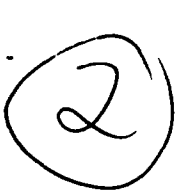
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Report No. NADC-91124-60



CARRIER LANDING PARAMETERS FROM SURVEY 45, FLEET AND TRAINING COMMAND AIRCRAFT LANDING ABOARD USS ENTERPRISE CVN-65 (APPENDICES B THROUGH R)

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Warminster, PA 18974-5000

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Work Unit No. 181004
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NAVAL AIR SYSTEMS COMMAND (AIR-5302)
Washington, DC 20361-0001

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A photographic landing loads survey which recorded both day and night carrier landing operations, was performed aboard the USS Enterprise CVN-65 operating off the west coast of the United States. Over 900 day and 500 night landings of various fleet carrier aircraft were recorded and analyzed. Statistical distributions of landing parameters were generated. An additional 1000 day landings of Training Command Aircraft are included in this report.

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Aircraft Landing Parameter Approach Speed, Engaging Speed, Glideslope Angle, Sink Speed

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APPENDIX B

F-14A AIRCRAFT

DAY CARRIER LANDINGS

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A-1

USS ENTERPRISE
CVN-65

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MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=158 $\bar{X}$=27.85 KNOTS (14.32 METRES/SEC) A3=.38
S=3.39 KNOTS (1.74 METRES/SEC) A4=1.88

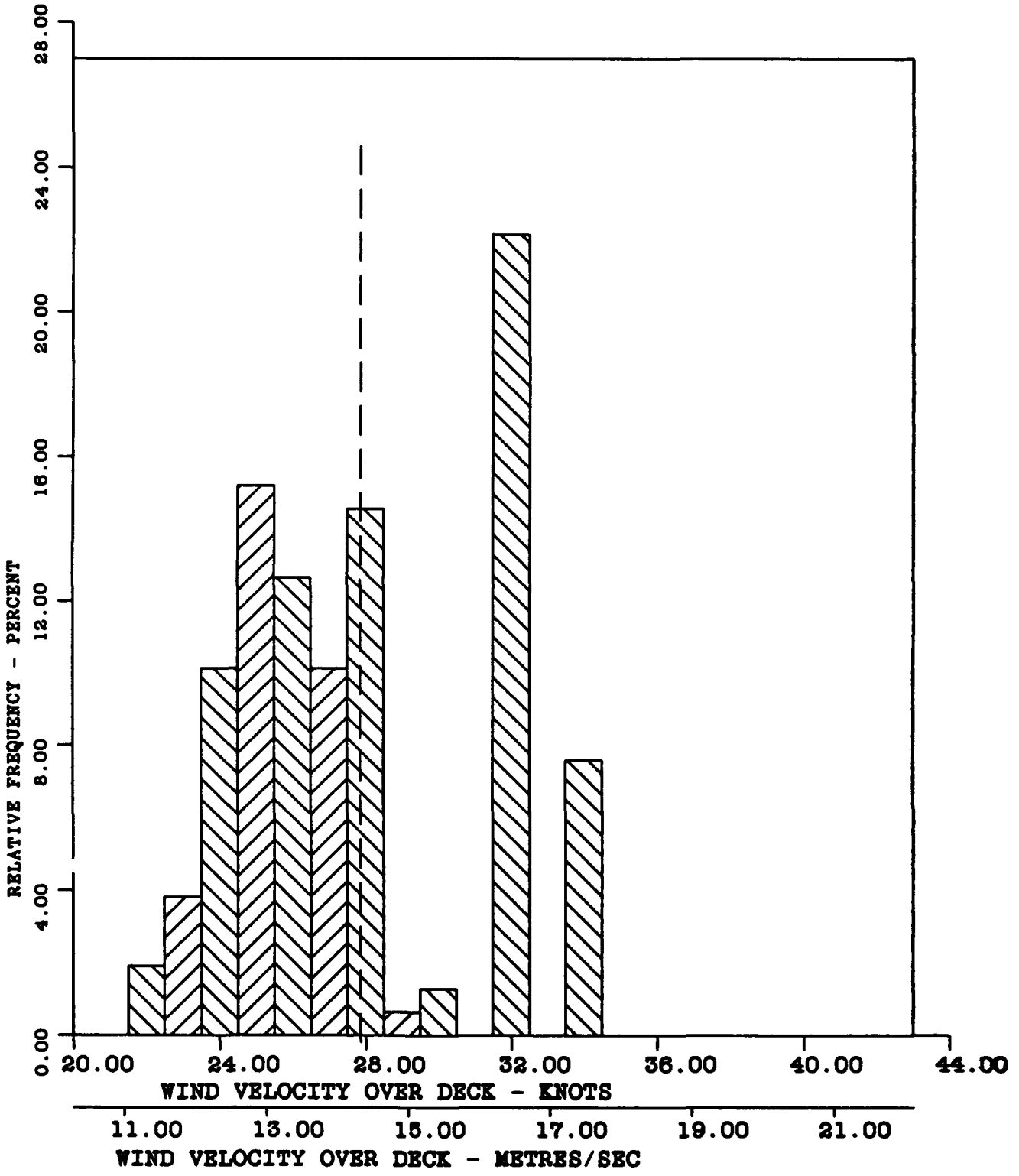


FIGURE B-1 FREQUENCY DISTRIBUTION OF WIND VELOCITY OVER THE DECK

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-158 $\bar{X}$-27.85 KNOTS (14.32 METRES/SEC) A3=.38
S-3.39 KNOTS (1.74 METRES/SEC) A4=1.88
CURVE FITTED - PEARSON TYPE III

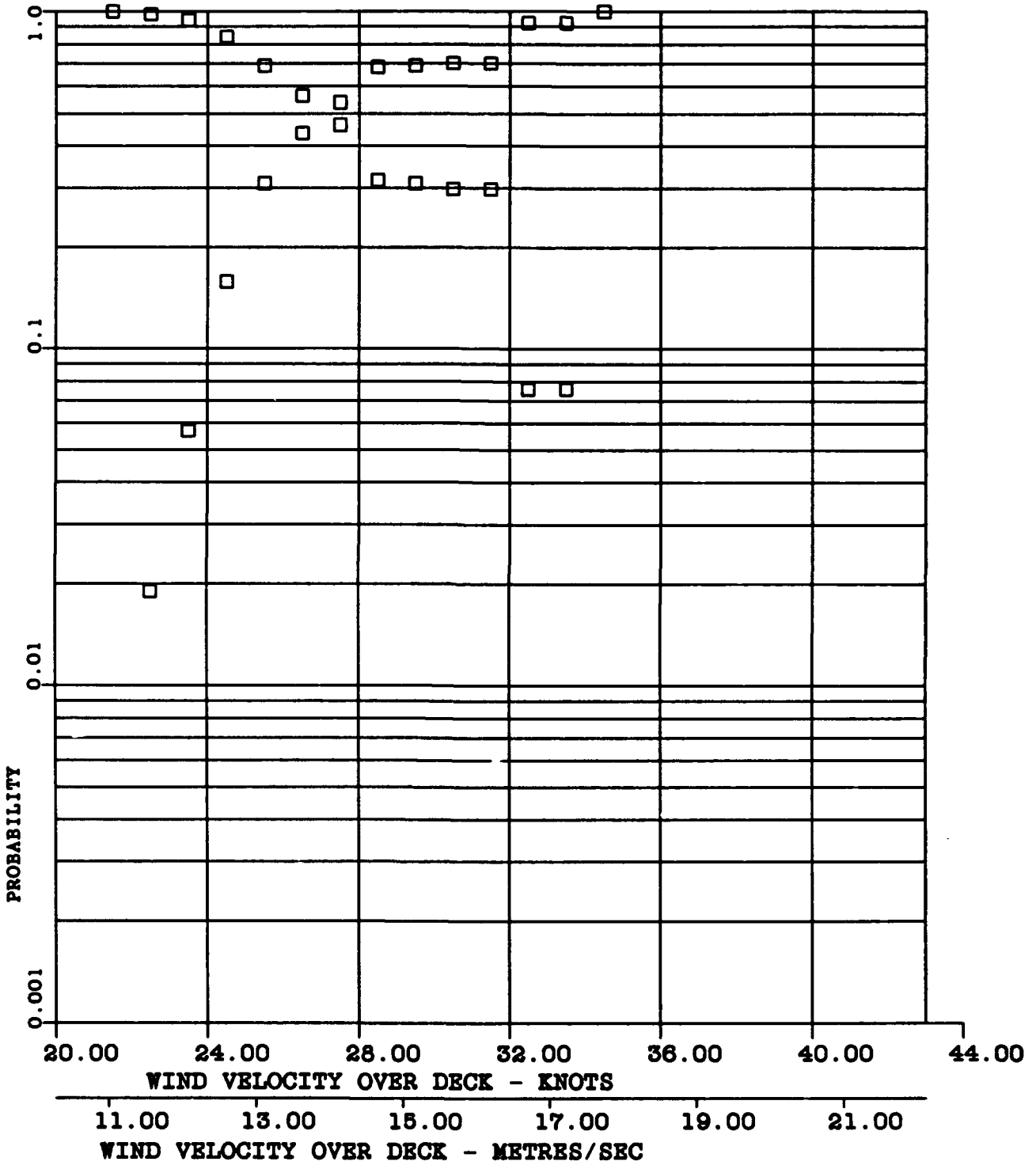


FIGURE B-2 PROBABILITY DISTRIBUTION OF WIND VELOCITY OVER THE DECK

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-158 $\bar{X}$-140.43 KNOTS (72.24 METRES/SEC) A3=-.01
S-4.03 KNOTS (2.07 METRES/SEC) A4-2.79

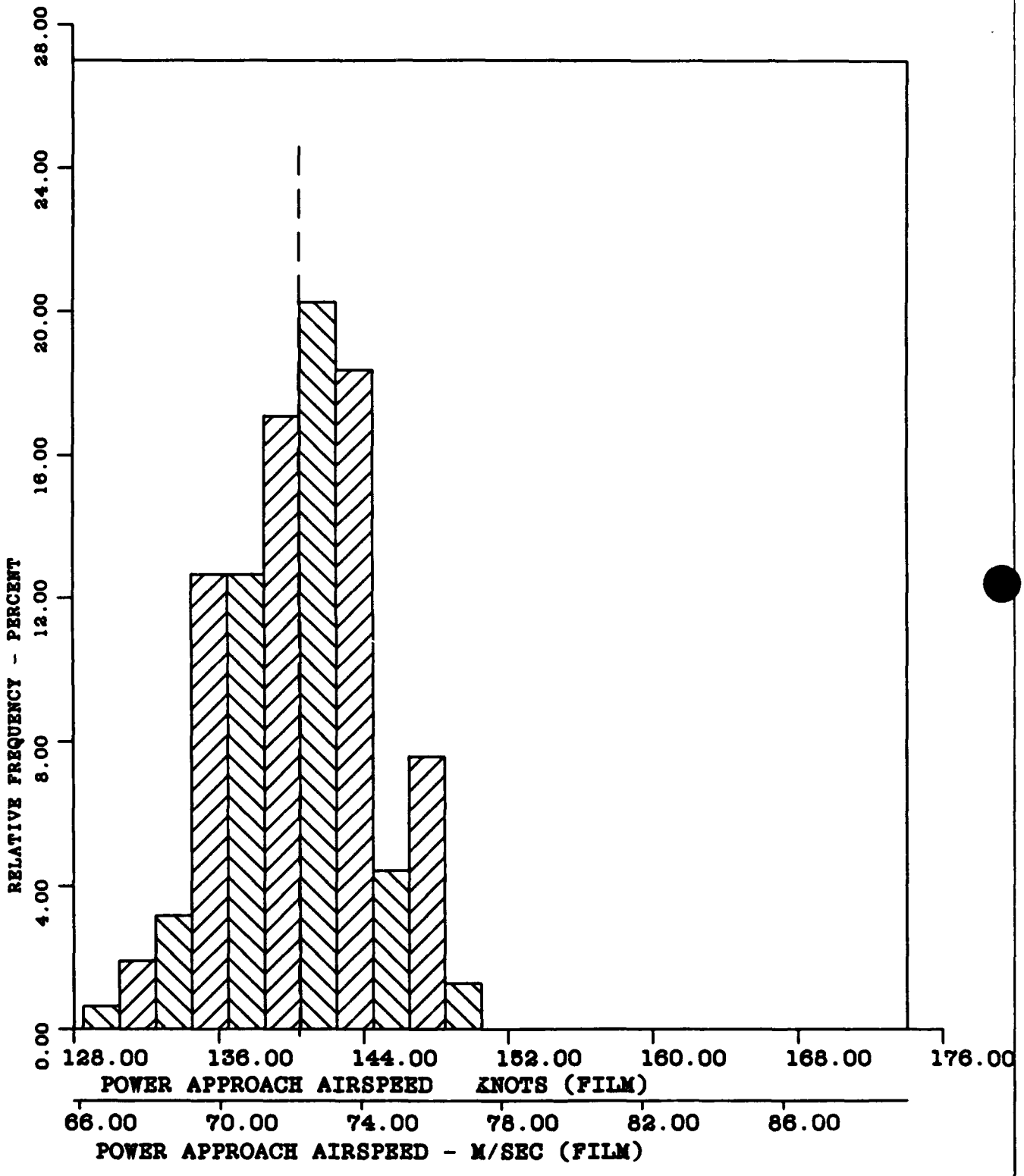


FIGURE B-3 FREQUENCY DISTRIBUTION OF FILM MEASURED POWER APPROACH AIRSPEED AT THE RAMP

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-158 $\bar{X}$-140.43 KNOTS (72.24 METRES/SEC) A3=-.01
S-4.03 KNOTS (2.07 METRES/SEC) A4=2.79
CURVE FITTED - NORMAL

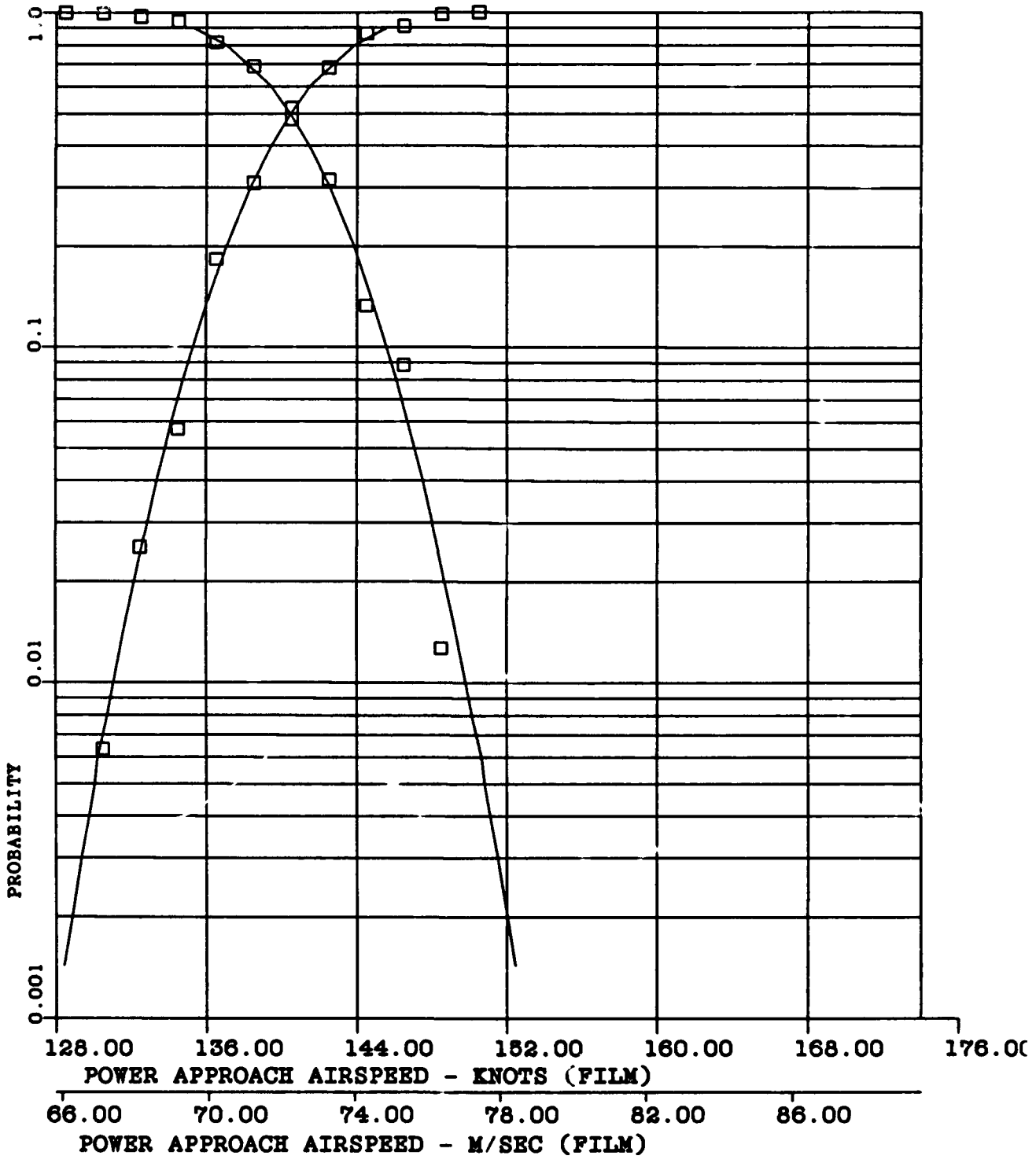


FIGURE B-4 PROBABILITY DISTRIBUTION OF POWER APPROACH AIRSPEED AT THE RAMP (FILM)

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=156 $\bar{X}$=15.36 FEET (4.68 METRES) A3=.14
S=3.51 FEET (1.07 METRES) A4=3.19

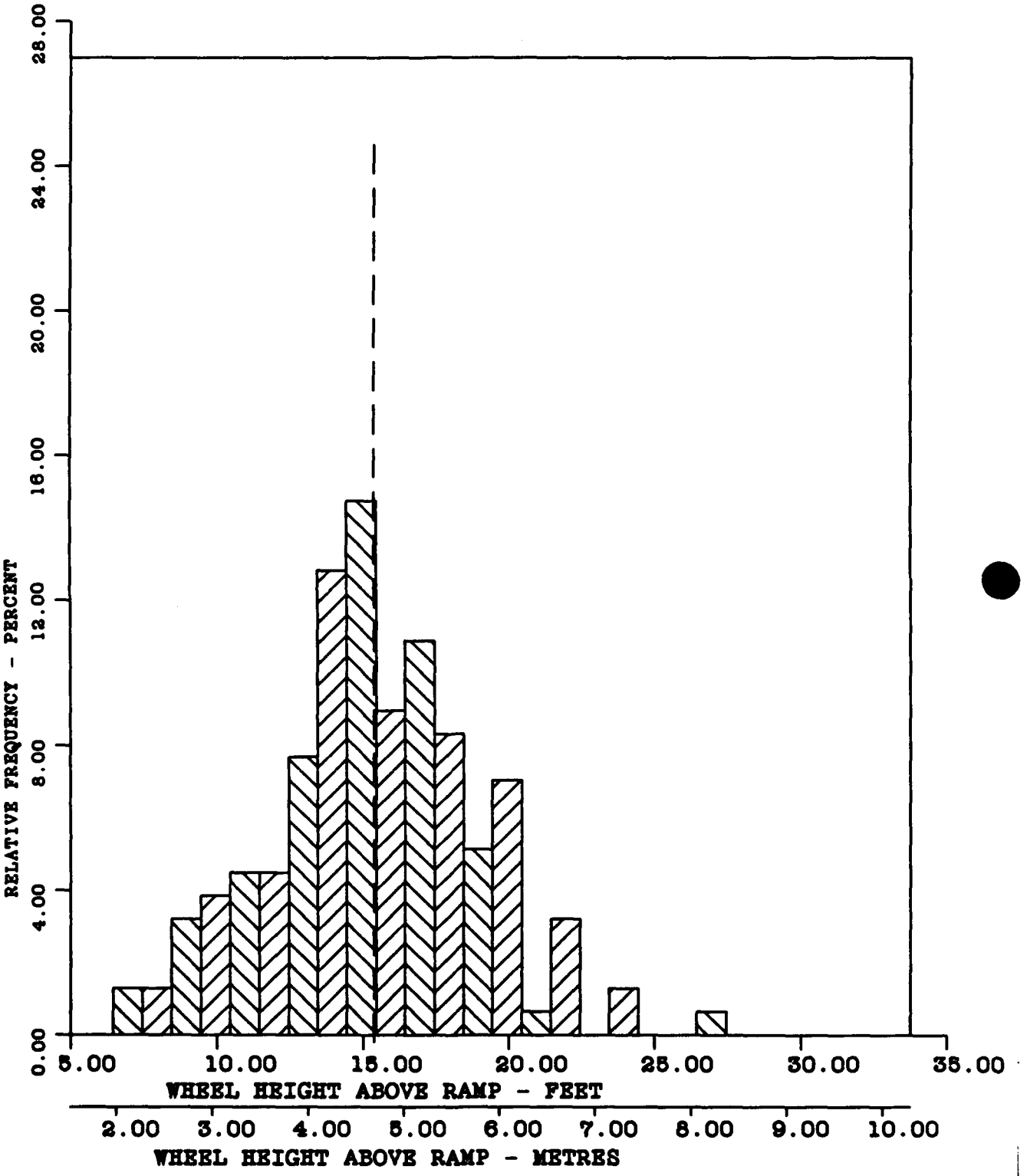


FIGURE B-5 FREQUENCY DISTRIBUTION OF AIRCRAFT WHEEL HEIGHT ABOVE CARRIER RAMP

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-156 $\bar{X}$-15.36 FEET (4.68 METRES) A3=.14
S-3.51 FEET (1.07 METRES) A4=3.19
CURVE FITTED - NORMAL

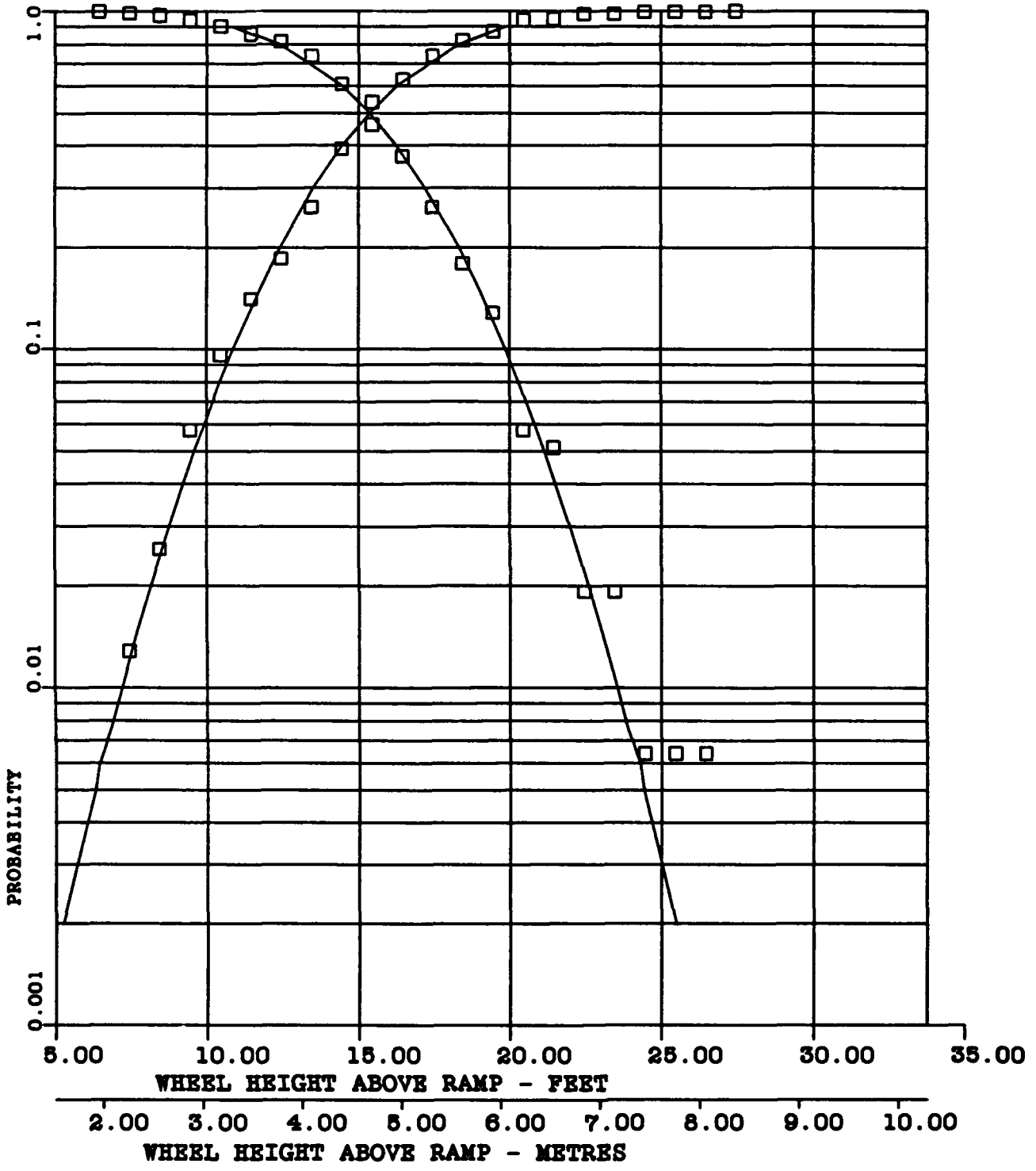


FIGURE B-6 PROBABILITY DISTRIBUTION OF AIRCRAFT WHEEL HEIGHT ABOVE CARRIER RAMP

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-158 $\bar{X}$-9.71 FEET/SEC (2.96 METRES/SEC) A3=-.42
S-2.56 FEET/SEC (.78 METRES/SEC) A4-3.80

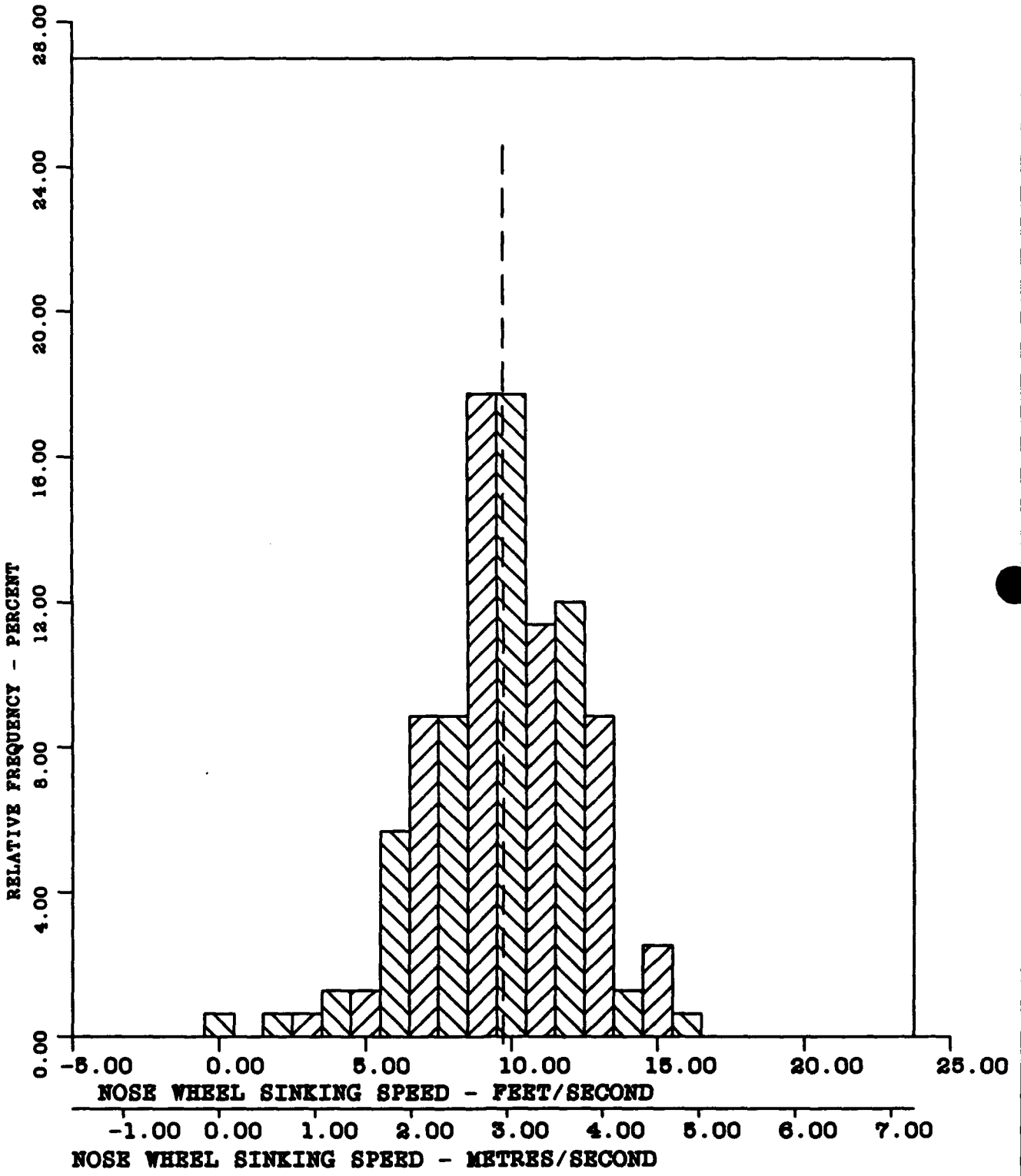


FIGURE B-7 FREQUENCY DISTRIBUTION OF NOSE WHEEL SINKING SPEED

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-158 $\bar{X}$-9.71 FEET/SEC (2.96 METRES/SEC) A3=-.42
S-2.56 FEET/SEC (.78 METRES/SEC) A4-3.80
CURVE FITTED - PEARSON TYPE III

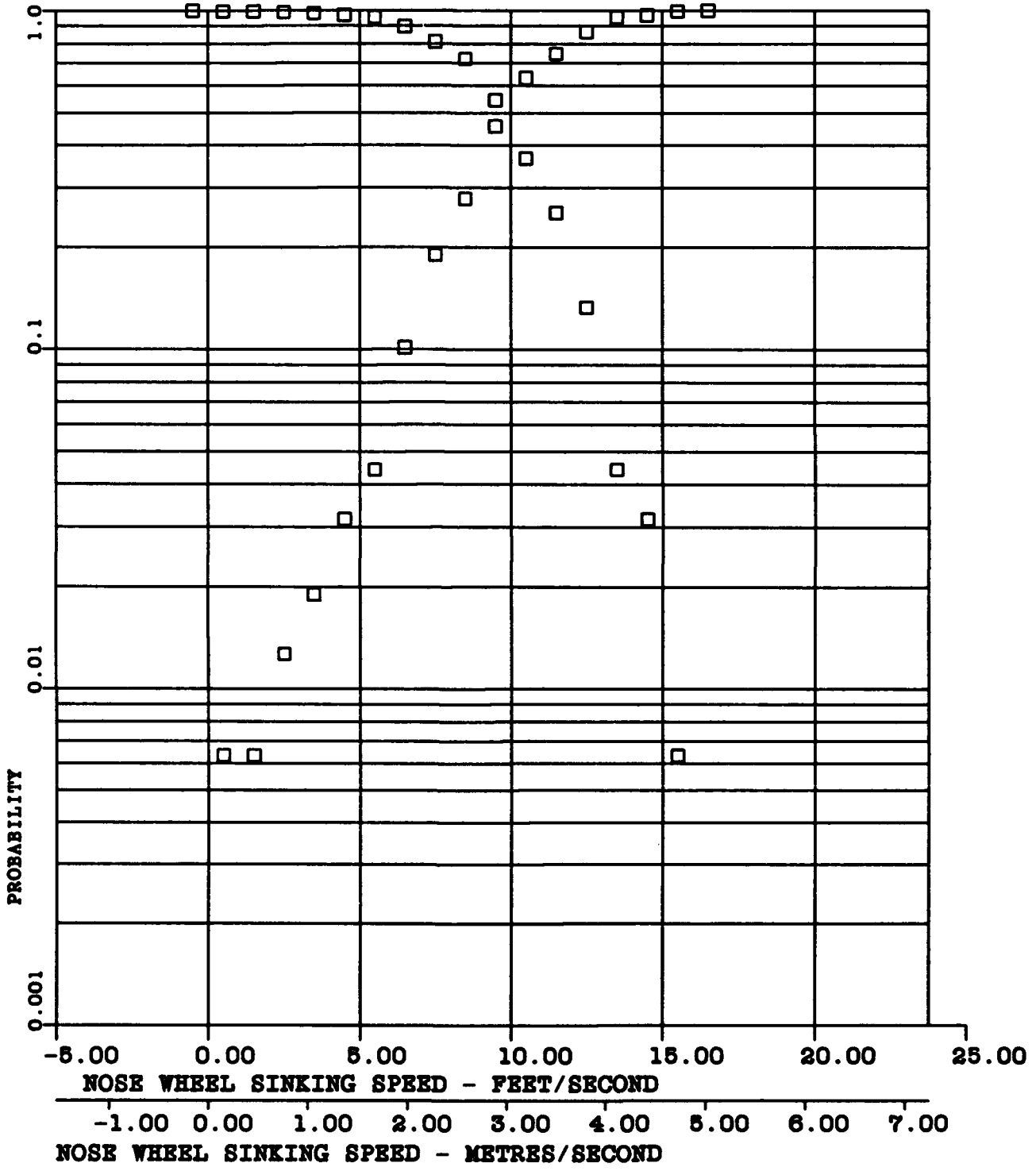


FIGURE B-8 PROBABILITY DISTRIBUTION OF NOSE WHEEL SINKING SPEED

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-158 $\bar{X}$-10.38 FEET/SEC (3.16 METRES/SEC) A3=-.57
S-2.59 FEET/SEC (.79 METRES/SEC) A4-3.48

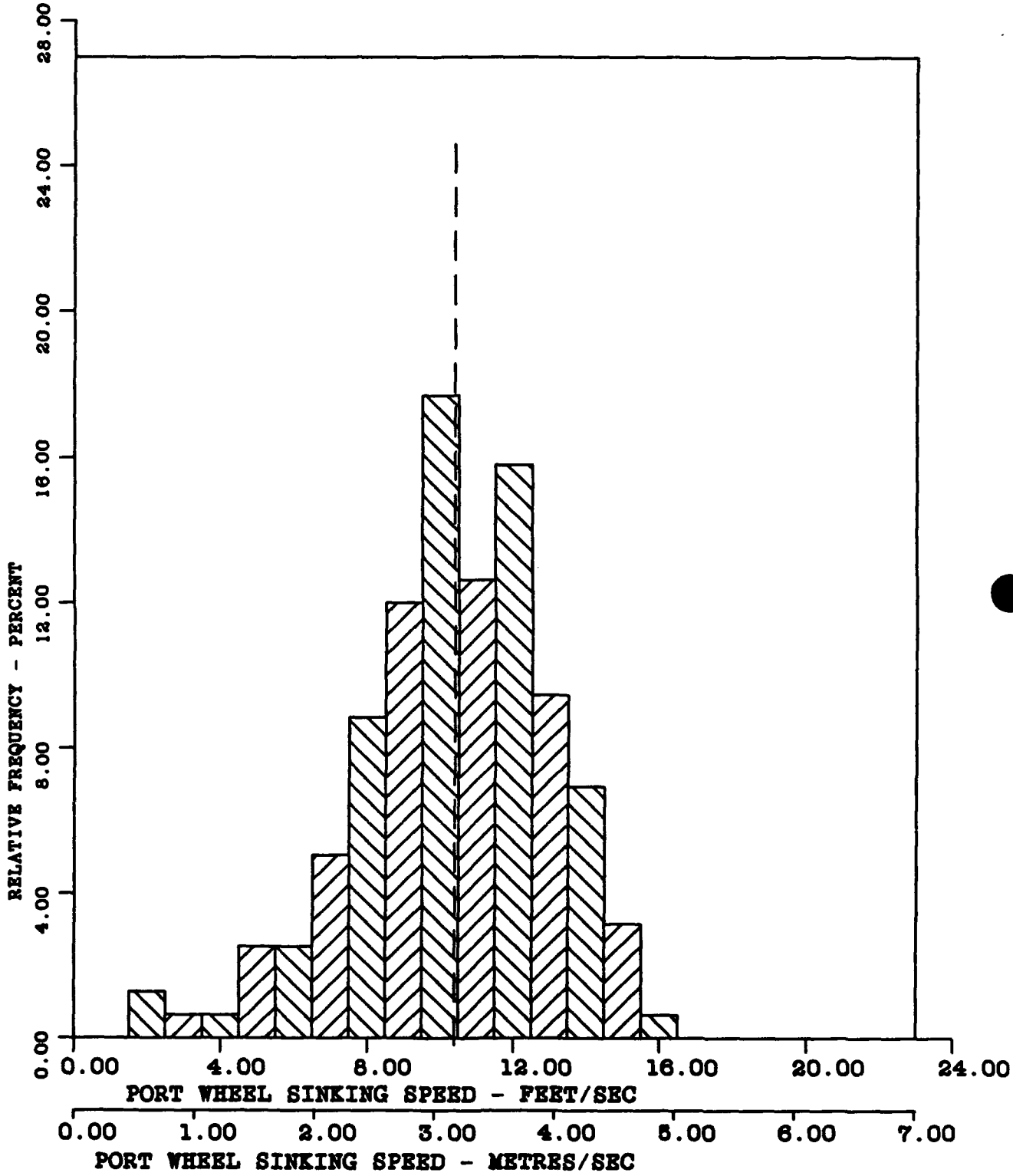


FIGURE B-9 FREQUENCY DISTRIBUTION OF PORT WHEEL SINKING SPEED AT PORT WHEEL TOUCHDOWN

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-158 $\bar{X}$-10.38 FEET/SEC (3.16 METRES/SEC) A3=-.57
S-2.59 FEET/SEC (.79 METRES/SEC) A4-3.48
CURVE FITTED - PEARSON TYPE III

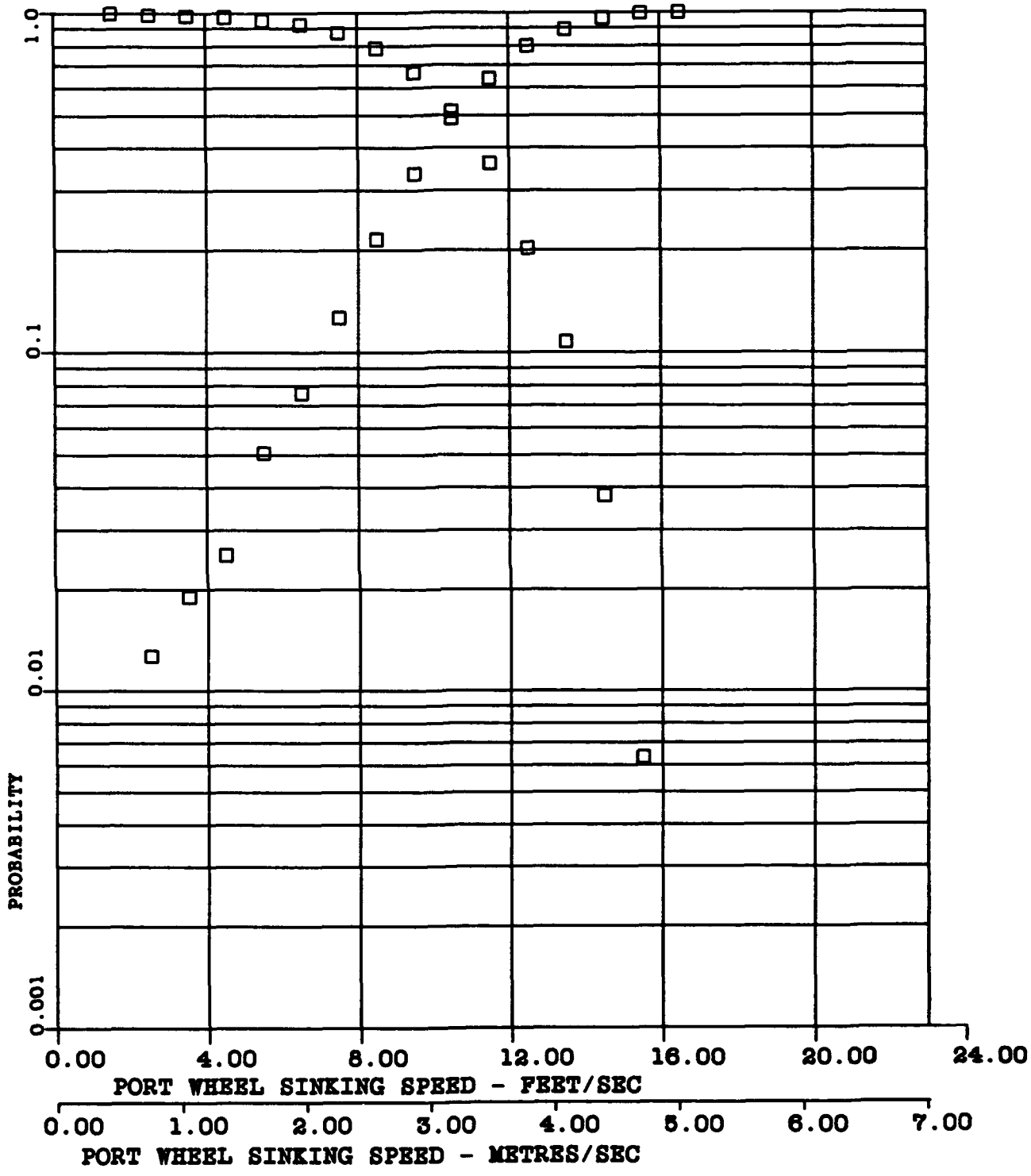


FIGURE B-10 PROBABILITY DISTRIBUTION OF PORT WHEEL SINKING SPEED

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N=157 $\bar{X}$=10.21 FEET/SEC (3.11 METRES/SEC) A3=-.33
S=2.68 FEET/SEC (.81 METRES/SEC) A4=3.66

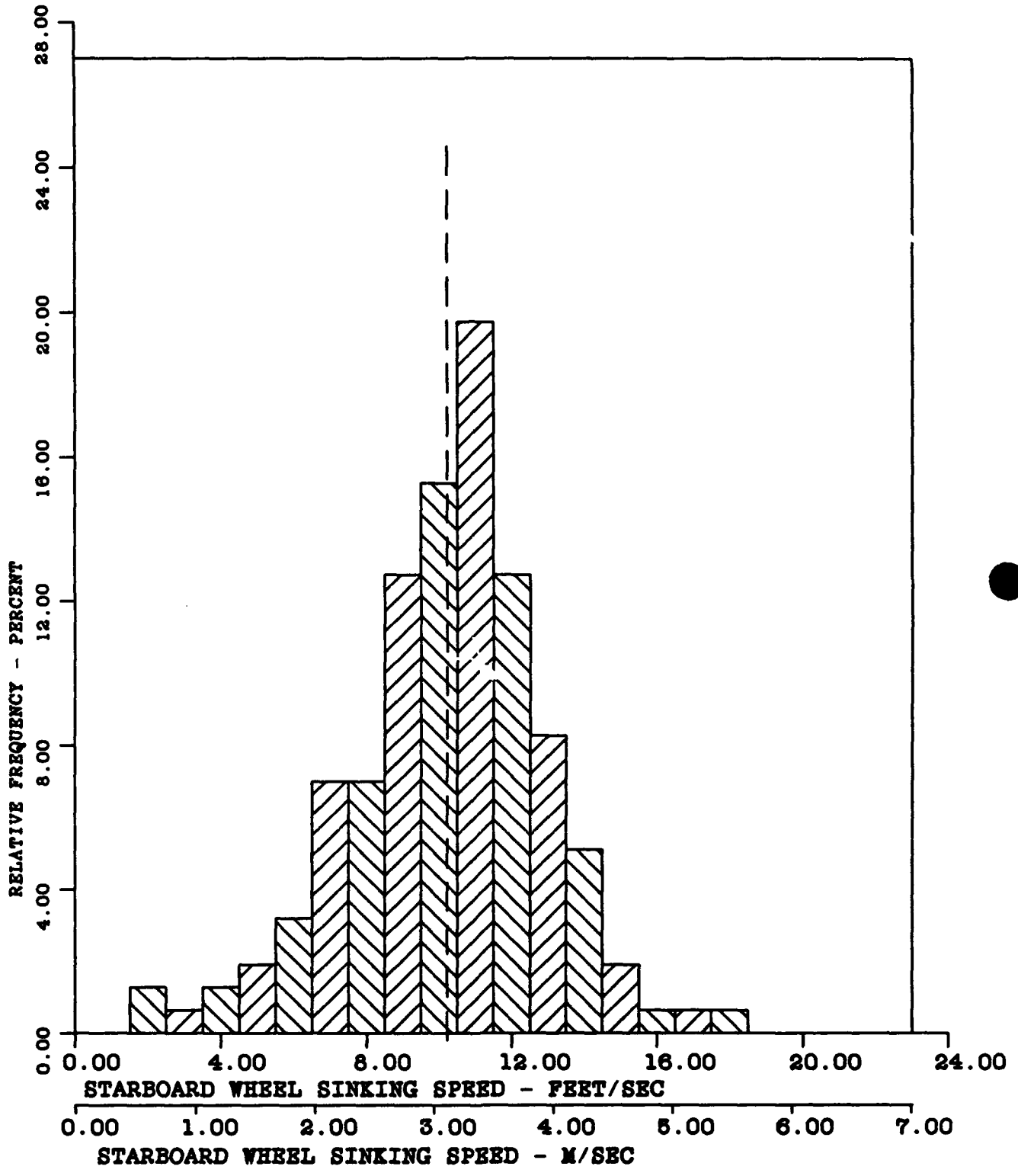


FIGURE B-10 FREQUENCY DISTRIBUTION OF STARBOARD WHEEL SINKING SPEED AT STARBOARD WHEEL TOUCHDOWN

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-157 $\bar{X}$-10.21 FEET/SEC (3.11 METRES/SEC) A3=-.33
S-2.68 FEET/SEC (.81 METRES/SEC) A4-3.66
CURVE FITTED - NORMAL

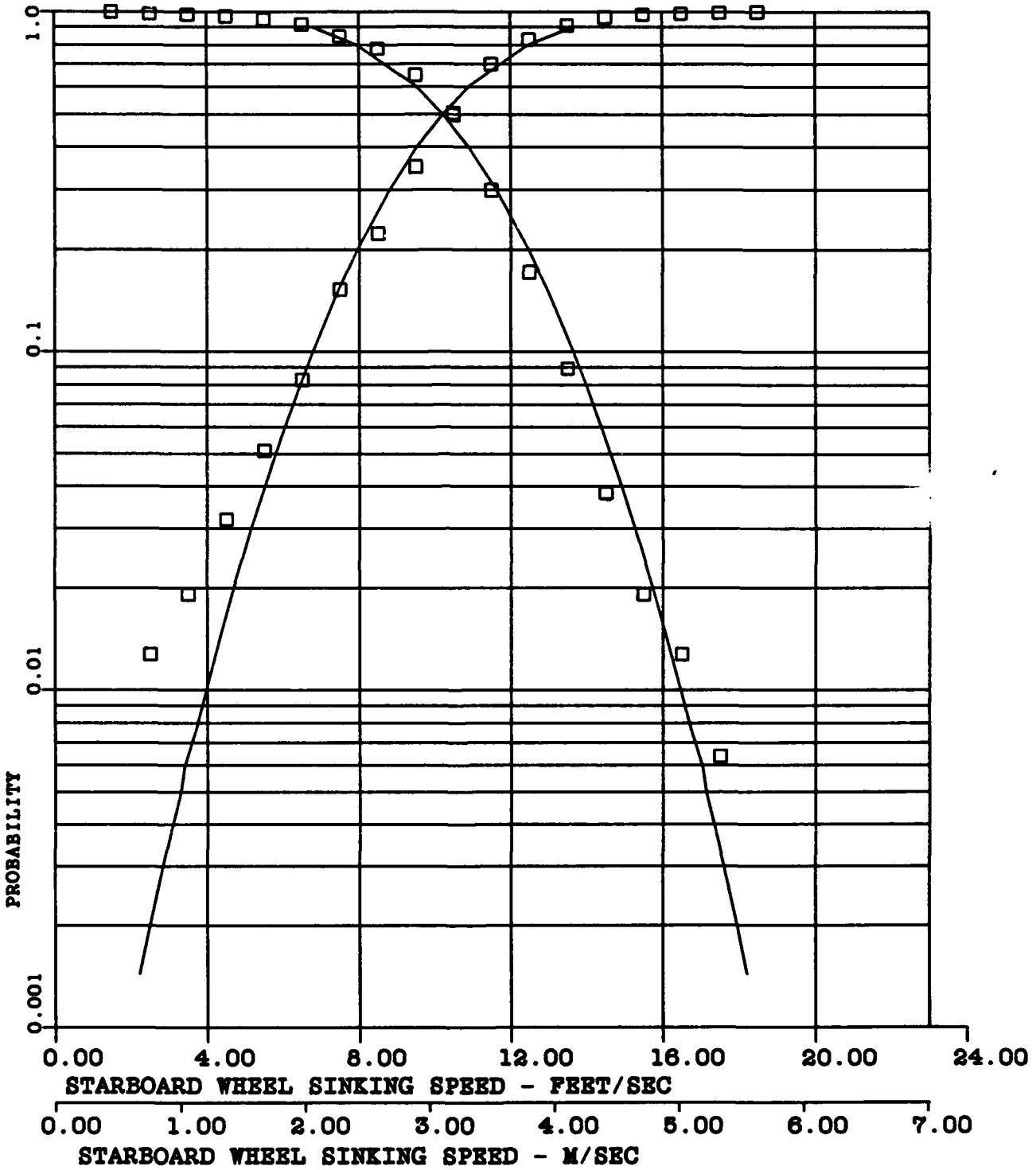


FIGURE B-11 PROBABILITY DISTRIBUTION OF STARBOARD WHEEL SINKING SPEED

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-157 $\bar{X}$-10.32 FEET/SEC (3.14 METRES/SEC) A3=-.65
S-2.54 FEET/SEC (.77 METRES/SEC) A4-3.60

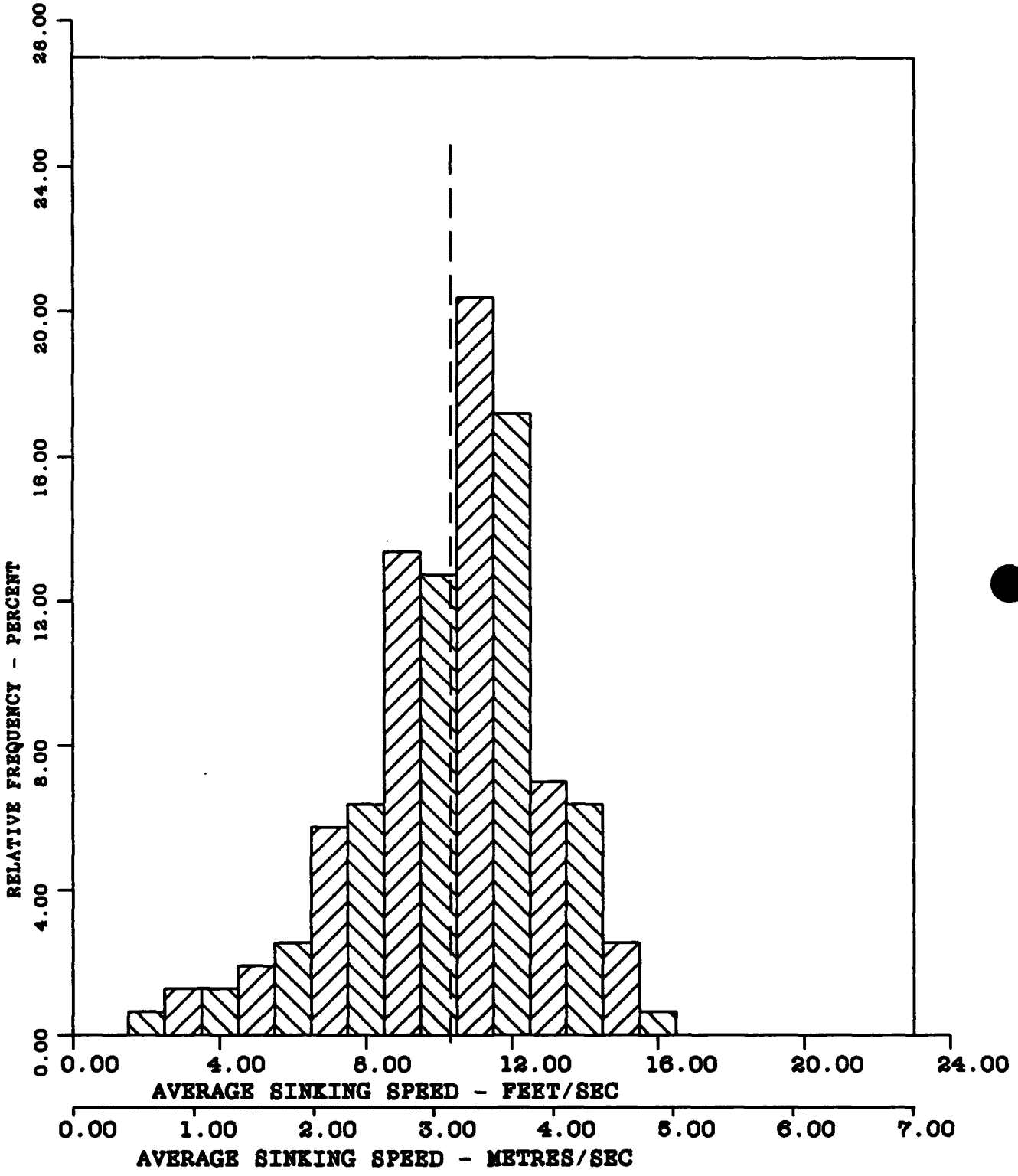


FIGURE B-12 FREQUENCY DISTRIBUTION OF AVG SINKING SPEED OF MAIN WHEEL AT FIRST MAIN WHEEL TOUCHDOWN

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-157 $\bar{X}$-10.32 FEET/SEC (3.14 METRES/SEC) A3=-.65
S-2.54 FEET/SEC (.77 METRES/SEC) A4-3.60
CURVE FITTED - PEARSON TYPE III

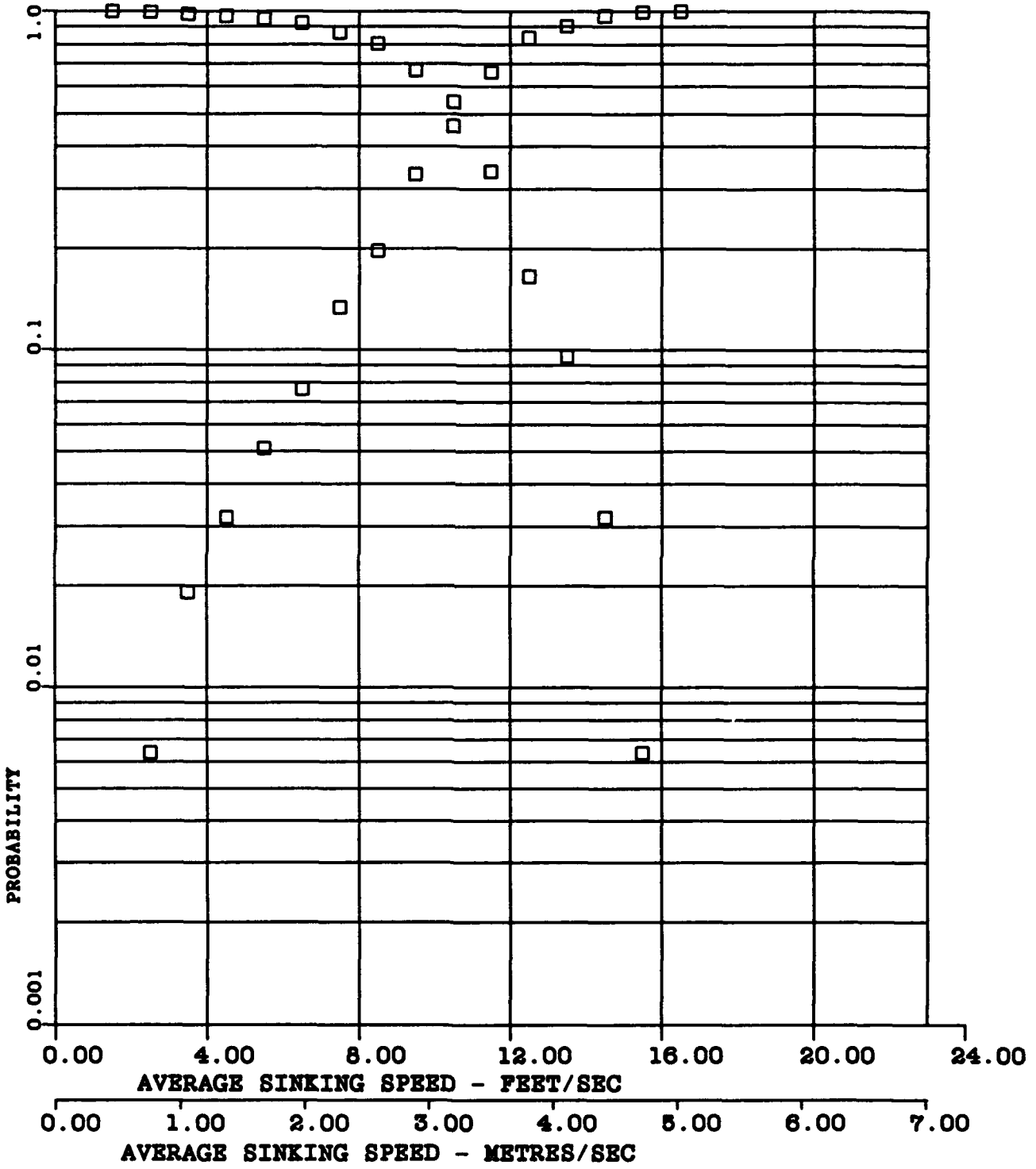


FIGURE B-13 PROBABILITY DISTRIBUTION OF AVERAGE SINKING SPEED AT FIRST MAIN WHEEL TOUCHDOWN

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-30 $\bar{X}$-9.28 FEET/SEC (2.83 METRES/SEC) A3=-.34
S-3.13 FEET/SEC (.95 METRES/SEC) A4-2.49

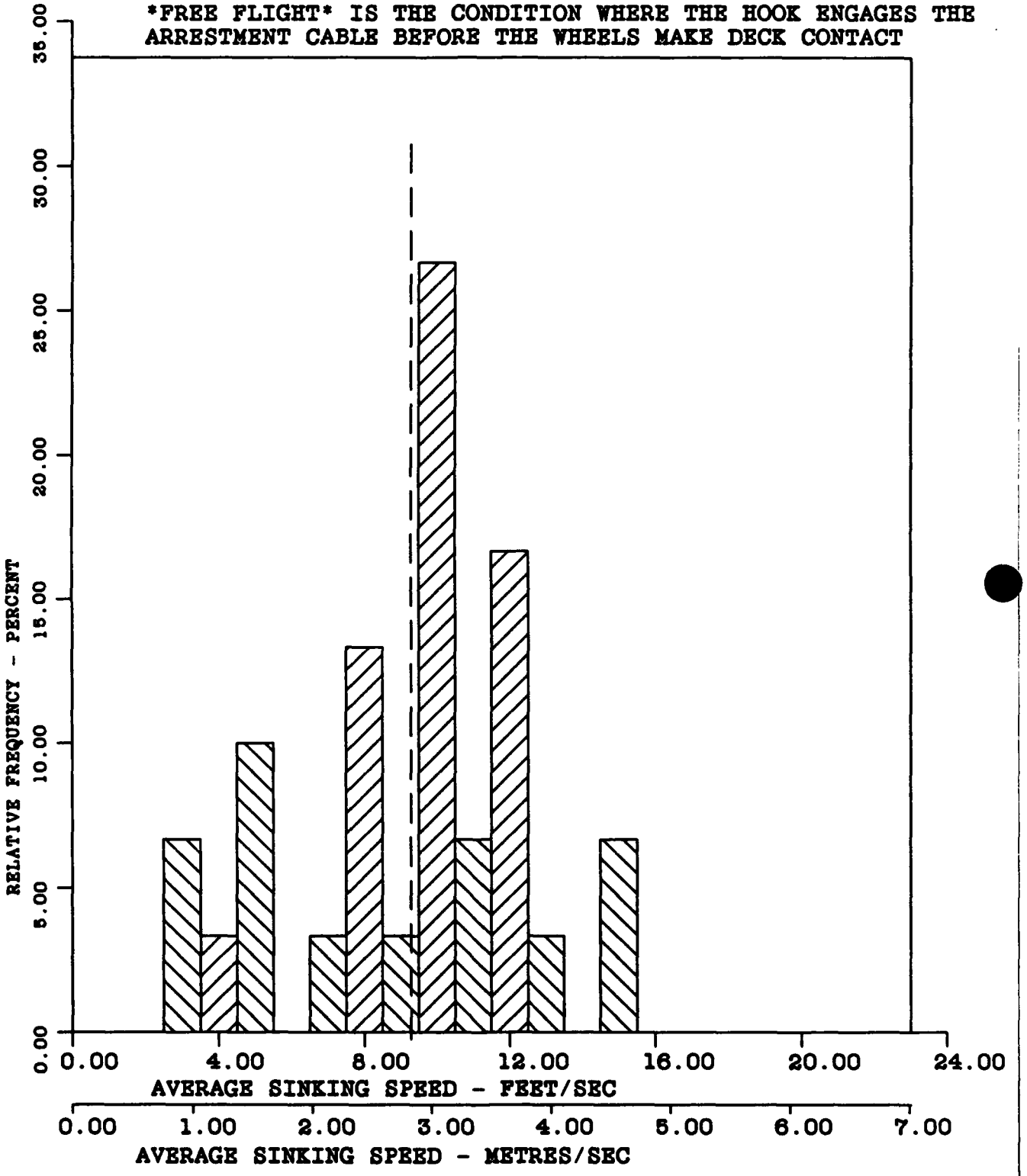


FIGURE B-14 FREQUENCY DISTRIBUTION OF AVERAGE SINKING SPEED OF MAIN WHEELS AT FREE FLIGHT

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-30 $\bar{X}$-9.28 FEET/SEC (2.83 METRES/SEC) A3=-.34
S-3.13 FEET/SEC (.95 METRES/SEC) A4-2.49
CURVE FITTED - NORMAL
FREE FLIGHT IS THE CONDITION WHERE THE HOOK ENGAGES THE ARRESTMENT CABLE BEFORE THE WHEELS MAKE DECK CONTACT

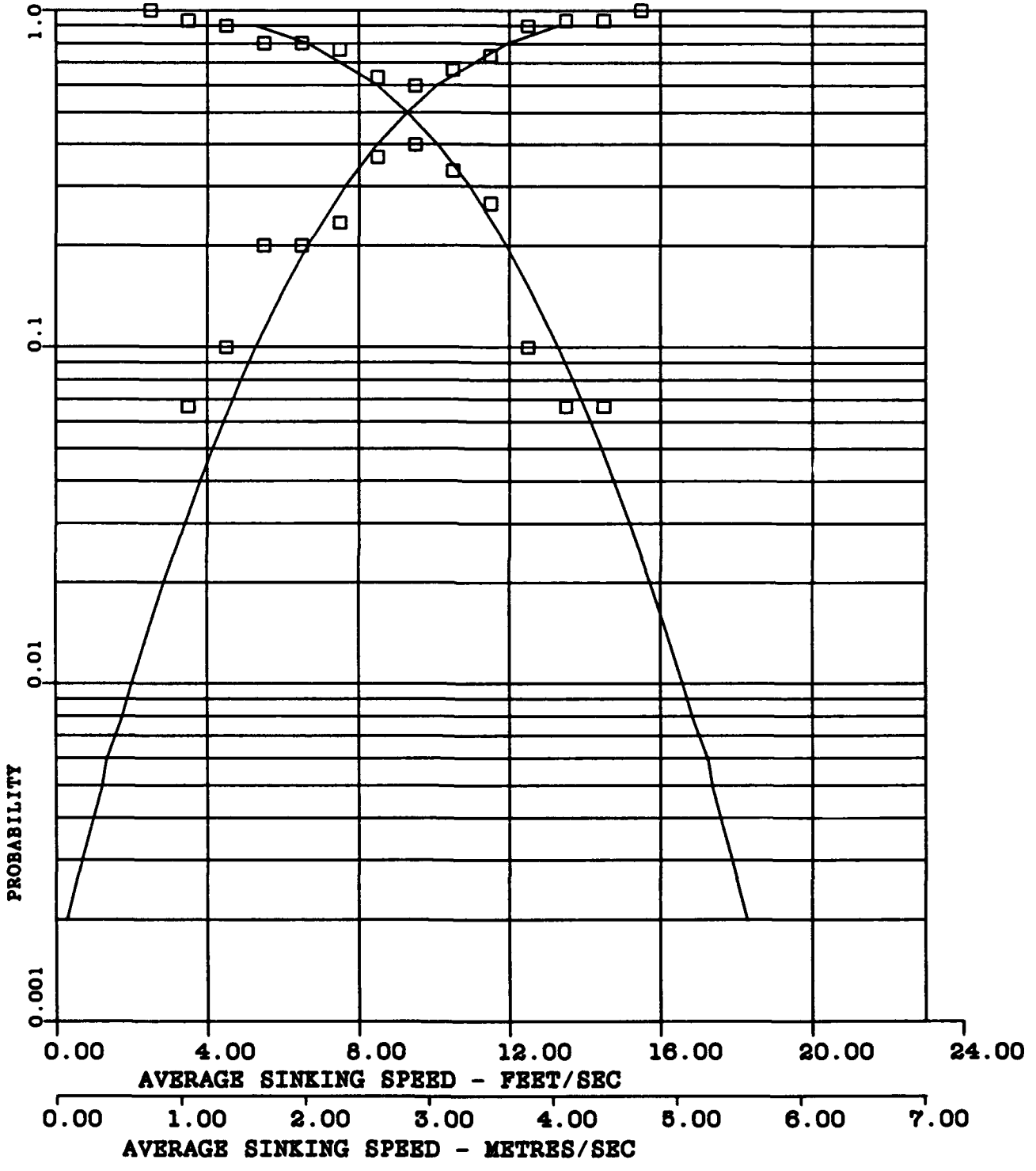


FIGURE B-15 PROBABILITY DISTRIBUTION OF AVERAGE SINKING SPEED AT FREE FLIGHT

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-157 $\bar{X}$-1.04 A3-.26
S-.09 A4-2.94

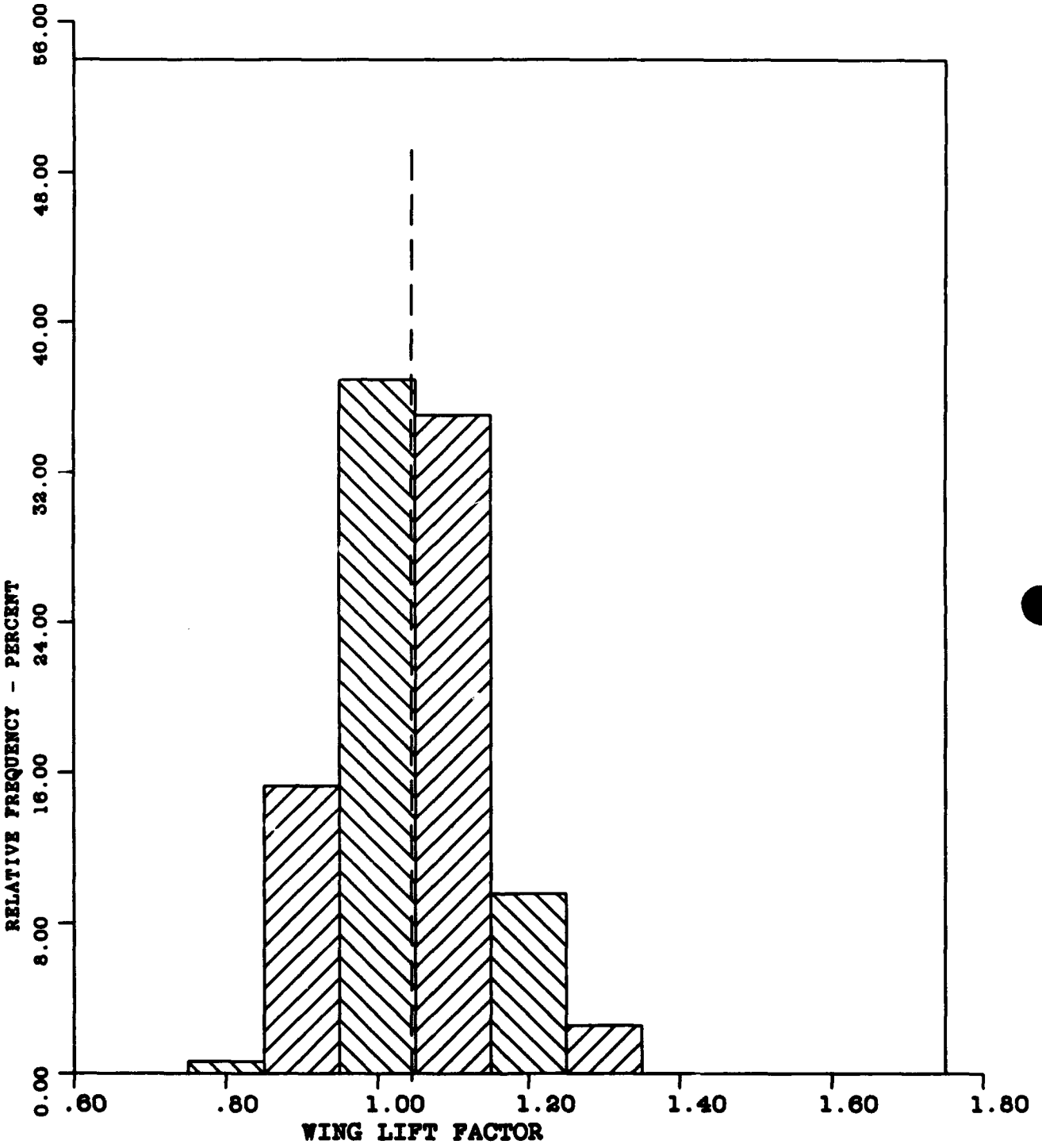


FIGURE B-16 FREQUENCY DISTRIBUTION OF WING LIFT FACTOR AT FIRST MAIN WHEEL TOUCHDOWN

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-157 $\bar{X}$-1.04 A3-.26
S-.09 A4-2.94
CURVE FITTED - NORMAL

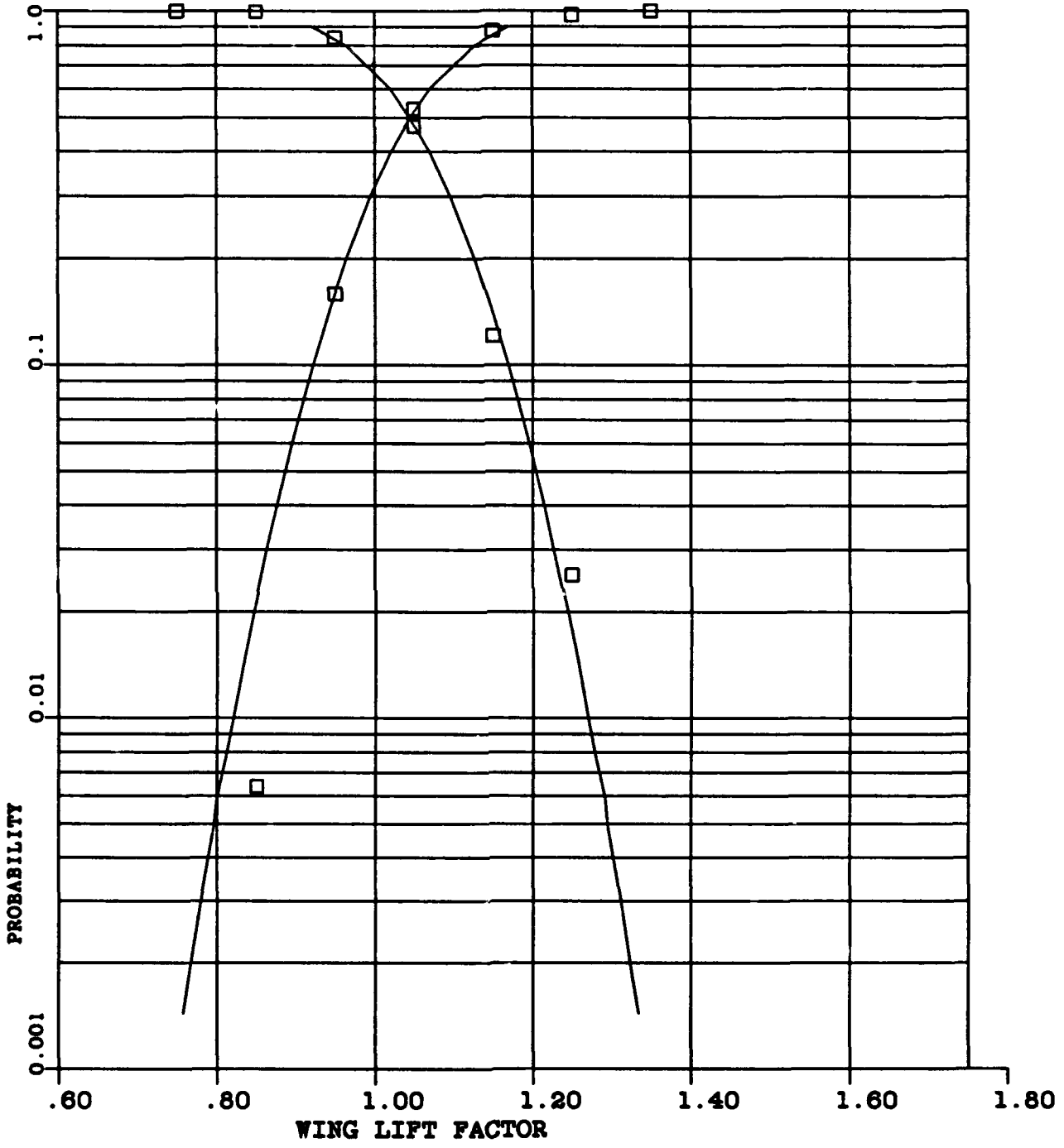


FIGURE B-17 PROBABILITY DISTRIBUTION OF WING LIFT FACTOR AT FIRST MAIN WHEEL TOUCHDOWN

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.60 DEGREES (.061 RADIANS)
N-30 $\bar{X}$-1.08 A3=.73
S=.10 A4=3.70

