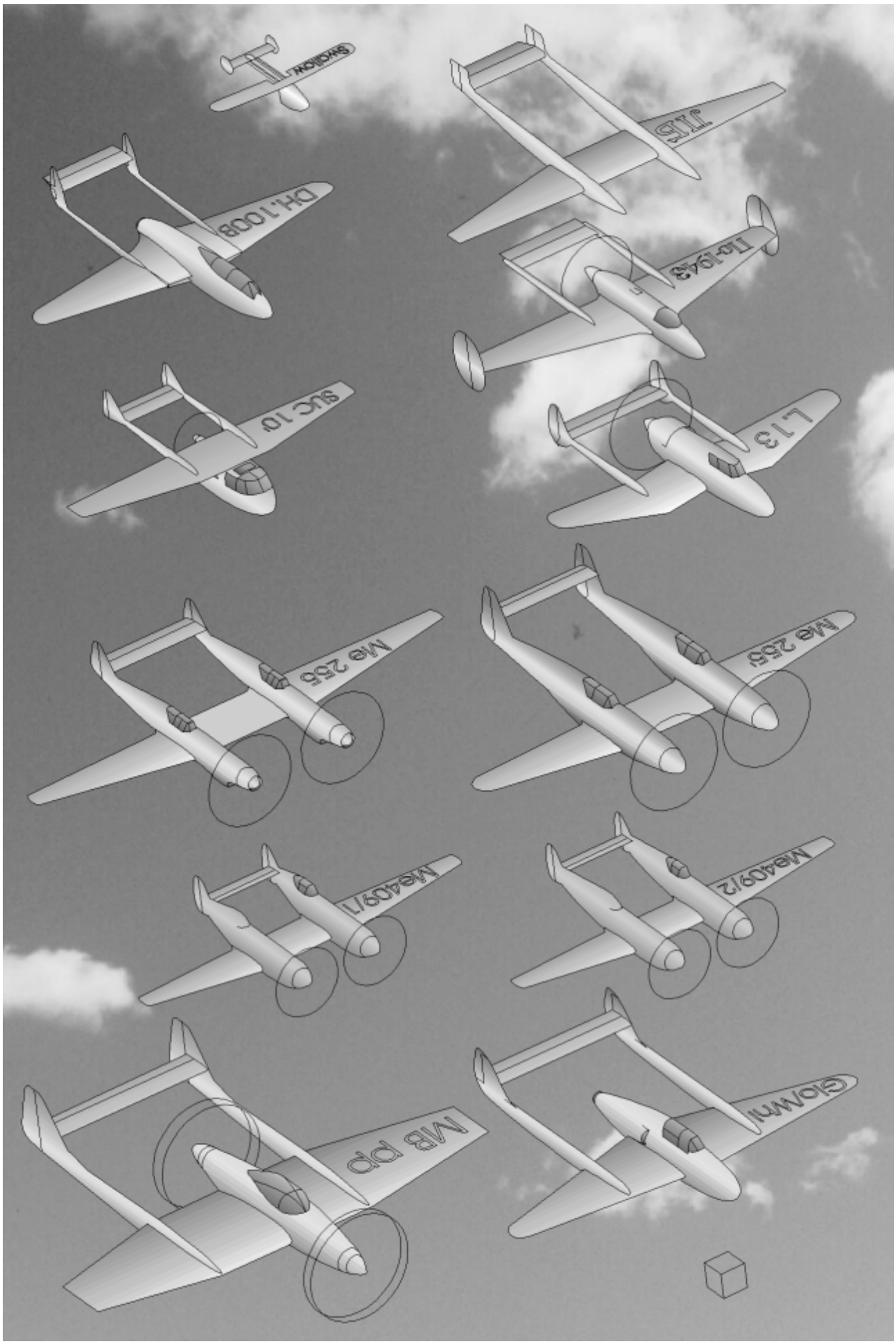
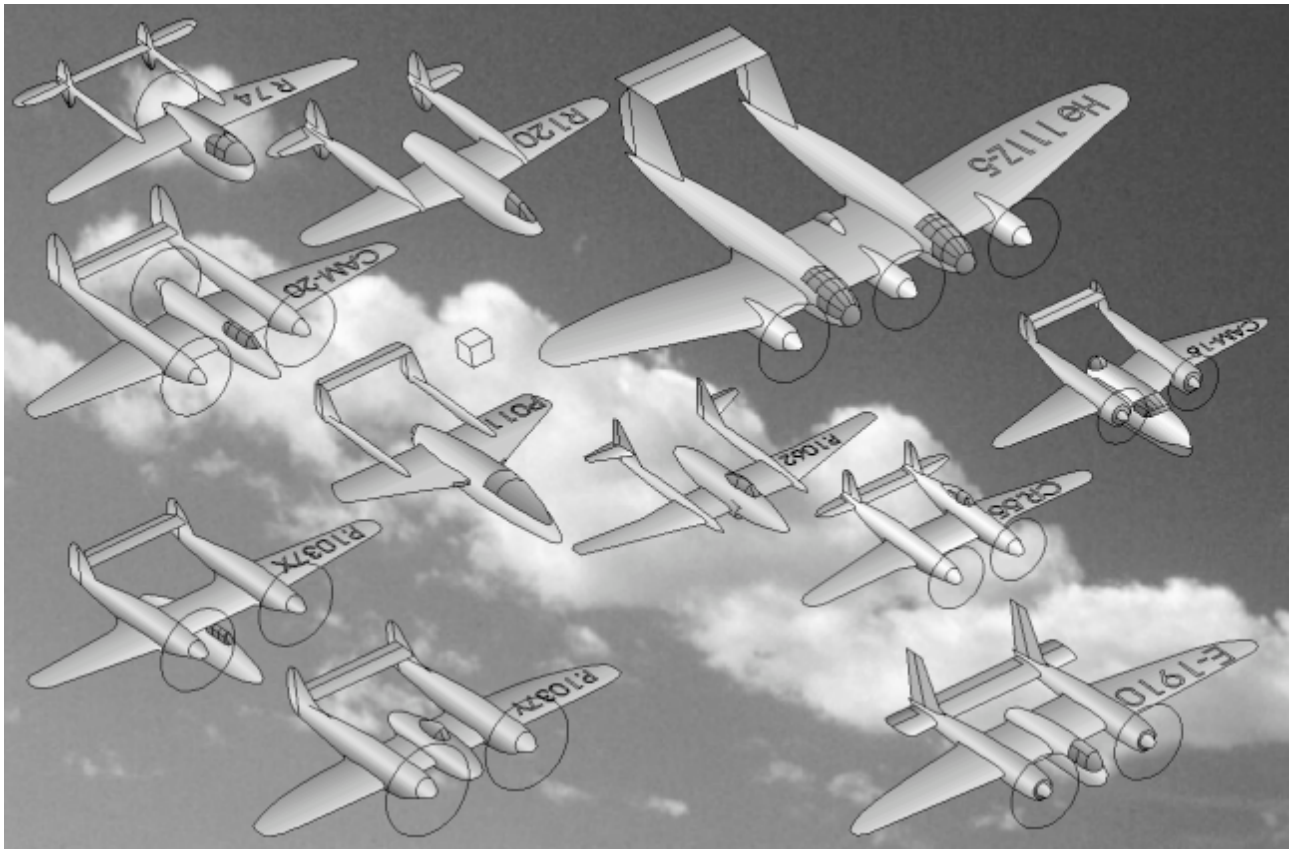
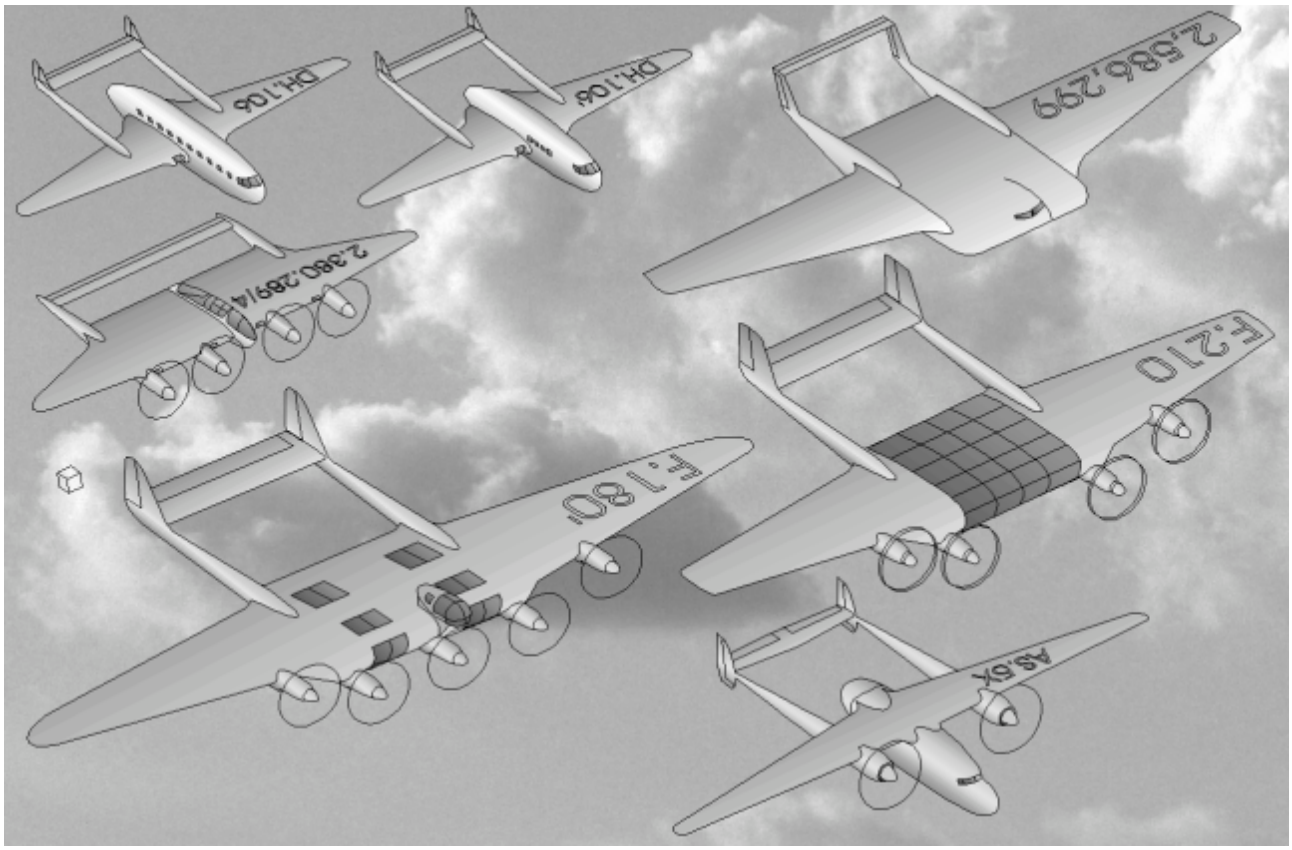

