

# Til Hamburg med DC3-vennerne - april 2015

Vi havde tilmeldt os en 2-dages tur til Hamburg. Karin havde besøgt byen et par gange for mange år siden: på udflygt med handelsskolen i 1960, og en anden gang, hvor hun var inviteret til jomfru-sejllads med et nyt cruiseskib. Jeg havde kun passeret byen med tog og bus, og ikke oplevet selve Hamburg. Så her var muligheden for at se og opleve mest muligt af denne interessante by ved Elben.

Vi mødtes med 49 andre rejsedeltagere på en parkeringsplads ved Høje Taastrup station, og bussen afgik kl. 8.30 og kørte non-stop til Rendsburg. Det var en flot langtursbus fra Solrød Rejser. Vi savnede dog lidt underholdning og informationer under den lange busrejse. Vi fik wienerschnitzel med pommes frites og lyserød dessert med godt øl i "Brucken-Terrassen", der var en hyggelig restaurant ved Kielerkanalen. En speaker fortalte om de passerende skibe, og skibenes nationalmelodier blev spillet.

Rendsburg ligger midt i Slesvig-Holsten ved Kielerkanalen og Ejderen, som den gamle hærvej krydsede her. Byen knytter sig både til Sydslesvig og Holsten og har ca. 28.000 indbyggere. Rendsburgs gamle bydel er beliggende på en tidligere ø i Ejderen og ligger på grænsen mellem Sønderjylland (≈ Slesvig) og Holsten. Med udbygningen til fæstning i 1600- og 1700-tallet og senere udvidelser mistede Rendsburg efterhånden sin karakter som ø.

I Rendsburg så vi også en høj jernbanebro, hvorunder der var ophængt en transportfærge. Sydfra kommende tog passerer kanalen over en op til 42 meter høj jernbanebro. For at få togene op i tilstrækkelig højde over kanalen byggedes i årene 1911-13 en cirka 7,5 kilometer lang elliptisk sløjfe over den østlige bydel. Højden er påkrævet, for at de store skibe kan komme under. Under broen hænger en svævefærge, som transporterer personer og biler over kanalen. Færgen, der er gratis at benytte, sejler fire gange i timen og tilbagelægger 135 meter på cirka halvandet minut.



De fleste af byens seværdigheder kan nås indenfor relativ kort tid til fods ved hjælp af den blå rute eller den blå linje (på tysk *Blau Linie*). Linjen er en malet markering, der passerer de mest interessante steder og bygninger i den indre by. Den cirka 3,2 lange rute starter ved torvet i midtbyen. Af byens seværdigheder kan blandt andet nævnes bymuseet og det jødiske museum i det såkaldte Dr. Bambergus i Prinsessegade. Det jødiske museum omhandler jødernes historie i hertugdømmerne samt jødisk kunst og kulturhistorie. Museet er indrettet i byens tidligere synagoge. Ikke langt fra synagogen ligger bymuseet, som er indrettet i det tidligere danske arsenal i Nyværk. De byhistoriske udstillinger er suppleret med et lille trykkerimuseum.

Af kirker kan især nævnes Vor Frue Kirke fra 1287 og Kristkirken fra 1700. Vor Frue Kirke (*Sankt Marienkirche*) er Rendsburgs centrale middelalderkirke. Kirken blev omkring 1330/35 udvidet til en treskibet

hallekirke med kor. Tårnet blev opført i 1454. Den korsformede Kristkirke blev opført i årene 1695-1700 og var oprindeligt tænkt som garnisonskirke for officerer og soldater på det danske arsenal. Arkitekten var Domenico Pelli. Kirkens indre er præget af dens højalter, den barokke døbefont fra 1700 og ikke mindst af kirkens kongeloge med udskårne stole. Logen var tiltænkt Frederik 4. Kristkirken har plads til over 1000 mennesker. Byens nuværende danske kirke er fra 1966 og ligger lidt nord for midtbyen. Udover en dansk kirke råder byen også over en dansk skole (*Ejderskolen* oprettet i 1952), to danske børnehaver samt et dansk forsamlingshus, hvilket er indrettet i midtbyens gamle Amtmandsgård.

Efter frokost var vi med færge over Kielerkanalen, hvorefter vi fortsatte til Hamburg. Vejarbejde forsinkede os, så vi først var fremme ved Hotel Novum i Spalingerstrasse 70 kl. 16. Vi fik vort værelse og bestilte hurtigt en taxi, som bragte os til

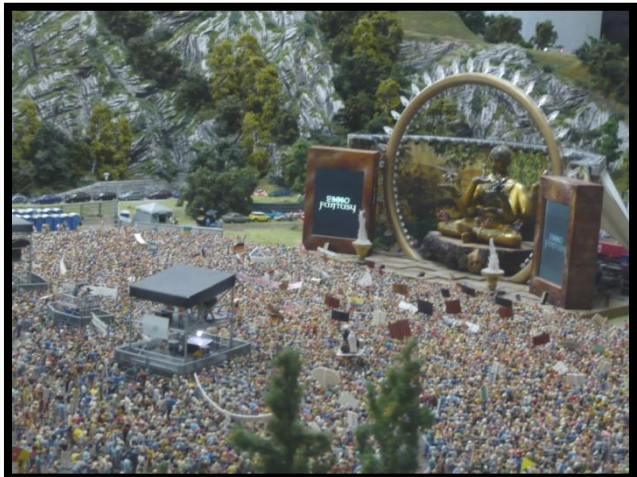
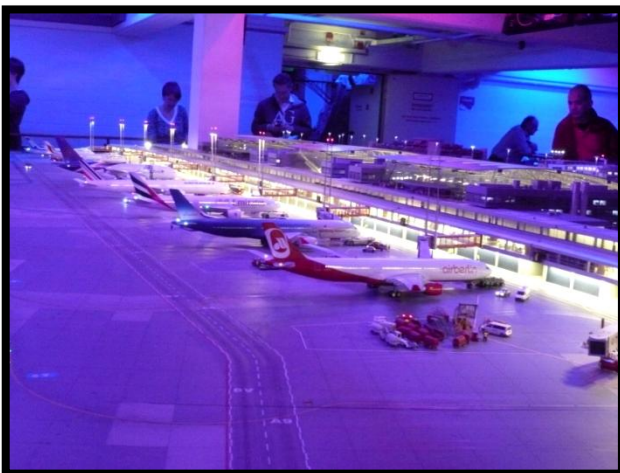
Wunderland i Hafen City - det er en del af havnen, som renoveres vældig meget. Området kaldes også **Speicherstadt**. Vi så det imponerende **ElbPhilharmonie-byggeri** og mange restaurerede pakhuse.

**Elbphilharmonie** - The Elbphilharmonie Hamburg (nicknamed **Elphi**) is a concert hall under construction in the HafenCity quarter of Hamburg, Germany. The concert hall is designed by *Herzog & de Meuron* on top of an old warehouse (Kaispeicher A). It will be the tallest inhabited building of Hamburg, with a final height of 110m. On 2 April 2007, the First Mayor of Hamburg Ole von Beust, Henner Mahlstedt, *Hochtief Construction AG*, project coordinator Hartmut Wegener, Hamburg Minister of Culture Karin von Welck and architect Pierre de Meuron laid the foundation stone in the warehouse *Kaispeicher A*. In 2007, the construction was scheduled to be finished in 2010 with an estimated cost of €241 million. In November 2008, as an endorsement to the original contract, the costs for the project were estimated at €450 million. In August 2012, the costs were re-estimated to be over €500 million, which should also cover the increased cost for a strengthened roof. As of December 2014, construction work is scheduled to end in October 2016 at a cost of €789 million, with an announced opening date of 12 January 2017. The easternmost part of the building will be occupied by "Westin Hamburg" hotel scheduled to open in October 2016. The upper floors west of the concert hall will accommodate apartments.



**Wunderland** er en meget stor modeljernbane i flere etager. Her var tyske og schweiziske landskaber, og de var i gang med at bygge Italien. Der var også tableauer med udvalgte scener fra Tysklands historie. Der var en flot lufthavn med fly, der startede og landede. Hvert 20. minut veksledes mellem nat og dag.

**Miniatur Wunderland** is a model railway attraction in Hamburg, Germany, and one of the largest of its kind in the world, built by the twins Gerrit and Frederik Braun. In January 2011 the railway consisted of 12,000 meters of track in HO scale, divided into seven sections: *Harz*, the fictitious city of Knuffingen, the *Alps and Austria*, *Hamburg*, *America*, *Scandinavia*, and *Switzerland*. Of the 6,400 square meters of floor space, the model takes 1,150 m<sup>2</sup>. By 2020, the exhibit is expected to have reached its final construction phase, including at least a total of ten new sections in



a model area of over 2,300 m<sup>2</sup>. The exhibit includes 890 trains made up of over 11,000 carriages, 300,000 lights, 215,000 trees, and 200,000 human figurines. The creators will work on models of Italy and France now that the airport section is completed. The airport is named *Knuffingen International Airport* and is modeled after Hamburg International Airport. Possible future additions include Africa, England, or a futuristic landscape.

The construction of the first part started in December 2000 and the first three parts were completed in August 2001. The project was created by twin brothers Frederik and Gerrit Braun. In 2012 the Wunderland also completed a series of diorama representing social conditions and life in various periods of German history.