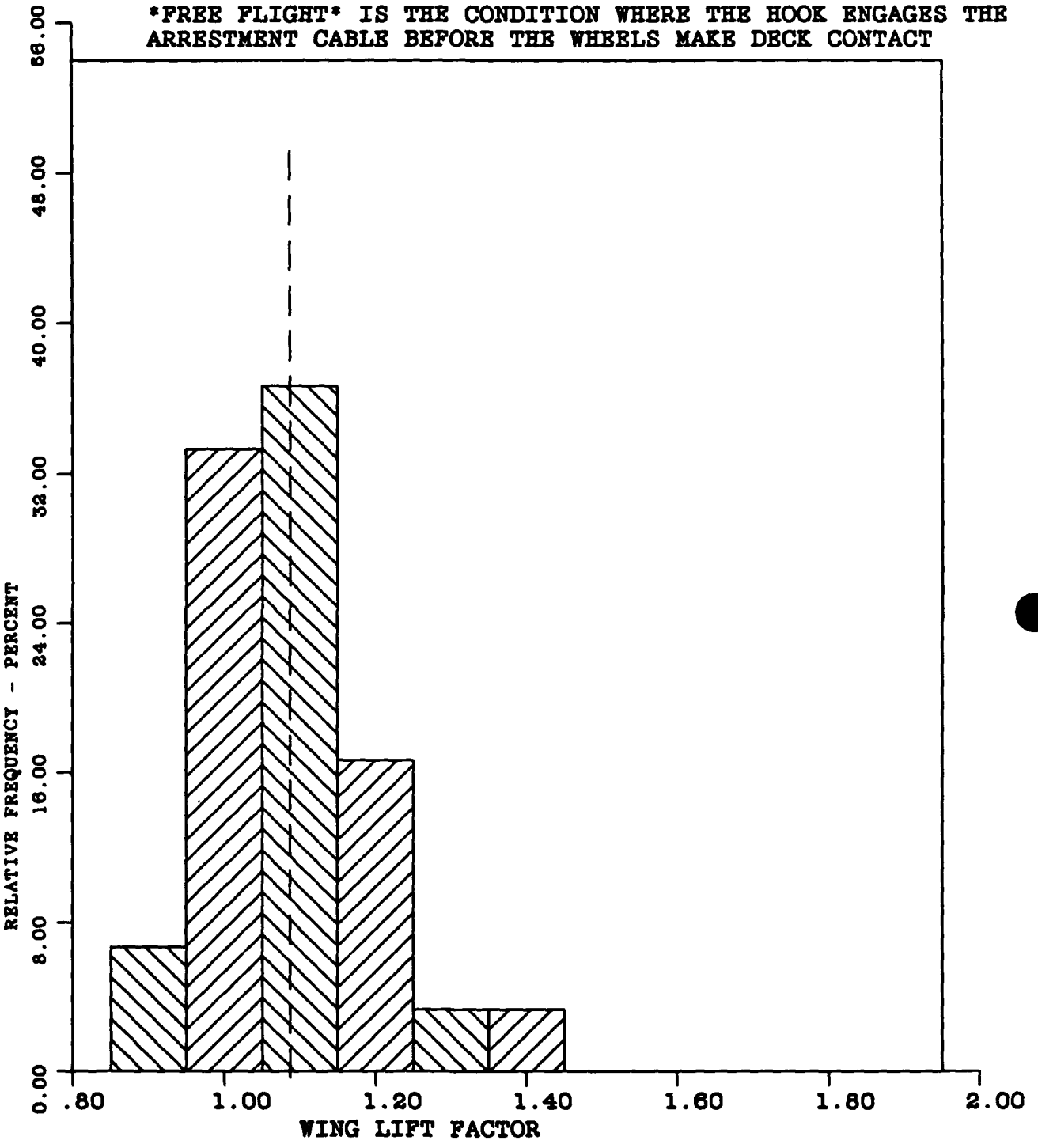


FIGURE B-18 FREQUENCY DISTRIBUTION OF WING LIFT FACTOR AT FREE FLIGHT

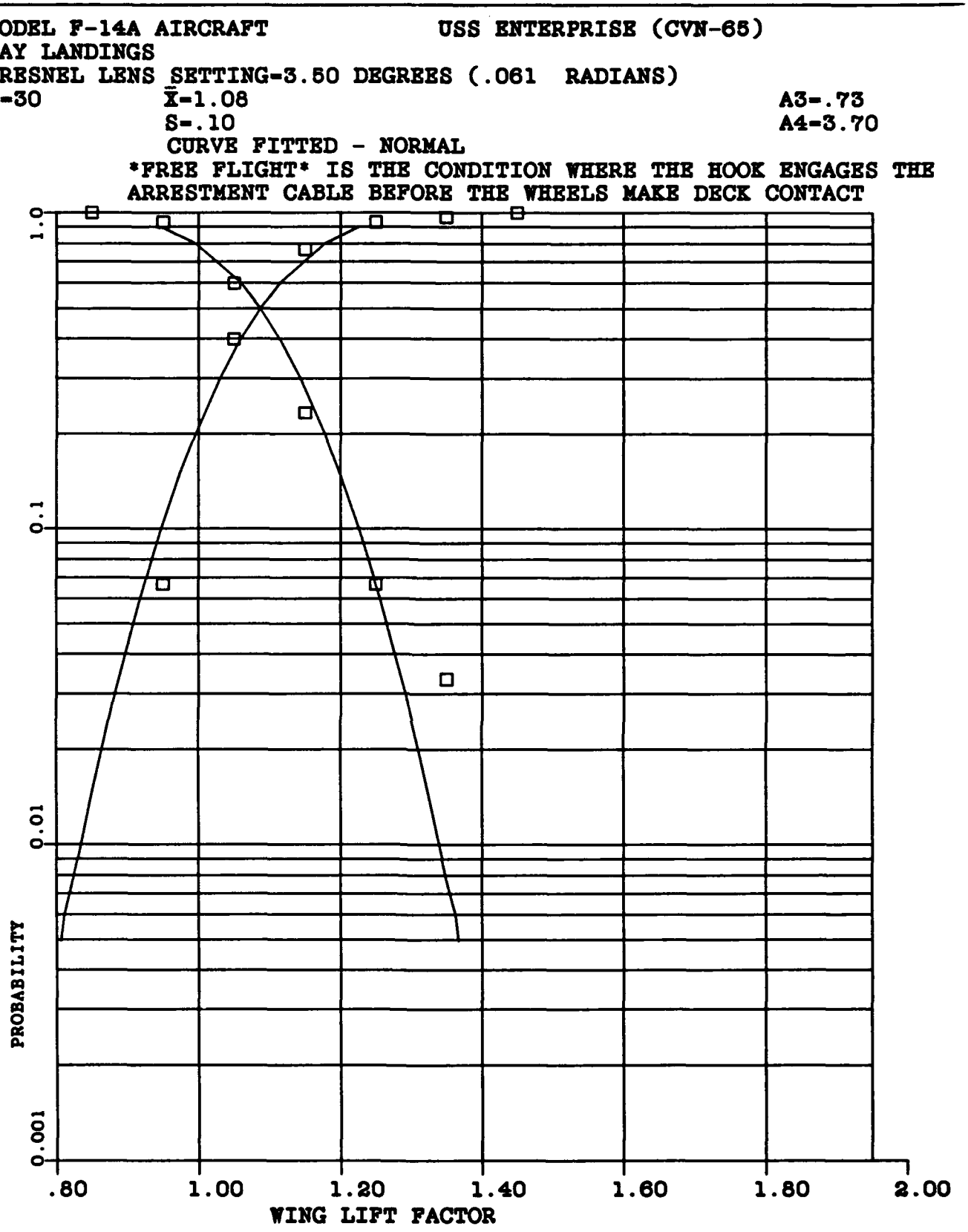


FIGURE B-19 PROBABILITY DISTRIBUTION OF WING LIFT FACTOR AT FREE FLIGHT

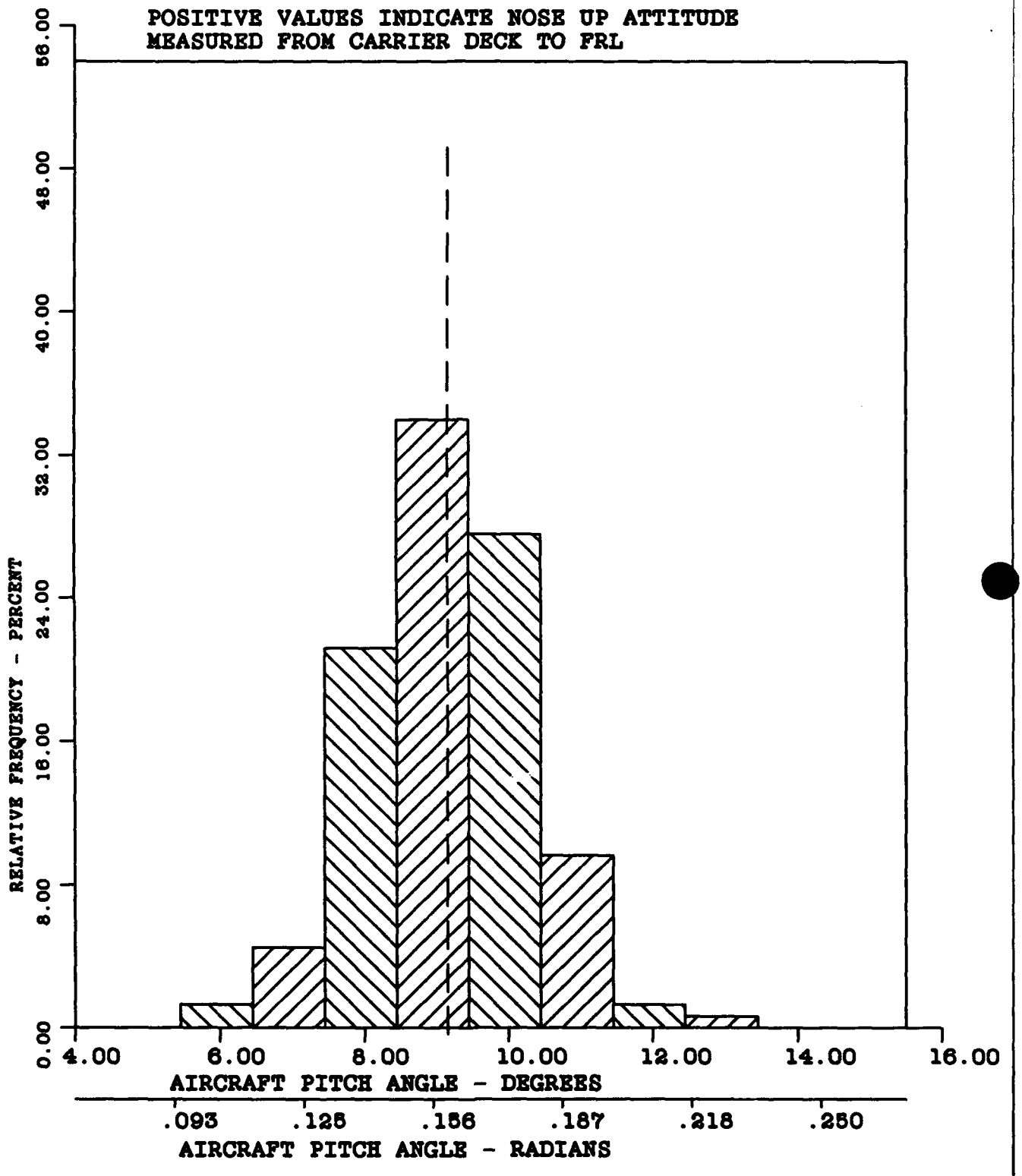


FIGURE B-20 FREQUENCY DISTRIBUTION OF AIRCRAFT PITCH ANGLE AT THE RAMP

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-156 $\bar{X}$-9.15 DEGREES (.159 RADIANS) A3=.03
S-1.14 DEGREES (.019 RADIANS) A4-3.12
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE NOSE UP ATTITUDE
MEASURED FROM CARRIER DECK TO FRL

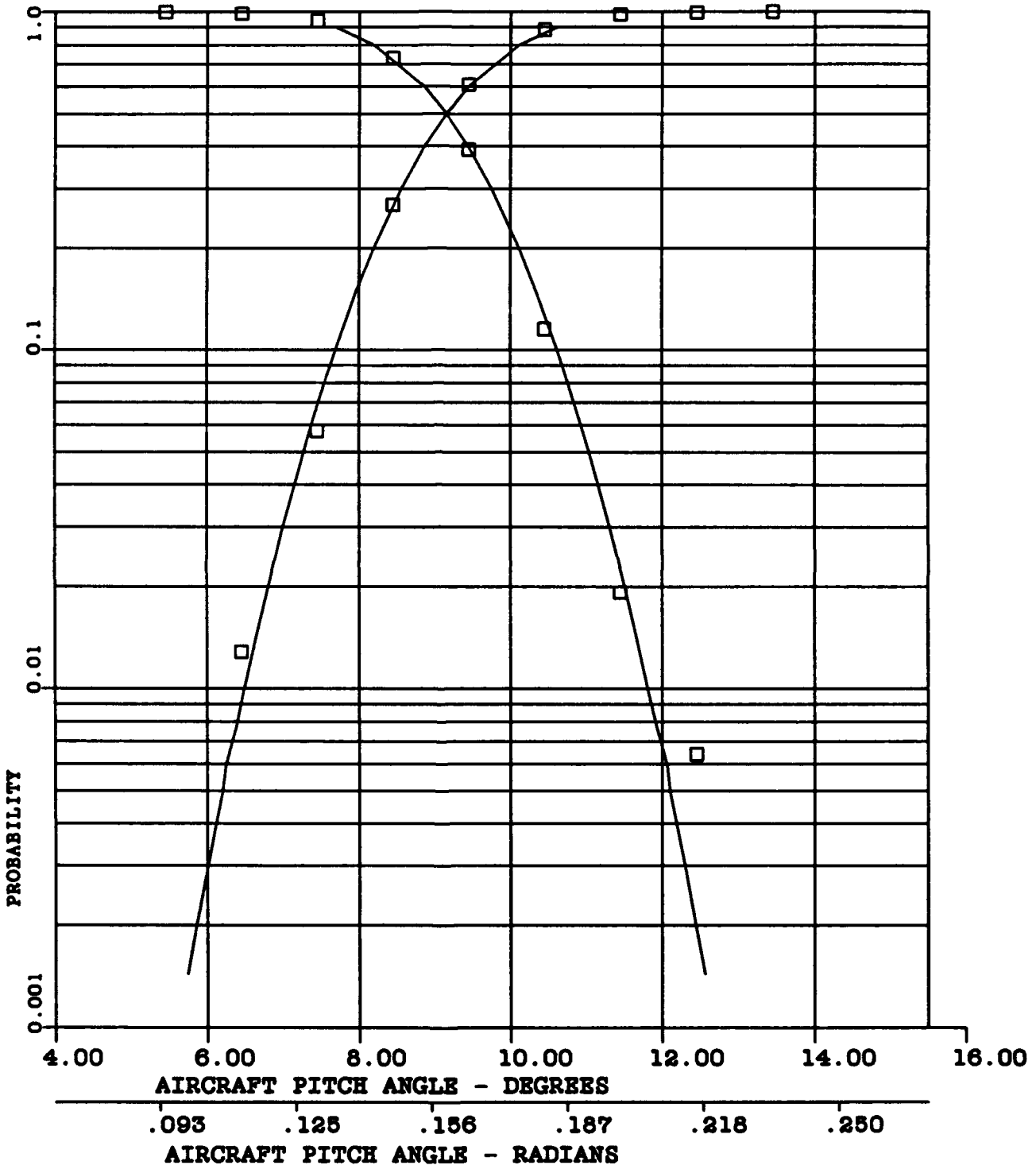


FIGURE B-21 PROBABILITY DISTRIBUTION OF AIRCRAFT PITCH ANGLE AT THE RAMP

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-158 $\bar{X}$-7.76 DEGREES (.135 RADIANS) A3=.60
S-1.17 DEGREES (.020 RADIANS) A4=4.62

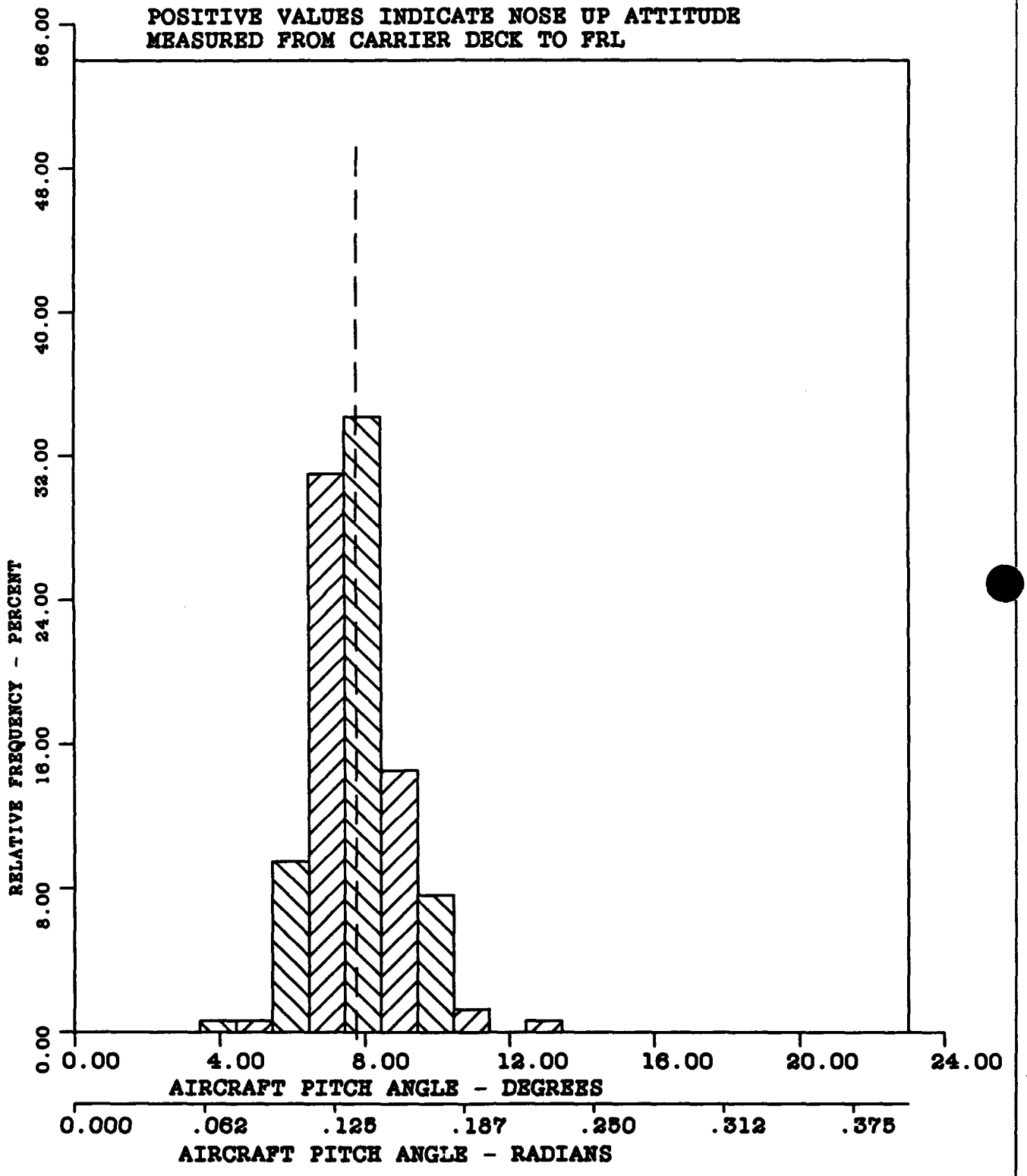


FIGURE B-22 FREQUENCY DISTRIBUTION OF AIRCRAFT PITCH ANGLE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-158 $\bar{X}$-7.76 DEGREES (.135 RADIANS) A3=.60
S-1.17 DEGREES (.020 RADIANS) A4-4.62
CURVE FITTED - PEARSON TYPE III
POSITIVE VALUES INDICATE NOSE UP ATTITUDE
MEASURED FROM CARRIER DECK TO FRL

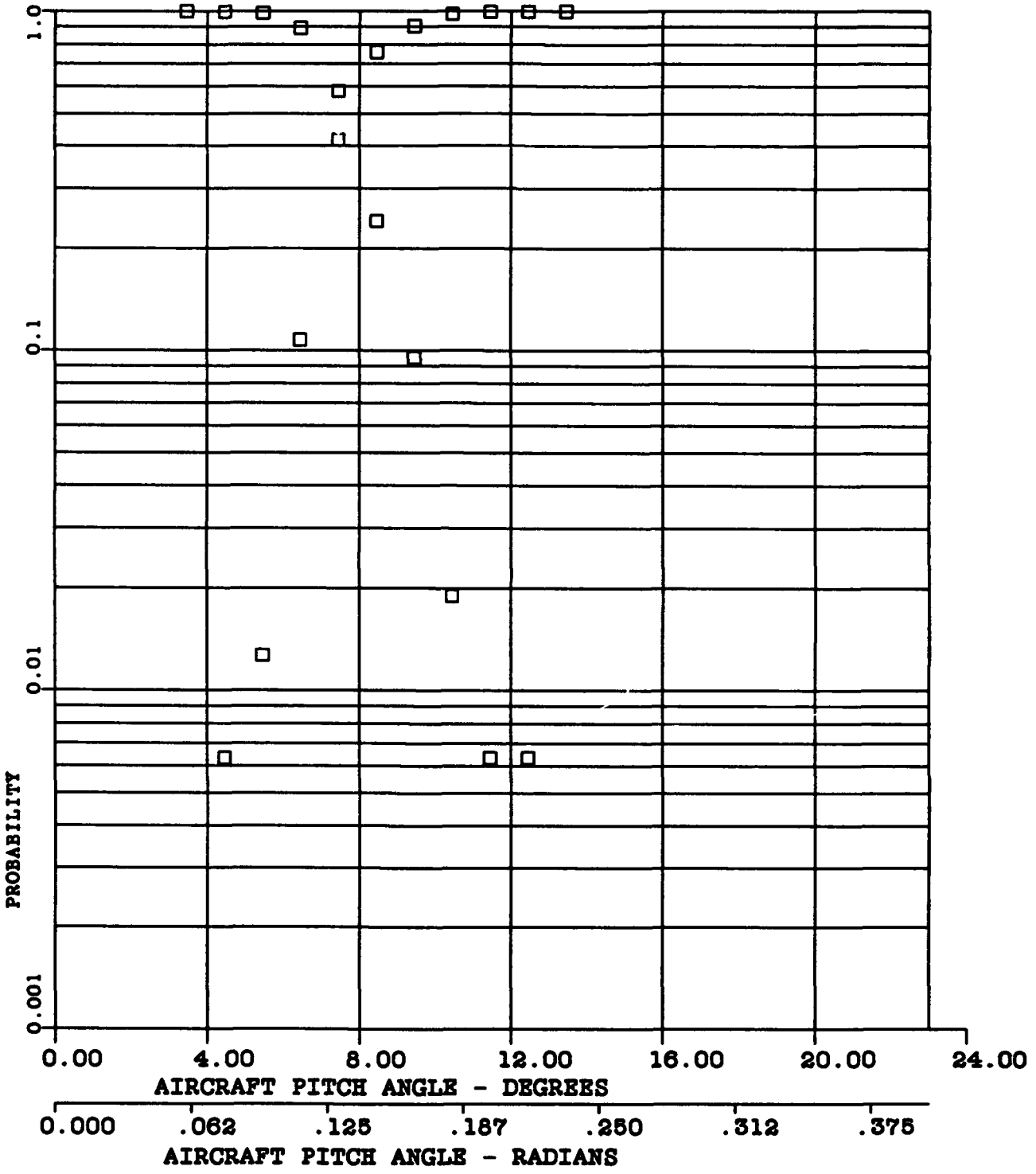


FIGURE B-23 PROBABILITY DISTRIBUTION OF AIRCRAFT PITCH ANGLE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-30 $\bar{X}$-8.07 DEGREES (.140 RADIANS) A3-.78
S-1.18 DEGREES (.020 RADIANS) A4-3.07

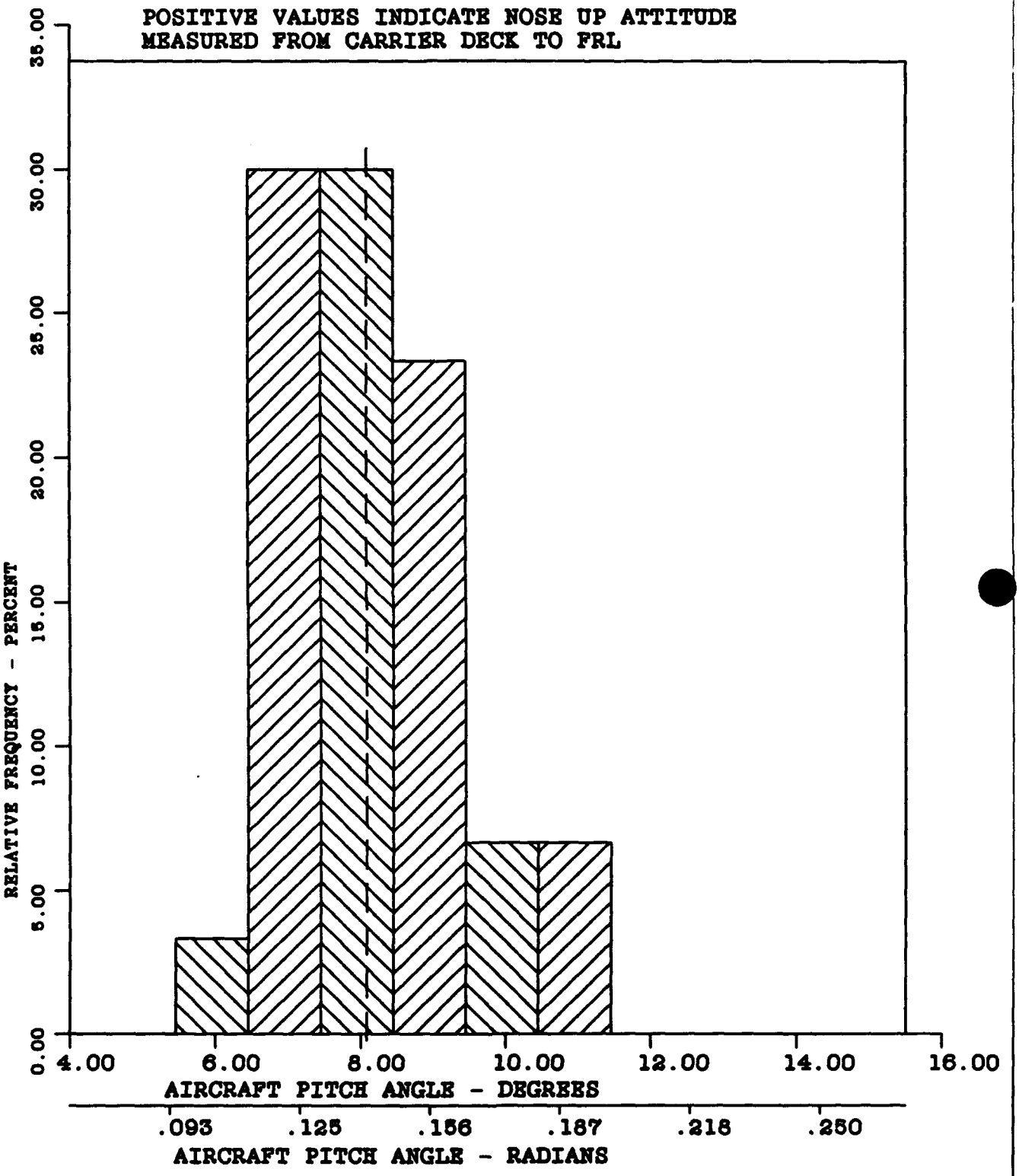


FIGURE B-24 FREQUENCY DISTRIBUTION OF AIRCRAFT PITCH ANGLE AT FREE FLIGHT

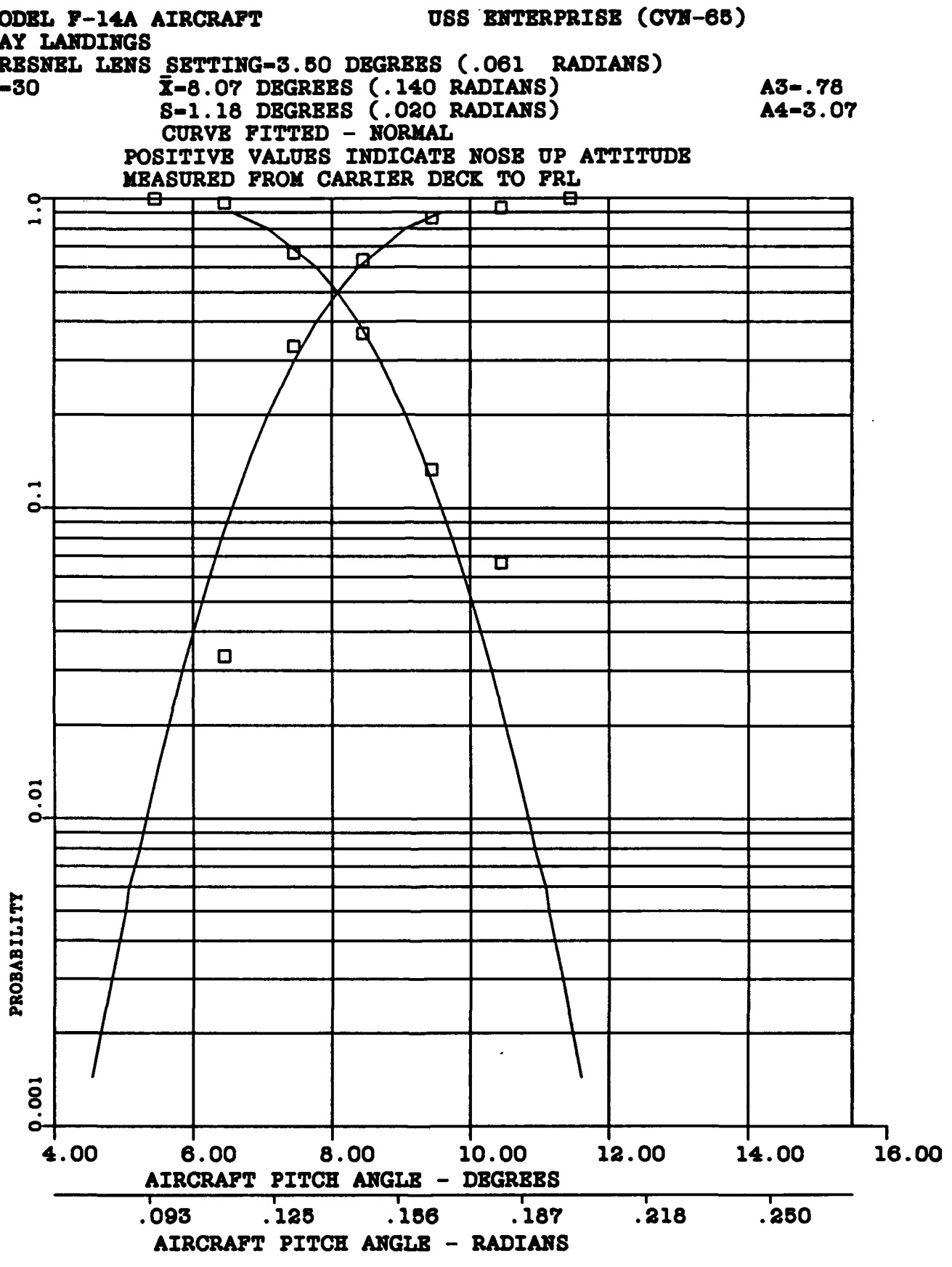


FIGURE B-25 PROBABILITY DISTRIBUTION OF AIRCRAFT PITCH ANGLE AT FREE FLIGHT

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-156 $\bar{X}$=-.18 DEGREES (-.003 RADIANS) A3=.32
S=2.49 DEGREES (.043 RADIANS) A4=3.44

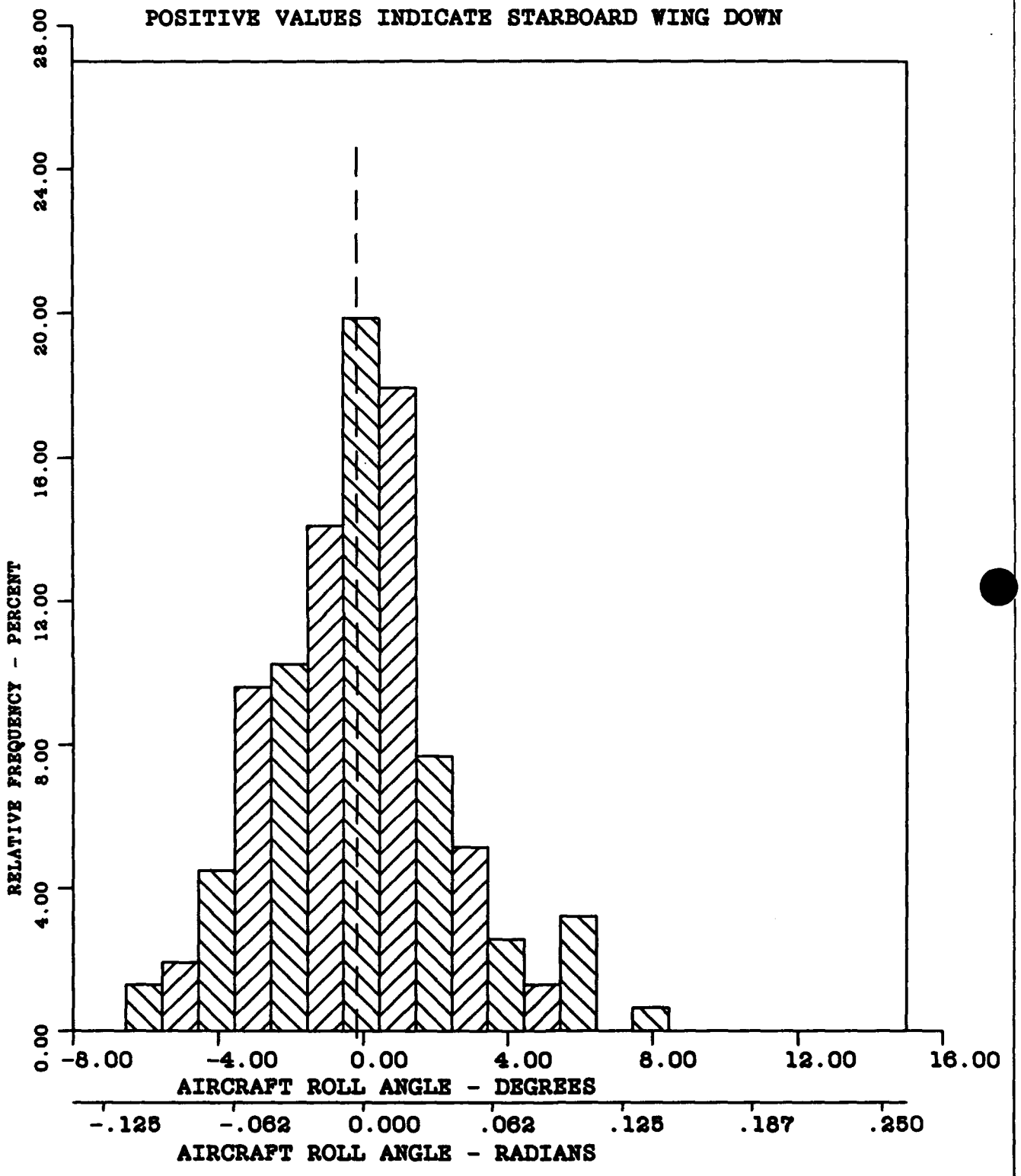


FIGURE B-26 FREQUENCY DISTRIBUTION OF AIRCRAFT ROLL ANGLE AT THE RAMP

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-156 $\bar{X}$=-.18 DEGREES (-.003 RADIANS) A3=.32
S-2.49 DEGREES (.043 RADIANS) A4=3.44
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE STARBOARD WING DOWN

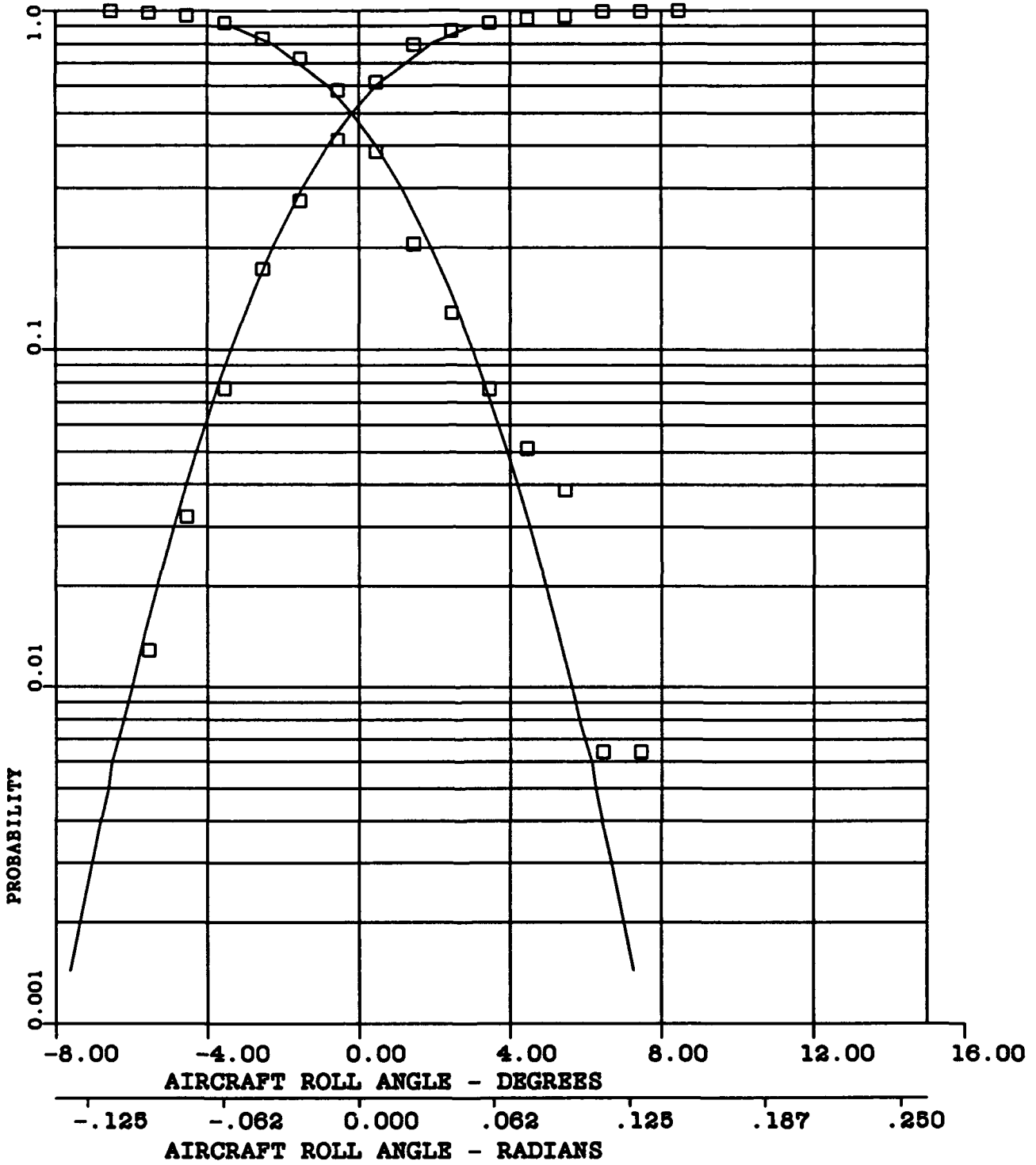


FIGURE B-27 PROBABILITY DISTRIBUTION OF AIRCRAFT ROLL ANGLE AT THE RAMP

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N=158 $\bar{X}$=-.58 DEGREES (-.010 RADIANS) A3=.10
S=2.09 DEGREES (.036 RADIANS) A4=3.33

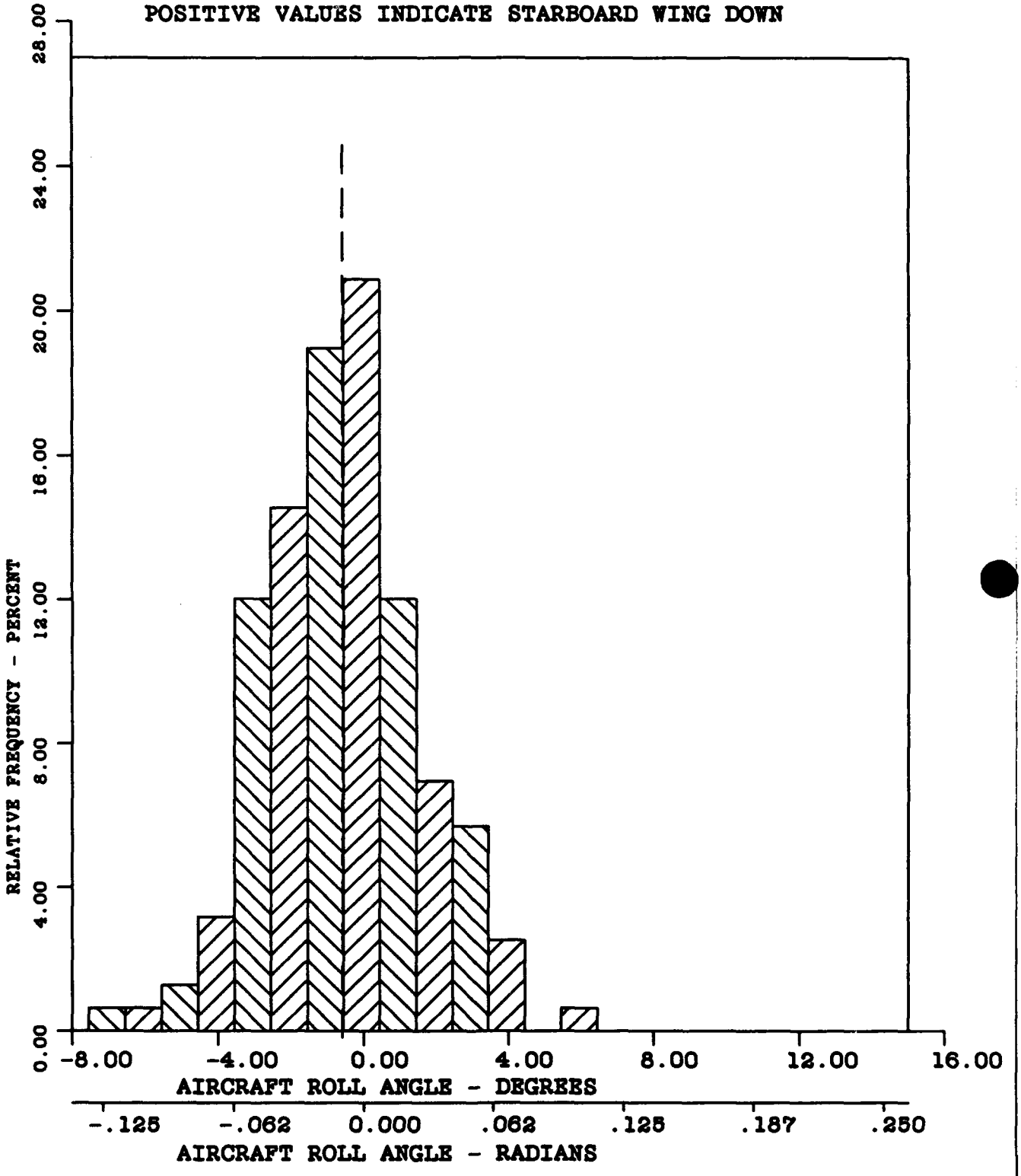


FIGURE B-28 FREQUENCY DISTRIBUTION OF AIRCRAFT ROLL ANGLE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-158 $\bar{X}$=-.58 DEGREES (-.010 RADIANS) A3=.10
S-2.09 DEGREES (.036 RADIANS) A4=3.33
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE STARBOARD WING DOWN

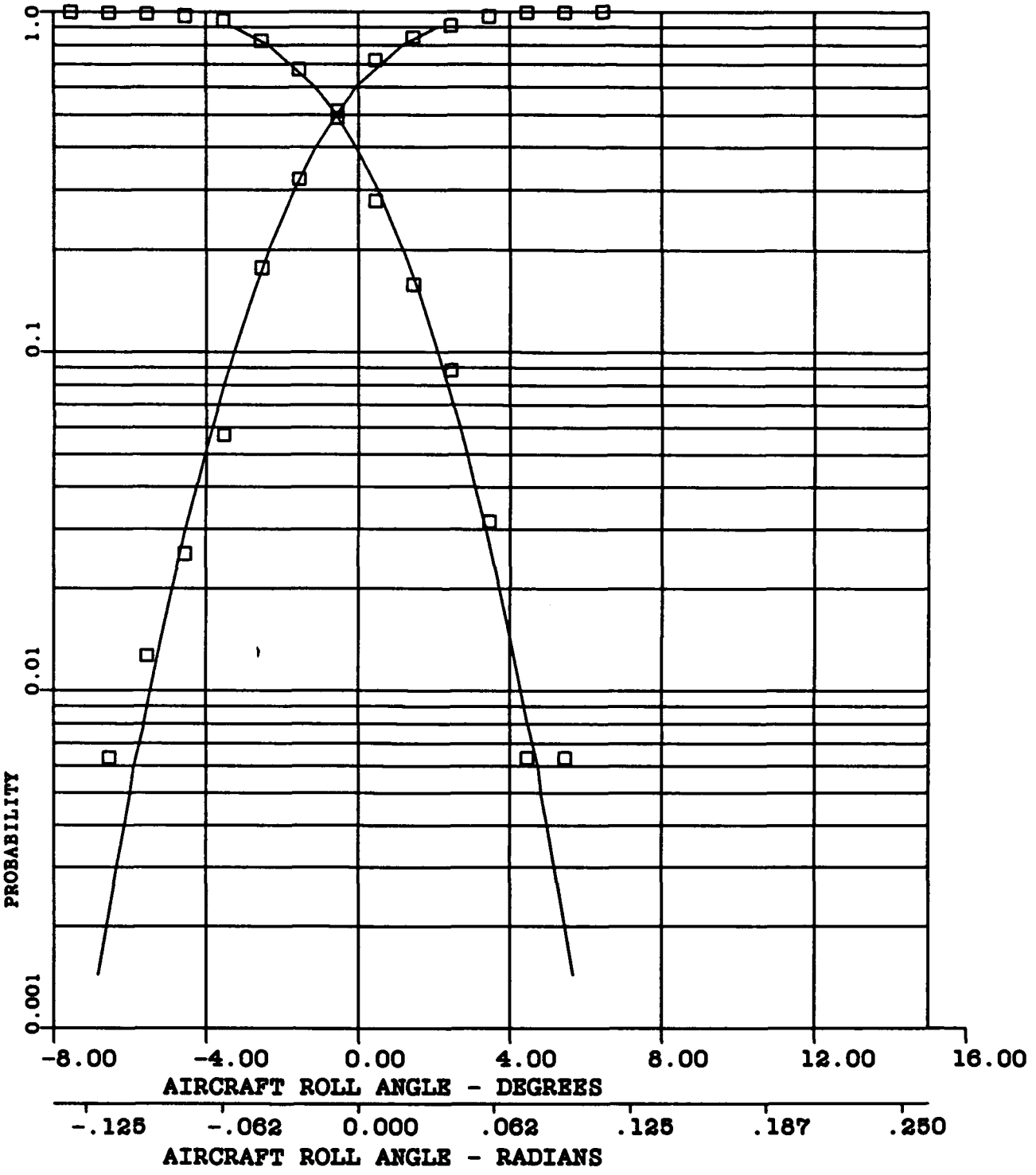


FIGURE B-29 PROBABILITY DISTRIBUTION OF AIRCRAFT ROLL ANGLE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N=30 $\bar{X}$=-.50 DEGREES (-.008 RADIANS) A3=-.82
S=1.38 DEGREES (.024 RADIANS) A4=3.46

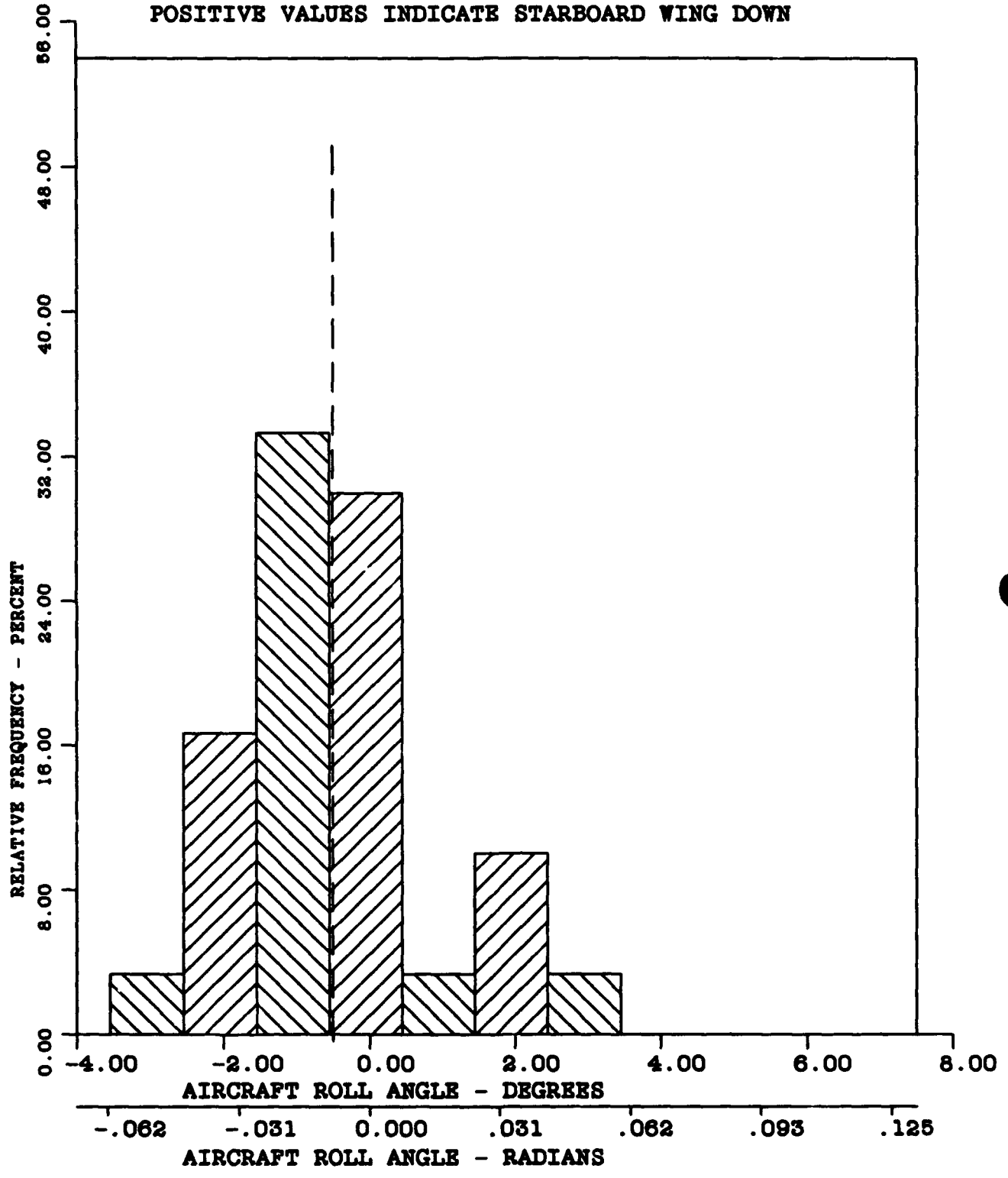


FIGURE B-30 FREQUENCY DISTRIBUTION OF AIRCRAFT ROLL ANGLE AT FREE FLIGHT

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-30 $\bar{X}$=-.50 DEGREES (-.008 RADIANS) A3=.82
S=1.38 DEGREES (.024 RADIANS) A4=3.46
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE STARBOARD WING DOWN

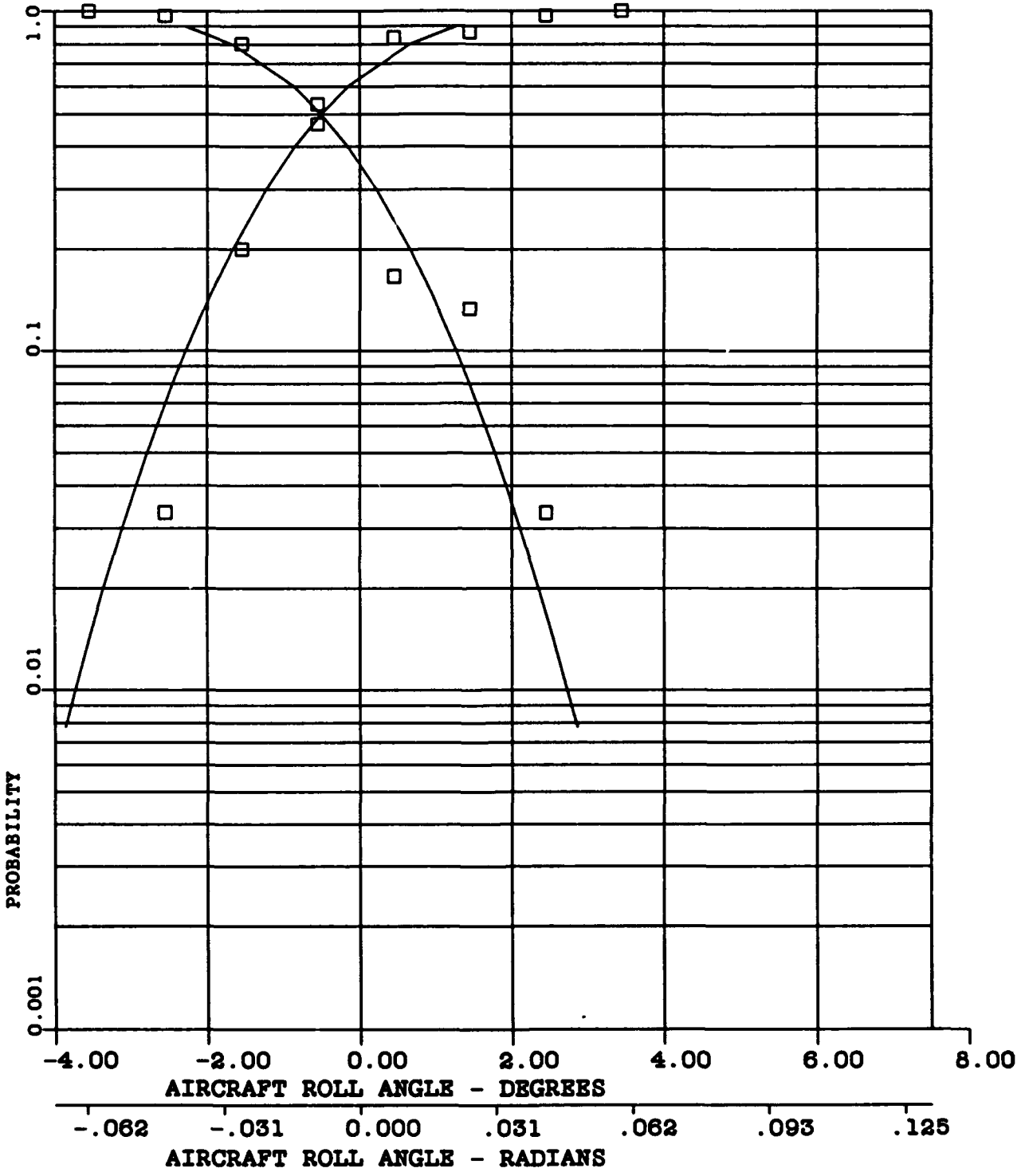


FIGURE B-31 PROBABILITY DISTRIBUTION OF AIRCRAFT ROLL ANGLE AT FREE FLIGHT

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-158 $\bar{X}$-245.81 FEET (74.92 METRES) A3=-.77
S-42.80 FEET (13.04 METRES) A4-4.35

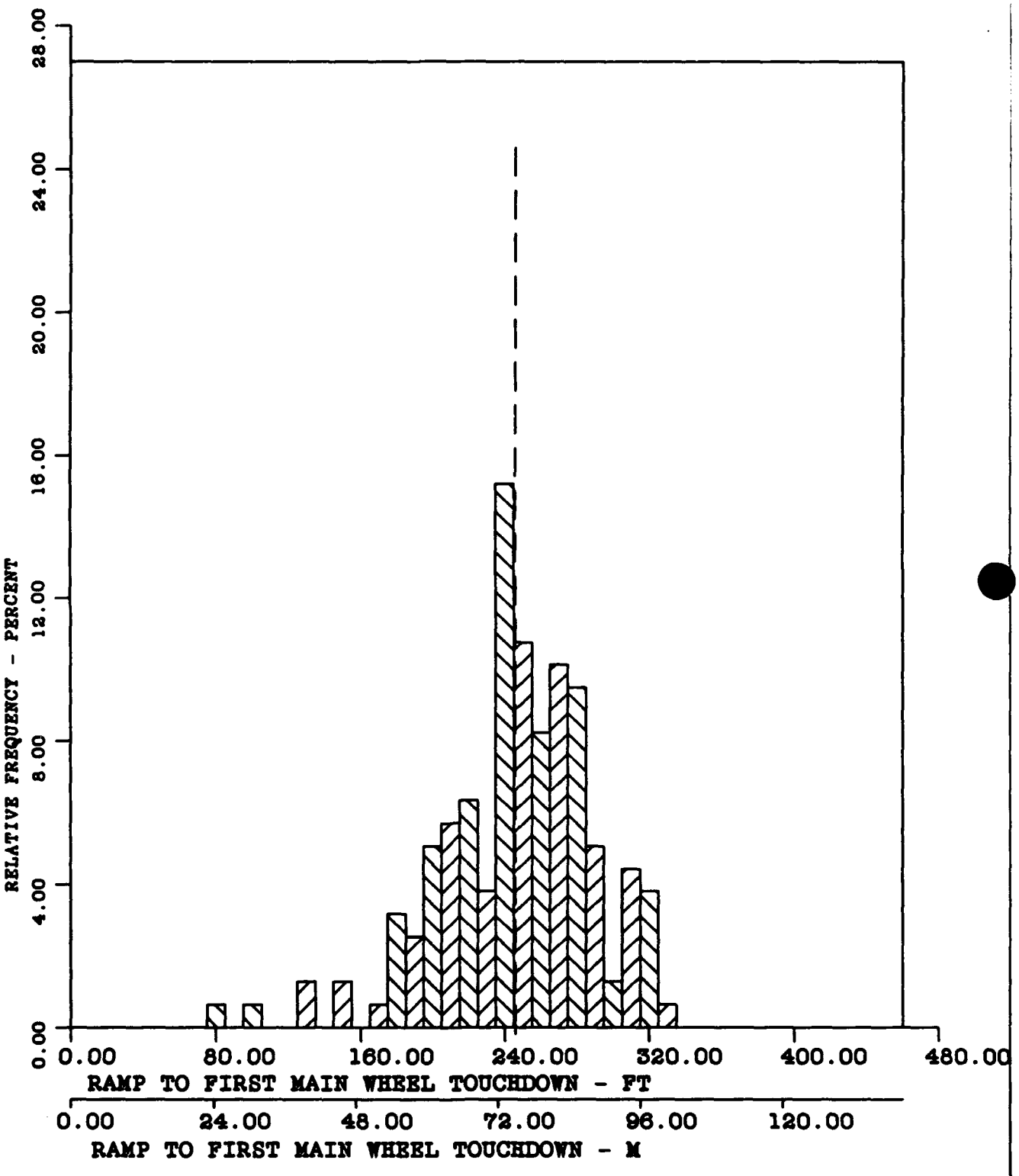


FIGURE B-32 FREQUENCY DISTRIBUTION OF DISTANCE FROM RAMP TO FIRST MAIN WHEEL TOUCHDOWN POINT

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-158 $\bar{X}$-245.81 FEET (74.92 METRES) A3=-.77
S-42.80 FEET (13.04 METRES) A4-4.35
CURVE FITTED - PEARSON TYPE III

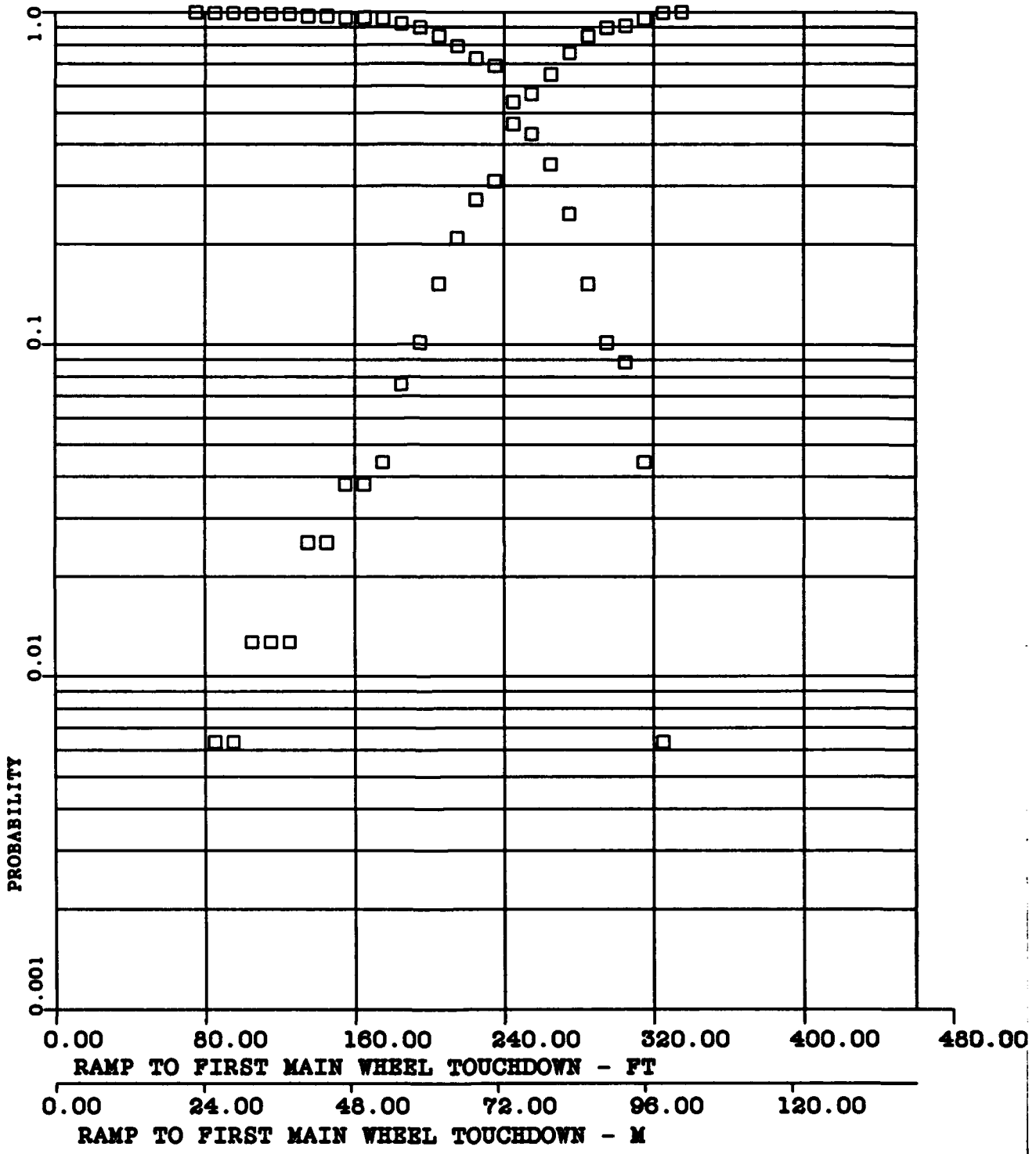


FIGURE B-33 PROBABILITY DISTRIBUTION OF DISTANCE FROM RAMP TO FIRST MAIN WHEEL TOUCHDOWN POINT

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=158 $\bar{X}$=-12.91 FEET (-3.93 METRES) A3=.20
S=4.16 FEET (1.26 METRES) A4=3.69

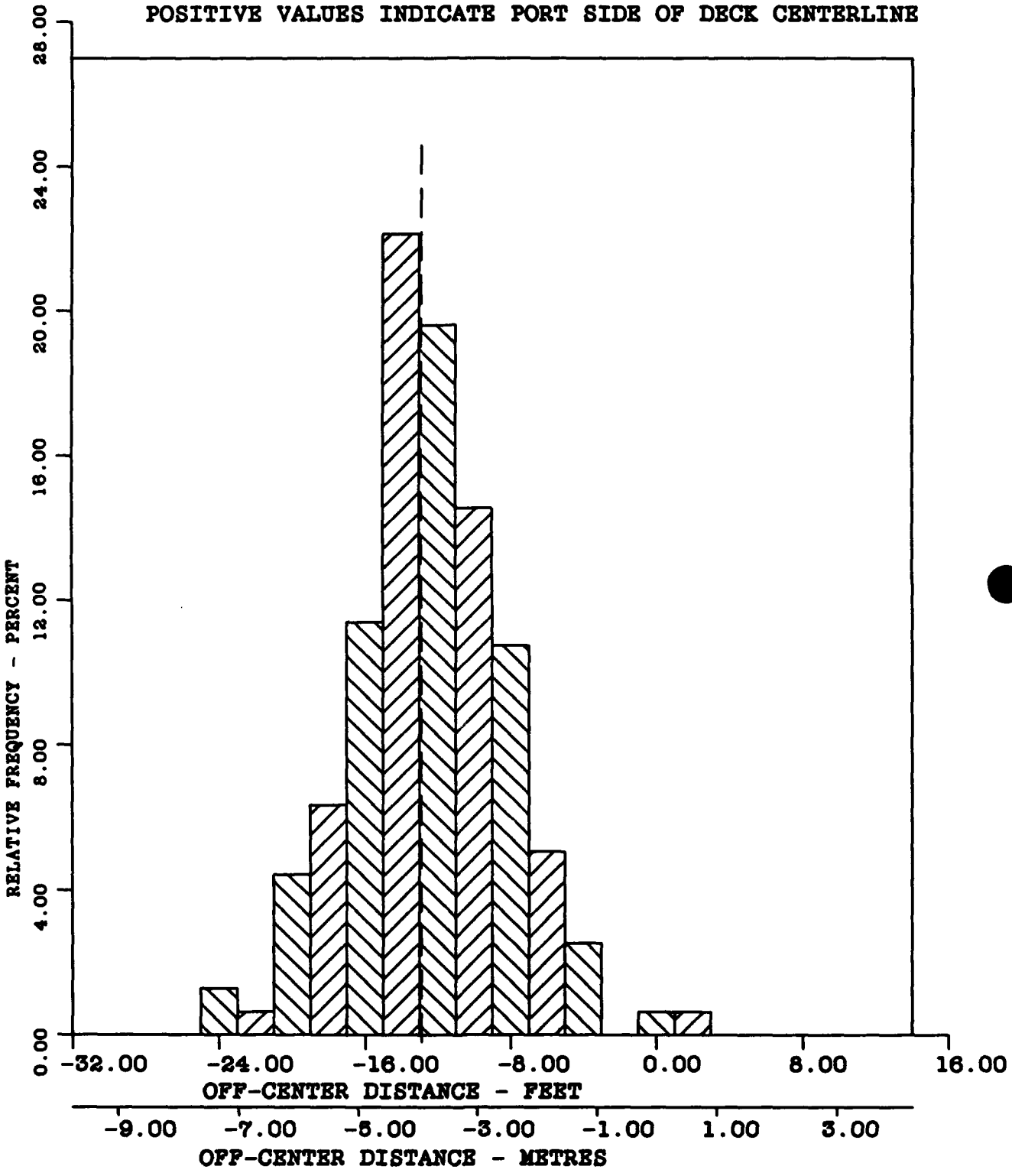


FIGURE B-34 FREQUENCY DISTRIBUTION OF AIRCRAFT CENTERLINE OFF-CNTR DISTANCE AT 1ST MAIN WHEEL TOUCHDOWN

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-158 $\bar{X}$=-12.91 FEET (-3.93 METRES) A3=.20
S=4.16 FEET (1.26 METRES) A4=3.69
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE PORT SIDE OF DECK CENTERLINE

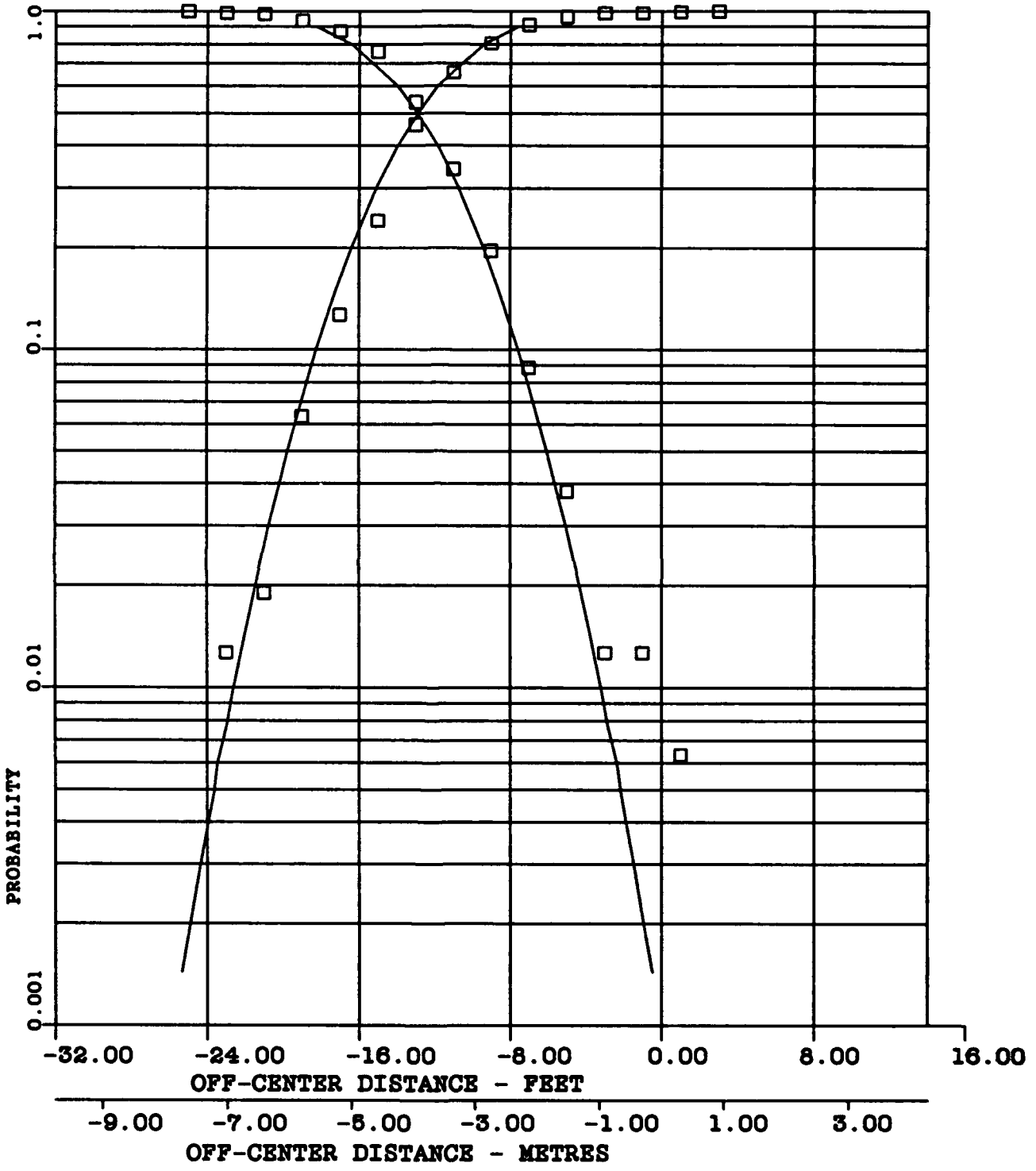


FIGURE B-35 PROBABILITY DISTRIBUTION OF AIRCRAFT OFF-CENTER DISTANCE AT 1ST MAIN WHEEL TOUCHDOWN

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-113 $\bar{X}$-2.61 A3=-.07
S-.91 A4-2.17

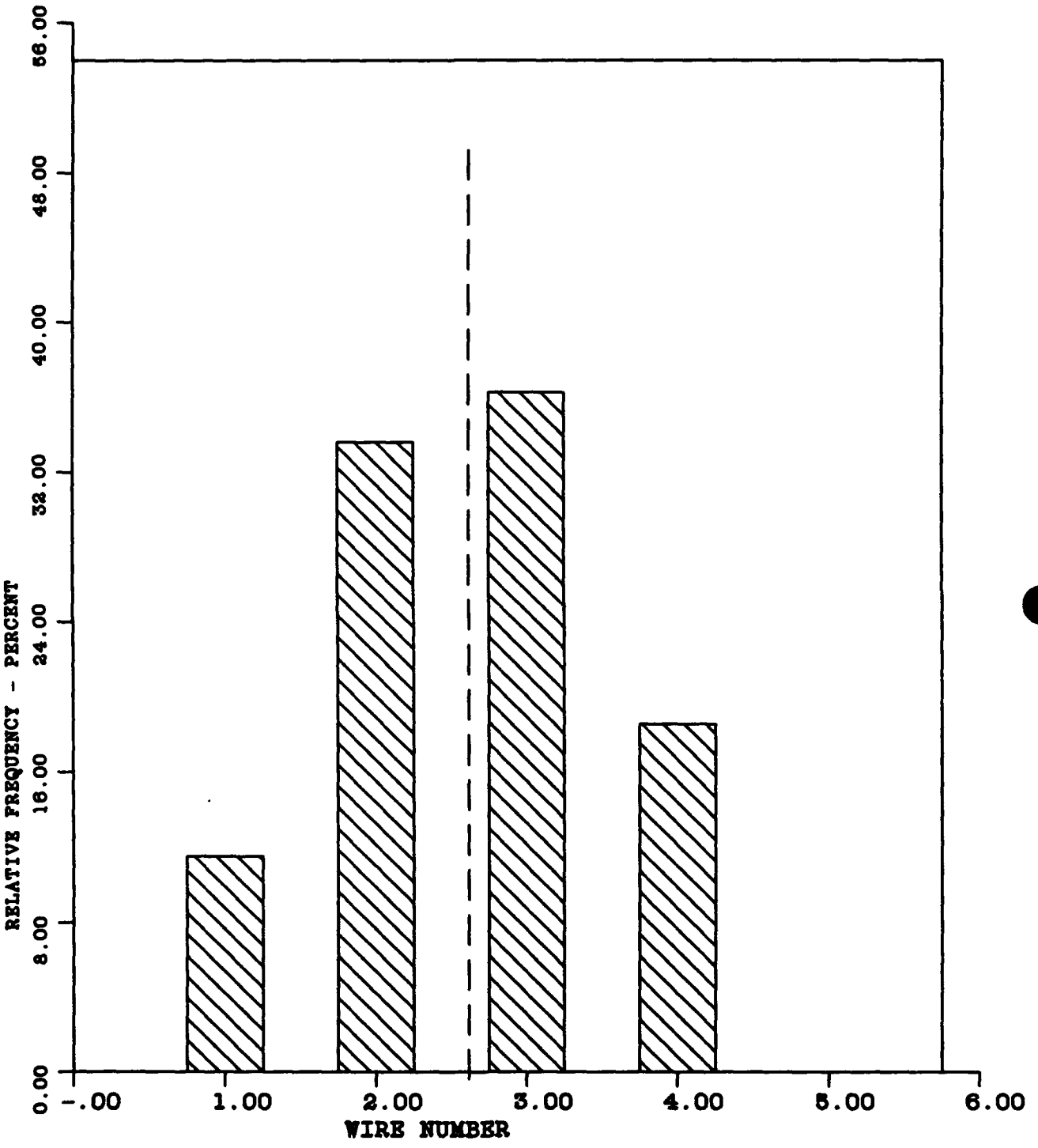


FIGURE B-36 FREQUENCY DISTRIBUTION OF ARRESTMENT WIRE NUMBER ENGAGED

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=157 $\bar{X}$=2.82 DEGREES (.049 RADIANS) A3=-.60
S=.77 DEGREES (.013 RADIANS) A4=3.51

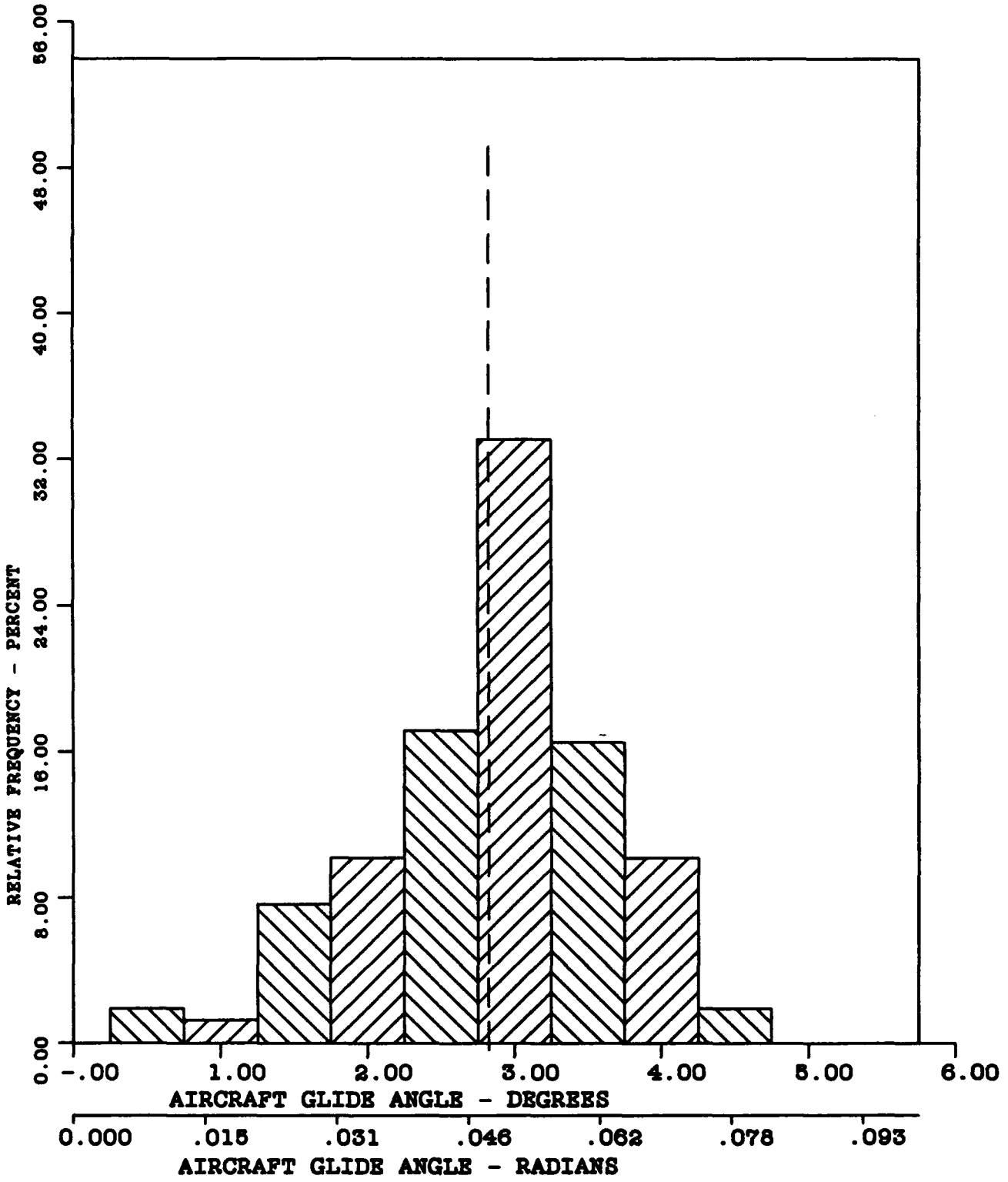


FIGURE B-37 FREQUENCY DISTRIBUTION OF AIRCRAFT GLIDE ANGLE - INSTANTANEOUS METHOD

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-156 $\bar{X}$-3.14 DEGREES (.054 RADIANS) A3-.13
S-.58 DEGREES (.010 RADIANS) A4-2.76

