Photos)

* Photos 1-3. Bachem Ba 349A-1 Natter recovered in Germany by American troops at St. Leonhard im Pitztal, Austria in May 1945.


(Aconcagua Photo)

* Photo. Bachem Ba 349A-1 Natter replica on display in the Deutsches Museum, Munich, Germany. This Natter is said to have been reconstructed partly from sub-assemblies that survived the end of the war. This machine is of the experimental type as launched from the steel tower and is painted to look like an M17.

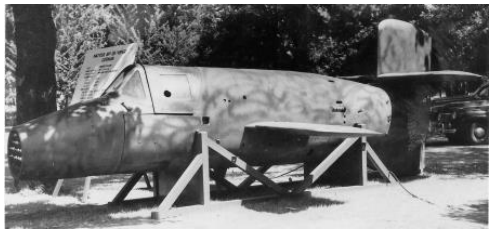



(USAAF Photos)

* Photos 1-3. Bachem Ba 349 Natter in the USA, being prepared for storage with the NASM. This Natter was recovered in Germany by American troops at St. Leonhard im Pitztal, Austria in May 1945.




(USAAF Photos)

* Photos 1 & 2. Bachem Ba 349 Natter on display in the USA, prior to being stored with the NASM. This Natter was recovered in Germany by American troops at St. Leonhard im Pitztal, Austria in May 1945.


(Edgar Diegan Photo)

* Photo. Bachem Ba 349 Natter on display in the USA.


(Creanium Photo)

* Photo. Bachem Ba 349A-1, T2-1 in the Smithsonian Institute National Air and Space Museum's Paul E. Garber Preservation, Restoration, and Storage Facility. This Natter was recovered in Germany by American troops at St. Leonhard im Pitztal, Austria in May 1945.

The Natter's weapon systems were simple and potentially devastating. They comprised either a honeycomb loaded with 24 electrically fired 73-mm Föhn spin-stabilized unguided air-to-air rockets, or 33 R4M 55-mm spin-stabilized rockets, or (projected) two 30-mm MK 108 cannon each with 30 rpg .or 32 R40 air-to-air missiles located behind a jettisonable cover in nose section. The alternative, the Rheinmetall SG 119 consisted of six clusters, each cluster containing seven MK108 barrels grouped together in a cylinder with the clusters arranged about the Viper's nose as in a revolver.

In April 1945, French armour advanced into Waldsee near Berlin, where the Natter's were being assembled, and captured a great number of spare parts. Only a few days before the French arrived, fifteen rocket engines destined for Vipers had been thrown into Lake Waldsee to prevent their capture. The secret was not well kept however and all were later recovered.

Plans for mass production of the Ba 349 A-1 were authorized on 1 March 1945, but only a few Natters were actually completed. These were followed by the improved Ba 349 B-1 (Entwurf 2) interceptors which were to be produced at Waldsee, but few were actually completed.

One of the models was powered by a solid-fuel rocket to evaluate takeoff characteristics. Practical tests were carried out at Peenemünde, where a first test conducted during February 1945, proved unsuccessful. Willy A. Fiedler, a testing engineer working for the RLM, was sent to the Heuberg Hills to oversee the program. Erich Bachem is quoted after the war as having said that about twenty Vipers had been used for practical tests. Fifteen were of the A-series, and four B-series aircraft. All were constructed at Waldsee. Still others were assembled by the Wolf Hirth glider factory. Four additional Ba 349s, possibly of the B-series, were captured at the end of the war by Allied forces near St. Leonhard, Austria.[2]

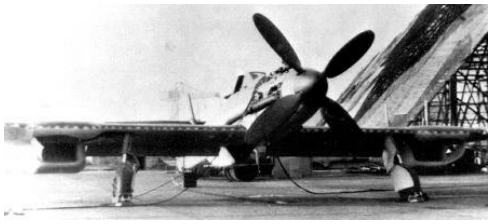
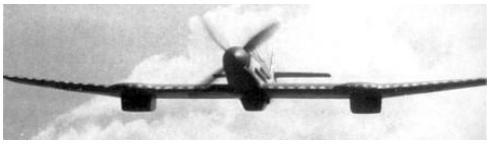
Only two Bachem Natters are known to exist. The NASM has an original Ba 349A-1 Natter. It appears that this machine was captured at St. Leonhard in the Pitztal, Austria in May 1945 by US troops. It was then shipped to Freeman Field, Indiana, for analysis. Captured equipment number T2-1 was assigned to the Natter and the USAF transferred it to the National Air Museum (now the NASM) on 1 May 1949.[3]

The Deutsches Museum, Munich, Germany, displays a Ba 349A-1 which is a partial replica, and is restored in the colours and markings of one of the unmanned test aircraft. This machine is of the experimental type as launched from the steel tower and is painted to look like M17. The Natter displayed at the Deutsches Museum is said to have been reconstructed partly from sub-assemblies that survived the end of the war.

There are several static reproductions of Natters around the world, for example at the "Planes of Fame", Chino, California and "Fantasy of Flight", Polk City, Florida, USA.


(Author Photo)

* Photo. Bachem Ba 349A-1, Fantasy of Flight Museum, Polk City, Florida.

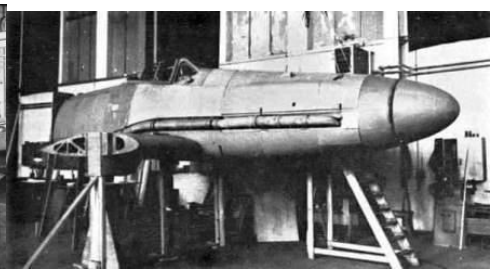



(Luftwaffe Photos)

* Photos 1-3. Blohm + Voss BV 155B V-2.

Blohm + Voss Bv 155B V-2

The BV 155 was designed to be a single-engine high performance fighter aircraft capable of capable of intercepting bombers at high altitudes and conducting reconnaissance as a secondary mission. One variant was also intended to operate from aircraft carriers with a tailhook system. The Bv 155 was powered by one Daimler-Benz DB 603 U engine and the Heinkel-Hirth TKL 15 turbo supercharger. It was armed with one MK 108 30-mm cannon in the nose and two 20-mm MG 151 cannons in the wing.

The BV 155 featured an armoured, pressurized cabin with an ejection seat, high aspect ratio laminar-flow wings, wide-track landing gear, and a very advanced, though troublesome and complex, propulsion system. An air scoop located on the underside of the fuselage at the trailing edge of the wing fed outside air to the TKL 15 turbo-supercharger. The supercharger compressed the air and fed it to an intercooler mounted above. A pipe semi-recessed into the left fuselage (visible below the cockpit and above the long exhaust pipe) fed the cooled, high-pressure air from the intercooler forward to the engine-driven supercharger. Blohm + Voss designed the BV 155 to reach speeds of about 430-mph at over 50,000'.

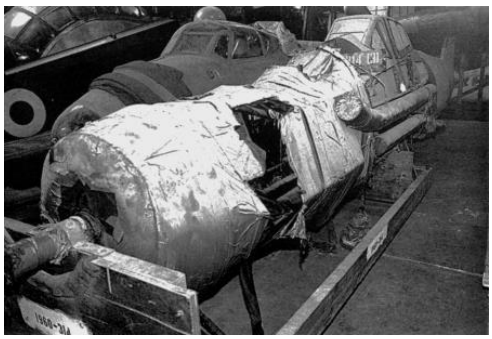




(RAF Photos)

* Photos 1-4. Blohm + Voss BV 155B V-2, Farnborough, England. before being transferred to the USAAF, where it was designated USA FE-505.

Blohm + Voss completed the BV 155B V1 (V for Versuch, German for experiment) and the first of three prototypes flew on 8 February 1945 out of newly armoured hangars at Finkenwerder, near Hamburg. On 8 February the V1 took to the air but the right radiator leaked badly and chief test pilot Helmut "Wasa" Rodig terminated the flight. Following repairs, the aircraft flew twice more on 10 and 26 February. Repairs followed each flight but it is doubtful that the airplane flew again after the 26th.

All work had stopped on the third prototype, BV 155 V3, as Blohm + Voss concentrated on finishing the V2, but the war ended first. The British Army occupied Hamburg on 3 May 1945 and found the three prototypes at the factory. British officials examined the V1 and decided it was airworthy then directed an RAF pilot to fly it to England. The airplane crashed shortly after takeoff from the factory and was destroyed. The British gathered up V2 and V3 and shipped them to the test establishment at Farnborough, England, for evaluation. They seriously considered completing the V2 for flight test but in the end, simply displayed the aircraft in October-November 1945 and then stored it.


(NASM Photo)

* Photo. Blohm + Voss Bv 155B V2, USA FE-505, in storage at the Garber Facility, Paul E. Garber Facility in Silver Hill, Maryland.

For years, the identification of the National Air & Space Museum's Bv 155B was mysterious. Historians knew the British shipped a Bv 155B to the US after the war and that the US Army Air Forces evaluated it at Wright Field, Ohio. They eventually transferred it (bearing Foreign Equipment Number FE-505) to the National Air & Space Museum. Most sources claimed this was the unfinished V3 prototype. In 1998, two restoration specialists reassembling the parts stored at the Paul E. Garber Facility in Silver Hill, Maryland, were amazed to discover nearly the entire V2 airframe. Except for wiring harnesses the factory never hooked up and other small parts, the aircraft appears to be 90-95% complete, including most of the propulsion system. German documents verify that the V3 was only half-finished at war's end and the discovery of "V2" stamped into both sides of the windshield frame seemed to prove conclusively that the NASM aircraft is in fact the second prototype. The BV 155B V-2, (Wk. Nr. 360052) in the NASM is also the last surviving aircraft built by Blöhm und Voss during the company's 12-year foray into aviation.[1]

[1] Internet: http://www.nasm.si.edu/research/aero/aircraft.


(Luftwaffe Photo)

* Photo. Blohm + Voss Bv 222 Wiking in flight.

Blohm + Voss Bv 222 Wiking

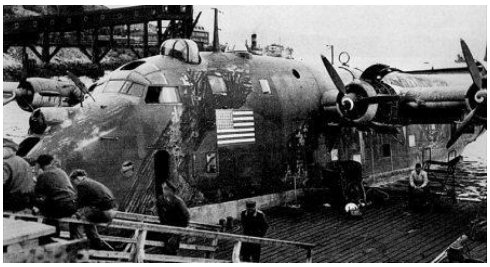
Three Blohm + Voss BV 222 Wikings were captured and subsequently operated by Allied forces: C-011, C-012, and C-013. C-012, captured at Sørreisa in Norway after the war along with V2, was flown by Captain (N) Eric Brown from Norway to the RAF station at Calshot in 1946, with RAF serial number VP501. After testing at Marine Aircraft Experimental Establishment at Felixstowe it was assigned to No. 201 Squadron RAF, who operated it up to 1947, when it was scrapped.




(RAF Photos)

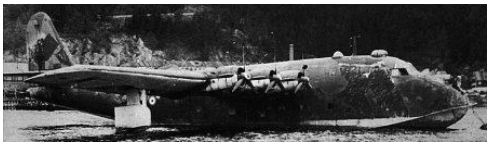
* Photos 1-3. Blohm & Voss BV 222 Wiking, RAF C-012, (Wk. Nr. 330052), RAF VP501, R.

Blohm + Voss BV 222 *Wiking*, transport flying-boats. Several were flown by the RAF. The white aircraft marked R is Bv 222C-012 (Wk. Nr. 330052), RAF VP501, captured at Sorreisa in northern Norway. None of these aircraft have survived. (RAF Photos)


(USN Photo)

* Photo. Blohm + Voss BV 222 *Wiking*, transport flying-boat with American flag, designated USA C-011 or C-113, Trondheim Fjord, 27 Aug 1945.




(USN Photos)

* Photos 1-3. Blohm + Voss BV 222 seaplane at Trondheim, Norway, undergoing tests by the U.S. Navy, ca 1945-46. This aircraft is one of two flown by the USN, designated USA C-011 and C-113.

BV 222, USA C-011 and C-013 were captured by US forces at the end of the Second World War. On 15 August and again on 20 August 1945, LCdr Richard Schreder of the US Navy performed test flights along with the Luftwaffe crew of one of the Bv 222 Wiking aircraft that had been acquired by the US. In two flights resulting in a total flight time of 38 minutes they experienced 4 engine fires. While many spare engines were available they were of substandard quality due to the lack of quality alloys near the end of the war, and caught fire easily. Since the aircraft was unairworthy with these engines, the aircraft was supposedly taken out to open water and sunk by a Navy Destroyer.

Other reports indicate the US captured aircraft were flown or shipped to the US. Convair acquired one for evaluation at the Naval Air Station Patuxent River, the intensive studies leading to the hull design of their Model 117 which in turn led to the R3Y Tradewind. Their subsequent fate is unknown. The V2 aircraft briefly wore US markings in 1946. Strangely the V2 aircraft had identification markings given to her from the original V5 aircraft for Operation Schatzgräber.

V2 was later scuttled by the British who filled her with Bv 222 Wiking spare parts from the base at Ilsvika to weigh her down. V2 was towed to a position between Fagervika and Monk's island where it is thought she now rests perfectly preserved on the seabed, owing to low oxygen levels in the water. There are plans to raise and restore this aircraft.[1]

[1] Internet: http://www.ww2aircraft.net/forum/aircraft-pictures/captured-aircrafts-uk-32131-3.html.





(Author Photos)

* Photos 1 & 2. Bücker Bü 131 *Jungmann*, biplane trainer on display in the Fantasy of Flight Museum, Polk City, Florida.

Bücker Bü 131 *Jungmann*, biplane trainer (Wk. Nr. 4477), GD+EG of Luftdienst, RAF DR626, seerved with the RAF Telecommunications Flying Unit (TFU) until it was struck off charge in Nov 1941.



(Author Photo)

* Photo. Bücker Bü 133C *Jungmeister*, aerobatic biplane trainer, on display in the Fantasy of Flight Museum, Polk City, Florida.

Bücker Bü 180 *Student*, trainer.

Bücker Bü 181 *Bestmann*, trainer and light transport (Wk. Nr. unknown), captured at Husum. Designated RAF AM121, this aircraft was likley scrapped at Woodley, England.

Bücker Bü 181C-3 *Bestmann*, trainer and light transport (Wk. Nr. 120417), captured at Husum. Designated RAF AM121, this aircraft held Reg No. G-AKAX until it was scrapped at Denham, England in 1950.


(Author Photo)

* Photo. Bücker Bü 181 *Bestmann*, trainer and light transport on display in the Fantasy of Flight Museum, Polk City, Florida.



* Photo. Bücker Bü 181 *Bestmann*, armed for the "*tank busting*" role carrying four Panzerfaust anti-tank grenade launchers from wing-mounted launchers (C-3 subtype). (Luftwaffe Photo)

Bücker Bü 181 Bestmann

The Bücker Bü 181 Bestmann was a two-seater, single-engine aerobatic monoplane aircraft built by Bücker Flugzeugbau GmbH in Rangsdorf, near Berlin and extensively used by the Luftwaffe in the Second World War. Over 4,000 Bü 181s were built. Only about 10 examples remain, none in flying condition.

The Bücker Bü 181 was named *Bestmann* after a German maritime term designating a member of the deck crew on coastal or fishing vessels. The prototype Bü 181 (D-ERBV) made its maiden flight in February 1939 with Chief Pilot Arthur Benitz at the controls. After official flight testing by the Reichsluftfahrtministerium (RLM) the Bü 181 was nominated to be the standard primary trainer for the Luftwaffe. Series production of the Bü 181 commenced in 1940. The production types were designated B to C with only slight variations between each, and could be powered by the Hirth HM 500 A or B.

Although built primarily as a trainer for the Luftwaffe, the type also performed other duties such as courier & liaison. From March 1945 an order was issued to concentrate all the available Bü 181s to be converted either to the "*tank busting*" role carrying four Panzerfaust anti-tank grenade launchers from wing-mounted launchers (C-3 subtype), or to the night harassment role carrying three 50 kg bombs (B-3 subtype), most likely inspired by the Soviet female nocturnal *Nochnye Vedmy* units' campaigns from 1942 to V-E Day. These units saw very limited use in the final days of the war due to the war situation. However, some missions were carried out, achieving moderate success but at the price of severe losses. One restored Bestmann in the tank buster configuration is on display at the Deutsches Technikmuseum Berlin. Test pilot, and sister-in-law of Claus von Stauffenberg, Melitta Schenk Gräfin von Stauffenberg was flying a Bücker Bü 181 when she was shot down and fatally wounded in 1945.[1]

The RAF flew two, Bücker Bü 181 Bestmann, (Wk. Nr. unknown), RAF AM121, captured at Husum and believed to have been scrapped at Woodley in England, and Bücker Bü 181C-3, (Wk. Nr. 120417), RAF AM122, also captured at Husum, Reg. No. G-AKAX, scrapped at Denham, England in 1950.



(USAAF Photos)

* Photos 1 & 2. Bücker Bü 181 *Bestmann*, trainer and light transport, possibly USAF FE-4611, later T2-4611, or FE-4612, Freeman Field, Indiana, ca 1945. FE-4611 is preserved in the NASM Paul E. Garber facility, Suitland, Maryland, and FE-4612 was scrapped at Freeman Field in 1946.

Two were brought to the USA, Bücker Bü 181 Bestmann, (Wk. Nr. unknown), USA FE-4611, now on display in the NASM's Garber facility, and FE-4612, which was scrapped at Freeman Field in 1946.

[1] Internet: https://en.wikipedia.org/wiki/B%C3%BCcker_B%C3%BC_181.



* Photo. DFS 108-49 Grunau Baby glider, (Wk. Nr. 031016), designated USA FE-2600, later T2-2600, at Freeman Field. (US National Archives Photo 80G-4Z0983)

DFS 108-49 Grunau Baby glider, (Wk. Nr. 031016), shipped to the USA where it was designated USA FE-2600, later T2-2600. This aircraft-NC, is on display in the NASM, Washington, D.C.







(General Electric & Luftwaffe Photos)

* Photo. Doblhof WNF 342V-4 helicopter, USA FE-4615, later T2-4615. This helicopter was sent to General Electric, Schnectady, New York, last reported in 1949.

Doblhof WNF 342V-4 helicopter

The Doblhof WNF 342V-4 helicopter was the fourth prototype constructed by Friedrich von Doblhoff as the world's first tip jet powered helicopter. This helicopter used a seven cylinder Sh 14A radial engine that had powered an earlier model designated the V3. All four Doblhof prototypes used an Argus As 411 supercharger as an air compressor. The V4 was a two-seat version with a faired fuselage (the prototypes were all single seat). The helicopter was designed with a twin boom layout and had a single vertical stabilizer mounted on top of a horizontal tail that ran between the booms. The V4 had a gross weight of 1411 pounds and a rotor diameter of 32.68 feet. Testing of the WNF 342 V4 took place in the spring of 1945, with 25 hours of flying conducted before the war ended. As the Soviet Army approached Vienna on 3 April 1945, the engineers and mechanics loaded the WNF 342 V4 onto a trailer and drove West for 12 days on roads overcrowded with other refugees until they encountered the American forces. The German design team was the team was interrogated by Allied intelligence and engineering officers, and then the V4 prototype was crated and shipped to the USA for further evaluation. Friedrich von Doblhoff went to work for McDonald Aircraft, becoming their chief helicopter engineer and and worked on the McDonald XV-1 convertiplane and the McDonald model 120 flying crane which both used the jet rotor and the pusher propeller. Theodor Laufer who had done the detailed design of the jet rotor went to work for France's Sud Aviation, where he was responsible for the Djinn (Genie) jet helicopter. A. Stefan who had done the structural design and most of the test flying of the WFN 342s, joined Fairey Aviation in great Britain and contributed in the design of several jet rotor aircraft including the Fairey Gyrodyne helicopter and the giant 48 passenger Fairey Rotodyne convertiplane.[1]

[1] Internet: http://tofast2.0lx.net/germanvtol/wnffolder/wnfbase.html?ckattempt=1.


(USAAF Photo)

* Photo. Dornier Do 17E-2, (Wk. Nr. 2095), shipped to the USA, where it was designated USA FE-2000, later T2-2000. It was named "*Axis Sally*". This aircraft was scrapped in Sep 1946.

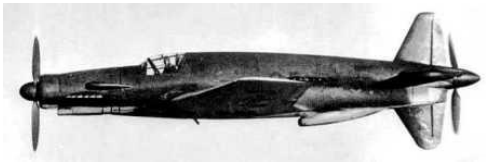
Dornier Do 17Z, (Wk. Nr. 1160), coded 5K+AR, from III./KG3, has been recovered from the sea off the English coast. On 26 August 1940, 5K+AR was taking part in a raid by KG2 and KG 3, targeting the RAF stations. While flying over clouds, the aircraft became separated from the bomber formation and lost its bearings; it was then attacked by Boulton-Paul Defiant fighters of RAF No. 264 Squadron. One of the Dornier's engines was disabled and the other damaged, so the wounded pilot, *Feldwebel* (Flight Sergeant) Willi Effmert, elected to make a crash landing on the Goodwin Sands. He and another crew member survived and were taken prisoner. The other two crew were killed. The aircraft was raised on 10 June 2013, and taken to RAF Cosford where it is being restored.



(USN Photos)

* Photos 1 & 2. Messerschmitt Me 262, Dornier Do 335, Junkers Ju 338 and other aircraft preserved on the deck of HMS *Reaper*.

All the aircraft were cocooned against the salt air and weather, loaded onto HMS *Reaper*, and brought to the US where they were studied by the Air Intelligence groups of both the USAAF and US Navy.



(Luftwaffe Photos)

* Photos 1 & 2. Dornier Do 335V-1 (Wk. Nr. 230001), first prototype, bearing the *Stammkennzeichen* (factory radio code) of CP+UA, first flew on 26 October 1943.

Dornier Do 335A Pfeil

The Dornier Do 335 was a Luftwaffe tandem twin-engine ground attack/close support fighter-bomber manufactured by Dornier-Werk GmbH. Models: A-1 (Single-seat fighter) & A-6 (Night fighter). It was armed with one 30 mm MK103 cannon with 70 rounds, firing through the front propeller hub, and two 15 mm MG151/15 cannon with 200 r.p.g. above the nose, plus one 1,102 lb (500 kg) bomb or two 551 lb (250 kg) bombs internally and 551 lb (250 kg) bombs on underwing racks. The Do 335 was powered by a pair of Daimler-Benz DB 603G 12-cylinder inverted-vee, liquid cooled engine with 1,900 hp each. It was equipped with two different propellers, type VDM, with a diameter of 3.50m (front), and 3.30m (rear). Fuel for the Do 335 is stored in two separate tanks behind the pilot's seat (port tank for forward engine and starboard tank for rear engine). It had a wing span of 45'4", a length of 13.8m (45'6") and a height of 5m (16'4"). The A-1 version weighed 16,314 lbs empty and 16,975 lbs loaded. The A-6 version weighs 25,800 lbs loaded. It has a maximum Speed of 664 kmh (413-mph) and a sustained speed of 768 kmh (477-mph) with emergency boost. Its range with maximum fuel is 2,060 km (1,280 miles), and with drop tanks 3,750 (2,330 miles).


(Luftwaffe Photo)

* Photo. Dornier Do 335V-2, (Wk. Nr. 230002), *Stammkennzeichen* CP+UB, with its engines being run up. This aircraft's rear engine caught fire and it was written off on 15 April 1944.

At least 16 prototype Do 335s were known to have flown, including V1–V12, (Wk. Nrs. 230001-230012) and *Muster*-series prototypes M13–M17, (Wk. Nrs. 230013-230017), on a number of DB603 engine subtypes including the DB 603A, A-2, G-0, E and E-1. The first preproduction Do 335 (A-0s) starting with (Wk. Nr. 240101), *Stammkennzeichen* VG+PG, were delivered in July 1944. Approximately 22 preproduction aircraft were thought to have been completed and flown before the end of the war, including approximately 11 A-0s converted to A-11s for training purposes. Dornier Do 335A-0, (Wk. Nr. 240121) or (Wk. Nr. 240161), (to be confirmed), and Dornier Do 335A-12, (Wk. Nr. 240112), captured by American forces at Oberpfaffenhoffen, were transferred to the RAF.


(USAAF Photo)

* Photo. Dornier Do 335A-0, reported as (Wk. Nr. 240121) and (Wk. Nr. 240161), (unconfirmed), captured at Oberpfaffenhoffen, Germany by US forces. This single seat version was taken over by the RAF. It is shown here being examined by American soldiers. Designated RAF AM225, this aircraft was test flown until it waswritten off after a landing accident in Merville, France on 13 December 1945.

Dornier Do 335A-1, reported as (Wk. Nr. 240121), and (Wk. Nr. 240161), (unconfirmed), RAF AM225, was a single-seat version of the Pfeil, which had been surrendered at the Dornier Oberpfaffenhofen factory and flown to Neubiberg under US control. It was an unpainted aircraft, which had not been delivered to the Luftwaffe. It was handed over to the British authorities on 7 September and flown from Neuberg to Reims where it became unserviceable. After repairs, it was test flown at Reims on 9 and 12 December, and then flown to Marville, France on 13 December where it made a forced landing with the nose wheel retracted, and was later scrapped. The only Do 335 parts sent to the UK included a single-seat fuselage, which was also scrapped at Farnborough.[1]



(USAAF Photos)

* Photo. Dornier Do335A-12, (Wk. Nr. 240112) captured by American forces at Oberpfaffenhofen, Germany. (Wk. Nr. 240112) was traded to the RAF where it became AM223.





(RAF Photos)

* Photos 1-4. Dornier Do 335A-12 Pfeil, (Wk. Nr. 240112) at Farnborough, England, summer 1945. This aircraft crashed on 18 Jan 1946.

The Do 335A-12 Pfeil, (Wk. Nr. 240112), was captured by US forces at Oberpfaffenhofen, Germany, in May 1945. RCAF Squadron Leader Joe McCarthy had traded 15 Focke-Wulf Fw 190 single engine fighters to the USAAF for this aircraft (No. 112). This aircraft had its iron cross markings removed and USAAF star and bar markings had been painted on it. Joe put the RAF roundels on the aircraft over the star, but one can still see the bar under the roundel in this photo taken at the Royal Aircraft Establishment at Farnborough in England. Designated RAF AM223, it was test flown at war's end by RCAF S/L Joe McCarthy with the Royal Aircraft Establishment's Foreign Aircraft Flight at Farnborough, UK. This aircraft came to a tragic end when, during a familiarization flight on 18 January 1946 the rear engine caught fire and the elevator controls burnt through. The aircraft plunged vertically into a school at Cove, Hampshire, killing RAF Group Captain Alan F. Hards.



(Luftwaffe Photos)

* Photos 1 & 2. Dornier Do 335A-11.


(USAAF Photo)

* Photo. Dornier Do 335A-12, 121 in the factory, unfinished, one of 11 aircraft built at Oberpfaffenhofen, plus 9 aircraft partially assembled, November – April 1945) and captured by American forces at Oberpfaffenhofen, Germany, May 1945. 20 Do 335A-1 aircraft included (Wk. Nrs. 240113, 240161-240170), intact, and (Wk. Nrs. 240301-240309), partially assembled. Four partially assembled Do335A-4 (of 10 aircraft scheduled for January – February 1945) were also captured at Oberpfaffenhofen, (Wk. Nrs. 240310-240313). One Do 335A-10, (Wk. Nr. 240111), which had flown in late Nov 1944 was captured.


(Luftwaffe Photo)

* Photo. Dornier Do 335A, 107, overhead view of a factory fresh Pfeil on the tarmac.

The A-1 version had a service ceiling of 37,400' and the A-6 version had a service ceiling of 33,400'. The Do 335A-1 was armed with two 15-mm MG 151/15 machine guns above the nose and one 30-mm Mk 103 cannon firing through the propeller hub. The Do 335A-6 was armed with two 20-mm MG 151/20 machine guns above the nose and one 30-mm Mk 103 cannon firing through the propeller hub. The Do 335B-2 was armed with two 20-mm MG 151/20 machine guns above the nose, two 30-mm Mk 103 cannon mounted in the wings and one 30-mm Mk 103 cannon firing through the propeller hub. Avionics for the Do 335B-2 included a FuG 125a blind landing receiver and FuG 25a IFF.[1]


(USAAF Photo)

* Photo. Captured Dornier Do 335A Pfeil. An American test pilot familiarizes himself with the controls of a USAAF-marked Dornier Do 335A Pfeil at a captured Luftwaffe airfield, surrounded by the wreckage of other German aircraft.


(USAAF Photo)

* Photo. Dornier Do 335A, (Wk. Nr. 240161), USA FE-1012, later T2-1012.

As far as is known, the Pfeil never entered into combat, although US pilots reported seeing the strange aircraft in the sky during sorties over Germany, and the Erprobungskommando was forced to send aircraft into a sky which could not be guaranteed as being free of hostile aircraft. In its single-seat version it was one of the fastest piston-engined fighters ever built, with a claimed top speed of around 475-mph (765 km/h). Despite this high performance, it was the much slower two-seat night-fighter version which would probably have proved the most effective if the war had continued. Equipped with excellent radar and powerful weapons, and blessed with good visibility, combat persistence and performance, the night-fighter would have wreaked havoc against the RAF bomber streams.

Flying the Pfeil was an experience, thanks to its high performance and unusual configuration. While the performance provided an exhilarating ride for the pilot, the configuration prompted some doubts. His main concern was the ejection seat, the Do 335 being only the second production type to feature this (after the Saab J21). Before firing the seat, explosive bolts which held the upper vertical tail surface and rear propeller were fired to clear a way for the egressing pilot. Despite the ejection seat, he had to jettison the canopy manually. As another safety feature, the lower vertical tail surface was jettisonable in case a wheels-up landing was attempted. The upper tailfin and the rear propeller were equipped with explosive bolts to separate them from the fuselage to avoid impacting the pilot in the case of ejection.[2]

When the US Army overran the Oberpfaffenhofen factory in late April 1945, only eleven Do 335A-1 single seat fighter-bombers and two Do 335A-12 conversion trainers had been completed. In his book *The Big Show*, French ace Pierre Clostermann claims the first Allied combat encounter with a *Pfeil* in April 1945. Leading a flight of four Hawker Tempests from No. 3 Sqn, RAF, over northern Germany, he intercepted by chance a lone Do 335 flying at maximum speed at treetop level. Detecting the British aircraft, the Luftwaffe pilot reversed course to evade. In spite of the Tempest's considerable speed (equal to a North American P-51D Mustang's), the RAF fighters were not able to catch up or even get into firing position.[3]

[1] Phil Butler, *War Prizes*, p. 108.




(French Armee de l'Air Photos)

* Photos 1-4. Dornier Do 335B-2 prototype, (Wk. Nr. 230018), ex-RP+UB, (14/18), armed with an additional pair of Rheinmetall-Borsig *Maschinenkanone* MK103 30-mm autocannon, transferred to France and painted in French Armée de l'Air markings.






* Photos 1-4. Dornier Do 335V-17, B6 prototype, (Wk. Nr. 230016), coded RP+UE, No. 2, was transferred to France in the fall of 1945 and painted in French Armée de l'Air markings. It was damaged in a landing accident and written off. (French Armee de l'Air Photos)



(USN Photo)

* Photo. Dornier Do 335A *Pfeil* being loaded on HMS *Reaper* for shipment to the USA.



(USAAF Photo)

* Photo. Dornier Do 335A-0 *Pfeil* (Arrow) (Wk. Nr. 240102), coded VG+PH, tail number 102, at Freeman Field, Indiana post war. A second Do 335A (Wk. Nr. 240161), USA FE-1012 was probably scrapped at Freeman Field in 1946.




(USN Photos)

* Photos 1-3. Dornier Do 335A-0, (Wk. Nr. 240102), coded VG+PH at NAS Norfolk. This aircraft went to the USN Tactical Test Division at NAS Patuxent River, Maryland where it was allocated USN (BuNo. 121447) and examined from Dec 1945 to 31 Mar 1947, then stored at NAS Norfolk until 1961. It went to the Smithsonian, and was eventually sent to Germany on 10 Oct 1974 to the original makers for refurbishment. It was displayed in Deutsches Museum, Munich for a few years and then returned to the Smithsonian. It is now on display in the Steven F. Udvar-Hazy Centre, Chantilly, Virginia.



* Photo. Dornier Do 335A-02, (Wk. Nr. 240102), VG+PH, USN (BuNo. 121447), on display in the National Air and Space Museum Steven F. Udvar-Hazy Center, Washington-Dulles International Airport, Chantilly, Virginia. (Ishaan Dalal Photo)



* Photo. Dornier Do 335A-02 Pfeil, (Wk. Nr. 240102), VG+PH, USN (BuNo. 121447), on display in the Steven F. Udvar-Hazy Centre, Chantilly, Virginia. (Guinog Photo)

The Do 335A-1 is on display in the National Air and Space Museum Steven F. Udvar-Hazy Center, Washington-Dulles International Airport, Chantilly, Virginia, was the second Do 335A-0, designated A-02, with construction number (Werk-Nummer 240102) and factory registration VG+PH. It was built at Dornier's Rechlin-Oberpfaffenhofen, Germany, plant on 16 April 1945. It was captured by Allied forces at the plant on 22 April 1945.

After checkout, it was flown from a grass runway at Oberweisenfeld, near Munich, to Cherbourg, France. During this flight, the Do 335 easily out-climbed and outdistanced two escorting North American P-51D Mustangs, beating them to Cherbourg by 45 minutes. Under the US Army Air Force's "Project Sea Horse," two Do 335s were shipped to the United States aboard the Royal Navy ship HMS *Reaper* together with other captured Luftwaffe aircraft, for detailed evaluation. This aircraft was assigned to the U.S. Navy, which tested it at the Test and Evaluation Center, Patuxent River Naval Air Station, Maryland. The other aircraft, Dornier Do 335A, (Wk. Nr. 240161), with registration FE-1012 (later T2-1012), went to the USAAF at Freeman Field, Indiana, where it was tested in early 1946. Its subsequent fate is unknown, and VG+PH is the only Do 335 known to exist.

Following Navy flight tests in 1945-48, the aircraft was donated to the Smithsonian's National Air Museum in 1961 but was stored at NAS Norfolk until 1974. It was then returned to Oberpfaffenhofen, Germany, where the Dornier Company restored it to original condition in 1975. The return trip to Germany required an exemption under U.S. laws concerning the export of munitions. The Dornier craftsmen doing the restoration, many of whom had worked on the original aircraft, were astonished to find that the explosive charges fitted to blow off the tail fin and rear propeller in an emergency were still in the aircraft and active, 30 years after their original installation! The Do 335 was put on static display at the 1-9 May 1976, Hannover Air show, and then loaned to the Deutsches Museum in Munich, where it was on prominent display until returned to Silver Hill, Maryland, in 1986.[4]



(Dornier Photo)

* Photo. Dornier Do 335A-02 Pfeil, (Wk. Nr. 240102), VG+PH, USN (BuNo. 121447), as restored by the Deutsches Museum.


(Bundesarchiv Photo Bild 146-1975-117-26)

* Photo. Fieseler Fi 103, V-1, FZG 76 flying bomb, being wheeled into position by its German launch crew.

Fieseler Fi 103, V-1, FZG 76

The Fieseler Fi 103, V-1, FZG 76, was a small, fixed-wing pilotless aircraft powered by a pulsejet engine mounted above the rear fuselage. In effect, it was the world's first operational cruise missile, and incorporated a simple flight control system to guide it to its target, an air log device to make it dive to the ground after travelling a preset distance and a warhead packed with high explosive. The first of these weapons landed in the London area in the early hours of 13 June 1944.[1]

The V-1 (Vergeltungswaffe Eins, or Vengeance Weapon One), name was given to it by Josef Goebbels' Propaganda Ministry, but the original Air Ministry designation was Fieseler Fi 103, after its airframe designer, the Fieseler company. The missile also had the cover names of Kirschkern (Cherry Stone) and Flakzielgerät (Flak Target Device) 76 (FZG 76). Powered by a simple but noisy pulsejet, thousands were launched on British and continental European targets from June 1944 to March 1945. [2]

There are at least 54 Fi 103 Flying bombs on display in museums around the world, including a V-1 on display in the Deutsches Technik Museum in Berlin.[3]

Australia. Fieseler Fi 103, V-1, FZG 76 flying bomb, on display in The Australian War Memorial in Canberra, Australia.

Belgium. Fieseler Fi 103, V-1, FZG 76 flying bomb, (two), are with the Stampe et Vertongen Museum at Antwerp International Airport. One is complete (Wk. Nr. 256978), that had been used as instructional material by the Germans, and one is in partial condition because it had been shot down but did not explode.


(Author Photos)

* Photos 1-3. Canada. Fieseler Fi 103, V-1, FZG 76 flying bomb, on display in the Atlantic Canada Aviation Museum in Halifax, Nova Scotia.

Canada. Fieseler Fi 103, V-1, FZG 76 flying bomb, preserved in the Canada Air and Space Museum, Ottawa, Ontario,

Denmark. Fieseler Fi 103, V-1, FZG 76 flying bomb, on display in The Danish Defence Museum Tøjhusmuseet, Copenhagen, Denmark.


(ECM Photo)

* Photo. England. Fieseler Fi 103, V-1, FZG 76 flying bomb, on display at Eden Camp Museum, Malton, England.

England. Fieseler Fi 103, V-1, FZG 76 flying bomb, (Wk. Nr. 442795), is on display at the Science Museum, London. It was presented to the museum in 1945 by the War Office.


(Florestan Photo)

* Photo. England. Fieseler Fi 103, V-1, FZG 76 flying bomb, on display in the IWM, London.

 (Martin Richards Photo)

* Photo. England. Fieseler Fi 103, V-1, FZG 76 flying bomb, mounted on a partial ramp section, at the Imperial War Museum Duxford. The museum also has a partially recreated launch ramp with a mock–up V-1 displayed outside.

England. Fieseler Fi 103 V-1, FZG 76 flying bomb, on display in addition to a V2 rocket at the RAF Museum Hendon, north London.

 (Rept0n1x Photo)

* Photo. England. Fieseler Fi 103 V-1, FZG 76 flying bomb, on display in front of a V2 rocket in the RAF Museum Cosford.

England. Fieseler Fi 103 V-1, FZG 76 flying bomb, on display at the Aeropark at East Midlands Airport.



* Photo. France. Fieseler Fi 103 V-1, FZG 76 flying bomb, wreckage being examined by a Canadian soldier and a member of the French Resistance (F.F.I.), Foucarmont, France, 5 September 1944. (Library and Archives Canada Photo, MIKAN No. 3239436)

 (Musée de la Reddition, G. Garitan Photo)

* Photo. France. Fieseler Fi 103 V-1, FZG 76 flying bomb, on display at Place de la mairie exposition de V-1, 22 Sep 1945.

 (Pline Photo)

* Photo. France. Fieseler Fi 103 V-1, FZG 76 flying bomb, on display in the Museum of Air and Space Paris, Le Bourget, France.



(Ben pccs Photo)

* Photo. France. Fieseler Fi 103 V-1, FZG 76 flying bomb, on display in the Musée de l'Armée, les Invalides Museum, Paris.

France. Fieseler Fi 103 V-1, FZG 76 flying bomb, on display in The Grand Bunker Museum in Ouistreham, Caen, near Sword Beach, Normandy.


(Velvet Photo)

* Photo. France. Fieseler Fi 103 V-1, FZG 76 flying bomb, on display beside the Blockhaus d'Éperlecques, near Saint-Omer. Although this was intended as a V2 launch site the museum on the site has a display devoted to the V1, including a V1 cruise missile and an entire launch ramp.

France. Fieseler Fi 103 V-1, FZG 76 flying bomb, on display in Val-Ygot at Ardouval, north of Saint-Saëns. This site was disabled by Allied bombing in December 1943, before completion. There are remains of blockhouses, with a recreated launch ramp and mock V1.

France. Fieseler Fi 103 V-1, FZG 76 flying bomb, on display in La Coupole, near Saint-Omer. This V-1 is on loan from the Science Museum in London, England.


(Ricardo Reis Photo)

Germany. Rheintochter Anti-Aircraft Missile, Fieseler Fi 103 V-1, FZG 76 flying bomb, and Henschel Hs 293 air to surface missile, on display in the German Museum of Technology Berlin, Germany.


(Softeis Photo)

* Photo. Fieseler Fi 103 V-1, FZG 76 flying bomb, on display in the Deutsches Museum, Munich.

The Netherlands. Fieseler Fi 103 V-1, FZG 76 flying bomb, on display in the Overloon War Museum in Overloon.

The Netherlands. Fieseler Fi 103 V-1, FZG 76 flying bomb, on display in the Museum Vliegbasis Deelen in Schaarsbergen.

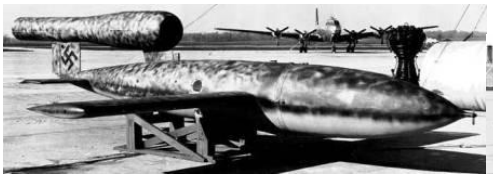
New Zealand. Fieseler Fi 103 V-1, FZG 76 flying bomb, on display in the Auckland War Memorial Museum, Auckland.

New Zealand. Fieseler Fi 103 V-1, FZG 76 flying bomb, on display in the Museum of Transport and Technology, Auckland.

Sweden. Fieseler Fi 103 V-1, FZG 76 flying bomb, on display in the Arboga Missile Museum.



* Photo. Switzerland. Fieseler Fi 103 V-1, FZG 76 flying bomb, on display in the Schweizerisches Militärmuseum Full; Aargau, Switzerland. (SMF Photo)




United States. Fieseler Fi 103 V-1, FZG 76 flying bomb, on display at Freeman Field, Indiana, late in 1945. (USAAF Photos)

United States. Fieseler Fi 103 V-1, FZG 76 flying bomb, on display at the US Army Air Defense Artillery Museum, Fort Sill, Oklahoma.

United States. JB-2 Loon, on display at the National Museum of the United States Air Force in Dayton, Ohio. It was donated by the Continental Motors Corporation in 1957.

United States. JB-2 Loon, on display at the NASM's Steven F. Udvar-Hazy Center in Chantilly, Virginia.

United States. Fieseler Fi 103 V-1, FZG 76 flying bomb, on display as a war memorial in Greencastle, Indiana.

 (Kowloonese Photo)

* Photo. United States. Fieseler Fi 103 V-1, FZG 76 flying bomb and a V2 rocket are on display in The Smithsonian's National Air and Space Museum on the National Mall in Washington, D.C.

United States. JB-2 Loon engine is on display in The Planes of Fame air museum at Chino Airport in Chino, California. The JB-2 engine has been restored to fully function.

United States. JB-2 Loon, on open-air display at the Museum of Alaska Transportation and Industry in Wasilla, Alaska.

United States. JB-2 Loon, also on open-air display at the Point Mugu Missile Park at Naval Air Station Point Mugu in California.

United States. Fieseler Fi 103 V-1, FZG 76 flying bomb, on display iat the Air Zoo in Portage, Michigan.

United States. Fieseler Fi 103 V-1, FZG 76 flying bomb, and a V2 rocket are on display in the Kansas Cosmosphere and Space Center in Hutchinson, Kansas.

United States. Fieseler Fi 103 V-1, FZG 76 flying bomb, on display at the Fantasy of Flight aviation museum in Polk City, Florida

United States. Fieseler Fi 103 V-1, FZG 76 flying bomb, on display in The U.S. Space & Rocket Center in Huntsville, Alabama in their Rocket Park.

 (Josh Hallett Photo)

United States. Fieseler Fi 103 V-1, FZG 76 flying bomb, (Wk. Nr. 121536), is on display at the Pima Air and Space Museum, in Tucson, Arizona.

United States. Fieseler Fi 103 V-1, FZG 76 flying bomb, on display outside at the southwest corner of the Putnam County Courthouse in Greencastle Indiana.

United States. Fieseler Fi 103 V-1, FZG 76 flying bomb, and one Fieseler Fi 103 Re IV Reichenberg are on display at the Flying Heritage Collection, Paine Field, Everett, Washington.



* Photo. Fi 103R Reichenberg Re III, trainer version. (USAAF Photo)

Fieseler Fi 103R Reichenberg Re III

The Reichenberg Fi 103A-1/RE-III was the trainer version of the RIV. The front position was for the flight instructor. Two fuselages were found by the allied forces at the end of the War, at Tramm, near Dannenbergbut, Germany. Length: 8 m (26.24 ft) Wingspan: 5.72 m (18.76 ft) Loaded weight: 2,250 kg (4,960 lb) Power plant: 1 × Argus As 014 pulse jet, 350 kgf (770 lbf). Performance: Max speed: 800 km/h (500 mph (in diving flight) Cruise speed: 650 km/h (400 mph). Range: 330 km (205 miles).

The idea of putting a pilot in the Fi 103 V1 for special operations was proposed by Hanna Skorzeny, Otto Skorzeny and Heinrich Lange. Lange sought to form a special group of pilots who if need be would sacrifice themselves. At the same time the DFS were looking into such a idea since 1943, because tests using the Me P.1079 (Me 328) had found it was unsuitable. In 1944 the DFS was given the go ahead to develop such a weapon, given the code name "Reichenberg". With in fourteen days the DFS had designed, built, and tested the five different models needed to convert the volunteer pilots. By October 1944 about 175 R-IVs were ready for action.

Fieseler Fi 103R Reichenberg Re I: Two man unpowered trainer

Fieseler Fi 103R Reichenberg Re II: Two man powered trainer

Fieseler Fi 103R Reichenberg Re III: One man powered trainer

Fieseler Fi 103R Reichenberg Re IV: Operational model

Fieseler Fi 103R Reichenberg Re V: Powered trainer for the He 162 with a shorter nose

The Re I was towed in to the air by a Henschel Hs 126, all the rest were air launched from the Heinkel He 111 H-22. Volunteers were trained in ordinary gliders in order to give them the feel of unpowered flight. The pilots then progressed to special gliders with shortened wings which could dive at speeds of up to 300 kilometres per hour (190 mph). After this, they progressed to the dual-control Re II.

Training began on the Re I and Re II and although landing the aircraft on a skid was difficult, it handled well, and it was anticipated that the Leonidas Squadron would soon be using the machines. Albert Speer wrote to Hitler on 28 July 1944 to say that he opposed wasting the men and machines on the Allies in France and suggested it would be better to deploy them against Russian power stations.

The first real flight was performed in September 1944 at the *Erprobungsstelle Rechlin*, the Reichenberg being dropped from a He 111. However, it subsequently crashed after the pilot lost control when he accidentally jettisoned the canopy. A second flight the next day also ended in a crash, and subsequent test flights were carried out by test pilots Heinz Kensche and Hanna Reitsch. Reitsch herself experienced several crashes from which she

survived unscathed. On 5 November 1944 during the second test flight of the Re III, a wing fell off due to vibrations, but Heinz Kensche managed to parachute to safety, albeit with some difficulty due to the cramped cockpit.

By October 1944 about 175 Fi 103 Reichenberg Re IV's were ready for combat with some 60 Luftwaffe personnel and 30 personnel from Skorzeny's commando unit, who joined Leonidas Staffel 5.II/KG 200(Heinrich Lange's special unit led by himself) to fly the aircraft in to combat. Werner Baumbach assumed command of KG 200 in October 1944, however, the whole operation was shelved in favour of the "Mistel" program. Baumbach and Speer eventually met with Hitler on 15 March 1945 and managed to convince him that suicide missions were not part of the German warrior tradition, and later that day Baumbach ordered the Reichenberg unit to be disbanded. (Wikipedia)



* Photo. Fieseler Fi 103R Reichenberg Re IV with British troops in 1945. (RAF Photo)

Fieseler Fi 103R Reichenberg Re IV

The Fieseler Fi 103R Reichenberg IV was basically a manned version of the Fieseler Fi 103, V-1 flying bomb. The Fi 103R-IV had simple flight instruments in the cockpit and the canopy had guidelines for calculating the correct dive angle for attacks. The Reichenberg was powered by one 772-lb thrust Argus 109 014 pulse-jet engine. It had a maximum speed of 404-mph. Its wing span was 18'9", and its length was 26'3".[4] It was armed with an 850 kg warhead

In theory, this wasn't a Kamikaze-style suicide weapon, since the pilot was intended to bail out after aiming the aircraft/missile at its target. In practice, this would have presented certain difficulties, since the cockpit was placed directly underneath the jet intake. Attacks were to be carried out by the "Leonidas Squadron", Group V of the Luftwaffe's Kampfgeschwader 200.

The engine was the same one used on the V-1, one 2.94 kN As 109-014 pulse-jet. Versions planned were the Fi 103R-I and R-II training gliders, R-III powered trainer, and R-IV operational version. About 175 were built, and a few test flights were made by the R-III, but none flew operationally. [5]

The *Leonidas* Squadron, part of KG 200, had been set up as a suicide squadron. Volunteers were required to sign a declaration which said, "I hereby voluntarily apply to be enrolled in the suicide group as part of a human glider-bomb. I fully understand that employment in this capacity will entail my own death." Initially, both the Messerschmitt Me 328 and the Fieseler Fi 103 (better known as the V-1 flying bomb) were considered as suitable aircraft, but the Fi 103 was passed over in favour of the Me 328 equipped with a 900 kilograms (2,000 lb) bomb.

However, problems were experienced in converting the Me 328 and Heinrich Himmler wanted to cancel the project. Otto Skorzeny, who had been investigating the possibility of using manned torpedoes against Allied shipping, was briefed by Hitler to revive the project, and he contacted famous test pilot Hanna Reitsch. The Fi 103 was reappraised and since it seemed to offer the pilot a slim chance of surviving, it was adopted for the project.

The project was given the codename "Reichenberg" after the capital of the former Czechoslovakian territory "Reichsgau Sudetenland" (present-day Liberec), while the aircraft themselves were referred to as "Reichenberg-Geräte" (Reichenberg apparatus).

In the summer of 1944 the DFS (German Research Institute for Sailplane Flight) at Ainring took on the task of developing a manned version of the Fi 103, and an example was made ready for testing within days and a production line was established at Dannenberg.

The V-1 was transformed into the Reichenberg by adding a small, cramped cockpit at the point of the fuselage that was immediately ahead of the pulsejet's intake, where the standard V-1's compressed-air cylinders were fitted. The cockpit had basic flight instruments and a plywood bucket seat. The single-piece canopy incorporated an armoured front panel and opened to the side to allow entry. The two displaced compressed-air cylinders were replaced by a single one, fitted in the rear in the space which normally accommodated the V-1's autopilot. The wings were fitted with hardened edges to cut the cables of barrage balloons.

It was proposed that a He 111 bomber would carry either one or two Reichenbergs beneath its wings, releasing them close to the target. The pilots would then steer their aircraft towards the target, jettisoning the cockpit canopy shortly before impact and bailing out. It was estimated that the chances of a pilot surviving such a bailout were less than 1% due to the proximity of the pulsejet's intake to the cockpit.[6]



(RAF Photo)

* Photo. Fieseler Fi 103R Reichenberg Re IV on display at Farnborough, England, Nov 1945.

England. Fieseler Fi 103R Reichenberg Re IV, the piloted version of the V1, is on display at Headcorn (Lashenden) Airfield's Air Warfare Museum.



(USAAF Photo)

* Photo. Fieseler Fi 103R Reichenberg Re IV piloted version of the V1 flying bomb, being handled by American troops.

 (USAAF Photo)

* Photo. Fieseler Fi 103R Reichenberg Re IV piloted version of the V1 flying bomb, examined by American troops.

 (USAAF Photo)

* Photo. Fieseler Fi 103R Reichenberg Re IV piloted version of the V1 flying bomb, USA FE-082, on display at Freeman Field, Indiana, post war.

[1] David Donald, *Warplanes of the Luftwaffe*, Aerospace Publishing London, 1994, p. 54.

[2] Internet: http://www.nasm.si.edu/research/aero/aircraft.

[3] Internet: http://www.thomasgenth.de/indexeng.html.

[4] David Donald, *Warplanes of the Luftwaffe*, Aerospace Publishing London, 1994, p. 54.

[5] Phil H. Butler, *War Prizes*, and Carl-Fredrik Guest, *Under the Red Star – Luftwaffe aircraft in the Soviet Air Force* (Airlife Ltd., 1993), pp. 106-109.

[6] Internet: http://en.wikipedia.org/wiki/Fieseler_Fi_103R_Reichenberg.

[7] Internet: www.preservedaxisaircraft.com.



* Photo. Fieseler Fi 103R Reichenberg Re IV piloted flying bomb at RCAF Station Trenton, Ontario. This piloted version of the "Buzz Bomb" was brought to Canada in 1945 by Captain Farley Mowat's Intelligence Collection Team, shown here on display on Air Force Day, 16 June 1947. This aircraft has recently been put on display in the Canadian War Museum, Ottawa, Ontario. (Library and Archives Canada Photo, MIKAN No. 3584067)



* Photo. Fieseler Fi 103R Reichenberg Re IV Air Force Day, RCAF Station Trenton, Ontario, 9 June 1951. (Library and Archives Canada Photo, MIKAN No. 3584520)



* Photo. Canada. Fieseler Fi 103R Reichenberg Re IV piloted flying bomb in the Canadian War Museum, Ottawa, Ontario. This is the same R4 as the one shown at RCAF Station Trenton, Ontario in 1949. (Author Photo)

England. Fieseler Fi 103R Reichenberg Re IV piloted flying bomb, an incomplete version is preserved in the Lashenden Air Warfare Museum.


(Chriusha Photo)

* Photo. France. Fieseler Fi 103R Reichenberg Re IV in the museum La Coupole at Helfaut-Wizernes; Pas-de-Calais, France. The Re IV is on loan from the city of Antwerp, Belgium, and is on display in the entrance hall.

The Netherlands. Fieseler Fi 103R Reichenberg Re IV, (Object Nr. 007606), on display in the Nationaal Militair Museum,Verlengde Paltzerweg 1 3768 MX Soest.

United States. Fieseler Fi 103R Reichenberg Re 1V flying bomb is on display in the Flying Heritage Collection, Paine Field, Everett, Washington.


(Deutsches Bundesarchiv Bild 101I-567-1503C-04 Photo)

* Photo. Fieseler Fi 156 Storch. This is the aircraft used by Otto Skorzeny in the raid on Grand Sasso, Italy to fly Mussolini out of


(USAAF Photo)

Fieseler Fi 156 Storch in USAAF markings.



(Luftwaffe Photos)

* Photos 1 & 2. Flettner Fl 282 *Kolibri*, reconnaissance helicopter.






(USAAF Photos)

* Photos 1-5. Flettner Fl 282V-23 *Kolibri*, reconnaissance helicopter, USA FE-4613, later T2-4613, tested in the USA. This helicopter was damaged in an accident in April 1948.




(USAAF Photos)

* Photos 1 & 2. Flettner Fl 282V-12 *Kolibri*, reconnaissance helicopter, USA FE-4614, later T2-4614, tested in the USA. This helicopter was used for spare parts to service FE-4613.

One Flettner Fl 282 was captured at Rangsdorf, Germany by Soviet forces. Two, which had been assigned to Transportstaffel 40 (TS/40), the Luftwaffe's only operational helicopter squadron at Mühldorf, Bavaria, were captured by U.S. forces. One of these two, Fl 282 V-10, (Wk. Nr. 28368) has parts including a partial airframe with rotor head and wheels preserved in the Midland Air Museum, Coventry, England. Flettner Fl 282 V-23, (Wk. Nr. 280023), CI+TW, USA FE-4613, later T2-4613, may be with the National Museum of the USAF, Dayton, Ohio. Flettner Fl 282V-12, (Wk. Nr. 280008), CJ+SF, USAF FE-4614, later T2-4614 was also tested in the USA. It was used as a source of spare parts for FE-4613, also reported as sold in 1955.



