

Introduction on the Internet: Aircraft religious caricatures

by: X.Toff, October-November 2004

Knowing the genius work of

Jean Barbaud (<http://lt.macfly.free.fr>),

Rob Henderson (<http://www.caricatureaircraftpictures.com/>),

Pat Cherry (<http://blackheartart.com>),

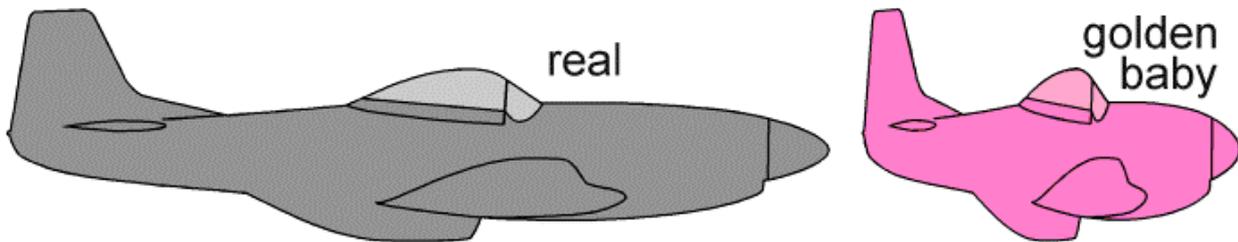
Thomas Troestler (<http://www.desinaero.fr.st>),

we were facing a mystery: "**why cartoon aircraft are more cute and lovely than real aircraft ?**"

I finally found an answer trying to create mathematical caricatures with computer (Corel Draw software), without the artistic talent of these great Masters. Very surprisingly, my explanation is religious:

1- **Baby** aircraft: a more bulbous shape may be interpreted as a shortening (with not-increased heights), creating a new-born little-aircraft, and we are programmed (by God - or Nature) to love babies...

2- **Golden** aircraft: shortening a long aircraft includes it in a rectangle which is closer to the divine Gold rectangle - the ratio length/height should reach precisely $[1+\sqrt{5}]/2=162\%$ to have the Harmony of a Middle-Age church, somehow...



What is the relation between God and a rectangle ?

Well, the principle is that God is (or would be) the highest perfection, so a *perfect* rectangle would be a *holy* rectangle... Of course, the church architects would use this shape to honour the Lord.

But what is a *perfect* rectangle? A rectangle is an elongated square in one direction, but *how much* should we elongate to have some *perfection*?

Well, to find the good shape, mathematical perfect calculations may help, you just need to find a figure to optimise. Obviously, the major numbers to define a rectangle are the ratios Big-side/Short-side or Short-side/Big-side. Which one of these 2 ratios, and to which value (1.01 to 1000 are possible for the first, 0.01 to 0.99 for the second)? One of our forefathers then said he has found THE unique answer: the perfect rectangle is an horizontal rectangle A which is a **square S prolonged by** a rectangle B of **its own shape**, thus Horizontal/Vertical of rectangle A = Vertical/Horizontal of rectangle B = Gold number....



Mathematicians took it easy: $G=1+(1/G)$ thus $G^2=G+1$ thus $G^2-G-1=0$ thus $G= \frac{[-(-1)] + \sqrt{(-1)^2 - 4(1)(-1)}}{2(1)}$ thus $G=\frac{1+\sqrt{5}}{2}=1,6180...$

The other (mathematically true) answer to the same equation (before the sqrt: + replaced by -) being negative, impossible for a ratio of lengths, G above is the only answer, God's answer concluded the official Church...

A4 rectangle

In the modern society, the everyday-used rectangle was not mainly the shape of architects (rooms, windows) but the shape of paper sheets (before TV and computer screens became available). English/American schools and companies seem to hesitate between 8.5"x11" or 12" or 14" (ratio 1.29 or 1.41 or 1.65) while continental European countries seem to use a single one, called A4 (8.27"x11,69", ratio 1.41). Is this another rectangle being a *unique* answer to another optimisation? Yes it is...

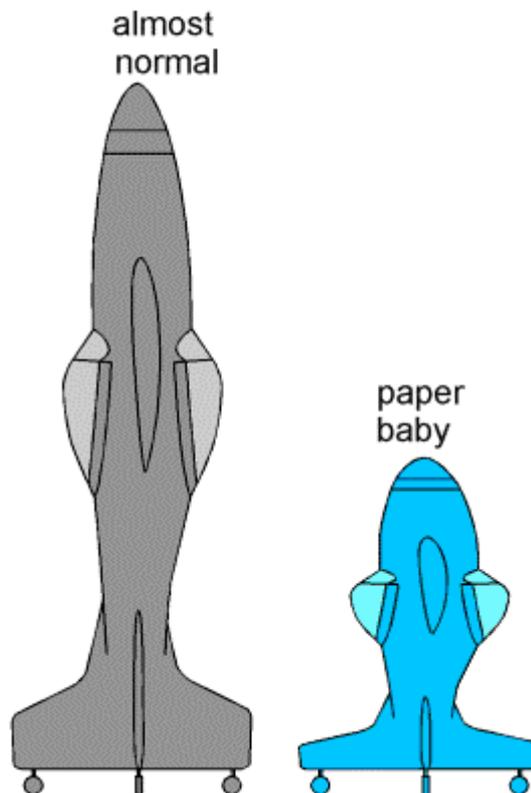
The basic principle was choosing a 1m² sheet of paper, called A1, of perfect shape to find. As this is too big for everyday use, it was fold in 2 and cut (into a A2 sheet), and the idea was there: Big-side/Short-side of A2 = Big side/Short-side of A1, precisely, without a reference to a square basis anymore, a kind of perfect rectangle from just a **fold in 2** principle.

