

# COMPUTER TESTING SUPPLEMENT FOR COMMERCIAL PILOT



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U.S. Department of Transportation  
**Federal Aviation Administration**

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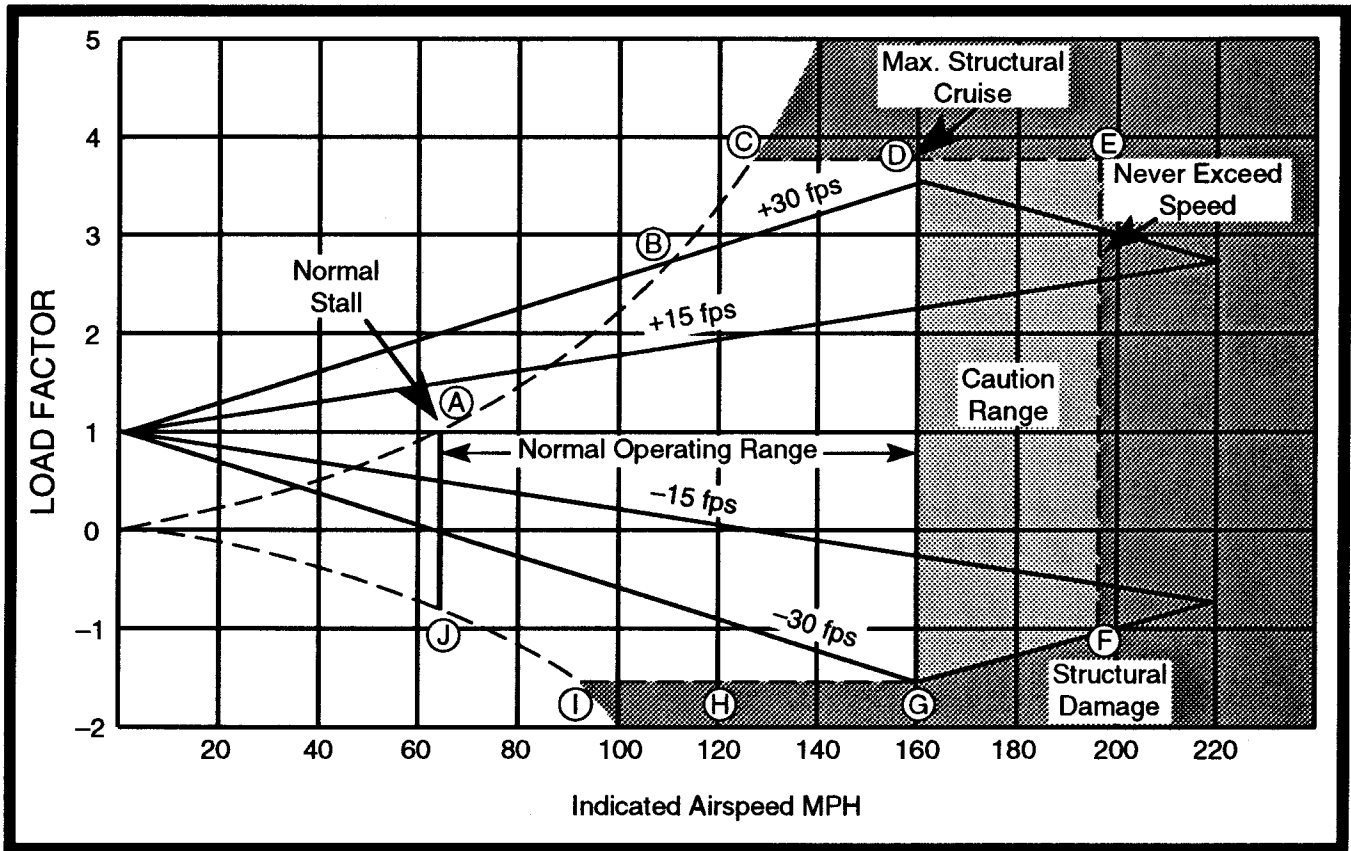


FIGURE 5.—Velocity vs. G-Loads.