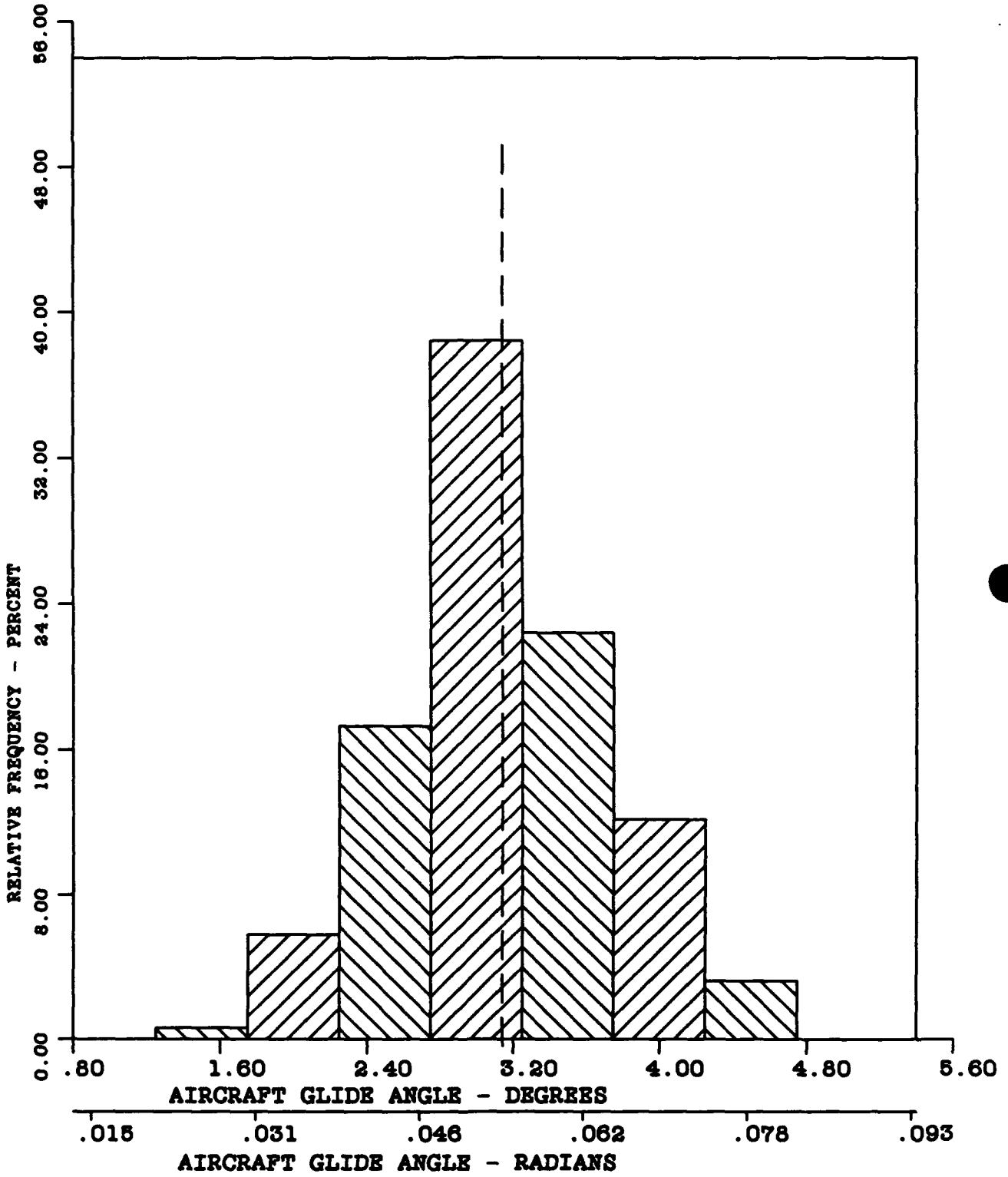


FIGURE B-38 FREQUENCY DISTRIBUTION OF AIRCRAFT GLIDE ANGLE - GEOMETRIC METHOD

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-156 $\bar{X}$-10.65 FEET (3.24 METRES) A3=.13
S-3.60 FEET (1.09 METRES) A4=3.23

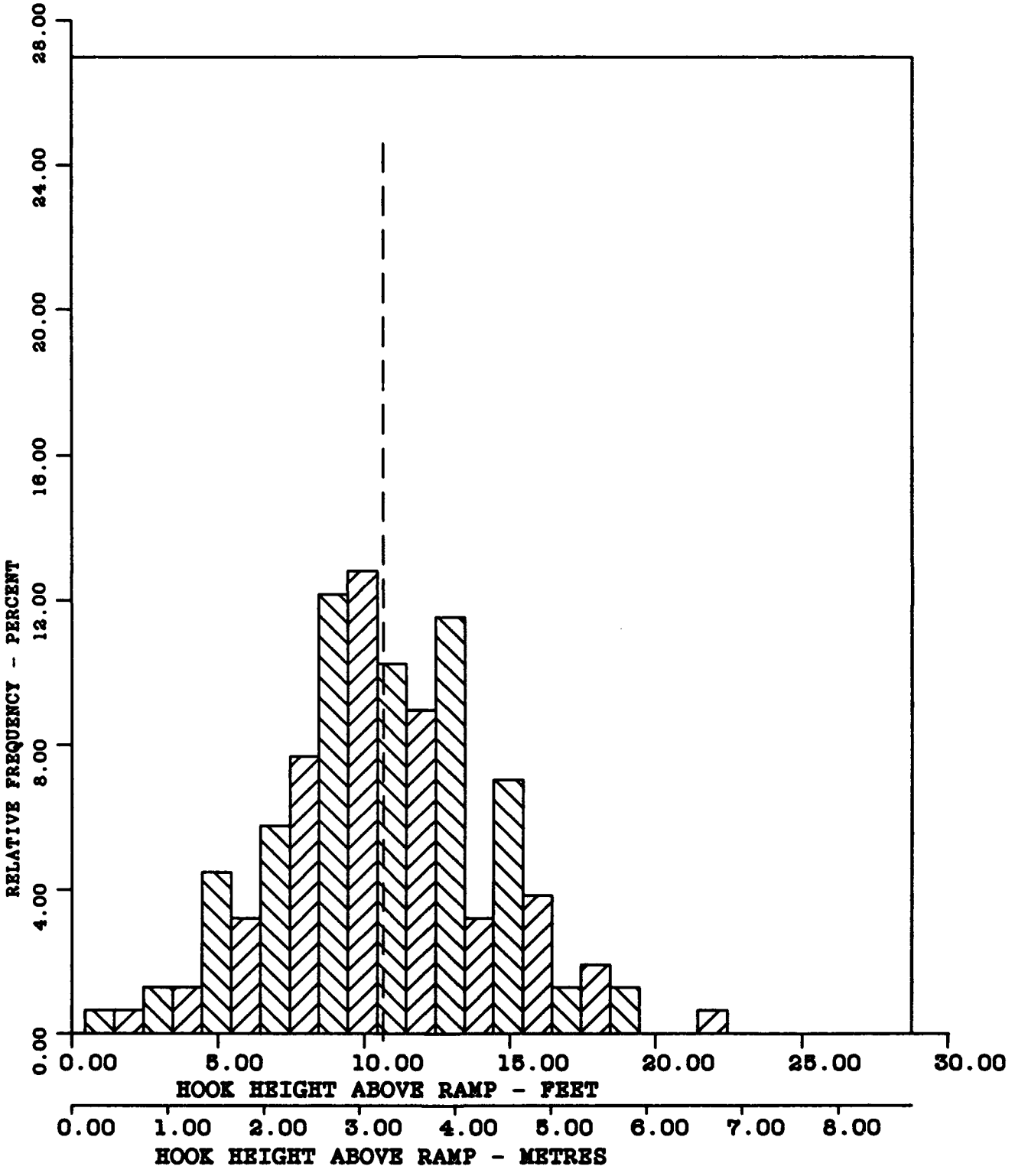


FIGURE B-39 FREQUENCY DISTRIBUTION OF AIRCRAFT ARRESTMENT HOOK HEIGHT ABOVE CARRIER RAMP

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-156 $\bar{X}$-10.65 FEET (3.24 METRES) A3=.13
S-3.60 FEET (1.09 METRES) A4=3.23
CURVE FITTED - NORMAL

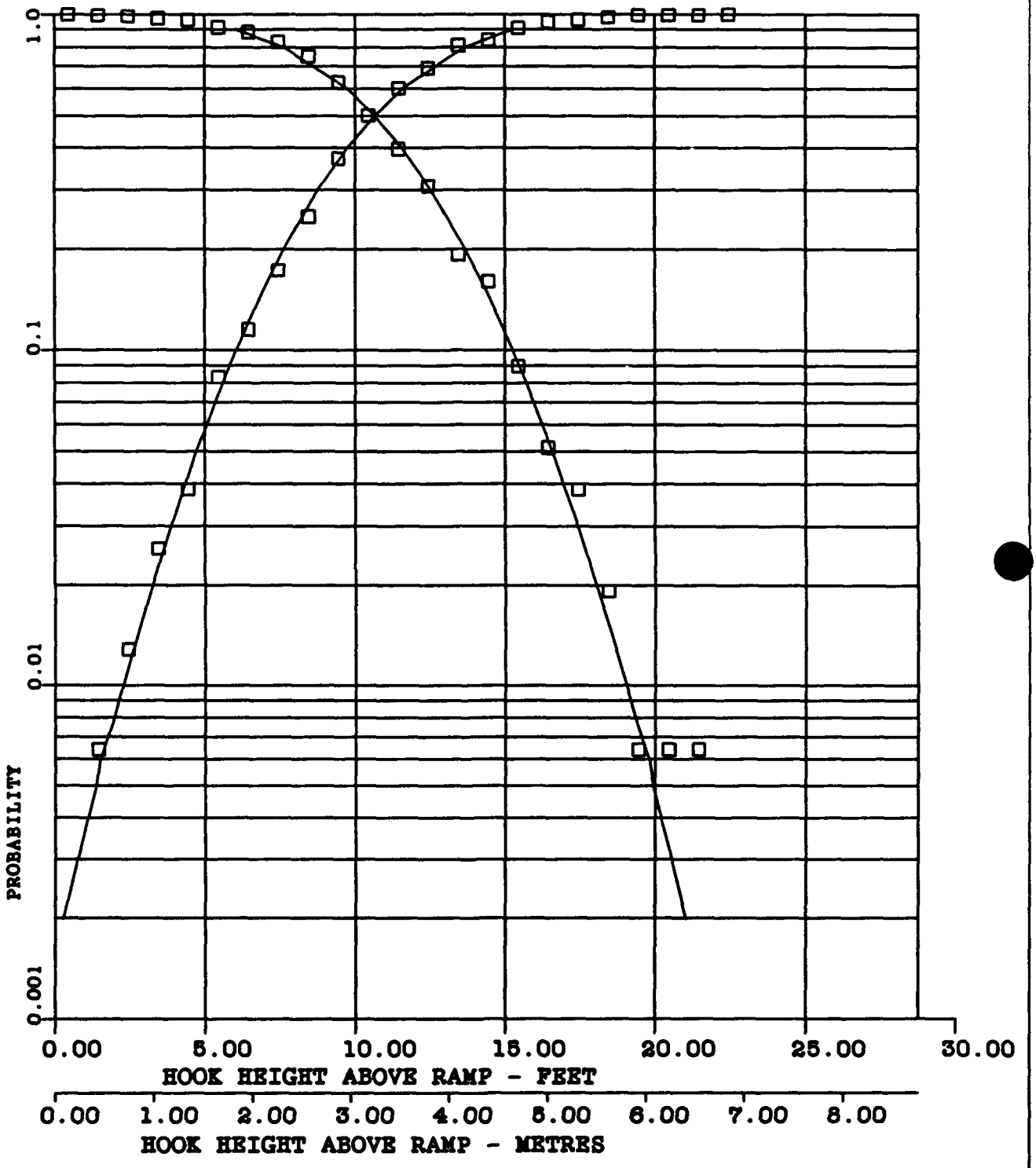


FIGURE B-40 PROBABILITY DISTRIBUTION OF ARRESTMENT HOOK HEIGHT ABOVE CARRIER RAMP

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N=158 $\bar{X}$=112.58 KNOTS (57.91 METRES/SEC) A3=-.00
S=4.44 KNOTS (2.28 METRES/SEC) A4=2.65

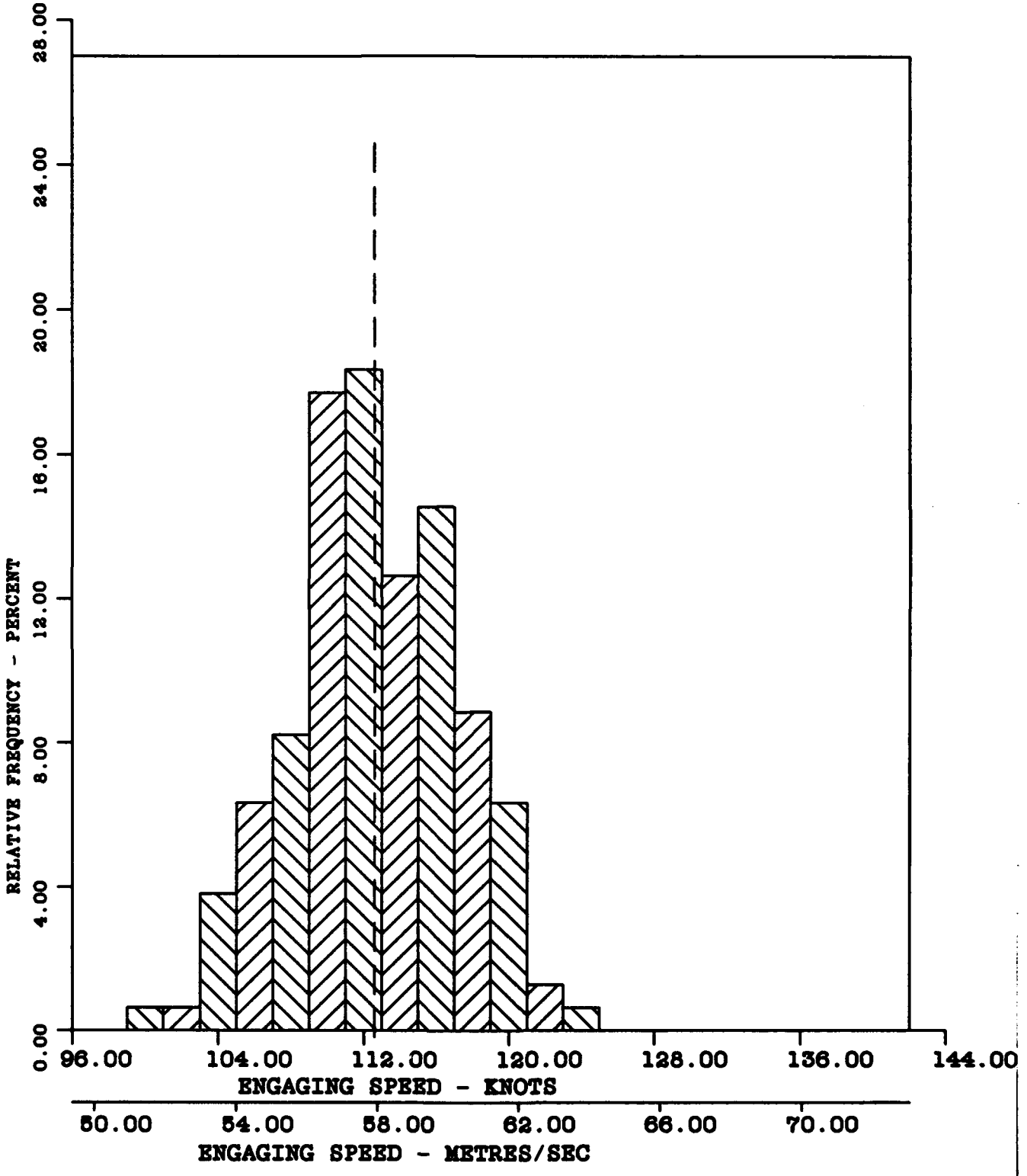


FIGURE B-41 FREQUENCY DISTRIBUTION OF AIRCRAFT ENGAGING SPEED AT FIRST MAIN WHEEL TOUCHDOWN

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-158 $\bar{X}$-112.58 KNOTS (57.91 METRES/SEC) A3=-.00
S-4.44 KNOTS (2.28 METRES/SEC) A4-2.65
CURVE FITTED - NORMAL

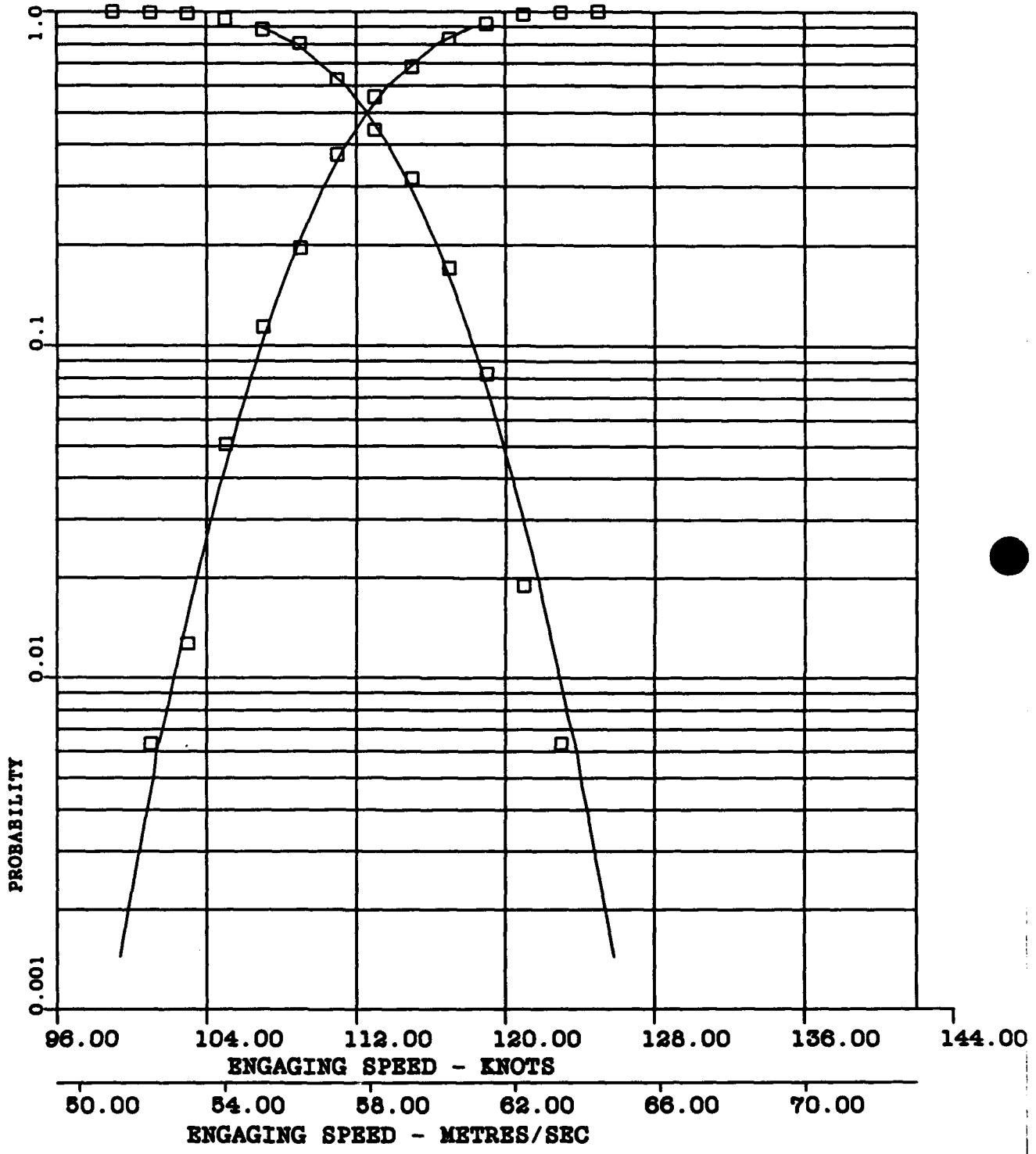


FIGURE B-42 PROBABILITY DISTRIBUTION OF ENGAGING SPEED AT FIRST MAIN WHEEL TOUCHDOWN

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-156 $\bar{X}$-120.50 KNOTS (61.98 METRES/SEC) A3=-.34
S-2.06 KNOTS (1.06 METRES/SEC) A4-2.24

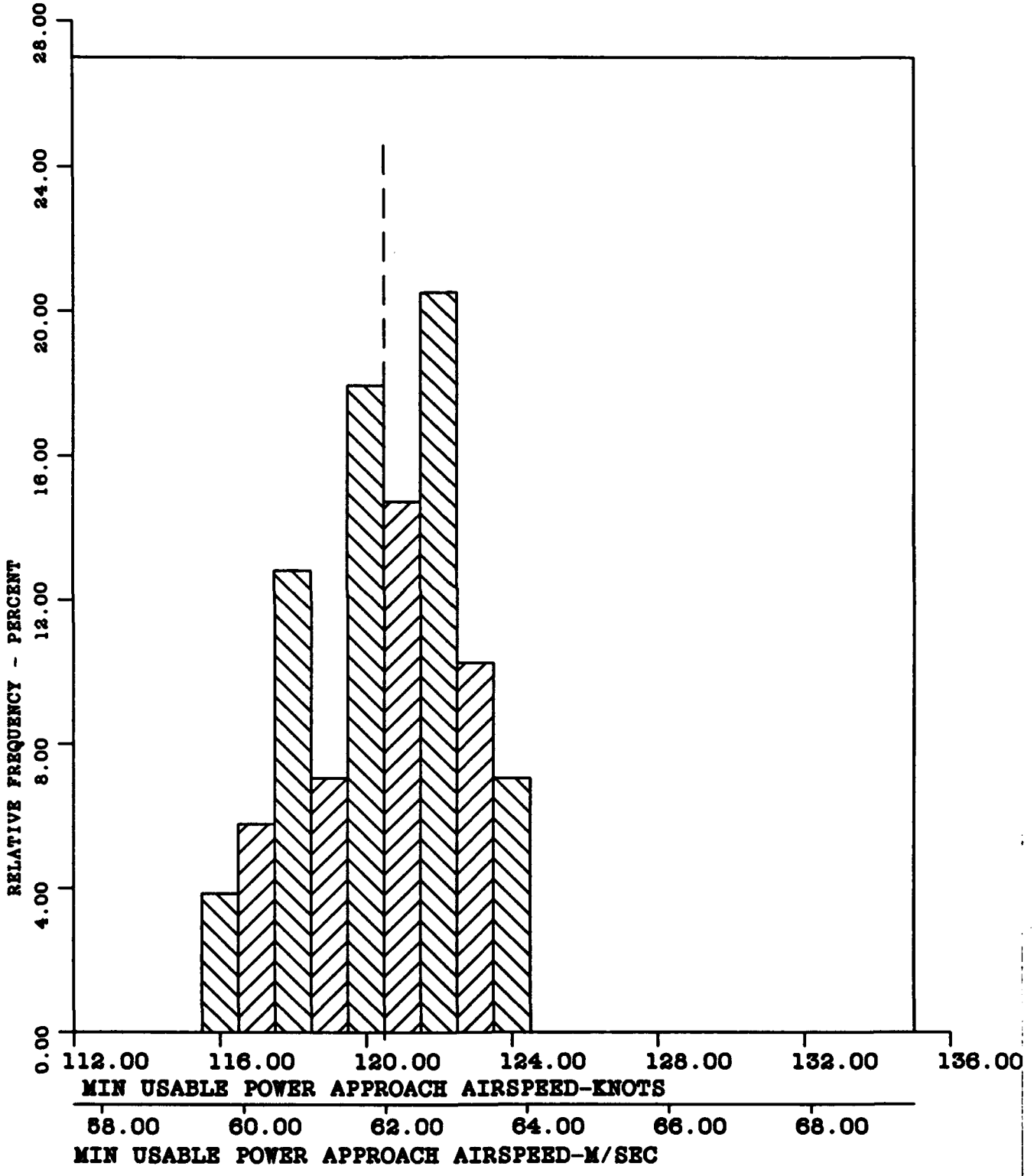


FIGURE B-43 FREQUENCY DISTRIBUTION OF MINIMUM USABLE POWER APPROACH AIRSPEED

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-156 $\bar{X}$-1.16 A3-.03
S-.03 A4-2.64

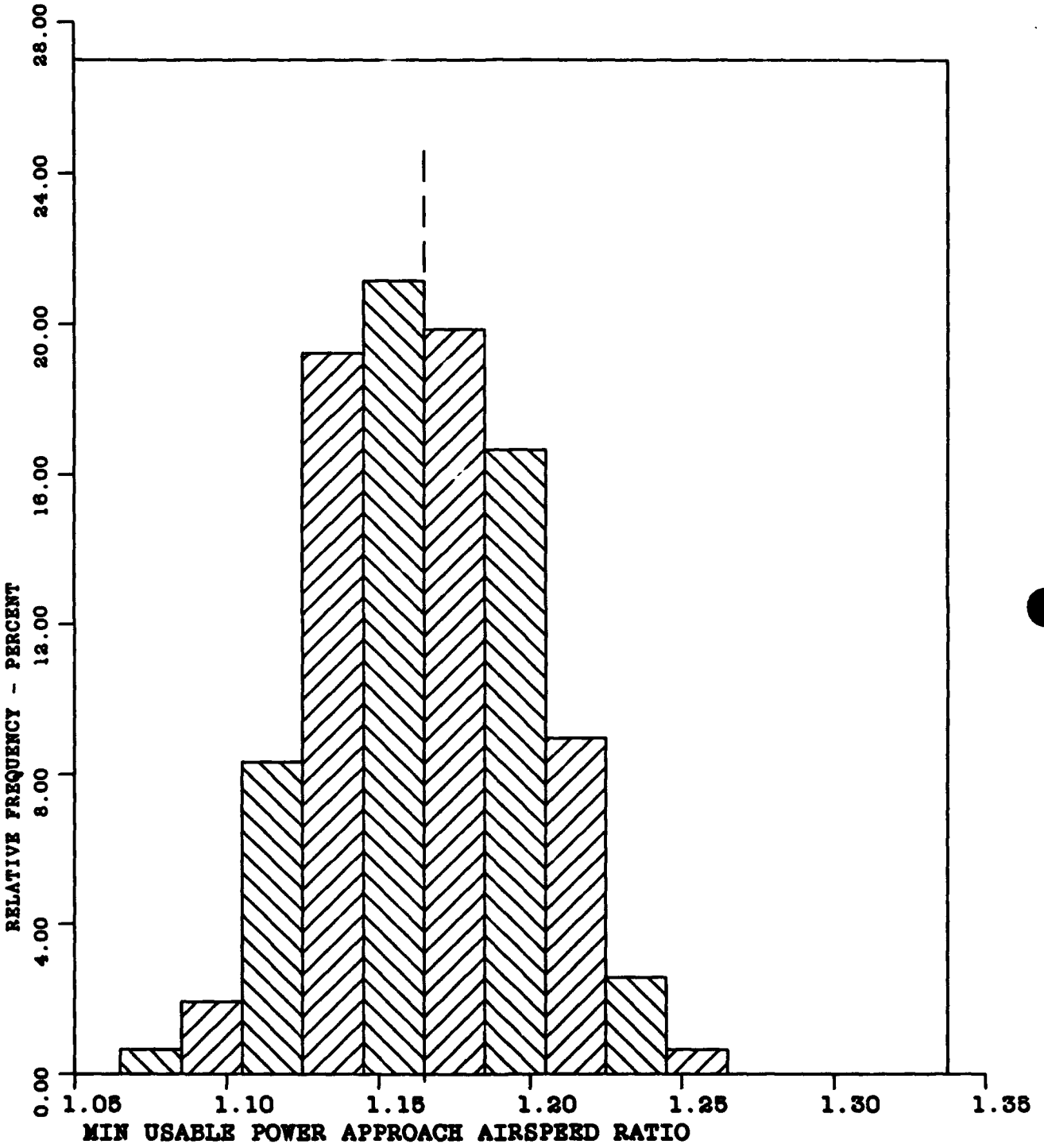


FIGURE B-44 FREQUENCY DISTRIBUTION OF MINIMUM USABLE POWER APPROACH AIRSPEED RATIO - FILM

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-153 $\bar{X}$=-.31 DEGREES (-.005 RADIANS) A3=.17
S=1.17 DEGREES (.020 RADIANS) A4=2.54

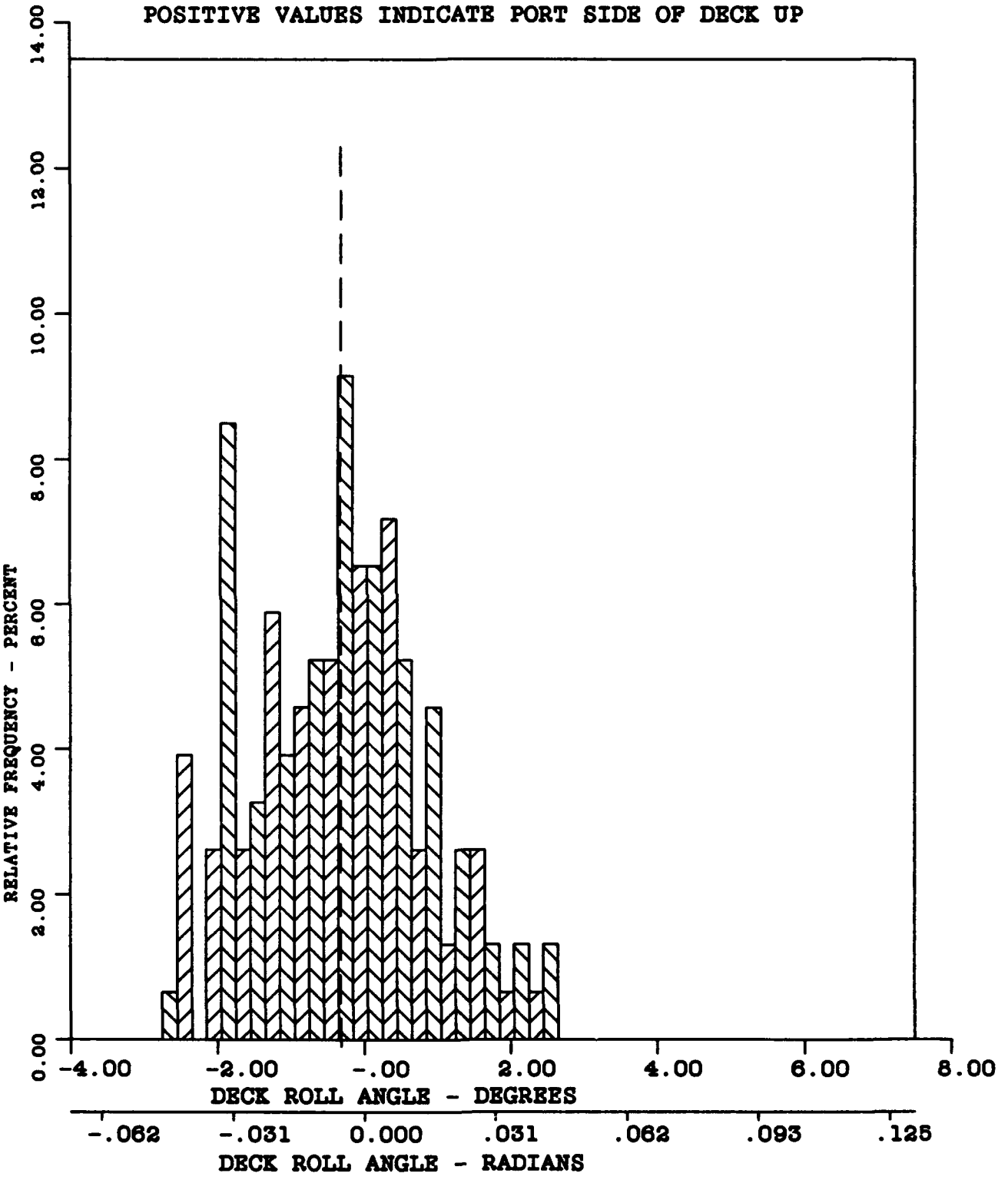


FIGURE B-45 FREQUENCY DISTRIBUTION OF CARRIER DECK ROLL MOTION

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N=153 $\bar{X}$=-.31 DEGREES (-.005 RADIANS) A3=.17
S=1.17 DEGREES (.020 RADIANS) A4=2.54
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE PORT SIDE OF DECK UP

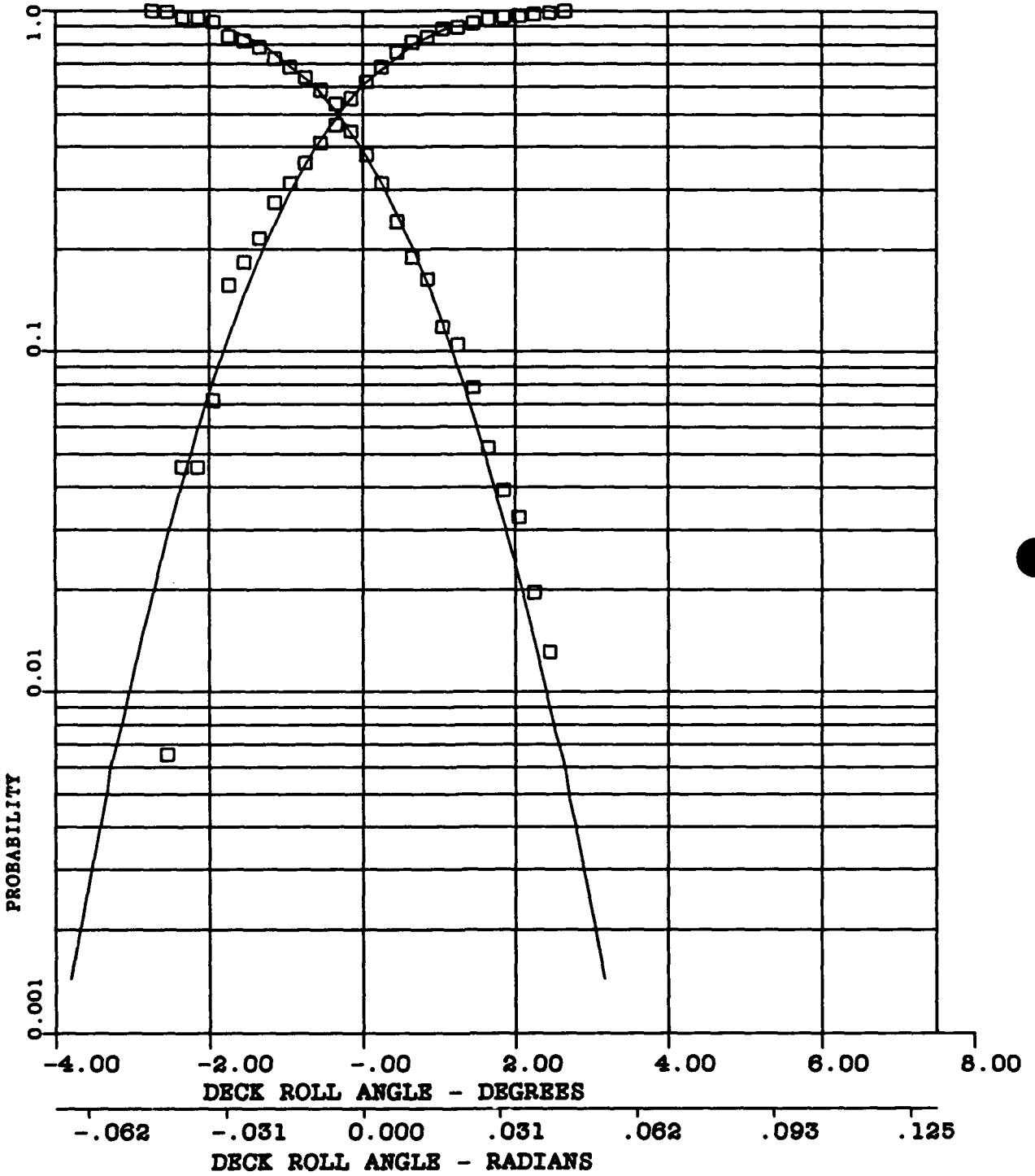


FIGURE B-46 PROBABILITY DISTRIBUTION OF CARRIER DECK ROLL MOTION

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N=153 $\bar{X}$=-.29 DEGREES (-.005 RADIANS) A3=.36
S=.19 DEGREES (.003 RADIANS) A4=3.63

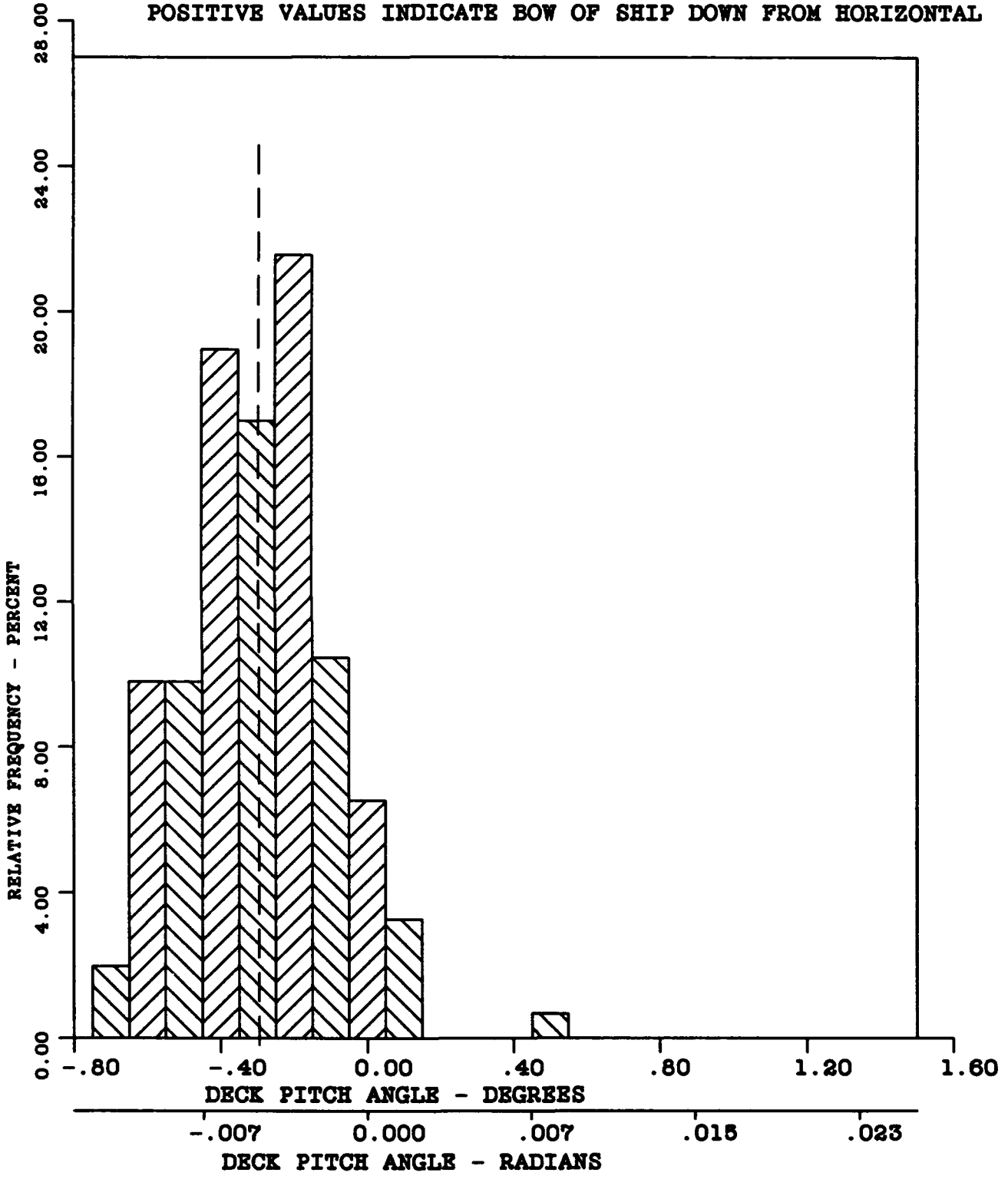


FIGURE B-47 FREQUENCY DISTRIBUTION OF CARRIER DECK PITCH MOTION

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N=153 $\bar{X}$=-.29 DEGREES (-.005 RADIANS) A3=.36
S=.19 DEGREES (.003 RADIANS) A4=3.63
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE BOW OF SHIP DOWN FROM HORIZONTAL

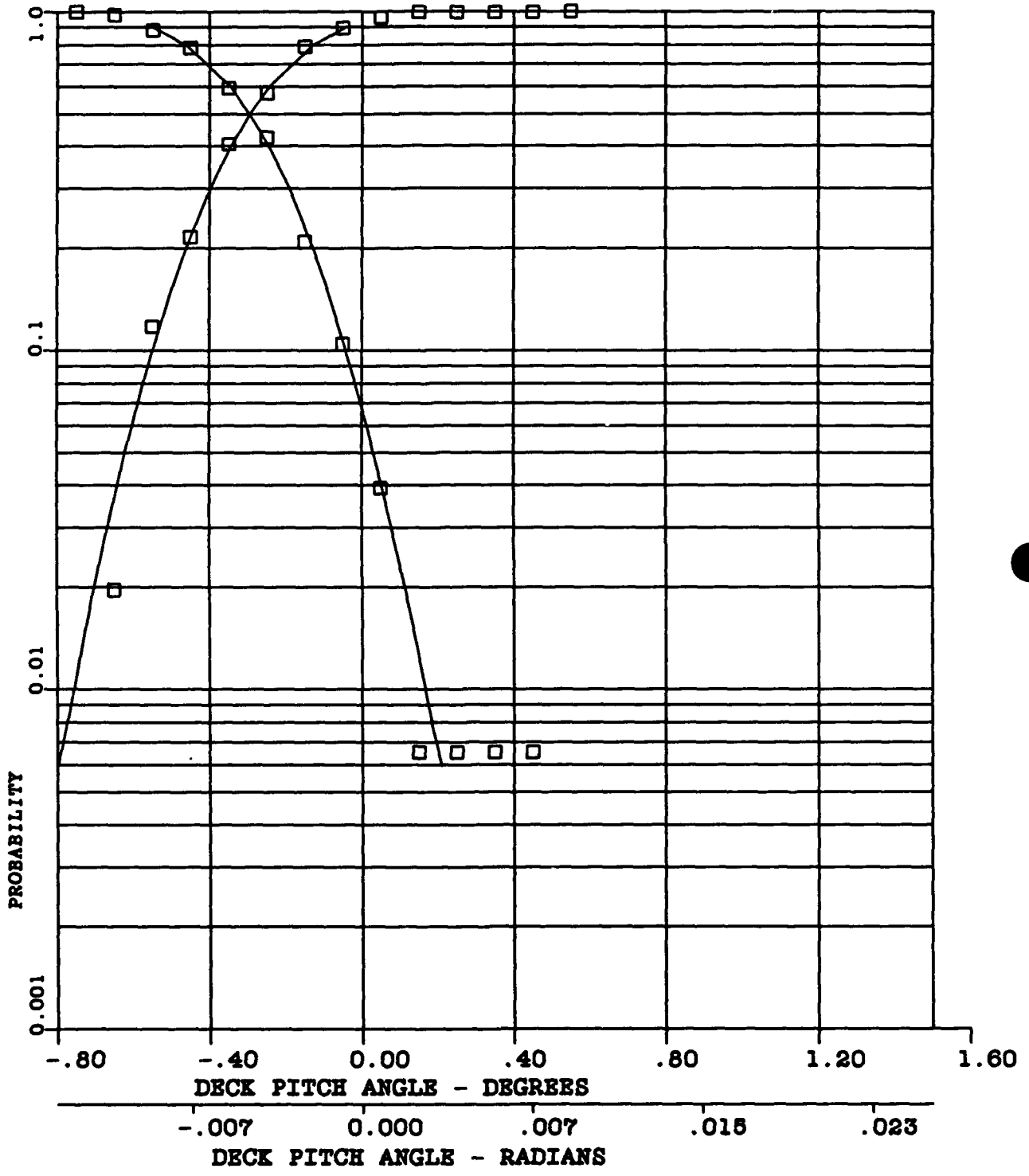


FIGURE B-48 PROBABILITY DISTRIBUTION OF CARRIER DECK PITCH MOTION

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-156 $\bar{X}$-47788.59 POUNDS (21676.90 KILOGRAMS) A3=-.31
S-1629.22 POUNDS (739.01 KILOGRAMS) A4-2.22

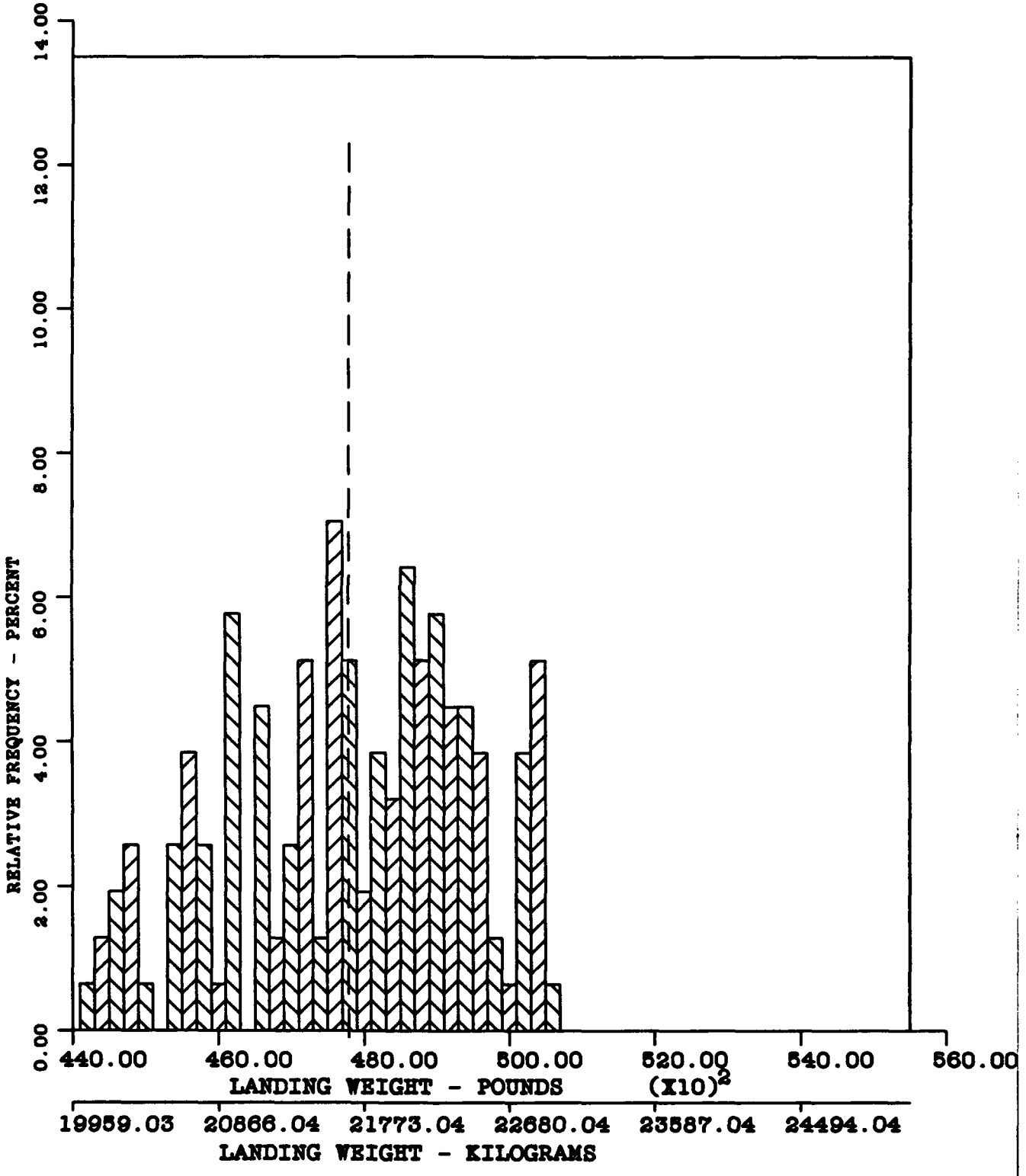


FIGURE B-49 FREQUENCY DISTRIBUTION OF AIRCRAFT LANDING WEIGHT

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-157 $\bar{X}$-1.78 DEG/SEC (.031 RAD/SEC) A3-1.09
S-2.17 DEG/SEC (.038 RAD/SEC) A4-3.81

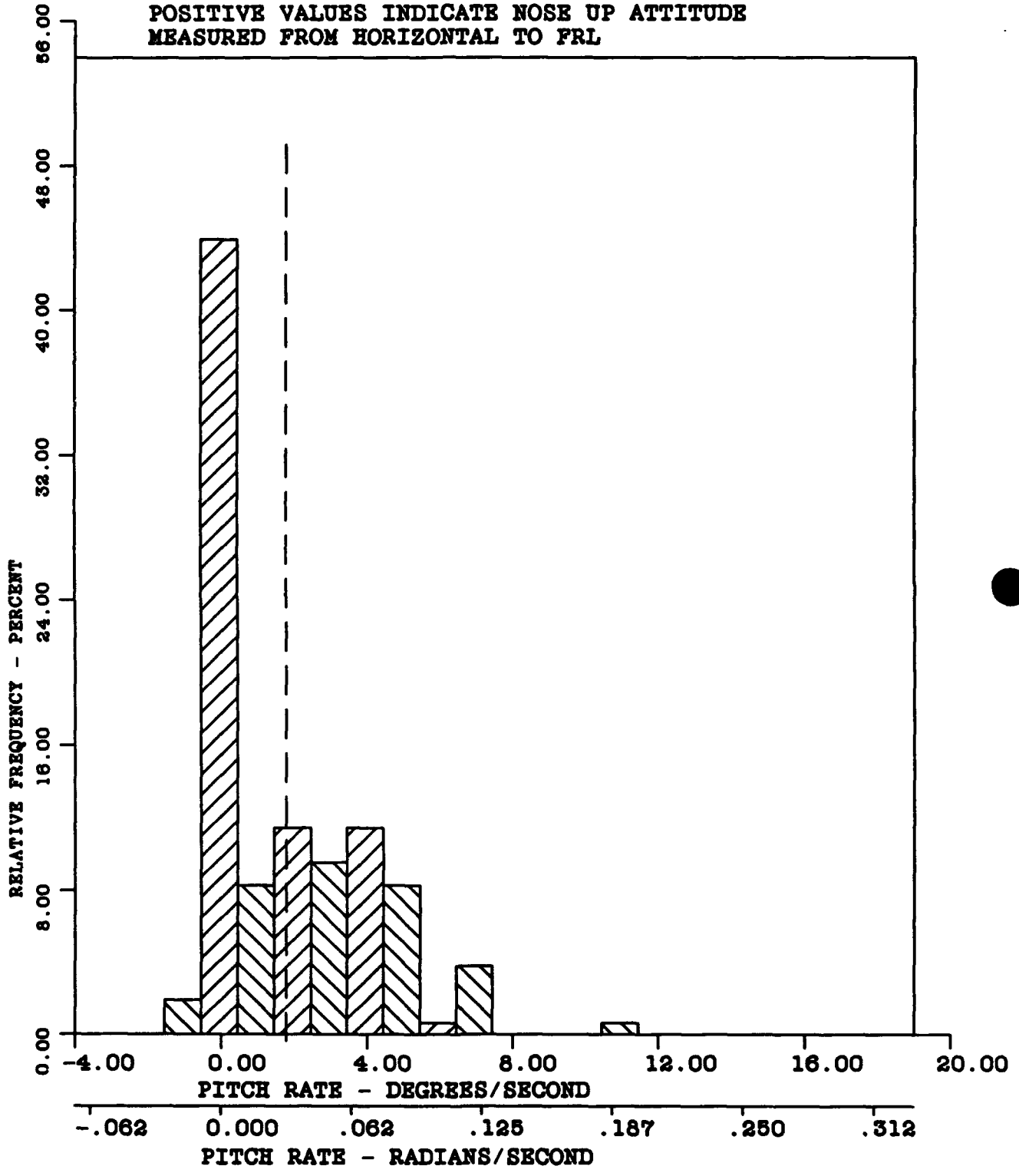


FIGURE B-50 FREQUENCY DISTRIBUTION OF PITCH RATE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-157 $\bar{X}$-1.78 DEG/SEC (.031 RAD/SEC) A3-1.09
S-2.17 DEG/SEC (.038 RAD/SEC) A4-3.81
CURVE FITTED - PEARSON TYPE III
POSITIVE VALUES INDICATE NOSE UP ATTITUDE
MEASURED FROM HORIZONTAL TO FRL

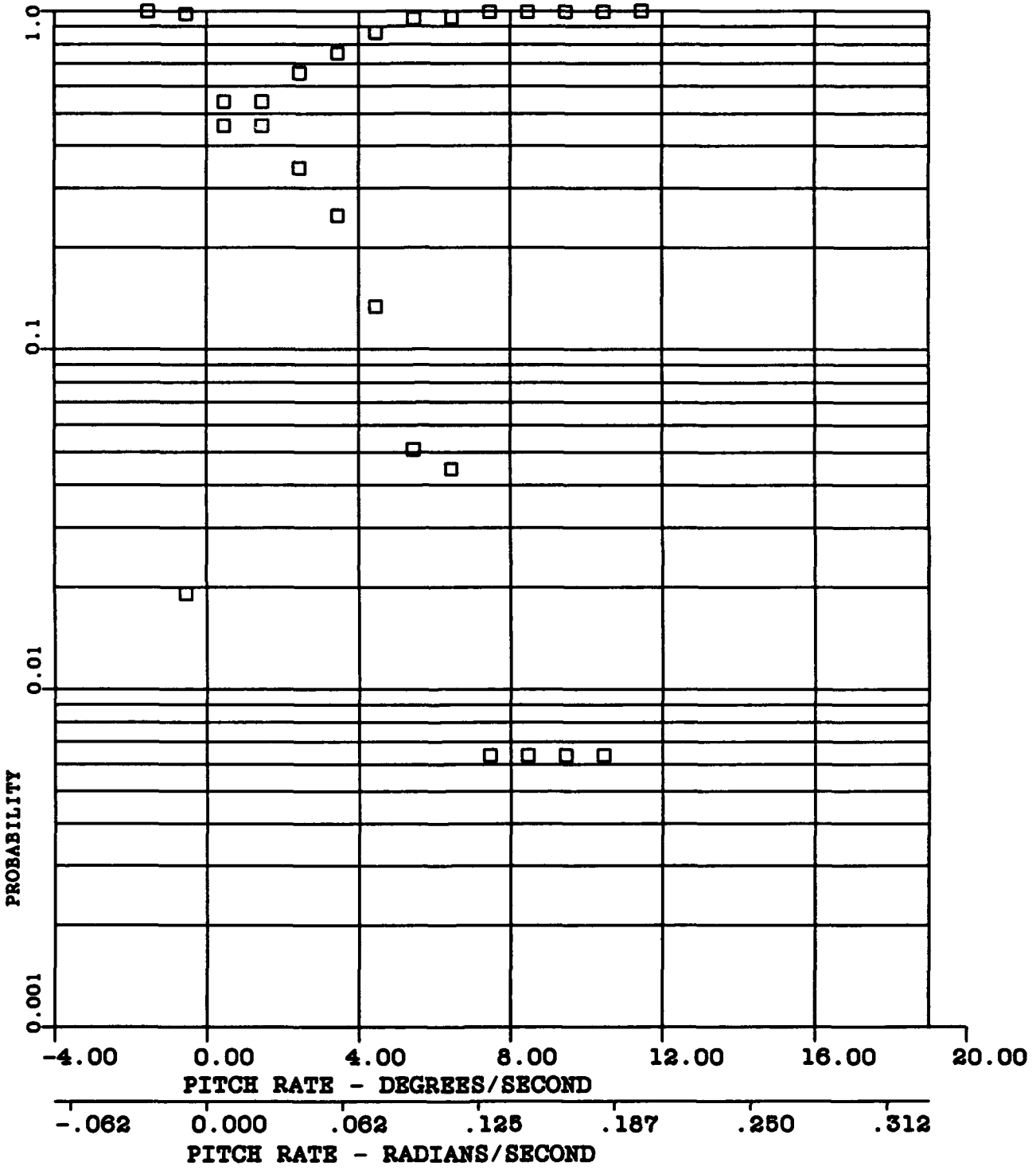


FIGURE B-51 PROBABILITY DISTRIBUTION OF PITCH RATE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=158 $\bar{X}$=-3.13 DEGREES (-.054 RADIANS) A3=-1.01
S=1.10 DEGREES (.019 RADIANS) A4=6.03

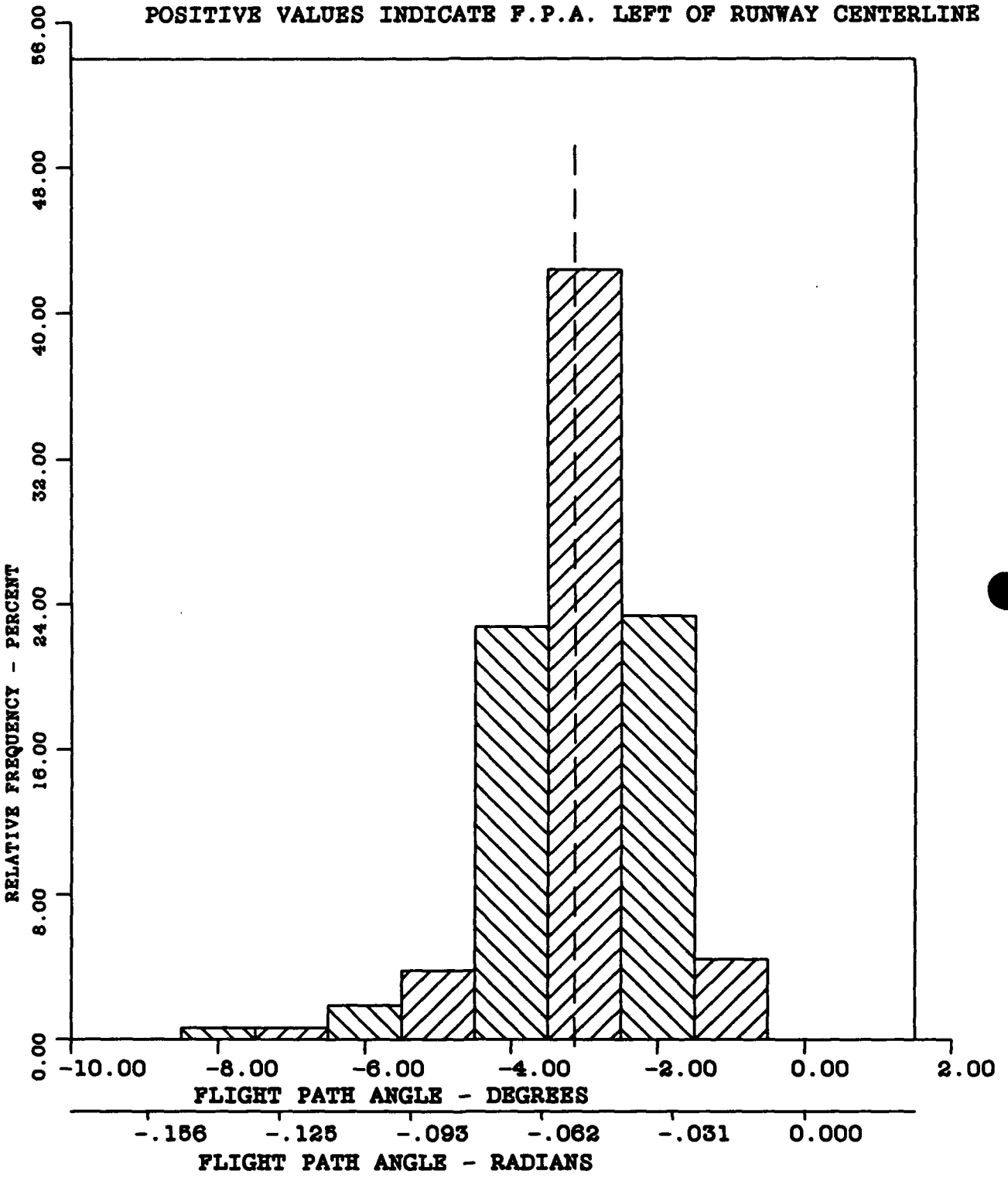


FIGURE B-52 FREQUENCY DISTRIBUTION OF AIRCRAFT FLIGHT PATH ANGLE AT TOUCHDOWN

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-158 $\bar{X}$--3.13 DEGREES (-.054 RADIANS) A3=-1.01
S-1.10 DEGREES (.019 RADIANS) A4-6.03
CURVE FITTED - PEARSON TYPE III
POSITIVE VALUES INDICATE F.P.A. LEFT OF RUNWAY CENTERLINE

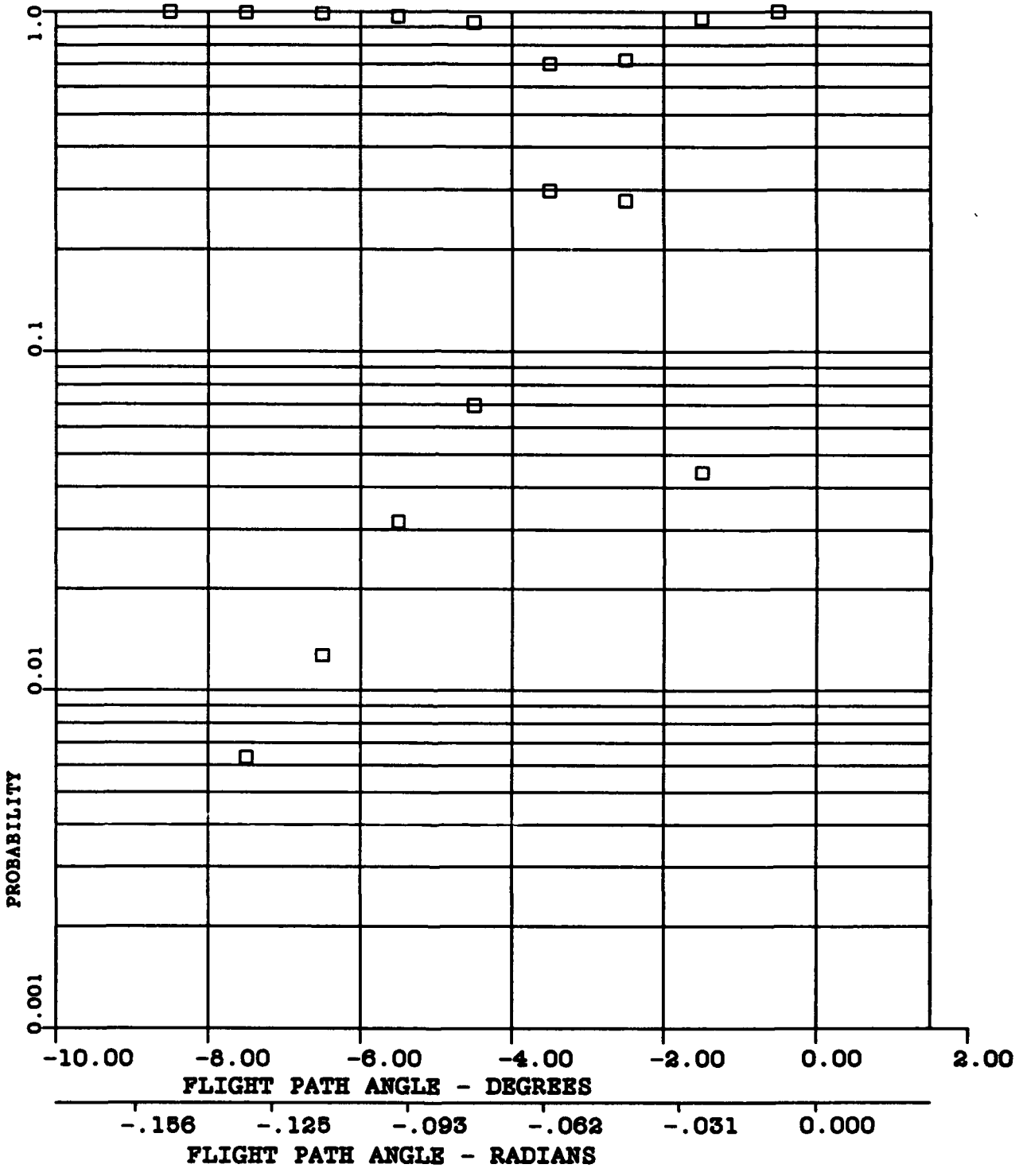


FIGURE B-53 PROBABILITY DISTRIBUTION OF AIRCRAFT FLIGHT PATH ANGLE AT TOUCHDOWN

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-158 $\bar{X}$-4.88 DEGREES (.085 RADIANS) A3=-.26
S-2.16 DEGREES (.037 RADIANS) A4-3.39

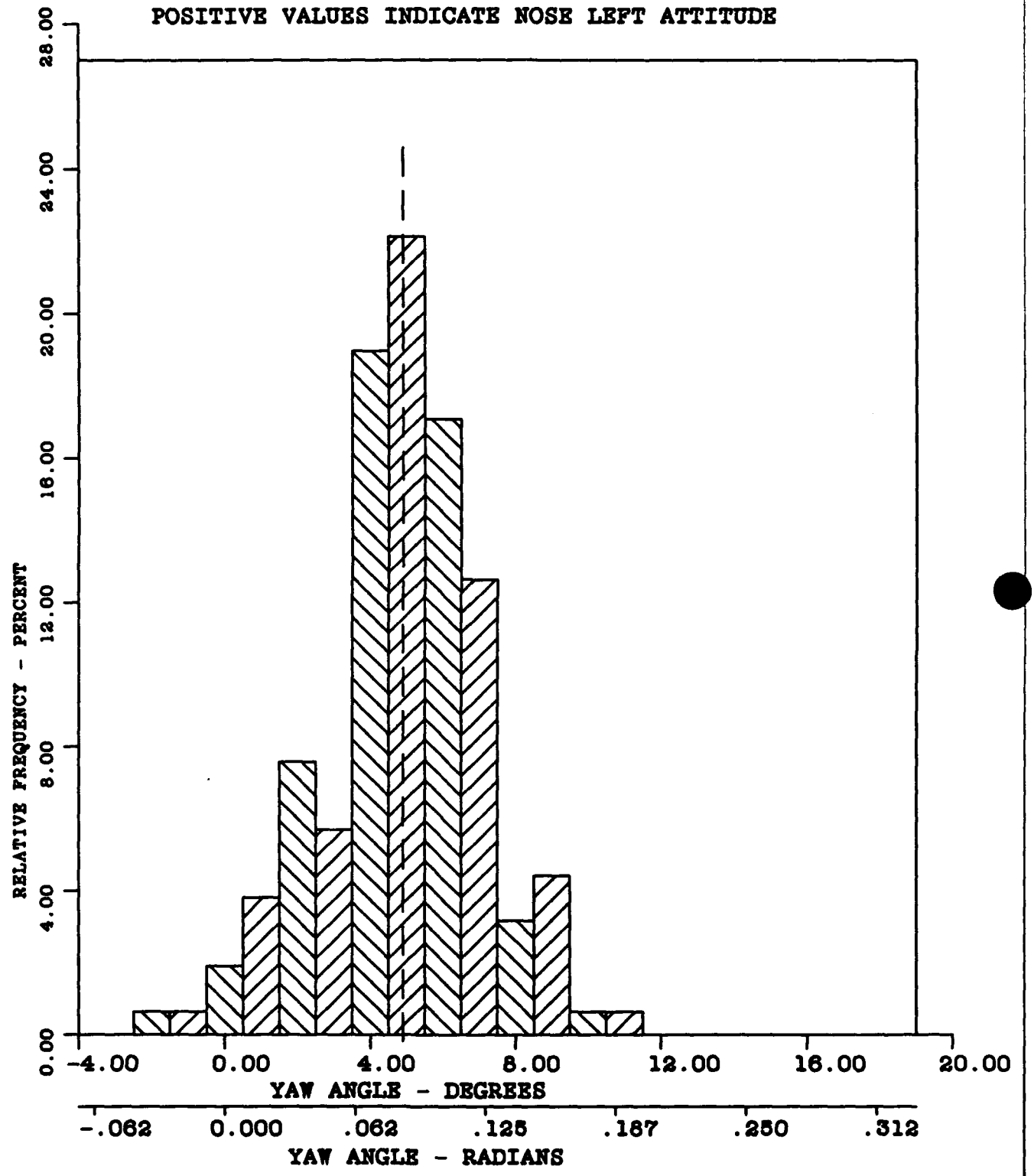


FIGURE B-54 FREQUENCY DISTRIBUTION OF AIRCRAFT YAW ANGLE

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-158 $\bar{X}$-4.88 DEGREES (.085 RADIANS) A3=-.26
S-2.16 DEGREES (.037 RADIANS) A4-3.39
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE NOSE LEFT ATTITUDE

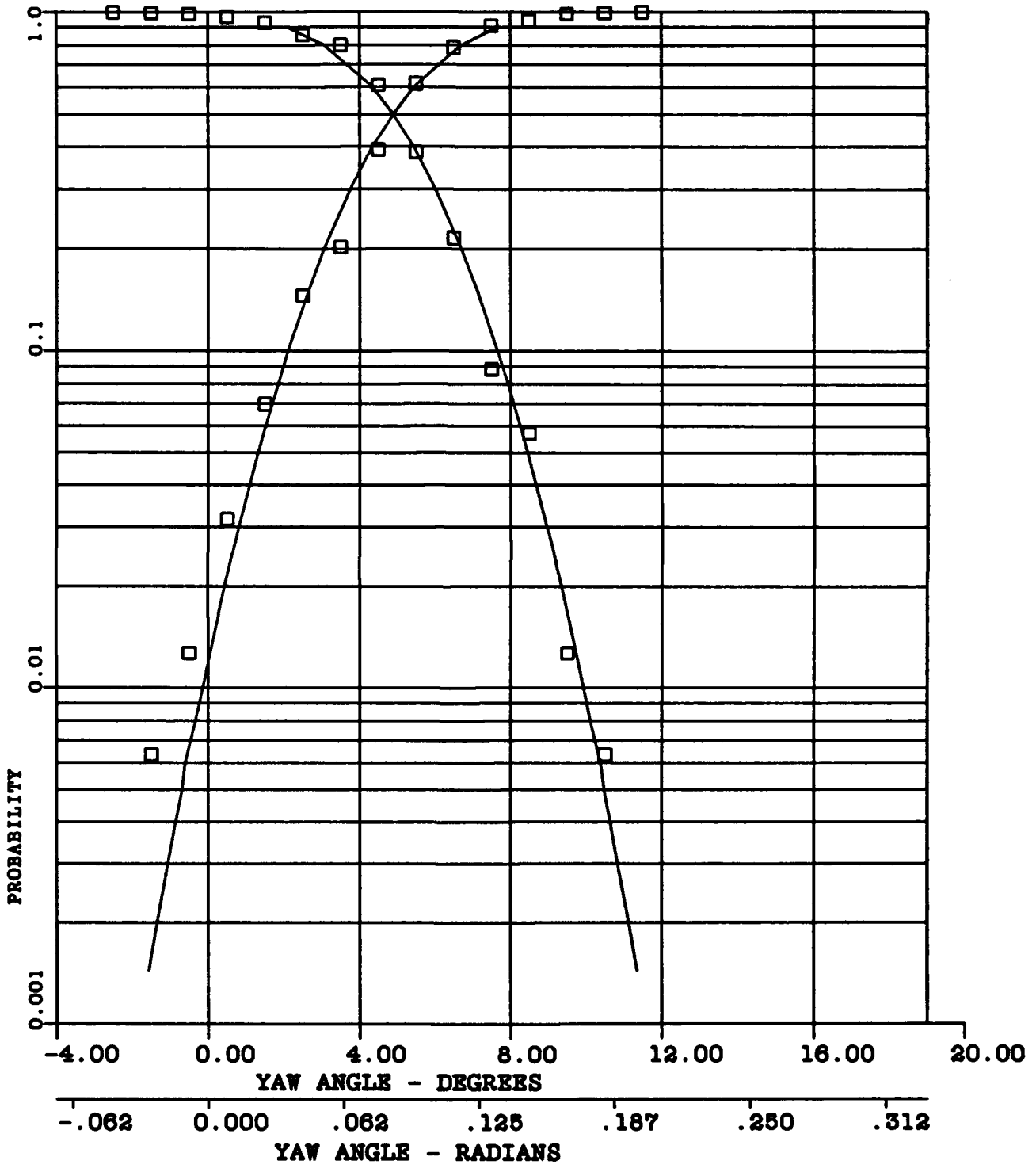


FIGURE B-55 PROBABILITY DISTRIBUTION OF AIRCRAFT YAW ANGLE

APPENDIX C

F-14A AIRCRAFT

NIGHT CARRIER LANDINGS

USS ENTERPRISE
CVN-65

Appendix C:

Frequency and Probability Distributions,
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MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-95 $\bar{X}$-30.95 KNOTS (15.92 METRES/SEC) A3=-.08
S-5.00 KNOTS (2.57 METRES/SEC) A4=1.38

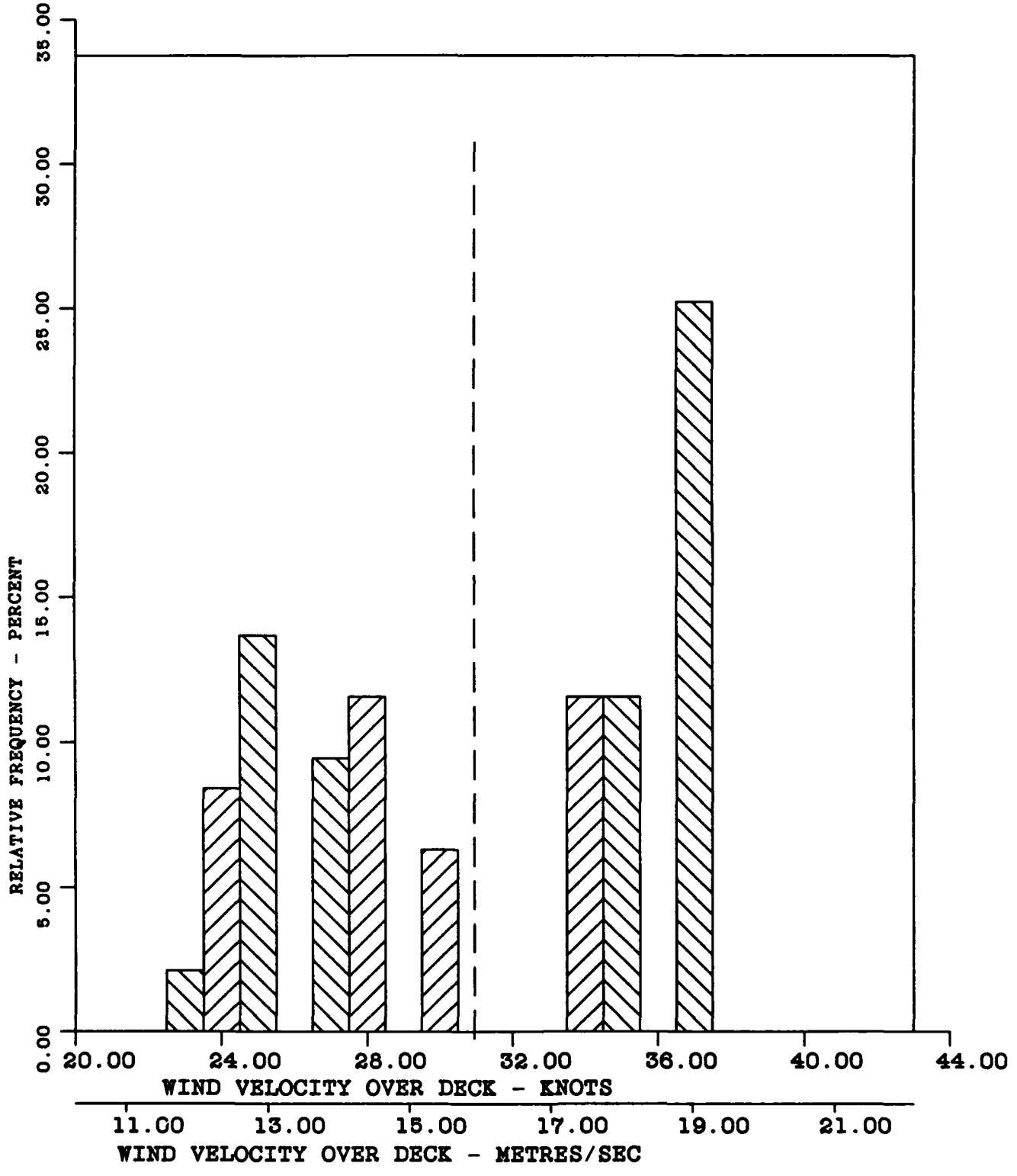


FIGURE C-1 FREQUENCY DISTRIBUTION OF WIND VELOCITY OVER THE DECK

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-95 $\bar{X}$-30.95 KNOTS (15.92 METRES/SEC) A3=-.08
S-5.00 KNOTS (2.57 METRES/SEC) A4-1.38
CURVE FITTED - NORMAL