Giovanni
MB 202
Me409/2
Me409/1
Me 255
Me 255
L 13
Ta-1943
J1B
SUC 10
DH.100B
Shadow

* In *Le Fana de l'Aviation* article about **Capra/Matra**, the R75 twin-engined 4-seater was described as derivative of the **R74**, a single-engined 2-seater. A smaller R75?
* In the same article was mentioned the **Matra R120**, an unknown twin-boomer that may have been a single-seat jet derivative of the R100/110. In the magazine *Le Trait d'Union*, this late project was classified as designed before 1946.
* I add the 3-engined final version of the **Heinkel** He 111Z without glider tug (**He 111Z-5**?), probable goal of testing the He 111Z-1 with 2 engines deleted.
* A 3-engined 2-seater **Moskalyov SAM-20** has been described, without picture, in the *Bulletin of the Russian Aviation Research Trust*: push-pull liquid-cooled engines with a central pusher, twin-fuselages and a nose wheel. This project of 1940, with the size of a Tu 2 would have reached the very high speed of 480 mph (775km/h) carrying a load of only 440 lb (200kg) though.
* The second **SAM-16** proposal was also mentioned as a twin-boom design, before the final version, and I imagine the same gull wing with an even better rear view.
* I have been unable to find a picture of the twin-boom **Focke-Wulf** JP.011 or **P.011**-001 mentioned in *German Jet Genesis*. They may have been streamlined Flitzers for high speed.
* The twin-engined twin-boom **Hawker** P.1037 of 1944 has been mentioned by Tony Buttler. I have imagined a derivative of the Hurricane (**P.1037X**) and one of the Twin-Tempest Mk. III (**P.1037Y**).
* I did not find, either, "the **Messerschmitt 1939** single-jet twin-boomer" mentioned on Internet. It could have been a single-jet forefather (**P.1062**?) of the Me 262 (P.1065).
* The bifusoliera CR.50 (with radial engines) and **CR.55** (with in-line engines) remain a mystery. Ing. Celestino **Rosatelli** was the designer of the famous Fiat CR.42 and the Fiat G-55 is dated 1942, so I imagined these CR.50/55 of 1939 as doubles made with intermediate Fiat G-50/G-50V.
* Before the SNCA **Sud-Ouest** SO-1070 was the short **E-1910** with a large tailplane. I have imagined a silhouette for this one too.

