

MEYERS AIRCRAFT COMPANY

TECUMSEH, MICHIGAN

BASIC AIRPLANE DATA FOR MEYERS MODEL 200

Report No. 601

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Revisions		Additions			BY
Date	Page	Date	Page		
		1955 1/17	17-19		<u>Joseph H. Conway</u> Joseph H. Conway
1955 9/28	2	1955 9/28	6		
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## BASIC AIRPLANE DATA FOR MEYERS MODEL 200

### INTRODUCTION

This report contains the basic airplane data including the general specifications, three view drawing, and wing planform for the Meyers Aircraft Company Model 200.

The maximum lift coefficient, and basic lift distribution for flaps extended  $45^{\circ}$  were calculated by Dr. T.H. Lin in a previous report. This report has since been superseded and the referred to data is now included in this report for the sake of reference in future Model 200 reports.

## SUMMARY OF REVISIONS AND ADDITIONS

## Page

17.	Addition of Design Weight and Balance	1/17/55
18.	" " " " " " "	"
19.	" " Fig. 6, Balance Diagram	"

The revisions and additions dated September 28, 1955, were made a part of this report for the following reasons:

1. A reduced weight condition of 2500 pounds with the center of gravity located at 17 percent of the mean aerodynamic chord was investigated in anticipation of various loading conditions which may arise in service use of the Meyers Model 200 Airplane.
2. The horizontal tail area was increased to give added static and dynamic longitudinal stability.

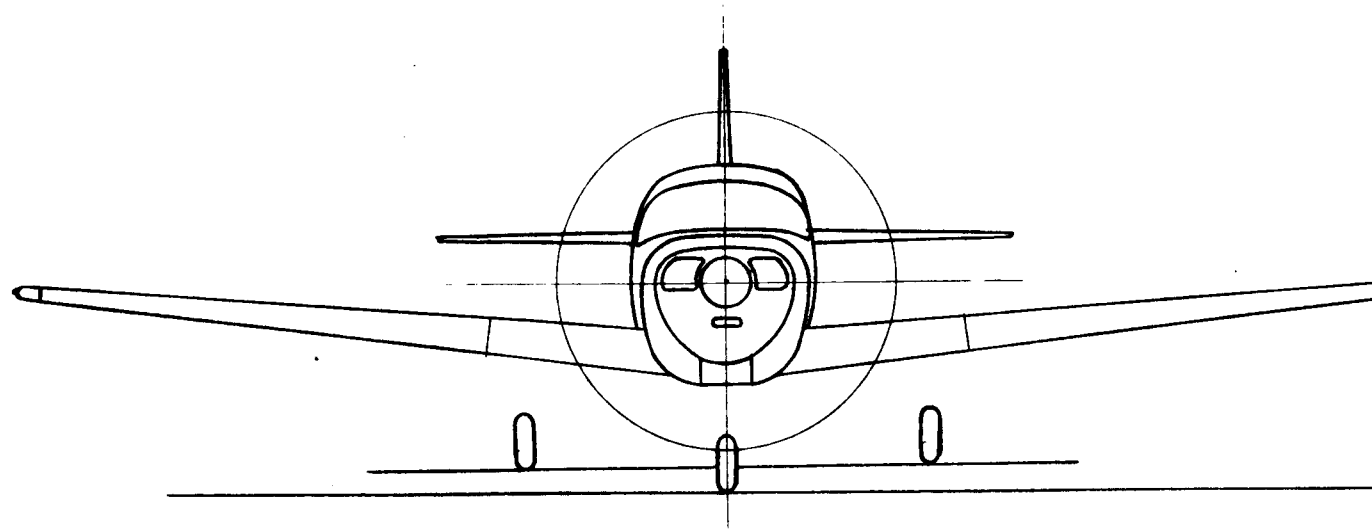
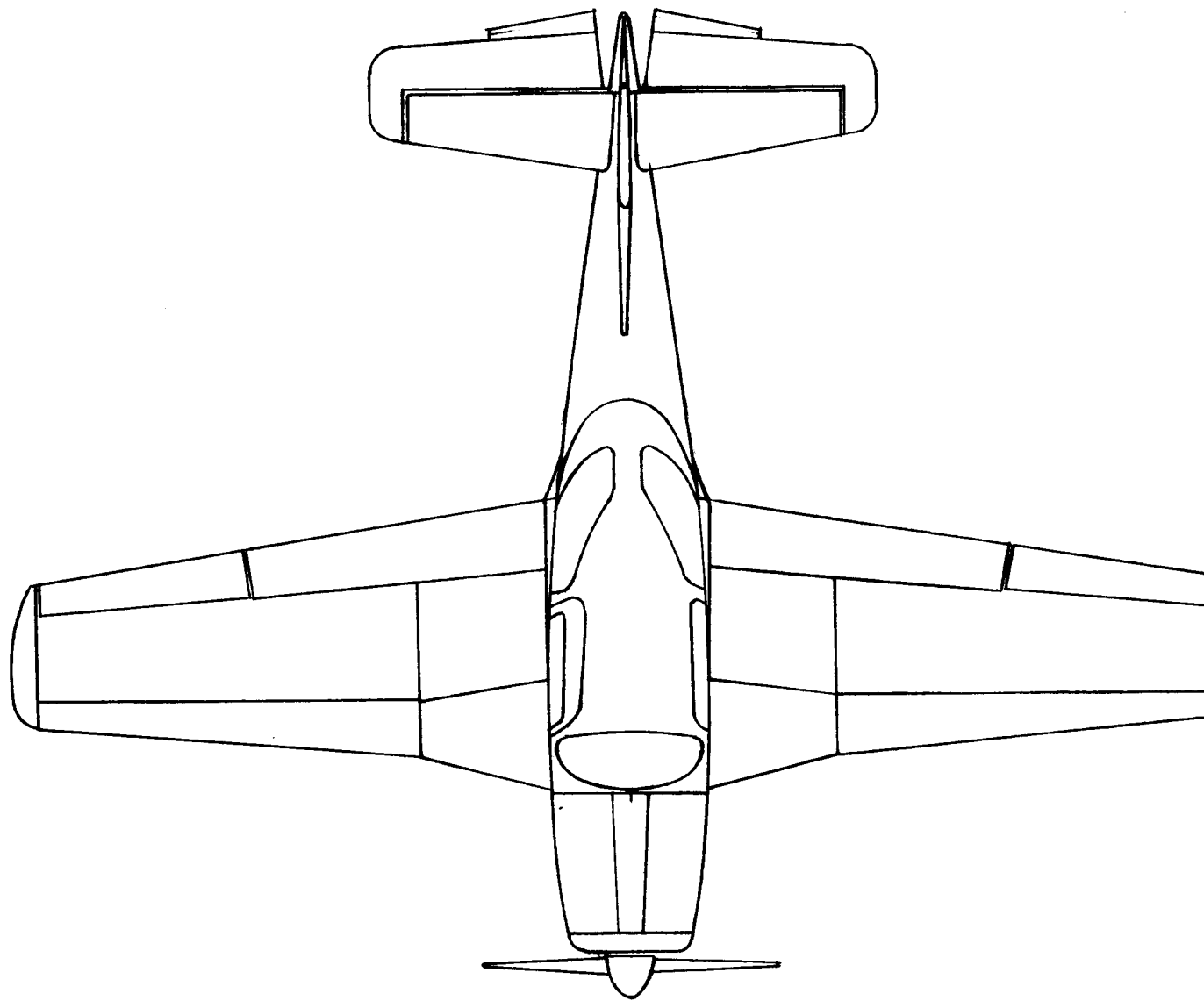
## Page

