CRICRI *MC 15*

Michel Colomban

SUMMARY

DIFFERENT VERSIONS OF THE CRICRI

DATE	1973	1977	1981	1998
APPELLATION	MC 10	MC 12	MC 15	MC 15 S
ENGINE	ROWENA (1)	VALMET (1)	JPX PUL 212 (1)	SOLO 210
POWER	9 HP	12 HP	15 HP	15 HP
DIMENSIONS				
Wing span	4.90 m	4.90 m	4.90 m	4.90 m
Wing area	3.10 m2	3.10 m2	3.10 m2	3.10 m2
Wimg aspect ratio	7.74	7.74	7.74	7.74
Length overall	3.90 m	3.90 m	3.90 m	3.90 m
WEIGHTS				
Weight empty	68 kg	72kg	78 kg	78 kg
Max take off weight	170 kg	170 kg	170 kg	170 kg
Max wing loading	55 kg/m2	55 kg/m2	55 kg/m2	55 kg/m2
PERFORMANCE				
Max level speed	180 km/h	200 km/h	220 km/h	220 km/h
Stalling speed flaps down°	72 km/h	72 km/h	72 km/h	72 km/h
Take off run	170 m	140 m	120 m	120 m
Max rate off climb at S/L	4 m/s	5 m/s	6.4 m/s	6.4 m/s
Service ceiling	3800 m	4500 m	5200 m	5200 m
Ultimate load factor	+6 -4	+9 -4.5	+9 -4.5	+9 -4.5

(1) No more produced.

1 HISTORY

The CRICRI story is already fairly old. It started back in the 50's when its future designer, Michel COLOMBAN, then a student pilot was constantly being surprised by airplane dimensions finding them over-generous and even disproportionate to the load they carried.

As much through technical curiosity as by his desire to create something tiny and economical (even then...), COLOMBAN, an engineer in aerodynamics and ex-model aircraft fan, decided on a relatively simple research program. His aim was to find a minimal structure capable of excellent performances and flying characteristics using a light 20 HP engine and 10 kg of fuel which would carry a 75 kg pilot. He undertook a series of parametrical calculations. He determined the principal performances (take off, rate of climb, max. and min. speeds) by studying wing area parameters such as surface and aspect ratios naturally accounting for associated tail units and corresponding masses.

The resulting graphs showed that a single seat aircraft having a 4 m^2 wing area and a 180 kg gross weight was perfectly feasible. Although this took place in 1957, construction could not be undertaked at that time. Twelve years later, conditions finally became favorable and the first structural test components were realized.

In the meantime the original project had undergone some changes :

- *Metal, though heavier, took the place of wood; its clean flying surfaces taking full advantage of low-drag airfoils.*

- *To simplify things, standard 1m × 2m sheet metal was used as wing-skin reducing wing area to 3.1m^2.*

- *Two light 9 HP chain-saw engines took the place of the inexistant 20 HP one dividing the power also improved propeller efficiency at high engine speeds.*

- *The fuselage was designed as a simple rectangular box with a streamlined panoramic canopy on top.*

- *The horizontal tail was perched at the top of the fin firstly in order to... avoid obstacles on the ground and also to improve its aerodynamic qualities and make construction and positioning in its trailer easier. The result of all this was the MC 10 which at the time its masses and performances and especially its propeller speed and its efficiency had been announced had brought many a complacent smile; only proving that you're wrong when you are right too soon !*

Because of the innovation of the stuctural technique, a large number of tests of all sorts were conducted before actual construction began. In particular, they dealt with the bonded joints and their resistance to cold, heat, humidity and in relation to surface preparation conditions. The Klégécell was probably tested most extensively going from the classical resistance to tearing, crushing, and shearing to the more specific resistance to humidity, thermal cycles, freezing, fatigue, aging...etc.

Numerous structural tests were also performed on everything from simple structural components to a whole wing tested at full limit load.

Successful static and fatigue tests on the glass fiber laminate main gear leg (100,000 cycles at 1 m/s impacts followed by 60,000 cycles at 1.5 m/s impacts

showing no signs of failure). The engine mount was then tested (78,000 cycles 0"g" to 5"g" before fatigue failure).

The CRICRI prototype first came out on June 23, 1973 in Guyancourt. At that time, the MC 10 weighed only 63 kg. After taking it on its maiden flight in Guyancourt on July 19, 1973, Robert BUISSON, 69, ex-fighter pilot with 12,000 flying hours on 150 different airplanes under his belt and ironically enough strongly in favor of high power planes had to admit : "a page in the history of light aviation has just been turned".

Shortly afterwards the first memorable public presentations took place : in 1973 in Montargis at the National Amateur Constructors Meeting, followed by the National Meetings of 1974 and 1975 and finally by the "famous" landing on the Ferté-Alais woods, caused by an obstruction in the air vent of the fuel tank,in which the CRICRI prototype finished its career by giving living proof of its great strength.

Since that incident, plans and manuals have been executed and some "premature" but conviced amateurs went on with the construction of their CRICRI's. "Thanks" to the problems they met up with and the solutions which were found, the Building and Operating Instruction has been amended and perfected.

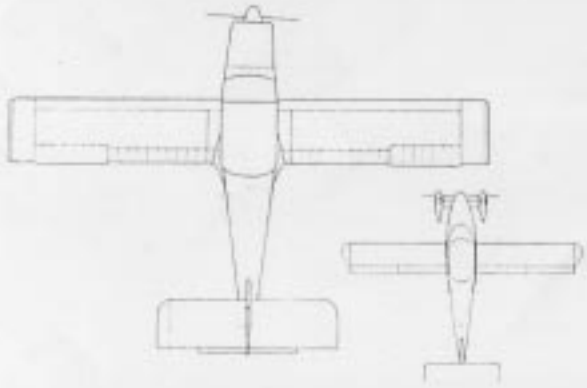
The time was also used to advantage especially to find good engines which was the CRICRI's main, if not only problem. On the whole, tuning and adjusting the power plant presented some serious problems (out of proportion to the installed power). However, Michel COLOMBAN would not rest until he had them completely under control before issuing the Building and Operating Instructions: safety first.

We can say today, that very good results have been reached in the domaine of carburetion as well as in the domaines of working reliability, sound level and particularly vibratory level. Adopting the excellent JPX engines, especially designed for the CRICRI, added largly to overcoming these problems. However, it took nearly ten more years to achieve the result of all this, namely the CRICRI MC 15.

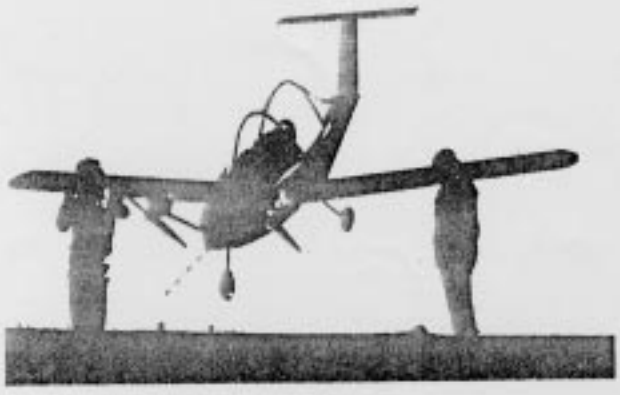
2 SPECIFIC CHARACTERISTICS

From the time of its very first flights, the CRICRI attracted attention by a certain number of its features. And, despite the considerable improvements found on today's MC 15 compared with the MC 10 prototype, concerning different domains such as structural strenght, flying quality, power plant, noise, comfort, performances, handling, etc. the essential characteristics have remained the same.

• A wing area of 3.10 m^2, which is smaller than the horizontal tail of a RALLYE, makes it, if not the smallest airplane, in any case the smallest twin-engine flying today.



• An empty weight of about 78 kg, less than a small motorcycle's, also makes it not only the lightest, but also the only plane capable of performing acrobatic flight sequences when carrying a load of nearly 120% of its empty weight. All this, while still complying with the Federal Aviation Regulation (F.A.R. 23), in the acrobatics category, at the ultimate load factor of +9"g", - 4.5"g".



• Two JPX monocylinder two-stroke 212 cc displacement engines producing 2x15 HP (the equivalent of a 250 cc motorcycle) make it anything but an under-powered airplane. This is confirmed by its excellent acceleration, short take-off run, its rate of climb (about 6 m/s) and its maximum cruise speed (about 220 km/h). In addition, despite the use of two-stroke engines to achieve these performances, its fuel consumption remains below 5 litres for 100 km at a speed of 180 km/h.

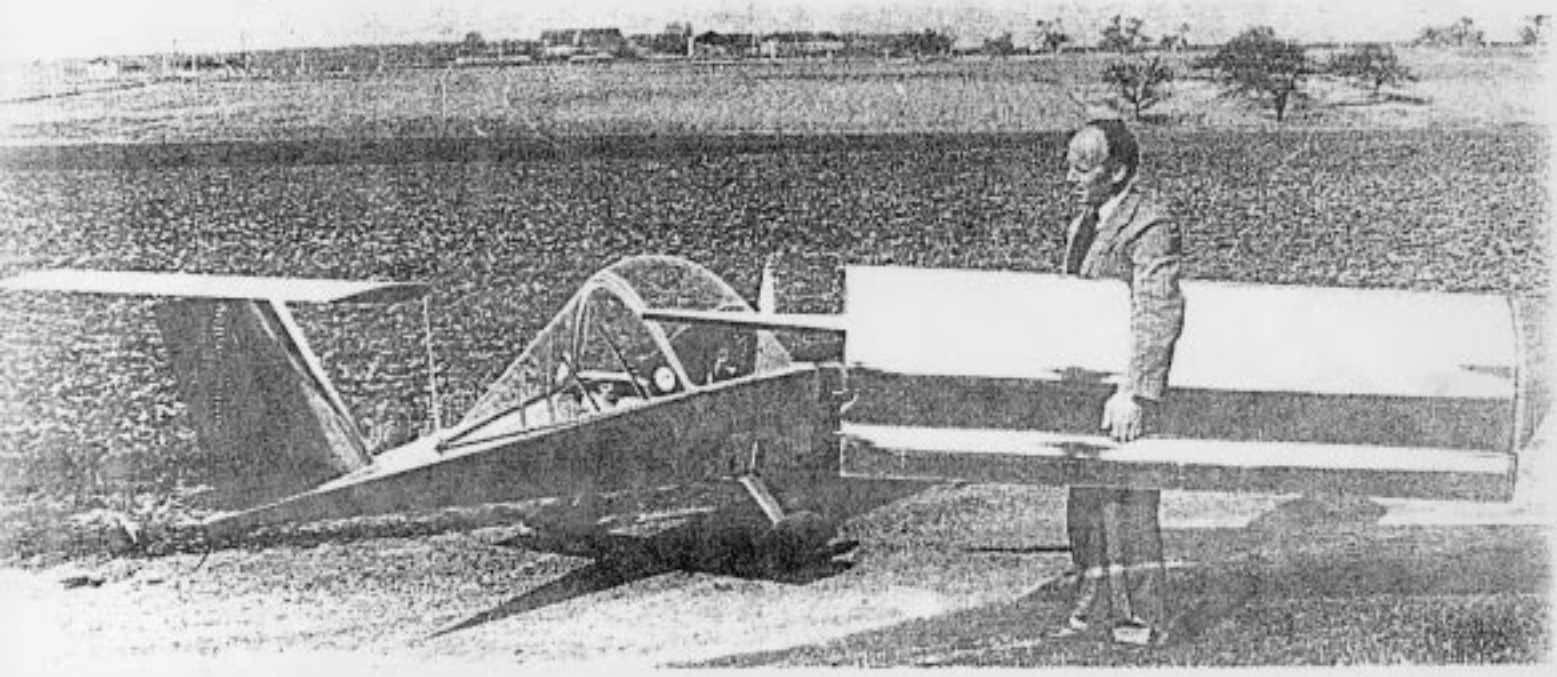
• The twin-engine airplane has little adverse yaw with only one working engine. This peculiarity is due to the position of the engines which are very close together and the propeller slipstream, which is deflected by the canopy. This creates an incidence on the vertical tail (Coanda effect) which compensates for the asymetrical thrust on one engine. The prototype has during repeated tests been flown and landed safely on one working engine.

• A take-off weight of 170 kg resulting in a 55 kg/m^2 wing load makes the CRICRI relatively insensi-tive to atmospheric turbulence.

• Junkers-type slotted flaps extend over the full wing span. Combined with very thick airfoil they insure excellent lift augmenting resulting in a minimum speed comparable to airplanes without high-lift devices loaded to only 40 kg/m^2.

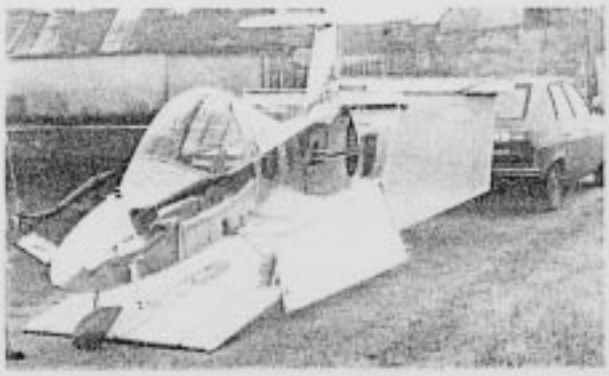
At moderate deflection, this type of flap provides the least amount of drag. By differential deflection, the flaps also act as ailerons.

• **Assembly/disassembly** is extremely easy. The half-wings are attached by two main spar-attach pins with handles and four small secondary quick-locking attaching pins. The flap/aileron control is connected with a quick self-locking rod end (two seconds).



The total time for ground handling has been clocked at two minutes (unloading the airplane from its trailer and assembling it from the moment the trailer stops). The whole operation can be performed by one person and is greatly simplified by the design of the trailer which incorporates its own ramp and the lightweight and small dimension of the half-wings, 8kg each. The reverse operation is just as fast.

• **The trailer** : by purely and simply doing away with hangar fees, this small trailer, measuring no more than a small car (1.5m x 4m) is an extremely economical asset to the MC 15. Keeping the airplane at home also provides the added advantages of security, protection and easy maintenance. The loaded trailer weighs only about 200 kg and can easily be towed on the road by any car.



3 DESCRIPTION

• **Wings** : rapid assembly/disassembly low wing monoplace. Constant thick low-drag airfoil over full wing span. Twist : 1.5°, dihedral : 4°.
Each half-wing is made up of a classical single spar in light alloy 2024 with 32 rigid foam (Klégécell) ribs bonded to it, forming an extremely strong unit. Note : two ribs are strong enough to withstand, at breaking point, a load of about 250 kg, which is greater than the weight of the airplane itself at full charge.

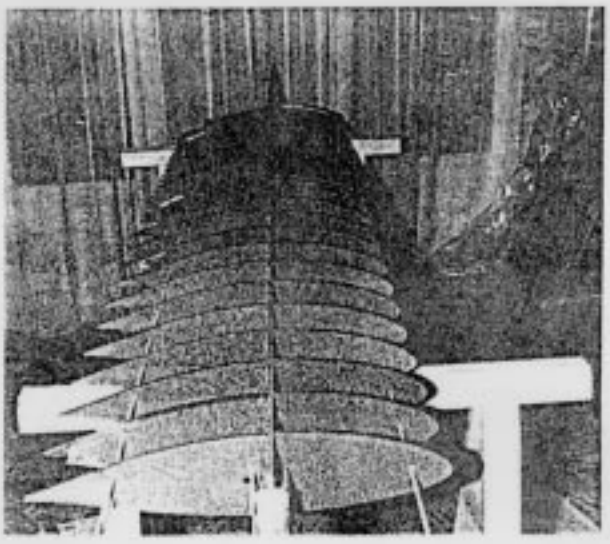
By bonding under light suction (using a household vacuum-cleaner), the structure is then covered with a standard size (1m x 2m) sheet of light alloy 2024.

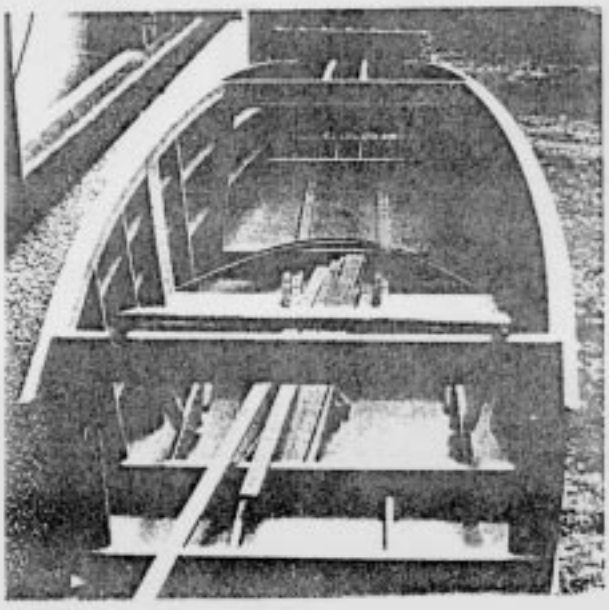
Each half wing is like a perfect box, free of any internal systems such as cables, flight control etc. Four flap/aileron support arms are simply bolted to the rear end of the wing.

• **Flaps** : external Junkers-type slotted flaps extend over the full wing span and also act as ailerons by differential functioning. They are made of thin metal sheets which are bent and bonded to a Klégécell leading edge and 4 metal ribs. There is no spar.

• **Horizontal tail** : All moving "T" type, without an anti-tab, pivoting on 2 ball joints at the top of the fin spar. One piece rectangular panel of constant section with no indentations. Same construction technique as the wings.

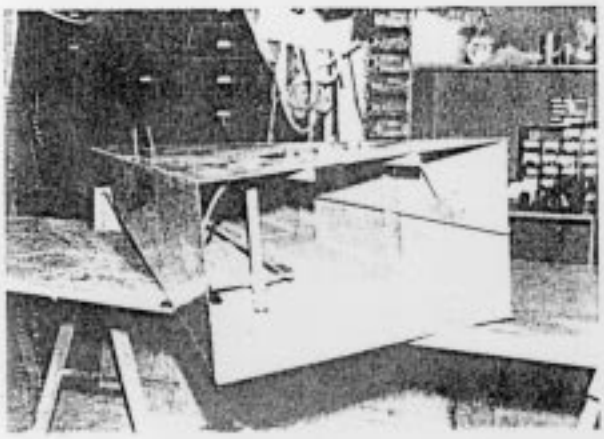
• **Vertical tail** : with moderate sweep back. Equipped with a standard rudder. Same construction technique as the wings.



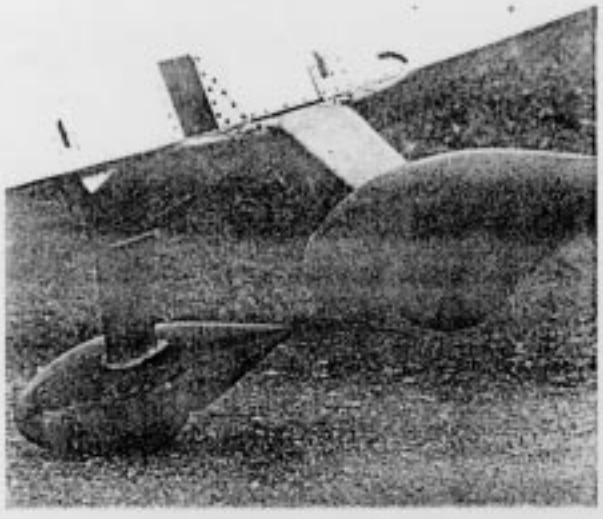


• **Fuselage** : double-symetry profile. Rectangular cross-section, panoramic canopy hinged on the right side. Forward fuselage of standard construction, is made up of 4 curved panels with bent metal frames at stress entry points (wings, seat, gear) and stabilized by Klégécell stiffeners. These panels are then blind-riveted together by four angles.

The rear fuselage also consists of four panels, two completely flat and two flanged. After bonding Klégécell stiffeners, the panels are riveted together along the flanged edges. Angles are not used and construction is easy and quick.



• Landing gear : tricycle-type. The front wheel is steerable and connected to the rudder bar. The main gear consists of a glass fibre epoxy lamination blade placed under the fuselage and bound to it by four silent-blocks. The blade is equipped with two 210 x 70 wheels with moped drum-brakes.



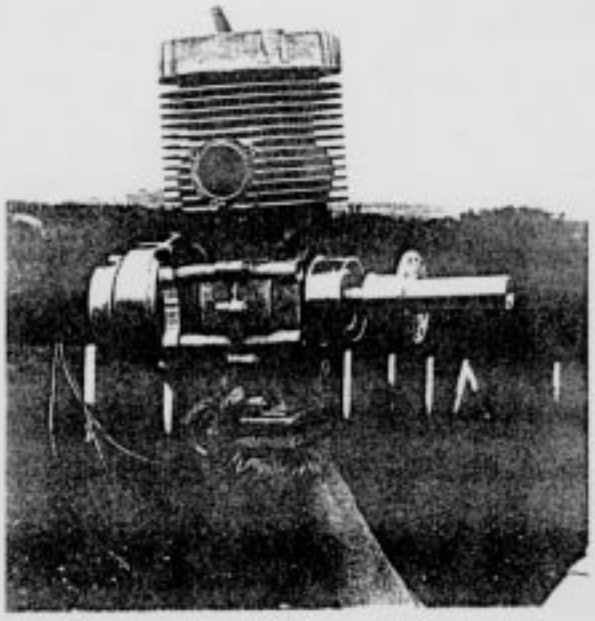
The nose-gear consists of two sliding tubes which insure suspension (using bungee cords) and yaw.

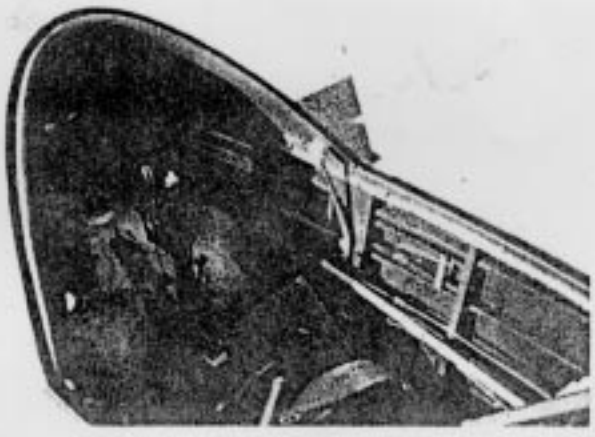
• Flight control : rigid elevator control consists of alloy 2024 tubes with ball joints on bell cranks cut in 2024 plate. This control is equipped with artificial load made of elastic bands connected to the trim control lever.

Aileron control : of similar design is very short. The flap/ailerons are controlled through a mixer, and an instant-locking ball-joint acts directly on the root of the flap.

Yaw control : with cables is classical. The rudder bar slides along the bottom of the fuselage on two stiffeners and is adjustable in flight.

• Engines : the French JPX PUL 212 engines were especially designed for the CRICRI. They are two - stroke 212 cc displacement engines producing 15 HP each at 6000 RPM and only weigh 7.9 kg. They stand out for being easy to start and very reliable. The PUL 212s show remarkable strenght and endurance despite their relatively light weight, and are extremely easy to adjust (there are only two adjustments). They come equipped with a





diaphragm carburetor which allows them to be used in any position. These engines are installed on a welded steel "V" shaped engine mount with a special patented elastic suspension at either end.

The engine's very low specific fuel consumption (less than 300 g/HP/hour) is assured by a tuned exhaust which doubles as a silencer and by a reed valve inlet.

• Propellers : double blade, 690 mm in diametre, of composite construction.

• Fuel tank : 23 litre capacity, of composite construction, located in the fuselage.

4 CONSTRUCTION

■ GENERAL

Amateur construction does not fall under international regulation. Each country has its own rules and it is up to the potential constructor to find out about them at the competent administrative authorities.

When allowed by the regulations, any person has the right to construct one airplane per Manual Set including a Grant of a Right to build the airplane and a serial number to identify it.

In general, each airplane built in this way is considered as a prototype and is therefore subject to certain procedures such as : inspection, registration, trials, etc.

■ BUILDING AND OPERATING INSTRUCTIONS

The Building and Operating Instruction is required to build a CRICRI. It may be ordered at the address below (1) after signing an "Amateur Construction Contract" which defines the reciprocal commitments of the Designer, Michel COLOMBAN, on the one hand and the constructor on the other hand.

The Building and Operating Instructions includes :

• The set of 42 plans (size 0.42 m x 0.85 m) showing all the details, sub-assemblies and assemblies of the aeroplane as well as the complete nomenclature of all the parts.

• The Construction manual in 3 parts:

- First : "General Operations" in 30 chapters such as : Plan-reading, Working the Klégécell, Metal-folding, Riveting, Stripping, Gluing, etc...

- Second : "Special Operations" in 8 chapters in which the way to execute the parts, assemblies and the different assembly sequences for each component of the aeroplane are defined in reference to the plans.

- Third : "Ground Tests and Flight Tests".

• The "Power plant" brochure in 17 chapters where the preparations, assemblies, adjustments, functioning, breaking in etc... as well as everything concerning the power plant such as propellers, electric circuit, engine control, fuel system etc... are explained.

• The complete list of materials with suppliers'addresses.

• The Flight and Maintenance manual in 6 chapters.

■ SUPPLIES

Once in possession of the Building and Operating Instructions, the construc-tor may begin work. Unfortunately, it is not always easy to find all the materials. Some of them are conside-red "professional" and are extremely hard, if not impossible to come-by retail.

To overcome this difficulty, a Distribution Centre has been set up at the address below (2) which will supply most of the materials and parts that are found on the materials list and followed by the Distribution Centre's address.

Choosing this solution not only makes getting supplies much easier, but is also a security factor as the Distribution Centre assures quality and conformity to the Building and Operating Instructions specifications.

(1) Michel COLOMBAN
37 bis rue Lakanal
92 500 RUEIL-MALMAISON

(2) See addresses at the last page

Also, certain items specifically manufactured for the CRICRI, including the molded canopy, the landing gear leg in glass fiber epoxy lamination, spindles and wheel hubs, propellers in glass fiber epoxy lamination and spinners can be obtained at the addresses indicated on the materials list.

■ CONSTRUCTION COST

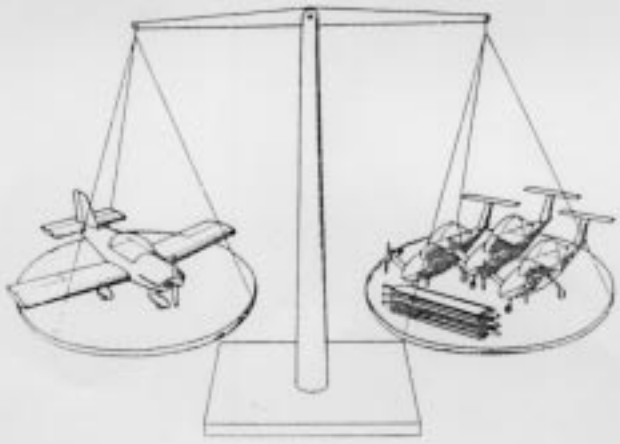
With supply costs forever evolving, we can only make comparisons.

-Engines : Bought new and airplane-ready, their price is fairly proportional to their power. 30 HP is all the CRICRI needs in installed power.

-Instrument panel and accessories : Twin-engines call for the doubling of certain accessories such as the RPM indicator, the throttle lever and fuel system. As on any other airplane, an anemometor, an altimeter and a level indicator are the minimum required flight instruments.

-Structure : Most of the structure's raw materials, such as sheets, tubes, angles, paint, rivets etc. are sold by weight.

Since the CRICRI weighs 2.5 to 3 time less than the average single seat aircraft with comparable performances...



The up-to-date approximate cost is shown on a separate sheet.

There is also the cost of the trailer, but by doing away with hangar fees, it soon pays for itself.

Taking into consideration its performances and the flying qualities it offers, the CRICRI is still the most inexpensive airplane that can be built... because it is the lightest.

■ BUILDING : HOW DIFFICULT AND HOW LONG ?

Along with most of those who have already built a CRICRI, the potential builder must be aware of the three psychological stages he will probably go through :

- First, the discovery of the CRICRI and the enthousiasm that goes with it, as well as the impression of facility because of the airplane's small size and simple lines.
- Then, discouragement at first sight of the 42 highly detailed plans where every assembly has been clearly shown from various angles to eliminate any ambiguity.

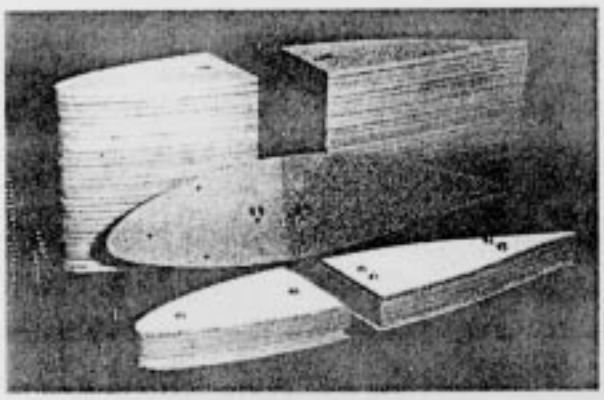
Of course, a set of plans like this, is not as attractive as a much simpler set, but it is only an impression.

- In fact, the third stage, that of reality, has finally come. At this point, the Amateur has begun putting the pieces together with no guess work or loss of time or money. Though it may have been discouraging at first, he now fully appreciates the advantages that such a set of plans offers.

Needless to say, an airplane especially conceived for economy and lightweight, with all the CRICRI's flying qualities, cannot be built as simply as an airplane designed with only simplicity in mind. Besides this, the construction technique adopted for the CRICRI requires extreme care and precision.

All things considered, construction time is about the same as for most other single-seaters with differences owing more to tools and individual skills than to the actual type of construction. The CRICRI makes up for this by having convenient, quick and easy features as well, for example :

- Its small size and lightweight parts : engines that are easy to handle, a half-wing which can be carried under one's arm, etc...

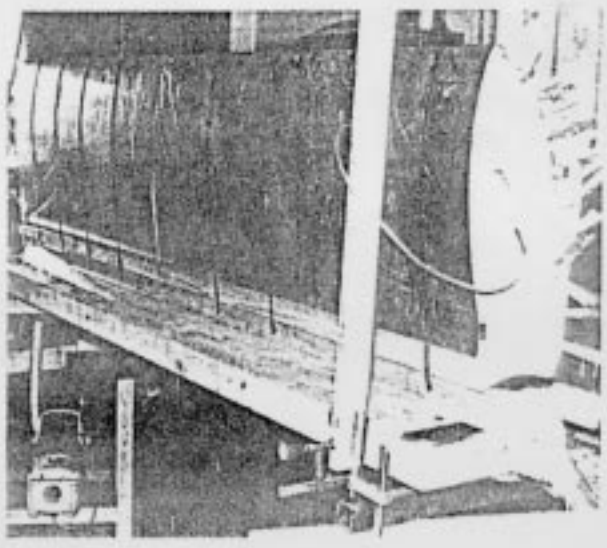


- The rigid foam (Klégécell) ribs are all identical and have many advantages over metal ribs : they can be manufactured very quickly, their outlines are extremely exact, etc.

- Because of the specially shaped low drag airfoil used, the wing and tail skin-forming can be made by simple crushing between two wooden panels.

- The wings and horizontal tail are simple boxes without cut-outs or inspection doors.

- The vacuum-cleaner suction bonding is an operation which may look complex at first, but which is suprisingly simple and fast. This technique greatly cuts down assembly and fitting time by doing away with riveting and cementing.



- The fuselage panels are equipped on a cradle and then assembled angle-to-angle afterwards.

To make things clear, starting from its raw materials, the actual building times for the first CRICRIs varied between 1300 and 2000 hours.

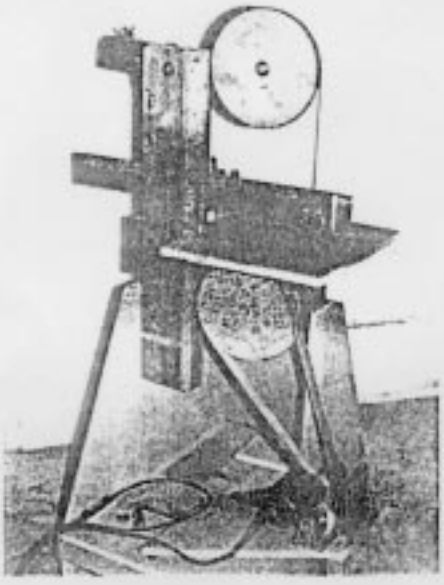
■ TOOLS

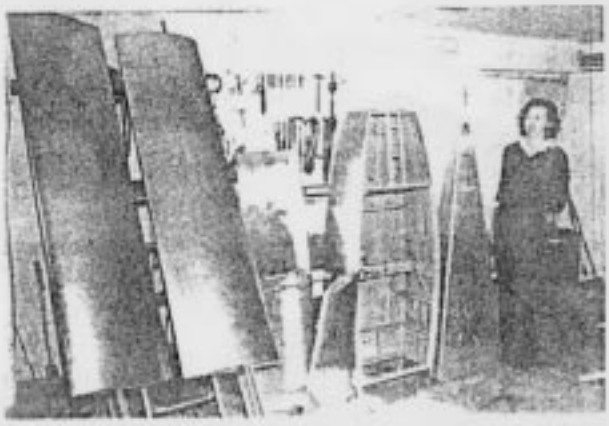
The basic tools are the same as for standard metal work : a workbench, strong vice, drill, shears, blind rivet pliers, files, etc. A small band saw (280 mm wheels) and a small amateur brake, are not as common but just as indispensable. Some simplified versions of these two tools have already been built by amateurs using the plans and instructions included in the Building and Operating Instructions.

Woodworking tools are also needed for cutting boards and wedges and for building some wooded assembly units and templates. Working on Klégécell with these tools is even easier than on wood.

The workshop is not exactly a tool, but it must rather dry and warm (minimum temperature 22° -25° C) for bonding and painting.

And, with its 2.60m long wings and 1.85m long fuselage sections, it is unlikely than any other airplane can do with as little work space as the CRICRI.





5 HANDLING

On the ground

Getting into the CRICRI is something like being parallel bars and sliding your feet in towards the front. Once in, the shape of the seat puts the pilot into a very "relaxed" position. The back of the seat is adjustable making it possible to carry a parachute if needed. All the flight controls are within easy reach.

Taxiing aboard the CRICRI is made remarkably easy by the steerable nosewheel. It allows a minimum turning radius of about 4m and an extraordinary visibility - you can see the ground as close as three metres away!

The cable wheelbrakes are extremely effective. They function like bicycle hand brakes situated on the control stick of the plane and can completely lock the wheels. The parking brakes use the same system.

In flight

You would imagine that such a small aircraft would call for very careful handling, but once in the air, you realize this is not so. Because the problems of static and dynamic stability on the three aircraft axis as well as the flight controls have all been dealt with very thoroughly and as the control surfaces and their deflections, trim and artificial load have all undergone minute study, the airplane is uniform, stable, well damped and easy to fly. Its slight inertia and unobstructed control surfaces make control response immediate and crisp.

There are pratically no secondary or induced effects. Take off and landing are made very easy by its tricycle design, the ground effect due to a very low wing and the firm low speed flight controls (artificial load).

At this stage, the CRICRI can handle crosswinds at up to 20 knots.

Any normally trained pilot will have no trouble flying this plane.

Flight with one engine is no problem. Speed is maintained at about 140 km/h and under normal conditions, the rate of climb remains positive.

Standard light aircraft piloting qualifications are all that are needed to fly a CRICRI. Twin-engine qualifications are not required in France or the U.S.A.

In case both engines fail, its lift-to-drag ratio is 11 to 1 and the rate of sink is about 2.5 m/s. This is comparable to a good classical light aircraft.

The engine's lubrification system uses a two-stroke mixture and the "all position" diaphragm carburetors allow the CRICRI unlimited inverted flight. This, plus a very high rate of rool (180°/s at 180 km/h equipped with aerobatic bellcranks) make it especially good for aerobatic figures.

6 USE

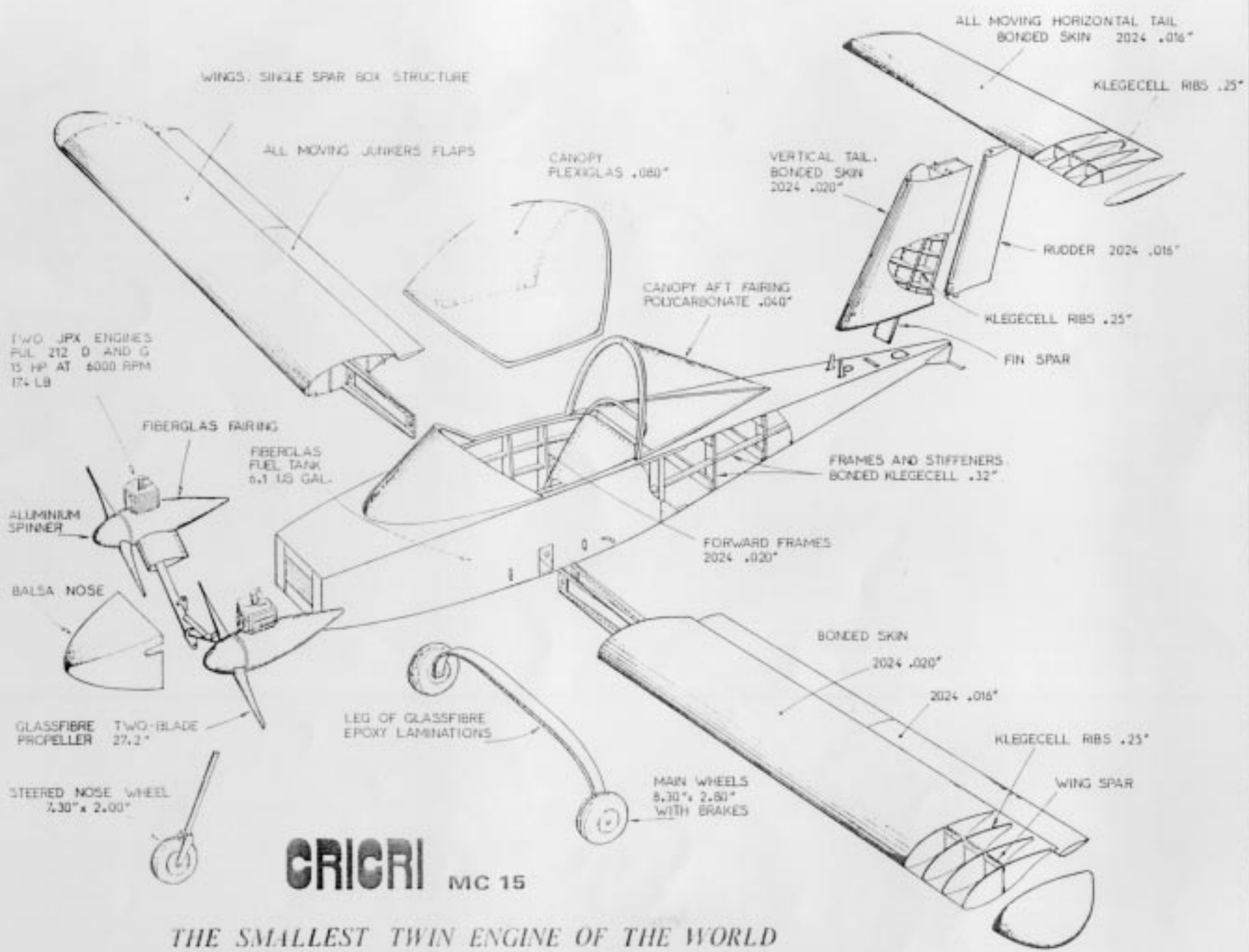
Once equipped with flight authorization, the CRICRI enjoys pretty much the same airspace possibilities as an industrially built airplane with its Certificate of Airworthiness. All normal flight is generally possible provided that the reglementations in force are respected.

The CRICRI is most often used as a sports or pleasure airplane. Its maximal range of about 400 km makes it suitable for small VFR voyages as well.

As for pilot limitations : the position of the rudder bar is adjustable, so only the height of his torso is limited to 0.95m and his weight should not exceed 85 kg.

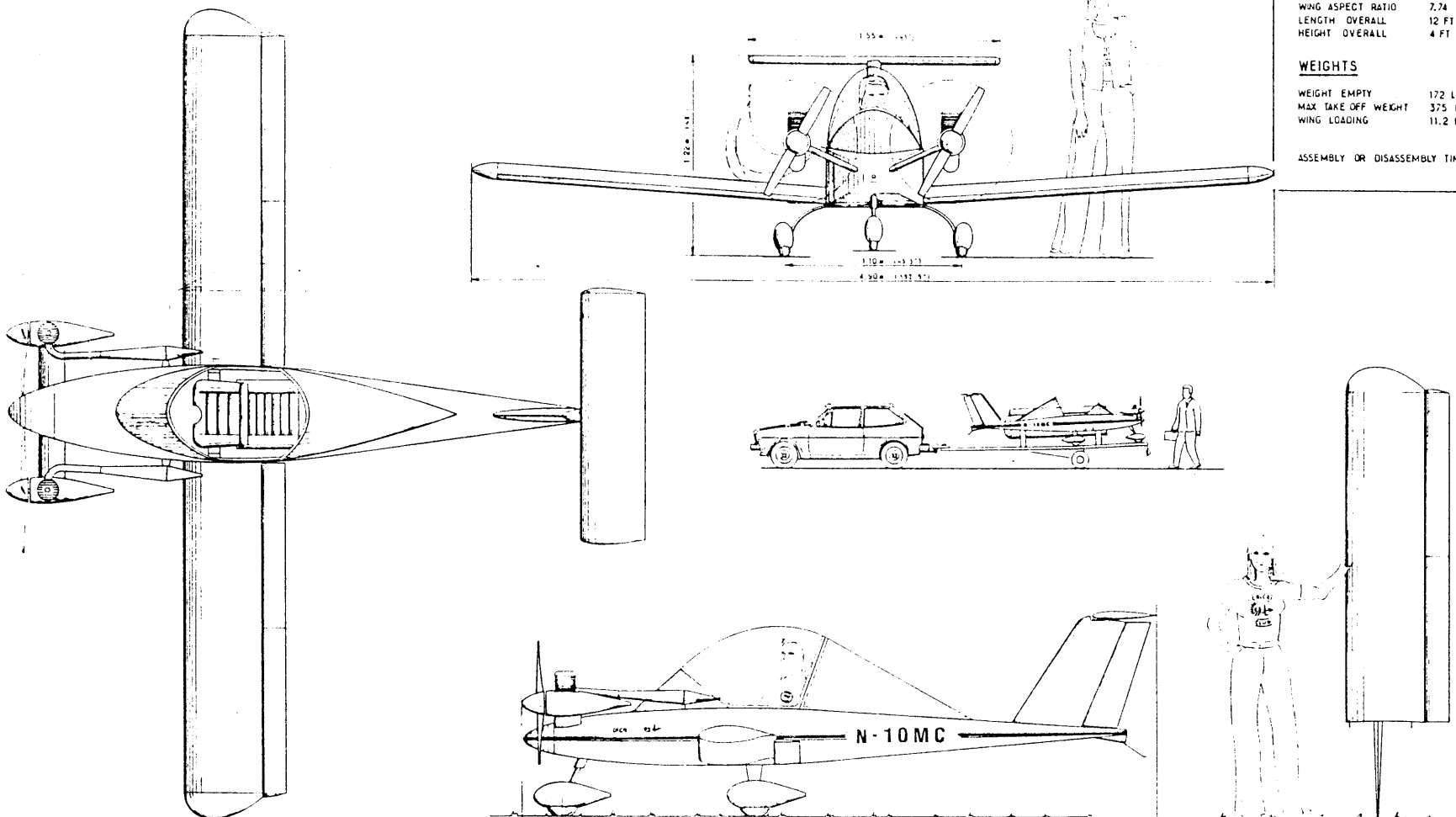
A limited number of elementary aerobatic figures can be authorized by Administrative Authorities. The request should be made during airplane construction.

How to use the CRICRI including its performances, limitations, emergency procedures and maintenance are all clearly explained in the Flight Manual included in the Building and Operating Instruction.



CRICRI MC 15

THE SMALLEST TWIN ENGINE OF THE WORLD



DIMENSIONS

WING SPAN	16 FT 0.75 IN
WING AREA	33.4 SQ FT
WING ASPECT RATIO	7.74
LENGTH OVERALL	12 FT 10 IN
HEIGHT OVERALL	4 FT

WEIGHTS

WEIGHT EMPTY	172 LB
MAX TAKE OFF WEIGHT	375 LB
WING LOADING	11.2 LB/SQ FT

ASSEMBLY OR DISASSEMBLY TIME 2 MINUTES

PERFORMANCE

MAX LEVEL SPEED	135 MPH
STALL SPEED FLAPS DOWN	45 MPH
TAKE OFF RUN	400 FT
MAX RATE OF CLIMB AT S/L	1200 FT/MN
SERVICE CEILING	16,000 FT
RANGE WITH MAX FUEL	250 MILES
FUEL CONSUMPTION	47 M/US GAL

LOAD FACTORS

ULTIMATE LOAD FACTOR	+9 -4.5
LIMIT LOAD FACTOR FOR UTILISATION	+4.5 -2.3

PLANS LIST

- 800 ENGINES CONTROL - FUEL SYSTEM - AIMING - NOSE
- 700 INSTRUMENTS PANEL - PITOT SYSTEME - SEAT
- 600 DIRECTION CONTROL SYSTEME
- 600 AILERON CONTROL SYSTEM
- 600 ELEVATOR AND AILERON CONTROL -
- 600 ELEVATION CONTROL SYSTEME
- 500 POWER PLANT - DETAILS
- 500 POWER PLANT - ASSEMBLY
- 400 NOSE GEAR - BRAKES - WHEEL FAIRING
- 400 PRINCIPAL LANDING GEAR
- 300 HORIZONTAL TAIL
- 300 RUDDER
- 300 FIN TO FUSELAGE ATTACHMENT
- 300 FIN - LOWER PORTION
- 300 FIN - UPPER PORTION
- 300 VERTICAL TAIL - DETAILS
- 300 FIN SPAR
- 300 FIN - GENERAL
- 200
- 200
- 200 CANOPY
- 200 CANOPY FRAMING
- 200 FRAME 2 - FORWARD STIFFENERS
- 200 FRAME 5
- 200 FRAME 3
- 200 FRAME 4 - LONGITUDINAL BEAM F4 - F6
- 200 FRAME 7
- 200 FRAME 1 AND 1 BIS
- 200 FUSELAGE - FORWARD PORTION - ASSEMBLY
- 200 FUSELAGE - FORWARD PORTION - RIVETING - STRINGERS
- 200 FUSELAGE - AFT PORTION - ASSEMBLY
- 200 FRAMES 11 - 12 - 13 - DETAIL
- 200 STIFFENERS - AFT PORTION OF FUSELAGE
- 200 FUSELAGE - AFT PORTION - RIVETING - STRINGERS
- 200 FRAME 6 - FRONT FACE
- 200 FRAME 6 - REAR FACE
- 200 FRAME 6 - DETAILS
- 200 FUSELAGE SKINS - DIMENSIONS
- 200 FUSELAGE - GENERAL
- 100
- 100
- 100 WING ASSEMBLY - RIVETING PLAN - SPAR AND RIGHT HAND
- 100 FLAP BRACKETS - WING TIP FAIRING
- 100 FLAPS - ASSEMBLY AND DETAILS
- 100 RIBS AND ATTACHMENT FITTINGS - DETAILS
- 100 RIGHT HAND WING MOUNTING
- 100 LEFT HAND WING SPAR - INBOARD PORTION
- 100 RIGHT HAND WING SPAR - OUTBOARD PORTION
- 100 RIGHT AND LEFT HAND WING SPARS - SHOT ENDS
- 100 RIGHT HAND WING SPAR - INBOARD PORTION
- 100 WING ASSEMBLY - SPAR WEBS AND CAP
- 000 GENERAL ARRANGEMENT - THREE VIEWS

CRICRI MC 15

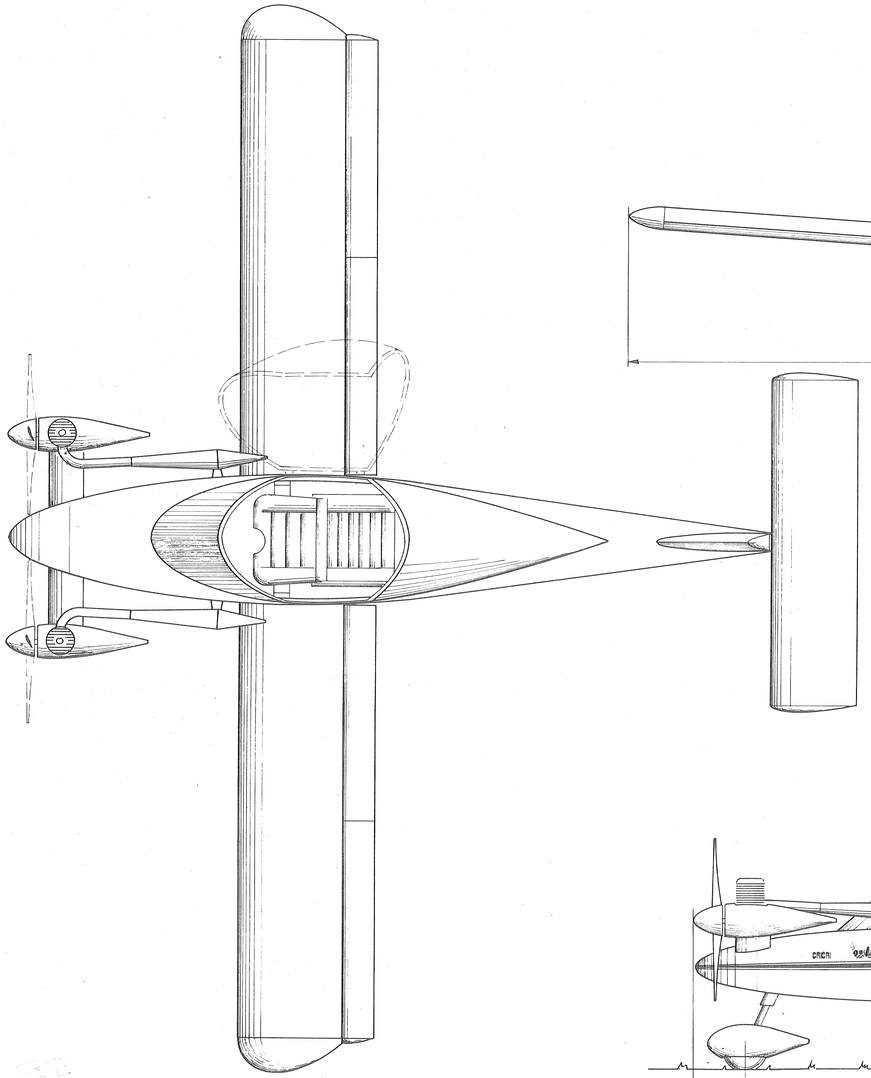
TITLE : GENERAL ARRANGEMENT - THREE VIEWS

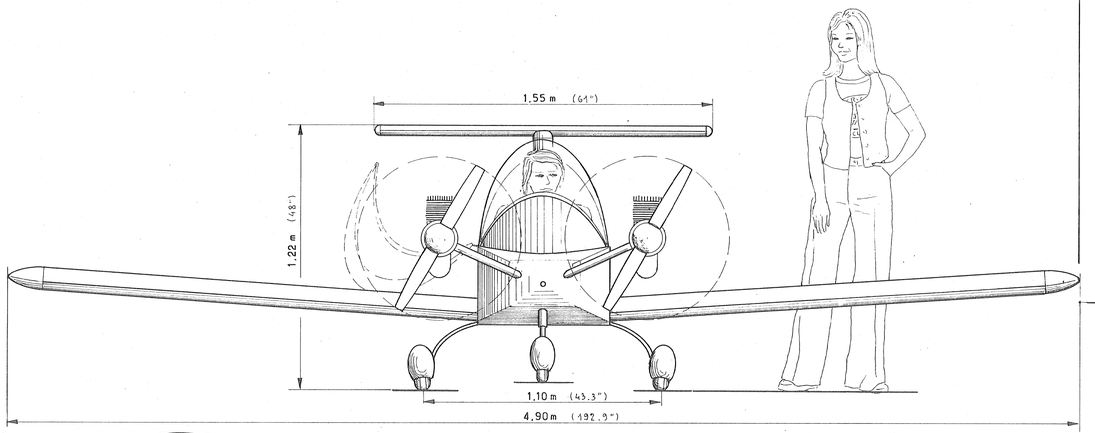
Date 4/10

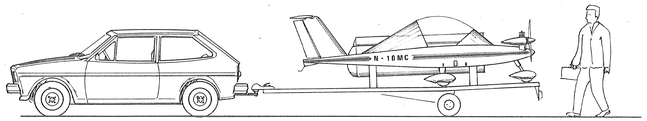
Drawn by Casimir Bath

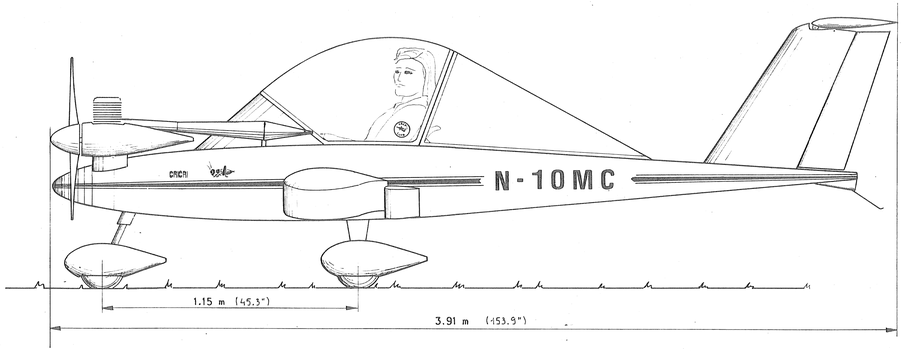
Date : May 1981

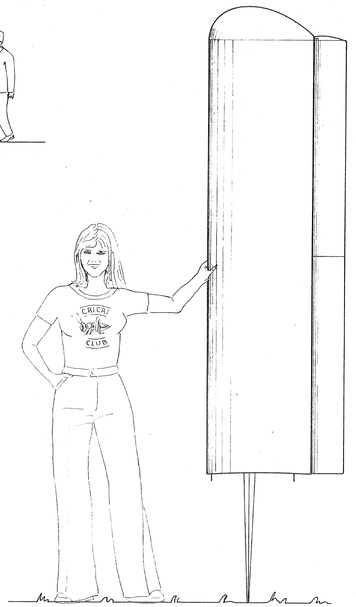
000











DIMENSIONS

WING SPAN	16 FT 0.75 IN
WING AREA	33.4 SQ FT
WING ASPECT RATIO	7.74
LENGTH OVERALL	12 FT 10 IN
HEIGHT OVERALL	4 FT

WEIGHTS

WEIGHT EMPTY	172 LB
MAX TAKE OFF WEIGHT	375 LB
WING LOADING	11.2 LB/SQ FT

PERFORMANCE

MAX LEVEL SPEED	135 MPH
STALL. SPEED FLAPS DOWN	45 MPH
TAKE OFF RUN	400 FT
MAX RATE OF CLIMB AT S/L	1,200 FT/MN
SERVICE CEILING	16.000 FT
RANGE WITH MAX FUEL	250 MILES
FUEL CONSUMPTION	47 M/US GAL.

