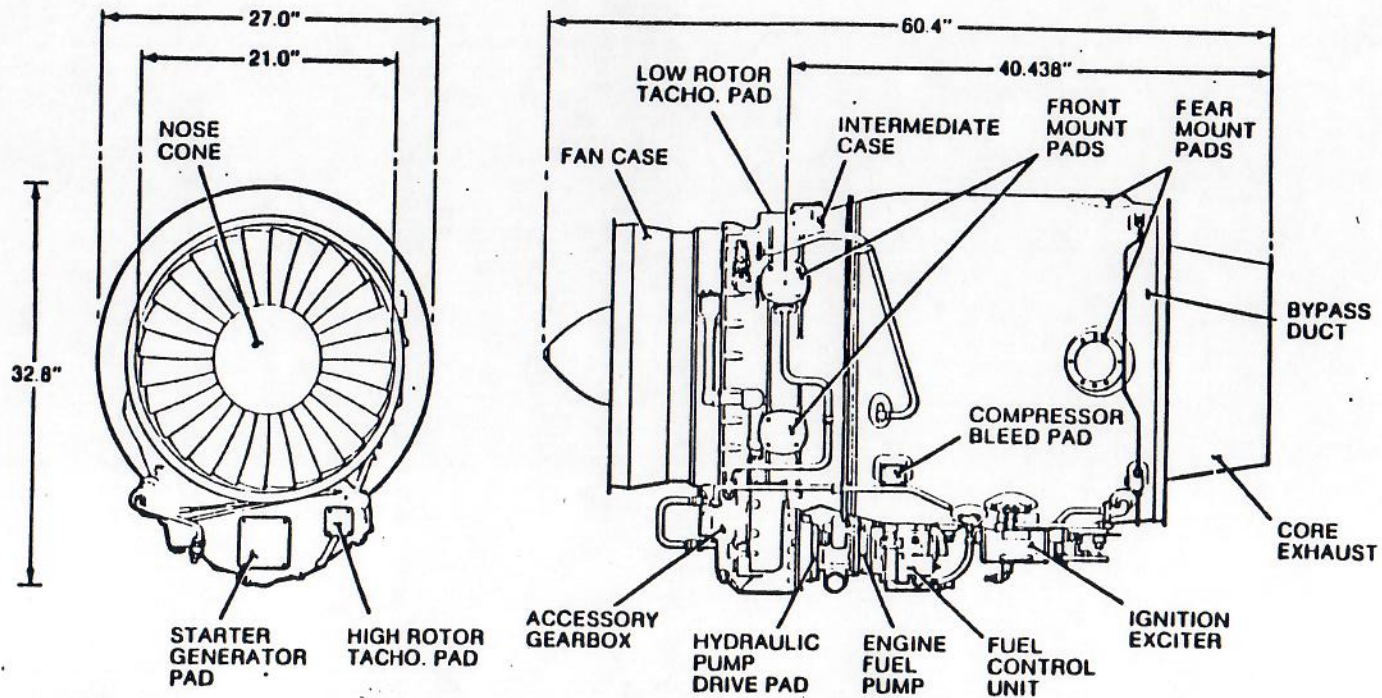


JT15D



Engine dry weight (with standard equipment): 557 lbs.

Note book Copy

PROPULSION DATA

The attached data are based on the Pratt & Whitney JT15D-5(M) engine which was a candidate for several of the twin-engine all-new VTX designs. Other versions of the JT15D are in use today in various models of business aircraft. The data are for use in the Bendix design competition only; they include some simplifications and approximations for the convenience of the student.

Scaling

If a pair of JT15D engines, as defined in these data, proves to be significantly off-optimum for the students' design, the data may be scaled for the purposes of this competition. The scaling factor would be defined as the ratio of the desired maximum sea level static thrust to the reference sea level static thrust (3060 lb.). Weight, fuel flow, air flow, and engine length should be assumed to vary in direct proportion to the scale factor. Engine diameter will vary as the square root of the scale factor.

Losses

The attached performance data is installed, including typical bleed and mechanical power extraction losses.

PRATT & WHITNEY
MAY 12 1983
D. M. RYLE JR.