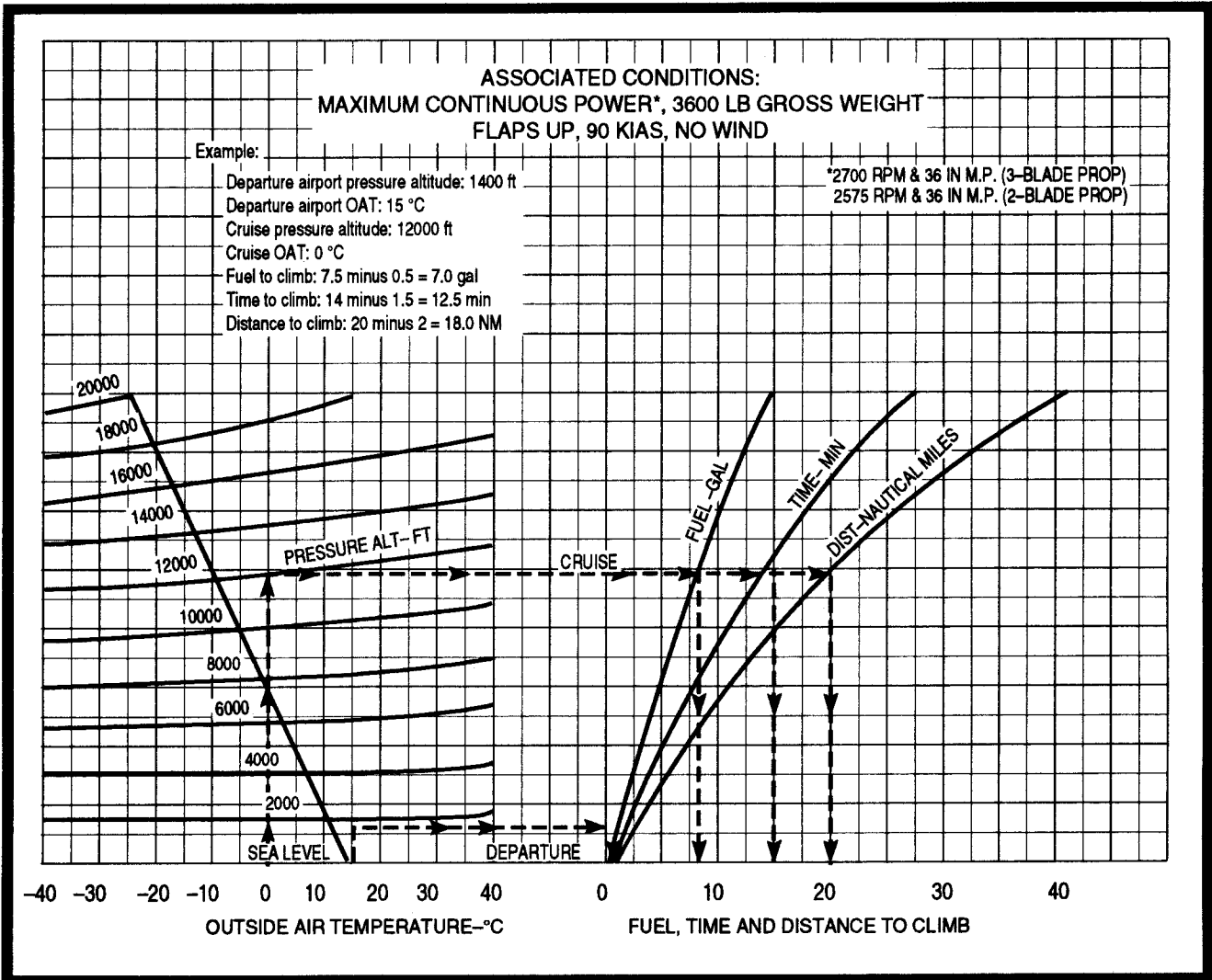


FIGURE 15.—Fuel, Time, and Distance to Climb.