LOAD FACTORS

ULTIMATE LOAD FACTOR	+9 -4.5
LIMIT LOAD FACTOR FOR UTILISATION	+4.5 -2.3

ASSEMBLY OR DISASSEMBLY TIME 2 MINUTES

PLANS LIST

800	ENGINES CONTROL - FUEL SYSTEM - AIRING - NOSE
700	INSTRUMENTS PANEL - PITOT SYSTEME - SEAT
603	DIRECTION CONTROL SYSTEME
602	FLAP AND AILERON CONTROL SYSTEM
601	ELEVATOR AND AILERON CONTROL -
600	ELEVATOR CONTROL SYSTEME
501	POWER PLANT - DETAILS
500	POWER PLANT - ASSEMBLY
401	NOSE GEAR - BRAKES - WHEEL FAIRING
400	PRINCIPAL LANDING GEAR
307	HORIZONTAL TAIL
306	RUDDER
305	FIN TO FUSELAGE ATTACHMENT
304	FIN - LOWER PORTION
303	FIN - UPPER PORTION
302	VERTICAL TAIL - DETAILS
301	FIN SPAR
300	FIN - GENERAL
220	
219	
218	CANOPY
217	CANOPY FRAMING
216	FRAME 2 - FORWARD STIFFENERS
215	FRAME 5
214	FRAME 3
213	FRAME 6 - LONGITUDINAL BEAM F4 - F6
212	FRAME 7
211	FRAME 1 AND 1 BIS
210	FUSELAGE - FORWARD PORTION - ASSEMBLY
209	FUSELAGE - FORWARD PORTION - RIVETING - STRINGERS
208	FUSELAGE - AFT PORTION - ASSEMBLY
207	FRAMES 11-12-13 - DETAILS
206	STIFFENERS - AFT PORTION OF FUSELAGE
205	FUSELAGE - AFT PORTION - RIVETING - STRINGERS
204	FRAME 4 - FRONT FACE
203	FRAME 4 - REAR FACE
202	FRAME 4 - DETAILS
201	FUSELAGE SKINS - DIMENSIONS
200	FUSELAGE - GENERAL
414	
410	
409	WING ASSEMBLY - RIVETING PLAN - SPAR AND RIGHT HAND
408	FLAP BRACKETS - WING TIP FAIRING
407	FLAPS - ASSEMBLY AND DETAILS
406	RIBS AND ATTACHMENT FITTINGS - DETAILS
405	RIGHT HAND WING MOUNTING
404	LEFT HAND WING SPAR - INBOARD PORTION
403	RIGHT HAND WING SPAR - OUBOARD PORTION
402	RIGHT AND LEFT HAND WING SPARS - ROOT ENDS
401	RIGHT HAND WING SPAR - INBOARD PORTION
400	WING ASSEMBLY - SPAR WEBS AND CAP
000	GENERAL ARRANGEMENT - THREE VIEWS

AVIONS COLOMBAN

CRICRI MC 15

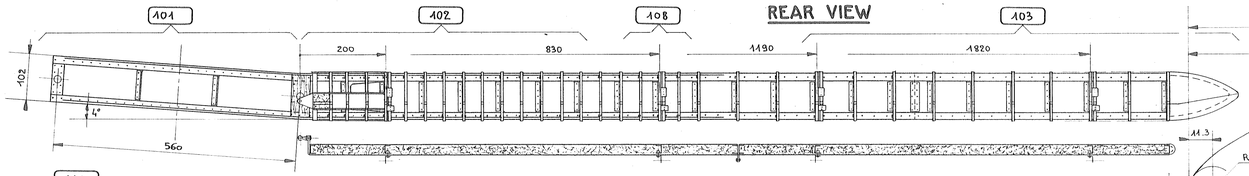
TITLE : GENERAL ARRANGEMENT - THREE VIEWS

Scale : 1/10

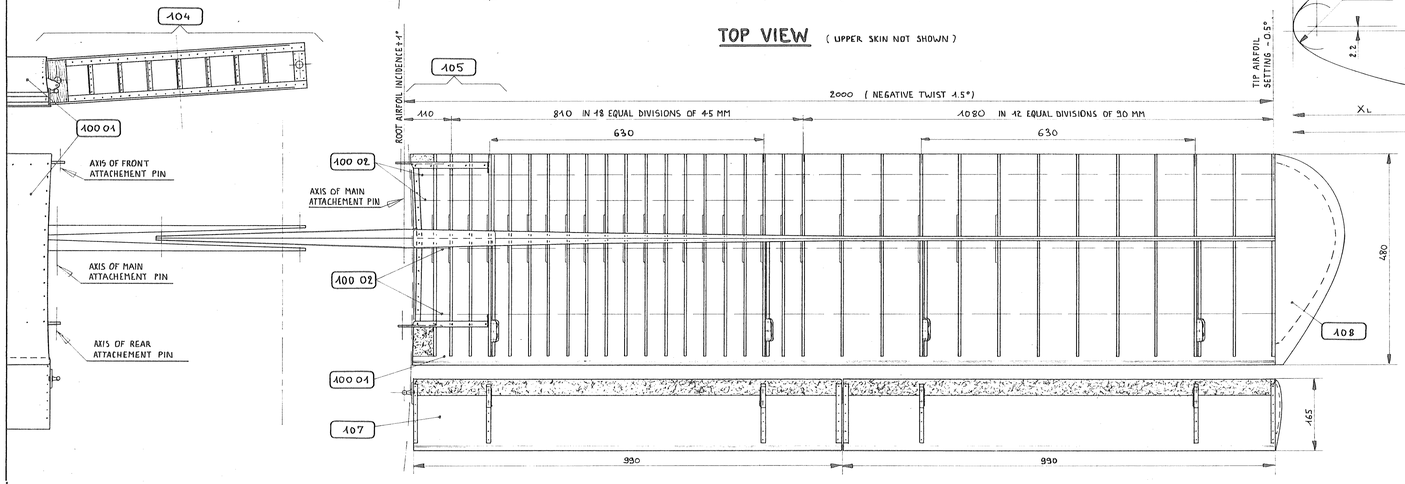
Drawn by : Colomban
Date : May 1981

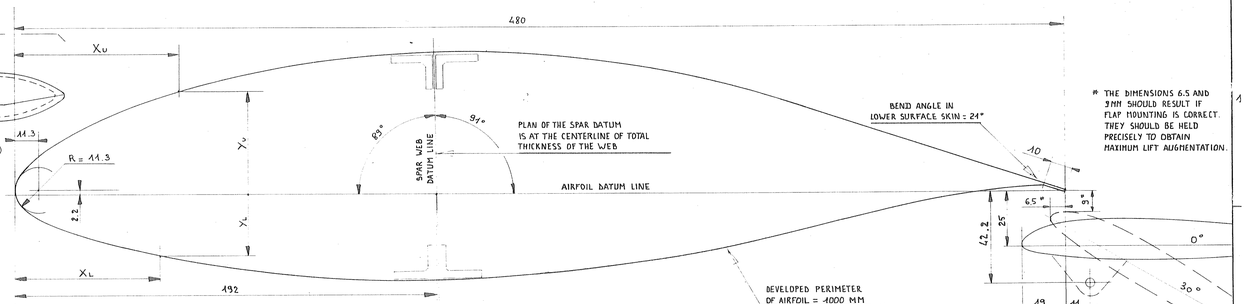
000

REAR VIEW



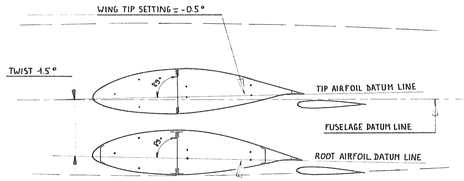
TOP VIEW (UPPER SKIN NOT SHOWN)





* THE DIMENSIONS 6.5 AND 9 MM SHOULD RESULT IF FLAP MOUNTING IS CORRECT. THEY SHOULD BE HELD PRECISELY TO OBTAIN MAXIMUM LIFT AUGMENTATION.

AIRFOIL CO-ORDINATES			
X_U	Y_U	X_L	Y_L
1.00	6.74	3.80	- 6.09
2.01	8.47	5.19	- 7.38
4.45	11.52	7.85	- 9.38
9.80	17.09	14.20	- 12.92
21.49	25.20	26.51	- 17.75
33.36	31.56	38.64	- 21.39
45.33	36.85	50.67	- 24.44
69.42	45.58	74.58	- 29.43
93.65	52.62	98.35	- 33.31
117.96	57.68	122.04	- 36.20
142.33	61.54	145.67	- 38.24
166.73	64.04	169.27	- 39.31
191.16	65.12	192.84	- 39.44
215.59	64.88	216.41	- 38.60
240.00	63.37	240.00	- 36.89
264.38	60.76	265.62	- 34.48
288.71	57.14	287.25	- 31.43
312.98	52.61	311.02	- 27.78
337.17	46.63	334.83	- 23.30
361.24	39.24	358.76	- 17.76
		382.84	- 11.49
		407.03	- 6.01
		431.34	- 1.66
		470.00	2.73
480.00	0.50	480.00	- 0.50



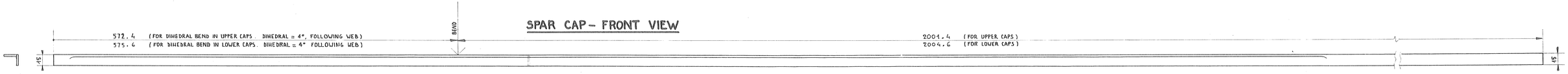
WING SETTING IS THE ANGLE FORMED BY THE AIRFOIL AND FUSELAGE DATUM LINES. IT IS POSITIVE WHEN THE LEADING EDGE IS ABOVE THE FUSELAGE REFERENCE.

THE RIBS, ALL IDENTICAL, ARE BONDED TO THE UNTWISTED SPAR. THE 1.5° NEGATIVE TWIST IS PRODUCED WHEN THE SKIN IS BONDED ON, BY THE BONDING FIXTURE, ITSELF TWISTED 1.5°.

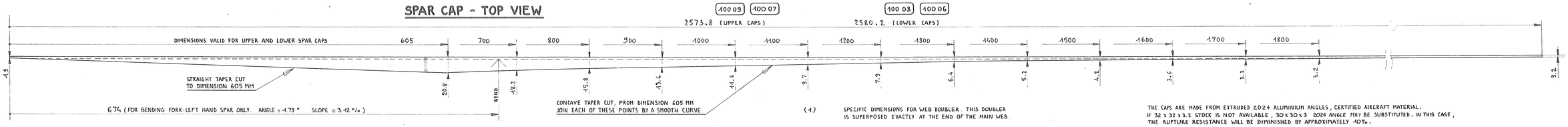
THE ANGLE OF 1.5° CORRESPONDS TO A SLOPE OF 2.6/1000

RIB TEMPLATES : BUTT-JOIN TWO SHEETS OF ALUMINIUM AT THE SPAR WEB DATUM LINE. LAY OUT THE PROFILE, CUT OUT AND FINISH AS TOUGH MAKING A SINGLE TEMPLATE. SEPARATE THE FRONT AND REAR SECTIONS AFTERWARD.

SPAR CAP - FRONT VIEW



SPAR CAP - TOP VIEW

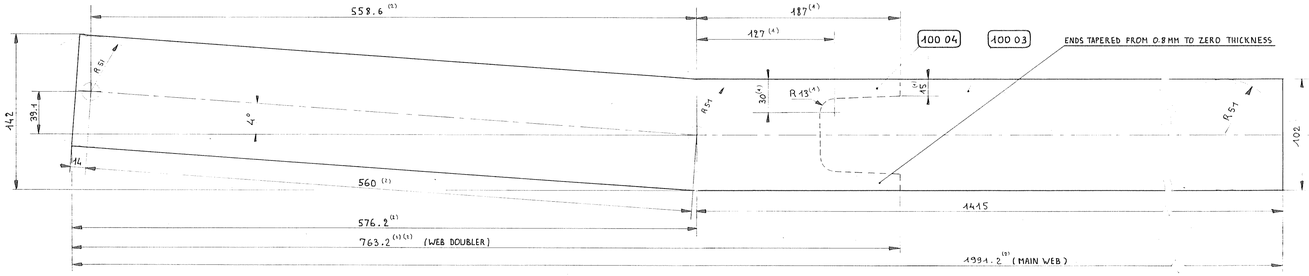


(1) SPECIFIC DIMENSIONS FOR WEB DOUBLER. THIS DOUBLER IS SUPERPOSED EXACTLY AT THE END OF THE MAIN WEB.

(2) THESE DIMENSIONS ARE TO BE INCREASED BY 0.3 MM FOR THE FORKED LEFT HAND SPAR.

THE CAPS ARE MADE FROM EXTRUDED 2024 ALUMINIUM ANGLES, CERTIFIED AIRCRAFT MATERIAL. IF 32 x 32 x 3.2 STOCK IS NOT AVAILABLE, 30 x 30 x 3 2024 ANGLE MAY BE SUBSTITUTED. IN THIS CASE, THE RUPTURE RESISTANCE WILL BE DIMINISHED BY APPROXIMATELY 10%.

ASSEMBLY OF WEB AND CAPS WITH 2.117-T4 ALLOY RIVETS IS SHOWN ON DRAWING 109. ALIGN THE INBOARD ENDS (TO THE LEFT ON THIS DRAWING) OF THE WEBS AND CAPS.



BONDING : ● THE ENTIRE SURFACE OF THE WEB DOUBLER TO THE WEB, FOR THE RIGHT HAND SPAR.
● THE SURFACES IN COMMON, FOR THE FORKED LEFT HAND SPAR.

EQUIVALENT THICKNESS :
— 0.6 MM ≅ 0.020"
— 0.8 MM ≅ 0.032"
— 3.2 MM ≅ 0.125"

Reference	Qty	Description	Material	Cond	Dimensions	Resist.	Comments
100 09	2	UPPER CAP. LEFT	2024	T4	2574 x 15 x 3/8 x 3.2	63,000	EXTRUSION
100 08	2	LOWER CAP. LEFT	2024	T4	2581 x 15 x 3/8 x 3.2	63,000	EXTRUSION
100 07	2	UPPER CAP - RIGHT	2024	T4	2574 x 15 x 3/8 x 3.2	63,000	EXTRUSION
100 06	2	LOWER CAP - RIGHT	2024	T4	2581 x 15 x 3/8 x 3.2	63,000	EXTRUSION
100 05	2	WEB END	2024	T3	588 x 102 x 0.5	63,000	t = 0.5 MM
100 04	2	WEB DOUBLER	2024	T3	764 x 114 x 0.8	63,000	t = 0.8 MM
100 03	2	MAIN WEB	2024	T3	1992 x 142 x 0.8	63,000	t = 0.8 MM
100 02	44	SPACERS	BALSA		2000 x 3 x 30		FOR ASSEMBLY
100 01	2	SKIN	2024	T3	2000 x 1000 x 0.5	63,000	t = 0.5 MM

AVIONS COLOMBAN

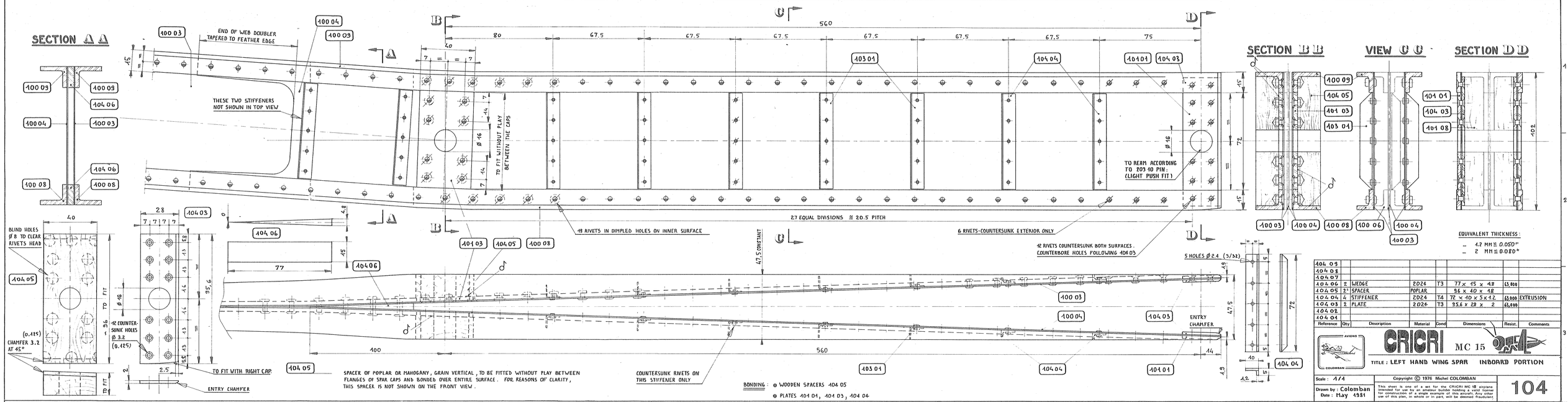
CRICRI MC 15

TITLE : WING ASSEMBLY — SPAR WEBS AND CAPS

Scale : 1/5 1/1 1/2

Drawn by : Colomban
Date : May 1981

100



Reference	Qty	Description	Material	Cond	Dimensions	Resist.	Comments
104 09							
104 08							
104 07							
104 06	2	WEDGE	2024	T3	77 × 45 × 4.8	65,806	
104 05	2	SPACER	POPLAR		86 × 40 × 48		
104 04	4	STIFFENER	2024	T4	72 × 10 × 3 × 1.2	65,000	EXTRUSION
104 03	2	PLATE	2024	T3	95.6 × 28 × 2	65,806	
104 02							
104 01							

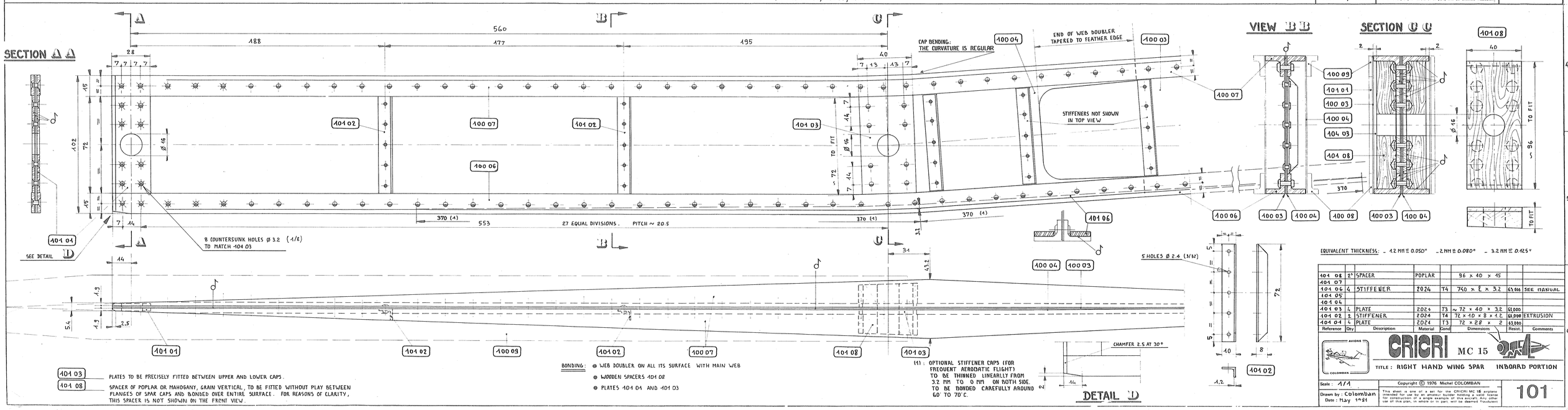
AVIONS COLOMBAN — CRICRI MC 15

TITLE : LEFT HAND WING SPAR INBOARD PORTION

Scale : 1/1

Drawn by : Colomban
Date : May 1981

104



Reference	Qty	Description	Material	Cond	Dimensions	Resist.	Comments
101 08	2	SPACER	POPLAR		96 × 40 × 15		
101 07							
101 06	4	STIFFENER	2024	T4	740 × L × 3.2	65,806	SEE MANUAL
101 05							
101 04							
101 03	4	PLATE	2024	T3	≈ 72 × 40 × 3.2	65,000	
101 02	2	STIFFENER	2024	T4	72 × 10 × 8 × 1.2	65,000	EXTRUSION
101 04	4	PLATE	2024	T3	72 × 28 × 2	65,806	

AVIONS COLOMBAN — CRICRI MC 15

TITLE : RIGHT HAND WING SPAR INBOARD PORTION

Scale : 1/1

Drawn by : Colomban
Date : May 1981

101

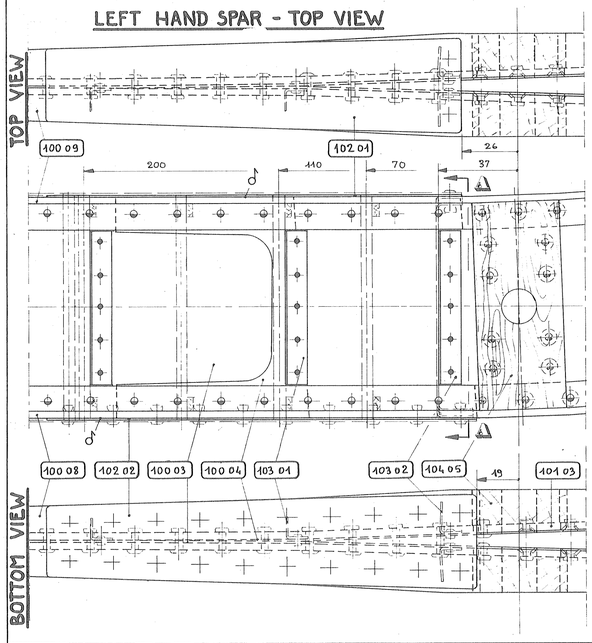
104 01 — PLATES TO BE PRECISELY FITTED BETWEEN UPPER AND LOWER CAPS.

104 08 — SPACER OF POPLAR OR MAHOGANY, GRAIN VERTICAL, TO BE FITTED WITHOUT PLAY BETWEEN FLANGES OF SPAR CAPS AND BONDED OVER ENTIRE SURFACE. FOR REASONS OF CLARITY, THIS SPACER IS NOT SHOWN ON THE FRONT VIEW.

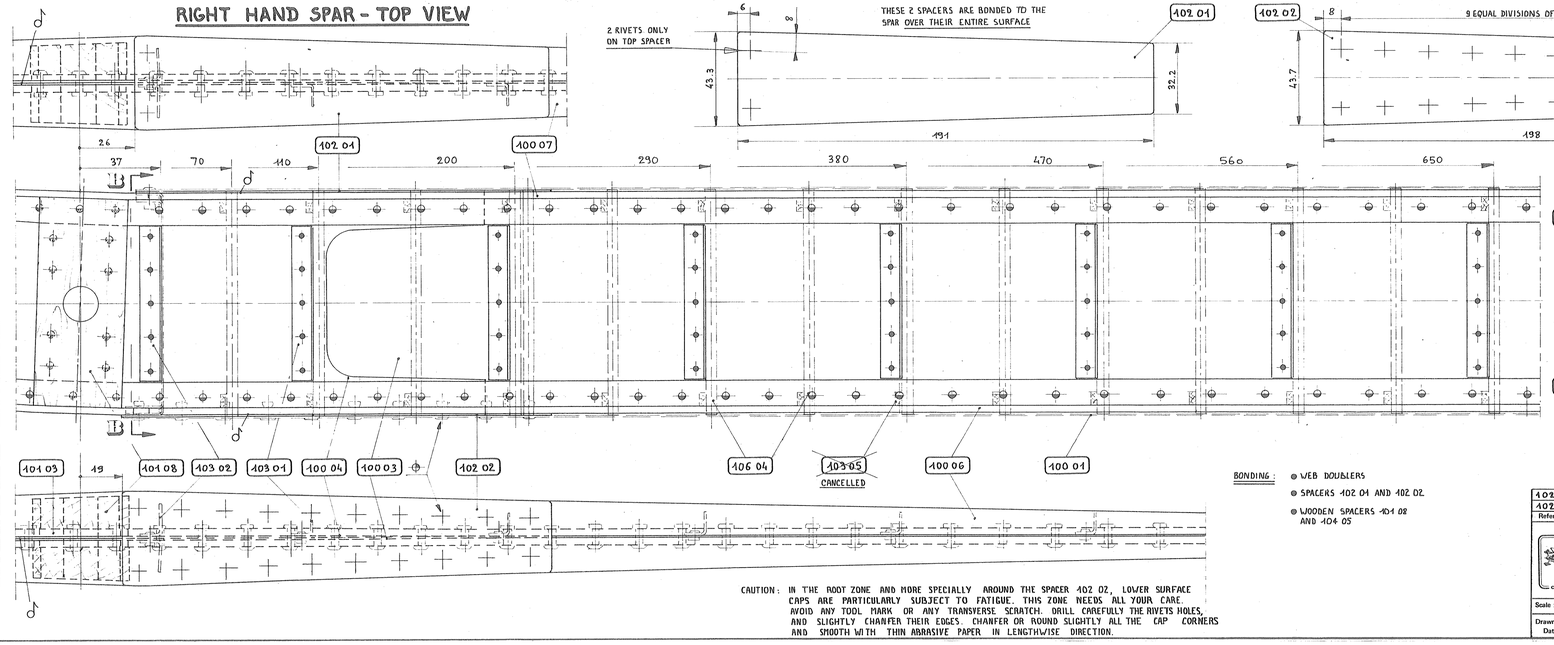
BONDING : ● WEB DOUBLER ON ALL ITS SURFACE WITH MAIN WEB
● WOODEN SPACERS 101 08
● PLATES 101 04 AND 101 03

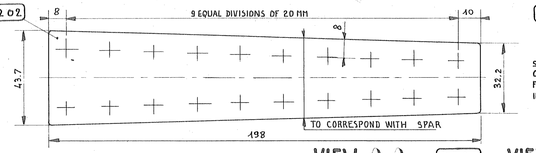
(1) : OPTIONAL STIFFENER CAPS (FOR FREQUENT AERODATIC FLIGHT) TO BE THINNED LINEARLY FROM 3.2 MM TO 0 MM ON BOTH SIDE. TO BE BONDED CAREFULLY AROUND 60° TO 70°C.

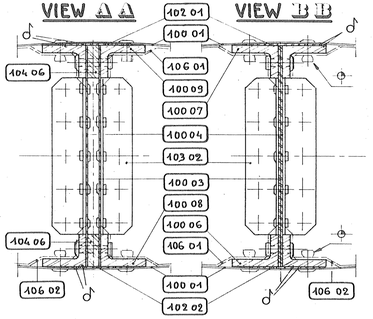
LEFT HAND SPAR - TOP VIEW



RIGHT HAND SPAR - TOP VIEW







EQUIVALENT THICKNESS : _ 0.5 MM ≅ 0.020"

BONDING :
- WEB DOUBLERS
- SPACERS 102 01 AND 102 02.
- WOODEN SPACERS 101 08 AND 104 05

CAUTION : IN THE ROOT ZONE AND MORE SPECIALLY AROUND THE SPACER 102 02, LOWER SURFACE CAPS ARE PARTICULARLY SUBJECT TO FATIGUE. THIS ZONE NEEDS ALL YOUR CARE. AVOID ANY TOOL MARK OR ANY TRANSVERSE SCRATCH. DRILL CAREFULLY THE RIVETS HOLES, AND SLIGHTLY CHANFER THEIR EDGES. CHANFER OR ROUND SLIGHTLY ALL THE CAP CORNERS AND SMOOTH WITH THIN ABRASIVE PAPER IN LENGTHWISE DIRECTION.

Reference	Qty	Description	Material	Cond.	Dimensions	Resist.	Comments
102 02	2	SPACER	2024	T3	198 x 43.7 x 0.5	63.000	
102 01	2	SPACER	2024	T3	191 x 43.3 x 0.5	63.000	

CRICRI MC 15

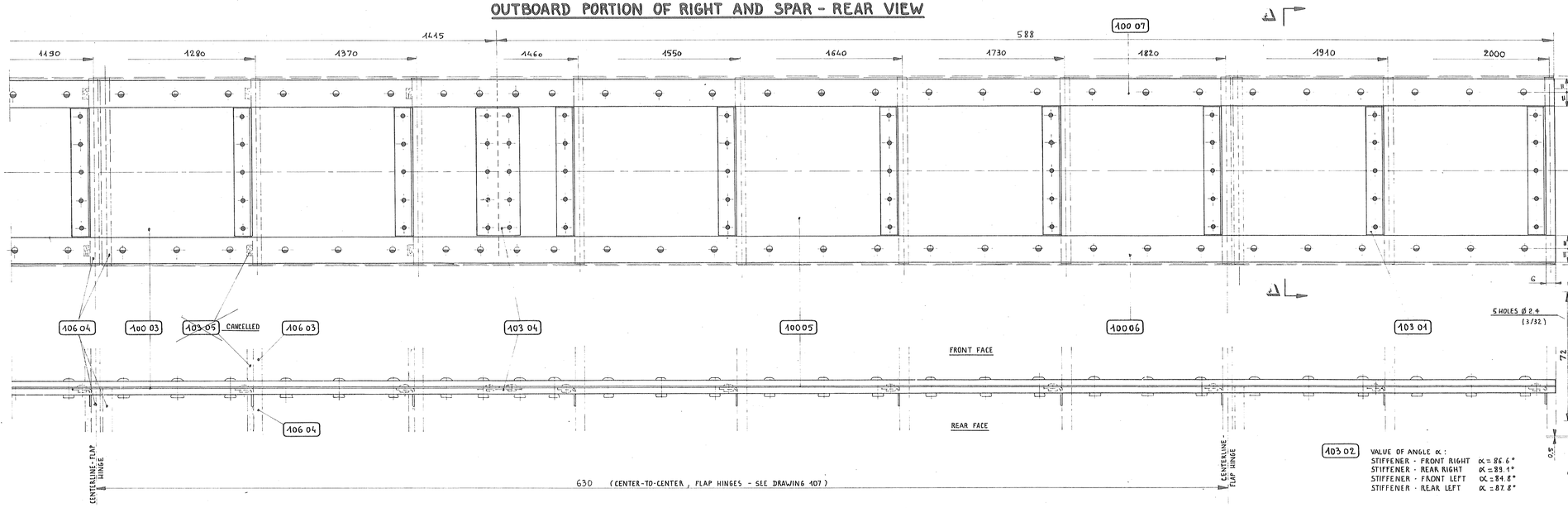
TITLE : RIGHT AND LEFT HAND WING SPARS _ ROOT ENDS

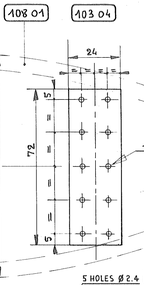
Scale : 1/1

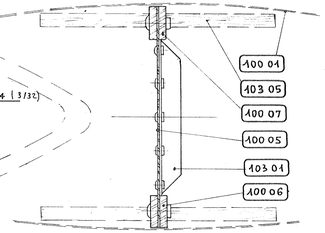
Drawn by : Colomban
Date : May 1981

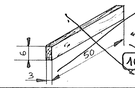
102

OUTBOARD PORTION OF RIGHT AND SPAR - REAR VIEW









EQUIVALENT THICKNESS :
_ 0.5 MM ≅ 0.020"
_ 0.8 MM ≅ 0.032"

103.02. VALUE OF ANGLE α :
STIFFENER - FRONT RIGHT α = 86.6°
STIFFENER - REAR RIGHT α = 89.1°
STIFFENER - FRONT LEFT α = 84.8°
STIFFENER - REAR LEFT α = 87.8°

Reference	Qty	Description	Material	Cond.	Dimensions	Resist.	Comments
103 06							
103 05							
103 04	2	WEB SPLICE PLATE	2024	T3	72 x 24 x 0.5	63.000	
103 03							
103 02	4	STIFFENER	2024	T3	72 x 24 x 0.8	63.000	BENT 0.8 MM SHEET
103 01	54	STIFFENER	2024	T3	72 x 19.5 x 0.5	63.000	BENT 0.5 MM SHEET

CRICRI MC 15

TITLE : RIGHT HAND WING SPAR _ OUTBOARD PORTION

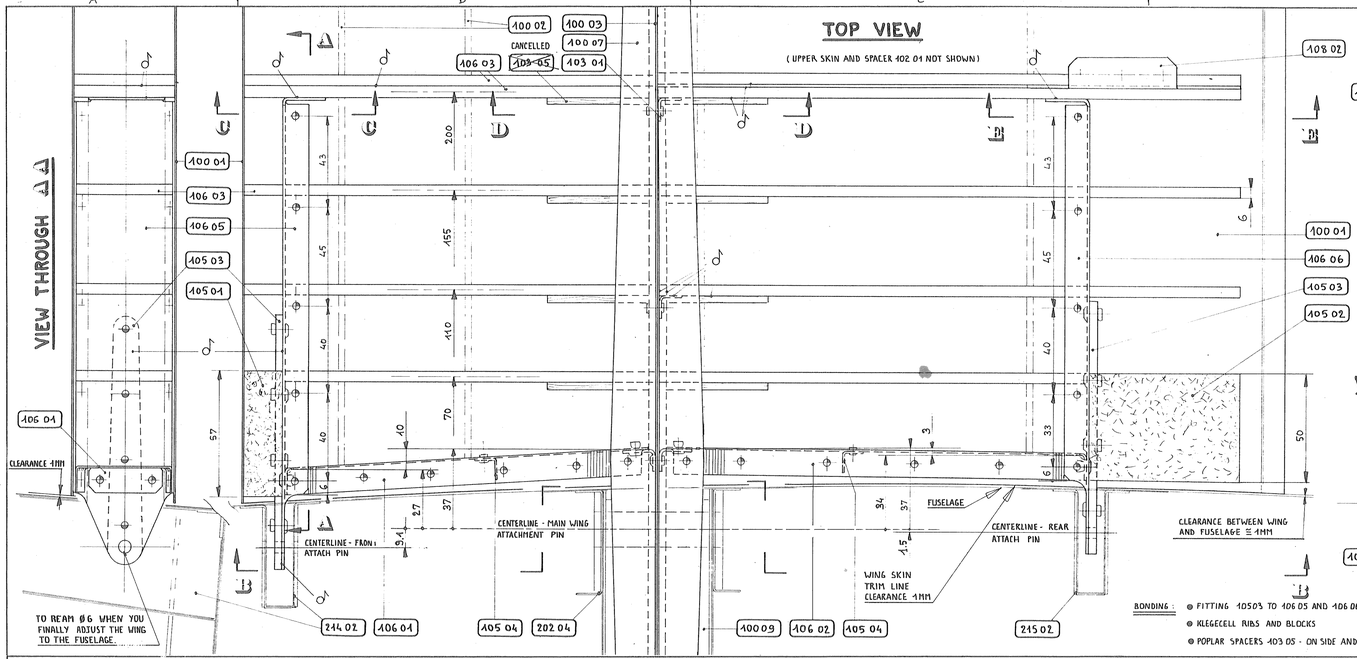
Scale : 1/1

Drawn by : Colomban
Date : May 1981

103

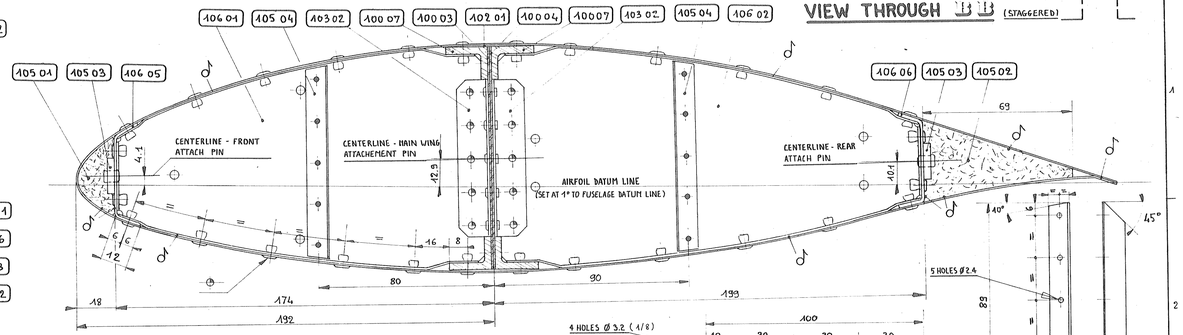
TOP VIEW

(UPPER SKIN AND SPACER 102 01 NOT SHOWN)

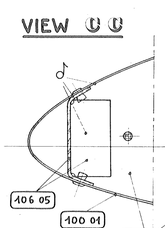


BONDING :
- FITTING 105 03 TO 106 05 AND 106 06
- KLEGECELL RIBS AND BLOCKS
- POPLAR SPACERS 103 05 - ON SIDE AND ENDS

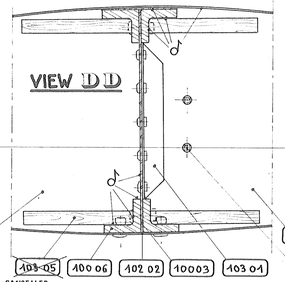
VIEW THROUGH B-B (STAGGERED)



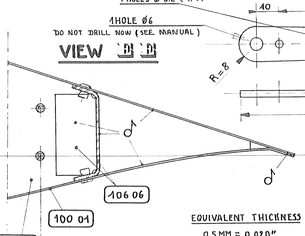
VIEW C-C



VIEW D-D



VIEW E-E



EQUIVALENT THICKNESS
- 0.5 MM ≅ 0.020"
- 1 MM ≅ 0.040"
- 3.2 MM ≅ 0.125"

Reference	Qty	Description	Material	Cond	Dimensions	Resist.	Comments
105 04	4	STIFFENER	2024	T3	85 x 40 x 10 x 05	63,000	BENT SHEET
105 03	4	FITTING	2024	T3	114 x 16 x 32	63,000	DR 3
105 02	2	TRAILING EDGE BLOCK	KLEGECELL	100	69 x 50 x 37		
105 01	2	LEADING EDGE BLOCK	KLEGECELL	100	57 x 37 x 18		

AVIONS COLOMBAN

CRICRI MC 15

TITLE : RIGHT HAND WING MOUNTING

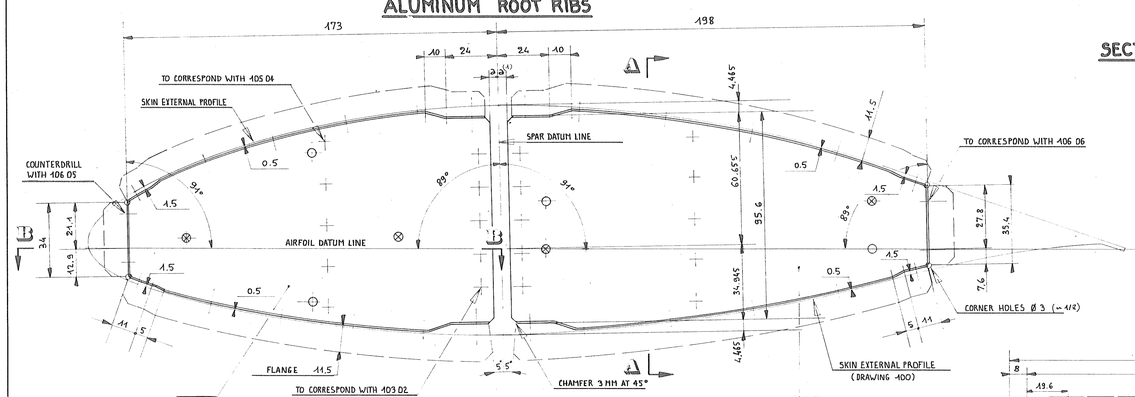
Scale : 1/1

Drawn by : Colomban

Date : May 1981

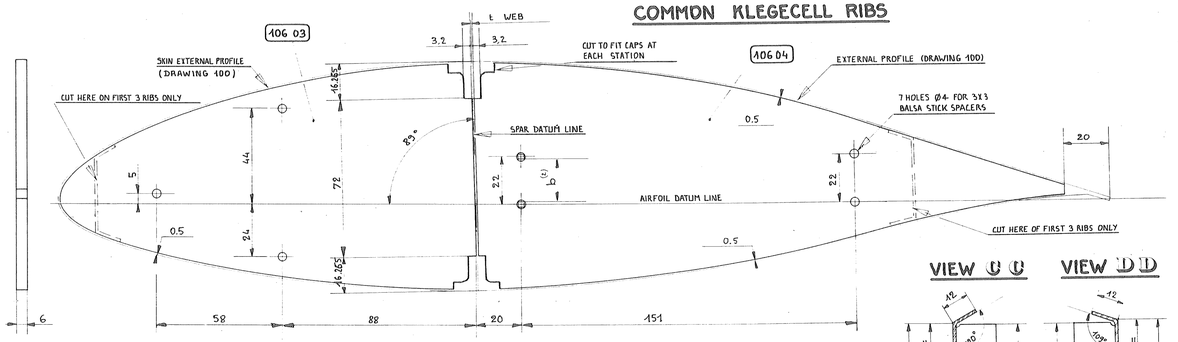
105

ALUMINUM ROOT RIBS

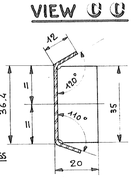


SECTION A-A

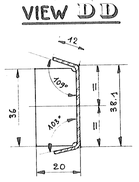
COMMON KLEGECELL RIBS



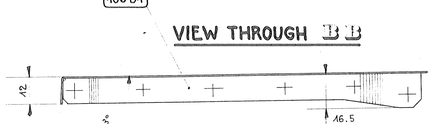
VIEW F-F



VIEW G-G



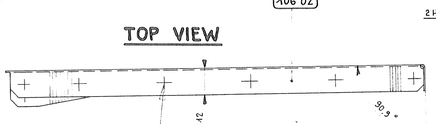
VIEW THROUGH B-B



(1) DIMENSION "A" : = 4 MM FOR RIGHT RIBS
= 6 MM FOR LEFT RIBS

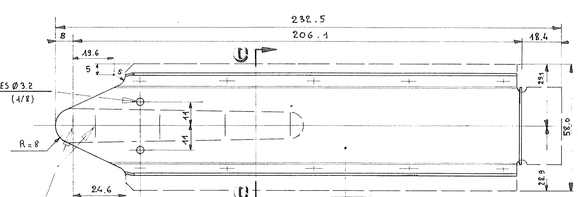
(2) DIMENSION "b" : DISTANCE BETWEEN INSIDE EDGES OF BALSA STICK SPACERS. THIS MUST BE EQUAL TO THE THICKNESS OF THE ASSEMBLY BOARD. (J16 : SEE MANUAL, PART 2)

TOP VIEW

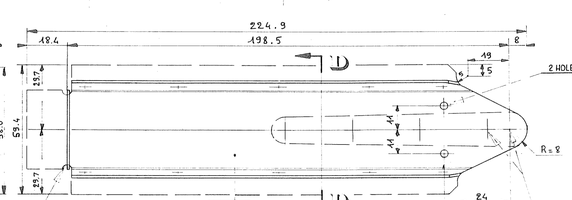


BONDING : ● FITTINGS 105 03 TO 106 05 AND 106 06

VIEW C-C



VIEW D-D



EQUIVALENT THICKNESS
- 0.5 MM ≅ 0.020"
- 1 MM ≅ 0.040"

Reference	Qty	Description	Material	Cond	Dimensions	Resist.	Comments
106 06	2*	REAR ATTACH FITTING	2024	T3	222 x 60 x 1	63,000	
106 05	2*	FRONT ATTACH FITTING	2024	T3	233 x 58 x 1	63,000	
106 04	1*	COMMON RIB - REAR	KLEGECELL	100	268 x 104 x 6		
106 03	1*	COMMON RIB - FRONT	KLEGECELL	100	191 x 104 x 6		
106 02	2*	ROOT RIB - REAR	2024	T3	206 x 127 x 0.5	63,000	
106 01	2*	ROOT RIB - FRONT	2024	T3	181 x 127 x 0.5	63,000	

AVIONS COLOMBAN

CRICRI MC 15

TITLE : RIBS AND ATTACHMENT FITTINGS - DETAILS

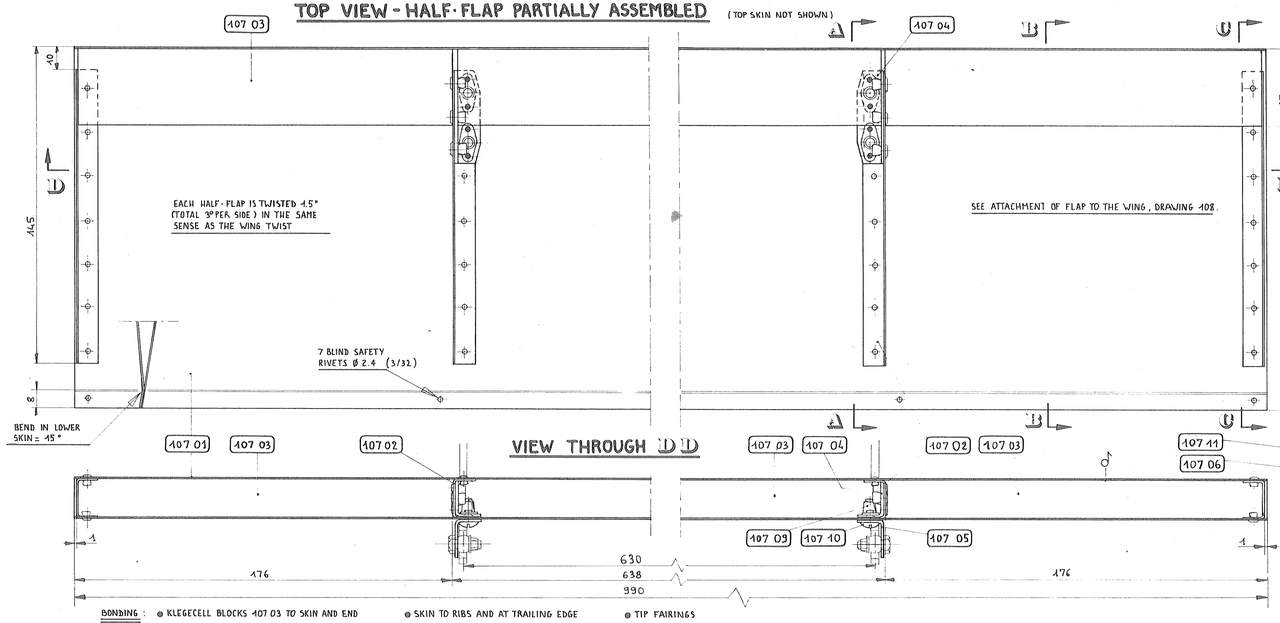
Scale : 1/1

Drawn by : Colomban

Date : May 1981

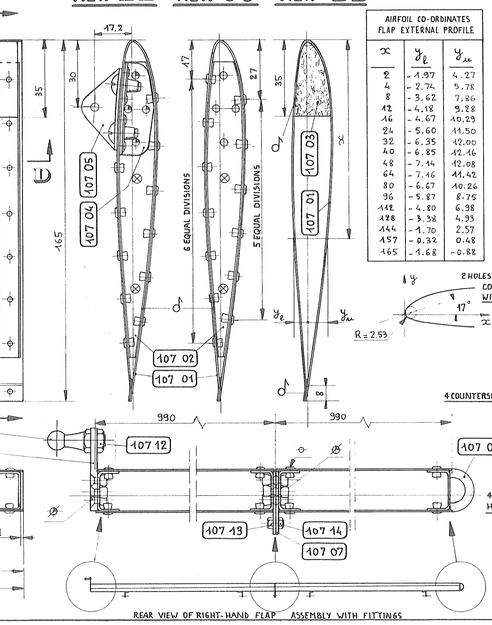
106

TOP VIEW - HALF-FLAP PARTIALLY ASSEMBLED (TOP SKIN NOT SHOWN)

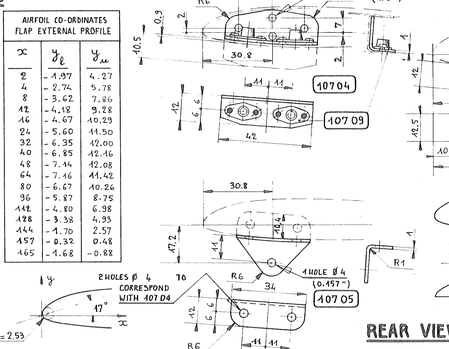


BONDING : ● KLEGECELL BLOCKS 107 03 TO SKIN AND END ● SKIN TO RIBS AND AT TRAILING EDGE ● TIP FAIRINGS

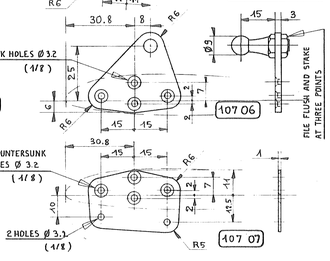
VIEW A A VIEW C C VIEW B B



AIRFOIL CO-ORDINATES FLAP EXTERNAL PROFILE		
x	y_ℓ	y_u
0	- 1.97	4.27
4	- 2.74	5.78
8	- 3.62	7.86
12	- 4.18	9.28
16	- 4.67	10.29
24	- 5.60	11.50
32	- 6.35	12.00
40	- 6.85	12.16
48	- 7.14	12.08
64	- 7.16	11.42
80	- 6.67	10.26
96	- 5.87	8.75
112	- 4.80	6.98
128	- 3.38	4.93
144	- 1.70	2.57
157	- 0.32	0.48
165	- 1.68	- 0.82



REAR VIEW



REAR VIEW OF RIGHT-HAND FLAP ASSEMBLY WITH FITTINGS

Reference	Qty	Description	Material	Cond	Dimensions	Resist.	Comments
107 15							
107 14	4	NUT (THIN)	STEEL		Ø 3 ISO	110.000	STAKED
107 13	4	BOLT	STEEL		HEX Ø 3 x 6 ISO	110.000	OR ALLEN
107 12	2	NUT (THIN)	STEEL		Ø 6 ISO	130.000	STAKED
107 11	2	BALL JT L'HOTELLIER	STEEL		TYPE 965 M2		
107 10	16	BOLT	STEEL		ROUND HD Ø 4 x 10 ISO	110.000	
107 09	16	ANCHOR NUT	STEEL		REDUCED Ø 4 ISO	120.000	
107 08	2*	TIP FAIRING	BALSA		165 x 19 x 40		
107 07	4*	SPLICE FITTING	2024	T3	42 x 25 x 1	63.000	
107 06	2*	CONTROL HORN	2024	T3	42 x 37 x 3	63.000	
107 05	8*	PIVOT FITTING	2024	T3	34 x 29 x 1	63.000	
107 04	8*	NUT PLATE FITTING	2024	T3	42 x 28 x 1	63.000	
107 03	4	FILLER, LEADING EDGE	KLEGECELL	75	990 x 35 x 18		OR CONTICELL 60
107 02	16*	RIB	2024	T3	135 x 38 x 0.5	63.000	
107 01	4	SKIN	2024	T3	990 x 342 x 0.4	63.000	

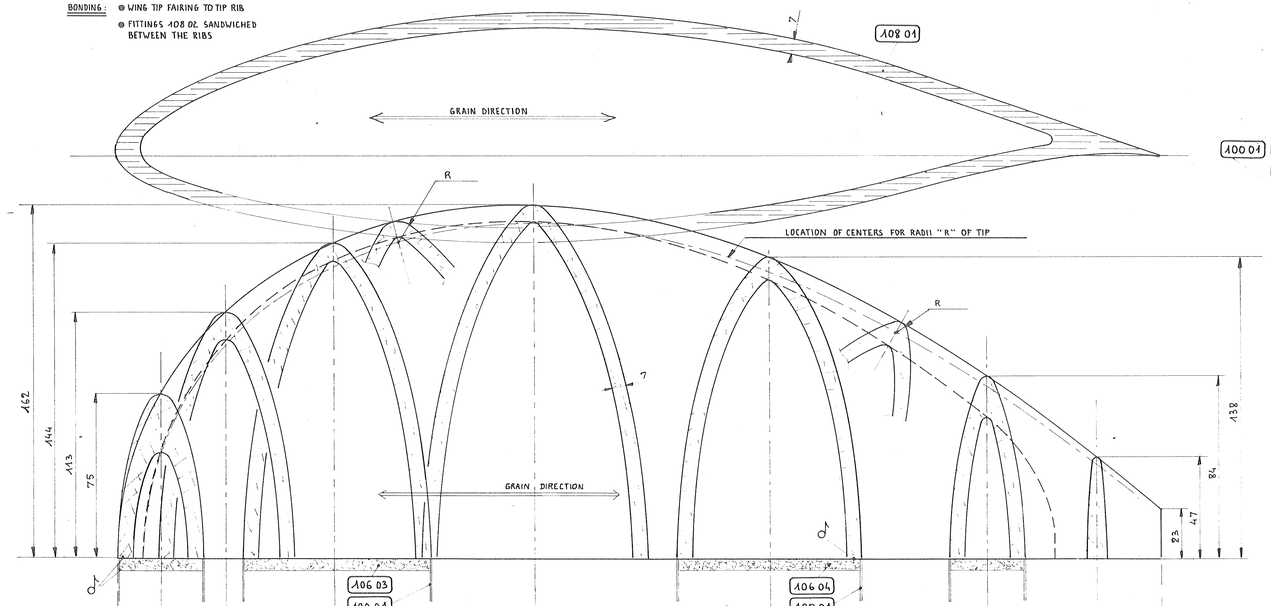
AVIONS COLOMBAN — CRICRI MC 15

TITLE : FLAPS - ASSEMBLY AN DETAILS

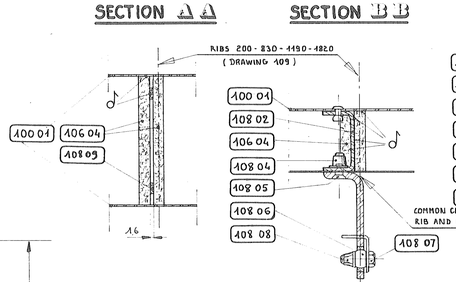
Scale : 1/1 — Drawn by : Colomban — Date : Sept. 1981

107

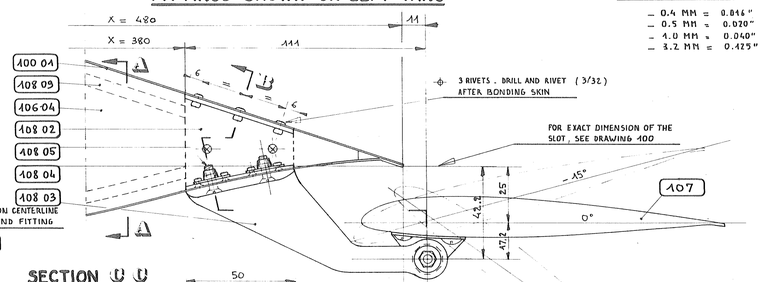
BONDING : ● WING TIP FAIRING TO TIP RIB
● FITTINGS 108 02. SANDWICHED BETWEEN THE RIBS



SECTION A A SECTION B B

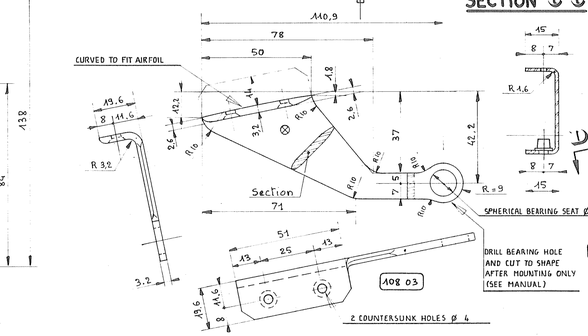


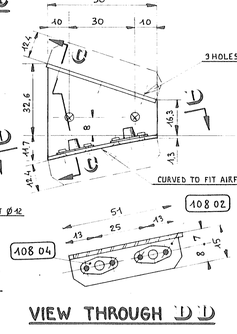
FITTINGS SHOWN ON LEFT WING



EQUIVALENT THICKNESS :
- 0.4 MM = 0.016"
- 0.5 MM = 0.020"
- 1.0 MM = 0.040"
- 3.2 MM = 0.125"

SECTION C C





VIEW THROUGH D D

EQUIVALENT THICKNESS :
- 4.6 MM = 0.063"
- 3.2 MM = 0.125"

Reference	Qty	Description	Material	Cond	Dimensions	Resist.	Comments
108 09	16	SPACER	KLEGECELL		120 x 5 x 4.6		OR CONTICELL
108 08	8	NUT SIMLOC	STEEL		REDUCED Ø 4 ISO	110.000	
108 07	8	BOLT	STEEL		HEX Ø 4 x 12 ISO	110.000	OR ALLEN
108 06	8	SPHERICAL BEARING ASS	STEEL		TYPE GLD 4	240.000	
108 05	16	BOLT (FITTINGS)	STEEL		CISE HD Ø 4 x 12 ISO	110.000	OR ALLEN
108 04	16	ANCHOR NUT	STEEL		REDUCED Ø 4 ISO	120.000	
108 03	8*	FLAP SUPPORT ASM	2024	T3	130 x 45 x 3.2	63.000	OR 3
108 02	8*	INTERNAL SUPPORT	2024	T3	67 x 52 x 4.6	63.000	
108 01	2*	TIP FAIRING	BALSA		480 x 105 x 52		

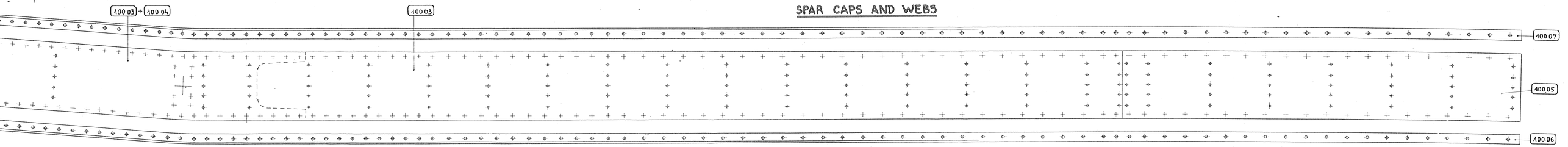
AVIONS COLOMBAN — CRICRI MC 15

TITLE : FLAP BRACKETS _ WING TIP FAIRINGS

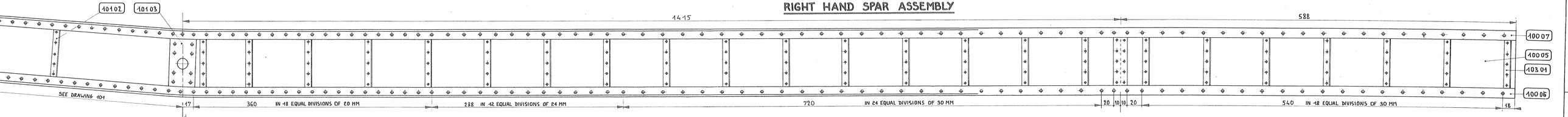
Scale : 1/1 — Drawn by : Colomban — Date : Sept. 1981