## Revisions and Additions

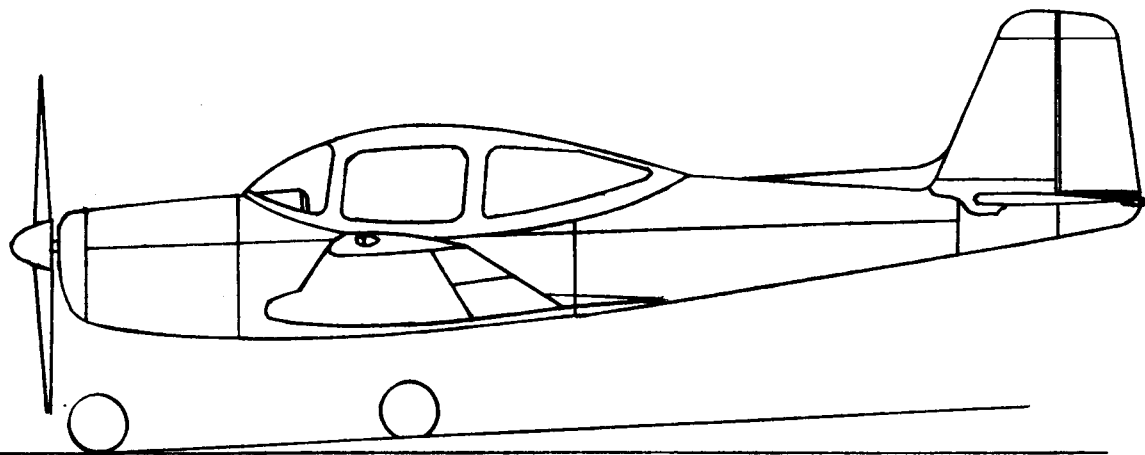
2. Revised Three View Drawing. The fuselage length was increased four inches ahead of the firewall. The horizontal tail area was increased.
3. Revised the Overall Length dimension.
4. Revised the horizontal tail data.
5. Revised the elevator and trim tab deflections.
6. Added wing and power loading for the reduced weight cond,
7. Added design airspeeds for the reduced weight condition.
9. Revised horizontal tail sketch and area calculations.