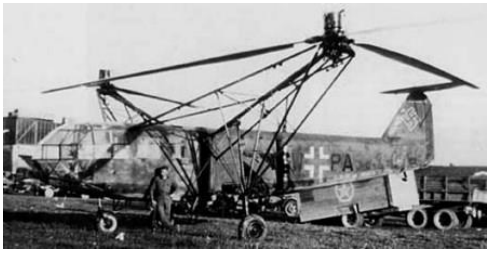
(USAAF Photo)

* Photo. Flettner Fl 282 helicopter and Messerschmitt Me 163 FE-500 at Freeman Field, Indianna.



(RAF Photos)

* Photos 1 & 2. Focke-Achgelis Fa 223E (V14) *Drache* (Dragon) transport helicopter, (Wk. Nr. 22300014), captured at Ainring, Germany. Designated RAF AM233, later VM479. This helicopter was the first to fly across the English Channel. VM479 crashed at Beaulieu, England on 4 Oct 1945.


(USAAF Photo)

* Photo. Focke Achgelis Fa 223 *Drache*, transport helicopter in Luftwffe markings, captured.


(USAAF Photo)

* Photo. Focke Achgelis Fa 223 *Drache*, transport helicopter in USAAF markings.

In January 1945, the German Air Ministry assigned three *Drachen* to Transportstaffel 40 (TS/40) at Mühldorf, Bavaria, the Luftwaffe's only operational helicopter squadron, equipped with at least five Flettner Fl 282s as well as the *Drachen*. TS/40 relocated to various sites before ending up at Ainring in Austria, where one of the *Drachen* was destroyed by its pilot to prevent it being captured and the other two were seized by US forces. The US intended to ferry captured aircraft back to the USA aboard HMS *Reaper*, but only had room for one of the captured *Drachen*. The RAF objected to plans to destroy the other, the V14, so Gerstenhauer, with two observers, flew it across the English Channel from Cherbourg to RAF Beaulieu on 6 September 1945, the first crossing of the Channel by a helicopter. The V14 later made two test flights at RAF Beaulieu before being destroyed on 3 October 1945, when a driveshaft failed.

 (Yachtman Photo)

* Photo. Focke Achgelis Fa 330 Bachstelze, autogyro kite, with Fieseler Fi 156 *Storch* behind it, in the RAF Museum Cosford, England.

 (Stahlkocher Photo)

* Photo. Focke Achgelis Fa 330 A-1 Bachstelze autogyro kite, (Wk. Nr. 100436), USA FE-4617, later T2-4617, National Museum of the USAF. (Stahlkocher Photo)

Focke Achgelis Fa 330, USA FE-4616, later T2-4616, was sent to Eastern Rotorcraft, Pennsylvania in 1947.

Focke Achgelis Fa 330A-1, USA FE-4618, (Wk. Nr. 100404), USA FE-4618, later T2-4618, was lost in the waters off McDill AFB during trials in Sep 1948.

Focke Achgelis Fa 330A, USA FE-5038 was sent to Cal-Aero in 1948, its subsequent fate is unknown.

 (Bill McChesney Photo)

* Photo. Focke Achgelis Fa 330 Bachstelze, autogyro kite, Stephen F. Udvar-Hazy Centre, Chantilly, Virginia.

Focke Achgelis Fa 330 survivors may also be found in the Imperial War Museum, Duxford, and in the RAF Millom Museum, England, the Deutsches Tecknikmuseum, Munich, Germany, and in Le musée de l'Air et de l'Espace, Paris, France.

Focke Achgelis Fa 336, 1944 scout helicopter (project).

 (Author Photo)

* Photo. Focke-Wulf Fw 44 *Stieglitz*, trainer biplane, on display in the Pima Air & Space Museum, Tucson, Arizona.




(USAAF Photos)

Focke-Wulf Fw 190s abandoned on German airfields at the end of the war.







(Luftwaffe Photos)

* Photos 1-6. Focke-Wulf Fw 190 *Würger* fighter in Luftwaffe service. Roughly 28 original Fw 190s survive in museums or in the hands of private collectors around the world.




(RAF Photos)

Focke-Wulf Fw 190A-3 Würger, (Wk. Nr. 135313), single chevron, Stab III./JG2, flown by Oblt Arnim Faber. This aircraft landed in error at RAF Pembrey in South Wales on 23 June 1942. Built by Arado at Warnemünde, this Fw 190 was designated RAF MP499. It was the first of its type to fall into Allied hands, and after its capture it was taken by road to Farnborough and flown extensively in comparative trials with Allied fighters. It was struck off charge (SOC) in Sep 1943.

"In the early evening of 23 June 1942, Luftwaffe pilots of the elite JG 2 fighter unit, based at Morlaix in Brittany, were scrambled to intercept a dozen RAF Boston bombers returning from a raid. Chasing the bombers over the English Channel, one of the German flyers, Oberleutnant Armin Faber became caught up in a dogfight south-east of Dartmouth with one of the bombers' Spitfire escorts, flown by Free Czech pilot Sergeant Frantisek Trejtnar.

During the intense air battle Faber performed a series of twisting manouevres before finally getting into a firing position and shooting his opponent down. Fortunately, the Czech pilot successfully parachuted out of his stricken plane and landed safely.

Unfortunately for Faber, however, all his hard manouevring had left him completely disorientated and unsure of his current position. Misidentifying the Bristol Channel as the English Channel, he set course for what he believed to be south and the French mainland. In actual fact, he was heading north, into South Wales!

Landing at the first airfield he came across, which happened to be RAF Pembrey, the hapless Faber was immediately taken into custody by the base's duty pilot, who was understandably stunned to see an enemy fighter plane land serenely on his airfield. Squadron Leader Richey rushed along to Pembrey to examine the aircraft that had been causing the RAF so many problems. He and his fellow pilots were mightily impressed by what they found. "We gave the Focke Wulf the once over; it was a beautifully designed thing," he recalled. "I think it must have been the best fighter of the war." British test pilots were equally impressed as they put the captured fighter through its paces. Its strengths and flaws were soon identified and the information passed on to frontline RAF pilots, who were able to then adjust their own tactics in order to exploit the Focke-Wulf's few weaknesses - such as its relatively sluggish performance at high altitudes. Some of the features of the Fw 190 were even worked into subsequent British fighter designs." (Wales Online)





(RAF Photos)

* Photos 1-6. Focke-Wulf Fw 190A-3 Würger, (Wk. Nr. 313), repainted as RAF MP499. It was SOC in Sep 1943.

"When Grumman engineering pilots climbed out of a captured FW-190A in England after their first flight, they were astounded: it made their beloved Hellcat look like a plow horse. It was light, rolled like lightning and climbed like an artillery shell.

Pilots loved the FW for many reasons. The Messerschmitt cockpit was claustrophobic and a medium-sized man felt scrunched into position with his shoulders touching the sides. Worse, he had to search for his enemy through a birdcage maze of canopy framing. The various controls were crude and scattered around the cockpit. The FW pilot, however, reclined in an airy, ergonomically correct cockpit that, in both comfort and layout, wasn't matched by the Allies until after the war. Plus, the flight controls were light and well balanced, making the airplane a nimble dancer with minimum input from the pilot. Kurt Tank, the airplane's designer, is revered for the "feel" and performance he made integral parts of his design.

With a pair of 20 mm cannons in each wing and two machine guns in the nose, The FW-190 was lethal in the extreme. At the same time, the slower firing cannons represented a different armament concept from the fast firing machine gun packages of the American fighters. The Germans reasoned only a few 20 mm hits would bring an airplane down. However, the bullets were further apart so the chances of a hit were less likely. The Americans' six and eight gun .50 caliber packages allowed low time pilots to put more bullets in the target because, in comparison, it was not unlike pointing a garden hose." (Budd Davisson).


(RAF Photos)

* Photo. Focke-Wulf Fw 190A-4/U8, (Wk. Nr. 7155), H+ from II./SKG10. Designated RAF PE822, this aircraft crashed in Oct 1944.



(RAF Photos)

* Photos 1-3. Focke-Wulf Fw 190A-4/U8, (Wk. Nr. 7155), repainted as RAF PE822, this aircraft crashed in Oct 1944.




(RAF Photos)

* Photos 1-3. Mistel S3A, Focke-Wulf Fw 190A, (Wk. Nr. 733682), designated RAF AM75 combined with Junkers Ju 88A-6, (Wk. Nr. 2492), designated AM77. The Focke-Wulf Fw 190A is preserved in the Imperial War Museum, London, England, while the Junkers Ju 88A-6 was scrapped at Farnborough.


(Gustav Gullberg Photo)

* Photo. Focke-Wulf Fw 190A-8/R6, (Wk. Nr. 733682), RAF AM75 on display in the Imperial War Museum, London, England. This aircraft was captured at Tirstrup, Denmark where it was found mounted on top of a Junkers Ju 88A-6 bomber, (Wk. Nr. 2492), RAF AM77, as part of a Mistel S3B combination. This aircraft has faired-over gun ports and a belly-mounted ETC-501 bomb rack. The Ju 88 was scrapped at Farnborough.




(RAF Photos)

* Photos 1-3. Mistel S3A designated RAF AM75 combined Fw 190A-8, (Wk. Nr. unknown) with Ju 88H-1, (Wk. Nr. unknown). Both aircraft were scrapped at Schleswig. One of three Mistel combinations captured at Tirstrup. (RAF Photo)

Mistel S3A designated RAF AM76 combined Fw 190A-8, (Wk. Nr. unknown) with Ju 88H-1, (Wk. Nr. unknown). Both aircraft were scrapped at Schleswig.



* Photo. Focke-Wulf Fw 190. 11./JG 1, 1+-, captured at Skrydstrup, Denmark, May 1945. (RAF Photo)

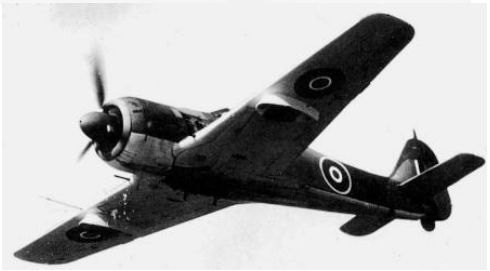


(RAF Photos)

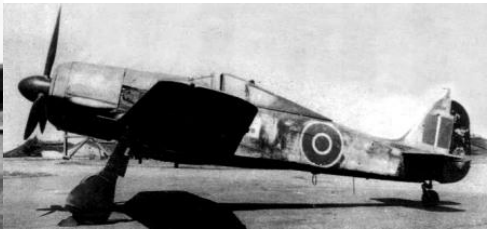
* Photos 1 & 2. Focke-Wulf Fw 190A-4/U8, (Wk. Nr. 5843), "Red 9" from 1.SKG10, RAF PM679. This aircraft crashed on 25 June 1944 and the remains were used for spare parts.








(RAF Photos)

* Photos 1-9. Focke-Wulf Fw 190A-5/U8, (Wk. Nr. 2596), "White 6" from 1.SKG10, flown by Unteroffizier Werner Ohne operating from St. Omer, France. Ohne landed accidentally at the RAF airbase at Manston on the night of 21 May 1943 and was quickly taken into custody. Built by Ago at Oschersleben, after its capture this aircraft was designated RAF PN999. White 6 had a temporary black finish which was removed and British roundels added. PN999 was probably scrapped after July 1946.

Focke-Wulf Fw 190A, (Wk. Nr. unknown), RAF NF754 and Fw 190A, (Wk. Nr. unknown), RAF NF755 were used in England for spare parts. Both were later scrapped at Tangmere.

Focke-Wulf Fw 190F-8/U1, (Wk. Nr. 580058), captured at Kastrup. Designated RAF AM36, this aircraft was likely scrapped at Kastrup.

Focke-Wulf Fw 190S-1, (Wk. Nr. 582044), captured at Kastrup. Designated RAF AM37, this aircraft crashed at Sonning, England on 30 Nov 1945.

Focke-Wulf Fw 190F-8/U1, (Wk. Nr. 580392), captured at Kastrup. Designated AM40, this aircraft was scrapped at Schlesweg.



(RCAF Photos)

* Photos 1 & 2. Focke-Wulf Fw 190F-8, RCAF JFE.



(Luftwaffe Photo)

* Photo. Focke-Wulf Fw 190F-F8/R15, (Wk. Nr. unknown), TD+SI, in Luftwaffe service. The aircraft had an enlarged fin and lengthened tailwheel leg. Gun armament was restricted to wing-root mounted MG 151s. It carried the LTF 5b torpedo on an adapted ETC 501 rack. One was captured at Travemunde, designated RAF AM111 was sent to the UK in July 1945. It was scrapped at Cranfield, Englad, ca 1950.


(Luftwaffe Photo)

* Photo. Focke-Wulf Fw 190F-8/R15, (Wk. Nr. unknown), RAF AM111.

Focke-Wulf Fw 190F-8/R15, (Wk. Nr. unknown), captured at Travemunde where it had been flown by the Luftwaffe Torpedowaffen Versuchsanstalt (TVA) on operational trials. Flown to Farnborough on 19 July 1945 this aircraft was designated RAF AM111. It was scrapped at Cranfield, England, ca. 1950.

Focke-Wulf Fw 190A-8, (Wk. Nr. 171747). Designated RAF AM230, this aircraft was crashed in England on 30 Aug 1944. The remains were scrapped at Little Rissington, England.


(RAF Photo)

* Photo. Focke-Wulf Fw 190 fighter captured by British forces having RAF roundels painted on it by German prisoners post war.



* Photo. Focke-Wulf Fw 190 with freshly painted RAF roundels in a German hangar, post war. (RAF Photo)


(Armée de l'Air Photo)

* Photo. French-built NC.900 (Focke-Wulf Fw 190A-8) in Armée de l'Air markings. In the immediate postwar period, the French Armée de l'Air operated a number of Fw 190 fighters (designated NC.900). 65 NC.900s were built in 1945 and 1946 by the Société Nationale de Constructions Aéronautiques du Centre (S.N.C.A.C.) at Cravant, France.


(Pine Photo)

* Photo. NC.900 (Focke-Wulf Fw 190A-8), (Wk. Nr. 730923) preserved at the Musée de l'Air et de l'Espace, Le Bourget, France. The NC.900 No. 62 on display in the Musée de l'Air at Le Bourget is a Focke-Wulf 190A-8 made to represent an A-7. It is painted in the colours of Oberst Josef Priller, Luftwaffe Kommodore of JG 26, who accumulted 101 victories, many of them in Fw 190s.

Focke-Wulf Fw 190A-8, (Wk. Nr. 173056), coded "White 14", I./JG11, Reg. No. N91169 (53116656), was originally built at the Focke-Wulf factory in Marienburg in 1944,. White 14 ended its service in Rheims, France, where it was buried at the train yards after being stripped of parts. It was restored by Don Hansen, Piping Analysis Inc., Baton Rouge, Louisiana. Its first flight with a Russian-sourced radial engine took place on 9 October 2011.[1]

[1] Internet: http://www.airport-data.com/aircraft/N91169.html; http://en.wikipedia.org/wiki/Focke-Wulf_Fw_190_operational_history#Survivors.


(USAAF Photo)

* Photo. Focke-Wulf Fw-190s at the end of the Second World War, April-May 1945.


(AlfvanBeem Photo)

* Photo. Focke-Wulf Fw 190A-5, Red 10, at the Auto & Technik Museum, Sinsheim, Germany.


(Clemens Vasters Photo)

* Photo. Focke-Wulf Fw 190A-5, Red 10, at the Auto & Technik Museum, Sinsheim, Germany.

Focke-Wulf Fw 190A-8, (Wk. Nr. 170393), "Yellow 11", coded 6./JG1 is preserved in the Luftfahrtmuseum, Laatzen, Lower Saxony, Hannover, Germany. This aircraft is a new built Flug Werk airframe (c/n 990000). The largest original part is the tailplane from Fw 190F-8, (Wk. Nr. 583958). The original Yellow 11 was flown by Feldwebel Alfred Bindseil in April 1944.[1]

[1]Internet: http://www.fw-190.de/survivors/170393/170393.htm.

Focke-Wulf 190 A-3, (Wk. Nr. 122219), IV./JG 5. This aircraft was recovered from an underwater location and is currently being rebuilt for the Norwegian Air Force Museum, Oslo, Norway.



(Nolween Photo)

* Photo. Focke-Wulf Fw 190A-6/R6, (Wk. Nr. 550214), PN+LU, possibly flown by III./NJG 11 as it was fitted with a FuG 217 Neptun radar system, designated RAF AM10. This aircraft was built by the Ago factory in mid-1943. Initially displayed in the UK, this aircraft was shipped from Birkenhead, England to Capetown, South Africa on the SS *Perthshire* on 20 Oct 1946, arriving on 6 Nov. It is now on display at the South African National Museum of Military History, Saxonwold, Johannesburg, South Africa.


(USAAF Photo)

* Photo. Focke-Wulf Fw 190A-8, (Wk. Nr. 681497), "White 11" of 5./JG 4 at St. Trond airfield, Belgium, circa 1 January 1945. This aircraft was flown during on 1 January 1945 during Operation Bodenplatte by Corporal Walter Wagner who was hit by flak during the attack over St. Trond airfield. The engine died and he had to make an emergency landing. The weapons have obviously been removed. The photo was taken by the resident USAAF 404th Fighter Group.



(USAAF Photos)

* Photos 1 & 2. Focke-Wulf Fw 190F, (Wk. Nr. 681237) at St Trond after being taken over by the USAAF 404th Fighter Group. This aircraft had force-landed during Operation Bodenplatte, a Luftwaffe attack on Allied airfields in France and Belgium on 1 Jan 1945. It was then painted red, but was not flown.



(USAAF Photos)

* Photos 1 & 2. Focke-Wulf Fw 190A-8 piloted by Gefreiter Walter Wagner, of 5. II/JG4 was slightly damaged by Allied anti-aircraft fire and was forced to land at the airport of St-Trond on 1 January 1945. Wagner had taken part in an attack on 404 Fighter Group 508 Squadron's airfield at St-Trond, Belgium during *Operation Bodenplatte,* a front wide attack to destroy allied aircraft on the ground. This aircraft was captured and painted overall bright orange-red to distinguish it from enemy Focke-Wulf Fw 190s. The aircraft's code, 00–L, is likely related to the Belgian national code for aircraft registration purposes. The L may have been for its intended pilot, Leo Moon, the Squadron's CO. It appears the aircraft was never flown and was left behind when the 404th left St-Trond.


(USAAF Photo)

* Photo. Focke-Wulf Fw 190A that was captured at Gerbini and then flown by the 85th Fighter Squadron, 79th Fighter Group of 12th Air Force. The 79th FG is the same unit that captured and flew the Messerschmitt Bf 109 *Irmgard*. To avoid any possibility of the aircraft being taken to be the enemy, the aircraft was painted overall red with yellow wings and red wingtips as well as a yellow fuselage band and horizontal stabilizer. It carries USAAF markings as well as the flying skull emblem of the 85th FS.


(USAAF Photo)

* Photo. Focke-Wulf Fw 190A-5, (Wk. Nr. unknown), captured in Italy by the USAAF. This aircraft was painted by the 325 Fighter Squadron (FS) with a bright red cowling and red, white and blue stripes on the tail fin and an American star over an orange square on the fuselage. It was flown by 1st Lt. Jack Shafton of 317 FS from Lesinia airbase near Foggia. The plane was immediately grounded by Colonel Chester L. Sluder (commander of the unit between 1 April 1944 and 11 September 1944) due to worn out tires. After Sluder's departure from command, several pilots tried to start the aircraft, but during taxiing the canopy fell off and the plane was eventually abandoned.




(USAAF Photo)

* Photos 1-3. Focke-Wulf Fw 190A-5, (Wk. Nr. unknown), captured and flown by the 85th fighter squadron, 79th fighter group of 12th USAAF in Mediterranean Theatre of Operations (MTO). The aircraft is painted red overall with yellow wings with red wingtips and yellow horizontal stabilizers with red tips. It has US markings (white star in blue roundel) in a broad yellow fuselage band. The plane also bears the squadron insignia of the 85th fighter squadron (flying skulls), "*Jones Flying Circus*".


(USN Photo)

* Photo. Focke-Wulf Fw 190G-3, (Wk. Nr. 160057), one of two captured by ground crews of the 85th Fighter Squadron, 79th Fighter Group at Gerbini Airfield on the Island of Sicily, in September 1943. It was painted in a striking white scheme with red spinner, cowling, fuselage band and USN striped tail. It was shipped to the United States in January 1944, where repairs were made. Later, in 1945 while in the USA, this aircraft was repainted in a standard USN 3-tone non-specular, intermediate blue and insignia white scheme. It was test flown by the Technical Air Intelligence Unit (TAIU) at NAS Anacostia, then moved to NAS Patuxent River in February 1945.



(USAAF Photos)

* Photos 1 & 2. Focke-Wulf Fw 190, (Wk. Nr. 181550), B, captured in North Africa, was flown by the USAAF 85th FS, 79th FG.





(USAAF Photos)

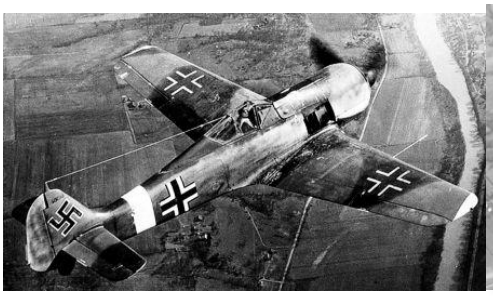
* Photos 1 & 2. Focke-Wulf Fw 190A-3, (Wk. Nr. unknown), USAAF EB-101 test flown in the USA in 1944. This aircraft was later renumbered USA FE-497, later T2-497. It was scrapped at Wright Field in 1946.


(USAAF Photo)

* Photo. Focke-Wulf Fw 190 captured in Germany, May 1945.

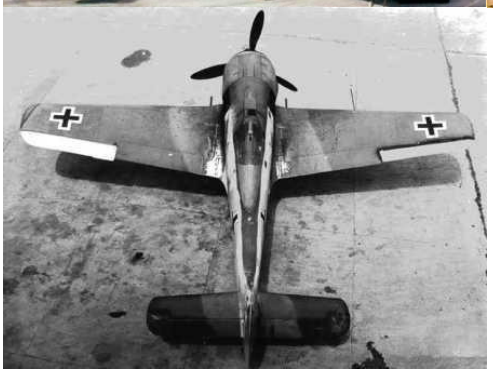

(D. Wadman Photo)

* Photo. Focke-Wulf Fw 190F-8 (or F-9), captured at Wünstorf, Germany, May 1945.








(USAAF Photos)

* Photos 1-7. Focke-Wulf Fw 190G-3, (Wk. Nr. 160016), DN+FP, EB-104, later renumbered USA FE-104, later FE-125 and then T2-125, in flight over Wright Field, Ohio, and on the ground at Freeman Field, Indiana, May 1945.


(USAAF Photo)

* Photo. Focke-Wulf Fw 190F, White 10, USA FE-113 was damaged beyond repair 12 Sep 1945 after a crash at Hollidaysburg, Pennsylvania en route to Freeman Field, Indiana.

Focke-Wulf Fw 190F, (Wk. Nr. unknown) USA FE-114, tested at Freeman Field, Indiana post-war, fate unknown.

Focke-Wulf Fw 190F, (Wk. Nr.unknown), USA FE-115, tested at Freeman Field, Indiana post-war, fate unknown.



(USAAF Photos)

* Photos 1 & 2. Focke-Wulf Fw 190F-8, (Wk. Nr. unknown), factory No. 12053, USA FE-116, later T2-116 in the USA. This aircraft went to Park Ridge, Pennsylvania where it was scrapped.



(USAAF Photos)

* Photos 1 & 2. Focke-Wulf Fw 190F-8, possibly USA FE-116, later T2-116 on display in the USA before being scrapped ca. 1946.


(Kogo Photo)

* Photo. Focke-Wulf Fw 190F-8/R1, (Wk. Nr. 931884), initially coded "Yellow 10" from I./SG2. This aircraft was shipped to the USA and designated FE-117. It is restored and currently painted as "White 7", on display in the Steven F. Udvar-Hazy Center, Chantilly, Virginia.


(Nick-D Photo)

* Photo. Focke-Wulf Fw 190F-8/R1, (Wk. Nr. 931884), White 7, USA FE-117, restored and on display in the Steven F. Udvar-Hazy Center, Chantilly, Virginia.

 (airforcefe Photo)

* Photo. Focke-Wulf Fw 190A-8, (Wk. Nr. 739447), Reg. No. N447FW, on display in the Evergreen Aviation & Space Museum, McMinnville, Oregon.

  (Joanna Poe Photos)

* Photos 1 & 2. Focke-Wulf Fw 190A-8 (Wk. Nr. 732183), from 12./JG 5 as flown by Ltn Rudi Linz, a German ace with 70 victories. This aircraft was shot down over Norway by a British Mustang during the 'Black Friday' raid on 9 February 1945. The aircraft is displayed in the Cottbus Hangar of the Military Aviation Museum in Pungo, Virginia.

  (Dustin May Photos)

* Photos 1 & 2. Focke-Wulf Fw 190A-9, (Wk. Nr. 980574), Reg. No. NX190RF, on display in the Planes of Fame Museum, Chino, California.

Focke-Wulf Fw 190A-2, (Wk. Nr. 5476)from JG 5, owned by Wade S. Hayes and currently located in Texas USA. It is thought to be one of the oldest Fw 190s still in existence.

 (PanGalacticGargleBlasterr Photo)

* Photo. Focke-Wulf Fw 190A-5, (Wk. Nr. 1227), from IV/JG 54. This aircraft was discovered in 1989 in Voibakala forest, near Saint Petersburg. Now airworthy, with the Flying Heritage Collection, Paine Field, Everett, Washington.

  (John Veit Photos)

* Photos 1 & 2. Focke-Wulf Fw 190A-5, (Wk. Nr. 1227), from IV/JG 54, Flying Heritage Collection, Paine Field, Everett, Washington.

Focke-Wulf Fw 190A-6, (Wk. Nr. 550470), from I./JG 26. Owned by Malcolm Laing and located in Lubbock Texas.

Focke-Wulf Fw 190A-8, (Wk. Nr. 173889), from 7./JG 1. This aircraft is owned by Mark Timken, currently under restoration.

Focke-Wulf Fw 190A-8, (Wk. Nr. 350177), from 12./JG 5. This aircraft is located at the Texas Air Museum in Rio Hondo, Texas.


(Soviet Air Force Photo)

* Photo. Focke Wulf 190A-4, (Wk. Nr. 142310), "Black 2" flown by Unteroffizier Helmut Brandt of the I./JG54 "Grunherz" was captured by the Soviets on 13 January 1943 after air combat and a forced landing on the ice of Lake Ladoga in the USSR. Helmut Brandt shot off his propeller blades with a cannon round, thanks to a synchronizer failure, and he was unable to get his aircraft to his side of the front line. After lending on the ice of Lake Ladoga he tried to escape on skis, but was caught by Russian patrols.


(Soviet Air Force Photo)

* Photo. Focke Wulf 190A-4, (Wk. Nr. 142310), repainted in Soviet Air Force markings as it appeared while being tested at the Soviet Air Force Scientific Research unit. It was also placed on display at a "BNT exhibition in TsAGI". Its subsequent fate is unknown. (Soviet Air Force Photo)


(Soviet Air Force Photos)

* Photos 1-3. Focke-Wulf Fw 109A-4, (Wk. Nr. 142362), coded 6+, early in 1944. Built by Ago at Oschersleben, and assigned to 11./J.G. 51 as "Black 6 +", this aircraft was captured by the Soviets near Neval on 17 July 1943, while being flown by Uffz. Erwin Grossmann. This aircraft was later flown by many Soviet Flight Research Institute pilots.


(Soviet Air Force Photo)

* Photo. Focke-Wulf Fw 190A-8, (Wk. Nr. 580967) captured by the Soviet Union in Feb 1945 and test flown at NII-VVS in the USSR.

During special trials conducted by the Soviet Air Forces Scientific Research Institute captured Fw 190A-8, (Wk. Nr. 682011) and Fw 190A-8, (Wk. Nr. 580967), were flown against Yak-3, Yak-9u and La-7 fighters. The engagements demonstrated that new tactical procedures were needed to counter German aircraft flying at low levels. The Focke-Wulfs usually ingressed at low altitudes and regressed at treetop level at maximum speed, making it hard to counter-attack in time. The pursuit became more complicated, because the gray matte paint concealed the German aircraft against the background of the landscape. In addition, German pilots employed engine reheat at low altitudes. It was determined that the Focke-Wulf could deliver 582 km/h, i. e. neither the Yak-3 (the aircraft at the Air Forces Scientific Research Institute developed 567 km/h) nor the Yak-9U (575 km/h) could overtake them. Only the La-5 reached 612 km/h in augmented mode, but the speed margin was insufficient to reduce the range between the two aircraft to a distance permitting aimed fire. Based on test results, the institute leadership issued recommendations: it is necessary to echelon the fighters in patrols at different altitudes. The mission of the pilots on the higher tiers would be to disrupt the bombing and to attack the enemy fighter escort, while the lower patrol aircraft, having the capability to overtake in a shallow dive, probably would be able to intercept the ground-attack aircraft themselves. (Soviet Air Force Photo)

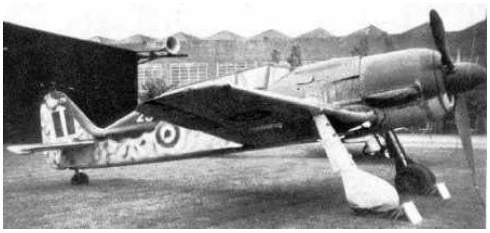


(Aldo Bidini Photo)

* Photo. Focke-Wulf Fw190A-8, new-build aircraft privately owned, "White 11", JP7645827. In 1997, a German company, Flug Werk GmbH, began manufacturing new Fw 190 models as reproductions. By 2012 almost 20 had been produced, most flyable, a few as static display models, with airworthy examples usually powered by Chinese-manufactured Shvetsov ASh-82 radial powerplants, which have a displacement of 41.2 litres, close to the BMW 801's 41.8 litres.


(Luftwaffe Photo)

* Photo. Focke-Wulf Fw 190S8 two-seat training version of the Fw 190F-8/U1, White 30, in Luftwaffe service. The aircraft was used as a high-speed transport for senior officers or for conversion training.


(RAF Photo)

* Photo. Focke-Wulf Fw 190F-8/U1 (Fw 190S8) two-seat training and high speed transport (Wk. Nr. 584219), Black 38, RAF AM29. This aircraft was built by Arado at the Warnemünde factory, and was an FW 190 F-8 converted to two-seat standard. Captured in Grove, Denmark, North of Schleswig-Holstein, Germany by British forces in May 1945. It is shown here shortly after it was flown to Farnborough in the UK on 2 Sep 1945 and repainted with RAF markings. In *Luftwaffe* service, it operated with training units, and carried the letters HRZ. It was exhibited at various locations, and now resides in the RAF Museum at Hendon, England.


(Les Chatfield Photo)

* Photo. Focke-Wulf Fw 190S8 two-seat training version of the Fw 190F-8/U1 (Wk. Nr. 680430), RAF AM29, shown here as "Black 38" on display in the RAF Museum, Hendon, England.




(RuthAS Photos)

* Photos 1 & 2. Focke-Wulf Fw 190S8 two-seat training version of the Fw 190F-8/U1, (Wk. Nr. 584219), Black 38, designated RAF AM29, on display in the RAF Museum, Hendon, England.


(USAAF Photo)

* Photo. Focke-Wulf Fw 190 D-9 appears to be a late production aircraft built by Fieseler at Kassel. It has a late style canopy; the horizontal black stripe with white outline shows that this was a II. Gruppe aircraft.



(Luftwaffe Photos)

* Photos 1 & 2. Focke-Wulf Fw 190D-9 in Luftwaffe service. When "the FW-190D, the “Dora,” came along in 1944, with the Fw 190’s radial engine replaced by an inline, V-12 Jumo 213 of more than 1770 horsepower, the airplane’s primary target was the never-ending high altitude stream of B-17’s headed for Germany. Plus, German high command knew the B-29 was on the horizon and they had nothing that could get that high and fight effectively. With water/methonal injection, the FW-190D’s horsepower soared to 2240 hp at sea level (for ten minutes), which, combined with the supercharger, make the “Dora” a real high altitude threat. The longer engine and its annular radiator necessitated a four-foot fuselage extension and eventually the type mutated into the super long wing, high altitude interceptor, the TA-152H." (Budd Davisson)


(USAAF Photo)

* Photo. Focke-Wulf Fw 190D-9, JG26, (Wk. Nr. 600651) captured at Straubing, Germany, May 1945.

Focke-Wulf Fw 190D-9, (Wk. Nr. 500618) captured at Flensburg was designated RAF USA 15. This aircraft was likely scrapped at Flensberg.



(USAAF Photos)

* Photo. Focke-Wulf Fw 190D-13/R11, (Wk. Nr. 836017), coded "Yellow 10" from I./JG26, captured at Flensburg. Designated RAF USA 14, this aircraft was shipped to the USA on HMS *Reaper*, where it was designated USA FE-118, later T2-118. This aircraft was with the Champlin Collection in Arizona, and then the Museum of Flight in Seattle, Washington. It is now with the Flying Heritage Collection, Paine Field, Everett, Washington.







(Bzuk Photos)

* Photos 1-5. Focke-Wulf Fw 190D-13/R11, (Wk. Nr. 836017) ,"Yellow 10," from 1./JG 26 as flown by Major Franz Götz. Captured at Flensberg in May 1945, this aircraft was designated RAF USA 14, and shipped to the USA on HMS *Reaper*. It was then numbered USA FE-118, later T2-118. Previously with the Champlin Air Museum in Arizona, this aircraft has been restored and is on display in the Flying Heritage Collection, Paine Field, Everett, Washington.


(PanGalacticGargleBlasterr Photo)

* Photo. Focke-Wulf Fw 190D-13/R11, (Wk. Nr. 836017) ,"Yellow 10," from 1./JG 26 as flown by Major Franz Götz. USA FE-118. Previously with the Champlin Air Museum in Arizona, this aircraft is on display in the Flying Heritage Collection, Paine Field, Everett, Washington.


(USAAF Photo)

* Photo. Focke-Wulf Fw 190D-9, (Wk. Nr. 211018), "White 14" from II./JG26, shipped to the USA. This aircraft was designated USA FE-119, later T2-119. It was destroyed in a crash at Freeman Field, Indiana, on 22 Sep 1945.




(NMUSAF Photos)

* Photos 1-3. Focke-Wulf Fw 190D-9, (Wk. Nr. 601088), JG 26, captured by the RAF at Flensburg. Designated RAF USA 12, this aircraft was shipped to the USA on HMS *Reaper*. It was alloted USA FE-120, later T2-120. It was restored by the NASM and is now on display at the National Museum of the USAF, Dayton, Ohio.


(USAAF Photo)

* Photo. Focke-Wulf Fw 190D-9, (Wk. Nr. 401392), "Black 5", JG26, captured at Flensburg. Designated RAF USA 13, this aircraft was shipped to the USA on HMS *Reaper* and allotted USA FE-121, later T2-121. In this photo taken at Newark, the number 31 is visible just forward and above the horizontal stabilizer referring to its loading position on HMS *Reaper*. This aircraft was scrapped at Freeman Field, Indiana, ca. 1946.




(USAAF Photos)

* Photos 1-3. Focke-Wulf Fw 190D-9, (Wk. Nr. 401392), "Black 5", JG26, captured at Flensburg. Designated RAF USA 13, this aircraft was shipped to the USA on HMS *Reaper* and allotted USA FE-121, later T2-121. It was scrapped at Freeman Field, Indiana, ca. 1946.

Focke-Wulf Fw 190D-9, (Wk. Nr. 210968), from 2./JG 26. This aircraft is under restoration for the *Luftwaffe* Museum in Berlin, Germany.captured at Flensburg.

Focke-Wulf Fw 190D-9, (Wk. Nr. 210596), captured at Flensburg. Designated RAF AM98, this aircraft was shipped from Birkenhead, England to Capetown, South Africa on the SS *Perthshire* on 20 Oct 1946, arriving on 6 Nov. After acceptance by the SAAF it was stored at 15 Air Depot, Snake Valley and during 1950 it was sold to the Benoni Technical College as an instructional airframe. It waso scrappedin 1953.


(Luftwaffe Photo)

* Photo. Focke-Wulf Fw-190D-12, CS+IA, 1945.




(Soviet Air Force Photos)

* Photos 1-3. Focke-Wulf Fw 190D-9, possibly (Wk. Nr. 210251), built by Focke-Wulf at Cottbusas, flown by Soviet VVS Baltic Fleet Air Force pilots in June 1945. The war was already over when this aircraft arrived for testing in the USSR. The flight tests suggested the Soviet La-5 was superior to the Dora in many respects.

Focke-Wulf Fw 190D-9, (Wk. Nr. 211028), coded Black 8, 14/JG26 is preserved in England after being recovered from Germany in 1996. This aircraft was registered on 21 May 2003, by Glenn R. Lacey of Epsom, Surrey, as G-DORA. (Wk. Nr. 211028) is currently with the Fighter Factory at Virginia Beach, USA, as the Lacey collection no longer exists.

Focke-Wulf Fw 190F-3, (Wk. Nr. 670071), from 1./SchG 1. This aircraft is being restored for the Flugplatz Museum of Cottbus, Germany.

Focke-Wulf Fw 190F-8, (Wk. Nr. 5415), aunder restoration in New Zealand and owned by the Old Flying Machine Company.

Focke-Wulf Fw 190F-8, (Wk. Nr. 930638), built by Norddeutsche Dornier, Wismar. This aircraft was assigned to I./S.G. 2, "White 43 + ", painted in the camouflage scheme of RLM 70/75/76, with a yellow chevron wing marking. Towards the end of 1944, the aircraft was captured by Yugoslavian partisans and, after being repainted as "White 11", was put into Yugoslavian service in 1945, serving until 1946. After being retired, the aircraft was repainted in German colours, and remains of it are still in existence today, in the basement of the Air Yugoslav Aeronautical Museum in Surcin, Belgrade.

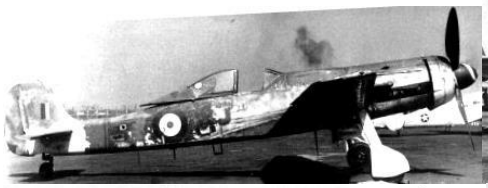
Focke-Wulf Fw 190F-8, (Wk. Nr. 931862), from 9./JG 5, the "White 1+0" as flown by Unteroffizier Heinz Orlowski. It was built by Norddeutsche Dornier at Wismar in June 1944, and transferred to the *Luftwaffe* on 13 July 1944. This aircraft was shot down by North American P-51D Mustangs over Norway in the "Black Friday" engagement. It was recovered in the early 1980s from a Norwegian fjord. Originally under restoration in Kissimmee, Florida, USA by *The White 1 Foundation*, it was transferred to The Collings Foundation in 2012, and is expected to be returned to airworthy status.



(Luftwaffe Photos)

* Photos 1 & 2. Focke-Wulf Ta 152H, high altitude fighter (derived from Fw 190) CI+XM, in Luftwaffe service.

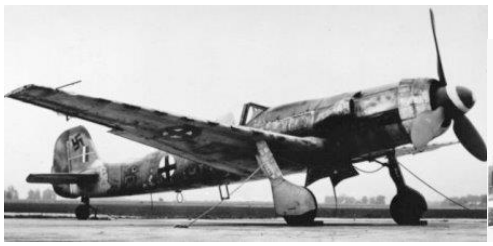






(RAF Photos)

* Photos 1-5. Focke-Wulf Ta 152H-1 high-altitude fighter, (Wk. Nr. 150168), captured at Leck. This aircraft was designated RAF AM11. It was scrapped at Farnborough, England in 1946.







(USAAF Photos)

* Photos 1-6. Ta 152H-0/R-11 (Werk Number 1500010), Green 4, JG301 coded CW+CJ, with the NASM, is the only existing example of this fighter in the world today. Definitive information about the NASM Ta 152 has always been lacking but research conducted late in 1998 may have revealed the airplane's true identity as Werk-Nummer 150010, not 150003 or '020 as has been widely reported. This places the airframe toward the end of the range of pre-production H-0 models, a variant marking the transition from the Ta 152 prototypes to full production Ta 152H-1 airplanes. It was probably built at Focke-Wulf's production facility at Cottbus, Germany, in December 1944, and delivered to Erprobungskommando Ta 152 at Rechlin, Germany, for service testing. As with most Ta 152s produced, '020' was apparently transferred to Jagdgeswader (fighter squadron) JG 301 in early 1945. A green '4' was painted on the fuselage and this may have been the squadron identification and radio call sign "Green 4" but much remains unknown about this aircraft.

The initial information suggesting the aircraft was (Wk. Nr. 150020), was based on a type plate in the fuselage, which only designated a component. The aircraft has a wooden tail and only (Wk. Nr. 150003) and (Wk. Nr. 150010) were fitted with this and on historical photos the overpainted remains of the code CW+CJ is visible which belongs to (Wk. Nr. 150010). (Wk. Nr. 150020). was coded CW+CT[1]

[1] Information courtesy of Peter W. Cohausz, D-73655 Plüderhausen, Dahlienweg 10, Germany.

As the Soviets rolled over eastern Germany, many Luftwaffe pilots took off and steered their mounts west. They preferred to be captured by the West. The British recovered "Green 4" in Aalborg, Denmark, at the end of hostilities. They turned the airplane over to "Watson's Whizzer's, the American unit charged with collecting Luftwaffe aircraft for further study.

Watson's men traveled far and wide over Europe by jeep and occasionally by air to find the aircraft on the "Black Lists." Some of the aircraft were found in flyable condition. Others had to be reconstructed from remnants of other aircraft. Many aircraft were shipped to the United States aboard the British carrier HMS *Reaper.* The most viable harbour for docking the carrier and loading the various aircraft was at Cherbourg, France. The "Whizzers" flew the Me 262s and other aircraft from Lechfeld to St. Dizier, to Melun, and then to Cherbourg.

Lt Harold McIntosh flew '020 to Melun, France, where it was loaded aboard the British aircraft carrier HMS *Reaper* and shipped Newark Army Airfield, New Jersey. From Newark, McIntosh flew this Ta 152 to Freeman Field, Indiana. The airplane was later transferred to Wright Field, Ohio, to undergo extensive flight testing as Foreign Equipment number FE-112 (later changed to T2-112). After testing, the Army stored the aircraft and then turned it over to the National Air Museum in 1960.

In 1998 Museum restoration staff were treating deteriorated sections of the wooden aft fuselage, fin, rudder, and right elevator when they discovered several interesting items that offered tantalizing glimpses into the airplane's shadowy past. Extensive wood rot was found in where the horizontal stabilizer joins the vertical fin. The restoration staff speculated that during testing at Wright Field, pilots and engineers became concerned that the wooden tail may have been weakened by defective glues or sabotage. They strengthened the entire area with steel plate. However, this work may have compromised flight safety because it required moving the horizontal stabilizer forward several inches, exacerbating a tail-heavy condition already known to the Germans. The restoration specialist removed the steel plate and rebuilt the tail to the original German configuration.

After comparing photographs with the aircraft, the staff determined the British painted over some of the original Luftwaffe markings. The US Army Air Force then stripped and repainted part of the airplane but NASM technicians carefully sanded through the layers of Allied paint to reveal previous markings and much of the original German paint. They found the old Foreign Equipment number, RAF markings, the Reich Defence tail bands of JG 301 (fighter wing 301), and the original Nazi swastika. The staff also found 20-mm MG 151 gun mounts and fittings in the upper cowling. However, these were not normally found in H-0 models, suggesting this airframe may have been destined to become a C-1 variant.[1]

[1] Internet: www.nasm.si.edu/./ aircraft/focke_ta152.htm.







(Luftwaffe Photos)

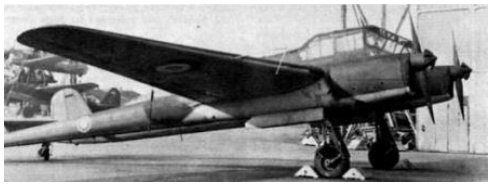
* Photos 1-6. Focke-Wulf Ta 154, *Moskito* night-fighter in Luftwaffe service.


(USAAF Photo)

* Photo. One slightly damaged Ta 154 is known to have been captured at Lage, Germany, by the 54th Air Disarmament Squadron and is reported to have been shipped to the USA on board the SS *Richard Gatling.* No FE number was assigned, its fate is unknown.


(USAAF Photo)

* Photo. Focke-Wulf Fw 189 *Uhu* tactical reconnaissance aircraft found by American troops near Salzburg, Austria

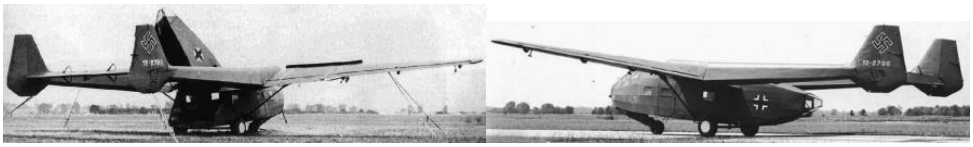



* Photo. Focke-Wulf Fw 189A-3 *Uhu,* (Wk. Nr. 0173), 3X+AA, captured at Grove, Denmark. This aircraft was designated RAF AM27. It was scrapped at Gosport, England, in 1947. (RAF Photos)

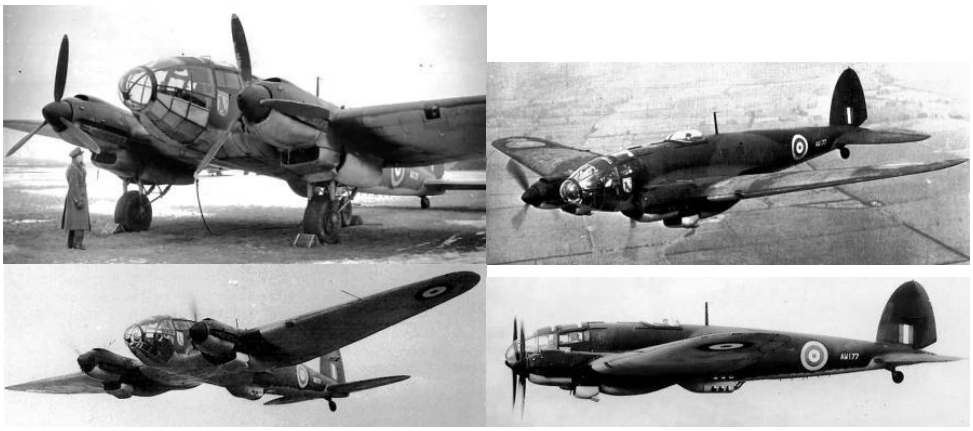


* Photo. Focke-Wulf Fw 189 Uhu in Soviet markings. (Soviet Air Force Photo)

The Soviet Union evaluated captured Fw 189s and made copies post war. The Focke-Wulf Fw 189 was called the "frame" by Red Army and was assessed to have excellent all-round visibility, good stability and responsiveness, and the ability to maintain steady flight on one engine. Despite its low speed (300 km/h) this aircraft performed its combat duties until the end of the war. Soviet examiners noted "The aircraft's excellent visibility cuts down on the possibility of surprise fighter attacks. Its high maneuverability allows gunners to prepare to beat off an attack only if the attacking aircraft is detected in time. In combat turns, the fighter will always be in the field of fire of its rear guns. The Fw 189 can bank at speeds of 180-200 km/h. The maneuver Fw 189 crews commonly use to break off combat is to descend in a spiral to low altitudes and remain there, hedge-hopping."6" Engineer-Major M. S. Dmitriyev, who examined the Fw 189 in detail, also noted the crew comforts provided: carefully thought-out arrangement of navigational equipment and radios; side-by-side seating of navigator and pilot, making their work easier without intercom; and efficient cockpit heating. The aircraft could also perform light bombing missions. It turned out to be very easy to put onto a target.



* Photos 1 & 2. Gotha Go 242B-4, (Wk. Nr. unknown), troop-carrying transport glider rebuilt from the remains of a badly damaged example captured in Italy with parts of other Go 242s. Shipped to the USA, it was reassembled at Clinton County Army Air Field near Wright Field, Ohio. Named "*The Fabric Fortress*", it was rebuilt in Texas and then returned to Wright Field where it was flight tested in July 1946 as USA FE-2700, later T2-2700. It was likely scrapped at Prk Ridge. (USAAF Photos)



* Photos 1-4. Heinkel He 111H-1, (Wk. Nr. 6853), RAF AW177, coded 1H+EN of II/KG26, that made a forced landing with only minor damage in an open field in at North Berwick, East Lothian, Scotland, after combat with a Spitfire of No. 602 Squadron on 9 February 1940. AW177 is shown here being test flown in England. This aircraft crashed at RAF Polebrook on 10 November 1943 while carrying a number of 1426 Flight ground crew as passengers. The pilot, F/O Barr, and six others were killed, four were injured. (RAF Photo)

 (RAF Photo)

* Photo. Heinkel He 111H, (Wk. Nr. unknown), captured in North Africa in 1942. Designated HS-? by the RAF, it was named "*Delta Lily*" and flown by No. 260 Squadron.. It was scrapped in Egypt in 1947.

Heinkel He 111H, (Wk. Nr. unknown). One aircraft was captured was captured in Syria in 1942 and used by the French to transport diplomats around the Middle East. Another He 111, (Wk. Nr. unknown) was captured in France ca. 1944-1945 by the French Armee de l'Air and flown by GB I/31 Aunis alongside that units' Junkers Ju 88's. flown by the French Armee de l'Air post war.

 (USAAF Photo)

* Photo. Heinkel He 111 in USAAF markings.


(USAAF Photo)

* Photo. Heinkel He 111H-20, (Wk. Nr. 701152), NT+SL captured in the Munich area of Germany this aircraft was flown by Watsons Whizzers and then by the 56th FG, 8th USAAF before being handed over to the british. It is painted black and has an RAF roundel painted over the USAAF star and bar markings. The peculiar logo on the fuselage is the letter W inside a C inside an O from the initials of Major J. Carter of the 61st FS, Major Williamson of the 62nd FS and Captain Ordway, Engineer Officer of the 61stFS. This aircraft is preserved in the RAF Museum at Hendon in England.


(Dapi89 Photo)

* Photo. Heinkel He 111H-20, (Wk. Nr. 701152), coded NT+SL. This aircraft was built in 1944 and modified to drop Fallschirmjäger (paratroops). It is on display in the RAF Museum, Hendon, England.


(Clemens Vasters Photo)

* Photo. Heinkel He 111 P-2 (5J+CN), (Wk. Nr. 1526) 5.Staffel/Kampfgeschwader 54 (KG 54 - Bomber Wing 54), on display at the Royal Norwegian Air Force (RNAF) Museum at Gardermoen, part of the Norwegian Armed Forces Aircraft Collection. The 5J Geschwaderkennung code on the aircraft is usually documented as being that of either I. Gruppe/KG 4 or KG 100, with B3 being KG 54's equivalent code throughout the war.


(Aeroprints Photo)

* Photo. Heinkel He 111 P-2 (5J+CN), (Wk. Nr. 1526), RNAF Museum, Gardermoen, Norway.


(Hugh Lleweln Photo)

* Photo. Heinkel He 111 E-3 (25+82), (Wk. Nr. 2940). with the "conventional" cockpit is on display at the Museo del Aire, Madrid, Spain, having served in the Condor Legion.

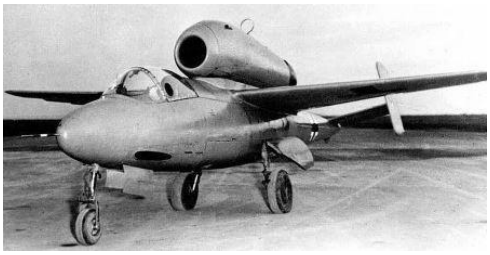


(USAAF Photos)

* Photos 1 & 2. Heinkel He 111H-16, (Wk. Nr. 8433), 2B+DC, "Red 4", surrendered in Italy by a defecting Hungarian pilot in Dec 1944. This aircraft was shipped to the the USA where it was designated USA FE-1600, later T2-1600. It was probably scrapped at Freeman Field, Indiana in 1946.


(Soviet Air Force Photo)

* Photo. Heinkel He 111H-11, (Wk. Nr. unknown), KG27 captured by the USSR in Jan 1943. It was sent to the NII-VVS (Soviet Air Forces Scientific Research Institute), where it was flown in May 1943.

 (Luftwaffe Photo)

* Photo. Heinkel He 162 *Volksjäger*, jet fighter.

 (USAAF Photo)

* Photo. Heinkel He 162 aircraft in a large underground factory at Hinterbruhl, Germany in April 1945. United States Ninth Army troops found these nearly completed aircraft ina former salt mine near Engels. Built 300 metres underground, a large elevator was used to bring the aircraft to the surface.

 (Luftwaffe Photo)

* Photo. Overhead view of a Heinkel He 162 in Luftwaffe service. The He 162A-2 *Volksjäger* or "People's Fighter" was also known as *Salamander,* which was the code name of its construction program, and *Spatz* ("Sparrow"), which was the name given to the aircraft by the Heinkel company.

Heinkel He 162A-2, (Wk. Nr. 120221) captured at Leck. Designated RAF AM58, this aircraft was scrapped at Farnborough in 1946.



* Photo 1. Heinkel He 162A-2, (Wk. Nr. 120076), originally on display in the Canada Air and Space Museum in Ottawa. (Author Photo)

 (CASM Photo)

* Photos 1 & 2. Heinkel He 162A-2, (Wk. Nr. 120076), captured at Leck. Designated RAF AM59, later RAF Serial No. VH523, this aircraft was held by the Canada Air and Space Museum in Ottawa. It was traded to Aero Vintage in the UK for a Bristol Fighter (G-AANM, D-7889) in December 2006. This aircraft is now on display at the Deutsches Technikmuseum Berlin, Germany.


(RAF Photo)

* Photo. Heinkel He 162A-2, (Wk. Nr. 120074), captured at Leck. Designated RAF AM60, this aircraft was scrapped at Brize Norton in 1947.



(RAF Photos)

* Photos 1 & 2. Heinkel He 162A-2, (Wk. Nr. 120072), captured at Leck. Designated RAF AM61, this aircraft crashed at Farnborough on 9 Nov 1945.


(RAF Photo)

* Photo. Heinkel He 162A-2, (Wk. Nr. 120086), Yellow 2, JG1, captured at Leck. Designated RAF AM62, this aircraft was on display in Hyde Park, London, England post war. This aircraft was later shipped to Canada and is on display in the Canada Air and Space Museum.


(JustSomePics Photo)

* Photo. Heinkel He 162A-2, (Wk. Nr. 120086), captured at Leck. Designated RAF AM62, this aircraft is on display in the Canada Air and Space Museum, Ottawa, Ontario.



(AWM Photo)

* Photo. Heinkel He 162A-2, (Wk. Nr. 120095), captured at Leck. Designated RAF AM63, this aircraft is shown here on display in the UK post war. It was scrapped at Brize Norton in 1947.

Heinkel He 162A-2, (Wk. Nr. 120097), captured at Leck. Designated RAF AM64, this aircraft was scrapped at Farnborough in 1947.