108

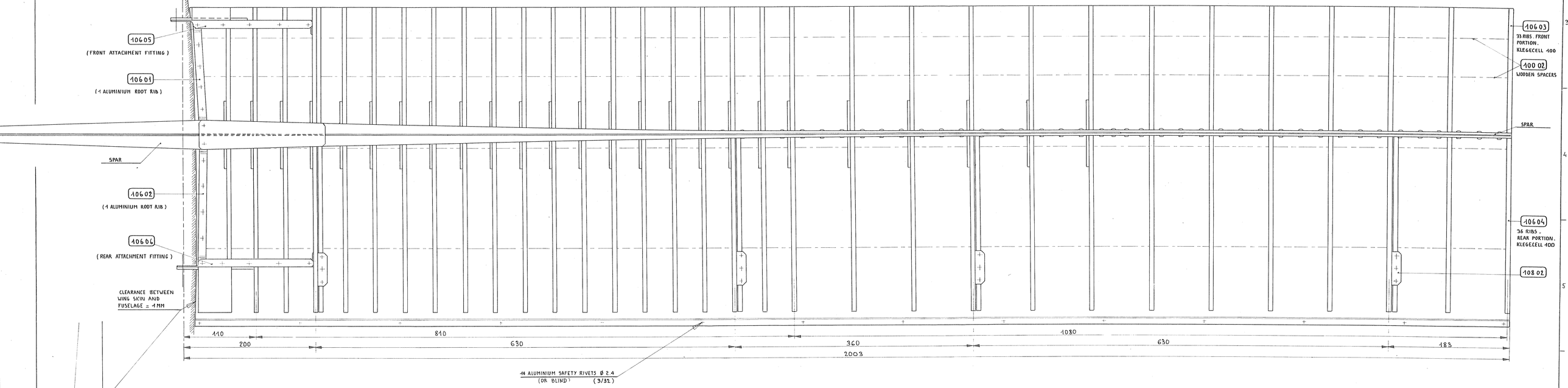
SPAR CAPS AND WEBS

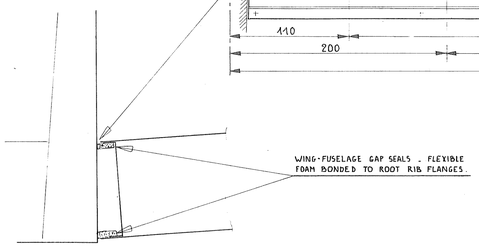


RIGHT HAND SPAR ASSEMBLY



RIGHT HAND WING ASSEMBLY





Reference	Qty	Description	Material	Cond	Dimensions	Resist.	Comments

AVIONS COLOMBAN — CRICRI MC 15

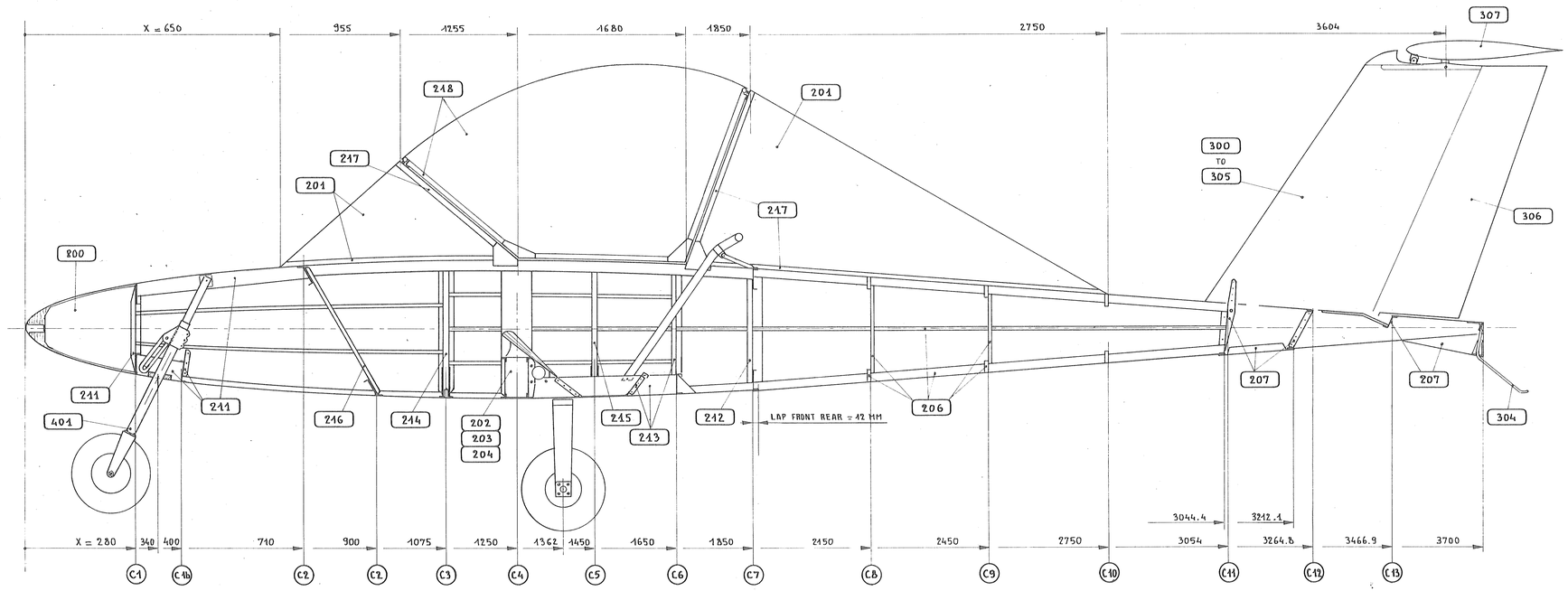
TITLE : RIVETING PLAN
SPAR AND RIGHT HAND WING ASSEMBLY

Scale : 1/2

Drawn by : Colomban
Date : May 1981

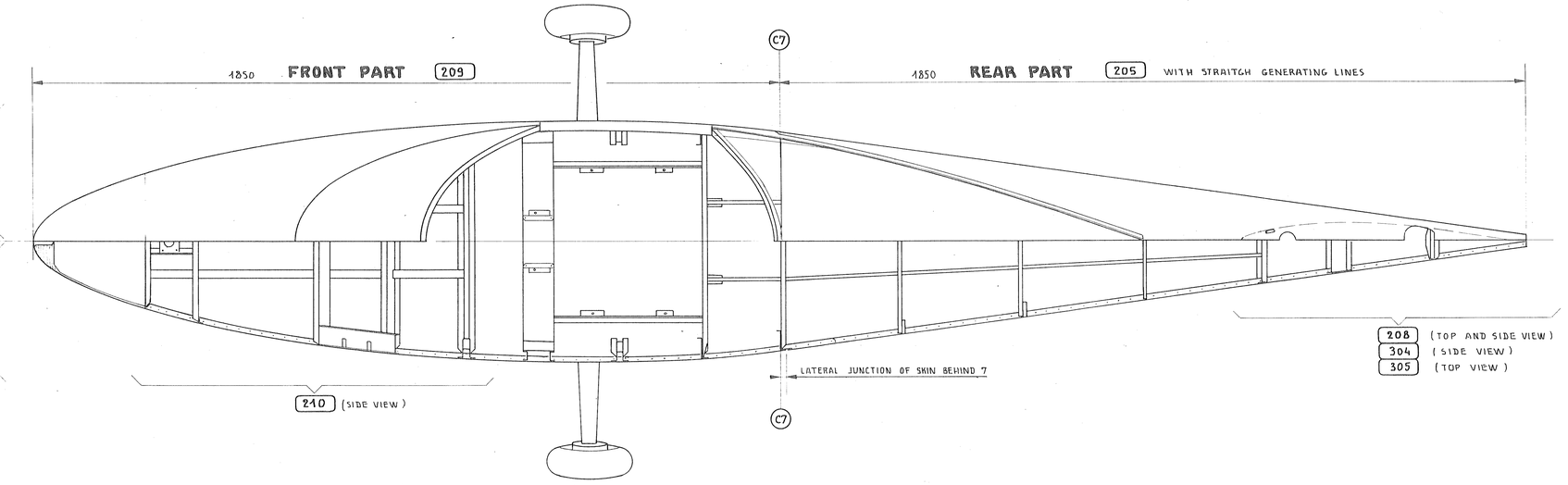
109

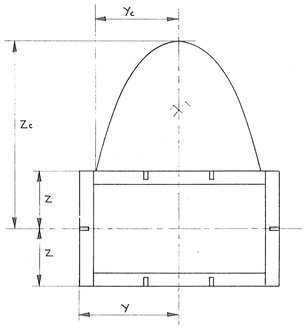
SIDE VIEW THROUGH SYMETRICAL PLAN



RIGHT SIDE TOP VIEW

LEFT SIDE WITHOUT TOP SKIN AND LATERAL STIFFENERS





OUTSIDE DIMENSIONS

		FUSELAGE		COCKPIT	
	X	Y	Z	Yc	Zc
	15	42.5	29.0		
	30	58.6	40.5		
	50	73.5	52.1		
	75	88.1	63.5		
	100	100.6	72.8		
	140	118.5	85.0		
	180	134.5	95.2		
	260	161.6	112.0		
A	280	168.1	115.6		
	330	181.3	123.3		
1b	400		132.9		
	450	210.9	138.9		
	600	239.4	152.9		
	650		156.4	0.0	156.4
	660			52.0	
	680			88.2	
2	710	256.1	160.2	119.8	
	750			150.0	
	800			178.1	
	850			200.4	
2	900	278.0	169.4	219.0	
	955		171.1	236.0	424.0
3	1075	291.3	173.6	265.1	514.3
	1150			277.4	560.0
4	1250	298.4	174.6		
	1255	298.5	174.6	288.7	609.4
	1350			293.4	641.5
5	1450	298.9	172.3	294.0	663.0
	1550			290.5	672.0
6	1650	290.8	166.0		
	1680	288.4	164.6	278.6	662.0
7	1850	270.3	154.3	251.0	605.0
8	2150	228.9	131.7	185.7	
9	2450	187.5	109.1	104.4	
10	2750	146.1	86.5	0.0	86.5
11	3044	105.5	64.4		
	3054	104.2	63.7		
	3241	82.3	51.8		
12	3265	75.0	47.8		
13	3467	47.2	32.5		
	3700	45.0	45.0		

Reference	Qty	Description	Material	Cond	Dimension	Resist.	Comments

AVIONS COLOMBAN

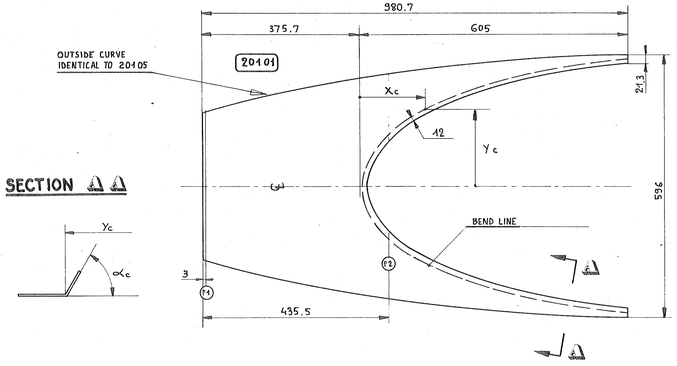
CRICRI MC 15

TITLE : FUSELAGE - GENERAL

Scale : 1/5

Drawn by : Colomban
Date : Sept. 1981

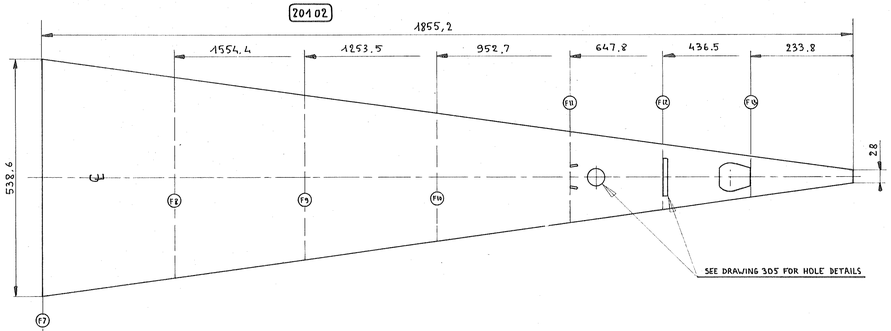
20101



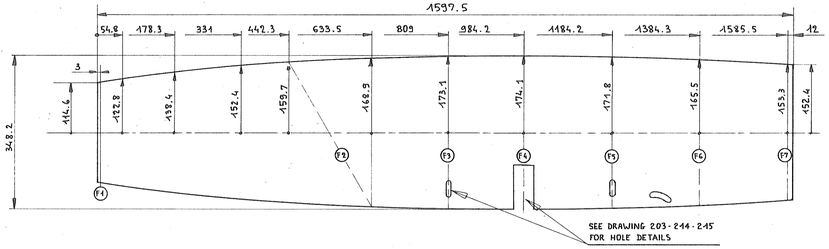
BEND LINE CO-ORDINATES		BEND ANGLE
X_c	Y_c	α_c
0.5	0.0	38.0
10	50.7	39.5
30	87.3	42.4
60	119.1	46.2
100	149.4	50.5
150	177.5	54.5
200	199.9	58.0
250	218.5	60.2
305	235.5	63.0
425	264.6	67.0
500	276.9	68.5
605	288.2	70.0

SECTION A-A

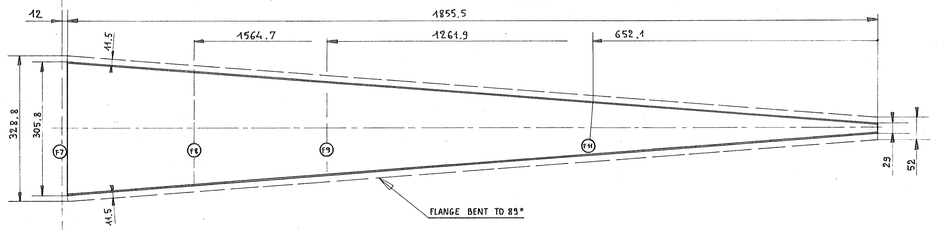
20102



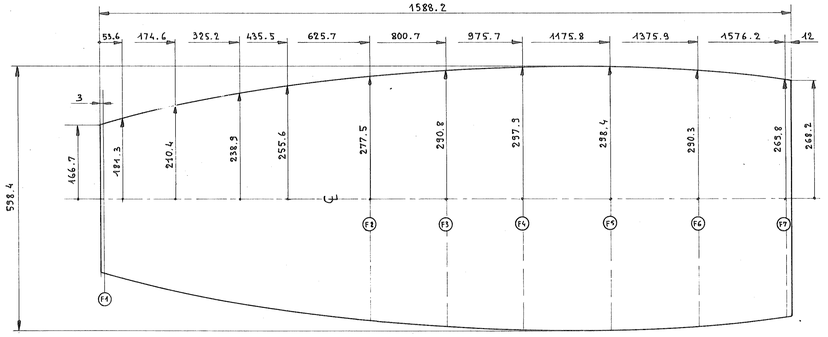
20103



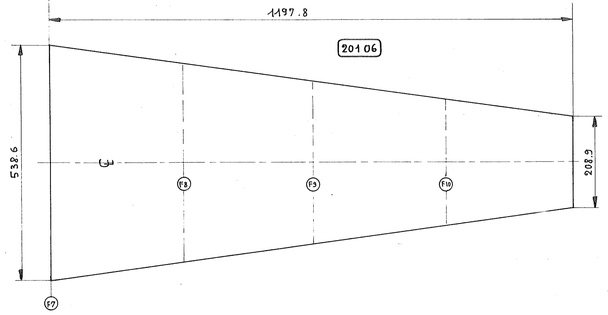
20104



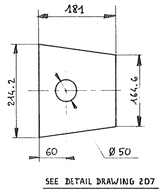
20105



20106

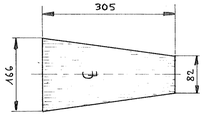


20107



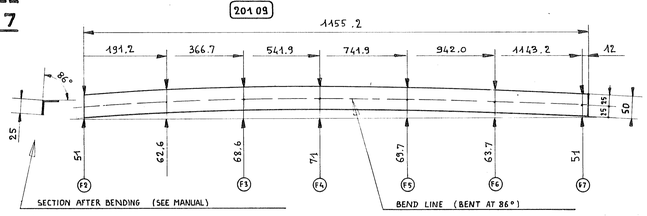
SEE DETAIL DRAWING 207

20108

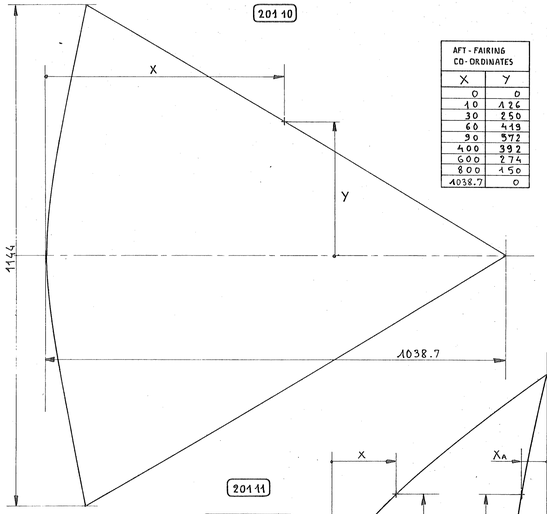


SEE DETAIL DRAWING 207

20109

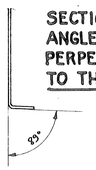


20110



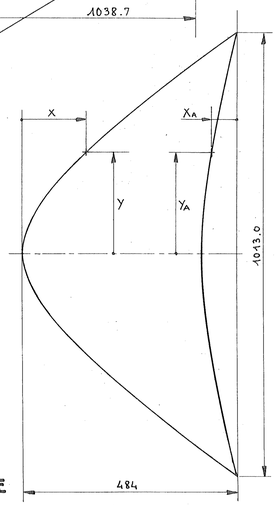
AFT-FAIRING CO-ORDINATES	
X	Y
0	0
10	126
30	250
60	419
90	572
400	392
600	274
800	150
1038.7	0

SECTION OF AN ANGLE OF 20104 PERPENDICULAR TO THE EDGE

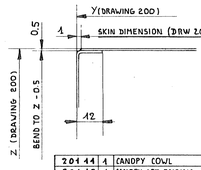


20111

CANOPY COWL CO-ORDINATES	
X	Y
0	0.0
20	80.0
60	142.3
120	208.0
200	281.0
280	349.0
360	412.6
484	506.5
X_A	Y_A
77	0
75	60
64	160
40	300
0	506.5

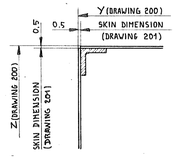


SECTION OF AN ANGLE AFT OF FRAME 7

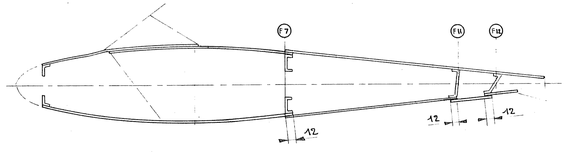


EQUIVALENT THICKNESS :
- 0.5MM ≅ 0.020"
- 0.8MM ≅ 0.032"

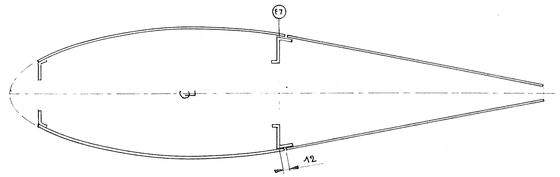
SECTION OF AN ANGLE FORWARD OF FRAME 7



ASSEMBLY SCHEMATIC UPPER AND LOWER SKINS



ASSEMBLY SCHEMATIC SIDE SKINS



Reference	Qty	Description	Material	Cond	Dimensions	Resist.	Comments
201 11	1	CANOPY COWL	2024	T3	1043 x 484 x 0.5	63,000	
201 10	1	CANOPY AFT FAIRING	POLYCARBONATE		1144 x 1039 x 0.8		OR 1
201 09	2*	COCKPIT BORDER	2024		1157 x 83 x 0.5	63,000	
201 08	1	LOWER AFT SKIN	POLYCARBONATE		305 x 166 x 0.8		OR 1
201 07	1	INSPECTION PORT	2024	T3	245 x 184 x 0.5	63,000	
201 06	1	BELLY SKIN - REAR	2024	T3	1198 x 535 x 0.5	63,000	
201 05	1	BELLY SKIN - FOREWARD	2024	T3	1585 x 555 x 0.5	63,000	
201 04	2*	SIDE SKIN - REAR	2024	T3	1856 x 329 x 0.5	63,000	
201 03	2*	SIDE SKIN - FRONT	2024	T3	1600 x 349 x 0.5	63,000	
201 02	1	REAR DECK	2024	T3	1956 x 539 x 0.5	63,000	
201 01	1	FOREWARD DECK	2024	T3	981 x 596 x 0.5	63,000	

AVIONS COLOMBAN — CRICRI MC 15

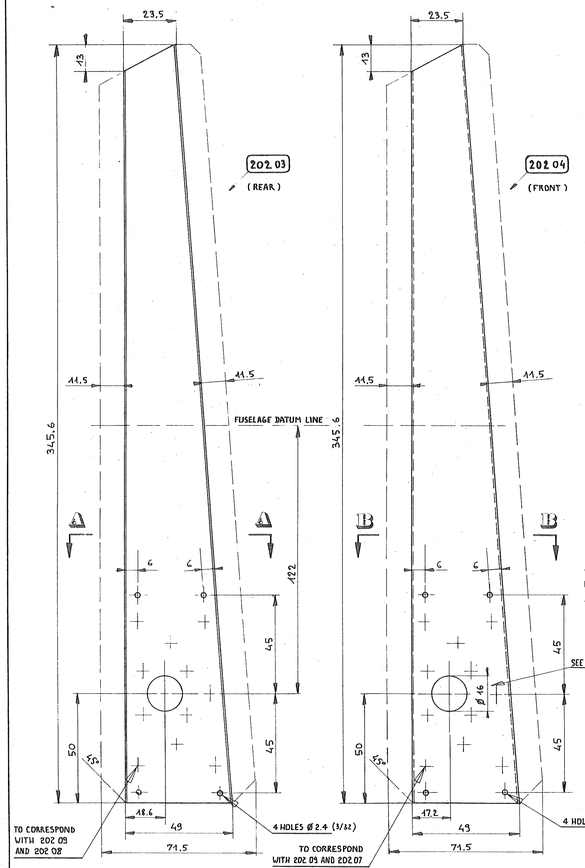
TITLE : FUSELAGE SKINS DIMENSIONS

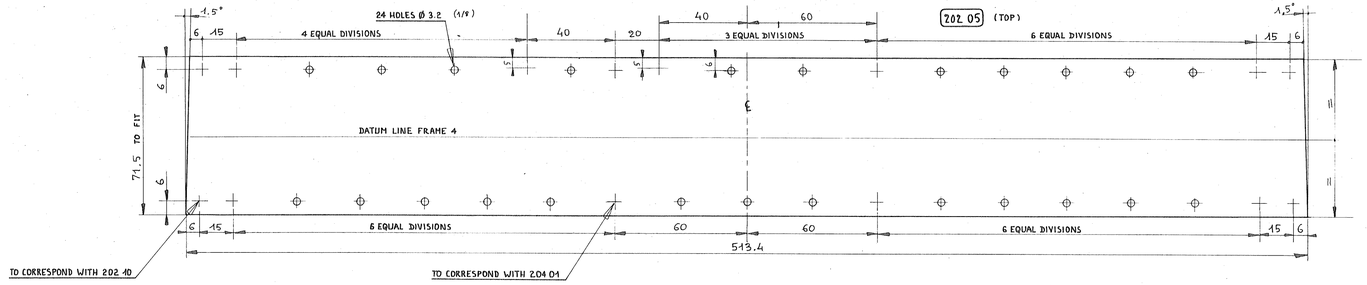
Scale : 1/5 1/1

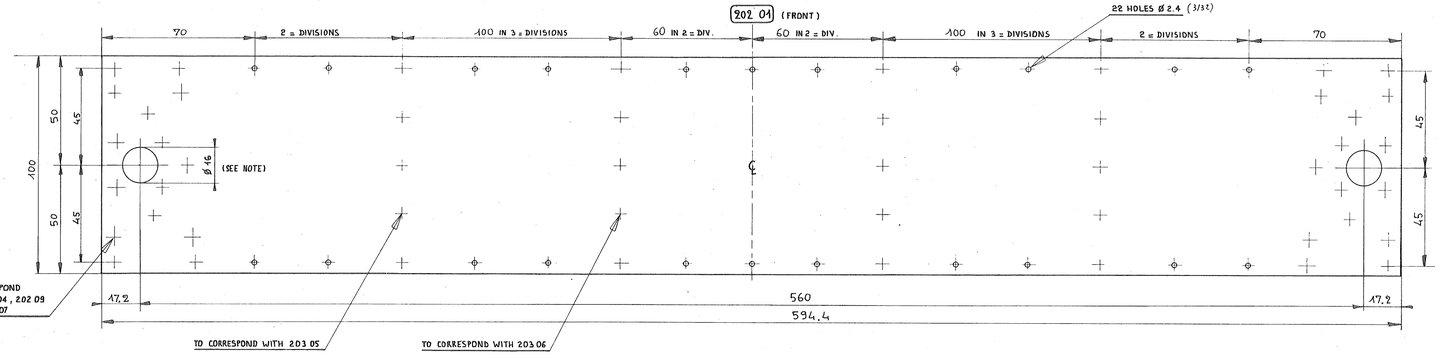
Drawn by : Colomban

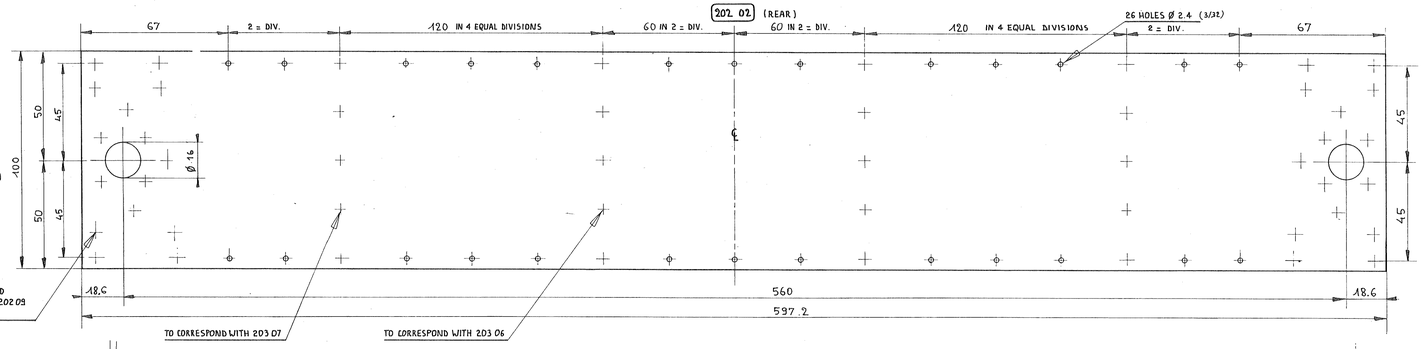
Date : May 1981

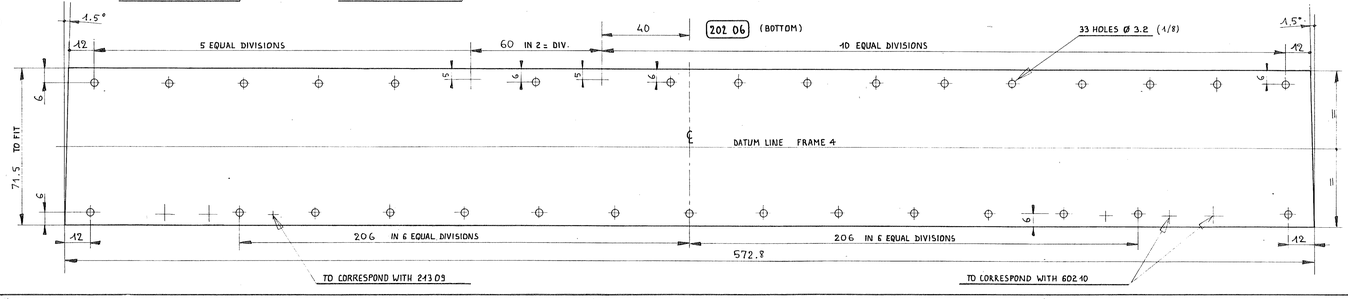
201

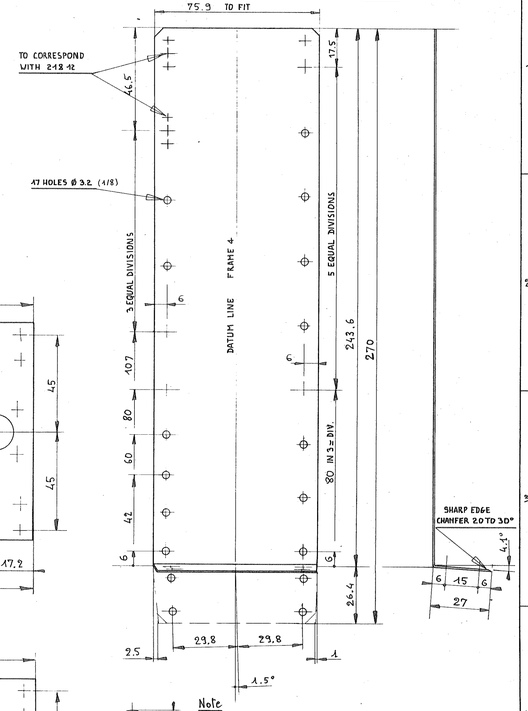


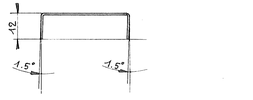


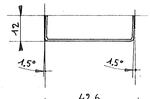


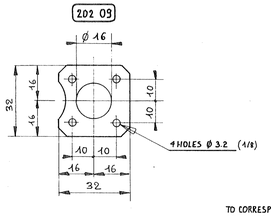


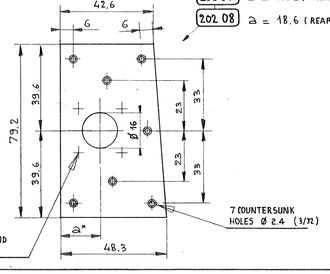












Note

DO NOT REAM WING PIN HOLES UNTIL THE TWO SPARS ARE ASSEMBLED TO THE FINISHED FRAME 4.

ASSEMBLY SEQUENCE

- FRONT FACE :
  1. WEB 202.01 TO CAPS 203.04 AND 203.03
  2. THEN VERTICAL WEBS 202.04
  3. THEN REINFORCEMENTS 202.07
  4. THEN PLATES 202.09
  5. THEN STIFFENERS 203.05 AND 203.06

  ON "MOLD" WITH DRILL BUSHES IN FRONT OF THE ATTACH PIN HOLES.
- REAR FACE :

  SAME SEQUENCE
- FIT FRONT AND REAR FACES TO THE ASSEMBLED SPAR, AND THEN ATTACH :
  1. LOWER COVER 202.06
  2. UPPER COVER 202.05
  3. SIDE COVERS 202.10

  } WIDTH TO ADJUST

EQUIVALENT THICKNESS:
- 0.5MM ≅ 0.020"
- 1 MM ≅ 0.040"
- 4 MM ≅ 0.160"

Reference	Qty.	Description	Material	Cond.	Dimensions	Resist.	Comments
202.10	2*	SIDE COVER	2024	T3	270 x 75 x 0.5	63,000	
202.09	4	PLATE	2024	T3	32 x 32 x 4	63,000	
202.08	2*	REINFORCEMENT - REAR	2024	T3	79.2 x 48.3 x 1	63,000	
202.07	2*	REINFORCEMENT - FRONT	2024	T3	79.2 x 48.3 x 1	63,000	
202.06	1	LOWER COVER	2024	T3	572.7 x 71.5 x 0.5	63,000	
202.05	1	UPPER COVER	2024	T3	543.4 x 71.5 x 0.5	63,000	
202.04	2*	VERTICAL WEB - FRONT	2024	T3	345.6 x 71.5 x 0.5	63,000	
202.03	2*	VERTICAL WEB - REAR	2024	T3	345.6 x 71.5 x 0.5	63,000	
202.02	1	TRANSVERSE WEB - REAR	2024	T3	597.2 x 100 x 0.5	63,000	
202.01	1	TRANSVERSE WEB - FRONT	2024	T3	594.4 x 100 x 0.5	63,000	

AVIONS COLOMBAN

CRICRI MC 15

TITLE : FRAME 4 - DETAILS

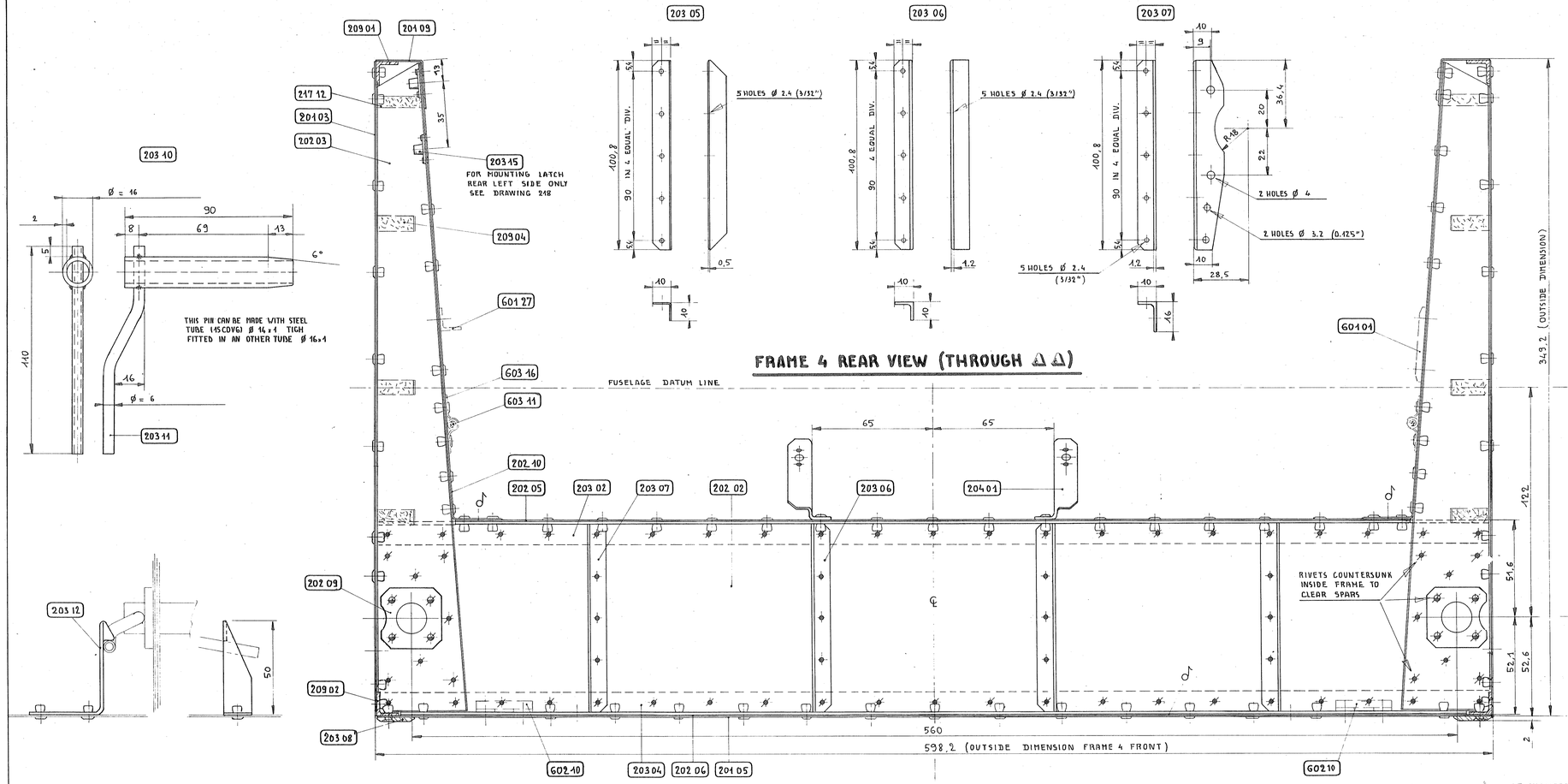
Scale : 1/1

Drawn by : Colomban

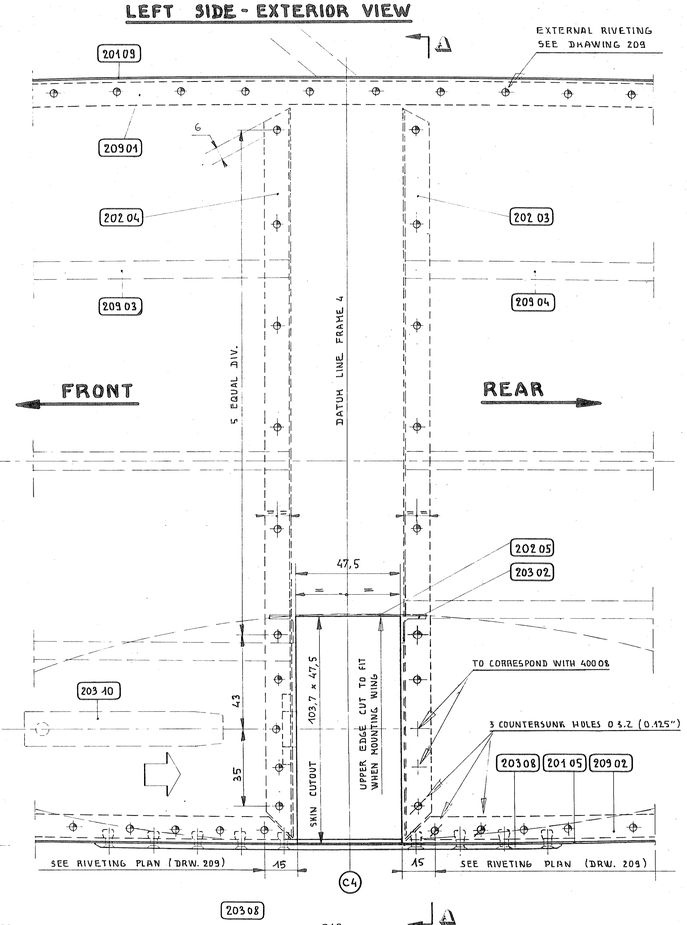
Date : May 1981

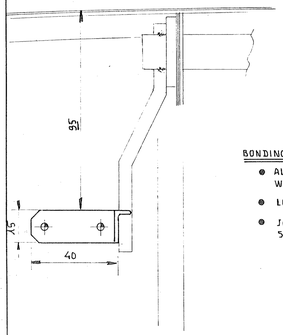
202

FRAME 4 REAR VIEW (THROUGH ⚠⚠)



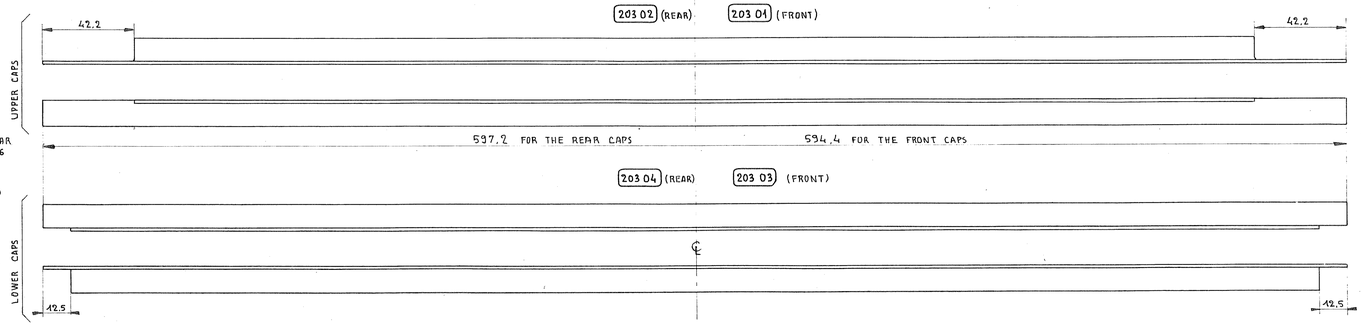
LEFT SIDE - EXTERIOR VIEW

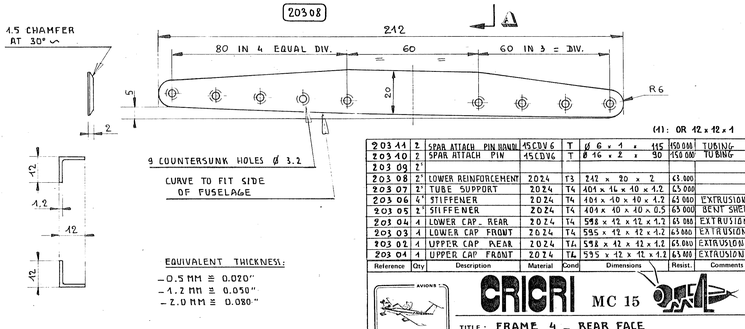




BONDING

- ALL STACKED PARTS NEAR WING PIN HOLES Ø 16
- LOWER COVER 202 06
- JOINT OF UPPER AND SIDE COVERS





EQUIVALENT THICKNESS:
- 0.5 MM ≅ 0.020"
- 1.2 MM ≅ 0.050"
- 2.0 MM ≅ 0.080"

(1): OR 12 x 12 x 1

Reference	Qty	Description	Material	Cond	Dimensions	Resist.	Comments
203 11	2	SPAR ATTACH PIN BUSH	15CDV6	T	Ø 6 - 1 x 415	150 000	TUBING
203 10	2	SPAR ATTACH PIN	15CDV6	T	Ø 16 x 2 x 50	150 000	TUBING
203 09	2						
203 08	2	LOWER REINFORCEMENT	2024	T3	212 x 20 x 2	65 000	
203 07	2	TUBE SUPPORT	2024	T4	404 x 16 x 10 x 4.2	65 000	
203 06	4	STIFFENER	2024	T4	401 x 40 x 10 x 4.2	65 000	EXTRUSION
203 05	2	STIFFENER	2024	T4	401 x 40 x 40 x 0.5	65 000	BENT SHEET
203 04	4	LOWER CAP. REAR	2024	T4	598 x 42 x 42 x 4.2	65 000	EXTRUSION (1)
203 03	4	LOWER CAP FRONT	2024	T4	595 x 42 x 42 x 4.2	65 000	EXTRUSION (1)
203 02	4	UPPER CAP REAR	2024	T4	598 x 42 x 42 x 4.2	65 000	EXTRUSION (1)
203 01	4	UPPER CAP FRONT	2024	T4	595 x 42 x 42 x 4.2	65 000	EXTRUSION (1)

203 15	2	ANCHOR NUT	STEEL		REDUCED Ø4 150
203 14	20				
203 13	20				
203 12	2	SAFETY DEVICE	2024	T5	90 x 22 x 4 65 000

CRICRI MC 15

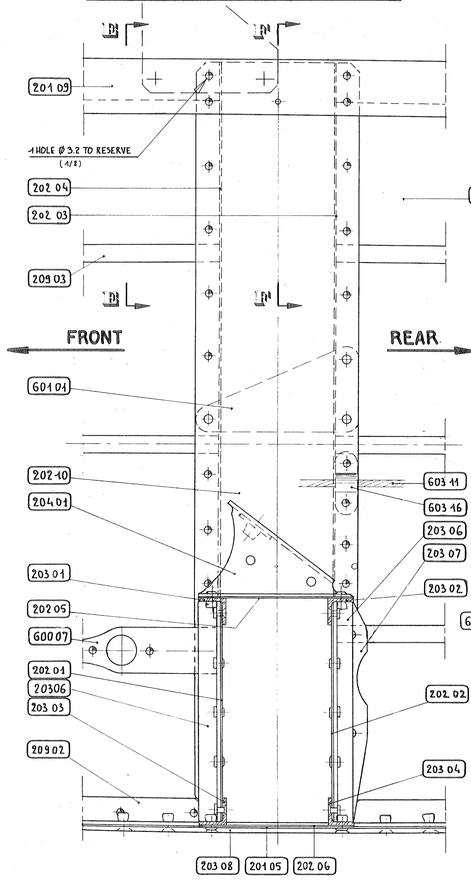
TITLE : FRAME 4 _ REAR FACE

Scale : 1/1

Drawn by : Colomban
Date : Sept 1984

203

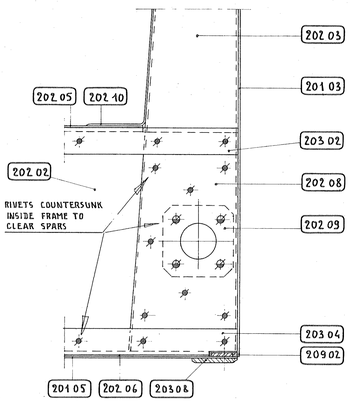
INSIDE RIGHT - VIEW THROUGH AA



SECTION BB

SECTION FF

VIEW THROUGH JJ

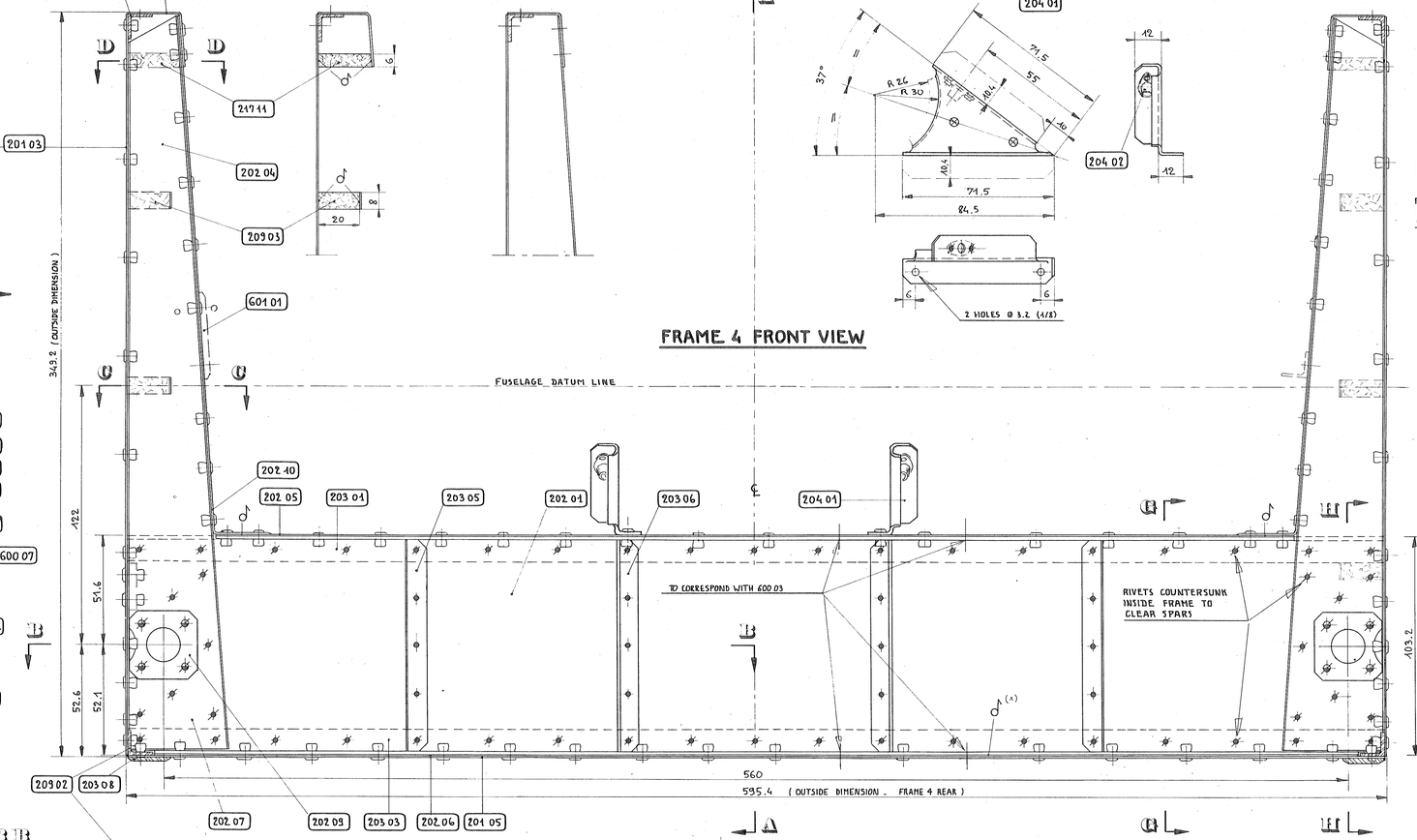


BONDING:
- ALL STACKED PARTS NEAR WING PIN HOLES Ø 16
- LOWER COVER 202.06
- JOINTS OF UPPER AND SIDE COVERS

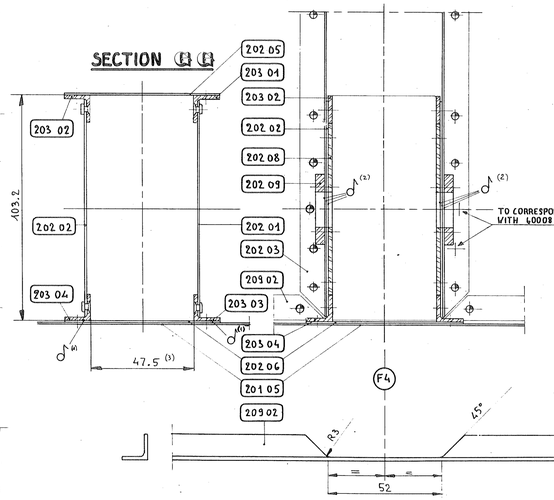
(1) BONDING TO HOLD LOWER COVER 202.06 IN PLACE PENDING FINAL ASSEMBLY WITH THE FUSELAGE.

(2) STACK OF 4 PARTS TO BOND AT THE MOMENT OF RIVETING, TO FACILITATE BOXING HOLES Ø 16 HOLES AFTERWARD

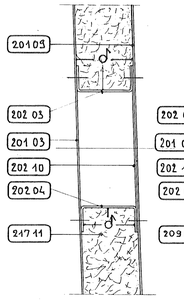
FRAME 4 FRONT VIEW



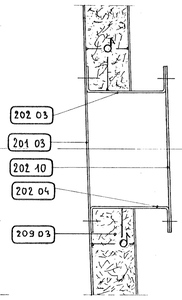
VIEW THROUGH HH



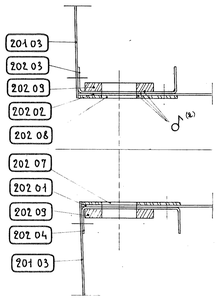
SECTION DD



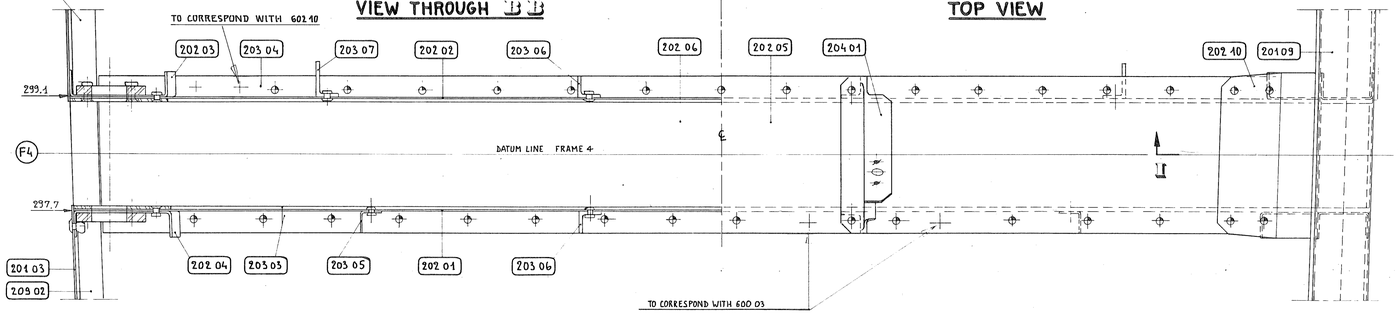
SECTION EE



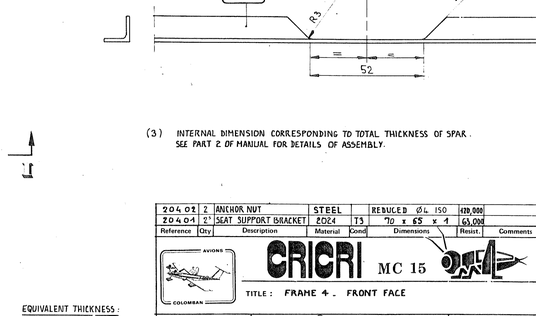
SECTION BB



VIEW THROUGH BB



TOP VIEW



(3) INTERNAL DIMENSION CORRESPONDING TO TOTAL THICKNESS OF SPAR. SEE PART 2 OF MANUAL FOR DETAILS OF ASSEMBLY.