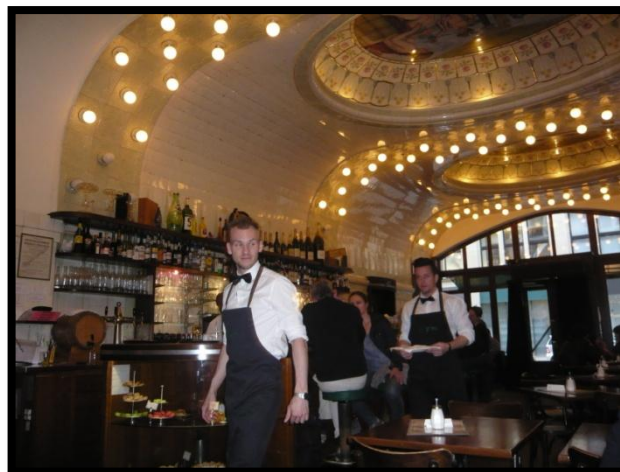
Fra havnen gik vi mod Rådhuset, og passerede krigsmindesmærket **St. Thomas Kirche** på Willy Brandt Strasse. Tårnet var helt indhyllet i byggestilladser. Vi fotograferede **Hygieia-fontænen** ved den fine rådhus - den er opført efter, at byen kom sig efter et koleraangreb i 1892. Der var fine butikker ved **Alster Arcaderne** og **Jungfernstieg** langs **Alster-søen**. Vi fik en øl i **Alster Pavillon "Alex"** med udsigt over søen med springvandet. Det berømte hotel "**Vier Jahreszeiten**" og spacentret "**Nivea**" så vi også. Hele området omkring Alster er meget smukt.

Guidebogen anbefalede **Restaurant "Cafe de Paris"** i Rathausstrasse. Den var fra 1882 og indrettet i Jugend-stil. Mange berømte



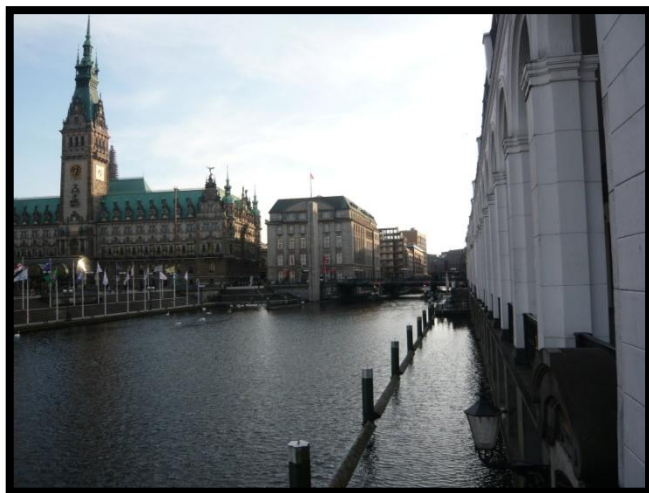
mennesker havde været der - Hemmingway, Henry Miller, Bing Crosby, Yul Brynner, James Mason, etc. Vi fik god mad - indbagt laks og cordon bleue, men det eneste kreditkort, som de accepterer, er American Express. Vi tog en taxi hjem, og så undervejs på **Domplatz** monumentet for den første bebyggelse i Hamburg: 30 hvide plexiglasskiver markerede omridset af **Hammaburg**, der blev opført af frankere i 817 og ødelagt af vikinger i 845.

Tiden var begrænset, og vi måtte gemme Hamburgs kendte teatre og operahuse, parker, havnerundfart, markeder og museer til et andet besøg. Heller ikke HSV Arena med Uwe Seelers Fod, FC St. Pauli, forlystelsesområdet Reeperbahn og Hagenbeck Zoo nåede vi denne gang. Vi sov godt i hotelværelset, og fik en god morgenmad. Vi kunne komme på Internettet og fandt bl.a. følgende tyskrelaterede nyheder: Benjamin Brittens "War Requiem" blev spillet i Torsdagskoncerten - det var skrevet som forsøg på forsoning, og blev valgt i anledning af 75-års dagen for Danmarks besættelse. En 65-årig berlinsk kvinde med 13 børn er nu gravid med firlinger.



Efter morgenmaden gik vi en dejlig **formiddagstur på 1½ time** i godt men køligt vejr. Vi var forbi **Hovedbanegården** i neo-rennaissance, bygget i 1906. og ned ad **Mönchebergstrasse** med løvebrønden. Vi passerede **Skt. Petri Kirche** med mindeplader for en præst, som blev myrdet i KZ-lejr og en herre, som brændte sig ihjel i protest mod atomkraft. Rådhuset i neo-renæssance er opført i 1886-97, og imponerede også i dag. Her er fine sale for lokalparlament, senat, borgmester og banketsal. Vi gik i både **Old City and New City**.

Vi passerede adskillige imponerende kontorbygninger i **Kontorhausviertel** - Der Spiegel, Die Zeit, Chilehaus, Afrikahaus, Sprinkenhof og mange flere. Vi var også forbi nogle af byens **kunstudstillingsbygninger** - Kunsthalle Hamburg, Deichtorhallen, Freie Kunsthalle, fotografimuseum og Museum für Kunst und Gewerbe. Det var en fin tur på 1,5 time, og så var der lige tid til et hvil og en kop kaffe på hotelværelset, inden vi skulle af sted kl. 11.



**Jungfernstieg** omkring **Binnenalster**, over 100 år gammelt, **Hotel Atlantic Kempinski** ved Alster See er ligeså flot. **Alsterhaus** er et mondænt stormagasin. **Alsterpavillon** er en kendt café.

**Alster Arcades** - In 1843, Alexis de Chateaufort erected the Alsterarkaden (Alster Arcades) alongside the Kleine Alster, between Jungfernstieg and Rathausmarkt. Not all of the construction is as old as it looks. A part of the colonnade, including the Mellin arcade with its Art Nouveau frescos which links it to the Neuer Wall, was destroyed in a fire in 1989 but by 1992 was rebuilt according to the former designs. The arches are home to exclusive boutiques and jewellers. Behind the arcades is the Neue Wall, one of Hamburg's classiest shopping streets. Alongside perfumeries, jewellers and furniture and living design shops, you will find branches of the large international fashion houses, such as Joop and Jil Sander from Hamburg. On Am Jungfernstieg you will find cafés and restaurants that invite you to pause for a while. The best view of the Alsterarkaden is from Rathausplatz, which is reached via the Schleusenbrücke. **Hotel Vier Jahreszeiten** - ved

Om man nu vælger at vandre igennem de utallige indendørs shopping-gallerier eller over indkøbsboulevardeerne Mönckebergstraße, Spitalerstraße og Neuer Wall - her forbliver næppe et ønske uopfyldt. Teatrets venner oplever toppræstationer indenfor scenekunsten i Thalia Theater, i Deutsches Schauspielhaus og i Oper. Og også kunstmuseums-milen mellem Alster og Oberhafen indbyder til at drømme.

**Jungfernstieg** ved Alster er for længst blevet Hamborgs indkøbsgade og promenade. I gamle dage var det her familierne spadserede om søndagen og luftede deres ugifte døtre ("Jomfruer"). I dag handler alt her om at købe ind i store varehuse og eksklusitte butikker. Også indkøbscentret Hamburger Hof ligger her ved Jungfernstieg. Her bliver indkøb til kultur: de fine store og små butikker nærmest overbyder hinanden med deres eksklusive tilbud. Andre kostbarheder langs med Jungfernstieg: sko-, læder- og rejsetilbehør, det kendte "Alsterhaus" og traditionsrige huse som "Streit's" biograf. Og så? Helt enkelt: direkte ved Jungfernstieg ligger endelig Binnenalster og der venter skibene på dig ved Alsterbådebroen.

**Rådhuset** - Efter at Hamborgs rådhus var nedbrændt fuldstændig i 1842, flyttede rådet for en kort bemærkning til provisoriske lokaler - og blev der i 55 år! Det nye rådhus blev indviet i 1897, har 647 rum og står på mere end 4000 egepæle. Helt i modsætning til den hanseatiske stil skinner rådhuset med en pompøst dekoreret facade, som omkranses af i alt 20



kejserstatuer. Over hovedporten står på latin: "Den frihed, som forfædrene har opnået, bør efterkommerne værdigt søge at bibeholde."

**Kirker** - Hamborgs bybillede præges af tårnene af hovedkirkerne St. Katharinen, St. Petri, St. Jacobi, St. Nikolai og St. Michaelis - Nordtysklands betydeligste barokbygning. Grundstenen til St. Petri ved den nuværende indkøbszone Mönckebergstraße blev allerede lagt i det 12. århundrede. Efter den store Hamburger Brand i 1842 blev kirken genoprettet. Seværdigt er ud over Arp-Schnittger-orglet i St. Jacobi også altermosaik efter et udkast af Oskar Kokoschka i St. Nikolai-kirken ved Hopfenmarkt, som blev ødelagt under anden verdenskrig. Tårnruinen blev stående som

mindesmærke. Om aftenen kan man til gengæld nyde en drøm af en udsigt over byen fra Hamborgs varetegn St. Michaels - også kaldt "Michel".

På vej til **Finkenwerder** ved Elbens sydlige bred fik vi et indtryk af Hamborgs store havn - containere og kulbunker i massevis og meget intensiv trafik. En del buske og træer var sprunget ud. Vi fik taget gruppebillede og spiste frokost på **Restaurant Finkenwerder Elbblick** - et nydeligt sted, hvor vi fik "hamburger-labskovs". Vi fortsatte mod Airbus-fabrikken. Karin var i SMS-kontakt med Michael, og Steinar ringede.

Vi var opdelt i 3 grupper under **omvisningen på Airbus**. Der var en del irriterende ventetid både før og efter vi fik adgang til virksomheden. Der var en del regler og kontrol forbundet med besøget - f.eks. fik Gert Juster ikke lov at komme ind, da antallet på listen ikke stemte. Der arbejder 15.000 mennesker, og der er også andre produktionssteder i Tyskland, og i England, Frankrig og Spanien. De har egen havn og lufthavn, og 10 testpiloter, så vi så jævnligt nye fly lette. En A320 koster 100 millioner Euro og en A380 4 gange mere. Der var mindst 1500 underleverandører. Også lagerføring ansvarer underleverandører for.