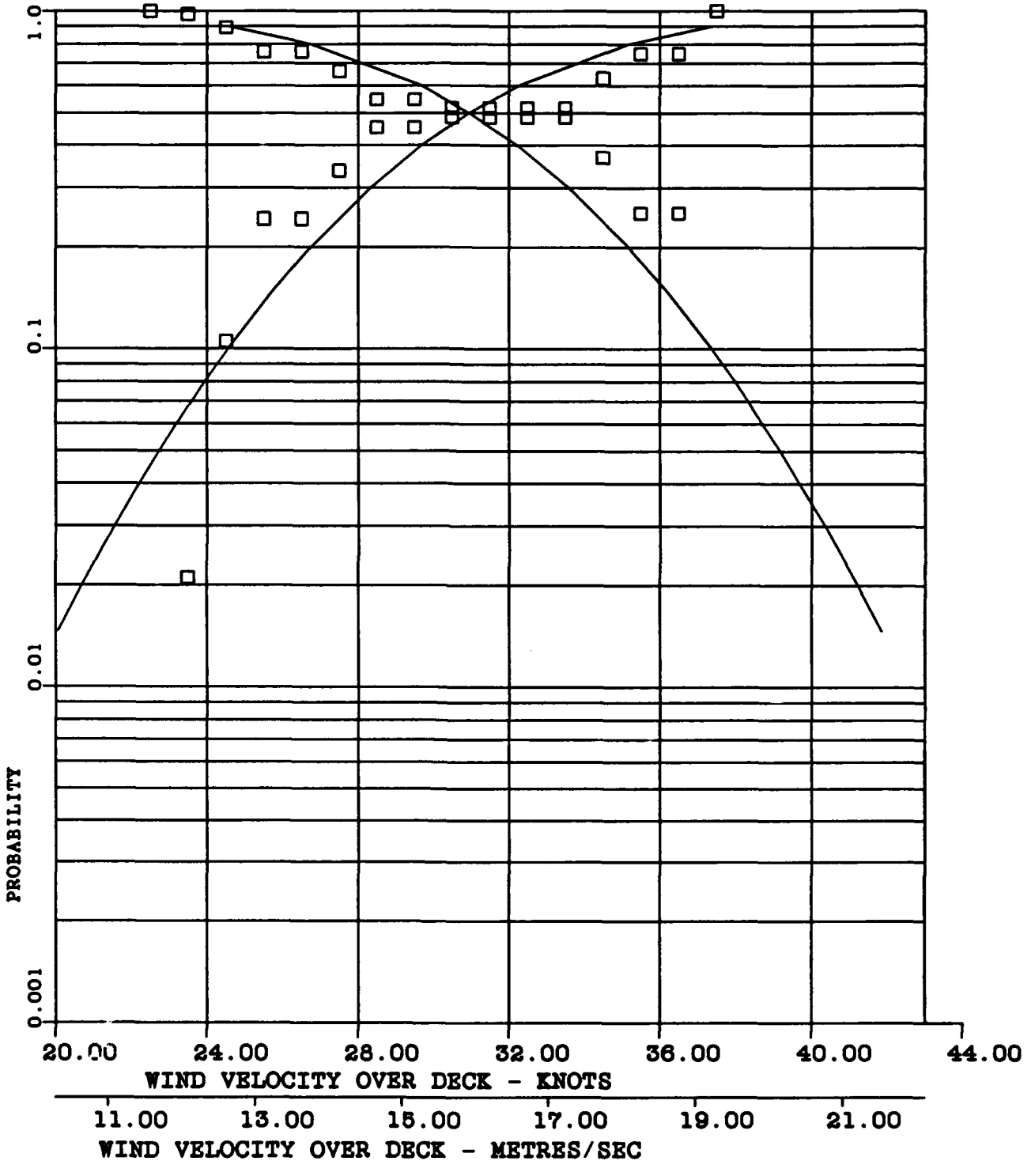


FIGURE C-2 PROBABILITY DISTRIBUTION OF WIND VELOCITY OVER THE DECK

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-95 $\bar{X}$-139.66 KNOTS (71.84 METRES/SEC) A3-1.15
S-5.87 KNOTS (3.02 METRES/SEC) A4-6.93

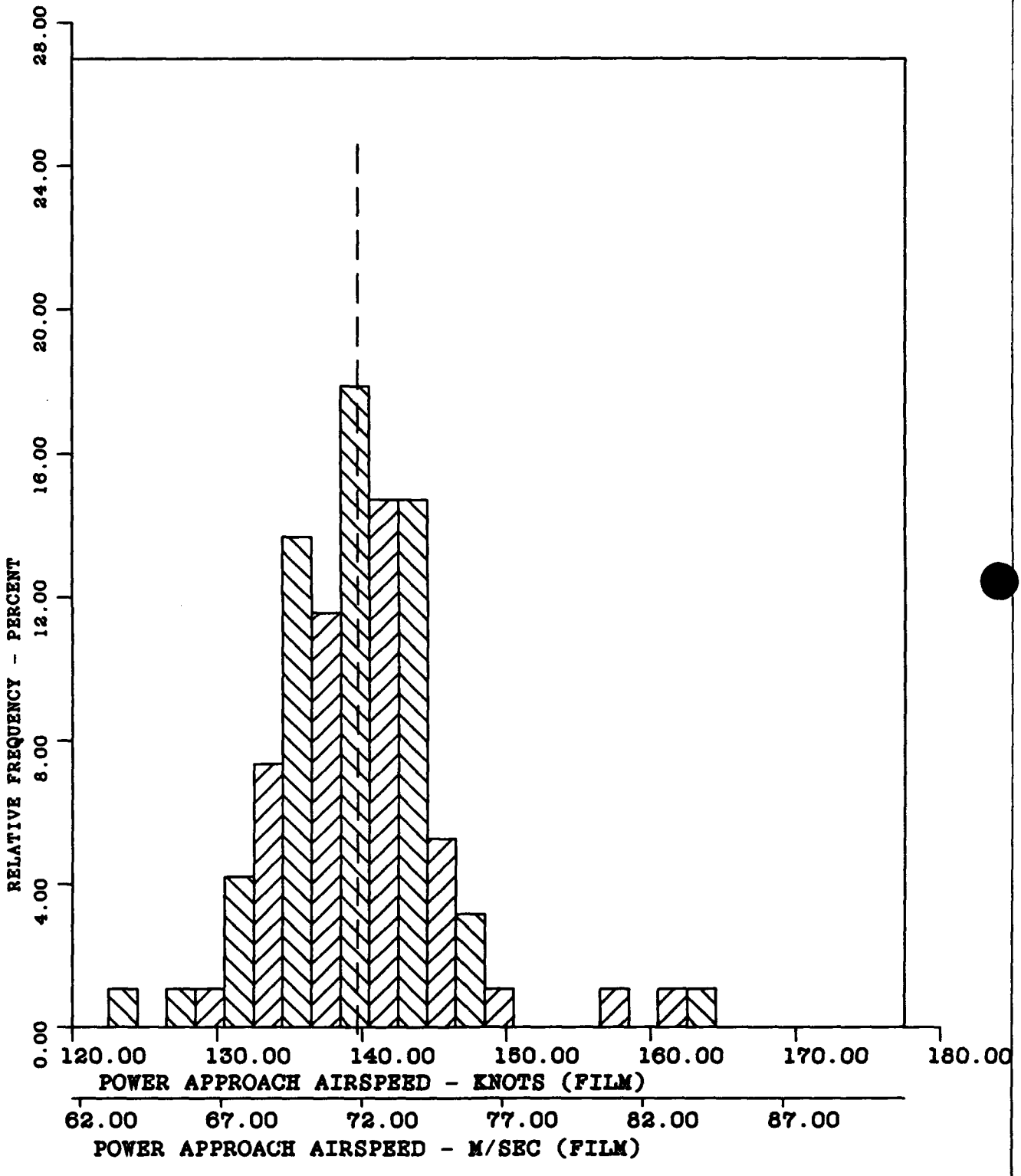


FIGURE C-3 FREQUENCY DISTRIBUTION OF FILM MEASURED POWER APPROACH AIRSPEED AT THE RAMP

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-95 $\bar{X}$-139.66 KNOTS (71.84 METRES/SEC) A3-1.15
S-5.87 KNOTS (3.02 METRES/SEC) A4-6.93
CURVE FITTED - PEARSON TYPE III

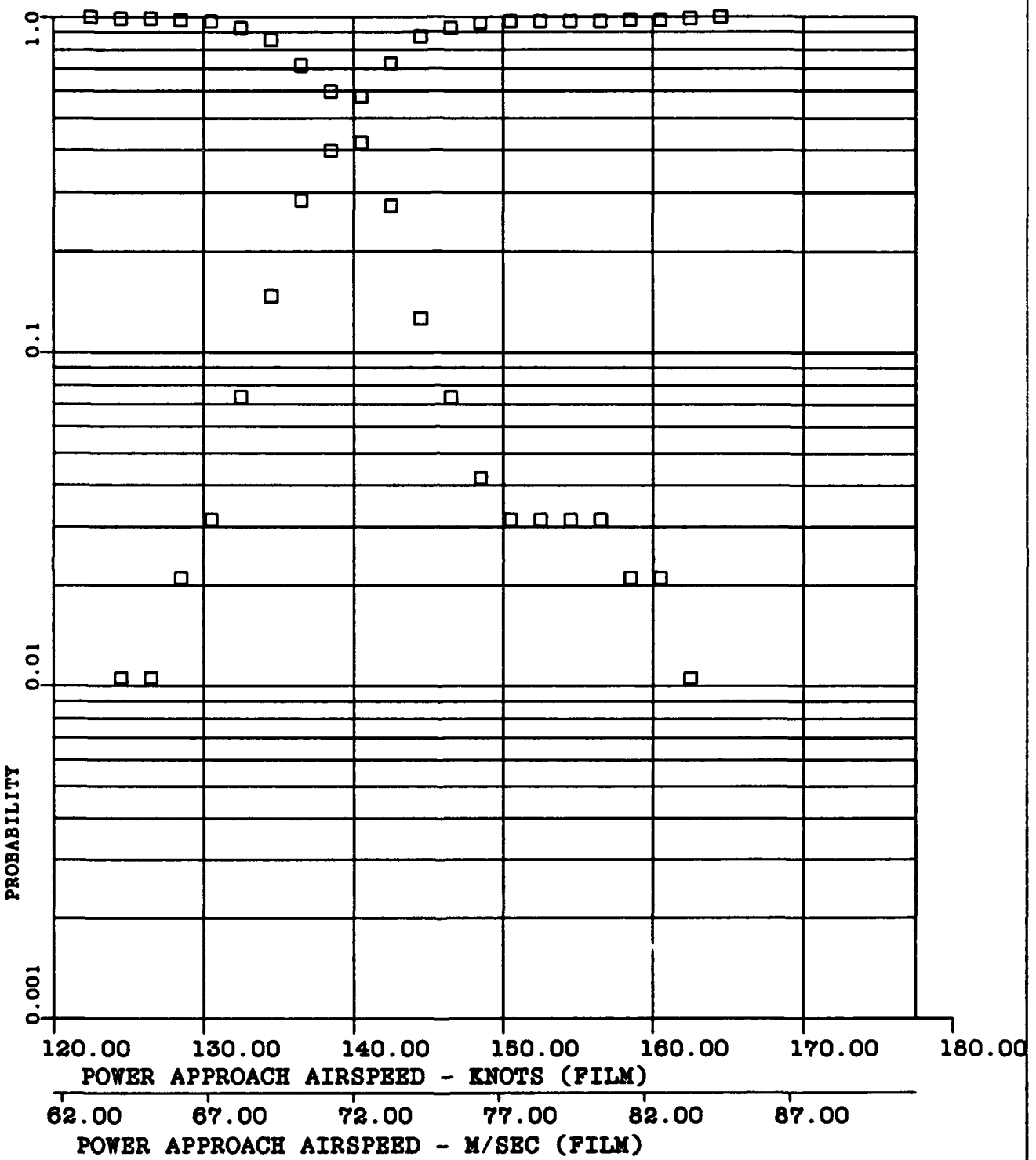


FIGURE C-4 PROBABILITY DISTRIBUTION OF POWER APPROACH AIRSPEED AT THE RAMP (FILM)

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=95 $\bar{X}$=10.85 FEET/SEC (3.30 METRES/SEC) A3=-.05
S=2.74 FEET/SEC (.83 METRES/SEC) A4=3.74

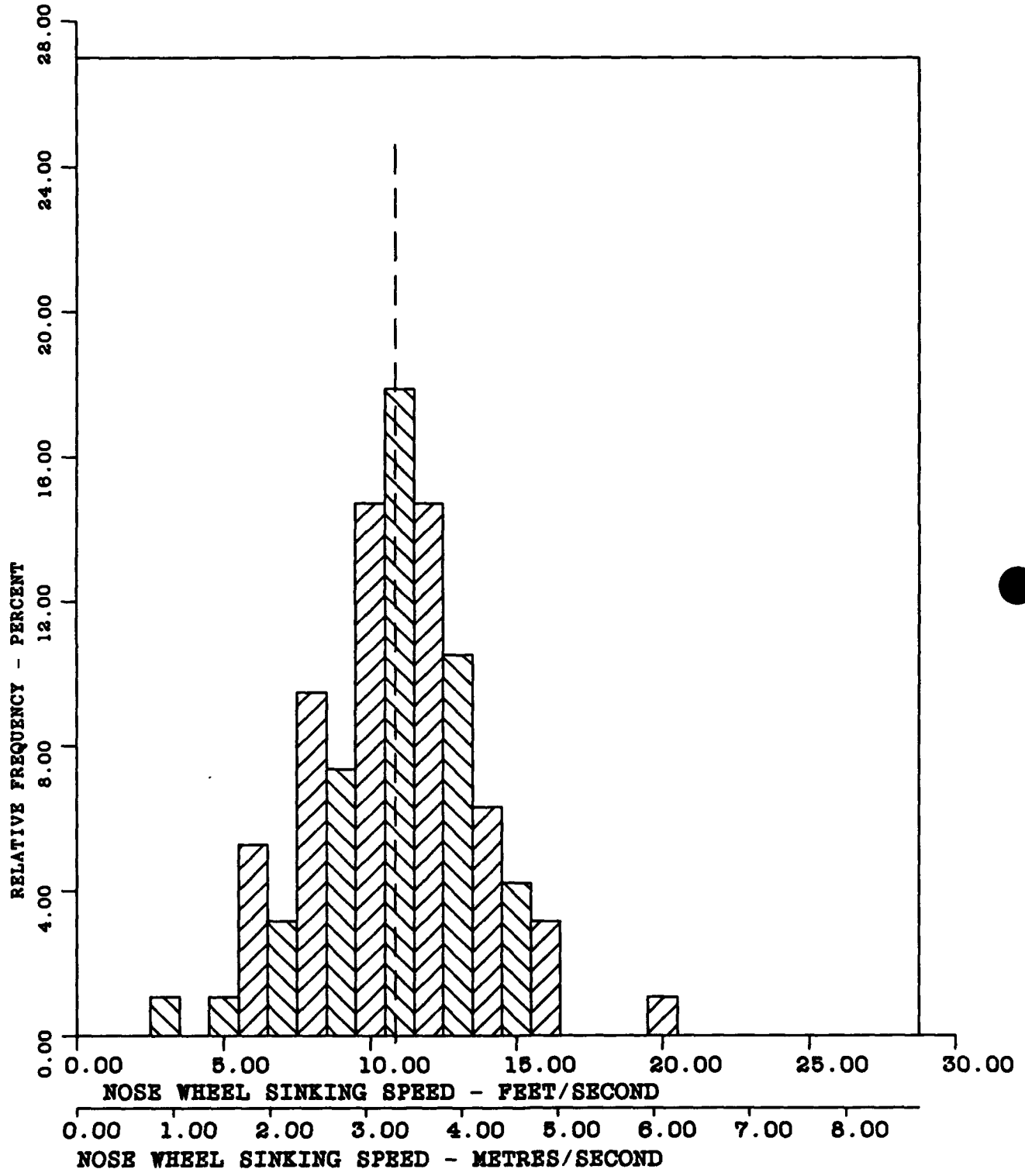


FIGURE C-5 FREQUENCY DISTRIBUTION OF NOSE WHEEL SINKING SPEED

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-95 $\bar{X}$-10.85 FEET/SEC (3.30 METRES/SEC) A3=-.05
S-2.74 FEET/SEC (.83 METRES/SEC) A4=3.74
CURVE FITTED - NORMAL

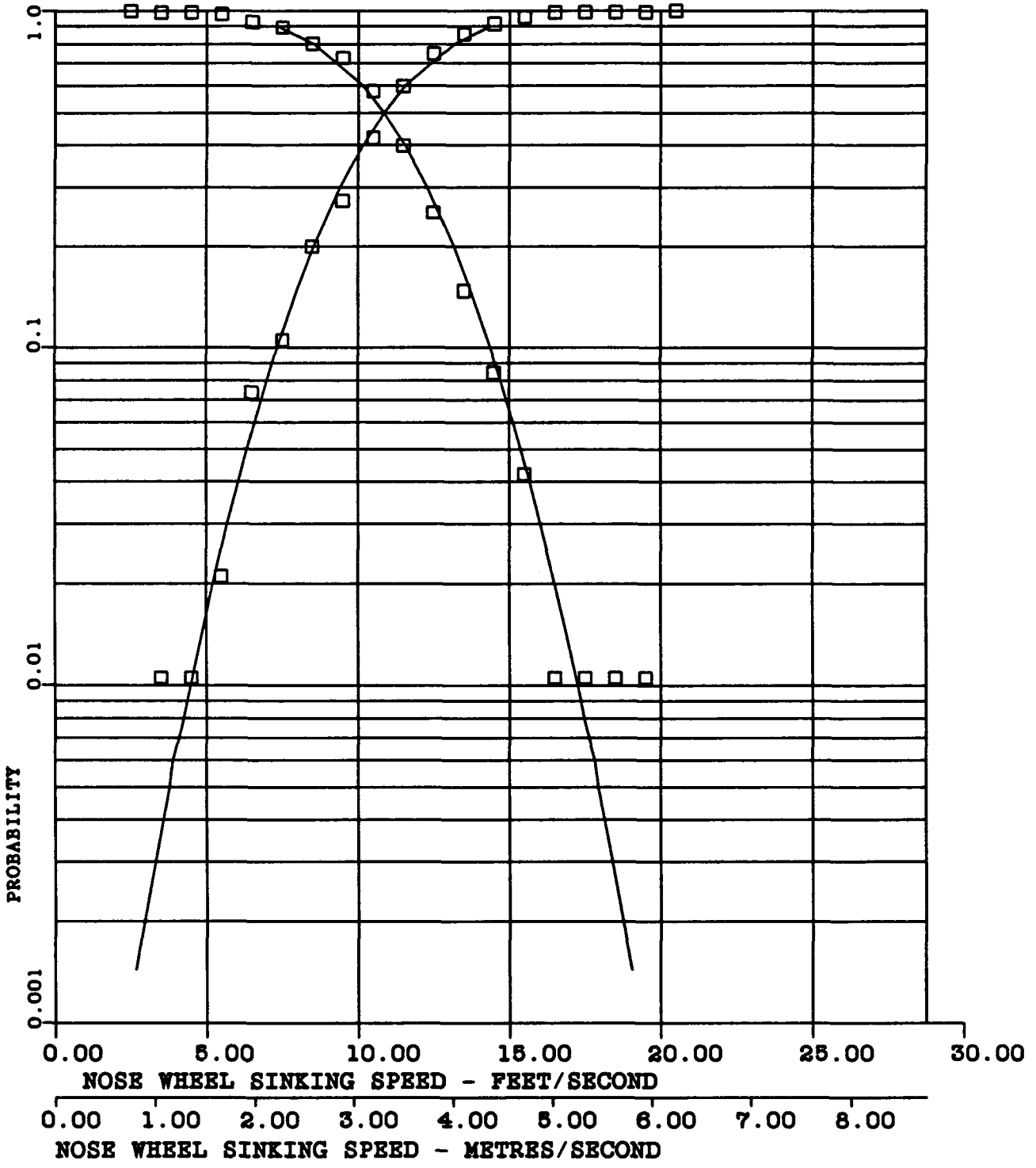


FIGURE C-6 PROBABILITY DISTRIBUTION OF NOSE WHEEL SINKING SPEED

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-95 $\bar{X}$-12.11 FEET/SEC (3.69 METRES/SEC) A3=-.10
S-2.92 FEET/SEC (.89 METRES/SEC) A4-3.21

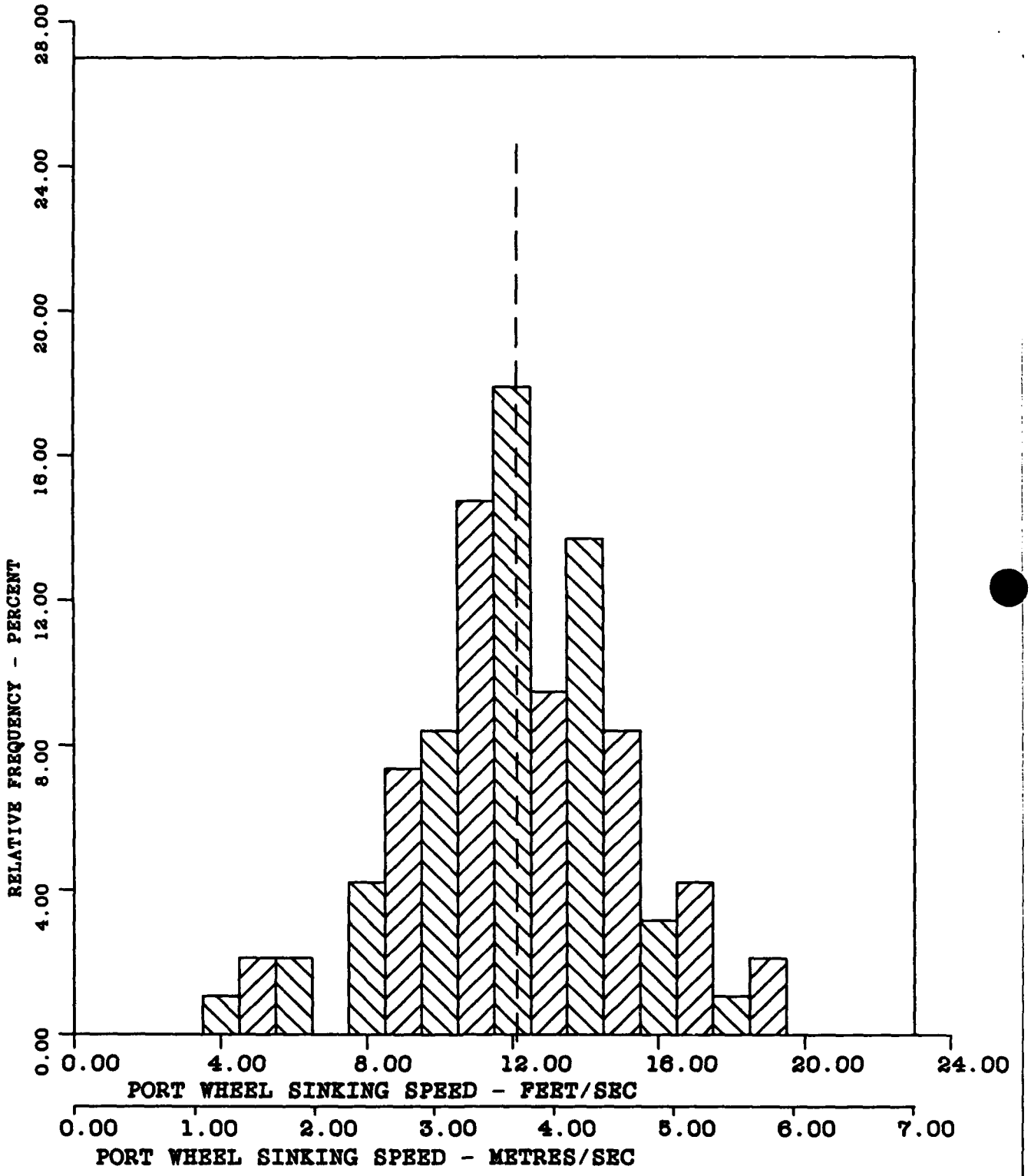


FIGURE C-7 FREQUENCY DISTRIBUTION OF PORT WHEEL SINKING SPEED AT PORT WHEEL TOUCHDOWN

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-95 $\bar{X}$-12.11 FEET/SEC (3.69 METRES/SEC) A3=-.10
S-2.92 FEET/SEC (.89 METRES/SEC) A4-3.21
CURVE FITTED - NORMAL

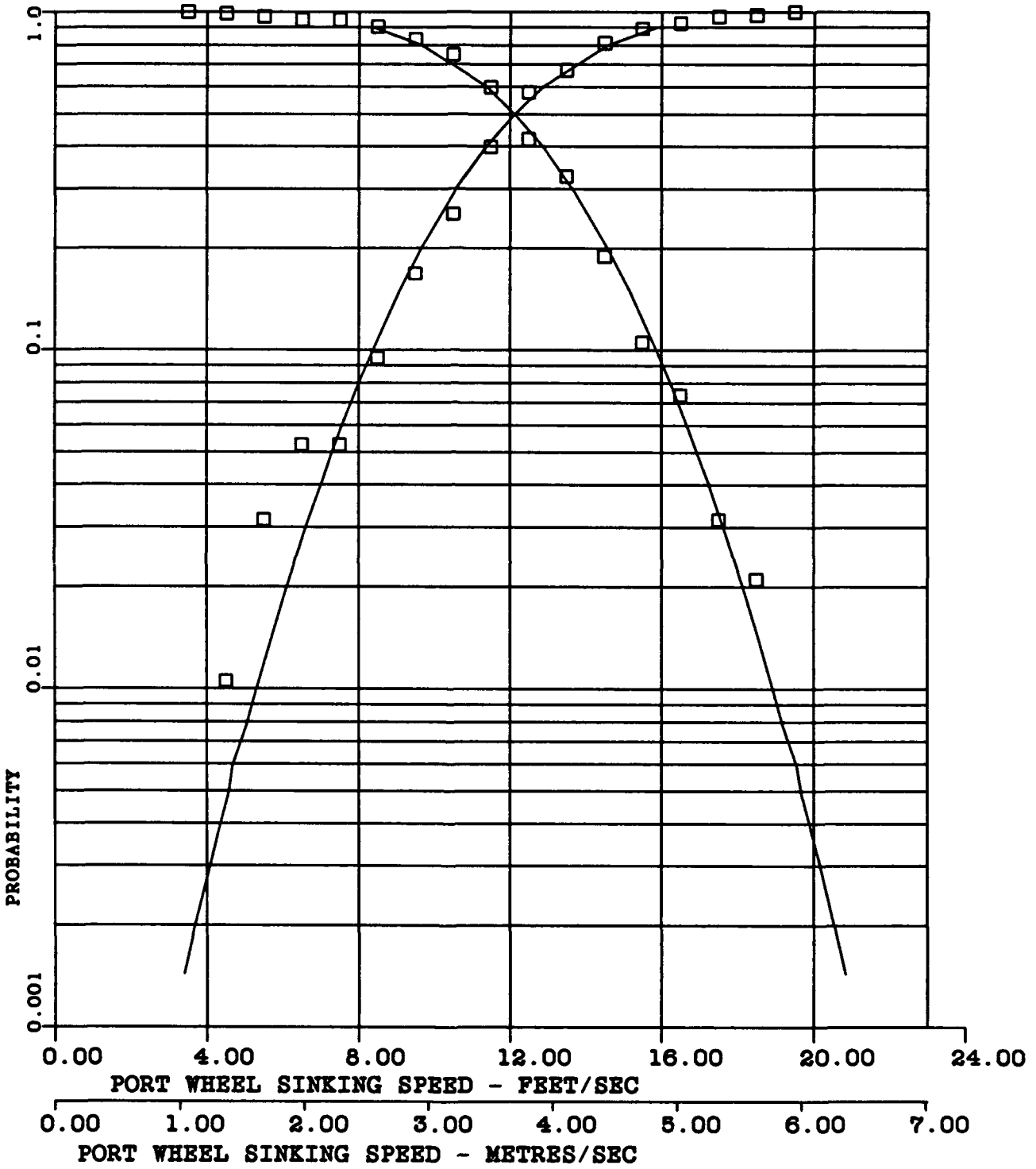


FIGURE C-8 PROBABILITY DISTRIBUTION OF PORT WHEEL SINKING SPEED

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-95 $\bar{X}$-11.62 FEET/SEC (3.54 METRES/SEC) A3=-.27
S-2.92 FEET/SEC (.89 METRES/SEC) A4-2.91

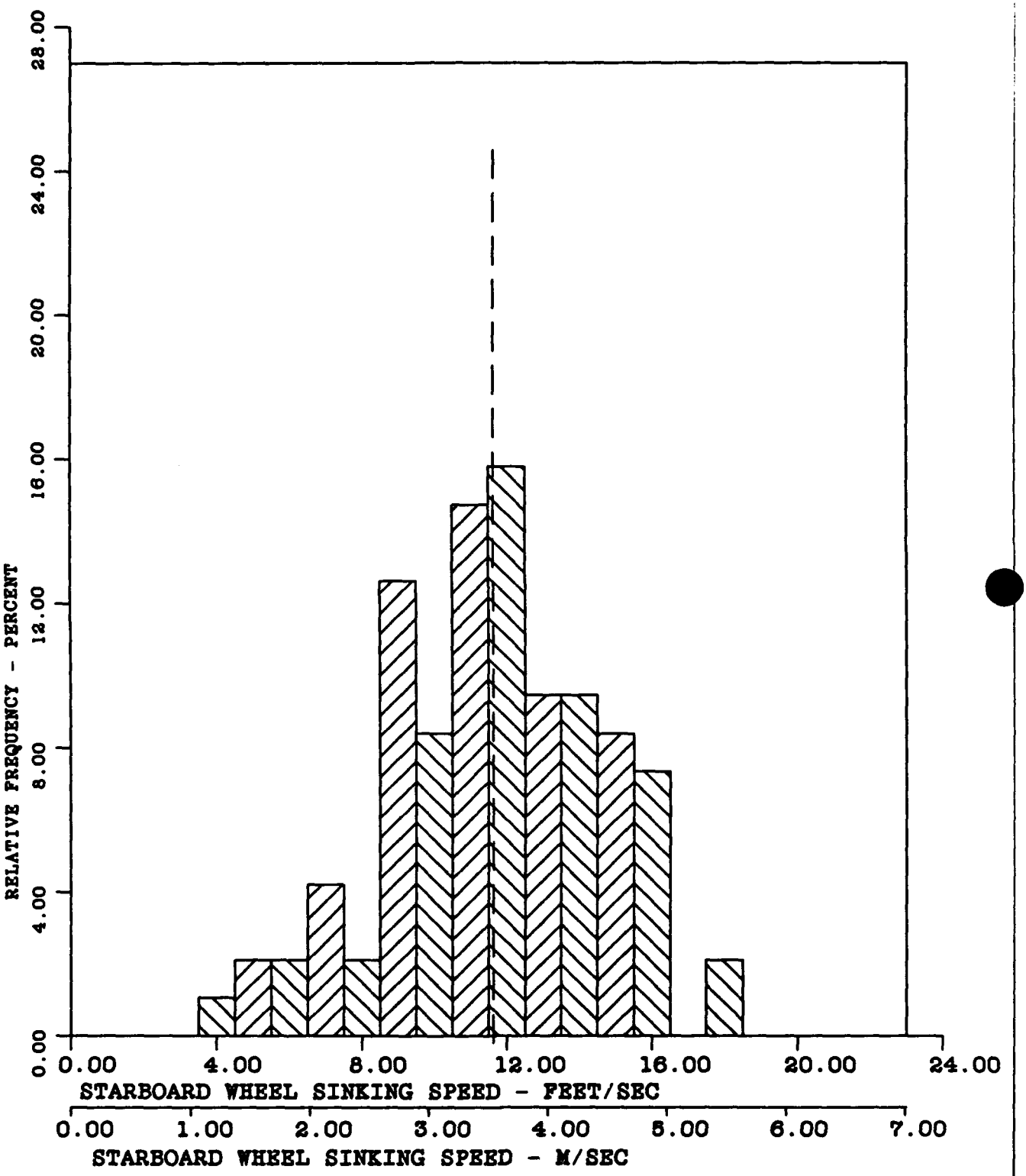


FIGURE C-9 FREQUENCY DISTRIBUTION OF STARBOARD WHEEL SINKING SPEED AT STARBOARD WHEEL TOUCHDOWN

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-95 $\bar{X}$-11.62 FEET/SEC (3.54 METRES/SEC) A3=-.27
S-2.92 FEET/SEC (.89 METRES/SEC) A4-2.91
CURVE FITTED - NORMAL

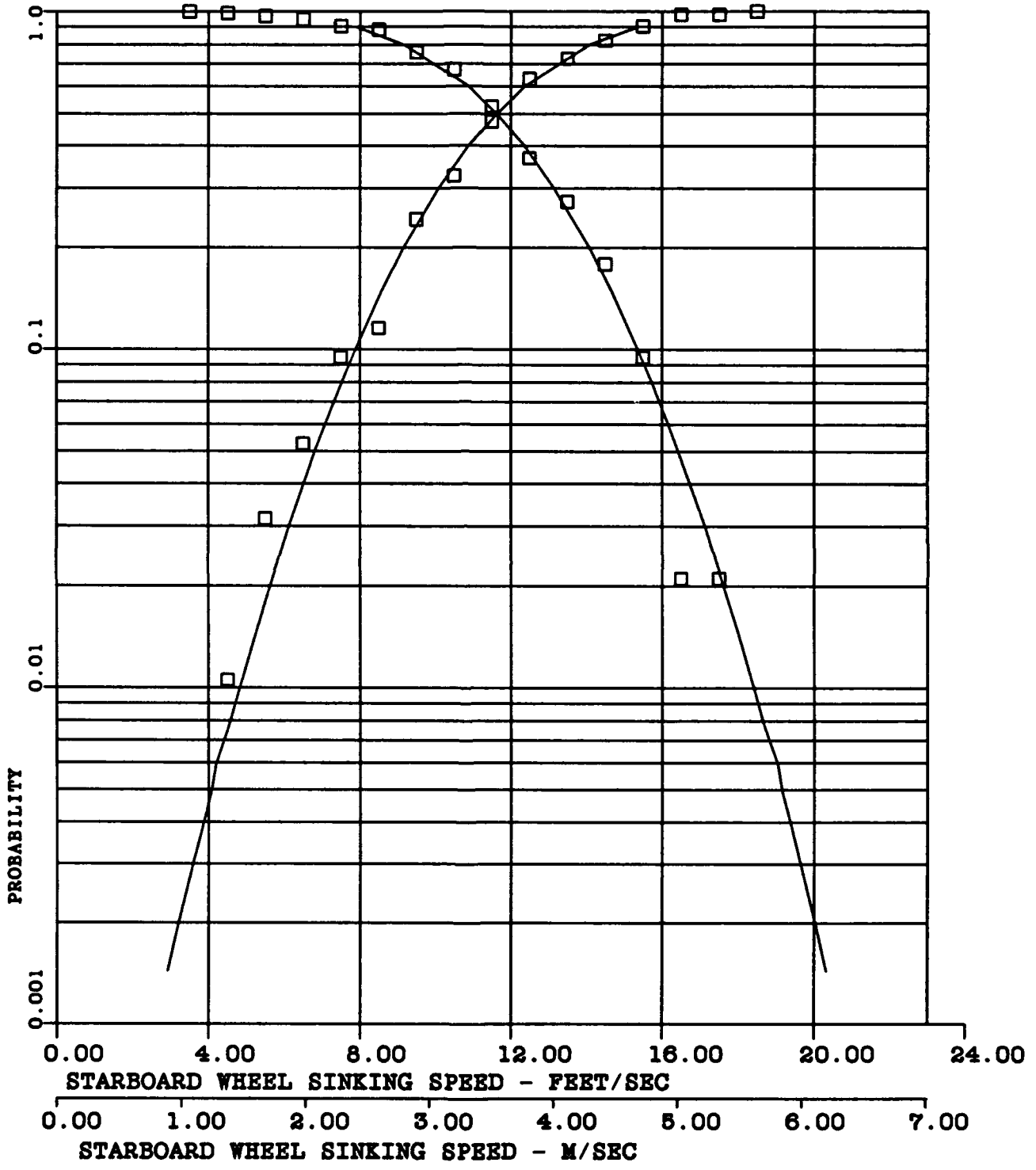


FIGURE C-10 PROBABILITY DISTRIBUTION OF STARBOARD WHEEL SINKING SPEED

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-95 $\bar{X}$-11.85 FEET/SEC (3.61 METRES/SEC) A3=-.44
S-2.76 FEET/SEC (.84 METRES/SEC) A4-3.38

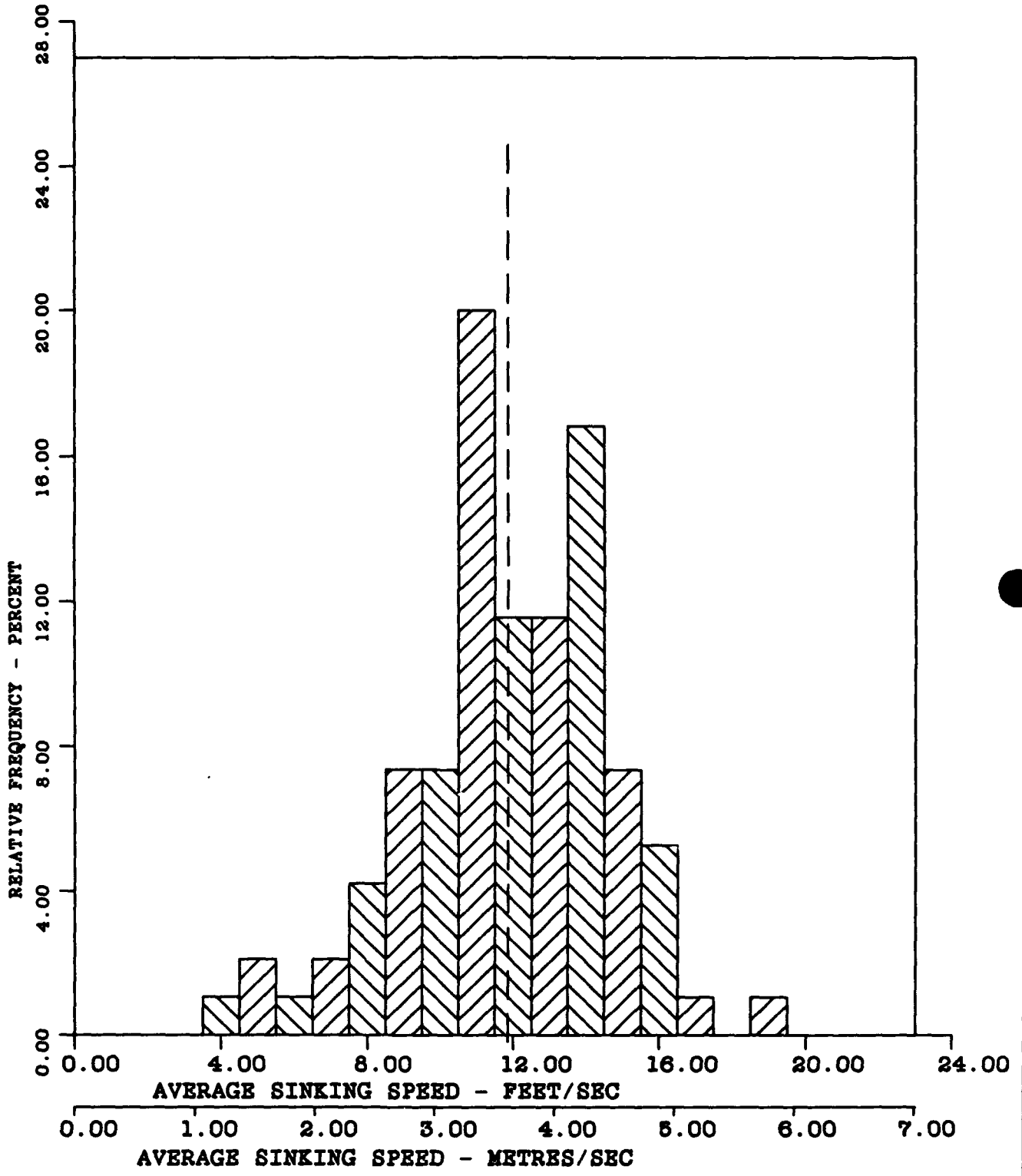


FIGURE C-11 FREQUENCY DISTRIBUTION OF AVG SINKING SPEED OF MAIN WHEEL AT FIRST MAIN WHEEL TOUCHDOWN

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-95 $\bar{X}$-11.85 FEET/SEC (3.61 METRES/SEC) A3=-.44
S-2.76 FEET/SEC (.84 METRES/SEC) A4-3.38
CURVE FITTED - NORMAL

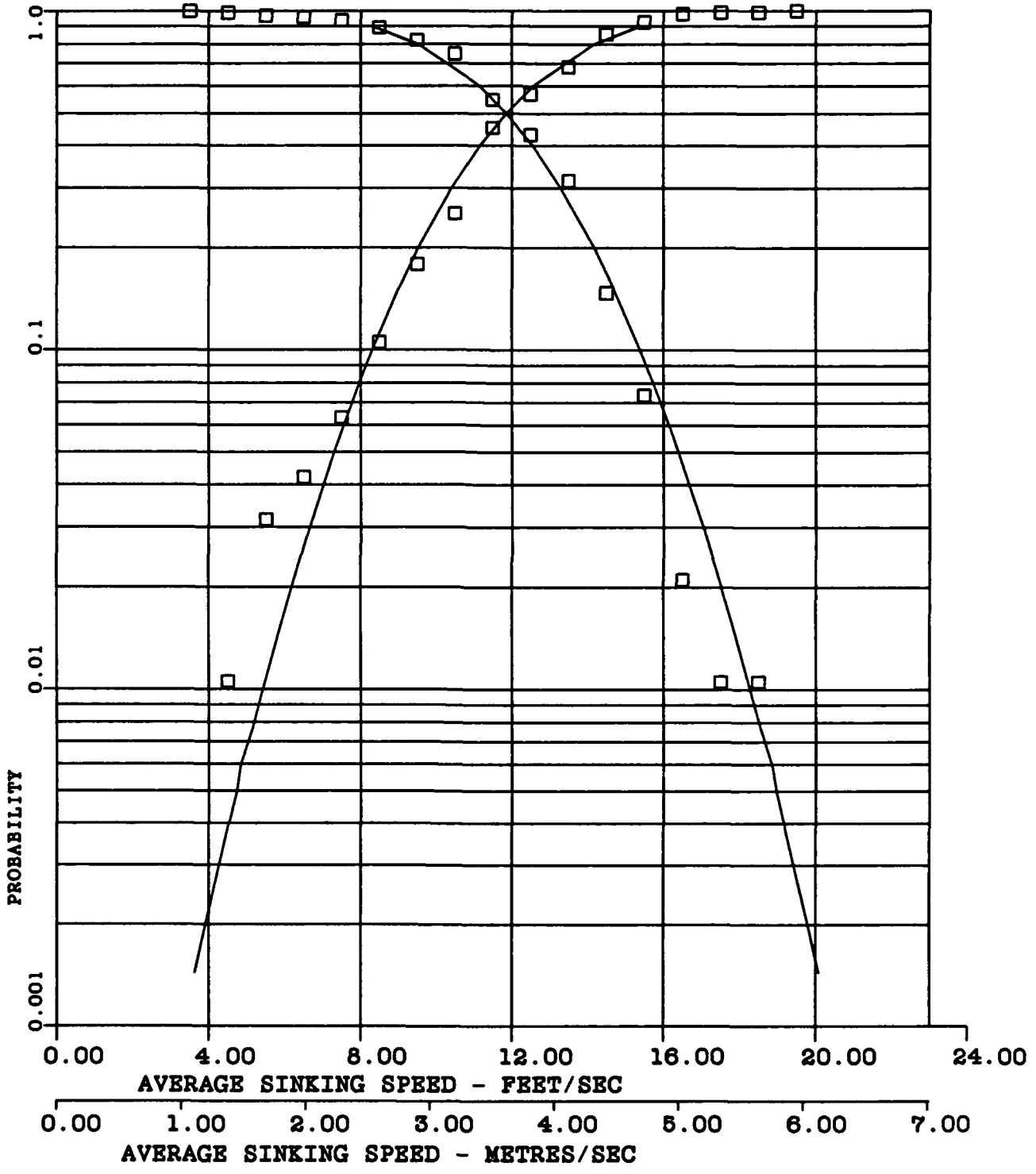


FIGURE C-12 PROBABILITY DISTRIBUTION OF AVERAGE SINKING SPEED AT FIRST MAIN WHEEL TOUCHDOWN

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-7 $\bar{X}$-12.21 FEET/SEC (3.72 METRES/SEC) A3=.57
S-1.99 FEET/SEC (.60 METRES/SEC) A4=1.89

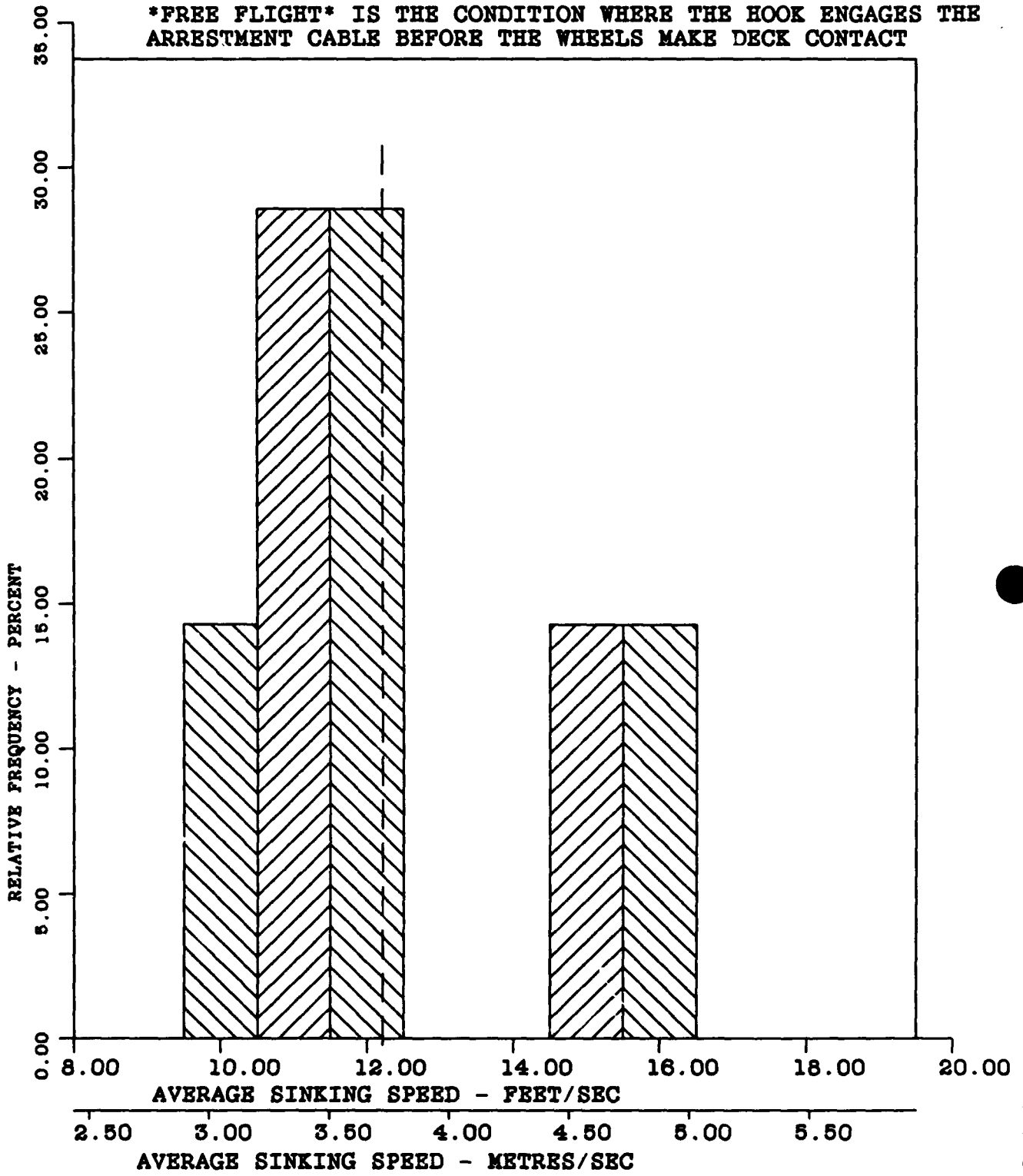


FIGURE C-13 FREQUENCY DISTRIBUTION OF AVERAGE SINKING SPEED OF MAIN WHEELS AT FREE FLIGHT

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=7 $\bar{X}$=12.21 FEET/SEC (3.72 METRES/SEC) A3=.57
S=1.99 FEET/SEC (.60 METRES/SEC) A4=1.89
CURVE FITTED - NORMAL
FREE FLIGHT IS THE CONDITION WHERE THE HOOK ENGAGES THE ARRESTMENT CABLE BEFORE THE WHEELS MAKE DECK CONTACT

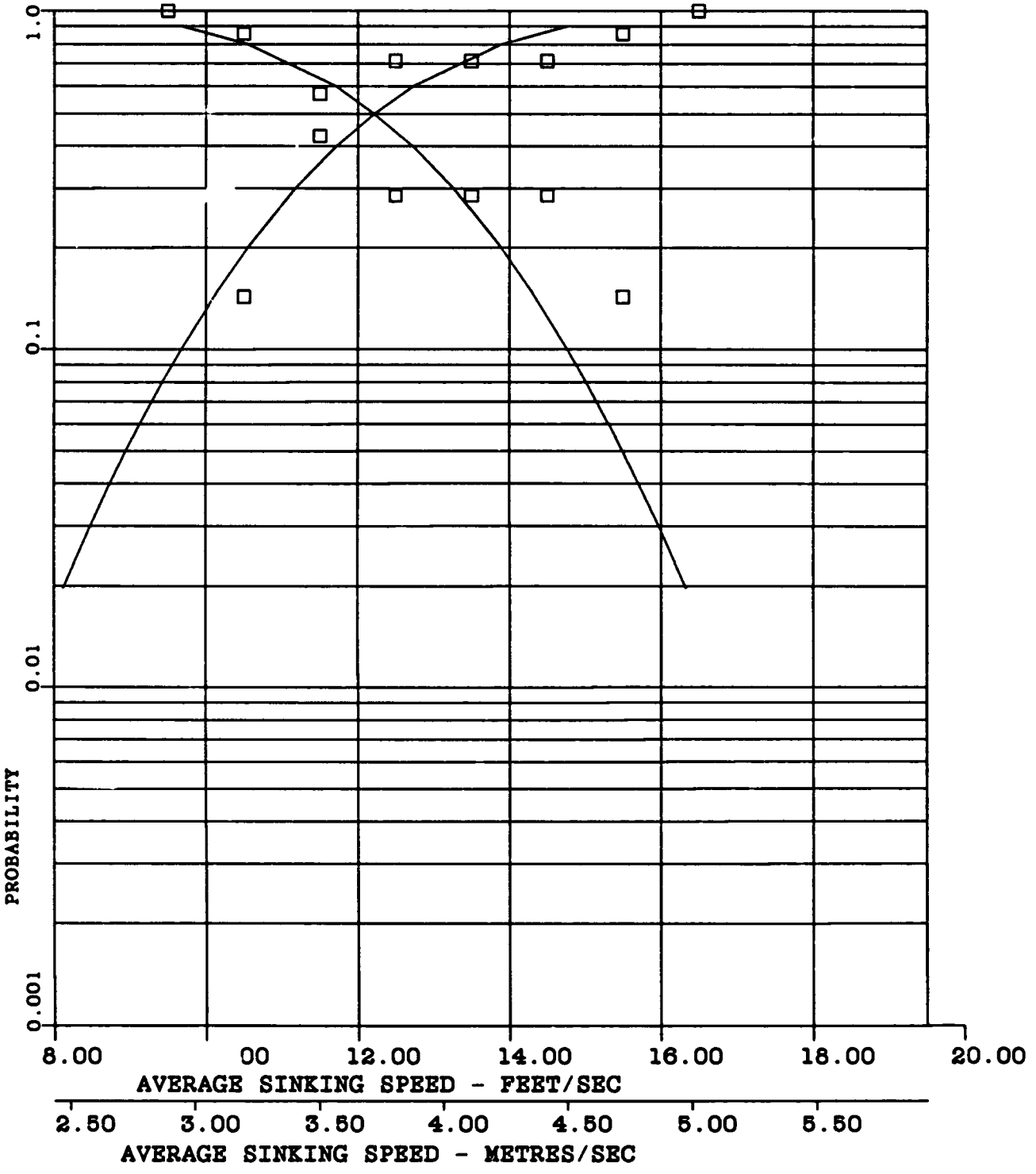


FIGURE C-14 PROBABILITY DISTRIBUTION OF AVERAGE SINKING SPEED AT FREE FLIGHT

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=95 $\bar{X}$=1.05 A3=.96
S=.11 A4=4.99

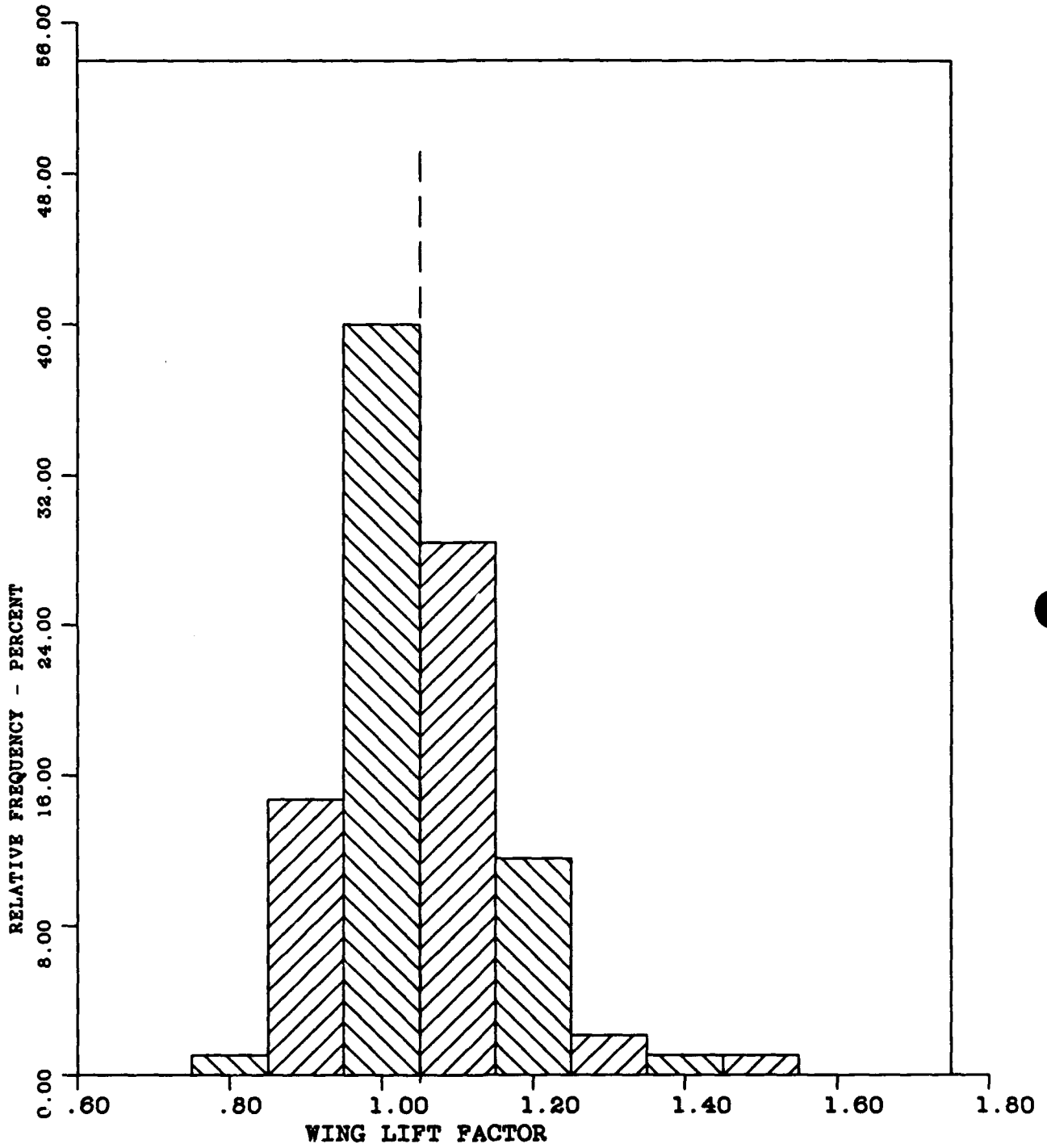


FIGURE C-15 FREQUENCY DISTRIBUTION OF WING LIFT FACTOR AT FIRST MAIN WHEEL TOUCHDOWN

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-95 $\bar{X}$-1.05 A3-.96
S-.11 A4-4.99
CURVE FITTED - PEARSON TYPE III

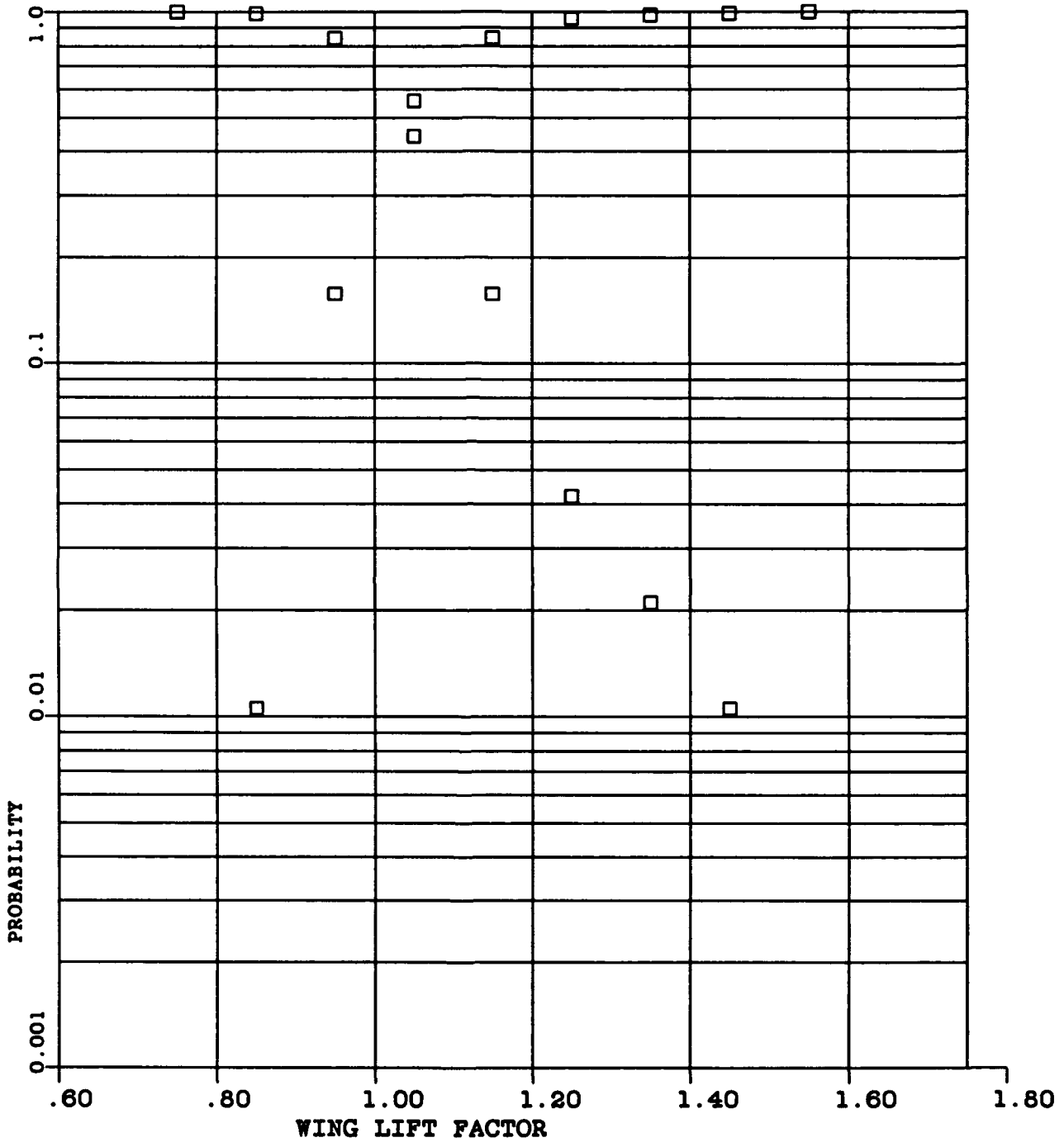


FIGURE C-16 PROBABILITY DISTRIBUTION OF WING LIFT FACTOR AT FIRST MAIN WHEEL TOUCHDOWN

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-7 $\bar{X}$-1.04 A3-.28
S-.04 A4-1.08

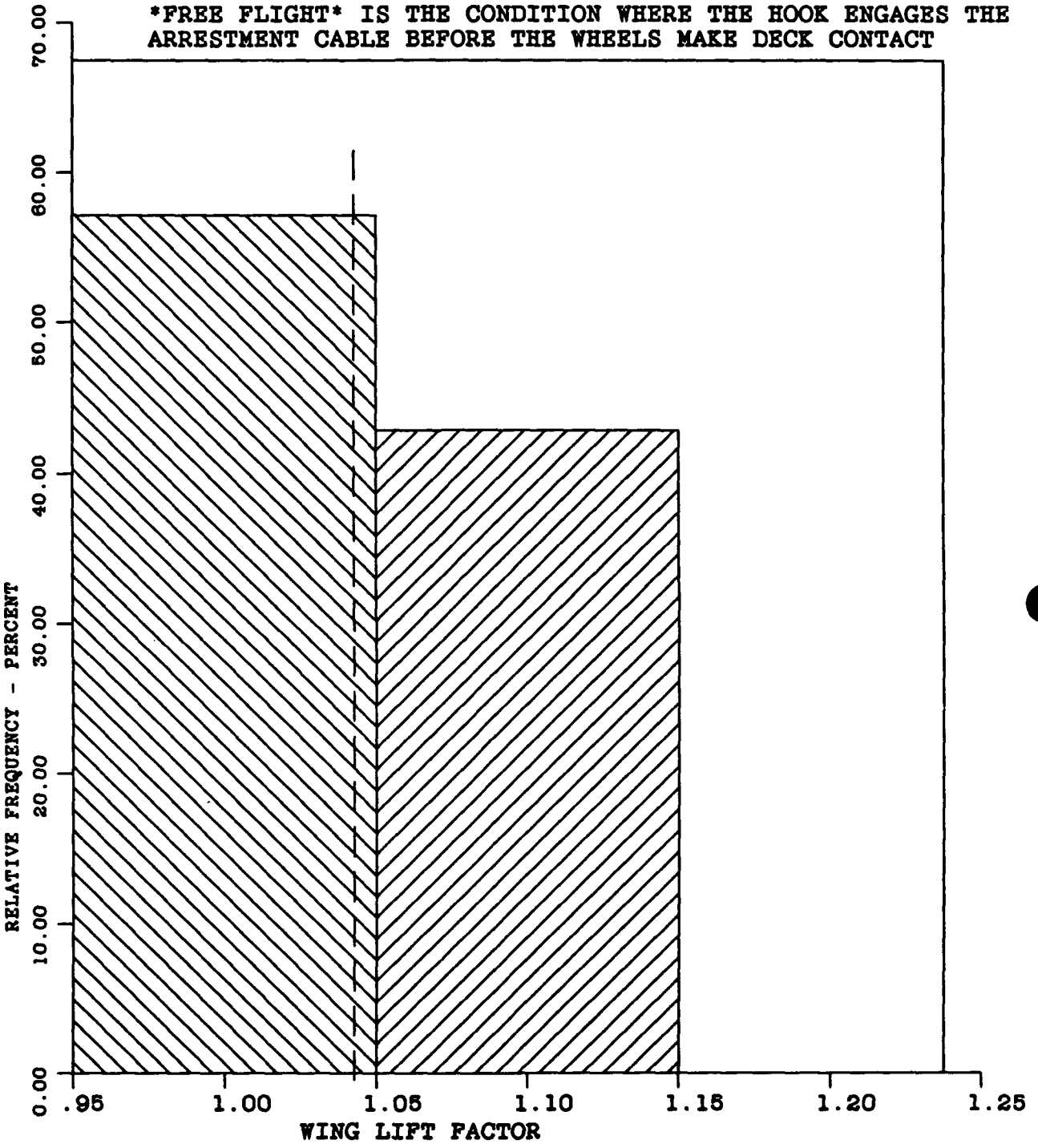


FIGURE C-17 FREQUENCY DISTRIBUTION OF WING LIFT FACTOR AT FREE FLIGHT

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=7 $\bar{X}$=1.04 A3=.28
S=.04 A4=1.08
CURVE FITTED - NORMAL
FREE FLIGHT IS THE CONDITION WHERE THE HOOK ENGAGES THE ARRESTMENT CABLE BEFORE THE WHEELS MAKE DECK CONTACT

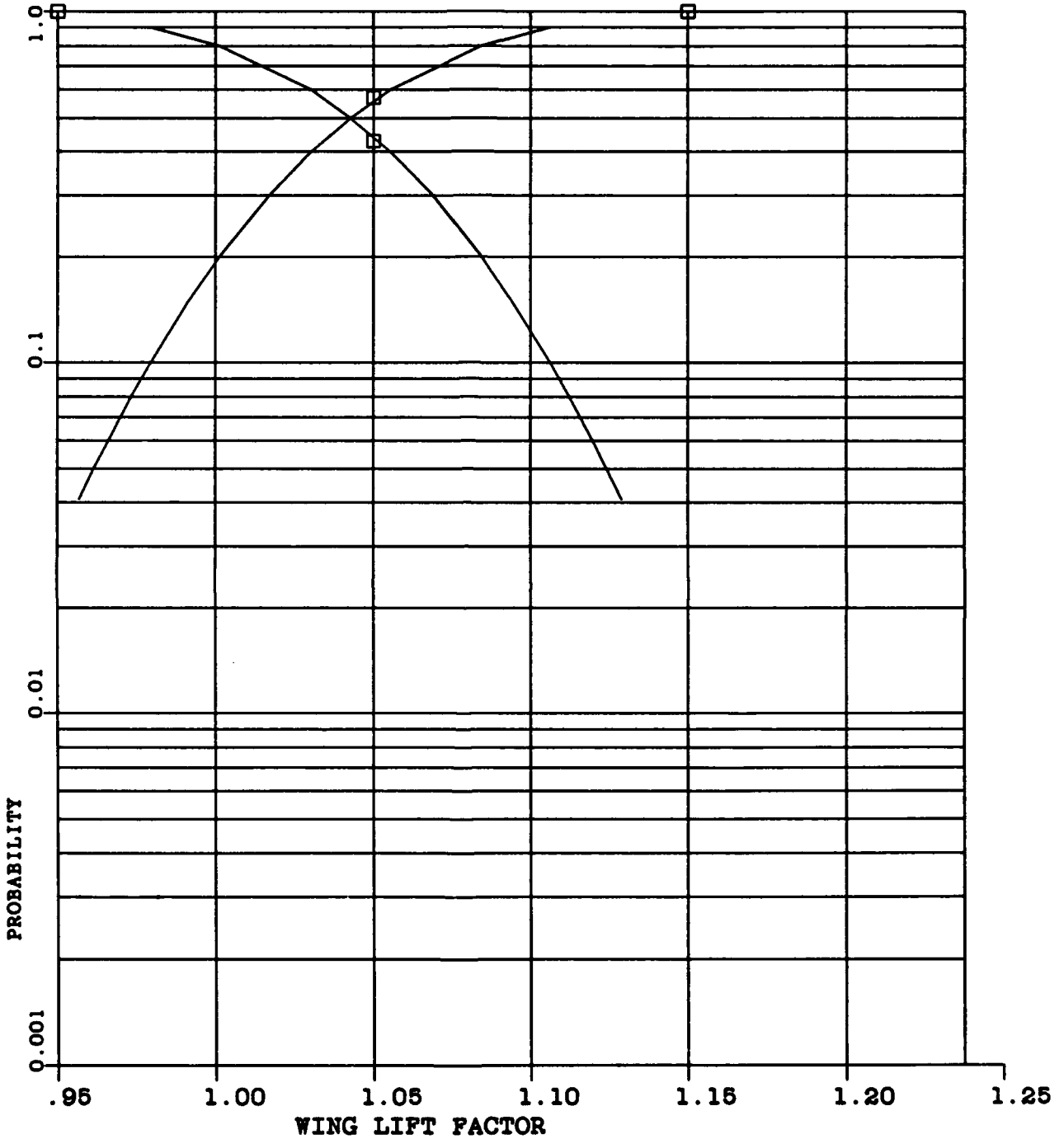


FIGURE C-18 PROBABILITY DISTRIBUTION OF WING LIFT FACTOR AT FREE FLIGHT

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N=95 $\bar{X}$-7.53 DEGREES (.131 RADIANS) A3=.67
S=1.33 DEGREES (.023 RADIANS) A4=5.89

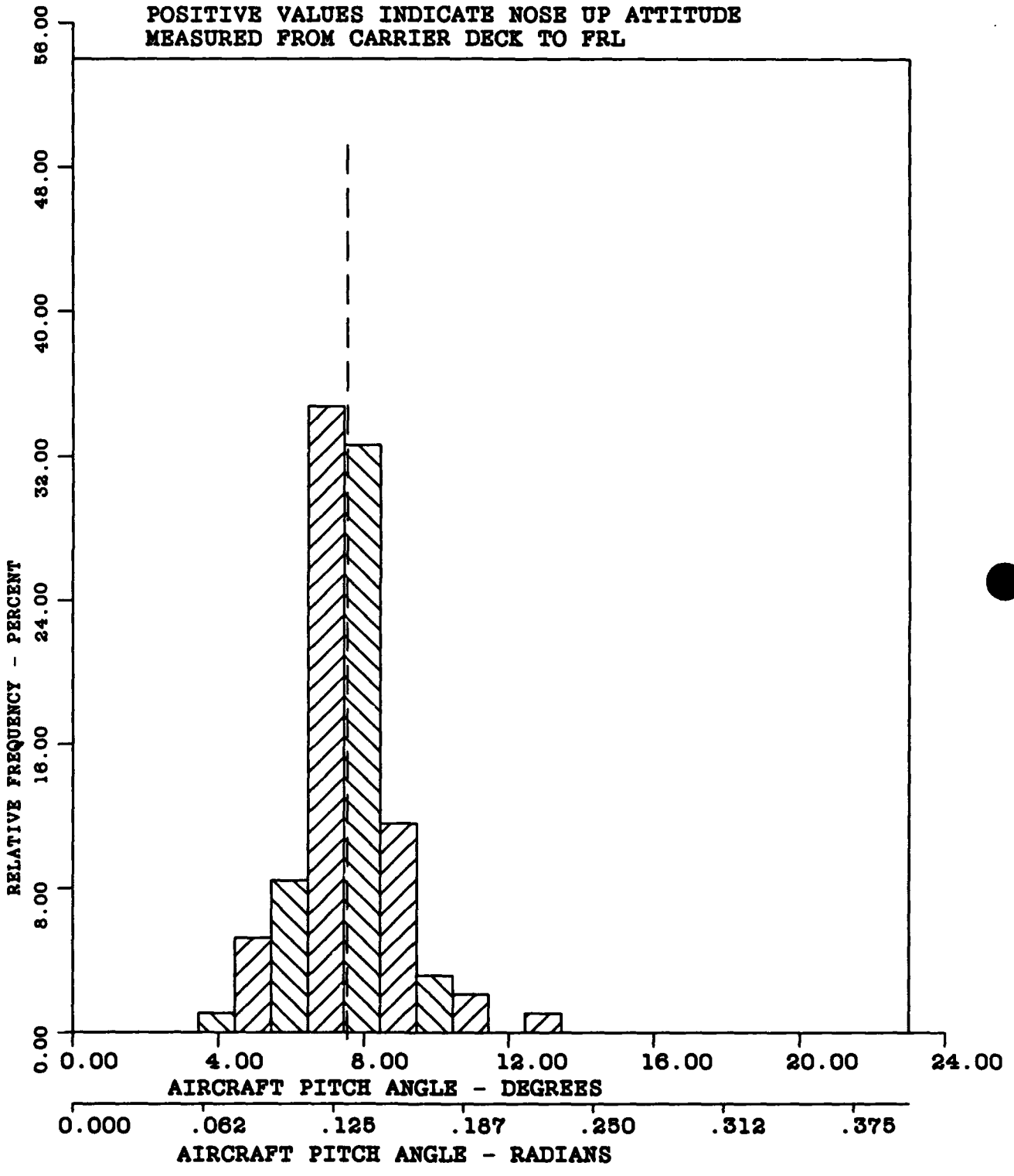


FIGURE C-19 FREQUENCY DISTRIBUTION OF AIRCRAFT PITCH ANGLE AT FIRST MAIN WHEEL TOUCHDOWN

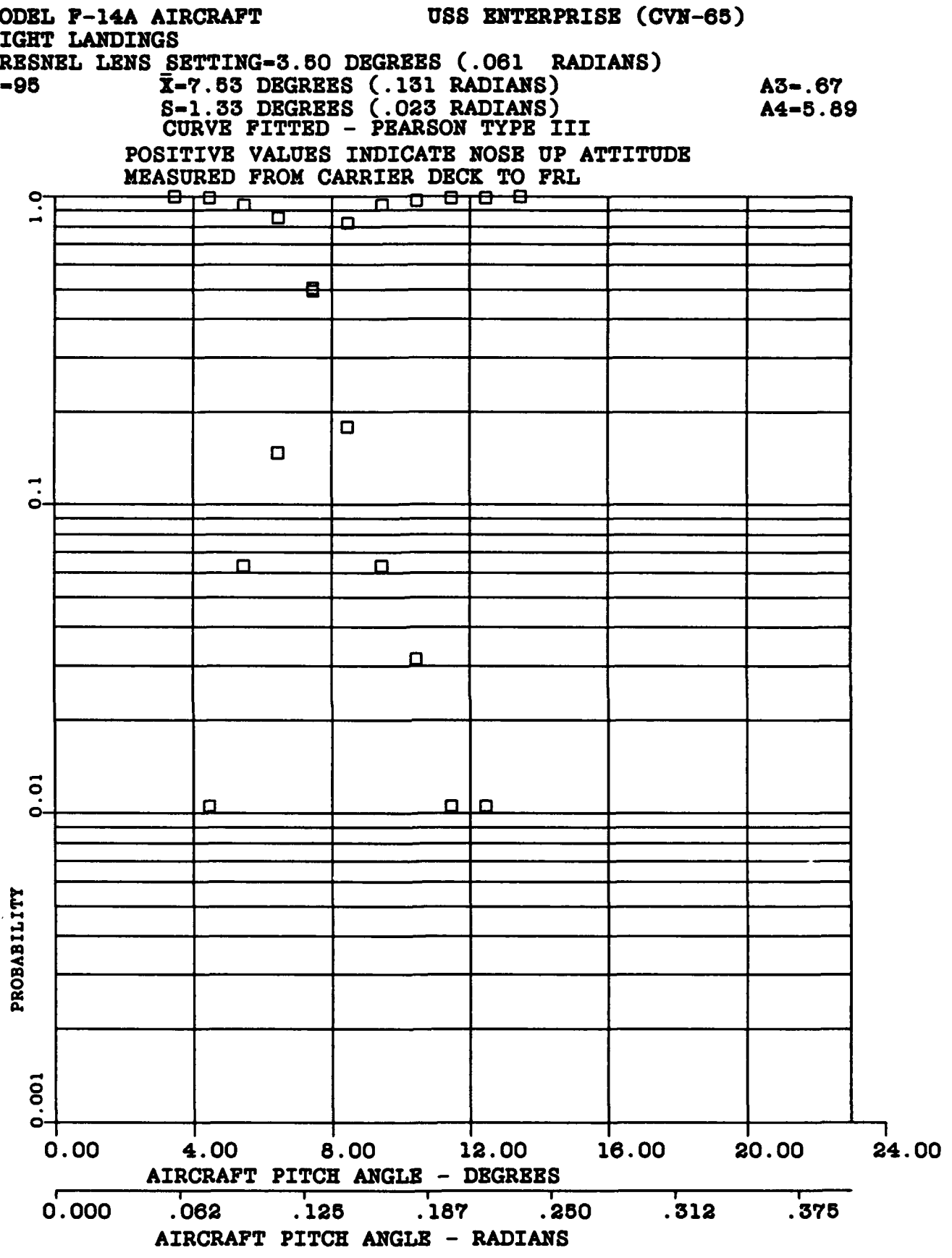


FIGURE C-20 PROBABILITY DISTRIBUTION OF AIRCRAFT PITCH ANGLE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N=7 $\bar{X}$=8.37 DEGREES (.146 RADIANS) A3=-.06
S=1.18 DEGREES (.020 RADIANS) A4=2.04