(Dapi99 Photo)

* Photo. Heinkel He 162A-2, (Wk. Nr. 120227) of JG 1, captured at Leck in northern Germany. Designated RAF AM65, later VN629 this aircraft was brought to Farnborough by surface transport on 31 July 1945. It was not flown by the RAF. It is currently on display in the RAF Museum, Hendon, England.

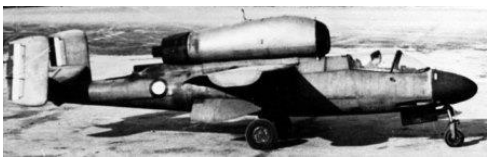
Heinkel He 162A-2, (Wk. Nr. 120091), captured at Leck. Designated RAF AM66, this aircraft was possibly sscrapped at South Cerney, England.

Heinkel He 162A-2, (Wk. Nr. 120098), captured at Leck. designated RAF AM67, Later VH513, this aircraft was scrapped at Farnborough in 1946.


(Tony Hisgett Photo)

* Photo. Heinkel He 162A-1, (Wk. Nr. 120235), originally coded Red 6, now painted coded Yellow 6, JG1, was captured at Leck. This aircraft was not allocated an Air Ministry number, likely because it was intended for use as a ballistics target. Initially on display at RAF Cranwell it was transferred to Imperial War Museum, Lambeth in London, but is now on display at Duxford, Cambridgeshire, England.








(Armée de l'Air Photos)

* Photos 1-7. Heinkel He 162A-2, (Wk. Nr. 120015) formerly of III./JG1. This aircraft is being restored by the Memorial Flight Association at the *Musée de l'Air et de l'Espace* near Paris, France. This aircraft was one of 27 He 162s captured by the RAF at Leck on 15 May 1945. Five of these aircraft were turned over to the French Air Force in February 1946, and these included two He 162A-1s, (Wk. Nr. 310012) "Red 7" and (Wk. Nr. 310003) "Yellow 5"; three He 162A-2s (Wk. Nr. 120093), "White 2", (Wk. Nr. 120223) "Yellow 1", and (Wk. Nr. 120015). The He 162A-2s were flown by the French Air Force from April 1947 to July 1948. No. 1, (Wk. Nr. 120015) was painted in a single colour of grey/beige and bore the fuselage No. 2. It was flown for most of the tests totalling nearly 14 hours on a total amount of 18 hours of flight tests; each flight lasting approximately 20 to 30 mn ; this enabled about 30 French Air Force pilots to get a glimpse of jet flying, pending the arrival of British Vampires in 1949. Grounded after the death of Capt. Schienger on aircraft No. 1, (Wk. Nr. 120015) was sent to the Rochefort-Sur- Mer Air Force mechanics school. It was then repainted "bordeaux-red" and sent to the Musée de l'Air et de l'Espace in 1952. Its colour changed again to dark green which it wore until 1975 when it was given an approximate camouflage paint with (Wk. Nr. 120223).


(USAAF Photo)

* Photo. Heinkel He 162 damaged at the end of the war, captured by American forces.


) (Lynn Ware Photo)

* Photo 1. Heinkel He 162 A-2, (Wk. Nr. 120077), "Red 1" on display at Freeman Field, designated USA FE-489, later T2-489. This aircraft went to the Planes of Fame Museum, Chino, California.


(USAAF Photo)

* Photo. Heinkel He 162 A-2, (Wk. Nr. 120077), "Red 1" being test flown as USA FE-489, later T2-489. This aircraft went to the Planes of Fame Museum, Chino, California.

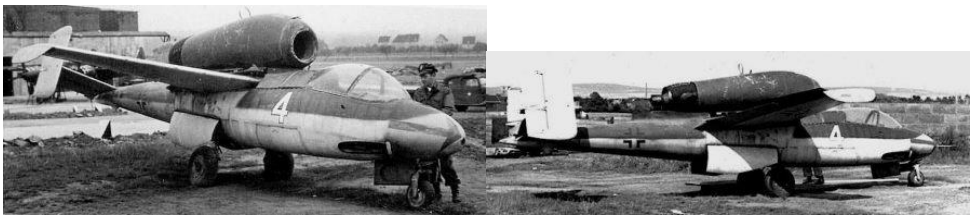


(Dustin May Photo)

* Photo. Heinkel He 162A-2, (Wk. Nr. 120077) "Nervenklau" is currently owned by the Planes of Fame Museum and is on static display at Chino, California. This aircraft was sent to the United States in 1945 where it was given the designation USA FE-489 (Foreign Equipment No. 489) and later T2-489.



* Photo. Heinkel He 162 A-2, (Wk. Nr. 120077), "Red 1", USA FE-489, later T2-489, coded Red 1, on display in the Planes of Fame Museum, Chino, California. (Goshimini Photo)


(USAAF Photos)

* Photo. Heinkel He 162A-1, fuselage (Wk. Nr. 120222), coded White 4, later repainted Yellow 7, USA FE-493, later T2-493, at USAAF Depot Y76 Kassel, Germany before shipment to the USA.


(USAAF Photo)

* Photo. Heinkel He 162A-1, fuselage (Wk. Nr. 120222), originally coded White 4, repainted Yellow 7, USA FE-493, later T2-493, with a wing from He 162A-1 (Wk. Nr. 120067), at Freeman Field, Seymour, Indiana Ohio post-war.



* Photo. Heinkel He 162A-2, (Wk. Nr. 120230), coded White 23, 1/JG1, captured by the British at Leck airfield in May 1945. Transferred by the RAF to the USA, coded USA FE-504, later T2-504, now with the NASM. (RAF Photo)





(USAAF Photos)

* Photos 1-4. Heinkel He 162A-2, (Wk. Nr. 120230), coded White 23, 1/JG1, USA FE-504, later T2-504, with the tail of (Wk. Nr. 120222). This aircraft is now with the NASM.

Heinkel He 162A-2, (Wk. Nr. 120230), coded White 23, 1/JG1, painted (Wk. Nr. 120222), USA FE-504, is stored in the NASM collection. This aircraft was one of thirty-one JG 1 aircraft manufactured by Heinkel at Rostock-Marienehe and captured by the British at Leck on 8 May 1945. It was painted with the number White 23, and its red-white-black nose bands were in reverse order from the usual paint scheme, which may indicate that the wing commander and high-scoring ace, Col Herbert Ihlefeld, flew this particular aircraft. After transfer to Britain, the US Army Air Forces accepted the airplane and shipped it to Wright Field, Ohio, for evaluation. It received the foreign equipment number FE-504, later T2-504, and was later moved to Freeman Field, Indiana. For unknown reasons, mechanics replaced the tail unit at Wright Field with the tail unit of aircraft Wk. Nr. 120222. FE-504/T2-504 was apparently never flown. Its flying days ended permanently when someone at Freeman Field neatly sawed through the outer wing panels sometime before September 1946. The wings were reattached with door hinges and the jet was shipped to air shows and military displays around the country. The US Air Force transferred the aircraft to the Smithsonian Institution in 1949 but it remained in storage at Park Ridge, Illinois, until transfer to the Garber Facility in January 1955. Internet: www.preservedaxisaircraft.com.

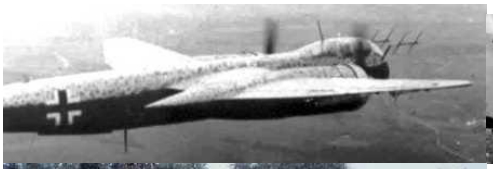
Heinkel He 162A-2, (Wk. Nr. 120017), possibly "Yellow 6", JG1, USA FE-494, later T2-494, was used as a source of spare parts for T2-489. This aircraft was scrapped at Park Ridge, Pennsylvania in 1950.



(RAF Photos)

* Photos 1 & 2. Heinkel He 177A-5/R6 *Greif* (Griffon) long-range heavy bomber, (Wk. Nr. 550062), coded F8+AP of II./KG40, RAF TS439. This aircraft was captured by the French Resistance at Toulouse-Blagnac, France in Sep 1944. It wore French markings including the title “Prise de Guerra”, until it was allocated to the RAF and flown to Farnborough on 10 September 1944. This aircraft was shipped to the USA where it was designated USA FE-2100, later T2-2100. It was not flown in the USA, and was scrapped at Park Ridge ca. 1950.

Heinkel He 177A-7 *Grief,* (Wk. Nr. 550256), coded GP+RY, captured at Toulouse-Blagnac, France in Sep 1944. It wore French markings including the title “Prise de Guerra”, until it was allocated to the USA. it had the star and bar insignia added and was marked 56 under the nose section. This aircraft crashed at Paris-Orly airport at the start of its intended ferry flight to the USA on 28 Feb 1945.




(Luftwaffe Photos)

* Photos 1-3. Heinkel He 219A-7 *Uhu* night fighter in Luftwaffe service.



(RAF Photos)

* Photos 1 & 2. Heinkel He 219A-7 *Uhu,* (Wk. Nr. 290126), captured at Grove. This aircraft was designated RAF AM20. It has a night camouflage paint scheme. It was scrapped at Brize Norton in 1948.

Heinkel He 219A-7 *Uhu,* (Wk. Nr. 310109), captured at Grove. This aircraft was designated RAF AM21. It was scrapped at Sleap in 1948.


(RAF Photo)

* Photo. Heinkel He 219A-7 *Uhu,* (Wk. Nr. 310189), D5+CL of I/NJG 3 night fighter captured at Grove, Denmark. This aircraft was designated RAF AM22. It was scrapped at Farnborough in 1946. Squadron Leaders Joe McCarthy and Ian Somerville both flew these aircraft.

Heinkel He 219A-7 *Uhu,* (Wk. Nr. 310200), captured at Grove, Denmark. This aircraft was designated RAF AM23. It crashed at Grove on 21 July 1945.

Heinkel He 219A *Uhu,* (Wk. Nr. 310215), or (Wk. Nr. 310114) captured at Sylt. Designated RAF AM43, this aircraft may have had the vertical tail fins from two different aircraft. It was likely scrapped at Ford, England.

Heinkel He 219A *Uhu,* (Wk. Nr. 310106), captured at Sylt. Designated RAF AM44, this aircraft was scrapped at Brize Norton.


(Luftwaffe Photo)

* Photo. Heinkel He 219A *Uhu* in Luftwaffe service.


(USAAF Photo)

* Photo. Heinkel He 219A-0 *Uhu,* (Wk. Nr. 210903), captured at Grove, Denmark. Designated RAF USA 8, this aircraft was shipped to the USA on HMS *Reaper*, and re-designated USA FE-612 at Freeman Field, Indiana post war. This aircraft was scrapped about 1950.


(USAAF Photo)

* Photo. Heinkel He 219A-5 *Uhu*, (Wk. Nr. 290060), CS+QG, captured at Grove, Denmark. Designated RAF USA 9, marked on the rear fuselage in this photo, USA FE-613, later T2-613. This aircraft was scrapped at Freeman Field, Indiana in 1946




(USAAF Photos)

* Photos 1-3. Heinkel He 219 *Uhu* (Wk. Nr. 290202), captured at Grove, Denmark. Designated RAF USA 10, USA FE-614, later T2-614, Freeman Field Indiana fall 1945. This aircraft is preserved in the Steven F. Udvar-Hazy Centre, Chantilly, Virginia.


(Dverma Photo)

* Photo. Heinkel He 219 *Uhu* (Wk. Nr. 290202), captured at Grove, Denmark. Designated RAF USA 10, USA FE-614, preserved in the Steven F. Udvar-Hazy Centre, Chantilly, Virginia.



(Kogo Photos)

* Photos 1 & 2. Heinkel He 219 *Uhu* (Wk. Nr. 290202), captured at Grove, Denmark. Designated RAF USA 10, USA FE-614, preserved in the Steven F. Udvar-Hazy Centre, Chantilly, Virginia.



(RAF Photos)

* Photos 1 & 2. Henschel Hs 129B-1, (Wk. Nr. 0297), captured in North Africa where it had served with I./SG2. Designated RAF NF756, this aircraft was flown at RAF Collyweston on 13 May 1944. It was struck off charged and was scrapped in August 1947.


(Luftwaffe Photo)

* Photo. Henschel Hs 129B-1/R2 in Luftwaffe service.


(USAAF Photo)

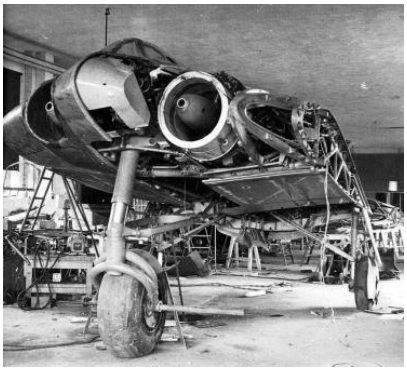
* Photo. Henschel Hs 129, 5PzSG1, captured at Tunis, being examined by USAAF personnel, May 1943.






(USAAF Photos)

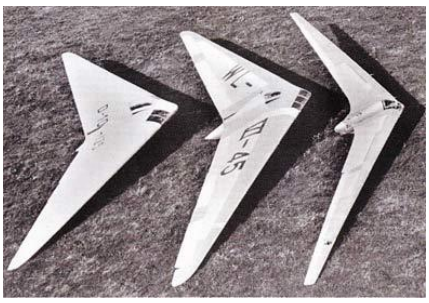
* Photos 1-5. Henschel Hs 129B-1/R2, (Wk. Nr. 0385), 8.(Pz)1Sch.G2, captured at El Aouina, Tunisia, in May 1943. This aircraft was brought to the USA where it was designated EB-105, then USA FE-103, later FE-4600 and then T2-4600, at Freeman Field, Indiana in 1945. The aircraft was cut up for scrap in 1946, but the cockpit was purchased and is on display in Der Adler Luftwaffe Museum, Sidney, Australia. Another Hs 129, was reported to have been at Freeman Field, fate unknown.



* Photo. Horten Ho 229V-3, (aka Go 299V-3) advanced flying wing twin-jet fighter (project) captured in Germany. This aircraft was shipped to the USA where it was designated USA FE-490, later T2-490. it is stored with the NASM. (USAAF Photos)



* Photos 1& 2. Horten Ho 229 (Horten H. IX V3), (aka Go 229V-3) experimental flying wing twin-jet fighter (project). Because of the limited resources of the Horten organization, this aircraft was being produced by the Gothaer Waggonfabrik organization where it was captured at Freidrichsroda, Germany. Brought to the USA, it was designated USA FE-490, later T2-490. This aircraft is preserved with the NASM. (USAAF Photos)



* Photo. Horten Flying-wing-gliders, Ho II, Ho III, and Ho IV. Ho II, USA FE-5042 is with the NASM. (Luftwaffe Photo)

Horten Ho IIIh, this aircraft was shipped to America where it was designated USA FE-7, later T2-7 and then either FE-5039 or FE-5041. This aircraft may be in storage with the NASM. (Michael Katzmann Photo)



* Photo. Horten H.IIIh flying wing sailplane, (Wk. Nr. 31) built at Göttingen in 1944, USA FE-5041, center section, on display at the National Air and Space Museum, Steven F. Udvar Hazy Center, Chantilly, Virginia. This glider was built with a prone-position cockpit and modified control systems. Three were built including this one which was captured by the British Combined Intelligence Objectives Subcommittee in 1945 at Rottweil, moved to Freeman Field, Indiana in the USA. By 1946 it had been transferred to Northrop Corporation at Hawthorne, California along with a Horten H.IIIf and the Horten Ho VI V2 in 1947. (Mark Pellegrini Photo)

Horten Ho IIIf all wing sailplane, (Wk. Nr. 32), prone pilot version built in 1944. This aircraft was captured in damaged condition at Rottweil, Germany in 1945. It was shipped to American and given the designation USA FE-5039, later T2-5039. This aircraft is on display in the Steven F. Udvar-Hazy Centre.

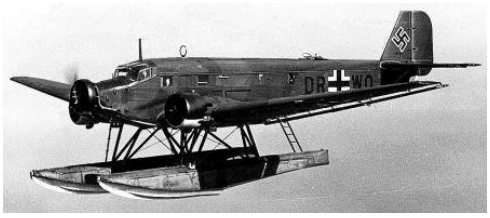


* Photo. Horten Ho IV, (Wk. Nr. unknown), on display in the Deutsches Museum, Munich, Germany. (John McCullagh Photo)

Horten Ho IV, LA-AC, (Wk. Nr. unknown). This aircraft was displayed at Farnborough in Nov 1945. Sold in the USA it is on display in the Planes of Fame Museum, Chino, California.



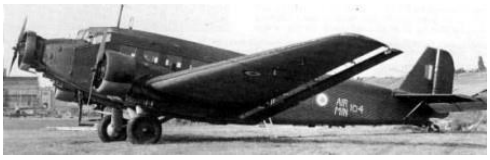

* Photos 1 & 2. Horten Ho VI, (Wk. Nr. 34), all wing sailplane. USA FE-5040, later T2-5040 is on display in the Steven F. Udvar-Hazy Centre.


(Luftwaffe Photo)

* Photo. Junkers Ju 52 *Tante Ju*, transport bomber, floatplane. Nine of these aircraft went to France after the war.

Junkers Ju 52/3m, (Wk. Nr. 6840), captured at Flensburg. Designated RAF AM102, this aircraft was scrapped at Brize Norton in 1948.

Junkers Ju 52/3m, (Wk. Nr. 6567), captured at Flensburg. Designated RAF AM103, this aircraft was scrapped at Brize Norton in 1948.

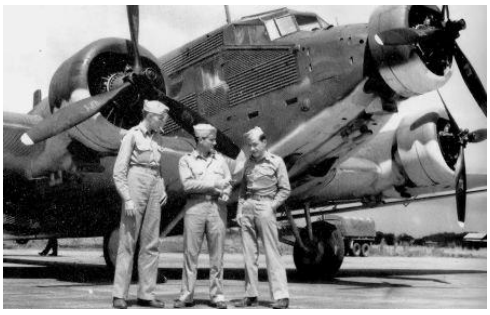

(RAF Photo)

* Photo. Junkers Ju 52/3m, (Wk. Nr. 641038), *Tante Ju*, transport bomber, captured at Flensburg where it had been flown by Deutsche Luft Hansa (DLH) as D-AUAV. The Ju 52 was flown to Farnborough on 18 July 1945. Designated RAF AM104, this aircraft was scrapped at Woodley in 1948.



(Brendan Cowan Photos)

* Photos 1 & 2. Junkers Ju 52/3m captured intact by the Australian forces at Ain-El Gazala, Libya. It was repainted with the Royal Australian Air Force's roundels and nicknamed "*Libyan Clipper*", ca. 1943.


(USAAF Photo)

* Photo. Junkers Ju 52 "*Tante Ju*", transport bomber aka Junkers C-79, (Wk. Nr. J5283), D-AENF, (Ju 52/3mGE), USAAF (Serial No. 42-52883), with American airmen.


(Joanna Poe Photo)

* Photo. Junkers Ju 52, Military Air Museum, Virginia Beach, Virginia.


(RAF Photo)

* Photo. Junkers Ju 87 *Stuka*, dive-bomber formerly in Italian service in North Africa. Its pilot was forced to land behind British lines after running out of fuel. Of the ten aircraft forced to land only this one remained airworthy.


(RAF Photo)

* Photo. Captured Junkers Ju 87 *Stuka* in RAF markings, VZ-?.


(Luftwaffe Photo)

* Photo. Junkers Ju 87 Stuka factory.



(Kogo Photos)

* Photos 1 & 2. Junkers Ju 87G-2 Stuka, (Wk. Nr. 494083) on display in the RAF Museum, Cosford. This aircraft was captured at Eggebek in Schleswig-Hostein, Germany in May 1945. No Air Ministry number was allocated.

The Junkers Ju 87 *Stuka*, dive-bomber displayed at the Royal Air Force Museum was captured by British troops in Germany in 1945 It is thought to have been built in 1943–1944 as a D-5 before being rebuilt as a G-2 variant, possibly by fitting G-2 outer wings to a D-5 airframe. After the war, it was one of 12 captured German aircraft selected by the British for museum preservation. In 1967, permission was given to use the aircraft in the film Battle of Britain and it was repainted and modified to resemble a 1940 variant of the Ju 87. The engine was found to be in excellent condition and there was little difficulty in starting it, but returning the aircraft to airworthiness was considered too costly for the filmmakers, and ultimately, models were used in the film to represent *Stukas*. In 1998, the film modifications were removed, and the aircraft returned to the original G-2 configuration. This aircraft has also been reported as Junkers Ju 87B, (Wk. Nr. 5763), RAF HK827. Junkers Ju 87B-1, (Wk. Nr. 087/5600), S2+LM from II./StG77 was reported as being on the scrap area at Farnborough in Dec 1946.


(USAAF Photo)

* Photo. Junkers Ju 87 *Stuka*, dive-bomber, S7+EP captured in North Africa, 1943.




(USAAF Photos)

* Photos 1-3. Junkers Ju 87 *Stuka*, dive-bombers being examined by American forces.



(ox6adb015 Photo)

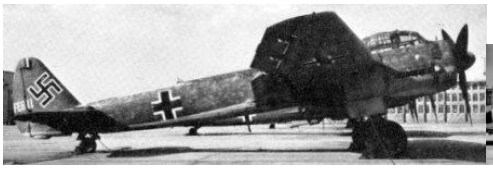
* Photo. Junkers Ju 87R2/Trop *Stuka*, dive-bomber, (Wk. Nr. 5954), on display in the Chicago Museum of Science and Industry, Illinois. This aircraft was abandoned in North Africa and found by British forces in 1941. The Ju 87 was donated by the British government and sent to the USA during the war. It was fully restored in 1974 by the EAA of Wisconsin.

Other Ju 87 survivors include a Junkers Ju 87 R-2, (Wk. Nr. 0875709) owned by the Flying Heritage Collection, Paine Field, Everett, Washington under a long-term restoration to fly. It served bearing the*Stammkennzeichen* of LI+KU with 1./St.G.5, and was recovered to the United Kingdom in 1998 before being sold to the FHC. It is likely to be the best candidate for an airworthy restoration. Other Ju 87 aircraft survive as wreckage, recovered from crash sites. The Deutsches Technikmuseum in Berlin has the wreckage of two complete aircraft that were recovered from separate crash sites near Murmansk in 1990 and 1994. These wrecks were purchased from New Zealand collector Tim Wallis, who originally planned for the remains to be restored to airworthy condition, in 1996. The Sinsheim Auto & Technik Museum displays the remains of an aircraft that crashed near Saint-Tropez in 1944 and was raised from the seabed in 1989. In October 2006, a Ju 87 D-3/Trop. was recovered underwater, near Rhodes. Junkers Ju 87 B-2 *9801,* (Wk. Nr. 0406) is under reconstruction at Yugoslav Aeronautical Museum.



(USAAF Photos)

* Photos 1 & 2. Junkers Ju 88A-4, (Wk. Nr. 4300227), captured at Foggia, Italy, in 1943. It was repaired by the men of the 86th Fighter Squadron and flown from Italy to Wright Field on 5 Nov 1943 by 86th Fighter Squadron *Comanche* pilots. USA FE-106, later FE-1599. It appeared in war bond drives, and was finally returned to Wright Field in the summer of 1945 after being superficially damaged in Los Angeles. It finally went to Freeman Field, Indiana, where it was used for spare parts until it was scrapped in 1946.



(USAAF Photos)

* Photos 1 & 2. Junkers Ju 88G-6, (Wk. Nr. unknown), possibly RAF USA 21, transferred by the British to the USA. Shipped to the USA it was designated USA FE-611, later T2-611. This aircraft was scrapped at Freeman Field, Indiana in 1946.






 (USAAF Photos)

* Photos 1-5. Junkers Ju 88D-1/Trop, (Wk. Nr. 430650) initially came to the RAF via a defecting Romanian pilot who landed in Cyprus on 22 July 1943. RAF HK959 was flown to Egypt and transferred to the USAAF and flown to Wright Field, over the South Atlantic route on 14 Oct 1943. This aircraft was designated USA FE-105 and later FE-1598, and briefly USAAF (Serial No. 43-0650). This aircraft is now preserved in the National Museum of the USAF, Dayton, Ohio.

 (NMUSAF Photo)

* Photo. Junkers Ju 88D-1/Trop, (Wk. Nr. 430650), USA FE-1598, with Fritz X bomb, preserved in the National Museum of the USAF, Dayton, Ohio.

 (Stahlkocker Photo)

* Photo. Frtiz X guided bomb on display under the Junkers Ju 88 in the NMUSAF.

 (Piotr Witkowski Photo)

* Photo. Fritz X guided bomb on display in the RAF Museum Cosford, England. The Fritz X, also known as the Ruhrstahl X-1, was a precision-guided, armour-piercing bomb used with deadly effect by Germany in the Second World War against Allied ships in the Mediterranean Sea.

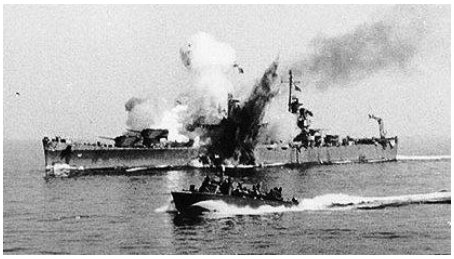
 (Rept0n1x Photo)

* Photo. Fritz X guided bomb on display in the RAF Museum Cosford, England.



 (Nick-D Photos)

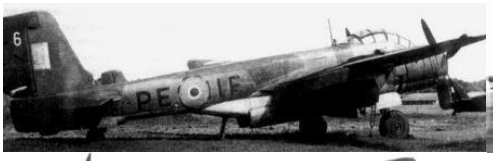
* Photos 1 & 2. Fritz X guided bomb on display at the Australian War Memorial's Treloar Technology Centre.


(USN Photo)

* Photo. USS *Savannah* (CL-42), hit by a German Fritz X guided bomb off the coast of Salerno, Italy on 11 Sep 1943.



Henschel Hs 293 guided bomb on display at the Australian War Memorial's Treloar Technology Centre. (Nick-D Photo)

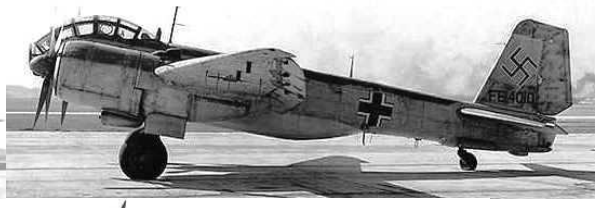



(RAF Photos)

* Photos 1-3. Junkers Ju 388L-0 reconnaissance/night fighter, (Wk. Nr. 500006), coded PE+IF, captured at Tarnewitz. Designated RAF AM83, and flown by the RAF, this aircraft was scrapped at Cranfield, England, ca. 1950.


(USAAF Photo)

* Photo. Junkers Ju 388L captured by the USAAF at the end of the war.


(USAAF Photos)

* Photos 1-4. Junkers Ju 388L-1 Störtebeker, (Wk. Nr. 560049), USA FE-4010, later T2-4010, at Freeman Field, Indiana, post war. This aircraft is currently stored in the Paul E. Garber Facility, Suitland, Maryland. (USAAF Photos)


(San Diego Air & Space Museum Photo)

* Photo. Junkers Ju 388L-1, (Wk. Nr. 560049), FE-410, later T2-4010, Wright Field, 1946 victory display.


(USAAF Photo)

* Photo. Junkers Ju 290, Salzburg, Austria.





(USAAF Photos)

* Photos 1-4. Junkers Ju 290A-4, (Wk. Nr. 110196), originally coded A3+HB of Kampfgeschwader 200 (KG 200), captured at Munich-Riem on 6 May 1945. Designated RAF USA 022, this aircraft was amed "*Alles Kaput*", and re-numbered USA FE-3400. It was flown across the Atlantic to Wright Field, Ohio, where it was scrapped in Dec 1946.

Junkers Ju 388L, (Wk. Nr. 6010). Captured after the war, this aircraft was sent to the NII-VVS (Soviet Air Forces Scientific Research Institute), where it was flown as a tow-plane for a Kranich sailplane used for prone-pilot experiments. It was still in service in 1951.


(USAAF Photo)

Lioré-et-Olivier LeO 451T, ex-OK+ZD, captured from the Luftwaffe and photographed in Sicily in 1943 while serving with the USAAF's 57th Fighter Group.








(USAAF Photos)

* Photos 1-4. Messerschmitt Bf 108B-1 *Taifun,* (Wk. Nr. 8378)*,* trainer and light transport, USA FE-4610, later T2-4610 in the USA post war. This aircraft is now with the Planes of Fame Museum, Chino, California.



(NMUSAF Photos)

* Photos 1 & 2. Messerschmitt Bf 109G-14, (Wk. Nr. 610824), captured at Neubiberg, near Munich, Germany in May 1945. It was shipped to the USA on HMS *Reaper* and tested as USA FE-124, later T2-124, at Freeman Field, Indiana. This aircraft is currently preserved in the National Museum of the USAF, Dayton, Ohio.


(Author Photo)

* Photo. Messerschmitt Bf 109G-14, (Wk. Nr. 610824), Reg. No. N109MS. Since 1 April 1999, (Wk. Nr. unknown), USA FE-124, later T2-124, has been with the National Museum of the USAF at Wright-Patterson AFB in Dayton, Ohio, painted as (Wk. Nr. 610824), "Blue 4" of JG 300, "Wild Sau."

Bf 109G-10/U-4, (Wk. Nr. 610824), Reg. No. N109MS, coded Black 2, 11/JG52, surrendered at Neubiberg, near Munich in the group's en masse retreat to escape Soviet forces. This machine was one of three Bf 109s taken to the US by Capt Fred McIntosh, in charge of collecting piston engined aircraft for "Watson's Whizzers." After test flying, it was found not to be airworthy and made its journey to Cherbourg by truck, it was then loaded on the aircraft carrier HMS *Reaper* along with many other captured Luftwaffe aircraft and left port on 19 July 1945. 12 days later it arrived at pier 14 in New York Harbor, and it was then trucked to Newark, New Jersey and finally arrived at Freeman Field near Seymour, Indiana on 17 May 1946. The aircraft was given a rather spurious paint scheme and coded USA FE-124, this was changed later to: T2-124 when the Air Technical Service Command underwent re-organization and the Technical Data Laboratory Branch became part of T-2 Intelligence. 610824 was not used for research, but instead became a display aircraft in the early post war era touring various airbases. In 1947, T2-124 and T2-118 were donated to the Georgia Institute of Technology in Atlanta. Sometime around 1955, Bud Weaver, an FAA inspector in Atlanta traded a working aero engine for the two aircraft. They were then stored out in the open at various rental properties owned by Mr. Weaver and soon became derelict due to vandals and exposure to the elements. It was at this time that 610824 lost its original wings. Someone had the local Trash Company haul it off to the dump. Mr. Weaver arrived in time to retrieve the fuselage, but it was too late to save the wings. If anything good could have happened from all this, then at least the weather had worn off the spurious paint job to reveal the original markings on what was left of the airframe. In the mid-1960s T2-124 and T2-118 parted company as John W. Caler of Sun Valley, California Valley purchased the remains of the Me-109. His intentions were to restore the aircraft (in his own garage!) and he was able to obtain a set of wings from a Czech Avia. He reportedly tried to re-skin the fuselage and because of a lack of proper tools and expertise, the results were not a professional looking job. This is supposed to be a clue to 610824's identity. This project was eventually abandoned and the airframe sold to an unknown private collector, date unknown at this time.

Somewhere between 1979 and 1984 it was sold to Doug Arnold's Warplanes of Great Britain Collection and placed in storage at his Biggin Hill facility to eventually become a stable mate with another Bf 109G-10, (Wk. Nr. 610937). Some restoration work may have been carried out but cannot be confirmed. In 1989 it was sold to Evergreen Ventures and restored to static display condition by Vintage Aircraft Restorations Ltd., of Fort Collins, Colorado. Restoration work may have been completed in 1995-1997. Since 1 April 1999, 610824 has been on display at the National Museum of the USAF at Wright-Patterson AFB in Dayton, Ohio as "Blue 4" of JG 300, "Wild Sau." An interesting side note here: as Freeman Field was a subsidiary of what was then known as Wright Field, it would seem that 610824 has traveled full circle since its arrival in the US in 1946.[29]



(Author Photos)

* Photos 1 & 2. Messerschmitt Bf 109G-10/U4, (Wk. Nr. 610937), airworthy. This aircraft is on display in the Evergreen Aviation & Space Museum, McMinnville, Oregon.

Bf 109G-10/U-4, (Wk. Nr. 610937), Reg. No. N109EV, White 44, former Bulgarian and Yugoslavian Air Force 9644, is with the Captain Michael Smith Evergreen Aviation Center, McMinnville, Oregon. Built in the summer of 1944 as a G-14, (Wk. Nr. 127914), the aircraft was later upgraded as a G-10/U4 Jabo Rei (long range fighter-bomber) by WNF. It was abandoned at Zeltweg Airfield in Austria at the end of the war. Somewhere between May and August 1945, (Wk. Nr. 610937) and many other aircraft were taken as trophies by units from the 6th Polk (regiment) of the Bulgarian Air Force and ferried to Bulgaria. The trip must have been a harrowing one to say the least. The airfield was situated between the British and Soviet zones of occupation and the aircraft had to fly through the British zone. The English reacted by sending a protest to the Soviet Command to "stop flying German planes in their zone." Two Supermarine Spitfires were dispatched to patrol the area and anti-aircraft units occasionally opened fire on these "trophies" with at least three of them reported to have been shot down. The next stop was Pech Airfield in Hungary, where the Hungarians rushed the field thinking that they were welcoming their pilots returning home. They had a rather unpleasant surprise seeing that the aircraft were piloted by the Bulgarians.

After a stop in Belgrade, they finally reached Sophia. Not much is known about the service history of these Bulgarian Bf 109s. Many were transferred from the Karlovo Airfield to the Burshen Airfield near Silven and were actively flown by the 2nd and 3rd Orlyak (group) of the 6th Polk until they converted to the Soviet built Yak-9. Some of these Bf 109s served in the training role as late as 1950, with the last of them being cut into scrap metal in 1951. In 1947, the Paris Peace Treaty limited the size of Bulgaria's Air Force and some of its excess aircraft were sent to Yugoslavia in military equipment trade negotiations between the two countries. 610937 became part of a shipment of 59 Bf 109s of assorted variants to be traded for a number of fuselages and tail units of Ilyushin Il-2 Sturmoviks. After being transported to Zagreb by rail, the aircraft were refurbished, repainted and 610937 became "White 44", Yugoslav Air Force (Serial No. 9644). White 44 was flown by either the 83rd or 172nd fighter wing based at Cerklje Airfield and may have been flown on patrol sorties along the Italian frontier during the confrontation between Yugoslavia and Italy over the free zone of Trieste. White 44's last recorded flight was 17 October 1950. Total flight time in service: 35 hrs. 15 mins.

The aircraft was placed in storage until 1953, when it was declared scrapped and donated to a technical school known as the Machine Facility in Belgrade. It was used as an instructional airframe until somewhere between 1977 and 1979 when it was transferred to the Yugoslav Aviation Museum in Belgrade. Apparently the museum didn't have the funds to restore the airframe and in 1984, it was sold to Doug Arnold's Warplanes of Great Britain Collection. In 1989, it was sold along with 610824, to Evergreen Ventures and in 1991 it was sent to Vintage Aircraft Restorations Ltd., at Fort Collins, Colorado where after 5 years it was restored to flight-worthy condition. It was painted to represent an aircraft flown by Germany's leading ace, Eric Hartman with 352 aerial victories, and is on display in preserved condition (fluids drained) at the Captain Michael King Smith Evergreen Aviation Educational Institute in McMinnville, Oregon.[30]


(Dustin May Photo)

* Photo. Messerschmitt Bf 109E hulk undergoing restoration at the Planes of Fame Museum, Chino, California.


(USAAF Photo)

* Photo. Messerschmitt Bf 109G-10/U-4, (Wk. Nr. 611943) coded Yellow 13, 11/JG52, USA FE-122, later TE-122, now in the Planes of Fame Museum.



(Author Photos)

* Photos 1 & 2. Messerschmitt Bf 109G-10/U-4, (Wk. Nr. 611943) coded Yellow 13, 11/JG52, USA FE-122, later TE-122, now in the Planes of Fame Museum.

Bf 109G-10/U-4, (Wk. Nr. 611943) coded Yellow 13, 11/JG52 is in the Planes of Fame Museum, Valle, near the Grand Canyon, Arizona. 611943 was found in the area of Munich by US troops, and later transported to Cherbourg where it was loaded on HMS *Reaper* and transferred to the USA. Yellow 13 was test flown with the registration numbers USA FE-122 and later T2-122, then loaned to a high school before being purchased privately. It was sold to Ed Maloney in 1959, who added the aircraft to his "Planes of Fame" Museum collection. It has had a number of colour schemes over the years.[31]


(USAAF Photo)

* Photo. Messerschmitt Bf 109K-4, (Wk. Nr. unknown), captured at Neubiberg and restored at Freeman Field and shown here on static display at Petterson AFB, Ohio, as Black 7, USA FE-123, later T2-123. Last seen in the 1950s, fate unknown.

* Photos 1-3. Messerschmitt Bf 109G-6/Trop, (Wk. Nr. 16416), "White 9", USAAF EB-102. This fighter was captured intact by American soldiers on 8 May 1943 at Soliman airfield in Tunisia. It flew with Luftwaffe 4. Staffel of JG 77. The aircraft was disassembled, shipped to the USA, reassembled by the North American Aircraft company, and subsequently flown to Wright Airfield, Ohio. This aircraft was scrapped in Oct 1944.



(USAAF Photos)

* Photos 1 & 2. Messerschmitt Bf 109 on display at Freeman Field, Indiana post war.


(USAAF Photo)

* Photo. Messerschmitt Bf 109G6, (Wk. Nr. 166133) in USAAF markings.

 (USAAF Photo)

* Photo. Messerschmitt Bf 109, +G, being transported on a war bond drive across the USA.

 (Author Photo)

* Photo. Messerschmitt Bf 109G-6, (Wk. Nr. 160163), 2+1, USA FE-496, later T2-496, on display in the National Air and Space Museum, Washington, D.C.

 (Concord Photo)

* Photo. Messerschmitt Bf 109 G-6, (Wk. Nr. 160163), 2+1, USA FE-496, on display in the National Air and Space Museum, Washington, D.C.

 (350z33 Photo)

* Photo. Messerschmitt Bf 109 G-6, (Wk. Nr. 160163), 2+1, USA FE-496, on display in the National Air and Space Museum, Washington, D.C.

Bf 109G-6/R3, (Wk. Nr. 160756) originally coded Yellow 4, 3/JG4, KT+LL, is in the NASM in the USA, painted as White 2, III./JG27 (Wk. Nr. 160163). During a transfer flight, leading from Maniago to Gedi in Italy, the pilot, Unteroffizier Rene Darbois, left his formation and landed at Santa Maria, where he handed over his aircraft to the Allied forces. Considerable restoration work was conducted on this aircraft between 1972 and 1974, but its true identification (documents and the type-plate) was not discovered until 1997.[20] The NASM's Bf 109G-6 is one of 21,000 of this model which were completed by the end of 1944. Known as "Gustav," the museum's Bf 109G fighter was shipped to the United States with a number of other Luftwaffe aircraft near the end of the war for evaluation. It was stripped of all its unit markings and camouflage; even its serial number was eradicated. The FE-496 number assigned to it by the Air Technical Intelligence Command while operating at Wright and Freeman Field was its only identity. The Messerschmitt was transferred from the Air Force to the NASM in 1948 along with a group of other the Second World War aircraft which were stored at O'Hare Field, Illinois. Later, the collection was moved to the museum's storage facility at Silver Hill, Maryland, near Washington, D.C. As of April 1974 the aircraft had been totally restored inside and out, carrying the selected camouflage and markings of ship number 2 of the 7th Squadron. 3rd Group, 27th Wing that operated in the Eastern Mediterranean in late 1943. As an escort fighter, it carries the two-tone grey camouflage pattern design. This Bf 109G-6 is one of the best preserved and most completely and accurately restored Messerschmitt fighters in the world today.[21]

 (Articseahorse Photo)

* Photo. Hispano HA-1112-M1L C/N 186, coded C.4K-122, Yellow 7, <<+I, has been rebuilt as a Bf 109E-4 with DB 601 engine by using an original engine hood. Registered as G-AWHL in 1968 it played a role in the movie *Battle of Britain*. In 1976 the aircraft went to Günzburg, Germany, where it was restored to airworthy status. It was registered as N109J, but never flown before being transferred to the Champlin Fighter Museum. This aircraft is now in the Museum of Flight, Seattle, Washington.

 (USAAF Photo)

* Photo. Messerschmitt Bf 110 wreckage examined by American forces, Bad-Abling, Germany, May 1945.

 (USAAF Photo)

* Photo. Messerschmitt Bf 110, (Wk. Nr. 730085) being used as the background for a USAAF pilot discussion.

 (USAAF Photo)

* Photo. Messerschmitt Me 410 *Hornisse* cannon-armed fighter diving away after an attack on a USAAF Boeing B-17 Flying Fortress.


 (USAAF Photos)

* Photos 1 & 2. Messerschmitt Me 410A-2/U1 *Hornisse,* (Wk. Nr. 10018), F6+WK from 2(F)./122, USAAF EB-103, later FE-102, then FE-499, and then T2-499, on display at Freeman Field, Indiana post war.



 (USAAF Photos)

* Photos 1-3. Messerschmitt Me 410A-2/U1 *Hornisse* , (Wk. Nr. 10018), USA EB-103, later FE-102, then FE-499 and then T2-499, Freeman Field, Indiana, post war. This aircraft is in storage with the NASM.

 (Luftwaffe Photo)

* Photo. Messerschmitt Me 261 twin engine bomber.


(USAAF Photo)

* Photo. Messerschmitt Me 261, long-range reconnaissance (prototype) twin engine aircraft being examined by Americans.

Throughout the war in Europe, the US Army Air Forces (USAAF) Intelligence Service sent teams to Europe to gain access to enemy aircraft, technical and scientific reports, research facilities, and weapons for study in the US. The Air Technical Intelligence (ATI) teams trained at the Technical Intelligence School at Wright Field, Ohio, and then collected enemy equipment to learn about Germany's technical developments. The ATI teams competed with 32 allied technical intelligence groups to gain information and equipment recovered from crash sites. As the war concluded, the various intelligence teams, including the ATI, shifted from tactical intelligence to post hostilities investigations. Exploitation intelligence increased dramatically.


(Luftwaffe Photo)

* Photo. Messerschmitt Me 163 *Komet*, rocket interceptor.

Messerschmitt Me 163 *Komet*s captured at Husum, the home base of JG 400, were allocated RAF Air Ministry numbers AM200 to AM222 and shipped to England. Other Me 163s collected at Husum were shipped to the USA and two were alloted to France. Two additional Me 163s for France were shipped from the storage depot at Kiel Holenau.



(RAF Photos)

* Photos 1 & 2. Messerschmitt Me 163B-1a *Komet*, RAF VF241. In March 1946, flight trials of the Messerschmitt Me 163B-1a VF241 were made mostly at the nearby airfield of Wisley, to avoid the busy circuit traffic at Farnborough, since the Me 163B was towed off as a glider by a Supermarine Spitfire and released at altitude to make its own way back to earth. These trials were primarily to explore the handling characteristics of the Me 163B's tailless configuration, to provide information for other tailless designs on the drawing boards of British manufacturers in the post-war period. One of these aircraft came to Canada where it was also test flown as a glider.

Messerschmitt Me 163B-1a *Komet,* (Wk. Nr. 191329), captured at Husum. Designated RAF AM200, this aircraft was scrapped at Brize Norton, England in 1947.

Messerschmitt Me 163B-1a *Komet,* (Wk. Nr. 191330), captured at Husum. Designated RAF AM201, this aircraft was scrapped at Brize Norton, England in 1947.

Messerschmitt Me 163B-1a *Komet,* (Wk. Nr. 191915), captured at Husum. Designated RAF AM202, this aircraft was likely scrapped at Farnborough, England.

Messerschmitt Me 163B-1a *Komet,* (Wk. Nr. 310061), captured at Husum. Designated RAF AM203, this aircraft was shipped to France from Brize Norton as their fifth Me 163B.



(RAF Photo)

* Photo. Messerschmitt Me 163B-1a *Komet,* (Wk. Nr. 191454) capture at Husum. Designated RAF AM204, it is shown here on display in Hyde Park, London, in Sep 1945. This aircraft was shipped to Canada.




(Photos courtesy of Ed Das)

* Photos 1 & 2. Messerschmitt Me 163B, (Wk. Nr. 191454), coded Yellow 11 of JG400, was surrendered at Husum and shipped to the RAE. Designated RAF AM204, it was despatched from Farnborough to No. 6 MU, Brize Norton, on 12 July 1945 and used as a static exhibit in Hyde Park, London, during September 1945. It was later returned to No. 6 MU, being recorded there at the Census on 21 March 1946. On 25 June 1946, this Komet was transferred to No. 47 MU, Sealand, for packing and transfer to Canada. AM204 left Solford Docks on 28 August 1946, and arrived at Montréal on 9 September. One of the records for this aircraft has been interpreted as reading (Wk. Nr. 191452), but photographic and other documentary evidence supports the view that (Wk. Nr. 191454) is the correct identity. This aircraft was scrapped at Arnprior, Ontario, ca. 1957.

Messerschmitt Me 163B-1a *Komet,* (Wk. Nr. 191905), captured at Husum. Designated RAF AM205, this aircraft was scrapped at Brize Norton, England in 1947.

Messerschmitt Me 163B-1a *Komet,* (Wk. Nr. 191902), captured at Husum. Designated RAF AM206, this aircraft was scrapped at Brize Norton, England in 1947.


(Rept0n1X Photo)


(Dapi89 Photo)

* Photos 1 & 2. Messerschmitt Me 163B-1a *Komet,* (Wk. Nr. 191614), captured at Husum. Designated RAF AM207, it is shown here wearing two different paint schemes, on display in the RAF Museum, Cosford, England. This aircraft last flew on 22 April 1945, when it shot down an RAF Lancaster.

Messerschmitt Me 163B-1a *Komet,* (Wk. Nr. 191912), captured at Husum. Designated RAF AM208, this aircraft was possibly scrapped at RAF South Cerney, England.

Messerschmitt Me 163B-1a *Komet,* (Wk. Nr. 191315), captured at Husum. Designated RAF AM209, this aircraft was scrapped at Brize Norton, England in 1947.


(Hugh Llewelyn Photo)

* Photo. Messerschmitt Me 163B-1a *Komet,* (Wk. Nr. 191316), "Yellow 6", captured at Husum. Designated RAF AM210, this aircraft has been on display in the Science Museum, London, England since 1964 with the Walter motor removed for separate display. A second Walter motor and a take-off dolly are part of the museum's reserve collection and are not generally on display to the public.


(Mattes Photo)


(Bandmaster Photo)

* Photos 1 & 2. Messerschmitt Me 163B-1a *Komet,* (Wk. Nr. 120370), "Yellow 6" of JG 400, displayed at the Deutsches Museum, Munich, Germany. It was originally sent to Britain, where it had received RAF AM210.




(NMUSAF Photos)

* Photos 1-3. Messerschmitt Me 163B *Komet* rocket-propelled fighter, (Wk. Nr. 191095), captured at Husum. Designated RAF AM211, this aircraft is on display at the National Museum of the United States Air Force, Dayton, Ohio. AM211 was acquired from the Canadian National Aviation Museum (now the Canada Aviation and Space Museum), where it had been restored, and was placed on display on 10 December 1999. *Komet* test pilot Rudolf "Rudi" Opitz was on hand for the dedication of the aircraft and discussed his experiences of flying the rocket-propelled fighter to a standing room only crowd. During the aircraft's restoration in Canada it was discovered that the aircraft had been assembled by French "forced labourers" who had deliberately sabotaged it by placing stones between the rocket's fuel tanks and its supporting straps. There are also indications that the wing was assembled with contaminated glue. Patriotic French writing was found inside the fuselage. The aircraft is displayed without any unit identification.

Messerschmitt Me 163B-1a *Komet,* (Wk. Nr. 191965), captured at Husum. Designated RAF AM212, this aircraft was scrapped at Brize Norton, England in 1947.

Messerschmitt Me 163B-1a *Komet,* (Wk. Nr. 191954), captured at Husum. Designated RAF AM213, this aircraft was scrapped at Little Rissington, England in 1947.


(Clemens Vasters Photo)


(Goshimini Photo)

* Photos 1 & 2. Messerschmitt Me 163B-1a *Komet,* (Wk. Nr. 191660), "Yellow 3", captured at Husum. Designated RAF AM214, this aircraft was sold to the USA in 2005. It is owned by the Flying Heritage Collection, Paine Field, Everett, Washington. Between 1961 and 1976, this aircraft was displayed at the Imperial War Museum in London. In 1976, it was moved to the Imperial War Museum, RAF Duxford. It underwent a lengthy

restoration, beginning in 1997, that was frequently halted as the restorers were diverted to more pressing projects . In May 2005, it was sold, reportedly for £800,000, to raise money for the purchase of a de Havilland/Airco DH.9 as the Duxford museum had no examples of a First World War bomber in its collection. Permission for export was granted by the British government's Department for Culture, Media and Sport as three other Komets were held in British museums.

 (Ad Meskens Photo)

* Photo. Messerschmitt Me 163B-1a *Komet,* (Wk. Nr. 191659), "Yellow 15". Designated RAF AM215, this aircraft is on display in the National Museum of Flight in East Fortune, East Lothian, Scotland. Captured at Husum, Schleswig Holstein at the end of the war, this *Komet* went to the College of Aeronautics at Cranfield in 1947. In 1976 it was refurbished and loaned to the Royal Scottish Museum. In 2007 it was donated to the museum by Cranfield University.

Messerschmitt Me 163B-1a *Komet,* (Wk. Nr. 191309), captured at Husum. Designated RAF AM216, this aircraft's fate is unknown, likely scrapped in England.

Messerschmitt Me 163B-1a *Komet,* (Wk. Nr. 191917), captured at Husum. Designated RAF AM217, this aircraft was likely scrapped at Farnborough, England.

Messerschmitt Me 163B-1a *Komet,* (Wk. Nr. 191654), captured at Husum. Designated RAF AM218, this aircraft was scrapped at Brize Norton, England in 1947.

 (Baku13 Photo)

 (Mike Freer Photo)

 (Riardo Reis Photo)

*Photos 1-3. Messerschmitt Me 163B-1a *Komet,* (Wk. Nr. 191904), "Yellow 25", belonging to JG 400. This aircraft was captured by the RAF at Husum in 1945. It was sent to England, arriving first at Farnborough, receiving the designation RAF AM219. It is now on display in the Militärhistorisches Museum der Bundeswehr - Flugplatz Berlin-Gatow (Bundeswehr Museum of Military History - Berlin-Gatow Airfield), Germany.

 (JustSomePics Photo)



(Author Photos)

* Photos 1-3. Messerschmitt Me 163B (Werk Nummer 191916 or 191914), RAF AM220, belonged to JG 400. It was surrendered at Husum and shipped to the Royal Aircraft Establishment at Farnborough and from there went to No. 6 MU, Brize Norton, on 1 August 1945. Recorded at No.6 MU in the Census of 21 March 1946 and despatched to No. 47 MU, Sealand, on 17 June 1945. It was crated at Sealand for shipment to Canada and left Salford Docks aboard the *SS Manchester Commerce* on 28 August 1946, arriving at Montréal on 9 September. It was stored in various locations until arriving at Rockcliffe where it is currently preserved in the Canada Air and Space Museum, Ottawa, Ontario, with the code 'Yellow 26'. There is some doubt about the accuracy of the Werk-Nummer of this aircraft, which has also been reported both as 191913 and 191916.

Messerschmitt Me 163B-1a *Komet,* (Wk. Nr. unknown), captured at Husum. Designated RAF AM221, fate unknown.


(UniversalNation Photo)

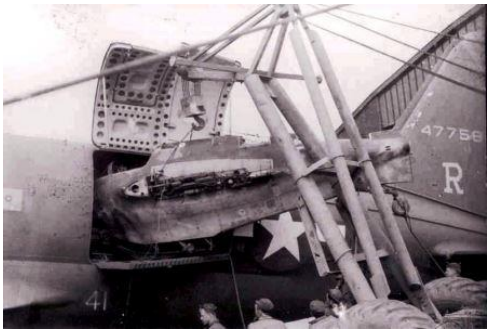

(Nick-D Photo)

* Photos 1 & 2. Messserschmitt Me 163B *Komet*, (Wk. Nr. 191907), served with JG 400. This aircraft was captured at Husum and shipped to the RAE at Farnborough. It was designated RAF AM222 and was dispatched from Farnborough to No. 6 MU, Brize Norton, on 8 August 1945. On 21 March 1946, it was recorded in the Census of No. 6 MU, and allocated to No. 76 MU (Wroughton) on 30 April 1946 for shipment to Australia. It is shown here on display in the Australian War Memorial, Canberra, Australia.

France received 417 aircraft through a cooperative agreement with the UK and USA. These included 88 Arado Ar 96B (including 28 cannibalised hulks); one Arado Ar 396; 154 Bücker Bü 181 (including 19 cannibalised hulks); 64 Fieseler Fi 156 *Storch*; 39 Siebel Si 204; 36 Junkers Ju 52 (including 9 floatplanes); 17 Messerschmitt Bf 108; three Junkers Ju 88G-6; seven Heinkel He 162; four Messerschmitt Me 163 *Komet*; seven Messerschmitt Me 262 in various states of repair; and two Arado Ar 234. France also received 2,772 aircraft engines (spare), 3,071 aircraft cannon and machine-guns, more than two million rounds of various ammunition and 3,000 tons of other material.



* Photo. Messerschmitt Me 163 *Komet* fighters loaded on US Army trucks in Germany for transport to the shipping docks, May 1945. (US Army Photo)



Messerschmitt Me 163 *Komet* being loaded on a USAAF Douglas C-46D aircraft. (USAAF Photo)




Messerschmitt Me 163 *Komet* brought to Freeman Field, Indiana post war. (USAAF Photos)




Messerschmitt Me 163 *Komet*, No. 54. brought to Freeman Field, Indiana post war. (USAAF Photos)

The Messerschmitt Me 163 *Komet*, designed by Alexander Lippisch, was a German rocket-powered fighter aircraft. It is the only rocket-powered fighter aircraft ever to have been operational. Its design was revolutionary, and the Me 163 was capable of performance unrivaled at the time. Messerschmitt test pilot Rudy Opitz in 1944 reached 1,123 km/h (698 mph). Over 300 aircraft were built. Records indicate the Komet was responsible for the destruction of about nine Allied aircraft (16 air victories for 10 losses, according to other sources).

Five Me 163B-1a *Komets* were originally brought to the United States in 1945, receiving the Foreign Equipment numbers FE-495 and FE-500 to FE-503. Me 163B-1a FE-501, later T2-502 was used for spare parts for FE-500 until it was scrapped at Freeman Field in 1946, along with FE-502, later T2-502. Me 163B-1a FE-503, later T2-503, went to Bell Aircraft in 1946.



(USAAF Photo)

* Photo. Messerschmitt Me 163B-1a, (Wk. Nr. 191301), brought to Freeman Field, Indiana post war, designated USA FE-495, later T2-495, and then later incorrectly painted FE-500. This aircraft is currently on display in the National Air and Space Museum Steven F. Udvar-Hazy Center, Washington-Dulles International Airport, Chantilly, Virginia.