Køberne skal under hele fabrikationsprocessen kontrollere og godkende fremstillingen. Det var interessant at kigge ind i de halvfærdige fly med deres virvar af elektriske ledninger og hydraulik. Der var 4 - 5 fly i hver hangar i forskellige stadier af produktionsprocessen. Det var samlebåndsproduktion, og de færdiglavede ca. 50 fly om måneden. Vi hørte om lean-produktion - flymotorer er dyre og installeres derfor senest muligt. Nye materialer som kulfiber og lodrette vingespidses medfører besparelser. Airbus introducerede systemet med 2 piloter i cockpittet.

Et flys levetid er ca. 30 år, og udviklingsomkostningerne fordeles på de første 250 producerede fly. Airbuskunderne kunne vælge mellem 4 forskellige motortyper til A320 - både europæiske og amerikanske. Hverken Boeing eller Airbus har nogen epokegørende nyskabelser på tegnebrættet for de kommende mange år - i stedet vil man forbedre nuværende flytyper. Vi kørte hjemad i dejligt vejr - det tog over en halv time at komme ud til motorvejen. Gert fungerede også som busværtinde og serverede kaffe undervejs. Færgeturen over Fehmern Bælt gik fint, og vi var i Tåstrup kl.22.30, og takkede Gert for en godt planlagt og vel gennemført tur.

Om Hamburg under 2. Verdenskrig:

**The Allied bombing of Hamburg during World War II** included numerous strategic bombing missions and diversion/nuisance raids. As a large port and industrial centre, Hamburg's shipyards, U-boat pens, and the Hamburg-Harburg area oil refineries were attacked throughout the war.

The attack during the last week of July 1943, *Operation Gomorrah*, created one of the largest firestorms raised by the Royal Air Force and United States Army Air Forces in World War II, killing 42,600 civilians and wounding 37,000 in Hamburg and practically destroying the entire city. Before the development of the firestorm in Hamburg there had been no rain for some time and everything was very dry. The unusually warm weather and good conditions meant that the bombing was highly concentrated around the intended targets and also created a vortex and whirling updraft of super-heated air which created a 1,500-foot-high tornado of fire, a totally unexpected effect. Various other previously used techniques and devices were instrumental as well, such as area bombing, Pathfinders, and H2S radar, which came together to work with particular effectiveness. An early form of chaff, code named 'Window', was successfully used for the first time by the RAF - clouds of shredded tinfoil dropped by Pathfinders as well as the initial bomber stream - in order to completely cloud German radar. The raids inflicted severe damage to German armaments production in Hamburg.

The name *Gomorrah* comes from that of one of the two Canaanite cities of Sodom and Gomorrah whose destruction is narrated in the Bible: "Then the Lord rained brimstone and fire on Sodom and Gomorrah, from the Lord out of the heavens." - Genesis 19:24. The Battle of Hamburg, codenamed *Operation Gomorrah*, was a campaign of air raids beginning 24 July 1943 and lasting for 8 days and 7 nights. It was at the time the heaviest assault in the history of aerial warfare and was later called the *Hiroshima of Germany* by British officials.

Until the focus of RAF Bomber Command switched to Hamburg it had been on the Ruhr industrial region which had been the target of a five-month-long campaign. The operation was conducted by RAF Bomber Command (including RCAF and RAAF Squadrons) and the USAAF Eighth Air Force. The British conducted night raids and the USAAF daylight raids.

The initial attack on Hamburg included two new introductions to the British planning: they used "Window", otherwise known as chaff, to confuse the German radar, while the Pathfinder Force aircraft, which normally kept radio silence, reported the winds they encountered, and this information was processed and relayed to the bomber force navigators.

No 35 Squadron led the target marking and, thanks to the clear weather and H2S radar navigation, accuracy was good, with markers falling close to the aiming point. On 24 July, at approximately 00:57, the first bombing started by the RAF and lasted almost an hour. The confusion caused to German radar kept losses of aircraft low. While some 40,000 firemen were available to tackle fires, control of their resources was damaged when the telephone exchange caught fire and rubble blocked the passage of fire engines through the city streets; fires were still burning three days later.

A second, daylight raid, by the USAAF was conducted at 16:40. It had been intended for 300 aircraft to attack Hamburg and Hanover but problems with assembling the force in the air meant that only 90 B-17 Flying Fortresses reached Hamburg. The bombers attacked the Blohm and Voss shipyard and an aero-engine factory, with German flak damaging 78 aircraft. In return the shipyard was not badly damaged and the aero-engine manufacturer could not be seen for smoke (a generating station was attacked instead). RAF Mosquitos carried out nuisance raids to keep the city on a state of alert and delayed action bombs from the night's raid exploded at intervals. Extra firemen were brought in from other cities including Hanover; as a result when the US bombers attacked, these firemen were in Hamburg and fires in Hanover burnt unchecked.

Another attack by the RAF on Hamburg for that night was cancelled due to the problems the smoke would cause and 700 bombers raided Essen instead. Mosquitos carried out another nuisance raid. A third raid was conducted on the morning of the 26th. The RAF night attack of 26 July at 00:20 was extremely light because of severe thunderstorms and high winds over the North Sea, during which a considerable number of bombers jettisoned the explosive part of their bomb loads (retaining just the incendiaries) with only two bomb drops reported. That attack is often not counted when the total number of Operation Gomorrah attacks is given. There was no day raid on the 27th.

On the night of 27 July, shortly before midnight, 787 RAF aircraft—74 Wellingtons, 116 Stirlings, 244 Halifaxes and 353 Lancasters—bombed Hamburg. The unusually dry and warm weather, the concentration of the bombing in one area and firefighting limitations due to blockbuster bombs used in the early part of the raid—and the recall of Hanover's firecrews to their own city—culminated in a firestorm. The tornadic fire created a huge inferno with winds of up to 240 kilometres per hour reaching temperatures of 800 °C and altitudes in excess of 300 metres, incinerating more than 21 square kilometres of the city. Asphalt streets burst into flame, and fuel oil from damaged and destroyed ships, barges and storage tanks spilled into the water of the canals and the harbour, causing them to ignite as well. The majority of deaths attributed to Operation Gomorrah occurred on this night. A large number of those killed died seeking safety in bomb shelters and cellars, the firestorm consuming the oxygen in the burning city above. The furious winds created by the firestorm had the power to sweep people up off the streets like dry leaves: Some people who tried to walk along, they were pulled in by the fire, they all of the sudden disappeared right in front of you (...) You have to save yourself or try to get as far away from the fire, because the draught pulls you in. —Ursula Gray (1974).

On the night of 29 July, Hamburg was again attacked by over 700 RAF aircraft. A planned raid on 31 July was cancelled due to thunderstorms over the UK. The last raid of Operation Gomorrah was conducted on 3 August. Operation Gomorrah killed 42,600 people, left 37,000 wounded and caused some one million German civilians to flee the city. The city's labour force was reduced permanently by ten percent. Approximately 3,000 aircraft were deployed, 9,000 tons of bombs were dropped and over 250,000 homes and houses were destroyed. No subsequent city raid shook Germany as did that on Hamburg; documents show that German officials were thoroughly alarmed and there is some indication from later Allied interrogations of Nazi officials that Hitler stated that further raids of similar weight would force Germany out of the war. The industrial losses were severe, Hamburg never recovered to full production, only doing so in essential armaments industries (in which maximum effort was made). Figures given by German sources indicate that 183 large factories were destroyed out of 524 in the city and 4,118 smaller factories out of 9,068 were destroyed. Other losses included damage to or destruction of 580 industrial concerns and armaments works, 299 of which were important enough to be listed by name. Local transport systems were completely disrupted and did not return to normal for some time. Dwellings destroyed

amounted to 214,350 out of 414,500. Hamburg was hit by air raids another 69 times before the end of World War II. In total, the RAF dropped 22,580 long tons of bombs on Hamburg.

In January 1946, Major Cortez F. Enloe, a surgeon in the USAAF who worked on the United States Strategic Bombing Survey (USSBS), said that the fire effects of the atomic bomb dropped on Nagasaki "were not nearly as bad as the effects of the R.A.F. raids on Hamburg on July 27th 1943". He estimated more than 40,000 people died in Hamburg.

"It was quite a surprise to us when the first Hamburg raid took place because you used some new device which was preventing the anti-aircraft guns to find your bombers, so you had a great success and you repeated these attacks on Hamburg several times and each time the new success was greater and the depression was larger, and I have said, in those days, in a meeting of the Air Ministry, that if you would repeat this success on four or five other German towns, then we would collapse." - Albert Speer - *The Secret War*

Several memorials in Hamburg are reminders of the air raids during World War II:

The Nikolaikirche, which was largely destroyed during the bombing, has been made into a memorial against war. The spire of the church, which was used by the bomber pilots as an aiming point survived the attacks. I krypten er der udstilling om ildstormen. Memorial at the Hamburger Strasse - a memorial for those who died in a shelter under the Karstadt department store at the corner of Desenißstrasse and Hamburger Strasse. The department store was hit by a bomb on the night of 29 July. The people in the air raid shelter below were killed by the heat and carbon monoxide poisoning. The victims of the air raids were buried on the Ohlsdorf Cemetery in mass graves. The memorial "Passage over the Styx" by Gerhard Marcks is in the center and shows how Charon ferries a young couple, a mother with her child, a man and a despairing person over the river Styx. Many houses rebuilt after World War II show a memorial plaque with the inscription "Destroyed 1943 - 19\*\* Rebuilt " as a reminder of their destruction during the air raids in July 1943.

