HP-13M SAILPLANE TECHNICAL DATA

ALL METAL ALUMINUM ALLOY CONSTRUCTION RETRACTABLE LANDING WHEEL AND TOW HOOK.

DESIGNED BY RICHARD SCHREDER, WITH SMALL MODIFICATIONS BY THE CONSTRUCTOR.

SOLD IN KIT FORM BY BRYAN AIRCRAFT COMPANY, USA.

CONSTRUCTED BY THE PILOT, RICHARD JOHNSON, AT HIS HOME DURING LEISURE TIME OVER AN 18 MONTH PERIOD. TOTAL CONSTRUCTION TIME = 2000 HOURS.

WING SPAN	= 54.5 FT (16.6 M)
WING AREA	= 138.3 FT^2 (12.9 M^2)
ASPECT RATIO	= 21.6
FUSELAGE LENGTH	= 23.3 FT (7.1 M)
EMPTY WEIGHT, UNEQUIPPED	= 510 POUNDS (231 KG)
EMPTY WEIGHT, EQUIPPED	= 550 POUNDS (249 KG)
FLIGHT WEIGHT	= 720 POUNDS (326 KG)
WING LOADING	= 5.21 LBS/FT^2 (25.3 KG/M^2)
WING AIRFOIL SECTION	= WORTMAN FX61-163
WING FLAP DEFLECTION RANGE	= 5° UP TO 80° DOWN
STALLING SPEED WITH FLAP DOWN	= 34 MPH (55 KM/HR)
MINIMUM SINKING SPEED	= 2.0 FT/SEC @ 48 MPH (.61 M/S @ 77 KM/HR)
MAXIMUM GLIDE RATIO	= 36.5 @ 53 MPH (85 KM/HR)
MAXIMUM DESIGN SPEED	= 160 MPH (257 KM/HR)

NOTE

THE DISPLAYED PERFORMANCE FIGURES WERE ACTUAL FLIGHT TEST VALUES MEASURED IN LATE 1967 WHEN THE SAILPLANE WAS IN ITS ORIGINAL MID-WING CONFIGURATION. SINCE THOSE TESTS, THE SAILPLANE CONFIGURATION WAS MODIFIED AS FOLLOWS:

(1) THE WING POSITION ON THE FUSELAGE WAS RAISED 5.5 INCHES (14 CM) TO REDUCE INTERFERENCE DRAG.

(2) THE WING INCIDENCE WAS INCREASED BY 1.0 DEGREES TO IMPROVE FORWARD VISIBILITY.

(3) THE CANOPY HEIGHT WAS REDUCED BY 1.5 INCHES (3.8 CM) TO REDUCE DRAG.