Bigger airplanes :
* A twin-boom version has been proposed for the preliminary **De Havilland DH.106** Comet project in 1943. This was a Vampire airliner derivative, powered by 3 jets. The goal was to carry 20 passengers. Then a shorter version was proposed in 1944 for 6 passengers and urgent mail, to cross the Atlantic Ocean at the cruise speed of 500mph (800km/h). At last, the twin-boom layout was discarded, and a very normal shape was used to build the final DH.106, famous jet airliner. I draw these twin-boomers here with the help of Antonio Oliver, that created a preliminary profile using the published view from below as a basis.
* Two **Burnelli Patents** of 1939-45 (**4-engined 2,380,289** & 2,380,290) have been illustrated by drawings that are difficult to classify without view from above, the views from front having no fin. This may have been flying wings, or single boom, or twin-boom aircraft.
* **Burnelli Patent 2,586,299** for a 4-jet plane, published in 1952 but filed in 1945, may also be drawn even if I have no complete view as a basis (wingtips and rear tail are unknown).
* In *Forked Ghosts* were presented the **Fokker 180** and the older Fokker 160 of 1938. Both were using a lifting fuselage, the 180 having 4 radial engines, while the 160 had 5 engines and a bigger size. But *Aeroplane Monthly* has presented them very differently. The Ontwerp180 would have had the same size as the 160, the same shape and 5 in-line engines. Moreover, 2 versions of the 160 were presented : the one that I knew and a peculiar one with radial engines and a pilot pod above the wing. There was also a drawing of a Fokker 180 using 5 engines, but radial ones. So, the Ont.180 code has been used for many different designs, including one with 5 in-line engines, and maybe this one had a raised up pilot-pod like one of the Ont.160 proposals. I just don't know.
* The lifting-fuselage twin-boom **Fokker 210** of 1945 is another mystery. It might have been an improved Fokker 180, more aerodynamic and with better view for instance. More powerful engines may have used contra-rotating propellers.
* The **Airspeed** twin-boom transport designed the 23rd June 1942 (**AS.5X**?) can also be presented, as forefather of the AS.57 Ambassador and derivative of the AS.55. Knowing its size, the engines and the general layout is enough for a provisionary drawing.


E.1910
CR.65
P.1042
CAM.16
P.1032x
P.1037x
P01
CAM.20
He.111Z.5
R.120
R.74

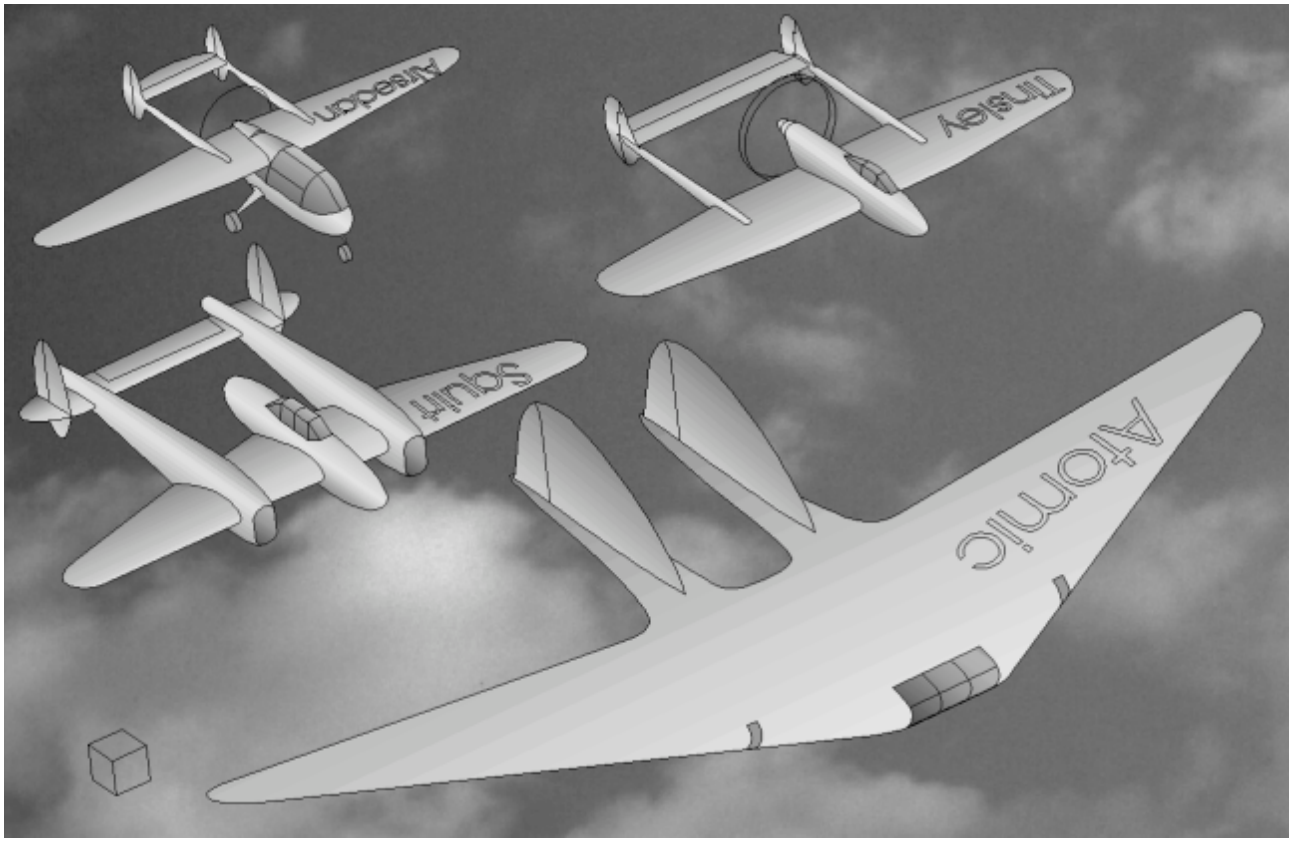

AS.6X
F.210
F.180
2.586.299
2.380.289/4
DH.106
DH.106

Enthusiast dreams of those years

* Thanks to Icarus Books, I have found the ***Flying***'s **Airsedan** that I was searching for many years. This 1944 ideal plane (according to journalists) has been finalised by Jo Kotula, artist and pilot, in 1945. It was mainly based on the Weick W-1 of 1936, that featured a perfect view ahead, easy access and a safe propeller guarded by booms. The high wing may come from the initial project of an amphibian version. The roadability has been considered then rejected (as well as a retractable landing gear) to lower cost. It was a 4-seater (sedan) but a 2-seater has been considered at the beginning.
* In 1944, the magazine *Air Trails* published an article about a Pilot Catapult, for rear-engined aircraft having a **pusher** propeller, that would be lethal in case of normal bailing out. To illustrate that, the artist Frank **Tinsley** invented a futuristic twin-boomer, as none was in service yet and design projects were poorly known. The big distance between booms was not explained by the propeller dimension, just artistic freedom…
* A drawing of some future **Atomic-Powered Flying-Wing** has been published in ***Newsweek*** magazine in 1945, and this was not science-fiction. It may have been drawn in 1940-42, according to the style of markings. The size is unknown. It is impossible to see if the fins are actually hold by 2 booms or by a lengthened part of the wing (like on the Charpentier C1 and Putilov Stal-5).
* In 1945 also, the chemical company named **Ethyl** Corporation advertised to high-school students 'Your Wonderful Future In Aviation' with the art picture of a jet-Lightning, called **The Squirt**. This was not technically wise, though, especially with the very long jet pipes…