TAKEOFF POWER

IT150-5M INSTALLED ENGINE PERFORMANCE

U.S. STANDARD ATMOSPHERE 1962

STANDARD DAY

ALTITUDE	
□	SEA LEVEL
○	4000
△	8000

Idle Performance = 150 lbs/hr

FN-LBS X 10²

36

34

32

30

28

26

24

22

20

18

0.0

0.1

0.2

0.3

0.4

0.5

0.6

0.7

0.8

FLIGHT MACH NUMBER

9 SEP 80

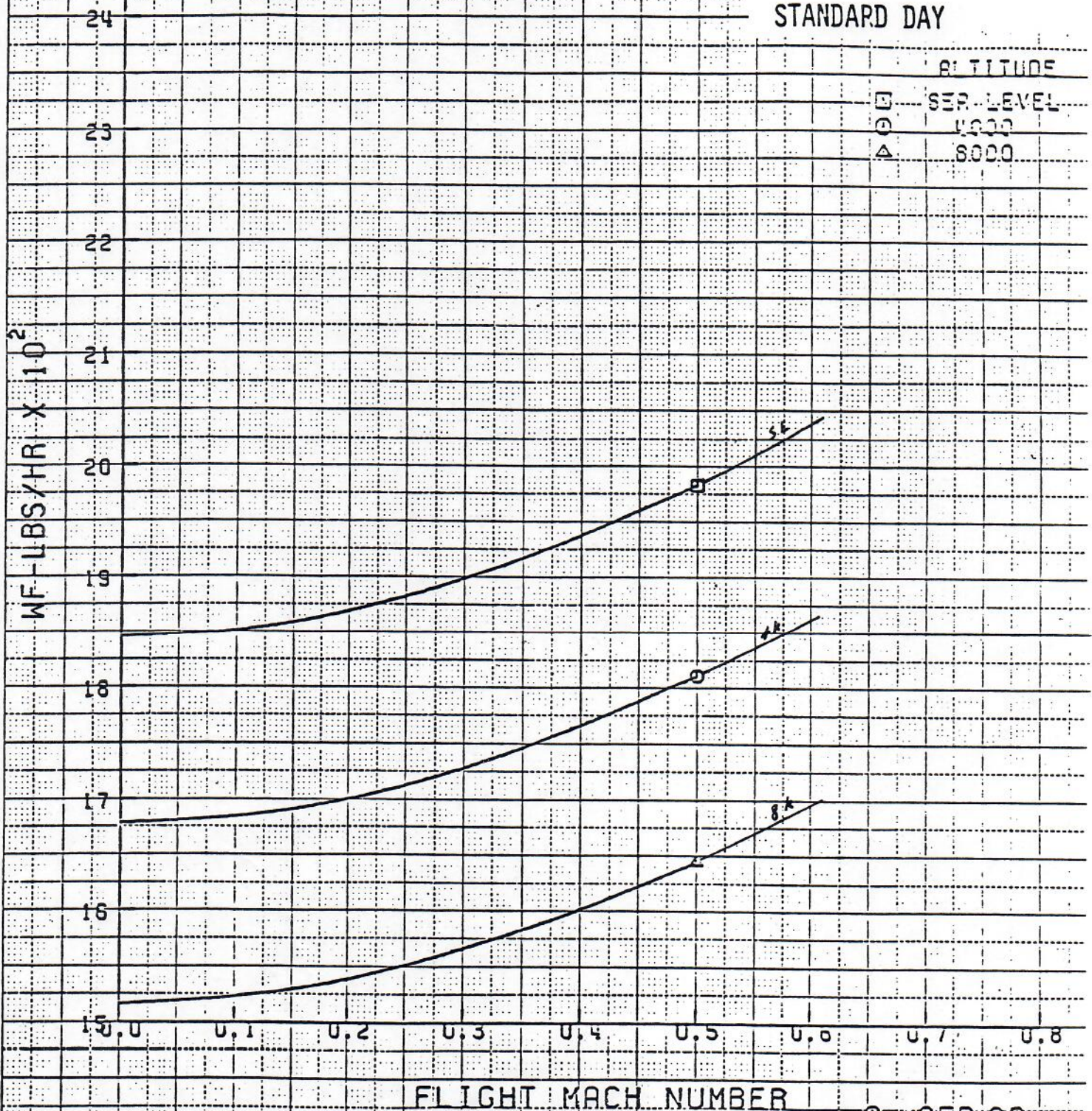
TAKEOFF POWER

JT15D-5M INSTALLED ENGINE PERFORMANCE

U.S. STANDARD ATMOSPHERE 1962

STANDARD DAY

ALTITUDE
 □ SEA LEVEL
 ○ 4000
 △ 8000



9 SEP 80

TAKEOFF POWER

JT15D-5M INSTALLED ENGINE PERFORMANCE

U.S. STANDARD ATMOSPHERE 1962