En hamburgsk berømted:

**Störtebeker Monument** - Nikolaus Storzenbecher, or Klaus Störtebeker (c. 1360 in Wismar - 20 October 1401 {1400} in Hamburg), was a leader and the best known representative of a companionship of privateers known as the Victual Brothers (German: *Vitalienbrüder*). The Victual Brothers (Latin "*victualia*") were originally hired during a war between Denmark and Sweden to fight the Danish and supply the besieged Swedish capital Stockholm with provisions. After the end of the war, the Victual Brothers continued to capture merchant vessels for their own account and named themselves "Likedeelers" (literally: equal sharers).

A large number of myths and legends surround the few facts known about Klaus Störtebeker's life. Störtebeker is only a nickname, meaning "empty the mug with one gulp" in Low Saxon. The moniker refers to the pirate's supposed ability to empty a four-litre mug of beer in one gulp. At this time, pirates and other fugitives from the law often adopted a colorful nom de guerre.

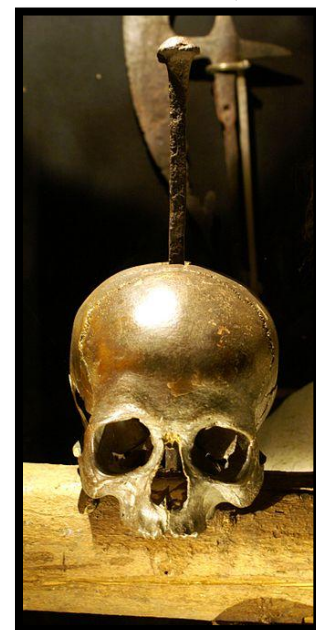
Born in the Baltic port of Wismar, Störtebeker entered public consciousness around 1398, after the expulsion of the Victual Brothers from the Baltic island of Gotland, where they had set up a stronghold and headquarters in the town of Visby. During the following years, Störtebeker and some of his fellow captains (the most famous of whom were Gödeke Michels, Hennig Wichmann and Magister Wigbold) captured Hanseatic ships, irrespective of their origin. Störtebeker had a stronghold in Marienhaf, East Frisia, dating from about 1396. He married a daughter of the East Frisian chieftain, Keno ten Broke (ca 1310-1376). There still exists a tower bearing his name (*Störtebekerturm*) at the Evangelical Lutheran Marienkirche in Marienhaf.

According to legend, in 1401, a Hamburgian fleet led by Simon of Utrecht caught up with Störtebeker's force near Heligoland. According to some stories, Störtebeker's ship had been disabled by a traitor who cast molten lead into the links of the chain which controlled the ship's rudder. Störtebeker and his crew were captured and brought to Hamburg, where they were tried for piracy. Legend says that Störtebeker offered a chain of gold long enough to enclose the whole of Hamburg in exchange for his life and freedom. However, Störtebeker and all of his 73 companions were sentenced to death and were beheaded on the Grasbrook.

The most famous legend of Störtebeker relates to the execution itself. Störtebeker is said to have asked the mayor of Hamburg to release as many of his companions as he could walk past after being beheaded. Following the granting of this request and the subsequent beheading, Störtebeker's body arose and walked past eleven of his men before the executioner tripped him with an outstretched foot. Nevertheless, the eleven men were executed along with the others. The senate of Hamburg asked the executioner if he was not tired after all this, but he replied he could easily execute the whole of the senate as well. For this, he himself was sentenced to death and executed by the youngest member of the senate.

According to legend (but not to history) when dismantling Störtebeker's ship, it was found the masts contained a core of gold (one of gold, one of silver, and one of copper). This was used to create the tip of St. Catherine's church in Hamburg. His famous drinking cup was stored in the town hall of Hamburg, until it was destroyed in the great fire of 1842.

Recent events have suggested it is more likely that Störtebeker and his crew died in 1400. A bill for digging graves for 30 Victual Brothers dated to this year survives in the Hamburg records. This would also suggest the story that Störtebeker was sentenced to death with 70 other privateers is at least misleading; at minimum, he certainly was buried with 30 other men. The year 1400 also excludes the involvement of Simon of Utrecht and the *Brindled Cow* (Bunte Kuh), since the records show this ship was not completed until 1401. In fact, the Hanseatic fleet that attacked Störtebeker was commanded





by Hermann Langhe (also Lange) and Nikolaus Schoke (Nicoalus Schocke), who set sail for Heligoland in August 1400, and the course of the battle is not described by any reliable sources.

No authentic portrait of Störtebeker is known. An etching made by Fifteenth century German artist Daniel Hopfer, often erroneously identified as a portrait of Klaus Störtebeker, is actually of Kunz von der Rosen (1470-1519), court jester of Emperor Maximilian I. However, a tentative reconstruction of Störtebeker's appearance has been made using a skull alleged to be his. This skull, displayed at the museum since 1922, was stolen in January 2010. In March 2011 it was found by the police.

Statues depicting him stand in a number of Northern German cities, including Hamburg, Verden an der Aller and Marienhafen.

Störtebeker Festival (*Störtebeker Festspiele*) is an open-air theatre event, held annually in the town of Ralswiek on the isle of Rügen. The term *Stoertebekerland* has been adopted to promote tourist in East Frisia.

The character of Klaus Störtebeker has appeared in various recent publications including *Die Vitalienbrüder: Ein Störtebeker Roman*, a German language novel by Willi Bredel (Hinstorff Verlag, 1996, ISBN 978-3356006582). Störtebeker was portrayed on television by Ken Duken in *Störtebeker*, a 2006 miniseries based very loosely on his life. He was also the subject of a 2007 documentary and of the feature-length movie *12 Paces Without a Head*, in the making in 2008. The German punk band Slime wrote and recorded a song about the

exploits of Störtebeker on their album *Alle gegen alle*. There is also a song by the heavy metal band Running Wild about Störtebeker's life in their album *Death or Glory*. Another German artist who made a song about Störtebeker is Achim Reichel, who recorded *Das Störtebekerlied*, which can be found on his album *Klabautermann*.

**Hans Hummel**, bürgerlicher Name **Johann Wilhelm Bentz**, (\* 21. Januar 1787 in Hamburg; † 15. März 1854) war ein Wasserträger in der Hamburger Neustadt und gilt als Ursprung des Hamburger Grußes „Hummel, Hummel - Mors, Mors“. Er ist daher die heute noch bekannteste Person der alten Hamburger Originale. Bentz, ein misstütiger Mensch, wurde der Überlieferung nach von Kindern ge neckt, indem sie ihn beim Spottnamen „Hummel, Hummel“ riefen, worauf er mit „Mors Mors“ antwortete, einer Kurzform des niederdeutschen Ausspruchs „Klei di an'n Mors“ („Kratz dich am Hintern“). In Kombination mit „Hans“ - der Kurzform seines Vornamens „Johann(es)“ - wurde er unter seinem Spitznamen *Hans Hummel* bekannt.

Zur Herkunft des Spottnamens *Hummel* gibt es mehrere Erklärungen: Der Spottname wird auf den Stadtsoldaten Daniel Christian Hummel aus der Franzosenzeit zurückgeführt, der wegen seiner Kriegserzählungen bei den Straßenkindern der Hamburger Neustadt sehr beliebt war. Nach dessen Tod zog Bentz in dessen Wohnung, woraufhin der Rufname seines Wohnungsvorgängers auf Bentz als Spitzname überging. Andererseits wird vermutet, dass sich der Name von der norddeutschen Bezeichnung „Griephummer“ oder kurz „Hummer“ ableitet, dem Spottnamen der ebenfalls „greifenden“ Gerichtsdiener; „Hummer“ wurde dann sprachlich zu „Hummel“ verschliffen. Als 1848 die Stadtwasserkunst in Hamburg-Rothenburgsort den Betrieb aufnahm, wurde Bentz arbeitslos. 1854 starb er und wurde auf Armenhauskosten auf dem Dammtorfriedhof begraben.





I Hamborg findes også **Neuengamme**: Lejren blev oprettet i 1938 ved et gammelt teglværk som en underlejr af kz-lejren Sachsenhausen. I 1940 fik den status som selvstændig kz-lejr og fik med tiden 96 mindre arbejdslejre og "udekommandoer" under sig, bl.a. underlejren Banterweg, hvor danskeren Gustav Alfred Jepsen fungerede som stedfortrædende lejrkommendant. Gustav Alfred Jepsen blev efter krigen dømt til døden af en britisk domstol for krigsforbrydelser begået i Banterweg.

Arbejdet i hovedlejren Neuengamme bestod hovedsageligt i produktion af mursten og bygningen af en kanal til at transportere murstenen fra lejren. Fangerne måtte grave den tunge masse ud med primitive redskaber uden hensyn til deres helbred eller vejrforhold.

Fra 13. december 1938 til 4. maj 1945 havde lejren 106 000 fanger fra 28 forskellige lande, deriblandt russere (34 350), polakker (16 900), franskmænd (11 500), tyskere 9 200), nederlændere 6 950), belgiere (4 800) og danskere (4 800). Der var også jøder fra lokalbefolkningen, kommunister, homoseksuelle, prostituerede, sigøjnere, Jehovas Vidner og andre grupper. Ca. 55 000 døde pga. de umenneskelige forhold: mishandling, hårdt arbejde med meget lidt mad, samt uhygiejniske forhold.