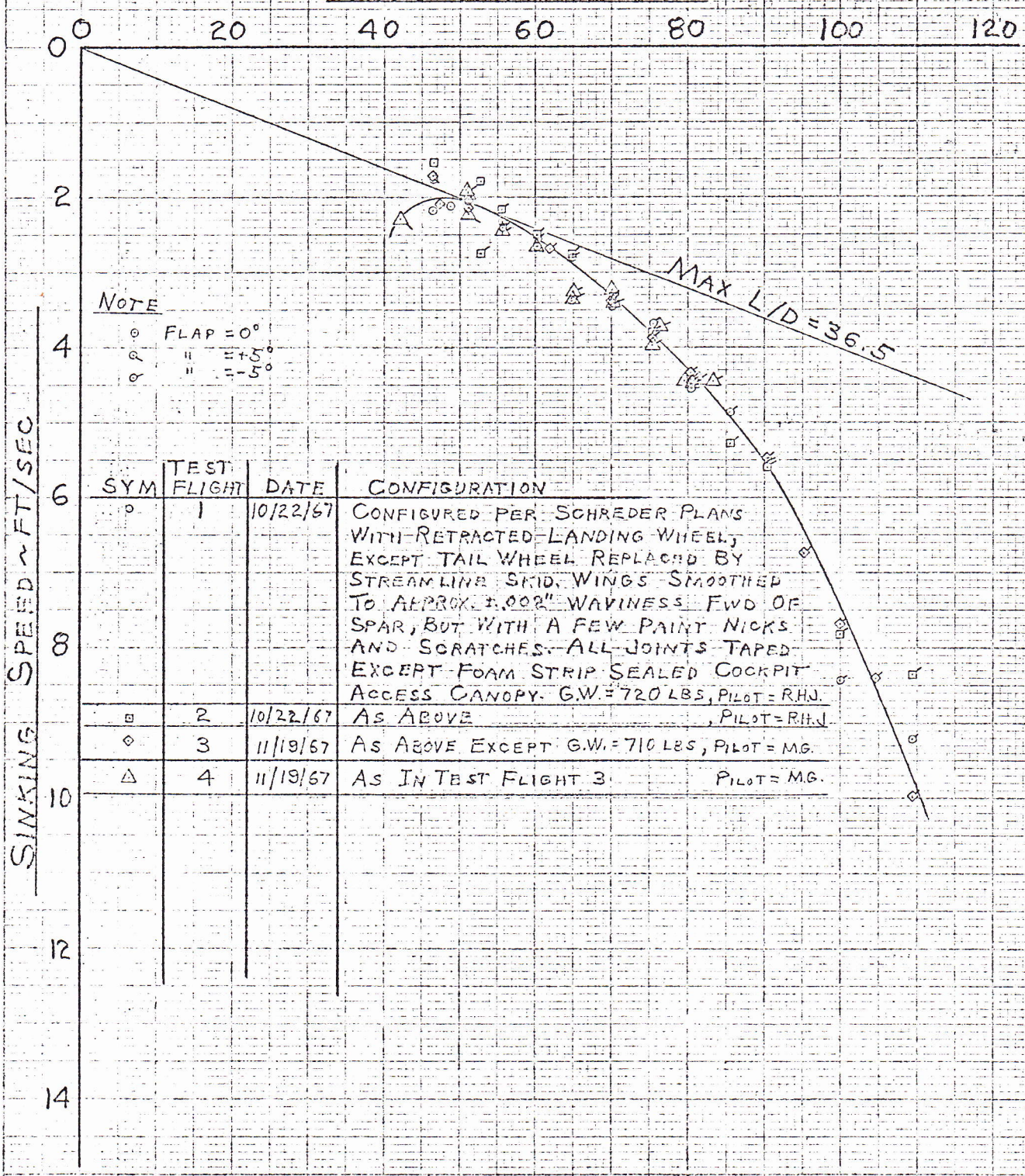
(4) THE TAIL SKID WAS REPLACED BY A 7.5 INCH (19 CM) HIGH VENTRAL FIN TO IMPROVE DIRECTIONAL STABILITY.

(5) THE TOW HOOK WAS MOVED TO THE FUSELAGE NOSE TO IMPROVE DIRECTIONAL CONTROL DURING TAKE-OFF AND TOW.

FLIGHT TEST PERFORMANCE MEASUREMENTS HAVE NOT BEEN ACCOMPLISHED SINCE THE ABOVE MODIFICATIONS WERE MADE. HOWEVER, PERFORMANCE IMPROVEMENTS ON THE ORDER OF 5 PERCENT TO 8 PERCENT ARE EXPECTED FROM THE MODIFICATIONS.