EQUIVALENT THICKNESS:
- 1 MM = 0.040"

Reference	Qty	Description	Material	Cond	Dimensions	Resist.	Comments
204 02	2	ANCHOR NUT	STEEL		REDUCED ØL 150	420,000	
204 01	2	SEAT SUPPORT BRACKET	2024	T3	70 x 65 x 4	63,000	

AVIONS COLOMBAN

CRICRI MC 15

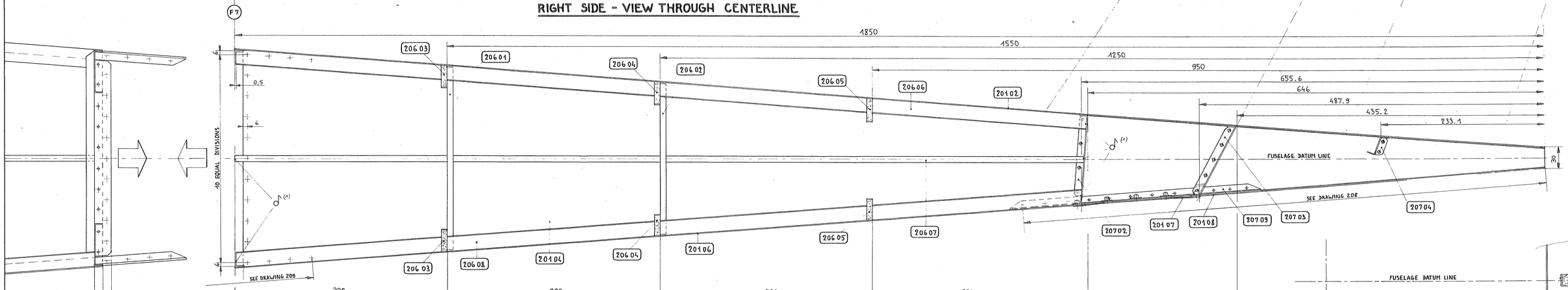
TITLE : FRAME 4 - FRONT FACE

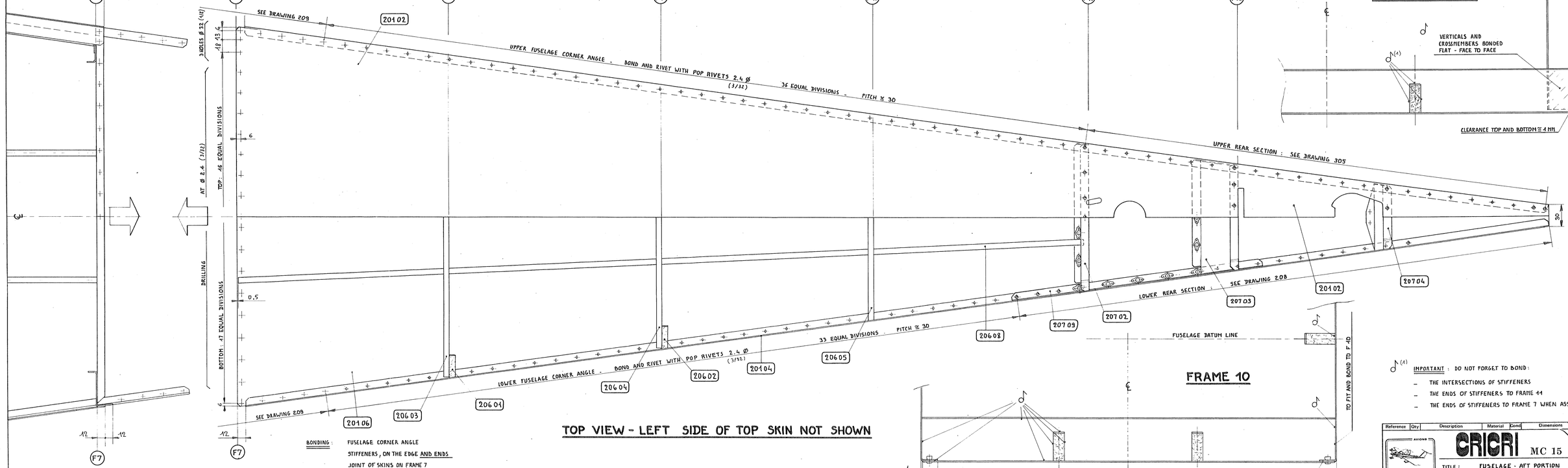
Scale : 1/1

Drawn by : Colomban
Date : May 1981

204

RIGHT SIDE - VIEW THROUGH CENTERLINE

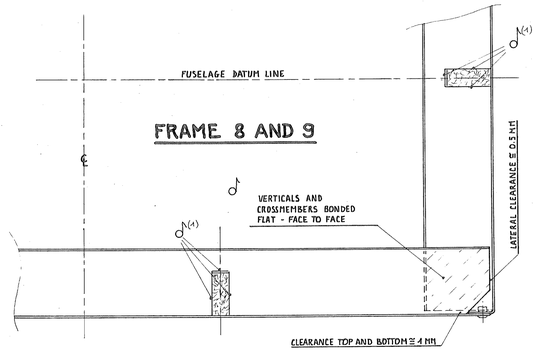




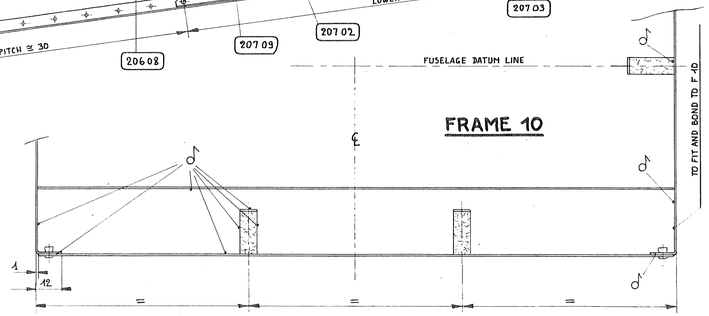
BONDING : FUSELAGE CORNER ANGLE
STIFFENERS, ON THE EDGE AND ENDS
JOINT OF SKINS ON FRAME 7

TOP VIEW - LEFT SIDE OF TOP SKIN NOT SHOWN

FRAME 8 AND 9



FRAME 10



(1) IMPORTANT : DO NOT FORGET TO BOND :
- THE INTERSECTIONS OF STIFFENERS
- THE ENDS OF STIFFENERS TO FRAME 11
- THE ENDS OF STIFFENERS TO FRAME 7 WHEN ASSEMBLING

Reference	Qty	Description	Material	Cond	Dimensions	Resist.	Comments

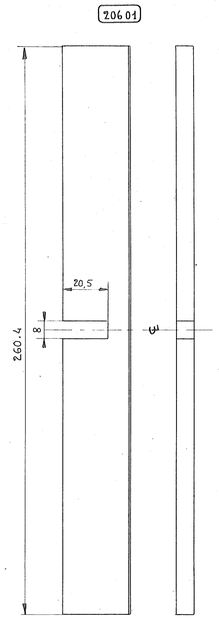
CRICRI MC 15

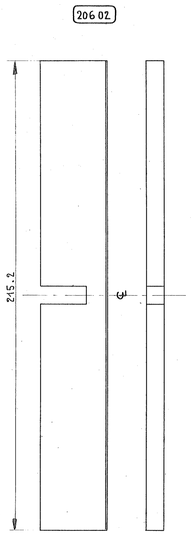
TITLE : FUSELAGE - AFT PORTION
RIVETING - STRINGERS

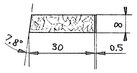
Scale : 1/2 - 1/1

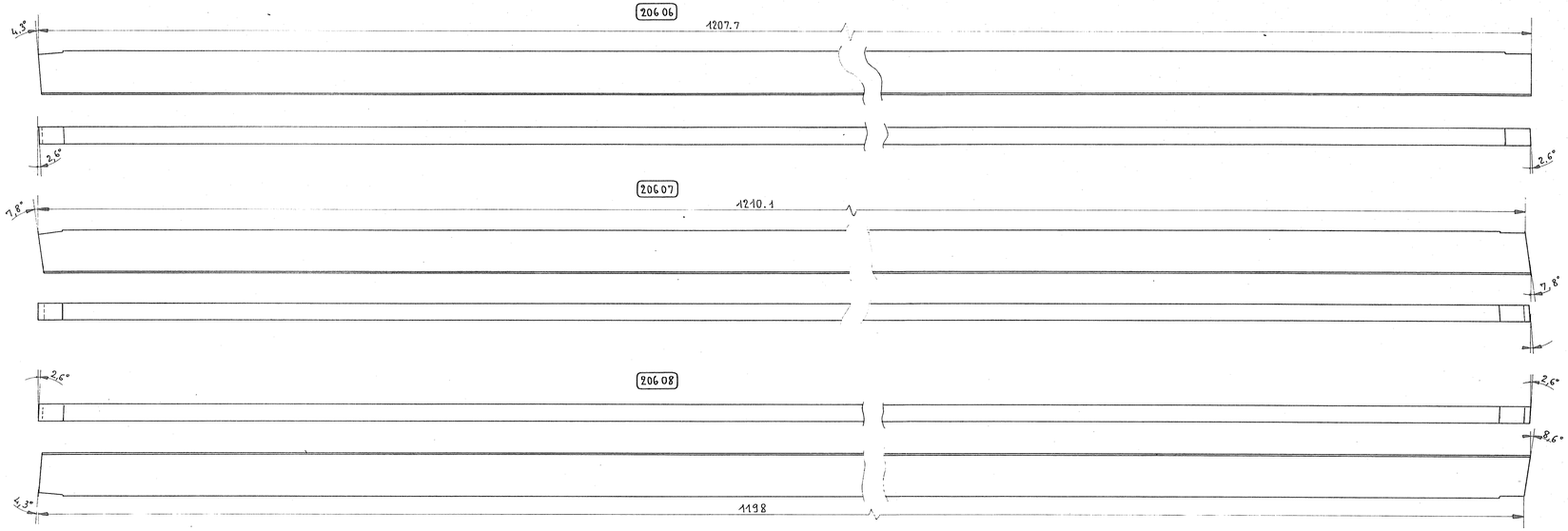
Drawn by : Colomban
Date : May 1981

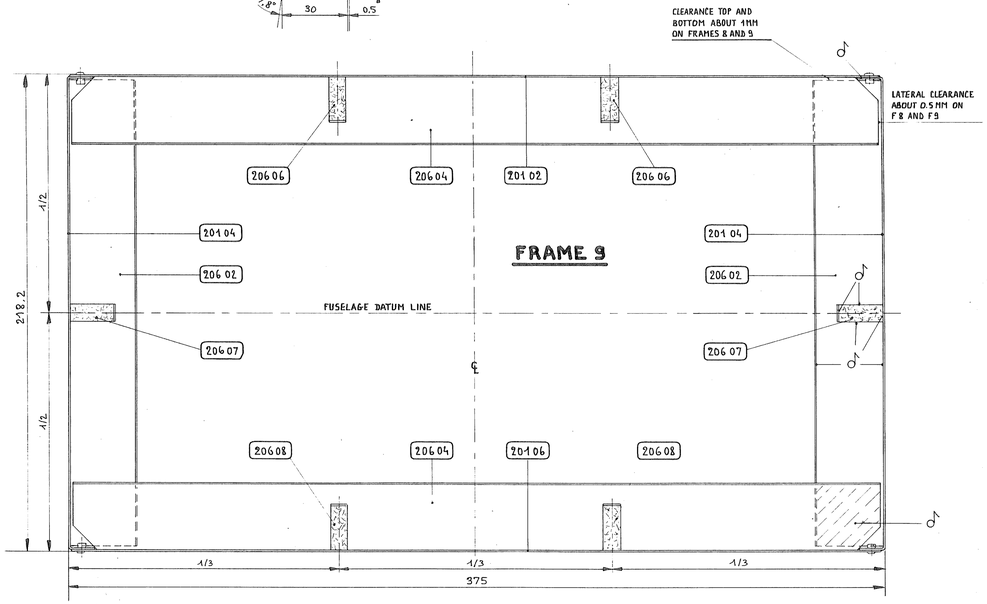
205

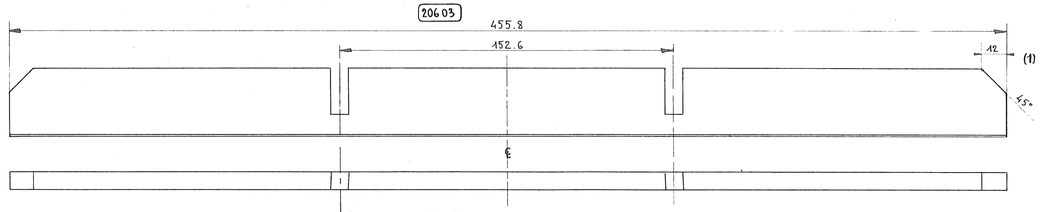










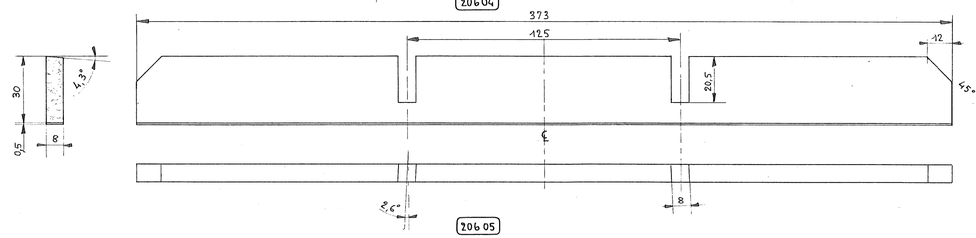


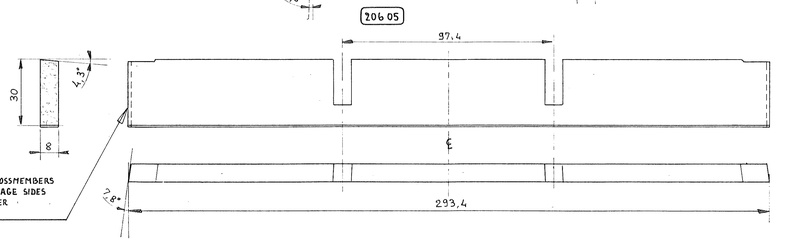
(1) ALL STIFFENERS ARE MADE UP OF :

- A WEB OF KLEGECELL 75 (OR CONTICELL 60) 20 x 8 OR 30 x 8, IN ONE OR SEVERAL PIECES JOINED BY SIMPLE BONDING
- A CAP IN 2024 T3 OF 0.50 THICKNESS IN A SINGLE PIECE BONDED TO THE KLEGECELL

THEY ARE BONDED AGAINST THE SKINS AND ON THE ENDS FOR THE LONGITUDINALS AND CROSSMEMBERS F10

ALL THE LENGTH DIMENSIONS ARE VALID FOR A PERFECTLY MADE FUSELAGE. IN PRACTICE, IT WILL BE NECESSARY TO CHECK AND FIT AS REQUIRED TO MAINTAIN THE END CLEARANCES SHOWN ON THE DRAWINGS.





Reference	Qty	Description	Material	Cond	Dimensions		Resist.	Comments
20608	2	STIFFENER - BOTTOM	KLEGECELL	75	1245 x 20 x 8			(1)
20607	2	STIFFENER - SIDE	KLEGECELL	75	1245 x 20 x 8			(1)
20606	2	STIFFENER - TOP	KLEGECELL	75	1245 x 20 x 8			(1)
20605	2	TRANSVERSE - F 10	KLEGECELL	75	295 x 30 x 8			(1)
20604	2	TRANSVERSE - F 9	KLEGECELL	75	375 x 30 x 8			(1)
20603	2	TRANSVERSE - F 8	KLEGECELL	75	460 x 30 x 8			(1)
20602	2	VERTICAL - FRAME 9	KLEGECELL	75	220 x 30 x 8			(1)
20601	2	VERTICAL - FRAME 8	KLEGECELL	75	265 x 30 x 8			(1)

AVIONS COLOMBAN

CRICRI MC 15

TITLE : STIFFENERS - AFT PORTION OF FUSELAGE

Scale : 1/1

Drawn by : Colomban
Date : May 1981

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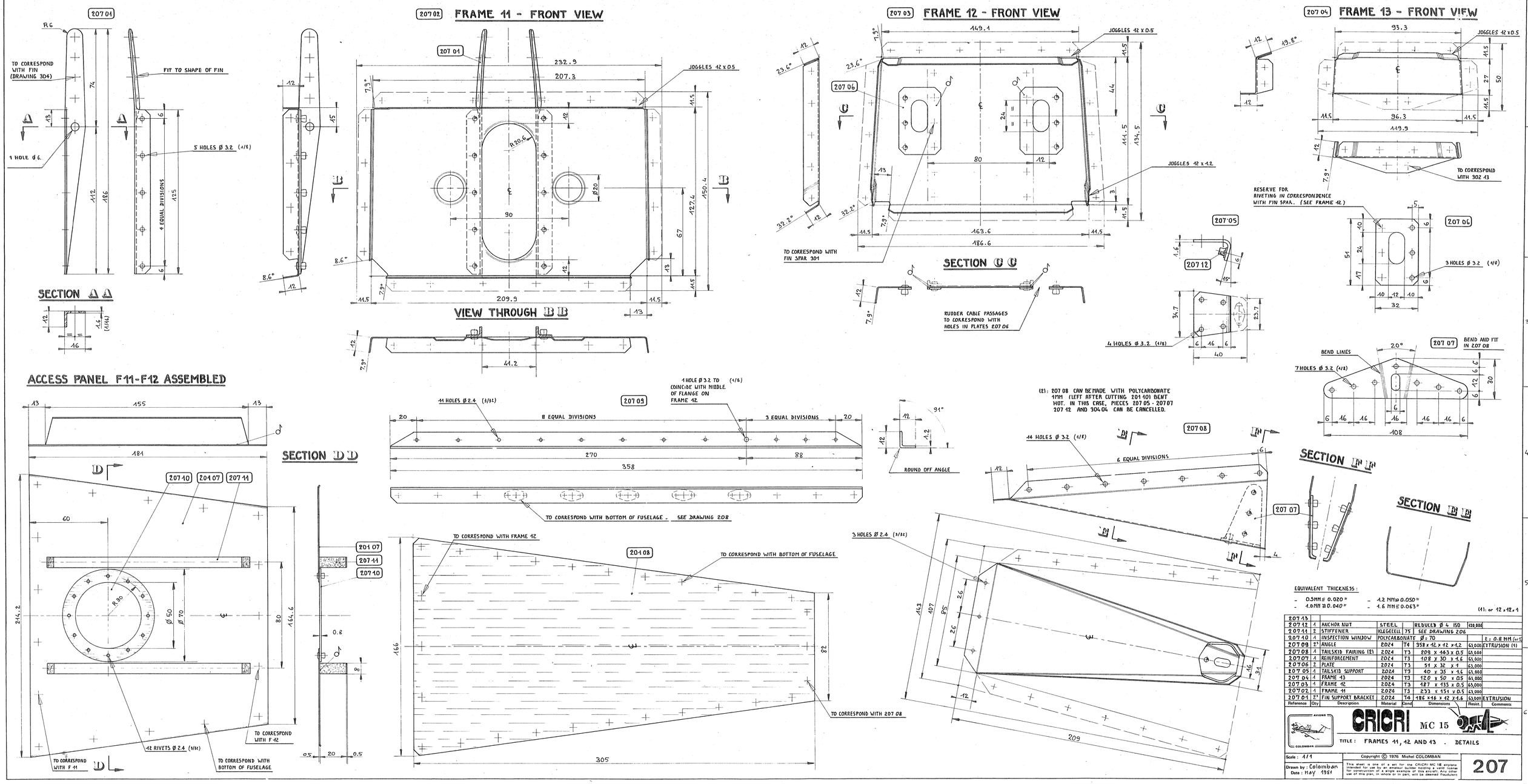
207 01
R.G
TO CORRESPOND WITH FIN (DRAWING 304)
FIT TO SHAPE OF FIN
1 HOLE Ø 6.
5 HOLES Ø 3.2 (1/8)
4 EQUAL DIVISIONS
74
112
186
125
SECTION A A
207 02 FRAME 11 - FRONT VIEW
232.9
207.3
JOGGLES 12 x 0.5
R 80.6
Ø 20
90
127.4
150.4
67
209.9
VIEW THROUGH B B
207 03 FRAME 12 - FRONT VIEW
149.1
JOGGLES 12 x 0.5
207 06
80
163.6
186.6
JOGGLES 12 x 1.2
TO CORRESPOND WITH FIN SPAR 301
SECTION C C
RUDDER CABLE PASSAGES TO CORRESPOND WITH HOLES IN PLATES 207.06
207 04 FRAME 13 - FRONT VIEW
93.3
96.3
149.3
TO CORRESPOND WITH 302 13
RESERVE FOR RIVETING IN CORRESPONDENCE WITH FIN SPAR. (SEE FRAME 12)
207 05
207 12
4 HOLES Ø 3.2 (1/8)
207 06
3 HOLES Ø 3.2 (1/8)
ACCESS PANEL F11-F12 ASSEMBLED
SECTION D D
207 10
207 07
207 11
60
R 30
Ø 50
Ø 70
214.2
164.6
12 RIVETS Ø 2.4 (3/32)
TO CORRESPOND WITH F 11
TO CORRESPOND WITH BOTTOM OF FUSELAGE
TO CORRESPOND WITH F 12
207 08
11 HOLES Ø 2.4 (3/32)
207 09
1 HOLE Ø 3.2 TO COINCIDE WITH MIDDLE OF FLANGE ON FRAME 12 (1/8)
8 EQUAL DIVISIONS
3 EQUAL DIVISIONS
270
358
88
TO CORRESPOND WITH BOTTOM OF FUSELAGE - SEE DRAWING 208
ROUND OFF ANGLE
(2): 207 08 CAN BE MADE WITH POLYCARBONATE 1MM. (LEFT AFTER CUTTING 204 101 BENT HOT. IN THIS CASE, PIECES 207 05 - 207 07 207 12 AND 304 04 CAN BE CANCELLED.
14 HOLES Ø 3.2 (1/8)
6 EQUAL DIVISIONS
TO CORRESPOND WITH FRAME 12
TO CORRESPOND WITH BOTTOM OF FUSELAGE
TO CORRESPOND WITH 207 08
3 HOLES Ø 2.4 (3/32)
SECTION E E
SECTION F F
207 07
BEND AND FIT IN 207 08
BEND LINES
7 HOLES Ø 3.2 (1/8)
108
EQUIVALENT THICKNESS :
- 0.5MM ≅ 0.020 "
- 1.0MM ≅ 0.040 "
- 1.2 MM ≅ 0.050 "
- 1.6 MM ≅ 0.063 "
(1): or 12 x 12 x 1
207 13
207 12 1 ANCHOR NUT STEEL REDUCED Ø 4 ISO 120,000
207 11 2 STIFFENER KLEGECELL 75 SEE DRAWING 206
207 10 1 INSPECTION WINDOW POLYCARBONATE Ø = 70 t = 0.8 MM (or 1)
207 09 2* ANGLE 2024 T4 358 x 12 x 12 x 1.2 65,000 EXTRUSION (1)
207 08 1 TAILSKID FAIRING (2) 2024 T3 209 x 143 x 0.5 65,000
207 07 1 REINFORCEMENT 2024 T3 108 x 30 x 1.6 65,000
207 06 2 PLATE 2024 T3 54 x 32 x 1 65,000
207 05 1 TAILSKID SUPPORT 2024 T3 40 x 35 x 1.6 65,000
207 04 1 FRAME 13 2024 T3 120 x 50 x 0.5 65,000
207 03 1 FRAME 12 2024 T3 187 x 135 x 0.5 65,000
207 02 1 FRAME 11 2024 T3 233 x 151 x 0.5 65,000
207 01 2* FIN SUPPORT BRACKET 2024 T4 186 x 16 x 12 x 1.6 65,000 EXTRUSION
Reference Qty Description Material Cond Dimensions Resist. Comments
AVIONS COLOMBAN
CRICRI MC 15
TITLE : FRAMES 11, 12 AND 13 . DETAILS
Scale : 1/1
Drawn by : Colomban
Date : May 1984
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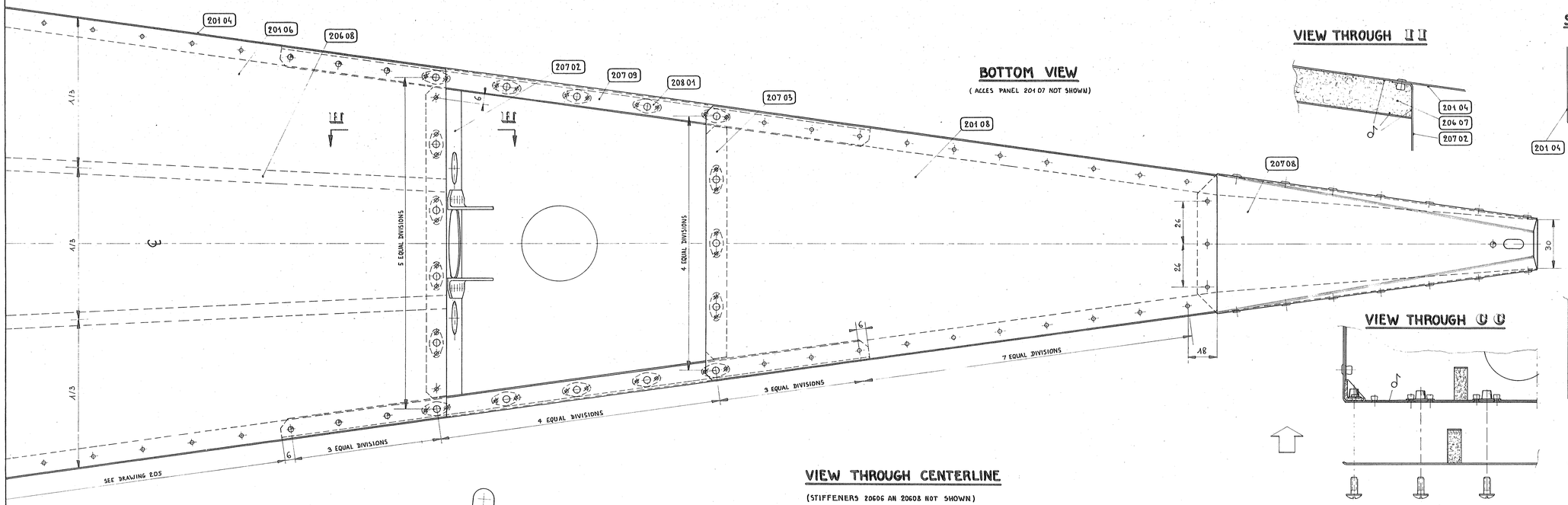
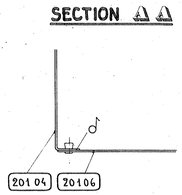
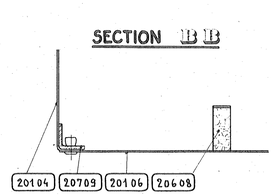
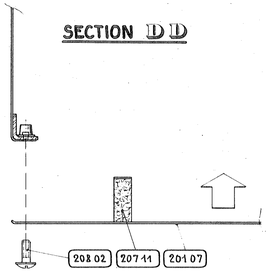
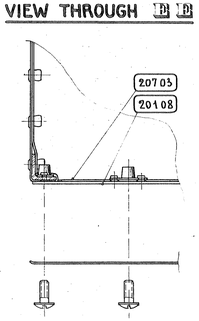
207

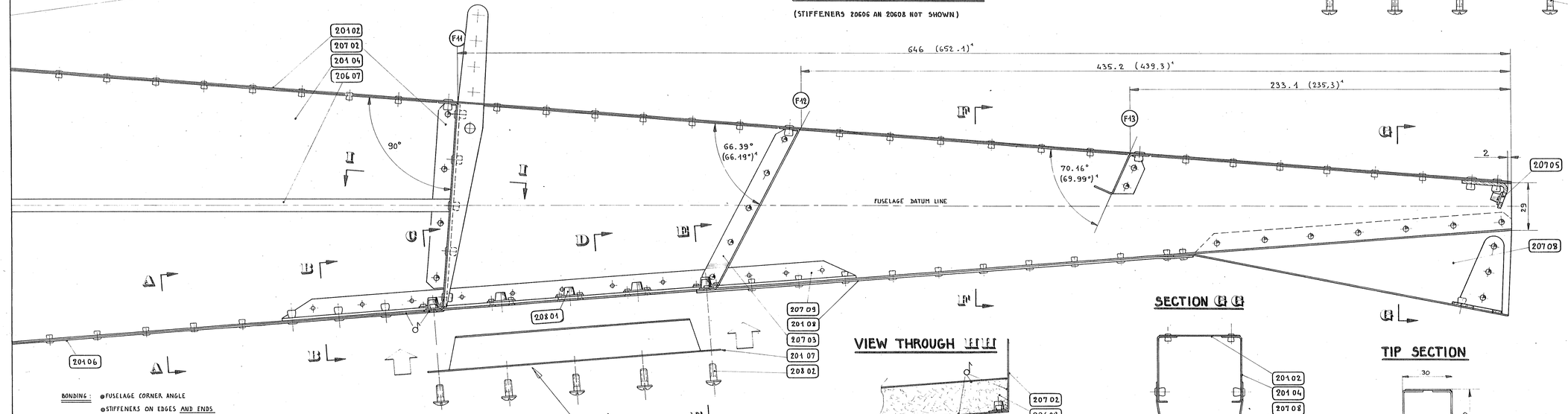


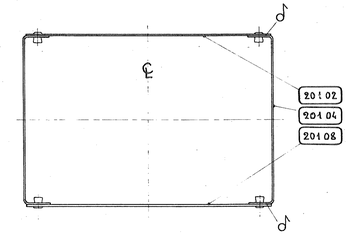


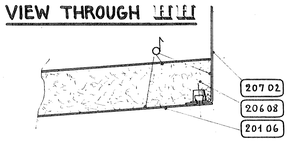


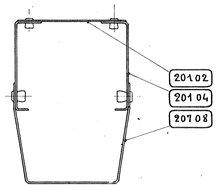


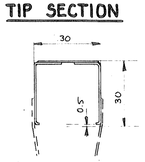












BONDING :
- ●FUSELAGE CORNER ANGLE
- ●STIFFENERS ON EDGES AND ENDS
- ●SKIN TO LOWER FLANGE OF FRAME 11

(1) THE DIMENSIONS AND ANGLES IN PARENTHSIS ARE TO BE USED ON THE ACTUAL FUSELAGE SIDE SKINS . THE OTHERS ARE PROJECTED ON THE SYMMETRY (SAME FOR DRAWINGS 200 AND 205), HENCE THE DIFFERENCE.

Reference	Qty	Description	Material	Cond	Dimensions	Resist.	Comments
208 02	47	SCREW	STEEL		ROUND HD. Ø 4x40 INT	120.000	
208 01	47	ANCHOR NUT	STEEL		REDUCED Ø 4 ISO	120.000	

AVIONS COLOMBAN

CRICRI MC 15

TITLE : FUSELAGE - AFT PORTION - ASSEMBLY

Scale : 1/1

Drawn by : Colomban
Date : May 1981

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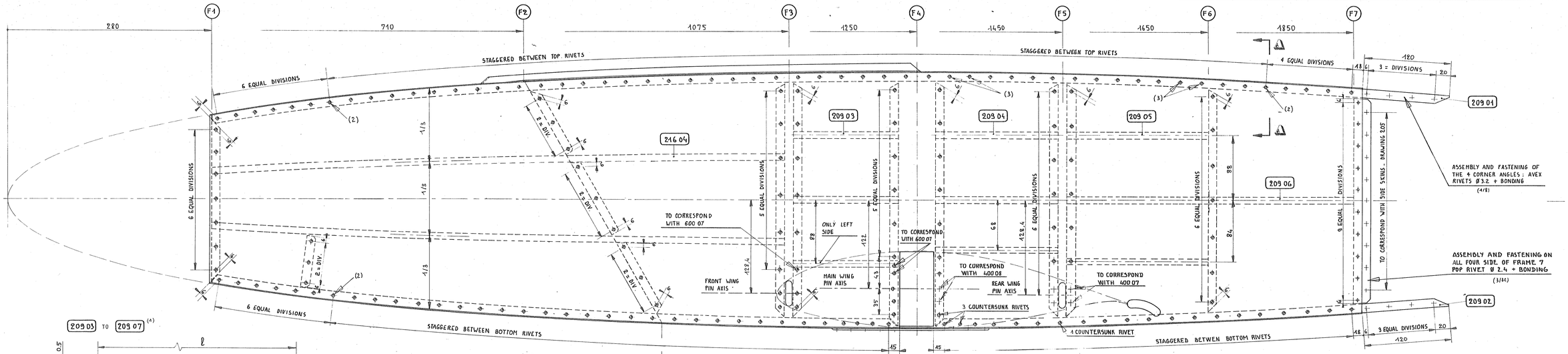
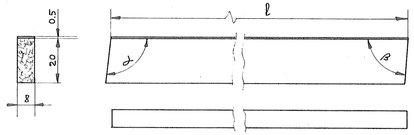
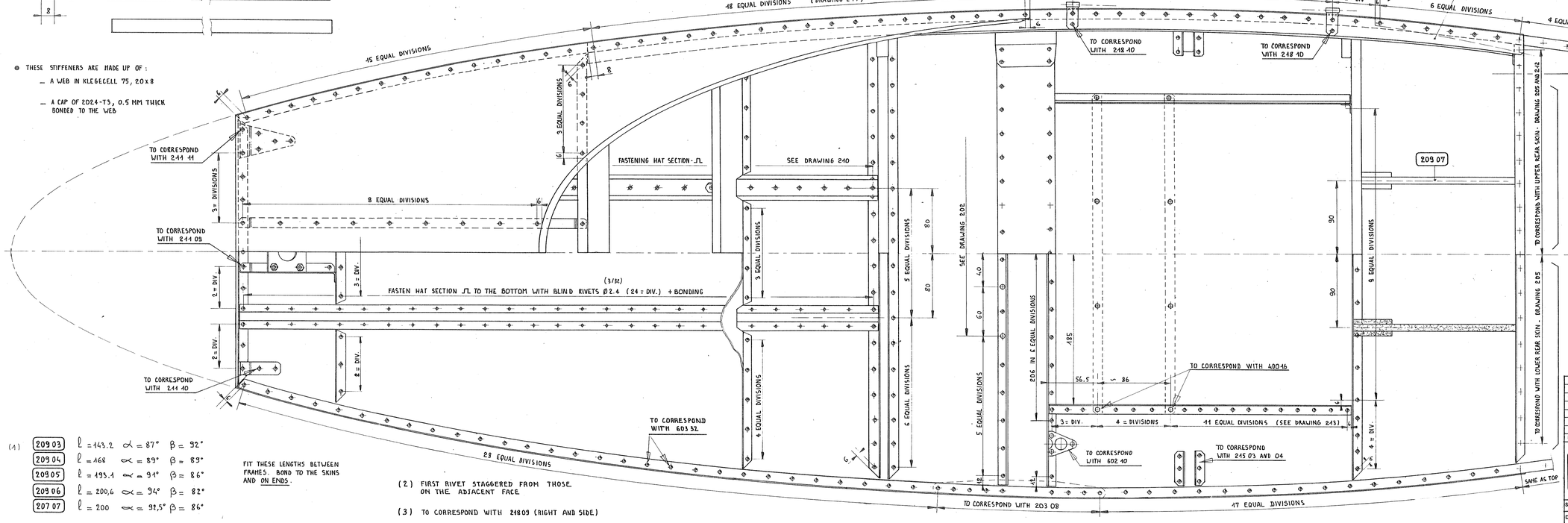
RIVETING PLAN - SIDES



209 03 TO 209 07 (4)



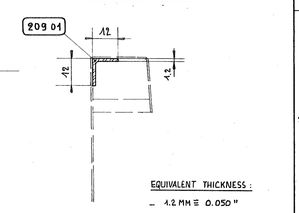
● THESE STIFFENERS ARE MADE UP OF :
- A WEB IN KLEGECELL 75, 20 x 8
- A CAP OF 2024-T3, 0.5 MM THICK BONDED TO THE WEB



RIVETING PLAN - TOP

RIVETING PLAN BOTTOM

SECTION



EQUIVALENT THICKNESS :
- 1.2 MM ≡ 0.050"

(4) : or 12 x 12 x 1

(4)

209 03	ℓ = 143.2	α = 87°	β = 92°	
209 04	ℓ = 168	α = 89°	β = 89°	
209 05	ℓ = 193.1	α = 94°	β = 86°	
209 06	ℓ = 200.6	α = 94°	β = 82°	
207 07	ℓ = 200	α = 91,5°	β = 86°	

FIT THESE LENGTHS BETWEEN FRAMES. BOND TO THE SKINS AND ON ENDS.

(2) FIRST RIVET STAGGERED FROM THOSE ON THE ADJACENT FACE.

(3) TO CORRESPOND WITH 248 09 (RIGHT AND SIDE.)

Reference	Qty	Description	Material	Cond	Dimensions	Resist.	Comments
209 07	2	STIFFENER	KLEGECELL 75		200 x 20 x 8		
209 06	2	STIFFENER	KLEGECELL 75		201 x 20 x 8		
209 05	6	STIFFENER	KLEGECELL 75		194 x 20 x 8		
209 04	6	STIFFENER	KLEGECELL 75		168 x 20 x 8		
209 03	6	STIFFENER	KLEGECELL 75		144 x 20 x 8		
209 02	2*	LOWER CORNER ANGLE	2024	T4	1720 x 42 x 12 x 4.2	63.000	EXTRUSION (4)
209 01	2*	UPPER CORNER ANGLE	2024	T4	1780 x 42 x 12 x 4.2	63.000	EXTRUSION (4)

AVIONS COLOMBAN

CRICRI MC 15

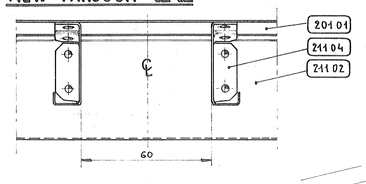
TITLE : FUSELAGE _ FORWARD PORTION RIVETING _ STRINGERS _

Scale : 1/2 1/1

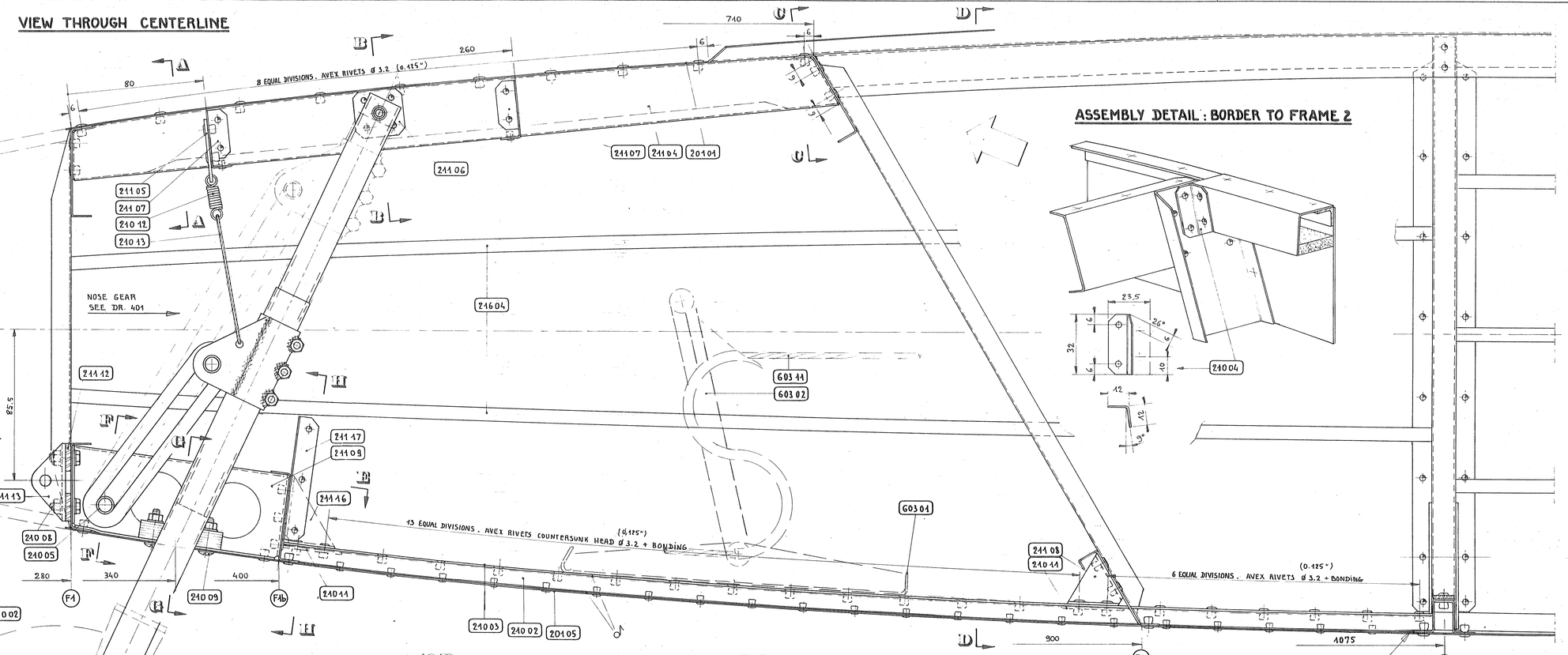
Drawn by : Colomban
Date : May 1981

209

VIEW THROUGH A A



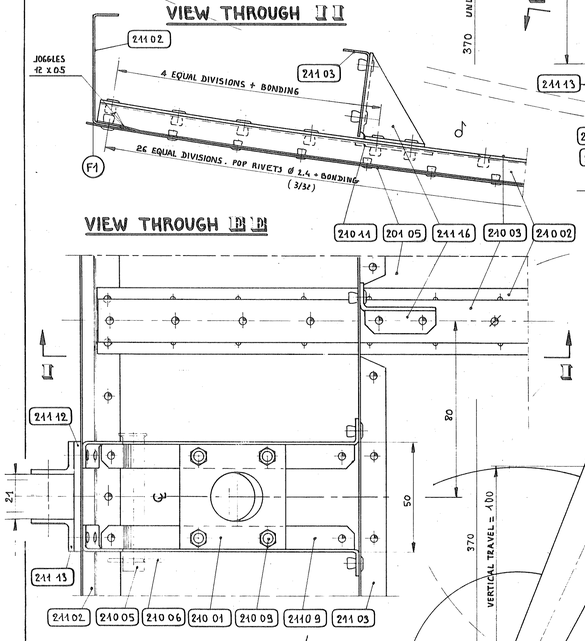
VIEW THROUGH CENTERLINE



ASSEMBLY DETAIL : BORDER TO FRAME 2

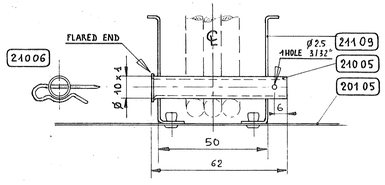
VIEW THROUGH C C

VIEW THROUGH D D

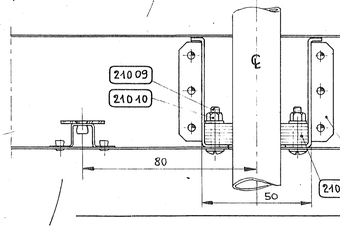


VIEW THROUGH E E

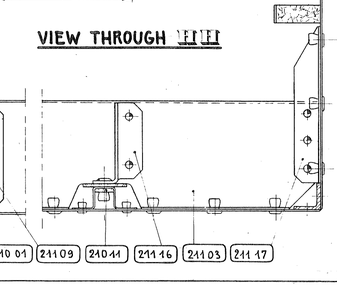
SECTION F F



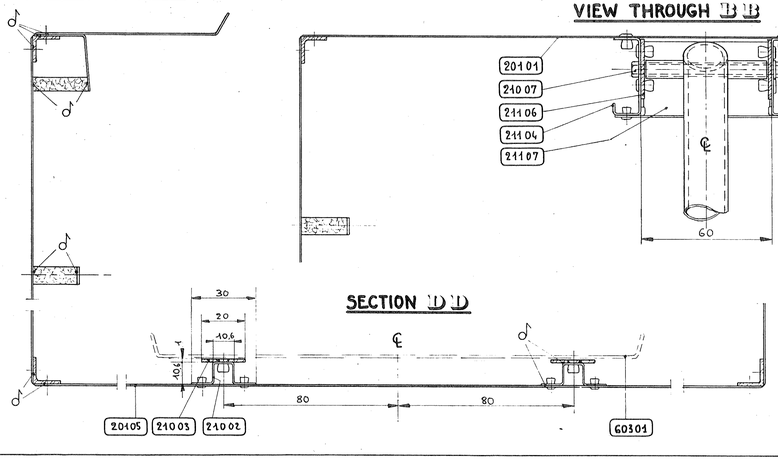
VIEW THROUGH G G



VIEW THROUGH H H



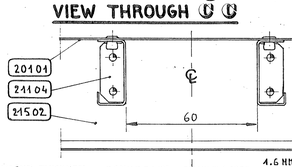
VIEW THROUGH D D



SECTION D D

VIEW THROUGH B B

VIEW THROUGH C C



BONDING :
- PEDAL RAIL CAP TO PEDAL RAIL WEB
- PEDAL RAIL WEB TO FLOOR
- SKINS TO CORNER ANGLES AND TO FRAME 1

EQUIVALENT THICKNESS : _ 0.3 MM ≅ 0.012" _ 0.5 MM ≅ 0.020" _ 1.2 MM ≅ 0.05" _ 1.6 MM ≅ 0.063"

Reference	Qty	Description	Material	Cond.	Dimensions	Resist.	Comments
210 13	1	LOOP OF CABLE	STEEL		ø 1.5		
210 12	1	SPRING, PIANO WIRE			ø 7 x 42 x 10 WHORLS		
210 11	4	PLATE	2024	T3	36 x 40 x 1.6	61,000	
210 10	9	NUT	STEEL		REDUCED ø 4 150	410.000	
210 09	4	SCREW - BEARING BLOCK	STEEL		ROUND HD ø 6 x 18	410.000	
210 08	4	BOLT - FRAME 1	STEEL		HEX. ø 4 x 12 150	410.000	OR ALLEN
210 07	1	BOLT - NOSE GEAR	STEEL		HEX ø 4 x 68 150	410.000	OR ALLEN
210 06	1	SAFETY PIN	PIANO WIRE		ø 2		
210 05	4	SHOCK CORD PIN - LOWER	2024	T4	ø 10 x 1 x 63	63,000	TUBING
210 04	2*	GUSSET F2 TO BORDER	2024	T3	32 x 23.5 x .05	63,000	
210 03	2	PEDAL RAIL - CAP	2024	T3	750 x 20 x 1	63,000	
210 02	2	PEDAL RAIL - WEB JL	2024	T3	750 x 51 x 0.3	63,000	SHEET 0.3 or 0.4
210 01	4	BEARING BLOCK	CELORON		48 x 48 x 10		

AVIONS COLOMBAN

CRICRI MC 15

TITLE : FUSELAGE - FORWARD PORTION - ASSEMBLY

Scale : 1/1

Drawn by : Colomban
Date : Sept. 1981

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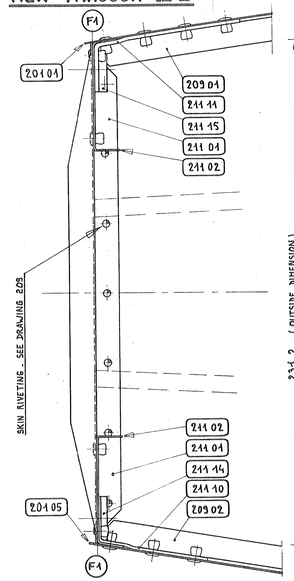
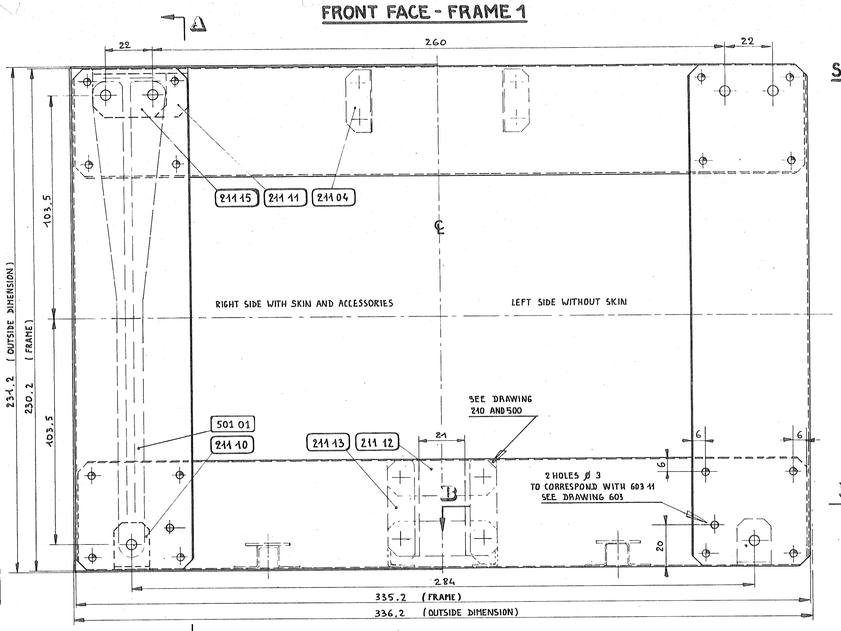
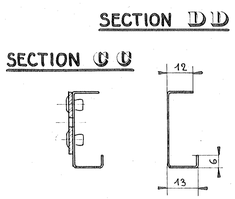
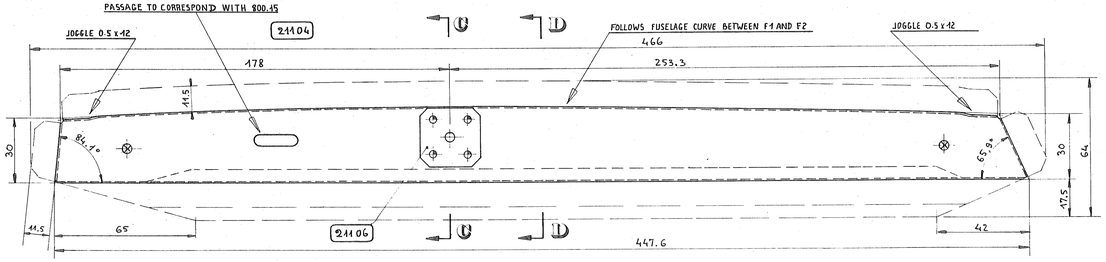
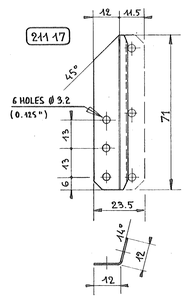
FRONT FACE - FRAME 1

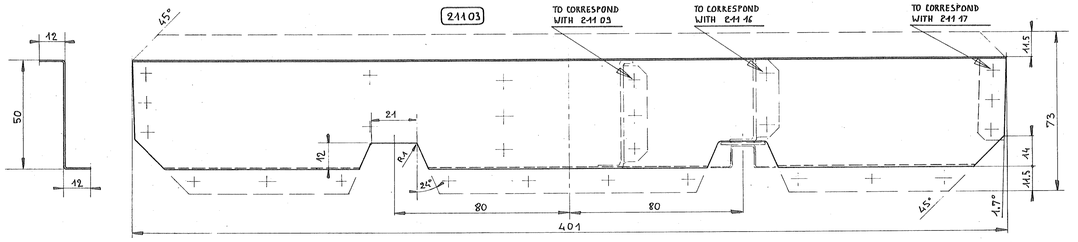


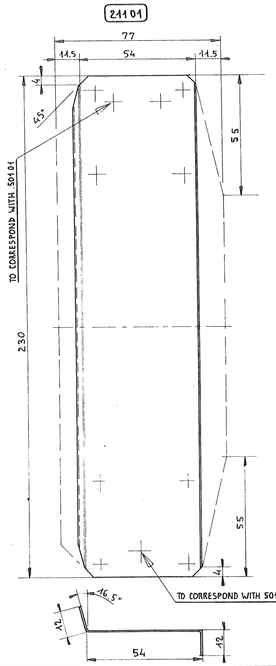


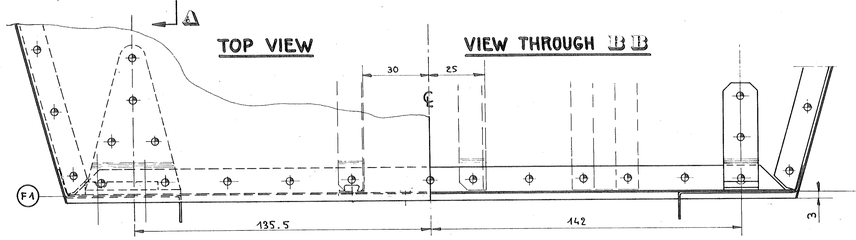


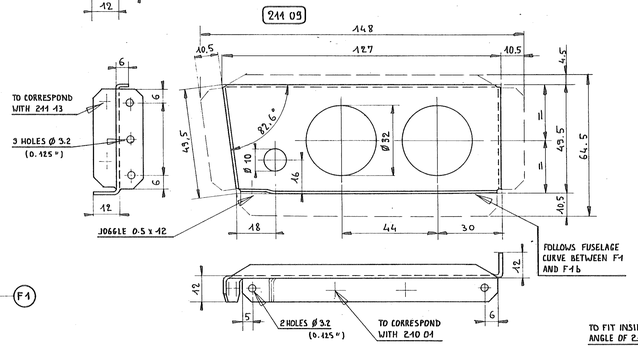


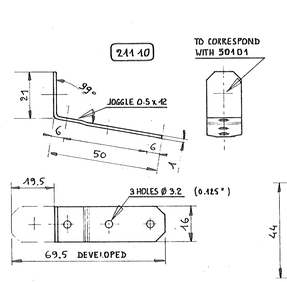


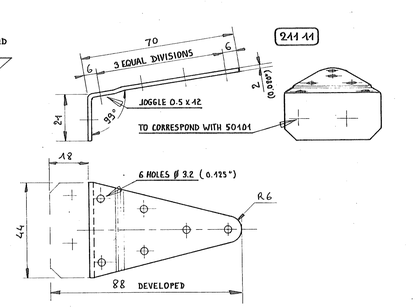


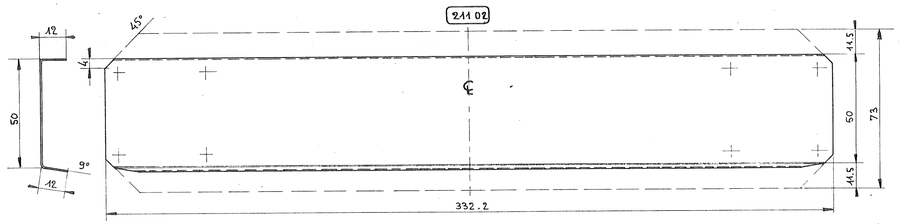


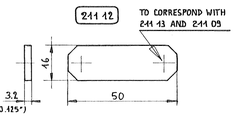


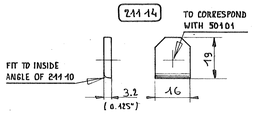


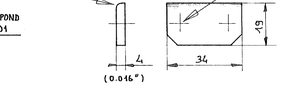


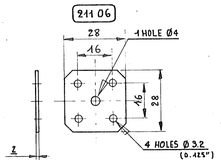


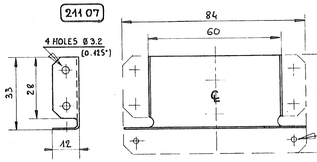


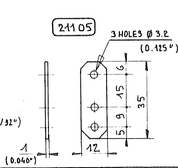


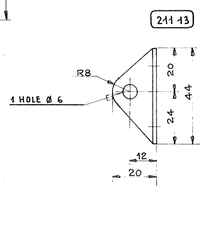


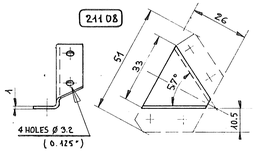


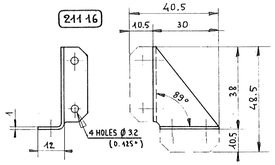












Reference	Qty	Description	Material	Dimensions	Resist.	Comments
211 18	2*					
211 17	2*	VERTICAL F4b	2024	T3 71 x 23.5 x 0.5	63,000	
211 16	2*	GUSSET-RAIL F4b	2024	T3 48.5 x 40.5 x 1	63,000	
211 15	2	SPACER	2024	T3 34 x 19 x 4	63,000	
211 14	2	SPACER	2024	T3 45 x 16 x 3.2	63,000	OR 3
211 13	2*	ENGINE MOUNT BRACKET	2024	T4 44 x 22 x 44.5 x 2	63,000	EXTRUSION
211 12	2	SPACER	2024	T3 50 x 16 x 3.2	63,000	OR 3
211 11	2*	FITTING - UPPER	2024	T3 88 x 44 x 2	63,000	
211 10	2	FITTING - LOWER	2024	T3 69.5 x 16 x 1	63,000	
211 09	2*	TRANSVERSE - F1 - F4b	2024	T3 148 x 64.5 x 1	63,000	
211 08	2*	GUSSET - RAIL - F2	2024	T3 51 x 26 x 1	63,000	
211 07	2	SPACER	2024	T3 84 x 44.5 x 0.5	63,000	
211 06	2	REINFORCEMENT	2024	T3 28 x 28 x 2	63,000	
211 05	1	SPRING ATTACH BRACKET	2024	T3 35 x 12 x 1	63,000	
211 04	2*	TRANSVERSE F1-F2	2024	T3 466 x 64 x 0.5	63,000	
211 03	1	TRANSVERSE F4b	2024	T3 401 x 73 x 0.5	63,000	
211 02	2*	TRANSVERSE F1	2024	T3 332.2 x 73 x 0.5	63,000	
211 01	2*	VERTICAL F1	2024	T3 230 x 77 x 0.5	63,000	

AVIONS COLOMBAN

CRICRI MC 15

TITLE : FRAMES 1 AND 1B

Scale : 1/1

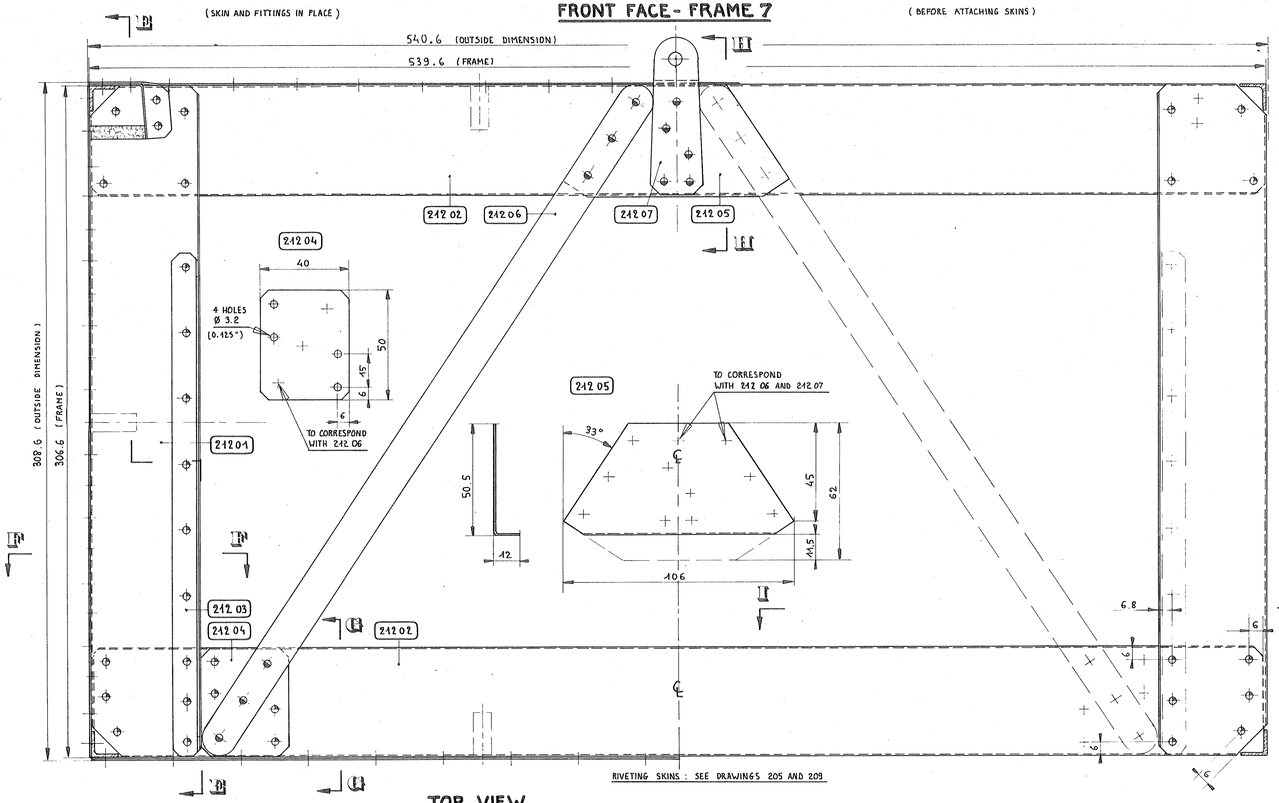
Drawn by : Colomban

Date : May 1981

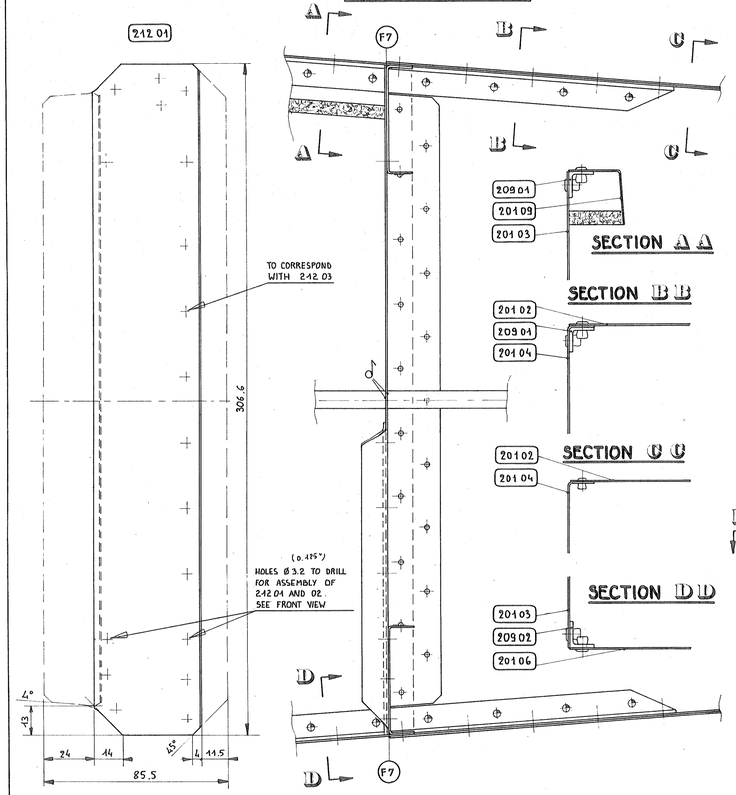
FRONT FACE - FRAME 7

(SKIN AND FITTINGS IN PLACE)

(BEFORE ATTACHING SKINS)



VIEW THROUGH B B



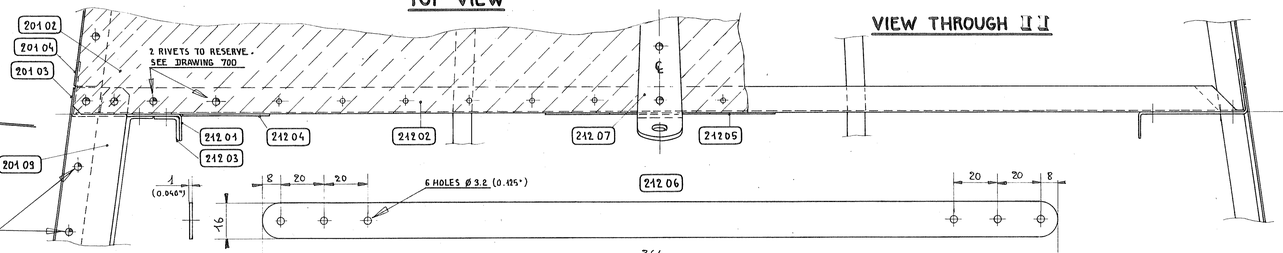
SECTION A A

SECTION B B

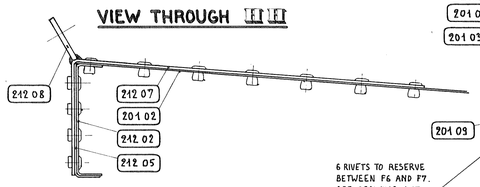
SECTION C C

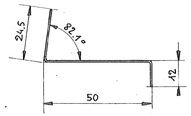
SECTION D D

TOP VIEW



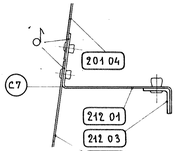
VIEW THROUGH H H





VIEW THROUGH J J

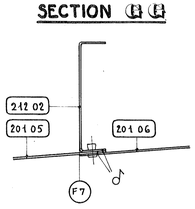
SECTION F F

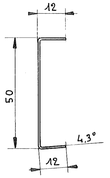


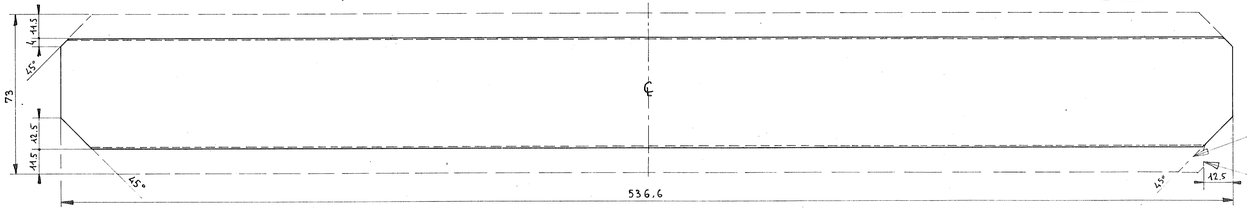
BONDING :