Flying toys of those years

Here, I am going to present tiny models designed in 1939-45 for fun flying, without payload, like the Winkler Doppelrumpf glider in *Supplement No.1.* Maybe many copies have been built, falling out of my *project* scope. It is difficult to know, as air-historians are boycotting this world of pilot-less aircraft… till the arrival of Unmanned Combat Air Vehicles that will probably change their mind.
* The **Meyer-Reichelt** twin-engined **model**, built at Bremen in 1940 featured an unconventional reason to choose a twin-boom layout. To protect propellers from hurting the ground (if the model falls on its nose or wing), which may destroy expensive engines, a nose gear was fitted and a central mounting of the engines was selected. So : push-pull propellers, and twin-booms.
* The **Cole Dry Duck** water-model seaplane of 1944 also tried to save the engine from ditching in the water, putting it in a central position, so with a pusher propeller and twin-booms. A more stable twin-float version was considered.
* Made in balsa, the **Rinaldi Hand Launched Glider** has been presented in 1941, with a possibility of being catapulted.
* The **Mc Berkeley Stella Filante** (shooting star) was a rubber-powered model with 2 single-blade propellers. A first twin-fuselage model has been built in 1939, and a slightly different version has been proposed in 1945. In those years of lethal hate between countries, the models of Renato McBerkeley, presented in Brussels and stored in Mendoza, are nicely mixing Italy, Ireland, Belgium and Argentina…
* At last, the **Motomodèle MB.33** has been presented in 1942, using a little gasoline engine. A kind of fake canopy is used here, as on the Meyer-Reichelt it seems.


Airsedan
Tinsley
Squirt
Atomic


Stella
MR
Duck
Rinaldi
MB.33

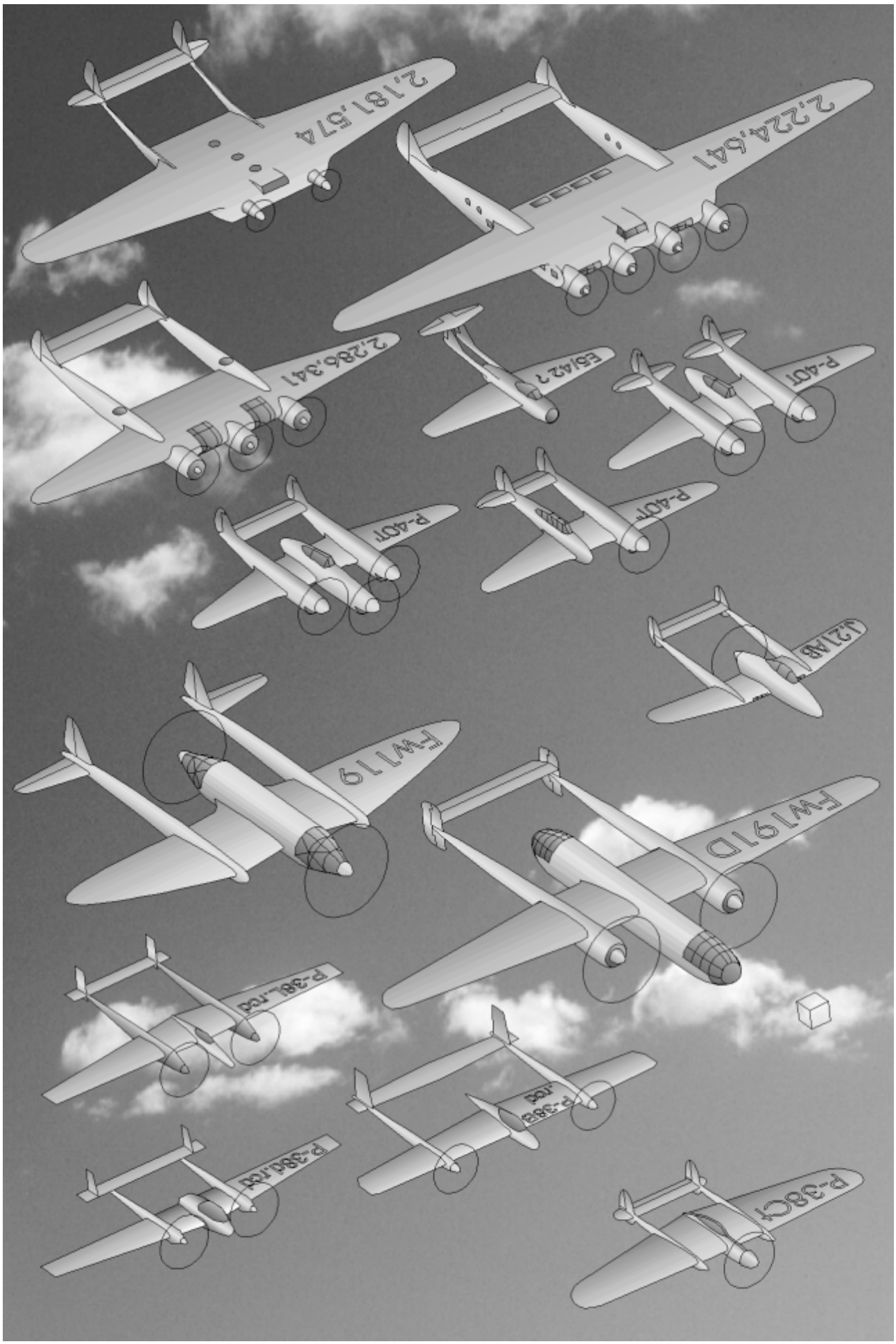
True mistakes

Sometimes historians (or witnesses, or spies) are wrong, misunderstanding may occur, and several twin-boomers of 1939-45 came this way, not as inventions for fun, just as mistakes.
* Three **Burnelli Patents** were presented as 1939-42 designs while further details proved these were publication dates, the files being deposited in 1938: patents **2,181,574** /**2,224,641** /**2,286,341**. The first one was an airplane with a separable flotation section featuring a water-propeller, in case of marine alighting in emergency. The second was an airliner with 74 passengers in the lifting fuselage and hollow booms. The third was a military plane with lateral posts between 3 engines and propellers.
* Having no source in 1997 for the **Westland E5/42**, I had made a provisional drawing, using it to illustrate the layout of 2 booms taking root on a jet pipe. This drawing ("E5/42?") was no more necessary after discovering the SAAB RX-2, and it was forgotten, not included. But it existed as a mistake.
* A genuine *Twin-P-40* scale model has been announced as a future product by AMTech Models, and Tom Choy wrote to fellow modellers that a 'twin-boom P-40(!)' was coming. It was very interesting in case its shape was different from the fake twin-fuselage P-40 shown in *Supplement No.1*. But at last the intended model was just the twin-engined (single-tail) P-40… So I proposed the Curtiss/Choy **P-40T** twin-boomer that I have dreamed of. And I tried a 3-engined **P-40T'** design with a nose gear. Then, looking better at the twin-engined P-40 profile (without starboard engine to show better the nose), I suspected that the misunderstanding might have come from this : imagining a single-engined asymmetric twin-boomer (**P-40T"**). At last, SuperTom answered that these *twin-boom* words have been a mistake only.
* In *Forked Ghosts*, I presented a provisional drawing of the bubble-canopy version of the **SAAB** J.21, as I had never seen it illustrated. Though, I found on the web a thumbnail photograph that looked like it… Though, seeing better, full size, it was wrong: just a normal J.21A with part of the canopy raised up for the pilot going out. I name this misunderstanding **J.21AB**.
* In *Supplement No.1*, I said that the veteran David Golding was wrong mentioning a twin-boom Fw 119 Zerstorer in service. Though, with full respect to this eye-witness, I should have proposed a provisional drawing. Friends helped me to imagine : the Heinkel/Mayerle **Fw 119** would be a twin-boom He 119 using the separate tails of the Fw 261, and the Focke-Wulf/Deweer **Fw 191D** would be a twin-boom Fw 191 that was mistyped inverting 91 into 19…