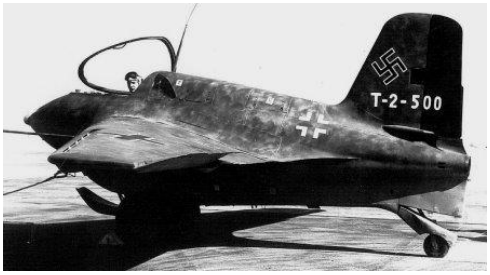

(USAAF Photos)

* Photos 1 & 2. Messerschmitt Me 163B-1a *Komet,* (Wk. Nr. 191301) before being designated USA FE-500, later T2-500, at Freeman Field, Indiana, post war. This aircraft has survived and is on display in the Steven F. Udvar-Hazy Centre, Chantilly, Virginia.



(USAAF Photo)

* Photo. Messerschmitt Me 163B-1a *Komet,* (Wk. Nr. 191301), USA FE-500, later USAAF T2-500, at Freeman Field, Indiana, post war.



(USAAF Photo)

* Photo. Messerschmitt Me 163B-1a *Komet,* (Wk. Nr. 191301), USAAF T2-500 being readied for a towed test flight at the USAAF's Muroc dry lake facility in Californian in 1946.


(Deano Photo)

* Photo. Messerschmitt Me 163B-1a *Komet,* (Wk. Nr. 191301), USA FE-500, later T2-500, on display in the Steven F. Udvar-Hazy Center, Chantilly, Virginia.

Me 163B-1a *Komet,* (Wk. Nr. 191301), was airfreighted by a Douglas C-54 to Freeman Field, Indiana, in 1946, where it received the foreign equipment number FE-500, later T2-500. On 12 April 1946, it was flown aboard a cargo aircraft to the USAAF facility at Muroc dry lake in California for flight testing. Testing began on 3 May 1946 in the presence of Dr. Alexander Lippisch and involved towing the unfueled Komet behind a B-29 to an altitude of 9,000–10,500 m (30,000–34,400 ft) before it was released for a glide back to earth under the control of test pilot Major Gus Lundquist. Deterioration of the wooden wing structure led to flight testing being abandoned. The aircraft was stored at Norton Air Force Base in California before being shipped to Silver Hill in 1954, and more recently to "The Mighty Eighth" Museum in Savannah, Georgia.. This aircraft was been returned to the Smithsonian and is on display unrestored at the National Air and Space Museum's Steven F. Udvar-Hazy Center near Washington D.C.

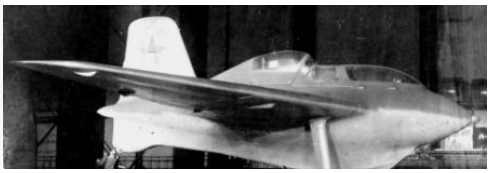


(Dustin May Photo)

* Photo. Messerschmitt Me 163B replica, (Wk. Nr. 191626), "White 11", Planes of Fame Museum, Chino, California.



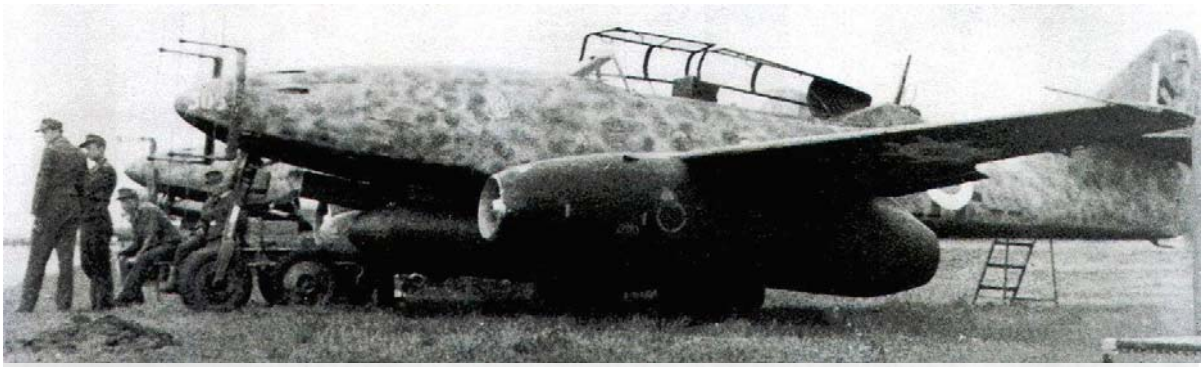
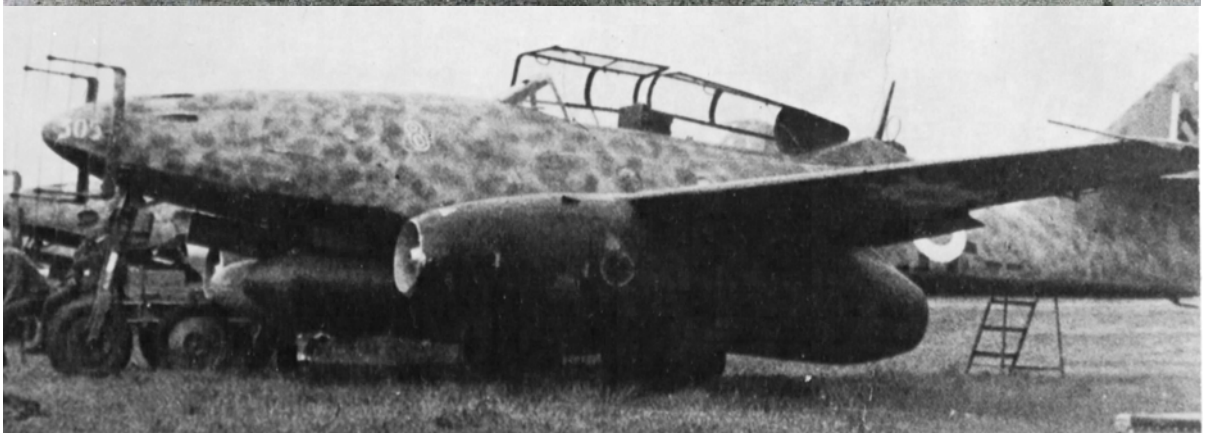
* Photo. Messerschmitt Me 163B in USSR service. (Soviet Air Force Photo)

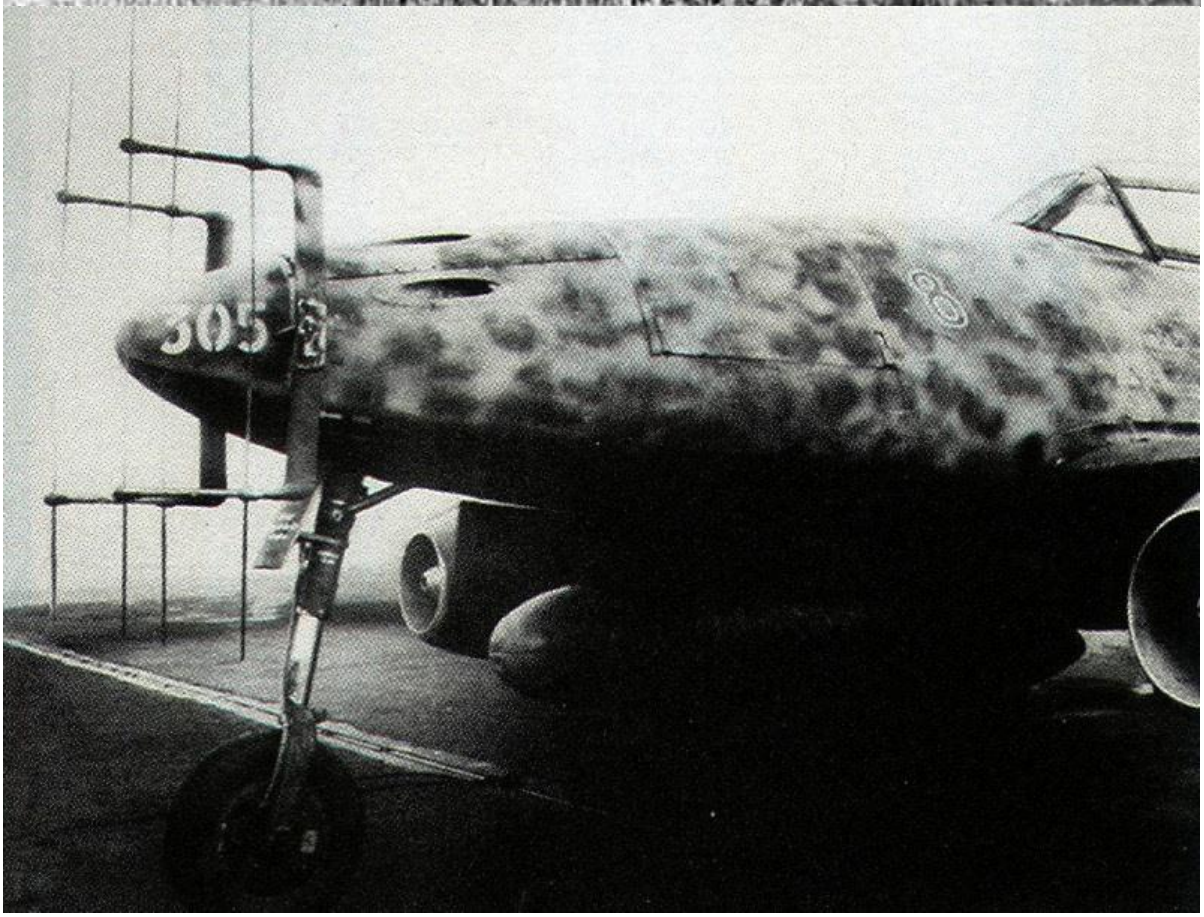

(Soviet Air Force Photos)

* Photos 1-3. Messerschmitt Me 163S two-seat trainer version, No. 94, captured by the USSR in Soviet service.

Messerschmitt Me 262s collected by the RAF





* Photos 1-4. Messerschmitt Me 262B-1a/U1 (Wk. Nr. **110305**), "***Red 8***", 10./NJG11, 305, two-seat trainer converted into a provisional night fighter version equipped with FuG 218 Neptun radar and Hirschgeweih (stag antler) eight-dipole antenna array. This aircraft was collected at Schleswig-Jagel, Germany in May 1945. "*Red 8*" flew operationally with Kurt Welters 10./NJG11 at Magdeburg. While at this location it was painted with all-black undersurfaces and mostly black engine nacelles. "'*Red 8*" was ferried to the UK on 19 May 1945 by Wg Cdr RJ 'Roly' Falk, via Twente, Gilze-Rijen and Melsbroek. It was then flown by Wg Cdr Gonsalvez from the RAE to RNAS Ford, and used for radar and tactical trials from 6 July 1945. Designated **AM50**, it was later given RAF Serial No. **VH519**. It was damaged on its first landing at RNAS Ford, but quickly repaired. "*Red 8*" is the only genuine night fighter version of the Me262 which has survived to the present day. It is currently displayed in the Ditsong National Museum of Military History, Saxonwold, Johannesburg, South Africa. (RAF Photos)





* Photos 1 & 2. Messerschmitt Me 262B-1a/U1 (Wk. Nr. **110305**), "***Red 8***", 10./NJG11, 305, two-seat trainer converted into a provisional night fighter version equipped with FuG 218 Neptun radar and Hirschgeweih (stag antler) eight-dipole antenna array. This aircraft was collected at Schleswig-Jagel, Germany in May 1945. "*Red 8*" flew operationally with Kurt Welters 10./NJG11 at Magdeburg. While at this location it was painted with all-black undersurfaces and mostly black engine nacelles. "*Red 8*" was ferried to the UK on 19 May 1945 by Wg Cdr RJ 'Roly' Falk, via Twente, Gilze-Rijen and Melsbroek. It was then flown by Wg Cdr Gonsalvez from the RAE to RNAS Ford, and used for radar and tactical trials from 6 July 1945. Designated **AM50**, it was later given RAF Serial No. **VH519**. It was damaged on its first landing at RNAS Ford, but quickly repaired. "*Red 8*" is the only genuine night fighter version of the Me262 which has survived to the present day. It is currently displayed in the Ditsong National Museum of Military History, Saxonwold, Johannesburg, South Africa. (NJR ZA Photo 1, Alan Wilson Photo 2)



* Photo. Messerschmitt Me 262A-1a "*Schwalbe*" (Wk. Nr. **112372**),"***Red 2***", 10./NJG11, previously JG7, collected at Schleswig-Jagel, Germany. This aircraft was built in 1945. Designated **AM51**, it was flown to Farnborough where it was allocated RAF Serial No. **VK893** and evaluated by the

Royal Aircraft Establishment Aerodynamics Flight. AM51 is currently on display at RAF Hendon, England. (RAF Photo)



* Photo. Messerschmitt Me 262A-1a "*Schwalbe*" (Wk. Nr. **112372**),"***Red 2***", 10./NJG11, previously JG7, collected at Schleswig-Jagel, Germany. This aircraft was built in 1945. Designated **AM51**, it was flown to Farnborough where it was allocated RAF Serial No. **VK893** and evaluated by the Royal Aircraft Establishment Aerodynamics Flight. AM51 is currently on display at RAF Hendon, England. (Paul Mantz Photo)



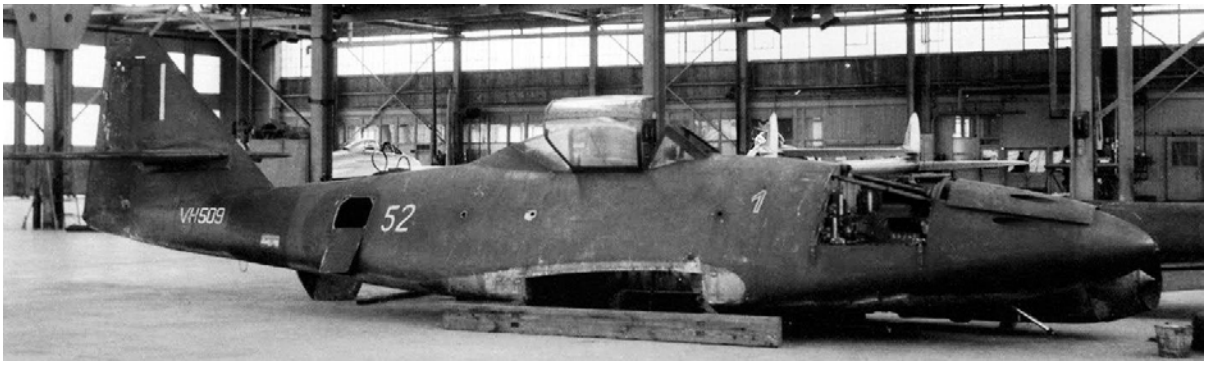
* Photo. Messerschmitt Me 262A-1a "*Schwalbe*" (Wk. Nr. **112372**),"***Red 2***", 10./NJG11, previously JG7, collected at Schleswig-Jagel, Germany. This aircraft was built in 1945. Designated **AM51**, it was flown to Farnborough where it was allocated RAF Serial No. **VK893** and evaluated by the Royal Aircraft Establishment Aerodynamics Flight. AM51 is currently on display at RAF Hendon, England, painted as "Yellow 4". (UniversalNation Photo)



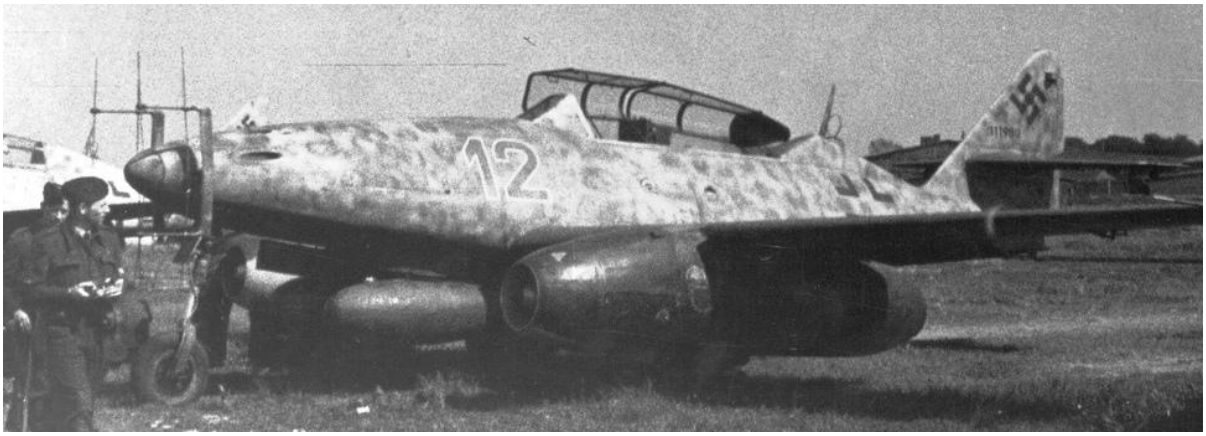


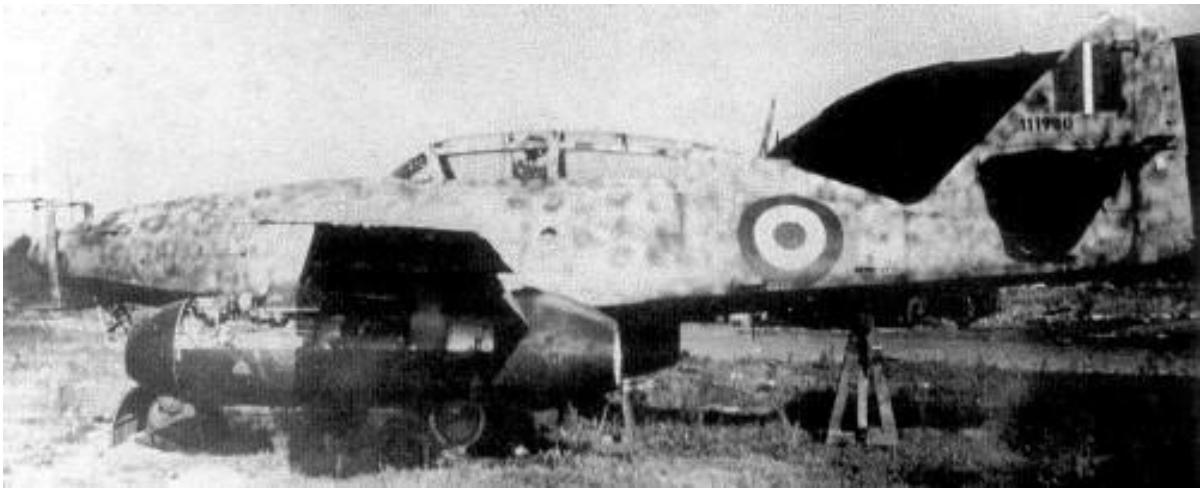


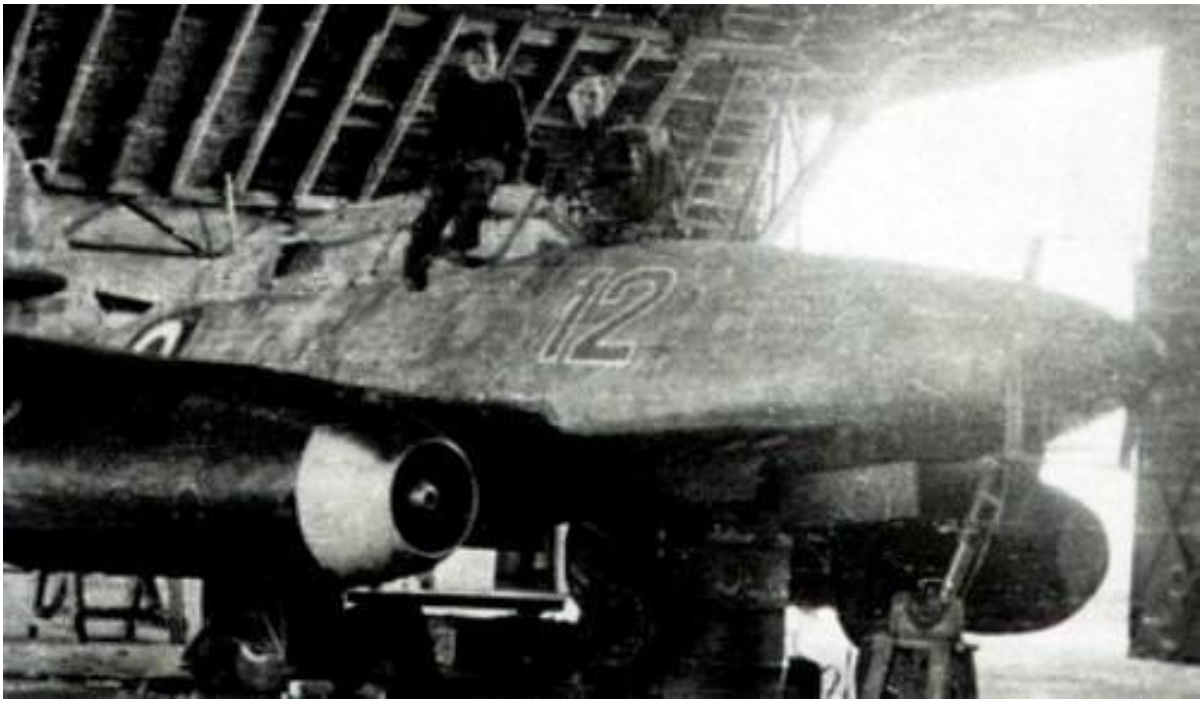
* Photos 1-3. Messerschmitt Me 262A-2a "*Sturmvogel*" (Wk. Nr. **500210**), coded "***Red 1***", painted *"Yellow 17",* 1./JG 7, surrendered at Fassberg, near Celle, Germany, and taken over by No. 616 Squadron, RAF. Designated **AM52**, it was flown to Lübeck on 29 May 1945, then ferried to Schleswig-Jagel, and then on to Farnborough on 9 June 1945. It was allocated RAF Serial No. **VH509** on 14 June, and made at least one test flight in July at Brize Norton. AM 52 was shipped to Canada from Ellesmere Port on board the SS *Manchester Shipper* on 23 August 1946, arriving at Montréal on 1 September. AM 52 was sold to Cameron Logan of New Scotland, Ontario, about 1947, with 300 other war-surplus RCAF aircraft, and was eventually scrapped by him at New Scotland. (RAF Photos)

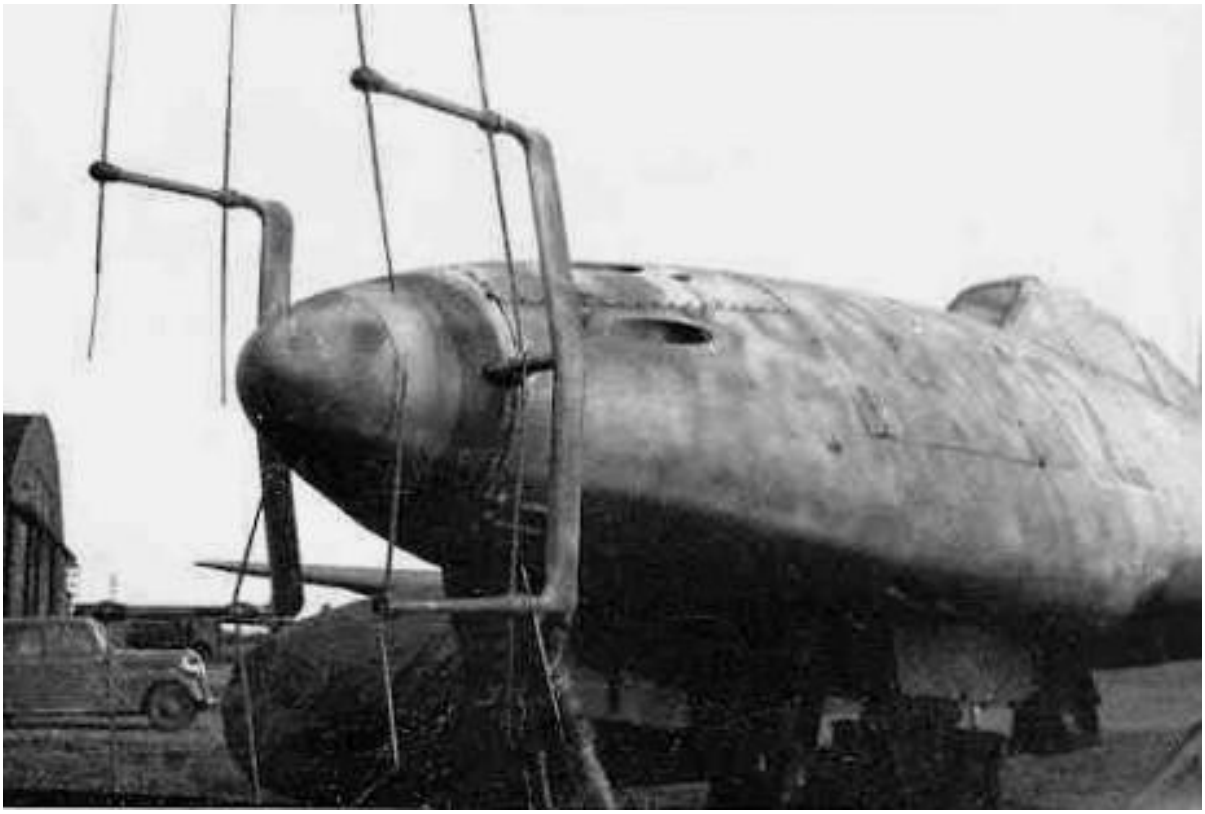


* Photo. Messerschmitt Me 262A-2a "*Sturmvogel*" (Wk. Nr. **500210**), coded "***Red 1***", painted *"Yellow 17",* 1./JG 7, surrendered at Fassberg, near Celle, Germany, and taken over by No. 616 Squadron, RAF. Designated **AM52**, it was flown to Lübeck on 29 May 1945, then ferried to Schleswig-Jagel, and then on to Farnborough on 9 June 1945. It was allocated RAF Serial No. **VH509** on 14 June, and made at least one test flight in July at Brize Norton. AM 52 was shipped to Canada from Ellesmere Port on board the SS *Manchester Shipper* on 23 August 1946, arriving at Montréal on 1 September. AM 52 was sold to Cameron Logan of New Scotland, Ontario, about 1947, with 300 other war-surplus RCAF aircraft, and was eventually scrapped by him at New Scotland. (Leslie Corness, CANAV Books Collection Photo)


12




12





* Photos 1-5. Messerschmitt Me 262B-1a/U1 (Wk. Nr. **111980**) ***"Red 12"***, 10./NJG11, two-seat trainer converted into a provisional night fighter version equipped with FuG 218 Neptun radar and Hirschgeweih (stag antler) eight-dipole antenna array. "*Red 12*" was flown by Lt Herbert Altner to Schleswig-Jagel, Germany, on 6 May 1945, where it was collected by the RAF. This aircraft was taken to England, and designated **AM53**. It was destroyed during a storm at Brize Norton in 1947. The remains were scrapped at Sealand in 1948. (RAF Photos)





* Photos 1& 2. Messerschmitt Me 262B-1a/U1 (Wk. Nr. 111007), "*Yellow 5*", captured at Fassberg. Designated AM79, this aircraft was scrapped at Fassberg. (RAF Photos)











* Photos 1-5. Messerschmitt Me 262A-1a "*Schwalbe*" (Wk. Nr. **111690**), coded "***White 5***", 1./JG 7, was built by Messerschmitt at Schwabisch Hall. It had been flown by Fritz Stehle, who was responsible for the last kill of the war, after arriving there from Melsbroek on 5 August 1945. It was surrendered at Fassberg and was transferred to Farnborough via Manston on 6 and 7 August. It later appeared in a static display during a German Aircraft Exhibition coded as **AM80**. AM80 was packed and shipped to Canada on SS *Manchester Shipper* on 23 August 1946, arriving in Montréal on 1 September. This aircraft was scrapped near Aylmer, Ontario , ca. 1949. (RAF & RCAF Photos)



* Photo. Messerschmitt Me 262A-2a "*Sturmvogel*" (Wk. Nr. **500200**), "***Black X***", coded 9K+XK, 2./KG 51, built at Regensburg in March 1945. Flown by Fahnenjunker Oberfeldwebel Fröhlich and surrendered at Fassberg. "Black X" was flown to Marston, via Melsbroek on 28 August 1945. Nine days later it was test flown to the Royal Aircraft Establishment in Farnborough, where it was designated **AM81**. It was allocated RAF Serial No. **VP554**, and subjected to tests and investigation, flown by Squadron Leader Martindale. While in British hands, the Luftwaffe camouflage was over-painted with English wording and RAF roundels. The airframe and flight systems were not modified, although the original German electronics were removed and replaced by British equipment. This meant that the FuG.25 Loop Antenna was removed. It was flown in an airshow at Farnborough on 4 November 1945. It was shipped to Australia. Restoration was completed in 1985 and the aircraft is currently on display in the Australian War Memorial, Canberra, Australia. (Universal Nation Photo)





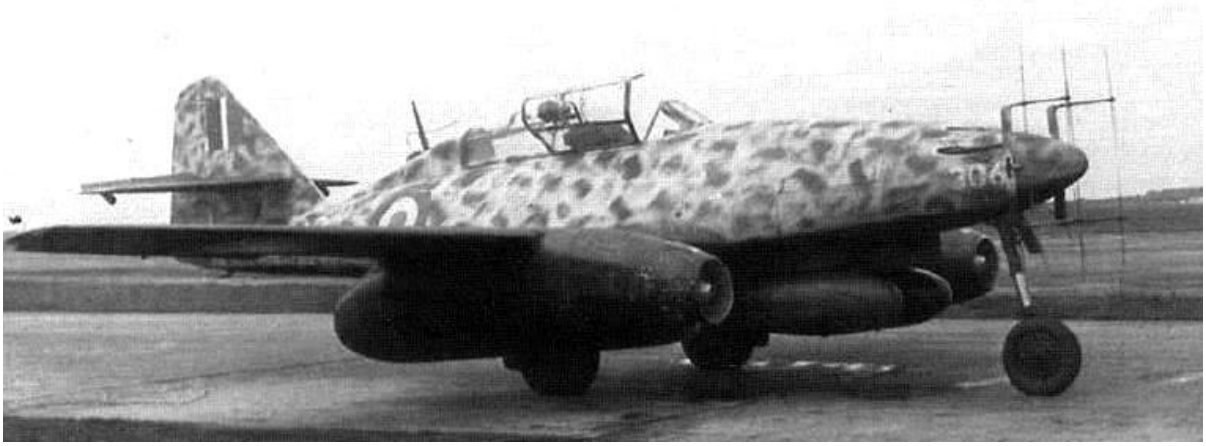


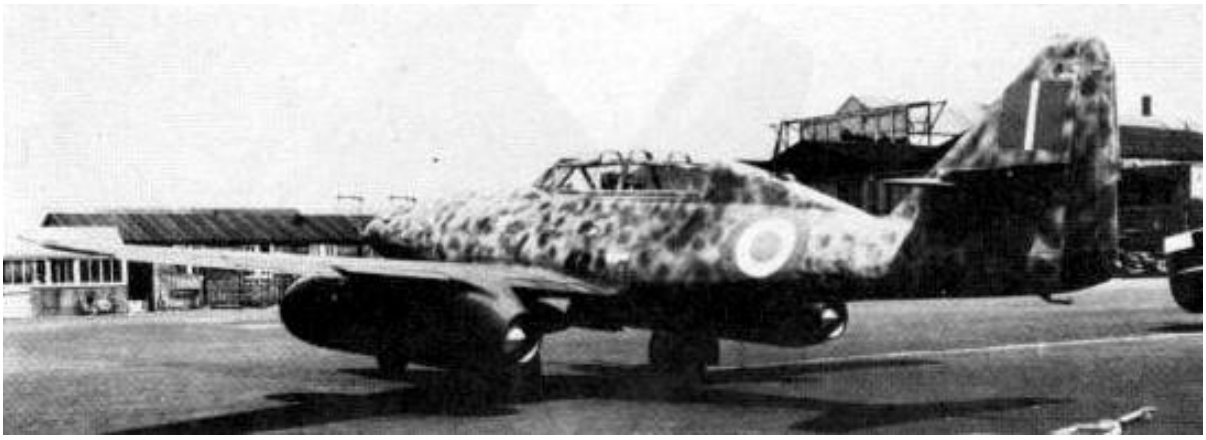


* Photos 1-4. Messerschmitt Me 262A-1a "*Schwalbe*" (Wk. Nr. **500443**), "***Yellow 5***", 7./JG7, this aircraft was flown by Unterofficier Anton Schoppler from his base at Saaz and surrendered at Schleswig-Jagel, Germany on 8 May 1945. Designated **USA 1**, this aircraft was brought to England. and was repainted "*Yellow 6*" at some point. USA 1 was shipped from Birkenhead, England to Capetown, South Africa on the SS *Perthshire* on 20 Oct 1946, arriving on 6 Nov. After acceptance by the SAAF it was stored at 15 Air Depot, Snake Valley and during 1950 it was sold to the Benoni Technical College as an instructional airframe. It was scrapped in 1953. (RAF Photos)



* Photo. Messerschmitt Me 262B-1a (there are at least six possible Wk. Nrs. 110779, 110979, 111053, 111471 and 111980), 10./NJGJ11, two-seat trainer surrendered to the RAF at Schleswig-Jagel, Germany, in May 1945, designated **USA 2** by the RAF. Fate unknown. Note: Wk. Nr. 110639, became Watson's Whizzers No. 555. (RAF Photo)





* Photos 1-3. Messerschmitt Me 262B-1a/U1 (Wk. Nr. **110306**), "***Red 6***", 10./NJGJ11, two-seat trainer converted into a provisional night fighter version equipped with FuG 218 Neptun radar and Hirschgeweih (stag antler) eight-dipole antenna array. Seven of these aircraft were used by 10/NJG.II in the defence of Berlin in April 1945. "*Red 6*" was surrendered to the RAF at Schleswig-Jagel, Germany. It was transferred to the USAAF and became **Watson's Whizzers 999**. It was shipped to the USA on HMS Reaper and then allocated FE-610, later T2-610. Later named "*Ole Fruit Cake*", and "*der Schwalbe*". FE-610 was scrapped at Freeman Field, Indiana, circa 1950. (RAF Photos)





* Photos 1 & 2. Messerschmitt Me 262B-1a/U1 (Wk. Nr. **110165**), uncoded, possibly 10./NJG11, two-seat trainer surrendered to the RAF at Schleswig-Jagel, Germany, in May 1945, designated **USA 3** by the RAF, "*What was it?*". Transferred to the USAAF, **Watson's Whizzers 101.** Shipped to the USA on HMS Reaper, where it was allocated Foreign Equipment number FE-109. This aircraft went to the USN Armament Test Division at NAS Patuxent River, Maryland in Dec 1945 where it was designated USN BuNo. 121441 and test flown. It was scrapped at NAS Anacostia, Nov 1946. (RAF Photos)

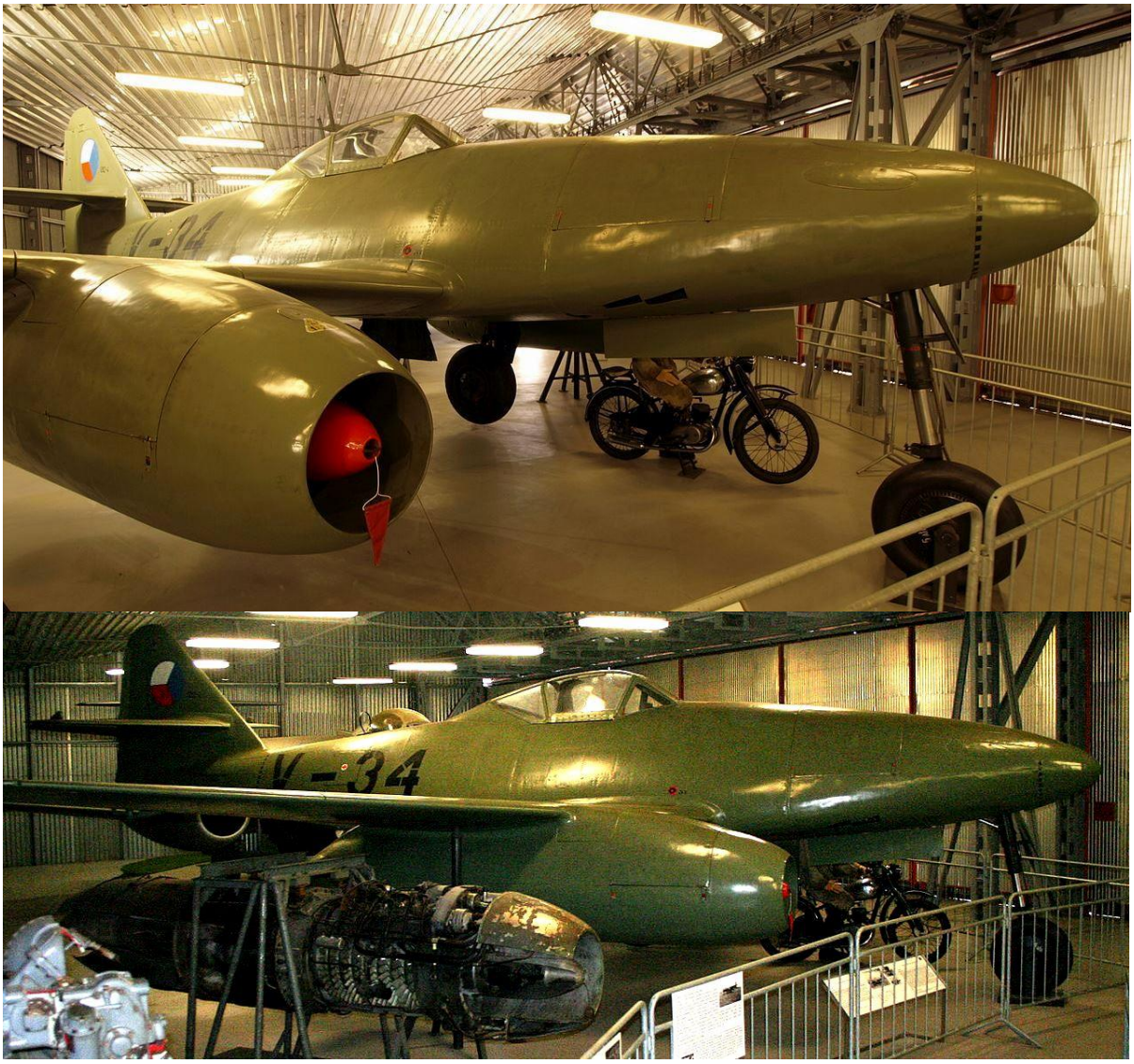






* Photos 1-3. Messerschmitt Me 262B-1a/U1 (Wk. Nr. **110635**), "***Red 10***", 10./NJG11, two-seat trainer converted into a provisional night fighter version equipped with FuG 218 Neptun radar and Hirschgeweih (stag antler) eight-dipole antenna array. "*Red 10*" was one of three night fighters captured at Schleswig-Jagel, Germany. Designated **USA 4**, this aircraft may have been brought to England, where it was likely used as a ballistics target at Oxfordness. It was reportedly scrapped at No. 6 Maintenance Unit (MU) at Brize Norton in 1947. (RAF Photos)

Czech Avia S-92s



* Photos 1 & 2. Avia S-92, Aviation Museum Kbely, Prague, Czech Republic. (AlfvanBeem Photo 1, Alan Wilson Photo 2)



*

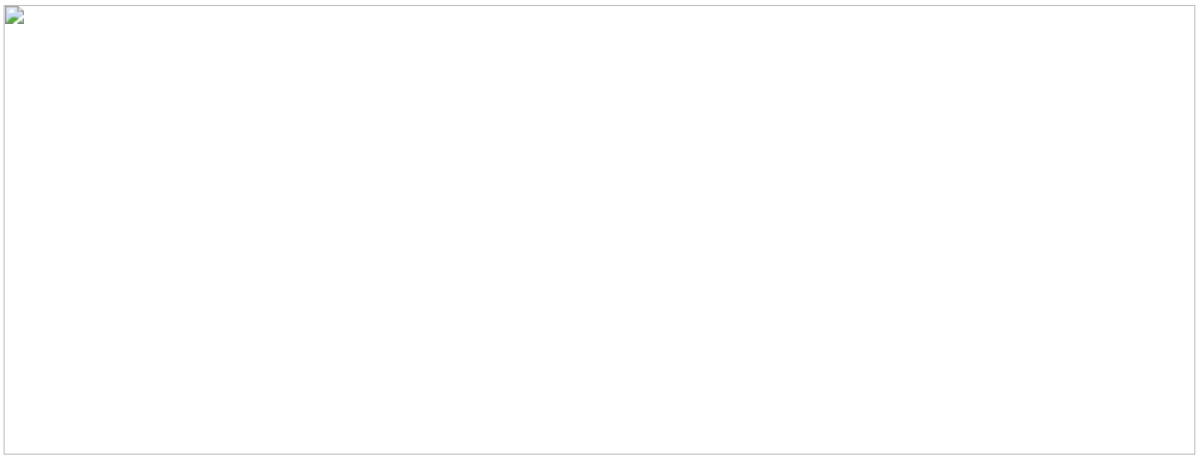
Photo. Avia CS-92, Aviation Museum Kbely, Prague, Czech Republic. The Avia CS-92 was a license built Messerschmitt Me262B-1A. This sole remaining example has been painted in Luftwaffe markings. Czech AF (Serial No. V-35 msn 51104). (Alan Wilson Photo1, Netopyr Photo 2)

French Me 262s

Messerschmitt Me 262A-1a, (Wk. Nr. unknown), No. 1, brought by rail to France and rebuilt, test flown, fate unknown.

* Photos 1 & 2. Messerschmitt Me 262A-1a, (Wk. Nr. 113332), No. 2, "*Feudin 54th A.D. Sq*", "Julie", before being transferred to the French Air Force (Armée de l'Air*)*, test flown, crashed on during a test flight, fate unknown. (USAAF Photos)





* Photos 1 & 2. Messerschmitt Me 262A-1a, (Wk. Nr. 113332), No. 2, "*Feudin 54th A.D. Sq*", "Julie", after being transferred to the French Air Force (Armée de l'Air*)*, shortly after crashing during a test flight, fate unknown. (Armée de l'Air Photos)

Messerschmitt Me 262A-1a, (Wk. Nr. unknown), No. 3, brought by rail to France and rebuilt, test flown, fate unknown.

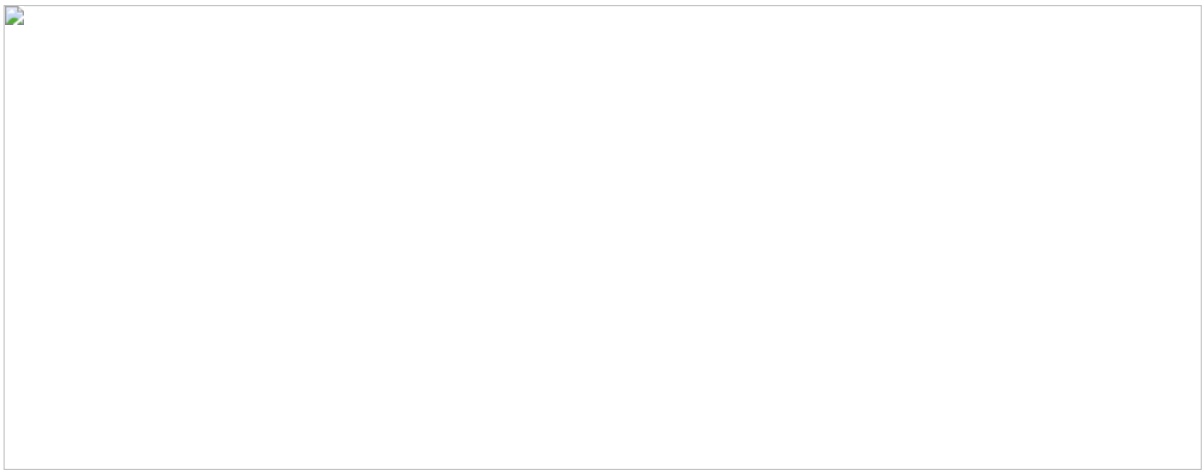
Messerschmitt Me 262A-1a, (Wk. Nr. unknown), No. 4, brought by rail to France and rebuilt. Ready to fly but not test flown, fate unknown.

Messerschmitt Me 262A-1a, (Wk. Nr. unknown), No. 5, brought by rail to France and used for spare parts, fate unknown.

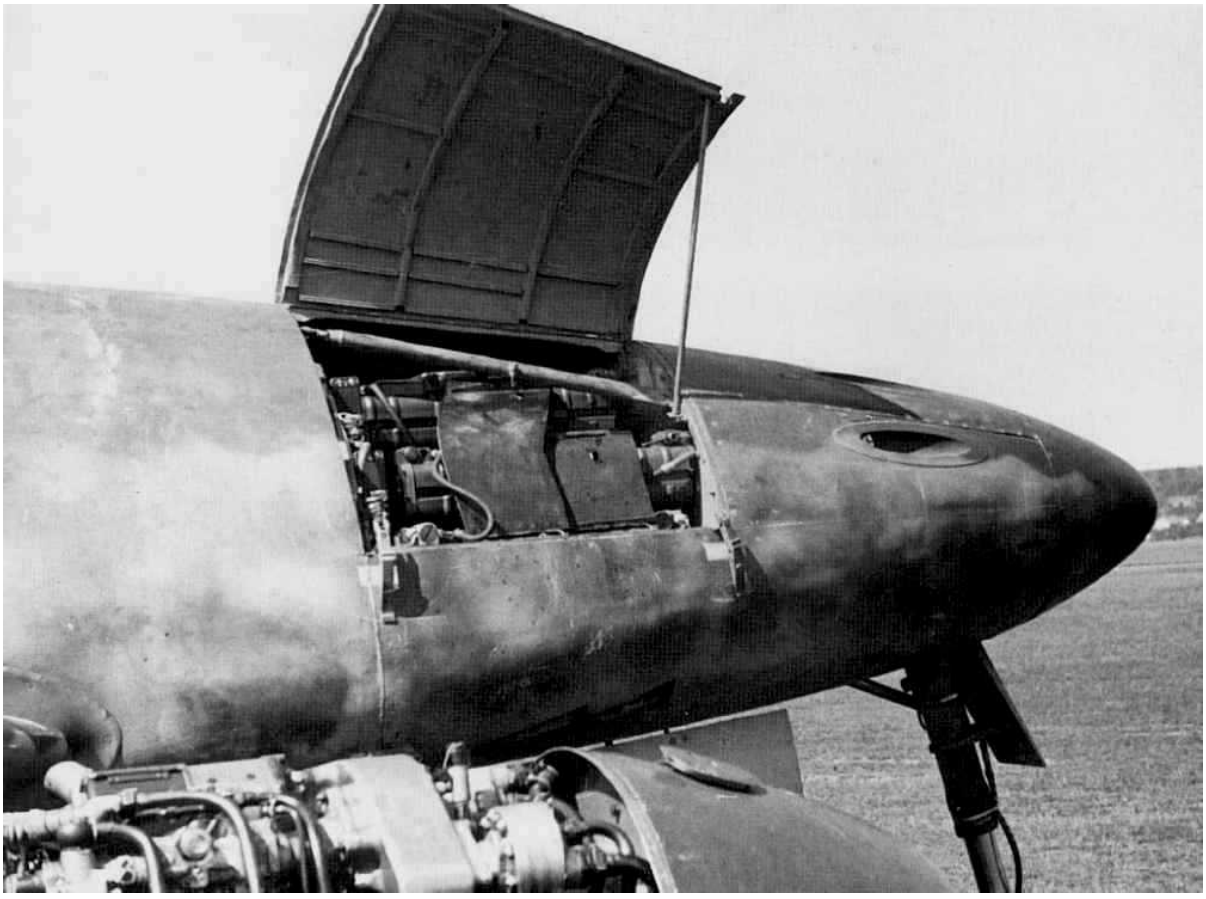
Messerschmitt Me 262A-1a, (Wk. Nr. unknown), No. 6, brought by rail to France and partially rebuilt, fate unknown.

Messerschmitt Me 262B-1a/U1, (Wk. Nr. unknown), No. 7, dual control two-seat trainer, brought by rail to France and rebuilt. Ready to fly but not test flown, fate unknown.

Me 262s preserved in Germany











* Photos 1-5. Messerschmitt Me 262A-1a, (Wk. Nr. 500071) coded "*White 3*", III/JG7. This aircraft made an emergency landing due to lack of fuel at Dübendorf, Switzerland on 25 April 1945. Flown by Hans Guido Mutke while a pilot of 9. Staffel/*JG* 7, "White 3" was confiscated by Swiss authorities on 25 April 1945 after Mutke made an emergency landing in Switzerland due to lack of fuel. Although it was taken over by the Swiss, it was not flown by them. After many years of storage at Dübendorf, the aircraft was given to the Deutsches Museum at Munich on 30 August 1957, where it is currently on display. (Swiss Air Force Photos)



* Photo. Messerschmitt Me 262A-1a, (Wk. Nr. 500071) coded "White 3", III/JG7 made an emergency landing due to lack of fuel at Dübendorf, Switzerland on 25 April 1945. This aircraft, flown by Hans Guido Mutke while a pilot of 9. Staffel/*JG* 7, was confiscated by Swiss authorities on 25 April 1945 after Mutke made an emergency landing in Switzerland due to lack of fuel. Although it was taken over by the Swiss, it was not flown by them. After many years of storage at Dübendorf, the aircraft was given to the Deutsches Museum at Munich on 30 August 1957, where it is currently on display. (Softeis Photo)

Messerschmitt Me 262A-1a (multiple Wk. Nrs.), reconstructed from parts of crashed and uncompleted Me 262s, is on display in the Militärhistorisches Museum der Bundeswehr - Flugplatz Berlin-Gatow (Bundeswehr Museum of Military History - Berlin-Gatow Airfield), Germany.



* Photo. Messerschmitt Me 262 *Schwalbe,* (Wk. Nr. unknown), with R4M underwing rockets on display at the Technikmuseum Speyer, Germany. (MisterBee1966 Photo)

Me 262s captured by the USAAF





* Photo. Messerschmitt Me 262A-2a *Schwalbe,* (Wk. Nr. 112385), "*Yellow 8*", captured at Stendal, fate unknown. (US Army Photos)



* Photo. Messerschmitt Me 262A-1a, (Wk. Nr. 110604), Lechfeld, 1945. (USAAF Photo)





* Photo. Messerschmitt Me 262A-1a, (Wk. Nr. 110956), IIIEJG2, "*White 17*", Franz-Holzinger, Lechfeld 29 Apr 1945. This aircraft may have been flown by Heinz Bar. (USAAF Photos)



* Photo. Messerschmitt Me 262A-1a *Schwalbe*, (Wk. Nr. 500079) captured by the USAAF, May 1945. (USAAF Photo)

Me 262s, USA




711
ME-262


711





* Photos 1-5. Messerschmitt Me 262A-1a "*Schwalbe*" (Wk. Nr. **111711**). This new airframe had been surrendered on 31 March 1945 by Messerschmitt test pilot Hans Fay who defected during a functional check flight rather than fly it to an operational unit, landing at Rhein-Main, Frankfurt. It was the first Me 262 to fall into Allied hands. The Me 262 was taken to Thornville, France, and shipped separately to USA on the *Manawaska Victory*. It was not one of Watson's Whizzers. The Me 262 was allocated Foreign Equipment number FE-107, and later T2-711. It was test flown by Russell E. Schleeh shortly after its capture. This aircraft was flown by Test Pilot Walter J. McAuley Jr. of the Flight Performance Section, Flight Test Division, Wright Field, Ohio, in a test flight for comparison with a Lockheed P-80. During the flight both engines of the Me 262 caught fire. McAuley, Jr., successfully parachuted to safety, surviving as the aircraft crashed on 20 Aug 1945 ~two miles South of Xenia, Ohio near Route 68. (USAAF Photos)

Watson's Whizzers

Throughout the war in Europe, the US Army Air Force (USAAF) Intelligence Service sent teams to Europe to gain access to enemy aircraft, technical and scientific reports, research facilities, and weapons for study in the US. The Air Technical Intelligence (ATI) teams trained at the Technical Intelligence School at Wright Field, Ohio, and then collected enemy equipment to learn about Germany's technical developments. The ATI teams competed with 32 allied technical intelligence groups to gain information and equipment recovered from crash sites. As the war concluded, the various intelligence teams, including the ATI, shifted from tactical intelligence to post hostilities investigations. Exploitation intelligence increased dramatically.

Captured Luftwaffe airfields rewarded the Allies with many aircraft that were technologically advanced and of great interest to intelligence agencies. In November 1944, General H.H. "Hap" Arnold directed that items of captured enemy equipment be collected methodically so technical experts could study the equipment. At Wright Field, the Technical Data Laboratory worked with the other laboratories to develop a "wish list" of German equipment they would like to have for technological study and exploitation. Colonel Donald L. Putt was in charge of the overall collection effort known as Project Lusty, and General Carl "Tooey" Spaatz, the Commanding General of U.S. Strategic Air Forces in Europe, picked Colonel Harold E Watson for the assignment. Colonel Watson had previously served at Wright Field as a test pilot as well as 9th Air Force Service Command in France.

On 22 April 1945, the USAAF combined technical and post-hostilities intelligence objectives under the Exploitation Division with the aim of exploiting captured German scientific documents, research facilities, and aircraft. The code name of the operation was Project "Lusty (from

Luftwaffe Secret Technology). The Operation had two teams. One, under the leadership of Colonel Watson, collected enemy aircraft and weapons for further examination in the US. The other recruited scientists, collected documents, and investigated facilities. Having been part of ATI in 1944, Colonel Watson eagerly accepted the Operation Lusty assignment.

General Watson's official travel orders allowed him to examine or remove any captured aircraft or equipment; carry a camera and photograph any captured equipment; and travel anywhere in the Allied Forces occupied zone. His pass was printed in English, French, and German.

Colonel Watson and his crew, nicknamed "Watson's Whizzers," which was comprised of 9th Air Force pilots, engineers, and maintenance men he had selected to join him, developed "Black Lists" which they used to collect aircraft. He organized his "Whizzers" into two sections, one collected jet aircraft and the other procured piston engine aircraft and non-flyable jet and rocket equipment. Their first catch was a Heinkel He 177 bomber. In April 1945, Lechfeld airfield, near the Messerschmitt factory, fell into American hands, and the collection of Luftwaffe aircraft grew dramatically.

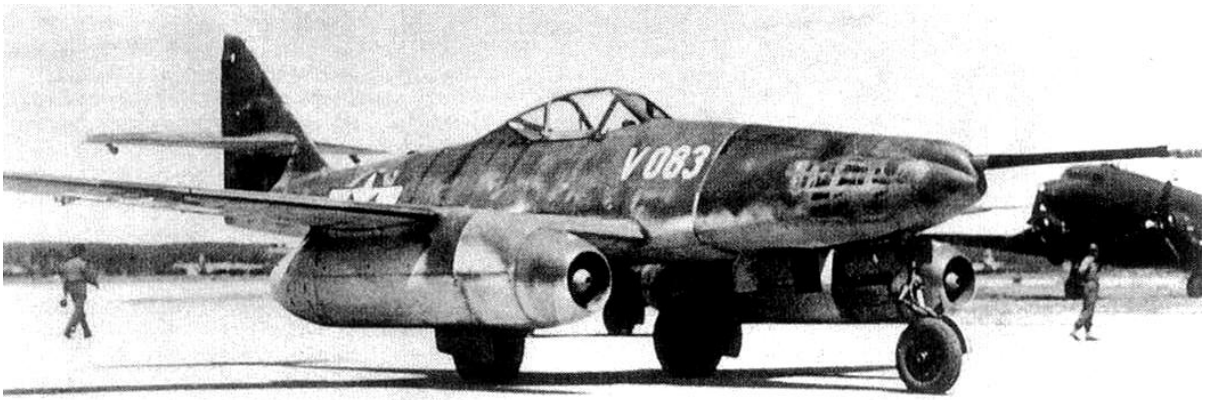
After the war, the "Whizzers" added a crew of 25 former Luftwaffe test pilots and mechanics to their team, including Hauptman Heinz Braun. Hauptman Braun had flown 70 women, children, and wounded troops to Munich-Riem airport on 8 May 1945. After he landed, Braun was approached by one of Watson's men who gave him the choice of either going to a prison camp or flying with the "Whizzers." Braun decided flying would be more preferable. Three Messerschmitt employees also joined the "Whizzers," with Karl Baur, the Chief Test Pilot of Experimental Aircraft; test pilot Ludwig "Willie" Huffman; and engineering superintendent, Gerhard Coulis. Test pilot Herman Kersting joined later. When the "Whizzers" located nine Me 262 jet aircraft at Lechfeld airfield, these Luftwaffe test pilots had the expertise to fly them.