Tre af underlejrene er også bevaret som mindesteder: **Bullenhus Damm**, **Kritenborg 8** og **Suhrenkamp 98**. Den første er viet mindet om 20 børn fra Auschwitz, der blev udsat for medicinske eksperimenter af SS-lægen Kurt Heissmeyer, der injicerede levende tuberkel-bakterier i blod og lunger efter at have fjernet deres lymfekirtler. Heissmeyer besluttede at få dem dræbt 20. april 1945 for at skjule spor efter forsøgene. Efter indsprøjtninger med morfin blev børnene hængt i kroge i væggen, "som malerier på væggen", erindrede den ene SS-mand, der var med til drabene. Den anden underlejr var fyldt med kvindelige fanger fra Łódź i Polen. Den tredje underlejr lå ved Fuhlsbüttels fængsel. Dele af den lejr gav plads for kommunister, modstandere af regimet og andre grupper. Ca. 450 fanger blev myrdet dér.

3. maj 1945 blev fartøjerne *Cap Arcona*, *Thielbek*, *Athen* og *Deutschland IV* lastet med fanger fra lejren, slæbt ud fra kaj og forladt hjælpeløst drivende i Lübeck-bugten - hensigten var at fjerne spor efter lejren. Allierede fly bombede og sænkede skibene. Ca. 8 000 fanger druknede eller blev skudt på stranden af SS. De fleste af de 6.000 danskere, som kom i koncentrationslejr, kom til Neuengamme eller en af dens underlejre.

Neuengamme blev i marts og april 1945 benyttet til transitlejr for skandinaviske fanger, som blev reddet af De Hvide Busser. Natten til 18. marts 1945 kørte danske og norske fanger fra Sachsenhausen til opsamling i Neuengamme, før turen gik til Frøslev-lejren. Himmler havde ikke tilladt transport ud af Tyskland før i april. Da skandinaverne ankom til Neuengamme, blev flere hundrede fanger slæbt ud - døde og døende mellem hinanden. Russerne havde i længere tid gemt de døde i madrasserne for at få deres madrationer. Det tog Røde Kors et kvarter at fjerne dem. Blandt nordmændene vakte det protester, at 2.000 syge og døende fanger måtte give plads til 2.000 skandinaver. Tyskerne havde ellers planlagt at evakuere Sachsenhausen-fangerne til Bergen-Belsen, men de nåede kun at sende et fåtal derhen. De ti nordmænd og den ene dansker, der ankom til Neuengamme fra Bergen-Belsen, var blevet alvorligt syge af tyfus.

I april 1945 skulle grev Folke Bernadotte inspicere fangebarakkerne. Da nogle fanger kom slæbende på en halvtreds liters suppespand, forlangte han at smage den. Kommendanten fik fremskaffet en ske og spurgte, om suppen ikke smagte godt. "*Inte ens hunden vill ha den,*" svarede Bernadotte.

**Airbus Beluga** – Airbus A300-600ST (*Super Transporter*) eller Beluga, er en variant af widebody-passagerflyet Airbus A300-600, som er omdannet til at kunne fragte flydele og meget store stykker gods. Oprindeligt blev modellen kaldet *Super Transporter*, men navnet *Beluga* (hvidhval) blev populært og er nu det officielle navn. Der er produceret 5 stk.

En række større flyfabrikker er multinationale, og det er ikke unormalt for dem at have fremstillingsfaciliteter, som ligger langt fra hinanden. Virksomheden Airbus er særegen i den forstand, at den er et konsortium, dannet af franske, tyske, britiske og spanske flyproducenter. Den geografiske beliggenhed for Airbus' fremstillingsfaciliteter påvirkes ikke kun af omkostninger og af hvad, der er mest belejligt, det afgøres også af traditioner i luftfartshistorien og af nationale interesser. Hver af partnerne i Airbus fremstiller en komplet del af et fly, som herefter skal transporteres til endelig samling på en central facilitet. Hvilke dele, der fremstilles hvor, afhænger af flymodellen, men generelt fremstilles vingerne og landingsstellet i Storbritannien, halen og dørene laves i Spanien, flykroppen i Tyskland, næsen og midtersektionen i Frankrig, og den endelige samling sker i enten Toulouse i Frankrig, Hamborg i Tyskland eller Sevilla i Spanien.



Da Airbus startede i 1970 blev de første komponenter bragt ved landtransport på vej, men større produktion gjorde det snart nødvendigt at gå over til lufttransport. Fra og med 1972 tog en flåde af 4 stærkt modificerede "Super Guppier" over. Flyene var tidligere Boeing Stratocruisere fra 1940'erne, som var konverteret med tilpassede flykropper og motorer, så de kunne transportere større fragtmængder for NASA's rumprogrammer i 1960'erne. Som tiden gik, blev brugen af Super Guppierne stadig mere utidssvarende med hensyn til at kunne opfylde Airbus' behov for fragt - flyenes alder medførte høje driftsomkostninger og forøget produktion hos Airbus medførte et større behov for fragtkapacitet.

I 1991 dannede Aérospatiale og DASA, to af de større Airbus-partnere, et selskab med henblik på at udvikle et erstatningsfly. Udgangspunktet var designet anvendt til det tomotors widebody-passagerfly Airbus A300: vingerne, landingsstellet og den nedre del af flykroppen er den samme som hos A300, mens den øvre del af flykroppen er en enorm hesteskoformet konstruktion på 7,7 meter i diameter. For at give adgang til den forreste del af flyet uden at skulle afkoble forbindelserne til elektronikken, hydraulikken og flyveinstrumenter blev cockpittet placeret lavere i forhold til A300, helt nede under fragtdækket, derudover blev halestrukturen forstørret og styrket for at bibeholde retningsstabilitet.

Opbygningen begyndte i september 1992 og den første flyvning fandt sted i september 1994. Efter 335 timers testflyvning blev flytypen certificeret i oktober 1995 og den første A300-600ST "Beluga" blev taget i brug. Yderligere fire Beluga blev fremstillet, cirka ét fly om året, og alle fem fly er stadig i anvendelse. Flyenes primære opgave er at transportere Airbus-komponenter, som er klar til endelig samling, tværs over Europa til Toulouse eller Hamborg, men flyene står også til rådighed for charteropgaver, og har været anvendt til en række særlige lastopgaver, heriblandt rumstationsudstyr, større og skrøbelige kunstværker, industrimaskiner samt helikoptere (en Beluga blev lejet til at fragte to hele NHI NH90'ere og en Eurocopter Tiger fra Europa til Australien og tilbage igen. A300-600ST's lastrum er 7,4 meter i diameter og den maksimale lastvægt er 47 ton. Med en maksimal startvægt på 155 ton kan Airbus Beluga sammenlignes med en almindelig A300, hvilket afspejler, at Beluga blev designet til stort, men relativt let gods.

Rumfanget til gods på en Beluga er større end på en C-5 Galaxy eller en Antonov An-124, men Belugaen er begrænset af en lastvægt på maksimalt 47 ton mod 122,5 ton i en C-5 Galaxy og 150 ton i en An-124. På trods af dens bredde kan Belugaen ikke fragte de fleste slags flykropdele til A380, som for det meste må fragtes med land- og søtransport. Belugaen har været anvendt til at fragte et mindre antal komponenter til A380.

I 1999 transporterede flyet et stort kunstmaleri, *La Liberté guidant le peuple* af Eugène Delacroix som har hængt i Louvre i Paris siden 1874. Maleriet blev fløjet fra Paris til Tokyo via Bahrain og Kolkata (tidligere Calcutta) på omkring 20 timer. Det store lærred på 2,99 gange 3,62 meter var for stort til at kunne være i en Boeing 747. Det blev fragtet opretstående i en særlig trykcontainer med isothermisk beskyttelse og en anti-vibrationsmekanisme.

**Airbus SAS** is an aircraft manufacturing division of Airbus Group (formerly European Aeronautic Defence and Space Company). It is based in Blagnac, France, a suburb of Toulouse, with production and manufacturing facilities mainly in France, Germany, Spain and the United Kingdom. Airbus began as a consortium of aerospace manufacturers, Airbus Industrie. Consolidation of European defence and aerospace companies in 1999 and 2000 allowed the establishment of a simplified joint-stock company in 2001, owned by EADS (80%) and BAE Systems (20%). After a protracted sales process BAE sold its shareholding to EADS on 13 October 2006.

Airbus employs around 63,000 people at sixteen sites in four countries: France, Germany, Spain and the United Kingdom. Final assembly production is based at Toulouse, France; Hamburg, Germany; Seville, Spain; and, since 2009 as a joint-venture, Tianjin, China. Airbus has subsidiaries in the United States, Japan, China and India. The company produces and markets the first commercially viable fly-by-wire airliner, the Airbus A320, and the world's largest passenger airliner, the A380.

While many European aircraft were innovative, even the most successful had small production runs. In 1991, Jean Pierson, then CEO and Managing Director of Airbus Industrie, described a number of factors which explained the dominant position of American aircraft manufacturers: the land mass of the United States made air transport the favoured mode of travel; a 1942 Anglo-American agreement entrusted transport aircraft production to the US; and World War II had left America with "a profitable, vigorous, powerful and structured aeronautical industry." "For the purpose of strengthening European co-operation in the field of aviation technology and thereby promoting economic and technological progress in Europe, to take appropriate measures for the joint development and production of an Airbus." Airbus Mission Statement.