FICTION MODELS

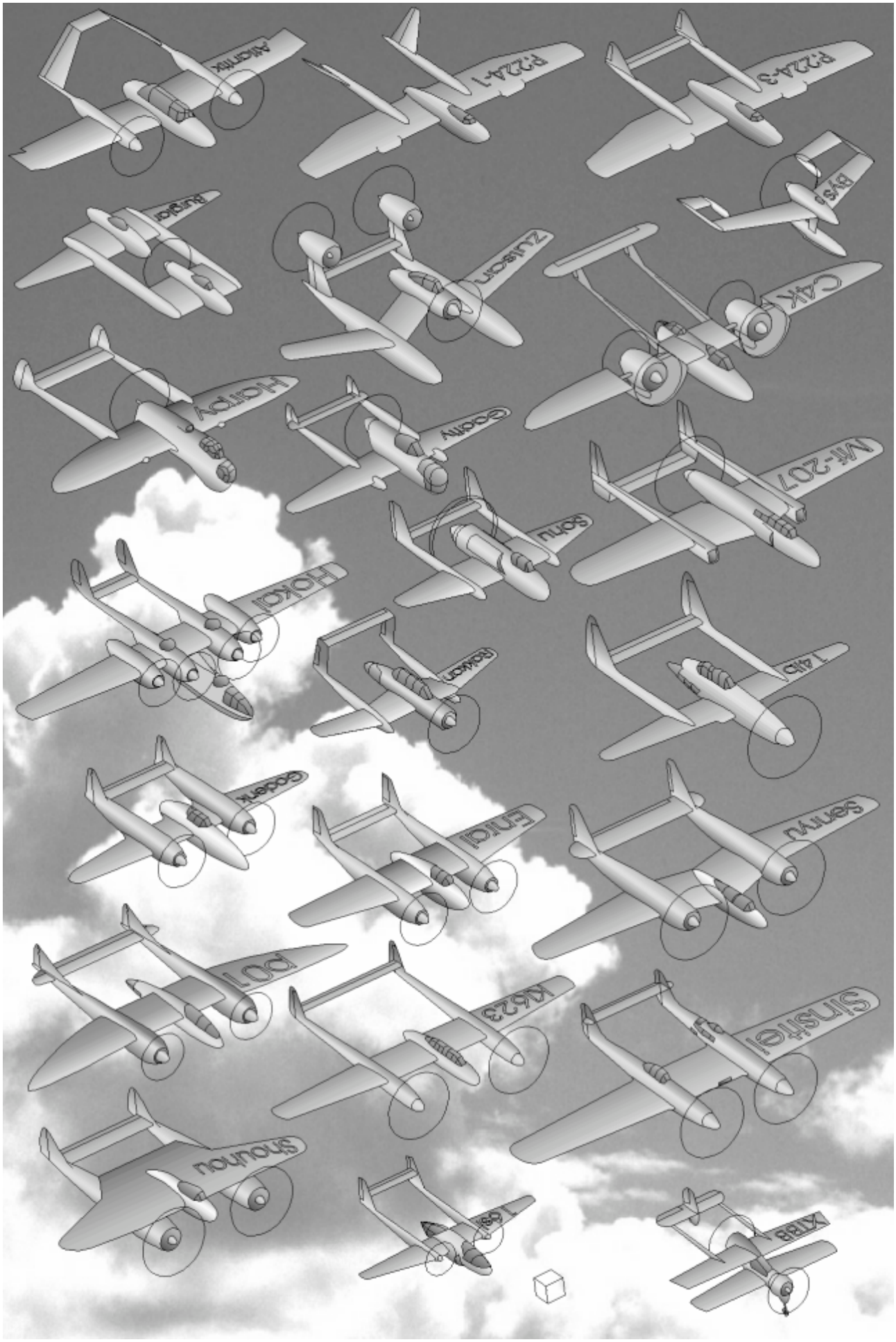
Imperfectly copying famous ones

* Completing the Corel Dream P-38_LTN.d3d in *Supplement No.1*, I have found several Lightning programmed with 3-dimension softwares. Using RcCad (Radio Controlled - Computer Aided Design), a perfect Lightning may be designed rather easily, but such a copy do not concern my subject (*unreal new shapes*); though some very raw designs have quickly been done with the demonstration free version, and I have selected among them the Lockheed/Klos **P-38Lightning.rcd** made by a 13 year old boy, the Lockheed/Robinson **P-38B.rcd** which is rather simple, and the Lockheed/Besson **P-38d.rcd** which is far from a Lightning but called P-38... There was also (on the Web at : http://www.rccad.com/ Gallery.htm) a Bf 109Z and a P-61 (also : J 21, Vampire, P-82, but referring to famous versions of the 1950s).
* Other source of very modified copies : electric flying models – most of them are so perfect that they do not interest me, but some use a nice simplification, providing creation. This way, a single-engined Lightning, the Lockheed/Ziroli **P-38 Combat** used a nose propeller and a flat profile as central pod - see at : http://www.controllineplans.com/frameset2.htm. On the Net are also several Vampires with a pusher propeller instead of the jet engine, but referring to the 50s.