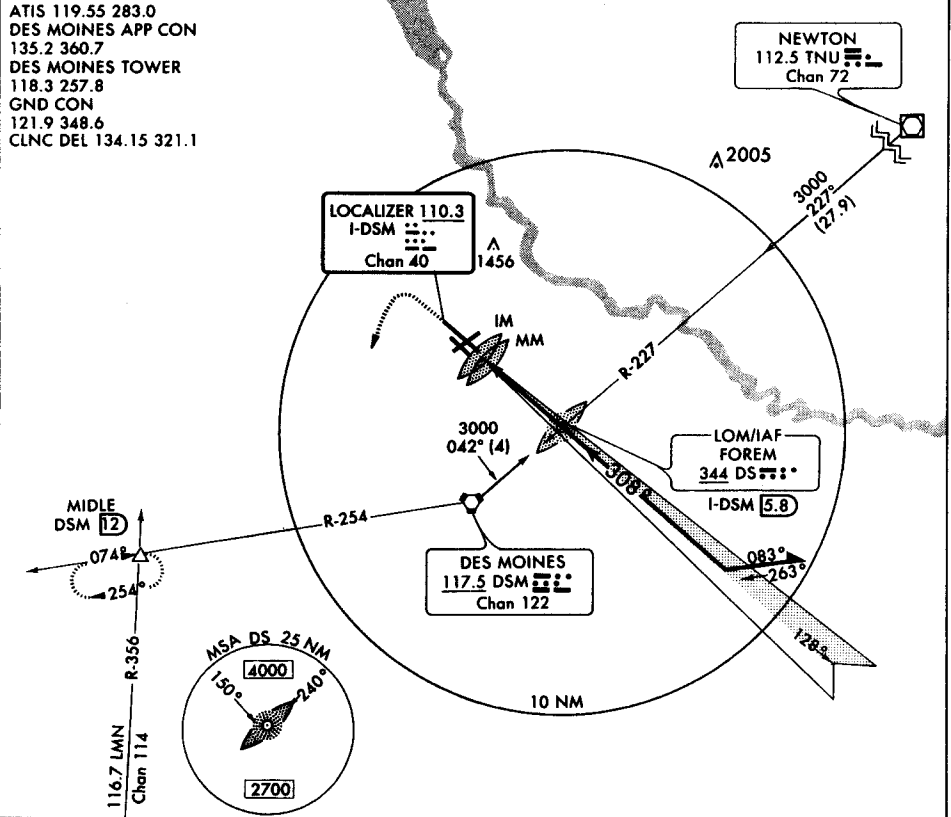
Amdt 20 97338

# ILS RWY 31R

AL-117 (FAA)

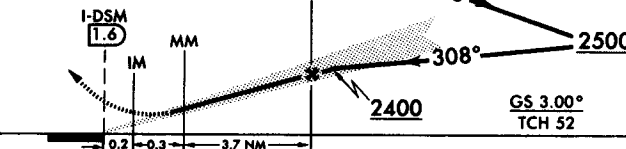
DES MOINES INTL (DSM)  
DES MOINES, IOWA

ATIS 119.55 283.0  
DES MOINES APP CON  
135.2 360.7  
DES MOINES TOWER  
118.3 257.8  
GND CON  
121.9 348.6  
CLNC DEL 134.15 321.1



**MISSED APPROACH**  
Climb to 1600 then climbing left turn to 3000 via heading 180° and DSM R-254 to MIDDLE Int/DSM 12 DME and hold.

**FOREM LOM/INT**  
I-DSM 5.8  
Remain within 10 NM

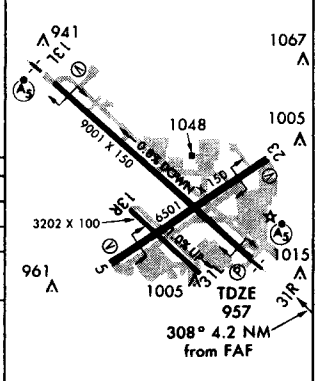


CATEGORY	A	B	C	D	E
S-ILS 31R	1157/24 200 (200-½)				
S-LOC 31R	1320/24 363 (400-½)		1320/40 363 (400-½)		
CIRCLING	1380-1	1420-1	1420-1½	1520-2	1760-2¾
	423 (500-1)	463 (500-1)	463 (500-1½)	563 (600-2)	803 (900-2¾)

Use I-DSM DME while on LOC course.

