OVERVIEW

000	THIS SHEET
001	DRAWINGS PRESENTATION / GROUND VERSIONS
002	HOW TO USE THE DRAWINGS
003	FOREWORD
008	HOW TO READ THE DRAWINGS
009	METRIC SYSTEM
010	FUSELAGE CHOICE
011	WEIGHT AND BALANCE
013	SCARF JOINTS

WING

101	WING ASSEMBLY
102½	WING RIBS
102²⁄₂	AILERONS STRUCTURE
103	WING SPAR
104	AILERONS HINGE & HORN
105	FLAPS RIBS

FUSELAGE

WOODEN VERSION

201	SPIT 14 FUSELAGE ASSEMBLY
202	SPIT 5-9 " "
203½	SPIT 5-9-14 COMMON FRONT FORMERS
203²⁄₂	SPIT 14 SPECIFIC REAR FORMERS
204	SPIT 5-9 " " "

TUBING VERSION

205	SPIT 5-9 FUSELAGE ASSEMBLY
206	SPIT 5-9 FORMERS
207	SPIT 14 FUSELAGE ASSEMBLY
208	SPIT 14 FORMERS

EMPENNAGES

301	RUDDER AND STAB+ELEVATOR
302	REINFORCEMENT PLATE

UNDERCARRIAGE

400	SCHEDULE
401	LEG, RETRACTION GEAR, FITTING ON WING SPAR
405⅓	FIXED TAIL WHEEL
405⅔	BASIC TAIL WHEEL RETRACTION
405³⁄₃	RETRACTABLE T. WHEEL GENERAL FITTINGS

ATTENTION

- STANDARD VERSION INCLUDES WOODEN FUSELAGE. PRICE = $ 500
- TUBING FUSELAGE NEEDS WOODEN VERSION AND $ 100 SUPPLEMENT (TOTAL $ 600)

FLIGHT CONTROL

501	PRINCIPLE OF FLIGHT CONTROLS
502	CABLE CHANGEMENT ANGLE
503	TORQUE TUBE
504	STICK
506	RUDDER PEDAL
507	FLAPS CONTROL
508	PRINCIPLE OF FLAPS
520	ELEVATOR HORN UNDER SEAT
521	" " BRACKET
539	539-1 / 539-3 / 539-4 RODS
540	EDGE HORN (AILERON)
541	" BRACKET "
543	TUBE INSERTS
545	BEARING
595	ELEVATOR CONTROL TUBE
596	INSERT

MISCELLANEOUS

601	HOODS, WINDSHIELDS SPIT 14-5
602	PILOT SEAT
603	CANOPY RAIL
604	JETTISSON
605	DOOR

ENGINE COMPARTMENT

7d	ENGINE MOUNT / COWLS / MOUNT-SUPPORTS

FUEL SYSTEM

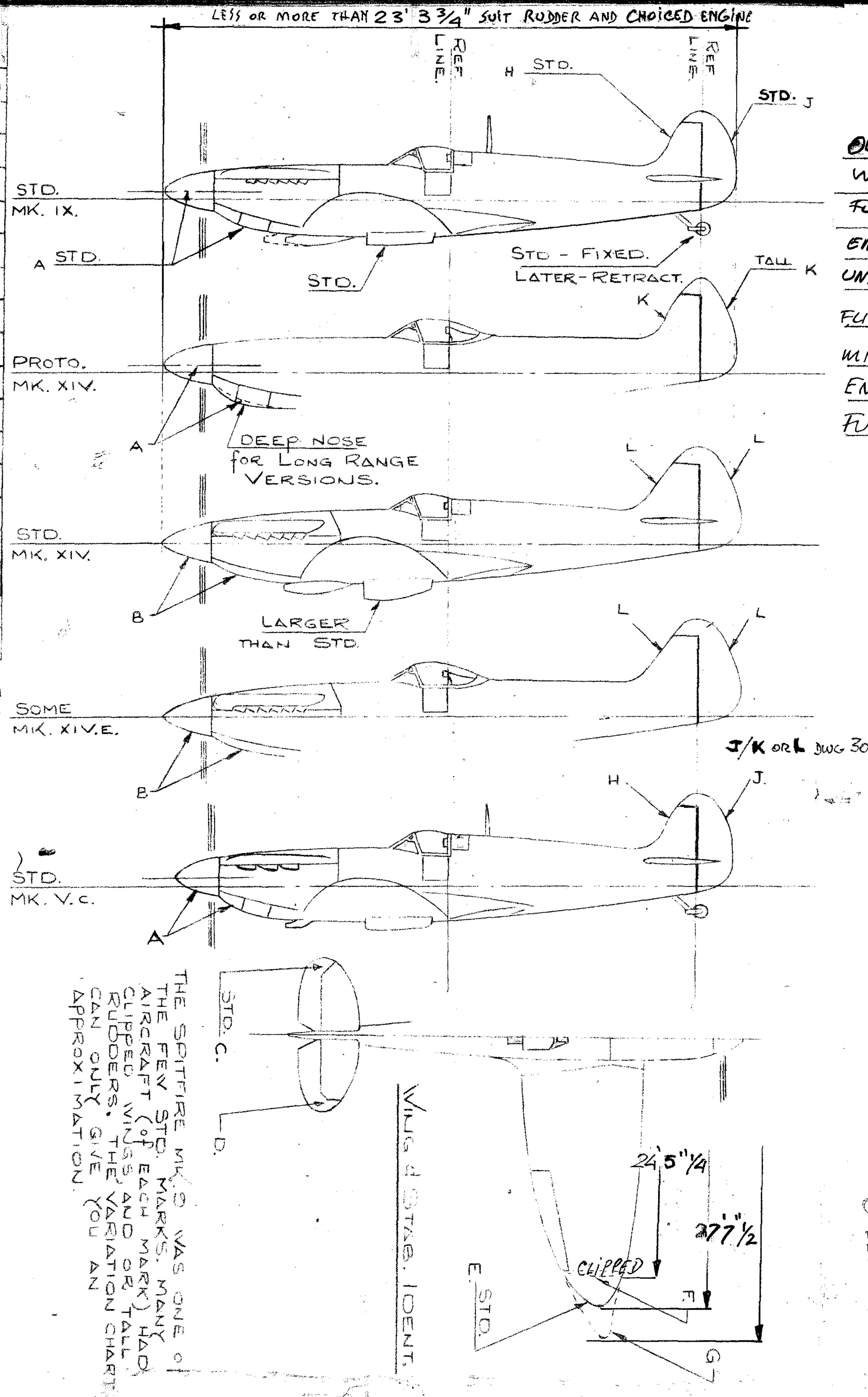
801	FUEL SYSTEM PRINCIPLE
802	FUEL CELLS IN THE FUSELAGE
	DETAILS
804 - 805 - 811 - 813 - 816 - 821	
824 - 825 - 826	
828	FUEL CELLS IN THE WING