90°F = 31.000°C

ALTITUDE

□ SEA LEVEL
○ 4000
△ 8000

FN-LBS X 10²

32
30
28
26
24
22
20
18
16
14

0.0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8

FLIGHT MACH NUMBER

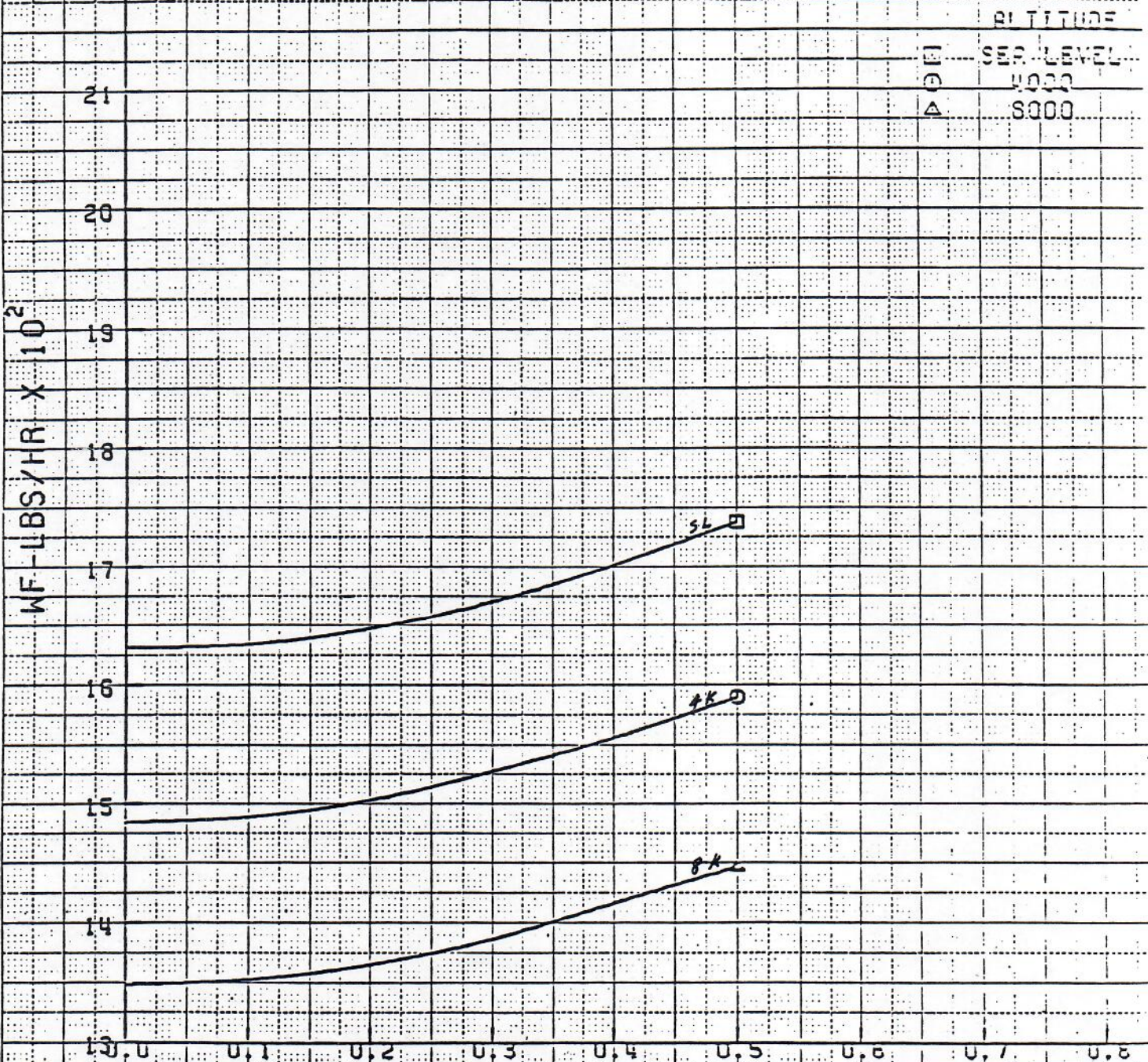
9 SEP 80

TAKEOFF POWER

JT15D-5M INSTALLED ENGINE PERFORMANCE

U.S. STANDARD ATMOSPHERE 1962

90°F



FLIGHT MACH NUMBER

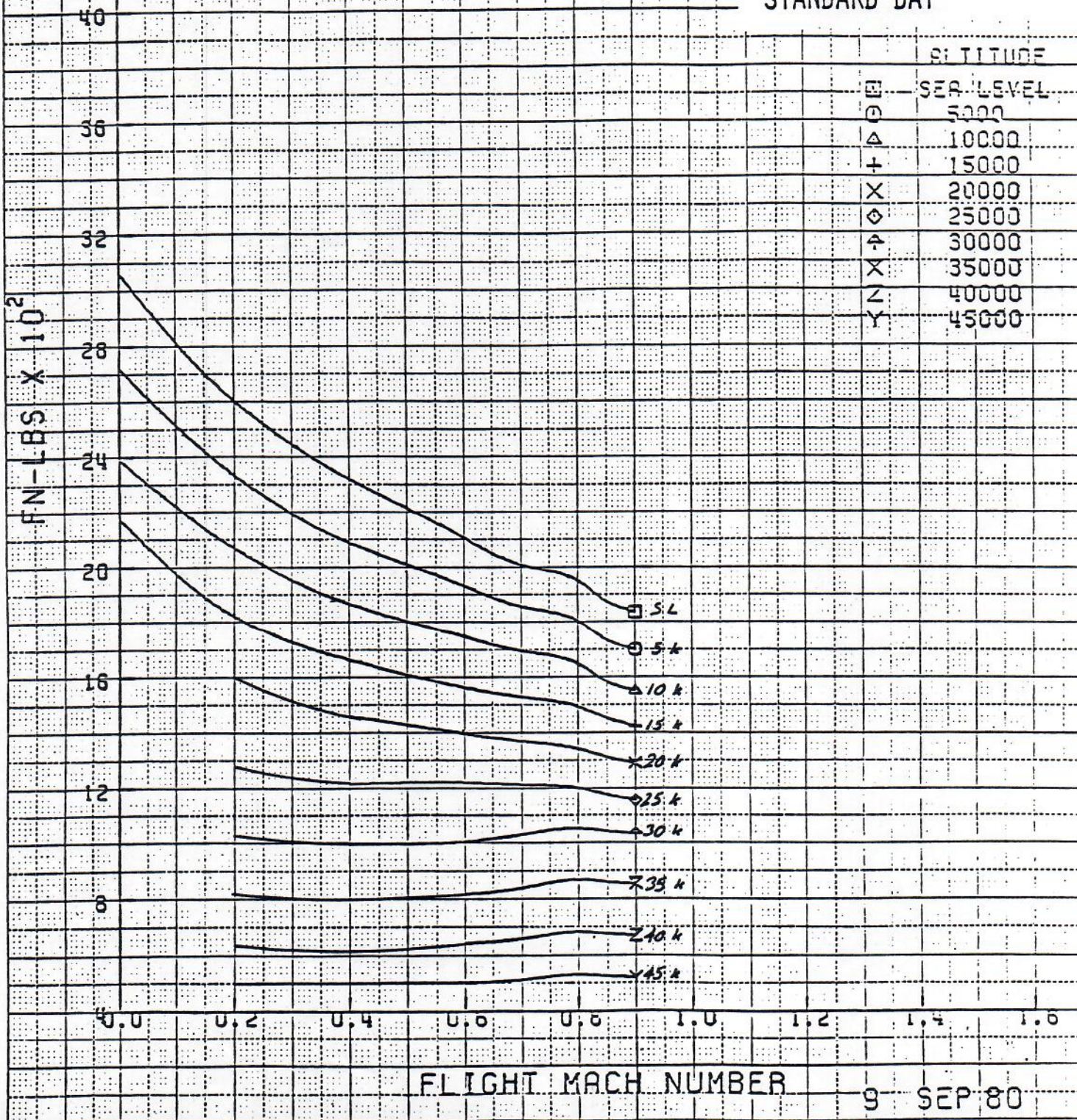
9 SEP 80

CLIMB POWER

JT15D-5M INSTALLED ENGINE PERFORMANCE

U.S. STANDARD ATMOSPHERE 1962

STANDARD DAY

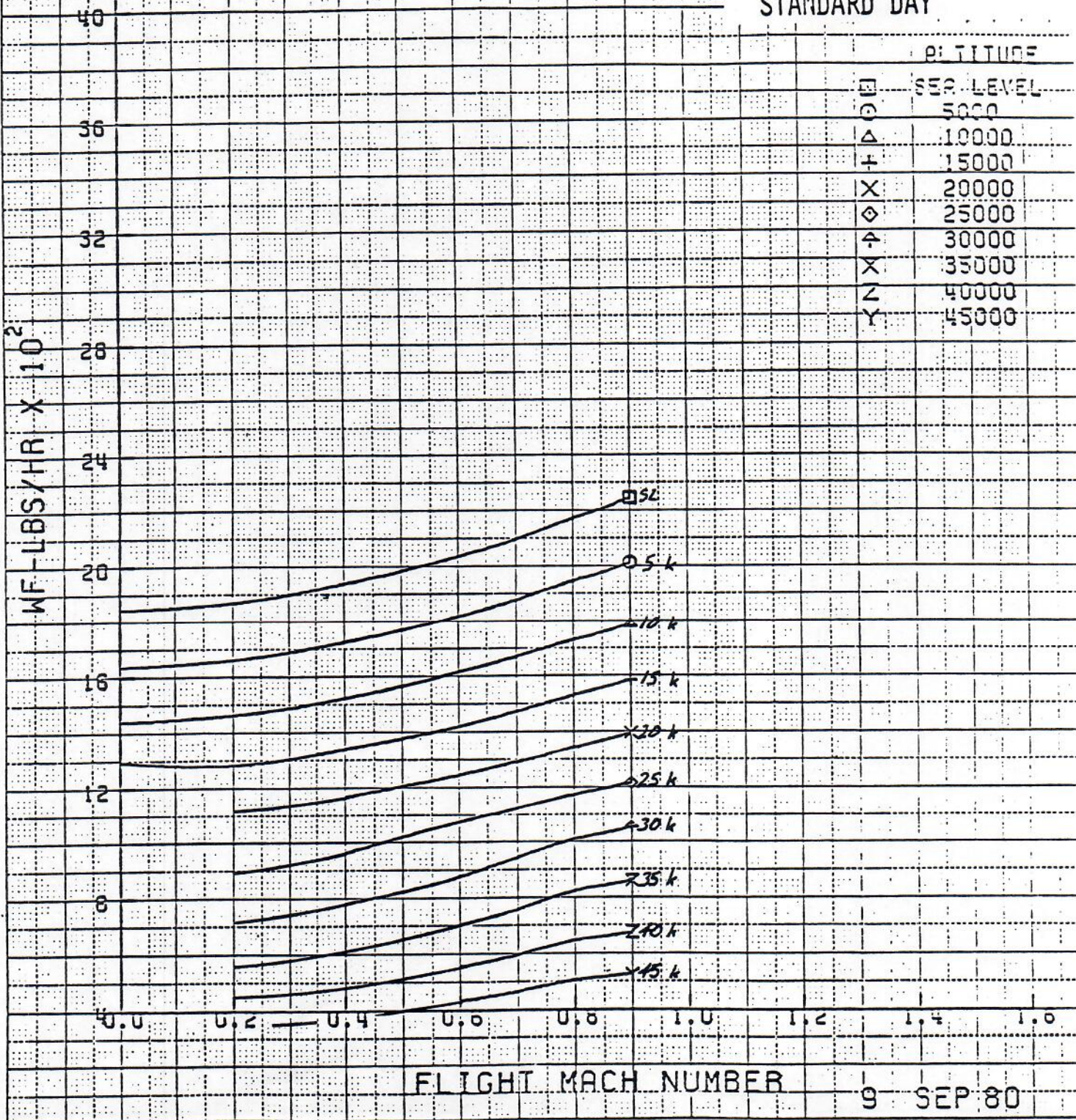


CLIMB POWER