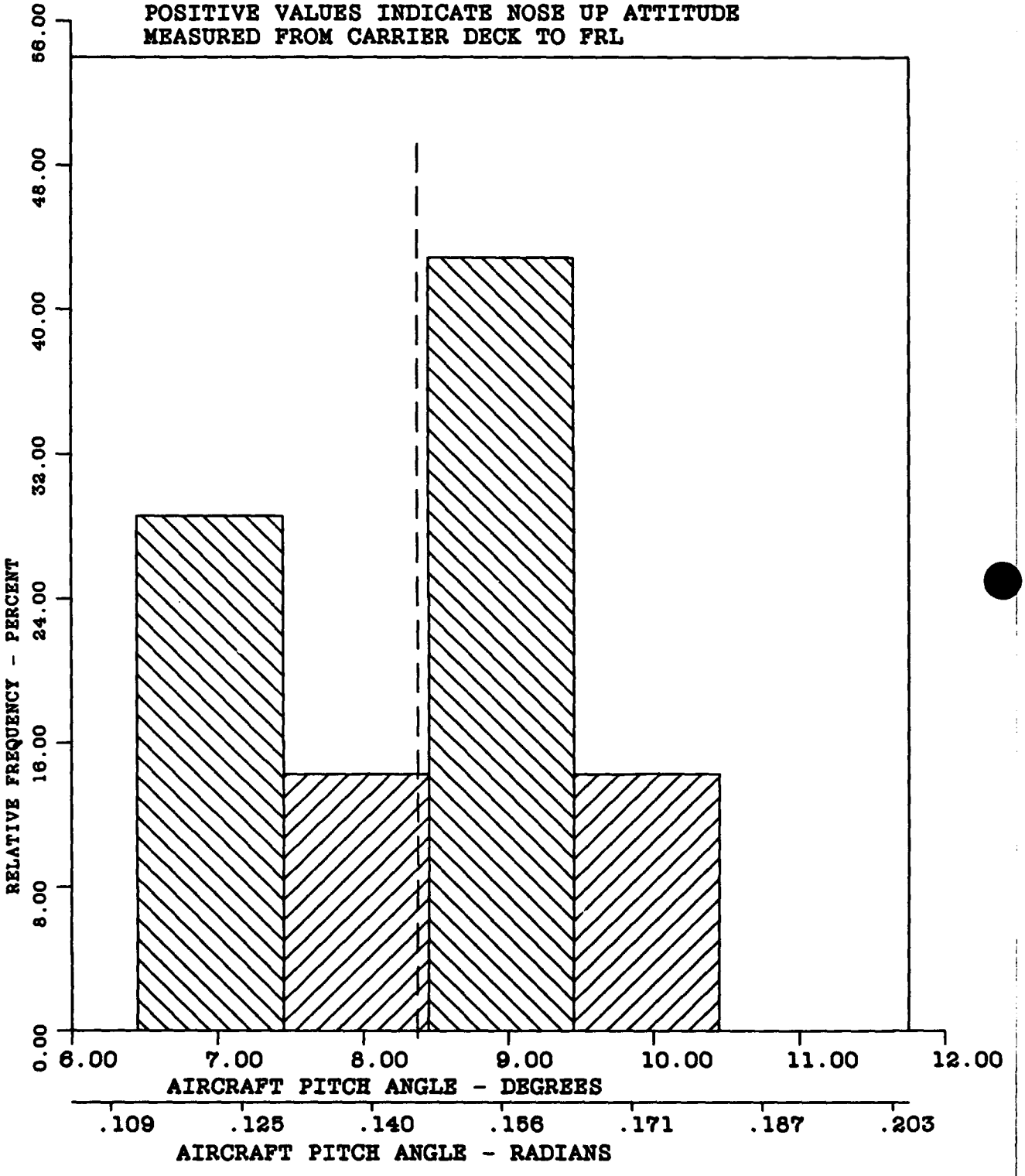


FIGURE C-21 FREQUENCY DISTRIBUTION OF AIRCRAFT PITCH ANGLE AT FREE FLIGHT

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-7 $\bar{X}$-8.37 DEGREES (.146 RADIANS) A3=-.06
S-1.18 DEGREES (.020 RADIANS) A4-2.04
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE NOSE UP ATTITUDE
MEASURED FROM CARRIER DECK TO FRL

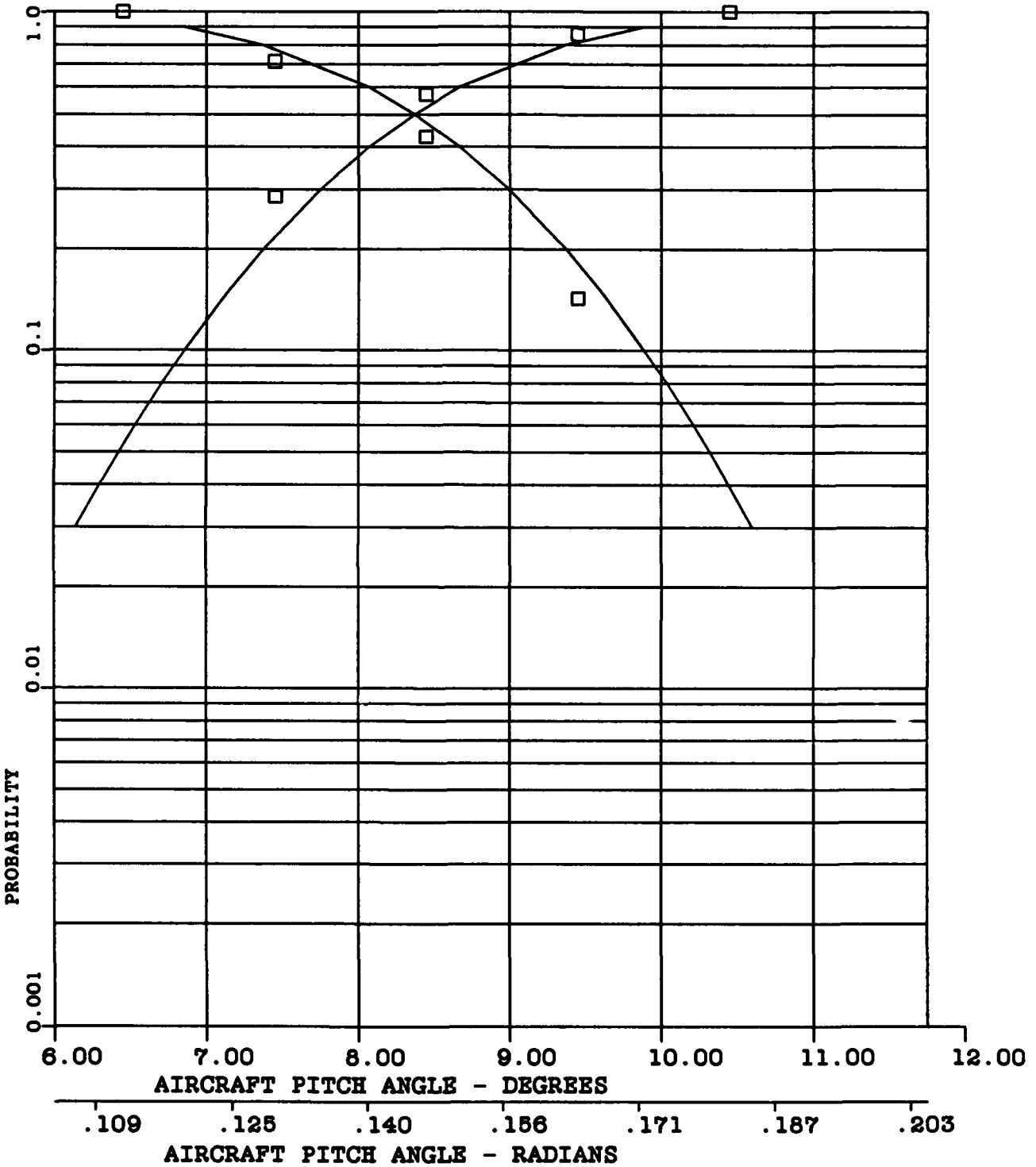


FIGURE C-22 PROBABILITY DISTRIBUTION OF AIRCRAFT PITCH ANGLE AT FREE FLIGHT

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=95 $\bar{X}$=-.29 DEGREES (-.005 RADIANS) A3=-.02
S=2.70 DEGREES (.047 RADIANS) A4=3.78

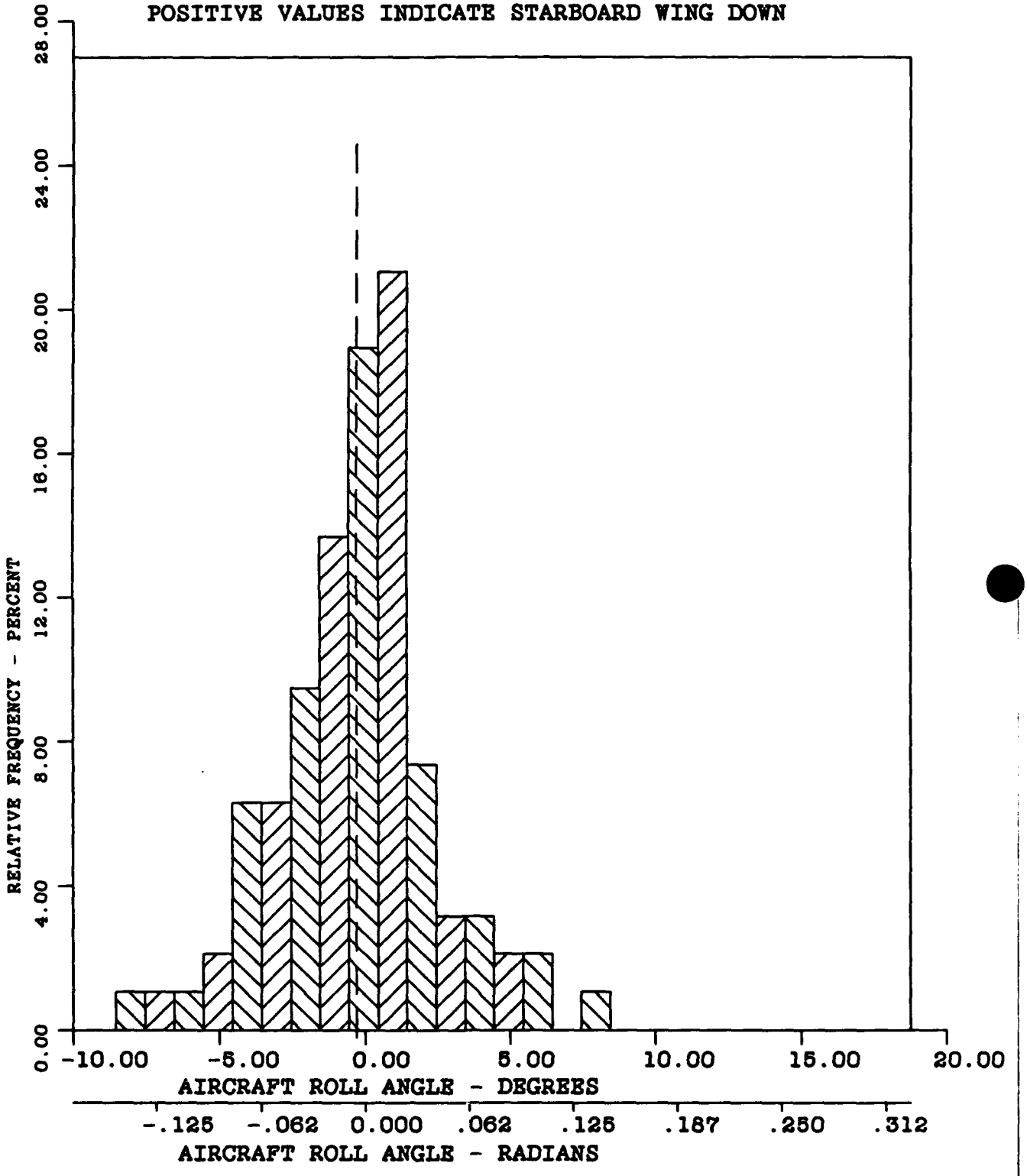


FIGURE C-23 FREQUENCY DISTRIBUTION OF AIRCRAFT ROLL ANGLE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-95 $\bar{X}$=-.29 DEGREES (-.005 RADIANS) A3=-.02
S=2.70 DEGREES (.047 RADIANS) A4=3.78
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE STARBOARD WING DOWN

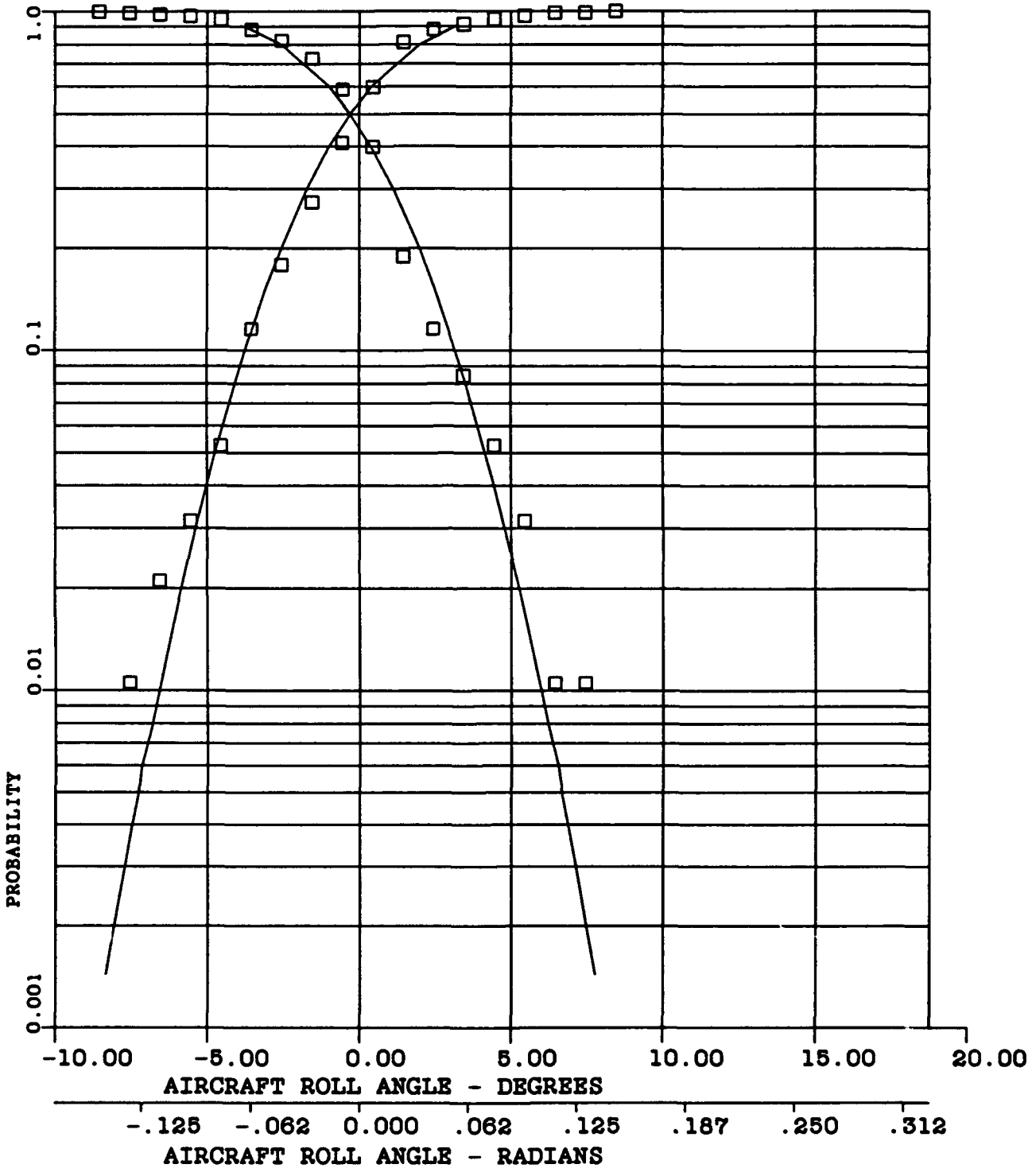


FIGURE C-24 PROBABILITY DISTRIBUTION OF AIRCRAFT ROLL ANGLE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=7 $\bar{X}$=.22 DEGREES (.003 RADIANS) A3=-.01
S=1.12 DEGREES (.019 RADIANS) A4=1.25

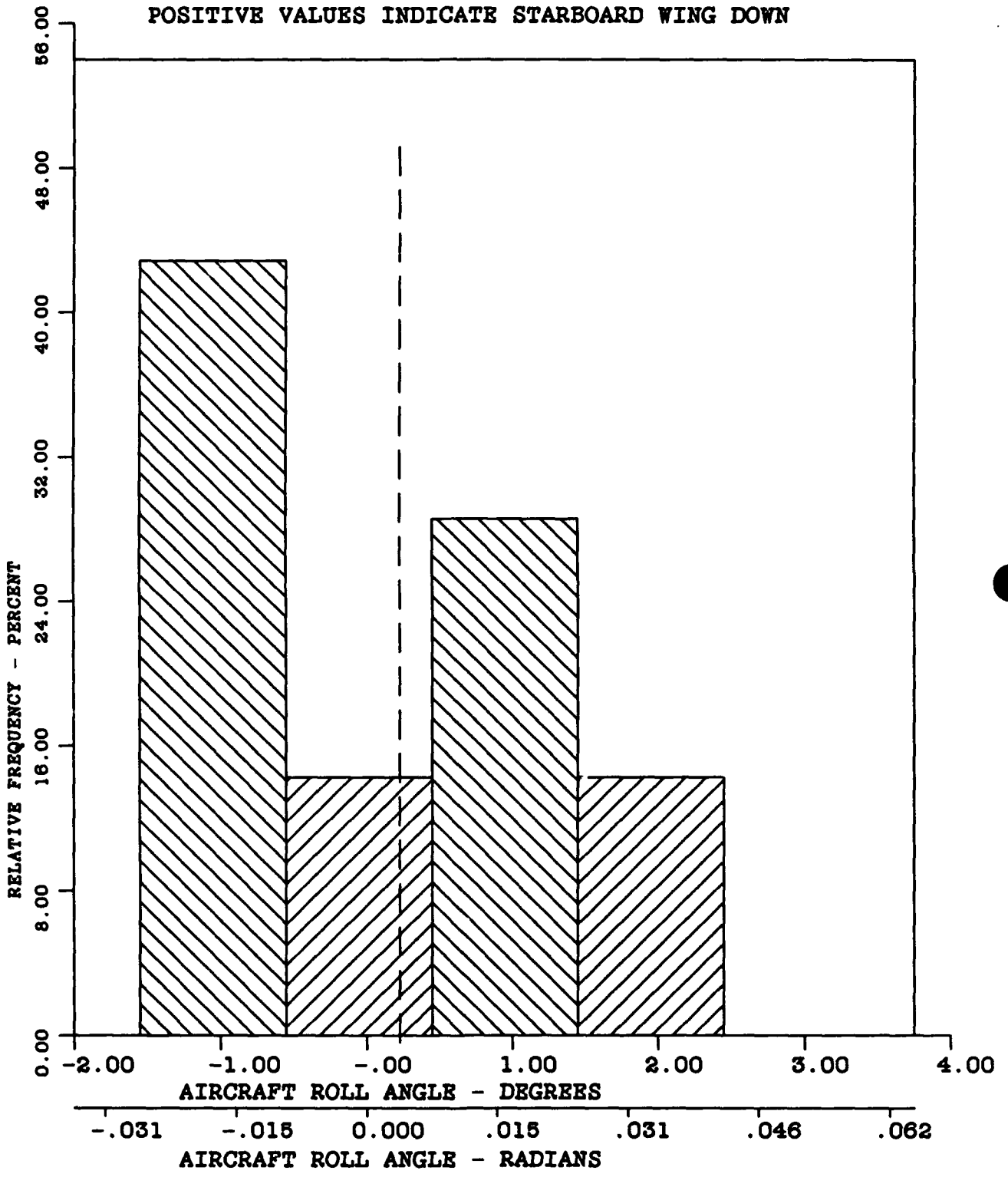


FIGURE C-25 FREQUENCY DISTRIBUTION OF AIRCRAFT ROLL ANGLE AT FREE FLIGHT

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-7 $\bar{X}$=-.22 DEGREES (.003 RADIANS) A3=-.01
S=1.12 DEGREES (.019 RADIANS) A4=1.25
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE STARBOARD WING DOWN

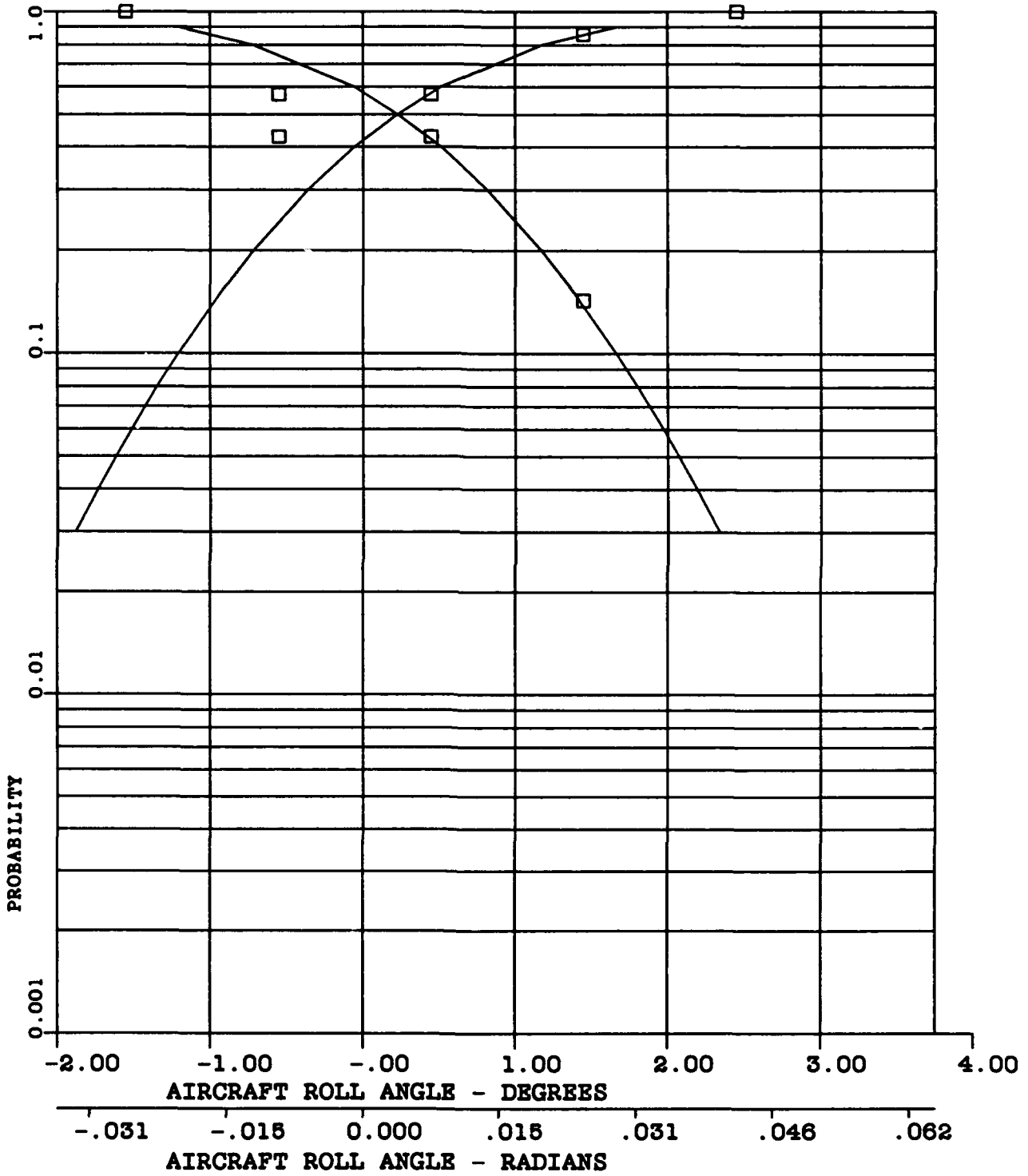


FIGURE C-26 PROBABILITY DISTRIBUTION OF AIRCRAFT ROLL ANGLE AT FREE FLIGHT

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-95 $\bar{X}$-256.17 FEET (78.08 METRES) A3=-.28
S-41.55 FEET (12.66 METRES) A4-2.67

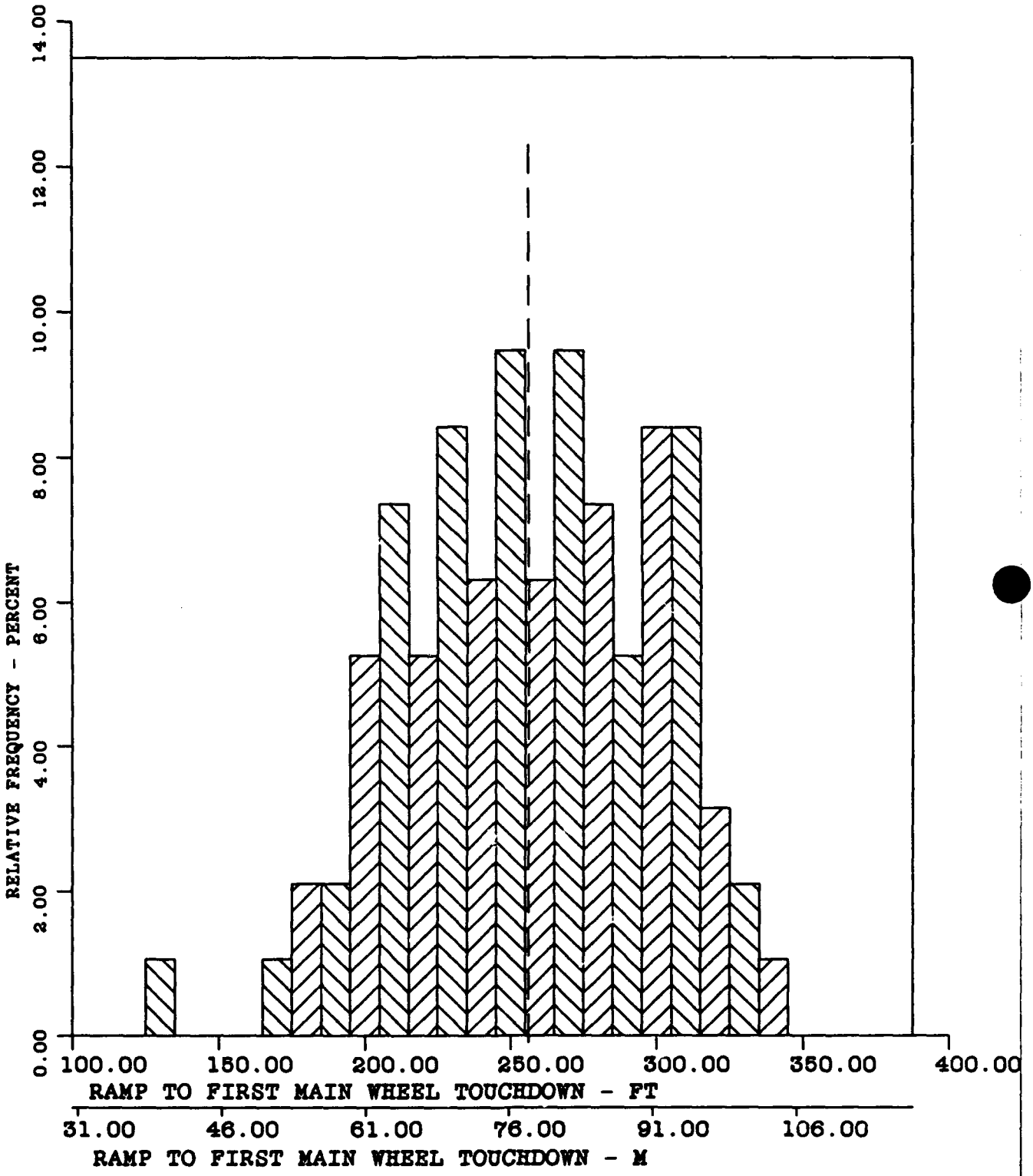


FIGURE C-27 FREQUENCY DISTRIBUTION OF DISTANCE FROM RAMP TO FIRST MAIN WHEEL TOUCHDOWN POINT

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-95 $\bar{X}$-256.17 FEET (78.08 METRES) A3=-.28
S-41.55 FEET (12.66 METRES) A4-2.67
CURVE FITTED - NORMAL

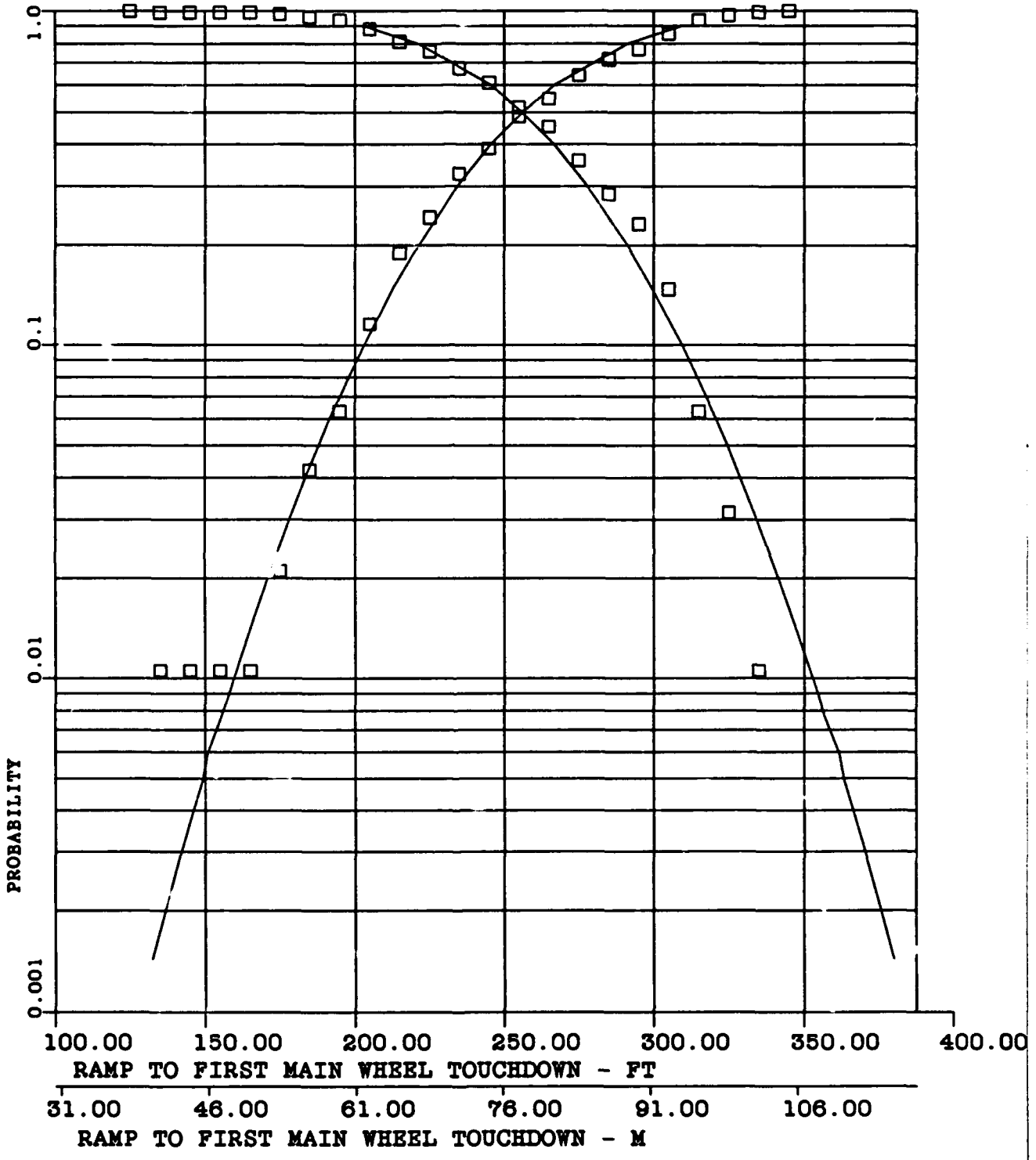


FIGURE C-28 PROBABILITY DISTRIBUTION OF DISTANCE FROM RAMP TO FIRST MAIN WHEEL TOUCHDOWN POINT

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-95 $\bar{X}$=-12.62 FEET (-3.84 METRES) A3=.88
S=5.06 FEET (1.54 METRES) A4=7.44

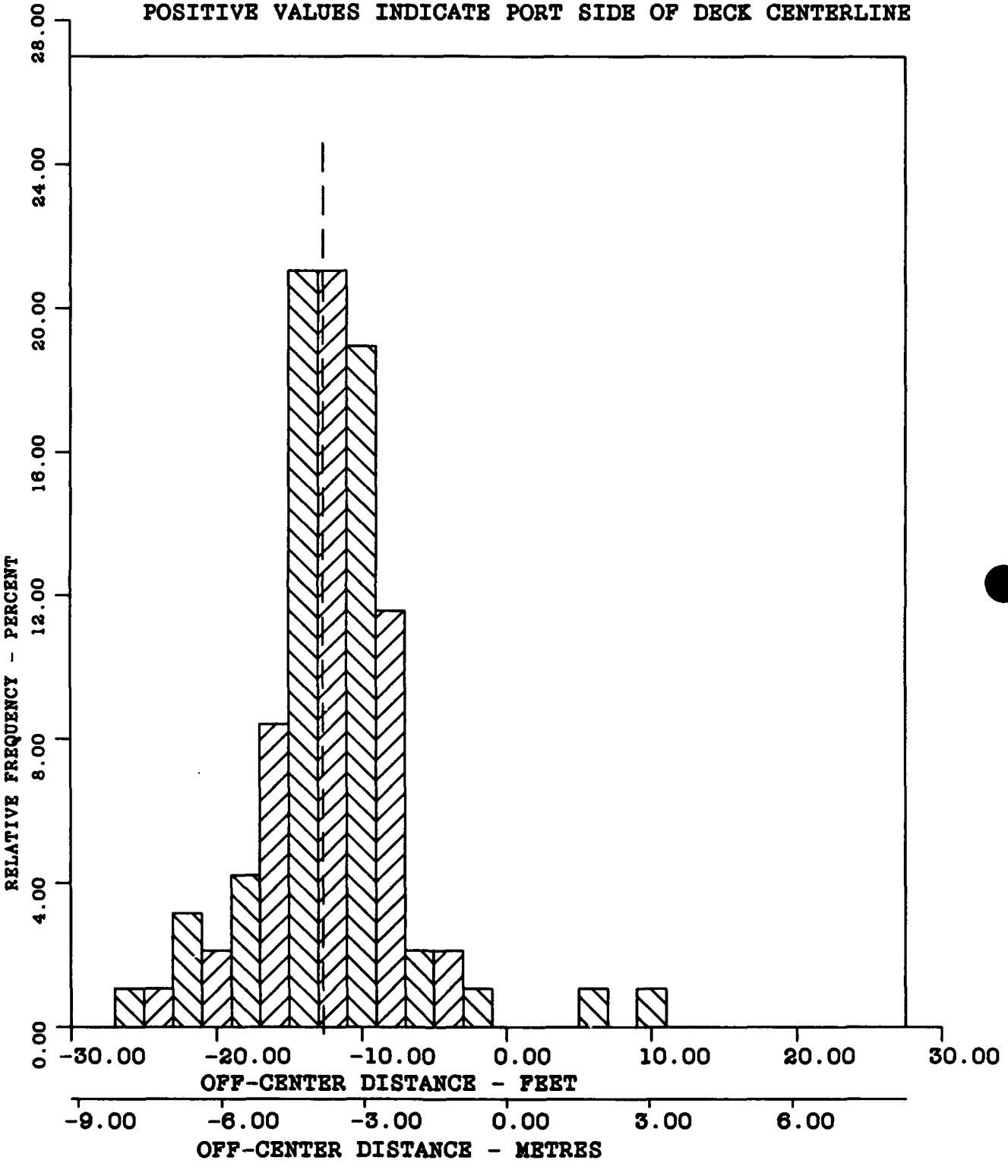


FIGURE C-29 FREQUENCY DISTRIBUTION OF AIRCRAFT CENTERLINE OFF-CNTR DISTANCE AT 1ST MAIN WHEEL TOUCHDOWN

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=95 $\bar{X}$=-12.62 FEET (-3.84 METRES) A3=.88
S=5.06 FEET (1.54 METRES) A4=7.44
CURVE FITTED - PEARSON TYPE III
POSITIVE VALUES INDICATE PORT SIDE OF DECK CENTERLINE

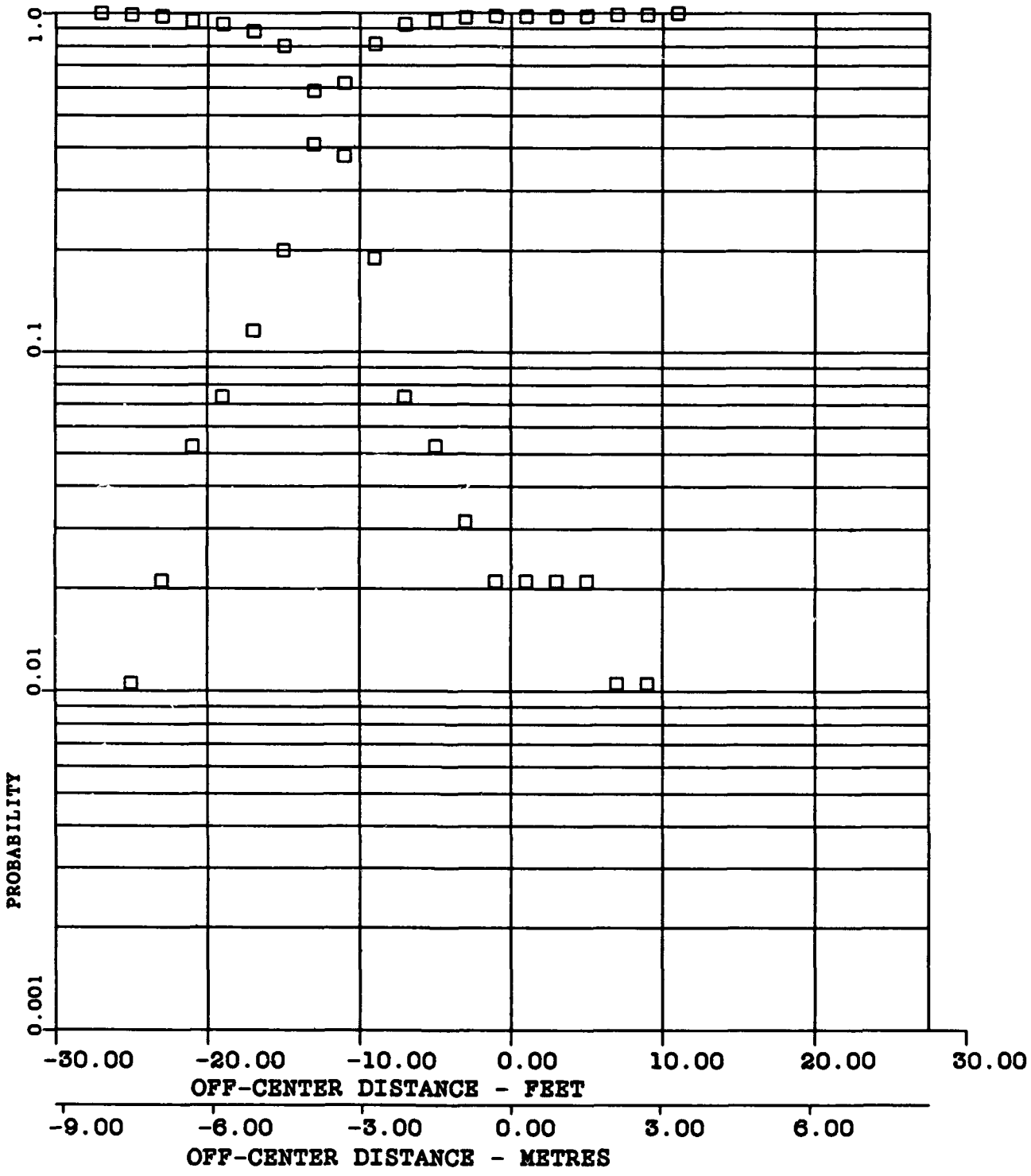


FIGURE C-30 PROBABILITY DISTRIBUTION OF AIRCRAFT OFF-CENTER DISTANCE AT 1ST MAIN WHEEL TOUCHDOWN

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=69 $\bar{X}$=2.81 A3=-.04
S=.93 A4=1.81

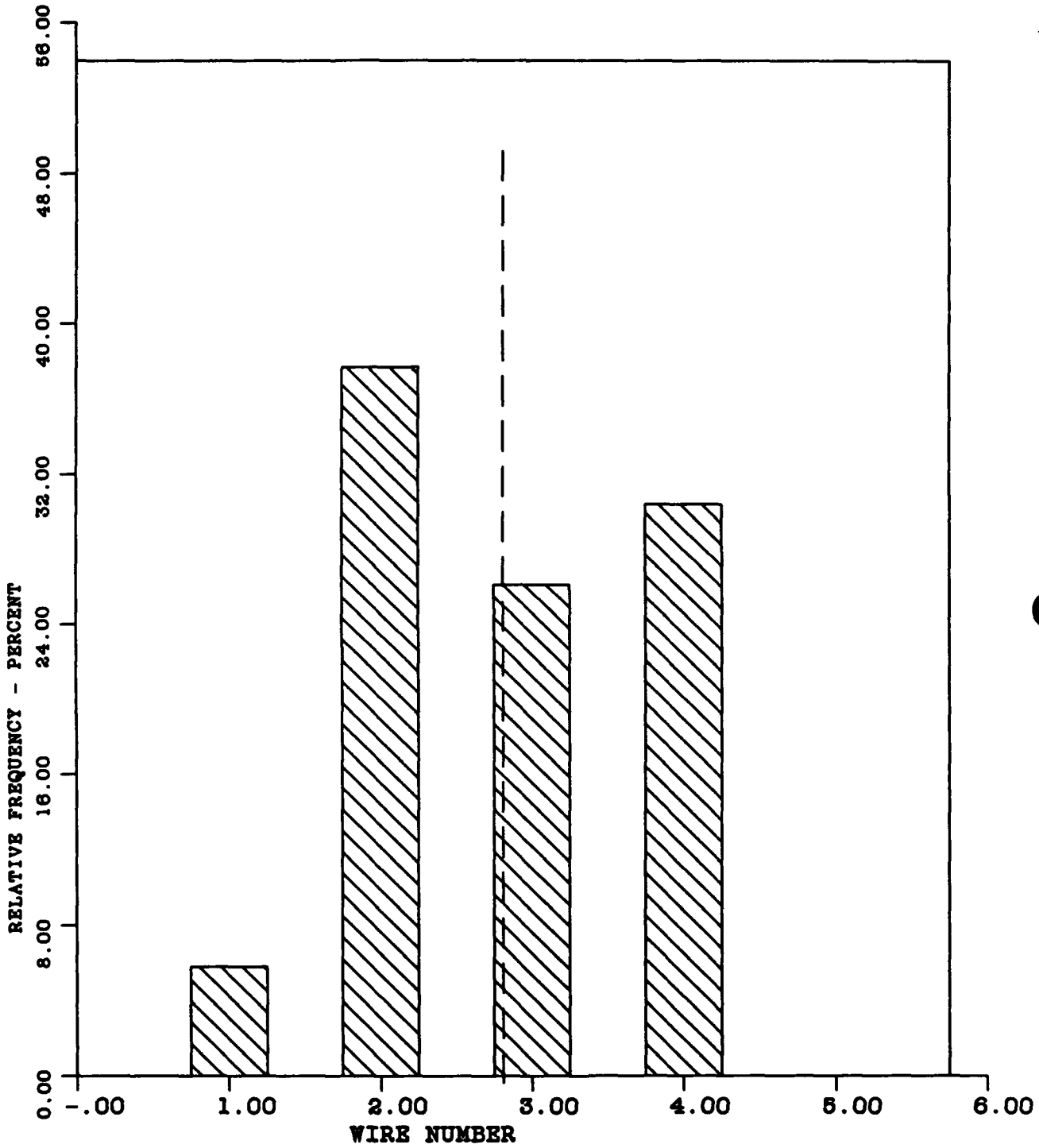


FIGURE C-31 FREQUENCY DISTRIBUTION OF ARRESTMENT WIRE NUMBER ENGAGED

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=95 $\bar{X}$=3.36 DEGREES (.058 RADIANS) A3=-.56
S=.88 DEGREES (.015 RADIANS) A4=3.49

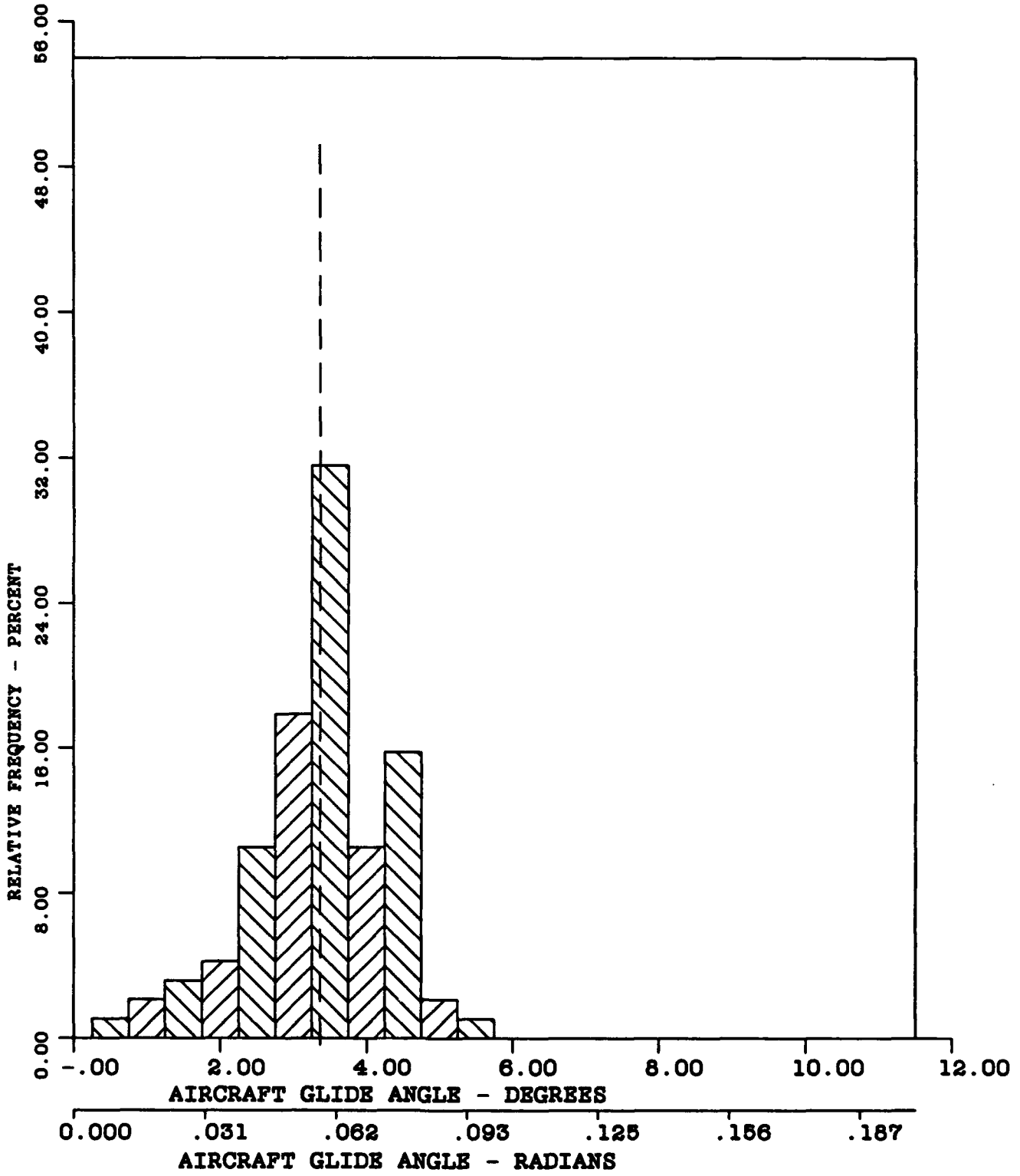


FIGURE C-32 FREQUENCY DISTRIBUTION OF AIRCRAFT GLIDE ANGLE - INSTANTANEOUS METHOD

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-95 $\bar{X}$-108.71 KNOTS (55.92 METRES/SEC) A3=.74
S-6.55 KNOTS (3.37 METRES/SEC) A4=4.15

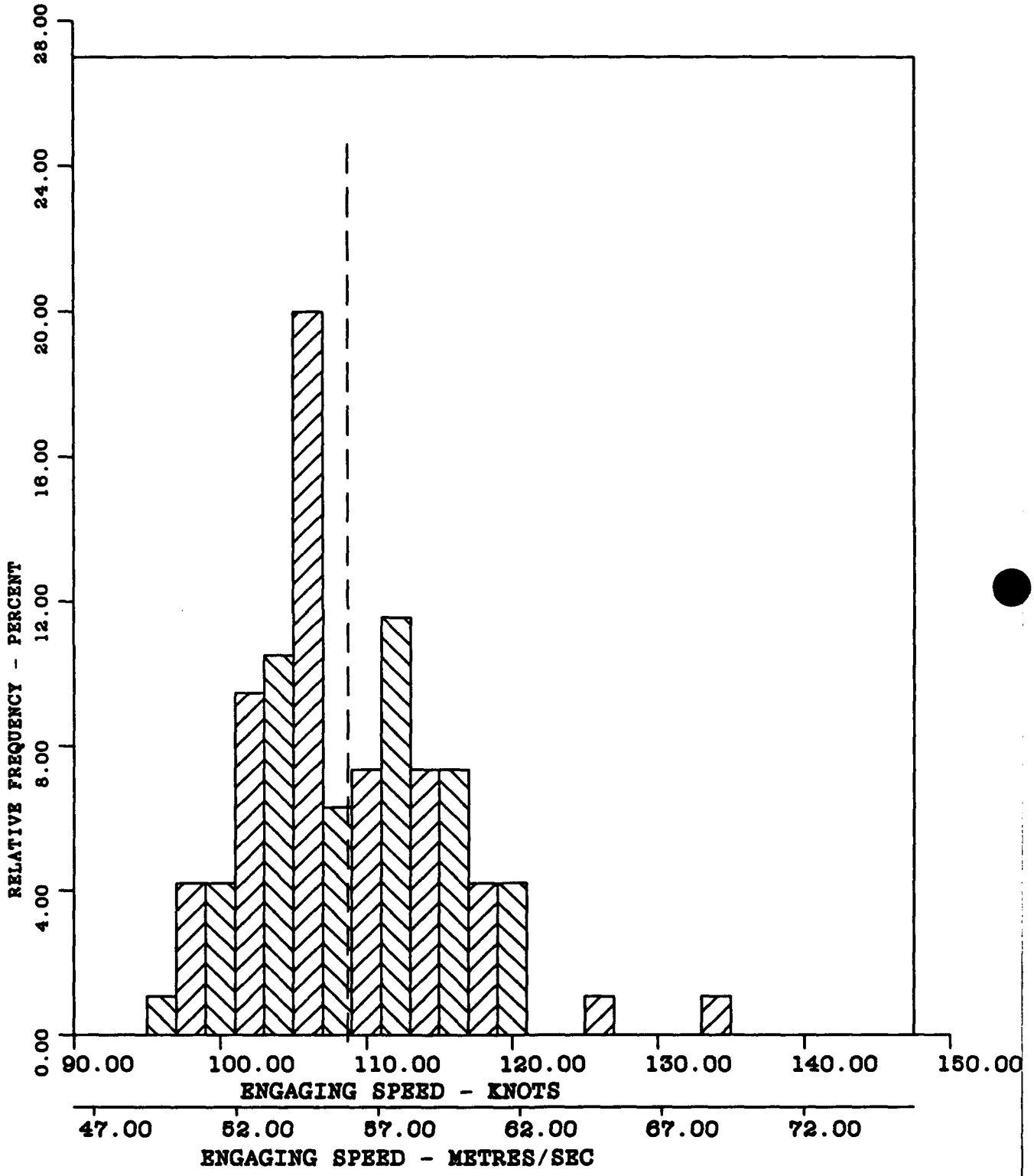


FIGURE C-33 FREQUENCY DISTRIBUTION OF AIRCRAFT ENGAGING SPEED AT FIRST MAIN WHEEL TOUCHDOWN

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-95 $\bar{X}$-108.71 KNOTS (55.92 METRES/SEC) A3=.74
S-6.55 KNOTS (3.37 METRES/SEC) A4=4.15
CURVE FITTED - PEARSON TYPE III

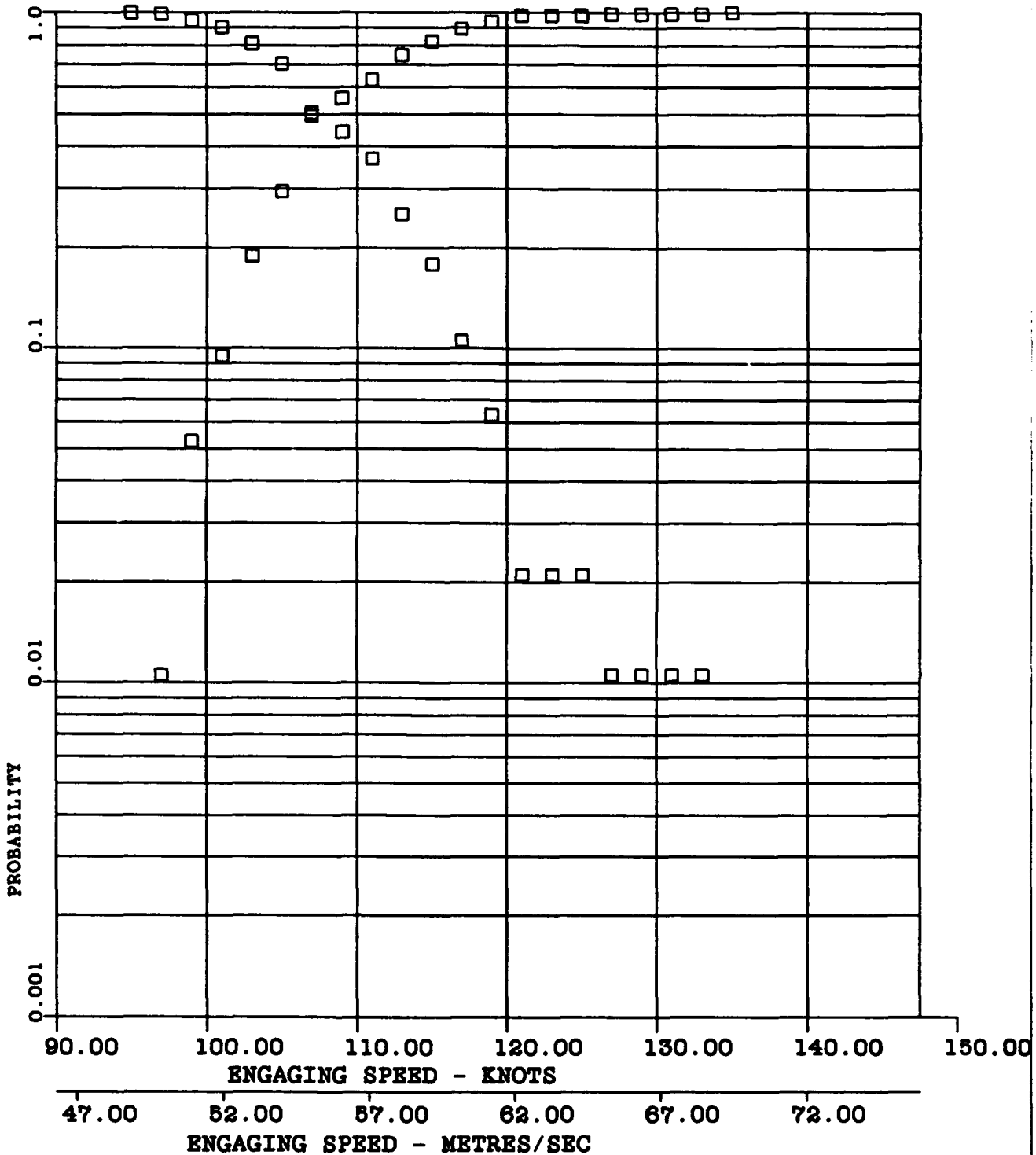


FIGURE C-34 PROBABILITY DISTRIBUTION OF ENGAGING SPEED AT FIRST MAIN WHEEL TOUCHDOWN

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-95 $\bar{X}$-120.70 KNOTS (62.09 METRES/SEC) A3=-.30
S-1.92 KNOTS (.99 METRES/SEC) A4-2.99

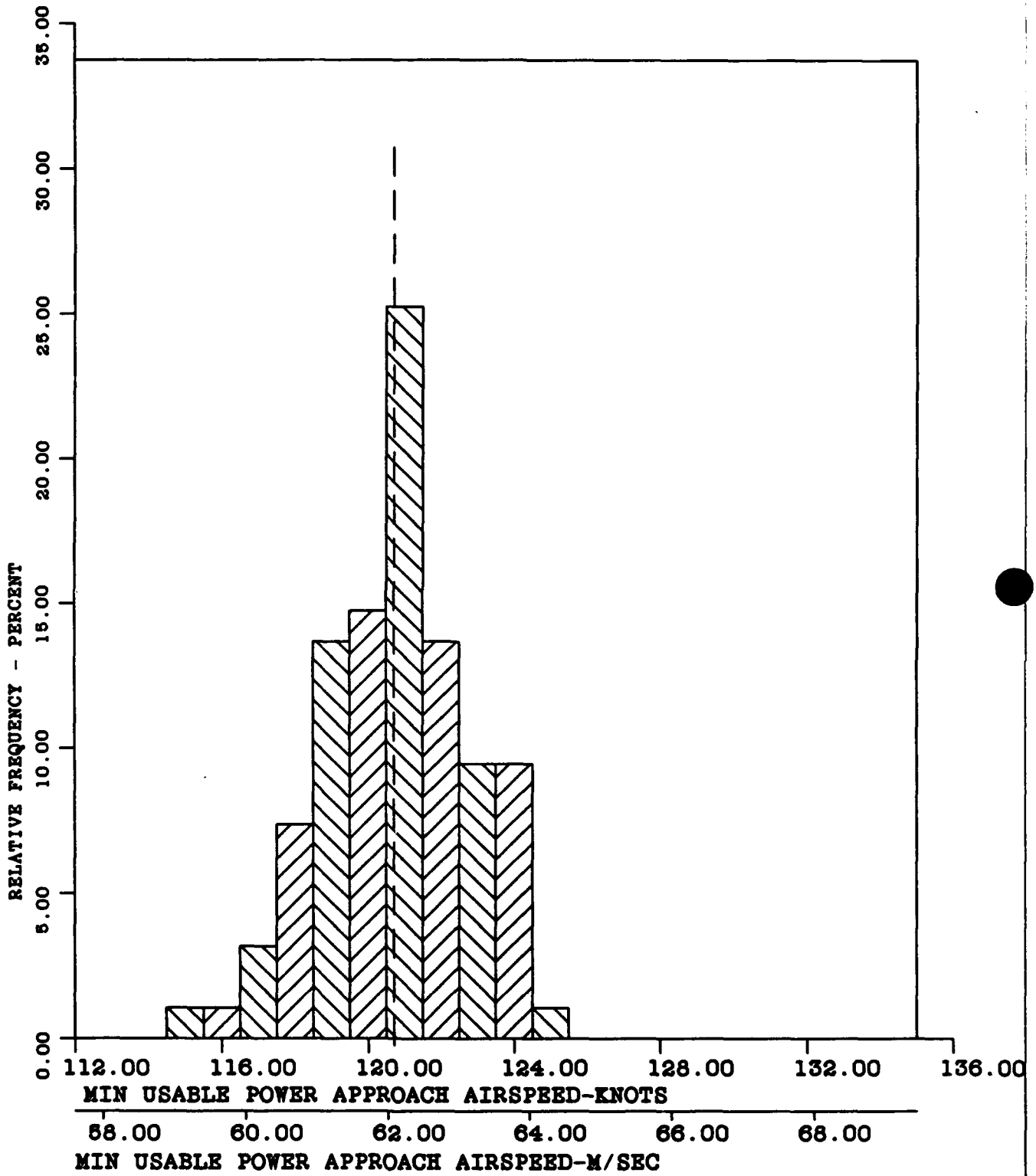


FIGURE C-35 FREQUENCY DISTRIBUTION OF MINIMUM USABLE POWER APPROACH AIRSPEED

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=95 $\bar{X}$=1.15 A3=.92
S=.05 A4=5.90

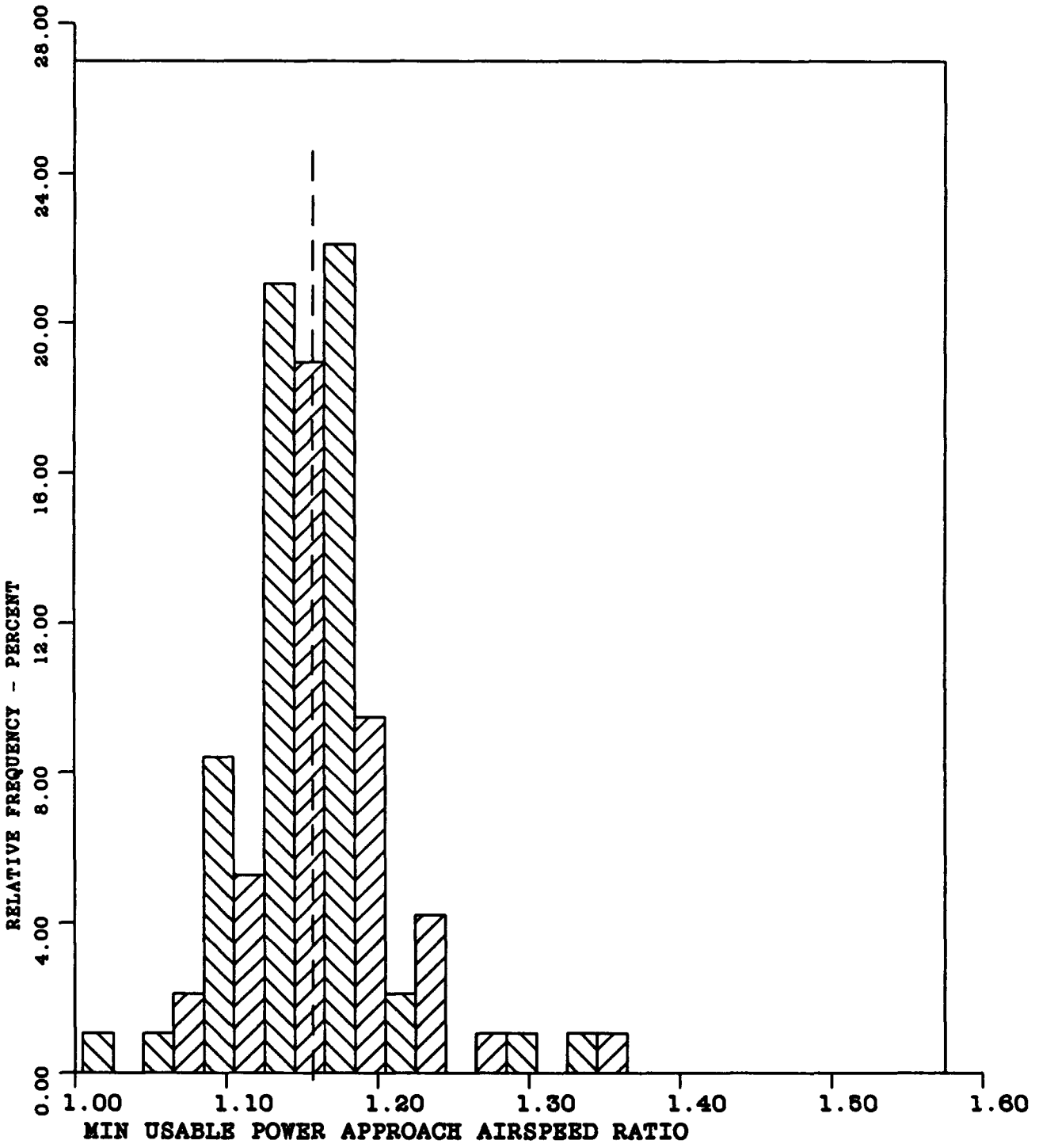


FIGURE C-36 FREQUENCY DISTRIBUTION OF MINIMUM USABLE POWER APPROACH AIRSPEED RATIO - FILM

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-95 $\bar{X}$=-.34 DEGREES (-.005 RADIANS) A3=.13
S=.20 DEGREES (.003 RADIANS) A4=3.03

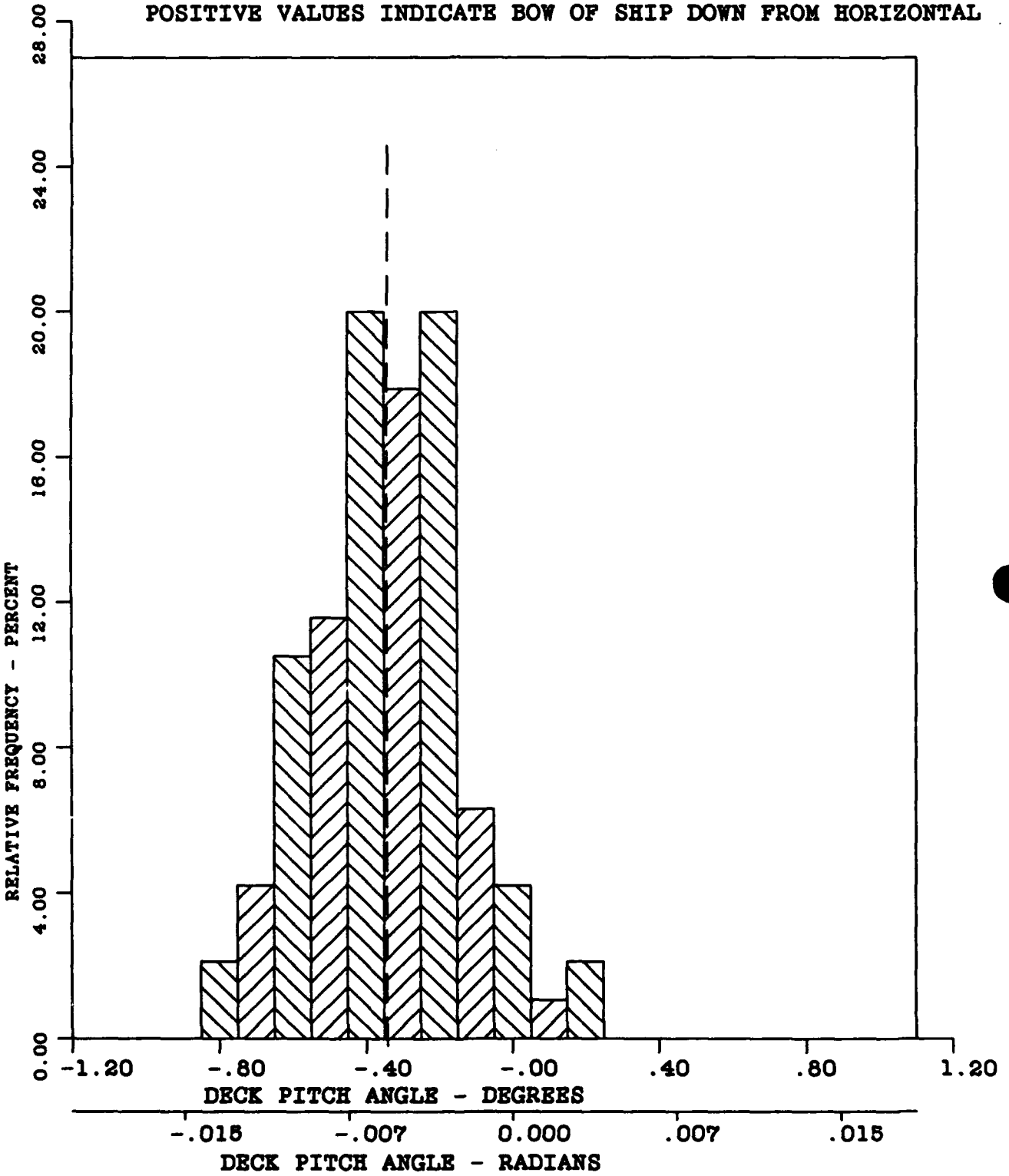


FIGURE C-37 FREQUENCY DISTRIBUTION OF CARRIER DECK PITCH MOTION

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N=95 $\bar{X}$=-.34 DEGREES (-.005 RADIANS) A3=.13
S=.20 DEGREES (.003 RADIANS) A4=3.03
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE BOW OF SHIP DOWN FROM HORIZONTAL

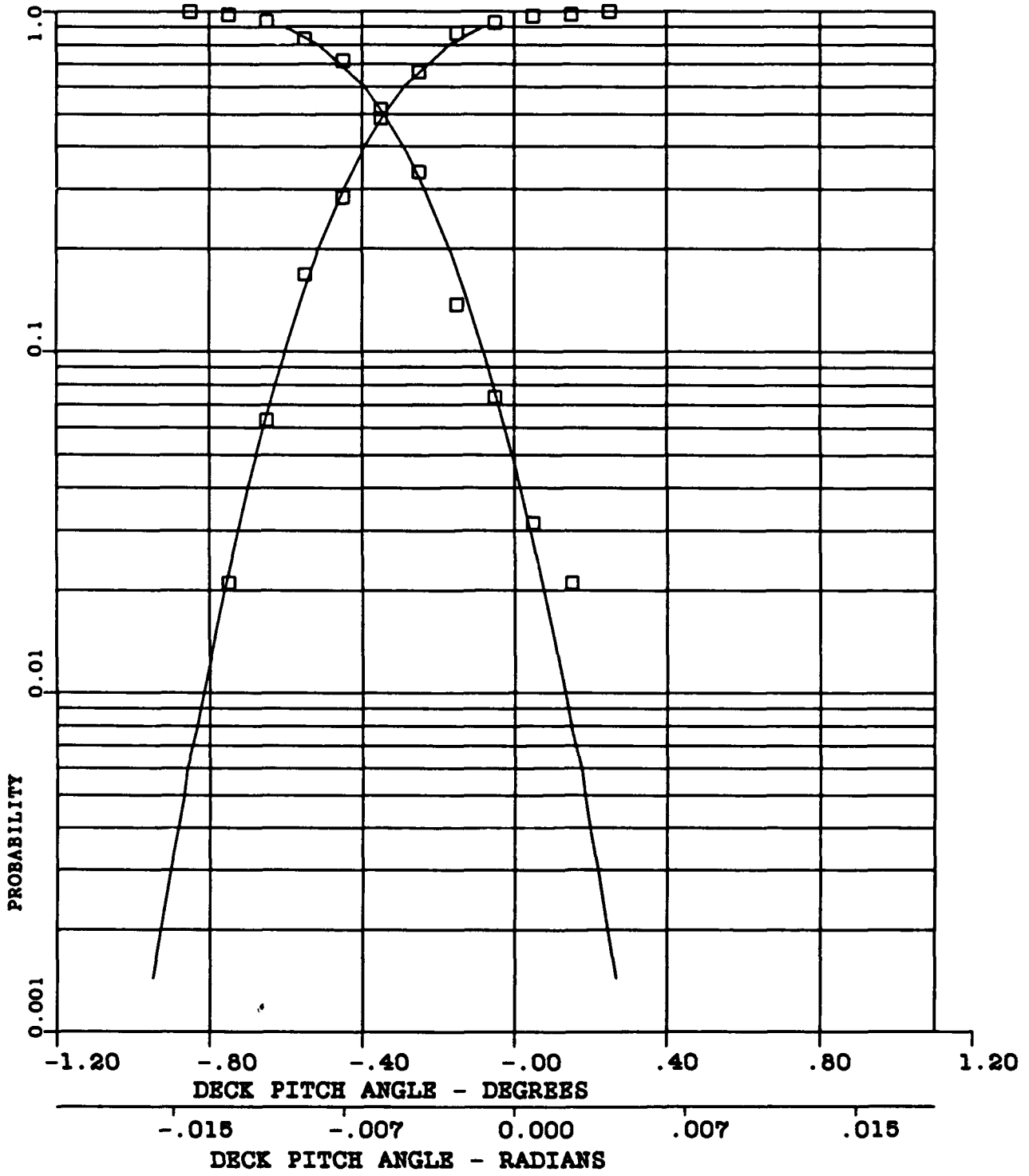


FIGURE C-38 PROBABILITY DISTRIBUTION OF CARRIER DECK PITCH MOTION

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=95 $\bar{X}$=47952.69 POUNDS (21751.34 KILOGRAMS) A3=-.26
S=1525.42 POUNDS (691.93 KILOGRAMS) A4=2.93

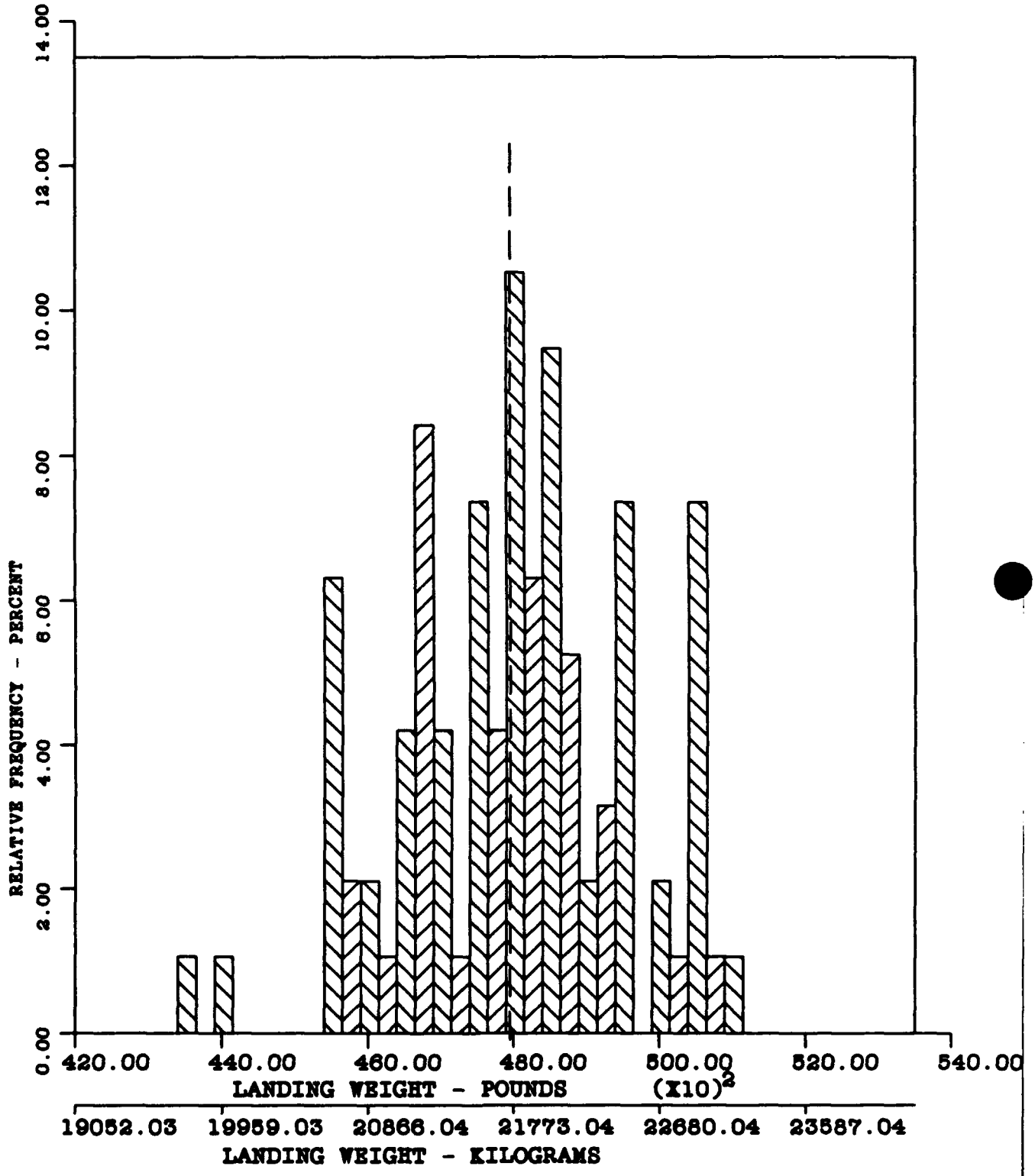


FIGURE C-39 FREQUENCY DISTRIBUTION OF AIRCRAFT LANDING WEIGHT

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-95 $\bar{X}$-1.26 DEG/SEC (.022 RAD/SEC) A3=.19
S-6.84 DEG/SEC (.119 RAD/SEC) A4=3.47

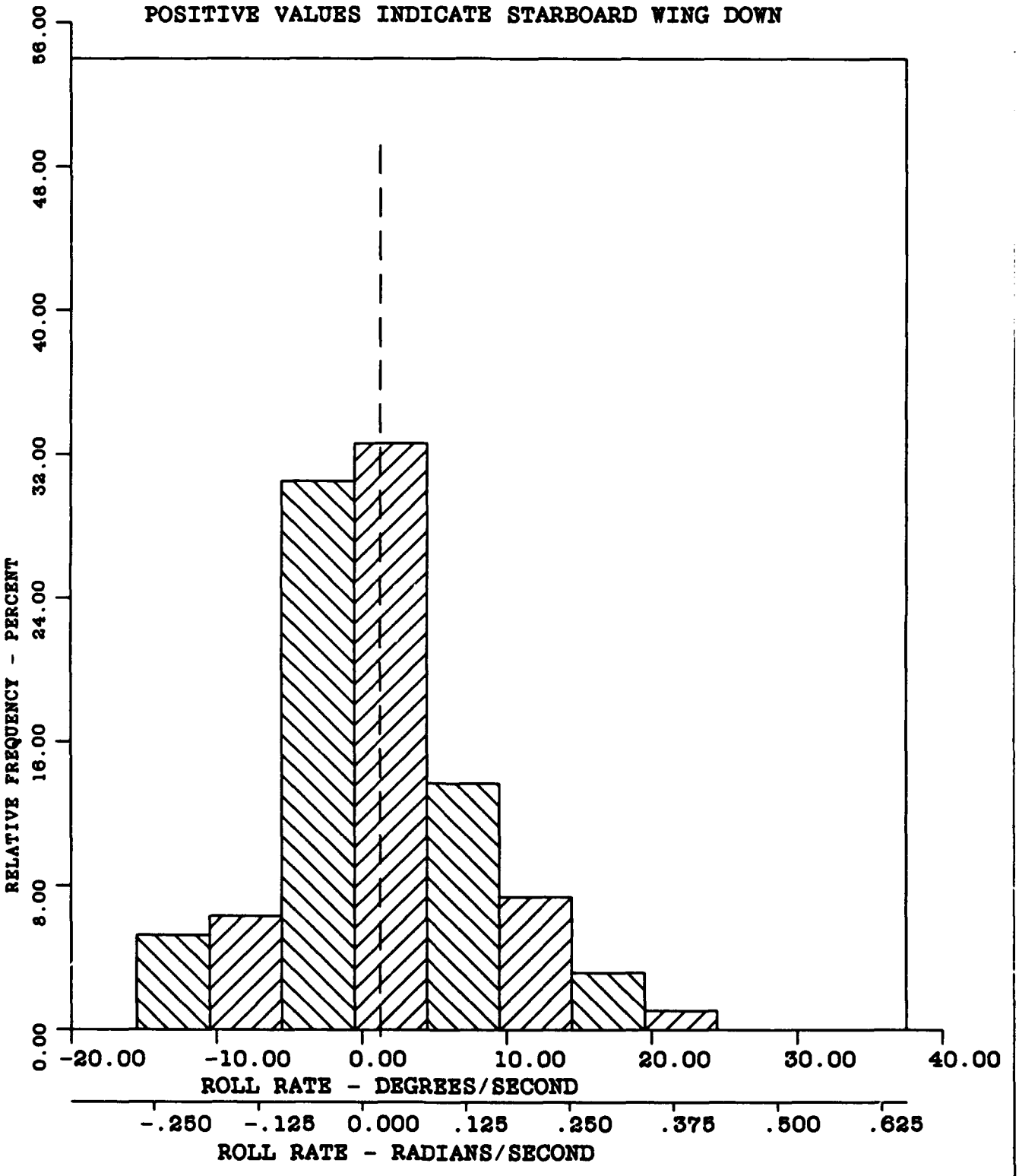


FIGURE C-40 FREQUENCY DISTRIBUTION OF ROLL RATE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=95 $\bar{X}$=1.26 DEG/SEC (.022 RAD/SEC) A3=.19
S=6.84 DEG/SEC (.119 RAD/SEC) A4=3.47
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE STARBOARD WING DOWN