Watson's men traveled far and wide over Europe by jeep and occasionally by air to find the aircraft on the "Black Lists." Some of the aircraft were found in flyable condition. Others had to be reconstructed from remnants of other aircraft. Many aircraft were shipped to the United States aboard the British carrier HMS *Reaper*. The most viable harbour for docking the carrier and loading the various aircraft was at Cherbourg, France. The "Whizzers" flew the Me 262s and other aircraft from Lechfeld to St. Dizier, to Melun, and then to Cherbourg. All the aircraft were cocooned against the salt air and weather, loaded onto HMS *Reaper*, and brought to the US where they were studied by the Air Intelligence groups of both the USAAF and US Navy.

Many of the "Whizzers" named aircraft after family and friends. General Watson named one of the captured Me 262s the "*Happy Hunter*" after his son. MSgt Freiburger named three of the planes, including "*Dennis*," for his son; "*Wilma Jeanne*," after his wife; and "*Vera*," for a sister-in-law. Me 262A-1a/U4 *Schwalbe*, (Wk. Nr. 170083) had "*Wilma Jeanne*" on the port side of the aircraft. All of these refurbished Me 262s had "*Feudin 54th A.D. Sq*" painted on the starboard side by MSgt Eugene Freiburger. This aircraft crashed at Tilleul-Dame-Agnes, Eure in France on 18 June 1945 (the pilot survived) and therefore never came to the USA.

40 German and one American aircraft were transported on board HMS *Reaper*, including ten Messerschmitt Me 262,(including nine Messerschmitt Me 262 (three standard fighters, two two-seat pilot training aircraft, one two-seat night fighter, and three photographic reconnaissance aircraft), five Focke-Wulf Fw 190F, four Focke-Wulf Fw 190D, one Focke-Wulf Ta 152H, four Arado Ar 234B, three Heinkel He 219, three Messerschmitt Bf 109, two Dornier Do 335A, two Bücker Bü 181, one Doblhoff WNF 342 helicopter, two Flettner Fl 282 helicopters, one Junkers Ju 88G, one Junkers Ju 388, one Messerschmitt Bf 108, and one North American F-6 (the photo reconnaissance version of the P-51). The balance of about ten aircraft may have included examples of the Heinkel He 162A, Messerschmitt Me 163B-1a, and the Bachem Ba 349 Natter, which were later transported to the US aboard merchant ships. A Junkers Ju 290A four-engine transport, nicknamed "*Alles Kaput*," was flown on its own across the Atlantic.

In 1945, the enemy aircraft shipped to the US were divided between the Navy and the Army Air Forces. For historical purposes, General Hap Arnold ordered the preservation of one of every type of aircraft used by the enemy forces. The Air Force brought their aircraft to Wright Field, and when the field could no longer handle additional aircraft, many were sent to Freeman Field, Seymour, Indiana.







* Photos 1-5. Messerschmitt Me 262A-1a/U4 Schwalbe, (Wk. Nr. 170083), "V083", "Pulkzerstörer", armed with one 50-mm Mauser Mk. 214 cannon. USAAF "*Feudin 54*" A.D Sq was painted on the port side of the nose of all the refurbished Me 262s, later painted over before leaving Lager Lechfeld Flugplatz and being shipped to the USA on HMS *Reaper*. This aircraft became Watson's Whizzers No. 000, with the name "*Wilma Jeanne*" on the starboard side of the nose, later the "*Happy Hunter II*". This aircraft crashed on a flight from Lechfield, Germany to Cherbourg. (Andrew T. Hill Photo 1, before being painted with Feudin 54th artwork, USAAF Photo 2)

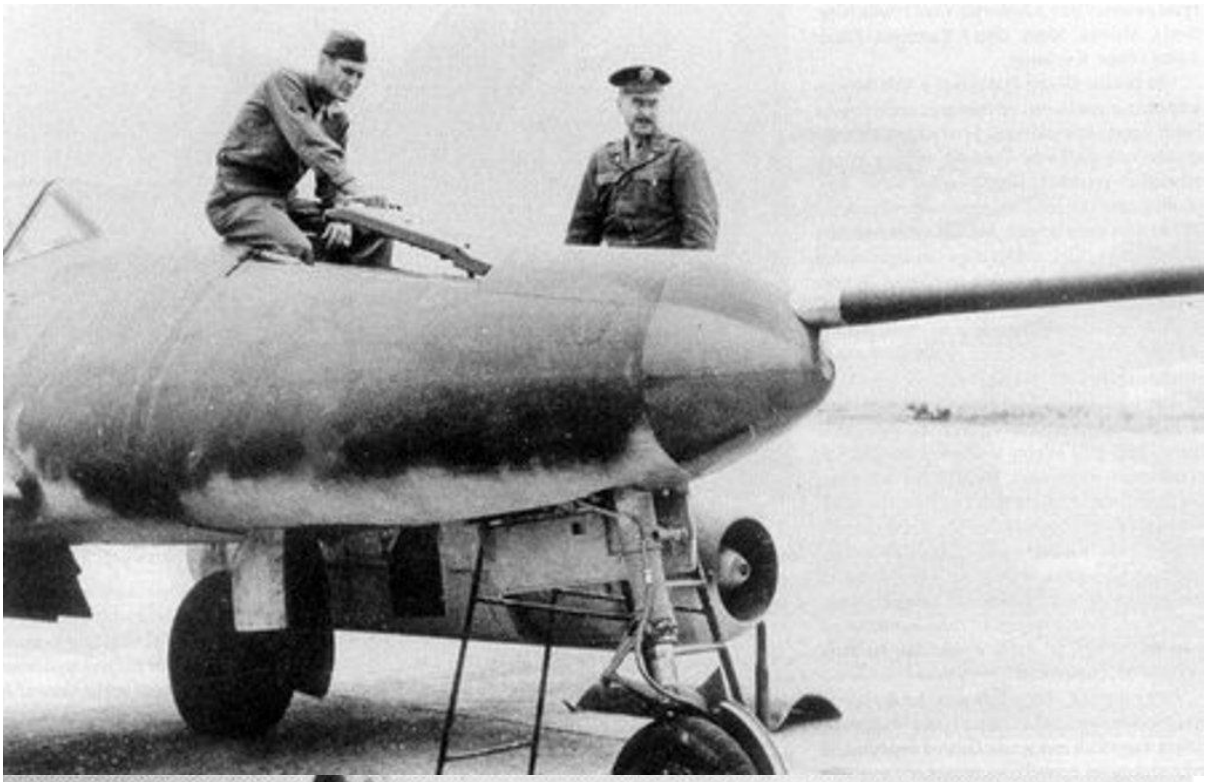




* Photos 1 & 2. Messerschmitt Me 262A-1a/U4 Schwalbe, (Wk. Nr. 170083), "V083", "Pulkzerstörer", armed with one 50-mm Mauser Mk. 214 cannon. USAAF "*Feudin 54*" A.D Sq was painted on the port side of the nose of all the refurbished Me 262s, later painted over before leaving Lager Lechfeld Flugplatz and being shipped to the USA on HMS *Reaper*. This aircraft became Watson's Whizzers No. 000, with the name "*Wilma Jeanne*" on the starboard side of the nose, later the "*Happy Hunter II*". This aircraft crashed on a flight from Lechfield, Germany to Cherbourg. (USAAF Photos)



* Photo. Messerschmitt Me 262A-1a/U4 Schwalbe, (Wk. Nr. 170083), "V083", "Pulkzerstörer", armed with one 50-mm Mauser Mk. 214 cannon. USAAF "*Feudin 54*" A.D Sq was painted on the port side of the nose of all the refurbished Me 262s, later painted over before leaving Lager Lechfeld Flugplatz and being shipped to the USA on HMS *Reaper*. This aircraft became Watson's Whizzers No. 000, with the name "*Wilma Jeanne*" on the starboard side of the nose, later the "*Happy Hunter II*". This aircraft crashed on a flight from Lechfield, Germany to Cherbourg. (USAAF Photo)

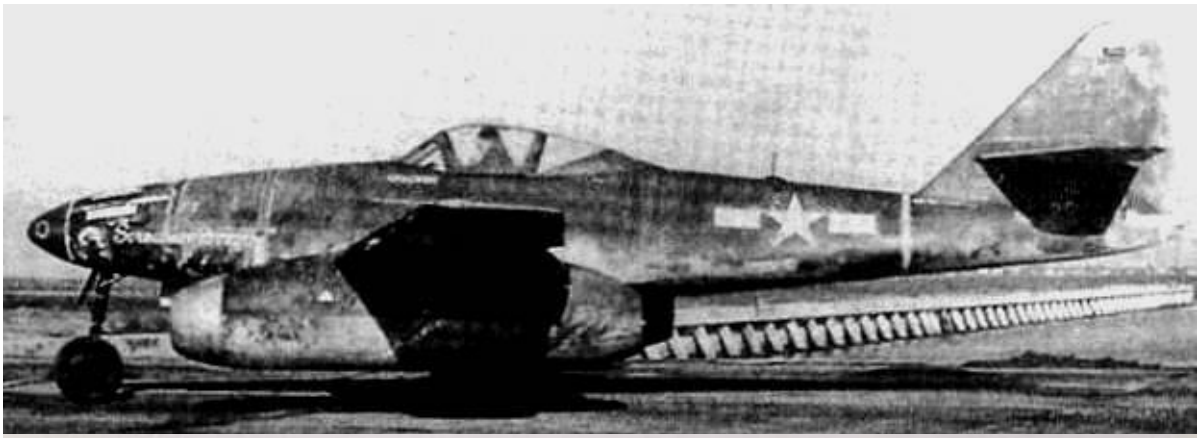




* Photos 1 & 2. Messerschmitt Me 262A-1a/U4, (Wk. Nr. unknown), "Pulkzerstörer", bomber destroyer version armed with one 50-mm Mauser Mk. 214 cannon. USAAF "*Feudin 54 A.D Sq*". Possibly shipped to the USA, fate unknown. (USAAF Photos)



* Photo. Messerschmitt Me 262A-1a "*Schwalbe*" (Wk. Nr. 501232), "*Yellow 5*", 3./KG(J)6, with homeland defence checkerboard pattern on the rear fuselage. This aircraft was designated Watson's Whizzers No. 111, and was painted as "*Beverly Anne*", later "*Screamin Meemie*". "*Yellow 5*" was shipped to the USA on HMS *Reaper*, with inventory control No. 20. This aircraft was sent to the USN Armament Test Division at NAS Patuxent River, Maryland in Dec 1945 where it was designated USN BuNo. 121442 and test flown. It is now on display in the National Museum of the USAF. (USAAF Photo)









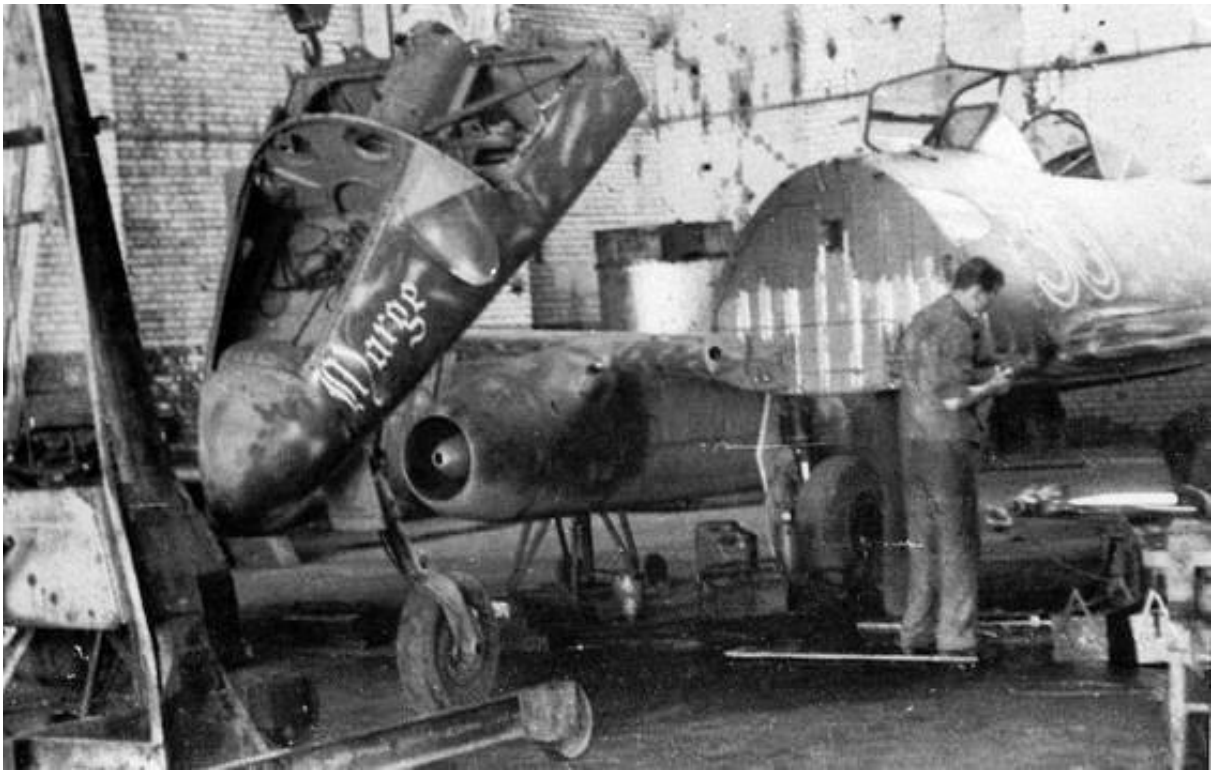
* Photos 1-4. Messerschmitt Me 262A-1a "*Schwalbe*" (Wk. Nr. 501232), "*Yellow 5*", 3./KG(J)6. This aircraft was designated Watson's Whizzers No. 111, and was painted as "*Beverly Anne*", later "*Screamin Meemie*". "Yellow 5" was shipped to the USA on HMS *Reaper*, with inventory control No. 20. This aircraft was sent to the USN Armament Test Division at NAS Patuxent River, Maryland in Dec 1945 where it was designated USN BuNo. 121442 and test flown. It is now on display in the National Museum of the USAF. (USAAF Photos)



* Photo. Messerschmitt Me 262A-1a "*Schwalbe*" (Wk. Nr. 501232), "*Yellow 5*", 3./KG(J)6, designated Watson's Whizzers No. 111, on display in the National Museum of the USAF. (National Museum of the USAF Photo)



* Photo. Messerschmitt Me 262A-1a "*Schwalbe*" (Wk. Nr. 501232), "*Yellow 5*", 3./KG(J)6, designated Watson's Whizzers No. 111, on display in the National Museum of the USAF. (Gojada Photo)





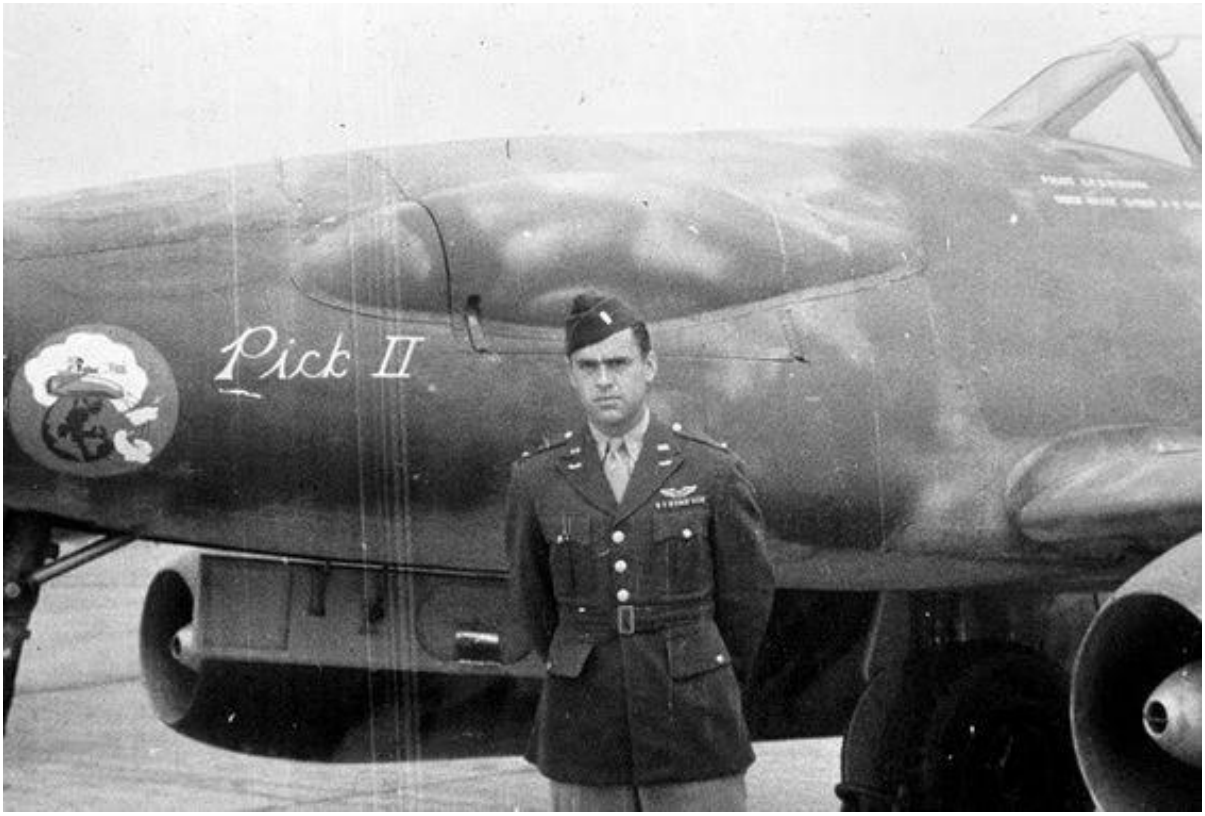
* Photos 1 & 2. Messerschmitt Me 262A-1a/U3 (Wk. Nr. unknown), "***White 30***", reconnaissance version modified with bulges on the nose to accommodate film magazines for two Rb 20/30 cameras. U3 (Umrüst-Bausatz 3, Factory Modification Kit No. 3). **Watson's Whizzers 222**, "*Marge*", later "*Lady Jess IV*". It was flown by Capt Kenneth Dahlstrom. Artwork was painted on the nose with a picture of Donald Duck circling the globe on a jet engine, with "Watson's Whizzers" in print. "*White 30*" was shipped to the USA on HMS *Reaper*. It was allocated FE-108, then transferred to the USN where it was allocated BuNo. 121443. It was written off at NAS Patuxent River, Maryland on its first test flight on 7 Nov 1945. (USAAF Photos)





* Photos 1 & 2. Messerschmitt Me 262A-1a "*Schwalbe*" (Wk. Nr. **111367**), **Watson's Whizzers 333**, "*Feuding 54th*", later "*Pauline", and "Deelovely".* This aircraft went to the USN A&T Division, Flight Test Division, NAS Patuxent River, Maryland in Dec 1945, where it was allocated USN BuNo. 121444 and test flown. It was transferred to Naval Proving Ground, Dahlgren Junction on 11 Oct 1946. This Me 262 was displayed at NAS Anacostia, then left outside the Naval Laboratory in Washington, D.C., where it stood derelict until it was apparently scrapped sometime after 27 Jan 1957. (USAAF Photos)







* Photos 1-3. Messerschmitt Me 262A-1a/U3 (Wk. Nr. **500453**), "***White 25***", reconnaissance version modified with bulges on the nose to accommodate film magazines for two Rb 20/30 cameras. U3 (Umrüst-Bausatz 3, Factory Modification Kit No. 3). Prior to the arrival of Watson's team, Master Sergeant Preston of the 54th Air Disarmament Squadron named this plane "*Connie ...My Sharp Article"* (after his wife). "White 5" became **Watson's Whizzers 444**, and was ferried to Melun, France by Lt Roy Brown, who renamed it "*Pick II"* (after a nickname derived from his wife's maiden name). Brown ferried the jet to the port of Cherbourg, where it was loaded onto the British escort carrier HMS *Reaper*. While on the deck of the HMS *Reaper*, it was allocated inventory control No. 19. After arrival at Newark, Watson ferried 444 to Freeman Field, Indiana on 19 August, 1945. There, the Army Air Force assigned "White 5" a Foreign Equipment number, FE-4012. This was later changed to T2-4012. This aircraft was selected to participate in classified tests against the Lockheed P-80, and underwent a nose section changeup with **Watson's Whizzers 888**, later FE-111. The machine was given an overall reconditioning for the tests. "White 5" was with the Planes of Fame Museum in California before being transferred to Paul Allen's Flying Heritage & Combat Armor Museum in Washington State. There are plans to restore this aircraft to flying status, and it is registered as N9450, painted as "*White 9*". (USAAF Photos)






T-2-4012





* Photos 1-5. Messerschmitt Me 262A-1a/U3 (Wk. Nr. 500453), "*White 25*", reconnaissance version modified with bulges on the nose to accommodate film magazines for two Rb 20/30 cameras. U3 (Umrüst-Bausatz 3, Factory Modification Kit No. 3). Prior to the arrival of Watson's team, Master Sergeant Preston of the 54th Air Disarmament Squadron named this plane "*Connie ...My Sharp Article"* (after his wife). "White 5" became Watson's Whizzers 444, and was ferried to Melun, France by Lt Roy Brown, who renamed it "*Pick II"* (after a nickname derived from his wife's maiden name). Brown ferried the jet to the port of Cherbourg, where it was loaded onto the British escort carrier HMS *Reaper*. While on the deck of the HMS *Reaper*, it was allocated inventory control No. 19. After arrival at Newark, Watson ferried 444 to Freeman Field, Indiana on 19 August, 1945. There, the Army Air Force assigned "White 5" a Foreign Equipment number, FE-4012. This was later changed to T2-4012. This aircraft was selected to participate in classified tests against the Lockheed P-80, and underwent a nose section changeup with **Watson's Whizzers 888**, later FE-111. The machine was given an overall reconditioning for the tests. "White 5" was with the Planes of Fame Museum in California before being transferred to Paul Allen's Flying Heritage & Combat Armor Museum in Washington State. There are plans to restore this aircraft to flying status, and it is registered as N9450, painted as "*White 9*". (USAAF Photos)






35









* Photos 1-7. Messerschmitt Me 262B-1a (Wk. Nr. **110639**), "***White 35***", one of 15 aircraft modified under contract by Blohm and Voss for use as a dual-control two seat trainer. **Watson's Whizzers 555**, "*Vera*", and later "*Willie*" flown from Germany to Cherbourg in 1945. Shipped to the USA on HMS *Reaper*, this aircraft went to the USN Armament Test Division at NAS Patuxent River, Maryland in Dec 1945 where it was designated USN (Bu No. 121448). After evaluation, it went to NART Willow Grove in Dec 1946. This aircraft has been restored and has returned to Naval Air Station Willow Grove, Pennsylvania. "*White 35*" appears to have had an operational history in *Luftwaffe* service, and was one of the few Stormbirds known to have been captured completely intact. Captured by American forces in May, 1945, it was the first jet the Americans brought into the hangar for restoration. Soon thereafter, it was named *Vera*, after Staff Sergeant Eugene Freiburger's sister-in-law. *Vera* was test flown by German test pilot Ludwig Hofmann on the 14th or 15th of May, accompanied by an American operations officer, Captain Ward, making him the first American to fly the Me 262. On the 30th of May, Hofmann's counterpart, Karl Baur, took Colonel Watson on a familiarization flight in this aircraft. "*Vera*" was used a few days later to train most of the American pilots who were tasked to fly the captured aircraft to Cherbourg. Hofmann ferried the aircraft to Melun, France with the team, where it was renamed "*Willie*" in his honor. At this time, the control number 555 was also assigned. The plane was loaded aboard the HMS *Reaper* with other captured aircraft, and transported to Newark, New Jersey. At Newark, it was transferred to the USN for flight testing. In 1993 the USN loaned 555 to the Me 262 Project for use as a pattern aircraft. 555 was returned to the USN in late 2001, and it is now back on permanent static display at Willow Grove NAS in eastern Pennsylvania. (USAAF and USN Photos)



* Photo. Messerschmitt Me 262B-1a (Wk. Nr. **110639**), "***White 35***", one of 15 aircraft modified under contract by Blohm and Voss for use as a dual-control two seat trainer. **Watson's Whizzers 555**, "*Vera*", and later "*Willie*" flown from Germany to Cherbourg in 1945. Shipped to the USA on

HMS *Reaper*, this aircraft went to the USN Armament Test Division at NAS Patuxent River, Maryland in Dec 1945 where it was designated USN (Bu No. 121448). After evaluation, it went to NART Willow Grove in Dec 1946. This aircraft has been restored and has returned to Naval Air Station Willow Grove, Pennsylvania. "*White 35*" appears to have had an operational history in *Luftwaffe* service, and was one of the few Stormbirds known to have been captured completely intact. Captured by American forces in May, 1945, it was the first jet the Americans brought into the hangar for restoration. Soon thereafter, it was named *Vera*, after Staff Sergeant Eugene Freiburger's sister-in-law. *Vera* was test flown by German test pilot Ludwig Hofmann on the 14th or 15th of May, accompanied by an American operations officer, Captain Ward, making him the first American to fly the Me 262. On the 30th of May, Hofmann's counterpart, Karl Baur, took Colonel Watson on a familiarization flight in this aircraft. "*Vera*" was used a few days later to train most of the American pilots who were tasked to fly the captured aircraft to Cherbourg. Hofmann ferried the aircraft to Melun, France with the team, where it was renamed "*Willie*" in his honor. At this time, the control number 555 was also assigned. The plane was loaded aboard the HMS *Reaper* with other captured aircraft, and transported to Newark, New Jersey. At Newark, it was transferred to the USN for flight testing. In 1993 the USN loaned 555 to the Me 262 Project for use as a pattern aircraft. 555 was returned to the USN in late 2001, and it is now back on permanent static display at Willow Grove NAS in eastern Pennsylvania. (USN Photo)





* Photos 1 & 2. Messerschmitt Me 262B-1a (Wk. Nr. 110639), "*White 35*", currently on display at Willow Grove NAS in eastern Pennsylvania. (Gregg Heilmann Photo 1, Rich Winkelmann Photo 2)

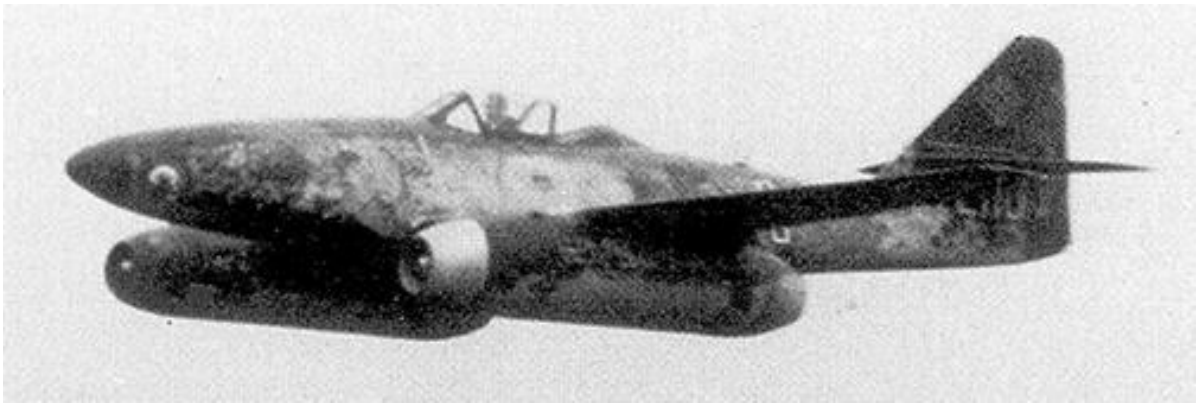






* Photo. Messerschmitt Me 262A-1a/U3 (Wk. Nr. **500098**), "***White 27***", reconnaissance version modified with bulges on the nose to accommodate film magazines for two Rb 20/30 cameras. U3 (Umrüst-Bausatz 3, Factory Modification Kit No. 3). "*White 27*" was collected at Lechfeld by the "*Feudin 54th A.D. Sq*", as painted on the starboard side by MSgt Eugene Freiburger, USAAF. **Watson's Whizzers No. 666,** painted as "*Joanne*", later "*Cookie VII".* "*White 27*" was flown to Melun, then Cherbourg, France. Shipped to the USA on HMS *Reaper,* this aircraft was allocated Foreign Equipment number FE-4011. "*White 27*" crashed at Pittsburgh on 19 Aug 1945. (USAAF Photos)

Fred Hillis named six of his Republic P-47 Thunderbolts "*Cookie*" from a nickname he gave his baby daughter Cynthia. Five of these P-47s were lost in combat, one was flown on one mission. Of the seven "*Cookies*", none of their pilots was injured or killed - good luck, and therefore, a good reason to keep the name. During Operation Iraqi Freedom in the spring of 2003, an assault helicopter flown by the 2-501st Aviation Regiment, 1st Armored Division (US Army), was christened "Cookie VIII" by her crew in honor of Hillis legacy.






FE110

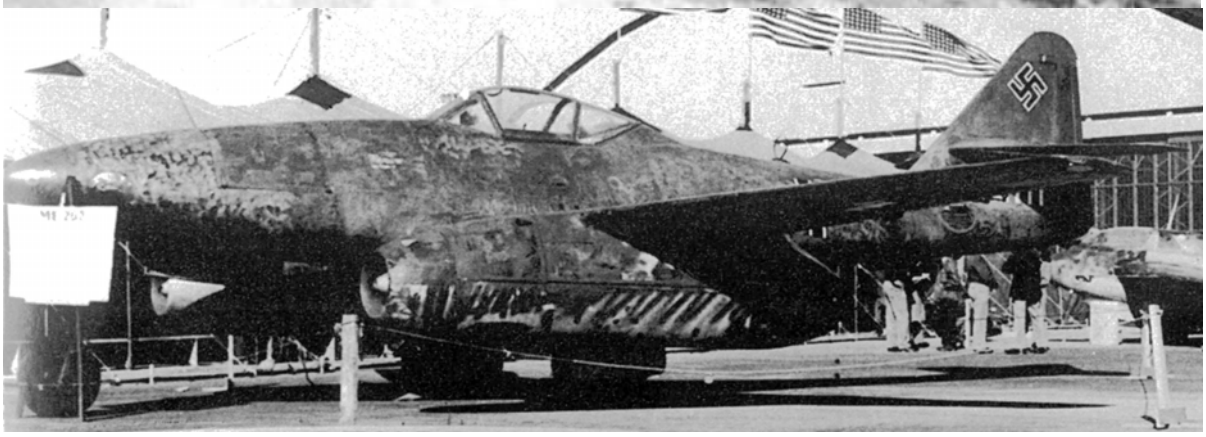

Jabo Bella





* Photos 1-4. Messerschmitt Me 262A-1a "*Schwalbe*" (Wk. Nr. **110836**). **Watson's Whizzers No. 777**, this aircraft was initially named "*Doris*" and later "*Jabo Bait*". Shipped to the USA on HMS *Reaper*, it was designated FE-110, later T2-110. (USAAF Photos).









* Photos 1-6. Messerschmitt Me 262A-1b (Wk. Nr. **500491**), "***Yellow 7***", 11./JG 7, surrendered to Allied forces on 8 May 1945 at Lechfeld. In service with *Jagdgeschwader* 7, the victory markings found on this aircraft included one P-51, one P-47 and five B-17s. The aircraft has original under wing racks for 24 R4M unguided rockets. Karl Baur test flew this aircraft for some 20 minutes on the 12th of May; well before the arrival of Watson's team. **Watsons Whizzers No. 888**, Staff Sergeant Eugene Freiburger of the 54th Air Disarmament Squadron named the plane "*Dennis",* after his son. These markings remained on the jet until it arrived in Melun, France, where Lt James (Ken) Holt re-christened it "*Ginny H".* named "*Dennis*", and then "*Ginny H*", it was flown by Lt James K. Holt. "*Yellow 7*" was shipped to the USA on HMS *Reaper*, with inventory control No. 29. "*Yellow 7*" arrived at Wright Field in August 1945, and was subsequently moved to Freeman Field, Indiana, where it remained until May 1946. At Freeman Field it was allocated Foreign Equipment number FE-111, and later T-2-111. As **Watson's Whizzers No. 444** was being prepared for a series of classified flight tests, it's reconnaissance-modified nose section was exchanged for No. 888's more streamlined fighter version. This modification took place before the plane was moved to the 803rd Special Depot storage facility at Park Ridge, Illinois in July 1946, when the jet entered long-term storage. In 1950, it was moved again, this time to the National Air Museum facility (now the Garber Facility) at Silver Hill, Maryland. In 1978, the plane was brought out of storage and fully restored, with the modified nose section returned to its original A-1 fighter configuration. "*Yellow 7*" is now on display in the National Air & Space Museum (NASM), on the Mall in Washington, D.C. (USAAF Photos)



* Photo. Messerschmitt Me 262A-1b (Wk. Nr. 500491), "*Yellow 7*", 11./JG 7, on display in the National Air & Space Museum (NASM), on the Mall in Washington, D.C. (Author Photo)


FE610


FE-610


FE-610

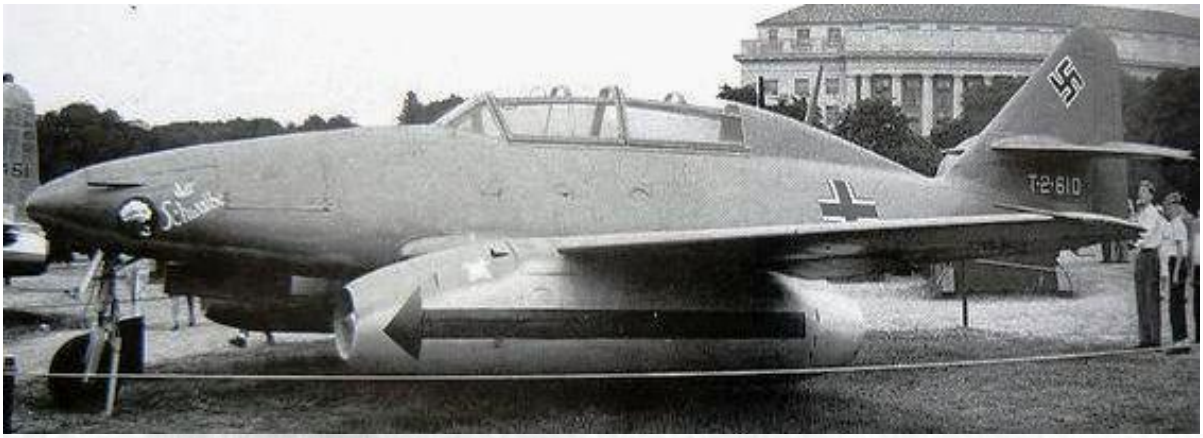

FE-610

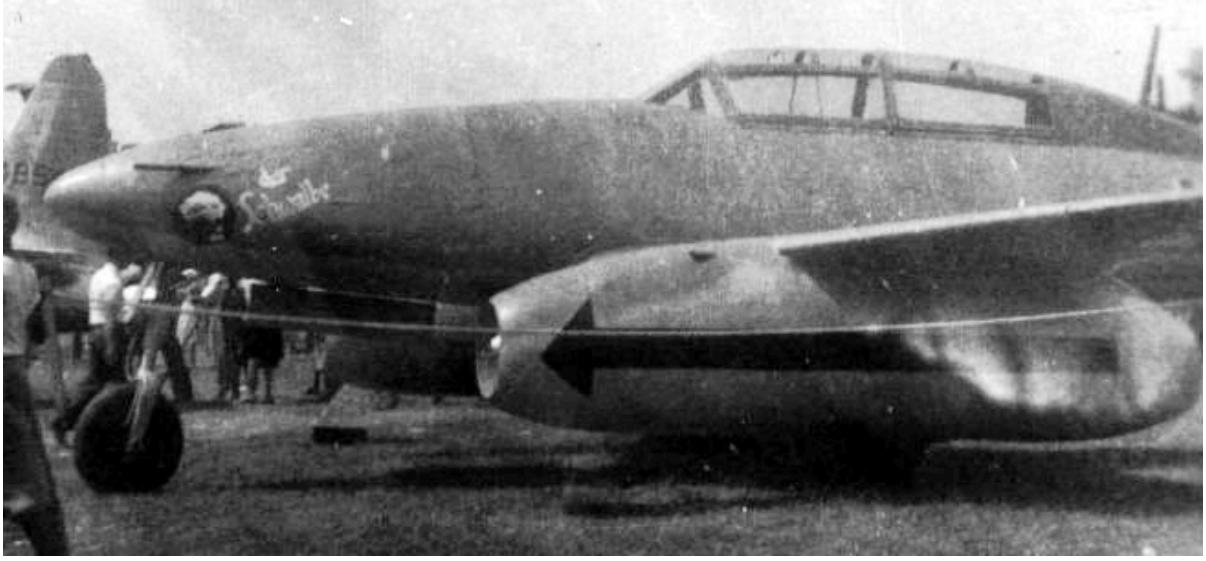






* Photos 1-6. Messerschmitt Me 262B-1a/U1 (Wk. Nr. **110306**), "***Red 6***", 10./NJGJ11, two-seat trainer converted into a provisional night fighter version equipped with FuG 218 Neptun radar and Hirschgeweih (stag antler) eight-dipole antenna array. Seven of these aircraft were used by 10/NJG.II in the defence of Berlin in April 1945. "*Red 6*" was surrendered to the RAF at Schleswig-Jagel, Germany. It was transferred to the USAAF and became **Watson's Whizzers 999**. It was shipped to the USA on HMS Reaper and then allocated FE-610, later T2-610. Later named "*Ole Fruit Cake*", and "*der Schwalbe*". FE-610 was scrapped at Freeman Field, Indiana, circa 1950. (USAAF Photos)


T-2-610






FE-SID



* Photos 1-4. Messerschmitt Me 262B-1a/U1 (Wk. Nr. **110306**), "***Red 6***", 10./NJGJ11, two-seat trainer converted into a provisional night fighter version equipped with FuG 218 Neptun radar and Hirschgeweih (stag antler) eight-dipole antenna array. Seven of these aircraft were used by 10/NJG.II in the defence of Berlin in April 1945. "*Red 6*" was surrendered to the RAF at Schleswig-Jagel, Germany. It was transferred to the USAAF and became **Watson's Whizzers 999**. It was shipped to the USA on HMS Reaper and then allocated FE-610, later T2-610. Later named "*Ole Fruit Cake*", and "*der Schwalbe*". FE-610 was scrapped at Freeman Field, Indiana, circa 1950. (USAAF Photos)





* Photos 1 & 2. Messerschmitt Me 262B-1a/U1 (Wk. Nr. **110165**), uncoded, possibly 10./NJG11, two-seat trainer surrendered to the RAF at Schleswig-Jagel, Germany, in May 1945, designated **USA 3** by the RAF, "*What was it?*". Transferred to the USAAF, **Watson's Whizzers 101.** Shipped to the USA on HMS Reaper, where it was allocated Foreign Equipment number FE-109. This aircraft went to the USN Armament Test Division at NAS Patuxent River, Maryland in Dec 1945 where it was designated USN BuNo. 121441 and test flown. It was scrapped at NAS Anacostia, Nov 1946. (RAF Photos)

Me 262s in Russia

At the end of the war the Soviet Union sent forces to an airdrome outside Prague, Czechoslovakia where they discovered two undamaged Me 262 jet fighters along with four more half-dismantled aircraft of the same type.









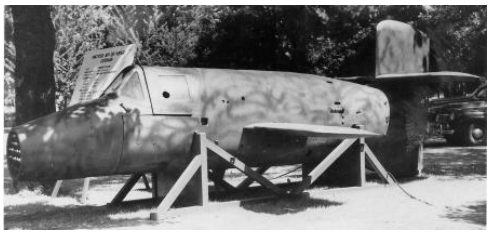


* Photos 1-5. Messerschmitt Me 262A-1 *Schwalbe,* (Wk. Nr. 110426) was dismantled and brought to the Soviet Air Forces Scientific Research Institute from the town of Schweidemuehle on 30 March 1945. Evidently the aircraft had made a gear-up forced landing judging from the damage it sustained. It was reconditioned at the experimental plant in Chkalovskaya and test flown on 15 August 1945. It became unserviceable the next day and testing had to be stopped for almost a month and a half, because the port engine malfunctioned and had to be replaced. During 12 sorties, Kochetkov managed to gather the main flight characteristics of the aircraft. Those sorties did not come easily. The last was the most difficult for Kochetkov. At the cost of tremendous physical tension and self-control, he managed to pull the aircraft out of a dive at a high altitude. In a similar situation on 17 September 1947 while flying another Me 262, test pilot F. F. Demida was killed, thus becoming one of the first victims of jet technology. General P. M. Stefanovskiy also flew the *Schwalbe*. (Soviet Air Force Photos)



(USAAF Photo)

Bachem Ba 349B Natter, one of two brought to the USA, possibly T2-1 which is currently held by the NASM, or T2-2, on display in Ohio in Sep 1945.



(USAAF Photo)

Bachem Ba 349B Natter, one of two brought to the USA.



(Author Photo)

Bachem Ba 349A-1 Natter replica on display in the Fantasy of Flight Museum, Polk, Florida.



(USAAF Photo)

Messerschmitt Me 163 Komet, (Wk. Nr. TBC), 54 brought to Freeman Field, Ohio post war.

The Messerschmitt Me 163 Komet, designed by Alexander Lippisch, was a German rocket-powered fighter aircraft. It is the only rocket-powered fighter aircraft ever to have been operational. Its design was revolutionary, and the Me 163 was capable of performance unrivaled at the time. Messerschmitt test pilot Rudy Opitz in 1944 reached 1,123 km/h (698 mph). Over 300 aircraft were built. Records indicate the Komet was responsible for the destruction of about nine Allied aircraft (16 air victories for 10 losses, according to other sources).



(USAAF Photo)

Messerschmitt Me 163B Komet, (Wk. Nr. 310051), FE 495 brought to Freeman Field, Ohio post war.

Five Me 163s were originally brought to the United States in 1945, receiving the Foreign Equipment numbers FE-495 and FE-500 to 503. An Me 163B-1a (Wk. Nr. 191301), arrived at Freeman Field, Indiana, during the summer of 1945, and received the foreign equipment number FE-500. On 12 April 1946, it was flown aboard a cargo aircraft to the USAAF facility at Muroc dry lake in California for flight testing. Testing began on 3 May 1946 in the presence of Dr. Alexander Lippisch and involved towing the unfueled Komet behind a B-29 to an altitude of 9,000–10,500 m (30,000–34,400 ft) before it was released for a glide back to earth under the control of test pilot Major Gus Lundquist.

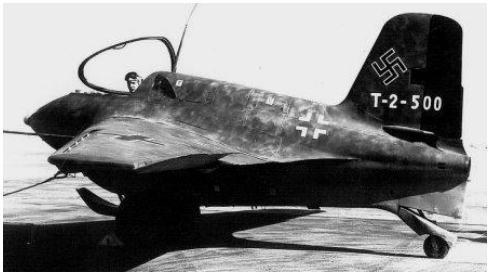

(USAAF Photo)

Messerschmitt Me 163B-1a Komet, (Wk. Nr. 191301) before receiving its USAAF FE-500 designation, later T-2-500, at Freeman Airfield, Ohio, post war.



(USAAF Photo)

Messerschmitt Me 163B-1a Komet, (Wk. Nr. 191301), USAAF FE-500 at Freeman Airfield, Ohio, post war.



(USAAF Photo)

Messerschmitt Me 163B-1a, (Wk. Nr. 191301), T-2-500 being readied for a towed test flight at the USAAF's Muroc dry lake facility in California in 1946.

Powered tests on the Me 163 were planned, but not carried out after delamination of the aircraft's wooden wings was discovered. It was then stored at Norton AFB, California until 1954, when it was transferred to the Smithsonian Institution. The aircraft remained on display in an unrestored condition at the museum's Paul E. Garber Preservation, Restoration, and Storage Facility in Suitland, Maryland, until 1996, when it was lent to the Mighty Eighth Air Force Museum in Pooler, Georgia for restoration and display. This aircraft was been returned to the Smithsonian and is on display unrestored at the National Air and Space Museum's Steven F. Udvar-Hazy Center near Washington D.C.



(NMUSAF Photo)

Messerschmitt Me 163B Komet (Wk. Nr. 191095), on display at the National Museum of the United States Air Force, Dayton, Ohio. This aircraft was acquired from the Canadian National Aviation Museum (now the Canada Aviation and Space Museum), where it had been restored, and was placed on display on 10 December 1999. Komet test pilot Rudolf "Rudi" Opitz was on hand for the dedication of the aircraft and discussed his experiences of flying the rocket-propelled fighter to a standing room only crowd. During the aircraft's restoration in Canada it was discovered that the aircraft had been assembled by French "forced labourers" who had deliberately sabotaged it by placing stones between the rocket's fuel tanks and its supporting straps. There are also indications that the wing was assembled with contaminated glue. Patriotic French writing was found inside the fuselage. The aircraft is displayed without any unit identification or Werk Nummer.


(Clemens Vasters Photo)

Messerschmitt Me 163B (Wk Nr. 191660), "Yellow 3", is owned by the Flying Heritage Collection, Evrett, Washington. Between 1961 and 1976, this aircraft was displayed at the Imperial War Museum in London. In 1976, it was moved to the Imperial War Museum, RAF Duxford. It underwent a lengthy restoration, beginning in 1997, that was frequently halted as the restorers were diverted to more pressing projects . In May 2005, it was sold, reportedly for £800,000, to raise money for the purchase of a de Havilland/Airco DH.9 as the Duxford museum had no examples of a First World War bomber in its collection. Permission for export was granted by the British government's Department for Culture, Media and Sport as three other Komets were held in British museums.


(USAAF Photo)

Messerschmitt Me 262s found in the American sector of occupation.


(USAAF Photo)

Messerschmitt Me 262 Schwalbe, 711, being test flown in the USA post war.

After arrival in the USA, most of the Me 262s were made airworthy and flown. During test flights many of the captured aircraft were involved in accidents, and often proved to be difficult to maintain. The Do 335, for example, had an engine overheat in flight, but was landed safely and later transported by road from Newark to Wright Field.[4]



(Ad Meskens Photo)

(Marcos Shuster Photo)

(Guinog Photo)

Dornier Do 335A-02 Pfeil, (Wk. Nr. 240102), on display in the Steven F. Udvar-Hazy Centre, Chantilly, Virginia. This "Arrow" haed the factory radio code registration, or *Stammkennzeichen*, of VG+PH. The aircraft was assembled at the Dornier plant in Oberpfaffenhofen, Bavaria on 16 April 1945. It was captured by Allied forces at the plant on 22 April 1945. VG+PH was one of two Do 335s to be shipped to the United States aboard the Royal Navy escort carrier HMS *Reaper*, along with other captured German aircraft, to be used for testing and evaluation under a USAAF program called "Operation Lusty". VG+PH went to the Navy for evaluation and was sent to the Test and Evaluation Center, Patuxent River Naval Air Station, Maryland. In 1975, the aircraft was restored by Dornier employees, many of whom had worked on the airplane originally.

One Do 335 (registration FE-1012) went to the USAAF and was tested in early 1946 at Freeman Field, Indiana. Its fate is not recorded.

General Watson and his pilots flew aircraft far in advance of those in the American inventory.[5] Because of their ad hoc training in piloting jet aircraft, the collection team became known as “Watson’s Whizzers” in articles written about them following the war. The “Whizzers” included: Captains Fred McIntosh, Robert C. Strobell,[6] Fred Hillis, Kenneth Dahlstrom, and a Captain Maxfield. Lieutenants James Holt, William Haynes, Robert Anspach, and Roy Brown completed the flight crews. As a symbol of their status, the pilots broke the propellers off their AAF lapel wings. MSgt Eugene Freiburger led the ground crew consisting of Sergeants Parker, Barr, Bloomer, Moon, Thompson, Box, Gibson, Taylor, Wilcoxson, and Moore, “some of the best mechanics in the world,” according to General Watson. The unit badge showed Donald Duck hanging onto a Junkers Jumo 004 engine (used to power the Me 262) and flying around the world.

Many of the “Whizzers” named aircraft after family and friends. General Watson named one of the captured Me 262s the “*Happy Hunter*” after his son. MSgt Freiburger named three of the planes, including “*Dennis*,” for his son; “*Wilma Jeanne*,” after his wife; and “*Vera*,” for a sister-in-law.



(USAAF Photo)

Messerschmitt Me 262 "*Dennis*".


(USAAF Photo)

Messerschmitt Me 262 "*Wilma Jeanne*".


(USAAF Photo)

Messerschmitt Me 262 "*Vera*".


(USAAF Photo)

Messerschmitt Me 262 "*Screamin Meamie*".



(USAAF Photo)

Messerschmitt Me 262B-1a/U1 (Wk. Nr. 110306), USAAF FE-610, at Freeman Airfield, Ohio, in 1945.

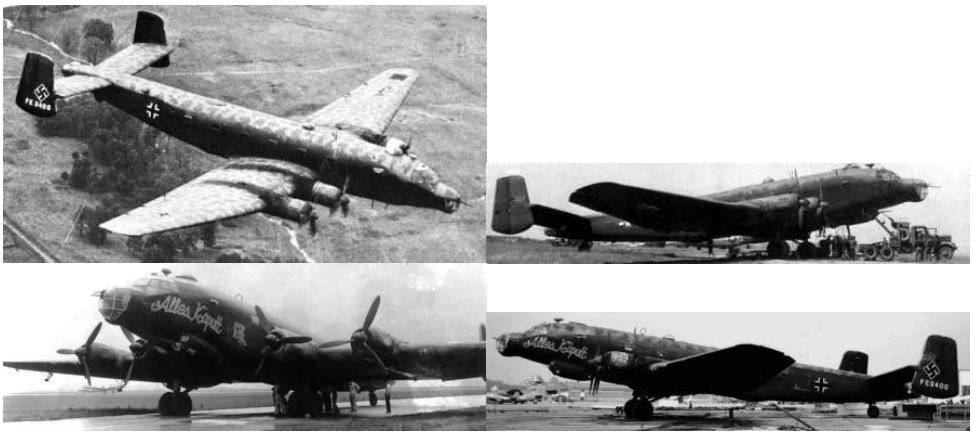

(Gojeda Photo)

Messerschmitt Me 262 (Wk. Nr. 501232) on display in the National Museum of the USAF, Dayton, Ohio.


(Clemens Vasters Photo)

Messerschmitt Me 262A-1a ,(Wk. Nr. 501232), USAAF FE-111, previously "*Beverly Anne*" and later "*Screamin' Meamie*", on display in the National Museum of the USAF, Dayton, Ohio.

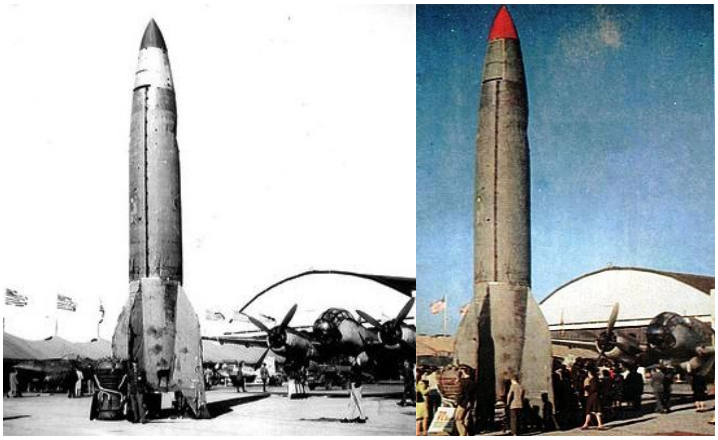
There were very real threats during the collection and testing programs, as the General's story about a Junkers Ju 290 transport reveals. As Russian troops marched through southern Czechoslovakia in May 1945, a Ju 290 loaded with 70 German men, women, and children fled to Munich, where it was claimed by the Americans. General Watson and Capt McIntosh equipped it with US radio equipment and flew it to Wright Field.[7] The flight beat the American transport aircraft record for crossing the Atlantic by more than an hour. During an inspection state-side, an explosive charge was discovered under the main fuel tank. It was disarmed without incident.



(USAAF Photos)

Junkers Ju 290A, originally coded A3+HB of Kampfgeschwader (KG) 200, captured at Munich-Reim on 6 May 1945. Later named "Alles Kaput", coded USA 022, and FE-3400, it was flown across the Atlantic to Wright Field, Ohio.

Exploitation and flight-testing of the captured German aircraft was done at Freeman Field, Indiana, and at Wright Field. Assigned as chief of the Collection Division, T-2 (Technical Intelligence), Air Materiel Command (AMC), in August 1945, Watson also got industry involved in the testing. In addition to the flight test programs, the Collection Division also directed the continuing technical collection and investigation efforts in Germany and Japan. General Watson and his staff also worked with military and civil agencies to exchange technical information. T-2's Analysis Division, then, sought ways in which to apply the information gained by the Collection Division. Technical Intelligence shared its findings with the R&D community at Wright-Patterson, the operational forces, contractors, industry, and educational institutions. Colonel Donald E. Putt was chief of T-2 at this time.



* Photos 1 & 2. V2 rocket and Junkers Ju 388 on display at Freeman Field, Indiana, post war. (USAAF Photos)

In 1946, when Freeman Field was scheduled to close, Air Technical Service Command (ATSC) had to move the aircraft. The larger aircraft were sent to Davis-Monthan Field, Tucson, Arizona, and the fighter aircraft sent to the Special Depot, Park Ridge, Illinois (now O'Hare airport), which was under the control of ATSC's Office of Intelligence. The Special Depot occupied buildings that Douglas Airplane Company had used to build Douglas C-54 Skymaster transport aircraft. The aircraft were stored in these two locations until they could be disposed of in accordance with General Arnold's order.

With the start of the Korean War in 1950, the Air Force needed the Special Depot; so the aircraft had to be moved outside. In 1953, some of the aircraft were moved to the National Air & Space Museum at Silver Hill, Maryland, and the remaining aircraft were scrapped.[8]

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[1] Phil Butler, *War Prizes*, p. 12.

[2] Phil Butler, *War Prizes*, p. 162. The top four Luftwaffe "Experten", flew the Bf 109 for many of their kills. In their the Second World War rank, they were: Major Erich Hartmann (352 kills), Major Gerhard Barkhorn (301 kills), Major Guenther Rall (275 kills), and Major Wilhelm Batz (237 kills).. *Air Progress*, July 1969, p. 74.