- SKINS TO FRAME 7
- FRONT SKIN TO REAR SKIN
- ENDS OF STIFFENERS TO FRAME 7

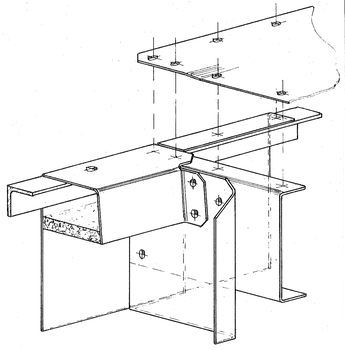
SECTION G G

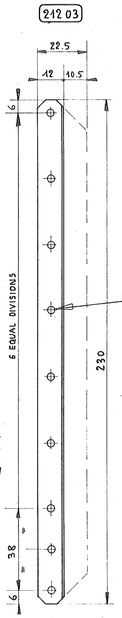


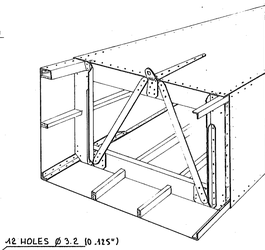


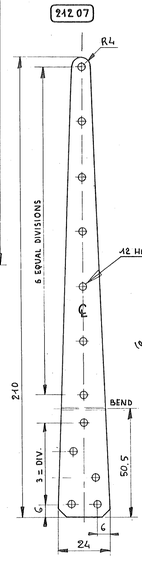


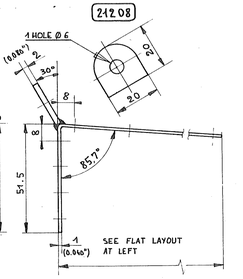
ASSEMBLY DETAILS - BORDER TO FRAME 7











EQUIVALENT THICKNESS : _ 0.5 MM ≅ 0.020" _ 0.8 MM ≅ 0.032" _ 1 MM ≅ 0.040" _ 2 MM ≅ 0.080"

Reference	Qty	Description	Material	Cond	Dimensions	Resist.	Comments
212.08	1	HARNESS MOUNT	15CDV6		20 x 20 x 2	120.000	
212.07	1	HARNESS BRACKET	15CDV6		240 x 24 x 1	120.000	
212.06	1	TIE STRAP	2024		364 x 16 x 1	63.000	
212.05	1	REINFORCEMENT	2024		106 x 62 x 0.5	63.000	
212.04	2	REINFORCEMENT	2024		40 x 50 x 0.5	63.000	
212.03	2*	ANGLE	2024	T3	230 x 22.5 x 0.8	44.000	BENT SHEET
212.02	2	TRANSVERSE MEMBER	2024	T3	536.6 x 73 x 0.5	55.000	
212.01	2*	VERTICAL MEMBER	2024	T3	306.6 x 85.5 x 0.5	65.000	

AVIONS COLOMBAN

CRICRI MC 15

TITLE : FRAME 7

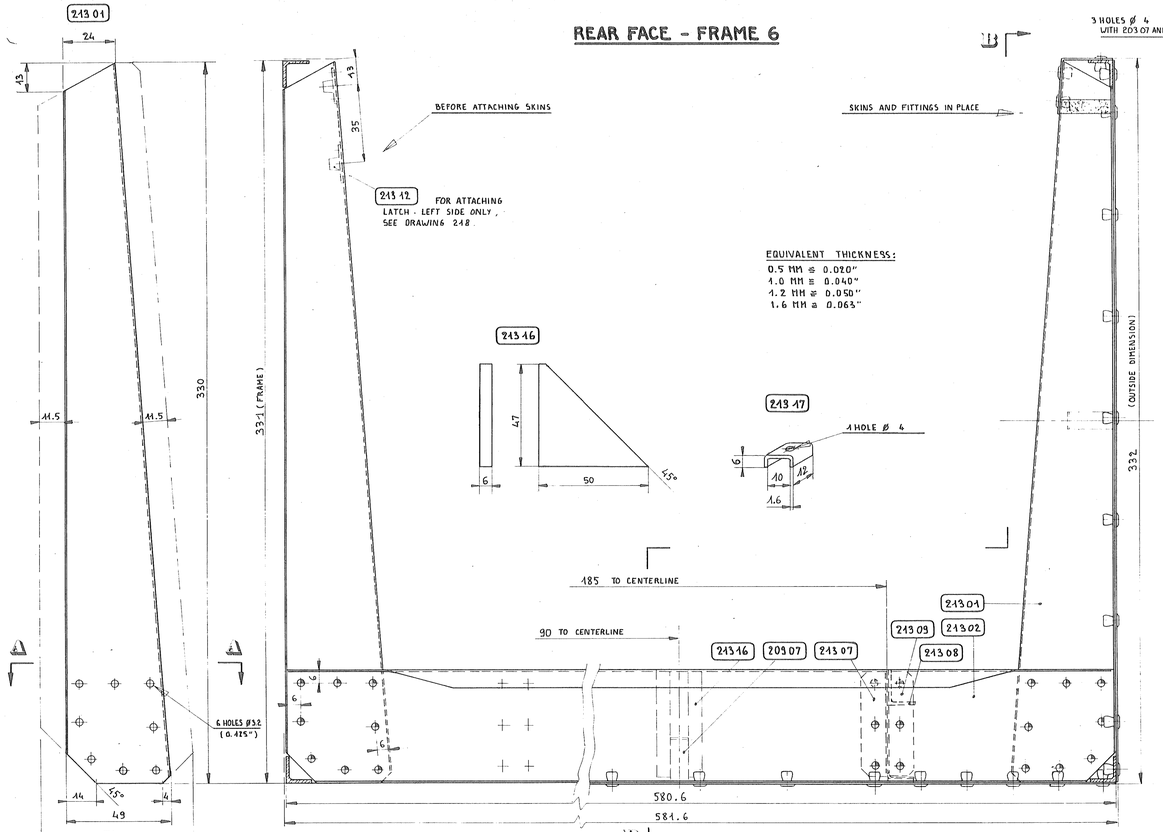
Scale : 1/1

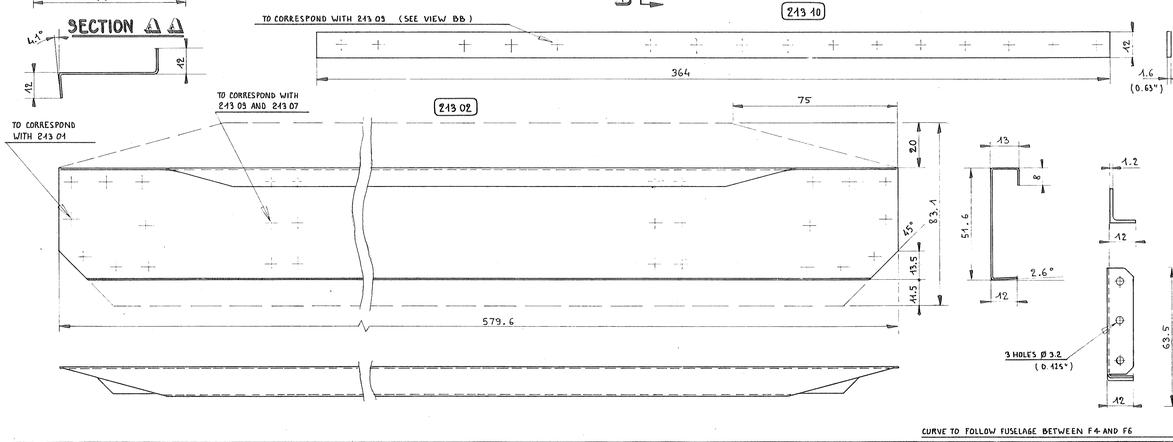
Drawn by : Colomban

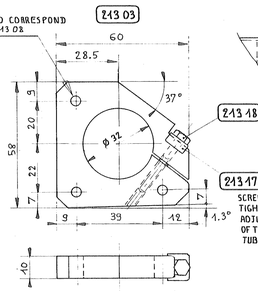
Date : May 1971

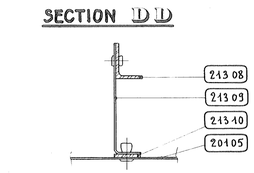
212

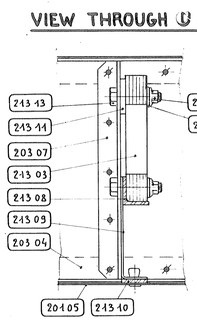
REAR FACE - FRAME 6

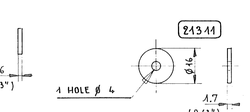


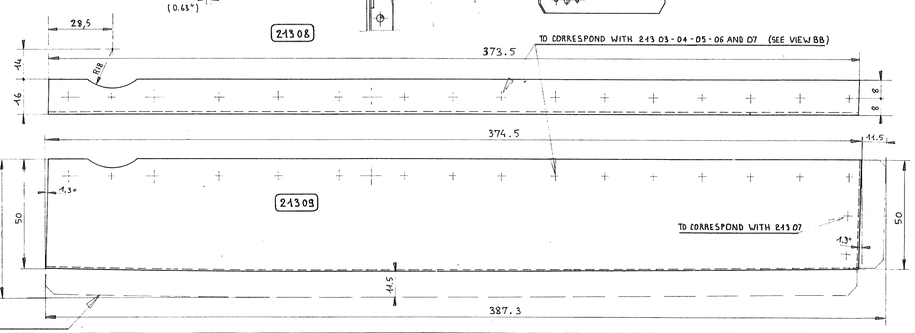




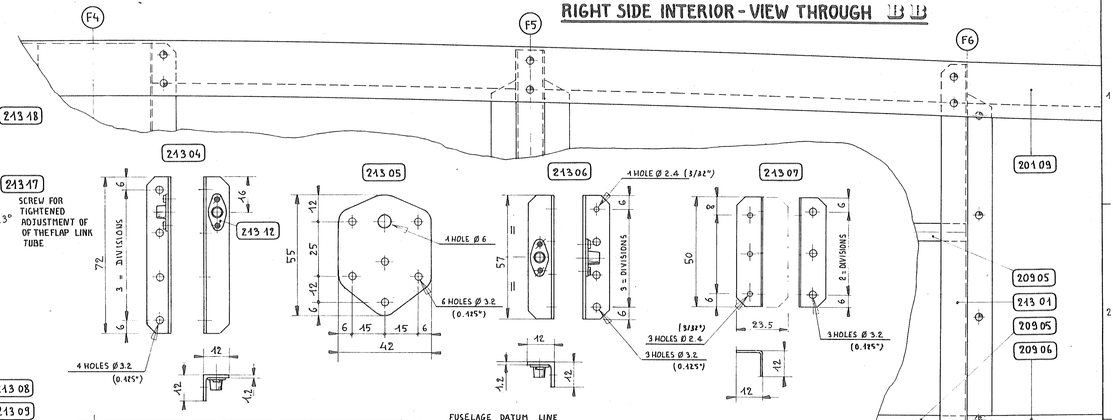




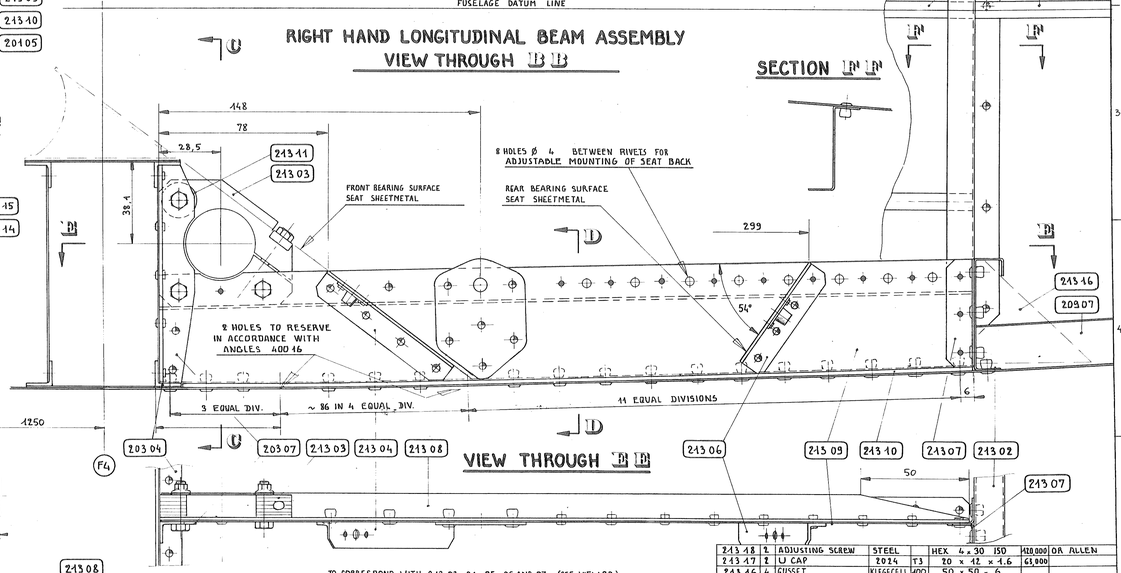




RIGHT SIDE INTERIOR - VIEW THROUGH B B



RIGHT HAND LONGITUDINAL BEAM ASSEMBLY VIEW THROUGH B B



Reference	Qty	Description	Material	Cond	Dimensions	Resist.	Comments
213 18	2	ADJUSTING SCREW	STEEL		HEX 4 x 30 150	420.000	OR ALLEN
213 17	2	U CAP	2024	T3	30 x 42 x 4.6	65.000	
213 16	4	GUSSET	KLEGECELL	400	50 x 50 x 6		
213 15	6	NUT	STEEL		REDUCED Ø4 150	120.000	
213 14	6	WASHER	STEEL		Ø4		
213 13	6	BOLT	STEEL		HEX. Ø4 x 20 150	420.000	OR ALLEN
213 12	4	ANCHOR NUT	STEEL		REDUCED Ø4 150	120.000	
213 11	2	SPACING WASHER	2024	T3	Ø16 x 4.7	65.000	
213 10	2	CAP	2024	T3	364 x 42 x 4.6	65.000	
213 09	2*	LONGITUDINAL WEB	2024	T3	387.3 x 63.5 x 0.5	65.000	
213 08	2*	LONGITUDINAL ANGLE	2024	T4	373.5 x 16 x 42 x 4.2	65.000	EXTRUSION
213 07	2*	GUSSET - REAR	2024	T3	50 x 23.5 x 0.5	65.000	BENT SHEET
213 06	2*	SEAT BRACKET - REAR	2024	T4	57 x 12 x 12 x 4.2	65.000	EXTRUSION
213 05	2	SEAT BELT PLATE	2024	T3	55 x 42 x 1	65.000	
213 04	2*	SEAT BRACKET - FRONT	2024	T4	72 x 12 x 12 x 4.2	65.000	EXTRUSION
213 03	2	BEARING BLOCK TUBE	CELORON		58 x 60 x 10		
213 02	1	TRANSVERSE WEB	2024	T3	575.6 x 83.1 x 0.5	65.000	
213 01	2*	VERTICAL WEB	2024	T3	330 x 71 x 0.5	65.000	

AVIONS COLOMBAN

CRICRI MC 15

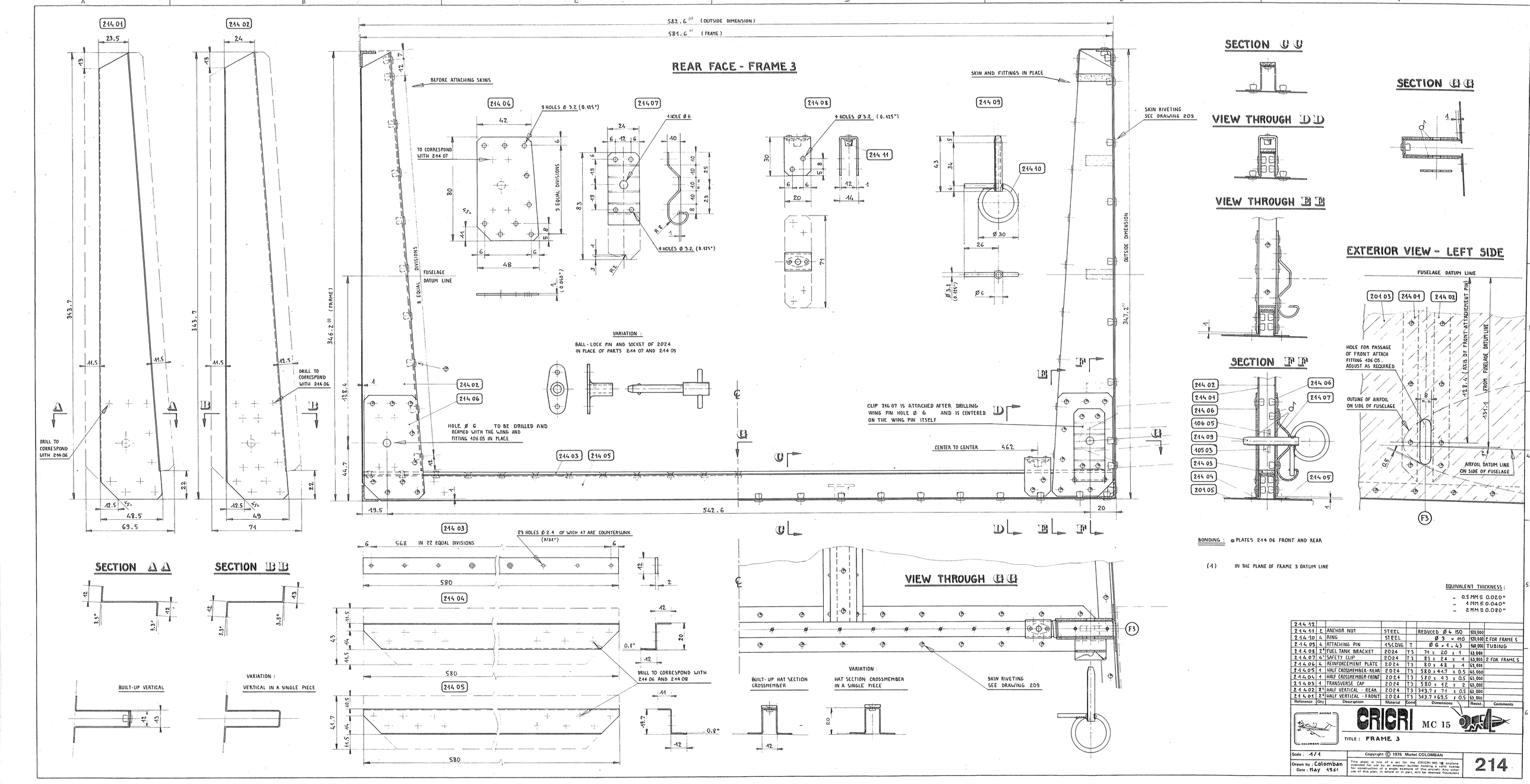
TITLE : FRAME 6 - LONGITUDINAL BEAM F4-F6

Scale : 1/1

Drawn by : Colomban

Date : May 1981

213



BONDING : ⊕ PLATES 214 06 FRONT AND REAR

(1) IN THE PLANE OF FRAME 3 DATUM LINE

EQUIVALENT THICKNESS :

- 0.5 MM ≅ 0.020"
- 1 MM ≅ 0.040"
- 2 MM ≅ 0.080"

Reference	Qty	Description	Material	Cond	Dimensions	Resist.	Comments
214.12							
214.11	2	ANCHOR NUT	STEEL		REDUCED Ø 4 150	120.000	
214.10	4	RING	STEEL		Ø 3 × 410	120.000	2 FOR FRAME 5
214.09	4	ATTACHING PIN	15CDV6	T	Ø 6 x 1.43	160.006	TUBING
214.08	2*	FUEL TANK BRACKET	2024	T3	74 x 20 x 1	63.000	
214.07	4*	SAFETY CLIP	2024	T3	83 x 24 x 1	63.800	2 FOR FRAME 5
214.06	4	REINFORCEMENT PLATE	2024	T3	80 x 48 x 1	63.000	
214.05	1	HALF CROSSMEMBER-REAR	2024	T3	580 x 44.7 x 0.5	63.000	
214.04	1	HALF CROSSMEMBER-FRONT	2024	T3	580 x 43 x 0.5	63.000	
214.03	1	TRANSVERSE CAP	2024	T3	580 x 48 x 2	63.000	
214.02	2*	HALF VERTICAL - REAR	2024	T3	343.7 x 74 x 0.5	63.000	
214.01	2*	HALF VERTICAL - FRONT	2024	T3	343.7 x 69.5 x 0.5	63.000	

AVIONS COLOMBAN

CRICRI MC 15

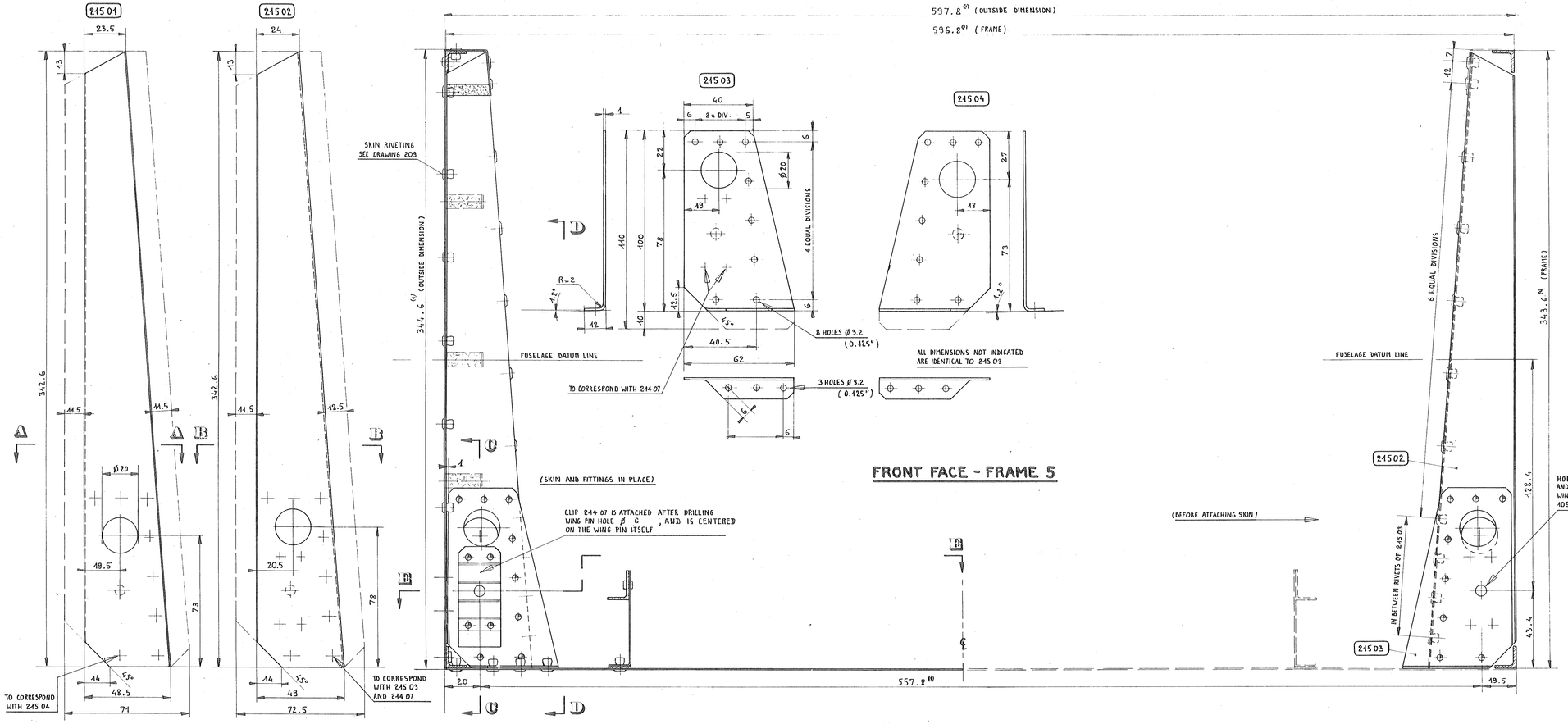
TITLE : FRAME 3

Scale : 1/1

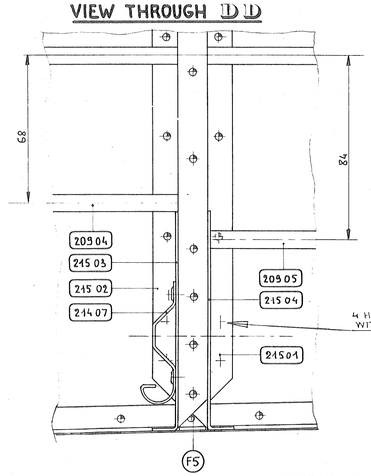
Drawn by : Colomban
Date : May 1981

214

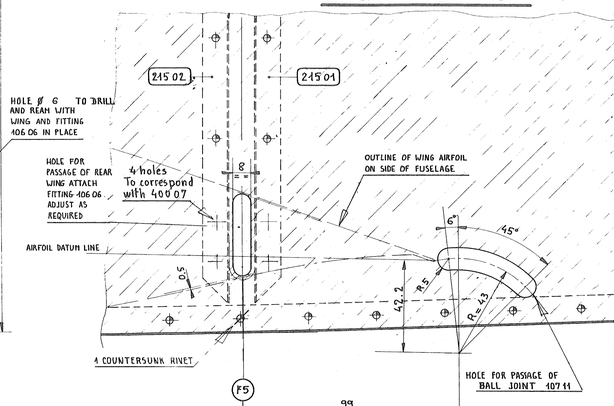
FRONT FACE - FRAME 5



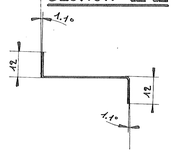
VIEW THROUGH D D



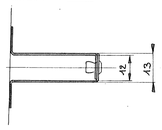
EXTERIOR VIEW - LEFT



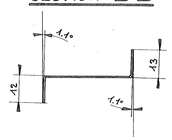
SECTION A A



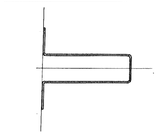
BUILT-UP VERTICAL



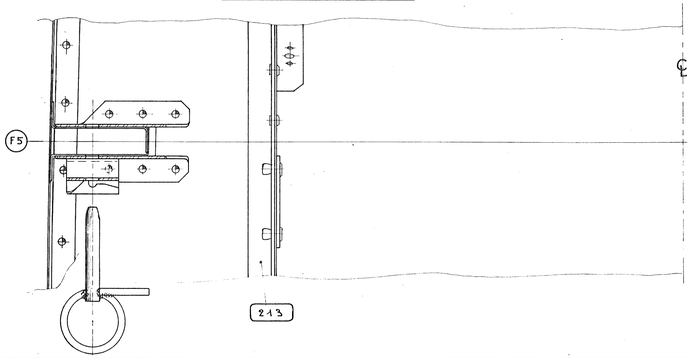
SECTION B B



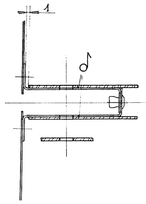
VARIATION : VERTICAL IN A SINGLE PIECE



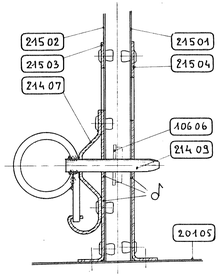
VIEW THROUGH E E



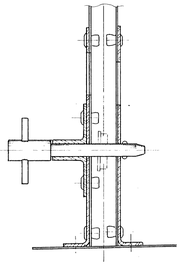
SECTION E E



SECTION C C



VARIATION : BALL-LOCK PIN AND SOCKET



BONDING : ● PLATES 215 03 AND 215 04 , AT LEAST IN LINE WITH HOLES TO BE DRILLED LATER FOR CLIP 214 07 AND PIN Ø G

EQUIVALENT THICKNESS :
- 0.5 MM ≅ 0.020"
- 1 MM ≅ 0.040"
- 2 MM ≅ 0.080"

Reference	Qty	Description	Material	Cond	Dimensions			Resist.	Comments
215 07									
215 06	2								
215 05	2*								
215 04	2*	REINFORCEMENT PLATE-REAR	2024	T3	110 x	62 x	1	63,000	
215 03	2*	REINFORCEMENT PLATE-FRONT	2024	T3	110 x	62 x	1	63,000	
215 02	2*	HALF VERTICAL - FRONT	2024	T3	342.6 x	72.5 x	0.5	63,000	
215 01	2*	HALF VERTICAL - REAR	2024	T3	342.6 x	71 x	0.5	63,000	

AVIONS COLOMBAN — CRICRI MC 15

TITLE : FRAME 5

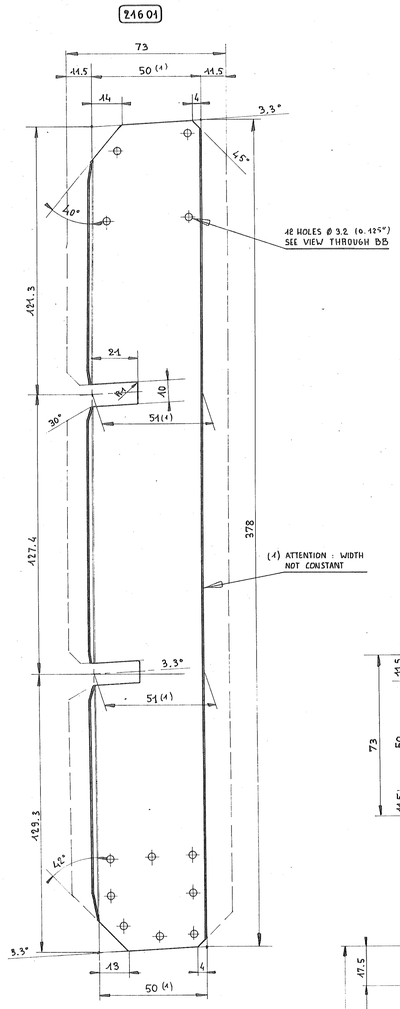
Scale : 1/1

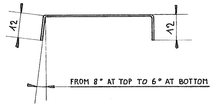
Drawn by : Colomban

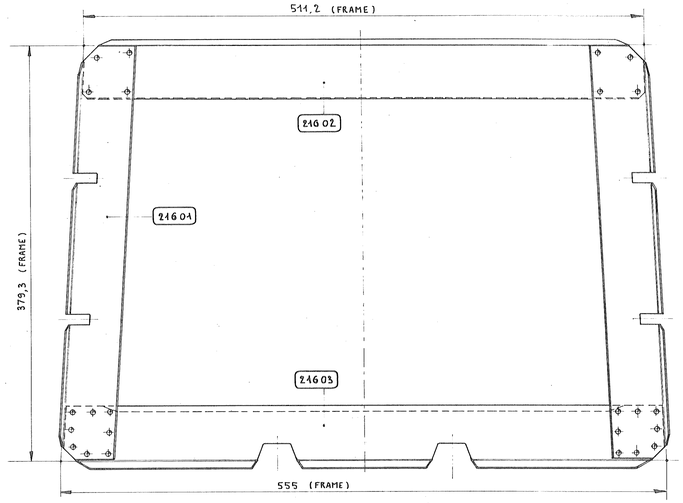
Date : Sept. 1984

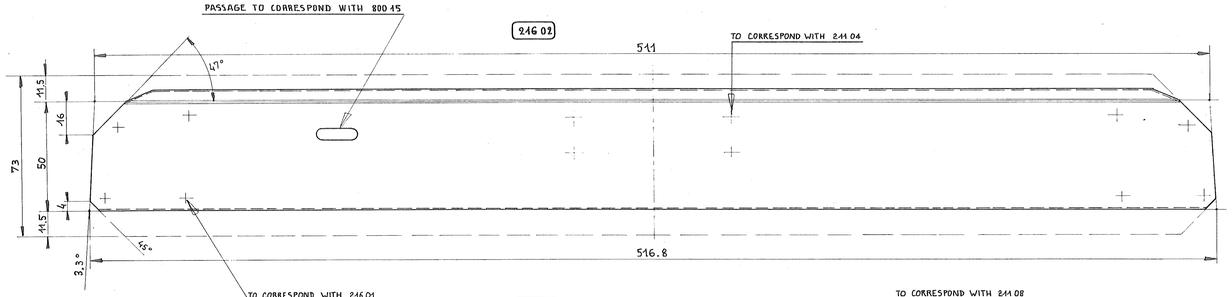
REAR FACE - FRAME 2

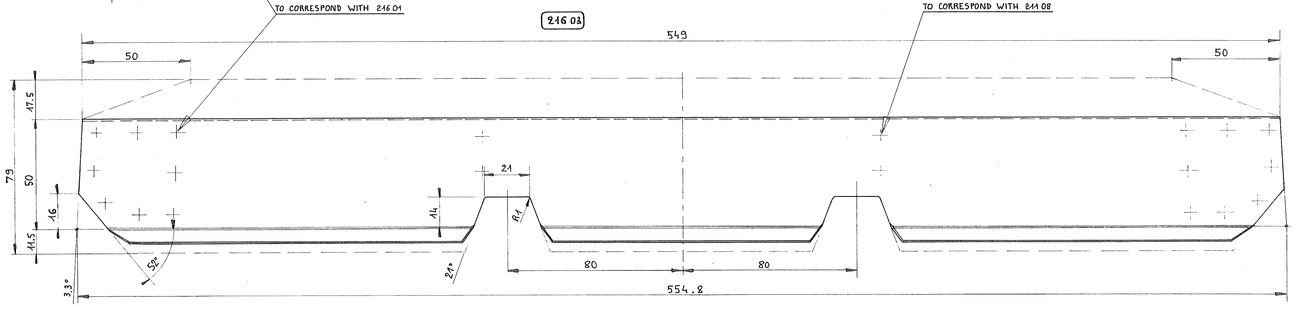
(HALF - SIZE)

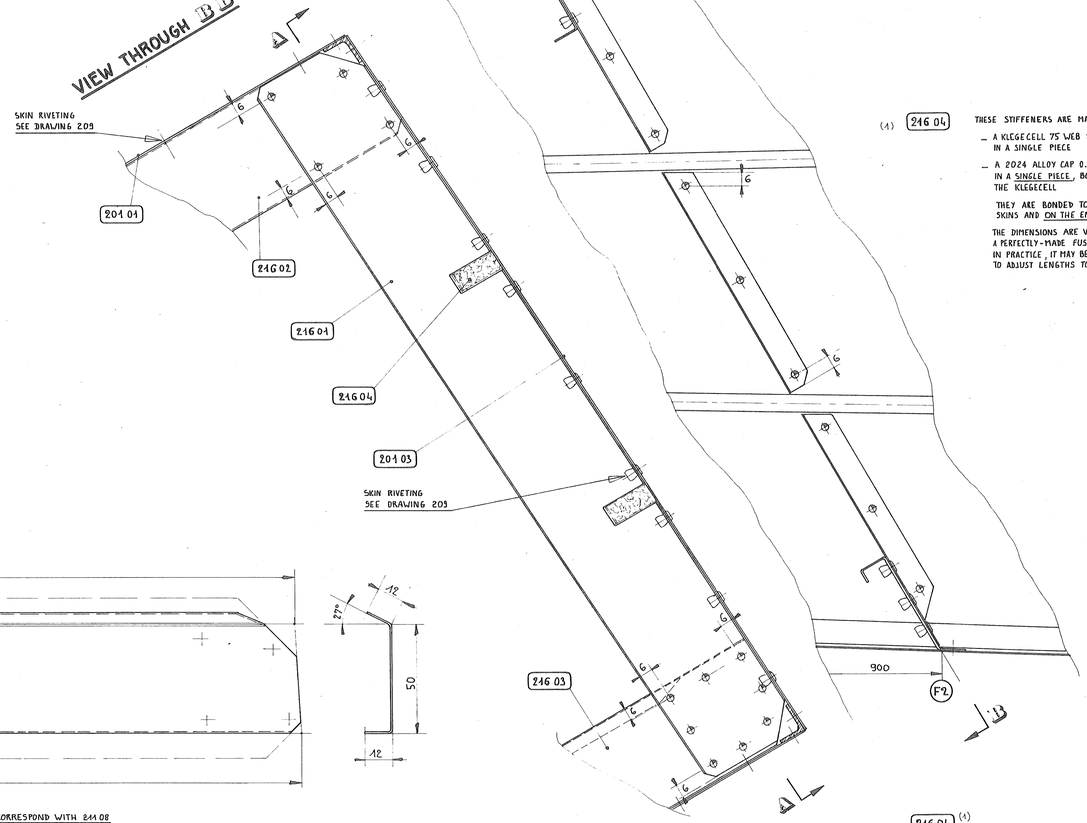


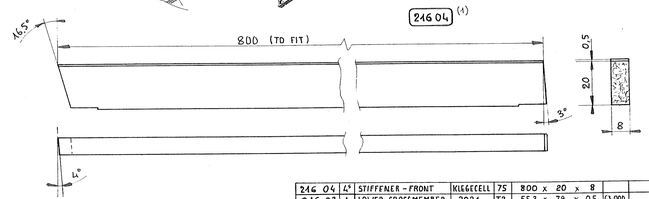












(1) 216 04 THESE STIFFENERS ARE MADE UP OF :

- A KLEGECELL 75 WEB 20 x 8 IN A SINGLE PIECE
- A 2024 ALLOY CAP 0.5 MM THICK IN A SINGLE PIECE, BONDED TO THE KLEGECELL

THEY ARE BONDED TO THE SKINS AND ON THE ENDS.

THE DIMENSIONS ARE VALID FOR A PERFECTLY-MADE FUSELAGE. IN PRACTICE, IT MAY BE NECESSARY TO ADJUST LENGTHS TO FIT.

EQUIVALENT THICKNESS :

- 0.5 MM ≅ 0.020"

Reference	Qty	Description	Material	Cond	Dimensions	Resist.	Comments
216 04	4*	STIFFENER - FRONT	KLEGECELL	75	800 x 20 x 8		
216 03	1	LOWER CROSSMEMBER	2024	T3	553 x 73 x 0.5	63,000	
216 02	1	UPPER CROSSMEMBER	2024	T3	547 x 73 x 0.5	63,000	
216 01	2*	VERTICAL MEMBER	2024	T3	380 x 74 x 0.5	65,000	

AVIONS COLOMBAN — CRICRI MC 15

TITLE : FRAME 2 - FORWARD STIFFENERS

Scale : 1/1 1/2

Drawn by : Colomban
Date : May 1981

SECTION A A

SECTION B B

SECTION C C

SECTION D D

SECTION E E

SECTION F F

(1/32")

RIVETING : POP RIVETS Ø 2.4 PITCH ≅ 30 + BONDING

CANOPY COWL 201 11
RIVETING POP Ø 2.4
PITCH ≅ 30 + BONDING

ROUND OFF CORNER

CLEARANCE 3 MM

SHARP ANGLE

LIMIT OF TRIM PIECE

JOGGLE 0.5 X 12

TO CORRESPOND WITH 217 07

TO FIT

DETAIL OF TOP VIEW

REAR BORDER

x	β°
0	102
200	106
400	109
600	111
800	113
1000	114
1090	114

CO-ORDINATES FRONT CANOPY BOW

Xfo	Yfo	ℓfo	α fo°
0	0	30	99
5	37.5	30	
10	53.3	30	
20	73.0	30	
50	112.0	30	
100	154.4	29	100
150	186.4	28	
200	213.6	27	101
250	237.0	25	
300	257.4	23	102
350	275.4	20	
390.1	288.7	16	103

CO-ORDINATES REAR CANOPY BOW

Xaf	Yaf	ℓaf	α af°
0	0	40	79.5
5	33.5	40	
10	47.3	40	
20	65.0	39	
50	98.6	38	80.1
100	136.1	36	80.6
150	164.6	34	
200	188.5	31.5	81.7
250	209.6	29.0	
300	228.3	26.5	82.7
350	245.0	23.5	
400	260.0	20.5	83.7
450	273.0	17.5	
472.1	278.6	16.0	84.5

TOP VIEW

FRONT CANOPY BOW JOINT
FRONT VIEW

4 HOLES TO RESERVE
SEE DRAWING 700 07

8 HOLES Ø 3.2 (0.125")

REAR CANOPY BOW JOINT
REAR VIEW

RIGHT SIDE - VIEW THROUGH CENTERLINE

CANOPY AFT FAIRING 201 10
AND MOUNTING BAND 217 16
RIVETING : POP
RIVETS Ø 2.4 (3/32")
PITCH ≅ 30 + BONDING

BONDING :
- ENTIRE PERIMETER OF CANOPY COWL 201 11 AND AFT FAIRING 201 10 (SEALING)
- REAR BORDER 217 07 (SEALING)
- JOINT 217 15 AND TRIM PIECE 217 03

EQUIVALENT THICKNESS :
- 0.5 MM ≅ 0.020"
- 0.8 MM ≅ 0.032"
- 1.2 MM ≅ 0.050"

								(1) or 12.12.1
217 16	2*	MOUNTING BAND	2024	T3	1090 x 12 x 0.5	65 000		
217 15		CANOPY SEAL	FLEXIBLE FOAM - 40 FT					GLUED
217 14	2*	STIFFENER	KLEGECELL	400	202 x 25.5 x 6			
217 13	2*	STIFFENER	KLEGECELL	400	195 x 25.5 x 6			
217 12	2*	STIFFENER	KLEGECELL	400	168 x 25.5 x 6			
217 11	2*	STIFFENER	KLEGECELL	400	144 x 25.5 x 6			
217 10	2*	STIFFENER	KLEGECELL	400	350 x 25.5 x 6			
217 09		TRIM	KLEGECELL	75	TO FIT			
217 03	16	CLIPS	2024	T4	28 x 12 x 12 x 1.2	65 000		or EXTRUSION(1)
217 07	2*	BORDER - REAR	2024	T3	1090 x 34 x 0.5	65 000		
217 06	2*	GUSSET - REAR	2024	T3	80 x 62 x 0.8	65 000		I.D. DW.
217 05	2*	GUSSET - FRONT	2024	T3	70 x 62 x 0.8	65 000		I.D. DW.
217 04	4	SPLICE PLATE - REAR	2024	T3	80 x 64 x 0.5	65 000		
217 03	4	SPLICE PLATE - FRONT	2024	T3	80 x 47 x 0.5	65 000		
217 02	2*	HALF - BOW - REAR	2024	T3	555 x 103 x 0.5	65 000		or 5051 t=0.8
217 01	2*	HALF - BOW - FRONT	2024	T3	494 x 100 x 0.5	65 000		or 5051 t=0.8
Reference	Qty	Description	Material	Cond	Dimensions		Resist.	Comments

CRICRI MC 15

TITLE : CANOPY FRAMMING

Scale : 1/1

Drawn by : Colomban
Date : May 1984

BONDING : ● PLEXIGLAS TO BOW OVER THE ENTIRE PERIMETER. BEFOREHAND, ROUGH THE PLEXIGLAS WITH FINE EMERY CLOTH.

NOTE : IF BONDED WITH PRC GLUE, REF. PR 1422 B SCREW 21819 ARE NOT REQUIRED

VIEW THROUGH A A

VIEW THROUGH B B

Ø 6 (TO REAM Ø4 INSIDE)

218 11 218 03

4 HOLES Ø 3.2 (0.125")

ANGLE TO ADJUST WHEN MOUNTING TO INSURE ALIGNMENT OF HINGE PINS

218 10

218 01 218 01 218 01

218 02 218 03

CONTOUR - SEE DRWG 200

CANOPY BUBBLE SIDE VIEW

218 02 218 03 218 04

ADJUST TO FIT CURVES OF CANOPY BOWS 24701 AND 24702

CANOPY BUBBLE TOP VIEW

SECTION D D

218 19 218 20

Yc (SEE DRWG 200)

SECTION F F

217 15

REDUCE AND ROUND OFF THE SCREW HEAD. TIGHTEN THE NUT MODERATELY, JUST ENOUGH TO PULL THE PLEXIGLAS INTO CONTACT WITH THE TUBE. SEE BONDING NOTE.

218 19 218 20

IF h IS HIGHER THAN 930 MM YOUR HEAD WILL TOUCH THE CANOPY. IN THIS CASE SEE MANUAL § 6.2 II.

930 h

INTERIOR VIEW - LEFT

218 06 218 19 218 20 218 04 218 05

HOLES Ø 5 TO CLEAR NUT 218 20

F4

CL. = 3MM

217 15

CLEARANCE = 3MM

F6

INTERIOR VIEW - RIGHT

218 07 218 09 217 15 218 04 218 09 218 08

SEE NOTE FOR REAR HINGE FITTING

CUT OUT A BIT OVERSIZE. AND FINISH TRIM AFTER BENDING. SAME FOR FRONT HINGE FITTING.

TOP VIEW

218 18 218 17

218 07 218 10

218 03

218 04

218 10 218 08

218 03

ROUND THE HEAD

Yc (SEE DRWG 200)

EQUIVALENT THICKNESS :

- 1 MM = 0.040"
- 1.6 MM = 0.063"
- 2 MM = 0.080"
- 3.2 MM = 0.125"

VIEW TH. C C

VIEW TH. D D

VIEW TH. E E

VIEW THROUGH B B

Yc (SEE DRWG 200)

217 15

FILL LOCALLY WITH BONDED KLEGECELL 400 t = 12 MM = 0.5"

218 21

218 14

218 15

218 16

(0.125") 2 HOLES Ø 3.2 VERY SLIGHTLY COUNTERSUNK ON THE OUTSIDE FACES

HOLE Ø 8 TO CLEAR HEAD OF BOLT 218 21

218 13

2 HOLES Ø 3.2 (0.125")

TONGUE PRESSING ON CANOPY FRAME ADJUST TO FIT WHEN ASSEMBLING

218 12

2 SLOTTED HOLES 4 WIDE FOR LATCH ADJUSTMENT

ASSEMBLED LATCH

END OF PIN SLIGHTLY PEENED

Reference	Qty	Description	Material	Cond	Dimensions	Resist.	Comments
218 24	4	BOLT	STEEL		HEX HD. Ø 4.42 ISO	426.040	
218 20	34	NUT	STEEL		Ø 2	60.000	
218 19	34	SCREW	STEEL		ROUND HD. Ø 2.46	60.000	
218 18	2	NUT	STEEL		REDUCED Ø 6 ISO	120.000	
218 17	2	MACHINE SCREW	STEEL		R. HD. Ø 4.445 ISO	178.848	
218 16	2	PIN	STEEL		Ø 3 x 24	120.000	
218 15	2	PIN	STEEL		Ø 3 x 17.2	120.000	
218 14	2	LATCH	2024	T3	60 x 46 x 1.6	65.000	BENT SHEET
218 13	2*	LATCH	2024	T3	64 x 33 x 1.6	63.000	BENT SHEET
218 12	2	LATCH	2024	T3	35 x 35 x 1.6	65.000	BENT SHEET
218 11	4	HINGE	15CDV6	T	Ø6 x 1 x 16	160.000	TO REAM
218 10	2	HINGE	15CDV6		26 x 14 x 1	120.000	
218 09	2	HINGE	15CDV6		42 x 12 x 1	120.000	
218 08	1	HINGE FITTING	15CDV6		102 x 55 x 2	120.000	
218 07	1	HINGE FITTING	15CDV6		115 x 33 x 2	120.000	
218 06	1	LATCH PLATE GUSSET	2024	T3	110 x 50 x 1.6	63.000	
218 05	1	LATCH PLATE GUSSET	2024	T3	155 x 38 x 1.6	63.000	
218 04	2*	SIDE FRAME	6061	T6	Ø 12 x 1 x x 425	65.010	TUBING
218 03	1	REAR BOW	6061	T6	Ø 12 x 1 x x 1200	65.000	TUBING
218 02	1	FRONT BOW	6061	T6	Ø 12 x 1 x x 1050	65.010	TUBING
218 01	1	BUBBLE	PLEXIGLAS		1200 x 1200 x 2		

AVIONS COLOMBAN

CRICRI MC 15

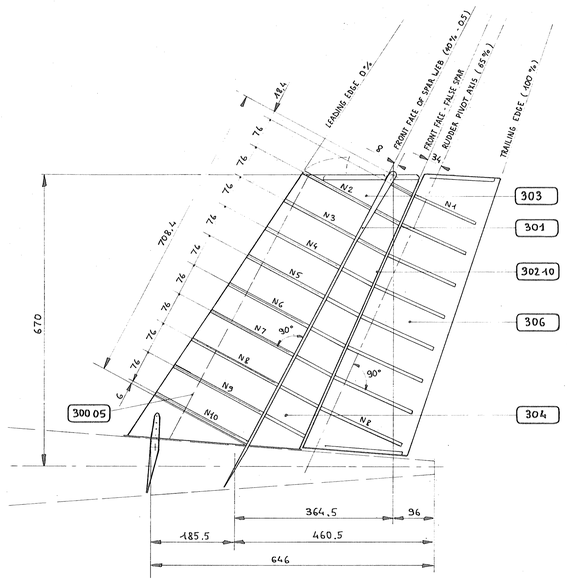
TITLE : CANOPY

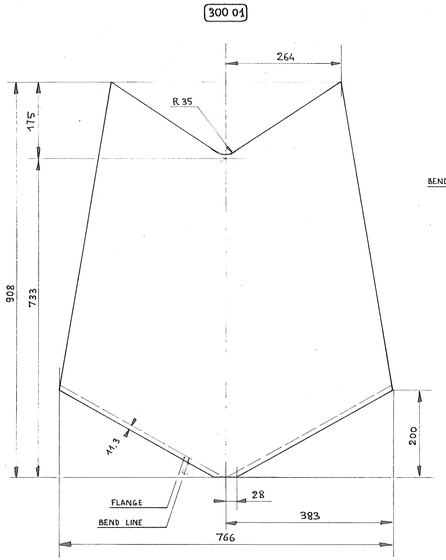
Scale : 1/1

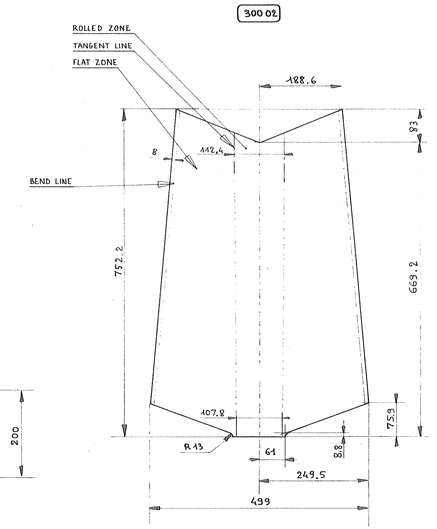
Drawn by : Colomban

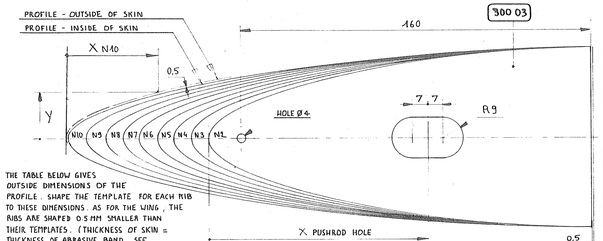
Date : May 1981

218









THE TABLE BELOW GIVES OUTSIDE DIMENSIONS OF THE PROFILE. SHAPE THE TEMPLATE FOR EACH RIB TO THESE DIMENSIONS. AS FOR THE WING, THE RIBS ARE SHAPED 0.5 MM SMALLER THAN THEIR TEMPLATES. (THICKNESS OF SKIN = THICKNESS OF ABRASIVE BAND. SEE MANUAL, CHAPTER 18 I).
X_{N10} SIGNIFIES: LENGTH CORRESPONDING TO RIB 10, X_{N9} .... RIB 9 .... ETC.
Y IS THE WIDTH DIMENSION COMMON TO ALL THE RIBS.