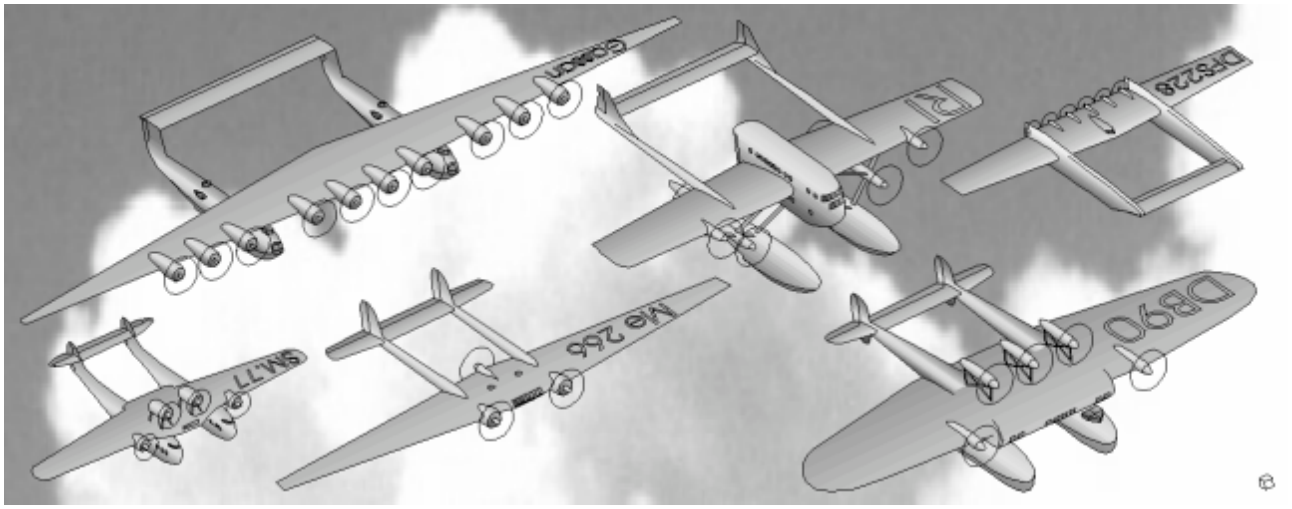

P-38C1
P-38E
P-38E
P-38E
FW190D
FW190
J21MB
P-40T
P-40T
P-40T
EB42-1
2,286,341
2,224,641
2,181,574

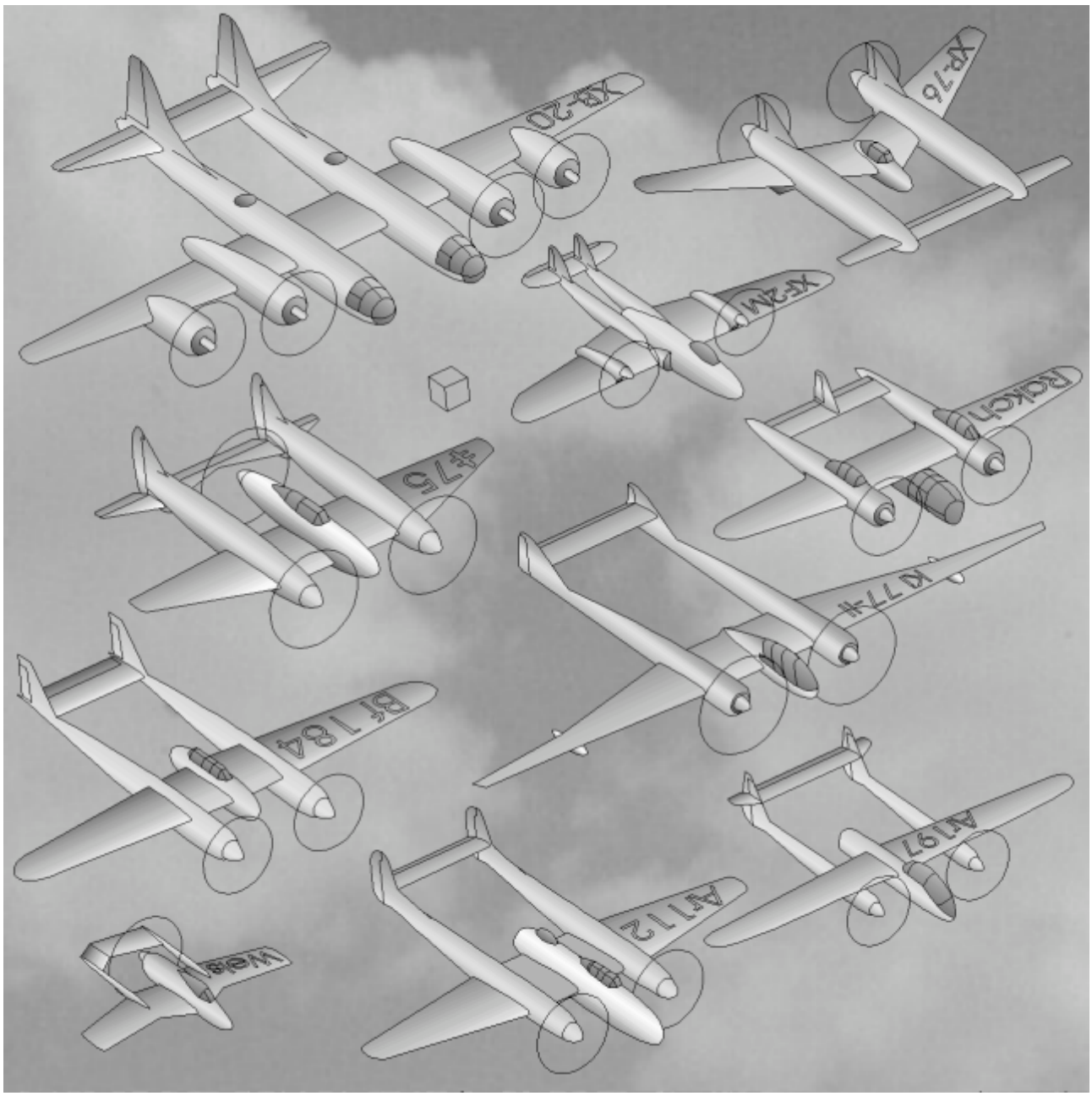
Daring to invent

• In the world of flying models, I have been surprised to discover an unknown twin-boomer with swastikas, at http://x.wings.free.fr/2002/ph-2002-2.html. In fact, this Cœur **Atlantix** was using such an History background just to bring mystery, and a personality – as explained by Jean-Michel Cœur, RC model expert (http://batmodelisme.free.fr).
• Among desk models, I have also found an unknown twin-boomer, called Bv 224. This Blohm-und-Voss/Larmanger **P.224-1** was belonging to the *Just fantasy* part of the nice Pend-Oreille Models collection (http://pomkit.itplushost.com), and was based on the asymmetric P.194. With the help of Dan Johnson, I met Lionel Larmanger, and discovered that a **P.224-3** derivative would feature a more classical tail-plane.
• As drawings and computer fake photographs, the web site www.warbirds.jp/kakuki presented hundreds of fiction aircraft 1941-45, including 36 twin-boomers – presented here in 2 full pages. As I do not speak Japanese, I cannot describe them in detail. According to directory nouns, the designer names may be Kakuki, Kyosaku, Sasaki, Sakamagi, Oekaki, Kakkawa, Kaksei.
* The Skoda **Bystrouska** is amazing, with two separate oblique tails, holding rear floats for balance.
* The Bristol **Burglar** is a canard featuring 2 cockpit pods and a central propeller. This layout could have been used for a whole family of 15 layouts : one 4-engined push-pull, four 3-engined push-pull (discarding one propeller of the previous), six 2-engined (four different push-pull, one double-push, one double-pull), four single-engined ones (two push, central or aft, two pull, central or front)… And if you imagine a variant with the wing in front and rear tailplane, that makes a total of 30 cousins. Funny.
* The **Zuisan** is a 3-engine push-pull sea-plane, with floats used as booms and an amazing tail. The original drawing was a triplex boomer, but I removed the pod-tailplane link to make a true twin-boomer.
* The (Kawanishi?) **C4K** would have used 2 channel wings, giving probably STOL ability (the air-flow above the wing provides lift, even without airplane speed).
* The De Havilland **Harpy** and **Gadfly** (Mk I to IV) feature a pusher propeller to have a nose post on a single engine plane.
* The **Sohu** (or Sora, as drawing and main page have different names) would have been proposed either as land-plane or float-plane.
* The Mozikonig Fabrik **Mf 207 Skorpion**'s special feature is the very low tailplane. The air-intakes at the front of the booms may have been for cooling or for superchargers.
* The **Hokai** flying boat was the twin-boom version in a family of 3 designs. First, the Saikai looked like a Catalina: 2 engines on a parasol wing and a fuselage hull raised high at the rear to carry the tail. Then, the improved Nankai featured 3 engine pods, the central one being lengthened into a boom; the hull was short for marine qualities and easy taking off from water, with room for a rear post moreover. At last the Hokai was a 4-engined version of the Nankai, with the 2 central engines lengthened into booms. This reminds what was said about the USCG flying boat.
* The **Rakkankou** had a nose propeller and rear post, a very rare shape among real twin-boomers, without clear explanation because such a feature may be great for users.
* The **14ib** was similar but with 2 tandem engines in a very long nose. It is difficult to understand the shape of the wing (with maybe special devices for cooling) and the back of the central pod, above the rear post.
* The **Godenk** (twin-Raiden J2M?), **Enrai**, **Senryu**, **p01** (or a01), **Ki 623**, **Shouhou**, all look like P-38s or P-61s. The 16-kantei planes (**16si**-01/02/03) were different in having a central engine driving lateral propellers with shifts and gears (NIAI-OCh-like); the Nanpu version had retractable floats in the booms and central pod, too.
* The **Sinsitei** was a twin-fuselage plane with the pilot in the starboard cockpit. It was rather similar to the Tachikawa Dai-Ni-An.
* **XTBB** could be the name for an eXperimental Torpedo Bomber of Boeing, like the XTBD of Douglas. The silhouette is rather old-looking, with 2-blade propellers and 2 wings, but a biplane layout may have been selected lately for best handling at low speed.