## TABLE OF CONTENTS

	Page
Introduction . . . . .	1
Three View Drawing . . . . .	2
General Specifications . . . . .	3
Design Airspeeds . . . . .	7
Wing Planform . . . . .	8
Tail Area . . . . .	9
Calculation of $C_L$ max. . . . .	10
Calculation of Basic Lift Distribution (Flaps down $45^\circ$ )	14
Design Weight and Balance for Meyers Model 200 . . . . .	17
Balance Diagram . . . . .	19



Moyers 200



By. R.J.B.  
Scale  $\frac{1}{50}$   
Date. 12-14-54

## GENERAL SPECIFICATIONS

The dimension and general specifications of the Meyers Model 200 are:

OVERALL SPAN . . . . . 30 ft. 6 in.  
 OVERALL LENGTH . . . . . 24 ft. 4½ in.  
 OVERALL HEIGHT . . . . . 6 ft. 8 in.

## WING

Ref. Rept.

Wing Area . . . . . 161.5 sq. ft. 601, pp. 8  
 Flap Area . . . . . 22.4 sq. ft. 601, pp. 8  
 Aileron Area . . . . . 10.8 sq. ft. 601, pp. 8  
 Airfoil Section at Root . . . . . NACA 23015  
 Airfoil Section at Station 62 . . . . . NACA 23012  
 Airfoil Section at Tip . . . . . NACA 4412  
 Incidence at Root . . . . . 2°  
 Incidence at Station 62 . . . . . 2°  
 Incidence at Tip . . . . . -3°  
 Washout . . . . . 5°  
 Dihedral . . . . . 6°  
 Root Chord . . . . . 85 in. 601, pp. 8  
 Root Chord (leading edge extension  
     included) . . . . . 90 in. 601, pp. 8  
 Tip Chord . . . . . 40 in. 601, pp. 8  
 Wing Taper Ratio . . . . . 2.125/1  
 Aspect Ratio . . . . . 5.81

		Ref. Rept.
MAC . . . . .	62.4 in.	408, pp. 6
$C_L$ max. . . . .	1.61	601, pp. 12
$C_L$ max. $\delta f = 45^\circ$ . . . . .	2.22	602, pp. 49
$C_{Mac}$ . . . . .	-0.0265	408, pp. 4
$C_{Mac} \delta f = 45^\circ$ . . . . .	-0.2138	602, pp. 50
$C_{Mac} \delta a = 9.5^\circ$ (Aerodynamic moment over the aileron portion of wing). . . . .	-0.1215	602, pp. 109
$C_{Mac} \delta a = -22^\circ$ (Aerodynamic moment over the aileron portion of wing). . . . .	+0.1935	602, pp. 109
a (Slope of wing lift curve). . .	0.0755/deg.	602, pp. 9
m (Slope of wing lift curve). . .	4.325 /rad.	
$\alpha_{Ro}$ (Angle between wind direction and the horizontal reference axis when the wing is operating at zero lift) . . . . .	$-2.56^\circ$	408, pp. 3
$\alpha_{Ro} \delta f = 45^\circ$ (Angle between wind direction and the horizontal reference axis when the wing is operating at zero lift with flaps extended $45^\circ$ ) . . . . .	$-7.88^\circ$	601, pp. 14

## HORIZONTAL TAIL

Horizontal Tail Area . . . . .	31.6 sq. ft.	601, pp. 9
Elevator Area . . . . .	15.2 sq. ft.	
Elevator Control Tabs . . . . .	2.1 sq. ft.	601, pp. 9
Airfoil Section . . . . .	NACA 0009	
Span . . . . .	12.5 ft.	601, pp. 9
Aspect Ratio . . . . .	4.94	602, pp. 116
$a_t$ (Slope of lift curve). . . . .	0.0710/deg.	602, pp. 116
$m_t$ (Slope of lift curve). . . . .	4.07/rad.	602, pp. 116
Incidence . . . . .	$1.5^\circ$	



## VERTICAL TAIL

Ref. Rept.

Vertical Tail Area . . . . .	12.00 sq. ft.	601, pp. 9
Rudder Area . . . . .	4.92 sq. ft.	601, pp. 9
Airfoil Section . . . . .	NACA 0009	
Span . . . . .	3 ft. 10 $\frac{1}{2}$ in.	601, pp. 9
Aspect Ratio . . . . .	1.25	
$m_v$ (Slope of lift curve) . . . . .	2.217/rad.	602, pp. 120
$a_v$ (Slope of lift curve) . . . . .	0.0387/deg.	

## MOVABLE CONTROL SURFACE DEFLECTIONS

Flap (Extended) . . . . .	45°
Aileron (Up) . . . . .	22°
Aileron (Down). . . . .	9.5°
Elevator (Up) . . . . .	32°
Elevator (Down). . . . .	20°
Rudder (Right) . . . . .	21°
Rudder (Left) . . . . .	16°
Right Elevator Trim Tab (Up) . . . . .	12°
Right Elevator Trim Tab (Down) . . . . .	49°
Left Elevator Trim Tab (Up) . . . . .	12°
Left Elevator Trim Tab (Down). . . . .	49°

## LANDING GEAR

Tricycle Type . . . . .	Hydraulic Operated
Shock Strut . . . . .	Combination Spring-Hydraulic
Tread . . . . .	8 ft. 9 in.