In the mid-1960s, tentative negotiations commenced regarding a European collaborative approach. Individual aircraft companies had already envisaged such a requirement; in 1959 Hawker Siddeley had advertised an "Airbus" version of the Armstrong Whitworth AW.660 Argosy, which would "be able to lift as many as 126 passengers on ultra short routes at a direct operating cost of 2d. per seat mile." However, European aircraft manufacturers were aware of the risks of such a development and began to accept, along with their governments, that collaboration was required to develop such an aircraft and to compete with the more powerful US manufacturers. At the 1965 Paris Air Show major European airlines informally discussed their requirements for a new "airbus" capable of transporting 100 or more passengers over short to medium distances at a low cost. The same year Hawker Siddeley (at the urging of the UK government) teamed with Breguet and Nord to study airbus designs. The Hawker Siddeley/Breguet/Nord group's HBN 100 became the basis for the continuation of the project. By 1966 the partners were Sud Aviation, later Aérospatiale (France), Arbeitsgemeinschaft Airbus, later Deutsche Airbus (Germany) and Hawker Siddeley (UK). A request for funding was made to the three governments in October 1966. On 25 July 1967 the three governments agreed to proceed with the proposal.

In the two years following this agreement, both the British and French governments expressed doubts about the project. The MoU had stated that 75 orders must be achieved by 31 July 1968. The French government threatened to withdraw from the project due to the concern over funding development of the Airbus A300, Concorde and the Dassault Mercure concurrently, but was persuaded otherwise. With concerns at proposal of the A300B proposal in December 1968, and fearing it would not recoup its investment due to lack of sales, the British government withdrew on 10 April 1969. Germany took this opportunity to increase its share of the project to 50%. Given the participation by Hawker Siddeley up to that point, France and Germany were reluctant to take over its wing design. Thus the British company was allowed to continue as a privileged subcontractor. Hawker Siddeley invested GB£35 million in tooling and, requiring more capital, received a GB£35 million loan from the German government.

Airbus Industrie was formally established as a *Groupement d'Intérêt Économique* (Economic Interest Group or GIE) on 18 December 1970. It had been formed by a government initiative between France, Germany and the UK that originated in 1967. Its initial shareholders were the French company Aérospatiale and the German company Deutsche Airbus, each owning a 50% share. The name "Airbus" was taken from a non-proprietary term used by the airline industry in the 1960s to refer to a commercial aircraft of a certain size and range, for this term was acceptable to the French linguistically. Aérospatiale and Deutsche Airbus each took a 36.5% share of production work, Hawker Siddeley 20% and the Dutch company Fokker-VFW 7%. Each company would deliver its sections as fully equipped, ready-to-fly items. In October 1971 the Spanish company CASA acquired a 4.2% share of Airbus Industrie, with Aérospatiale and Deutsche Airbus reducing their stakes to 47.9%. In January 1979 British Aerospace, which had absorbed Hawker Siddeley in 1977, acquired a 20% share of Airbus Industrie. The majority shareholders reduced their shares to 37.9%, while CASA retained its 4.2%.

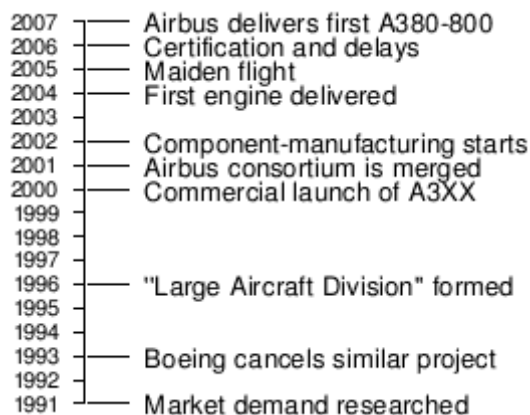
The Airbus A300 was to be the first aircraft to be developed, manufactured and marketed by Airbus. By early 1967 the "A300" label began to be applied to a proposed 320 seat, twin engined airliner. Following the 1967 tri-government agreement, Roger Béteille was appointed technical director of the A300 development project. Béteille developed a division of labour which would be the basis of Airbus' production for years to come: France would manufacture the cockpit, flight control and the lower centre section of the fuselage; Hawker Siddeley, whose Trident technology had impressed him, was to manufacture the wings; Germany should make the forward and rear fuselage sections, as well as the upper centre section; the Dutch would make the flaps and spoilers; finally Spain (yet to become a full partner) would make the horizontal tailplane. On 26 September 1967 the German, French and British governments signed a Memorandum of Understanding in London which allowed continued development studies. This also confirmed Sud Aviation as the "lead company", that France and the UK would each have a 37.5% work share with Germany taking 25%, and that Rolls-Royce would manufacture the engines.

In the face of lukewarm support from airlines for a 300+ seat Airbus A300, the partners submitted the A250 proposal, later becoming the A300B, a 250 seat airliner powered by pre-existing engines. This dramatically reduced development costs, as the Rolls-Royce RB207 to be used in the A300 represented a large proportion of the costs. The RB207 had also suffered difficulties and delays, since Rolls-Royce was concentrating its efforts on the development of another jet engine, the RB211, for the Lockheed L-1011 and Rolls-Royce entering into administration due to bankruptcy in 1971. The A300B was smaller but lighter and more economical than its three-engined American rivals. "We showed the world we were not sitting on a nine-day wonder, and that we wanted to realise a family of planes...we won over customers we wouldn't otherwise have won...now we had two planes that had a great deal in common as far as systems and cockpits were concerned." Jean Roeder, chief engineer of Deutsche Airbus, speaking of the A310

In 1972, the A300 made its maiden flight and the first production model, the A300B2 entered service in 1974; though the launch of the A300 was overshadowed by the similarly timed supersonic aircraft Concorde. Initially the success of the consortium was poor, but orders for the aircraft picked up, due in part to the marketing skills used by Airbus CEO Bernard Lathière, targeting airlines in America and Asia. By 1979 the consortium had 256 orders for A300, and Airbus had launched a more advanced aircraft, the A310, in the previous year. It was the launch of the A320 in 1987 that guaranteed the status of Airbus as a major player in the aircraft market - the aircraft had over 400 orders before it first flew, compared to 15 for the A300 in 1972.

The retention of production and engineering assets by the partner companies in effect made Airbus Industrie a sales and marketing company. This arrangement led to inefficiencies due to the inherent conflicts of interest that the four partner companies faced; they were both GIE shareholders of, and subcontractors to, the consortium. The companies collaborated on development of the Airbus range, but guarded the financial details of their own production activities and sought to maximise the transfer prices of their sub-assemblies. It was becoming clear that Airbus was no longer a temporary collaboration to produce a single plane as per its original mission statement, it had become a long term brand for the development of further aircraft. By the late 1980s work had begun on a pair of new medium-sized aircraft, the biggest to be produced at this point under the Airbus name, the Airbus A330 and the Airbus A340. In the early 1990s the then Airbus CEO Jean Pierson argued that the GIE should be abandoned and Airbus established as a conventional company. However, the difficulties of integrating and valuing the assets of four companies, as well as legal issues, delayed the initiative. In December 1998, when it was reported that British Aerospace and DASA were close to merging, Aérospatiale paralysed negotiations on the Airbus conversion; the French company feared the combined BAe/DASA, which would own 57.9% of Airbus, would dominate the company and it insisted on a 50/50 split. However, the issue was resolved in January 1999 when BAe

abandoned talks with DASA in favour of merging with Marconi Electronic Systems to become BAE Systems. Then in 2000 three of the four partner companies (DaimlerChrysler Aerospace, successor to Deutsche Airbus; Aérospatiale-Matra, successor to Sud-Aviation; and CASA) merged to form EADS, simplifying the process. EADS now owned Airbus France, Airbus Deutschland and Airbus España, and thus 80% of Airbus Industrie. BAE Systems and EADS transferred their production assets to the new company, Airbus SAS, in return for shareholdings in that company.



In mid-1988 a group of Airbus engineers led by Jean Roeder began working in secret on the development of an ultra-high-capacity airliner (UHCA), both to complete its own range of products and to break the dominance that Boeing had enjoyed in this market segment since the early 1970s with its 747. The project was announced at the 1990 Farnborough Air Show, with the stated goal of 15% lower operating costs than the 747-400. Airbus organised four teams of designers, one from each of its partners (Aérospatiale, DaimlerChrysler Aerospace, British Aerospace, CASA) to propose new technologies for its future aircraft designs. In June 1994 Airbus began developing its own very large airliner, then designated as A3XX. Airbus considered several designs, including an odd side-by-side combination of two fuselages from the Airbus A340, which was Airbus's largest jet at the time. Airbus refined its design, targeting a 15% to 20% reduction in operating costs over the existing Boeing 747-400. The A3XX design converged on a double-decker layout that provided more passenger volume than a traditional single-deck design. Five A380s were built for testing and demonstration purposes. The first A380 was unveiled at a ceremony in Toulouse on 18 January 2005, and its maiden flight took place on 27 April 2005. After successfully landing three hours and 54 minutes later, chief test pilot Jacques Rosay said flying the A380 had been "like handling a bicycle". On 1 December 2005, the A380 achieved its maximum design speed of Mach 0.96. On 10 January 2006, the A380 made its first transatlantic flight to Medellín in Colombia.

The Airbus A380 was delayed in October 2006 due to the use of incompatible software used to design the aircraft. Primarily, the Toulouse assembly plant used the latest version 5 of CATIA (made by Dassault), while the design centre at the Hamburg factory were using the older and incompatible version 4. The result was that the 530 km of cables wiring throughout the aircraft had to be completely redesigned. Although no orders had been cancelled, Airbus still had to pay millions in late-delivery penalties. The first aircraft delivered was to Singapore Airlines on 15 October 2007 and entered service on 25 October 2007 with an inaugural flight between Singapore and Sydney. Two months later Singapore Airlines CEO Chew Choong Seng said that the A380 was performing better than both the airline and Airbus had anticipated, burning 20% less fuel per passenger than the airline's existing 747-400 fleet. Emirates was the second airline to take delivery of the A380 on 28 July 2008 and started flights between Dubai and New York on 1 August 2008. Qantas followed on 19 September 2008, starting flights between Melbourne and Los Angeles on 20 October 2008.