Atlantik
P.22A-1
P.22A-3
Zuisan
C-4K
Harpy
Mi-207
Hokai
Senryu
Ki623
Shounou

* The giant twin-hull **Gassan** would have used 10 engines, the span reaching 84m (275 ft).
* The Potez **RI**, *Royaume d'Ibukuro* (Ibukoro Kingdom), would have been a six-engine big plane (50m span = 164 ft). The tail-boom shape is justified by the panoramic rear post, not by the twin-floats as these parts do not carry the tail. Though, with push-pull devices installed on the pylons linking floats and wings, there could be no version without floats, unless we imagine 2 long streamlined pods carrying wheels…
* The **DFS-228** introduces a problem: the real DFS-228 was completely different from that (not twin-boom nor canard). It seems just the existing name was used for this invention, without any relation. This may be a misunderstanding: the Japanese text maybe explains this was a big flying carrier (mother-plane) for many DFS-228s – while I picked this name in Latin-letters thinking it was referring to the big one. But this is only a hypothesis and I am not sure – in some future an English version may prove I was wrong. Calling this plane Unknown would be rather uncomfortable, and *DFS-228 (carrier?)* is a little better. As the DFS-228 prototype is far less known than the mass-produced DFS 230, maybe it was just imagination from a DFS-228 name in a big Web list, not an expert judgement, all is possible…
* In the same way, the Savoia-Marchetti **SM.77 Manta** is using the code of a poorly known aircraft designed before 1939, a version of the famous SM.66 (thanks to Justo Miranda for that information and picture). The size is bigger, with 2 fuselages/4 engines instead of 4 booms/3 engines. This can have been a design of 1940, using an old figure to fool the spys (as the top-secret jet-powered Bell XP-59A used the code of the old propeller-driven Bell XP-59, and that may have been an usual way in several countries).
* The **Me 266** is a different invention or mistake. The RLM code 266, officially given to Focke-Achgelis, would have been used by Messerschmitt, for a Burnelli-like cargo.
* The big Dyle and Bacalan **DB 90** presented here is not the real old one (DB 75 version, before 1939), once again.
* As well, the beautiful and modern **XB-20** has no relation with the official XB-20 project, which was a version of the old Boeing XB-15, before 1939. Looking like the Boeing B-29, this beautiful twin-fuselage could have been a forefather of the famous Superfortress.
* The Brewstar **XP-76** (Brewster?) is a similar invention: XP-76 was the code for a Bell P-39 Airacobra version, not twin-boom and not canard. Too bad, I prefer this swept-wing beauty, a little similar to the P-38 pushers.
* The General Motors **XF2M** was a Wildcat FM version, not twin-boom, but here, the XF2M-A would have been an asymmetric twin-propeller plane, the XF2M-II Thunder Heart and XF2M-III Thunder Party: twin-boomers with one jet and 2 propellers.
* The **Ki 75** (or Ki 75-II?) was drawn as a push-pull 3-engined single-seater with low tailplanes too. A different Ki 75-I was presented on the same site, with a single engine and single fuselage. According to historians, the Nakajima Ki 75 was a twin-engined project, matching none…
* A peculiar shape was presented with the name Ki 69, a kind of twin-Zero with a glazed central pod in between. The port fuselage housed the pilot. A version with a single fuselage and just a glazed nose was named Ki 68, and a version with a single fin: **Rakchokkyou**. According to historians, the Nakajima Ki 69 was a long range aircraft, never built.
* The **Ki 77-II** used external extra tanks and wings (for very long range probably) that could be removed (or jettisoned in flight). There has been a real Tachikawa Ki 77 but without any resemblance to this one.
* The Messerschmitt **Bf 184** is a fiction with no relation to the Flettner 184. Once again, this was a design close to the famous P-38 Lightning, without clear reason to be a twin-boomer (lengthened engine pods?).
* The Arado **Ar 112** uses the RLM code 112 which was given to Heinkel, not for a twin-boomer.
* The Arado **Ar 197 Zwilling Schwanz** (Twin Tail) is very far from the real Ar 197 which was just an Ar 68 version, not twin-boom.
* The Gotha **Go 250 Wels** has a very special V-tail, swept back with the centre low. It would be clear on a 3-view drawing (V from above, V from front), but it is very surprising on the 6 oblique views presented, and my one is difficult to read either. According to historians, the RLM code 250 was not Gotha property but Horten, and not for a twin-boomer: for a flying wing.


DB90
Me 264
Gigant
DFS228
BM.77


XP-76
XB-20
XF-2M
Rocket
Ki 74
Ki 75
Bf 184
Ai 97
Ai 112
Wale

Enriching families

Seeing the Blohm-und-Voss P.224-1 for the first time, I thought it was a BMW TL III with inverted booms, to have the tailplanes oriented outside. This was a misinterpretation, but this created somehow a BMW **TL V** (there is already a TL IV, not a twin-boomer). In fact, the transformation of the P.194 into a twin-boomer 224 was not the only possible way: a twin-plane **P.194Z** would have fallen just as well in the collection. And the modeller Allan invented a TL III with a turboprop: PTL III…

The genius Australian modeller Lyn Ludgate has actually built several wonderful twin-boom models and photographed them *in flight* (thanks to great computer handling skills)…

* The first that I discovered was on the Unicraft Models site of Igor Shestakov, gathering all asymmetric airplanes, including *what-if* creations: this was the piston-jet Lockheed **P-38X** composite (at http:// www.geocities.com/asymmetrics).