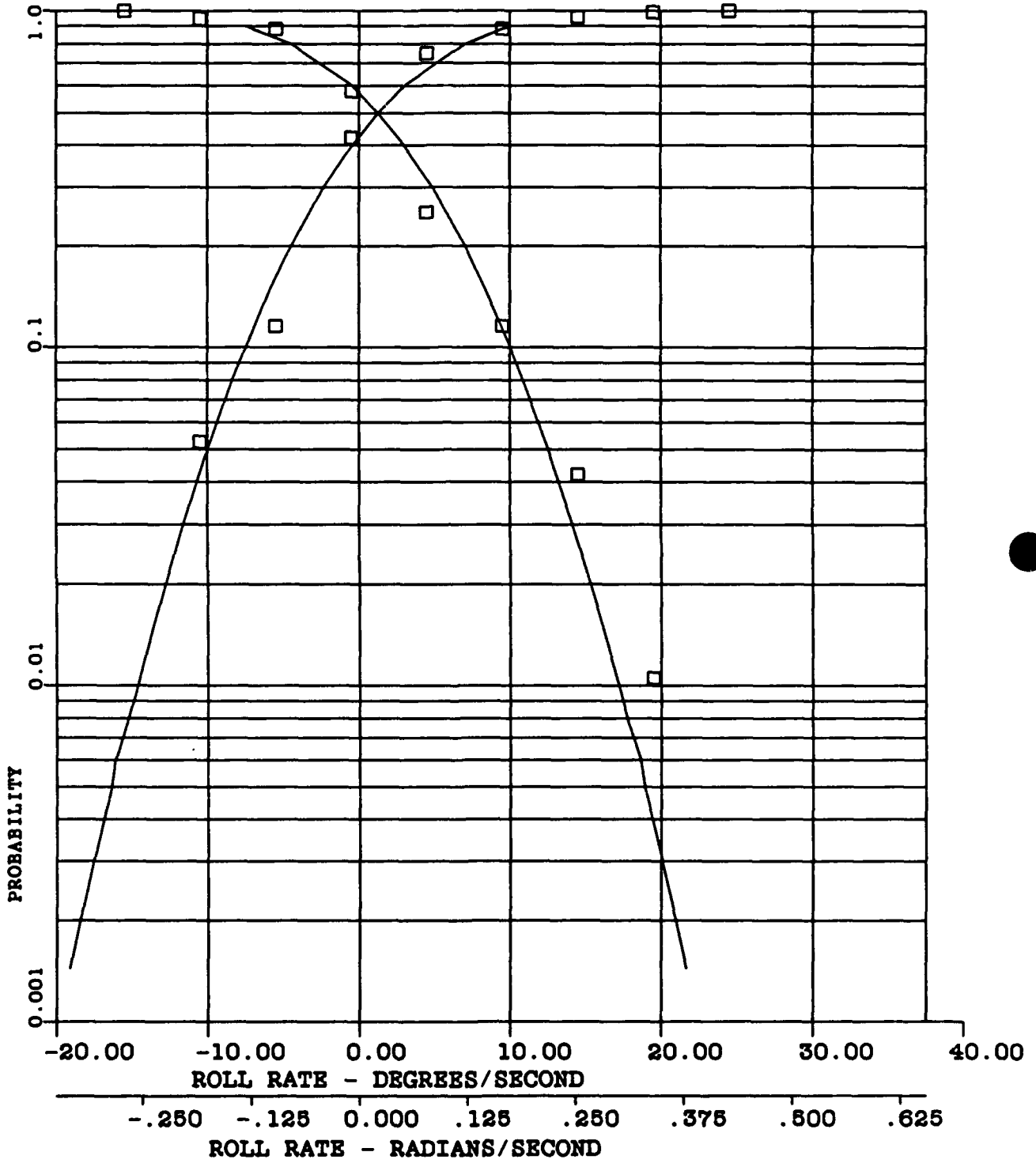


FIGURE C-41 PROBABILITY DISTRIBUTION OF ROLL RATE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-95 $\bar{X}$-1.21 DEG/SEC (.021 RAD/SEC) A3-1.15
S-1.95 DEG/SEC (.034 RAD/SEC) A4-4.19

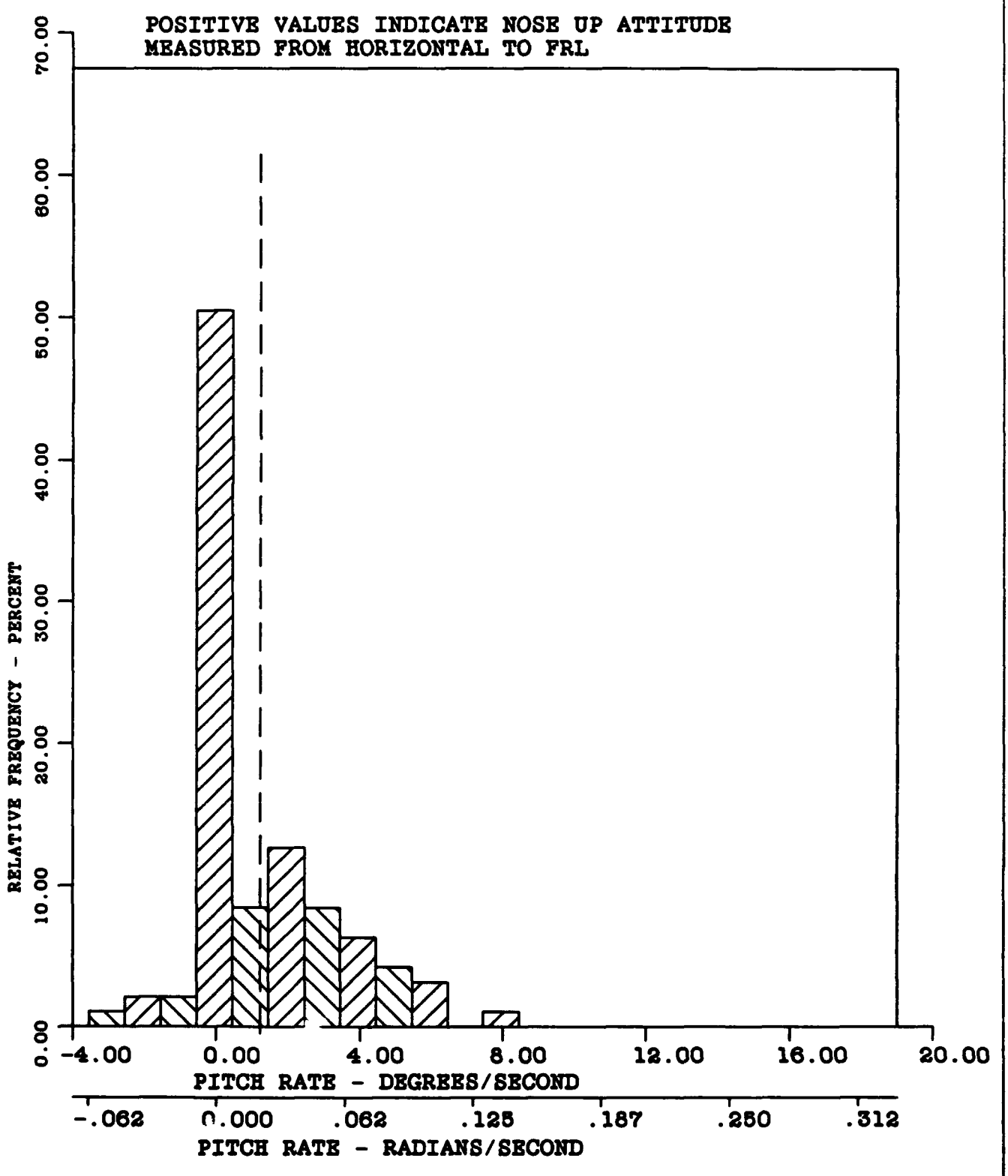


FIGURE C-42 FREQUENCY DISTRIBUTION OF PITCH RATE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-95 $\bar{X}$-1.21 DEG/SEC (.021 RAD/SEC) A3-1.15
S-1.95 DEG/SEC (.034 RAD/SEC) A4-4.19
CURVE FITTED - PEARSON TYPE III
POSITIVE VALUES INDICATE NOSE UP ATTITUDE
MEASURED FROM HORIZONTAL TO FRL

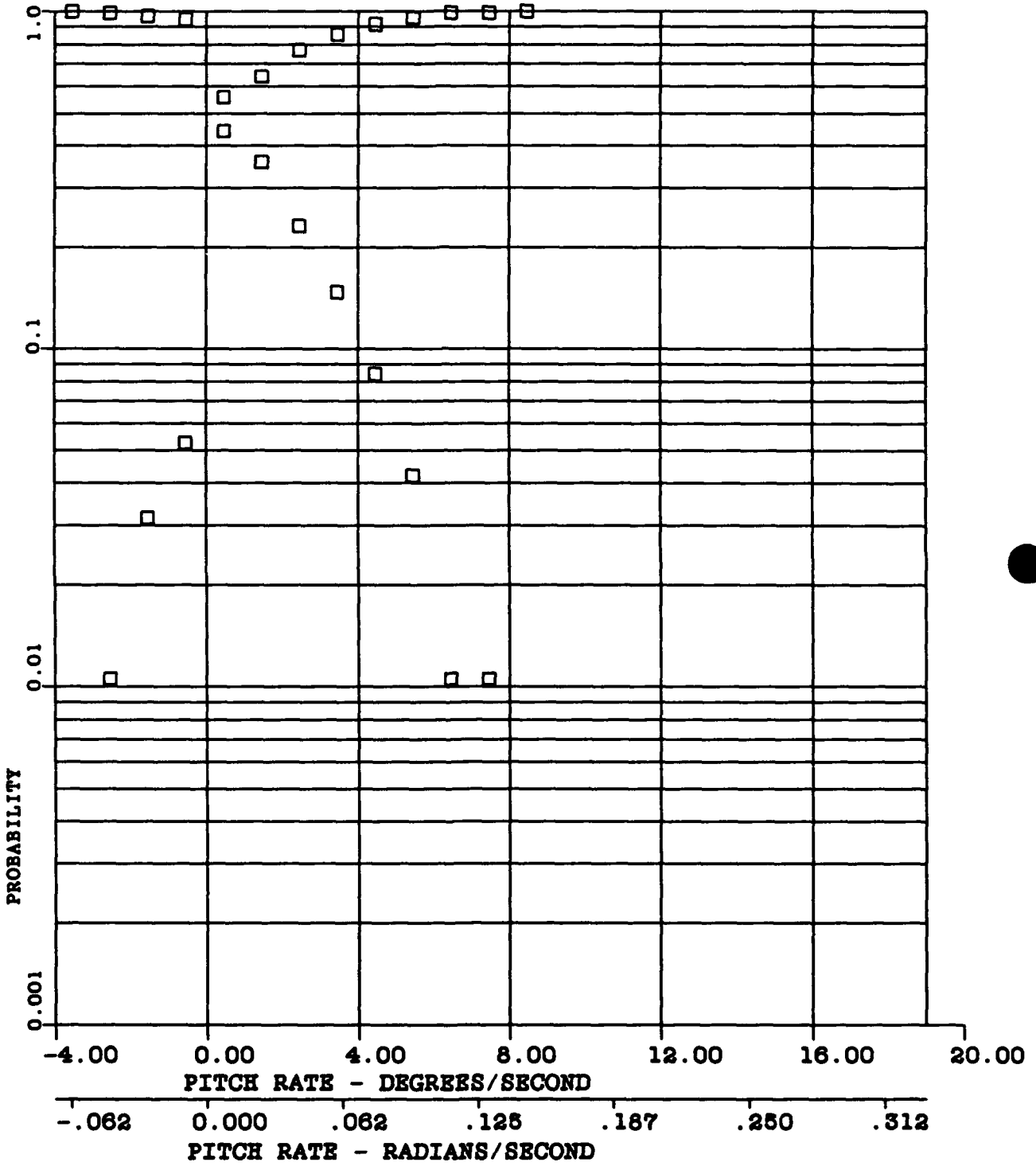


FIGURE C-43 PROBABILITY DISTRIBUTION OF PITCH RATE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=95 $\bar{X}$=-3.36 DEGREES (-.058 RADIANS) A3=-.18
S=1.89 DEGREES (.033 RADIANS) A4=4.96

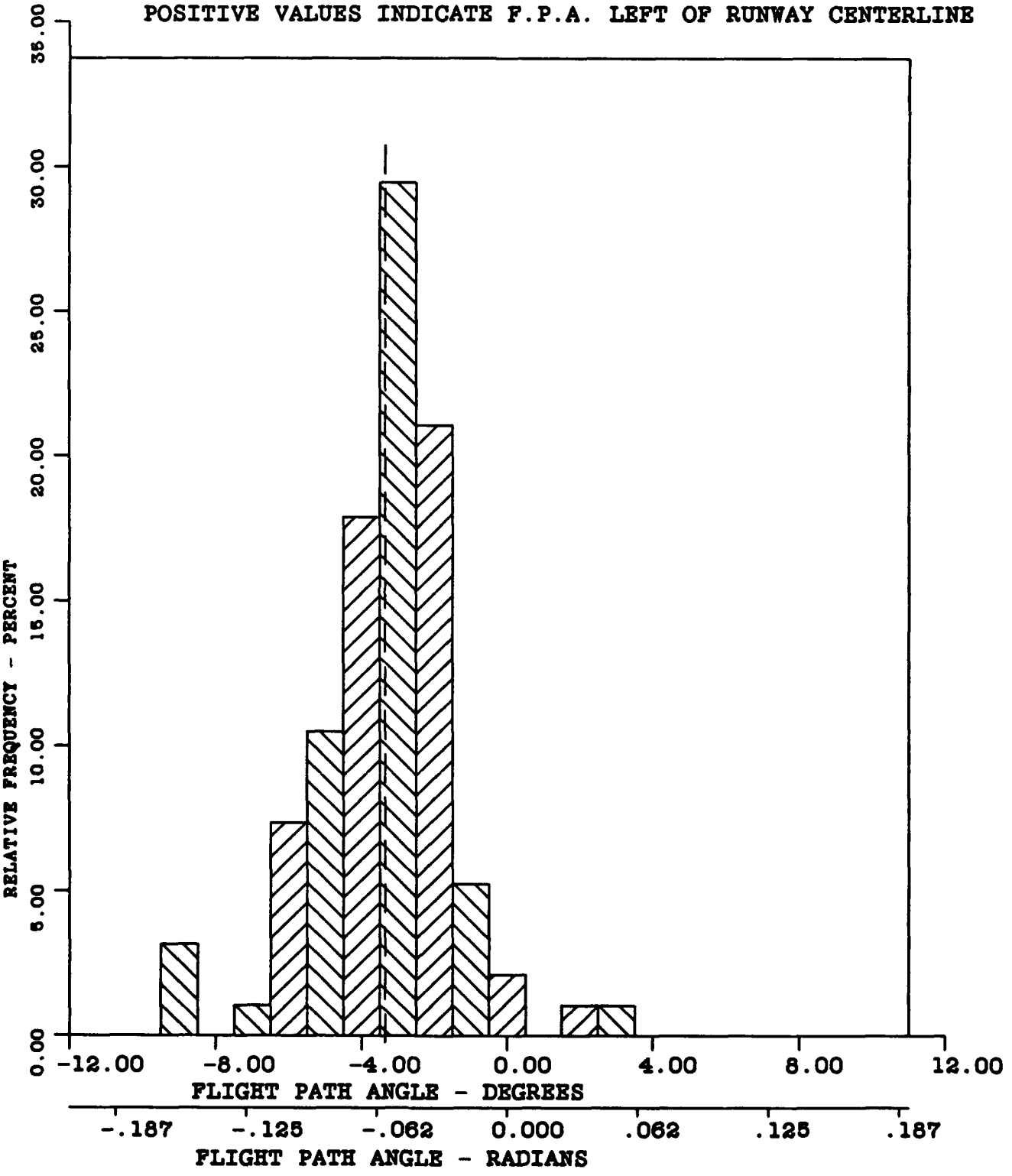


FIGURE C-44 FREQUENCY DISTRIBUTION OF AIRCRAFT FLIGHT PATH ANGLE AT TOUCHDOWN

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=95 $\bar{X}$=-3.36 DEGREES (-.058 RADIANS) A3=-.18
S=1.89 DEGREES (.033 RADIANS) A4=4.96
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE F.P.A. LEFT OF RUNWAY CENTERLINE

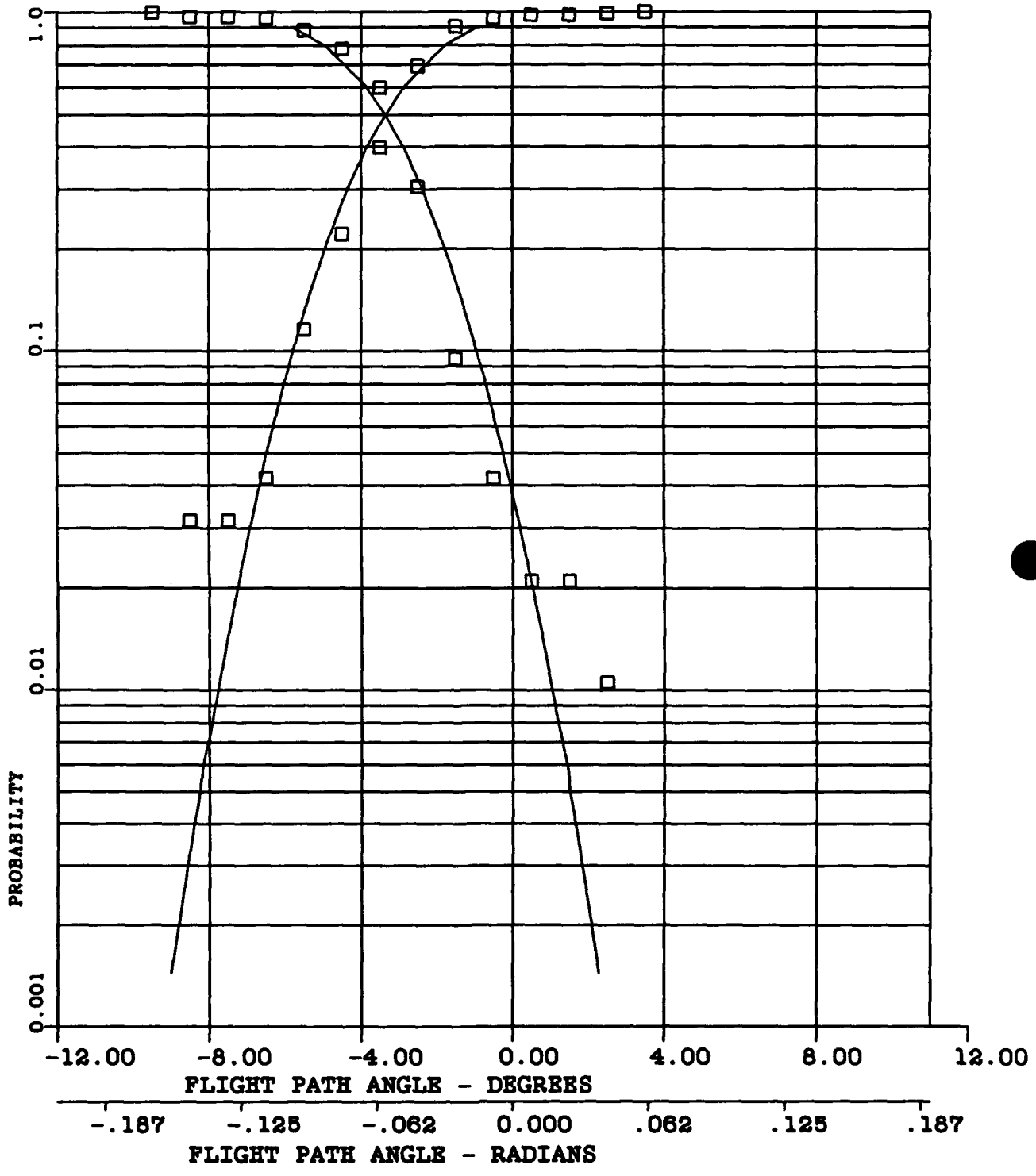


FIGURE C-45 PROBABILITY DISTRIBUTION OF AIRCRAFT FLIGHT PATH ANGLE AT TOUCHDOWN

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=95 $\bar{X}$=6.16 DEGREES (.107 RADIANS) A3=.27
S=2.87 DEGREES (.050 RADIANS) A4=2.79

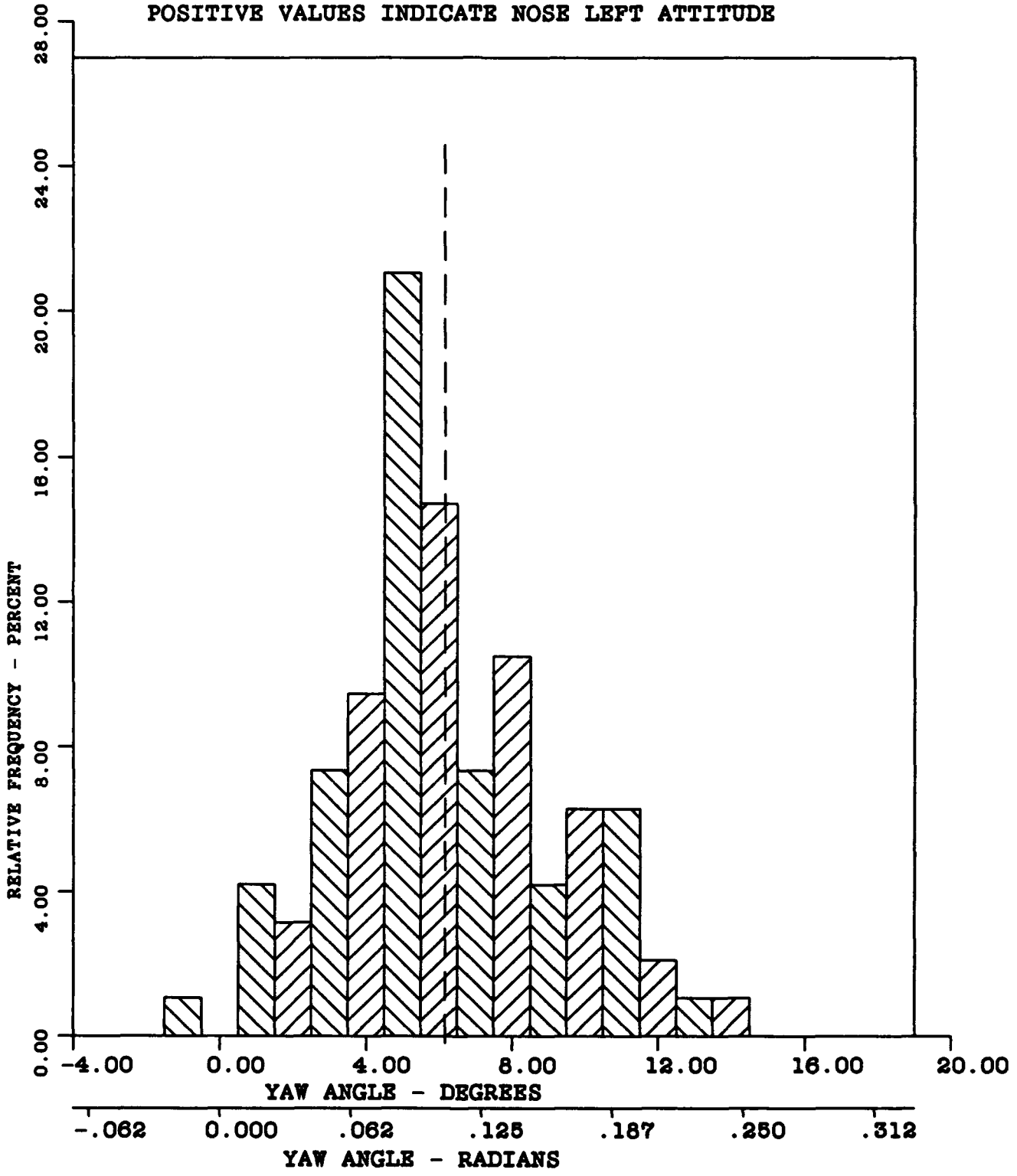


FIGURE C-46 FREQUENCY DISTRIBUTION OF AIRCRAFT YAW ANGLE

MODEL F-14A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-95 $\bar{X}$-6.16 DEGREES (.107 RADIANS) A3=.27
S-2.87 DEGREES (.050 RADIANS) A4=2.79
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE NOSE LEFT ATTITUDE

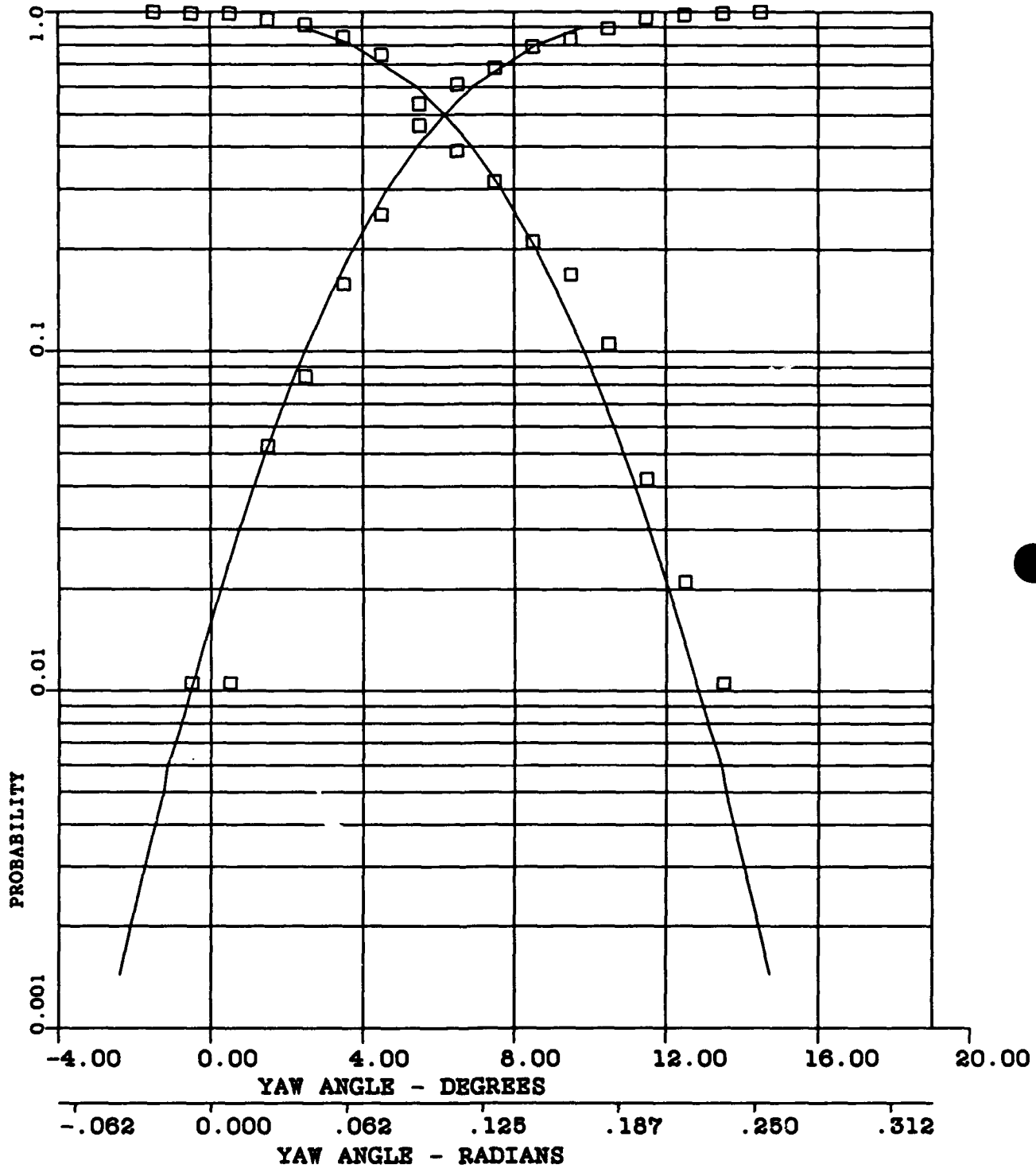


FIGURE C-47 PROBABILITY DISTRIBUTION OF AIRCRAFT YAW ANGLE

APPENDIX D

F-18 AIRCRAFT

DAY CARRIER LANDINGS

USS ENTERPRISE
CVN-65

Appendix D:

Frequency and Probability Distributions,
F-18 Aircraft, Day Landings

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MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N=190 $\bar{X}$=26.00 KNOTS (13.37 METRES/SEC) A3=.25
S=2.91 KNOTS (1.49 METRES/SEC) A4=1.76

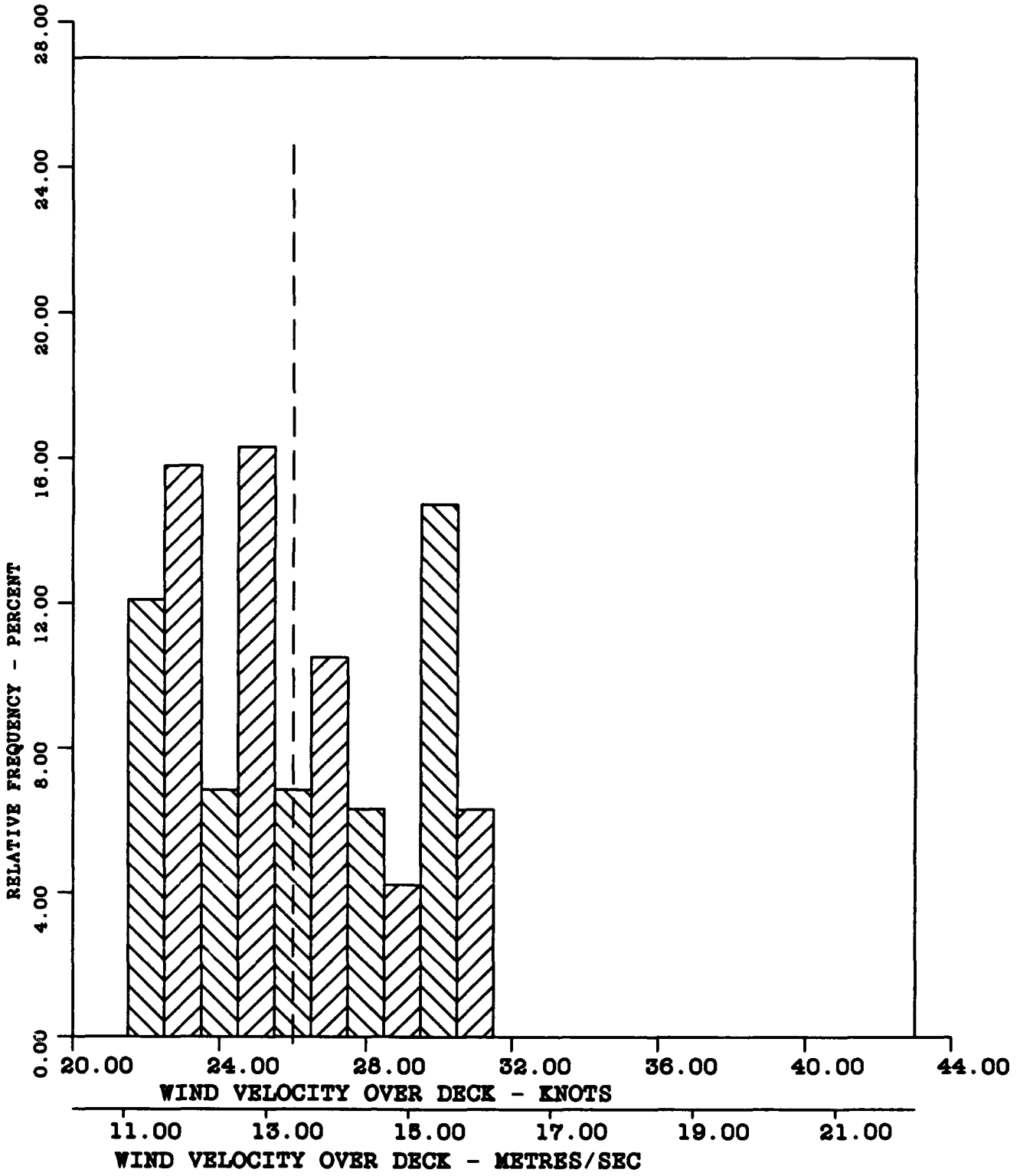


FIGURE D-1 FREQUENCY DISTRIBUTION OF WIND VELOCITY OVER THE DECK

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-190 $\bar{X}$-26.00 KNOTS (13.37 METRES/SEC) A3=.25
S-2.91 KNOTS (1.49 METRES/SEC) A4=1.76
CURVE FITTED - NORMAL

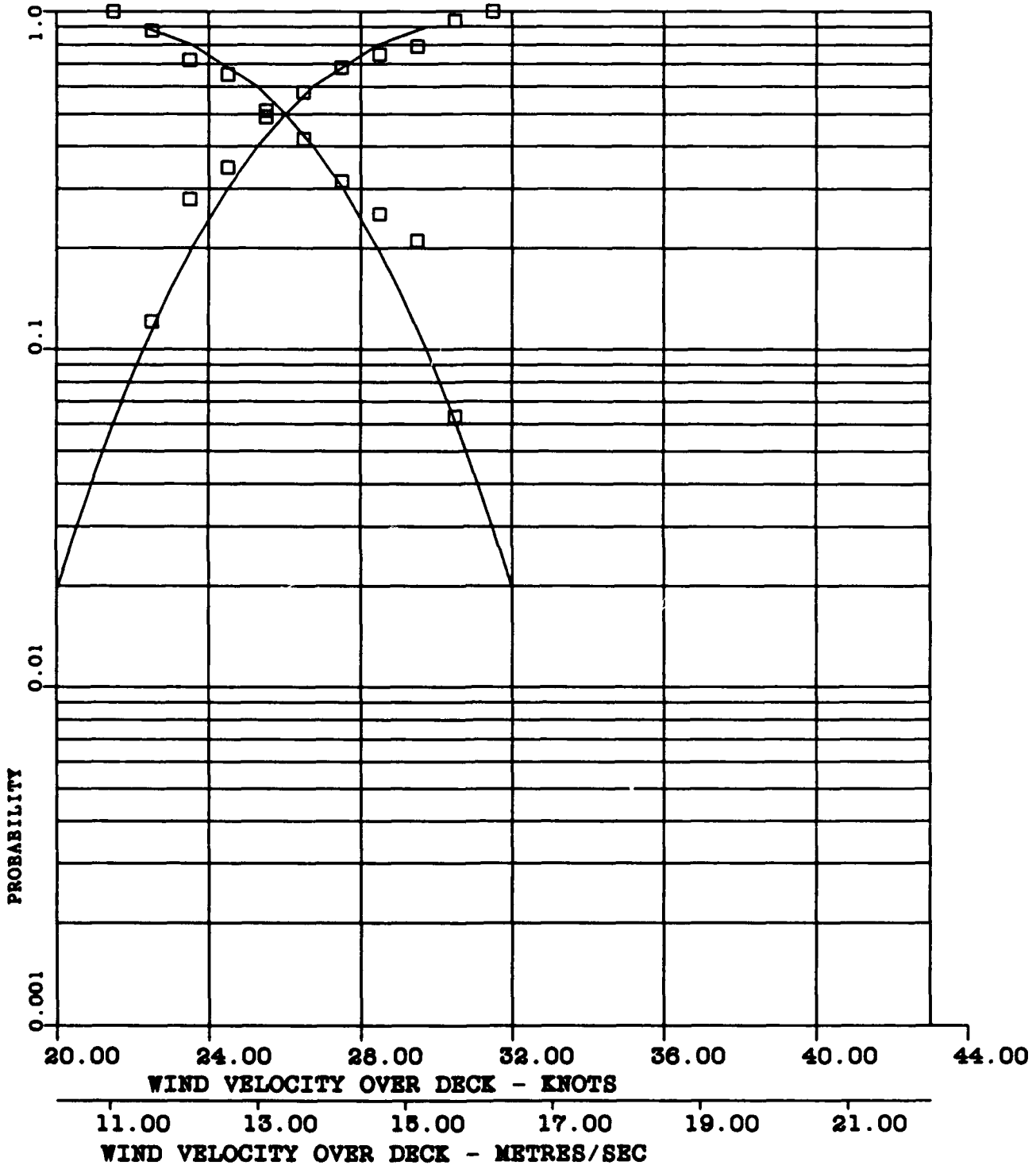


FIGURE D-2 PROBABILITY DISTRIBUTION OF WIND VELOCITY OVER THE DECK

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-190 $\bar{X}$-145.22 KNOTS (74.70 METRES/SEC) A3=.16
S-5.03 KNOTS (2.59 METRES/SEC) A4=3.38

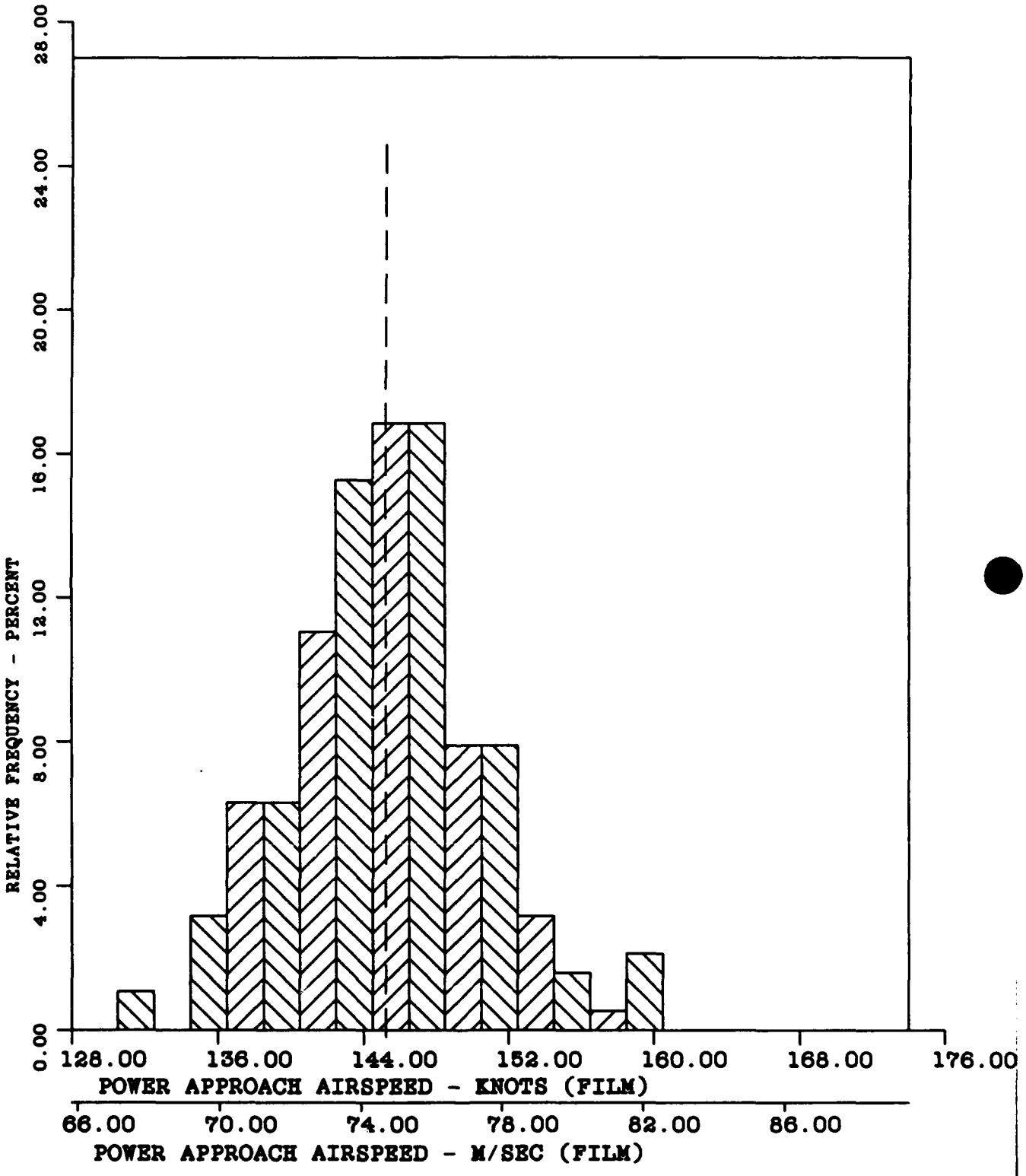


FIGURE D-3 FREQUENCY DISTRIBUTION OF FILM MEASURED POWER APPROACH AIRSPEED AT THE RAMP

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-190 $\bar{X}$-145.22 KNOTS (74.70 METRES/SEC) A3=.16
S-5.03 KNOTS (2.59 METRES/SEC) A4=3.38
CURVE FITTED - NORMAL

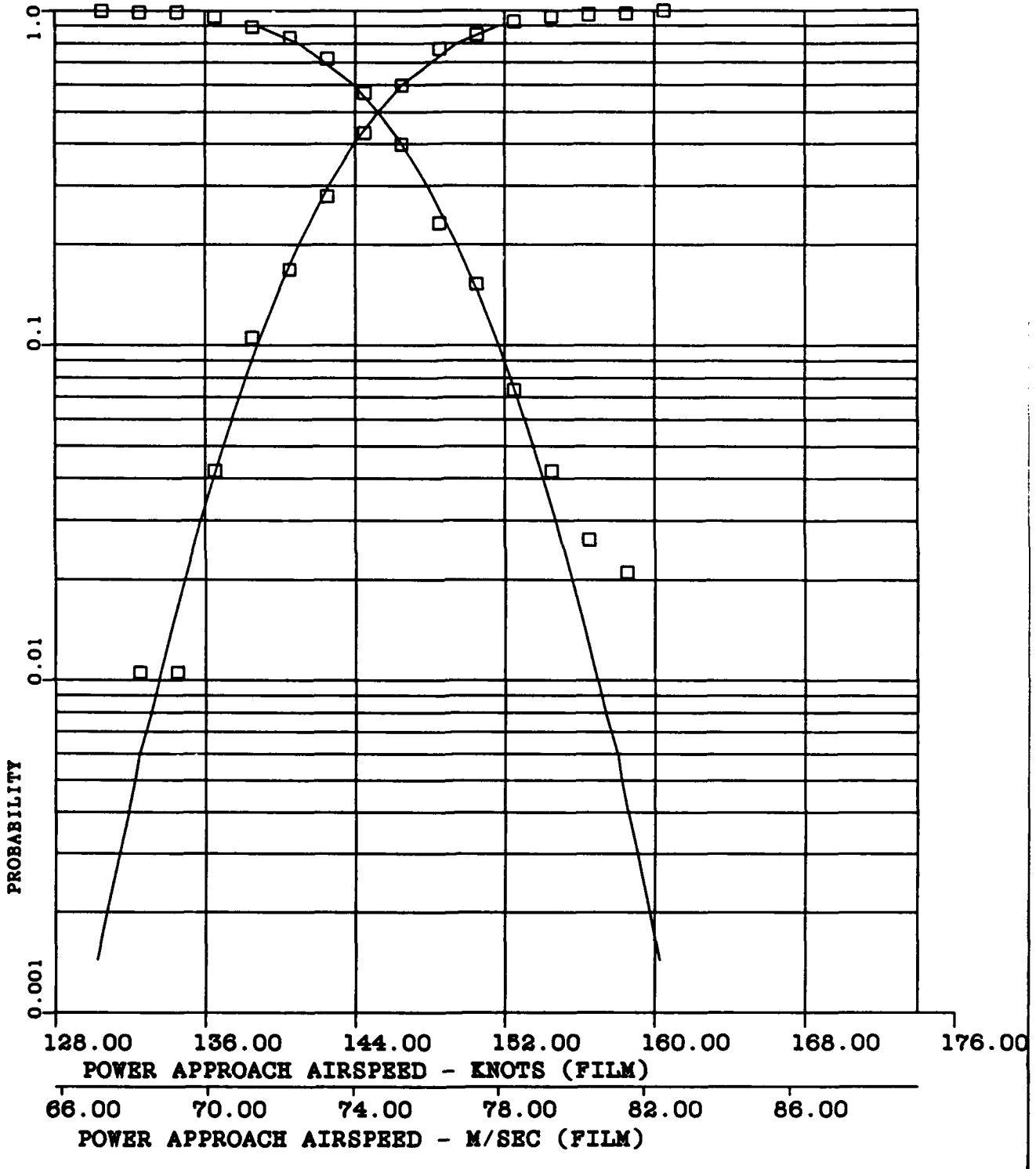


FIGURE D-4 PROBABILITY DISTRIBUTION OF POWER APPROACH AIRSPEED AT THE RAMP (FILM)

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=187 $\bar{X}$=16.93 FEET (5.16 METRES) A3=.21
S=2.70 FEET (.82 METRES) A4=3.14

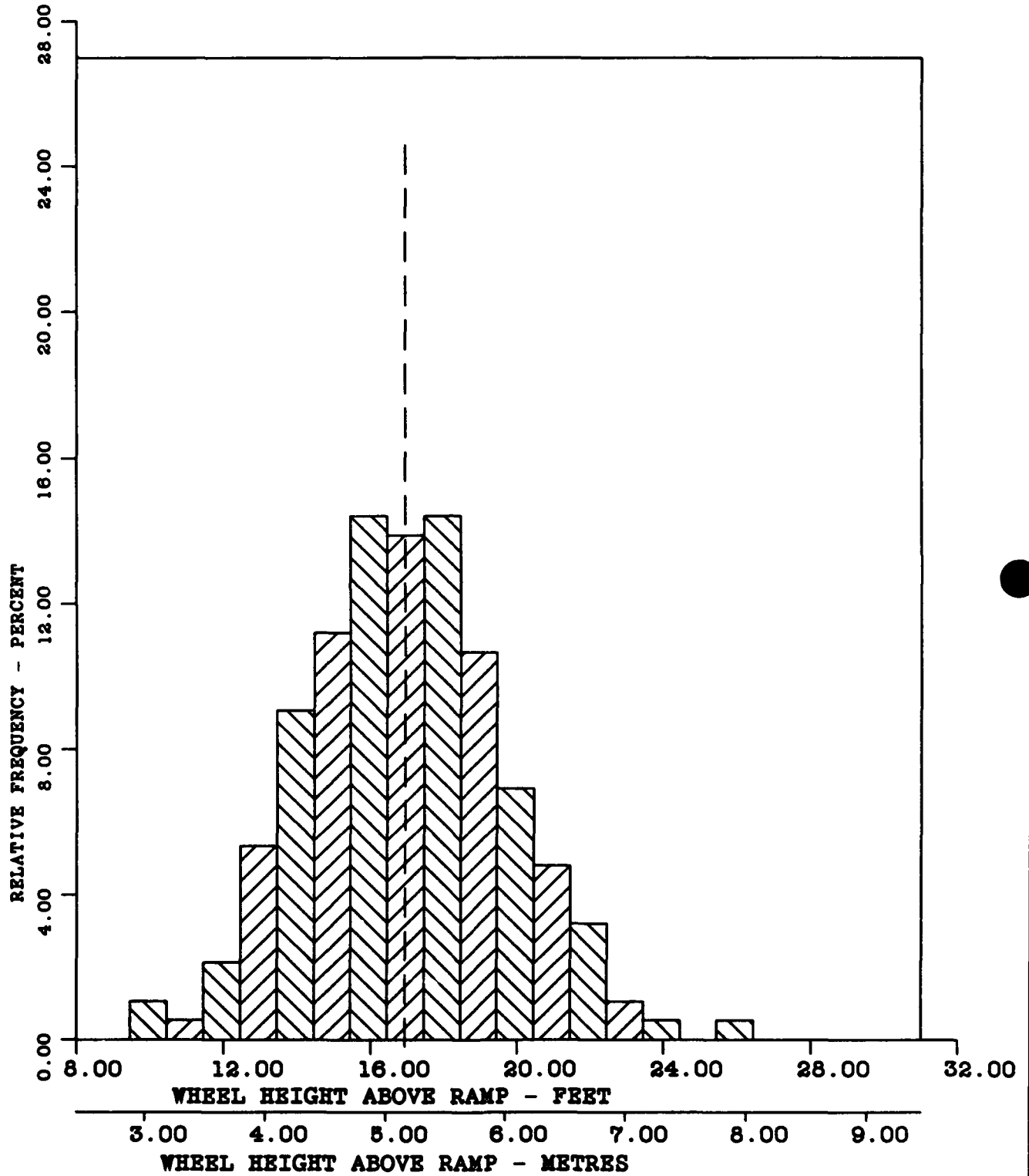


FIGURE D-5 FREQUENCY DISTRIBUTION OF AIRCRAFT WHEEL HEIGHT ABOVE CARRIER RAMP

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=187 $\bar{X}$=16.93 FEET (5.16 METRES) A3=.21
S=2.70 FEET (.82 METRES) A4=3.14
CURVE FITTED - NORMAL

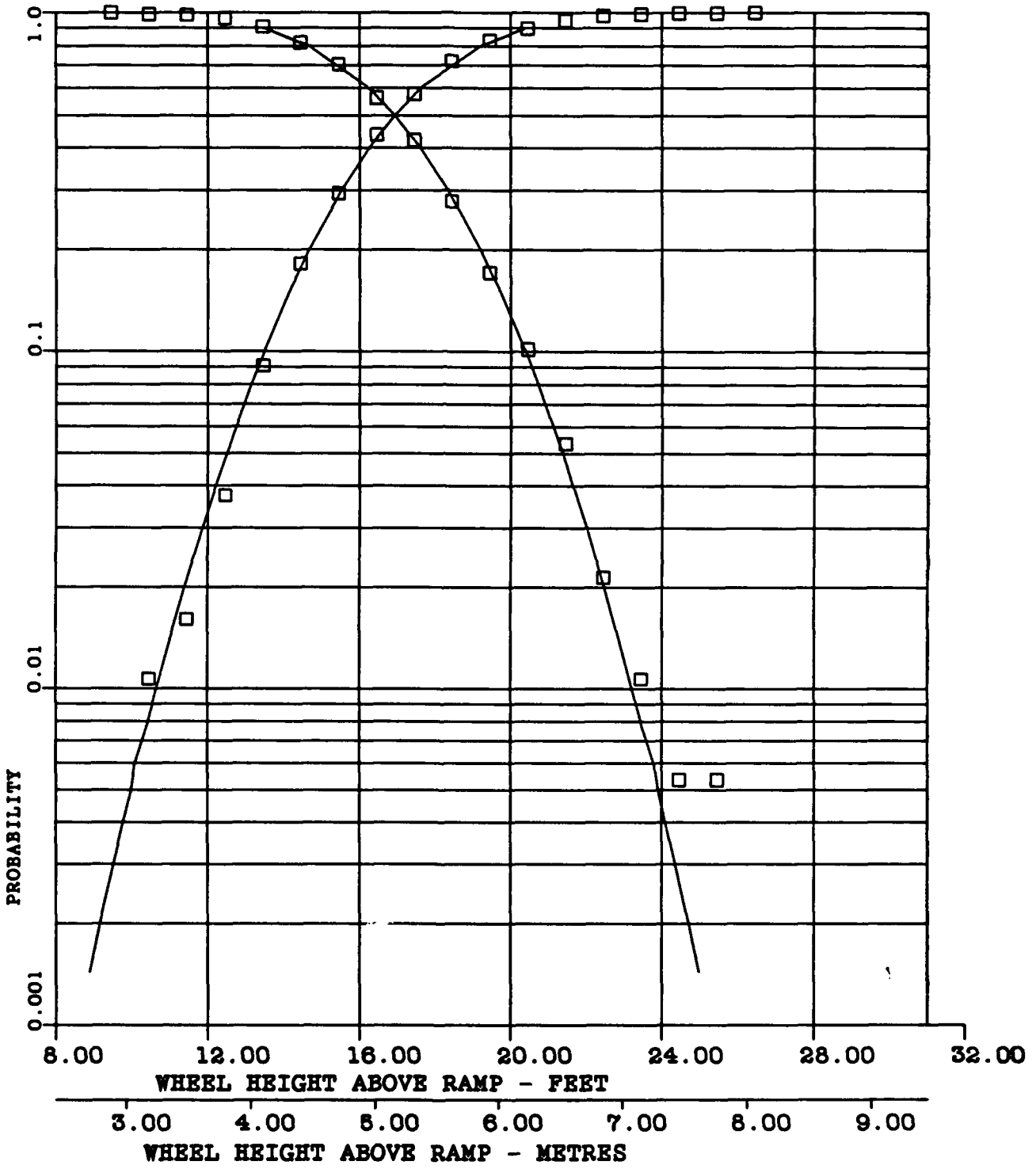


FIGURE D-6 PROBABILITY DISTRIBUTION OF AIRCRAFT WHEEL HEIGHT ABOVE CARRIER RAMP

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-191 $\bar{X}$-10.63 FEET/SEC (3.24 METRES/SEC) A3=-.11
S-2.30 FEET/SEC (.70 METRES/SEC) A4-3.52

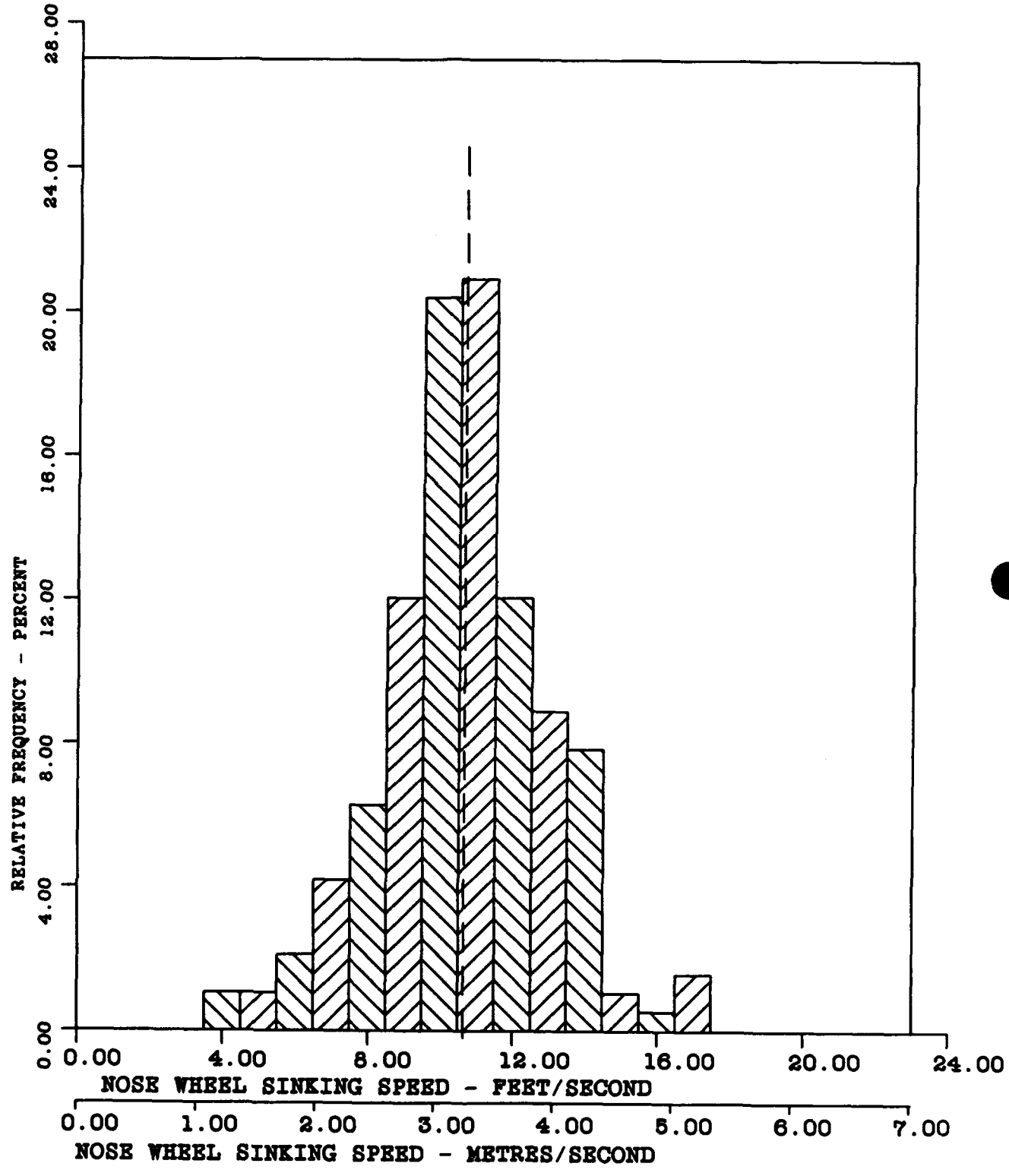


FIGURE D-7 FREQUENCY DISTRIBUTION OF NOSE WHEEL SINKING SPEED

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-191 $\bar{X}$-10.63 FEET/SEC (3.24 METRES/SEC) A3=-.11
S-2.30 FEET/SEC (.70 METRES/SEC) A4-3.52
CURVE FITTED - NORMAL

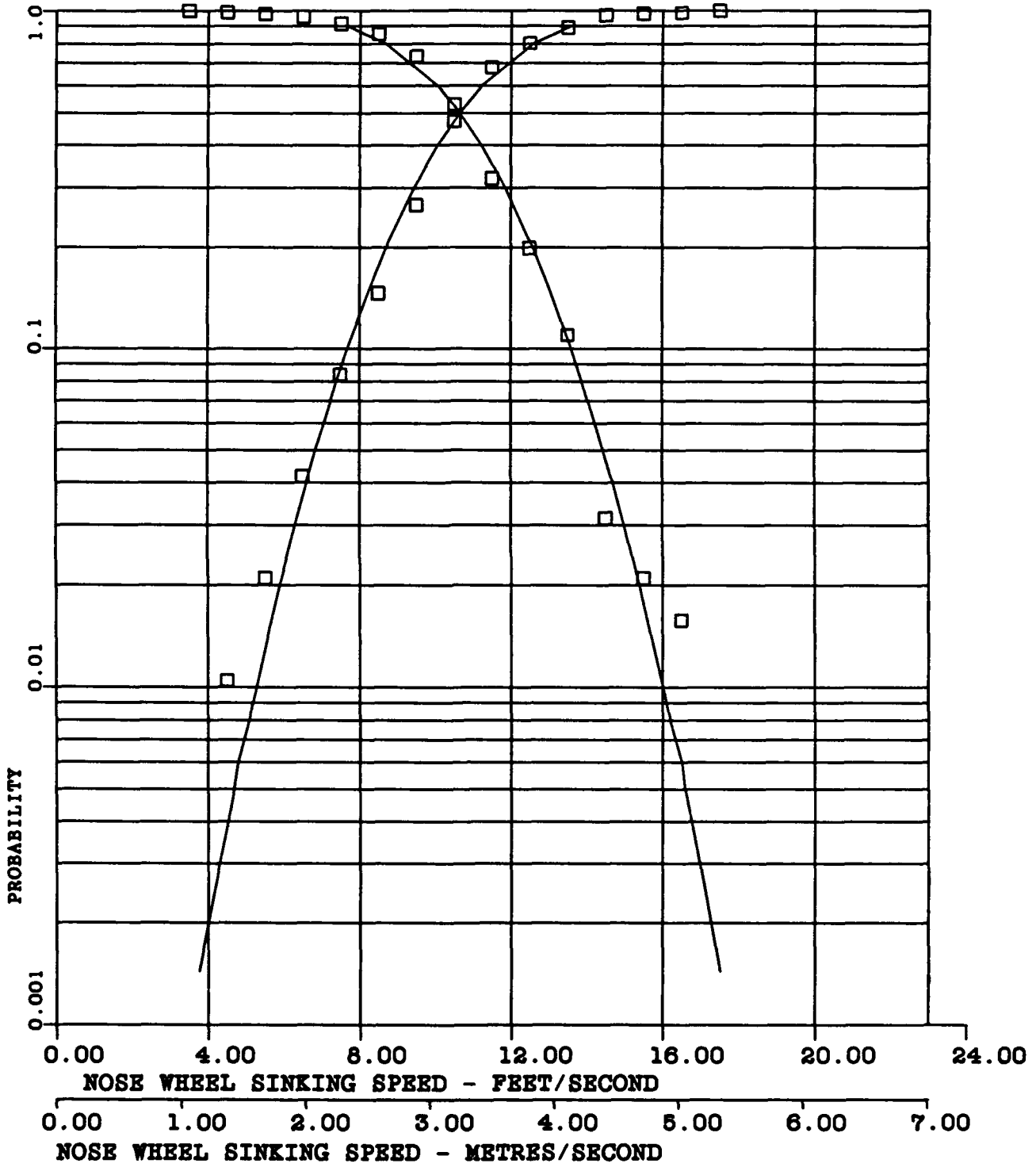


FIGURE D-8 PROBABILITY DISTRIBUTION OF NOSE WHEEL SINKING SPEED

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=191 $\bar{X}$=12.02 FEET/SEC (3.66 METRES/SEC) A3=.00
S=2.24 FEET/SEC (.68 METRES/SEC) A4=3.90

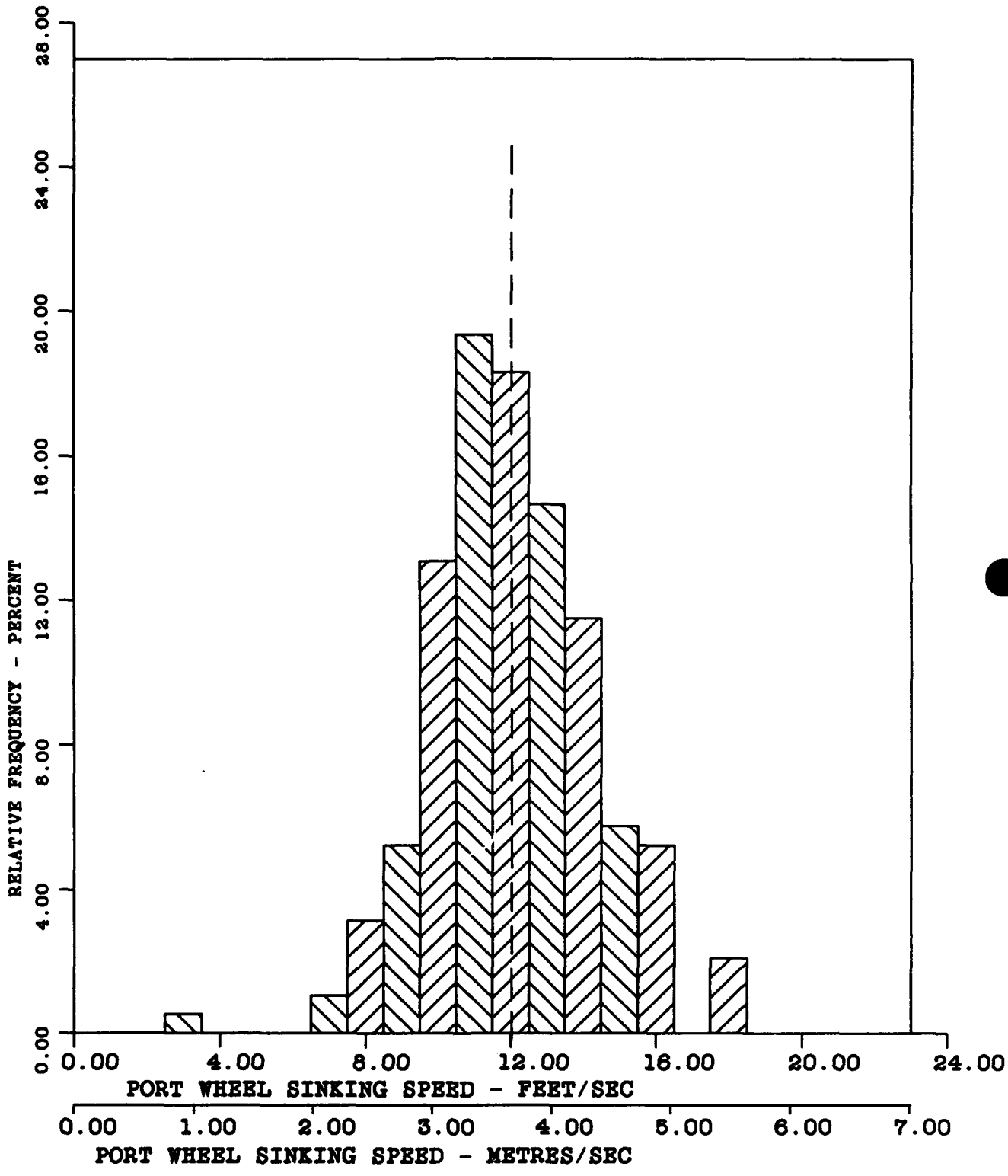


FIGURE D-9 FREQUENCY DISTRIBUTION OF PORT WHEEL SINKING SPEED AT PORT WHEEL TOUCHDOWN

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=191 $\bar{X}$=12.02 FEET/SEC (3.66 METRES/SEC) A3=.00
S=2.24 FEET/SEC (.68 METRES/SEC) A4=3.90
CURVE FITTED - NORMAL

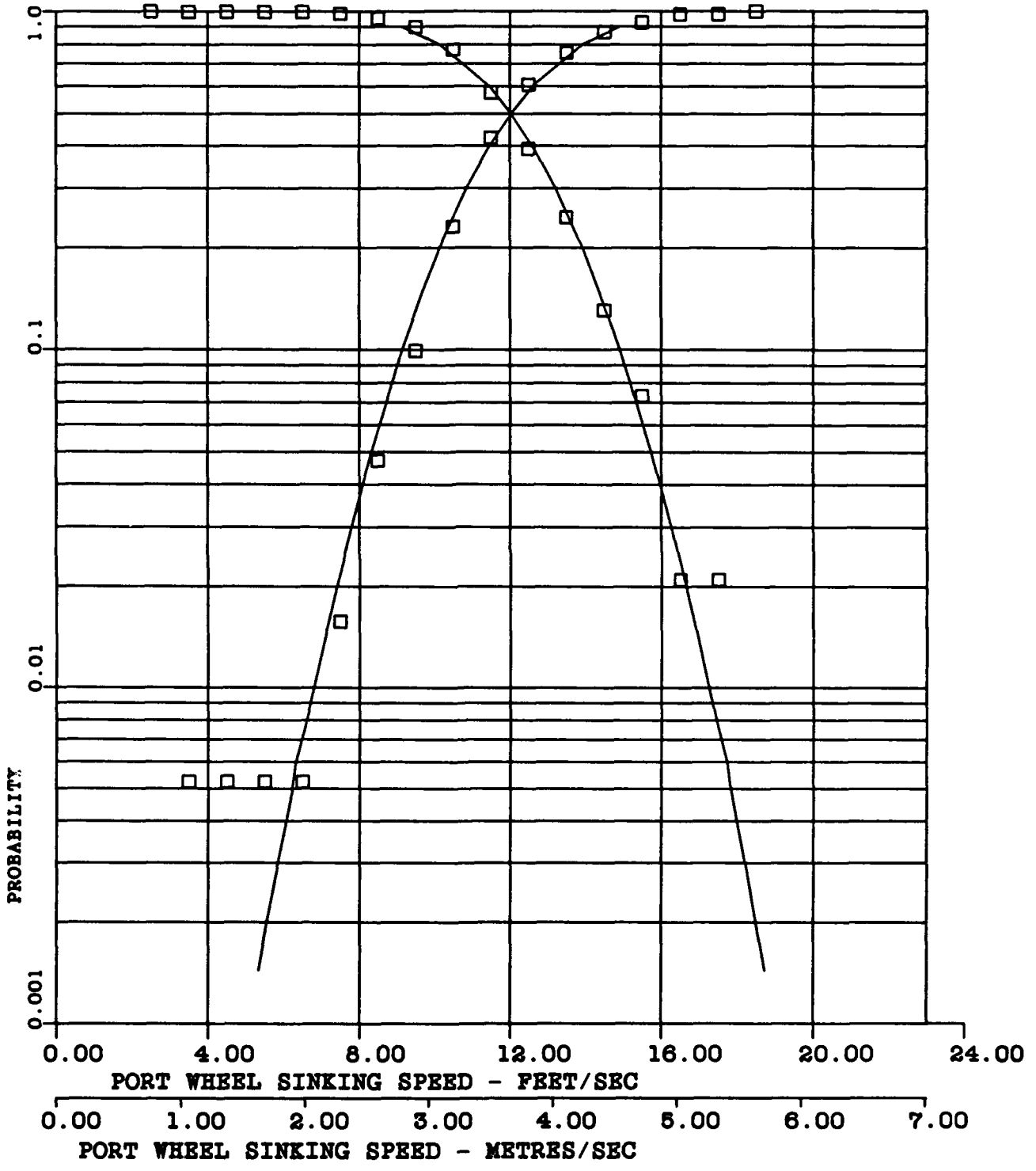


FIGURE D-10 PROBABILITY DISTRIBUTION OF PORT WHEEL SINKING SPEED

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=191 $\bar{X}$=12.01 FEET/SEC (3.66 METRES/SEC) A3=-.39
S=2.28 FEET/SEC (.69 METRES/SEC) A4=4.86

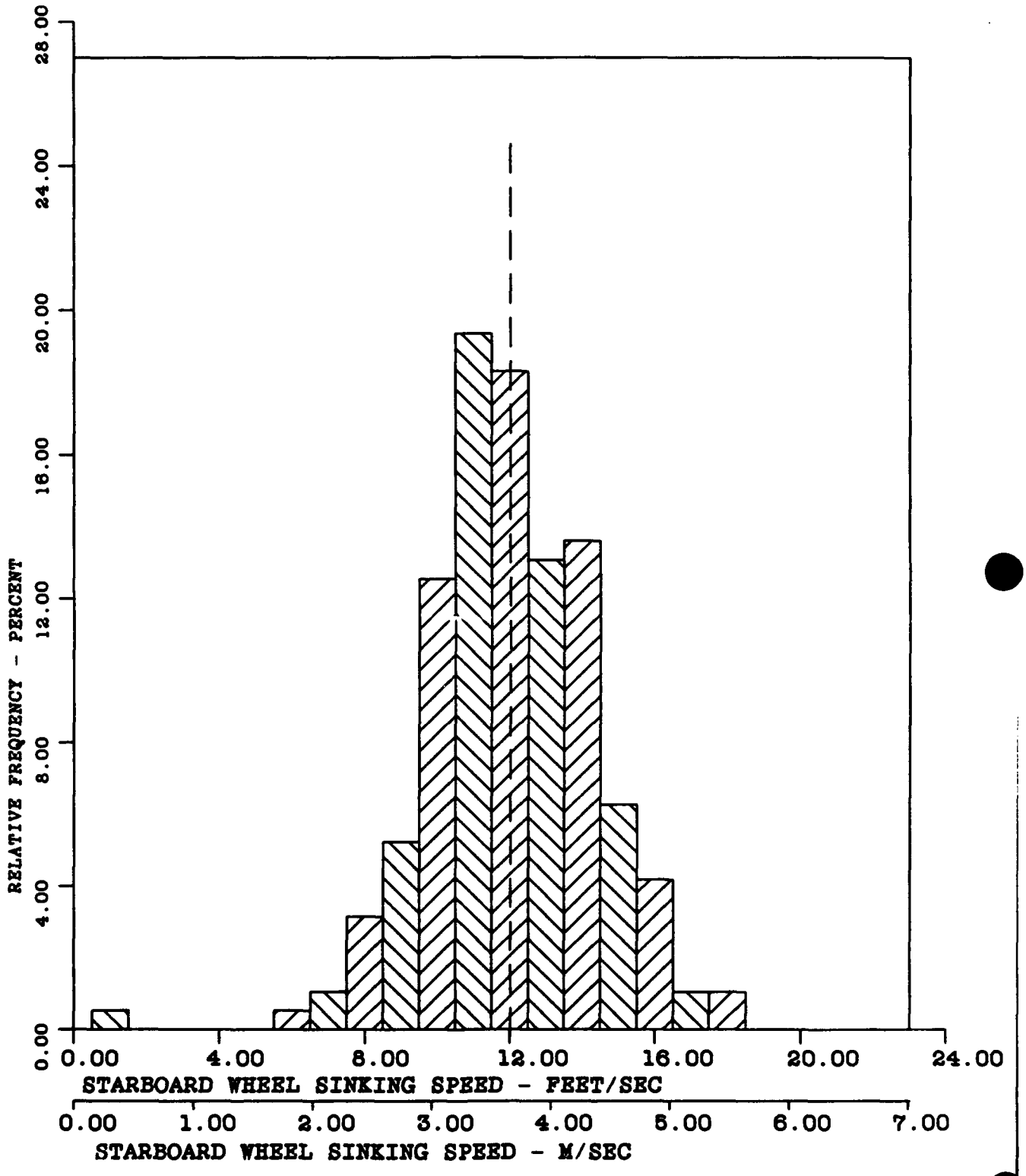


FIGURE D-11 FREQUENCY DISTRIBUTION OF STARBOARD WHEEL SINKING SPEED AT STARBOARD WHEEL TOUCHDOWN

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=191 $\bar{X}$=12.01 FEET/SEC (3.66 METRES/SEC) A3=-.39
S=2.28 FEET/SEC (.69 METRES/SEC) A4=4.86
CURVE FITTED - PEARSON TYPE III

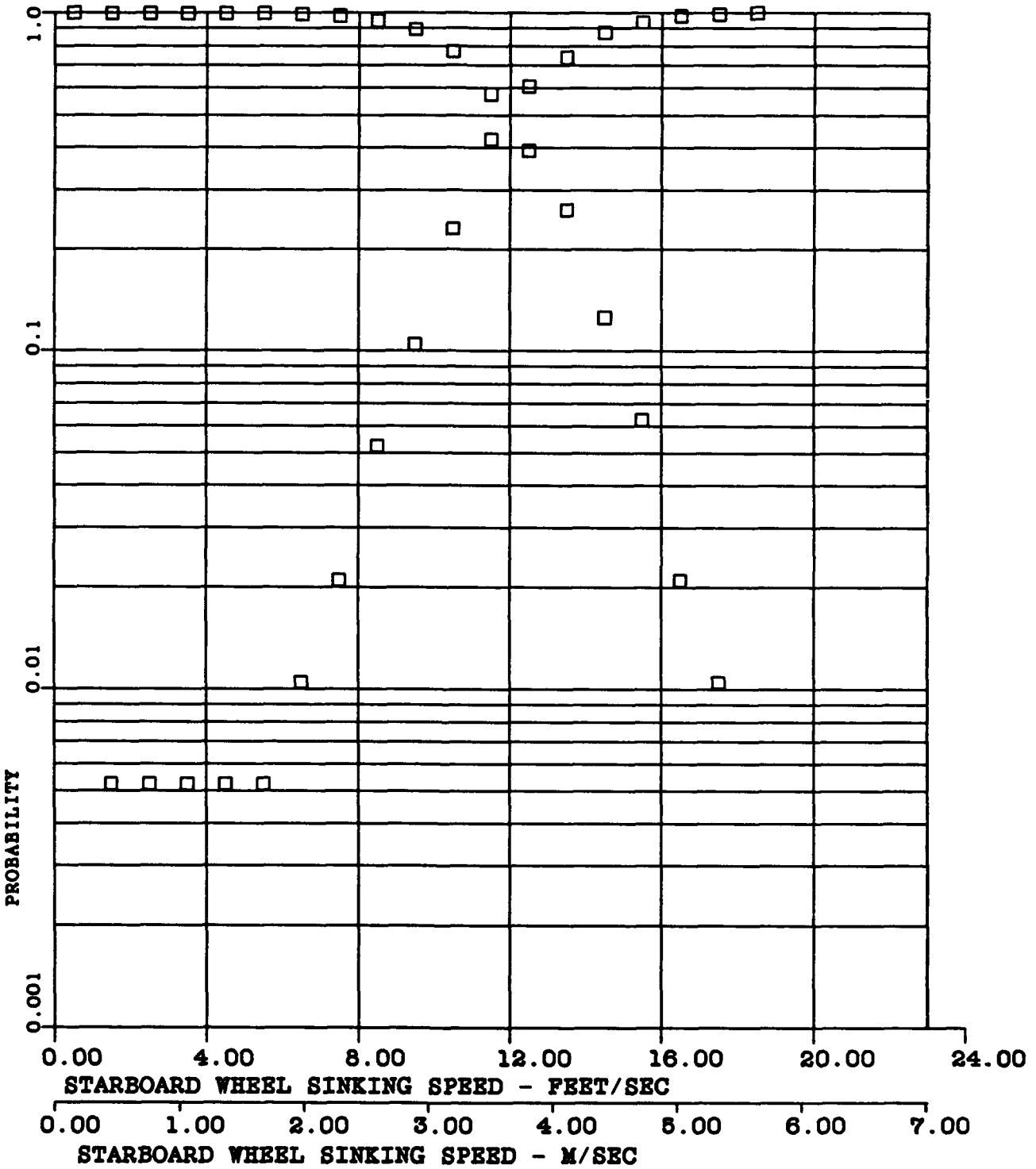


FIGURE D-12 PROBABILITY DISTRIBUTION OF STARBOARD WHEEL SINKING SPEED

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N=191 $\bar{X}$=12.03 FEET/SEC (3.66 METRES/SEC) A3=-.07
S=2.14 FEET/SEC (.65 METRES/SEC) A4=4.09