MJ 10 000

VARIATIONS.

MARK	MARK	NOSE	STAB. TIP	WING TIP	RUDDER	FIN
Vc	5c	A	C	E	J	H
VI	6	A	C	G	J	H
VII	7	A	D	G	J	H
VIII	8	B	D	E	L	L
IX	9	A	C	E	J	H
IX	9	A	D	E	K	K
X	10	A	D	F	K	K
XI	11	B	D	F	K	K
XII	12	B	D	F	K	K
XIII	13	B	D	F	L	L
XIV	14	B	D	E	L	L
XIV E	14 E	B	D	E	L	L
XV	15					
XVI	16	A	D	F	K	K
XVII	17	B	D	F	K	K
XVIII	18	B	D	F	L	L
XIX	19	B	D	F	L	L
XX	20	B	D	F	L	L

SPITFIRE VARIATIONS



M J 10 S.P. T. 001

ORN. MCG 24 2 68 SHEET 001

MARCEL JURCA 2 RUE DES CHAMPS PHILIPPE LA GARENNE COLOMBES (SEINE) FRANCE

THE SET OF DRAWINGS OF THIS LIGHT AIRCRAFT IS DIVIDED INTO 9 SECTIONS:

OVERVIEW SECTION	"ZERO" (000)	DRAWINGS NUMBERED FROM	000 TO 099
WING	" "HUNDRED" (100)	" " "	100 TO 199
FUSELAGE	" "TWO HUNDRED" (200)	" " "	200 TO 299
EMPENNAGES	" "THREE HUNDRED" (300)	" " "	300 TO 399
UNDERCARRIAGE	"FOUR HUNDRED" (400)	" " "	400 TO 499
FLIGHT CONTROL	" "FIVE HUNDRED" (500)	" " "	500 TO 599
MISCELLANEOUS	" SIX " (600)	" " "	600 TO 699
ENGINE COMPART	SEVEN (700)	" " "	700 TO 799
FUEL SYST	EIGHT (800)	" " "	800 TO 899

THE MJ 10 "SPIT"

IS DEDICATED TO THOSE WHO HAD FLOWN A FIGHTER AND WHO WOULD REMEMBER AND ALSO TO THOSE WHO COULD'NT BUT WHO DREAM OF IT...

...I ONLY ASK YOU: PLEASE, COMPOSE YOURSELF THE COMPLETE SYMBOLIZATION OF YOUR CHOICED VERSION, TO BE WRITTEN ON THE TWO SIDES OF THE FIN, AS FOLLOWS:

EXAMPLES

MARK SYMBOL (ON THIS DWG) → XIV
LICENSE OF AMATEUR BUILDING SERIAL → 12

FINAL SYMBOLE: MJ 10 - SPIT XIV-12

INVARIABLE

LETTERS HEIGHT 100 mm M.J. 10 G _ _ _

Marcel JURCA
2, Rue des Champs Philippe
LA GARENNE-COLOMBES (Seine), France

REPÈRES	DÉSIGNATION	NOMBRE	DESSIN	NATURE	ÉTAT	DIMENSIONS	TRAITEMENT THERMIQUE	POIDS BRUT	NORMES	PROTECTION SURF. EN CM²	FINITION

REVISED 12. MARCH 84 A

ÉCHELLE A B C D E F — POIDS PESÉ

DESSINÉ PAR M. Jurca DATE 13. 3. 68
VÉRIFIÉ PAR DESSIN DATE
TECHNIQUE DATE

REMPLACE LE PLAN Nº ... DU ...
REMPLACÉ ET ANNULÉ PAR ... LE ...

DRAWINGS PRESENTATION AND CHOICE OF YOUR VERSION

MARCEL JURCA
2 RUE DES CHAMPS PHILIPPE
LA GARENNE COLOMBES
(SEINE) FRANCE

MJ 10 001 A

HOW TO USE THE D R A W I N G S

The set of drawings is divided into several " Groups ".
Each group covers one complete assembly, such as wing, fuselage tail units, Etc.
Each group number is followed by a drawing number.