* The Twin Yak-15, almost symmetric at first glance, was called **Yak 15Dv** (Як 15Дв) with once again the help of Igor, speaking fluently Russian: he told me that there was no name for Soviet double-planes, so they should be called simply Dvukhfusyelyajniy (twin-fuselage) but letter D was not free for Yakovlev (as Dalnostniy is Long Range). So, this became the Yak 15Dv…

* The Avro **Grenville** (Twin-Lancaster) was very different from the Warrior that was presented in *Supplement No.1*. To join normal tailplanes, the fuselages should be close, and that made the central propellers intermeshing, which is dangerous from separate engines. So the spinner of the port one was lengthened to hold the propeller ahead. Nice idea, that recalls the principle of the Wagner Twin-Cub, Harkey Twin-Mustang-Racer, Sarpolus Twin-Cut – twin-fuselage planes with the port fuselage moved a little ahead to allow fuselages to be far closer, thus improving solidity and providing less asymmetry if one engine fails…

* A modified symmetric Bv 141 has also been built by Lyn, different from Igor's one as using a connecting tailplane, to improve stability. Lyn called it **Bv 141Z**. This wise creator told us that maybe the central pod should have been raised up to improve lateral visibility. Though, this would be further improved with a real twin: the asymmetric-again double **Bv 141Zz**… Such an asymmetric twin-boom shape associates a perfect view forward-rearward with great solidity.

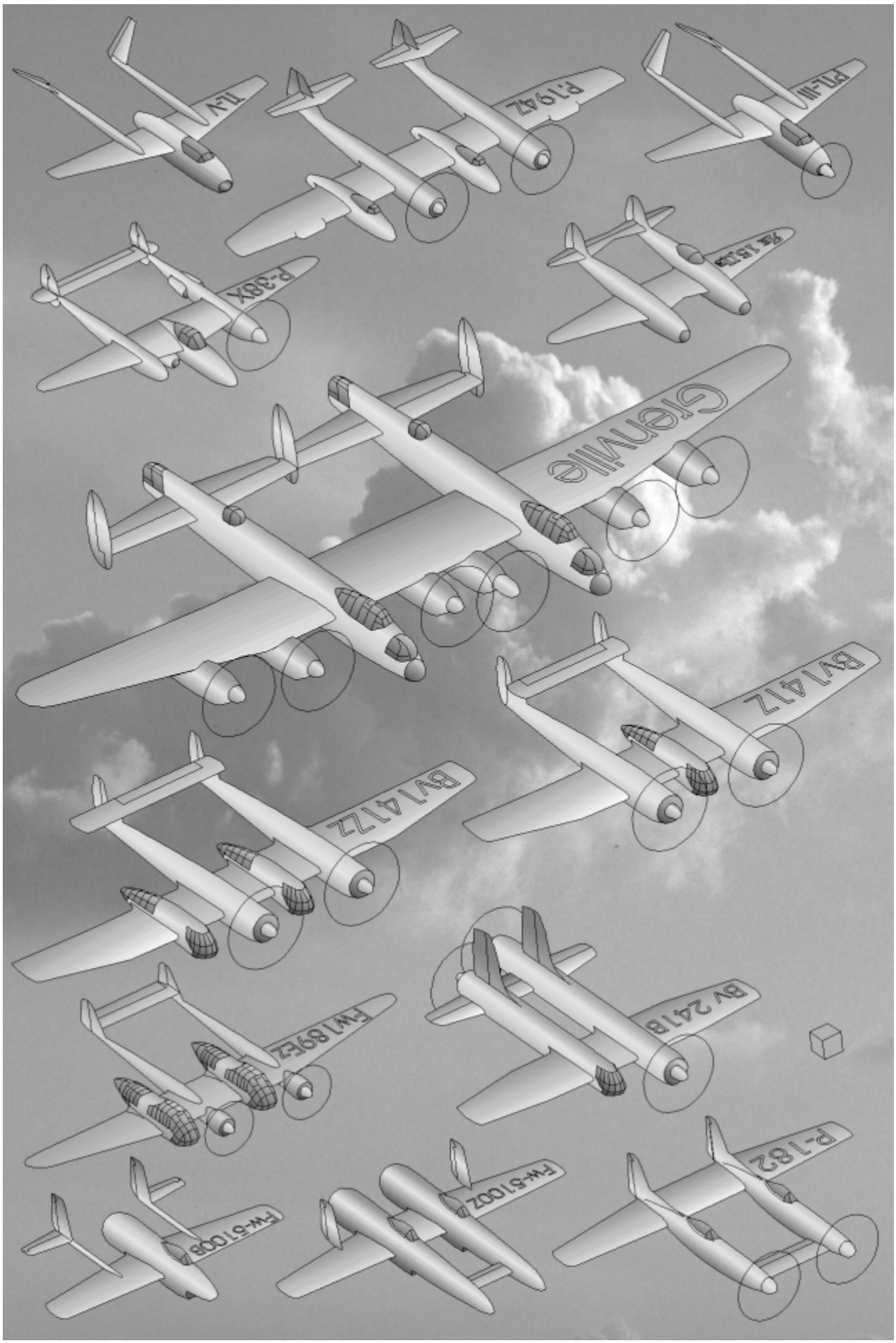
* The Fw 189 could follow its colleague Bv 141 into the new shape, becoming the improved assymmetric **Fw 189Ez**.

* I have also imagined a reason for Igor's Bv 241 (see *Supplement No.1*) to be a twin-boomer, loosing the rear post of the standard 141: this could be a way to hold a tail-engine, in a 3-engined version: **Bv 241B**… Once again, one propeller is moved backward to avoid intermeshing without a great distance between them. The result is a rather nice 3-engined plane, if you compare to the very famous leading Ju-52/3m or Savoia SM-79-II: less drag, better visibility forward, less asymmetry if one external engine remains the only working one…

* Lyn Ludgate made another nice model, named Fw 1900: a Focke-Wulf Fw 190A reverted to become a canard, with the engine cowling turned into a jet pipe, while the fin was moved, duplicated, on lateral booms. At that time, I was writing the book *Virtual Mustangs*, so I imagined the same with North American P-51 canopy, fin and air-intake: Fw-5100. But both Fw 1900 and 5100 had a triplex-boom layout, as the central pod is holding a foreplane… For this book, it was not correct. So I created actual twin-boomers from the Fw-5100 Mustang special (and the same could have been done with the Ludgate Fw 1900, of course):

- North Australian **Fw-5100B Musgate**: discarding the foreplane from the pod, and adding tailplanes (external to avoid the jet flame) at the rear of lengthened booms;
- **Fw-5100Z Zwilling**: discarding the booms, with fins located on the wing, and duplicating the fuselage pod into a Siamese twin layout.

* To compare with a simpler Twin-Mustang in the wrong direction, I have modified the XP-82 into the canard **P-182**. The balance seems very bad, with too much weight ahead of the wing, but this is just a fiction drawing to show the originality of the Fw-5100Z.


P-182
Fw-61008
Fw-61002
Bv 241B
FW189E2
BV142Z
BV142Z
Glenmile
P-38X
Ta-152B
P194Z
TLV
PTL-III