[3] One report indicates that in addition to "ordinary" fighters, one had a 50-mm cannon, three were pilot training aircraft, one was equipped for night fighting, and three were photographic reconnaissance aircraft.

[4] US Air Force Historical Studies Office Internet Website: https://www.airforcehistory.hq.af.mil/PopTopics/airtechintel.htm.

[5] General Watson's logbooks indicate he flew the Bf 109, the Fw 190, the He 177, the Ju 290, the Ju 388, the Me 262 and the Ar 234. Robert L. Young*, historian at the Air Force's National Air and Space Intelligence Center, Wright-Patterson AFB, Ohio, Air Force Magazine,* January 2005, Vol. 88, No. 1.

[6] Strobell had been based at 1st Tactical Air Force (Provisional) headquarters at Vital, France. A P-47 pilot with the 353rd Fighter Group, he was an experienced airman with 79 missions and a Bf-109 kill to his credit. Robert L. Young*, Air Force Magazine,* January 2005, Vol. 88, No. 1.

[7] For his test flight adventures in the Messerschmitt Me 262, Watson received the Distinguished Flying Cross. For his work with the four-engine Junkers Ju 290 bomber, he won the Air Medal. Watson also test flew the Japanese "Rita" bomber. USAF Historical Studies Office, Internet: https://www.airforcehistory.hq.af.mil/EARS/watson.htm.

[8] National Museum of the USAF, Internet: http://www.wpafb.af.mil/museum/history/the Second World War/lusty.htm.

Warplane Survivors of other Axis Countries

Axis Powers

The Axis powers also known as the Axis alliance, Axis nations, Axis countries, or just the Axis, was the alignment of nations that fought in the Second World War against the Allied forces. The alliance began in 1936 when Germany signed treaties with Italy and Japan. The "Rome-Berlin Axis" became a military alliance in 1939 under the Pact of Steel, with the Tripartite Pact of 1940 leading to the integration of the military aims of Germany and its two treaty-bound allies. At their zenith during the war, the Axis powers presided over empires that occupied large parts of Europe, Africa, East and Southeast Asia, and islands of the Pacific Ocean. The war ended in 1945 with the defeat of the Axis powers and the dissolution of the alliance. Like the Allies, membership of the Axis was fluid, with nations entering and leaving over the course of the war.

The "Axis powers" formally took the name after the Tripartite Pact was signed by Germany, Italy, and Japan on 27 September 1940, in Berlin. The pact was subsequently joined by Hungary (20 November 1940), Romania (23 November 1940), Slovakia (25 November 1940), Bulgaria (1 March 1941), and Yugoslavia (25 March 1941). Various other countries fought side by side with the Axis powers for a common cause. These countries were not signatories of the Tripartite Pact and thus not formal members of the Axis. These co-belligerents included Thailand, Finland, San Marino, and Iraq.

The Empire of Japan created a number of puppet states in the areas occupied by its military, beginning with the creation of Manchukuo (Manchuria) in 1932. These puppet states achieved varying degrees of international recognition. In addition to Manchuria, they included Mengjiang (Inner Mongolia), the Re-organized National Government of China, the Philippines (Second Republic), India (Provisional Government of Free India), Vietnam (Empire of Vietnam), Cambodia, Laos, and Burma (Baw Maw Regime).

The Italian Puppet States included Montenegro, Albania and Monaco. Germany's Puppet Regimes included Slovakia (Tiso regime), the Protectorate of Bohemia and Moravia, Serbia, Italy (Italian Social Republic), Albania (under German control), Hungary (Szalasi regime), Norway (Quisling regime), Macedonia, Belarus, and the Province of Ljubljana. Joint German-Italian puppet states included the Independent State of Croatia and Greece. The Vichy France regime was a collaborator state. Various controversial agreements were made during the war years with Argentina, Denmark, the Soviet Union, Spain and Sweden.[1]

This section focuses on the air forces and the combat aircraft in use by these nations and the locations of surviving airframes.

Axis Air Forces of Bulgaria, Hungary, Romania, Slovakia and Yugoslavia

Bulgaria

The Bulgarian Air Force was obsolete at the beginning of the Second World War. It was armed with a lot of Polish-built equipment (PZL P.11s, P.24s, P.23s and P.46s) bought in 1938-39, some Italian aircraft bought in the 1930s, and Czech aircraft bought in 1939 after Germany took over (72

Avia B-534 fighters + 32 Avia B-71 (SB-2) bombers). Over the course of the war, Bulgaria received more equipment from Germany, including 10 Messerschmitt Bf 109Es and 11 Dornier Do 17M in 1940, and 120 Dewoitine D.520 and 48 Bf 109G in 1943.[2]

At the beginning of the Second World War, the Bulgarian combat air fleet comprised 374 machines in various roles. In addition orders were placed for 10 Messerschmitt Bf 109E-4 fighters, 11 Dornier Do 17M/P bombers, 6 Messerschmitt Bf 108 light liaison and utility aircraft, 24 Arado Ar 96B-2 and 14 Bücker Bü 131 Bestmann trainers.

The Air Force order of battle comprised the 1st, 2nd, 3rd and 4th Army Aviation Orlyaks (Army Air Groups or air regiments), each attached to the correspondingly-numbered field army. Each Orlyak had a fighter, a line bomber and two reconnaissance Yatos (Squadrons). There was also an Independent Aviation corps, which combined the 5th Bomber and 6th Fighter Regiments. The training units consisted of the "Junker" School Orlyak at Vrazhdebna airfield, the 2nd Training Orlyak at Telish airfield (called the Blind Flying Training School) and the 3rd Training Orlyak at Stara Zagora airfield. In 1940, the Bulgarian aviation industry provided the HMAT with 42 DAR-9, 45 KB-5 aircraft and the serial production of the KB-6 - Bulgaria's first twin-engined aircraft was scheduled to commence. At year's end the Air Force had 595 aircraft (258 combat) and 10,287 personnel.

The Kingdom of Bulgaria entered the Second World War on 1 March 1941 as a German ally. Under the signed treaty Bulgaria allowed the use of its territory as a staging point for the invasion of Yugoslavia and Greece and some minor logistical support. Bulgaria's fighter force at the time consisted of 91 machines, with just 10 of them being of the modern Bf 109E-4 type. In addition, 11 were of the outdated PZL.24B; the remaining numbers were of the Avia B.534 biplane types. The ground-based air defences were made up of only eight 88-mm (3.5 in) and six 20-mm (0.79 in) AA guns. To help its new ally the 12th Army of the Wehrmacht offered support with its air and air defense assets and 8 Freya-type radars dispersed throughout the country. A dispersed observation and reporting system was gradually developed.



Arado Ar 196 floatplane preserved in Bulgaria. (1GonZosft Photo)

Arado Ar 196A floatplane in Bulgarian Air Force markings, Bulgarian Museum of Aviation and the Air Force Plovdive, Bulgaria. (Gonzosft Photo)

The first air strike against Bulgarian targets was carried out by 4 Yugoslav Dornier Do.17Kb-1 on 6 April 1941 on the city of Kyustendil and its railway station killing 47 and injuring 95, mostly civilians. The air strikes intensifying following days; British Royal Air Force units based in Greece participated in the attacks as well. At the end of April the 2nd and 5th Bulgarian armies occupied Greek and Yugoslav territories according to an agreement with the Third Reich. As a part of the joint armed forces' effort on 26 June 1941, six Avia B.71 and 9 Dornier Do 17M bombers were transferred to the Badem Chiflik airfield near Kavala (in modern Greece). They were tasked with ASW patrols and air support for Italian shipping over the adjacent area of the Aegean Sea. In addition 9 Letov Š.328s based in Badem Chiflik provided the ground troops with air reconnaissance. At the Black Sea shores the "Galata" Fighter Orlyak was established at NAS Chaika, Varna, with the 10 Bf 109E-4s and 6 Avia B.534s. The S.328s were also used for ASW patrols over the Black Sea, flying out of the Sarafovo and Balchik airfields. At the end of 1941 the inventory of His Majesty's Air Troops consisted of 609 aircraft of 40 different types.[3]

Avia B-534

The Avia B-534 was a Czechoslovak biplane fighter produced during the Second World War. Bulgaria bought 78 B-534s in 1939, well after the partition. The last batch of these aircraft arrived in March 1942. On 1 August 1943, seven of these aircraft were able to make two passes at American Consolidated B-24 Liberator bombers returning from the raid on Ploie?ti. Hits were scored but no B-24s were shot down and some of the B-534s that received damage in the combat, cracked up on landing. After the anti-German coup of 9 September 1944, Bulgaria switched sides overnight and its B-534s were often used in ground attacks against German units. On 10 September 1944, six B-534s were involved in a brief melee with six German Bf 109s at low altitude. One B-534 was lost, but the Germans quickly broke off, wary of the low altitude and the B-534's manoeuvrability. [4]

As German forces invaded Vichy's so-called "free zone" in November 1942, they captured 246 Dewoitine D.520s. Of these, 96, or 120, were transferred to *Vozdushni Voiski*, the Bulgarian Air Force, for use in combat. The D.520s reached Bulgaria in August 1943, as the Bulgarian fighter pilots were still training on the type at Nancy with JG 107. The following month, the first 48 Dewoitines were taken over in a ceremony on Karlovo airfield. Two months later, on 24 November, the D.520s were used in combat, when 17 out of the 60 B-24s of 15th USAAF arrived in the Bulgarian sky to bomb the capital, Sofia. Twenty four Dewoitines took off from Vrashdebna base (along with 16 Bf 109G-2s from Bojourishte) and attacked the bombers and the 35 escorting P-38s. The Bulgarian pilots claimed four American aircraft for the loss of one fighter, three more aircraft had to force land. American bombers attacked Sofia again, on 10 December 1943. That day, 31 B-24 Liberators escorted by P-38s, were intercepted by six Dewoitines of II/6th Fighter regiment from Vrashdebna and 16 D.520s of I/6th Fighter regiment from Karlov (along with 17 Bf 109G-2s). The Americans claimed 11 D.520s for the loss on only one P-38. Later records showed only one Dewoitine was lost during that air battle.

The *Vozdushni Voiski* D.520s were again up in force, to face the massive Allied air raid of 30 March 1944. To intercept the 450 bombers (B-17s, B-24s and Handley Page Halifaxes) escorted by 150 P-38s, the Bulgarians scrambled 28 Dewoitines from I./6th at Karlovo, six D.520s from II/6th at Vrashdebna (together with 39 Bf 109G-6s and even Avia 135s). At least ten Allied aircraft (eight bombers and two P-38s) where shot down, while *Vozdushni Voiski* lost five fighters and three pilots. Two more Bulgarian aircraft had to force land. During the last Allied raid on Sofia, on 17 April, the II./6th fighter scrambled seven Dewoitines (plus 16 Bf 109s) against 350 B-17s and B-24s escorted by 100 P-51 Mustangs. Bulgarians pilots, that up to that time had encountered only P-38s, mistook the P-51s for their own Bf 109 and before they realized their mistake, seven Bf 109G-6s had been shot down. That day the *Vozdushni Voiski* suffered the heaviest losses since the beginning of the war: nine fighters shot down and three that had to crash land. Six pilots lost their lives. By 28 September 1944, twenty days after Bulgaria joined the Allies, Dewoitines still equipped a *Orlyak* (Group) of 6th Fighter regiment: I Group had a total of 17 D.520s, five in repair and 12 operational, for its three *Jato* (Squadrons). [5]



Dar 10 in Bulgarian Air Force service. (Bulgarian Air Force Photo)

Aviation Museums of Bulgaria

Muzej na Aviatsyata I VVS, Bulgarian Museum of Aviation, Krumovo, Plovdiv, 4112.

www.airmuseum-bg.com. (Arado Ar 196A3, No. 3)

Nationalen Istoricheski Muzei, National Historical Museum, 16 Vitosho Lale Str, Sofia.

www.historymuseum.org.

Voenno Istoricheski Muzei, Military Historical Museum, 23 General Skobelev Blvd, Sofia. www.mod.bg/nvim/_bg/index.html.

Voenno Morski Musei, Naval Museum, 2 Primorski Blvd, Varna 9000. http://navalmuseum.dir.bg.

Hungary

The present day Hungarian Air Force (Hungarian: *Magyar Légier?*) is the air force branch of the Hungarian Army. Following the dissolution of the Austro-Hungarian Monarchy in 1918, a small air arm was established operating surviving aircraft from Hungarian factories and training schools. This air arm became the Hungarian Red Air Force under the short lived Hungarian Soviet Republic but was disbanded upon its downfall.

Under the Treaty of Trianon (1920), Hungary was forbidden from owning military aircraft. However, a secret air arm was gradually established under the cover of civilian flying clubs. During 1938, the existence of the Royal Hungarian Air Force was made known. The air arm was reorganized and expanded. On 1 January 1939, it became independent of the army. It subsequently participated in clashes with the newly established Slovak Republic and in the border confrontation with the Kingdom of Romania. In April 1941, operations were conducted in support of the German invasion of Yugoslavia and, on 27 June 1941, Hungary declared war on the Soviet Union. On 1 March 1942, the air force was returned to army control. In the summer of 1942, an air brigade was attached to the Luftwaffe's VIII. /Fliegerkors on the Eastern Front. In March 1944, Allied bomber raids began on Hungary and progressively increased in intensity. Late in 1944 all efforts were redirected towards countering the advancing Red Army, but to no avail. All fighting in Hungary ended on 16 April 1945. Following the end of the war, a small air arm was organised along Soviet lines in 1947.[6

The Museum of Hungarian Aviation displays old military and civilian aircraft and aircraft engines in Szolnok, Hungary. It is located next to the "Lt. Ittebei Kiss József" Helicopter Base of the Hungarian Air Force. The museum started out as the aircraft and technical peripherals collection of the "Kilián György Flight Technical College" in 1973. This museum stores the remains of a number of Second World War warplanes shot down over Hungary and it plays a leading role in salvaging and conservation of such wrecks. As result of these efforts the museum recovered an Il-2, two Bf 109s and a LaGG-5.[7]

During the war, Hungary produced 1,182 aircraft and 1,482 aircraft engines. Among the aircraft were 488 Bf 109s and 279 Me 210s. 158 of these aircraft were taken on strength of the RHAF. Aircraft used by the Royal Hungarian Air Force included the Arado Ar 96 trainer; Bücher Bü 131 flown as a courier aircraft; Caproni Ca 135bis bomber; Fiat CR 32; Dornier Do 215 bomber; Fiat CR.42; Fiat G.12 transport; Fieseler Fi 156 Storch; Focke-Wulf Fw 56 Weihe used as a courier/liaison aircraft; Focke-Wulf Fw 189 Uhu; and Focke-Wulf Fw 190F; Heinkel He 46; Heinkel He 112; Junkers Ju 86K-2 flown as a bomber; Junkers Ju 88A-4; Messerschmitt Bf 109G-6, Bf 109G-14 and Bf 109F-4; Messerschmitt Bf 110G-4; Messerschmitt Me 210Ca-1 (Licence-built in Hungary); Nardi FN 305 used as an advanced trainer; PZL P.11; Regianne Re.2000 Falco I (licence-built in Hungary as the Héja); and Savoia-Marchetti SM.79 bomber.[8

Royal Hungarian Air Force records claim 126 victories were achieved by the 101st Fighter Regiment/Battalion during the ten months between 14 June 1944 and 14 April 1945. On 4 May 1945, with the end of the war closing in on the them, the surviving staff of the regiment set the remaining aircraft (recorded as 47 by one source and 70 by another) on fire at Raffelding airport.[9

Aviation Museums in Hungary

A Szovjet Repuloter Titkai, Secrets of the Soviet Air Base, Berek tér, Berekfurdo, Hungary, 5309. www.soviet-airforce.com.

Kozlekedesi Muzeum, Transport Museum, 11 Varosliget korut, XIV Budapest. www.km.iif.hu.

Budapest Ferihegy Airport Museum, Ferihegy Repuloterre Vezeto Ut, Budapest Ferihegy Airport.

Pinter Muvek Military Museum, Military Technology park, Rakoczy F. Street, Kecel, H-6237 Hungary. www.pintermuvek.hu.

Repulomuzeum Szolnok, Szolnok Aviation Museum, Kilian Gyorgy utca 1, 5000 Szolnok. www.repulomuzeum.hu.

Haditechnikai Park, Route 71, H-8251 Zánka. www.zanka.hu/hirek.ws?id=294.

Romania

The Royal Romanian Air Force (Romanian: For?ele Aeriene Regale ale României, FARR), or simply For?ele Aeriene Române (Romanian Air Force) was the Air Arm of Royal Romanian forces in the Second World War. It provided support to land forces, carrying out reconnaissance and mounting air raids between other missions.

FARR flew aircraft from Germany and Italy, along with their own and other foreign aircraft, as well as a number of captured enemy aircraft. The Romanian Air Force fought against the Magyar Királyi Honvéd Légierö (Hungarian Air Force) during the Hungarian annexation of Transylvania. The most basic unit of their formations was the squadron (*Grupp*). The FARR fought alongside the Luftwaffe during the advance into the Ukraine and Crimea until the Battle of Stalingrad, when the Southern Luftwaffe Command was installed in Bucharest. It also carried out some reconnaissance and patrol missions over the Black Sea alongside Bulgarian units. The FARR was tasked with the air defence of the Ploie?ti oil installations, and also Bucharest against Allied air raids, and to protect Axis convoys in the Black Sea. These units fought against the USAAF and RAF during their raids against Romania.

The main models of aircraft flown by the FARR were the PZL P.11f (80 built in Romania), PZL P.24E (50 built in Romania), Hawker Hurricane, Heinkel He 112, Messerschmitt Bf 109E and Bf 109G (70 built in Romania) , Messerschmitt Bf 110 (for night defence), IAR 36 and IAR 80A fighters which were flown alongside other types of interceptors used by the Luftwaffe units in area. FARR bombers included 30 Heinkel He 111 and Savoia-Marchetti SM.79 (16 built in Romania under licence).

When the country was invaded by Soviet forces, King Mihai I (Michael) ordered Romanian forces to attack Axis forces, and the FARR was allied with Soviet Voenno-vozdushniye Sily against German and Hungarian forces in Transylvania and Slovakia, though some units continued to fight with the Axis in Luftwaffe volunteer units. One result f the Soviet Invasion of Poland was that a large number of Polish Air Force aircraft were interned in Romania. Also, a number of Soviet aircraft were captured during the war, as well as a few American Consolidated B-24 Liberator bombers.[10]

IAR 80



Romanian IAR 80. (Romanian Air Force Photo)

The IAR 80 was a Romanian low-wing, monoplane, all-metal monocoque fighter and ground-attack aircraft. When it first flew in 1939, it was comparable to contemporary designs such as the German Messerschmitt Bf 109E, the British Hawker Hurricane Mk. I, and the American Curtiss P-40B Tomahawk Mk. I and superior to the Dutch Fokker D.XXI and Polish PZL P.24. Romania joined the Axis in November 1940. Production problems and lack of available armament delayed entry of the IAR 80 into service until 1941. It remained in front-line use until 1944.



Romanian IAR 80 replica at the King Ferdinand National Military Museum in Bucharest. (David Holt Photo)

By 1944 the ARR fighter units included examples of 80A, B and C models, as well as 81A, B and Cs. In order to up-gun the earlier fighters as well as simplify logistics and maintenance, an upgrade program was started in mid-1944 to bring all existing airframes to the 81C armament suite of two MG 151/20s and four FN 7.92s. Various IAR.80s soldiered on in Romanian service until 1949, when they were replaced by La-9s and Il-10s. At that time the airframes with the lowest hours were modified by removing one of the fuel tanks in front of the cockpit and inserting another seat, resulting in a training aircraft called the IAR.80DC. These were used for only a short time before being replaced by Soviet Yakovlev Yak-11s and Yak-18s in late 1952.

After the Soviet occupation of Romania, within five years all remaining IAR 80s were scrapped and replaced with Soviet fighters. None of them is known to survive. An IAR 80 post war rebuilt after the fall of Communism and painted in its 1941–1944 original colors was shown at the Mihail Kog?lniceanu airshow, near Constan?a. An IAR 80 replica (No. 1) can be found at the Muzeul Aviatiei in Bucharest and another replica (No. 42) is on display in the Muzeul Militar National (National Military Museum) in Bucharest, which is a rebuild from IAR 80DC two-seat trainer parts. [11]

When Operation Barbarossa began, the IAR 80 equipped Esc. 41, 59 and 60 of *Grupul 8 Vânátoare*, part of the *Grupul Aerian de Lupta* (GAL), that were tasked to support the Romanian 3rd and 4th Armies deployed at the southern flank of the Eastern Front. These units took part in the Battle of Stalingrad. In the summer of 1943 the FARR's IAR-80s were transferred to Romania for air defense duties, where they were used in combat against the USAAF. USAAF attacks were directed at the oil refinery installation at Ploie?ti, in particular. On 1 August 1943 the IAR 80 faced the B-24 Liberator for the first time. There were 178 B-24s from 9th USAAF, part of the Operation Tidal Wave. Romanian IAR 80Bs and IAR 80Cs joined together with Bf 109Gs and Bf 110s from the Romanian night fighter squadron, dived on the low-flying, four-engined bombers, belonging to five USAAF bomber groups (the 44th, 93rd, 98th, 376th and 389th). 51 Liberator bombers were lost either in combat or on the return leg of the mission. Only 89 reached their home bases, of which only 31 were serviceable for a mission the next day. The Romanians pilots claimed 25 certain and probable victories for just two losses, one IAR 80 B and one Bf 110C. According to Romanian statistics, IARs and Messerschmitts were confirmed as having shot down ten B-24s, with two probables. On 10 June 1944, IAR 80s took part in another major air battle when the USAAF attacked Ploie?ti, with 36 Lockheed P-38 Lightnings of the 82nd Fighter Group carrying one bomb each, escorted by 39 Lightnings of the 1st and 82 FGs. IAR 81Cs from *Grupul* 6, as well as German fighters from I./JG 53 and 2./JG 77, intercepted the large American formation. The USAAF lost 22 or 23 P-38s on that day. Eight were claimed by *Grupul* 6 and the remainder were claimed by the *Luftwaffe* and by anti-aircraft gunfire. The Americans claimed 23 victories, although the Romanians and Germans each reported only one aircraft lost on that day.

In 1944 USAAF aircraft appeared over Romania in more significant numbers. Many air battles took place and by the time of their last encounter with the USAAF on 3 July 1944, Romanian pilots of *Grupul 6 vanatoare* had submitted 87 confirmed (and ten not confirmed) claims. Casualties among the Romanian fighter pilots, However, quickly mounted as well. The three IAR 80/81 groups (the 1st, 2nd and 6th) in a period of less than four months – known as the "American Campaign" – had at least 32 IAR pilots killed in action, including 11 aces. These losses exceeded the number of casualties suffered in the previous two and a half years of fighting against the Soviets. Because of these heavy losses, all IAR 80/81 units were withdrawn from combat against the Americans in July 1944 and IAR pilots started to convert to the more modern Bf 109G-6s. [12]

Royal Romanian Air Force (FARR) units:

Grupul 3° Picaj, Corpul 2° Aerian, Luftflotte 4, South Russia Front, Winter of 1943-44.

Grupul 3° Picaj, Corpul 1° Aerian, Cioara, Dolcesti, Romania August 1944; under orders of Luftwaffe, Luftflotte Kommando 4 with commands in Debrecen, Hungary.

6th Fighter Group

7th Fighter Group

8th Fighter Group (1941–1943)

9th Fighter Group

5th Bomber Group

FARR equipped with the IAR 80 during the Second World War:

1st Fighter Group FARR received IAR-80Cs aircraft in October 1943.

2nd Fighter Group FARR operated IAR-80Cs aircraft.

3rd Fighter Group FARR received IAR-80As aircraft in August 1942.

4th Fighter Group FARR received IAR-80As aircraft in July 1942. In early 1943 this unit was re-equipped with IAR-80Cs.

45th Fighter Squadron FARR based at Cetatea Alba.

46th Fighter Squadron FARR based at Cetatea Alba.

49th Fighter Squadron FARR based at Targsor.

5th Fighter Group FARR operated IAR-81Cs aircraft.

51st Dive Bomber Squadron FARR

6th Fighter Group FARR started training on IAR-80s aircraft since 27 September 1941 and in January 1942 conversion to IAR-81 begun.

61st Dive Bomber Squadron FARR operated IAR-81s aircraft.

62nd Dive Bomber Squadron FARR operated IAR-81s aircraft.

7th Fighter Group FARR received IAR-81Cs aircraft in October 1943.

8th Fighter Group FARR received first IAR-80s aircraft in February 1941. In April 1943 was transformed into 8th Assault Group FARR and reequipped with Henschel Hs 129Bs.

42/52nd Fighter Squadron FARR received first IAR-80s aircraft in July 1941.

59th Fighter Squadron FARR received first six IAR-80s aircraft in September 1941.

60th Fighter Squadron FARR operated IAR-80s aircraft.

9th Fighter Group FARR was formed in April 1942 and received IAR-80As aircraft. In April 1943 unit was re-equipped with Bf 109Gs.

Aviation Museums of Bulgaria:

Muzeul Aviatiei, National Museum of Romanian Aviation, 2-4 Fabrica de Glucoz? Street, Sector 2, Bucharest.
www.roaf.ro/en/muzeu_en.php.

Muzeul Militar National "Regele Ferdinand I", National Military Museum, Mircea Vulcanescu Street 125-127, Bucharest.
www.traseeromania.ro/muzeul-militar-national-regele-ferdinand-i-bucuresti/.

Grupul Scolar de Aeronautica Henri Coanda, B-dul Ficusului nr. 44, sector 1, Bucharest.

http://coandabucuresti.licee.edu.ro.

Slovakia

After the division of Czechoslovakia by Nazi Germany in 1939, Slovakia was left with a small air force composed primarily of Czechoslovakian combat aircraft. This force defended Slovakia against Hungary in 1939, and took part in the invasion of Poland in support of Germany. During the Second World War, the Slovak Air force was charged with the defence of Slovak airspace, and, after the invasion of Russia, provided air cover for Slovak forces fighting against the Soviet Union on the Eastern Front. While engaged on the Eastern Front, Slovakia's 24 obsolete Avia B-534 biplane fighters[13] were replaced with German combat aircraft, including the Messerschmitt Bf 109. The air force was sent back to Slovakia after combat fatigue and desertion had reduced the pilots' effectiveness. Slovak air units took part in the Slovak National Uprising against Germany from late August 1944.[14]

The Avia B-534 was a Czechoslovak biplane fighter produced during the Second World War. There are no real surviving airframes, but a B-534 replica is on display in the Prague Aviation Museum, Kbely, Czech Republic. A second replica is displayed at the Slovak Technical Museum at Košice International Airport, Slovakia. Both of these replicas use some original parts in their construction.[15]

On 1 September 1938, less than a month before the Munich Agreement would cause Czechoslovakia to lose 30% of its territory and 34% of its population, 328 B-534 and Bk-534s equipped 21 fighter squadrons of the Czechoslovak Air Force, with other aircraft being assigned to reserve and training squadrons, and deliveries continuing of the final batch of fighters. On 14 March 1939, Germany forced the partition of Czechoslovakia, with Slovakia being declared as the nominally independent Slovak Republic with Germany annexing the remaining "Czech" part of Czechoslovakia as the Protectorate of Bohemia and Moravia the next day. The *Slovenské vzdušné zbrane* (Slovak Air Force) was organised out of the units of the Czechoslovak Air Force that were based in Slovakia at the time of partition, and inherited about 71 B-534s and Bk-534s.

Slovakia quickly had to use its new formed air force, weakened by the departure of Czech pilots, to defend itself when Hungary invaded on 23 March 1939.[16] Two B-534s were shot down by Hungarian anti-aircraft fire with four more being shot down by Hungarian Fiat CR-32 fighters and another Avia making a forced landing behind Hungarian lines, and being captured.

In September 1939, Slovakia participated in the German Invasion of Poland, with the aim of regaining territories lost to Poland at Munich. Two squadrons of B-534s supported the attack, escorting *Luftwaffe* Junkers Ju 87 bombers on eight missions, losing two B-534s while claiming a single Polish RWD-8 liaison aircraft shot down. The same squadrons served with the Germans in Ukraine during summer 1941, with one squadron returning in 1942 for anti-partisan duty. Obsolescence, lack of spare parts and the old Czechoslovak air force's curious fuel mixture (BiBoLi, or some other mix of alcohol, benzol and petrol) finally relegated the surviving B-534s to training duties.

This would have been the last operational service of the B-534s in Slovak colors if not for the Slovak National Uprising of September–October 1944. The rest of the Slovak air assets did not turn-coat as expected and the leaders of the uprising were faced with using a rag-tag collection of leftover aircraft, including several B-534s at Tri Duby airfield. On 2 September 1944, Master Sergeant František Cyprich, just after testing a repaired B-534, downed a Junkers Ju 52 transport under Hungarian colours on its way to a base in occupied Poland. This was at once the first aerial victory for the Uprising and the last recorded biplane air-to-air victory. As the Slovak National Uprising was desperate for available aircraft, Sergeant Cyprich was derided by his colonel for not trying to force the Junkers Ju 52 to land and be captured instead. The last two B-534s at Tri Duby were burned as the base was evacuated on 25 October 1944.[17]

Aviation Museums of Slovakia

Muzeum Letectva, Kosice Airport, 041 75. www.stm-ke.sk/vysunute/letectvo.htm.

Vojenske Historicke Muzeum, Zilinska 6545, Piestany, 921 01.

Dopravne Muzeum, Bardejovska, Presov.

Yugoslavia

On 25 March 1941, fearing that Yugoslavia would be invaded otherwise, Prince Paul signed the Tripartite Pact with significant reservations. Unlike other Axis powers, Yugoslavia was not obligated to provide military assistance, nor to provide its territory for Axis to move military forces during the war. Yugoslavia's inclusion in the Axis was not openly welcomed; Italy did not desire Yugoslavia to be a partner in the Axis alliance because Italy had territorial aims on Yugoslavia. Germany, on the other hand, initially wanted Yugoslavia to participate in Germany's then-planned Operation Marita in Greece by providing military access to German forces to travel from Germany through Yugoslavia to Greece.

Two days after signing the alliance in 1941, after demonstrations in the streets, Prince Paul was removed from office by a coup d'état. 17-year-old Prince Peter was proclaimed to be of age and was declared king. The new Yugoslavian government under King Peter II, still fearful of invasion, stated that it would remain bound by the Tripartite Pact. Hitler, however, suspected that the British were behind the coup against Prince Paul and vowed to invade the country.

The German invasion began on 6 April 1941. Yugoslavia was a country concocted by the Treaty of Versailles as multi-ethnic state, and was heavily dominated by peoples of the Eastern Orthodox religion. With unresolved questions of national identity, resistance to the Nazi occupation was not united until major resistance groups like the partisans and Chetniks formed and began making offensives in the Balkans. Resistance crumbled in less than two weeks and an unconditional surrender was signed in Belgrade on 17 April. King Peter II and much of the Yugoslavian government had left the country because they did not want to cooperate with the Axis.

While Yugoslavia was no longer capable of being a member of the Axis, several Axis-aligned puppet states emerged after the kingdom was dissolved. Local governments were set up in Serbia, Croatia, and Montenegro. The remainder of Yugoslavia was divided among the other Axis powers. Germany annexed parts of Drava Banovina. Italy annexed south-western Drava Banovina, coastal parts of Croatia (Dalmatia and the islands), and attached Kosovo to Albania (occupied since 1939). Hungary annexed several border territories of Vojvodina and Baranja. Bulgaria annexed Macedonia and parts of southern Serbia.[18]

Aviation Museums of Yugoslavia

Aeronautical Museum – Belgrade, Internacional Airport "Nikola Tesla", PO Box 35, 11271, Belgrade.
http://www.aeronauticalmuseum.com/?jez=eng&id=1.

http://en.wikipedia.org/wiki/Museum_of_Aviation_(Belgrade). (Fieseler Fi 156C Storch (Wk Nr 9393), YU-COE 91, Focke-Wulf Fw 190F-8/R1 (Wk Nr 930838) 3, Junkers Ju 52/3m (Wk Nr 7208) 222, Junkers Ju 87B-2 (Wk Nr 9801) 0406, Messerschmitt Bf 109G-2 (Wk Nr 9663) 14792).

Co-belligerent Air Forces of Finland, Iraq, San Marino and Thailand

Finland

The Finnish Air Force (FAF or FiAF) (Finnish: *Ilmavoimat*) is one of the branches of the Finnish Defence Forces. Its peacetime tasks are airspace surveillance, identification flights, and production of readiness formations for wartime conditions. As a separate branch of the military, the Finnish Air Force is one of the oldest in the world, having existed officially since 6 March 1918.[19]

Finland was forced into the Second World War when the "Winter War"[20] began on 30 November 1939 when the Soviet Air Force bombed 21 Finnish cities and municipalities. The Soviet Union is estimated to have had about 5,000 aircraft in 1939, and of these, some 700 fighters and 800 medium bombers were brought to the Finnish front to support the Red Army's operations. As with most aerial bombardment of the early stages of the war, the damage against the Finnish industry and railways was relatively limited.

At the beginning of the Winter War, the Finnish Air Force was equipped with only 17 bombers and 31 fighters. There were also 54 liaison aircraft but 20 of these were only used as messengers. The most modern aircraft in the Finnish arsenal were the British-designed Bristol Blenheim bombers that had been license-built in Finland. The primary fighter aircraft was the Fokker D.XXI, a cheap but manoeuvrable design with a fabric-covered fuselage and fixed landing gear. In theory, this force should have been no match for the attacking Soviet Red Air Force.

In order to prevent their aircraft from being destroyed on the ground, the Finns spread out their aircraft to many different airfields and hid them in the nearby forests. The Finns constructed many decoys and built shrapnel protection walls for the aircraft. Soviet air raids on Finnish airfields usually caused little or no damage as a result, and often resulted in interception of the attackers by the Finns as the bombers flew homeward.

As the war progressed, the Finns tried desperately to purchase aircraft wherever there were any to be found. This policy resulted in a very diverse aircraft inventory, which was to cause some major logistical problems until the inventory became more standardized. The Finnish Air Force was to consist of numerous American, British, Czechoslovakian, Dutch, French, German, Italian, Soviet, and Swedish designs. Other countries, like South Africa and Denmark, sent aircraft to assist in the Finnish war effort. Many of these purchases and gifts did not arrive until the end of the hostilities, but were to see action later during the Continuation and Lapland wars.

To make up for its weaknesses of being equipped with few and obsolete fighters, the FiAF mainly focused on attacking enemy bombers from directions that were disadvantageous to the enemy. Soviet fighters were usually superior in firepower, speed and agility, and were to be avoided unless the enemy was in a disadvantageous position. A good example of the wisdom of this strategy was the surprise attack on the Immola air base in late February 1940 by some 40 Soviet fighters. The Finns were surprised during takeoff and lost seven planes, one Fokker D.XXI and six Gloster Gladiators.

As a result of these tactics, the Finnish Air Force managed to shoot down 218 Soviet aircraft during the Winter War while losing only 47 to enemy fire. The Finnish anti-aircraft gunners also had 314 confirmed downed enemy planes. 30 Soviet aircraft were captured – these were "kills" that landed more or less intact within Finland and were quickly repaired.

The Finnish Air Force was better prepared for the Continuation War.[21] It had been considerably strengthened and consisted of some 550 aircraft, though many were considered second-rate and thus "exportable" by their countries of origin. Finland purchased a large number of aircraft during the Winter War, but few of those reached service during the short conflict. Politics also played a factor, since Hitler did not wish to antagonize the Soviet Union by allowing aircraft exports through German-controlled territory during the conflict.

New aircraft types were in place by the time hostilities with Soviet Union resumed in 1941. Small numbers of Hawker Hurricanes arrived from the United Kingdom, Morane-Saulnier M.S.406s from France, Fiat G.50s from Italy, a few dozen Curtiss Hawk 75s captured by the Germans in France and Norway then sold to Finland, when Germany began warming up its ties with Finland, and numerous Brewster B239s from the neutral USA strengthened the FiAF. The FiAF proved capable of holding its own in the upcoming battles with the Red Air Force. Older models, like the Fokker D.XXI and Gloster Gladiator, were replaced in front-line combat units with the new aircraft.

A small number of Caudron C.714 light fighter aircraft developed by Caudron-Renault for the French Armée de l'Air just prior to the start of the Second World War were supplied to Finland. Six Caudron C.714s were received in a semi-assembled state. An additional 10 were on the dockside at the time of France's Armistice with Germany, subsequently, further shipments were halted. After assembly, operations in Finland were limited to test flights and, in September 1941, combat flights with the fighters were prohibited. The aircraft were maintained on the roster until they were retired and scrapped on 30 December 1949. One example, *CA-556* was transferred to the maintenance personnel school as an instructional airframe.[22]

The FiAF's main mission was to achieve air superiority over Finland and prevent Soviet air power from reinforcing their front lines. The fighter squadrons were very successful in the Finnish offensive of 1941. A stripped-down, more manoeuvrable, and significantly lightened version of the American Brewster B239 Buffalo was the FiAF's main fighter until 1943. Results with this fighter were very good, even though the type was considered to be a failure in the US Navy and with British Far East forces. In the Finnish use, the Brewster had a victory rate of 32:1 – 459 kills to 15 losses. German Messerschmitt Bf 109s replaced the Brewster as the primary front-line fighter of the FiAF in 1943, though the Buffalos continued in secondary roles until the end of the wars.

Other types of aircraft, especially the Italian Fiat G.50 and Curtiss Hawk 75 also proved capable in the hands of well-trained Finnish pilots. Various Russian designs also saw action when lightly damaged "kills" were repaired and made airworthy.

Dornier Do 17s (received as a gift from Hermann Göring in 1942) and Junkers Ju 88s improved the bombing capability of the Finnish Air Force. The bomber force was also strengthened with a number of captured Soviet bombers, which had been taken in large numbers by the Germans during Operation Barbarossa. The bomber units flew assorted missions with varying results, but a large part of their time was spent in training, waiting to use their aircraft until the time required it. Thus the bomber squadrons of Flying Regiment 4 were ready for the summer battles of 1944, including the Battle of Tali-Ihantala.

While the FiAF was successful in its mission, the conditions were not easy. Spare parts for the FiAF planes were scarce - parts from the US (Buffalo & Hawk), Britain (Hurricanes), and Italy (G.50) were unavailable for much of the war. Repairs took often a long time, and the State Aircraft Factory was burdened with restoration/repair of Soviet war booty planes, foreign aircraft with many hours of flight time, and the development of indigenous Finnish fighter types. Also, one damaged bomber took up workshop space equalling three fighters. Finland was required to expel or intern remaining German forces as part of its peace agreement with the Soviets in mid-1944. As a result, the final air battles were against retreating Luftwaffe units. The Finnish Air Force did not bomb any civilian targets during either war. Curiously, overflying Soviet towns and bases was also forbidden, as to avoid any unneeded provocations and to spare equipment. According to Kalevi Keskinen's and Kari Stenman's book *Aerial Victories 1–2*, the Finnish Air Force shot down 1,621 Soviet aircraft while losing 210 of its own aircraft during the Continuation War.[23]

Preserved combat aircraft from the Winter War and Continuation War in Finland include:

Polikarpov I-16UTI two-seat trainer, Reg. No. UT-1, in the Keski-Suomen Ilmailumuseo, Tikkakoski, Finland;

Hawker Hurricane Mk. I, (Serial No. HC-452), ex N2394, Keski-Suomen Ilmailumuseo, Tikkakoski, Finland;

Hawker Hart, Reg. No. Fv 714, displayed in Finnish Air Force markings in the Flygvapenmuseum, Linköping, Sweden. This aircraft was part of the F19 volunteer force sent to Finland.

Gloster Gladiator, (Serial No. G5/59066), Yellow H, Rweg. No. Fv 278, displayed in Finnish Air Force markings in the Flygvapenmuseum, Linköping, Sweden. This aircraft was also part of the F19 volunteer force sent to Finland.

Gloster Gauntlet, (Serial No. GT-400), ex-K5271, Lentomuseo Kymi, Finland.

Fokker D.XXI III/11, Reg. No. FR-110, partial replica, in the Keski-Suomen Ilmailumuseo, Tikkakoski, Finland;

Curtiss Hawk 75A-6, (Serial No. 13659), Reg. No. CU-554, recovered in Russia, now under restoration in New Zealand.

Caudron C.714, No. 6, Reg. No. CA-556, Vesivehmaan Varastohalli, Lahti, Finland.

Brewster B-239, No. 39, Reg. No. BW-372, recovered from Russia in 1998, being restored at the National Museum of Naval Aviation, Pensacola, Florida.

VL Humu, (Serial No. 632567), Reg. No. HM-671, Keski-Suomen Ilmailumuseo, Tikkakoski, Finland;

VL Pyry Mk. II, No. 26, Reg. No. PY-27, Suomen Ilmailumuseo, Helsinki, Finland.

VL Pyörremyrsky, No. 1, Reg. No. PM-1, Keski-Suomen Ilmailumuseo, Tikkakoski, Finland;

Bristol Bulldog Mk. IV, (Serial No. 7810), Reg. No. BU-59, Hallinporti Ilmailumuseo, Halli, Tampere, Finland.

Bristol Blenheim Mk. IV, VI/3, Reg. No. BL-200, Keski-Suomen Ilmailumuseo, Tikkakoski, Finland;

Blackburn Ripon IIF, No. 12, Reg. No. RI-140, Vesivehmaan Varastohalli, Lahti, Finland.

Aero A-32 biplane, Reg. No. AEj-59, Vesivehmaan Varastohalli, Lahti, Finland.

Aviation Museums of Finland

Hallinportii Ilmailumuseo, Hallinportii Aviation Museum, Haukilahdentie 3, 35600 Halli.

Museo Torpin Tykit, The Cannons at Torp Museum, Torppanummentie 73, 10210 Inkoo.

http://torpintykit.suntuubi.com/.

Flying Museum of Karhula's Flying Club, Kymi Airport. http://users.kymp.net/model0449/e_etumus.htm.

Aviation Museum Association of South-East Finland, Kaakkois Suomen Ilmailumuseo, Lappeenranta Airport, 53600 Lappeenranta.

Keski-Suomen Ilmailumuseo, Aviation Museum of Central Finland, 41160 Tikkakoski.

http://www.k-silmailumuseo.fi/. (BW-372 Brewster Buffalo, Messerschmitt Bf 109G-6Y (MT-507/O)).

Suomen Ilmailumuseo, Finnish Aviation Museum, Helsinki-Vantaa Airport, Tietotie 3, 01530 Vantaa. http://www.ilmailumuseo.fi/. (Fieseler Fi 156K-1 Storch (OH-FSA), Messerschmitt Bf 109G-2 (MT-208)

Ilmatorjuntamuseo, Anti-Aircraft Museum, Klaavolantie 2, 04300 Tuusula. http://www.ilmatorjuntamuseo.fi/.

Paijat-Hameen Ilmailumuseo, Finnish Aviation Museum Society Storage Hangar, Lahti-Vesivehmaa Airfield, Lentokentta, 17130 Vesivehmaa. http://www.lahdenilmasilta.fi/.

Iraq

The Kingdom of Iraq was briefly an ally of the Axis, fighting the United Kingdom in the Anglo-Iraqi War of May 1941. Anti-British sentiments were widespread in Iraq prior to 1941. Seizing power on 1 April 1941, the nationalist government of Iraqi Prime Minister Rashid Ali repudiated the Anglo-Iraqi Treaty of 1930 and demanded that the British abandon their military bases and withdraw from the country. Ali sought support from Germany and Italy in expelling British forces from Iraq.

On 9 May 1941, Mohammad Amin al-Husayni, the Mufti of Jerusalem and associate of Ali, declared holy war against the British and called on Arabs throughout the Middle East to rise up against British rule. Hostilities between the Iraqi and British forces began on 2 May 1941, with heavy fighting at the RAF air base in Habbaniyah. On 25 May 1941, the Germans stepped up offensive operations. The Germans and Italians dispatched aircraft and aircrew to Iraq utilizing Vichy French bases in Syria, which would later provoke fighting between Allied and Vichy French forces in Syria.

The Germans planned to coordinate a combined German-Italian offensive against the British in Egypt, Palestine, and Iraq. Iraqi military resistance ended by 31 May 1941. Rashid Ali and the Mufti of Jerusalem fled to Iran, then Turkey, Italy, and finally Germany, where Ali was welcomed by Hitler as head of the Iraqi government-in-exile in Berlin.[24]

During the time leading up to the coup d'etat, Rashid Ali's supporters had been informed that Germany was willing to recognise the independence of Iraq from the British Empire. There had also been discussions on war material being sent to support the Iraqis and other Arab factions in fighting the British. On 6 May 1941, in accordance with the Paris Protocols, Germany concluded a deal with the Vichy French government to release war materials, including aircraft, from sealed stockpiles in Syria and transport them to the Iraqis. The French also agreed to allow passage of other weapons and material as well as loaning several airbases in northern Syria, to Germany, for the transport of German aircraft to Iraq. Between 9 May and the end of the month, about one-hundred German and about twenty Italian aircraft landed on Syrian airfields.

Also on 6 May *Luftwaffe* Colonel Werner Junck received orders that he was to take a small force to Iraq, where they were to operate out of Mosul. The British quickly learned of the German arrangements through intercepted Italian diplomatic transmissions. Between 10 and 15 May the aircraft arrived in Mosul via Vichy French airbases, in Syria, and then commenced regular aerial attacks on British forces. The arrival of these aircraft was the direct result of fevered consultations between Baghdad and Berlin in the days following air strikes carried out by Air Vice-Marshal Smart on Iraqi forces above Habbaniya. The *Luftwaffe* force, under the direction of Lieutenant General Hans Jeschonnek, was named "*Fliegerführer Irak*" (Flight Commander Iraq) and was under the tactical command of Colonel Werner Junck. At least 20 bombers were initially promised however in the end Junck's unit consisted of between 21 and 29 aircraft all painted with Royal Iraqi Air Force markings.

On 14 May 1941, Winston Churchill gave the RAF authorisation to act against German aircraft in Syria and on Vichy French airfields. On the same day, two over-laden Heinkel He 111 bombers were left in Palmyra in central Syria because they had damaged rear wheels. British fighters entered French air space and strafed and disabled the damaged Heinkels. By 18 May, Junck's force had been whittled down to eight Messerschmitt Bf 110 fighters, four Heinkel He 111 bombers, and two Junkers Ju 52 transports. This represented roughly a 30 percent loss of his original force. Near the end of May, Junck had lost 14 Messerschmitts and 5 Heinkels.

On 27 May, after being invited by Germany, 12 Italian Fiat CR.42s of the *Regia Aeronautica Italiana* arrived at Mosul to operate under German command and by 29 May, Italian aircraft were reported in the skies over Baghdad. In the end the *Luftwaffe* found conditions in Iraq intolerable, as spare parts were not available and even the quality of aircraft fuel was far below the *Luftwaffe's* requirements. With each passing day fewer aircraft remained serviceable and, ultimately, all *Luftwaffe* personnel were evacuated on the last remaining Heinkel He 111.[25]

San Marino

San Marino was ruled by the Sammarinese Fascist Party (PFS) from 1923 and was closely allied to Italy. On 17 September 1940, San Marino declared war on Britain; Britain and the other Allied nations did not reciprocate. San Marino restored relations with Germany, as it did not attend the 1919 Paris Peace Conference. This was done to avoid a repeat of the 1936 incident when San Marino denied a Turkish student entry because he was an enemy alien.

Three days after the fall of Mussolini, PFS rule collapsed and the new government declared neutrality in the conflict. The Fascists regained power on 1 April 1944, but kept neutrality intact. On 26 June, the Royal Air Force accidentally bombed the country, killing 63 civilians. The Fascists and the Axis used this tragedy in propaganda about Allied aggression against a neutral country.

Retreating Axis forces occupied San Marino on 17 September 1944, but were forced out by the Allies in less than three days. The Allied occupation removed the Fascists from power, and San Marino declared war on Germany on 21 September 1844. The newly elected government banned the Fascists on 16 November 1944.[26]

Aviation Museum of Rimini - San Marino

Parco Tematico & Museo dell'Aviazion, Superstrada Rimini – San Marino, Km. 8.500, Via S. Aquilina, 58 Rimini.
www.museoaviazione.net/.

Thailand

The Royal Thai Air Force or RTAF is the air force of the Kingdom of Thailand. Since its establishment in 1913, as one of the earliest air forces of Asia, the Royal Thai Air Force had engaged in many major and minor battles.

In early 1935, Thailand placed an order for 24 Curtiss Hawk IIIs at a cost of 63,900 Baht each, and a manufacturing license was also bought. The first 12 Hawk IIIs were shipped to Thailand in August and the remaining 12 arrived in late 1935, which were named Fighter Type 10. A total of 50 Hawk IIIs were locally built during 1937 and 1939. The type was used against the French in the Franco-Thai War and the Japanese invaders in December 1941, and then relegated for use as trainers. Some of these aircraft were still active in 1949 and one airframe (KH-10) survives in the Royal Thai Air Force Museum.

During the French-Thai War, the Thai Air Force flew the Vought V-93S (American export version of the O3U-6) Corsair biplane scout and observation aircraft and scored several air-to-air-victories against the Vichy France Armée de l'Air.

The Vought O2U Corsair was a 1920s biplane scout and observation aircraft. Made by Vought Corporation, the O2U was ordered by the United States Navy (USN) in 1927. Powered by a 400 hp (298 kW) Pratt & Whitney R-1340 Wasp engine, it incorporated a steel-tube fuselage structure and a wood wing structure with fabric covering. Many were seaplanes or amphibians. A single AXV1 (O2U) was supplied to the Imperial Japanese Navy Air Service for evaluation in 1923.[27]

During the Second World War the Thai Air Force supported the Royal Thai Army in its occupation of the Burmese Shan States as allies of the Japanese in 1942 and defended Bangkok from allied air raids during the latter part of the war. Some RTAF personnel also assisted the anti-Japanese resistance. During the war five Ki-27s fought in a dogfight with eight North American P-51 Mustangs and 9 Lockheed P-38 Lightnings over Lampang Province in Thailand. The RTAF lost all Ki-27s, but claimed they shot down one P-38 and badly damaged two P-51s. An RTAF Nakajima Ki-43 shot down one USAAF Boeing B-29.[28]

Aviation Museums in Thailand

Royal Thai Air Force Museum, Thanon Phahon Yothin, Don Muang Airport, Bangkok.

www.rtaf.mi.th/museum/main%20index.html.

Royal Thai Army Aviation Museum, Lop Buri/Sa Pran Nak, Khao Phra Ngam.

Jesada Technik Museum, 100 Moo 2 Ngew-rai, Nakhon Chaisri, Nakhon Pathorn 73120.

www.jesadatechnikmuseum.com.

Empire of Japan Puppet State Air Forces of Manchukuo (Manchuria), Mengjiang (Inner Mongolia), the Re-organized National Government of China, the Philippines (Second Republic), India (Provisional Government of Free India), Vietnam (Empire of Vietnam), Cambodia, Laos, and Burma (Baw Maw Regime)

The government of the Empire of Japan viewed all the lands of Asia to be the rightful property of the Imperial Japanese Government and the Emperor. The land invasion of Korea, China and parts of Russia, which had begun at the turn of the 20th century, had been taking an upswing. The Japanese had been kept from realizing their goal of unifying or dominating the Asian lands by the presence of foreign military forces in the Philippines (United States), Hong Kong, Malaysia (United Kingdom) and the Dutch East Indies. Japan had hoped that they could strike fast and hold off reinforcements long enough to broker a peace accord from a position of strength such as they had done during the Russo Japanese War.

Central to the Japanese goals was the taking of all Asian lands. To be successful US, UK, and Dutch forces were to be attacked simultaneously to prevent their ability to reinforce and aid their Asian possessions. Pivotal to the Japanese decision to attack was a tremendous need for crude oil as a result of economic sanctions imposed by the United States, the United Kingdom and the Netherlands which was weakening the Japanese economy. The Japanese leaders were faced with a choice: end the war in China and their plans for Asian conquest, so as to end the sanctions, or declare war on three large military forces. The current war against Britain, and Holland, and the strain of providing aid by the United States to these countries was seen as an opportunity by the Japanese to extend their "rightful" place as a ruler in Asia.

The Japanese government decided to seize resources under the control of Britain, the United States and the Netherlands. Japan had already placed over ten divisions in Formosa (Taiwan). Japanese military planners argued that the British (and the USSR should they decide to declare war), would be unable to effectively respond to a Japanese attack, given the threat posed by the Third Reich.[29]

Manchukuo (Manchuria)

Before the Second World War, the Japanese colonized Manchukuo and used it as a base from which to invade China. I n the summer of 1939 a border dispute between Manchukuo and the Mongolian People's Republic resulted in the Battle of Khalkhin Gol. During this battle, a combined Soviet-Mongolian force defeated the Japanese KwantungArmy supported by limited Manchukuoan forces.

On 8 August 1945, the Soviet Union declared war on Japan, in accordance with the agreement at the Yalta Conference, and invaded Manchukuo from outer Manchuria and Outer Mongolia. This was called the Manchurian Strategic Offensive Operation.[30]

The Manchukuo Imperial Air Force was established in February 1937, initially with 30 men selected from the Manchukuo Imperial Army and trained at the Japanese Kwantung Army aircraft arsenal in Harbin. The official air force's predecessor was the Manchukuo Air Transport Company (later renamed the Manchukuo National Airways) a paramilitary airline formed in 1931, which undertook transport and reconnaissance missions for the Japanese military.

The first air unit of the Manchukuo Air Force was established at the airfield in Xinjing, under the command of 1st Lieutenant Uta, and initially had only one aircraft: a French-built Nieuport-Delage NiD 29 biplane. Kawasaki Type 88 (KDA-2) light bombers and Nakajima Type 91 fighters were later supplied from Japan. A second air unit was established in Fengtien and the third air unit in Harbin from 1938-1939. In July 1940, an Air Defense HQ was created in Xinjing.

Initially, only Japanese pilots and ground crews were also deployed. After 1940, the Japanese allowed native ethnic Manchus to receive pilot training. On 30 August 1940, a flight school was established in Fengtien to teach both military and civil pilots. The training program received a severe setback in January 1941 when approximately 100 pilot cadets rebelled, and fled to join to anti-Japanese guerillas after killing their instructors. During September to October 1942 the school received more than twenty training aircraft, including Tachikawa Ki-9 "Spruce", Tachikawa Ki-55 "Ida" and Mansy? Ki-79 advanced trainers.

In addition, a transport section with three Nakajima Ki-34 passenger aircraft was established to serve the needs of the imperial court. Additional Junkers Ju-86Z-2, Tachikawa Ki-54 "Hickory" and Mansh? Hayabusa provided for government transportation needs. From 1944, the Manchukuo Imperial Air Force came under the command of the Japanese 2nd Air Army. At that point, it had around 100 to 120 combat aircraft.

From 1941 to the end of the Second World War, the main equipment of the Manchukuo Air Force was the Nakajima Ki-27b "Nate" light fighter. Money to pay for these fighters was "donated" by various Japanese companies based in Manchukuo. Primarily a fighter force, the only tactical bomber in Manchukuo service during the war was the Kawasaki Ki-32.

The Manchukuo Air Force requested Type 1 Nakajima Ki-43 IIa Hayabusa "Oscar" and Type 2 Nakajima Ki-44 IIb Shoki "Tojo" fighter/interceptors from Japan in early 1945. However, these more advanced aircraft were supplied in only small numbers.