I.E.

You'll find drawing numbers 100 to 190 for wing " group ", 200 to 299 for fuselage, Etc.

Each 101, 201, 301 numbers are complete ass'v DWG of the concerned group and the others are details.

Therefore if it is necessary to find any particular drawing look for it on " list of drawings " for that particular group, list always carries the full number, such as 000, 100, 200, 300, etc; or otherwise it may be found on ass' v DWG of the part this group covers.

A good precaution is to write on each drawing the date when the drawing was received, this will give you a supplementary reference to the age of this drawing.

Otherwise, automatically, all drawings modified carry a " change letter ".

EXAMPLE :

M J10-103 ~~A~~ ~~B~~ C

This means that the drawing number 103 was modified 3 times (one " A", second one " B " and the last " C ")

At the time of a modofication also D E S T R O Y all obsolete drawings (if any) to avoid possible errors at later day.

All modifications - if any - will be mailed to you at blue prints ' cost. Any necessary corrections will be made at no cost.

Marcel JURCA
2, Rue des Champs Philippe
LA GARENNE-COLOMBES (Seine), France

HOW TO USE THE DRAWINGS

LADIES - GENTLEMEN:

The Marcel Jurca fighter program was dedicated to bring upon the skys an exact silhouette of the enclosed replica fighter. What the designer expects and requests is that you, as the builder, owner, and pilot, will honor your agreement with him not to modify any part of the structural airframe without his written consent. This set of drawings also shows you how to possibly build:

1) *the retraction crank system*
2) *fuel system*
3) *instrument system*
4) *related systems.*

Realizing that many proven systems exist, he naturally agrees you may adapt one to your airplane.

So, to sum up our agreement please understand that for your safety and his honor you are expected to build this airplane STRICTLY as per the drawings meaning the structural airframe (fuselage, tail group, wing, landing gear legs and retraction scissors), stick and torque tube, control surfaces horns, using the materials prescribed within.

Any deviation from the above will be done at your expense and will not be a cause to modify the paternity of this design. Lets have a nice future together and a nice airplane to bring honor and happiness to us both.

Yours truly,

Marcel Jurca

FOREWORD

MJ 10 003

Plywood used are : okoumé - mahogany - wherewer plywood is required but not specified.

Exemple: 1/8 ply

"ply" stands for plywood
1/8 " " thickness - in inches-
direction of GRAIN

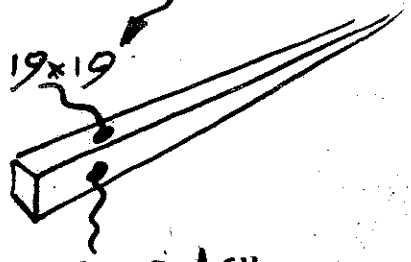
If birch plywood is used, this is specified by "birch" (ENGLISH) OR "BOULEAU" - FRENCH-

Exemple : 1/8 ply (birch)

Wood used is certified sitka spruce when not otherwise specified

Exemple : 19 x 19 mm OR 3/4" x 3/4"
(square 19 x 19 mm spruce strip)

WHEN SPRUCE



Ash wood is specified by "ash" Exemple: 19x19 ash

CONVERSION TABLE OF PLYWOOD'S THICKNESSES

mm	inch.
1.6	1/16
2	3/32
2.5	3/32
3.2	1/8
6.4	1/4

ENGLISH → 19x19 ASH
OR
FRENCH → 19x19 F

WHEN ASH

If okoumé or mahogany plywood is not available use birch plywoods substituting the thickness as shown below

1.6 mm or 1/16	= 0.8 or 0.9 mm	Birch
2	= 1.2 mm	"
2.5	= 1.6 (1/16)	"
3.2	= 2 (3/32)	"
6.4	= 3.5	"
10	= 6 (1/4)	"
19	= 12.7 (1/2)	"

BOLTS-NUTS-WASHERS

BECAUSE I AM NOT FAMILIARIZED WITH the AMERICAN STANDARDS, I JUST GIVE THE NOMINAL SIZE IN INCHES. THE BUILDER CAN MESURE THE LENGTH OF THE BOLT NEEDED AND USE THE A.N. AIRCRAFT GRADE FOR BOLTS-NUTS ETC ETC...

All plywood thicknesses, tubing dimensions, bolts diameters, and any other materials are given in U.S. standards.

If you find any metric specifications , howewer, here are the conversion :

Tubing : Ø I7x20 = 7/8x.065 Ø 65x70 = 3 x.093 Ø I0xI2 = 1/2x.035
I8x22 = 1" x.093 45x50 = 2 x.093 8xI0 = 3/8x.035
30x35 = 13/8x.093 53x63 = 21/2x0.93 6x8 =
26x30 = 11/4x.093 57x63 = 2 1/2x.I25 I0xI4 = 5/8x.065
I2xI4 = 5/8x .035

Steels : 25 CD4 S = SAE 4I30 high tensile, medium carbon, chrome-moly steel
acier doux = mild steel low carbon SAE 1025

DURALUMINIUM : weldable AL.AL.sheets (fuel tanks) 65 S AL AL (french AG3 or AG5)
extrusion 6S st. or 5052, 1100 H 4, 2 S
machinable 2024 T 3 (french Au4G)