HP-13 FLIGHT TEST DATA

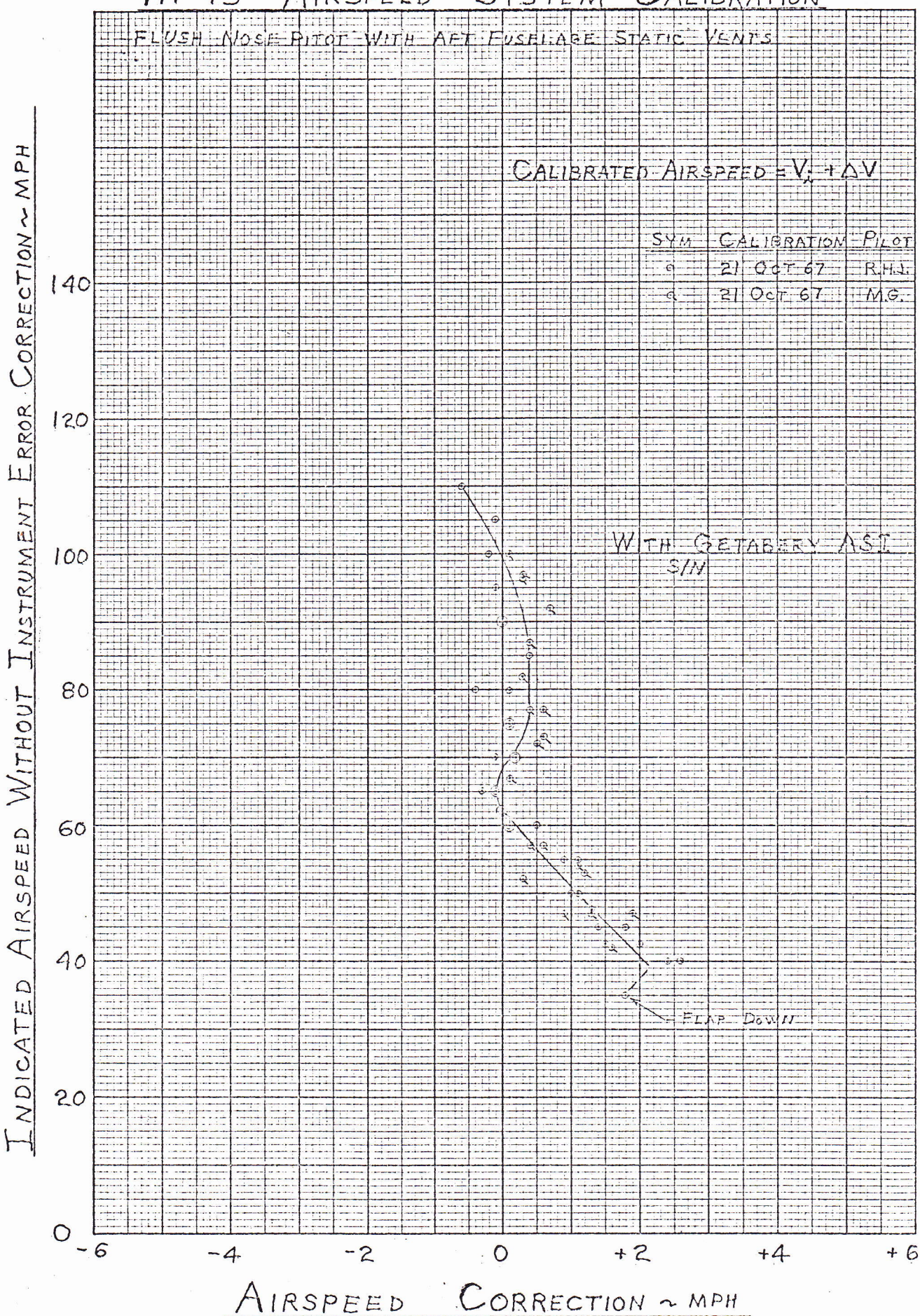
TEST DATA CORRECTED TO S.L. STD. ATMOS. CONDITIONS



SYM	TEST FLIGHT	DATE	CONFIGURATION
○	1	10/22/67	CONFIGURED PER SCHREDER PLANS WITH RETRACTED LANDING WHEEL, EXCEPT TAIL WHEEL REPLACED BY STREAMLINE SKID. WINGS SMOOTHED TO APPROX. ±.002" WAVINESS FWD OF SPAR, BUT WITH A FEW PAINT NICKS AND SCRATCHES. ALL JOINTS TAPED EXCEPT FOAM STRIP SEALED COCKPIT ACCESS CANOPY. G.W. = 720 LBS, PILOT = R.H.J.
□	2	10/22/67	AS ABOVE, PILOT = R.H.J.
◇	3	11/19/67	AS ABOVE EXCEPT G.W. = 710 LBS, PILOT = M.G.
△	4	11/19/67	AS IN TEST FLIGHT 3, PILOT = M.G.

HP-13 AIRSPEED SYSTEM CALIBRATION

FLUSH NOSE PITOT WITH AFT FUSELAGE STATIC VENTS



HP-13 DRAG ANALYSIS