▽  
△

ELEV 957  
HIRL Rwy 13L-31R  
MIRL Rwys 5-23 and 13R-31L  
REIL Rwys 5, 13R, 23, and 31L



FAF to MAP 4.2 NM

Knots	60	90	120	150	180
Min:Sec	4:12	2:48	2:06	1:41	1:24

# ILS RWY 31R

41°32'N-93°40'W

DES MOINES, IOWA  
DES MOINES INTL (DSM)

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FIGURE 28.—ILS RWY 31R (DSM).

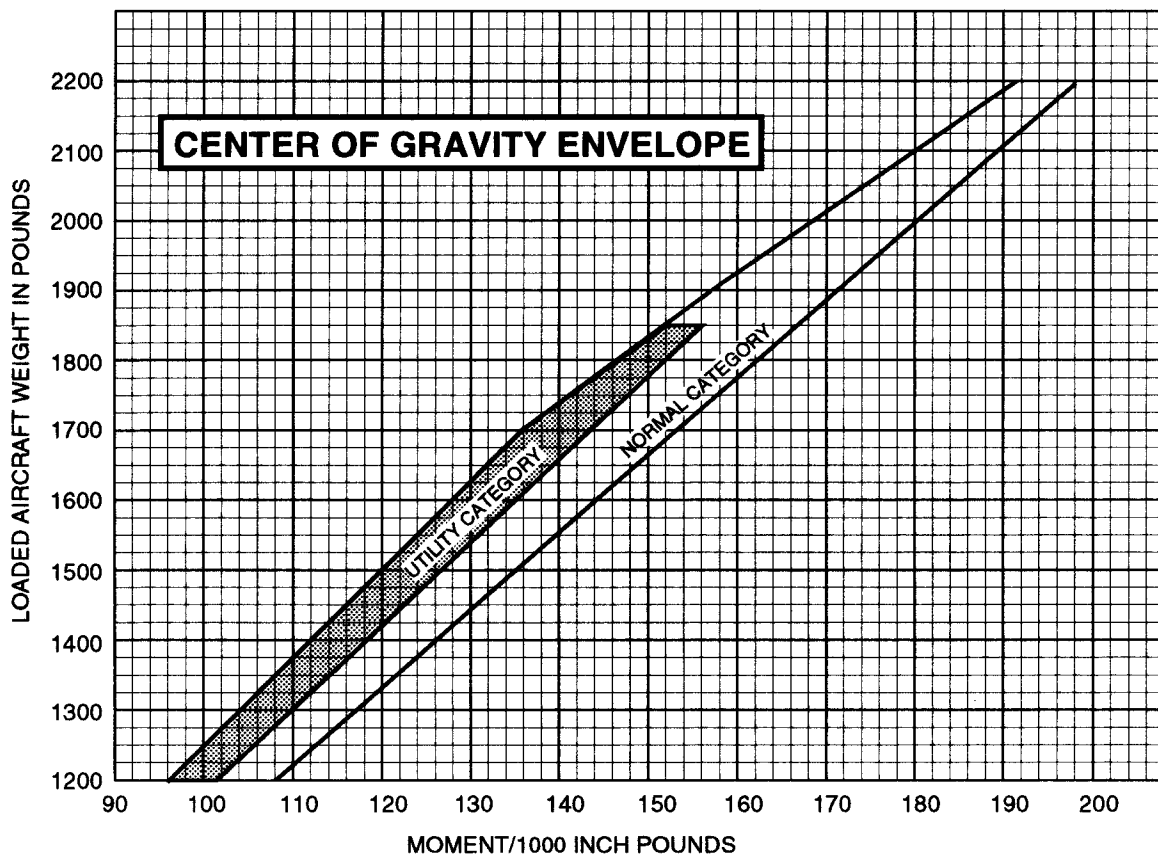
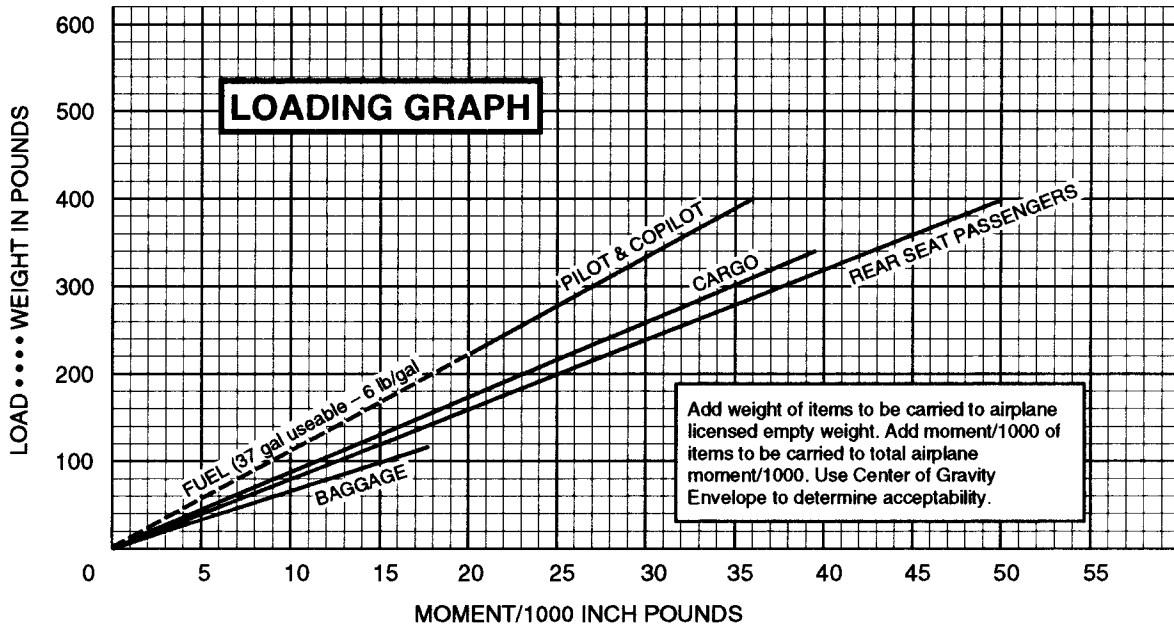