As American air raids against Manchukuo increased in frequency towards the end of the war, the Manchukuo Air Force resorted to Kamikaze tactics, with the first successful ramming attack (by a Ki-27) on a USAAF Boeing B-29 Superfortress strategic bomber occurring in December 1944. The Manchukuo Air Force also suffered from a chronic shortage of fuel, as Japanese military aviation had first claim to supplies.

In 1945, the American air raids against Manchuria decreased and the threat of the Soviet invasion increased. The Manchukuo Air Force changed its training from interception to emphasize ground attack against armored vehicles. During the Soviet Union's invasion of Manchukuo, the Japanese 2nd Air Army ordered the Manchukuo Air Force to train for suicide attacks against Soviet tanks. However, the war ended before attack plans could be executed.[31]

From 1945 to 1948, Manchuria (Inner Manchuria) served as a base area for the People's Liberation Army in the Chinese Civil War against the Kuomintang (KMT). With Soviet encouragement, the Chinese Communists used Manchuria as a staging ground until the end of the Chinese Civil War in 1949. Many Manchukuo army and Japanese Kantogun personnel served with the communist troops during the Chinese Civil War against the Nationalist forces. Most of the 1.5 million Japanese who had been left in Manchukuo at the end of the Second World War were sent back to their homeland in 1946-1948 by US Navy ships in an operation now known as the Japanese repatriation from Huludao.[32]

Mengjiang (Inner Mongolia)

Mengjiang was a Japanese puppet state in Inner Mongolia. It was nominally ruled by Prince Demchugdongrub, a Mongol nobleman descended from Genghis Khan, but was in fact controlled by the Japanese military. Mengjiang's independence was proclaimed on 18 February 1936, following the Japanese occupation of the region. The Inner Mongolians had several grievances against the central Chinese government in Nanking, including their policy of allowing unlimited migration of Han Chinese to the region. Several of the young princes of Inner Mongolia began to agitate for greater freedom from the central government, and it was through these men that Japanese saw their best chance of exploiting Pan-Mongol nationalism and eventually seizing control of Outer Mongolia from the Soviet Union.

Japan created Mengjiang to exploit tensions between ethnic Mongolians and the central government of China, which in theory ruled Inner Mongolia. When the various puppet governments of China were unified under the Wang Jingwei government in March 1940, Mengjiang retained its separate identity as an autonomous federation. Although under the firm control of the Japanese Imperial Army, which occupied its territory, Prince Demchugdongrub had his own independent army.

Mengjiang vanished in 1945 following Japan's defeat in the Second World War. As Soviet forces advanced into Inner Mongolia, they met limited resistance from small detachments of Mongolian cavalry, which, like the rest of the army, were quickly overwhelmed.[33]

Re-organised National Government of China

During the Second Sino-Japanese War, Japan advanced from its bases in Manchuria to occupy much of East and Central China. Several Japanese puppet states were organized in areas occupied by the Japanese Army, including the Provisional Government of the Republic of China at Beijing, which was formed in 1937, and the Reformed Government of the Republic of China at Nanjing, which was formed in 1938. These governments were

merged into the Reorganized National Government of China at Nanjing on 29 March 1940. Wang Jingwei became head of state. The government was to be run along the same lines as the Nationalist regime and adopted its symbols.

The Nanjing Government had no real power; its main role was to act as a propaganda tool for the Japanese. The Nanjing Government concluded agreements with Japan and Manchukuo, authorising Japanese occupation of China and recognising the independence of Manchukuo under Japanese protection. The Nanjing Government signed the Anti-Comintern Pact of 1941 and declared war on the United States and the United Kingdom on 9 January 1943.

The government had a strained relationship with the Japanese from the beginning. Wang's insistence on his regime being the true Nationalist government of China and in replicating all the symbols of the Kuomintang led to frequent conflicts with the Japanese, the most prominent being the issue of the regime's flag, which was identical to that of the Republic of China.

The worsening situation for Japan from 1943 onwards meant that the Nanking Army was given a more substantial role in the defence of occupied China than the Japanese had initially envisaged. The army was almost continuously employed against the communist New Fourth Army.

Wang Jingwei died on 10 November 1944, and was succeeded by his deputy, Chen Gongbo. Chen had little influence; the real power behind the regime was Zhou Fohai, the mayor of Shanghai. Wang's death dispelled what little legitimacy the regime had. The state stuttered on for another year and continued the display and show of a fascist regime.

On 9 September 1945, following the defeat of Japan, the area was surrendered to General He Yingqin, a nationalist general loyal to Chiang Kai-shek. The Nanking Army generals quickly declared their alliance to the Generalissimo, and were subsequently ordered to resist Communist attempts to fill the vacuum left by the Japanese surrender. Chen Gongbo was tried and executed in 1946.[34]

Aviation Museums in China

Oriental Green Boat Park, 6,888, Hu-Qing-Ping Expressway, Anzhuang, Shanghai, 201713. www.orientalland.com.cn.

Beijing Aviation Museum/Beihang University (BUAA), Xue Yuan Road No. 37, Hai Dian District, Beijing, 100083.

China Civil Aviation Museum, Zhongguo Minhang Bowuguan, Xiedao, Beijing.

www.caacmuseum.org.

Chinese People`s Revolution Military Museum, No. 9, Fuxing Road, Haldian District, Beijing. www.chinamil.com.cn/item/jb/index.htm. (Tachikawa Ki-36 (103/2)).

Chinese Space Museum, South Dahongmen Road, Box No. 1, Beijing Fengtai District, Beijing 100076. www.casc-csm.com.

Qingdao Naval Museum, 8 Laiyang Road, Shi Nan District, Hui Quan Bay Area (Lu Xun Park), Qingdao, Shandong Province, 266071.

China Aviation Pavilion, Shanghai World Expo 2010, Nancun, Shanghai. www.airexpo2010.com.

Museum and the Exhibition Hall of Shanghai Aerospace, No. 22 Caoxi Road, Caohejing High-Tech Area, Shanghai. www.shapc.org.

Xinjiang Army Reclamation Museum, Shihezi.

China Aviation Museum, Shahezhen Air Force Base, Datangshan, Xiaotangshan, Chang Ping County, Beijing. www.chn-am.com/mewEboz1/EbizPortalFG/portal/html/index.html. (Kawasaki Ki-48-II replica).

Philippines (Second Philippine Republic)

The Commonwealth of the Philippines was invaded by the Empire of Japan in December 1941 shortly after Japan's declaration of war upon the United States of America, which controlled the Philippines at the time and possessed important military bases there. The Philippine Army Air Corps engaged the Japanese on their invasion of the Philippines in 1941-1942. Many of the officers of the Philippine Army and Philippine Army Air Corps came from the members of the Philippine Constabulary and Air Constabulary. Most of their aircraft were withdrawn after the combined American-Filipino army was defeated by April 1942. Guerrilla resistance against the Japanese continued throughout the war. Filipino army units that had not been captured as well as a communist insurgency and supporting American agents all played a role in the resistance. Due to the huge number of islands, the Japanese did not occupy them all. Japanese control over the countryside and smaller towns was often tenuous at best. Allied forces liberated the islands from Japanese control in 1944, in a naval invasion.[35]

The Second Philippine Republic, officially known as the Republic of the Philippines (Tagalog: *Repúbliká ng Pilipinas*), was a state in the Philippines established on 14 October 1943 under Japanese occupation. President Manuel L. Quezon declared Manila, the capital, an "open city" and left it under the rule of Jorge B. Vargas, as mayor. The Japanese entered the city on 2 January 1942 and established it as the capital. Japan fully captured the Philippines on 6 May 1942, after the Battle of Corregidor.

General Masaharu Homma dissolved the Commonwealth of the Philippines and established the Philippine Executive Commission, a caretaker government, with Vargas as its first chairman. All political parties were banned and replaced by the non-partisan, authoritarian KALIBAPI–*Kapisanan sa Paglilingkod sa Bagong Pilipinas* (Tagalog for the "Organization in the Service of the New Philippines"). KALIBAPI's director-general was Benigno S. Aquino.

A constitution was formed by the Preparatory Commission for Independence, consisting of 20 members from the KALIBAPI. The Preparatory Commission, led by José P. Laurel, presented its draft Constitution on 4 September 1943 and three days later, the KALIBAPI general assembly ratified the draft Constitution.

In September 1944, Laurel officially declared war against the United States and United Kingdom. Following the return of American-led Allied forces, the government of the Second Republic evacuated from Manila and moved to Baguio. Laurel then placed the Republic under Martial Law on 22 March 1945 after the joint American and Filipino troops liberated Manila. The republic was formally dissolved by Laurel in Tokyo on 17 August 1945.[36]

Aviation Museums in the Philippines

Air Force City Park, Clark Field.

Philippine Air Force Museum, Pasay 1309, Villamor Air Base, Ninoy Aquino International, Manila.

India (Provisional Government of Free India)

The Provisional Government of Free India was a government in exile led by Subhas Chandra Bose, an Indian nationalist who rejected Mahatma Gandhi's nonviolent methods for achieving independence. One of the most prominent leaders of the Indian independence movement of the time and former president of the Indian National Congress, Bose was arrested by British authorities at the outset of the Second World War. In January 1941 he escaped from house arrest, eventually reaching Germany. He arrived in 1942 in Singapore, base of the Indian National Army, made up largely from Indian prisoners of war and Indian residents in South East Asia who joined their own initiative.

Bose and local leader A.M. Sahay received ideological support from Mitsuru Toyama, chief of the Dark Ocean Society, along with Japanese Army advisers. Other Indian thinkers in favour of the Axis cause were Asit Krishna Mukherji, a friend of Bose, and Mukherji's wife, Savitri Devi, a French writer who admired Hitler. Bose was helped by Rash Behari Bose, founder of the Indian Independence League in Japan. Bose declared India's independence on 21 October 1943. The Japanese Army assigned to the Indian National Army a number of military advisors, among them Hideo Iwakuro and Saburo Isoda.

The provisional government formally controlled the Andaman and Nicobar Islands; these islands had fallen to the Japanese and been handed over by Japan in November 1943. The government created its own currency, postage stamps, and national anthem. The government would last two more years, until 18 August 1945, when it officially became defunct. During its existence it received recognition from nine governments: Germany, Japan, Italy, Croatia, Manchukuo, China (under the Nanking Government of Wang Jingwei), Thailand, Burma (under the regime of Burmese nationalist leader Ba Maw), and the Philippines under de facto (and later de jure) President José Laurel.[37]

Aviation Museums in India

The Indian Air Force Museum, Palam Air Force Station, Palam, New Delhi, 110010.

http://en.wikipedia.org/wiki/Indian_Air_Force_Museum,_Palam; and

www.bharat-rakshak.com/IAF/Museum/Palam/index.html.

Naval Aviation Museum (India), Bogmalo, Vasco da Gama, Goa.

http://en.wikipedia.org/wiki/Naval_Aviation_Museum_(India).

HAL Heritage Centre and Aero Space Museum, Hindustan Aeronautics Limited, Bangalore.
http://en.wikipedia.org/wiki/HAL_Aerospace_Museum.

Vietnam (Empire of Vietnam)

The Empire of Vietnam was a short-lived Japanese puppet state that lasted from March 11 to 23 August 1945. When the Japanese seized control of French Indochina, they allowed Vichy French administrators to remain in nominal control. This ruling ended on 9 March 1945, when the Japanese officially took control of the government. Soon after, Emperor B?o ??i voided the 1884 treaty with France and Tr?n Tr?ng Kim, a historian, became prime minister. The state suffered through the Vietnamese Famine of 1945 and replaced French-speaking schools with Vietnamese language schools, taught by Vietnamese scholars.[38]

Aviation Museums of Vietnam

Bao Tang Phong Khon – Khong Quan, Vietnam Air Force Museum, Truong Chinh Street, Hanoi.

Viet Nam Military History Museum, 28A Dien Bien Phu Road, Ba Dinh District, Hanoi.

www.btlsqsvn.org.vn.

Tan Son Nhut Air Force Museum, Thang Long, Ho Chi Minh City.

War Remnants Museum, Nha Trung Bay Toi Ac Chien Tranh, 28 Vo Van Tan St, District 3, Ho Chi Minh City.

Cambodia

The Kingdom of Cambodia was a short-lived Japanese puppet state that lasted from 9 March 1945 to 15 April 1945. The Japanese entered Cambodia in mid-1941, but allowed Vichy French officials to remain in administrative posts. The Japanese calls for an "Asia for the Asiatics" won over many Cambodian nationalists. This policy changed during the last months of the war. The Japanese wanted to gain local support, so they dissolved French colonial rule and pressured Cambodia to declare its independence within the Greater East Asia Co-Prosperity Sphere. Four days later, King Sihanouk declared Kampuchea (the original Khmer pronunciation of Cambodia) independent. Co-editor of the *Nagaravatta*, Son Ngoc Thanh, returned from Tokyo in May and was appointed foreign minister.

On the date of Japanese surrender, a new government was proclaimed with Son Ngoc Thah as prime minister. When the Allies occupied Phnom Penh in October, Son Ngoc Thanh was arrested for collaborating with the Japanese and was exiled to France. Some of his supporters went to northwestern Cambodia, which had been under Thai control since the French-Thai War of 1940, where they banded together as one faction in the Khmer Issarak movement, originally formed with Thai encouragement in the 1940s.[39]

Aviation Museums in Cambodia

Siem Reap War Museum, Siem Reap.

Laos

Fears of Thai irredentism led to the formation of the first Lao nationalist organization, the Movement for National Renovation, in January 1941. The group was led by Prince Phetxar?t and supported by local French officials, though not by the Vichy authorities in Hanoi. This group wrote the current Lao national anthem and designed the current Lao flag, while paradoxically pledging support for France. The country declared its independence in 1945.

The liberation of France in 1944, bringing Charles de Gaulle to power, meant the end of the alliance between Japan and the Vichy French administration in Indochina. The Japanese had no intention of allowing the Gaullists to take over, and in late 1944 they staged a military coup in Hanoi. Some French units fled over the mountains to Laos, pursued by the Japanese, who occupied Viang Chan in March 1945 and Luang Phrab?ng in April.

King S?sav?ngvong was detained by the Japanese, but his son Crown Prince Sav?ngvatthan? called on all Lao to assist the French, and many Lao died fighting against the Japanese occupiers. Prince Phetxar?t opposed this position. He thought that Lao independence could be gained by siding with the Japanese, who made him Prime Minister of Luang Phrab?ng, though not of Laos as a whole. The country was in chaos, and Phetxar?t's government had no real authority. Another Lao group, the Lao S?ri (Free Lao), received unofficial support from the Free Thai movement in the Isan region.[40]

Aviation Museums of Laos

Lao People`s Army History Museum, Vientiane.

Burma (Baw Maw Regime)

The Japanese Army and Burma nationalists, led by Aung San, seized control of Burma from the United Kingdom during 1942. A State of Burma was formed on 1 August 1942 under the Burmese nationalist leader Ba Maw. The Ba Maw regime established the Burma Defence Army (later renamed the Burma National Army), which was commanded by Aung San.[41]

Italian Puppet States of Montenegro, Albania and Monaco.

Montenegro

Sekula Drljevi? and the core of the Montenegrin Federalist Party formed the Provisional Administrative Committee of Montenegro on 12 July 1941, and proclaimed on the Saint Peter's Congress the "Kingdom of Montenegro" under a protectorate of the Fascist Kingdom of Italy. The country served Italy as part of its goal of fragmenting the former Kingdom of Yugoslavia, expanding the Italian Empire throughout the Adriatic. The country was caught up in the rebellion of the Yugoslav Army in the Fatherland. Drljevic was expelled from Montenegro in October 1941. The country came under direct Italian control. With the Italian capitulation of 1943, Montenegro became a directly under the control of Nazi Germany.

In 1944 Drljevi? formed a pro-Ustaše Montenegrin State Council in exile based in the Independent State of Croatia, with the aim of restoring rule over Montenegro. The Montenegrin People's Army was formed out of various Montenegrin nationalist troops. By then the partisans had already liberated most of Montenegro, which became a federal state of the new Democratic Federal Yugoslavia. Montenegro endured intense air bombing by the Allied air forces in 1944.

Albania

In spite of Albania's long-standing protection and alliance with Italy, on 7 April 1939 Italian troops invaded Albania, five months before the start of the Second World War. Following the invasion, Albania became a protectorate under Italy, with King Victor Emmanuel III of Italy being awarded the crown of Albania. Albanian troops under Italian control were sent to participate in the Italian invasion of Greece and the Axis occupation of Yugoslavia. Following Yugoslavia's defeat, Kosovo was annexed to Albania by the Italians. After the Italian capitulation in September 1943, the country was occupied by the Germans until the end of the war.[42]

Monaco

A minor fascist regime was established in Monaco after the Italian army occupied the country in the aftermath of Case Anton. Monaco was finally liberated after the Allies landed on Western Europe.

German Puppet States of Slovakia (Tiso regime), the Protectorate of Bohemia and Moravia. Serbia, Italy (Italian Social Republic), Albania (under German control), Hungary (Szalasi regime), Norway (Quisling regime), Macedonia, Belarus, and the Province of Ljubljana.

The collaborationist administrations of German-occupied countries in Europe had varying degrees of autonomy, and not all of them qualified as fully recognized sovereign states. The General Government in occupied Poland did not qualify as a legitimate Polish government and was essentially a German administration. In occupied Norway, the National Government headed by Vidkun Quisling – whose name came to symbolize pro-Axis collaboration in several languages – was subordinate to the Reichskommissariat Norwegen. It was never allowed to have any armed forces, be a recognized military partner, or have autonomy of any kind. In the occupied Netherlands, Anton Mussert was given the symbolic title of "Führer of the Netherlands' people". His National Socialist Movement formed a cabinet assisting the German administration, but was never recognized as a real Dutch government.[43]

Slovakia (Tiso regime)

The Slovak Republic under President Josef Tiso signed the Tripartite Pact on November 24, 1940. Slovakia had been closely aligned with Germany almost immediately from its declaration of independence from Czechoslovakia on 14 March 1939. Slovakia entered into a treaty of protection with Germany on 23 March 1939.

Slovak troops joined the German invasion of Poland, having interest in Spiš and Orava. Those two regions, along with Cieszyn Silesia, had been disputed between Poland and Czechoslovakia since 1918. The Poles fully annexed them following the Munich Agreement. After the invasion of Poland, Slovakia reclaimed control of those territories.

Slovakia invaded Poland alongside German forces, contributing 50,000 men at this stage of the war. Slovakia declared war on the Soviet Union in 1941 and signed the revived Anti-Comintern Pact of 1941. Slovak troops fought on Germany's Eastern Front, furnishing Germany with two divisions totaling 80,000 men. Slovakia declared war on the United Kingdom and the United States in 1942. Slovakia was spared German military occupation until the Slovak National Uprising, which began on 29 August 1944, and was almost immediately crushed by the Waffen SS and Slovak troops loyal to Josef Tiso. After the war, Tiso was executed and Slovakia was rejoined with Czechoslovakia. The border with Poland was shifted back to the pre-war state. Slovakia and the Czech Republic finally separated into independent states in 1993.[44]

Protectorate of Bohemia and Moravia

The Protectorate of Bohemia and Moravia was created on 16 March 1939 by proclamation of Adolf Hitler from Prague Castle following the declaration of establishment of the independent Slovak Republic on 14 March 1939. The protectorate was abolished after the German surrender at the end of the Second World War.

Serbia

In April 1941 Germany invaded and occupied Yugoslavia. On 30 April a pro-German Serbian administration was formed under Milan A?imovi?. In 1941, after the invasion of the Soviet Union, a guerilla campaign against the Germans and Italians was launched by the communist partisans under Josip Broz Tito. The uprising became a serious concern for the Germans, as most of their forces were deployed to Russia; only three divisions were in the country. On 13 August 546 Serbs, including many of the country's most prominent and influential leaders, issued an appeal to the Serbian nation that called for loyalty to the Nazis and condemned the partisan resistance as unpatriotic.

Two weeks after the appeal, with the partisan insurgency beginning to gain momentum, 75 prominent Serbs convened a meeting in Belgrade and formed a Government of National Salvation under Serbian General Milan Nedi? to replace the existing Serbian administration. On 29 August the German authorities installed General Nedi? and his government in power. Nedi? would serve as Prime Minister, while the former Regent, Prince Paul, was recognized as head of state. The Germans were short of police and military forces in Serbia, and came to rely on armed Serbian formations to maintain order. By October, 1941, Serbian forces under German supervision became increasingly effective against the resistance. These Serbian formations were German-armed and equipped.[45]

Italy (Italian Social Republic) (also see Chapter XI)

Italian Fascist leader Benito Mussolini formed the Italian Social Republic *(Repubblica Sociale Italiana*) on 23 September 1943, succeeding the Kingdom of Italy as a member of the Axis. Mussolini had been removed from office and arrested by King Victor Emmanuel III on 25 July 1943. After the Italian armistice, in a spectacular raid led by German paratrooper Otto Skorzeny, Mussolini was rescued from arrest. Once restored in power, Mussolini declared that Italy was a republic and that he was the new head of state. He was subject to German control for the duration of the war.[46]

Albania (under German control)

After the Italian armistice, a void of power opened up in Albania. The Italian occupying forces could do nothing, as the National Liberation Movement took control of the south and National Front (Balli Kombëtar) took control of the north. Albanians in the Italian army joined the guerrilla forces. In September 1943 the guerrillas moved to take the capital of Tirana, but German paratroopers dropped into the city. Soon after the fight, the German High Command announced that they would recognize the independence of a greater Albania. They organized an Albanian government, police, and military with the Balli Kombëtar.

The Germans did not exert heavy control over Albania's administration, but instead attempted to gain popular appeal by giving the Albanians what they wanted. Several Balli Kombëtar leaders held positions in the regime. The joint forces incorporated Kosovo, western Macedonia, southern Montenegro, and Presevo into the Albanian state. A High Council of Regency was created to carry out the functions of a head of state, while the government was headed mainly by Albanian conservative politicians. Albania was the only European country occupied by the Axis powers that ended the Second World War with a larger Jewish population than before the war. The Albanian government had refused to hand over their Jewish population. They provided Jewish families with forged documents and helped them disperse in the Albanian population. Albania was completely liberated on 29 November 1944.[47]

Hungary (Szalasi regime)

Relations between Germany and the regency of Miklós Horthy collapsed in Hungary in 1944. Horthy was forced to abdicate after German armed forces held his son hostage as part of *Operation Panzerfaust. Hungary was reorganized following Horthy's abdication in December* 1944 into a totalitarian fascist regime called the Government of National Unity, led by Ferenc Szálasi. He had been Prime Minister of Hungary since October 1944 and was leader of the anti-Semitic fascist Arrow Cross Party. In power, his government was a Quisling regime with little authority other than to obey Germany's orders. Days after the government took power; the capital of Budapest was surrounded by the Soviet Red Army. German and fascist Hungarian forces tried to hold off the Soviet advance but failed. In March 1945, Szálasi fled to Germany to run the state in exile, until the surrender of Germany in May 1945.[48]

Norway (Quisling regime)

In Norway, the national government, headed by Vidkun Quisling, was installed by the Germans as a puppet regime during the occupation, while King Haakon VII and the legal government were in exile. Quisling encouraged Norwegians to serve as volunteers in the Waffen-SS, collaborated in the deportation of Jews, and was responsible for the executions of members of the Norwegian resistance movement. About 45,000 Norwegian collaborators joined the pro-Nazi party *Nasjonal Samling* (National Union), and some police units helped arrest many of Norway's Jews. However, Norway was one of the first countries where resistance during the Second World War was widespread before the turning point of the war in 1943. After the war, Quisling and other collaborators were executed. Quisling's name has become an international eponym for traitor.[49]

Macedonia

Ivan Mihailov, leader of the Internal Macedonian Revolutionary Organization (IMRO), wanted to solve the Macedonian Question by creating a pro-Bulgarian state on the territory of the region of Macedonia in the Kingdom of Yugoslavia. Romania left the Axis and declared war on Germany on 23 August 1944, and the Soviets declared war on Bulgaria on 5 September. While these events were taking place, Mihailov came out of hiding in the Independent State of Croatia and traveled to re-occupied Skopje. The Germans gave Mihailov the green light to create a Macedonian state. Negotiations were undertaken with the Bulgarian government. Contact was made with Hristo Tatarchev in Resen, who offered Mihailov the Presidency. Bulgaria switched sides on 8 September, and on the 9th the Fatherland Front staged a coup and deposed the monarchy. Mihailov refused the leadership and fled to Italy. Spiro Kitanchev took Mihailov's place and became Premier of Macedonia. He cooperated with the pro-Bulgarian authorities, the Wehrmacht, the Bulgarian Army, and the Yugoslav Partisans for the rest of September and October. In the middle of November 1944, the communists won control over the region.[50]

Belarus

The Belarusian Central Rada was established in Belarus after the region was occupied by invading German forces. The regime maintained local security forces, namely the Bie?aruskaja Krajovaja Abarona. The state ended its existence in 1944 when the Red Army drove the retreating Nazi German forces from Belarus.[51]

Province of Ljubljana.

In 1943 a small local government was established in German occupied Slovenia.

Joint German-Italian Puppet Independent State of Croatia, Greece and Vichy France.

Independent State of Croatia

On 10 April 1941, the Independent State of Croatia (*Nezavisna Država Hrvatska*, or NDH) was declared to be a member of the Axis, co-signing the Tripartite Pact. The NDH remained a member of the Axis until the end of Second World War, its forces fighting for Germany even after NDH had been overrun by Yugoslav Partisans. The Croatian Home Guard (*Hrvatsko domobranstvo*) was the official military force of the NDH. Originally authorized at 16,000 men, it grew to a peak fighting force of 130,000. The Croatian Home Guard included an air force and navy, although its navy was restricted in size by the Contracts of Rome. In addition to commanding the Croatian Home Guard, NDH leader Paveli? was the supreme commander of the Ustaše militia, although all NDH military units were generally under the command of the German or Italian formations in their area of operations. Many Croats volunteered for the German *Waffen SS*.

The Ustaše government declared war on the Soviet Union, signed the Anti-Comintern Pact of 1941, and sent troops to Germany's Eastern Front. Ustaše militia were garrisoned the Balkans, battling the Chetniks and communist partisans. Ustaše never had widespread support among the population of the NDH. Their own estimates put the number of sympathizers, even in the early phase, at around 40,000 out of total population of 7 million.

The Croatian Air Force (Croatian: *Hrvatsko bojno zrakoplovstvo*), originally the Air Force of the Independent State of Croatia (*Zrakoplovstvo Nezavisne Države Hrvatske,* ZNDH), was the air force of the Independent State of Croatia (NDH), a puppet state established with the support of the Axis Powers during the Second World War. The ZNDH was founded under German authority in April 1941. Its main contribution to the war effort was to carry out anti-partisan patrols over occupied Croatia. It also supplied a few staffels of pilots to Luftflotte 4 in Russia.[52]

Although it could not be considered a large air arm in the wider context of the Second World War, the ZNDH nonetheless had on its charge at one time or another some 650 aircraft between April 1941 and May 1945, as well as anti-aircraft and paratroop units. Although it began as a small organization in 1941, the ZNDH was still providing a measure of air-support in the form of fighter, attack and transport aircraft and aircrews until the last days of the Second World War in Europe.

During the middle part of 1941, some of the ZNDH's man-power capacity was sent to the Eastern Front as part of the Luftwaffe. This force was known as the Croatian Air Force Legion (*Hrvatska Zrakoplovna Legija*, HZL; *Kroatische Luftwaffen Legion*).[53] Most of the Croatian Air Force Legion's personnel were back on ZNDH territory by late 1943 and early 1944 to help counter the growing Allied air threat. A Croatian Anti-Aircraft Legion was also deployed.

The ZNDH maintained a flying school, originally at Rajlovac airfield near Sarajevo and then at Velika Gorica and Pleso airfields in Zagreb. Its parachute and paratroop school was located in Koprivnica, and its scout (fighter) school was located in Zagreb.[54]

Aircraft types that saw service with the Croatian Air Force included more than 50 Messerschmitt Bf 109G & K fighters, 48 Morane-Saulnier M.S. 406 fighters, more than 30 Fiat G.50 fighters, 18 Macchi C.202 Folgore fighters, four Macchi C.205 Veltro fighters, more than ten Fiat CR.42 fighters, two Messerschmitt Bf 110G-2 fighters, seven Avia BH-3 fighter-trainers, four Ikarus IK-2 fighters, eleven Dornier Do-17K, 30 Do-17E and 21 Do-17Z bombers, eight Bristol Blenheim Mk. I bombers and two Savoia-Marchetti SM.79 bombers, ten CANT Z.1007 bombers, six Fiat BR.20 bombers, one Avia Fokker F.39 bomber, seven Caproni Ca.310 bomber/utility 16 Caproni Ca.311/313/314 bomber/utility, 50 Breguet Bre 19 reconnaissance/utility, 42 Potez 25 reconnaissance/utility, eleven Fieseler Fi 156 Storch utility, 8 to 12 Fieseler Fi 167 utility and two de Havilland

DH 80 Puss Moth utility aircraft, one RWD-13 utility, 25 Beneš-Mráz Beta-Minor trainer/utility, 22 Bücker Bü 181 Bestmann trainer/utility, 25 Saiman 200 trainers, two Saiman trainer/utility, 20 AVIA FL.3 trainer/utility, one Rogozarski SIM-XI and one SIM-X trainer, one Ikarus MM-2 fighter/trainer, eleven Rogozarski R-100 fighter/trainer/attack, 46 Bücker Bü 131 Bestmann trainer/utility, ten Bücker Bü 133 trainer/utility, 20 Zmaj Fizir FN trainers, 23 Zmaj Fizir FP-2 trainer/utility, seven Avia Fokker F.VII transports, two Avia Fokker F.IX transports, one Junkers Ju 52 and four Junkers W 34 transports, 15 Junkers Ju 87 dive bombers, and two Airspeed Envoy transports.[55]

Greece

Following the German invasion of Greece and the flight of the Greek government to Crete and then Egypt, the Hellenic State was formed in May 1941 as a puppet state of both Italy and Germany. Initially, Italy had wished to annex Greece, but was pressured by Germany to avoid civil unrest such as had occurred in Bulgarian-annexed areas. The result was Italy accepted the creation of a puppet regime with the support of Germany. Italy had been assured by Hitler of a primary role in Greece. Most of the country was held by Italian forces, but strategic locations (Central Macedonia, the islands of the northeastern Aegean, most of Crete, and parts of Attica) were held by the Germans, who seized most of the country's economic assets and effectively controlled the collaborationist government.

The puppet regime never commanded any real authority, and did not gain the allegiance of the people. It was somewhat successful in preventing secessionist movements like the Principality of the Pindus from establishing themselves. By mid-1943, the Greek Resistance had liberated large parts of the mountainous interior ("Free Greece"), setting up a separate administration there. After the Italian armistice, the Italian occupation zone was taken over by the German armed forces, which remained in charge of the country until their withdrawal in autumn 1944. In some Aegean islands, German garrisons were left behind, and surrendered only after the end of the war.[56]

Aviation Museums in Greece

War Museum, Vassilissis Sophias Avenue, 2 Rizari Street, 106 75, Athens. www.warmuseum.gr.

Crete War Museum, Chromonastiri.

Hellenic Air Force Museum, Dekeleia – Tatoi Air Base, TGA 1010, Athens. www.haf.gr/en/history/museum/default.asp.

Elefsis Heritage Park, Elefsis Air Base, Elefsina.

Larisa Base Museum, Larisa Air Base, Larisa.

Tanagra Base Collection, Tanagra Air Base, Tanagra.

Thessaloniki War Museum, 4 Grigoriou Lambraki, Pedio Areos 3, Thessaloniki. www.warmuseum.gr.

P.A.L.I.S. Foundation, Vouliagmenis Avenue & Patriarhou Grigoriou E 1-3, 166 73, Voula.

www.palisfoundation.com.

Vichy France

France and its colonial empire, under the Vichy regime of Marshal Philippe Pétain, collaborated with the Axis from 1940 until 1944, when the regime was dissolved. The German invasion army entered Paris on 14 June 1940, following the battle of France. Pétain became the last Prime Minister of the French Third Republic on 16 June 1940. He sued for peace with Germany and on 22 June 1940, his government concluded an armistice with Hitler. Under the terms of the agreement, Germany occupied two-thirds of France, including Paris. Pétain was permitted to keep an "armistice army" of 100,000 men within the unoccupied southern zone. This number included neither the army based in the French colonial empire nor the French fleet. In French North Africa and French Equatorial Africa, the Vichy government was permitted to maintain 127,000 men under arms after the colony of Gabon defected to the Free French. The French also maintained substantial garrisons at the French-mandated territory of Syria and Lebanon, the French colony of Madagascar, and in French Somaliland.

After the armistice, relations between the Vichy French and the British quickly deteriorated. Fearful that the powerful French fleet might fall into German hands, the British launched several naval attacks, the most notable of which was against the Algerian harbour of Mers el-Kebir on 3 July 1940. Though Churchill defended his controversial decision to attack the French Fleet, the French people were less accepting. German propaganda trumpeted these attacks as an absolute betrayal of the French people by their former allies. France broke relations with the United Kingdom and considered declaring war.

On 10 July 1940, Pétain was given emergency "full powers" by a majority vote of the French National Assembly. The following day approval of the new constitution by the Assembly effectively created the French State (*l'État Français*), replacing the French Republic with the unofficial Vichy France, named for the resort town of Vichy, where Petain maintained his seat of government. The new government continued to be recognised as the lawful government of France by the United States until 1942.

In September 1940, Vichy France allowed Japan to occupy French Indochina, a federation of the French colonial possessions and protectorates roughly encompassing the territory of modern day Vietnam, Laos, and Cambodia. The Vichy regime continued to administer the colony under Japanese military occupation. French Indochina was the base for the Japanese invasions of Thailand, Malaya, and Borneo. In 1945, under Japanese sponsorship, the Empire of Vietnam and the Kingdom of Cambodia were proclaimed as Japanese puppet states.

French General Charles de Gaulle headquartered his Free French movement in London in a largely unsuccessful effort to win over the French colonial empire. On 26 September 1940, de Gaulle led an attack by Allied forces on the Vichy port of Dakar in French West Africa. Forces loyal to Pétain fired on de Gaulle and repulsed the attack after two days of heavy fighting. Public opinion in Vichy France was further outraged, and Vichy France drew closer to Germany.

Vichy France assisted Iraq in the Anglo–Iraqi War of 1941, allowing Germany and Italy to utilize air bases in the French mandate of Syria to support the Iraqi revolt against the British. Allied forces responded by attacking Syria and Lebanon in 1941. In 1942 Allied forces attacked the French colony of Madagascar.

There were considerable anti-communist movements in France, and as result, volunteers joined the German forces in their war against the Soviet Union. Almost 7,000 volunteers joined the anti-communist *Légion des Volontaires Français* (LVF) from 1941 to 1944, and some 7,500 formed the *Division Charlemagne*, a *Waffen-SS* unit, from 1944 to 1945. Both the *LVF* and the *Division Charlemagne* fought on the eastern front. Hitler never accepted that France could become a full military partner, and constantly prevented the buildup of Vichy's military strength.

Vichy's collaboration with Germany was industrial as well as political, with French factories providing many vehicles to the German armed forces.

In November 1942 Vichy French troops briefly but fiercely resisted the landing of Allied troops in French North Africa, but were unable to prevail. Admiral François Darlan negotiated a local ceasefire with the Allies. In response to the landings and Vichy's inability to defend itself, German troops occupied southern France and Tunisia, a French protectorate that formed part of French North Africa. The rump French army in mainland France was disbanded by the Germans. The Bey of Tunis formed a government friendly to the Germans.

In mid-1943, former Vichy authorities in North Africa came to an agreement with the Free French and setup a temporary French government in Algiers, known as the French Committee of National Liberation (*Comité Français de Libération Nationale*, CFLN), initially led by Darlan. After his

assassination De Gaulle emerged as the French leader. The CFLN raised more troops and re-organized, re-trained and re-equipped the French military, under Allied supervision.

While deprived of armed forces, the Vichy government continued to function in mainland France until summer 1944, but had lost most of its territorial sovereignty and military assets, with the exception of the forces stationed in French Indochina. In 1943 it founded the Milice, a paramilitary force which assisted the Germans in rounding up opponents and Jews, as well as fighting the French Resistance.[57]

The Vichy French Air Force (French: *Armée de l'Air de Vichy*) was the aerial branch of the armed forces of Vichy. The Vichy French Air Force existed between December 1940 and December 1942 and largely served to defend Vichy French territories abroad.[58]

The defeat of France did not mean the end of the French Air Force. The branch was soon split into two camps: those who escaped from France and joined the Free French Forces (Forces Françaises Libres) and those who stayed and flew for the French Armistice Air Force on behalf of the Vichy government. Initially the Germans wanted to disband the air force completely, and all personnel were to be demobilized by mid-September. However, on 3 July 1940 the British Royal Navy attacked the French fleet anchored in the Algerian ports of Oran and Mers-el-Kebir. Angered, the French broke all connections with the British. The Germans now agreed to the forming of a Vichy French air force.

Initially, Germany ordered military aircraft that had survived the Battle of France, including those now stationed in Tunisia, Algeria and Morocco, were to be surrendered either in whole or else already disassembled, or destroyed altogether. These orders changed when the British acted to prevent French Navy capital ships from falling into German hands and becoming adjuncts of the *Kriegsmarine* (German Navy).

Churchill authorised a plan – codenamed "Operation Catapult" – for a British naval formation (Force H) based in Gibraltar to sail to the harbor of Mers-el-Kébir, near Oran in French Algeria. Four capital ships and other vessels were stationed at Mers-el-Kebir, Force H was to persuade Admiral Marcel-Bruno Gensoul to disobey orders from Vichy and take his vessels out of the war in Europe; by sailing to British ports or to French colonies in the Far East or even to the (still neutral) USA. The overture was soundly rejected, so Royal Navy Admiral James Somerville gave the orders to destroy the French vessels. More than 2,000 French sailors died in the attack and one French battleship was sunk and two others severely damaged. The incident discredited the British in French eyes and gave the Germans a golden propaganda tool placing the British as France's real enemies. In retaliation, on 18 July 1940, the French air force half-heartedly bombed Gibraltar. The bombing did little damage.

Vichy and Berlin agreed, if reluctantly, that the *Armée de l'Air de Vichy* (Vichy French Air Force) was still needed in case French interests were to be attacked by the British once again – and, of course, for attacking the British themselves. Goering ordered that all Vichy French Air Force aircraft would henceforth be identified by special markings on the fuselage and tailplane of each one. Initially, the rear fuselage and tailplane (excluding the rudder) were painted a bright yellow, although the markings were later changed so that they consisted of horizontal red and yellow stripes. In all cases, French national markings (roundel on the fuselage and tricolour on the tailplane) were retained as before. French aircraft on Vichy strength at this time included Bloch MB 155, Bloch MB 174, Breguet Bre 695, Dewoitine D.520, Lioré-et-Olivier LeO 45, Martin 167F, Morane-Saulnier MS.406 and Potez 63.11.

On 23 September 1940, the Vichy air force saw action again when the British tried to take Dakar, the capital of French West Africa (now Senegal). As at Mers-el-Kébir, after an attempt to persuade the Vichy French to join the Allied cause failed, British and Free French forces attacked the Vichy forces. However, this time the Vichy French managed to repulse the British torpedo-bomber attacks launched from the carrier HMS *Ark Royal* during several days of fighting with only light casualties on their side.

On 24 September 1940, in response to the British attack at Dakar, the Vichy air force bombed British facilities at Gibraltar again from French bases in North Africa. The bombing stopped the following day - the same day that the British withdrew from Dakar - but only after Gibraltar suffered heavy damage.

Syrian-based Vichy air force units saw action against the British from April 1941, when a *coup d'état* in Iraq briefly installed the nationalist Rashid Ali Al-Gaylani as prime minister of in order to secure the vital oil supplies at Kirkuk (under British control since 1934) in northeastern Iraq for the pro-Axis nationalists who wanted the British to be expelled from the country. However, the RAF base at Habbaniya withstood the nationalists, and in May the British, Indian and Commonwealth "Iraqforce" invaded Iraq *via* Basra. The ensuing Anglo-Iraqi War ended with Iraqforce defeating the nationalists at the end of May and restoring a pro-Allied government in Iraq.

Allied operations during the Anglo-Iraqi War included attacks on Vichy air force bases in Lebanon and Syria, which served as staging posts for *Regia Aeronautica* and *Luftwaffe* units flying to Mosul to support the Iraqi nationalist *coup*. Before the campaign in Iraq was over, the Allies decided to attack Vichy forces in Syria and Lebanon and occupy those countries. The Vichy French air force was relatively strong at the start of the campaign. In 1940, many of the aircraft stationed in Syria and Lebanon had been sent back to France. This left the Vichy French with only a number of obsolete models. However, alarmed by the growing threat of invasion, Vichy dispatched a fighter group from Algeria. Once the fighting began, three more groups were flown from France and from North Africa. This brought the strength of the Vichy French air force in Lebanon and Syria up to 289 aircraft, including about 35 Dewoitine D.520 fighters and some new, US-built Glenn Martin 167 light bombers. This initially gave the Vichy French a numerical advantage over the Allied air units.

The invasion began on 8 June 1941. RAF and Royal Australian Air Force (RAAF) squadrons launched direct attacks on Vichy airfields, destroying many French aircraft on the ground. D.520s of GC III/6, II/3 and naval *escadrille* 1AC faced the Allies in air to air combat, where they claimed 31 kills over British and Australian planes, while losing 11 of their own in air combat and 24 to AA fire, accidents, and attacks on their airfields. However, No. 3 Squadron RAAF, which had just converted to the new Curtiss P-40B Tomahawk Mk. I, claimed five D.520s destroyed for the loss of one P-40 in air combat. In all 179 Vichy aircraft were lost during the campaign, most having been destroyed on the ground. In mid-July 1941, after heavily losses, Vichy French forces surrendered Syria and Lebanon to the Allies.

The last major battles against the Allied forces, in which the Vichy French air force took part, took place during Operation Torch, launched on 8 November 1942 as the Allied invasion of North Africa. Facing the U.S. Navy task force headed for Morocco, consisting of the carriers USS *Ranger*, *Sangamon*, *Santee* and *Suwannee*, were, in part, Vichy squadrons based at Marrakech, Meknès, Agadir, Casablanca and Rabat, which between them could muster some 86 fighters and 78 bombers. Overall, the aircraft may have been old compared to the Grumman F4F Wildcats of the U.S. Navy, yet they were still dangerous and capable in the hands of combat veterans who had seen action against both the Germans and the British since the start of the war.

F4Fs attacked the airfield at Rabat-Salé around 07.30 on the 8th and destroyed nine LeO 451 bombers of GB I/22, while a transport unit's full complement of various types was almost entirely wiped out. At Casablanca, SBD dive-bombers succeeded in damaging the French battle-cruiser, *Jean Bart*, and F4Fs strafed the bombers of GB I/32 at Camp Cazes airfield, some of which exploded as they were ready for take-off with bombs already on board, thus ensuring their mission never went ahead. The U.S. Navy did not have it all their own way, though, as several F4F pilots were shot down and taken prisoner.

The day's victory tally of enemy aircraft shot down by the French fighter pilots totaled seven confirmed and three probable, yet their losses were considered heavy – five pilots killed, four wounded and 13 aircraft destroyed either in combat or on the ground – when one considers that GC II/5, based in Casablanca, had lost only two pilots killed during the whole of the six-week campaign in France two years before. In the meantime, F4Fs of U.S. Navy Fighter Squadron VF-41 from the USS *Ranger* strafed and destroyed (ironically) three U.S.-built Douglas DB-7 bombers of GB I/32, which were being refueled and rearmed at Casablanca, leaving a mere three others undamaged.

Nevertheless, having been reinforced by two other bombers, GB I/32 carried out a bombing mission against the beaches at Safi, where more U.S. soldiers were landing, the next morning. One of the bombers was damaged and attempted to make a forced-landing, only it exploded upon contact

with the ground, killing the entire crew. Fighter unit GC I/5 lost four pilots in combat that day (9 November) and it was on that same day that *Adjudant* (Warrant Officer) Bressieux had the distinction of becoming the last pilot in the Vichy French air force to claim a combat victory, in this case an F4F of VF-9. Shortly afterwards, 13 F4Fs attacked the airfield at Médiouna and destroyed a total of 11 French aircraft, including six from GC II/5.

On the morning of 10 November 1942, the Vichy French air force units in Morocco had a mere 37 combat-ready fighters and 40 bombers left to face the might of the U.S. Navy F4Fs. Médiouna was attacked once again and several of the fighters were left burning, while two reconnaissance Potez were shot down, one by an F4F and the other by an SBD over the airfield at Chichaoua, where three F4Fs would later destroy four more Potez in a strafing attack.

Ultimately, the presence of Vichy France in North Africa as an ally of the Germans came to an end (ironically) on Armistice Day, 11 November 1942, when General Noguès, the commander-in-chief of the Vichy armed forces, requested a cease-fire – although that did not stop a unit of U.S. Navy aircraft attacking the airfield at Marrakech and destroying several French aircraft, apparently on the initiative of the unit's commander. Once the cease-fire request was accepted, the war between the Allies and the Vichy French came to an end after two and a half years of what was termed "fratricidal" fighting.

"Torch" had resulted in a victory for the Allies, even though it was fair to say that the French had no choice but to engage the Americans, otherwise the Americans would (and did) engage them since they were technically enemies. As a result, 12 air force and 11 navy pilots lost their lives in the final four days of combat between (Vichy) France and the Allies during the Second World War. Barely two weeks later, the Germans invaded the then-unoccupied zone of metropolitan France and ordered the complete dissolution of the Vichy French armed forces on 1 December 1942. Those units then not under Vichy control would then be free to join with their Free French colleagues to fight the common enemy: Nazi Germany. [59]

Arsenal VG-33

The Arsenal VG-33 was one of a series of fast French light fighter aircraft under development at the start of the Second World War, but which matured too late to see extensive service in the Armée de l'Air during the Battle of France. Somewhat under-armed compared to the Messerschmitt Bf 109, the VG-33 matched it in speed and manoeuvrability and was somewhat faster than the Dewoitine D.520. In larger quantities, this plane could have shown the Luftwaffe a rough time, but as was the case for most French planes, production problems plagued the VG-33 such that only 160 aircraft were close to completion before the Armistice, with just 19 of 40 produced (?) actually taken on by the Armée de l'Air. Just two machines ever flew in an active group, the piecemeal GC 1/55 which began life on June 18 and conducted missions for just a week. After the fall of France twelve VG-33s were confiscated by the Luftwaffe, perhaps for fighter training.[60]

Bloch MB.152

The Bloch MB 150 was a French low-wing, all-metal monoplane fighter aircraft with retractable landing gear and enclosed cockpit developed by *Société des Avions Marcel Bloch* as a contender in the 1934 French air ministry competition for a new fighter design.

During the Second World War, pilots flying the Bloch MB.152 are credited with destroying at least 188 enemy aircraft while losing about 86 of their own. They proved tough aircraft, able to stand considerable battle damage, and were a good gunnery platform, but with many problems that included poor agility, poor weapon reliability, poor range (600 km, although at that time the Bf 109E was only slightly better, at around 660 km), and were notably underpowered.

In 1944, several surviving MB.152s were liberated at an airfield in mid-southern France. After being flight-tested and evaluated, and painting out the balkenkreuzen and swastikas, they were fitted with more powerful American engines and went up against the last remnants of the Luftwaffe with the Free French.[61]

Bloch MB 170

The Bloch MB 170 and its family of derivatives were French reconnaissance bombers designed and built shortly before the Second World War. They were, by far, the best aircraft of this type available to the *Armée de l'Air* at the outbreak of the war, with speed and manoeuvrability that allowed them to evade interception by the German fighters of the time. Although the aircraft could have been in service by 1937, debate over what role to give the aircraft delayed deliveries until 1940. Too few in number to make any measurable impact on the Battle of France, they continued in service with the Vichy forces after the armistice.

Only 3 examples were lost to enemy fire during the Battle of France. However, like the majority of the modern equipment of the *Armée de l'Air* during the campaign, they arrived too late and in insufficient numbers. At the time of the armistice, most surviving MB.174s and 175s had been evacuated to North Africa. A few were recovered by the Germans and then used for pilot training. During the Vichy government rule on the French empire, MB.174s frequently flew over Gibraltar to monitor the British fleet.

In March 1941, German engineers used engines taken from MB.175s (as well as other captured aircraft) to propel the Messerschmitt Me 323 cargo aircraft, some of which actually flew with parts taken from already complete MB.175s. After Operation Torch, as French forces split from Vichy to side with the Allies, remaining examples of the MB 170 line flew their final combat missions during the battle of Tunisia. They were replaced by reconnaissance variants of the P-38 Lightning, and used as transports and target tugs.[62]

Breguet Bre 690

The Breguet Bre 690 and its derivatives were a series of light twin-engine ground-attack aircraft that were used by the French Air Force in the Second World War. The aircraft was intended to be easy to maintain, pleasant to fly and to be able to fly at 480 km/h (300 mph) at 4,000 m (13,120 ft). The type's sturdy construction was frequently demonstrated and the armament was effective. However, French rearmament began two full years later than that in Britain, and all of these aircraft were simply not available in sufficient numbers to make a difference in 1940.

Fewer than 250 Breguet Bre 690 series aircraft were completed. The *Armée de l'air* received only 211 examples: 75 Bre.691s, 128 Bre.693s, and eight Bre.695s, but the Germans captured a few dozen complete or near-complete aircraft at the factories.

On 12 May 1940, GBAs I/54 and II/54 performed the Breguet's first operational sorties, against German motorized columns in the Maastricht Tongeren-Bilsen area. German anti-aircraft fire was so devastating that only eight of the 18 Bre.693s returned. The disastrous results of this first engagement forced the French commanders to reconsider their tactics. Until 15 May, GBA crews performed shallow dive attacks from higher altitude, which resulted in reduced losses, but the attacks had clearly been inaccurate, as the Breguets lacked a bombsight, and they increased vulnerability to enemy fighters. On the following missions, the GBAs re-introduced low-level attacks, but with smaller formations. As the battle quickly evolved towards the collapse of the French armies, the assault groups were engaged daily, still enduring losses to the AAA, but also to enemy fighters.

In late June, the *Armée de l'Air* tried to evacuate its modern aircraft to North Africa, out of German reach, from where many hoped to continue the fight. Unfortunately, the short-ranged Breguets were not able to cross the Mediterranean. Unlike other French modern types, the Breguet Bre 690 family saw its combat career end with the Armistice. At this point in time, 119 aircraft had been lost, including 68 to direct enemy action, and a further 14 were written off as too heavily damaged. The five GBAs had therefore endured a materiel loss rate of 63%, while crew casualties accounted for nearly 50%.

After the Armistice, the Vichy authorities were allowed to maintain a small air force in mainland France, and its assault bomber pilots flew rare training flights in the Bre.693 and Bre.695. After the Germans occupied all of France in late 1942 some of the survivors were transferred to Italy for

use as operational trainers. [63]

Curtiss Hawk P-75A

The Curtiss P-36 Hawk, also known as the Curtiss Hawk Model 75, was an American-designed and built fighter aircraft of the 1930s and 40s. It was one of the first of a new generation of combat aircraft, a sleek monoplane design making extensive use of metal in its construction and powered by a powerful radial engine. Obsolete at the onset of the Second World War, it was used extensively by the French Air Force, both during the Battle of France and by the Vichy French; and was used against French forces in the Franco-Thai War (October 1940–May 9, 1941).[64]

Even before the P-36A entered production, the French Air Force entered negotiations with Curtiss for delivery of 300 aircraft. The negotiating process ended up being very drawn-out because the cost of the Curtiss fighters was double that of the French Morane-Saulnier M.S.406 and Bloch MB 150, and the delivery schedule was deemed too slow. The pressure of continuing German rearmament finally forced France to purchase 100 aircraft and 173 engines. The first Hawk P-75A arrived in France in December 1938 and began entering service in March 1939. After the first few examples, aircraft were delivered in pieces and assembled in France by the *Société Nationale de Constructions Aéronautiques du Centre*.

Officially designated Curtiss H75-C1 (the "Hawk" name was not used in France), the aircraft were powered by Pratt & Whitney R-1830-SC-G engines with 900 hp and had instruments calibrated for the metric system, a seat for French dorsal parachutes, a French-style throttle which operated in reverse from U.S. and British aircraft (full throttle was to the rear rather than to the front) and armament of four 7.5-mm FN-Browning machine guns. The aircraft evolved through several modifications, the most significant being the installation of the Wright R-1820 Cyclone engine. This variant, designated as Curtiss H751-C1, saw little operational use due to its late delivery and reliability problems with the new engine. A total of 416 H75s were delivered to France before the German occupation.

On 8 September 1939, aircraft from *Groupe de Chasse* II/4 were credited with shooting down two *Luftwaffe* Messerschmitt Bf 109Es, the first Allied air victory of the Second World War on the Western front. During 1939–1940, French pilots claimed 230 confirmed and 80 probable victories in H75s against only 29 aircraft lost in aerial combat. Of the 11 French aces of the early part of the war, seven flew H75s. The leading ace of the time was Lieutenant Edmond Marin la Meslée with 15 confirmed and five probable victories in the type. H75-equipped squadrons were evacuated to French North Africa before the Armistice to avoid capture by the Germans. While under the Vichy government, these units clashed with British aircraft over Mers el-Kébir and Dakar. During Operation Torch in North Africa, French H75s fought against U.S. Navy Grumman F4F Wildcats, losing 15 aircraft while shooting down seven American aircraft. From late 1942 on, the Allies started re-equipping the formerly Vichy-controlled French units with the H75s replaced by P-40s and P-39s.[65]

Dewoitine D.520

The Dewoitine D.520 was a French fighter aircraft that entered service in early 1940, shortly after the opening of the Second World War. Unlike the Morane-Saulnier M.S.406, which was at that time the *Armée de l'Air*'s most numerous fighter, the Dewoitine D.520 came close to being a match for the latest German types, such as the Messerschmitt Bf 109. It was slower than the Bf 109E but superior in manoeuvrability. Because of a delayed production cycle, only a small number were available for combat with the *Luftwaffe*.

The D.520 was designed in response to a 1936 requirement from the *Armée de l'Air* for a fast, modern fighter with a good climbing speed and an armament centred on a 20-mm cannon. At the time the most powerful V 12 liquid cooled engine available in France was the Hispano-Suiza 12Y, which was less powerful, but lighter, than contemporary engines such as the Rolls-Royce Merlin and Daimler-Benz DB 601. Other fighters were designed to meet the specifications but none of them entered service, or entered service in small numbers and too late to play a significant role during the Battle of France.[66]

By 10 May 1940, when Germany invaded France and the Low Countries, 228 D.520s had been manufactured, but the *Armée de l'Air* had only accepted 75, as most others had been sent back to the factory to be retrofitted to the new standard. As a result, only GC I/3 was fully equipped, having 36 aircraft. They met the *Luftwaffe* on 13 May, shooting down three Henschel Hs 126s and one Heinkel He 111 without loss. Four more *Groupes de Chasse* and three naval *Escadrilles* rearmed with the type before France's surrender. GC II/3, GC III/3, GC III/6 and GC II/7 later completed conversion on the D.520. A naval unit, the *1er Flotille de Chasse*, was also equipped with the Dewoitine. But only GC I/3, II/7, II/6 and the naval AC 1 saw any action in the Battle of France. GC III/7 converted to the D.520 too late to be involved in combat.