THICKNESSES OF SHEETS STEEL OR ALU ALLOYS:

mm	0.5	1	1.2	1.5	2	2.5	3	4	5	6
inch	0.025	.035	.048	.062	.078	.I09	."6	..I57	.I87	.236
US G	24	I9	I8	I6	I4	I2	11	9	7	4

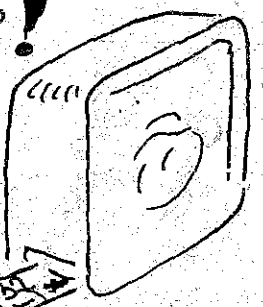
NORMALIZED CORRESP. DIMM. OF BOLTS :
Ø 3=1/8 Ø4=5/32 Ø 5=3/16 Ø 6=1/4 Ø 8=5/16 Ø 10=7/16 Ø 12=1/2 Ø 14=9/16

Marcel JURCA
2, Rue des Champs Philippe
LA GARENNE-COLOMBES (Seine), France

HOW TO READ THE DRAWINGS

TOLERANCES NON PRECISEES
Alesage : J 13
Arbre : j 13

(THOUSAND) millimeters MAKES 1 METER!

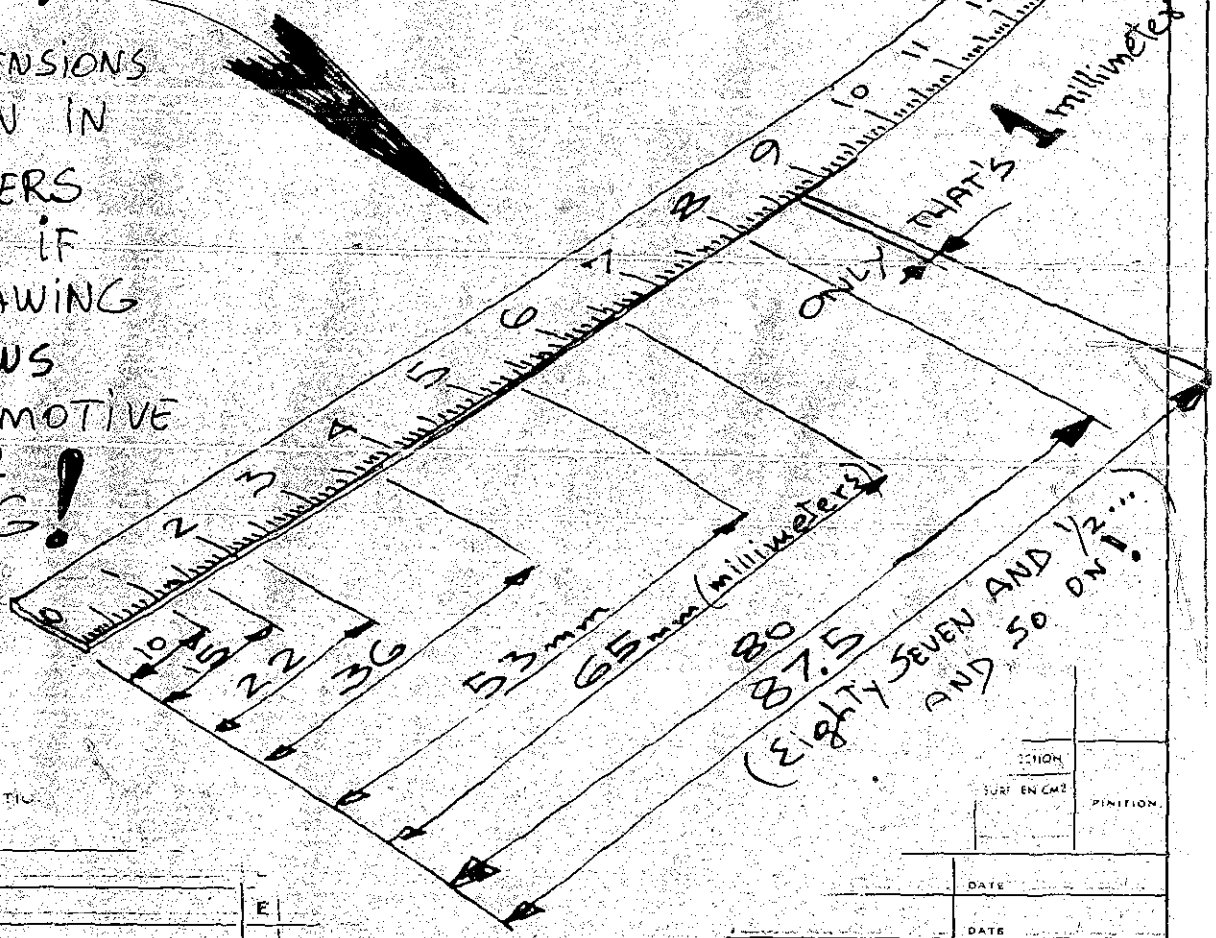


BUY A METRIC TAPE... IT'S UNBELIEVABLE SIMPLE...

UNCREDIBLE BUT TRUE!

WHEN METRIC DIMENSIONS ARE GIVEN READ THEM LIKE THIS!

ALL DIMENSIONS ARE GIVEN IN MILLIMETERS EVEN IF THE DRAWING SHOWS A LOCOMOTIVE OR A EGG!



THAT'S ALL!

REPÈRES	DÉSIGNATION		
ÉCHELLE	A		
POIDS PESÉ	B	E	
	C	F	

REMPLACE LE PLAN N° ... DU ...