FIGURE 38.—Loading Graph and Center-of-Gravity Envelope.

DESIGN DATA

Wing Span	51'	Empty Weight	600 lb
Length	25' 9"	Gross Weight	1,040 lb
Height	9' 3-1/2"	Wing Area	219.5 sq ft
Aspect Ratio	11.85	Wing Loading	4.74 psf

PERFORMANCE

Max. Speed	98 MPH	Stall (Dual)	35 MPH
Airplane Tow	98 MPH	L/D MPH Solo	22.25 to 1 at 45
Auto Winch	69 MPH	L/D MPH Dual	22.25 to 1 at 52
Dive brake			
Extend. Max.	98 MPH	Sink Speed Solo	2.6 fps at 38
Stall (solo)	31 MPH	Sink Speed Dual	3.1 fps at 42

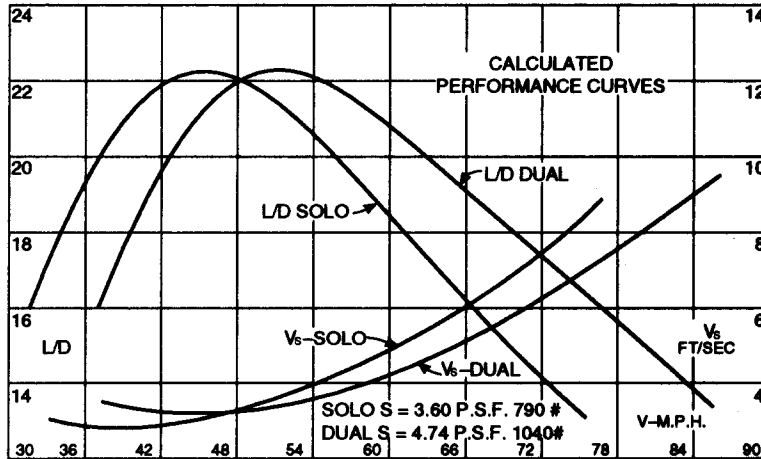


FIGURE 48.—Performance Curves Chart.

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