JT15D-5M INSTALLED ENGINE PERFORMANCE

U.S. STANDARD ATMOSPHERE 1962

STANDARD DAY



PARTIAL POWER

JT15D-5M INSTALLED ENGINE PERFORMANCE

U.S. STANDARD ATMOSPHERE 1962

STANDARD DAY

SEA LEVEL

MACH

□	0.55
○	0.30
△	0.70
+	0.60
X	0.40
◇	0.20
△	0.00

S.F.C. - LBS/HR/LB

1.3
1.2
1.1
1.0
0.9
0.8
0.7
0.6
0.5
0.4

M=0.85

M=0.8

M=0.7

M=0.6

M=0.4

M=0.2

M=0

FN-LBS X 102

SEP 80

F 9

PARTIAL POWER

JT15D-5M INSTALLED ENGINE PERFORMANCE

U.S. STANDARD ATMOSPHERE 1962

STANDARD DAY

15000 FT. ALTITUDE

MACH

□	0.85
○	0.80
△	0.70
+	0.60
x	0.40
◇	0.20
+	0.00

S.F.C. - LBS/HR/LB

MACH

0.85

0.80

0.70

0.60

0.40

0.20

0.00

FN - LBS X 102

8 SEP 80

PARTIAL POWER

JT15D-5M INSTALLED ENGINE PERFORMANCE

U.S. STANDARD ATMOSPHERE 1962

STANDARD DAY

30000 FT. ALTITUDE

MACH

□	0.85
○	0.80
△	0.70
+	0.60
x	0.40

S.F.C. - LBS/HR/LB

1.3

1.2

1.1

1.0

0.9

0.8

0.7

0.6

0.5

0.4

0

2

4

6

8

10

12

14

16

FN-LBS X 102

8 SEP 80

PARTIAL POWER

JT15D-5M INSTALLED ENGINE PERFORMANCE

U.S. STANDARD ATMOSPHERE 1962

STANDARD DAY

35000 FT. ALTITUDE

MACH

- 0.85
- 0.80
- △ 0.70
- + 0.60

S.F.C. - LBS/HR/LB

MACH

0.85

0.80

0.70

0.60

0.40

0.20

FN-LBS X 10²

8 SEP 80

PARTIAL POWER

JT15D-5M INSTALLED ENGINE PERFORMANCE

U.S. STANDARD ATMOSPHERE 1962

STANDARD DAY

40000 FT. ALTITUDE

MACH

□ 0.85
○ 0.80
△ 0.70
+ 0.60

S.F.C. LBS/HR/LB

MACH

□ 0.85
○ 0.80
△ 0.70
+ 0.60

0.40

FN-LBS X 102

8 SEP 80

PARTIAL POWER

JT15D-5M INSTALLED ENGINE PERFORMANCE

U.S. STANDARD ATMOSPHERE 1962

STANDARD DAY

45000 FT. ALTITUDE

MACH

- 0.85
- 0.80
- △ 0.70
- + 0.60

S.F.C. - LBS/HR/LB

MACH 0.85

0.80

0.70

0.60

0.40

FN - LBS X 102

8 SEP 80

E14

10 0010