REMPLACÉ ET ANNULÉ PAR ... LE ...

DÉSIGNATION

METRIC SYSTEM MISTERY...

DIVISION

FORMAT A4

Marcel JURCA
2, Rue des Champs Philippe
LA GARENNE-COLOMBES (Seine)

MJ 10 009

Builder:

The MJ 10 3/4 SPITFIRE is designed to permit the builder several options and for this reason before construction is started you must read this carefully.

WOODEN MONOCOQUE

The drwgs. show you how to build two typical MARKS XIV DWG 201 Vc-9 DWG 202. From these two you can further refine your SPIT to more closely resemble the MARK of your choice suit drwg. 001. This will mostly be cosmetic changes after you have chosen between one of the two fuselage types representing the different MARKS.

The fuselage can be built in two ways consisting Firstly of a fuselage made from wooden bulkheads set in a jig, then longerons strung down the sides, and lastly covered with thin plywood sheets. This gives a light, strong monocoque fuselage. (DWG 201 SPITFIRE MK XIV AND DWG 202 MK V c AND IX

TUBING FRAME

Secondly in place of the monocoque fuselage you can build a FRAME from 4130 welded tubes and covered in the following ways.

1.. Tube frame with .020 alclad alum. formers (drwg. 206) pop riveted to the body suit drwg. 206. After the formers are covered with .020 ALCLAD ALUM. sheets. (drwg. 205)

2.. Tube frame with formers cut from 1/8" mahogany plywood using drawing 206 for reference and attached to the body with small tabs welded to the tubes, and using several 5/32" nuts, bolts, and washers. Next cut, fit foam blocks between formers then sand the foam to the desired shape using the formers as a reference. Once this is finished then cover the form with DYNEL a la RAND method, .1/16" THICKNESS.

ENGINE

The MJ10 is quite true to scale in width and permits you to use a VEE or INLINE engine. However if for reasons of your own you can quite easily install a flat 4-6 engine and with some clever "trick fairing" it will blend in very well and retain the SPIT look.

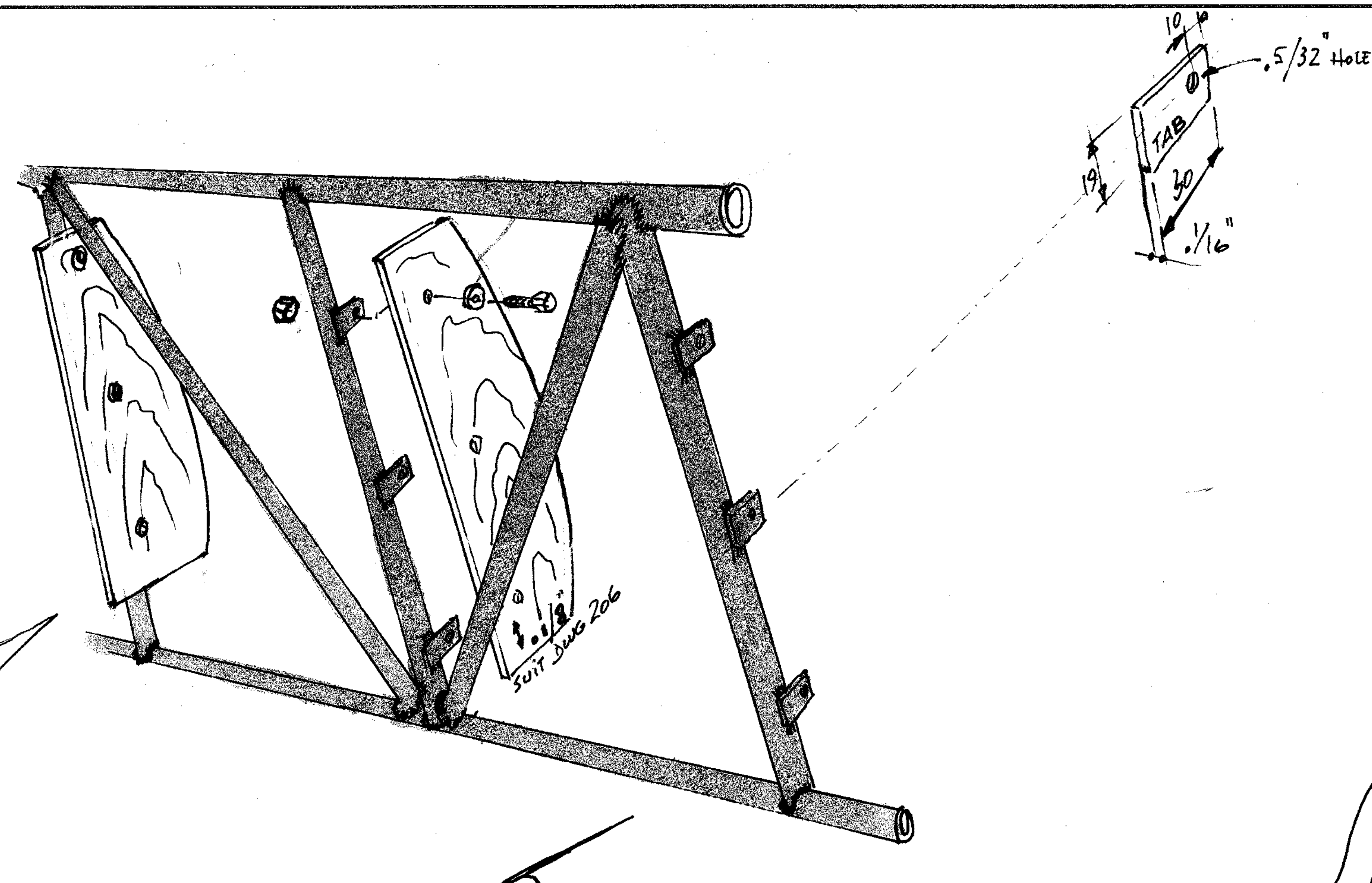
The wood monocoque, or tube frames, can be built and covered in the forementioned manners and this will permit you in the future to take off the "trick fairing" and add a more narrow VEE or inline engine. You would then only have to add a less wider cowl from the firewall forward.