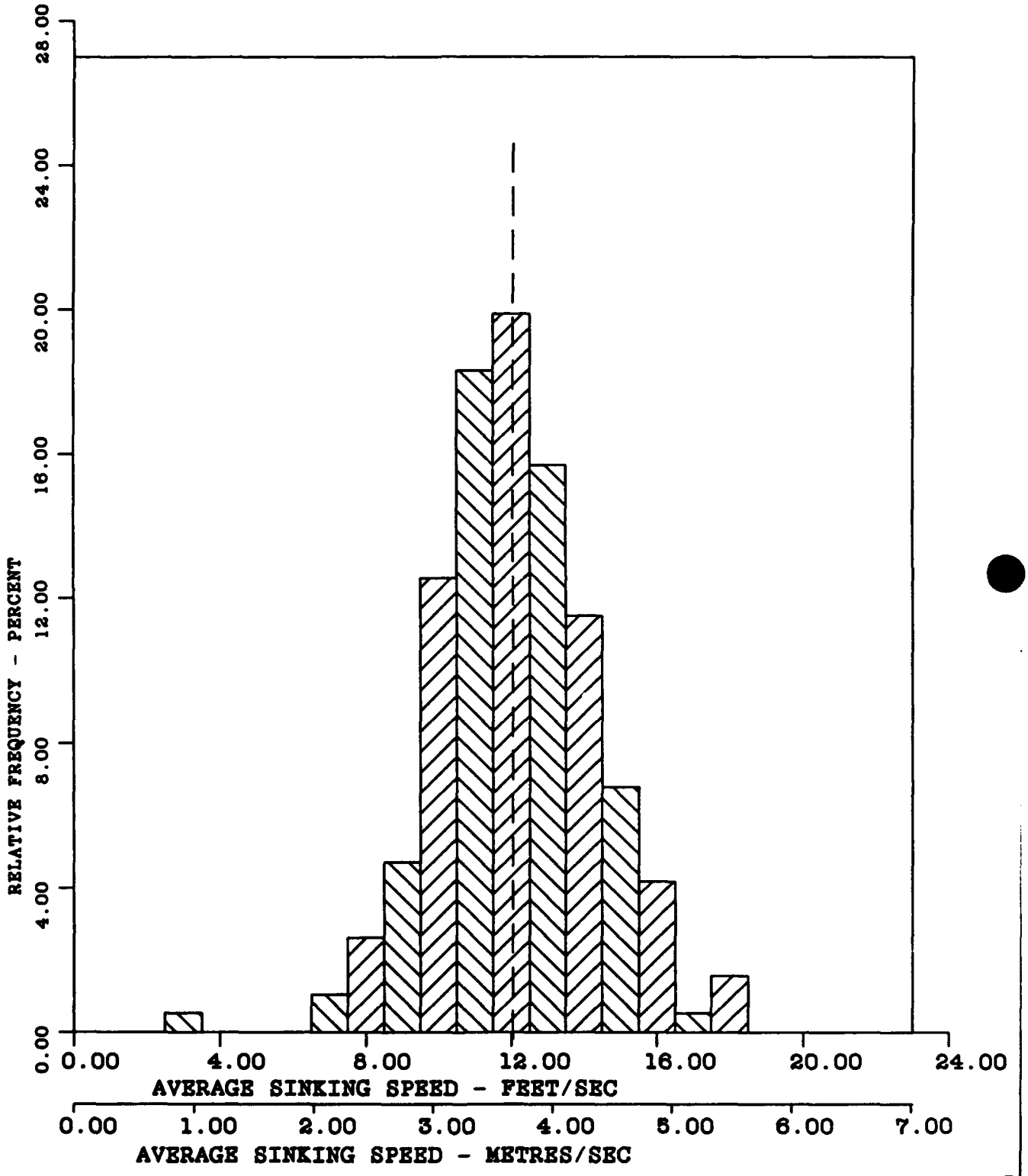


FIGURE D-13 FREQUENCY DISTRIBUTION OF AVG SINKING SPEED OF MAIN WHEEL AT FIRST MAIN WHEEL TOUCHDOWN

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-191 $\bar{X}$-12.03 FEET/SEC (3.66 METRES/SEC) A3=-.07
S-2.14 FEET/SEC (.65 METRES/SEC) A4-4.09
CURVE FITTED - NORMAL

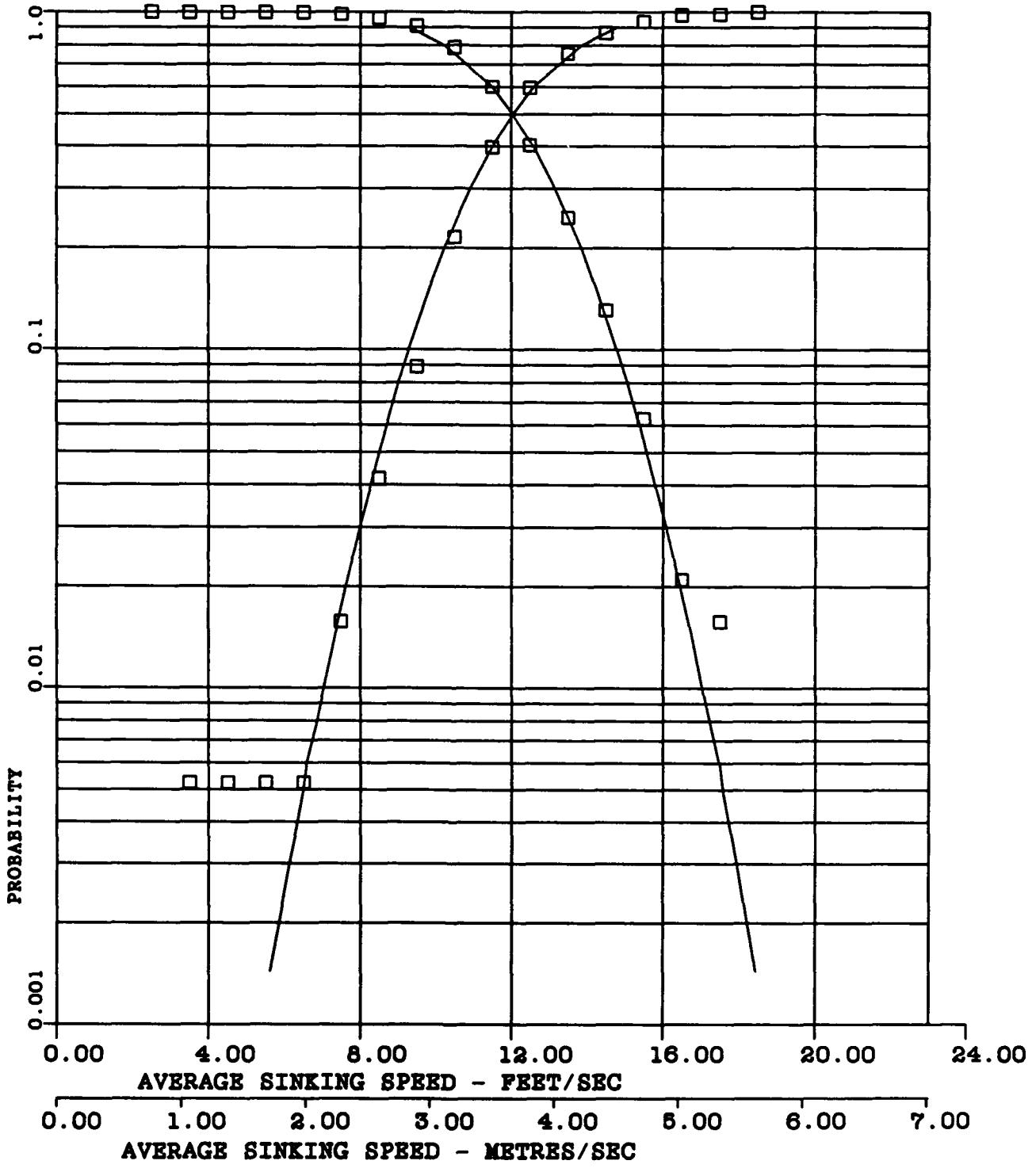


FIGURE D-14 PROBABILITY DISTRIBUTION OF AVERAGE SINKING SPEED AT FIRST MAIN WHEEL TOUCHDOWN

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=10 $\bar{X}$=12.49 FEET/SEC (3.80 METRES/SEC) A3=.57
S=1.90 FEET/SEC (.58 METRES/SEC) A4=2.10

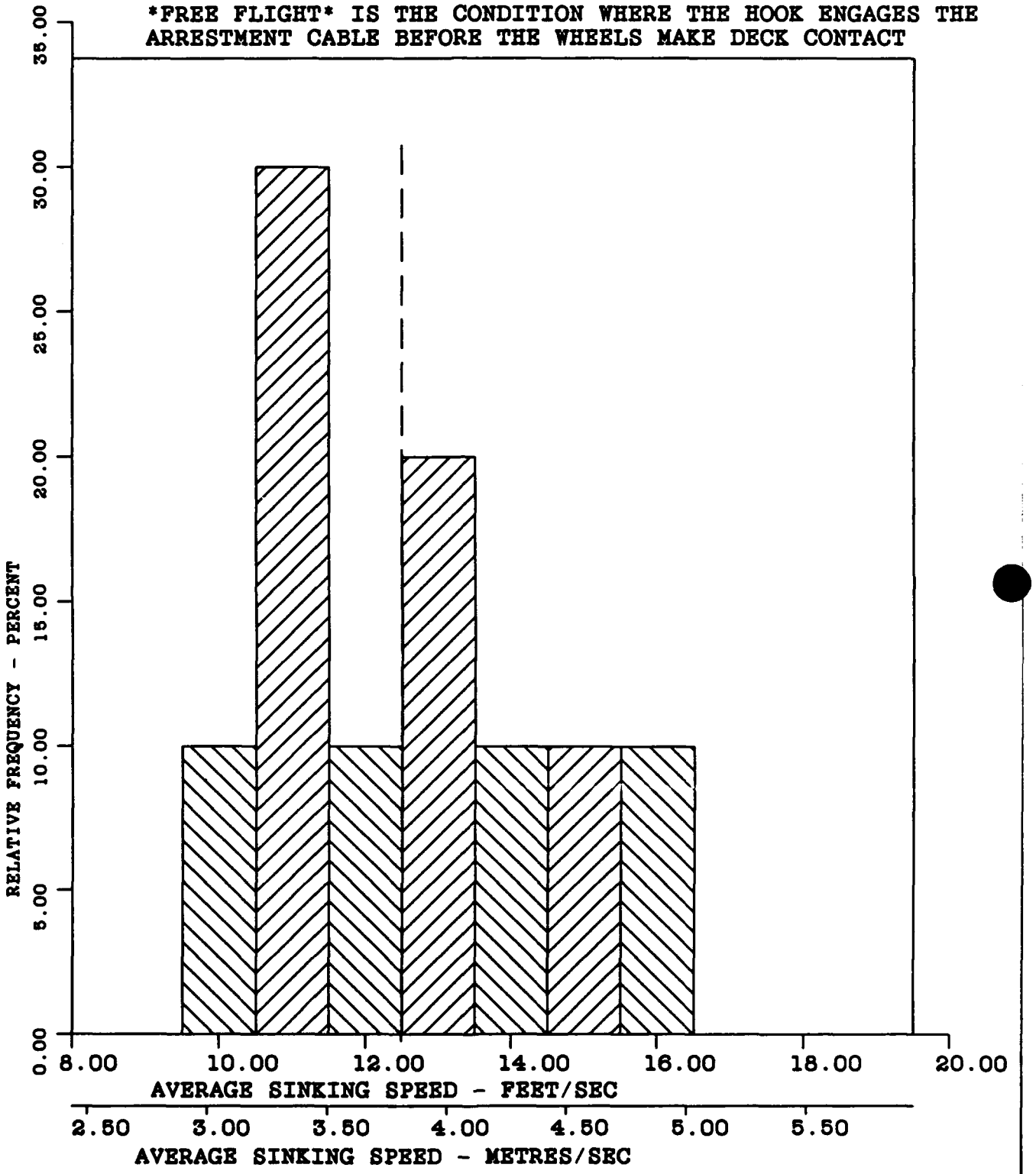


FIGURE D-15 FREQUENCY DISTRIBUTION OF AVERAGE SINKING SPEED OF MAIN WHEELS AT FREE FLIGHT

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-10 $\bar{X}$-12.49 FEET/SEC (3.80 METRES/SEC) A3=.57
S-1.90 FEET/SEC (.58 METRES/SEC) A4-2.10
CURVE FITTED - NORMAL
FREE FLIGHT IS THE CONDITION WHERE THE HOOK ENGAGES THE ARRESTMENT CABLE BEFORE THE WHEELS MAKE DECK CONTACT

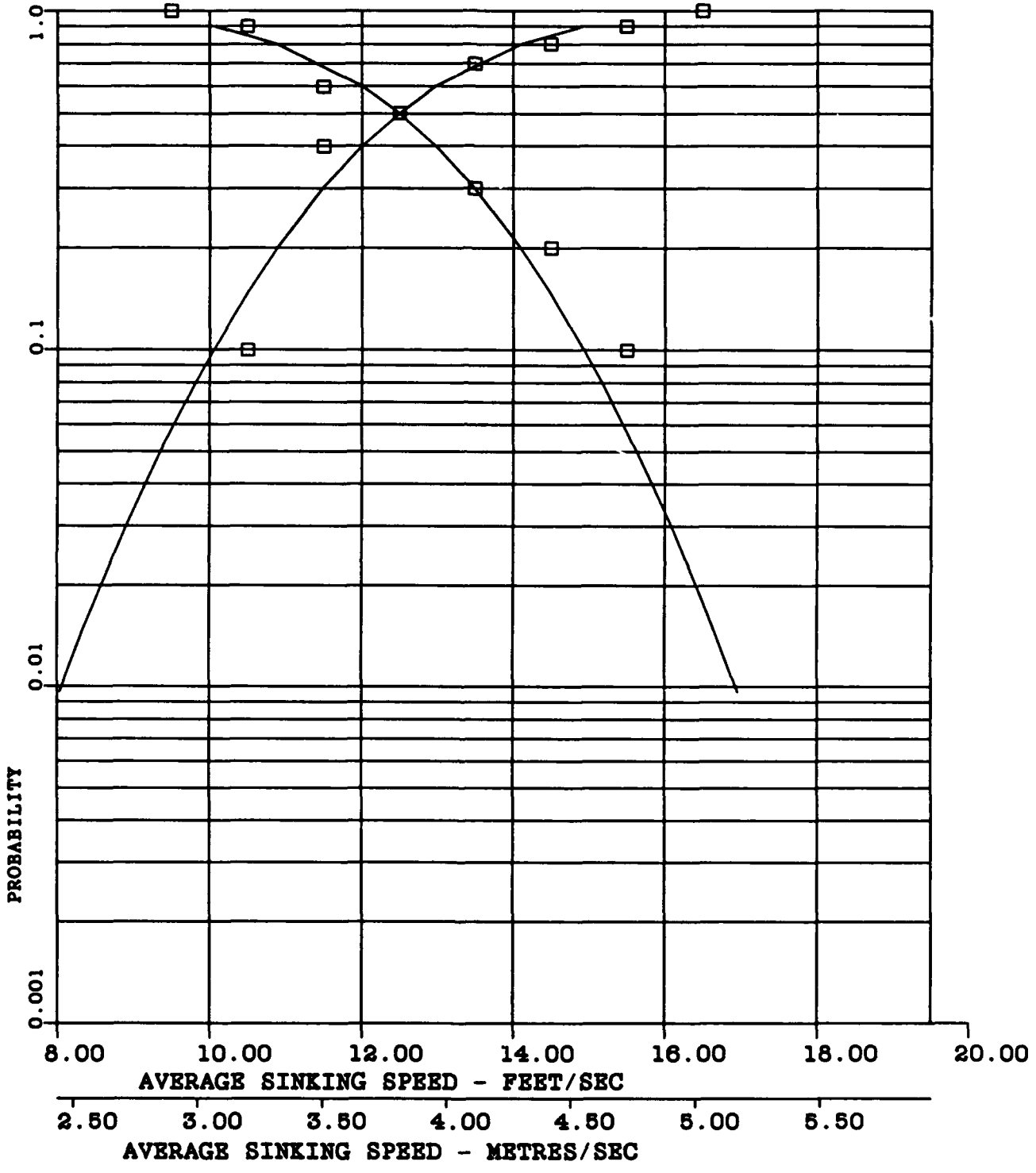


FIGURE D-16 PROBABILITY DISTRIBUTION OF AVERAGE SINKING SPEED AT FREE FLIGHT

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-191 $\bar{X}$-1.05 A3-.00
S-.08 A4-3.55

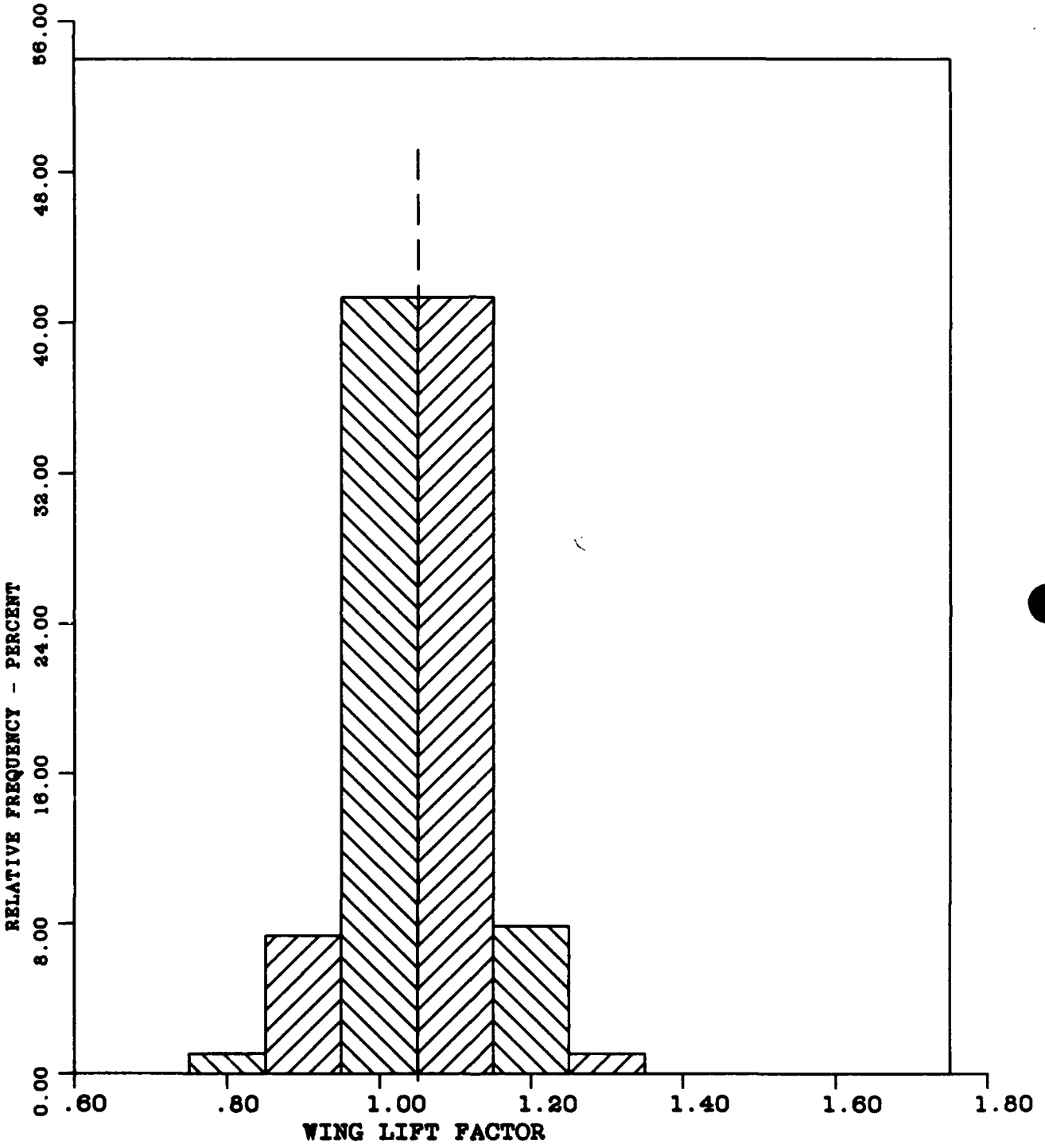


FIGURE D-17 FREQUENCY DISTRIBUTION OF WING LIFT FACTOR AT FIRST MAIN WHEEL TOUCHDOWN

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=191 $\bar{X}$=1.05 A3=.00
S=.08 A4=3.55
CURVE FITTED - NORMAL

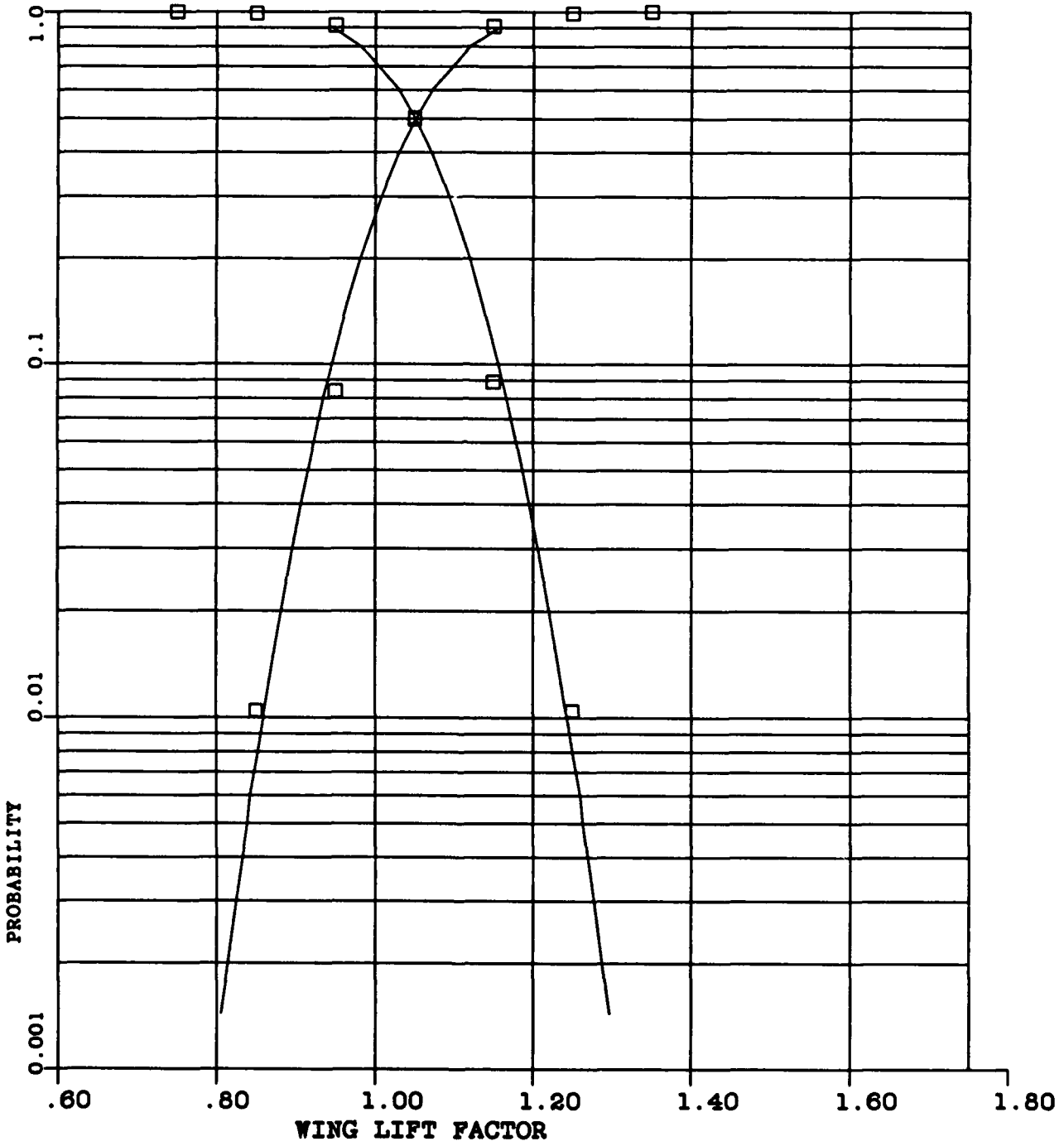


FIGURE D-18 PROBABILITY DISTRIBUTION OF WING LIFT FACTOR AT FIRST MAIN WHEEL TOUCHDOWN

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=10 $\bar{X}$=1.03 A3=-.36
S=.06 A4=2.29

FREE FLIGHT IS THE CONDITION WHERE THE HOOK ENGAGES THE ARRESTMENT CABLE BEFORE THE WHEELS MAKE DECK CONTACT

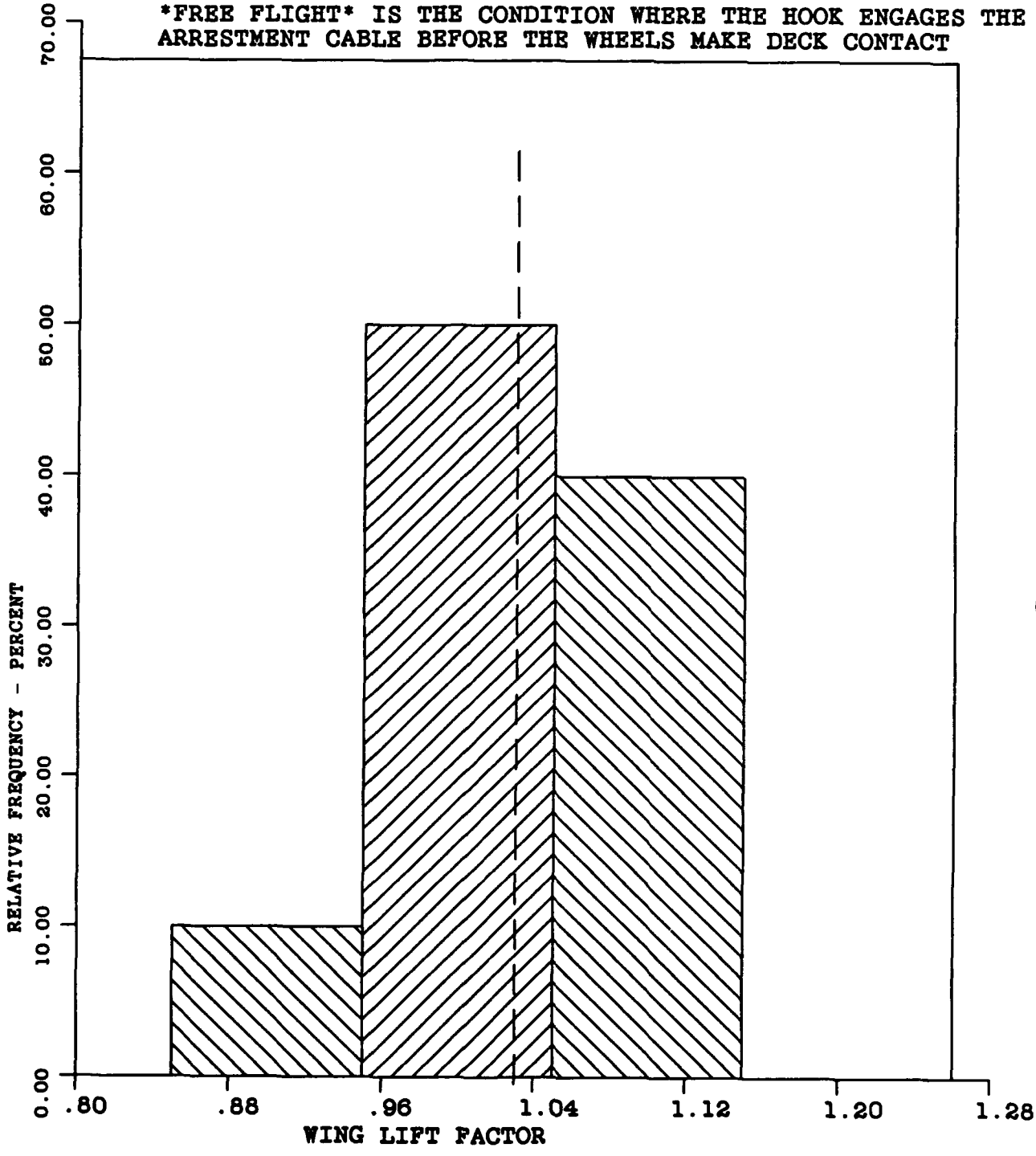


FIGURE D-19 FREQUENCY DISTRIBUTION OF WING LIFT FACTOR AT FREE FLIGHT

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-10 $\bar{X}$-1.03 A3=-.36
S=.06 A4=2.29
CURVE FITTED - NORMAL
FREE FLIGHT IS THE CONDITION WHERE THE HOOK ENGAGES THE ARRESTMENT CABLE BEFORE THE WHEELS MAKE DECK CONTACT

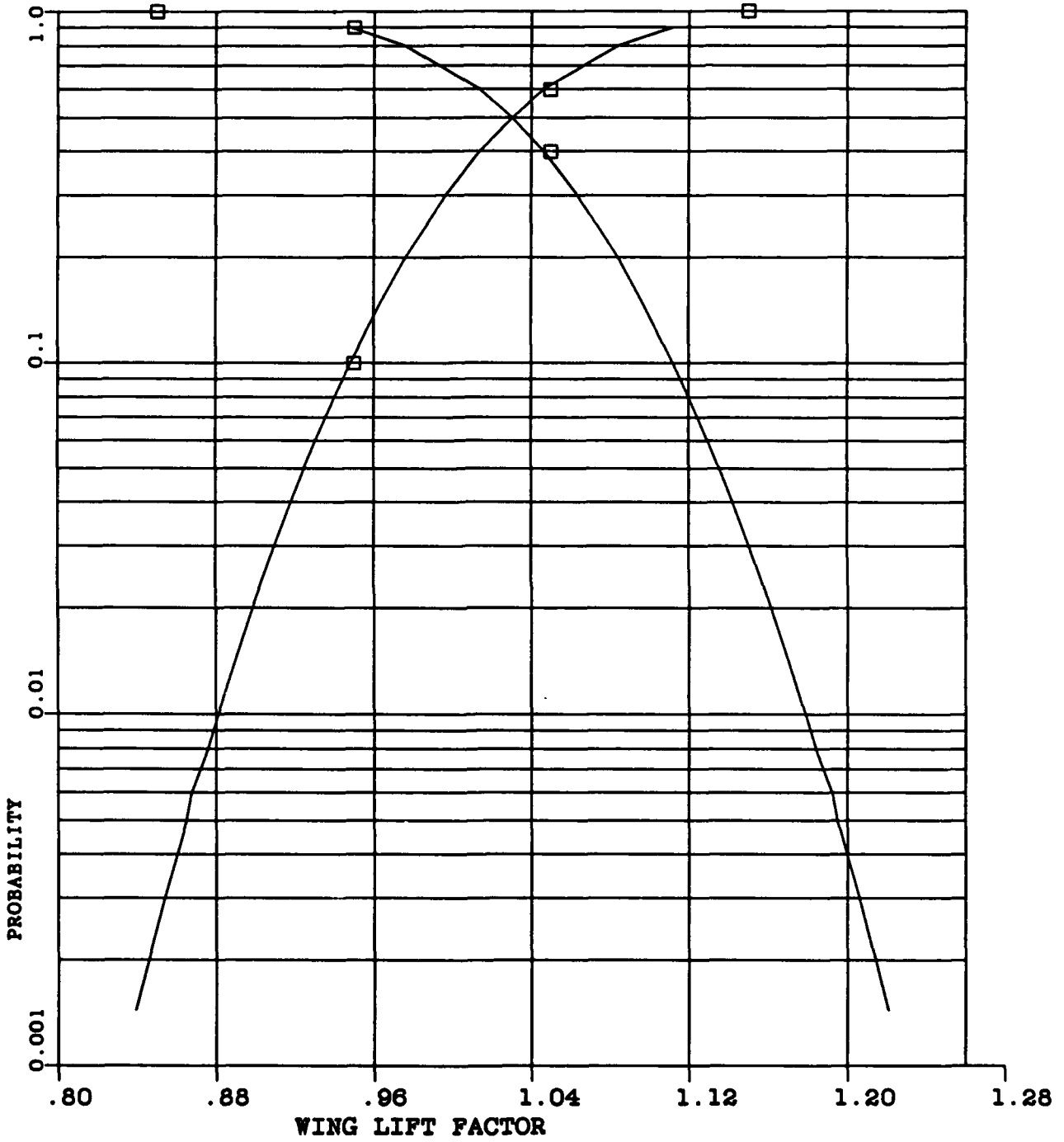


FIGURE D-20 PROBABILITY DISTRIBUTION OF WING LIFT FACTOR AT FREE FLIGHT

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N=187 $\bar{X}$=4.86 DEGREES (.084 RADIANS) A3=-1.77
S=.90 DEGREES (.015 RADIANS) A4=13.58

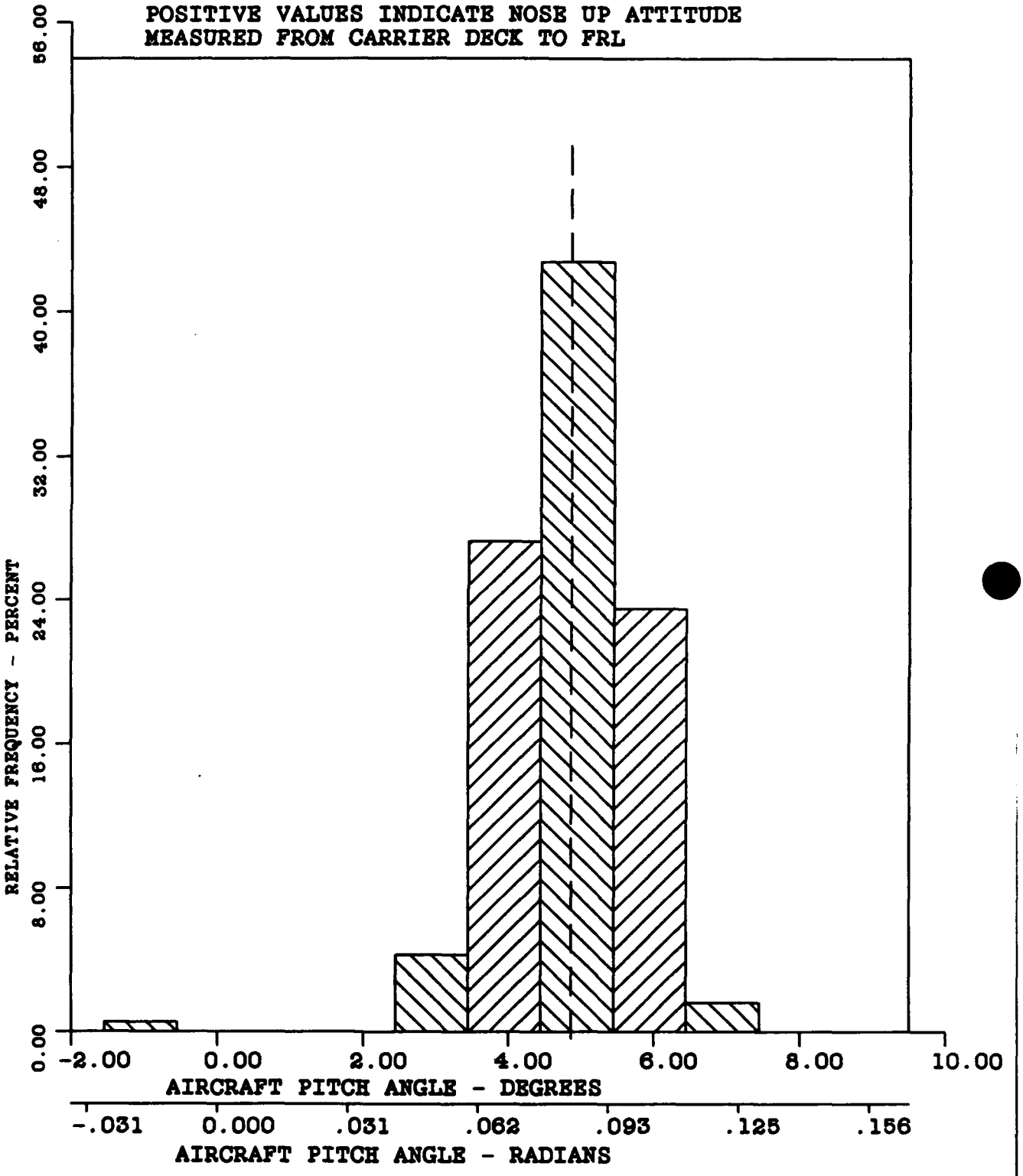


FIGURE D-21 FREQUENCY DISTRIBUTION OF AIRCRAFT PITCH ANGLE AT THE RAMP

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N=187 $\bar{X}$=4.86 DEGREES (.084 RADIANS) A3=-1.77
S=.90 DEGREES (.015 RADIANS) A4=13.58
CURVE FITTED - PEARSON TYPE III
POSITIVE VALUES INDICATE NOSE UP ATTITUDE
MEASURED FROM CARRIER DECK TO FRL

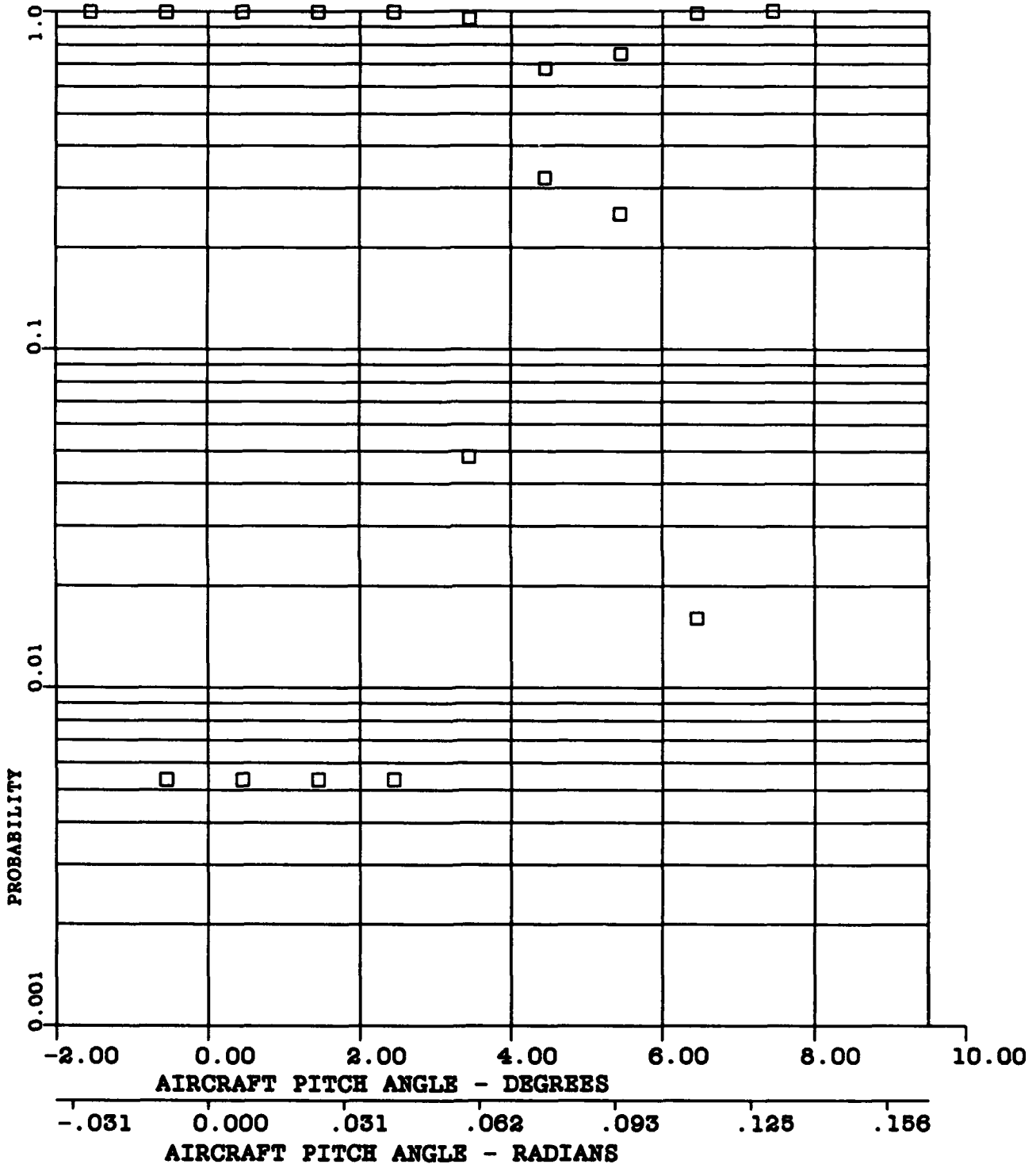


FIGURE D-22 PROBABILITY DISTRIBUTION OF AIRCRAFT PITCH ANGLE AT THE RAMP

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-191 $\bar{X}$-4.65 DEGREES (.081 RADIANS) A3=-.22
S-1.05 DEGREES (.018 RADIANS) A4-3.19

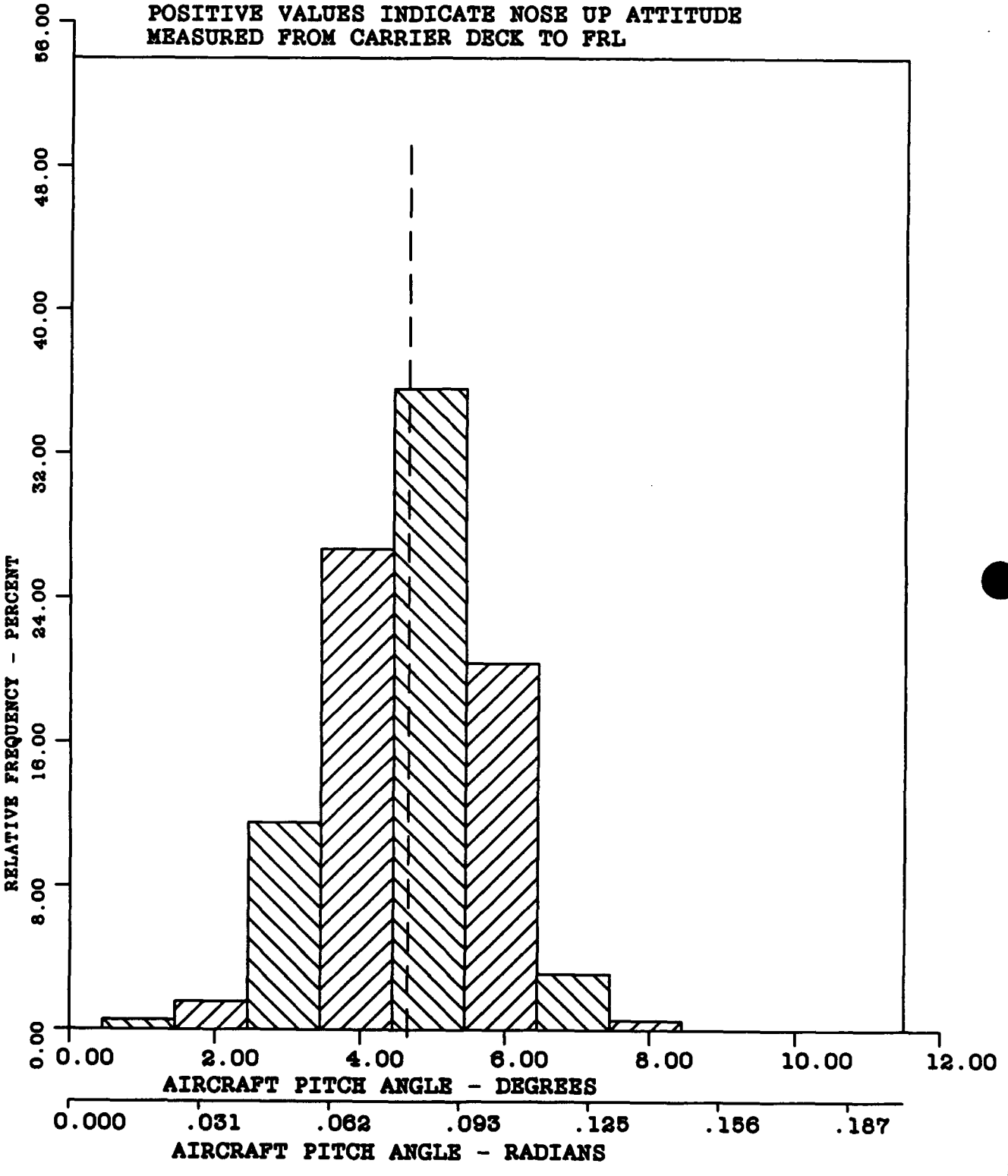


FIGURE D-23 FREQUENCY DISTRIBUTION OF AIRCRAFT PITCH ANGLE AT FIRST MAIN WHEEL TOUCHDOWN

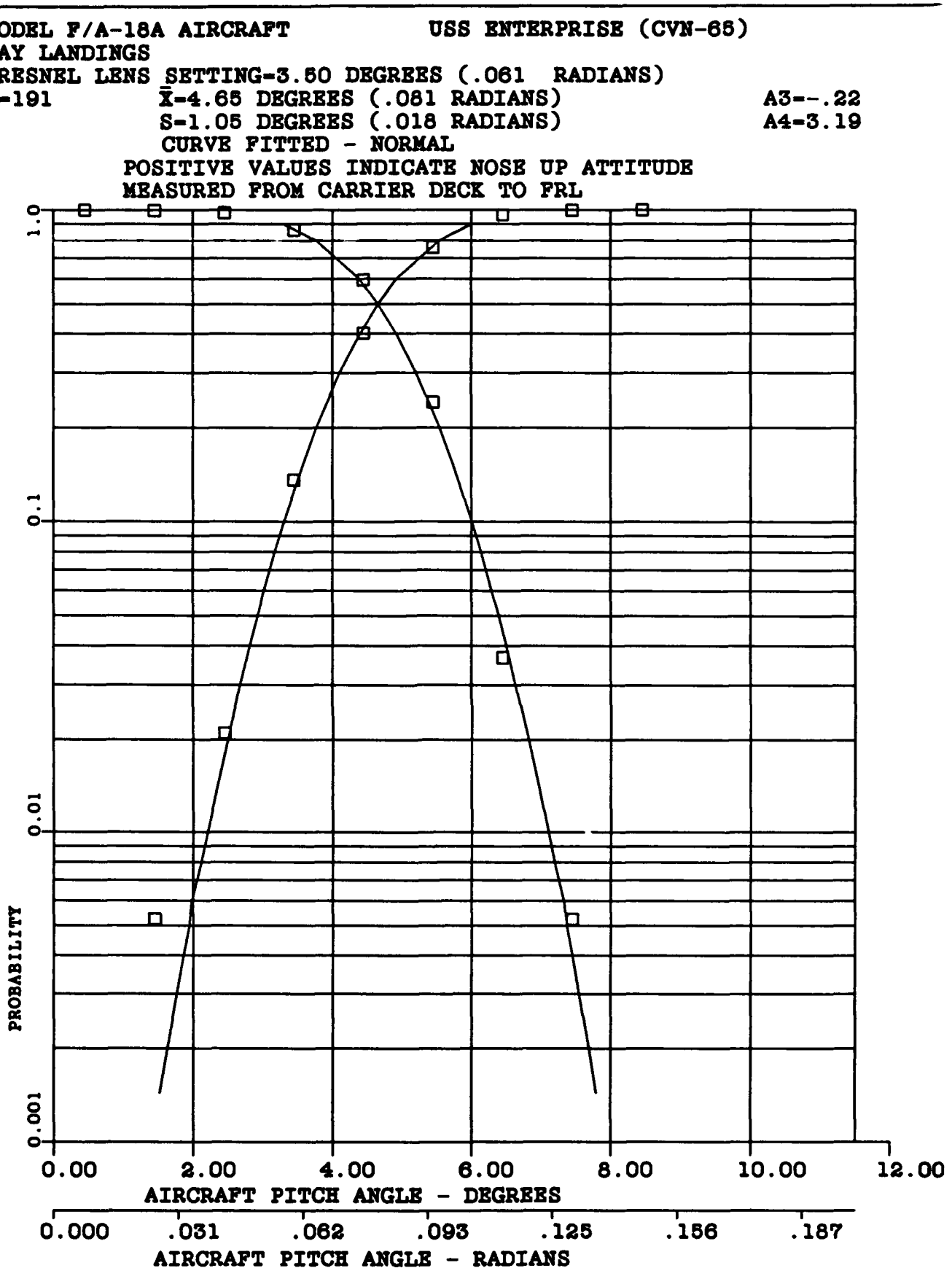


FIGURE D-24 PROBABILITY DISTRIBUTION OF AIRCRAFT PITCH ANGLE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-10 $\bar{X}$-5.43 DEGREES (.094 RADIANS) A3=-1.38
S=.52 DEGREES (.009 RADIANS) A4=4.24

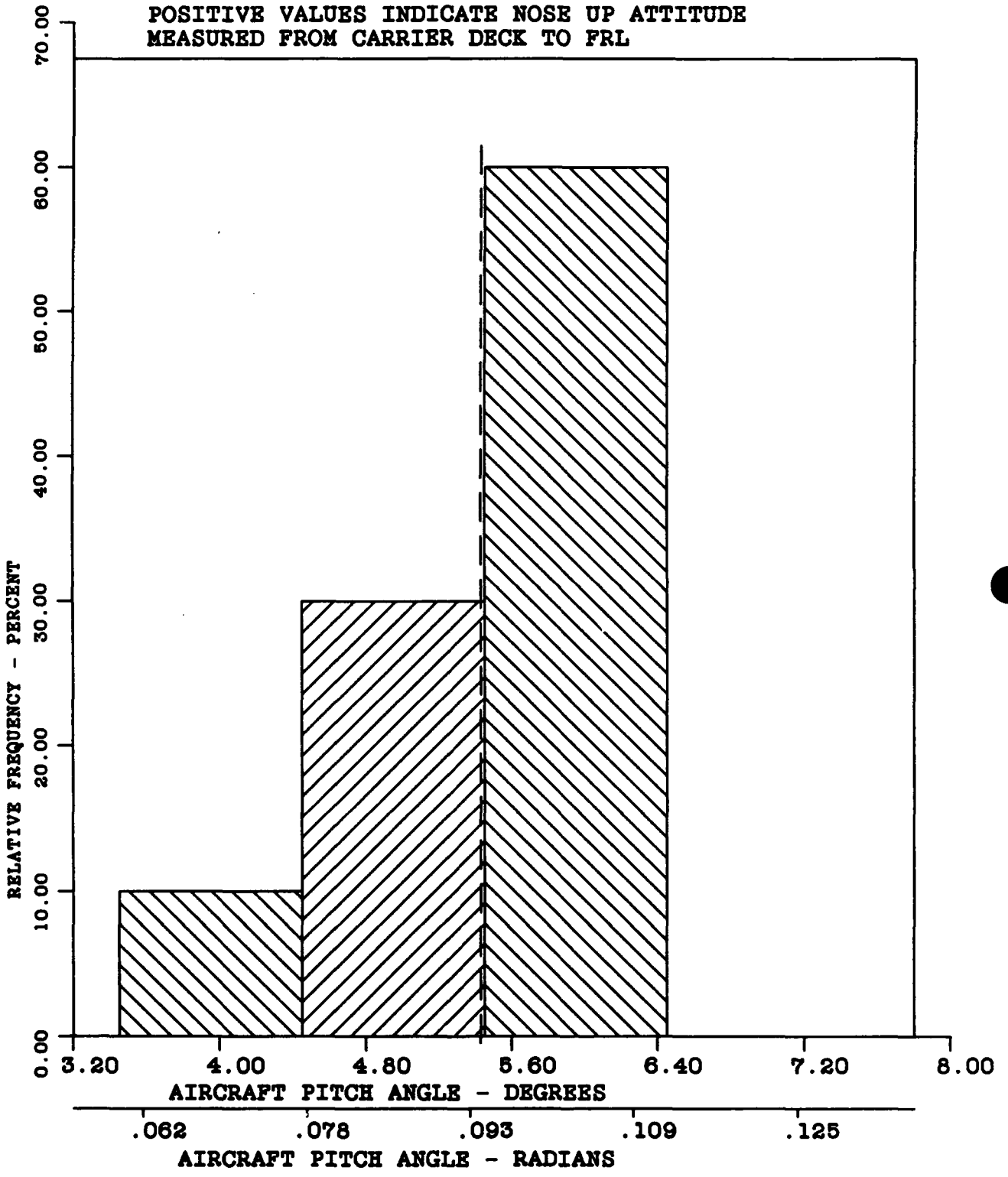


FIGURE D-25 FREQUENCY DISTRIBUTION OF AIRCRAFT PITCH ANGLE AT FREE FLIGHT

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N=10 $\bar{X}$=5.43 DEGREES (.094 RADIANS) A3=-1.38
S=.52 DEGREES (.009 RADIANS) A4=4.24
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE NOSE UP ATTITUDE
MEASURED FROM CARRIER DECK TO FRL

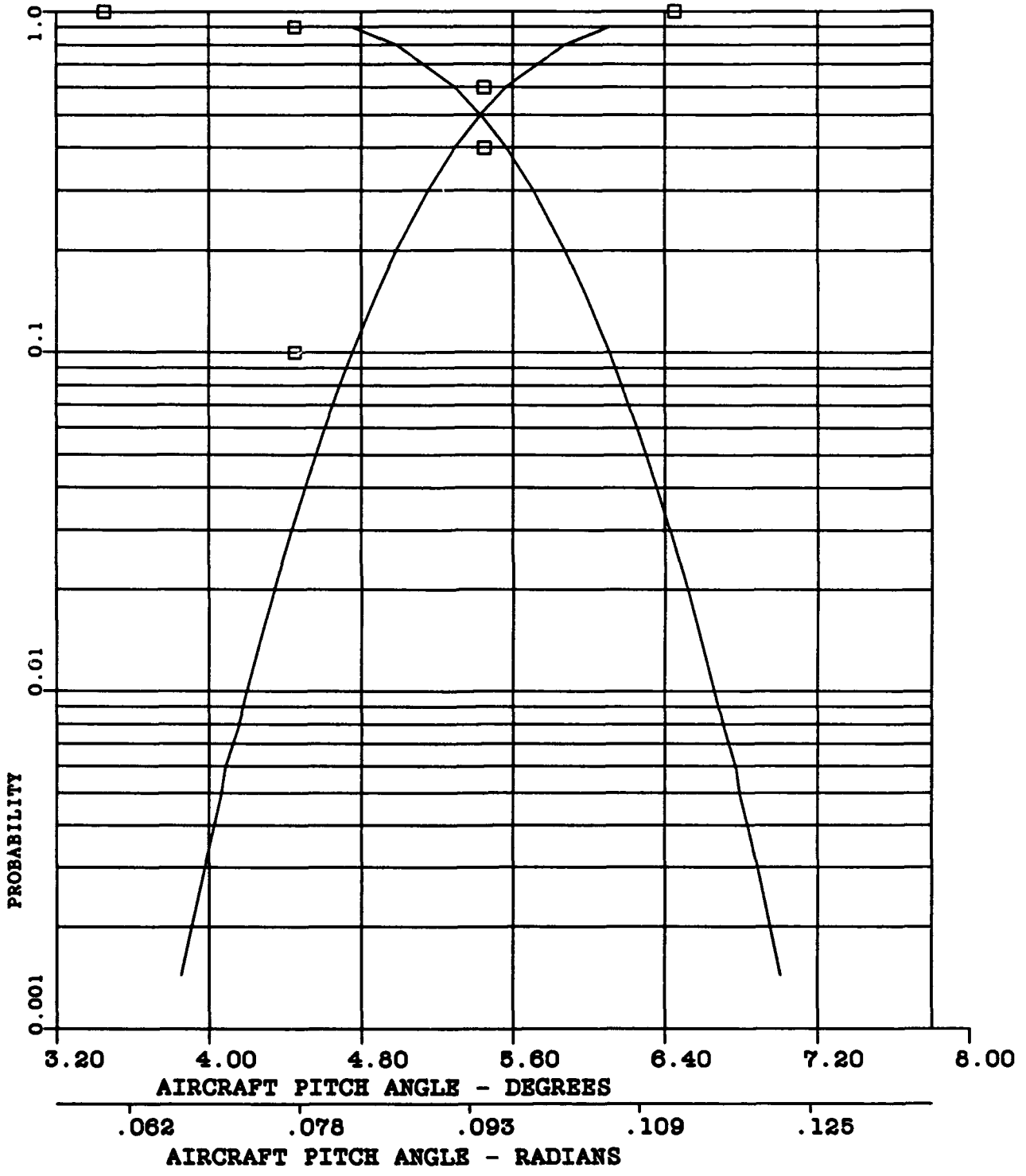


FIGURE D-26 PROBABILITY DISTRIBUTION OF AIRCRAFT PITCH ANGLE AT FREE FLIGHT

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=187 $\bar{X}$=.41 DEGREES (.007 RADIANS) A3=.12
S=3.30 DEGREES (.057 RADIANS) A4=2.97

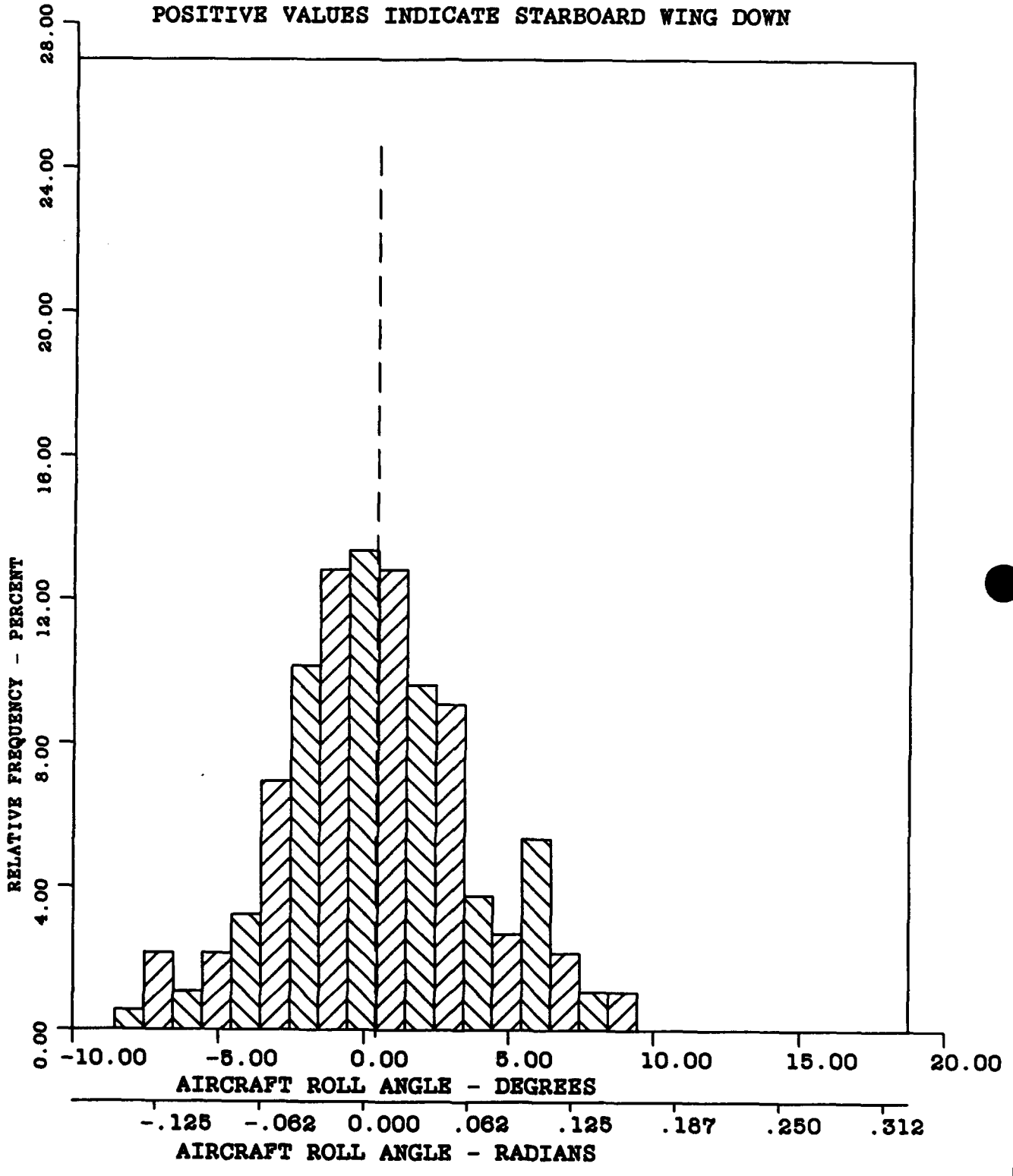


FIGURE D-27 FREQUENCY DISTRIBUTION OF AIRCRAFT ROLL ANGLE AT THE RAMP

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-187 $\bar{X}$-.41 DEGREES (.007 RADIANS) A3-.12
S-3.30 DEGREES (.057 RADIANS) A4-2.97
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE STARBOARD WING DOWN

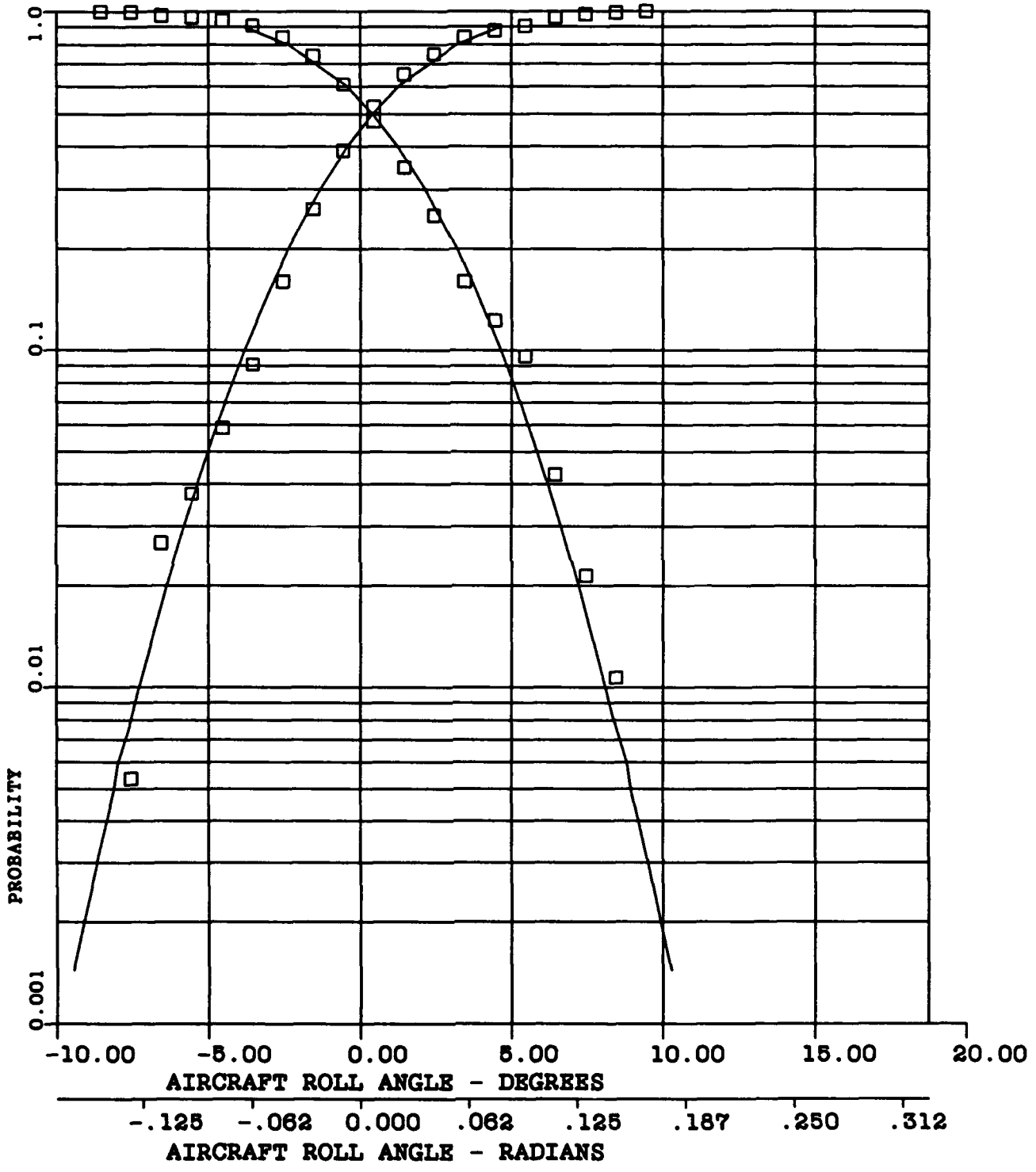


FIGURE D-28 PROBABILITY DISTRIBUTION OF AIRCRAFT ROLL ANGLE AT THE RAMP

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N=191 $\bar{X}$=.22 DEGREES (.003 RADIANS) A3=.41
S=2.51 DEGREES (.043 RADIANS) A4=5.03

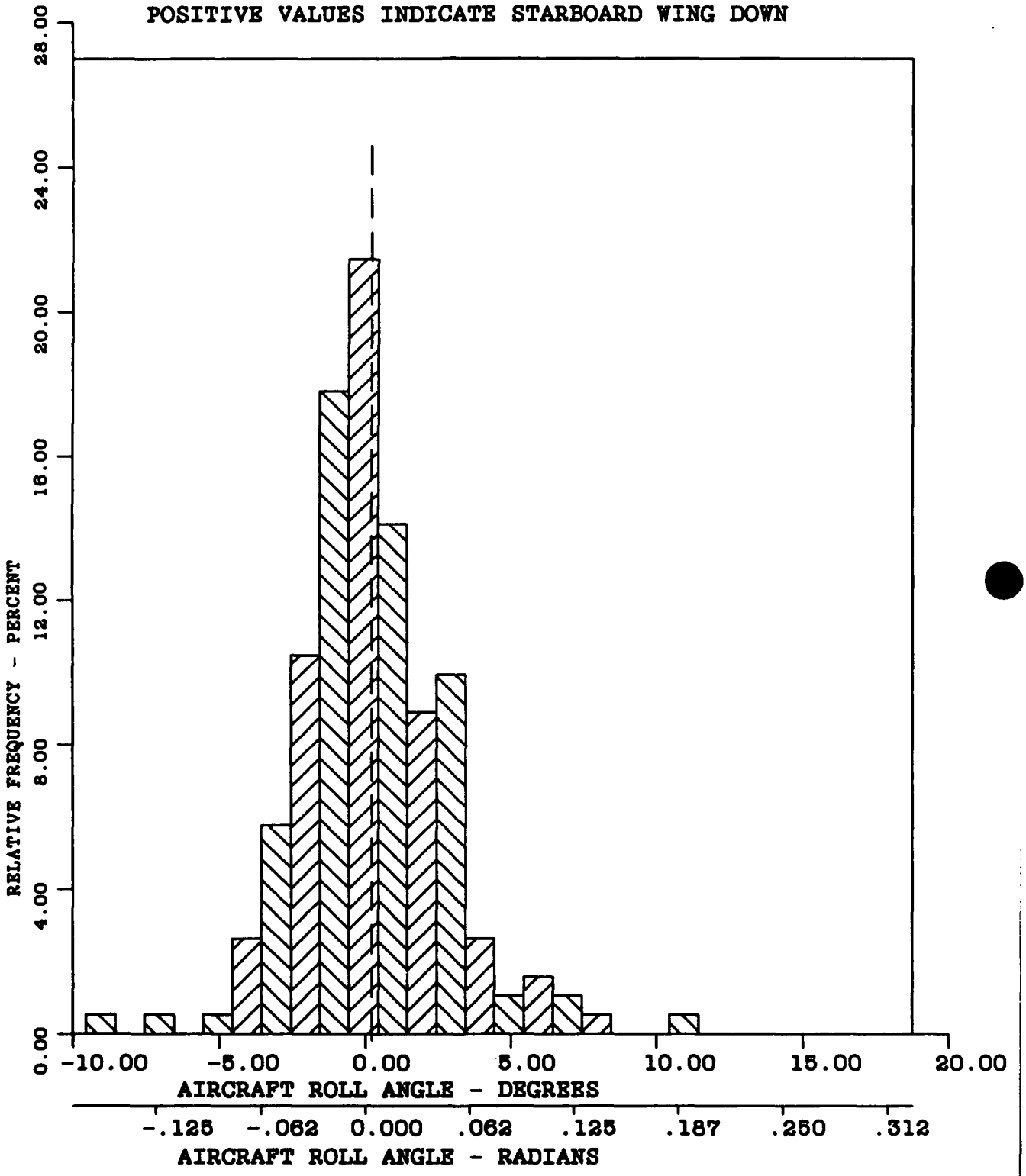


FIGURE D-29 FREQUENCY DISTRIBUTION OF AIRCRAFT ROLL ANGLE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-191 $\bar{X}$-.22 DEGREES (.003 RADIANS) A3-.41
S-2.51 DEGREES (.043 RADIANS) A4-5.03
CURVE FITTED - PEARSON TYPE III
POSITIVE VALUES INDICATE STARBOARD WING DOWN

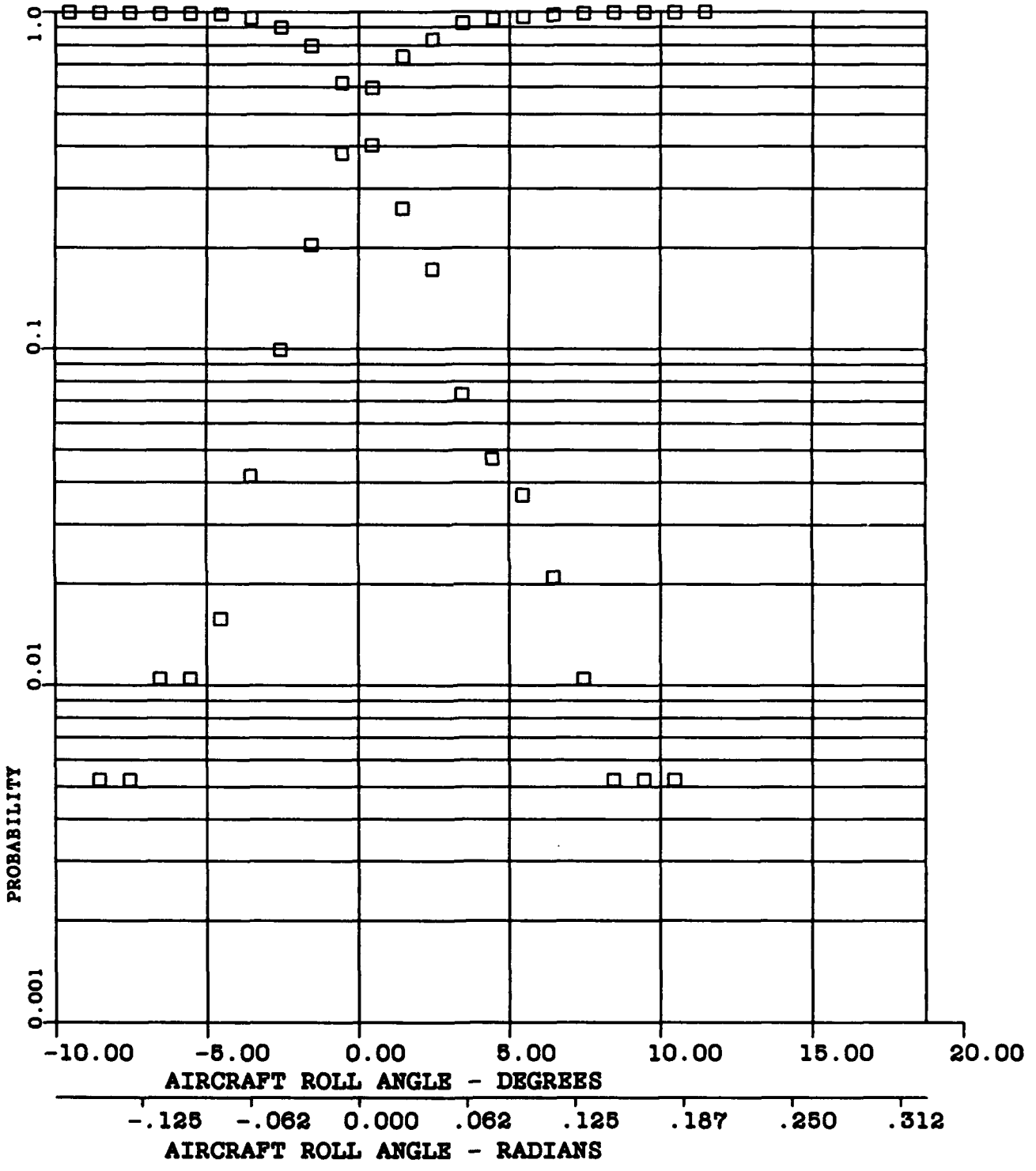


FIGURE D-30 PROBABILITY DISTRIBUTION OF AIRCRAFT ROLL ANGLE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N=10 $\bar{X}$=-.22 DEGREES (.003 RADIANS) A3=-.50
S=1.88 DEGREES (.032 RADIANS) A4=2.19

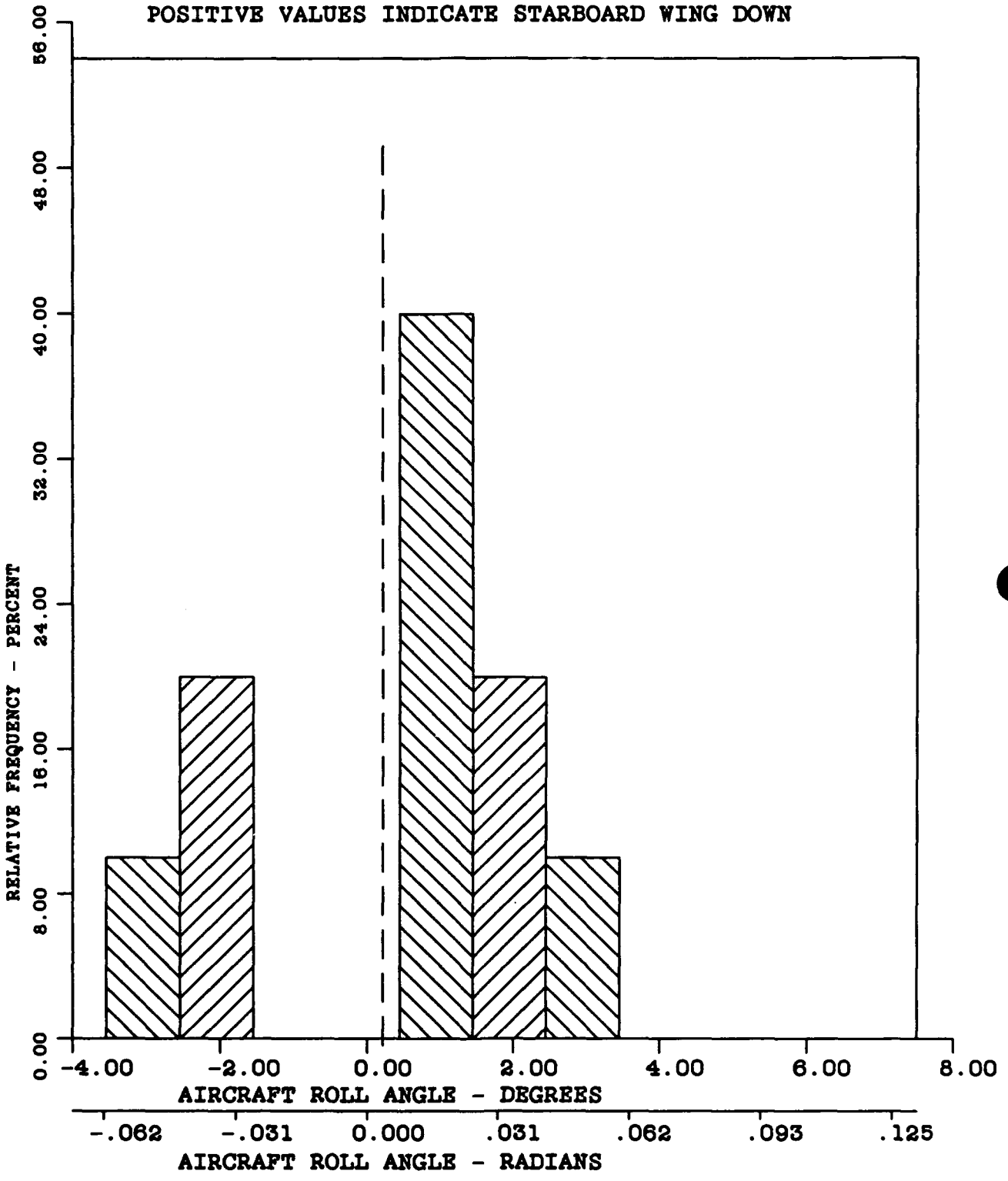


FIGURE D-31 FREQUENCY DISTRIBUTION OF AIRCRAFT ROLL ANGLE AT FREE FLIGHT

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-10 $\bar{X}$-.22 DEGREES (.003 RADIANS) A3=-.50
S-1.88 DEGREES (.032 RADIANS) A4-2.19
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE STARBOARD WING DOWN