AIRFOIL CO-ORDINATES

	X_{N1}	X_{N2}	X_{N3}	X_{N4}	X_{N5}	X_{N6}	X_{N7}	X_{N8}	X_{N9}	X_{N10}	Y
	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	5.36
	3.15	3.3	3.45	3.6	3.75	3.9	4.05	4.2	4.35	4.5	6.57
	5.25	5.5	5.75	6.0	6.25	6.5	6.75	7.0	7.25	7.5	8.48
	10.5	11	11.5	12	12.5	13	13.5	14	14.5	15	12.04
	21	22	23	24	25	26	27	28	29	30	17.00
	31.5	33	34.5	36	37.5	39	40.5	42	43.5	45	20.86
	42	44	46	48	50	52	54	56	58	60	24.12
	63	66	69	72	75	78	81	84	87	90	29.68
	84	88	92	96	100	104	108	112	116	120	33.66
	105	110	115	120	125	130	135	140	145	150	36.84
	126	132	138	144	150	156	162	168	174	180	39.13
	147	154	161	168	175	182	189	196	203	210	40.53
WEB - FRONT FACE	169.5	175.5	183.5	191.5	199.5	207.5	215.5	223.5	231.5	239.5	40.99
WEB - REAR FACE	168	176	184	192	200	208	216	224	232	240	40.99
	189	198	207	216	225	234	243	252	261	270	40.57
	210	220	230	240	250	260	270	280	290	300	39.34
ADDITIONAL DIMENSIONS TO AID IN LAYOUT	231	242	253	264	275	286	297	308	319	330	37.34
	252	264	276	288	300	312	324	336	348	360	34.73
	273	286	299	312	325	338	351	364	377	390	31.48
FALSE SPAR - FRONT FACE	239	252	265	278	291	304	317	330	343	356	
X PUSHROD HOLE	100.5	104	104.5	102	102.5	103	103.5	104	104.5	105	
LEADING EDGE RADIUS	7.70	7.35	7.03	6.73	6.46	6.22	5.99	5.77	5.57	5.39	

EQUIVALENT THICKNESS:
- 0.4 MM ≡ 0.016"
- 0.5 MM ≡ 0.020"
- 6 MM ≡ 0.240"

Reference	Qty	Description	Material	Cond	Dimensions	Resist.	Comments
300 05	1	ALIGNING PIECE	BALSA		200 x 3 x 3		
300 06	9	FIN RIB - AFT	KLEGECELL	100	THICKNESS 6 MM		OR KL. 75
300 03	9	FIN RIB - FOREWARD	KLEGECELL	100	THICKNESS 6 MM		OR KL. 75
300 02	1	SKIN - RUBBER	2024	T3	753 x 493 x 0.4	45,000	t = 0.4 MM
300 01	1	SKIN - VERTICAL FIN	2024	T3	508 x 766 x 0.5	45,000	t = 0.5 MM

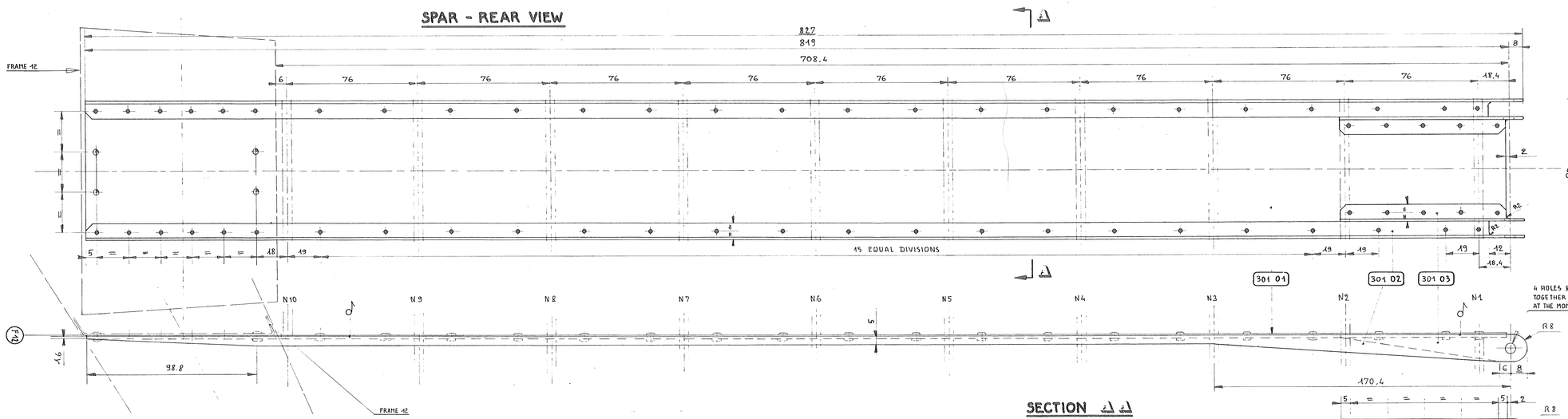
AVIONS COLOMBAN — CRICRI MC 15

TITLE : FIN - GENERAL

Scale : 1/5 1/1
Drawn by : Colomban
Date : May 1981

300

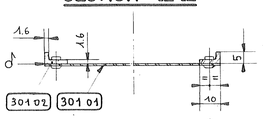
SPAR - REAR VIEW

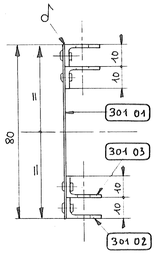


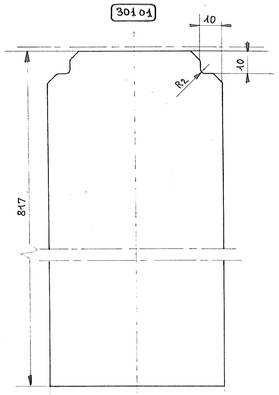
DRILLING AND RIVETING TO RESERVE FOR FINAL ASSEMBLY WITH FRAME 12. PROVISIONALLY DRILL Ø 2

BONDING : ● CAPS TO THE WEB

SECTION







4 HOLES Ø 6 . PIN THE 4 CAPS TOGETHER, PERFECTLY SQUARED UP, AT THE MOMENT OF ASSEMBLING THEM TO THE WEB.

EQUIVALENT THICKNESS: - 0.5MM ≡ 0.020" - 1.6MM ≡ 0.063"

Reference	Qty	Description	Material	Cond	Dimensions	Resist.	Comments
301 03	2*	DOUBLER - CAP	2024	T4	105 x 46 x 10 x 1.6	45,000	EXTRUSION
304 02	2*	CAP	2024	T4	329 x 16 x 10 x 1.6	45,000	EXTRUSION
301 01	1	WEB	2024	T3	817 x 80 x 0.5	45,000	

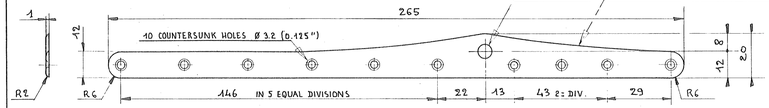
AVIONS COLOMBAN — CRICRI MC 15

TITLE : FIN SPAR

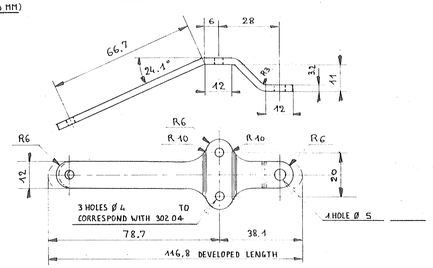
Scale : 1/1
Drawn by : Colomban
Date : May 1981

301

302.01



302.02



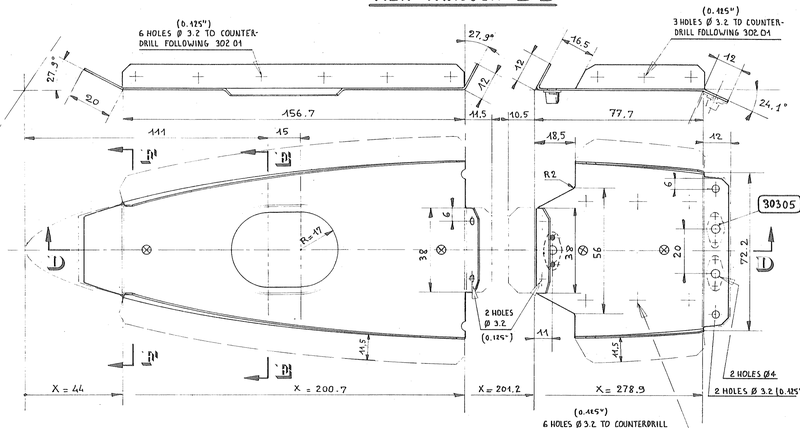
PROFIL CO-ORDINATES			
302.03		302.04	
X	Y	X	Y
39,7	20,36	11,2	
52,5	23,62	40,0	
78,1	28,98	8,0	
103,4	33,16	6,2	
128,3	36,34	5,0	
152,9	38,63	3,6	
177,3	40,03	2,0	
201,3	40,43	1,0	
224,7	40,07	- 0,3	
248,1	38,81	- 1,6	
271,4	36,84	- 2,8	
295,3	34,23	- 4,0	
316,4	30,98	- 5,0	

TO HELP IN LAYOUT

302.03

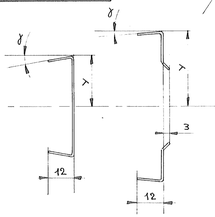
VIEW THROUGH D D

302.04

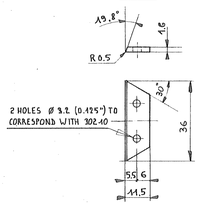


SECTION B B

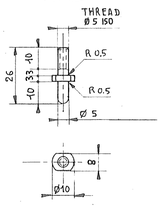
SECTION F F



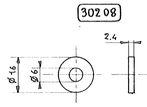
302.05



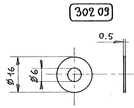
302.07



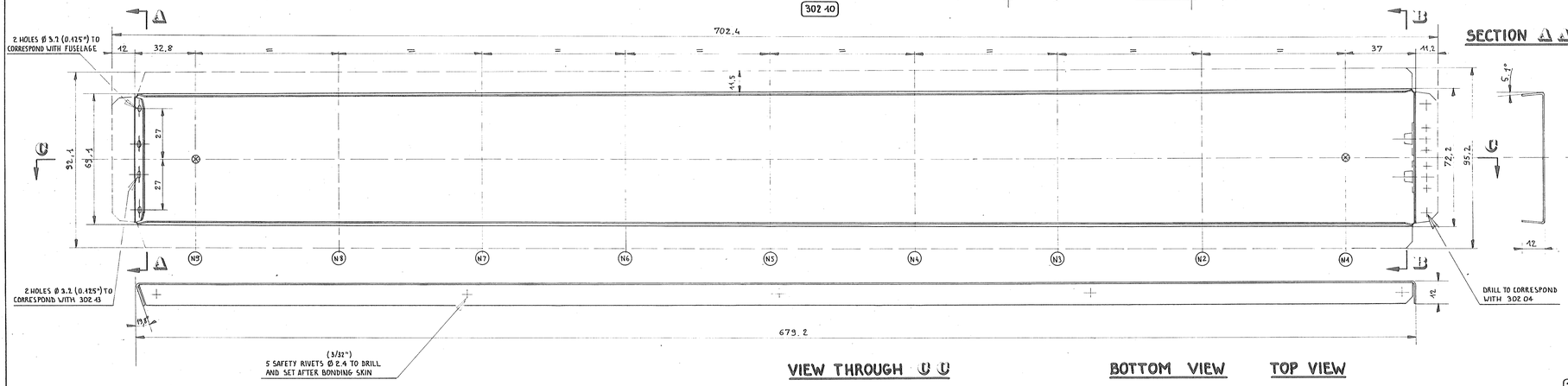
302.08



302.09



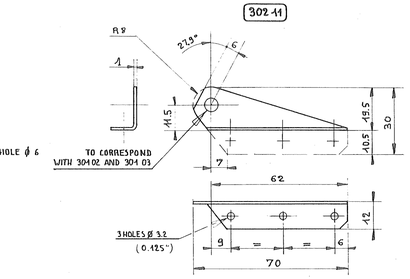
302.10



SECTION A A

SECTION B B

302.11

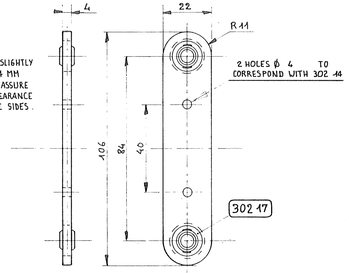


VIEW THROUGH C C

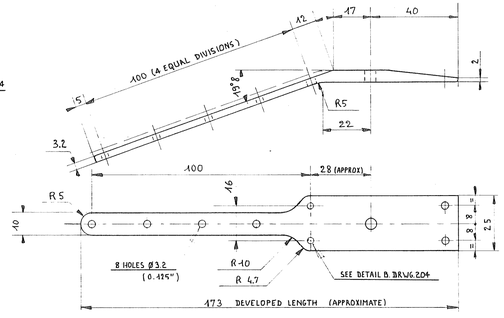
BOTTOM VIEW

TOP VIEW

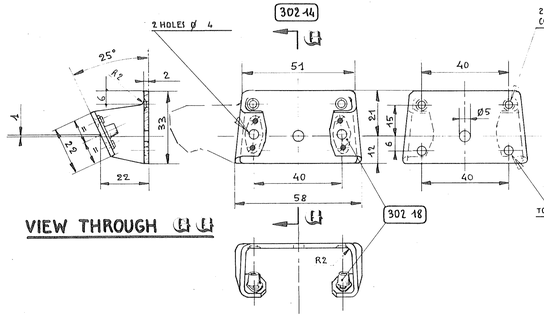
302.12



302.13



302.44



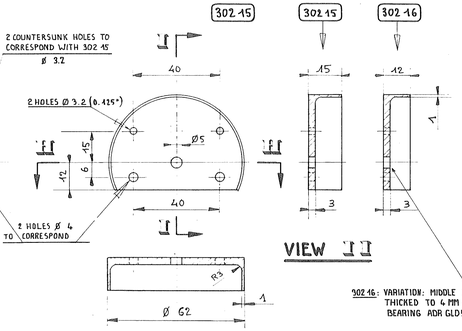
302.18

VIEW THROUGH G G

302.15

302.15

302.16



VIEW H H

VIEW J J

302.16: VARIATION: MIDDLE ZONE THICKED TO 4 MM + SPHERICAL BEARING ADR GLDS.

EQUIVALENT THICKNESS :

- 0.5 MM ≅ 0.020" - 2 MM ≅ 0.080" - 3.2 MM ≅ 0.125"
- 1 MM ≅ 0.040" - 4 MM ≅ 0.160"
- 1.6 MM ≅ 0.063" - 5 MM ≅ 0.190"

Reference	Qty	Description	Material	Cond	Dimensions	Resist.	Comments
302.48	2	ANCHOR NUT	STEEL		REDUCED Ø 6 150	410 MPa	
302.47	2	SPH. BEARING ADR GLDS	STEEL		Ø 5		
302.46	4	BEARING PLATE - UPPER	2024	T3	62 x 62 x 12	65.000	OR T4
302.45	4	BEARING PLATE - LOWER	2024	T3	62 x 62 x 15	65.000	OR T4
302.44	4	RUDDER HORN BRACKET	2024	T3	118 x 33 x 2	65.000	
302.43	4	PIVOT FITTING - LOWER	2024	T3	173 x 25 x 5	65.000	
302.42	4	RUDDER HORN	2024	T3	106 x 22 x 4	65.000	
302.41	2	"L" PIECE	2024	T3	70 x 30 x 4	65.000	BENT SHEET
302.40	1	FIN FALSE SPAR	2024	T3	703 x 95 x 0.5	65.000	
302.09	2	WASHER	2024	T3	Ø16 x 0.5	65.000	
302.08	2	WASHER	2024	T3	Ø 16 x 2.4	65.000	
302.07	2	RUDDER PIVOT PIN	STEEL		Ø 10 x 26	410.000	
302.06	4						
302.05	4	SPACER	2024	T3	36 x 11.5 x 1.6	65.000	
302.04	4	UPPER FIN RIB - REAR	2024	T3	104 x 101 x 0.5	65.000	
302.03	4	UPPER FIN RIB - FRONT	2024	T3	183 x 104 x 0.5	65.000	
302.02	1	PIVOT FITTING - UPPER	2024	T3	117 x 32 x 3.2	65.000	OR 3
302.01	2*	UPPER FIN DOUBLER	2024	T3	265 x 20 x 1	65.000	

AVIONS COLOMBAN

CRICRI MC 15

TITLE : VERTICAL TAIL - DETAILS

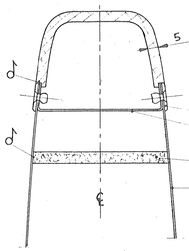
Scale : 1/1

Drawn by : Colomban

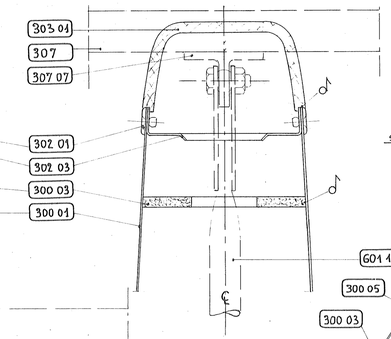
Date : Sept. 1984

302

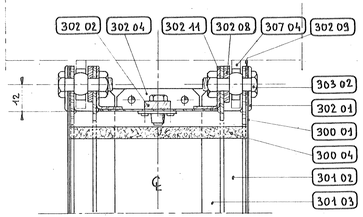
SECTION A A

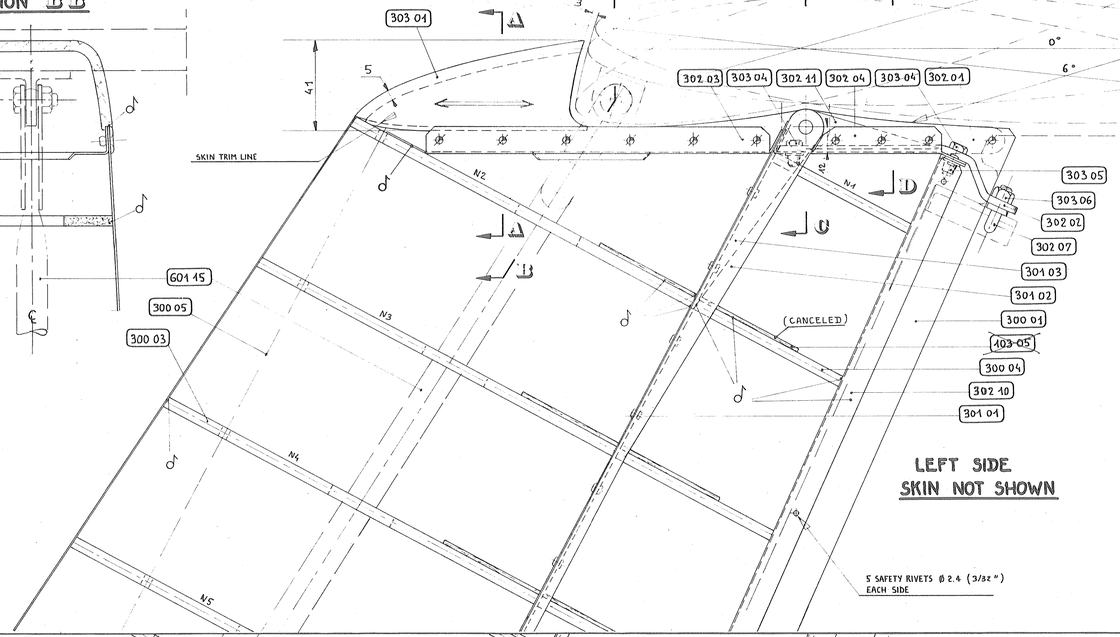


SECTION B B



VIEW THROUGH C C





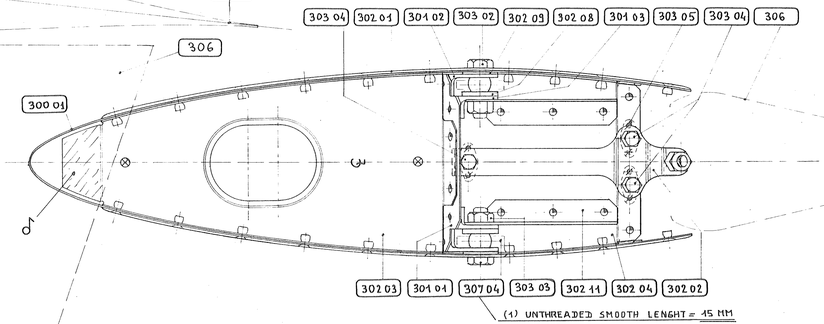
LEFT SIDE
SKIN NOT SHOWN

5 SAFETY RIVETS Ø 2.4 (3/32") EACH SIDE

TRIM SKIN TO CORRESPOND WITH 302 04 CLEARANCE WITH HORIZONTAL TAIL ≅ 3 MM

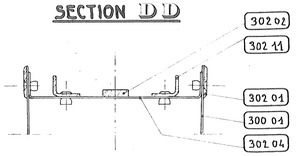
BONDING :
- SKIN TO RIBS AND FALSE SPAR
- TIP FAIRING
- KLEGECELL RIBS AND POPLAR SPACERS TO SPAR

TOP VIEW



(1) UNTHREADED SMOOTH LENGHT = 15 MM

SECTION D D



Reference	Qty	Description	Material	Cond	Dimensions	Resist.	Comments
303 07							
303 06	4	NUT	STEEL		REDUCED Ø 5 ISO	130.000	
303 05	3	ANCHOR NUT	STEEL		REDUCED Ø 4 ISO	130.000	
303 04	3	BOLT	STEEL		HEX. HD Ø 4 x 12 ISO	120.000	OR ALLEN (1)
303 03	2	NUT	STEEL		REDUCED Ø 6 ISO	120.000	
303 02	2	BOLT - STAB - ATTACH	STEEL		HEX HD. Ø 6 x 25 ISO	120.000	
303 01	4	FIN TIP FAIRING	BALSA		405 x 73 x 44 x 5		

AVIONS COLOMBAN — CRICRI MC 15

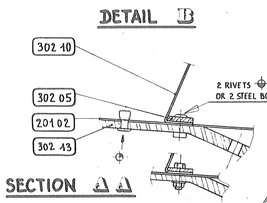
TITLE : FIN - UPPER PORTION

Scale : 1/1

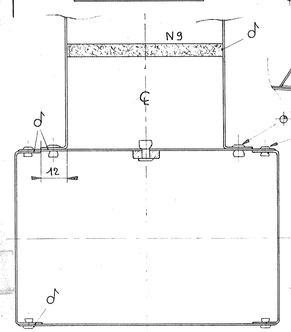
Drawn by : Colomban
Date : Sept 1981

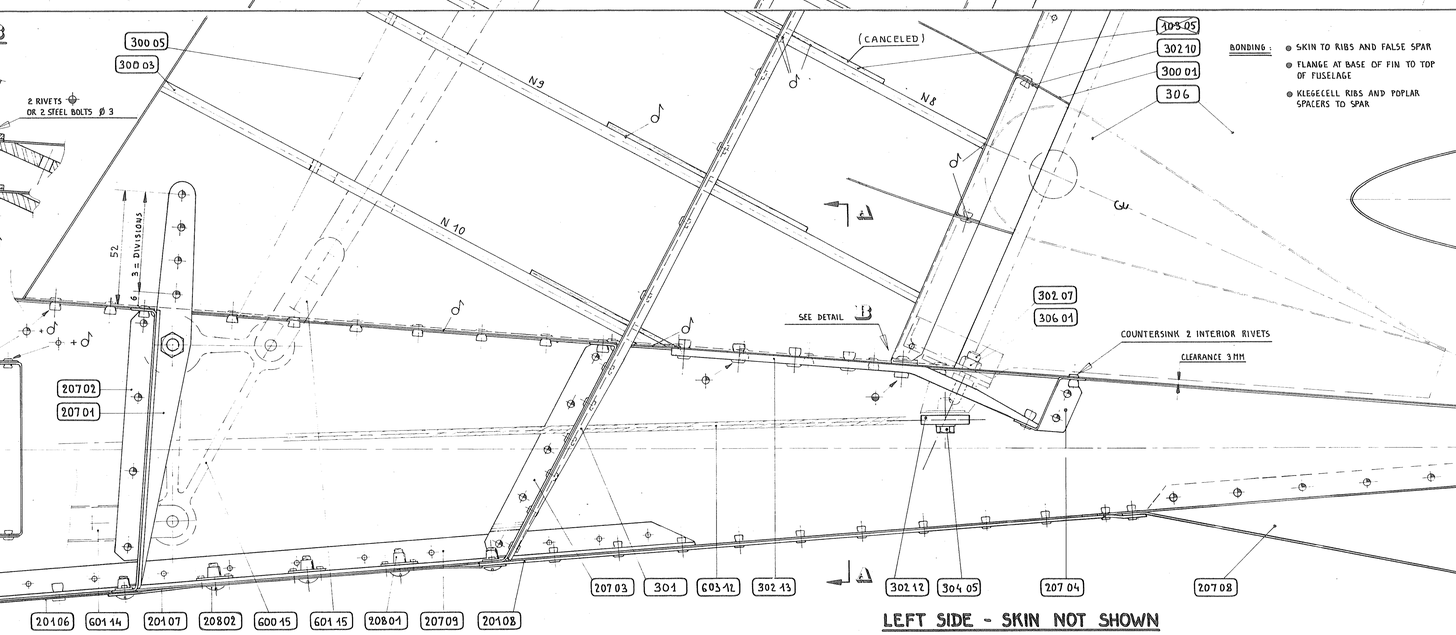
303

DETAIL B



SECTION A A

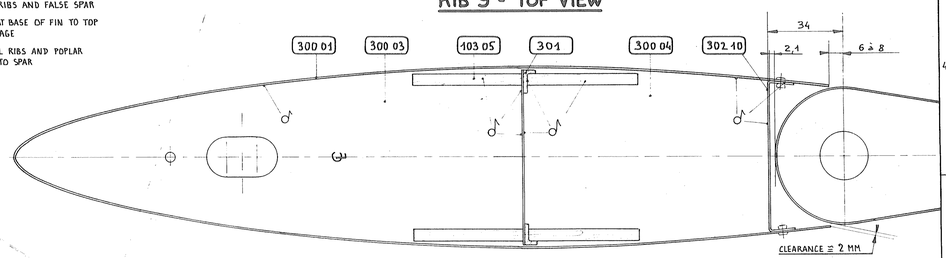




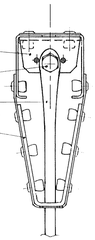
LEFT SIDE - SKIN NOT SHOWN

BONDING :
- SKIN TO RIBS AND FALSE SPAR
- FLANGE AT BASE OF FIN TO TOP OF FUSELAGE
- KLEGECELL RIBS AND POPLAR SPACERS TO SPAR

RIB 9 - TOP VIEW



REAR VIEW



Reference	Qty	Description	Material	Cond	Dimensions	Resist.	Comments
304 05	3	BOLT	STEEL		HEX. HD. 4 x 25 ISO	120.000	
304 04	4	TAIL SKID	PIANO WIRE		Ø 4.5 x 250	250.000	
304 03	4	BOLT	STEEL		HEX. HD. 4 x 12 ISO	120.000	
304 02	4						
304 01	1						

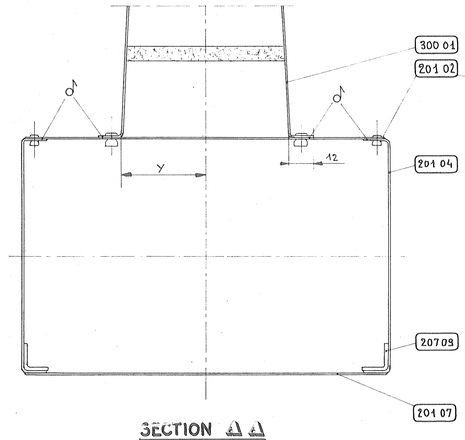
AVIONS COLOMBAN — CRICRI MC 15

TITLE : FIN - LOWER PORTION

Scale : 1/1

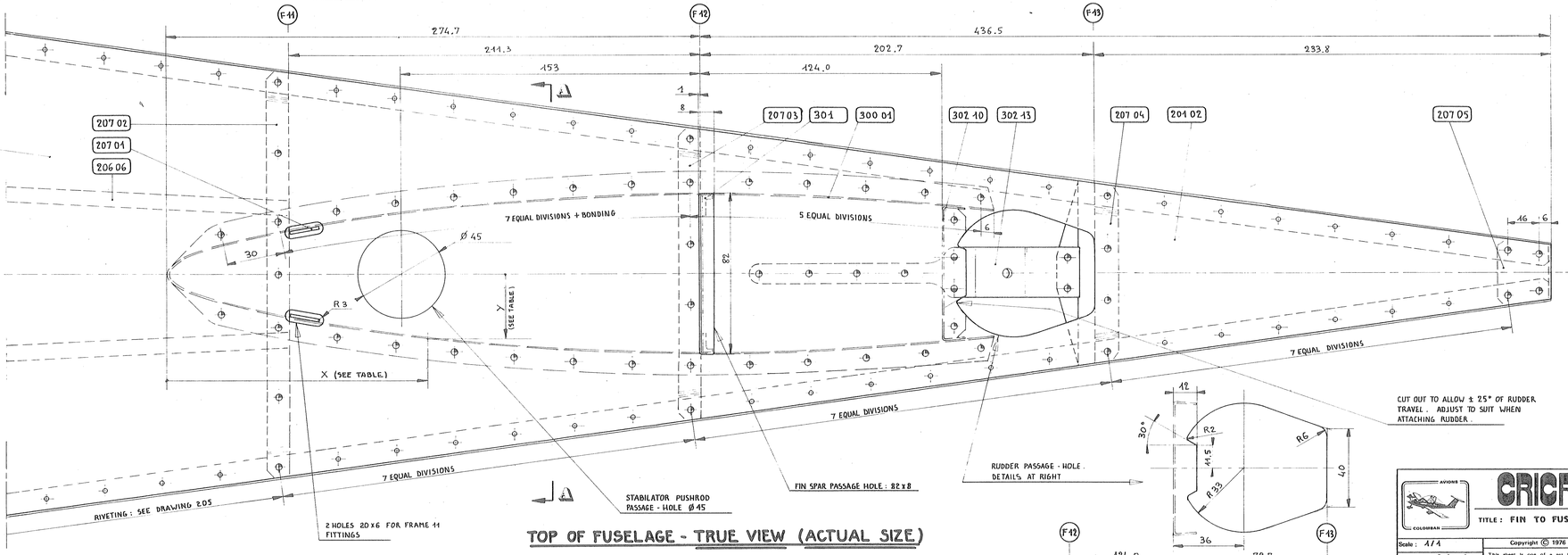
Drawn by : Colomban
Date : Sept 1981

304



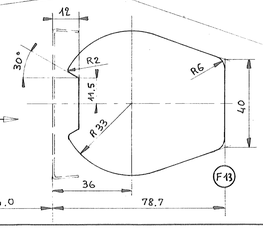
SECTION A A

BONDING : ● FLANGE AT BASE OF FIN TO TOP OF FUSELAGE



TOP OF FUSELAGE - TRUE VIEW (ACTUAL SIZE)

FIN AIRFOIL CO-ORDINATES AT FUSELAGE	
X	Y
0	0
3.2	5.36
4.8	6.57
8.3	8.48
17.1	12.01
35.0	17.00
52.7	20.86
70.5	24.12
105.8	29.48
140.6	33.66
175.0	36.84
208.8	39.18
242.1	40.53
274.7	40.99
307.0	40.57
339.0	39.34
371.0	37.34
403.0	34.73
434.0	31.48



RUDDER PASSAGE - HOLE . DETAILS AT RIGHT

CUT OUT TO ALLOW ± 25° OF RUDDER TRAVEL . ADJUST TO SUIT WHEN ATTACHING RUDDER .

AVIONS COLOMBAN — CRICRI MC 15

TITLE : FIN TO FUSELAGE ATTACHMENT

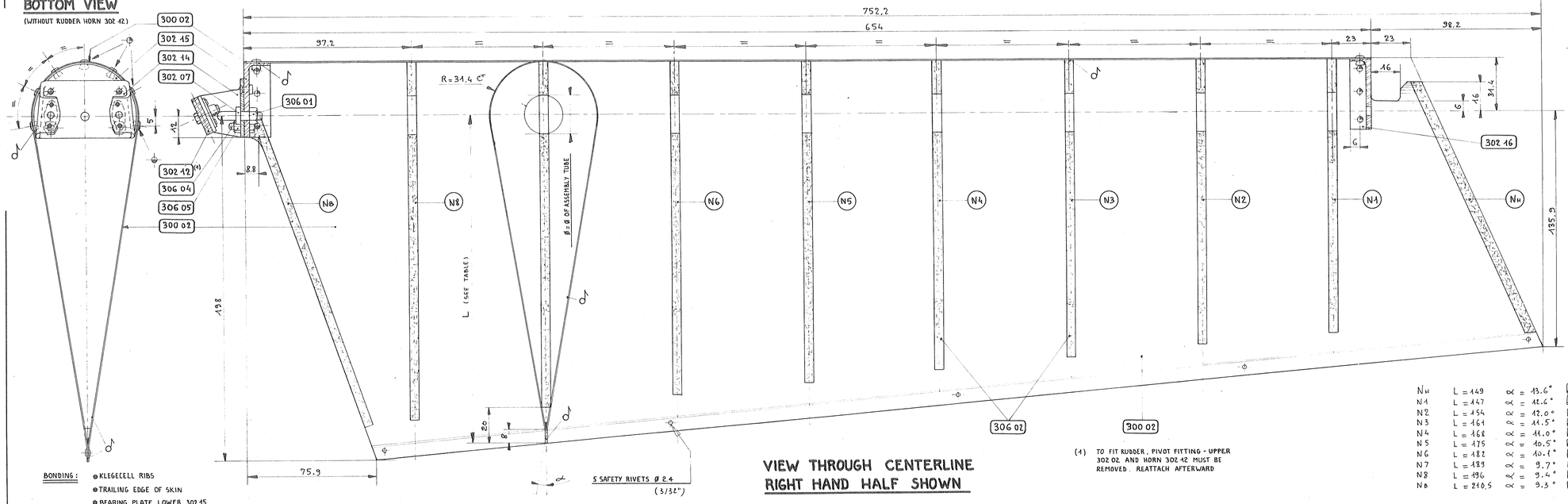
Scale : 1/4

Drawn by : Colomban
Date : Sept 1981

305

BOTTOM VIEW

(WITHOUT RUDDER HORN 302 12)



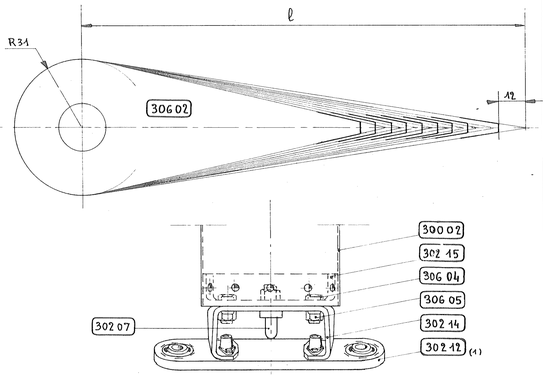
5 SAFETY RIVETS Ø 2.4 (3/32")

BONDING :
- ● KLEGECELL RIBS
- ● TRAILING EDGE OF SKIN
- ● BEARING PLATE, LOWER 302.45

VIEW THROUGH CENTERLINE
RIGHT HAND HALF SHOWN

N0	L = 210.5	α = 9.3°	D = 202.5
N1	L = 196	α = 9.4°	D = 188
N2	L = 189	α = 9.7°	D = 181
N3	L = 182	α = 10.1°	D = 174
N4	L = 175	α = 10.5°	D = 167
N5	L = 168	α = 11.0°	D = 160
N6	L = 161	α = 11.5°	D = 153
N7	L = 154	α = 12.0°	D = 146
N8	L = 147	α = 12.6°	D = 139
N9	L = 149	α = 13.6°	D = 141

(4) TO FIT RUDDER , PIVOT FITTING - UPPER 302.02 AND HORN 302.12 MUST BE REMOVED . REATTACH AFTERWARD



LOWER PART - FRONT VIEW

Reference	Qty.	Description	Material	Cond.	Dimensions	Resist.	Comments
306 05	2	NUT	STEEL		REDUCED Ø 4 ISO	470.006	
306 04	2	BOLT	STEEL		HEX HD Ø 4.25 ISO	120.004	
306 03							
306 02	10	RIB	KLEGECELL	100	THICKNESS = 6 MM		OR CONTICELL 80
306 01	1	NUT	STEEL		REDUCED Ø 5 ISO	470.005	

AVIONS COLOMBAN — CRICRI MC 15

TITLE : RUDDER

Scale : 1/4

Drawn by : Colomban
Date : Sept 1981

306

SPAR - FRONT VIEW

(1) : VARIATION: ANGLES WITH A DIFFERENT THICKNESS CAN BE USED:
: IF T = 1MM MULTIPLY α AND h BY 1.2
: IF T = 1.6MM MULTIPLY α AND h BY 0.8
IN ANY CASE, THE SAME SECTION SURFACE ON SPAR CAP MUST BE KEPT.

SPAR CAP CO-ORDINATES

y	a
0	9,5
40	9,5
100	7,4
200	6,0
300	5,0
400	4,0
500	3,0
600	2,0
750	1,2

AIRFOIL CO-ORDINATES

x	± y
2	4.19
3	5.08
5	6.46
10	8.94
20	12.45
30	15.07
40	17.19
60	20.42
80	22.73
100	24.30
120	25.23
140	25.53
160	25.19
180	24.27
200	22.85
220	21.00
240	18.81
260	16.20
280	13.10
300	10.00
320	6.30
340	4.10
360	1.90
380	0.50
395	0.40

24 HOLES Ø 2.4 (3/32") TO CORRESPOND WITH 307.01 AND 307.04

307 03 307 04 307 02 307 11 CANCELLED 307 13 307 14 307 02

VIEW TH. A A

307 12 307 10 307 09 307 13 307 12 307 40

16 HOLES Ø 3.2 (0.125") 12 = 2 x 6 BONDED

307 15 307 04 307 03 307 04

1 DECOMPRESSION HOLE Ø4 IN BOTTOM SKIN

5 POP RIVETS (3/32") OPPOSITE RIVETS ON BOTTOM SURFACE

307 15 307 05 307 17 307 18 307 06 307 07 307 16 307 20

307 08 307 01 307 02 307 11 CANCELLED 307 19

b = DIMENSION BETWEEN BALSA STICK SPACERS MUST BE EQUAL TO THE THICKNESS OF THE JIG PICK-UP (SEE MANUAL)

SECTION D D

307 10 307 12 307 09 307 13

10 BLIND SAFETY RIVETS (177 PITCH)

307 11 CANCELED

VIEW THROUGH B B

FIT TO RIB 307 05

(0.125") 3 HOLES Ø 3.2 307 06 307 20

307 17 307 16 307 07

4 HOLES Ø 4.5

VIEW THROUGH C C

307 04 307 45 307 12 307 05 307 13

VIEW B B

307 14 307 17 307 18 307 06 307 20 307 07 307 16

(0.125") 3 HOLES Ø 3.2 TO CORRESPOND WITH 307 06 307 05

5 HOLES Ø 2.4 (3/32") TO CORRESPOND WITH 307 13

(0.125") 5 HOLES Ø 3.2 TO CORRESPOND WITH 307 12

FITTING 307 06 BEARS ON RIB FLANGE

BOND UNDER 307 06 AND FIT FLUSH TO RIBS AFTER ASSEMBLY

TO CORRESPOND WITH 307 04

TO CORRESPOND WITH 307 06

DIMENSION "A" (SEE TABLE) JOIN THE POINTS WITH A SMOOTH CURVE

(CANCELED)

PARTIEL TOP VIEW (UPPER SKIN NOT SHOWN)

BONDING :

- CAPS 307.02 TO WEB 307.01
- REINFORCEMENT 307.03 TO WEB 307.01
- FITTINGS 307.04 TO REINFORCEMENT 307.03
- SPACER 307.20 UNDER FITTING 307.06
- BOTTOM OF FITTING 307.06 TO FLANGES OF RIBS 307.05
- RIBS 307.05 AGAINST FITTINGS 307.04
- KLEGECELL AND POPLAR SPACERS
- SKIN
- TIP FAIRINGS

EQUIVALENT THICKNESS :

— 0.4 MM ≅ 0.016" — 0.5 MM ≅ 0.020" — 1 MM ≅ 0.040"
— 1.6 MM ≅ 0.063" — 2 MM ≅ 0.080"

Reference	Qty	Description	Material	Cond.	Dimensions		Resist.	Comments
307 20	1	SPACER UNDER 307.06	2024	T3	40 x 26 x 4	61.000		
307 19	5	ALIGNMENT PIECES	BALSA		1600 x 3 x 3 (TO BE REMOVED AFTER SKIN BONDING			
307 18	4	BOLT	STEEL		HEX. HD. Ø4 x 12 ISO	170.000		DR. ALLEN
307 17	4	ANCHOR NUT	STEEL		REDUCED Ø4 ISO	170.004		
307 16	4	SPHERICAL BEARING ADA	STEEL		GLD 5 Ø5	260.000		
307 15	5	SPHERICAL BEARING ADA	STEEL		GL 6 Ø6	260.000		
307 14	2*	TIP FAIRING	BALSA		395 x 50 x 25 x 5			DENSITY = 0.12
307 13	1	SKIN	2024	T3	4500 x 800 x 0.4	63.000		0.4 MM
307 12	2	BOTTOM REINFORCEMENT	2024	T3	277 x 26 x 1	63.000		
307 11	5*	SPACER	POPLAR		40 x 5 x 5			
307 10	2	CENTER RIB	KLEGECELL 100		252 x 50 x 12			DR. K. 75
307 09	18	RIB - REAR	KLEGECELL 100		252 x 50 x 6			"
307 08	18	RIB - FRONT	KLEGECELL 100		442 x 50 x 6			"
307 07	4	PUSHROD ATTACH FITTING	2024	T4	32 x 25 x 22 Y 4	63.560		T EXTRUSION
307 06	4	FITTING-FRONT INNER	2024	T3	110 x 56 x 1.6	63.000		
307 05	2*	RIB- CENTER	2024	T3	400 x 700.5 x 0.5	63.500		
307 04	2*	PIVOT FITTING	2024	T4	71 x 24 x 24 x 4	63.560		T EXTRUSION
307 03	1	CENTER REINFORCEMENT	2024	T3	94.8 x 48 x 0.5	63.000		
307 02	2*	SPAR CAP	2024	T4	4500 x 10 x 8, x 4.2	63.500		L EXTRUSION
307 01	1	SPAR WEB	2024	T3	4500 x 48 x 0.5	63.500		

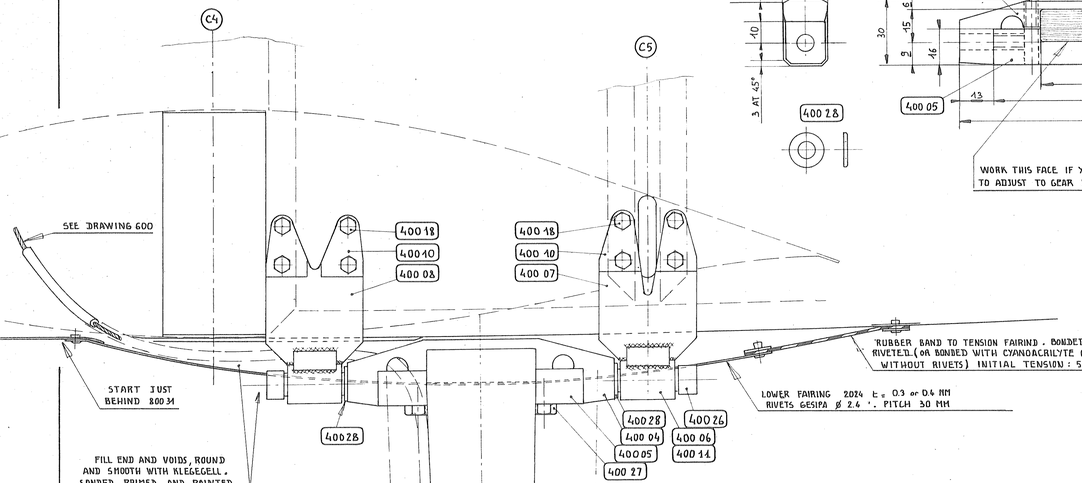
AVIONS COLOMBAN — CRICRI MC 15

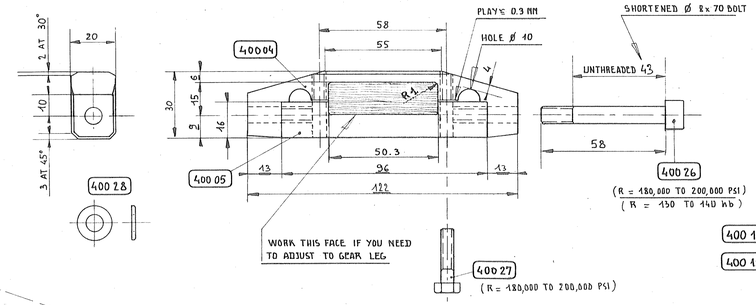
TITLE : HORIZONTAL TAIL - ASSEMBLY AND DETAILS

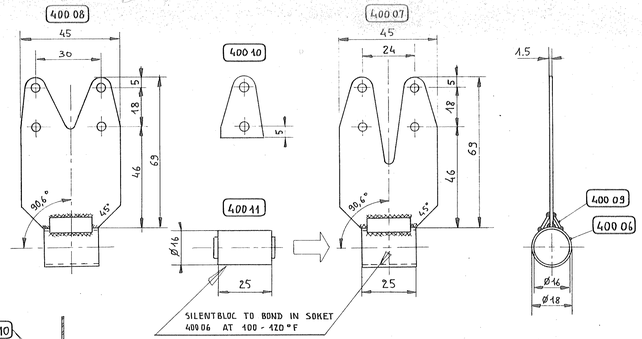
Scale : 1/1
Drawn by : Colomban
Date : Sept 1981

307

LEFT EXTERIOR VIEW





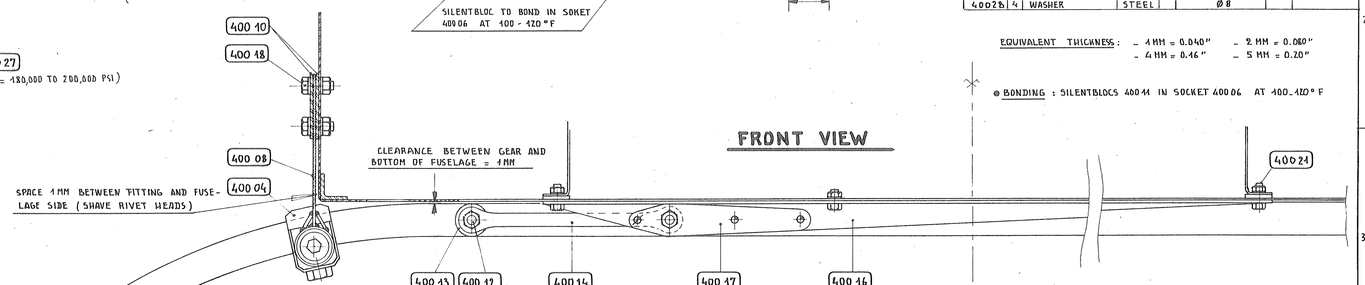


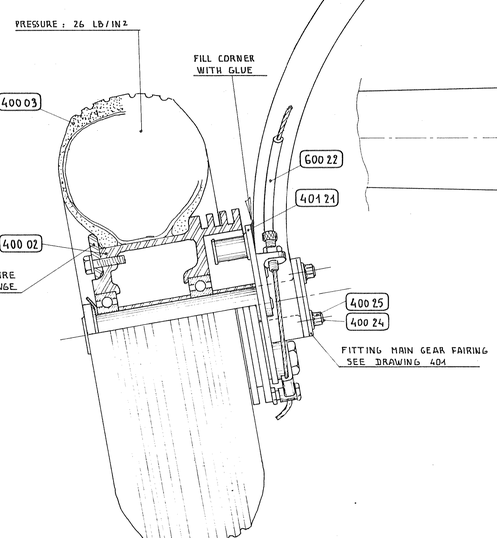
400 01	1	COMPOSITE GEAR LEG MC/AS - 15.50 VE				
400 02	2	HUB-AXLE ASSEMBLY MC/15 42.76				
400 03	2	TIRE AND INNER TUBE . REF 2.5 x 3 . 4 CANVAS				
400 04	2	UPPER CLAMP	2024	T4	412 x 30 x 20	OR T3
400 05	2	LOWER CLAMP	2024	T4	86 x 20 x 46	45,000 OR T6
400 06	4	SOCKET	15CDV6	T	Ø 18 x 1 x 25	160,000 TUBING
400 07	2	FITTING	15CDV6	T	69 x 45 x 15	160,000
400 08	2	FITTING	15CD16	T	69 x 45 x 15	160,000
400 09	8	REINFORCEMENT	STEEL		20 x 8 x 1	110,000
400 10	16	SPACER	2024		28 x 20 x 1	45,000
400 11	4	SILENTBLOC PAULSTRA Ref: 864 103 (TO BOND IN 400 06)				
400 12	1	PIN	STEEL		Ø 4 x 85	160,000
400 13	2	SPACER	2024		Ø 15 x 4 x 5	45,000
400 14	2	ROD	2024		105 x 12 x 5	45,000
400 15	4	SPACER			Ø 6 . 1 x 5.3	120,000 TUBING
400 16	2*	ANGLE	2024	T4	394 x 46 x 12 x 1.6	45,000 EXTRUSION
400 17	2*	REINFORCEMENT	2024	T3	93 x 44 x 2	45,000
400 18	16	BOLT	STEEL		HEX HD. Ø 4 x 25	110,000
400 19	20	NUT	STEEL		REDUCED Ø 4 ISO	120,000
400 20	2	BOLT	STEEL		HEX. HD. Ø 4 x 30	110,000
400 21	8	BOLT	STEEL		HEX. HD. Ø 3 x 22	110,000
400 22	8	NUT	STEEL		REDUCED Ø 3 ISO	110,000
400 23		WASHER	STEEL		Ø 4	120,000
400 24	8	BOLT	STEEL		CTK. HD Ø 5.30 ISO	120,000
400 25	8	NUT	STEEL		REDUCED Ø 5 ISO	110,000
400 26	4	BOLT	STEEL		HEX. HD. Ø 8 x 70	200,000
400 27	4	BOLT	STEEL		HEX. HD. Ø 6 x 25	120,000
400 28	4	WASHER	STEEL		Ø 8	

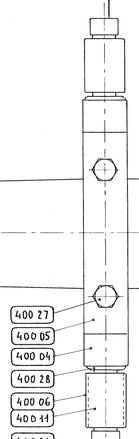
EQUIVALENT THICKNESS : - 1 MM = 0.040" - 2 MM = 0.080"
- 4 MM = 0.16" - 5 MM = 0.20"

@ BONDING : SILENTBLOCS 400 11 IN SOCKET 400 06 AT 400-420° F

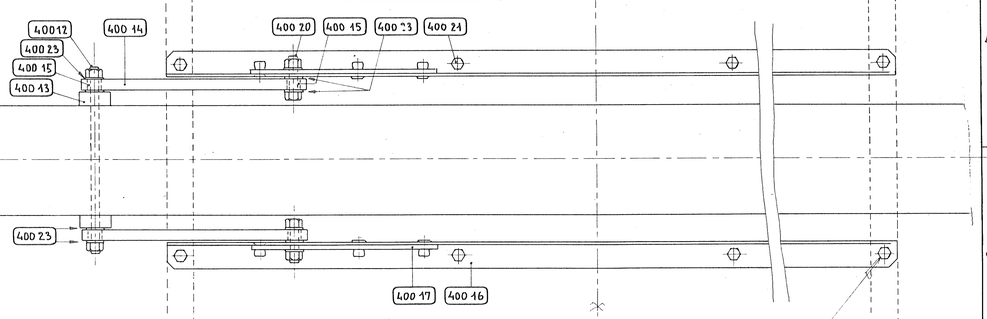
FRONT VIEW

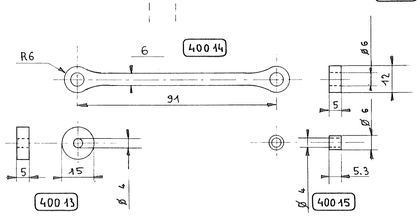






BOTTOM VIEW





CRICRI MC 15

TITLE : MAIN GEAR

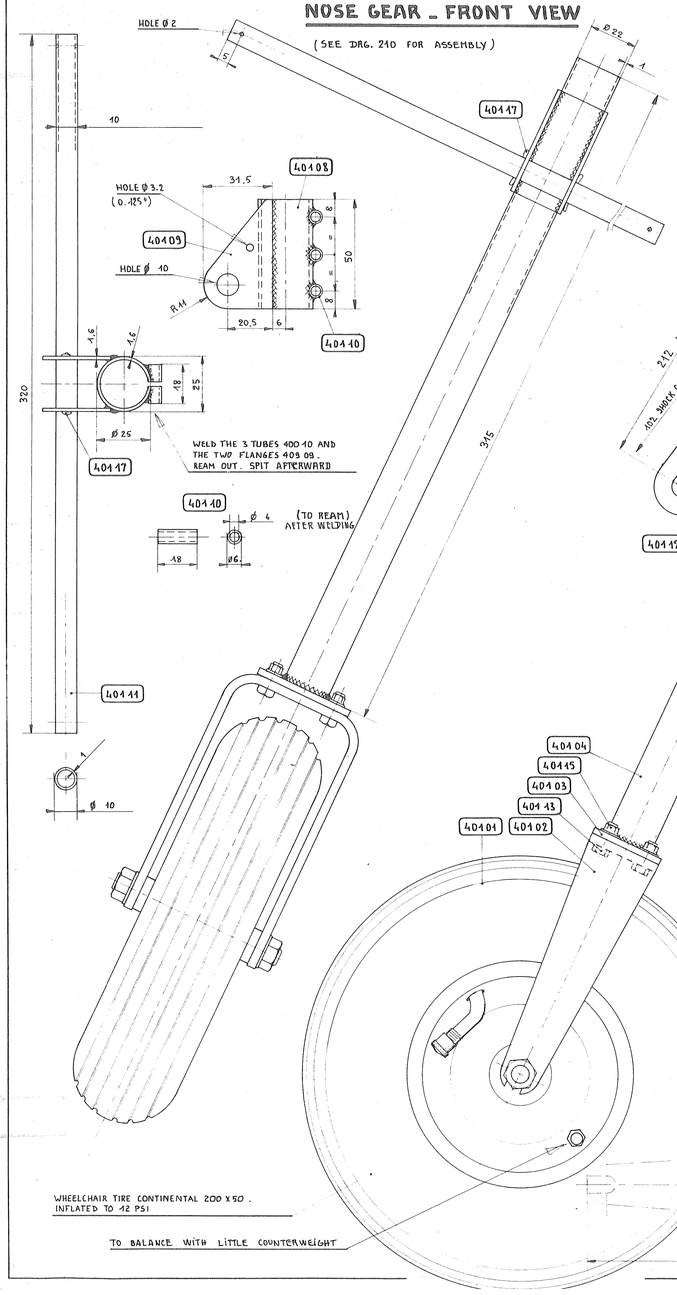
Scale : 1/1

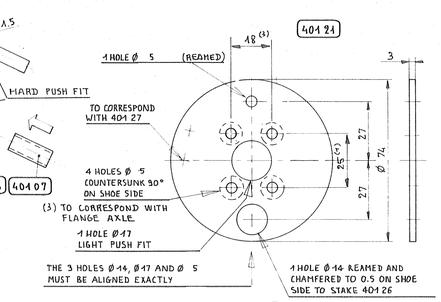
Drawn by : Colomban
Date : 8 nov. 1981

400

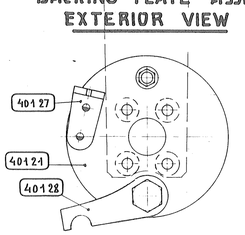
NOSE GEAR _ FRONT VIEW

(SEE DRG. 210 FOR ASSEMBLY)

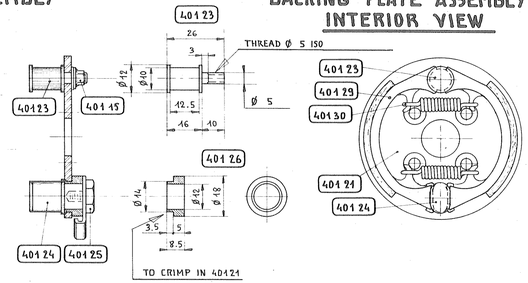




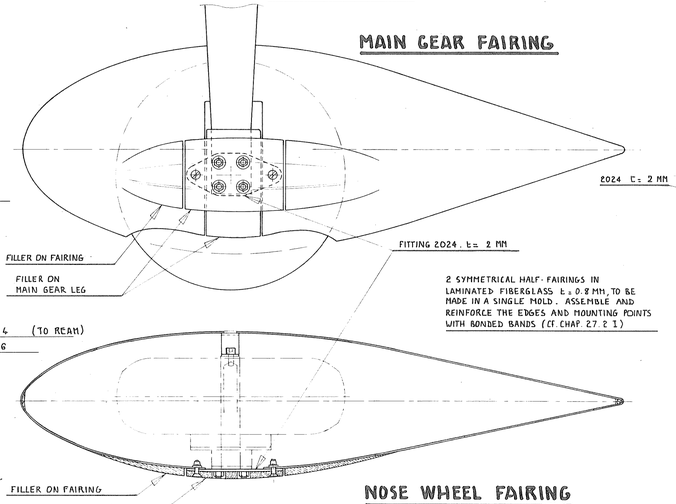
BACKING PLATE ASSEMBLY EXTERIOR VIEW



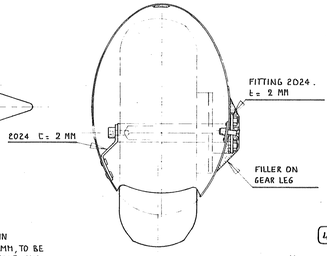
BACKING PLATE ASSEMBLY INTERIOR VIEW

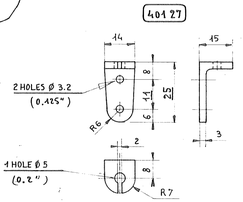


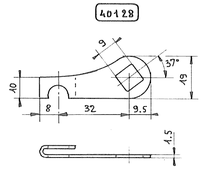
MAIN GEAR FAIRING



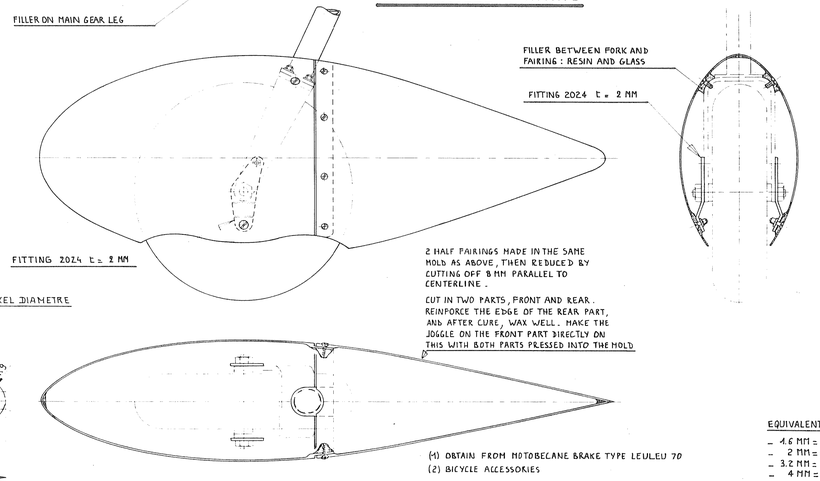
2 SYMMETRICAL HALF-FAIRINGS IN LAMINATED FIBERGLASS t = 0.8 MM, TO BE MADE IN A SINGLE MOLD. ASSEMBLE AND REINFORCE THE EDGES AND MOUNTING POINTS WITH BONDED BANDS (Cf. CHAP. 27.2.1)







NOSE WHEEL FAIRING



2 HALF FAIRINGS MADE IN THE SAME MOLD AS ABOVE, THEN REDUCED BY CUTTING OFF 8 MM PARALLEL TO CENTERLINE.

CUT IN TWO PARTS, FRONT AND REAR. REINFORCE THE EDGE OF THE REAR PART, AND AFTER CURE, WAX WELL. MAKE THE JOGGLE ON THE FRONT PART DIRECTLY ON THIS WITH BOTH PARTS PRESSED INTO THE MOLD

EQUIVALENT THICKNESS:

- 4.6 MM = 0.063"
- 2 MM = 0.030"
- 3.2 MM = 0.125"
- 4 MM = 0.160"

(1) OBTAIN FROM MOTOBECANE BRAKE TYPE LEULEU 70

(2) BICYCLE ACCESSORIES

Reference	Qty	Description	Material	Cond	Dimensions	Resist.	Comments
401 34							
401 33	2	CABLE CLAMP					(2) SEE DRWG. 400
401 32	2	CABLE ADJUSTER					(2) SEE DRWG. 400
401 31	4	CABLE GUIDE	KLEGECELL	100	15 x 15 x 10		SEE DRWG. 400
401 30	4	SPRING					(4)
401 29	4	BRAKE SHOES					(4)
401 28	2*	LEVER	STEEL		70 x 19 x 4.5	420,000	
401 27	2	BRACKET	2024	T4	28 x 15 x 14 x 3	63,000	WING ANGLE
401 26	2	SHOULDER WASHER	STEEL		Ø 18 x 8.5	400,000	TO CRIMP ON 401 24
401 25	2	BOLT					(4)
401 24	2	CAM					(4)
401 23	2	ANCHOR PIN	STEEL		Ø 12 x 26	420,000	
401 22	2						
401 21	2*	BRAKE BACK PLATE	2024	T3	74 x 74 x 3	63,000	
401 20							
401 19							
401 18							
401 17	2	COTTER PIN	STEEL		Ø 2 x 20		
401 16	3	NUT	STEEL		REDUCED Ø 4 150	410,000	
401 15	6	NUT	STEEL		Ø 5 150	410,000	
401 14	3	BOLT	STEEL		HEX. HD Ø 4 x 25 150	420,000	
401 13	4	BOLT	STEEL		HEX. HD Ø 5 x 12 150	420,000	
401 12	1	SUSPENSION	SHOCK CORD		Ø 8 AERO CR Ø 10	INDUST.	
401 11	1	STEERING TUBE	2024	T4	Ø 40 x 1 x 320	64,000	TUBING
401 10	3	TUBE	5056		Ø 6 x 1 x 48	63,000	TO REAM ø 4
401 09	2	FLANGE	5056		50 x 31.5 x 16	63,000	
401 08	1	CLAMPING TUBE	5056		Ø25 x 19 x 50	63,000	TUBING
401 07	2	SPACER	2024	T4	Ø 8 x 1 x 18	63,000	TUBING
401 06	1	AXIS	15CDV6	T	Ø 6 x 4 x 56	456,000	TUBING T.R.C.M.
401 05	1	INNER TUBE	2024	T4	Ø 20 x 1.5 x 260	63,000	TUBING (1)
401 04	1	OUTER TUBE	15CDV6	TA	Ø 22 x 1 x 345	460,000	TUBING
401 03	1	BASE PLATE	15CDV6		46 x 34 x 3	420,000	
401 02	1	FORK	2024	T3	294 x 34 x 4	63,000	
401 01	1	NOSEWHEEL ASSY			Ø 200 X 50		