In air combat, mostly against Italians, pilots flying the Dewoitine 520s claimed 114 air victories, plus 39 probables. Eighty five D.520s were lost. By the armistice at the end of June 1940, 437 D.520s had been built with 351 delivered. After the armistice, 165 D.520s were evacuated to North Africa. GC I/3, II/3, III/3, III/6 and II/7 flew their aircraft to Algeria to avoid capture. Three more, from GC III/7, escaped to Britain and were delivered to the Free French. A total of 153 D.520s remained in mainland France.

One of the most successful D.520 pilots was Pierre Le Gloan, who shot down 18 aircraft (four Germans, seven Italian and seven British), scoring all of his kills with the D.520, and ranked as the fourth-highest French ace of the war.

In April 1941, the German armistice commission authorized Vichy authorities to resume production of a batch of 1,000 military aircraft for their own use, under the condition that 2,000 German-designed aircraft would later be manufactured in France and delivered to Germany. As part of this agreement, 550 examples of the D.520 were ordered to replace all other single-seat fighters in service. The plan was to have the Dewoitine eventually equip a total of 17 *Groupes* with 442 aircraft, three *escadrilles* of the *Aéronautique navale* with 37 aircraft each, plus three training units with 13 aircraft.

In 1941, D.520s of GC III/6, II/3 and naval *escadrille* 1AC fought the Allies during the Syria-Lebanon campaign. The Vichy French Air Force (*Armée de l'Air de Vichy*) was already relatively strong, but several units were sent to reinforce it. D.520s were the only French single-seat fighters capable of making the trip to Syria. The GC III/6 was sent first. Flying over mountainous terrain for long distances, of the 168 French aircraft (of all types) sent to Syria, 155 accomplished their mission and successfully arrived. The Vichy Air force was numerically strong, but with very few ground crew and spare parts, so the operational flying time for the D.520s was very limited. D.520s of GC III/6 first saw action against British aircraft on 8 June 1941, when they shot down three Fairey Fulmars, losing one D.520 with its pilot taken prisoner). Over the following days several escort missions were made to protect Martin, LeO and Bloch 200 (3/39 Esc) aircraft from British Royal Navy fighters. On 9 June, two Hawker Hurricanes were shot down (with another D.520 lost).

In total, during the Syria campaign 266 missions were flown by the Vichy French Air Force: 99 of them were made by D.520s, nine by MS.406s, 46 by Martin 167s and 31 by LeO 451s. The D.520s were therefore the most active of the French aircraft in the campaign, where they claimed 31 kills over British and Australian units while losing 11 of their own in air combat and a further 24 to AA fire, accidents and attacks on their airfields.. On 10 July, five D.520s attacked Bristol Blenheim bombers from No. 45 Squadron RAF that were being escorted by seven Curtiss Tomahawks from No. 3 Squadron RAAF (3 Sqn). The French pilots claimed three Blenheims, but at least four of the D.520s were destroyed by the Australian escorts, including two by F/O Peter Turnbull. The following day, a Dewoitine pilot shot down a P-40 from 3 Sqn, the only Tomahawk lost during the campaign. This Dewoitine was in turn shot down by F/O Bobby Gibbes. The initial advantage that the Vichy French Air Force enjoyed did not last long, and they lost most of their aircraft during the campaign. The majority of the lost aircraft were destroyed on the ground where the flat terrain, absence of infrastructure and absence of modern anti-aircraft (AA) artillery made them vulnerable to air attacks. On June 26, a strafing run by Tomahawks of 3 Sqn, on Homs airfield, destroyed five Dewoitine D.520s of Fighter Squadron II/3 (Groupe de Chasse II/3) and damaged six more.

By the end of the campaign, the Vichy forces had lost 179 aircraft from the approximately 289 committed to the Levant. The remaining aircraft with the range to do so, evacuated to Rhodes. The known French losses of fighter aircraft were 26 in air combat and 45 in strafing and bombing actions. Allied forces lost 41 planes, 27 of those shot down by French fighters. During Operation Torch, GC III/3 (previously known as GC I/3) was engaged

in combat with the Allies over Oran. *Flotille* 1F saw action versus the United States Navy F4F Wildcat squadron VF-41 (from the carrier USS *Ranger*), over Casablanca. One D.520 was among 14 US victory claims, with the only Allied losses being due to ground and friendly fire. Other Dewoitine-equipped units in North Africa such as GC II/7 or GC II/3 did not to take part in the fighting. Overall, the known D.520 air strength in North Africa was 173 D.520s (143 combat ready) of GC II/3, III/3, III/6, II/7 and II/5, another 30 were in Senegal with GC II/6. The Navy had Esc 1AC and 2AC. Many D.520s were destroyed on the ground by Allied bombing. The French Air Force lost 56 aircraft, among them 13 D.520s. The Navy lost 19 D.520s aircraft. Among the 44 kills that the French scored overall, there was an entire squadron of nine Fairey Albacore, from the HMS *Furious*, all shot down by D.520s of GC III/3.

A very small number of D.520s were briefly operated by Free French Forces for training purposes. Along with the three examples that had flown to Britain in June 1940, two other D.520s were recovered from retreating Vichy forces in Rayak, Lebanon. These D.520s were flown by pilots of the *Normandie-Niemen* unit before the unit was sent to the USSR, where they flew the Yakovlev Yak-1 that had many similarities with the D.520.

In December 1942, as French forces formerly under Vichy sided with the Allies, there were 153 D.520s left in French hands in North Africa. They flew a few patrols during the Battle of Tunisia, but were considered obsolete, and their radio sets were incompatible with Allied equipment. From early 1943 on, they were relegated to training duties at the fighter school in Meknes, and progressively replaced by Spitfires and P-39s in combat units. During the liberation of France, a few D.520s abandoned by the Germans were used by *ad hoc* units in ground attacks against the isolated German pockets of resistance on the Western coast.

As German forces invaded Vichy's so-called "free zone" in November 1942, they captured 246 D.520s; additionally, a batch of 62 was completed under German occupation. The captured Dewoitines were to be delivered to the Axis Balkan Front, although some were used by the *Luftwaffe* for training purposes while 60 were transferred to Italy and 96, or 120, to *Vozdushni Voiski*, the Bulgarian Air Force, for use in combat.

Numerous sources have mentioned use of the D.520 by the Romanian Air Force, but no evidence has ever been provided. One source claims the so-called Romanian Dewoitines were, in fact, in transit to Bulgaria and only flew over Romania in order to get to their final destination. This seems the most reliable explanation, viewed against the numbers of Dewoitines actually available.

About 60 D.520s were acquired by *Regia Aeronautica*. Italian pilots appreciated the aircraft's capabilities and Hispano-Suiza HS.404 cannon, at least by 1940–1941 standards. The first three D.520s were assigned to 2° *Stormo* based at the Torino-Caselle airfield, where they were used for the defence of Torino's industrial area. Other D.520s were captured in Montélimar, Orange, Istres and Aix-en-Provence.

At the beginning of 1943, the Italian ace Luigi Gorrini ferried D.520s taken as prizes of war to Italy to be used for defence.

Surviving Dewoitine D.520 fighters:

Dewoitine D.520a No. 408 was restored to flying condition in the 1970s. Delivered in 1940, it fought against Allies in 1942, survived the war and many years later was rebuilt as the N.90, a famous D.520 flown with GC II/3 It was overhauled in 1977-80, and it flew at Le Bourget airshow in 1980. It performed at various airshows in Europe, but was destroyed in a fatal crash in 1986.

Dewoitine D.520 No. 603 is on display at the *Conservatoire de l'air et de l'espace d'Aquitaine* in Bordeaux-Mérignac.

Dewoitine D.520 No. 655 is undergoing restoration at the Naval Museum in Rochefort.

Dewoitine D.520 No. 862 is on display at the *Musée de l'Air et de l'Espace*. It has been repainted as No. 277 used by GC III/6 in June 1940.

Lioré-et-Olivier LeO 45

Lioré-et-Olivier LeO 45 was a French medium bomber used during the Second World War. It was a low-wing monoplane, all metal in construction, equipped with a retractable undercarriage and powered by two 1,100 hp Hispano-Suiza engines. It was a very effective bomber, but it appeared too late to give any substantial contribution to the war effort. Although designed before the war, it remained in service until September 1957.[67]

At the start of the Battle of France on 10 May 1940, only 54 of the 222 LeO 451 that had been delivered were considered ready for combat, the remainder being used for training, spares, undergoing modifications and repairs or having been lost. The first combat sortie of the campaign was flown by 10 aircraft from GB I/12 and GB II/12 on 11 May. Flying at low altitude, the bombers suffered from heavy ground fire with one aircraft shot down and 8 heavily damaged. Within the next 8 days many of them were shot down. By the Armistice of 25 June 1940, LeO 451 of the *Groupement 6* had flown approximately 400 combat missions, dropping 320 tons of bombs at the expense of 31 aircraft shot down by enemy fire, 40 written off due to damage, and 5 lost in accidents. There are other numbers, stating about 47 bombers lost (26 to fighters, 21 to flak). Although the LeO's were faster than many 1940's fighters and faster than almost all other types of bombers, unfortunately for them the Luftwaffe was equipped with fighters that were even faster (Bf 109 and Bf 110).

Following the Armistice, LeO 451s continued to fly, now under the Vichy government. The aircraft were fitted with larger rudders and, later, two additional 7.5 mm machine guns in the rear turret. Aircraft production had totally stopped with the German occupation, but a 1941 agreement authorized Vichy authorities to have a limited number of military aircraft built. As a result, 109 additional LeOs were manufactured in 1942. The most notable of these was LeO 451-359 which was fitted with an experimental degaussing coil for remotely detonating naval mines (some British Vickers Wellingtons and German Junkers Ju 52s also carried a similar device).

Two bomber units equipped with LeO 451s, GB I/12 and GB I/31 were based in Syria when Allied forces invaded on 8 June 1941, at the start of the Syria-Lebanon Campaign. These were supplemented by GB I/25, which was dispatched from Tunisia. During this campaign, the LeO 451s flew a total of 855 sorties, losing 29 LeO 451s in the process. After Operation Torch which began on 8 November 1942, surviving French LeO 451 in North Africa were used primarily for freight duties, although they flew a few bombing missions against Axis forces during the Tunisia Campaign. They were ultimately replaced in active service by Handley-Page Halifax and B-26 Marauder bombers.

The Germans showed little interest in this aircraft, but on 21 May 1943, Luftwaffe requested Regia Aeronautica to hand over 39 Lioré et Olivier LeO 451, captured by Italians troops in the SNCASE factory in Ambérieu-en-Bugey (Lyon). The Luftwaffe claimed it had previously bought the Lioré, and gave in exchange a stock of 30 Dewoitine D.520s. Subsequently, the 451s were converted into transport aircraft for fuel and troops. Other Lioré were delivered to the Regia Aeronautica and 12 were put in service with a ground attack unit, although they saw almost no active service. Following the war, the 67 surviving aircraft were mostly used as trainers and transports. The LeO 451 was finally retired in September 1957, making it the last pre-war French design to leave active duty.[68]

Martin Model 167

The Martin Model 167 was an American-designed light bomber that first flew in 1939. It saw action during the Second World War with France and the United Kingdom, where it was called the Maryland.[69]

Facing German arms buildup and desperate for modern aircraft, the French Air Force purchased US aircraft of numerous types in the late 1930s. Martin received an order for more than 200 167 Fs which incorporated French-specific equipment such as metric instruments. French officials expected the deliveries to begin in January 1939 but the type, locally designated Glenn Martin 167 A-3 only entered service in early 1940. Notably, because of the U.S. embargo on arms exports after the beginning of the Second World War, many planes were impounded for two months before being shipped to Europe. Approximately 215 Martin 167s were delivered to France.

When the Germans eventually invaded France there were only four *Groupes de bombardement* (bomber squadrons) equipped. The *Glenns* were quickly sent to the frontlines where they performed honorably. With their sufficient speed and excellent manoeuvrability for an airplane in this class,

they sometimes had a chance to avoid enemy fighters. In more than 400 sorties versus the Germans, they suffered a loss rate of only 4%, which was much better than the 16% endured by LeO 451s and their crews above the same targets.

Immediately before the June 1940 Armistice, units flying the Glenn Martin 167 were evacuated to French North Africa to avoid capture by the Germans. One of them landed in Spain and was interned, where it was test flown by the Spanish Air Force. Some examples were transferred to the Aéronautique Navale. During the Vichy rule over the French empire, French Martins occasionally clashed with British Commonwealth forces, most notably during the Syria-Lebanon campaign of 1941. As French North Africa got back in the Allied camp in 1943, M.167s were phased out of service and replaced with more modern Allied types, including the Martin B-26 Marauder.[70]

Morane-Saulnier M.S.406

The M.S.406 was a French Armée de l'Air fighter aircraft built by Morane-Saulnier starting in 1938. Numerically it was France's most important fighter during the opening stages of the Second World War.

Although sturdy and highly manoeuvrable, it was under-powered and weakly armed when compared to its contemporaries. Most critically, it was out-performed by the Messerschmitt Bf 109E during the Battle of France. The M.S.406 held its own in the early stages of the war (the so-called Phoney War), but when the war restarted in earnest in 1940, losses to all causes amounted to approximately 400 aircraft. Out of this total some 150 were lost to enemy fighters and ground fire, another 100 were destroyed on the ground in enemy air raids and the remainder was deliberately destroyed by French military personnel to prevent the fighters from falling into enemy hands intact. In return M.S.406 squadrons achieved 191 confirmed victories and another 83 probable victories. The type was more successful in the hands of Finnish and Swiss air forces which developed indigenous models.[71]

The Swiss continued development of the MS.412 when French involvement stopped following the June 1940 Armistice. The Dornier-Altenrhein factory completed a prototype powered with a licence-produced HS-51 12Y engine, generating 1,060 hp (791 kW) together with the fixed radiator and revised exhausts as tested on the MS.411, in October 1940. The new type retained the armament changes and other improvements introduced on the D.3800. This series was put into production in 1941 as the D-3801 with continued deliveries until 1945 with 207 completed. Another 17 were built from spares between 1947 and 1948. Reliability of the new engine was at first extremely poor, with problems with crankshaft bearings causing several accidents. The engine problems slowed deliveries, with only 16 aircraft produced in 1942 and a single aircraft delivered in 1943. The engine problems were eventually resolved in 1944. With 1,060 hp from the Hispano-Suiza 12Y-51, the speed was boosted to 535 km/h (332 mph), roughly equivalent to the D.520 or the Hurricane. Weights were between 2,124-2,725 kg. After being retired from operational use as a fighter when the North American P-51 Mustang was acquired in 1948, the type remained in service as a trainer and target tug until 1959.

The D.3802 was based on the MS.540, with a Sauer YS-2 (1,250 hp) engine. The prototype flew in the autumn of 1944. This aircraft had several shortcomings, but it was capable of 630 km/h. 12 were produced and saw limited use with Fliegerstaffel 17 and some other units.

The last development of this aircraft was the D.3803, with Sauer YS-3 (1,500 hp) engine, and modified dorsal fuselage (with an all-round visibility canopy). The D.3803 was armed with three HS-404 20 mm cannons (one in the nose, two in the wings), plus up to 200 kg bombs and rockets. Despite not having a powerful engine, the type reached 680 km/h at 7,000 m. The performance was impressive, but the last development of this 1935 fighter design had several shortcomings and was not entirely successful. Its development was halted as P-51D Mustangs became available.

France sent 30 Morane-Saulnier to Finland, between 4 and 29 February 1940. By 1943 Finnish had received an additional 46 M.S.406s and 11 M.S.410s purchased from the Germans. By this point, the fighters were hopelessly outdated, but the Finns were so desperate for serviceable aircraft that they decided to start a modification program to bring all of their examples to a new standard.

The aircraft designer Aarne Lakomaa turned the obsolete M-S into a first rate fighter, the Mörkö-Morane (Finnish for *Bogey* or *Ogre Morane*), sometimes referred to as the LaGG-Morane. Powered by captured Klimov M-105P engines (a licensed version of the HS 12Y) of 1,100 hp (820 kW) with a fully adjustable propeller, the airframe required some local strengthening and also gained a new and more aerodynamic engine cowling. These changes boosted the speed to 326 mph (525 km/h). Other changes included a new oil cooler taken from the Bf 109, the use of four belt-fed guns like the M.S.410, and the excellent 20-mm MG 151/20 cannon in the engine mounting. However, supplies of the MG 151 were limited, and several received captured 12.7mm Berezin UBS guns instead.

The first example of the modified fighter, MS-631, made its first flight on 25 January 1943, and the results were startling: the aircraft was 40 km/h (25 mph) faster than the original French version, and the service ceiling was increased from 10,000 to 12,000 m (32,800 to 39,360 ft).

Originally it was planned to convert all the 41 remaining M.S.406s and M.S.410s with the Soviet engine, but it took time, and the first front-line aircraft of this type did not reach LeLv 28 until July/August 1944. By the end of the Continuation War in 1944, only three examples had been converted (including the original prototype). Lieutenant Lars Hattinen (an ace with six victories) scored three kills with the Mörkö-Morane. More fighters arrived from the factory, though, and the Mörkö-Moranes took part in the Lapland War as reconnaissance and ground attack aircraft. Not all the Mörkö-Morane conversions were completed before March 1945, when the entire re-engining programme was halted. After the end of the war, the total was brought to 41, which served as advanced trainers with TLeLv 14 until September 1948. In 1952 all remaining Finnish Moranes were scrapped.

In late 1930s a war with Germany was clearly looming, and the Armée de l'Air placed an order for 1,000 airframes in March 1938. Morane-Saulnier was unable to produce anywhere near this number at their own factory, so a second line was set up at the nationalized factories of SNCAO at St. Nazaire converted to produce the type. Production began in late 1938, and the first production example flew on 29 January 1939. Deliveries were hampered more by the slow deliveries of the engines than by lack of airframes.

By April 1939, the production lines were delivering six aircraft a day, and when the war opened on 3 September 1939, production was at 11 a day with 535 in service. Production of the M.S.406 ended in March 1940, after the original order for 1,000 had been delivered to the Armée de l'Air, and a further 77 for foreign users (30 for Finland and 45 for Turkey). Additional orders for Lithuania and Poland were canceled with the outbreak of the war.

The MS 406 equipped 16 *Groupes de Chasse* and three *Escadrilles* in France and overseas, and 12 of the *Groupes* saw action against the Luftwaffe. The aircraft was very manoeuvrable and could withstand heavy battle damage, but was outclassed by the Bf 109 and losses were heavy (150 aircraft lost in action and 250-300 lost through other causes). After the armistice, only one Vichy unit, GC. 1/7, was equipped with the MS. 406.

Germany took possession of a large number of M.S.406s and the later M.S.410s. The Luftwaffe used a number for training, and sold off others. Finland purchased additional M.S.406s (as well as a few 406/410 hybrids) from the Germans, while others were passed off to Italy and Croatia. Those still in French hands saw action in Syria against the RAF, and on Madagascar against the Fleet Air Arm. Both Switzerland and Turkey also operated the type; the Swiss actually managing to down a number of both German and Allied aircraft, 1944-1945.

Before the Pacific campaign proper, Vichy authorities in French Indochina were engaged in a frontier war against Thailand, during 1940-41. A number of M.S.406s stationed in Indochina downed Thai fighters before the French Air Force abandoned the theatre. Some examples of the M.S.406 were captured by the Thai Air Force.

The M.S.406 had a parallel career in Finland. In February 1940 the first 30 French fighters were allocated to *LeLv 28*, commanded by Major Jusu. These aircraft received the Finnish designations MS-301 to MS-330. They were used in combat during the Winter War, against the USSR and carried out 259 operational sorties and shot down 16 Soviet aircraft. In modified form, the M.S.406 were later involved in the Continuation War. Between November 1939 and 4 September 1944, Lv28 scored 118 aerial victories flying the Morane M.S.406 (the unit flew Bf 109Gs for a time, as well). The unit lost 15 aircraft. Total Finnish kills amounted to 121. The top Morane ace in all theatres was W/O Urho Lehtovaara, with 15 of his 44.5 total

kills achieved in Moranes. The Finnish nicknames were *Murjaani* (blackmoor), a twist on its name, and *Mätimaha* (roe-belly) and *Riippuvatsa* (hanging belly) for its bulged ventral fuselage.[72]

Potez 630

The Potez 630 and its derivatives were a family of twin-engined aircraft developed for the Armée de l'Air in the late 1930s. The Potez 633 saw only brief operational service with the Armée de l'Air in Europe when aircraft from two units undertook a sortie near Arras on May 20, 1940; two days later the aircraft was withdrawn from front-line service. The Potez 633 exported to Greece and Romania saw more extensive service, in limited numbers. The Romanians used them against the USSR and the Greeks against Italy. A small number of Potez 633 originally destined for China were commandeered by the French colonial administration in Indo-China and saw limited action in the brief French-Thai War in early 1941.

More than 700 Potez 63.11 were delivered by June 1940, of which more than 220 were destroyed or abandoned, despite the addition of extra machine gun armament; the heaviest losses of any French type. The Potez 63.11 continued in service with the Vichy air force and with the Free French forces in North Africa seeing action with both. Production was resumed under German control and significant numbers appear to have been impressed by the Germans, mostly in liaison and training roles.[73]

Argentina, Denmark, the Soviet Union, Spain and Sweden

These states were not officially members of Axis, but had controversial relations with one or more Axis members at some point during the war.

Argentina

During the early years of the Second World War, Argentina maintained close relations with the Axis powers while officially remaining neutral. These close relations with the Axis irritated the United States, which cancelled weapons shipments to the country while increasing shipments to Argentina's neighbour, Brazil, in an attempt to pressure the Argentine government to abandon its ties with the Axis. Newly elected president Ramón Castillo drew Argentina closer to the Axis; in 1942 Argentina approached Germany with a request to purchase airplanes, weapons, and other equipment. Argentine General Domingo Martínez claimed that President Ramón Castillo was concerned over the country's relations with Brazil, with Argentina facing an ultimatum from the US. The Argentine government feared a potential invasion by Brazil and Uruguay backed by the US. Castillo was initially determined to resist, and openly joined the Axis, believing that Argentina's geography would allow it to withstand war. Upon Brazil joining the Allied powers in August 1942, Argentina declared itself a non-belligerent, while still negotiating with Germany for weapons. Castillo believed that the Axis would triumph in the Second World War.

In 1943 a military coup overthrew the Argentine government. A military junta was established, led by Pedro Pablo Ramírez. In 1944 the United States government labeled the Argentine government as "fascist" and enacted financial and trade restrictions against the country, urging other countries to do the same. British officials captured Argentina's envoy to Germany, creating a diplomatic disaster for Argentina. In January 1944, under pressure from Britain and the United States, Ramírez agreed to break all ties with the Axis powers. Argentine nationalists were alarmed by this concession and forced Ramírez to resign. For the remaining year of the war, the United States continued to maintain sanctions against Argentina due to its pro-Axis leanings. Argentina only declared war on Germany in 1945, about a month before the end of the war. The close ties between Argentina and Nazi Germany proved controversial near the end of the war and afterwards, as Nazi personnel and capital began to arrive in Argentina in 1944.[74]

Denmark

On 31 May 1939, Denmark and Germany signed a treaty of non-aggression, which did not contain any military obligations for either party. On 9 April 1940, citing the intended laying of mines in Norwegian and Danish waters as a pretext, Germany invaded both countries. The Danes had a very small air force attached to the Army. They had no military effect on the German invasion of Denmark; most aircraft were destroyed or captured on the ground. They were organized into two Aviation Battalions. The Jutland Battalion had one fighter squadron equipped with 13 Fokker D.XXI one reconnaissance squadron equipped with 11 biplanes, and the Saeland Battalion was equipped with 8 Fokker G.Ia and one reconnaissance squadron equipped with 14 biplanes.

King Christian X and the Danish government, worried about German bombings if they resisted occupation, accepted "protection by the Reich" in exchange for nominal independence under German military occupation. Three successive Prime Ministers, Thorvald Stauning, Vilhelm Buhl, and Erik Scavenius, maintained this *samarbejdspolitik* ("cooperation policy") of collaborating with Germany.

Denmark coordinated its foreign policy with Germany, extending diplomatic recognition to Axis collaborator and puppet regimes, and breaking diplomatic relations with the governments-in-exile formed by countries occupied by Germany. Denmark broke diplomatic relations with the Soviet Union and signed the Anti-Comintern Pact of 1941.

In 1941 a Danish military corps, the *Frikorps Danmark*, was created at the initiative of the SS and the Danish Nazi Party, to fight alongside the *Wehrmacht* on Germany's Eastern Front. *Frikorps Danmark* was open to members of the Danish Royal Army and those who had completed their service within the last ten years. Between 4,000 and 10,000 Danish citizens joined the *Frikorps Danmark*, including 77 officers of the Royal Danish Army. An estimated 3,900 of these soldiers died fighting for Germany during the Second World War.

Denmark transferred six torpedo boats to Germany in 1941, although the bulk of its navy remained under Danish command until the declaration of martial law in 1943.

The Danish protectorate government lasted until 29 August 1943, when the cabinet resigned following a declaration of martial law by occupying German military officials. Germany declared war on Denmark and attacked the Danish military bases which led to 13 Danish soldiers dead in the fighting. The Danish navy scuttled 32 of its larger ships to prevent their use by Germany. Germany seized 14 larger and 50 smaller vessels, and later raised and refitted 15 of the sunken vessels. During the scuttling of the Danish fleet, a number of vessels attempted an escape to Swedish waters, and 13 vessels succeeded, four of which were larger ships. By the autumn of 1944, these ships officially formed a Danish naval flotilla in exile. In 1943 Swedish authorities allowed 500 Danish soldiers in Sweden to train as police troops. By the autumn of 1944, Sweden raised this number to 4,800 and recognized the entire unit as a Danish military brigade in exile. Danish collaboration continued on an administrative level, with the Danish bureaucracy functioning under German command.[75]

Aviation Museums in Denmark

Forsvars – og Garnisonsmuseum, Aalborg Defence and Garrison Museum, Skydebanevej 22, Aalborg 9000. www.forsvarsmuseum.dk.

Marinemuseum, Vestre Fjordvej 81, Aalborg 9000. www.aalborgmarinemuseum.dk.

Danmarks Tekniske Museum, Fabriksvej 25, DK-3000 Helsingor. www.tekniksmuseum.dk.

Hjallerup Mekaniske Museum, Algade 42, 9320 Hjallerup. www.hjallerup-museum.dk.

Flyvestation Karup's Historiske Forening Museet, Karup Air Base Museum.

Egeskov Veteran Car Museum, Egeskov Castle, Egeskov Gade 18, 5772 Kvaerndrup.

www.egeskov.dk.

Danish Collection of Vintage Flying Aircraft, Stauning Airport, Dansk Veteranflysambling, Lufthavnsvej Stauning, Skjern 6900. www.flymuseum.dk.

Soviet Union

Relations between the Soviet Union and the major Axis powers were generally hostile before 1938. In the Spanish Civil War, the Soviet Union gave military aid to the Second Spanish Republic, against Spanish Nationalist forces, which were assisted by Germany and Italy. The Nationalist forces won the war. The Soviets suffered another political defeat when their ally Czechoslovakia was partitioned and partially annexed by Germany and Hungary via the Munich Agreement. In 1938 and 1939, the USSR fought and defeated Japan in two separate border wars, at Lake Khasan and Khalkhin Gol, the latter being a major Soviet victory.

In 1939 the Soviet Union considered forming an alliance with both Britain and France or with Germany. The Molotov-Ribbentrop Pact of August 1939 between the Soviet Union and Germany included a secret protocol whereby the independent countries of Finland, Estonia, Latvia, Lithuania, Poland, and Romania were divided into spheres of interest of the parties. On 1 September, barely a week after the pact had been signed, Germany invaded Poland. The Soviet Union invaded Poland from the east on 1 September and on 28 September signed a secret treaty with Nazi Germany to arrange coordination of fighting against Polish resistance.

Soon after that, the Soviet Union occupied the Baltic countries of Estonia, Latvia, and Lithuania, and annexed Bessarabia and Northern Bukovina from Romania. The Soviet Union attacked Finland on 30 November 1939, which started the Winter War. Finnish defences prevented an all-out invasion, resulting in an interim peace, but Finland was forced to cede strategically important border areas near Leningrad.

Germany ended the Molotov-Ribbentrop Pact by invading the Soviet Union in Operation Barbarossa on 22 June 1941. This resulted in the Soviet Union becoming one of the Allies. Germany then revived its Anti-Comintern Pact, enlisting many European and Asian countries in opposition to the Soviet Union. The Soviet Union and Japan remained neutral towards each other for most of the war by the Soviet-Japanese Neutrality Pact. The Soviet Union ended the Soviet-Japanese Neutrality Pact by invading Manchukuo on 8 August 1945, due to agreements reached at the Yalta Conference with Roosevelt and Churchill.[76]

Aviation Museums in Russia

Central Air and Space Museum, 24a Leningradsky Prospekt, Central Aerodrome at Khodinka Field, Moscow, 125040.

Central Armed Forces Museum, Ulitsa Sovetskoy Armii 2, Moscow, 129110.

www.cmaf.ru.

Central Museum of the Air Forces, 141170, pos. Monino, Shchelkovo district of Moscow region. www.moninoaviation.com. Largest aviation museum in Russia. The facility was an operational air base from 1932 through April, 1956. The museum was founded in 1958 and opened in 1960 at the original airfield location and in the original airfield structures.

Central Museum of the Great Patriotic War, Poklonnaya Gora, Park Pobedy, St. Brothers Fonchenko 10, 121170 Moscow. www.poklonnayagora.ru.

Kubinka Aviation Museum, Kubinka Air Base and Kubinka Garrison.

Kuibyshev Aviation Institute, Smyshlyaevka Airfield, Samara.

Kurgansk Aviation Museum, Kurgan Airport. Kurgansky Kosmopark, ul. Gagarina 41 airport, 640000 Kurgan. http://aviakurgan.narod.ru/.

Long Range Aviation Museum, Engel's Air Base. Open since 6 September 2000.

The Russian Federation Ministry of Defence, Moscow. www.mil.ru.

Vadim Zadorozhny Museum, Building 9, Arhangelskoe, 4-th km of Ilinskoe Highway, Moscow 143420. www.automuseum.ru.

VVS I PVO Museum, Sovetskiy Prospekt, Moscow – Nemchinovka.

Air Museum, Rzhev Air Base; Air Museum, Savasleyka Air Base; Air Museum, Torzhok Air Base.

Museum of History of Civil Aviation, Ulyanovsk, Barataevka, Aviacionnaya Street.

Ulavia73@mail.ru.

Nemchinovka Museum of Air Defence, Ramenskoye.

Nikolayevsk Aviation Museum.

Samara Aerospace University Museum, Samara.

In addition to the large scale aviation museums, a number of towns, airfields, cities and communities have aircraft preserved as monuments and gate guards. These include Aerodrome Bobrovka, Samara; Aerospace Lyceum Khimki, Ramenskoye; Anti-Aircraft Warfare Memorial Complex, Abram-Mys; Arkhangelskoe Krasnogorskiy Museum of Technology, Ramenskoye; Aviagarnizon Klip-Yavr, Murmansk Region; Aviagarnizon Kubinka, Ramenskoye; Balashov, Saratov Region; Borskoye, Samara Region Kubinka, Ramenskoye; Bugulma, Tatarstan; Bykovo Airport, Ramenskoye; Cadet Centre Patriot, Ramenskoye; Central Volokolamsk, Ramenskoye; Chkalovsky, Ramenskoye; Domodedovo Airport, Ramenskoye; Drakino (Serpukhov District), Ramenskoye; Dubna (Dubnenskogo District), Ramenskoye; Egorievsk, Ramenskoye; Falcon Territory Training Aviation Regiment, Saratov; Foresta Holiday Village, Ramenskoye; Igarka; IRPA Rosto, Ramenskoye; Kazan; Khimki, Ramenskoye; Kirsanov Technical School; Klin, Ramenskoye; Koltsovo Airport, Ekaterinburg; Kovdor, Murmansk Region; Krasnogorsk, Ramenskoye; Lenin and State University, Stavropol; Lobnensky District, Ramenskoye; Lovozero, Murmansk; Lukhovitsy, Ramenskoye; Lyubertsy, Ramenskoye; Minsk; Monchegorsk, Murmansk Region; Moscow Aircraft Repair Plant, Ramenskoye;

Murmashi Airport, Murmansk; Victory Park, Saratov; Myachkovo; North Luostari, Murmansk Region; North Safonovo, Murmansk Region; Novosibirsk Aeroclub, Murmansk Region; Olenegorsky, Murmansk Region; Omsk; Orsk Airfield Sokol, Orenburg; and Orsk Region; Ostafjevo; Perm South; Poliarniy, Murmansk Region;

Polyarniye Zori, Murmansk Region; Pos. Belushya LIP; PPC DSS "Rainbow", Ramenskoye; Putyatino, Ryazan; Ramenskoye; Revda, Lovozero Murmansk Region;

Sakha, Yakutia Airport; Samara Technical Institute, Smyshlyaevka Airfield; Saratove Region; Savelovo Klentino; Sergiev Posad, Ramenskoye; Severomorsk, Murmansk Region; Sheremetyevo Airport, Moscow; Shaykovka, Kaluga Region; Shong, Murmansk Region; Simferopol; Skeely Soyuz, St Petersburg; Smolensk; Solnechnogorsk, Ramenskoye; Stupino and Stupino Station, Ramenskoye; Taksimo Buryatia; Talagi Airport, Arkhangelsk; Technical Museum Vadim Zadorozhnogo, Ramenskoye; Togliatti Technical Museum of AVTOVAZ, Samara; Totskoye, Orenburg; Tushino; Ulyanovsk;

Ust-Kamenogorsk; Victory Park, the Museum of Military Glory, Saratov; Vidyaevo, Murmansk Region; Vnukovo Ramenskoye; Volodarskogo, Tver; Vorkuta Airport Memorial, Vortuka; Yakutsk; Yegor'yevsk-Shuvoe Airfield, Ramenskoye; Yury Gagarin Park, Samara; Zagashnik Moninskogo

Museum, Ramenskoye; and Zhukovsky Airfield and Zhukovsky Racecourse, Ramenskoye.

Spain

Caudillo Francisco Franco's Spanish State gave moral, economic, and military assistance to the Axis powers, while nominally maintaining neutrality. Franco described Spain as a member of the Axis and signed the Anti-Comintern Pact of 1941 with Hitler and Mussolini. Members of the ruling Falange party in Spain wanted the return of Gibraltar to Spanish control. Falangists also supported Spanish colonial acquisition of Tangier, French Morocco and northwestern French Algeria. Spain also held ambitions on former Spanish colonies in Latin America. In June 1940 the Spanish government approached Germany to propose an alliance in exchange for Germany recognizing Spain's territorial aims: the annexation of the Oran province of Algeria, the incorporation of all Morocco, the extension of Spanish Sahara southward to the twentieth parallel, and the incorporation of French Cameroons into Spanish Guinea.

In 1940 Spain invaded and occupied the Tangier International Zone, maintaining its occupation until 1945. The occupation caused a dispute between Britain and Spain in November 1940; Spain conceded to protect British rights in the area and promised not to fortify the area. During the Second World War the Spanish government planned to expand its territory into Portugal and made these plans known to the German government. In a communiqué with Germany on 26 May 1942, Franco declared that Portugal should be made part of a Greater Spain.

Franco won the Spanish Civil War with the help of Nazi Germany and Fascist Italy, which were both eager to establish another fascist state in Europe. When Germany invaded the Soviet Union in 1941, Franco immediately offered to form a unit of military volunteers to join the invasion. This was accepted by Hitler and, within two weeks, there were enough volunteers to form a division – the Blue Division (*División Azul*) under General Agustín Muñoz Grandes.

Spain's ruling Falange party operated in Latin America, especially Puerto Rico, where pro-Falange and pro-Franco sentiment was high. The Falangists promoted the idea of supporting Spain's former colonies in fighting against American domination. Prior to the outbreak of war, support for Franco and the Falange was high in the Philippines. The Falange Exterior, the international department of the Falange, collaborated with Japanese forces against US forces in the Philippines.[77]

Aviation Museums in Spain

Fundación Infante de Orleans, Cuatro Vientos Air Base, Hangar 3, 28044 Madrid. www.fio.es.

Museo del Aire, Cuatro Vientos Air Base, Madrid. www.aire.org/museuo/.

Museo de Aeropuertos y Transporte Aereo, Av Comandante Garcia Morato 81, 29004 Malaga. www.aeroplaza.org.

Fundació Parc Aeronàutic de Catalunya – Sabadell, Fundació PAC, Aeropuerto de Sabadell, 08205 Sabadell. www.fpac.org.

Museo Naval de San Fernando, Poblacion Militar de San Carlos, ES-11206 San Fernando (Cadiz).

El Museo de San Javier, Avenida de la Libertad 37, San Javier.

Museo Militar de Almeyda, Calle de San Isrido, Santa Cruz de Tenerife, Canary Islands.

Fundació Parc Aeronàutic de Catalunya – Vilanova, Delegación de Vilanova, Avinguda de l'Aragai s/n, Apartado de Correos 276, 08800 Vilanova I la Geltrú. Fundació PAC, Aeropuerto de Sabadell, 08205 Sabadell. www.fpac.org.

Sweden

The official policy of Sweden before, during, and after the Second World War was neutrality. It had held this policy for over a century, since the end of the Napoleonic Wars. In contrast to many other neutral countries, Sweden was not directly attacked during the war, although it was subject to British and Nazi German naval blockades, which led to problems with the supply of food and fuels.

From the spring of 1940 to the summer of 1941 Sweden and Finland were surrounded by Nazi Germany and the Soviet Union. This led to difficulties in maintaining the rights and duties of neutral states in the Hague Convention. Sweden violated this, as German troops were allowed to travel through Swedish territory between July 1940 and August 1943. In spite of the fact that it was allowed by the Hague Convention, Sweden has been criticized for exporting iron ore to Nazi Germany via the Baltic and the Norwegian port of Narvik. German dependence on Swedish iron ore shipments was the primary reason for Great Britain to launch Operation Wilfred and, together with France, the Norwegian Campaign in early April 1940. By early June 1940 the Norwegian Campaign stood as a failure for the allies. Nazi Germany could obtain the Swedish iron ore supply it needed for war production despite the British naval blockade by securing access to Norwegian ports by force.[78]

The Swedish Air Force was created on 1 July 1926 when the aircraft units of the Army and Navy were merged. Because of the escalating international tension during the 1930s the Air Force was reorganized and expanded from four to seven squadrons. When the Second World War broke out in 1939 further expansion was initiated and this substantial expansion was not finished until the end of the war. Although Sweden never entered the war, a large air force was considered necessary to ward off the threat of invasion and to resist pressure through military threats from the great powers. The Flygvapnet bought aircraft from a number of other nations. These included the J-7 Bristol Bulldog and the J-8A/B Gloster Gladiator Mk I & II from the UK; 60 J-9 Seversky EP-106 (P-35) from the USA (60 others were impounded by the USAAC); 72 J-11 Fiat CR.42 and 60 Reggiane Re.2000 from Italy; 50 North American P-51D Mustangs (purchased in April 1945); 56 B-3/A/B/C Junkers Ju 86K built under licence; 15 B-4 Hawker Hart light biplane bombers; 91 B-5B/C Northrop A-17A; and 31 B-16 Caproni Bergmaschi Ca.312s. As the war progressed, Sweden developed its own aircraft designs, including the SAAB J-21A pusher fighter in 1945 which was later modified to the J-21R jet fighter; and the FFVS J-22 monoplane fighter in 1945. The Swedish designated their bombers as the B-17A/B/C single-engine light level, reconnaissance and dive bomber from 1941; and the B-18 twin-engine medium bomber.[79]

When the Soviet Union attacked Finland in November 1939, Sweden came to its neighbour's assistance in most ways short of joining the war outright. A Swedish volunteer infantry brigade and a volunteer air squadron fought in northern Finland in January till March 1940. The squadron was designated F 19 and consisted of 12 Gloster Gladiator fighters and four Hawker Hart dive-bombers.

By 1945 the Swedish Air Force had over 800 combat-ready aircraft, including 15 fighter divisions. The Swedish Air Force underwent a rapid modernization from 1945. It was no longer politically acceptable to equip it with second-rate models. Instead, the air staff purchased the best it could find from abroad, including North American. P-51D Mustangs, De Havilland Mosquito NF.19 night fighters and de Havilland Vampires, and supported the development of top performance domestic models, including the Saab 29 Tunnan jet fighter was introduced around 1950.[80]

Aviation Museums in Sweden

Ängelholms Flyg Museum, F 10 Kamratforening, Valhall Park, 262 74 Ängelholm.

www.f10kamratforening.se.

Robotmuseum/Arboga Missile Museum, Glasbruksgatan 1, 732 31 Arboga.

http://robotmuseum.se.

Försvarsmuseum Boden, Granatvägen 2, 961 43 Boden.

www.forsvarsmuseum.se.

Eskilstuna Flygmuseum, Eskilstuna Flygplats, 63506 Eskilstuna.

Allebergs Segelflyg Museet, Alleberg, Falkoping. www.svs-se.org/museum/.

Aeroseum, Holmvägen 100, S-417 46 Göteborg-Säve. www.aerosum.se.

Flygvapenmuseum, Carl Cederstroms gata, Malmslatt, Flygvapenmuseum 581 98 Linkoping. www.flygvapnmuseum.se.

F11 Museet, Nykoping – Skavsta Flygplats, Nykoping Aviation Association, Skavsta Flygplats, 611 92 Nykoping. www.f11museum.se.

Teknikland, Optands flygfält, 83192 Östersund. www.teknikland.se.

Osterlens Flygmuseum, Ostra Vemmerlov, Ostbo, 272 97 Garsnas. www.osterlensflygmuseum.se.

Soderhamn F15 Flygmuseum, Byggnad 81 Flygstaden, 826 70 Soderhamn. www.soderhamnflygmuseum.se.

Tekniska Museet, National Museum of Science and Technology, Box 27842, Museivagen, S-115 93 Stockholm. www.tekniskamuseet.se.

Svedinos Bil- och Flygmuseum, Ugglarp, SE-310 50 Sloinge. www.svedinos.se.

Hangar 91, Garnisonsvägen, 752 19 Uppsala.

www.f16kamratforening.org/111-aktuellt/33-hangar-91.

Västerås Flygmuseum, Hasslogatan 16, 721 31 Västerås. www.flygmuseum.com.

RFN Vidsel Museum, Vidsel. www.vidsel.nu/rfnmuseum/.

Switzerland

At the outbreak of the Second World War in 1939, Switzerland immediately began to mobilize for a possible invasion. The entire country was fully mobilized in only three days. The Swiss government began to fortify positions throughout the country. The total strength of the army and militias grew to exactly 498,327 men.

In the course of the war, detailed invasion plans were drawn up by the German military command, such as Operation Tannenbaum, but Switzerland was never attacked. Switzerland was able to remain independent through a combination of military deterrence, economic concessions to Germany, and good fortune as larger events during the war delayed an invasion. Under General Henri Guisan, a massive mobilization of militia forces was ordered. The Swiss military strategy was changed from one of static defence at the borders, to a strategy of organized long-term attrition and withdrawal to strong, well-stockpiled positions high in the Alps known as the National Redoubt. This controversial strategy was essentially one of deterrence. The idea was to cause huge losses to German forces and render the cost of invading too high. During an invasion, the Swiss Army would cede control of the economic heartland and population centres, but retain control of crucial rail links and passes in the National Redoubt. Switzerland was an important base for espionage by both sides in the conflict and often mediated communications between the Axis and Allied powers by serving as a protecting power.

Nazi Germany repeatedly violated Swiss airspace. During the Invasion of France, German aircraft violated Swiss airspace at least 197 times. In several air incidents, the Swiss (ironically using 10 Messerschmitt Bf-109D and, 50 Bf-109E-1 and 30 Bf 109E-3 fighters bought from Germany prior to the war and some 290 licence-built Morane-Saulnier M.S.406s built under license in Switzerland (82 designated D.3800 and 207 as D.3801 with a larger engine), shot down 11 Luftwaffe planes between 10 May 1940 and 17 June 1940. Germany protested diplomatically on 5 June 1940 and with a second note on 19 June 1940 which contained clear threats. Hitler was especially furious when he saw that German equipment was shooting down German pilots. He said they would respond “in another manner”. On 20 June 1940, the Swiss air force was ordered to stop intercepting planes violating Swiss airspace. Swiss fighters began instead to force intruding aircraft to land at Swiss airfields. A few Bf 109Fs were interned and then added to active squadrons. The Swiss bought a few Junkers Ju 52s in 1943 that flew with their air force until 1969, and in 1944 they bought a dozen Bf 109G-6s. The Swiss also built some of their own designs, including the EKW C.3600 series of single engine light reconnaissance bombers.[81]

Anti-aircraft units still operated. Later, Hitler and Hermann Göring sent saboteurs to destroy Swiss airfields, but the sabotage team was captured by the Swiss army before it could cause any damage.

Allied aircraft also intruded on Swiss airspace during the war, mostly Allied bombers returning from raids over Italy and Germany that had been damaged and whose crews preferred internment by the Swiss to becoming prisoners of war. Over a hundred Allied aircraft and their crews were interned. They were subsequently put up in various ski resorts that had been emptied from lack of tourists due to the war and held until it ended.

Switzerland, surrounded by Axis-controlled territory, also suffered from Allied bombings during the war; most notably from the accidental bombing of Schaffhausen by American planes on 1 April 1944. It was mistaken for Ludwigshafen am Rhein, a nearby German town, 40 people were killed and over 50 buildings destroyed, among them a group of small factories producing anti-aircraft shells, ball-bearings, and Bf-109 parts for Germany. The bombing limited much of the leniency the Swiss had shown toward Allied airspace violations. Eventually, the problem became so bad that they declared a zero-tolerance policy for violation by either Axis or Allied aircraft and authorized attacks on American aircraft. Victims of these mistaken bombings were not limited to Swiss civilians, however, but included the often confused American aircrews, shot down by the Swiss fighters as well as several Swiss fighters shot down by American airmen. In February 1945, 18 civilians were killed by Allied bombs dropped over Stein am Rhein, Vals, and Rafz. Arguably the most notorious incident came on 4 March 1945, when both Basel and Zurich were accidentally bombed by Allied aircraft. The attack on Basel’s railway station led to the destruction of a passenger train, but no casualties were reported. However, a B-24 Liberator dropped its bomb load over Zürich, destroying two buildings and killing five civilians. The aircraft’s crew believed that they were attacking Freiburg in Germany.

The Swiss, although somewhat skeptical, reacted by treating these violations of their neutrality as “accidents”. The United States was warned that single aircraft would be forced down, and their crews would still be allowed to seek refuge, while bomber formations in violation of airspace would be intercepted. Danger from U.S. bombers came not only from accidental bombings, but from the aircraft themselves. In many cases, once a crippled bomber reached Switzerland and was out of enemy territory crews would often bail out, leaving the aircraft to continue until it crashed. In spite of these incidents, Switzerland also acted as a refuge for Allied prisoners of war who escaped, including those from Oflag IV-C (Colditz).[82]

Aviation Museums in Switzerland:

Fliegermuseum Altenrhein, Flugplatz Sankt Gallen, Postfach CH-9423, Altenrhein.

www.fliegermuseum.ch.

Fliegermuseum Bäretswil, Im Tisenwaldsberg 2, 8344 Bäretswil, ZH.

www.fahrzeug-museum.ch.

Flieger Flab Museum, Air Force Center, Uberlandstrasse 255, Dubendorf, CH-8600.

www.airforcecenter.ch.

Verkehrshaus der Schweiz, Swiss Museum of Transport, Lidostrasse 5, CH-6006, Lucerne. www.verkehrshaus.ch.

Clin d'Aile, Musee de l'Aviatino Militaire de Payerne, Base Aerienne, 1530 Payerne.

www.clindailes.ch.

Militaer Museum Wildegg, Peter Fischer, Ammerswilerstr. 63, 5600 Lenzburg.

www.militaermuseumwildegg.ch.

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[1] Internet: http://en.wikipedia.org/wiki/Axis_powers.

[2] Internet: http://world.std.com/~ted7/minorafe.htm.

[3] Internet: http://en.wikipedia.org/wiki/Bulgarian_Air_Force.

[4] Internet: http://en.wikipedia.org/wiki/Avia_B-534.

[5] Internet: http://en.wikipedia.org/wiki/Dewoitine_D.520.

[6] Internet: http://en.wikipedia.org/wiki/Hungarian_Air_Force.

[7] Internet: http://en.wikipedia.org/wiki/Museum_of_Hungarian_Aviation.

[8] Internet: http://www.ww2aircraft.net/forum/aircraft-pictures/hungarian-air-force-28890.html.

[9] Internet: http://comum.rcaap.pt/bitstream/123456789/1238/1/NeD110_SzaboMiklos.pdf.

[10] Internet: http://en.wikipedia.org/wiki/Royal_Romanian_Air_Force.

[11] Internet: http://en.wikipedia.org/wiki/IAR_80.

[12] Internet: http://en.wikipedia.org/wiki/IAR_80.

[13] Internet: http://world.std.com/~ted7/minorafe.htm.

[14] Internet: http://en.wikipedia.org/wiki/Slovak_Air_Force.

[15] Internet: http://en.wikipedia.org/wiki/Avia_B-534.

[16] The Slovak–Hungarian War or Little War (Hungarian: *Kis háború*, Slovak: *Malá vojna*), was a war fought from 23 March to 31 March/4 April 1939 between the First Slovak Republic and Hungary in eastern Slovakia. Internet: http://en.wikipedia.org/wiki/Slovak%E2%80%93Hungarian_War.

[17] Internet: http://en.wikipedia.org/wiki/Avia_B-534.

[18] Internet: http://en.wikipedia.org/wiki/Axis_powers.

[19] Internet: http://en.wikipedia.org/wiki/Finnish_Air_Force.

[20] The Winter War was a military conflict between the Soviet Union and Finland which began with a Soviet offensive on 30 November 1939, two months after the start of the Second World War and the Soviet invasion of Poland, and ended on 13 March 1940 with the Moscow Peace Treaty. The League of Nations deemed the attack illegal and expelled the Soviet Union from the League on 14 December 1939. Internet: http://en.wikipedia.org/wiki/Winter_War.

[21] The Continuation War (25 June 1941 – 19 September 1944) was the second of two wars fought between Finland and the Soviet Union during the Second World War. During this war, the Finnish side used the name to make clear its perceived relationship to the preceding Winter War. The Soviet Union saw the war as a part of its struggle against Germany and its allies on the Eastern Front, or, as it was known in the Soviet Union, the Great Patriotic War. Germany regarded its operations in the region as a part of its overall war efforts of the Second World War. It provided critical material support and military cooperation to Finland. Internet: http://en.wikipedia.org/wiki/Continuation_War.

[22] Internet: http://en.wikipedia.org/wiki/Caudron_C.714.

[23] Internet: http://en.wikipedia.org/wiki/Finnish_Air_Force/

[24] Internet: http://en.wikipedia.org/wiki/Axis_powers.

[25] Internet: http://en.wikipedia.org/wiki/Anglo-Iraqi_War.

[26] Internet: http://en.wikipedia.org/wiki/Axis_powers.

[27] Internet: http://en.wikipedia.org/wiki/Royal_Thai_Air_Force.

[28] Internet: http://en.wikipedia.org/wiki/Royal_Thai_Air_Force.

[29] Internet: http://en.wikipedia.org/wiki/Military_history_of_the_Philippines_during_World_War_II.

[30] Internet: http://en.wikipedia.org/wiki/Manchukuo.

[31] Internet: http://en.wikipedia.org/wiki/Manchukuo_Air_Force.

[32] Internet: http://en.wikipedia.org/wiki/Manchukuo.

[33] Internet: http://en.wikipedia.org/wiki/Axis_powers.

[34] Internet: http://en.wikipedia.org/wiki/Axis_powers.

[35] Internet: http://en.wikipedia.org/wiki/Military_history_of_the_Philippines_during_World_War_II.

[36] Internet: http://en.wikipedia.org/wiki/Second_Philippine_Republic.

[37] Internet: http://en.wikipedia.org/wiki/Axis_powers.

[38] Internet: http://en.wikipedia.org/wiki/Axis_powers.

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[49] Internet: http://en.wikipedia.org/wiki/Axis_powers.

[50] Internet: http://en.wikipedia.org/wiki/Axis_powers.

[51] Internet: http://en.wikipedia.org/wiki/Axis_powers.

[52] Internet: http://world.std.com/~ted7/minorafe.htm.

[53] The Croatian Air Force Legion (Croatian: *Hrvatska Zrakoplovna Legija*), or HZL, also known as the Croatian Legion, was a foreign volunteer unit of the Luftwaffe raised from volunteers drawn from the Independent State of Croatia which fought on the Eastern Front between 1941-1943 in the Second World War. It was then absorbed by the Air Force of the Independent State of Croatia and its surviving members fought back on Croatian soil. The legion had approximately 360 men. Internet: http://en.wikipedia.org/wiki/Croatian_Air_Force_Legion.

[54] Internet: http://en.wikipedia.org/wiki/Air_Force_of_the_Independent_State_of_Croatia

[55] Internet: http://en.wikipedia.org/wiki/Air_Force_of_the_Independent_State_of_Croatia.

[56] Internet: http://en.wikipedia.org/wiki/Axis_powers.

[57] Internet: http://en.wikipedia.org/wiki/Axis_powers.

[58] Internet: http://en.wikipedia.org/wiki/Vichy_French_Air_Force.

[59] Internet: http://en.wikipedia.org/wiki/Vichy_French_Air_Force.

[60] Internet: http://en.wikipedia.org/wiki/Arsenal_VG-33.

[61] Internet: http://en.wikipedia.org/wiki/Bloch_MB 150.

[62] Internet: http://en.wikipedia.org/wiki/Bloch_MB_174.

[63] Internet: http://en.wikipedia.org/wiki/Breguet_695.

[64] Internet: http://en.wikipedia.org/wiki/Curtiss_P-36_Hawk.

[65] Internet: http://en.wikipedia.org/wiki/Curtiss_P-36_Hawk.

[66] Internet: http://en.wikipedia.org/wiki/Dewoitine_D.520.

[67] Internet: http://en.wikipedia.org/wiki/Lior%C3%A9-et-Olivier_LeO_45.

[68] Internet: http://en.wikipedia.org/wiki/Lior%C3%A9-et-Olivier_LeO_45.

[69] Internet: http://en.wikipedia.org/wiki/Martin_Maryland.

[70] Internet: http://en.wikipedia.org/wiki/Martin_Maryland.

[71] Internet: http://en.wikipedia.org/wiki/Morane-Saulnier_MS.406.

[72] Internet: http://en.wikipedia.org/wiki/Morane-Saulnier_M.S.406.

[73] Internet: http://en.wikipedia.org/wiki/Potez_63.11.

[74] Internet: http://en.wikipedia.org/wiki/Axis_powers.

[75] Internet: http://en.wikipedia.org/wiki/Axis_powers.

[76] Internet: http://en.wikipedia.org/wiki/Axis_powers.

[77] Internet: http://en.wikipedia.org/wiki/Axis_powers.

[78] Internet: http://en.wikipedia.org/wiki/Axis_powers.

[79] Internet: http://world.std.com/~ted7/minoraf.htm#scand.

[80] Internet: http://en.wikipedia.org/wiki/Swedish_Air_Force.

[81] Internet: http://world.std.com/~ted7/minoraf.htm#scand.

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