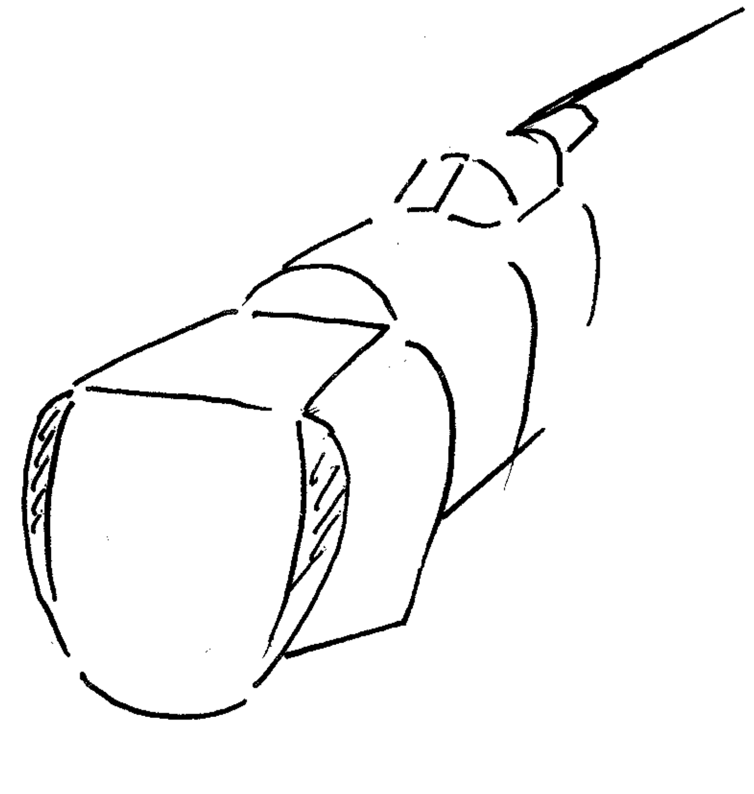
Refer to the sketch as shown on this drawing and you will see a simple idea suggesting how you may make a "trick fairing" to cover in a wide flat engine. Make this fairing as light as possible and attach as you would any other fairing.

The widest 6 cyl. flat engine is 35.66 inches (900 m.m. Lycoming), so from the rearmost cylinder to the widest fuselage point, enough length remains (around 3 meters) to smoothly flow the fairing lines to retain the true SPITFIRE look. At the bulkhead station the fuselage width is 27.5 inches (700 m.m.) which means that on each side you will have to smooth around 4 inches on approxamately 3 meters length which is invisible when sitting on ground, in profile view, or when it flies seen from the PLANET... FROM SPINNER TO RUDDER = 7m LONG. You CAN'T SEE A CHEEK OF 100mm WIDE (4")...

If a flat engine is used you can study the method used by MOONEY, a 1" circular intake surrounding the spinner-cowl area, and if properly designed along with the air outlet will create a venturi effect which can be quite efficient.