AVIONS COLOMBAN

CRICRI MC 15

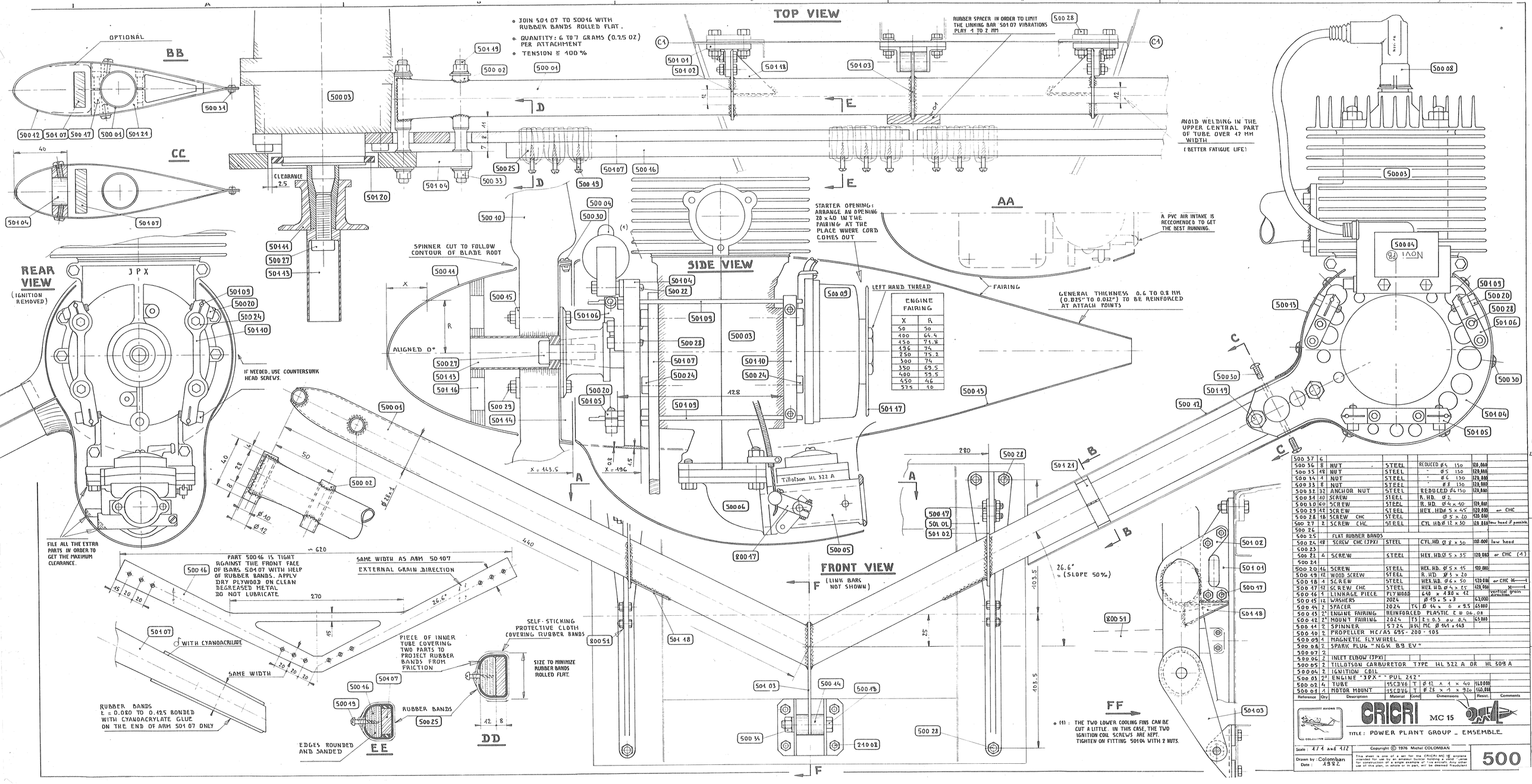
TITLE : NOSE GEAR _ BRAKES _ WHEEL FAIRING

Scale : 1/1 and 1/2

Drawn by : Colomban

Date : Oct. 1984

401



ENGINE FAIRING	
X	R
50	50
100	64.4
150	71.8
196	74
250	75.2
300	74
350	69.5
400	59.5
450	46
575	10

Reference	Qty	Description	Material	Cond	Dimensions	Resist.	Comments
500 37	6						
500 36	8	NUT	STEEL		REDUCED Ø5 150	120.060	
500 35	48	NUT	STEEL		" Ø5 150	120.060	
500 34	4	NUT	STEEL		" Ø6 150	120.060	
500 33	8	NUT	STEEL		" Ø8 150	120.060	
500 32	32	ANCHOR NUT	STEEL		REDUCED Ø4 150	120.060	
500 31	10	SCREW	STEEL		R. HD. Ø2.		
500 30	60	SCREW	STEEL		R. HD Ø4 x 40	120.060	
500 29	12	SCREW	STEEL		HEX. HDØ 5 x 45	120.000	or CHC
500 28	18	SCREW CHC	STEEL		Ø 5 x 20	120.060	
500 27	2	SCREW CHC	STEEL		CYL HDØ 12 x 30	120.060	low head if possible
500 26							
500 25		FLAT RUBBER BANDS					
500 24	48	SCREW CHC (JPX)	STEEL		CYL.HD. Ø 8 x 30	110.000	low head
500 23							
500 22	4	SCREW	STEEL		HEX. HDØ 5 x 35	120.060	or CHC (1)
500 21							
500 20	46	SCREW	STEEL		HEX. HD. Ø 5 x 15	120.060	
500 19	12	WOOD SCREW	STEEL		R. HD Ø 3 x 20		
500 18	4	SCREW	STEEL		HEX HD. Ø 6 x 50	120.060	or CHC
500 17	12	SCREW CHC	STEEL		HEX HD Ø 4 x 25	120.060	vertical grain direction
500 16	1	LINKAGE PIECE	PLYWOOD		640 x 130 x 12		
500 15	12	WASHERS	2024		Ø 15 x 5 x 3	63.000	
500 14	2	SPACER	2024 T4		Ø 14 x 6 x 9.5	65.000	
500 13	2*	ENGINE FAIRING	REINFORCED PLASTIC		t ≅ 06..08		
500 12	2*	MOUNT FAIRING	2024 T3		t = 0.3 ou 0.4	63.060	
500 11	2	SPINNER	5754	H14	MC Ø 141 x 143		
500 10	2	PROPELLER MC/AS 695 - 200 - 105					
500 09	1	MAGNETIC FLYWHEEL					
500 08	2	SPARK PLUG "NGK B9 EV"					
500 07	2						
500 06	2	INLET ELBOW (JPX)					
500 05	2	TILLOTSON CARBURETOR TYPE HL 322 A OR HL 309 A					
500 04	2	IGNITION COIL					
500 03	2*	ENGINE "JPX" " PUL 242"					
500 02	4	TUBE	15CDV6	T	Ø 12 x 1 x 40	41.000	
500 01	1	MOTOR MOUNT	15CDV6	T	Ø 28 x 1 x 340	160.000	

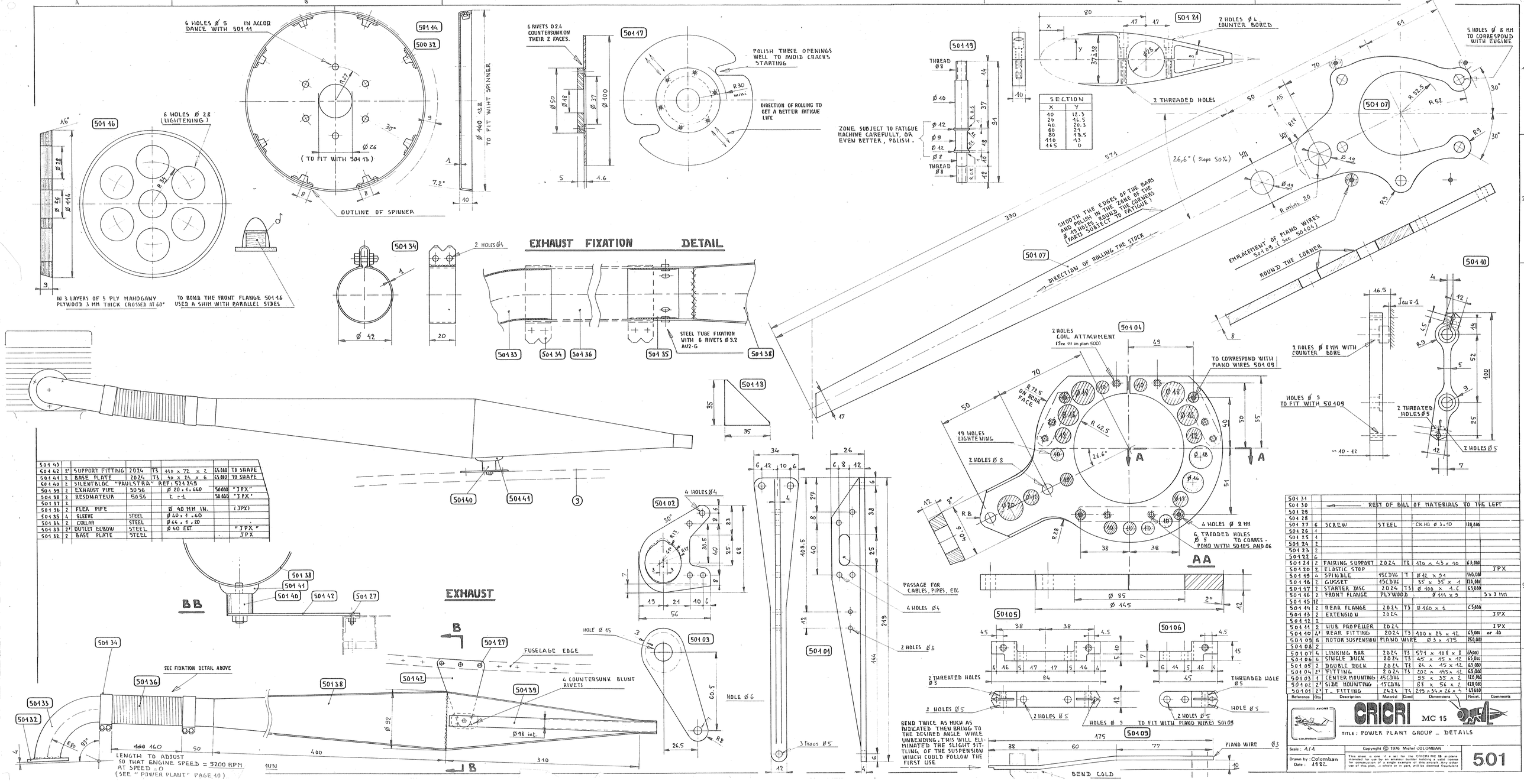
CRICRI MC 15

TITLE: POWER PLANT GROUP _ ENSEMBLE

Scale: 1/1 and 1/2

Drawn by: Colomban
Date: 1982

500



501 43							
501 42	2*	SUPPORT FITTING	2024	T3	110 x 72 x 2	65.000	TO SHAPE
501 44	2	BASE PLATE	2024	T3	40 x 24 x 6	65.000	TO SHAPE
501 40	2	SILENTBLOC "PAULSTRA" REF: 521 249					
501 39	2	EXHAUST PIPE	5056		Ø 20 x 1.440	50.000	"JPX"
501 38	2	RESONATEUR	5056		t = 1	50.000	"JPX"
501 37	2						
501 36	2	FLEX PIPE			Ø 40 MM IN.		(JPX)
501 35	4	SLEEVE	STEEL		Ø 60 x 1 x 40		
501 34	2	COLLAR	STEEL		Ø 44 x 1 x 20		
501 33	2*	OUTLET ELBOW	STEEL		Ø 40 EXT.		"JPX"
501 32	2	BASE PLATE	STEEL				JPX

501 31							
501 30		REST OF BILL OF MATERIALS TO THE LEFT					
501 29							
501 28							
501 27	6	SCREW	STEEL		CK HD Ø 3.40	130.000	
501 26	1						
501 25	1						
501 24	2						
501 23	2						
501 22	6						
501 21	2	FAIRING SUPPORT	2024	T3	120 x 43 x 10	65.000	
501 20	2	ELASTIC STOP					JPX
501 19	4	SPINDLE	15CDV6	T	Ø 12 x 51	160.000	
501 18	2	GUSSET	15CDV6		35 x 35 x 1	120.000	
501 17	2	STARTER DISC	2024	T3	Ø 100 x 1.6	65.000	
501 16	2	FRONT FLANGE	PLYWOOD		Ø 444 x 5		5 x 3 MM
501 15	12						
501 14	2	REAR FLANGE	2024	T3	Ø 160 x 1	65.000	
501 13	2	EXTENSION	2024				JPX
501 12	2						
501 11	2	HUB PROPELLER	2024				JPX
501 10	2*	REAR FITTING	2024	T3	100 x 23 x 12	65.000	or 10
501 09	8	MOTOR SUSPENSION	PIANO WIRE		Ø 3 x 175	250.000	
501 08	2						
501 07	4	LINKING BAR	2024	T3	571 x 40 x 8	65.000	
501 06	4	SINGLE DUCK	2024	T3	45 x 15 x 12	65.000	
501 05	2	DOUBLE DUCK	2024	T3	84 x 15 x 12	65.000	
501 04	2*	FITTING	2024	T3	207 x 195 x 12	65.000	
501 03	1	CENTER MOUNTING	15CDV6		95 x 55 x 2	120.000	
501 02	2*	SIDE MOUNTING	15CDV6		85 x 56 x 2	120.000	
501 01	2*	T FITTING	2424	T4	249 x 54 x 26 x 4	165.000	

Reference	Qty	Description	Material	Cond	Dimensions	Resist.	Comments

AVIONS COLOMBAN

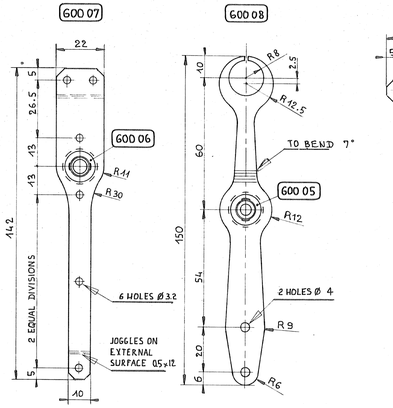
CRICRI MC 15

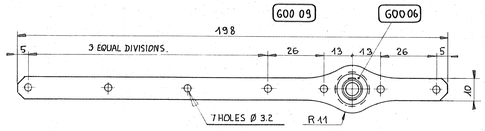
TITLE : POWER PLANT GROUP – DETAILS

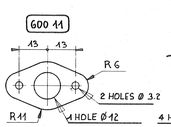
Scale : 1/1

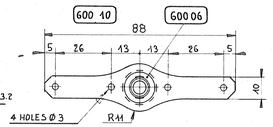
Drawn by : Colomban
Date : 1982

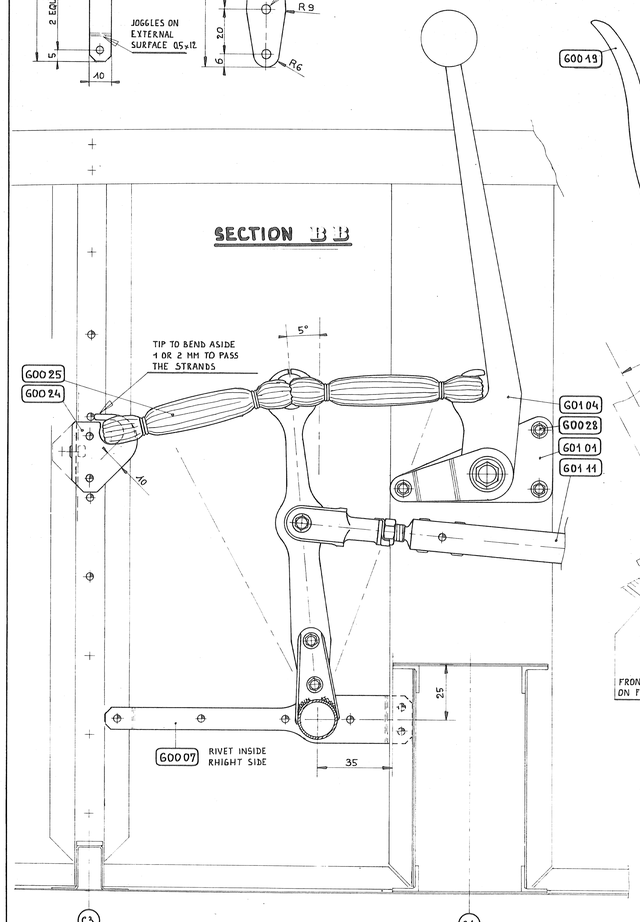
501

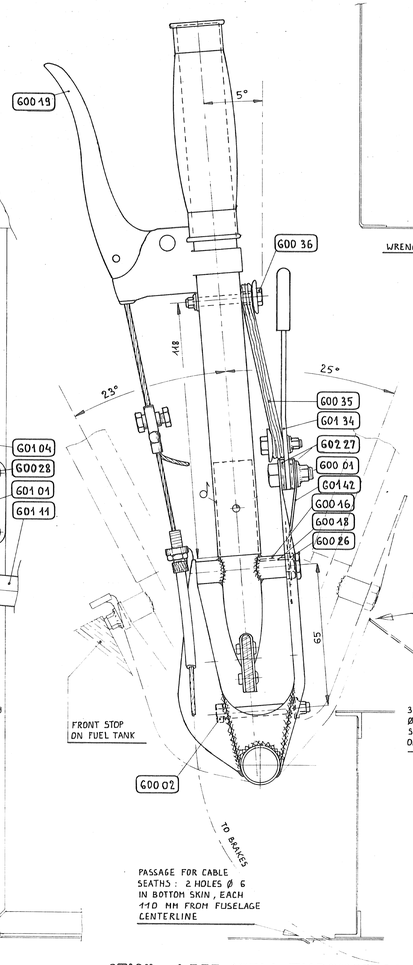


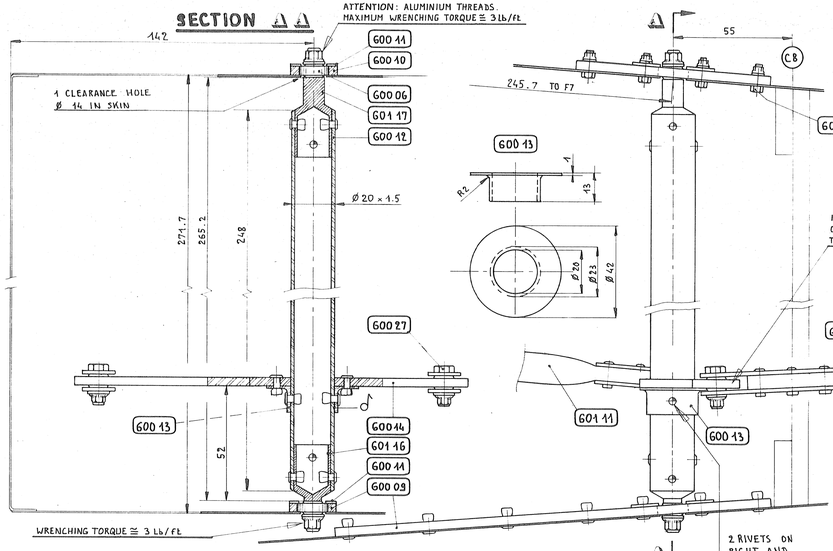


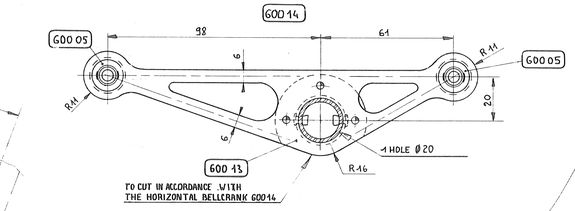


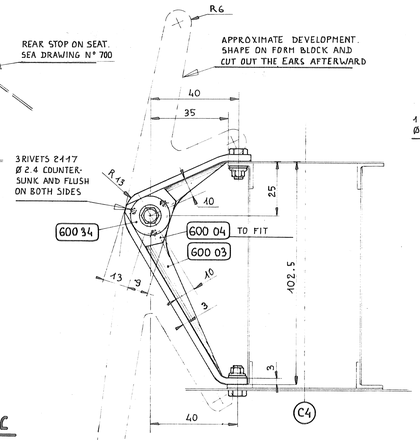


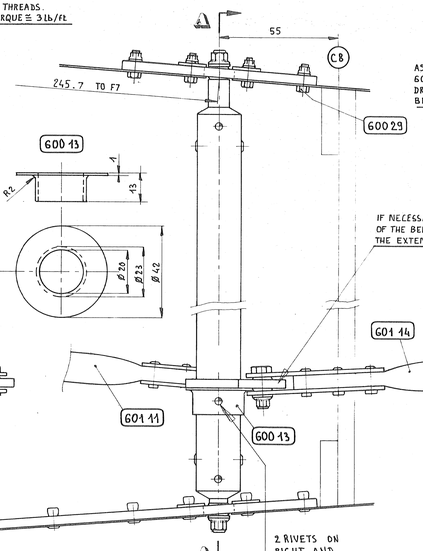


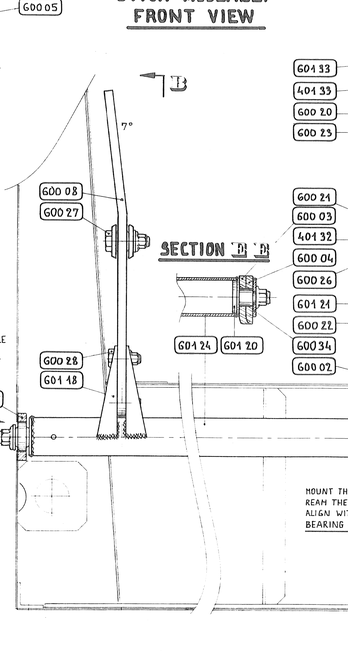


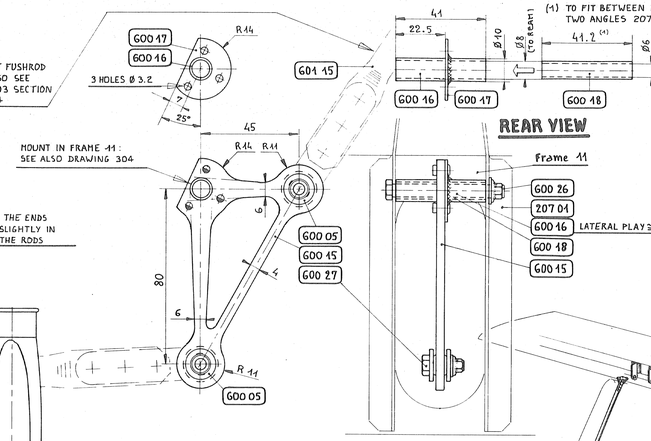


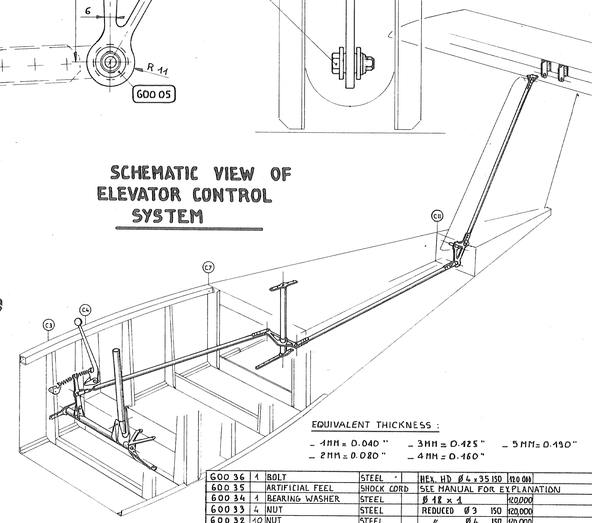












EQUIVALENT THICKNESS :

- 1 MM = 0.040 "
- 2 MM = 0.080 "
- 3 MM = 0.425 "
- 4 MM = 0.460 "
- 5 MM = 0.490 "

Reference	Qty	Description	Material	Cond	Dimensions	Resist.	Comments
600 36	1	BOLT	STEEL		HEX. HD Ø 6 x 35 150	170 044	
600 35		ARTIFICIAL FEEL	SHOCK CORD		SEE MANUAL FOR EXPLANATION		
600 34	1	BEARING WASHER	STEEL		Ø 18 x 1	420 000	
600 33	4	NUT	STEEL		REDUCED Ø 3 150	420 000	
600 32	40	NUT	STEEL		" Ø 4 150	420 000	
600 31	7	NUT	STEEL		" Ø 5 150	420 044	
600 30	7	NUT	STEEL		REDUCED Ø 6 150	420 044	
600 29	4	BOLT	STEEL		HEX. HD. Ø 3 x 10 150	420 044	
600 28	9	BOLT	STEEL		HEX. HD. Ø 4 x 25 150	420 004	⟷
600 27	6	BOLT	STEEL		HEX. HD Ø 5 x 30 150	420 040	⟷
600 26	2	BOLT	STEEL		HEX. HD Ø 6 x 70 150	420 006	⟷
600 25		ARTIFICIAL FEEL	SHOCK CORD		SEE MANUAL FOR EXPLANATION		
600 24	1	FEEL ATTACH PLATE	2024	T3	38 x 30 x 2	63 000	
600 23	2	BRAKE CABLE	STEEL		Ø 2 x 1000		BICYCLE
600 22	2	CABLE SEATH			Ø TO FIT x 800		CHAIN SAW
600 21	1	CABLE STOP PLATE	STEEL		38 x 30 x 3	420 000	
600 20	1	BALANCE BAR	2024	T3	30 x 22 x 5	63 000	
600 19	1	BRAKE HANDLE	USE LIGHTWEIGHT RACING BICYCLE PART				
600 18	2	PIVOT SPACER	STEEL		Ø 8 x 1 x 41.2	420 060	TO REAM
600 17	1	PIVOT PLATE	15 CDV6		Ø 28 x 4	420 060	
600 16	2	PIVOT TUBE	15 CDV6	T	Ø 10 x 1 x 44	446 160	TO REAM
600 15		VERTICAL BELLCRANK	2024	T3	105 x 67 x 4	63 000	
600 14	1	HORIZ. BELLCRANK	2024	T3	181 x 47 x 4	63 000	
600 13	2	LOCKING COLLAR	2024	T4	Ø 42 x 13	63 000	
600 12	1	VERTICAL TUBE	2024	T4	Ø 20 x 1.5 x 248	63 000	
600 11	2	SAFETY PLATE	2024	T3	38 x 22 x 1	63 000	
600 10	1	UPPER PIVOT PLATE	2024	T3	90 x 22 x 4	63 000	
600 09	1	LOWER PIVOT PLATE	2024	T3	200 x 22 x 4	63 000	
600 08	1	BELLCRANK	2024	T3	450 x 25 x 4	63 000	
600 07	1	LATERAL BRACKET	2024	T3	442 x 22 x 4	63 000	
600 06	1	SPHERICAL BEARING	TYPE : ADR GLD 6			250 060	
600 05	5	SPHERICAL BEARING	TYPE : ADR GLD 5			250 050	
600 04	1	REINFORCEMENT	2024	T3	22 x 21 x 3	63 000	
600 03	1	SUPPORT BRACKET	2024	T3	220 x 60 x 3	63 000	
600 02	1	LATERAL STOP BOLT	STEEL		HEX. HD. Ø 5 x 65 150	420 000	
600 01	1	TRIM LOCKING BOLT	STEEL		HEX. HD. Ø 6 x 30 150	170 000	⟷

AVIONS COLOMBAN

CRICRI MC 15

TITLE : ELEVATOR CONTROL SYSTEM _ ASSEMBLY _ DETAILS

Scale : 1/1

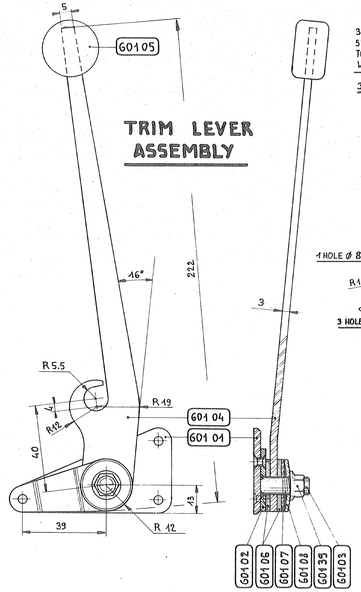
Drawn by : Colomban

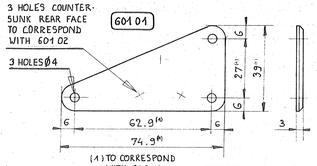
Date : Nov. 1981

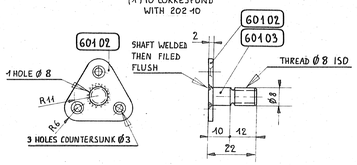
600

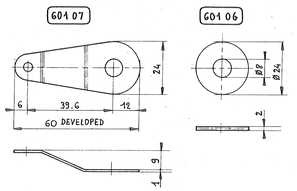
7 - 12 - 80

TRIM LEVER ASSEMBLY

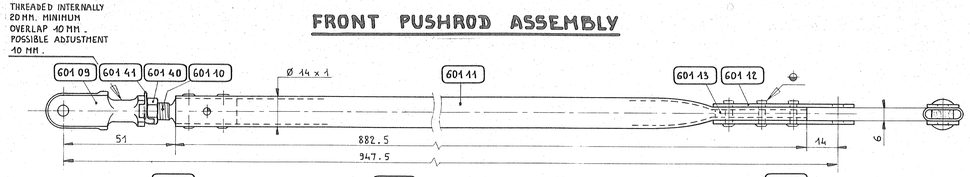


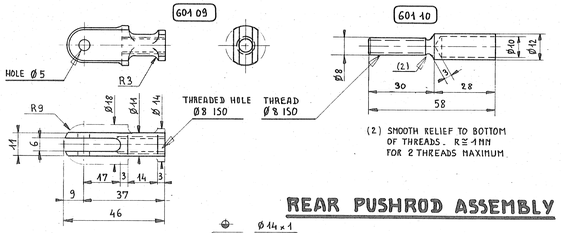


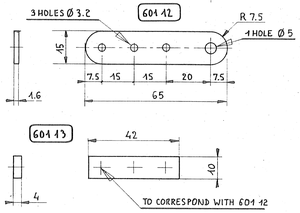


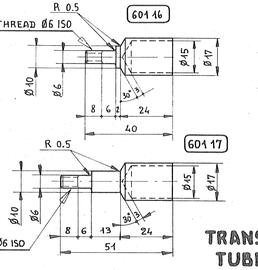


FRONT PUSHROD ASSEMBLY

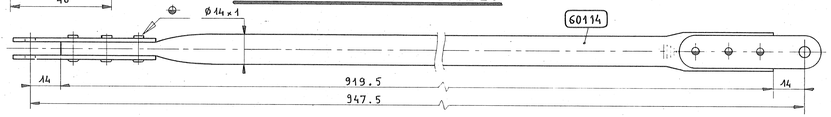




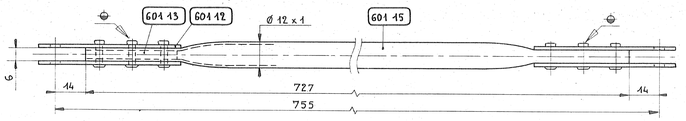




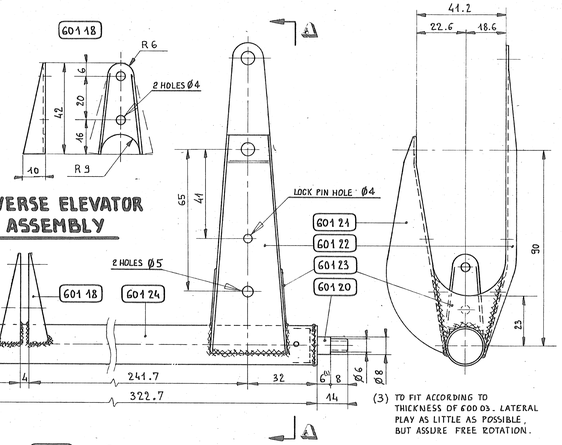
REAR PUSHROD ASSEMBLY



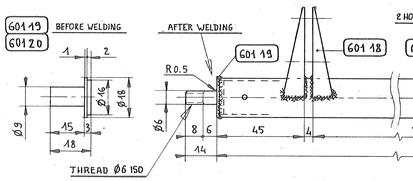
FIN PUSHROD ASSEMBLY

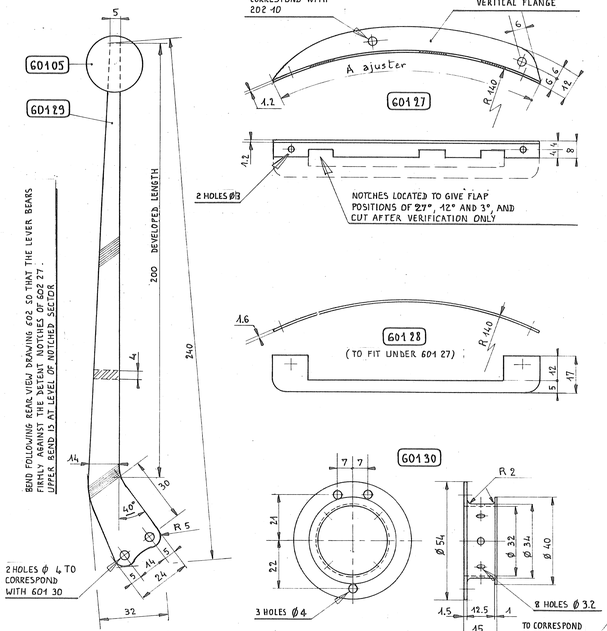


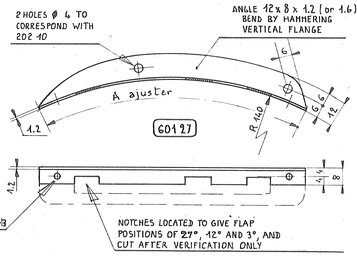
SECTION A-A



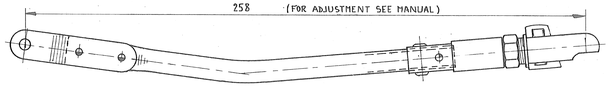
TRANSVERSE ELEVATOR TUBE ASSEMBLY

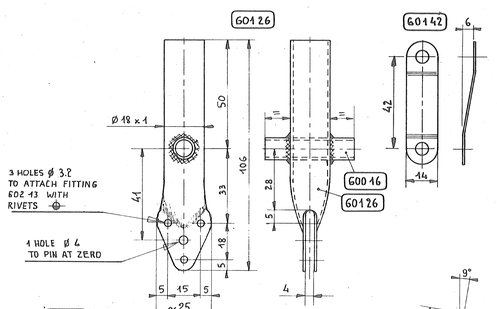


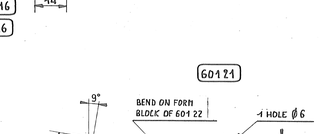


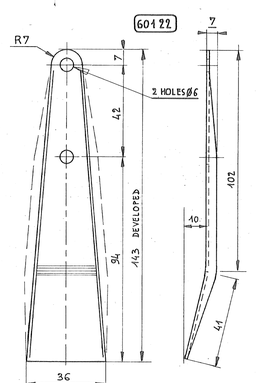


FLAP PUSHROD ASSEMBLY

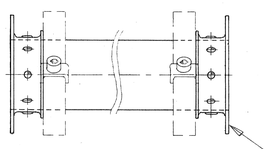


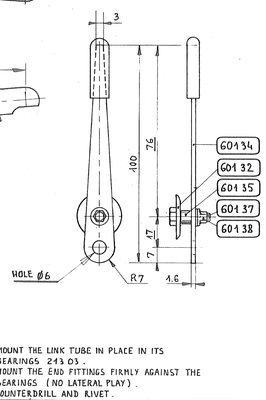




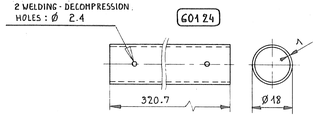


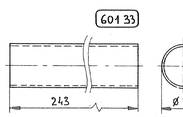
LINK TUBE ASSEMBLY





MOUNT THE LINK TUBE IN PLACE IN ITS BEARINGS 243 03. MOUNT THE END FITTINGS FIRMLY AGAINST THE BEARINGS (NO LATERAL PLAY). COUNTERDRILL AND RIVET.





Reference	Qty.	Description	Material	Cond.	Dimensions	Resist.	Comments
604 42	1	PLATE	2024	T3	56 x 14 x 0.5	63.000	
604 41	1	WASHER (BRAQUE)	ALU		Ø 8		
604 40	4	NUT	2024		HEX HD Ø8 150	63.000	
604 39	1	NUT	STEEL		REDUCED Ø 8 150	120.000	
604 38	1	NUT	STEEL		" Ø6 150	120.000	
604 37	1	BOLT	STEEL		HEX. HD. Ø 4 x 15 150	120.000	
604 36	2	BALL JOINT " L'HOTELLIER"	TYPE RK 5.41.2.22				
604 35	2	SPACER	2024	T3	Ø6 x 12 x 5		OR ALU
604 34	1	LATERAL TRIM LEVER	2024	T3	100 x 44 x 4.6	63.000	
604 33	1	CONTROL STICK	2024		Ø 20 x 1 x 243	63.000	
604 32	2	WASHER	2024	T3	Ø 20 x 2	63.000	
604 31	1	FLAP LINK TUBE	2024	T4	Ø 32 x 1 x 424	63.000	
604 30	2	LINK TUBE END	2024	T4	Ø 54 x 45	63.000	
604 29	1	FLAP LEVER	2024	T3	240 x 32 x 4	63.000	
604 28	1	GUARD RAIL	2024	T3	130 x 47.2 x 6	63.000	
604 27	1	NOTCHED SECTOR	2024	T4	130 x 42 x 4.2	63.000	
604 26	1	STICK - LOW PART	15CDV6		Ø 18 x 1 x 106	140.000	
604 25	2*	FLAP PUSHROD	2024	T4	Ø 10 x 1 x 178	63.000	or 6061 T6
604 24	1	TRANSV. ELEV. TUBE	15CDV6	T	Ø 18 x 1 x 324	140.000	
604 23	2	SIDE PLATES	15CDV6	T	32 x 25 x 1	140.000	
604 22	1	REAR FLANGE	15CDV6	T	143 x 38 x 1	140.000	
604 21	1	FRONT FLANGE	15CDV6	T	100 x 73 x 1	140.000	
604 20	4	INTERNAL TUBE END	15CDV6	T	Ø 18 x 48	140.000	
604 19	4	EXTERNAL TUBE END	15 CDV6	T	Ø 18 x 48	140.000	
604 18	2	VERT. BELLCRANK FLANGE	15 CDV6	T	42 x 38 x 1	140.000	
604 17	1	TOP PIVOT SHAFT	2024	T4	Ø 17 x 54	63.000	
604 16	1	BOTTOM PIVOT SHAFT	2024	T4	Ø 17 x 40	63.000	
604 15	1	FIN PUSHROD	2024	T4	Ø 12 x 1 x 727	63.000	OR 6061 T6
604 14	1	REAR PUSHROD	2024	T4	Ø 14 x 1 x 919.5	63.000	OR 6061 T6
604 13	5	SPACER	2024	T3	42 x 10 x 4	63.000	
604 12	10	PUSHROD FLANGE	2024	T3	65 x 15 x 4.6	63.000	
604 11	1	FRONT PUSHROD	2024	T4	Ø14 x 1 x 882.5	63.000	OR 6061 T6
604 10	1	THREADED END	STEEL		Ø 12 x 58	120.000	
604 09	1	CLEVIS	2024	T4	Ø 18 x 46	63.000	
604 08	1	CONICAL WASHER	2024	T3	Ø 24 x 2	63.000	
604 07	1	PLATE	2024	T3	60 x 24 x 1	63.000	
604 06	2	WASHER	CELORON		Ø 24 x 2		
604 05	1	KNOB	WOOD		Ø 26 x 15		
604 04	1	TRIM LEVER	2024	T3	222 x 33 x 3	63.000	
604 03	1	TRIM SHAFT	15CDV6	T	Ø 8 x 22	140.000	
604 02	1	SHAFT BASE	15CDV6		32 x 30 x 2	120.000	
604 01	1	TRIM SUPPORT	2024	T3	75 x 39 x 3	63.000	

CRICRI MC 15

TITLE : ELEVATOR AND AILERON CONTROL - DETAILS

Scale : 1/1

Drawn by : Colomban
Date : Nov. 1981

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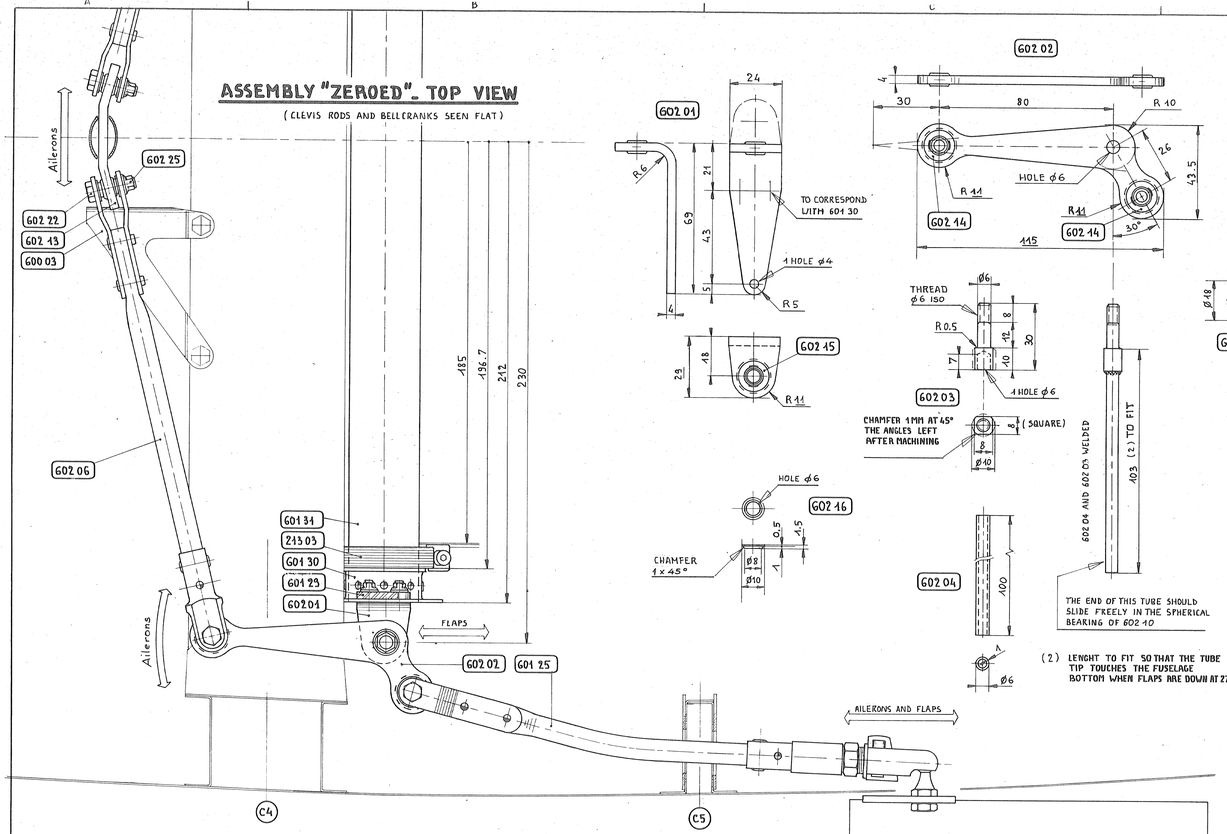
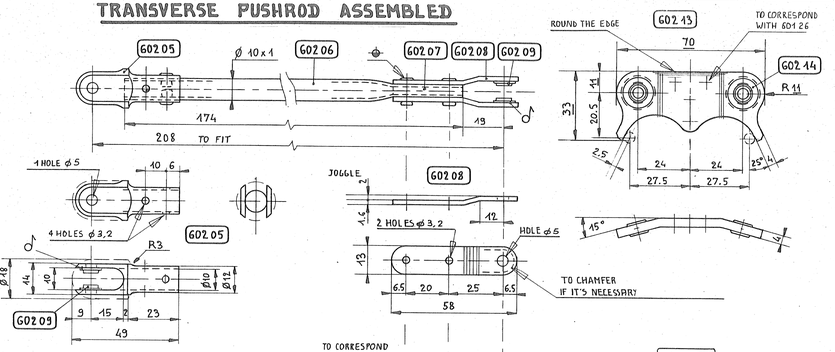
ASSEMBLY "ZEROED"_ TOP VIEW

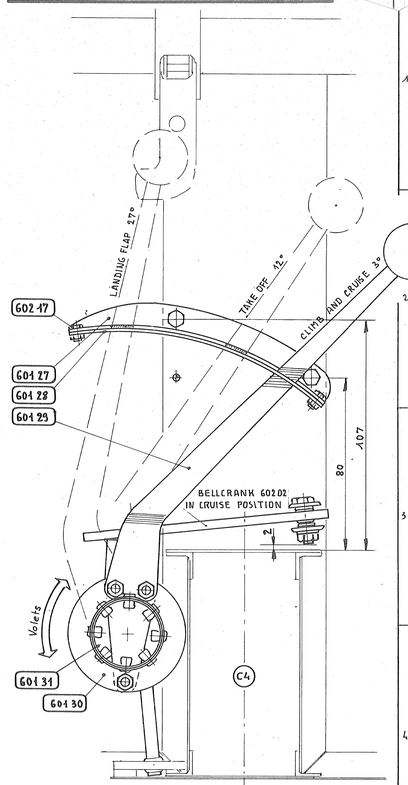
(CLEVIS RODS AND BELLCRANKS SEEN FLAT)



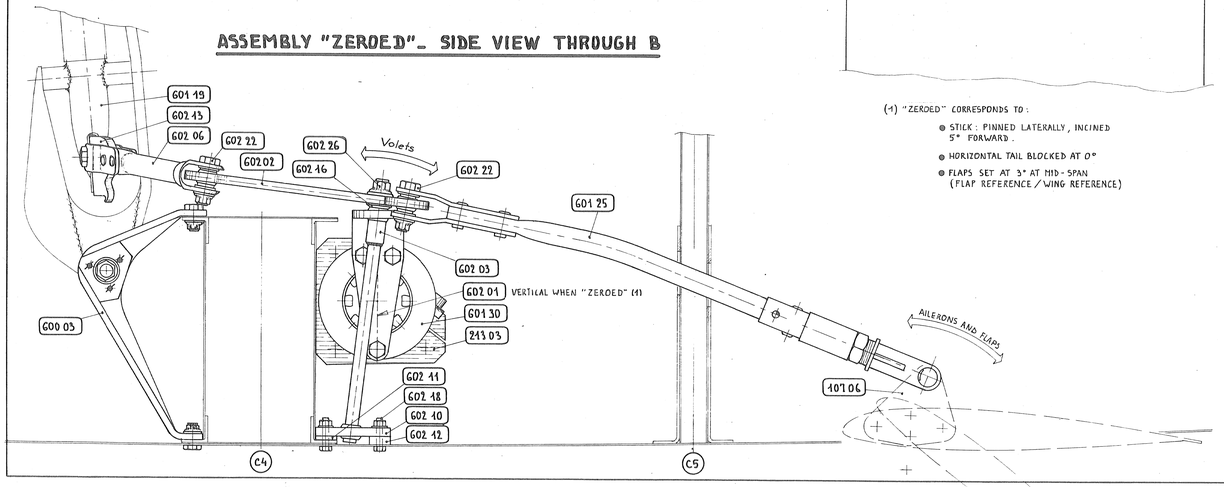
TRANSVERSE PUSHROD ASSEMBLED



FLAP HANDLE _ VIEW THROUGH A



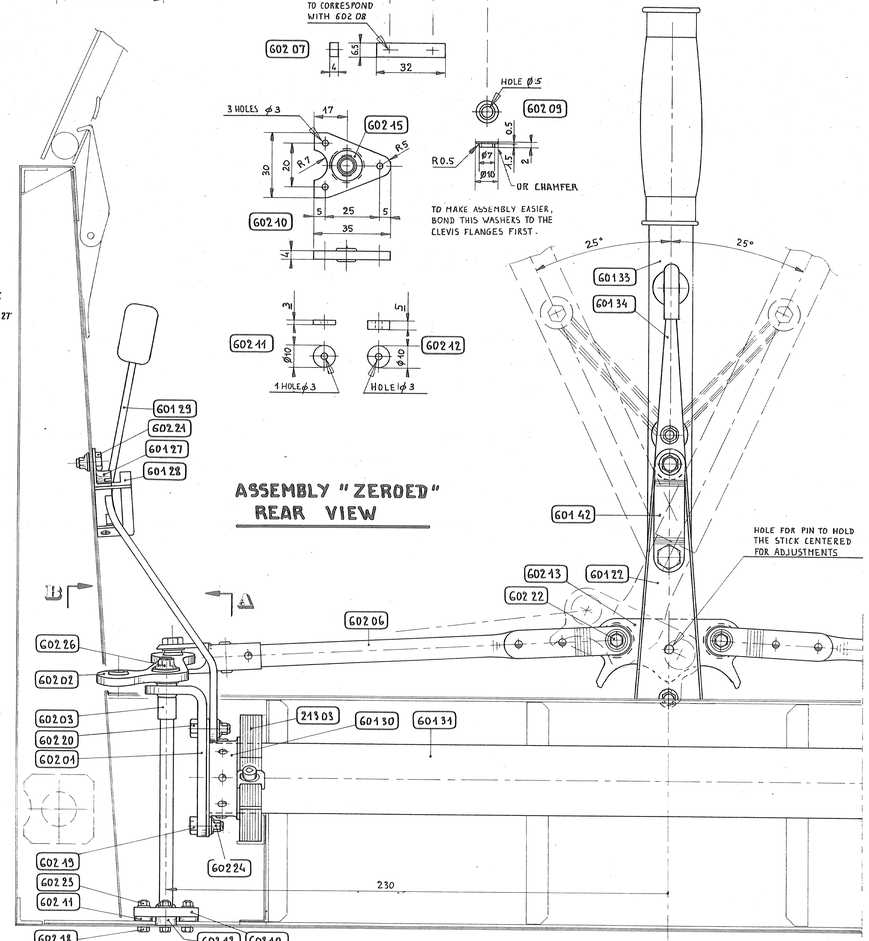
ASSEMBLY "ZEROED"_ SIDE VIEW THROUGH B



(1) "ZEROED" CORRESPONDS TO :

- STICK : PINNED LATERALLY, INCLINED 5° FORWARD .
- HORIZONTAL TAIL BLOCKED AT 0°
- FLAPS SET AT 3° AT MID-SPAN (FLAP REFERENCE / WING REFERENCE)

ASSEMBLY "ZEROED" REAR VIEW



Reference	Qty	Description	Material	Cond	Dimensions	Resist.	Comments
602 28							
602 27	2	WASHER	CELORAN		ϕ 14 x 6 x 2		
602 26	2	NUT	STEEL		REDUCED Ø 6 150	120,000	
602 25	6	NUT	STEEL		" Ø 5 150	120,000	
602 24	8	NUT	STEEL		" Ø 4 150	120,000	
602 23	8	NUT	STEEL		" Ø 3 150	120,000	
602 22	6	SCREEW	STEEL		H.HD ϕ 5 x 35 150	120,000	
602 21	2	SCREEW	STEEL		H.HD ϕ 4 x 8 150	120,000	
602 20	2	SCREEW	STEEL		H.HD ϕ 4 x 25 150	120,000	
602 19	4	SCREEW	STEEL		H.HD ϕ 4 x 12 150	120,000	
602 18	6	SCREEW	STEEL		H.HD ϕ 3 x 25 150	120,000	
602 17	2	SCREEW	STEEL		H.HD ϕ 3 x 7 150	120,000	
602 16	2	CHAMFERED WASHER	STEEL		ϕ 10 x 4,5	120,000	
602 15	4	SPHERICAL BEARING	TYPE : ADR GLD 6			240,000	
602 14	6	SPHERICAL BEARING	TYPE : ADR GLD 5			260,000	
602 13	1	FITTING	2024	T3	68 x 32 x 4	63,000	
602 12	3	SPACER	2024	T3	ϕ 10 x 5	63,000	
602 11	4	SPACER	2024	T3	ϕ 10 x 3	63,000	
602 10	2	BASE SOCKET	2024	T3	30 x 35 x 4	63,000	
602 09	12	SHOULDER WASHER	STEEL		ϕ 10 x 2	120,000	
602 08	8	PUSHROD FLANGE	2024	T3	50 x 13 x 1.6	63,000	
602 07	4	SPACER	2024	T3	32 x 6,5 x 4	63,000	
602 06	2	TRANSVERSE PUSHROD	6061	T6	ϕ 10 x 1 x 174	45,000	TUBE
602 05	2	CLEVIS	2024	T3	ϕ 48 x 49	63,000	
602 04	2	MIXER PIVOT	15CDV6	T	ϕ 6 x 1 x 100	468 000	TUBE
602 03	2	THREADED END	15CDV6		ϕ 10 x 30	410 000	
602 02	2	BELLCRANK	2024	T3	113 x 43 x 4	63,000	
602 01	2	MIXER SUPPORT	2024	T3	90 x 24 x 4	63,000	OR 6061 T6

AVIONS COLOMBAN — CRICRI MC 15

TITLE : FLAP AND AILERON CONTROL SYSTEM

Scale : 1/1

Drawn by : Colomban

Date : NOV 1981

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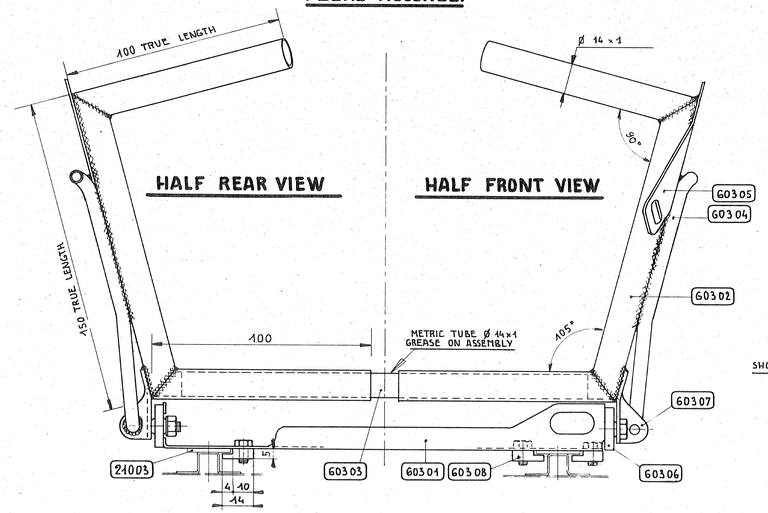
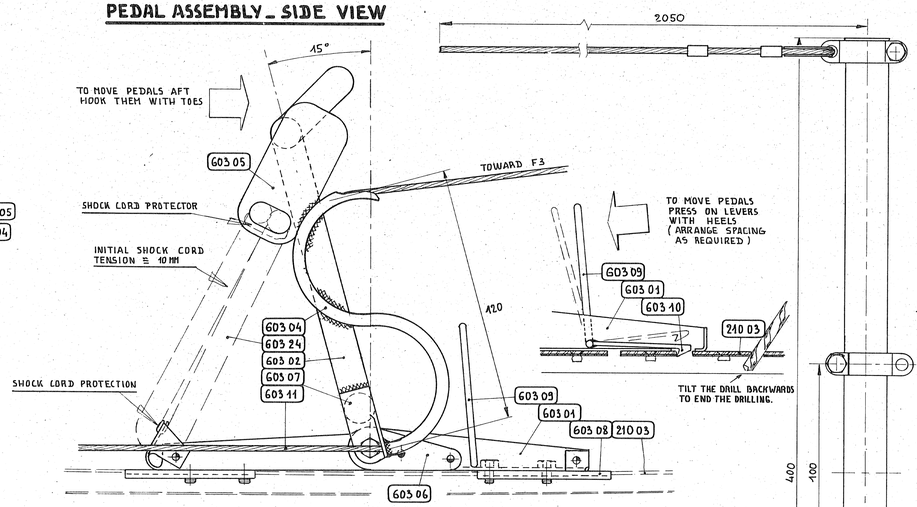
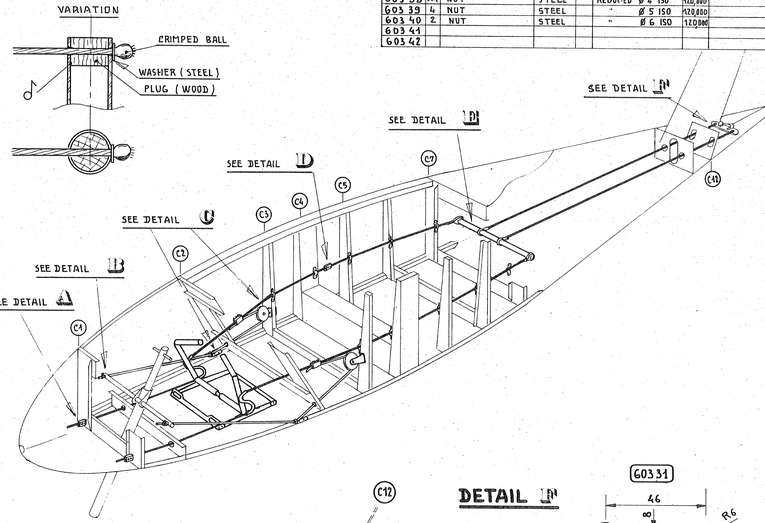
28-12-83