In 2003, Airbus and the Kaskol Group created an Airbus Engineering centre in Russia, which started with 30 engineers and since has emerged as a model of success for Airbus' globalisation strategy. It was the first engineering facility to open in Europe outside the company's home countries. Equipped with state-of-the-art communications equipment and linked with Airbus engineering sites in France and Germany, the facility performs extensive work in disciplines such as fuselage structure, stress, system installation and design. In 2011, the centre employs some 200 engineers who have completed over 30 large-scale projects for the A320, the A330/A340 and the A380 programmes. Russian engineers also performed more than half of all design work on the A330-200F freighter, with its activity related to fuselage structure design, floor grids installation and junctions design. The centre currently is involved in the A320neo Sharklets design development and numerous design works for the A350 XWB programme.

On 6 April 2006 BAE Systems planned to sell its 20% share in Airbus, then "conservatively valued" at €3.5 billion (US\$4.17 billion). Analysts suggested the move to make partnerships with U.S. firms more feasible, in both financial and political terms. BAE originally sought to agree on a price with EADS through an informal process. Due to lengthy negotiations and disagreements over price, BAE exercised its put option which saw investment bank Rothschild appointed to give an independent valuation.

In June 2006 Airbus was embroiled in significant international controversy over an announcement of further delays in the delivery of its A380. Following the announcement the value of associated stock plunged by up to 25% in a matter of days, although it soon recovered afterwards. Allegations of insider trading on the part of Noël Forgeard, CEO of EADS, its majority corporate parent, promptly followed. The loss of associated value was of grave concern to BAE, press described a "furious row" between BAE and EADS, with BAE believing the announcement was designed to depress the value of its share. A French shareholder group filed a class action lawsuit against EADS for failing to inform investors of the financial implications of the A380 delays while airlines awaiting deliveries demanded compensation. As a result EADS chief Noël Forgeard and Airbus CEO Gustav Humbert resigned on 2 July 2006.

On 2 July 2006 Rothschild valued BAE's stake at £1.9 billion (€2.75 billion), well below the expectation of BAE, analysts, and even EADS. On 5 July BAE appointed independent auditors to investigate how the value of its share of Airbus had fallen from the original estimates to the Rothschild valuation; however in September 2006 BAE agreed to the sale of its stake in Airbus to EADS for £1.87 billion (€2.75 billion, \$3.53 billion), pending BAE shareholder approval.<sup>[65]</sup> On 4 October shareholders voted in favour of the sale, leaving Airbus entirely owned by EADS.

On 9 October 2006 Christian Streiff, Humbert's successor, resigned due to differences with parent company EADS over the amount of independence he would be granted in implementing his reorganisation plan for Airbus. He was succeeded by EADS co-CEO Louis Gallois, bringing Airbus under more direct control of its parent company. On 28 February 2007, CEO Louis Gallois announced the company's restructuring plans. Entitled Power, the plan would see 10,000 jobs cut over four years: 4,300 in France, 3,700 in Germany, 1,600 in the UK and 400 in Spain. 5,000 of the 10,000 would be at subcontractors. Plants at Saint Nazaire, Varel and Laupheim face sell off or closure, while Meaulte, Nordenham and Filton are "open to investors". As of 16 September 2008 the Laupheim plant has been sold to a Thales-Diehl consortium to form Diehl Aerospace and while the design activities at Filton have been retained, the manufacturing operations have been sold to British company GKN. The announcements resulted in Airbus unions in France and Germany threatening strike action.<sup>[70]</sup>

At the 2011 Paris Air Show, Airbus received total orders valued at about \$72.2 billion for 730 aircraft, representing a new record in the civil aviation industry. The A320neo ("new engine option") model, announced in December 2010, received 667 orders, which, together with previous orders, resulted in a total of 1029 orders within six months of launch date, also a new record.

The Airbus product line started with the A300, the world's first twin-aisle, twin-engined aircraft. A shorter, re-winged, re-engined variant of the A300 is known as the A310. Building on its success, Airbus launched the A320, particularly notable for being the first commercial jet to utilise a fly-by-wire control system. The A320 has been, and continues to be, a great commercial success. The A318 and A319 are shorter derivatives with some of the latter under construction for the corporate business jet market as Airbus Corporate Jets. A stretched version is known as the A321. The A320 family's primary competitor is the Boeing 737 family.

The longer-range widebody products, the twin-jet A330 and the four-engine A340, have efficient wings, enhanced by winglets. The Airbus A340-500 has an operating range of 16,700 kilometres, the second longest range of any commercial jet after the Boeing 777-200LR (range of 17,446 km). All Airbus aircraft developed since then have cockpit systems similar to the A320, making it easier to train crew. Production of the four-engine A340 was ended in 2011 due to lack of sales compared to its twin-engine counterparts, such as the Boeing 777.

Airbus is studying a replacement for the A320 series, tentatively dubbed NSR, for "New Short-Range aircraft". Those studies indicated a maximum fuel efficiency gain of 9-10% for the NSR. Airbus however opted to enhance the existing A320 design using new winglets and working on aerodynamical improvements. This "A320 Enhanced" should have a fuel efficiency improvement of around 4-5%, shifting the launch of an A320 replacement to 2017-2018. In 24 September 2009 the COO Fabrice Bregier stated to Le Figaro that the company would need from €800 million to €1 billion over six years to develop the new aircraft generation and preserve the company technological lead from new competitors like C919, scheduled to operate by 2015-2020.

In July 2007, Airbus delivered its last A300 to FedEx, marking the end of the A300/A310 production line. Airbus intends to relocate Toulouse A320 final assembly activity to Hamburg, and A350/A380 production in the opposite direction as part of its Power8 organisation plan begun under ex-CEO Christian Streiff. Airbus supplied replacement parts and service for Concorde until its retirement in 2003.

#### Product list and details (date information from Airbus)

Aircraft	Description	Seats	Max	1st flight	Production ceased
A300	2 engines, twin aisle	228-254	361	1972-10-28	2007-03-27 (561 built)
A310	2 engines, twin aisle, modified A300	187	279	1982-04-03	2007-03-27 (255 built)
A318	2 engines, single aisle, shortened 6.17 m from A320	107	132	2002-01-15	
A319	2 engines, single aisle, shortened 3.77 m from A320	124	156	1995-08-25	
A320	2 engines, single aisle	150	180	1987-02-22	
A321	2 engines, single aisle, lengthened 6.94 m from A320	185	236	1993-03-11	
A330	2 engines, twin aisle	246-300	406-440	1992-11-02	
A340	4 engines, twin aisle	239-380	380-440	1991-10-25	2008-09 (A340-200) 2011-11-10 (all other variants, 377 built)
A350	2 engines, twin aisle	270-350	550	2013-06-14	
A380	4 engines, double deck, twin aisle	555	853	2005-04-27	

The Airbus Corporate Jets markets and modifies new aircraft for private and corporate customers. It has a model range that parallels the commercial aircraft offered by the company, ranging from the A318 Elite to the double/triple-decked Airbus A380 Prestige. Following the entry of the 737 based Boeing Business Jet, Airbus joined the business jet market with the A319 Corporate Jet in 1997. Although the term Airbus Corporate jet was initially used only for the A319CJ, it is now often used for all models, including the VIP widebodies. As of December 2008, 121 corporate and private jets are operating, 164 aircraft have been ordered, including an A380 Prestige and 107 A320 family Corporate Jet.

In the late 1990s Airbus became increasingly interested in developing and selling to the military aviation market. Expansion in the military aircraft market is desirable as it reduces Airbus' exposure to downturns in the civil aviation industry. It embarked on two main fields of development: aerial refuelling with the Airbus A310 MRTT and the Airbus A330 MRTT, and tactical airlift with the A400M.

In January 1999 Airbus established a separate company, Airbus Military SAS, to undertake development and production of a turboprop-powered tactical transport aircraft, the Airbus Military A400M. The A400M is being developed by several NATO members, Belgium, France, Germany,

Luxembourg, Spain, Turkey, and the UK, as an alternative to relying on foreign aircraft for tactical airlift capacity, such as the Ukrainian Antonov An-124 and the American C-130 Hercules. The A400M project has suffered several delays; Airbus has threatened to cancel the development unless it receives state subsidies.

Pakistan placed an order for the Airbus A310 MRTT in 2008, which will be a conversion of an existing airframe as the base model A310 is no longer in production. On 25 February 2008 Airbus won an order for three air refuelling Multi-Role Tanker Transport (MRTT) aircraft, adapted from A330 passenger jets, from the United Arab Emirates. On 1 March 2008 a consortium of Airbus and Northrop Grumman had won a \$35 billion contract to build the new in-flight refuelling aircraft KC-45A, a US built version of the MRTT, for the USAF. The decision drew a formal complaint from Boeing, and the KC-X contract was cancelled to begin bidding afresh.

New supersonic passenger plane - In September 2014, Aeron partnered with Airbus (mainly Airbus Defense) to collaborate on designing the Aeron AS2, a supersonic 11-seater private business jet, hoping for a market entry in 2021.