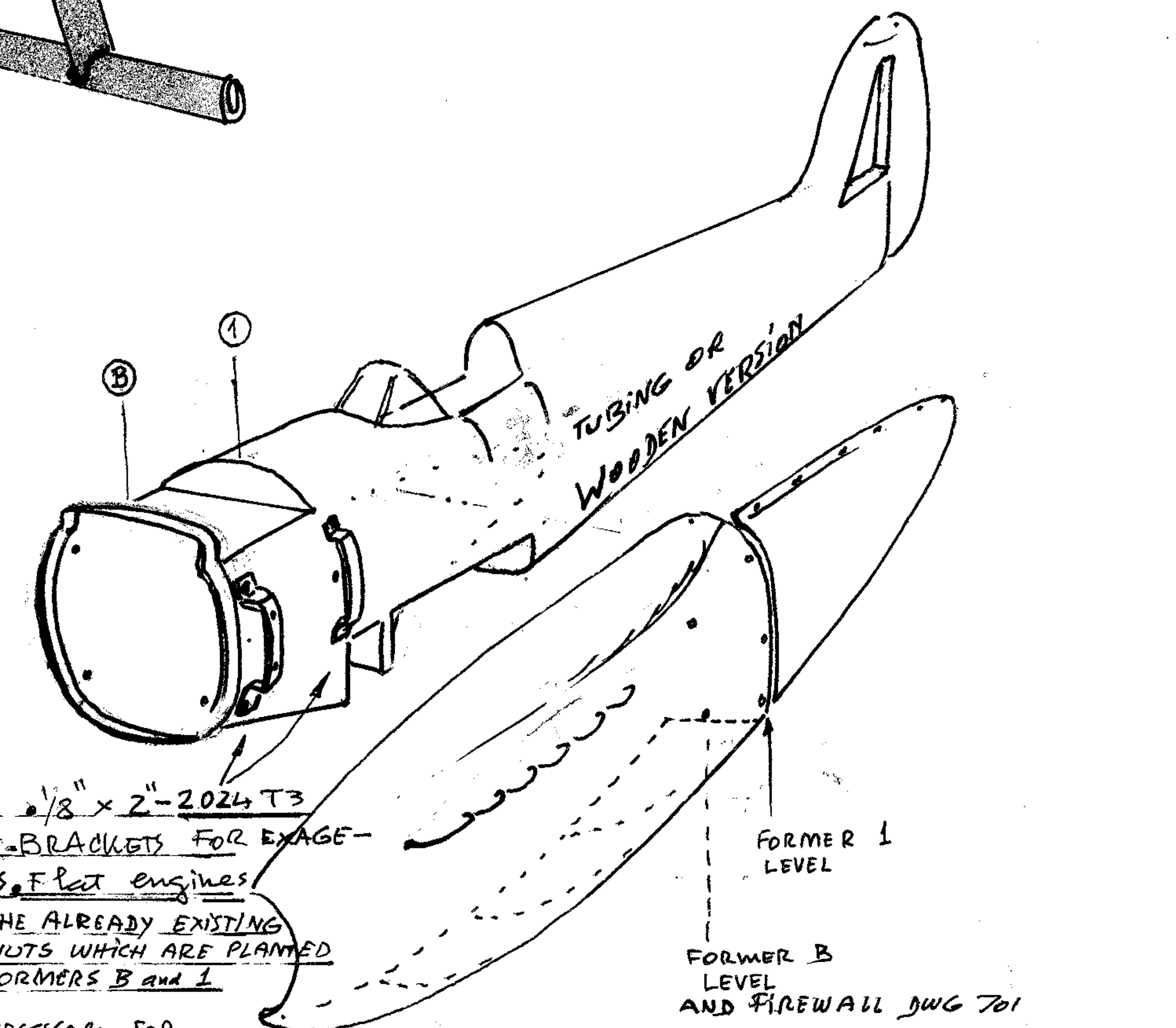
Because each aircraft along with its engine installation is unique, it is impossible to supply a definate set of plans for engine mounts, cowls, etc.; therefore the aforementioned ideas are to stimulate the creativity of each builder and should be proven through carefull experimentation and flight testing.





ALTERNATIVE SOLUTION, OF THE FLAT OPPOSED CYL. IS TO PROGRESSIVELY INCREASE THE FORMERS WIDTH BEGINNING FROM FORMER 4 UP TO THE FIREWALL AND TO SKIN OVER THIS NEW SHAPED FORM.

IN BOTH CASES NOBODY WILL SEE SOMETHING WHEN FLYING AT 100 Ft ---



REP.	N° de PLANS	Nb.	DÉSIGNATION	MATIÈRE	POIDS	Mod.	N°

RENTRE DANS :

MATIERE : | Ech. | Tolér. génér. | DESSIN. par Jurca le 1. MARCH 84 | VERIF. par le

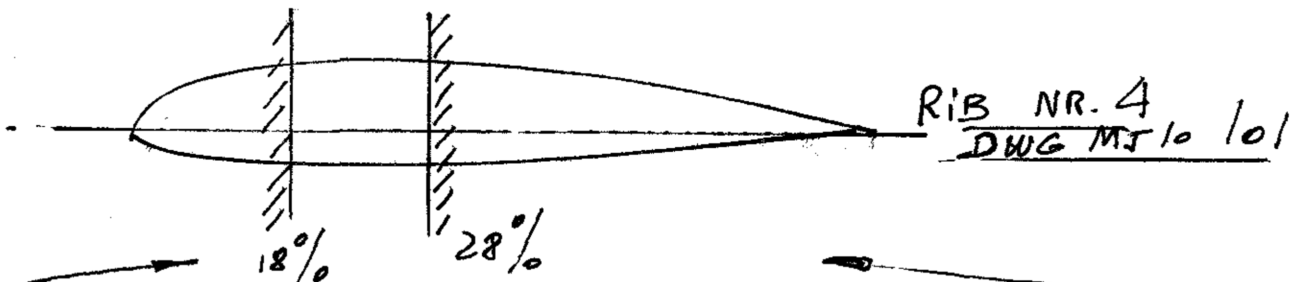
TRAITEMENT : | J_s12

FUSELAGE CHOICE

Jurca

N° MJ 10 010

BALANCE LIMITS



WHATEVER WILL BE THE ENGINE CHOICE, PILOT WEIGHT, FUEL WEIGHT

ATTENTION:

- THE FUSELAGE CONTAINS TWO FUEL CELLS (DWG 802) IF YOU CHOOSE THE LENGTHENED FUSELAGE DWG 201
- IF YOU CHOOSE THE SHORT FUSELAGE YOU MAY USE THE WING TANKS DWG 801

NOTE: — THE UP-DOWN POSITION OF THE LANDING GEAR ALTERATES THE CG RESPECTIVELY ± 2%

DO NOT TRY TO MODIFY IT INTO A TWOSEATER

— THIS IS A ONE SEATER AIRPLANE ONLY —

POWER UNIT WEIGHT = 400 kg MAXIMUM
INCLUDING: ENGINE 200 TO 350 HP
PROPELLER
MOUNT
SPINNER
COWLS

REP.	N° de PLANS	Nb.	DÉSIGNATION	MATIÈRE	POIDS	Mod.	N°

RENTRE DANS :