PEDAL ASSEMBLY



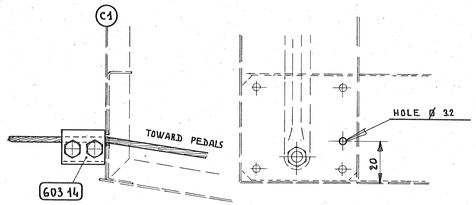
PEDAL ASSEMBLY _ SIDE VIEW





603 38	4/4	NUT		STEEL		REDUCED Ø 4 150	420,860
603 39	4	NUT		STEEL		" Ø 5 150	420,860
603 40	2	NUT		STEEL		" Ø 6 150	420,860
603 41							
603 42							

DETAIL A



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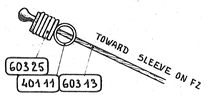
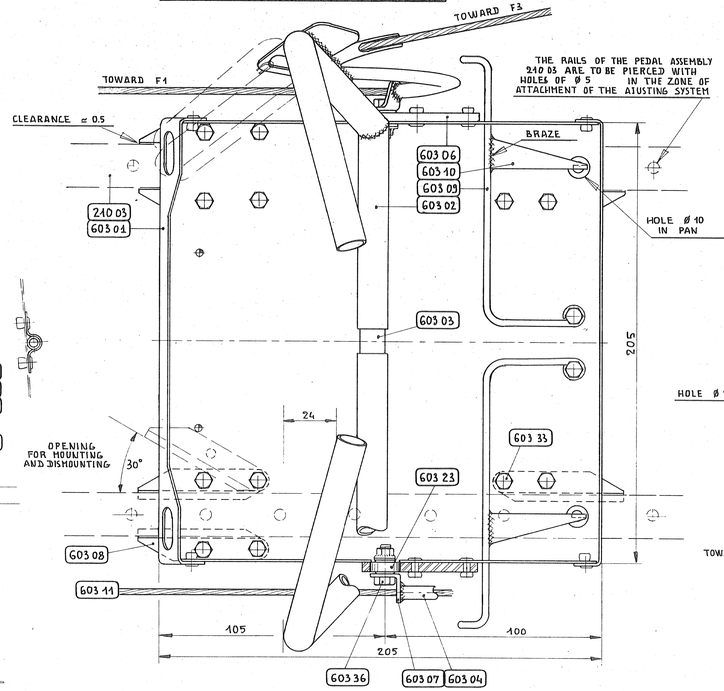


PEDAL ASSEMBLY _ PLAN VIEW



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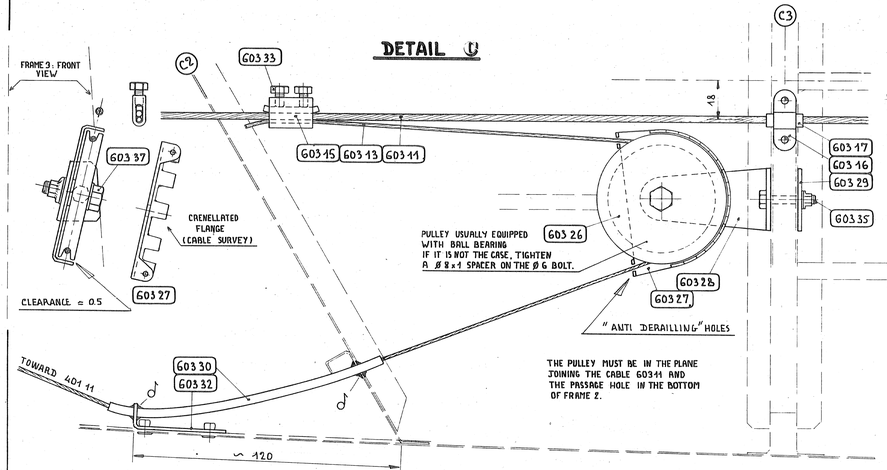

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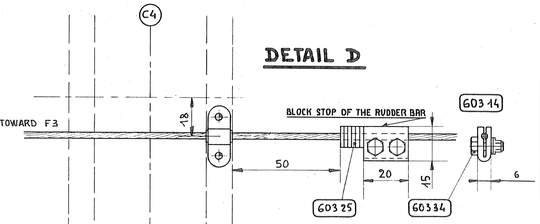

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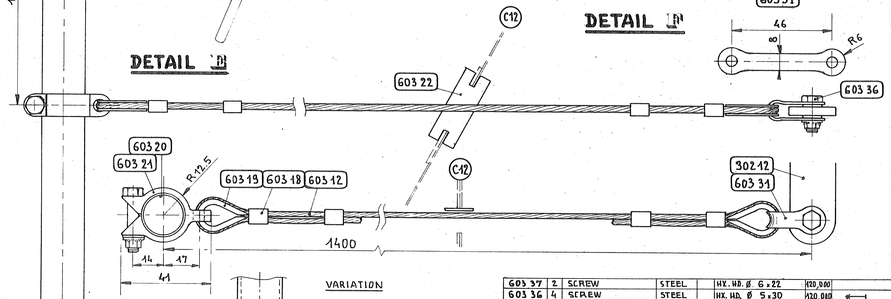

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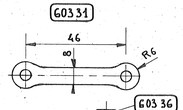
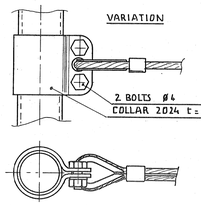




603 37	2	SCREW		STEEL		HX. HD. Ø 6 x 22	420,060
603 36	4	SCREW		STEEL		HX. HD. Ø 5 x 30	420,060
603 35	6	SCREW		STEEL		HEX. HD. Ø 4 x 25	420,060
603 34	8	"		"		" Ø 4 x 12	"
603 33	4/8	"		"		" Ø 4 x 8	"
603 32	2	ANGLE		2024	T3	50 x 10 x 1.6	65,080
603 31	2	SHACKLE		STEEL		58 x 12 x 1	85,000
603 30	2	HOUSING		STEEL		Ø 4.5 x 150	
603 29	2	PLATE		2024	T3	30 x 16 x 1.6	65,000
603 28	2	PULLEY SUPPORT		2024	T3	78 x 30 x 2	65,040
603 27	2	ANTI DERAIL COVER		2024	T3	85 x 57 x 0.8	65,000
603 26	2	PULLEY		CELORAN		Ø 50	
603 25		WASHERS		CAOUTCHOUC		Ø 10	
603 24		SHOCK CORD		INDUSTRIAL Ø 10 OR AERONAUTIC Ø 8			
603 23	2	SPHERICAL BEARING		TYPE : ADR GLD 5			250,000
603 22	2	ANTI FRICTION PAD		TEFLON		35 x 12 x 1	
603 21	4	COLLARS		2024	T3	40 x 25 x 10	65,006
603 20	1	REDUCING TUBE		2024	T6	Ø 20 x 1 x 400	68,000
603 19	6	CABLE EYE		STAINLESS STEEL FOR CABLE Ø 2.4 (OR GALVANIZED)			
603 18	12	NICOPRESS FITTING		ALU.		FOR CABLE Ø 2.5	
603 17	10	SLIDE TUBE		TEFLON		~ Ø 6 x 1 EXT. x 12	
603 16	10	CABLE GUIDE		2024	T3	32 x 10 x 0.5	65,050
603 15	2	CABLE CLAMP		2024	T3	20 x 15 x 6	65,000
603 14	4	CABLE CLAMP		2024	T3	20 x 15 x 6	65,000
603 13	2	LINK CABLE		STEEL		Ø 2 x 1400	
603 12	2	REAR CABLE		STAINLESS STEEL		Ø 2.4 x 1400	950 LB (OR GALVANIZED)
603 11	2	FRONT CABLE		"	"	Ø 2.4 x 2250	" "
603 10	2/1	LOCK HOOK		4130		45 x 15 x 2	420,060
603 09	2/1	LOWING LEVER		PIANO WIRE		Ø 3 x 260	250,060
603 08	1	SLIDE		CELORAN		60 x 14 x 5	OR 2024 3 MM
603 07	2/1	PIVOT FITTING		15CDV6		35 x 25 x 1.5	420,060
603 06	2	PIVOT PLATE		2024	T3	52 x 20 x 4	65,000
603 05	2/1	SIDE PLATE		STEEL		60 x 30 x 1	420,000
603 04	2/1	S TUBE		STEEL		Ø 6 x 1 x 200	80,100
603 03	1	LINK TUBE		2024	T4	Ø 12 x 4 x 190	65,000
603 02	2/1	TUBE PEDAL		15CDV6		Ø 14 x 1 x 350	440,060
603 01	1	PAN		2024	T3	245 x 235 x 1	65,080

Reference	Qty	Description	Material	Cond	Dimensions	Resist.	Comments

AVIONS COLOMBAN

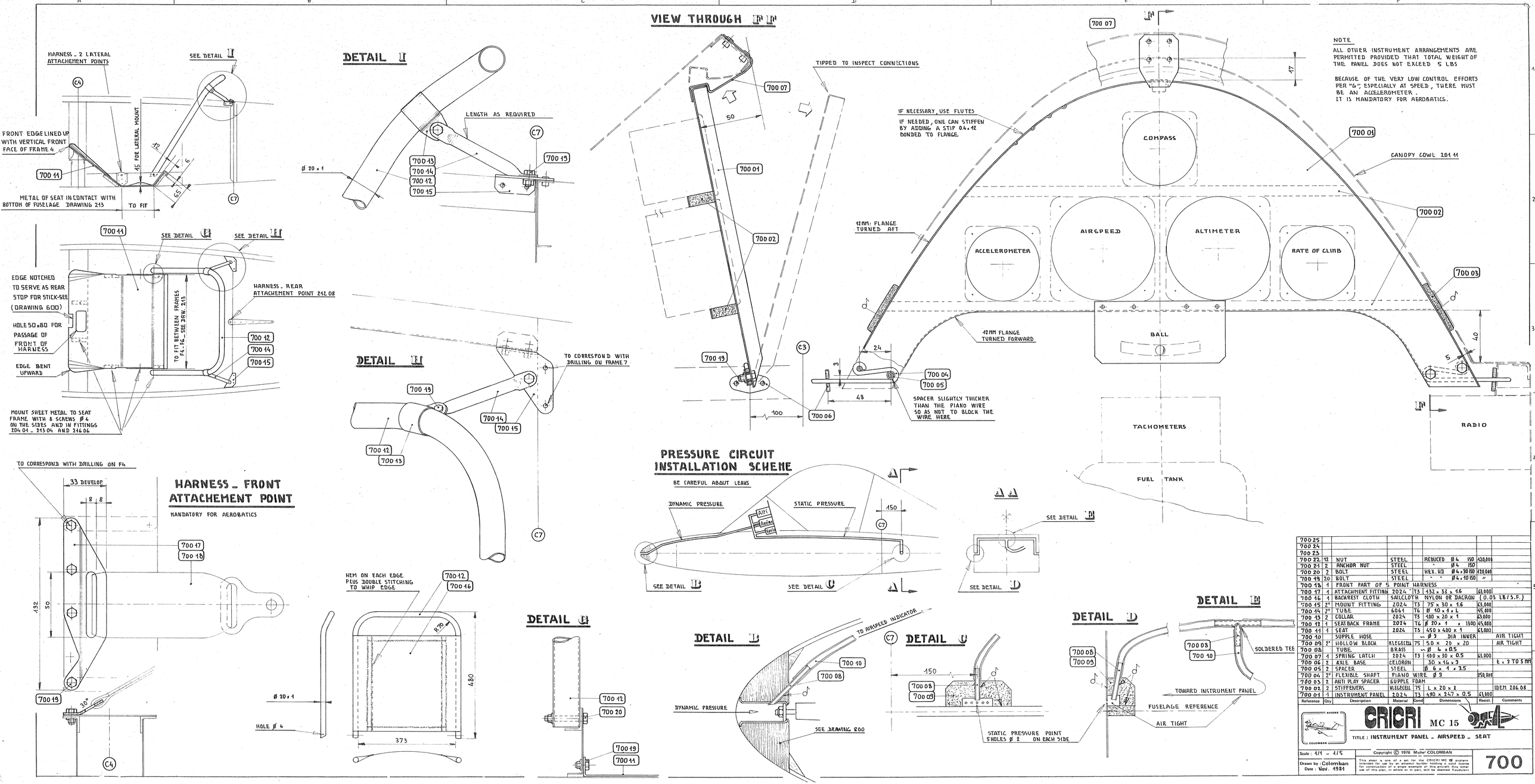
CRICRI MC 15

TITLE : RUDDER CONTROLS

Scale : 1/1

Drawn by : Colomban
Date : Nov 1984

603



Reference	Qty	Description	Material	Cond	Dimensions	Resist.	Comments
700 25							
700 24							
700 23							
700 22	12	NUT	STEEL		REDUCED Ø 4 150	420.000	
700 21	2	ANCHOR NUT	STEEL		" Ø 4 150		
700 20	2	BOLT	STEEL		HEX. HD Ø 4 x 30 150	420.000	
700 19	20	BOLT	STEEL		" " Ø 4 x 10 150	"	
700 18	1	FRONT PART OF 5 POINT HARNESS					
700 17	1	ATTACHMENT FITTING	2024	T3	432 x 32 x 1.6	63.000	
700 16	1	BACKREST CLOTH	SAILCLOTH	NYLON OR DACRON	(0.03 LB/S.F.)		
700 15	2*	MOUNT FITTING	2024	T3	75 x 30 x 1.6	63.000	
700 14	2*	TUBE	6061	T6	Ø 40 x 1 x L	45.000	
700 13	2	COLLAR	2024	T3	400 x 20 x 1	63.000	
700 12	1	SEATBACK FRAME	2024	T6	Ø 20 x 1 x 1300	45.000	
700 11	1	SEAT	2024	T3	450 x 400 x 1	63.000	
700 10		SUPPLE HOSE			~ Ø 3 DIA INNER		AIR TIGHT
700 09	2*	HOLLOW BLOCK	KLEGECEL	75	30 x 20 x 20		AIR TIGHT
700 08		TUBE	BRASS		~ Ø 4 x 0.5		
700 07	1	SPRING LATCH	2024	T3	400 x 30 x 0.5	63.000	
700 06	2	AXLE BASE	CELORON		30 x 46 x 3		L = 9 TO 5 MM
700 05	2	SPACER	STEEL		ID 6 x 1 x 3.5		
700 04	2*	FLEXIBLE SHAFT	PIANO WIRE Ø 3			250.000	
700 03	2	ANTI PLAY SPACER	SUPPLE FOAM				
700 02	2	STIFFENERS	KLEGECEL	75	L x 20 x 8		IDEM 206.08
700 01	1	INSTRUMENT PANEL	2024	T3	490 x 247 x 0.5	63.000	

AVIONS COLOMBAN

CRICRI MC 15

TITLE : INSTRUMENT PANEL - AIRSPEED - SEAT

Scale : 1/1 - 1/5

Drawn by : Colomban

Date : Nov. 1984

700

NOSE
(SCALE 1 AND 1/2.)

FULL SIZE TEMPLATE FOR NOSE SIDE PANELS

3MM BALSA PLYWOOD MAKE WITH THREE 1 MM SHEETS WITH EXTERNAL GRAIN TRANSVERSE. COVER INSIDE AND OUTSIDE FACES WITH FIBERGLASS CLOTH. (100 TO 110 Gr/M²) (0.02 LB/FT²)

SECTION A A

SECTION B B

SECTION C C

ROUND CORNERS PROGRESSIVELY TO POINT OF NOSE

(0.125")

JOIN 4 PANELS OF 3MM BALSA PLY (MAKE FROM 1MM SHEET) PREFERABLY ON A CURVED MOLD. MITER CORNERS AT 45° AND BOND EDGE TO EDGE WITH SEWING PINS TO HOLD IN PLACE. ADD INTERIOR BLOCKS LAST.

SEE DETAILS

CUT OUT FOR MOTOR MOUNT

SEE DRW. 700

800 51

500 01

DETAIL

CURVE: SEE DRW 200

OPTIONAL ANGLES OF 0.5 MM ALLOY

800 25

40

SEE DETAIL

800 51

NOSE MOUNTING NUT 800 28

800 27

800 26

800 24

501 01

FULL SIZE TEMPLATE FOR NOSE UPPER AND LOWER PANELS

800 31	2	SCOOP	2024	T3	100 x 404 x 0.5	65,000	
800 32	4	STIFFENER - WEB	KLEGECELL	75	440 x 12 x X		
800 33	4	STIFFENER - CAP	2024	T3	440 x 8 x 0.5	65,000	
800 34	2	SMALL BAR	2024	T3	56 x 40 x 1	65,000	
800 35	1	AIR EXIT	2024	T3	170 x 150 x 0.4	65,000	
800 36	1	FUEL TANK	FIBERGLAS		520 x 420 x 265		≈ 6.1 US GAL.
800 37	1	PLUG TANK					
800 38	1	TANK AIR DUCT	RILSAN TUBE = Ø3 IN.				
800 39	2	FUEL TAP	(FROM AUTOCYCLE)				
800 40	1	FITTING	2024	T3	75 x 48 x 3	65,000	
800 41	1	GASKET	SYNTHETIC RUBBER t = 1 or 2 MM				
800 42	2	PICK-UP TUBE	SYNTHETIC RUBBER (NOT HARDENING IN FUEL) Ø 3 TO 4 INNER				
800 43	1	FRONT FITTING	2024	T3	70 x 16 x 2	65,000	
800 44	1	FRONT FITTING	2024	T3	56 x 16 x 2	65,000	
800 45	2	SIDE FITTING	2024	T3	55 x 16 x 2	65,000	
800 46	2	THREADED SHANK	STEEL		Ø 4 x 70 ISO	90,000	
800 47	5	SCREW	STEEL		HEX. HD Ø 4 x 12 ISO	420,000	
800 48	7	NUT	STEEL		REDUCED Ø 4 ISO	420,000	
800 49	1	FUEL FILLER					
800 50	2	FUEL LINE	NYLON OR RILSAN TUBE. INNER Ø 3 TO 4 MM				
800 51	1	NOSE MOUNTING	2024	T3	560 x 20 x 0.5	65,000	

VENTILATION AIR INTAKE
(SCALE 1/2)

2 SYMMETRICAL 40 x 80 OPENINGS IN BOTTOM OF FUSELAGE.

THE POSITION OF THE SCOOPS IS MAINTAINED BY FRICTION BETWEEN 2 KLEGECELL STIFFENERS

800 34 800 33 800 32 800 31

LOWER FAIRING OF GEAR LEG STARTS BEHIND 800 31

800 03

800 47 800 48

VENTILATION . EXHAUST
(HALF SIZE)

800 35

HOLES IN FUSELAGE BOTTOM TOTAL AREA 40 TO 50 CM² 120 HOLES Ø7 FOR EXAMPLE

15 POP RIVETS 3/32 DIA (Ø 2.4)

VARIANT.

YOU MAY ALSO MAKE HOUSING STOPS FIXED TO THE SIDE OF REAR FITTING SOMO (LEFT MOTOR) AND ON THE FRONT FACE OF THE CRANKCASE (RIGHT MOTOR.)

MAKE SURE THAT ANGLE α IS THE SAME FOR BOTH SIDE (SYNCHRONIZATION)

IDLE

FULL THROTTLE

800 18 800 19 800 21 800 20 800 24 800 15

FIRM ADJUSTMENT

800 13

ENGINE CONTROLS
(SCALE 1/1)

OFF ON

800 01 800 02 800 22 800 03 800 15 800 14 800 46

TOWARD CARBURETOR

800 09 800 08 800 24 800 22 800 06 800 05 800 04

800 11 800 10 800 12 800 14 800 16 800 21

TOWARD CARBURETOR

800 50 800 39 800 40 800 41 800 44 800 47 800 43 800 36 800 49 800 37 800 38

CAP OF FUEL

NECK OF 2 STROKE FUEL CAN CUT OUT AND BONDED INTO LAMINATION OF TANK.

TANK VENT Ø INSIDE = 0.08" TO 0.125" (= 2 TO 3 MM)

16 x 2

FUEL TANK
(SCALE 1/1 AND 1/5)

CRIMP OR COLLAR

800 42

BALLAST

FITTING INSERTED INTO FRONT FACE OF FUEL TANK

LAYERS OF SUPPLE CLOTH (ABOUT 300 Gr M²) PLUS EPOXY RESIN

RELIEF FOR RIGHT AND LEFT HANDS.

RELIEF STICK TUBE RIGHT SIDE.

RELIEF FOR STICK IN CENTER.

RELIEF FOR PUSHRODS

RELIEF FOR F2

RELIEF FOR PULLEY 60326

RELIEF FOR RUBBER CABLE

RELIEF FOR PILOT'S LEGS

800 38 800 45 800 46 SIDE ATTACHMENTS

BANDS OF FOAM ON C2 AND C3

OUTLET UNDER FUSELAGE DIAGONAL FACE TO REAR

TOWARD THROTTLE

PASSAGE IN 21104 LEFT

PASSAGE IN 21602

PASSAGE IN 21104

(SEE MANUAL) ROUTE PARALLEL TO CENTER LINE PLANE

800 25	6	NUT	STEEL		REDUCED Ø 4 ISO	420,000	
800 27	4	SCREW	STEEL		HEX. HD. Ø 4 x 30 ISO	420,000	
800 26	4	INLET DYNAM. PRESS.	SOMO		Ø 46 TO 20 x 1 x 50	35,000	
800 25	1	NOSE	BALSA		THK = 3 MM OR FIBERGLASS T = 0.6 - 0.8		
800 24	44	NUT	STEEL		Ø 2	85,000	
800 23	10	NUT	STEEL		REDUCED Ø 3 ISO	420,000	
800 22	14	SCREW	STEEL		Ø 2 x 16	85,000	
800 21	14	SCREW	STEEL		HEX. HD. Ø 3 x 10 ISO	420,000	
800 20	2	STOP FITTING	2024	T3	26 x 22 x 6	65,000	
800 19	2	LITTLE TUBE	RILSAN OR NYLON (LIGHTLY RIGID)				
800 18	2	CABLE BLOC	SUPPLIED WITH THE CARBURETOR				
800 17	2	LEVER THROTTLE	STEEL		55 x 10 x 1	85,000	
800 16	1	STOP FITTING	2024	T3	34 x 20 x 6	65,000	
800 15	2	BOWDEN					
800 14	2	CABLE EXTRA SUPPLE (STEEL)	SELF LUBRICATING CABLE				
800 13	2	SCREW	STEEL		HEX. HD. 4 x 10 ISO	420,000	
800 12	2	SPACER	STEEL		Ø 6 x 4 x 4.3	420,000	
800 11	2	SCREW	STEEL		Ø 3 x 18 ISO	85,000	
800 10	2	TENSIONER	2024	T3	27 x 10 x 4	65,000	
800 09	1	ANCHOR NUT	STEEL		REDUCED Ø 4 ISO	420,000	
800 08	2	FRICTION WASHER	CELORON		Ø 44 x 6 t = 2		
800 07	2	WASHER	2024	T3	Ø 10 x 4 x 1	65,000	
800 06	1	LOCK SCREW	STEEL		HEX. HD. Ø 4 x 40 ISO	420,000	
800 05	2	FITTING	2024	T3	70 x 16 x 0.5	65,000	
800 04	1	THROTTLE SUPPORT	POPLAR		150 x 35 x 10		
800 03	2*	CONSOLE	2024	T3	72 x 60 x 0.5	65,000	
800 02	1	TABLET	PLYWOOD		175 x 40 x 5		
800 01	2	THROTTLE	2024	T3	450 x 14 x 3	65,000	

Reference	Qty	Description	Material	Cond	Dimensions	Resist.	Comments

AVIONS COLOMBAN

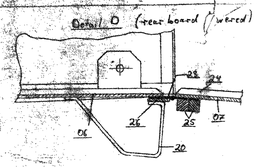
CRICRI MC 15

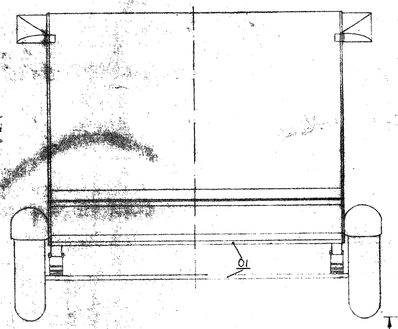
TITLE: NOSE - VENTILATION - FUEL TANK - ENGINE CONTROLS -

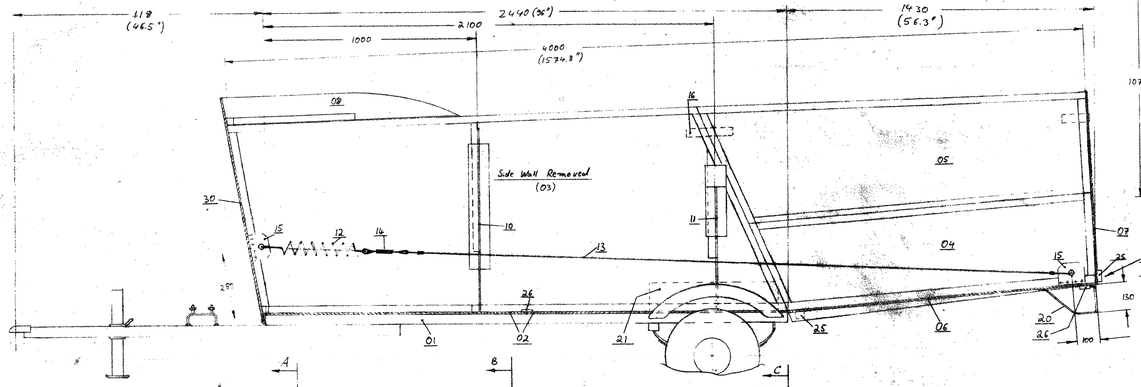
Scale: A . 1/2 . 1/5

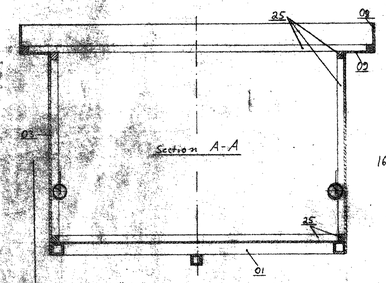
Drawn by: Colomban Date: FEV 1982

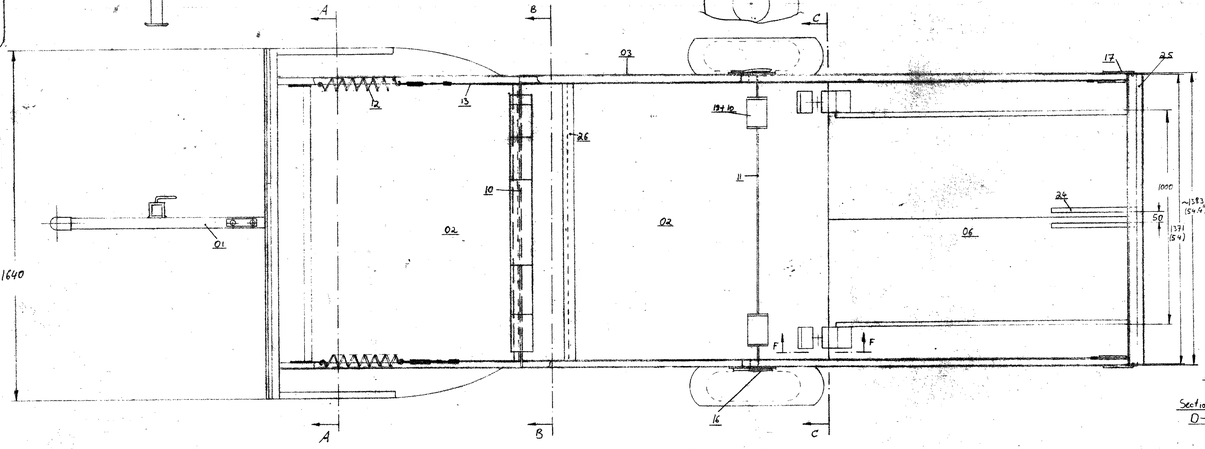
800

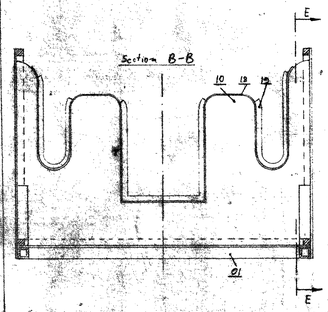


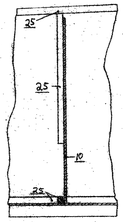


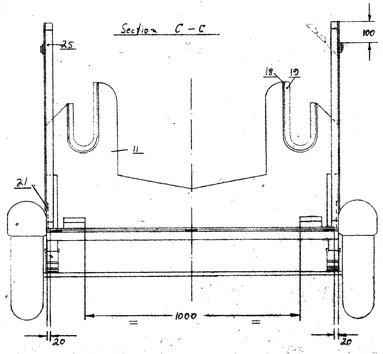


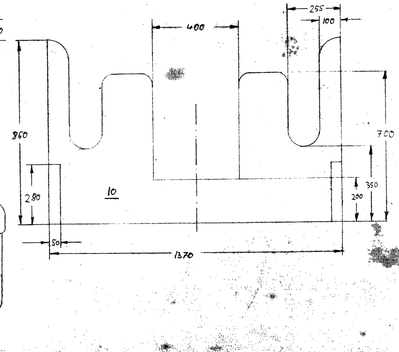


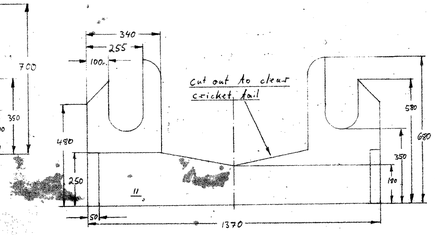


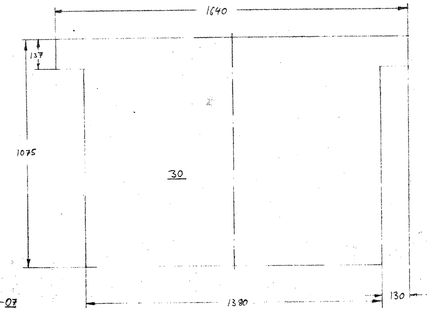


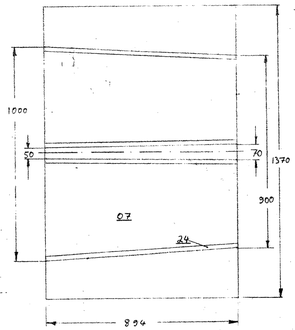


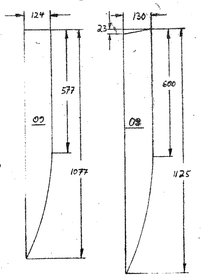


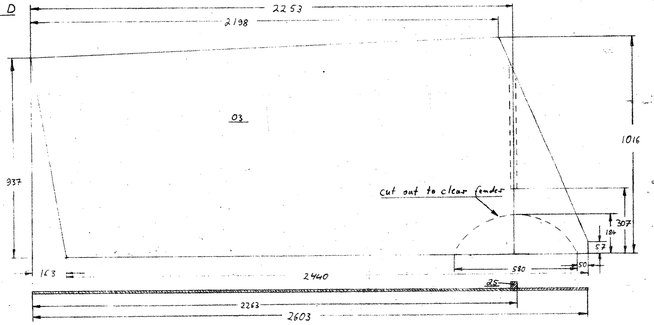


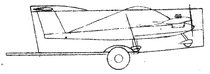


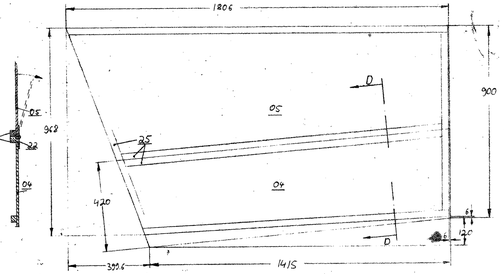




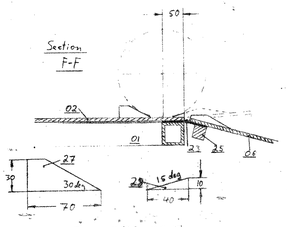








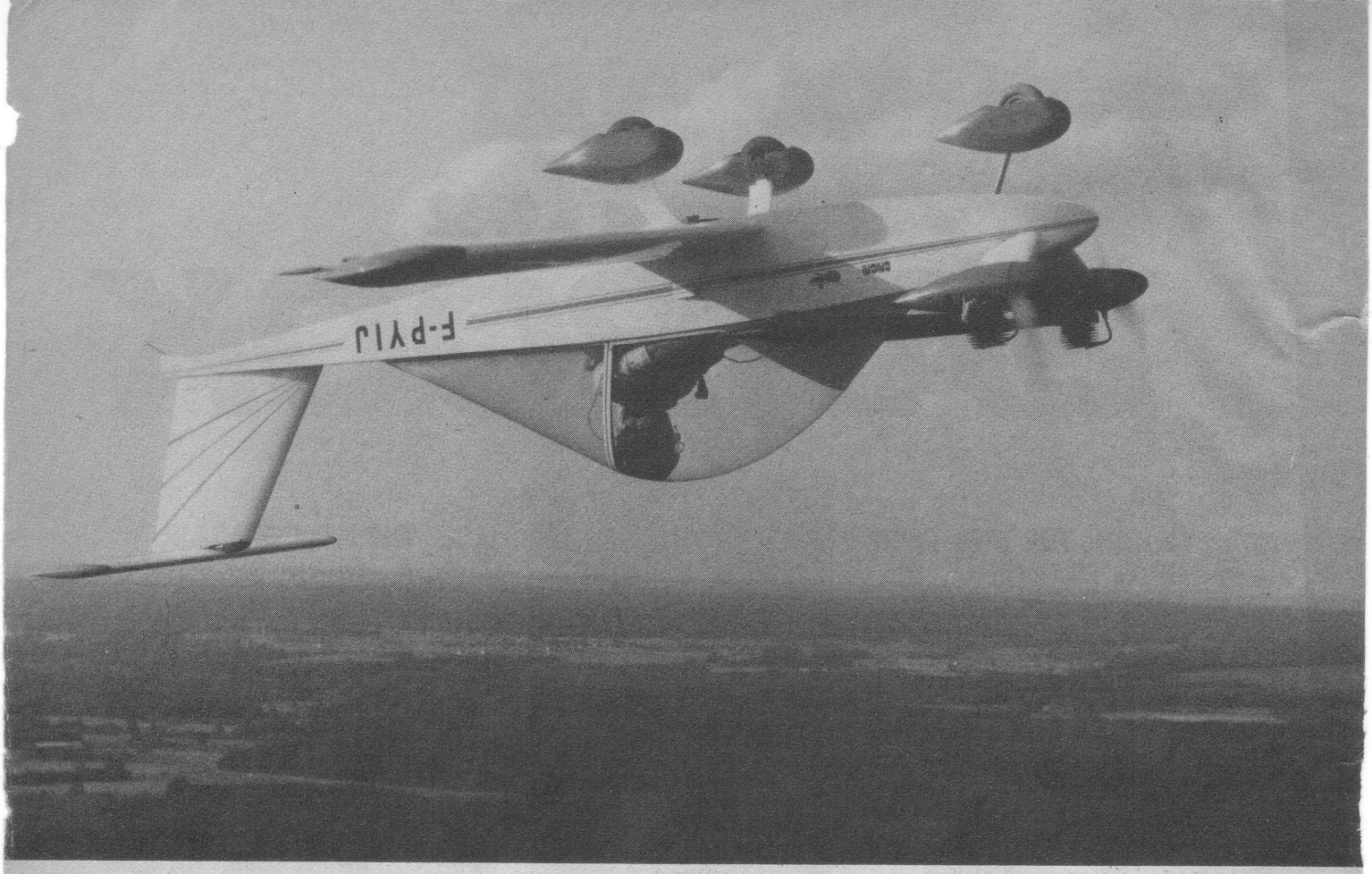
Section D-D



30	1	Front board	Plywood	1075 × 1640 × 6.2	
29	1	wheel block			adjust to fit
28	1	wheel block			adjust to fit
27	1	wheel block			adjust to fit
26	–	Plywood strip	Plywood	50 × 6.2 (2" × ¼")	
25	–	Beam	wood	1" × 1"	
24	–	Beam	wood	¼" × 1" or ½" × ½"	
23	6	hinge (bottom)			to 1040 mm
22	4	hinge (side)			
21	2	doubler	Plywood	580 × 525 × 6.2	
20	2	Rear mud support	Steel	450 × 284 × 4	bend
19	–	Foam strip	Ethafoam	100 wide, ¼" thick	to fit wires in
18	–	Aluminium strip	Alu	100 wide	steel channel
17	2	Clamp fastener(body)			self locking
16	2	Clamp fastener			self locking
15	4	plate	steel	100 × 100 × 1 (approx)	
14	2	Turnbuckle	steel		sides spring
13	–	cable	steel	~8000 × 3.2 dia	
12	2	Spring	Steel		Garage door spring
11	1	Wing support (rear)	Plywood	580 × 1370 × 6.2	
10	1	Wing support (front)	Plywood	350 × 1370 × 6.2	
09	2	Horiz. tail cover (side)	Plywood	124 × 1077 × 6.2	
08	2	Horiz. tail cover (side)	Plywood	130 × 1125 × 6.2	
07	1	Rear board	Plywood	894 × 1370 × 6.2	
06	1	Bulkhead (rear)	Plywood	1430 × 1370 × 6.2	
05	2	Side boards (rear, removable)	Plywood	1806 × 420 × 6.2	to fit wheels
04	2	Side boards (rear)	Plywood	(cut together with 05)	to fit wheels
03	2	Side boards (front)	Plywood	2603 × 1016 × 6.2	to fit wheels
02	2	Bottom boards	Plywood	2440 × 1370 × 6.2	
01	1	Trailer base	Steel	2440 × 1370	
Reference No.		Description	Material	Size	Remarks

Cricket Trailer

1:10 (1/8")
Millimetres
Dec. 81



CRICRI: THE TINY TWIN FROM FRANCE

The 160-Pound Cricket MC12 Becomes An Aerobatic Airshow Stopper

WHEN TWO CRICRI aircraft landed after their first team flight at the 1981 Oshkosh show it was almost as though the Pied Piper had walked through the crowd. The tiny planes were completely surrounded by enthusiastic EAA members with a curiosity that was maintained throughout the entire show.

CriCri is the French Cricket MC12, the world's smallest twin-engine airplane at 16 feet, 160 pounds. Powered with two 12-hp Swedish snowmobile Valmet engines, the tiny twin has a cruise of 127 mph and a redline of 160 mph. The wing is under 13 feet long and has an area less than that of the horizontal tail of a Rally, just 34 sq.ft. Full-span "Junker-type" flap/ailerons are hinged below the trailing edge of the wing and will produce a rate of roll of 180 degrees per second.

The Cricket is fully aerobatic, stressed to +9 and −4.5 G's. The hundreds of thousands of people who attended this year's Oshkosh show saw team aerobatics with these tiny twins by two French test pilots who call themselves "Les Porthos" after one of the Three Musketeers. Actually, "Les Porthos" are Claude Lelaie and Denis Legrand, civilian test pilots for the French Flight Test Center who perform in some 40 European air shows annually with the CAP 20 and 21 aircraft.

The Cricket was designed by Michel Colomban who accompanied the two models of the aircraft to Oshkosh. The prototype was first flown in 1973, and during the intervening years the design was refined, and drawings and manuals were prepared.

The tiny twin will be available to U.S. homebuilders through the Canadian Zenair group very early in 1982. The price for the kit with all materials, all fittings complete, engines and props is estimated at about $6,000. Zenair President Chris Heintz worked with the Cricket team at Oshkosh and finalized plans for producing the kit in Canada. Only engines, props, canopy and landing gear will come from France.

The Cricket is designed to be disassembled in three to five minutes. Aileron/flaps are connected with a ball joint that precludes rerigging every time the wings come off. The "Junker-

The Cricket's 160-pound empty weight makes it easy to move on the ground and load into its trailer. The wings are detachable.

type" flaps increase wing area and reduce wing loading from 11.2 to eight pounds/sq.ft., producing a stall speed of only 42 mph.

A compact "hangar-trailer" is part of the Cricket package. Both display aircraft were shipped to Oshkosh aboard a French 747, safely encased in their 5 x 13½-foot hangar-trailers. The loaded trailer weighs less than 500 pounds and is completely towable. The trailers were used each night at Oshkosh to secure the tiny aircraft.

Lelaie's and Legrand's work with the French Flight Test Center includes supersonic testing of many aircraft, even the Mirage jets. When the Cricket came along, the pilots asked designer Colomban if they could fly the first two models of the tiny homebuilt in demonstrations. Actually, the pair had only 10 hours to practice their seven-minute routine before arriving at Oshkosh. A smoke system was planned, but the pyrotechnics could not be air-shipped along with the aircraft.

Claude Lelaie is 34 and has 5000 hours of flight time, while Denis Legrand is four years younger and has a total of 3500 hours in 135 different aircraft. Both pilots are relatively lightweight, tipping the scales at 160 and 170 pounds, respectively, with parachute attached. Top allowable weight to pilot the Cricket is 200 pounds.

"We have to be very careful during our demonstrations because we are flying very close to redline of 160 mph," explained Legrand. "The aircraft are stressed for 9 G's positive and 4.5 G's negative, but that's the point at which the airframe will break. No permanent deformation takes place below 6 G's, so we make every effort not to exceed 5 G's in our shows."

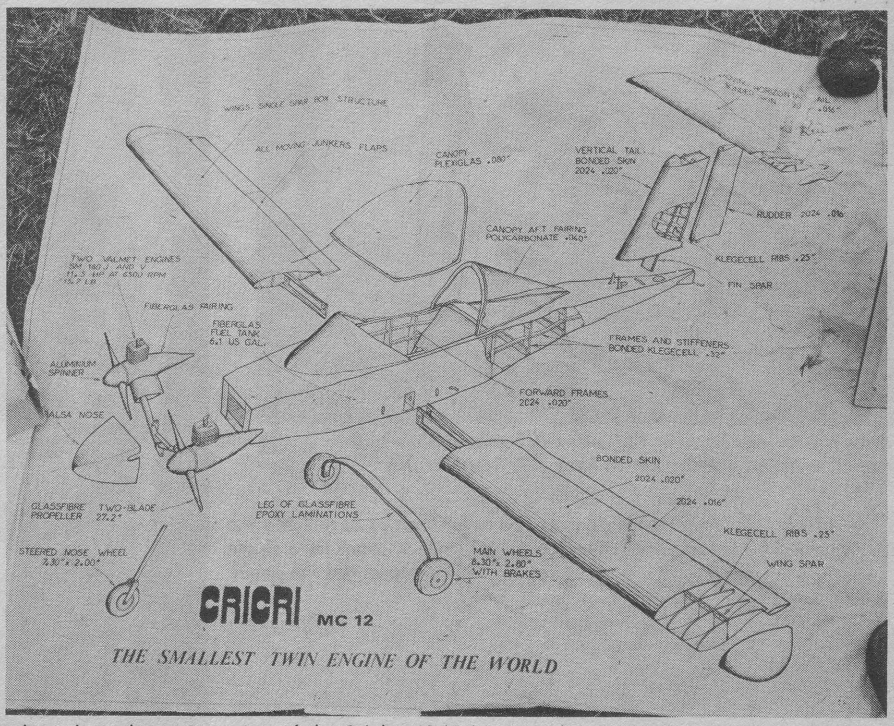
Their airshow routine includes takeoff at 65-70 mph with a climb of 80 mph. They do all flights with full fuel — four to six gallons! Usually "Les Porthos" take off during a lull in the preceding act and climbs to altitude away from the airport. When it is their turn to come "on stage," they enter at 1300 feet, dive to 155 mph indicated and then pull up into a wide 3½- to 4-G loop. This leads into a second tighter loop with G's just above 5. Then follows a close crossing pass, a half Cuban eight with the second ship flying inverted, a Cuban eight together with an inverted crossover, an inverted roll, slow roll in formation, flight toward the crowd with a crossover and a double roll by both aircraft. Then the team does a right-side-up/inverted close formation where the tiny wingtip of the second Cricket is from three to five feet from the T-tail of the lead aircraft.

"We don't recommend this for beginners," explained Lelaie. "Low-speed, inverted flight is difficult because of the limited power. We would like a little more forward stick to handle the vortex from the lead aircraft. Our teamwork differs from the 'French Connection' team that flies almost canopy-to-canopy — we give ourselves a little more room!"

The CriCris will fly inverted indefinitely because of the two-cycle engines that combine fuel and oil through a membrane carburetor in a ratio of 40:1. "You can fly along inverted just as long as you want — until you get tired of it," explained "Les Porthos."

The two demonstration Crickets were built in France by homebuilders under approval of the French EAA, the Reseau du Sport de L'Air (RSA).

The first Cricket to be built in North



Plans show the components of the Cricket (CriCri in French). The landing gear are fiberglass/epoxy laminations, and the wings are bonded.

CRICRI

America will come from the Zenair facility in Richmond Hill, Ontario, Canada. John Pickard, Zenair production manager for kits, was at the airshow, closely inspecting the twins. When Pickard, 6-feet-four-inches tall and weighing 210 pounds, found that he was just a little too tall and too hefty to close the canopy, he commented, "You can bet that I'll build one for myself that's big enough!" At six-feet-two and 190 pounds — and relatively short-waisted — I was able to shoehorn into the cockpit without a 'chute and get the canopy closed, so when one is available, I want to fly it!

The French designer and both airshow pilots report little or no adverse yaw when one engine is shut down. This phenomenon is caused by the close-in mounting of the engines to the aircraft centerline and the propeller slipstream as it is deflected by the large canopy. Colomban explains: "This automatically creates an incidence on the vertical tail that compensates for the asymetric thrust on one engine. Single-engine rate of climb is reported at 180 fpm. At the time of the Oshkosh demonstrations, the new homebuilts had not yet been stalled inverted. Pilots estimate an inverted stall speed with flaps retracted of about 65 mph.

The French air show pilots reported that the CriCri is very easy to fly. "Any normal pilot can fly it easily. There are no bad habits," they explained. "Aerobatics should be approached cautiously so as not to exceed the redline speed."

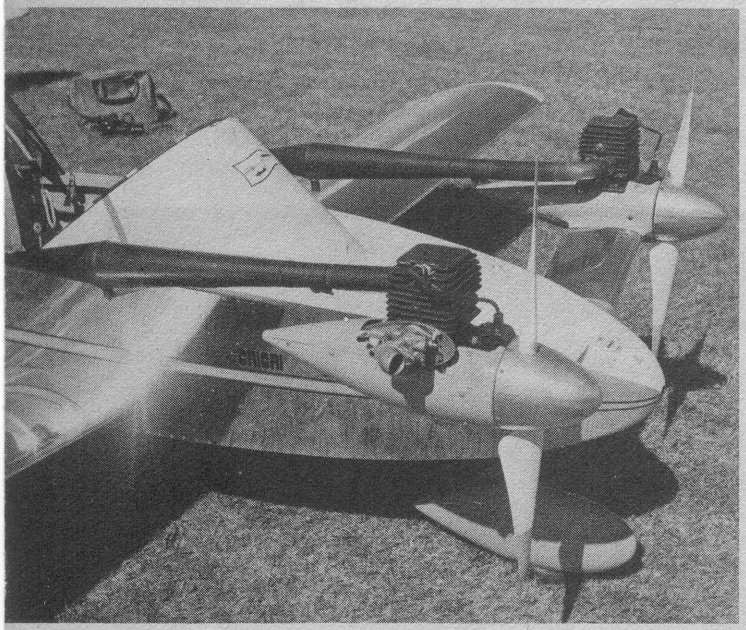
During the first flights of the Cricket in this country, there was some question of whether or not the FAA would require a multi-engine rating to fly this tiny homebuilt. The French pilots felt that this additional rating would probably not be necessary, but they were not sure. Zenair will have this minor piece of paper work resolved before the first kits are shipped.

Designer Colomban, an ex-model airplane fan, designed the Cricket as a simple, easy-to-build single-seater that would carry 180 pounds of pilot and 35 pounds of fuel with efficiency. His original prototype was designed for wood and fabric, but he soon found that sheet metal was more satisfactory. When he was unable to find a suitable 24-hp engine, he settled for the two chainsaw powerplants.

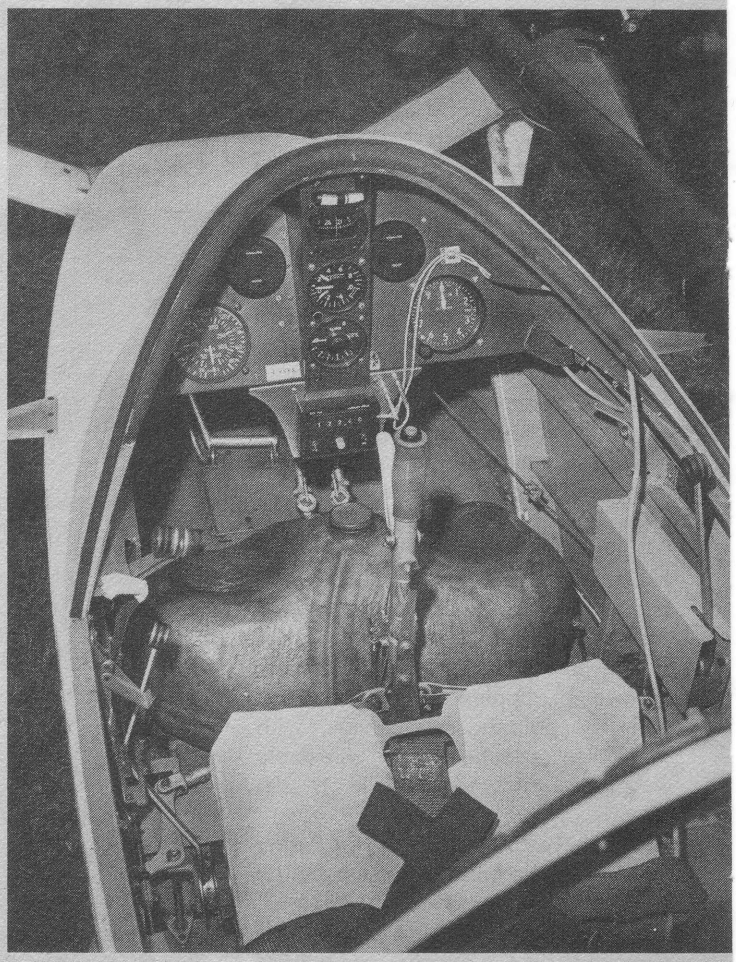
The fuselage is a simple "square box" made from sheet metal and doublers. The cross-section is rectangular with four single-curved panels with rigid foam stiffeners that are blind-riveted to four angle members. Loads from the wing, pilot, gear and engines are carried through bent metal bulkheads. The rear section of the fuselage has two straight sides blind-riveted to two sheets with bent edges. Original construction was with Abdol aluminum blind rivets.

The T-tail has two hinged bearings at the tip of the fin spar. Construction is out of a single piece of aluminum and no trim tab. The T-tail was selected to avoid damage in ground handling, for ease in construction and to make the aircraft easier to fit into its hangar-trailer.

The wing has a newly developed airfoil with constant chord. There is dihedral of 4 degrees and twist of 1.5



Power is provided by twin 12-hp Swedish snowmobile Valmet engines, enabling the Cricket to have a 127-mph cruise.



Inside the Cricket cockpit, note the twin throttles at left and the molded fuel tank under the pilot's legs. There is room for a single radio under the panel.

The Cricket drew a great deal of attention at Oshkosh, especially since it almost qualifies as an ultralight under the FAA's proposed rules.

degrees. The spar construction is of aluminum sections riveted together. Thirty-two rigid foam ribs are bonded at 6-inch intervals to the spar. Each rib is reported to be strong enough to support the aircraft's weight. The thin wing skins are metal bonded to the rear rib skeleton, with the necessary pressure supplied by enclosing the wing in a sealed vinyl bag and hooking it up to a household vacuum cleaner.

There is no internal system within the wing. The four flap/aileron support arms are bolted to the trailing edge of the wing so that the hinges provide almost no disturbance to the airflow.

The main gear is a single spring attached to the fuselage with four rubber donuts. The nose gear is steerable and constructed with two tubes — one installed within the other — and rubber bungees for shock absorbing. Turning radius is 14 feet. Wheels are 3.00 x 3, and there are brakes on the main wheels.

Elevator control is with a push-pull rod and artificial feel from a rubber bungee connected to the trim tab. The designer says that this system avoids the "overloose" feeling so common among lightweight aircraft. Aileron/flaps have short push-pull rods controlled through a mixer and a quick-release ball joint to the inboard ends of the control surfaces. Rudders are conventional with cables. The pedals adjust to accommodate six-foot-three-inch pilots.

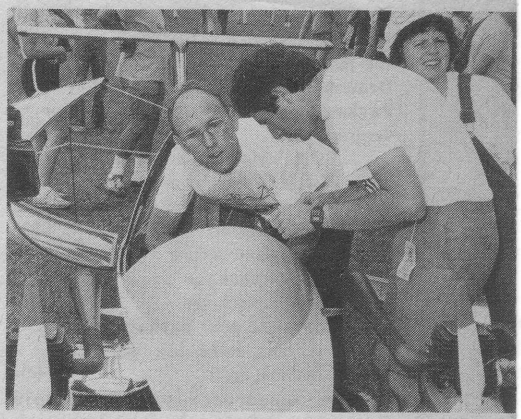
CRICKET MC12

PERFORMANCE

Stall, flaps down: 42 mph
Takeoff roll: 480 ft at S.L.
600 ft at 3000 ft
850 ft at 6000 ft
Rate of climb: 850 fpm at S.L.
700 fpm at 3000 ft
500 fpm at 6000 ft
Ceiling: 13,000 ft
Max. level speed: 127 mph
Cruise speed: 110 mph
Red line: 160 mph
Range (cruise): 4 hrs—450 mi
Rate of roll: 180 deg/sec

SPECIFICATIONS

Wingspan: 16 ft
Length: 12 ft 10 in
Wing area: 34 sq.ft.
Aspect ratio: 7.8
Empty weight: 160 lbs
Gross weight: 380 lbs
Wing loading: 11.2 psf
Powerplant: 2 x 24 hp
Propellers: fixed pitch
Fuel: 6 US gals 35 lbs
Stress: FAR 23; +9 G, −4.5 G



Designer Michel Colomban, glasses, works on one of his ships as airshow pilot Denis Legrand lends a hand.

The 12-hp Valmet engines are two-cycle, 150cc at 6500 rpm, each weighing only 16 pounds. The Valmet has a history of over 1500 hours at 10-hp cruise. The engines are mounted on a special patented welded steel interconnect tube that transmits vibration from one engine to the other, effectively dampening the movement. The composite propellers are 27 inches in diameter. A four-to-six-gallon fiberglass fuel tank is mounted in the

CRICRI

LEFT: Does anyone have a shoehorn? The 6-foot-2-inch author eases into the cockpit. RIGHT: Even with a 190-pound pilot, the canopy closes with room to spare.

PRICES AND ORDERING INFO

The Cricket package will have 42 drawings, most of them full-sized. Zenair will supply drawings and packages of parts in the following order:

Drawings and Manuals $150
Packages (Order in the following sequence)
- **Tail** (Horizontal and Vertical) . $378
- **Wings** (The spar is completely built and riveted) $987
- **Flaps/Ailerons** $131
- **Fuselage** structure $773
- **Control** package $369
- **Canopy** package $317
- **Complete gear package** (springs, wheels, axles, fairings, brakes, etc.) $694
- **Instrument** package for twin $416

Or save by ordering the **complete kit package** $3857

Twin Powerplant Package
Complete with engines, props, spinners exhaust, fuel system $1981

Prices are in U.S. currency and FOB plant Local residents add the sales tax. Prices subject to change without notice.

Ordering Procedure:
Plans: Complete the order sheet in the information manual and mail with your payment. Delivery will start Oct. 81 (add $2 for airmail)

Packages: Certified check from U.S. or Canadian Bank: 50% with order — balance before shipping upon notice that the crate is ready to be shipped. Delivery starts Nov. 81 on a first-ordered, first served basis at a scheduled rate of one kit per week. (Canopy, gear, instrument and powerplant packages are scheduled for Dec. 81).
Crating charges: $50 per package ($90 for simultaneous shipping of two packages, $120 for three packages or a complete kit.) Or pick up yourself (by appointment) and save the crating and shipping charges. All shipping charges are COD.

Zenair Atlanta (S.E.— USA)
Plant: 3349-B Thompson Bridge Rd.
Gainesville, GA
Tel: (404) 536-8099
Mail: Route 12 Box 720
Gainesville, GA 30501
Bill Miller (404) 536-1156

Zenair Seattle (West— USA)
606 S.W. 302nd
Federal Way, WA 98003
Ron Eckhardt (206) 839-0848

Zenair Ltd. (Canada & Overseas)
Plant: 25 King Road
Nobleton, Ontario
Gerry Boudreau (416) 859-4556
Head
Office: 236 Richmond Street
Richmond Hill,
Ontario L4C 3Y8
Chris Heintz (416) 884-9044

Our plants are open to visitors 10:00 am to noon during the Saturday Zenair Workshops, or by appointment.

fuselage under the pilot's knees.

Zenair recommends purchase of their complete package to cut construction time to under 600 hours; using your own raw materials, Zenair estimates 1500 hours of construction time. All surfaces are made from flat stock with simple curves — no complex cutouts or access doors.

The 32 rigid foam wing ribs are identical. Each panel is only 8½ feet long (including the spar carrythrough structure). Fuselage sections are 6 feet long.

As plans and kits become available for the world's smallest twin, it will be interesting to see just how many homebuilders want to spend the time and money for a solo-only twin. Colomban points out that the cost of raw materials is directly proportional to the aircraft's weight. The Cricket weighs 2½ to three times less than the average single-seater of comparable performance. Specifications call for a range of 450 miles on six gallons of fuel; i.e., 75 mph.

The tiny ship has full twin-engine reliability. Besides, it's different. It's small enough to be called "cute"; it's clean, performs well and puts on one helluvan aerobatic show. The new Cricket may very well become a popular homebuilt project and airshow stopper. •