Once more, mathematicians took it easy: the ratio long/short A comes from $L/S=S/(L/2)$ thus $L^2/S^2=2$ thus $L/S=\sqrt{2}=1.414...$

With $L \times S = 1\text{m}^2$, this gives A1, then folding (in 2) 4 times, that gave A4 of $1/(4)^2 \text{m}^2$.

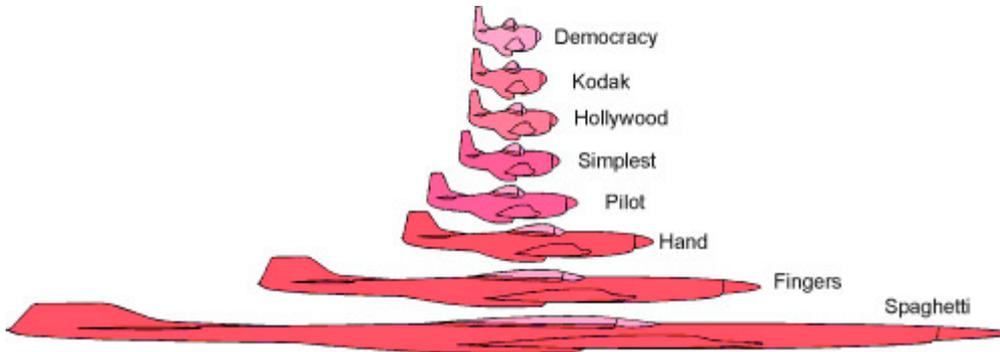
Knowing that, why have I chosen the church $G=1.62$ rather than the paper $A=1.41$? The answer is simple: - I agree that usually an aircraft has port/starboard symmetry (not always: for asymmetric aircraft, have fun with my site http://cmeunier.chez.tiscali.fr/asym_dahu_aeroUK.htm). So the **view from above** could be produced by painting the port half, then fold in 2 the paper before drying, then open again... The "fold in 2" principle has a meaning there, even if this more a childish way than an engineer work. The ideal ratio **Length/Span** (or Span/Length?) involves this A value, better than the G one.

- BUT... working on a *profile* of aircraft, there is no reason at all to mention any folding in 2 (except for my twin-cockpit P-51VTOL up/down and P-51DD-PP front/aft, but they are jokes), so my basis for the *Length/Height* ratio was the Gold number.



Only one!

The new generations may laugh at these complicated figures of the past, when choosing dimensions was not handled by everyone in a democratic way; now, it is clear that - no matter if you choose 640/480 pixels, or 800/600, 1024/768, 1152/864, 1280/960, 1600/1200, 2400/1800 - all comes from the very simple shape 4/3, without crazy square root, and the ideal ratio is $4/3=1.33$, the prophet MaSter Bill Gates confirmed... Well, let us try to understand the old ones anyway: the Kodak generation was believing the main rectangle is the 24x36mm one, the ideal ratio big/short being $36/24=3/2=1.5$, compromise between paper and gold numbers, with an amazing simplicity. Though, photographing landscapes, you will understand that this gave far too much room for the uninteresting sky, thus the Hollywood generation has wisely preferred the format $(4/3)^2=16/9$ (ratio **1.78**). However, a more simple answer was possible, from the 'fold in 2' logic: the first number after 1 is 2, so after the square 1/1 comes the simplest rectangle $2/1=2$, double square (or half square in opposite direction). But coming back in the aviation World, it is admitted that (the officials judged...) the Wright Brothers started all, so an airplane without a pilot or without an engine or without control counts for nothing: the right balance is the Mustang's tail/cockpit/nose-engine, 3 parts, and that makes a ratio $3/1=3$. Well, this is a lesson coming from an egotist pilot hero, and it is now clear that a good airplane must carry passengers, so you must stretch the basis with additions fore and aft, and that give the magic ratio **5**, our number of counting tools per hand; and this bring us back to religion: as we look like God, the Holy Old Book said, God has 5 fingers per hand, not 3 or 1.62! Yes, but God has a total of 2 hands, **10** fingers, and with feet and toes, that makes the magic number **20**, that leads us to the spaghetti airplane... nice with tomato ketchup?



Satan's ugly ones...

Tonight I made a nightmare: I was in a hall of Justice, and severely condemned - thrice guilty:

- 1- It is stupid to ask whether 1.41 should be the length/span ratio or span/length ratio : the folding clearly occurs at the middle of the big side, so the centreline is there, and this is automatically $1.41=\text{span/length}$ (closer to a wide U-2 than to a long X-15) = length/half-span. And for the P-51 VTOL with folding on the wing, it **must** be the same: the required symmetry occurs with an axis at the centre of the big side.
- 2- When you come into a church, you move forward in a long holy alley, and the sides are not important. So the church rectangle, drawn on a paper on a table in front of you is vertical, not horizontal. And about aircraft: after the tail-sitter foolish dead-end, it is now admitted that the principle of flight requires of course an horizontal wing, so you are not allowed to turn "nose up" your golden baby plane: the tail-to-nose **must** be the short-side.
- 3- Flying machines cannot exist, young Gallileo! Are there flying machines in the holy Bible? No! So you **must** stop immediately this what-if daydreaming and pray seriously...