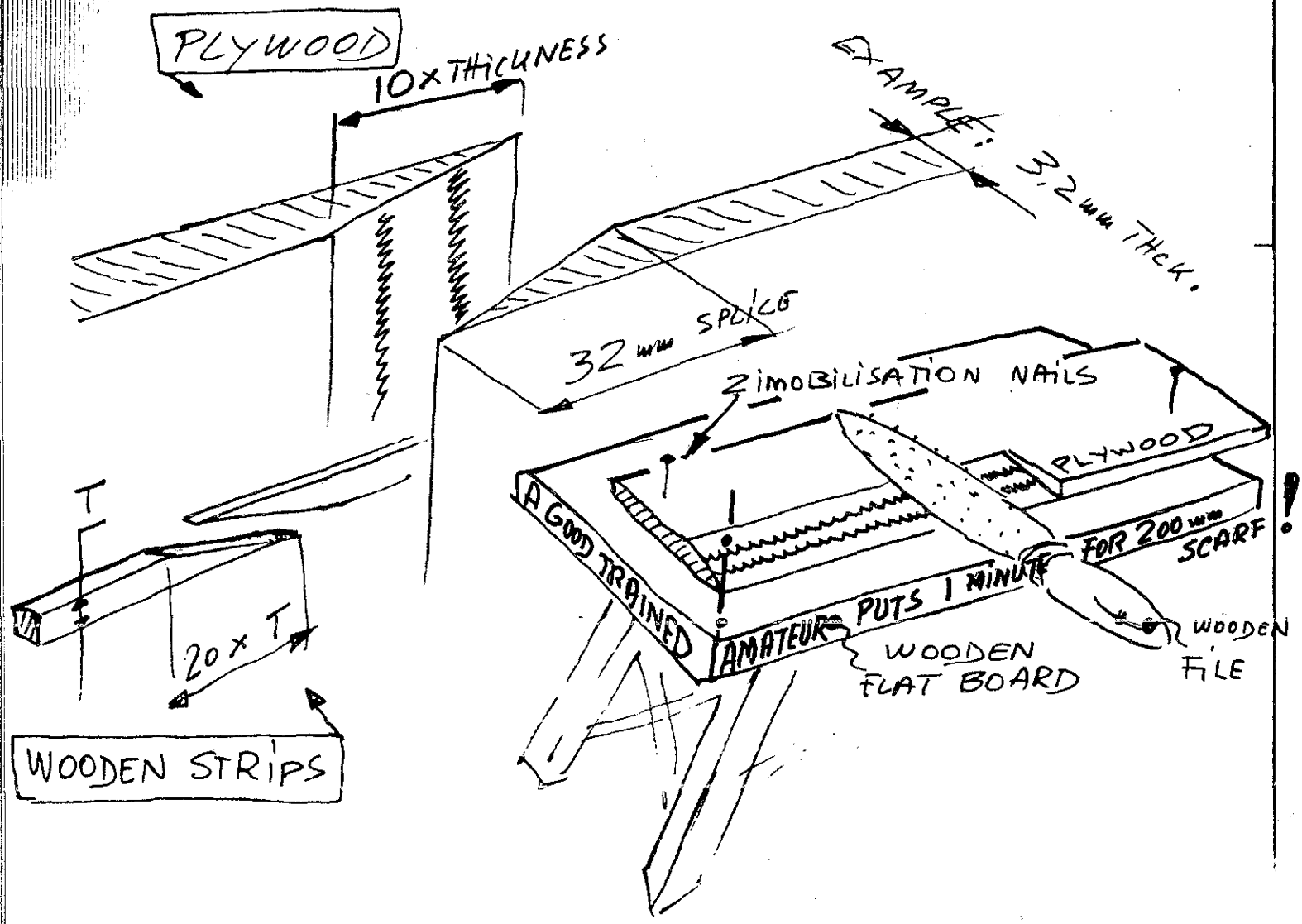
MATIERE :	Ech.	Tolér. génér.	DESSIN. par Jurca le 27 JAN 84	VERIF. par le
TRAITEMENT :		J_s12	Jurca	
POWER – WEIGHT AND BALANCE			N° MJ 10 011	c

PHOTOGAY-LYON

TOLERANCES NON PRECISEES
Alésage : J 13
Arbre : j 13

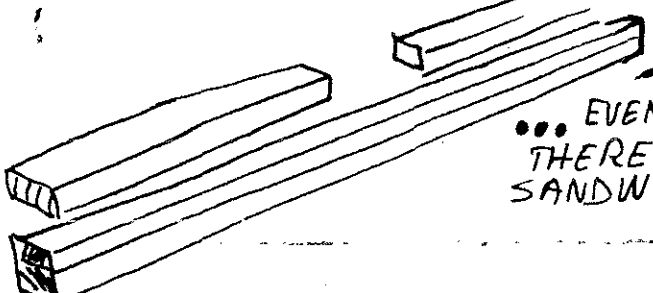
SPECIAL WARNING

How To DO WOOD STRIPS OR PLYWOOD SCARF JOINTS



NOTE: NEVER JOIN TWO PLYWOOD SHEETS THIS WRONG WAY:

NEVER JOIN TWO WOODEN STRIPS THIS WRONG WAY



MJ 10 013