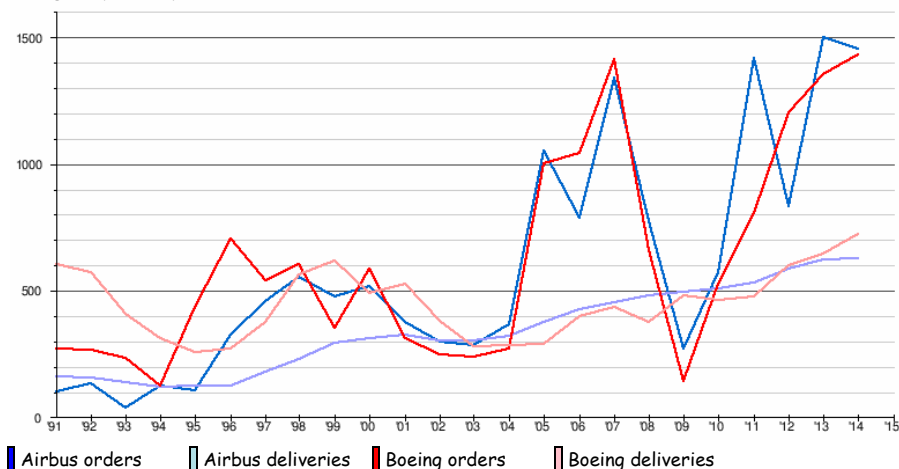
Aircraft Orders Deliveries In operation Unfilled

Aircraft	Orders	Deliveries	In operation	Unfilled
A300	561	561	246	
A310	255	255	117	
A318	79	79	68	
A319	1521	1434	1426	87
A320	7597	3889	3663	3708
A321	2340	1050	1037	1290
A330*	1472	1167	1151	305
A340*	377	377	333	
A350	780	1	1	779
A380	317	154	154	163
Totals	15299	8967	8196	6332

\* All models included.

Data as of end February 2015.

Competition with Boeing - Airbus is in tight competition with Boeing every year for aircraft orders although Airbus has secured over 50% of aircraft orders in the decade since 2003. The following chart presents the annual net orders recorded and delivered aircraft by Airbus and Boeing, respectively, since 1991:



Airbus won a greater share of orders in 2003 and 2004. In 2005, Airbus achieved 1111 (1055 net) orders, compared to 1029 (net of 1002) for the same year at rival Boeing. However, Boeing won 55% of 2005 orders proportioned by value; and in the following year Boeing won more orders by both measures. Airbus in 2006 achieved its second best year ever in its entire 35-year history in terms of the number of orders it received, 824, second only to the previous year. Airbus plans to increase production of A320 airliners to reach 40 per month by 2012, at a time when Boeing is increasing monthly 737 production from 31.5 to 35 per month.

Regarding operational aircraft, there were 7,264 Airbus aircraft operational at April 2013. Although Airbus secured over 50% of aircraft orders in the decade since 2003, the number of Boeing aircraft still in operation at April 2013 still exceeded Airbus by 21% because Airbus made a late entry into the market, 1972 vs. 1958 for Boeing; this lead is diminishing as older aircraft are progressively retired.

Though both manufacturers have a broad product range in various segments from single-aisle to wide-body, their aircraft do not always compete head-to-head. Instead they respond with models slightly smaller or bigger than the other in order to plug any holes in demand and achieve a better edge. The A380, for example, is designed to be larger than the 747. The A350XWB competes with the high end of the 787 and the low end of the 777. The A320 is bigger than the 737-700 but smaller than the 737-800. The A321 is bigger than the 737-900 but smaller than the previous 757-200. Airlines see this as a benefit since they get a more complete product range from 100 seats to 500 seats than if both companies offered identical aircraft.

In recent years the Boeing 777 has outsold its Airbus counterparts, which include the A340 family as well as the A330-300. The smaller A330-200 competes with the 767, outselling its Boeing counterpart in recent years. The A380 is anticipated to further reduce sales of the Boeing 747, gaining Airbus a share of the market in very large aircraft, though frequent delays in the A380 programme have caused several customers to consider the refreshed 747-8. Airbus has also proposed the A350 XWB to compete with the Boeing 787 Dreamliner, after being under great pressure from airlines to produce a competing model.

Boeing has continually protested over "launch aid" and other forms of government aid to Airbus, while Airbus has argued that Boeing receives illegal subsidies through military and research contracts and tax breaks. In July 2004 former Boeing CEO Harry Stonecipher accused Airbus of abusing a 1992 bilateral EU-US agreement providing for disciplines for large civil aircraft support from governments. Airbus is given reimbursable launch investment (RLI), called "launch aid" by the US, from European governments with the money being paid back with interest plus indefinite royalties, but only if the aircraft is a commercial success. Airbus contends that this system is fully compliant with the 1992 agreement and WTO rules. The agreement allows up to 33 per cent of the programme cost to be met through government loans which are to be fully repaid within 17 years with interest and royalties. These loans are held at a minimum interest rate equal to the cost of government borrowing plus 0.25%, which would be below market rates available to Airbus without government support. Airbus claims that since the signature of the EU-US agreement in 1992, it has repaid European governments more than U.S.\$6.7 billion and that this is 40 % more than it has received.

Airbus argues that the military contracts awarded to Boeing, the second largest U.S. defence contractor, are in effect a form of subsidy, such as the controversy surrounding the Boeing KC-767 military contracting arrangements. The significant U.S. government support of technology development via NASA also provides significant support to Boeing, as do the large tax breaks offered to Boeing, which some people claim are in violation of the 1992 agreement and WTO rules. In its recent products such as the 787, Boeing has also been offered direct financial support from local and state governments.

In January 2005 the European Union and United States trade representatives, Peter Mandelson and Robert Zoellick respectively, agreed to talks aimed at resolving the increasing tensions. These talks were not successful with the dispute becoming more acrimonious rather than approaching a settlement.

WTO ruled in August 2010 and in May 2011 that Airbus had received improper government subsidies through loans with below market rates from several European countries. In a separate ruling in February 2011, WTO found that Boeing had received local and federal aid in violation of WTO rules.

Main Airbus factory in Hamburg, Germany



Airbus has several final assembly lines for different models and markets. These are:

Toulouse, France (A320, A330, A350 and A380)

Hamburg, Germany (A320 series)

Seville, Spain (A400M)

Tianjin, China (A320 series).

Mobile, Alabama, (under construction) (A320)

Airbus, however, has a number of other plants in different European locations, reflecting its foundation as a consortium. An original solution to the problem of moving aircraft parts between the different factories and the assembly plants is the use of "Beluga" specially enlarged jets, capable of carrying entire sections of fuselage of Airbus aircraft. This solution has also been investigated by Boeing, who retrofitted 3 of their 747 aircraft to transport the components of the 787. An exception to this scheme is the A380, whose fuselage and wings are too large for sections to be carried by the Beluga. Large A380 parts are brought by ship to Bordeaux, and then transported to the Toulouse assembly plant by the *Itinéraire à Grand Gabarit*, a specially enlarged waterway and road route.

Airbus opened an assembly plant in Tianjin, People's Republic of China for its A320 series airliners in 2009. Airbus started constructing a \$350 million component manufacturing plant in Harbin, China in July 2009, which will employ 1,000 people. Scheduled to be operated by the end of 2010, the 30,000 square meter plant will manufacture composite parts and assemble composite work-packages for the A350 XWB, A320 families and future Airbus programmes. Harbin Aircraft Industry Group Corporation, Hafei Aviation Industry Company Ltd, AviChina Industry & Technology Company and other Chinese partners hold the 80% stake of the plant while Airbus control the remaining 20%.

North America is an important region to Airbus in terms of both aircraft sales and suppliers. 2,000 of the total of approximately 5,300 Airbus jetliners sold by Airbus around the world, representing every aircraft in its product line from the 107-seat A318 to the 565-passenger A380, are ordered by North American customers. According to Airbus, US contractors, supporting an estimated 120,000 jobs, earned an estimated \$5.5 billion (2003) worth of business. For example, one version of the A380 has 51% American content in terms of work share value. Plans for a Mobile, Alabama aircraft assembly plant were unveiled by Airbus CEO Fabrice Brégier from the Mobile Convention Centre on 2 July 2012. The plans include a \$600 million factory at the Brookley Aeroplex for the assembly of the A319, A320 and A321 aircraft. It could employ up to 1,000 full-time workers when operational. Construction began on 8 April 2013, and will become operable by 2015, producing up to 50 aircraft per year by 2017.

Environmental record - Airbus has committed to the "Flightpath 2050", an aviation industry plan to reduce noise, CO<sub>2</sub>, and NOx emissions. Airbus was the first aerospace business to become ISO 14001 certified, in January 2007; this is a broader certification covering the whole organisation, not just the aircraft it produces. Airbus has joined Honeywell and JetBlue Airways in an effort to reduce pollution and dependence on oil. They are trying to develop a biofuel that could be used by 2030. The companies propose supplying almost one third of the world's aeroplane fuel needs without affecting food resources. Algae is viewed as a possible alternative energy source because it absorbs carbon dioxide during its growth, and because its use will not affect food production. However, algae and other vegetation-based fuels are still just experiments, and fuel-bearing algae has been expensive to develop. Airbus recently operated the first alternative fuel flight on a mixture of 60% kerosene and 40% gas to liquids (GTL) fuel in one engine. It did not cut carbon emissions, but it was free of sulphur emissions. Alternative fuel was able to work properly in Airbus' aeroplane engine, demonstrating that alternative fuels should not require new aeroplane engines. This flight and the company's long term efforts are considered big strides towards environmentally friendly aeroplanes.

The Airbus numbering system is an alpha numeric model number followed by a dash and a three digit number. The model number often takes the form of the letter "A" followed by a '3', a digit, then followed normally by a '0', for example A380. There are some exceptions such as: A318, A319, A321 and A400M. The succeeding three digit number represents the aircraft series, the engine manufacturer and engine version number respectively. To use an A320-200 with International Aero Engines (IAE) V2500-A1 engines as an example; The code is 2 for series 200, 3 for IAE and engine version 1, thus the aircraft number is A320-231. An additional letter is sometimes used. These include, 'C' for a combi version (passenger/freighter), 'F' for a freighter model, 'R' for the long range model, and 'X' for the enhanced model.