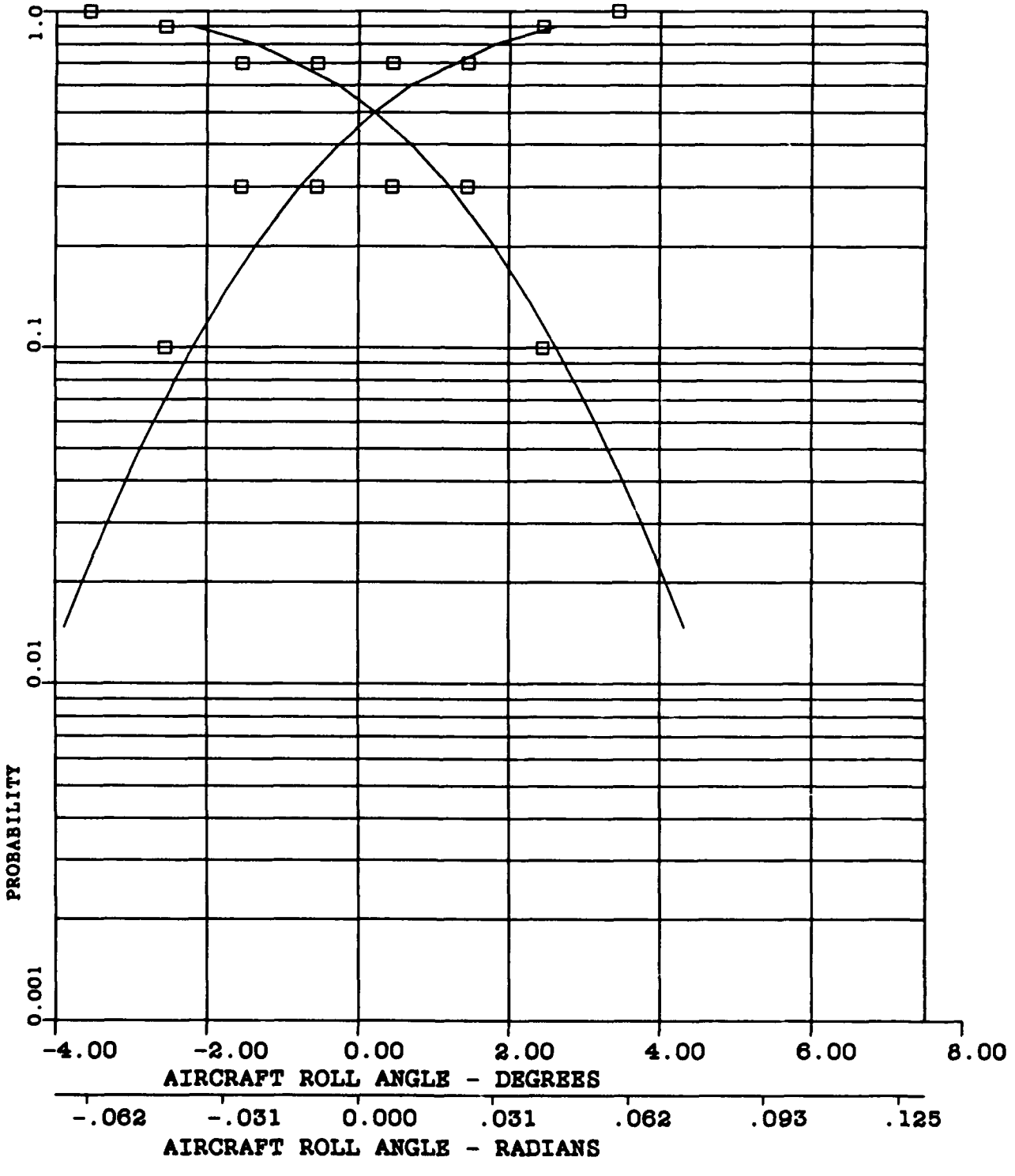


FIGURE D-32 PROBABILITY DISTRIBUTION OF AIRCRAFT ROLL ANGLE AT FREE FLIGHT

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N=191 $\bar{X}$=252.56 FEET (76.98 METRES) A3=.11
S=37.43 FEET (11.40 METRES) A4=2.74

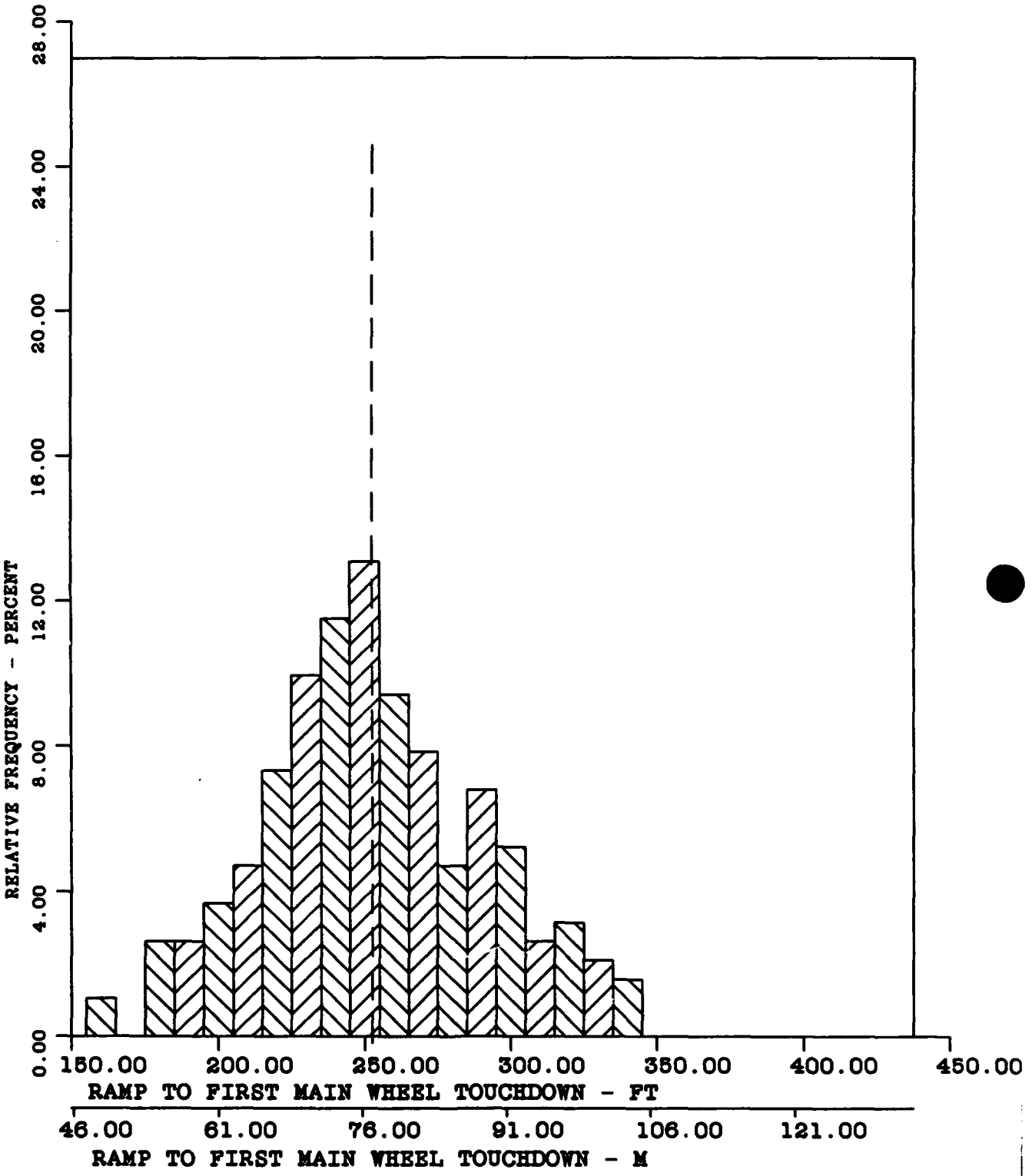


FIGURE D-33 FREQUENCY DISTRIBUTION OF DISTANCE FROM RAMP TO FIRST MAIN WHEEL TOUCHDOWN POINT

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-191 $\bar{X}$-252.56 FEET (76.98 METRES) A3=.11
S-37.43 FEET (11.40 METRES) A4=2.74
CURVE FITTED - NORMAL

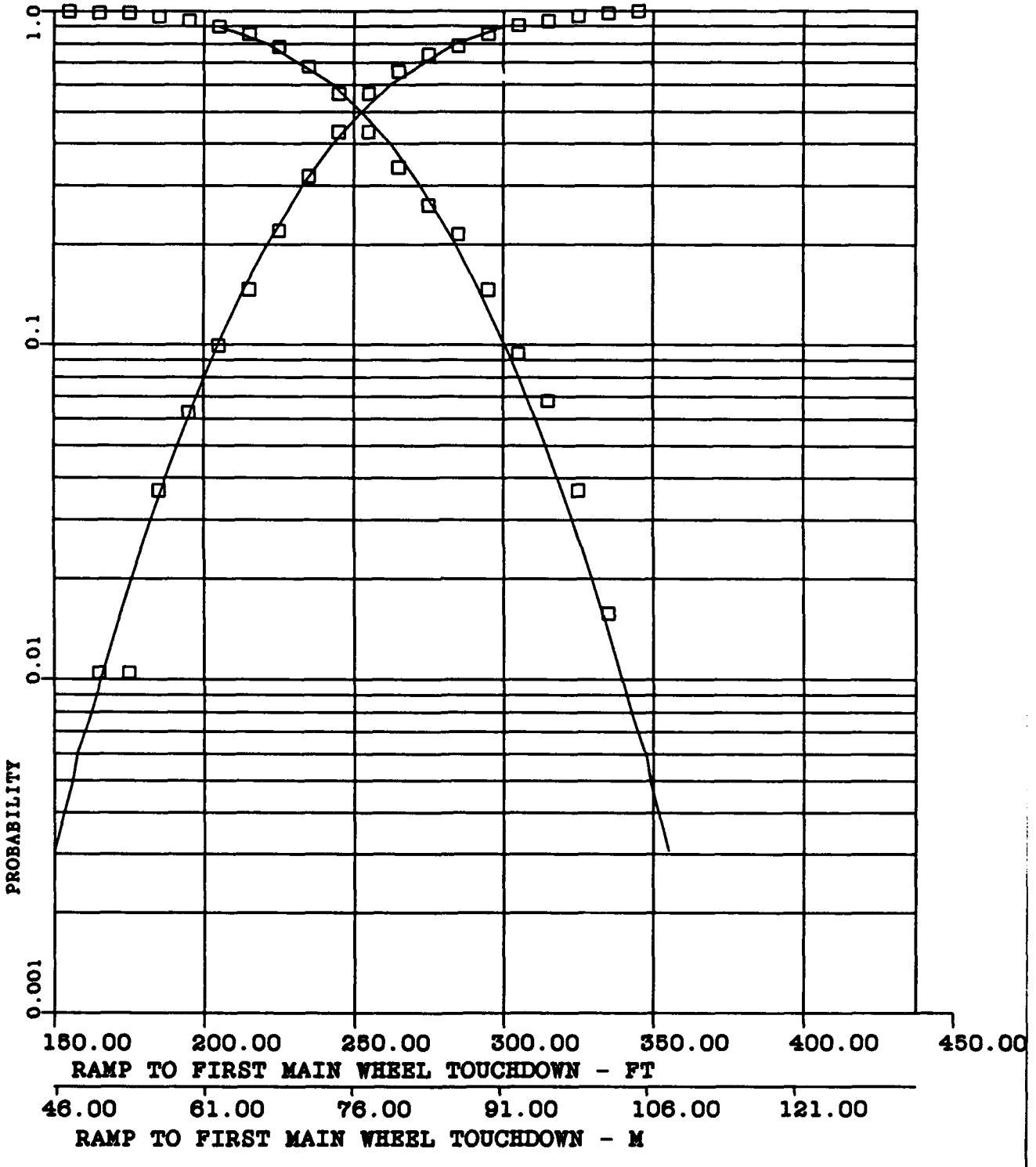


FIGURE D-34 PROBABILITY DISTRIBUTION OF DISTANCE FROM RAMP TO FIRST MAIN WHEEL TOUCHDOWN POINT

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N=191 $\bar{X}$=-9.84 FEET (-3.00 METRES) A3=-.07
S=4.22 FEET (1.28 METRES) A4=3.68

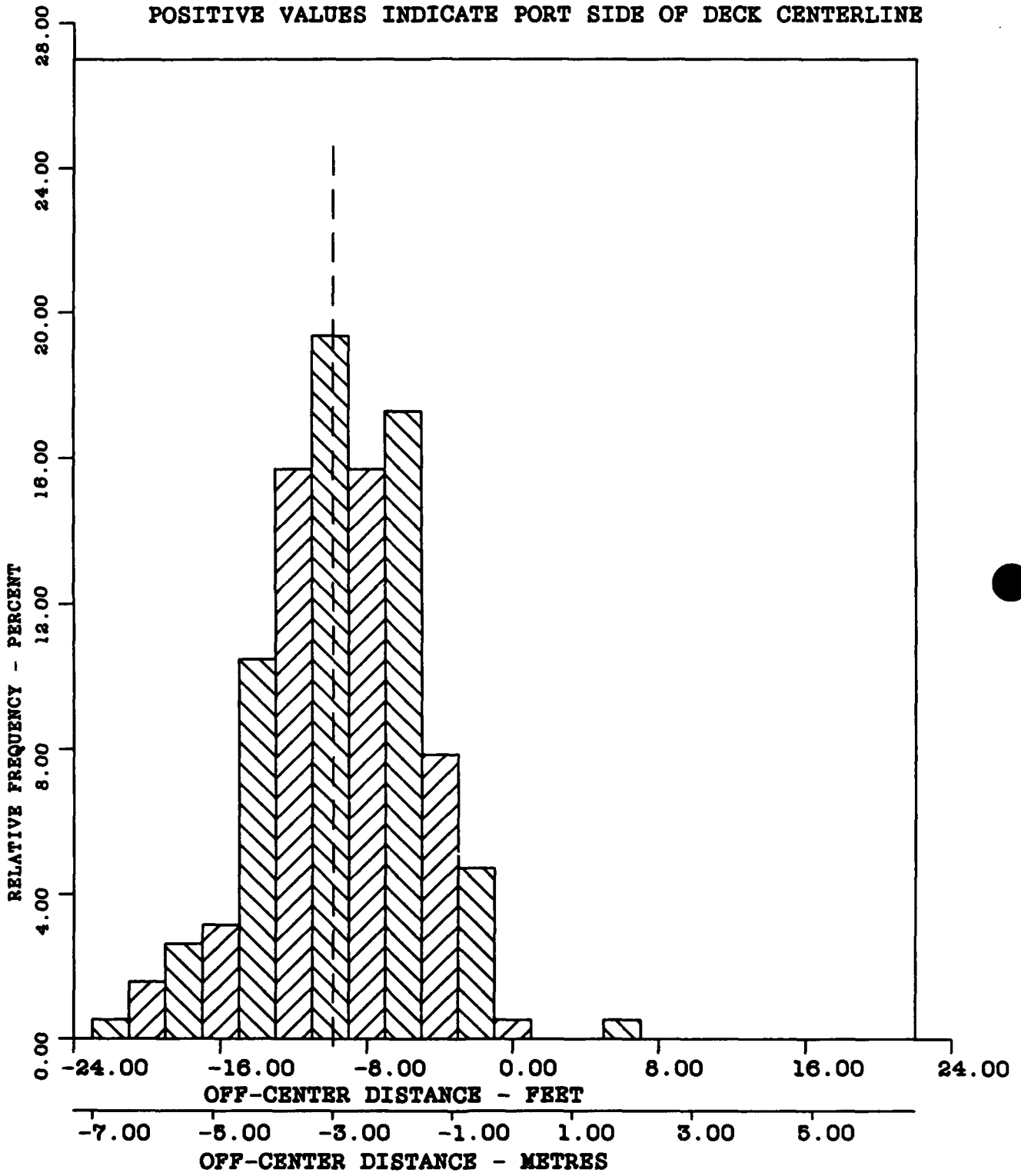


FIGURE D-35 FREQUENCY DISTRIBUTION OF AIRCRAFT CENTERLINE OFF-CNTR DISTANCE AT 1ST MAIN WHEEL TOUCHDOWN

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N=191 $\bar{X}$=-9.84 FEET (-3.00 METRES) A3=-.07
S=4.22 FEET (1.28 METRES) A4=3.68
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE PORT SIDE OF DECK CENTERLINE

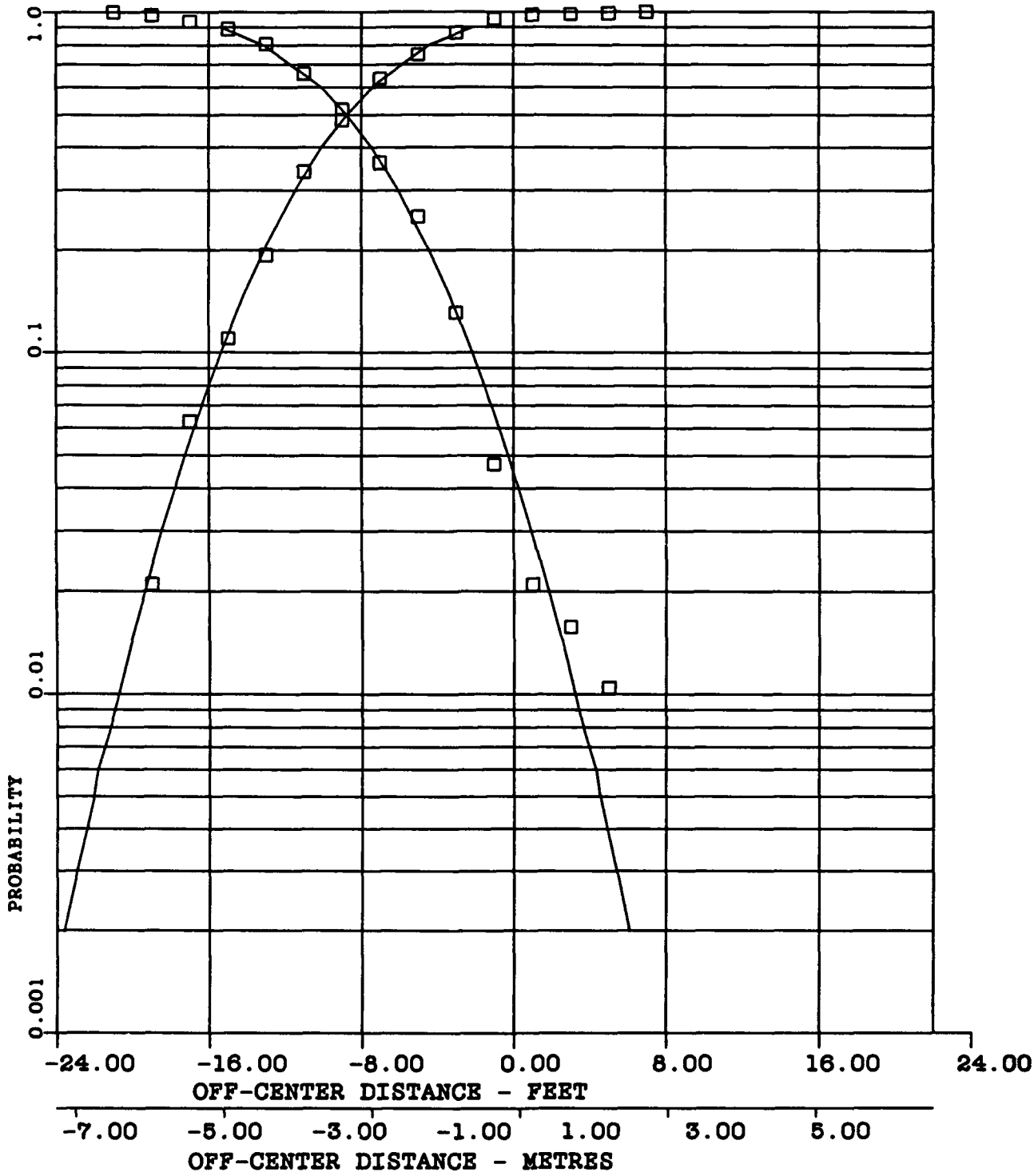


FIGURE D-36 PROBABILITY DISTRIBUTION OF AIRCRAFT OFF-CENTER DISTANCE AT 1ST MAIN WHEEL TOUCHDOWN

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=151 $\bar{X}$=2.91 A3=.02
S=.72 A4=2.13

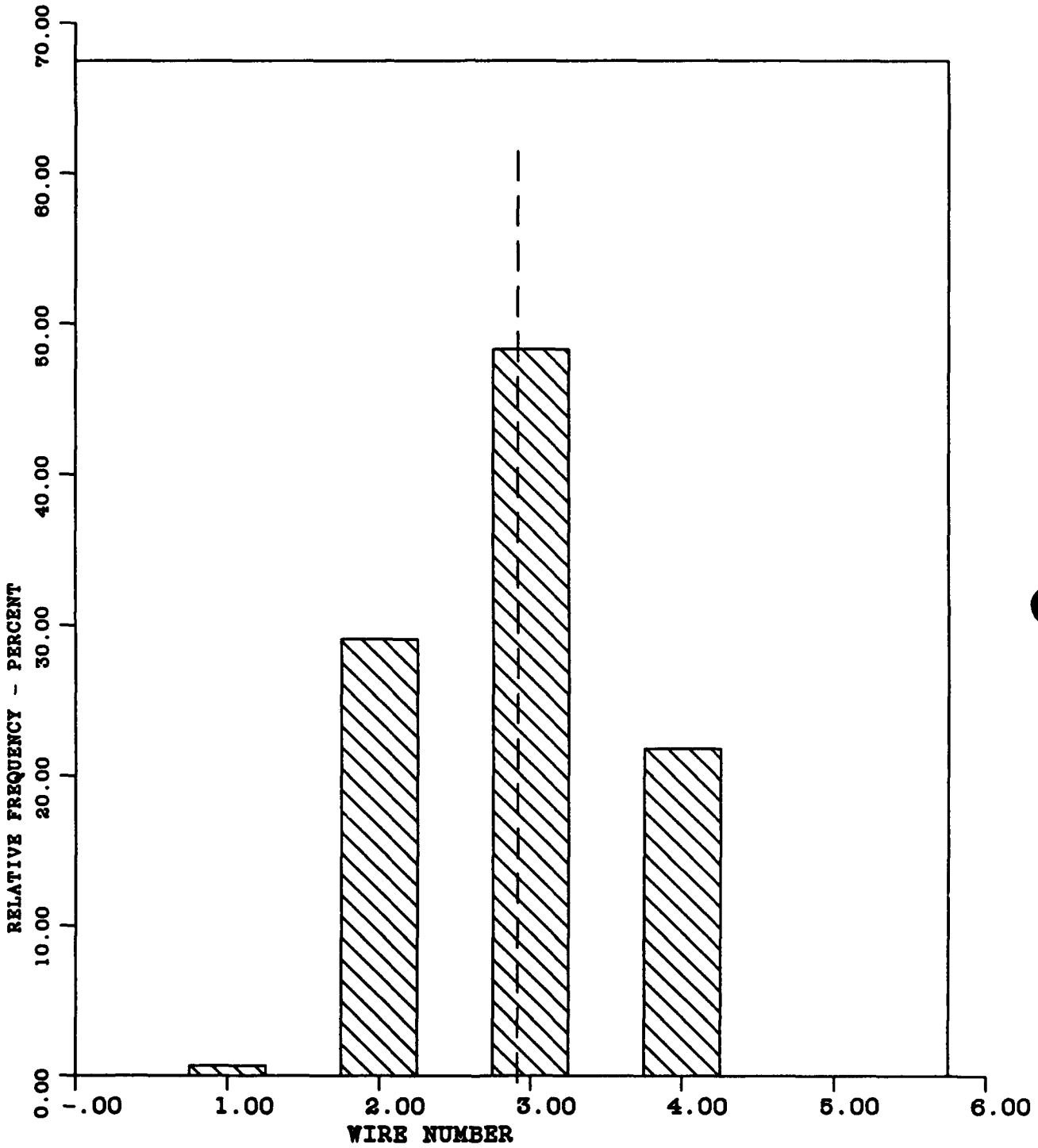


FIGURE D-37 FREQUENCY DISTRIBUTION OF ARRESTMENT WIRE NUMBER ENGAGED

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-191 $\bar{X}$-3.09 DEGREES (.054 RADIANS) A3=-.04
S=.63 DEGREES (.011 RADIANS) A4-3.76

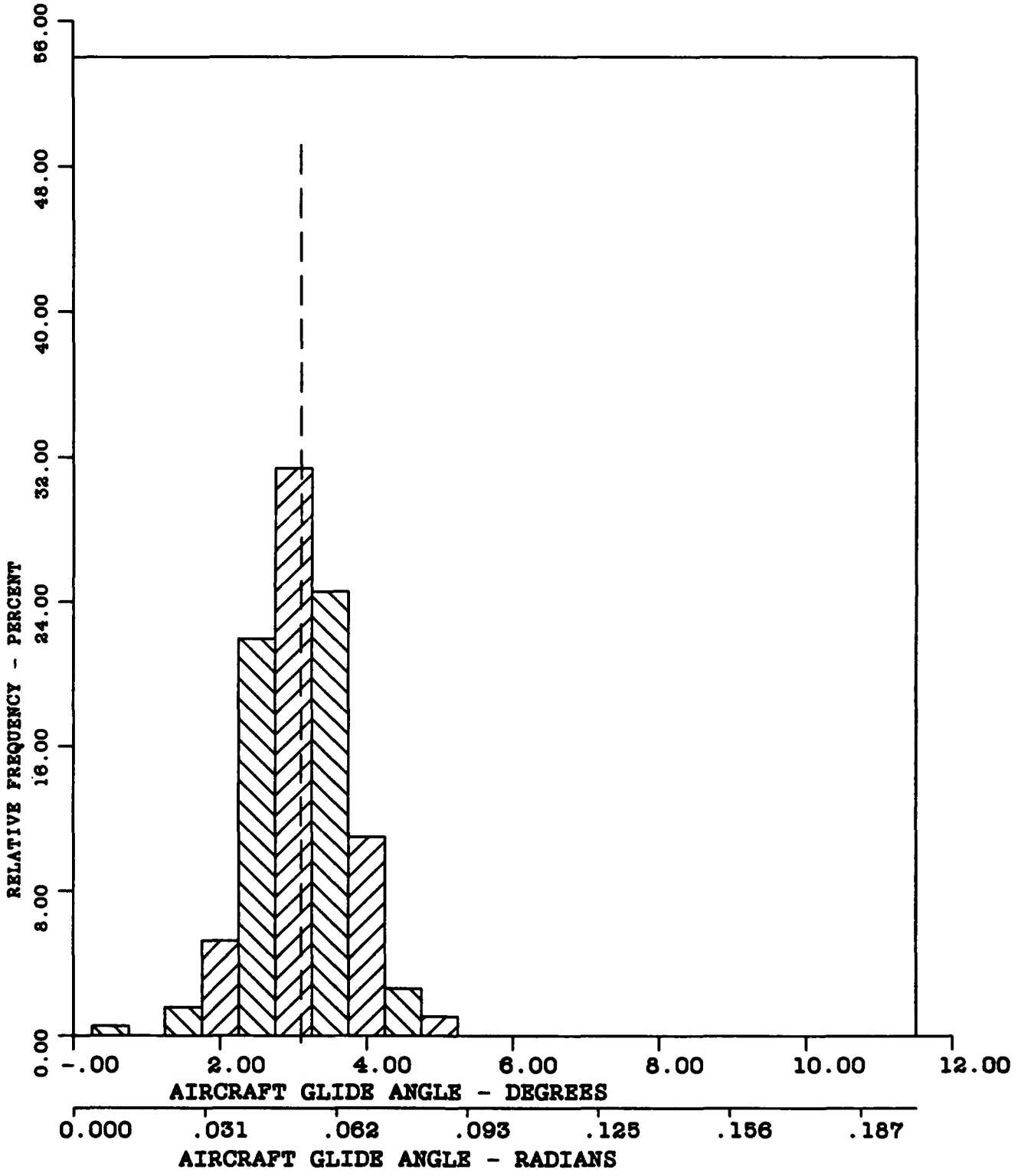


FIGURE D-38 FREQUENCY DISTRIBUTION OF AIRCRAFT GLIDE ANGLE - INSTANTANEOUS METHOD

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-187 $\bar{X}$-3.22 DEGREES (.056 RADIANS) A3-.32
S-.45 DEGREES (.008 RADIANS) A4-3.37

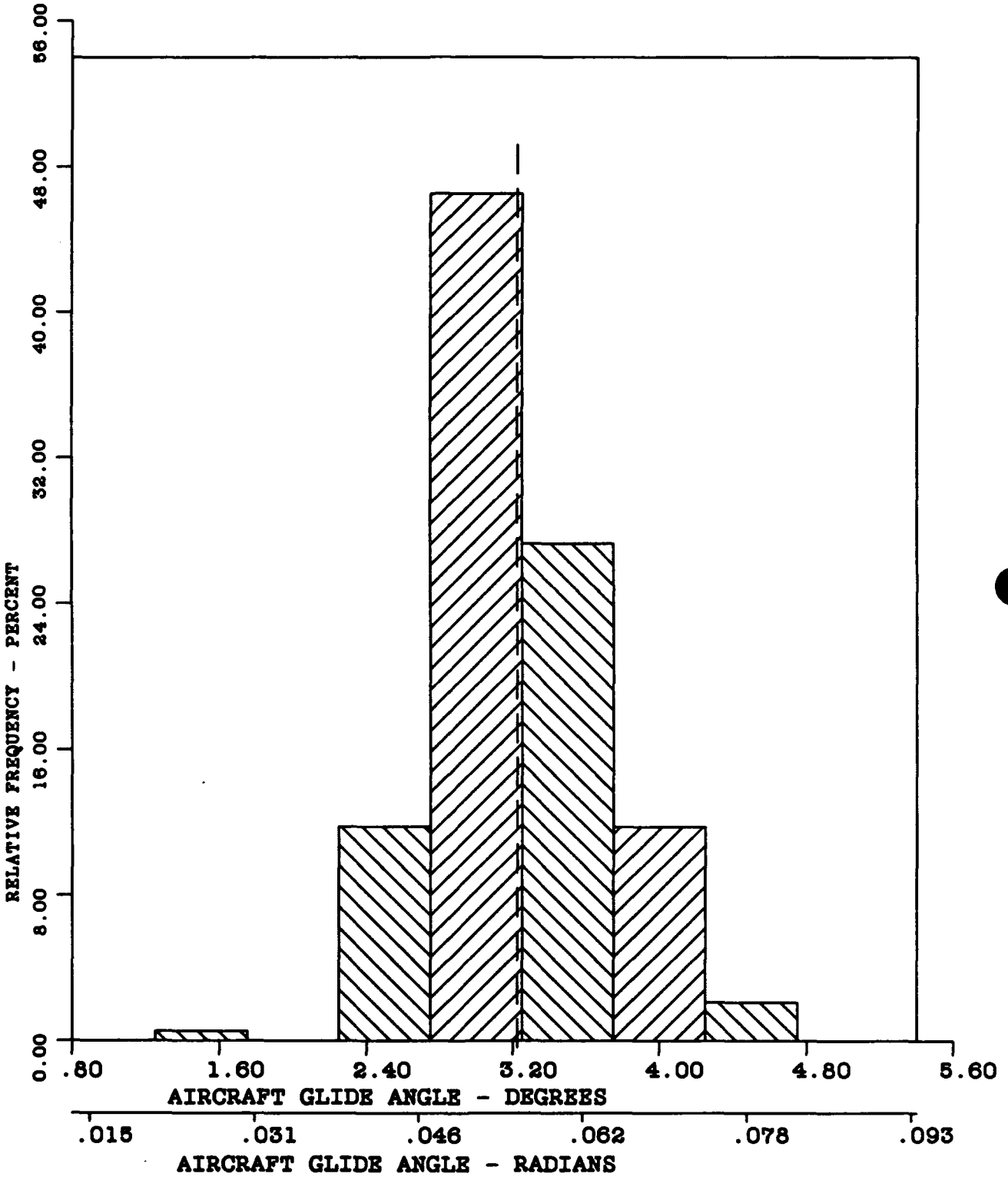


FIGURE D-39 FREQUENCY DISTRIBUTION OF AIRCRAFT GLIDE ANGLE - GEOMETRIC METHOD

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-187 $\bar{X}$-13.69 FEET (4.17 METRES) A3=.18
S-2.74 FEET (.83 METRES) A4=3.06

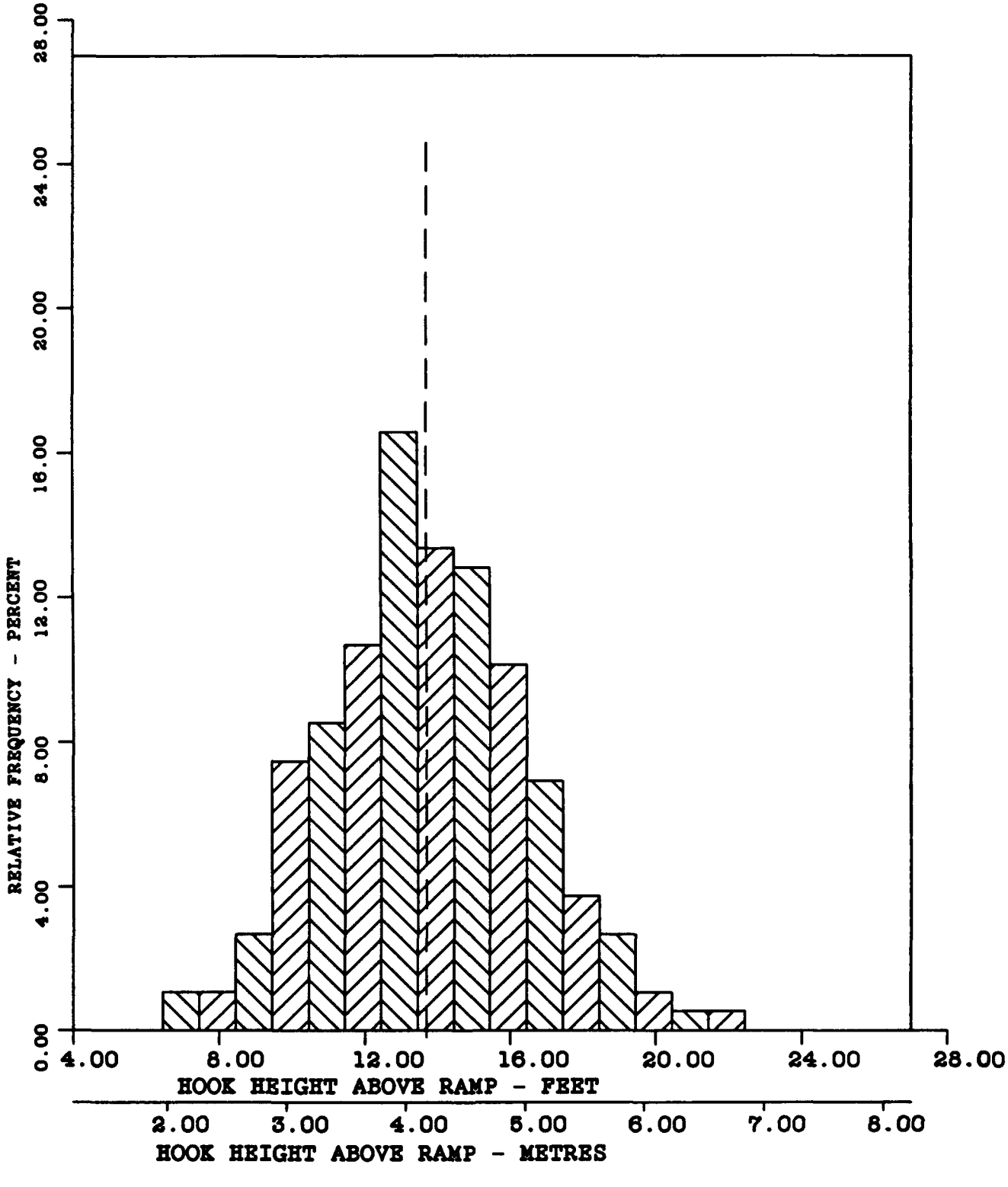


FIGURE D-40 FREQUENCY DISTRIBUTION OF AIRCRAFT ARRESTMENT HOOK HEIGHT ABOVE CARRIER RAMP

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-187 $\bar{X}$-13.69 FEET (4.17 METRES) A3=.18
S-2.74 FEET (.83 METRES) A4=3.06
CURVE FITTED - NORMAL

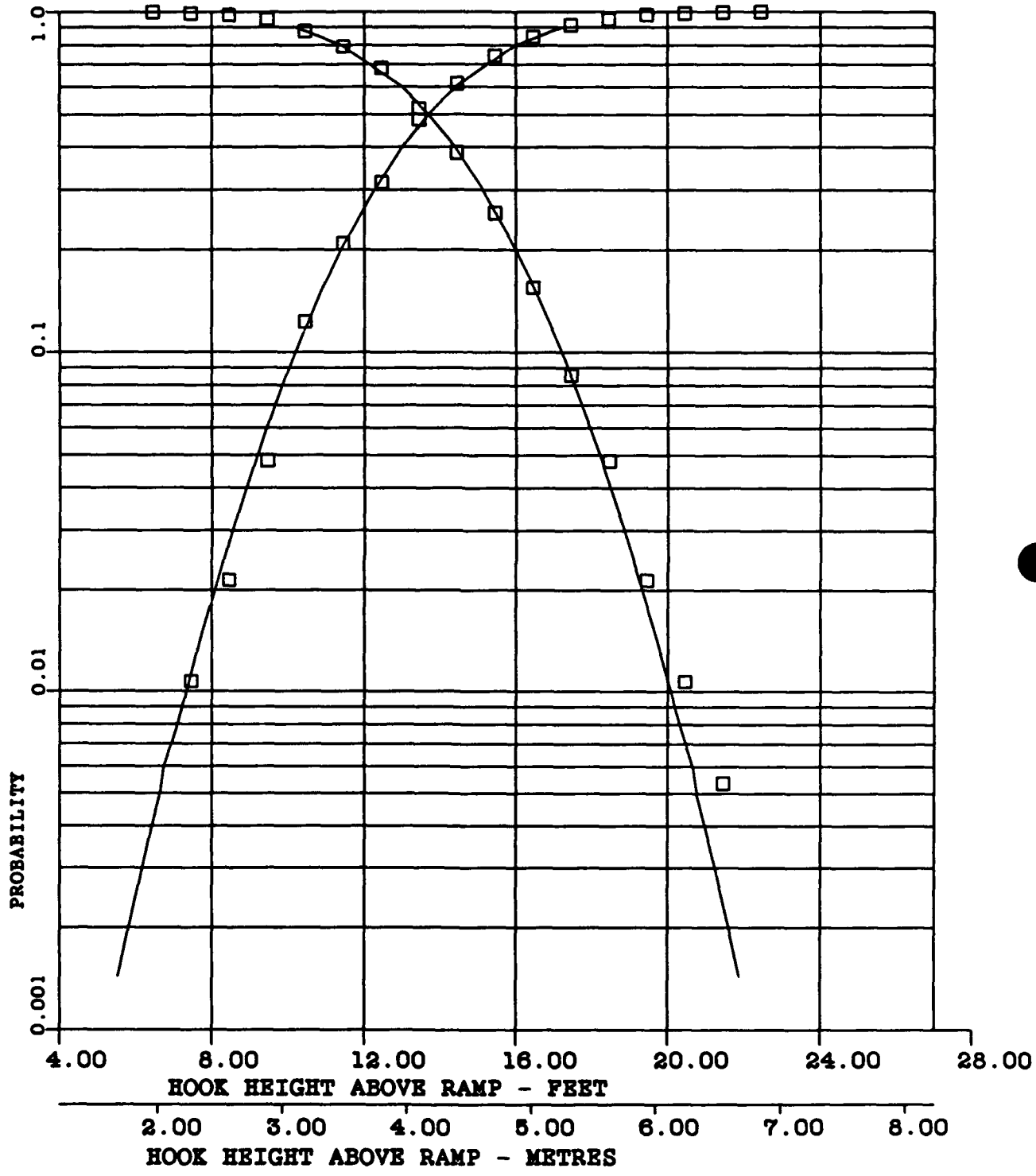


FIGURE D-41 PROBABILITY DISTRIBUTION OF ARRESTMENT HOOK HEIGHT ABOVE CARRIER RAMP

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-191 $\bar{X}$-119.23 KNOTS (61.33 METRES/SEC) A3=.02
S-5.16 KNOTS (2.65 METRES/SEC) A4=2.84

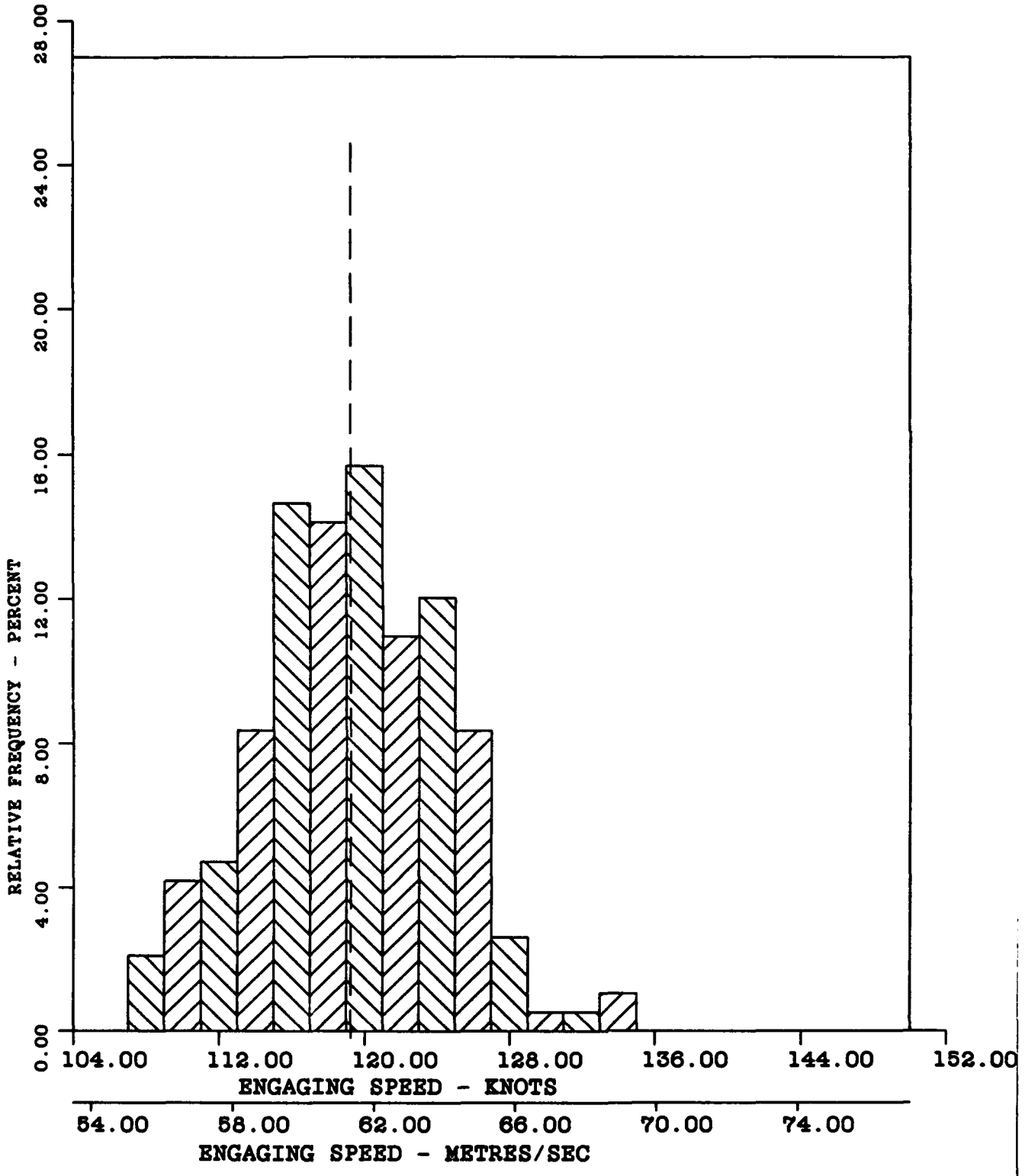


FIGURE D-42 FREQUENCY DISTRIBUTION OF AIRCRAFT ENGAGING SPEED AT FIRST MAIN WHEEL TOUCHDOWN

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-191 $\bar{X}$-119.23 KNOTS (61.33 METRES/SEC) A3=.02
S-5.16 KNOTS (2.65 METRES/SEC) A4=2.84
CURVE FITTED - NORMAL

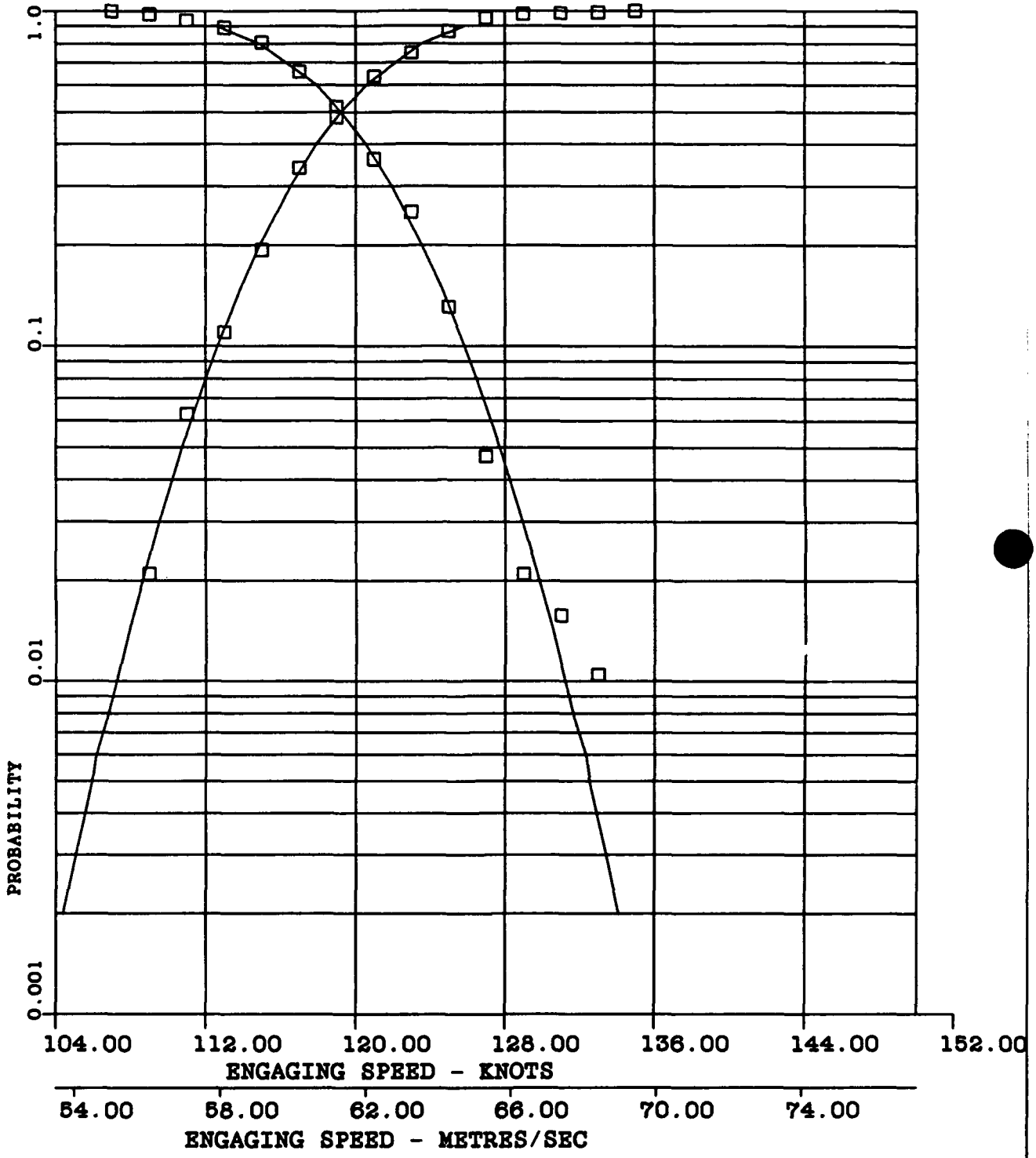


FIGURE D-43 PROBABILITY DISTRIBUTION OF ENGAGING SPEED AT FIRST MAIN WHEEL TOUCHDOWN

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=181 $\bar{X}$=134.13 KNOTS (68.99 METRES/SEC) A3=-.47
S=2.51 KNOTS (1.29 METRES/SEC) A4=2.45

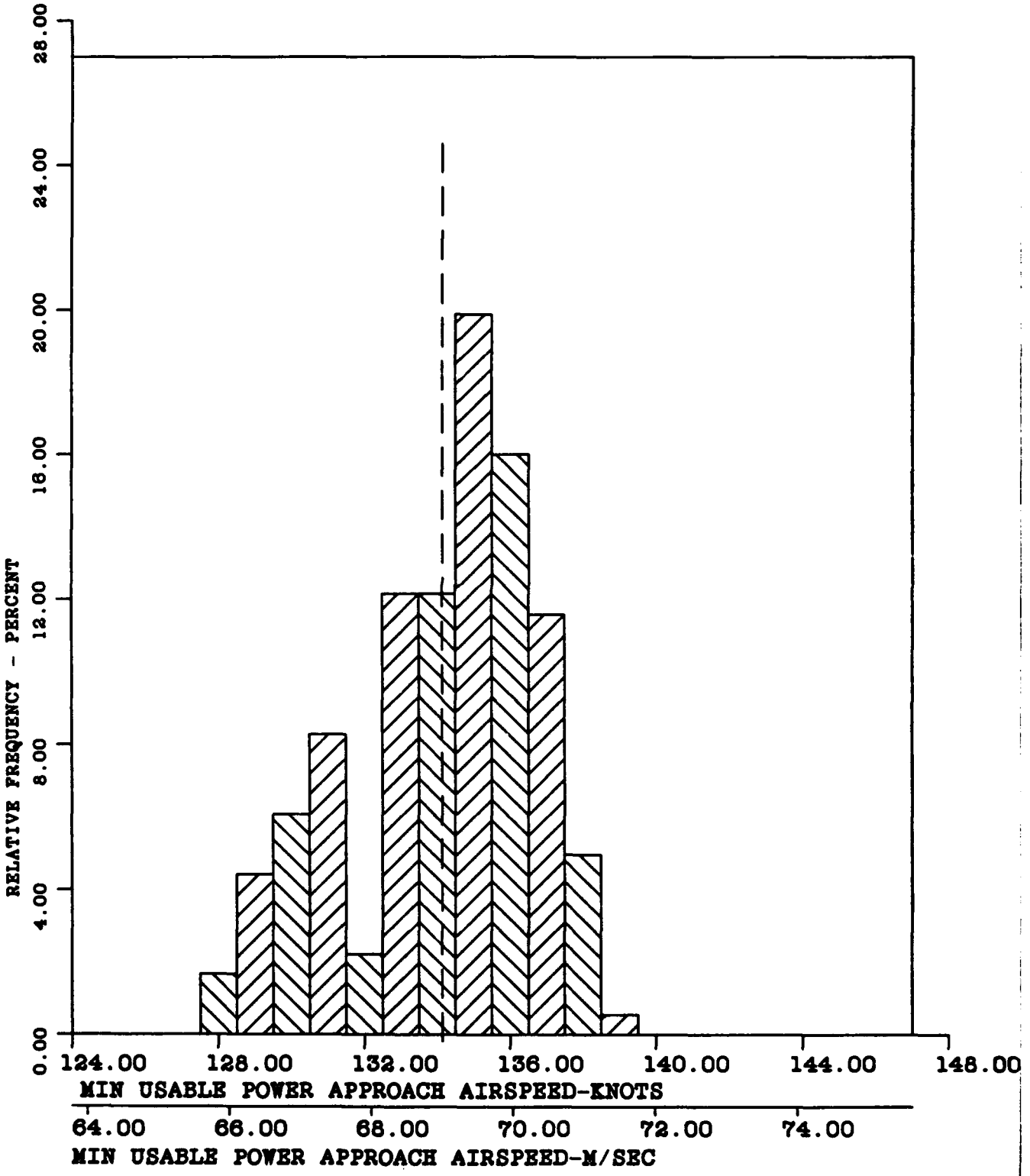


FIGURE D-44 FREQUENCY DISTRIBUTION OF MINIMUM USABLE POWER APPROACH AIRSPEED

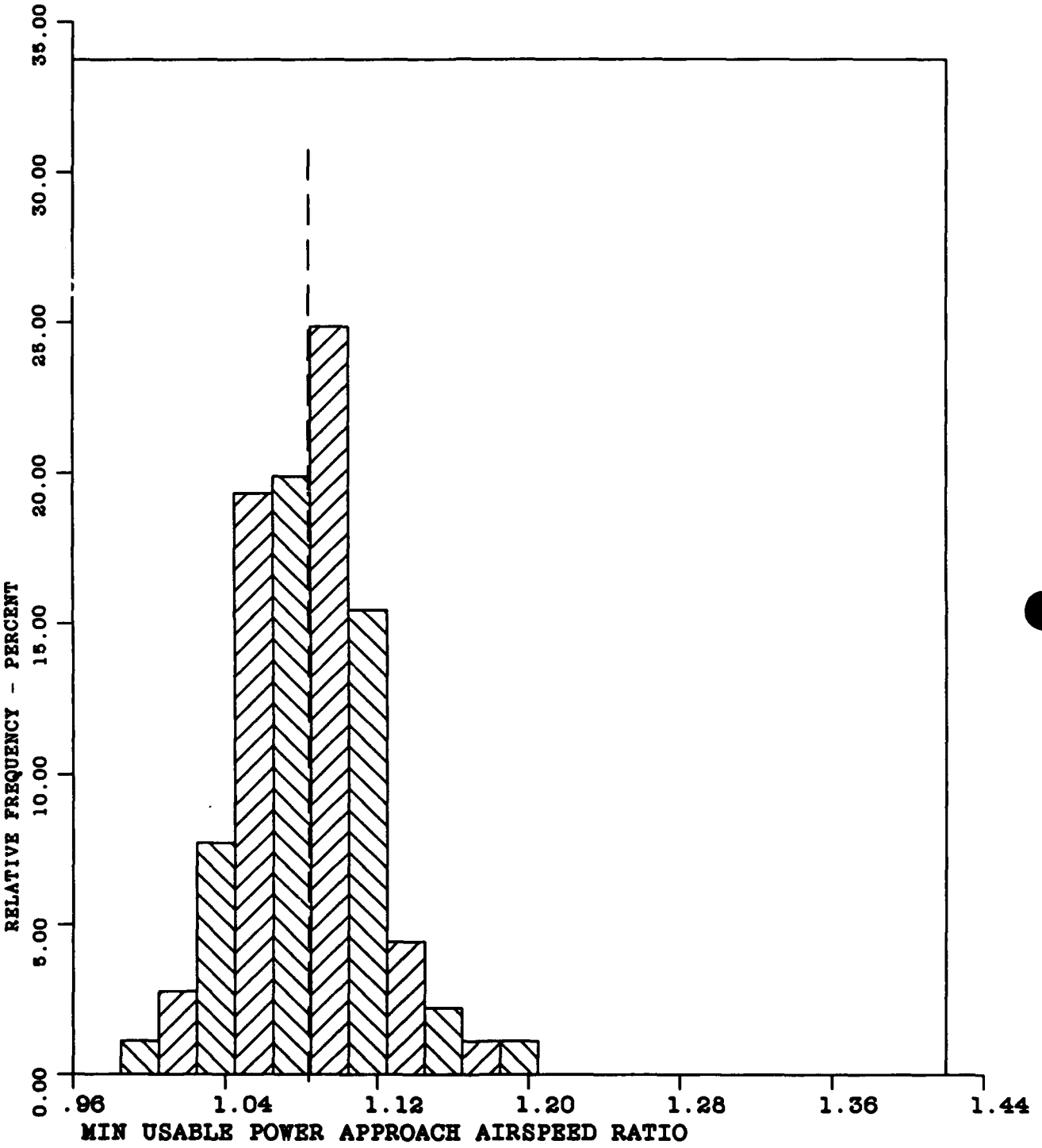


FIGURE D-45 FREQUENCY DISTRIBUTION OF MINIMUM USABLE POWER APPROACH AIRSPEED RATIO - FILM

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N=190 $\bar{X}$=-.41 DEGREES (-.007 RADIANS) A3=-.47
S=1.07 DEGREES (.018 RADIANS) A4=3.32

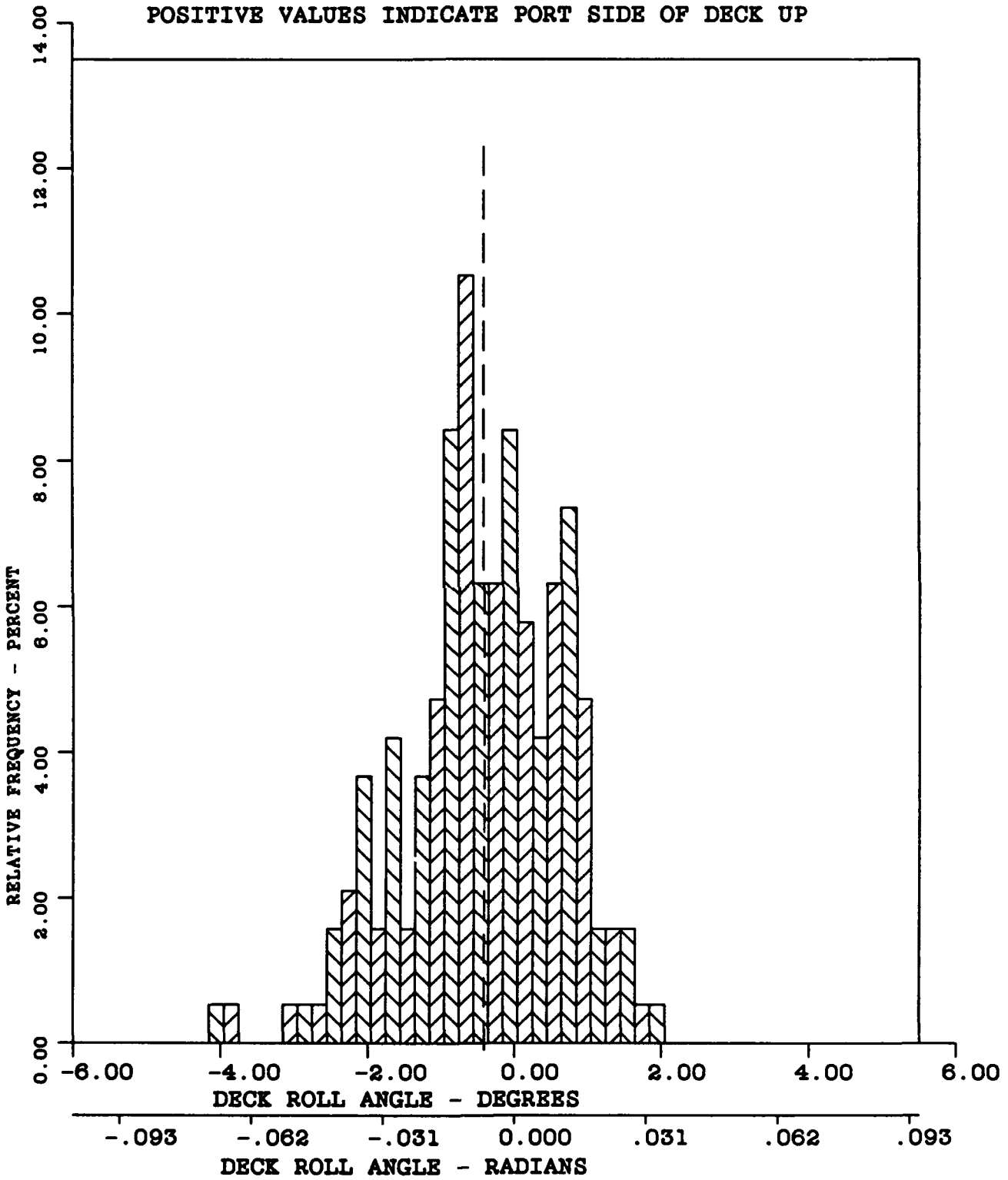


FIGURE D-46 FREQUENCY DISTRIBUTION OF CARRIER DECK ROLL MOTION

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N=190 $\bar{X}$=-.41 DEGREES (-.007 RADIANS) A3=-.47
S=1.07 DEGREES (.018 RADIANS) A4=3.32
CURVE FITTED - PEARSON TYPE III
POSITIVE VALUES INDICATE PORT SIDE OF DECK UP

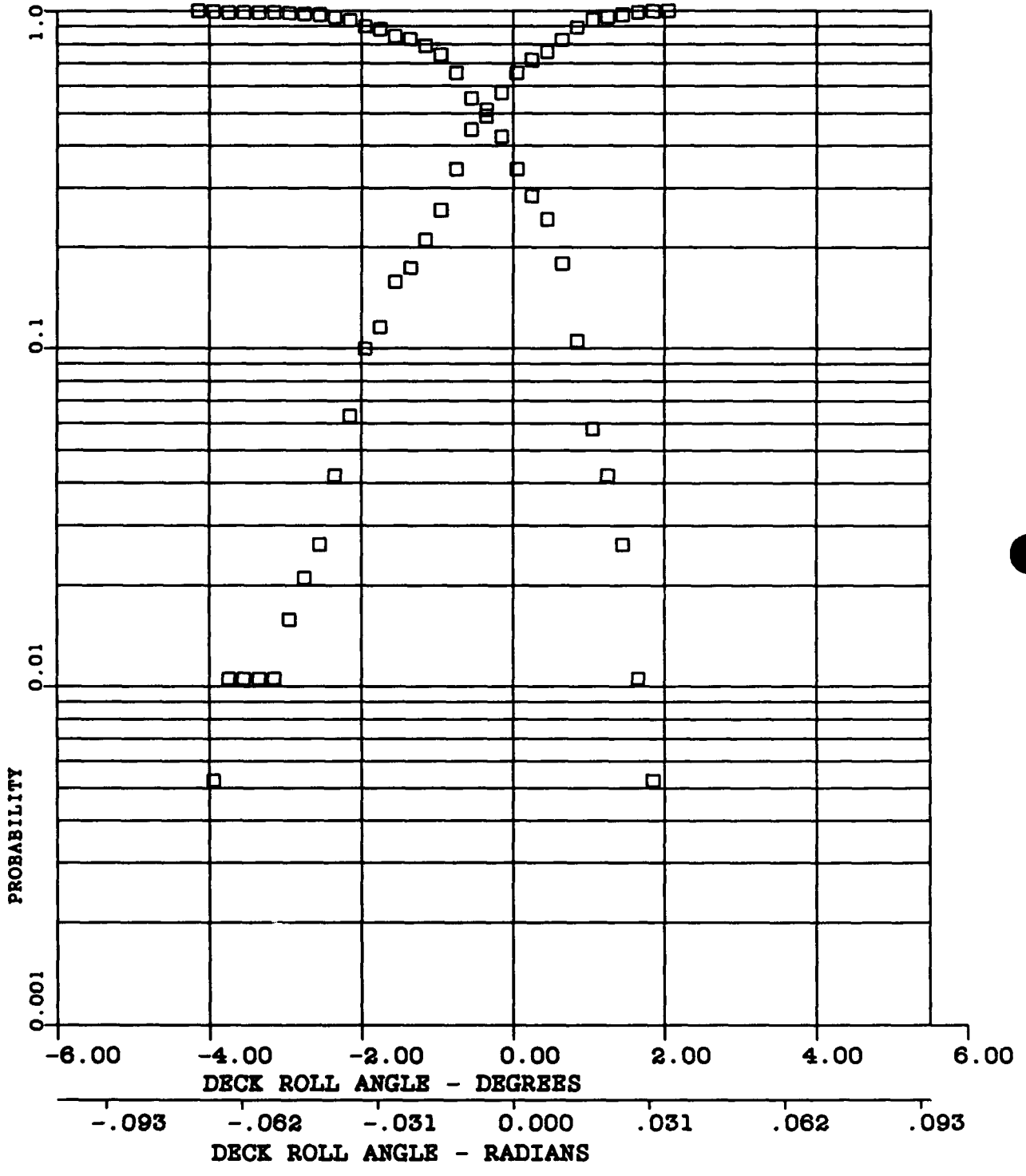


FIGURE D-47 PROBABILITY DISTRIBUTION OF CARRIER DECK ROLL MOTION

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N=190 $\bar{X}$=-.32 DEGREES (-.005 RADIANS) A3=.00
S=.16 DEGREES (.002 RADIANS) A4=2.97

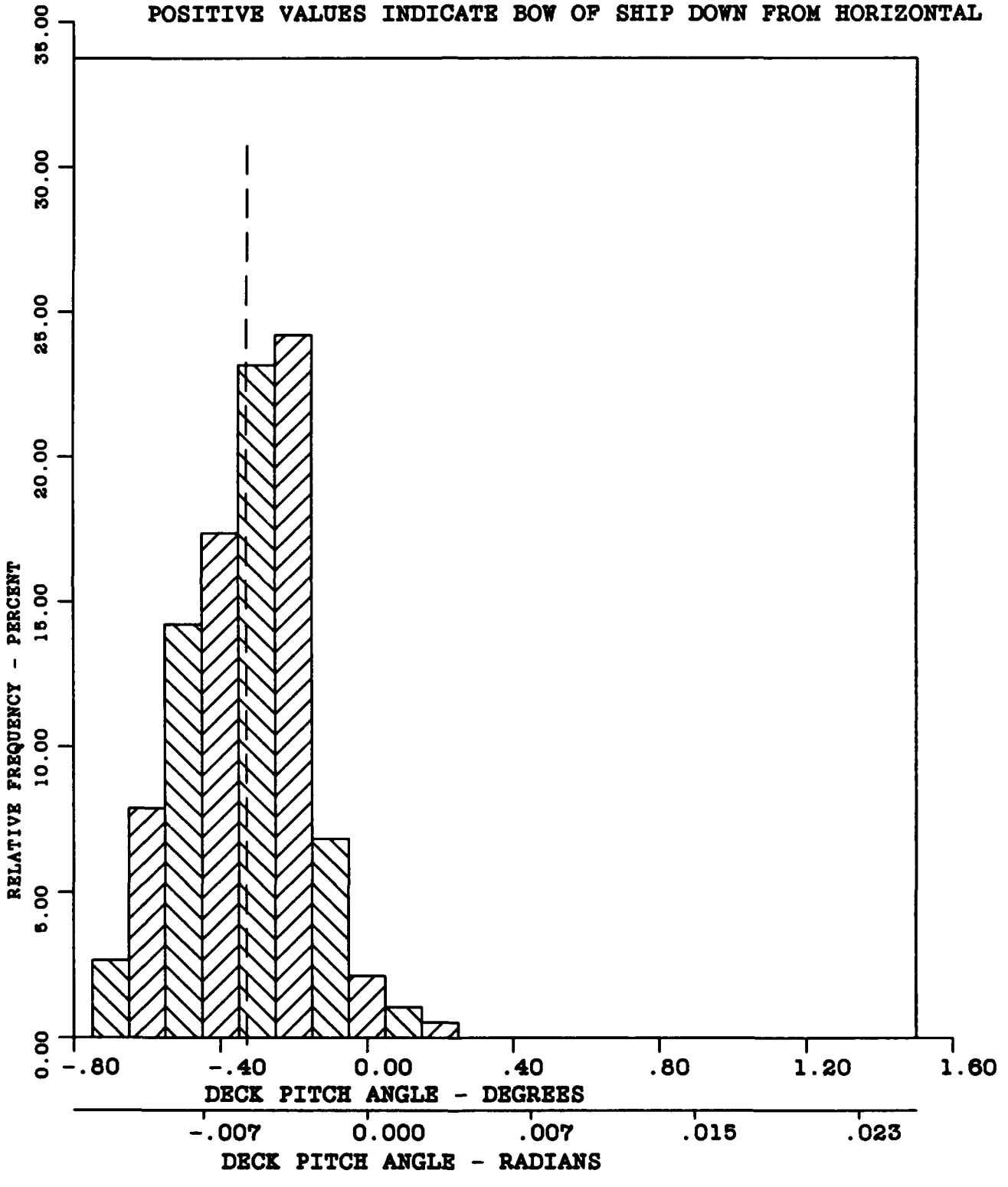


FIGURE D-48 FREQUENCY DISTRIBUTION OF CARRIER DECK PITCH MOTION

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=190 $\bar{X}$=-.32 DEGREES (-.005 RADIANS) A3=.00
S=.16 DEGREES (.002 RADIANS) A4=2.97
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE BOW OF SHIP DOWN FROM HORIZONTAL

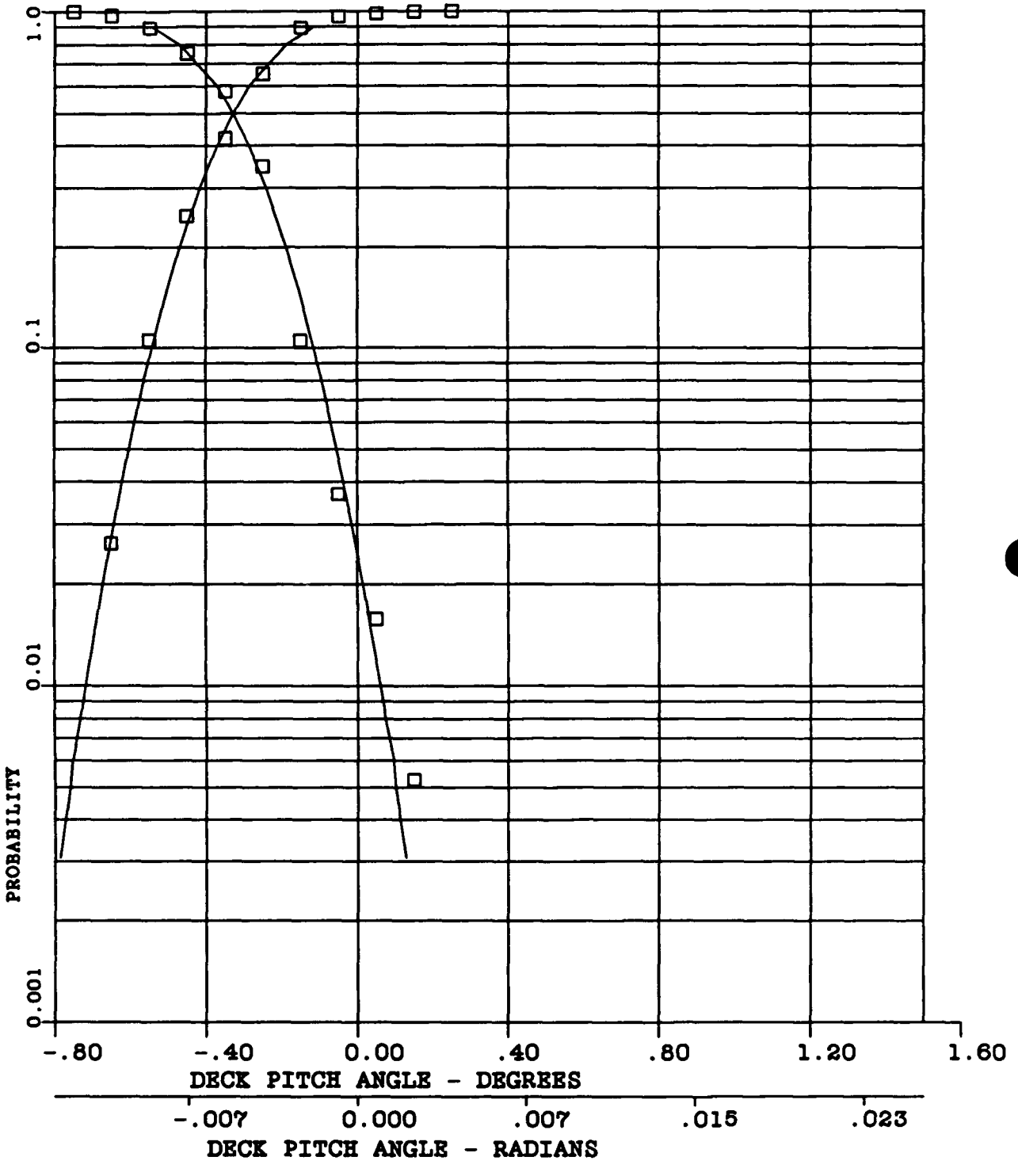


FIGURE D-49 PROBABILITY DISTRIBUTION OF CARRIER DECK PITCH MOTION

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-181 $\bar{X}$-30674.46 POUNDS (13913.93 KILOGRAMS) A3=-.43
S-1142.87 POUNDS (518.40 KILOGRAMS) A4-2.41

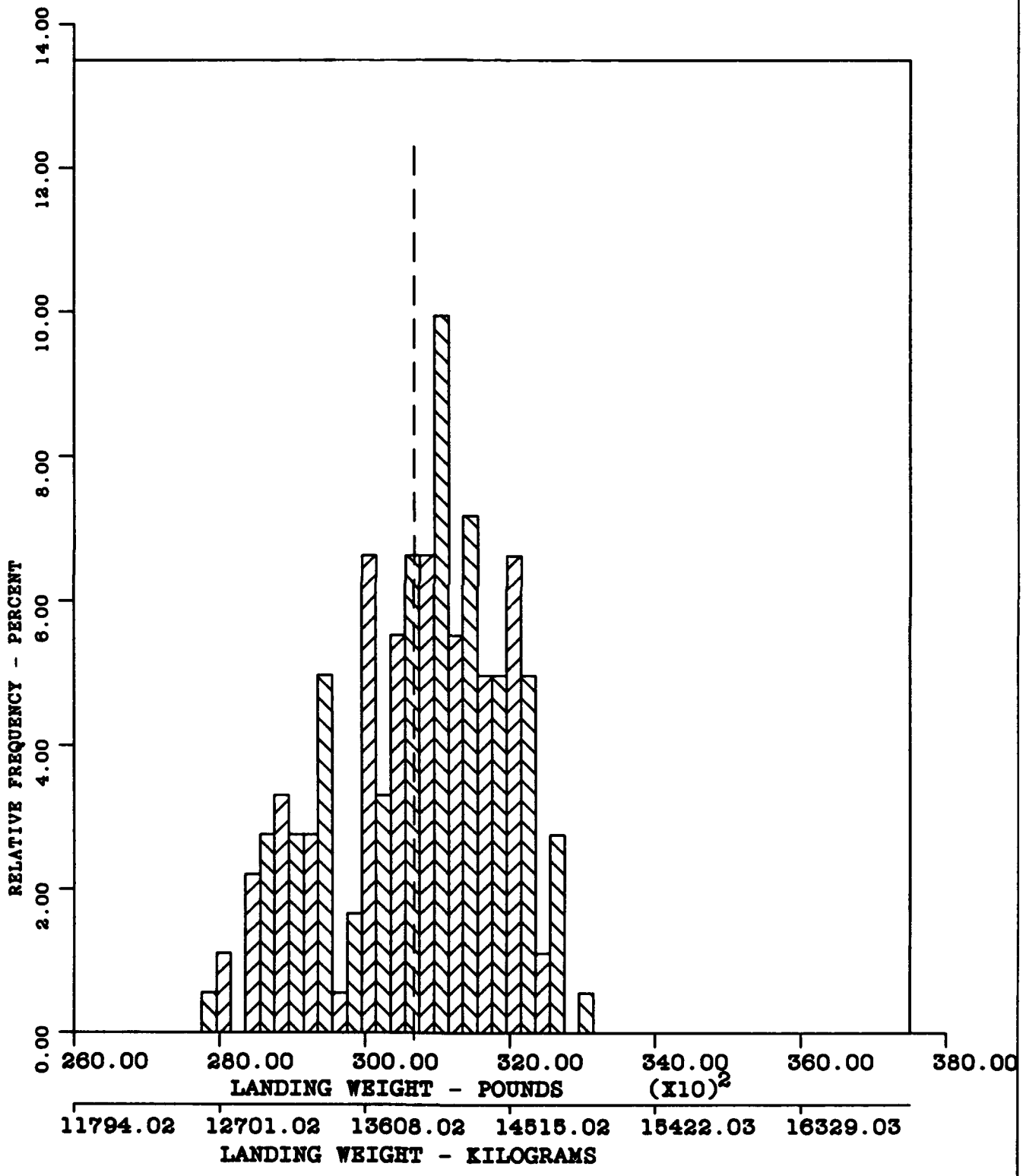


FIGURE D-50 FREQUENCY DISTRIBUTION OF AIRCRAFT LANDING WEIGHT

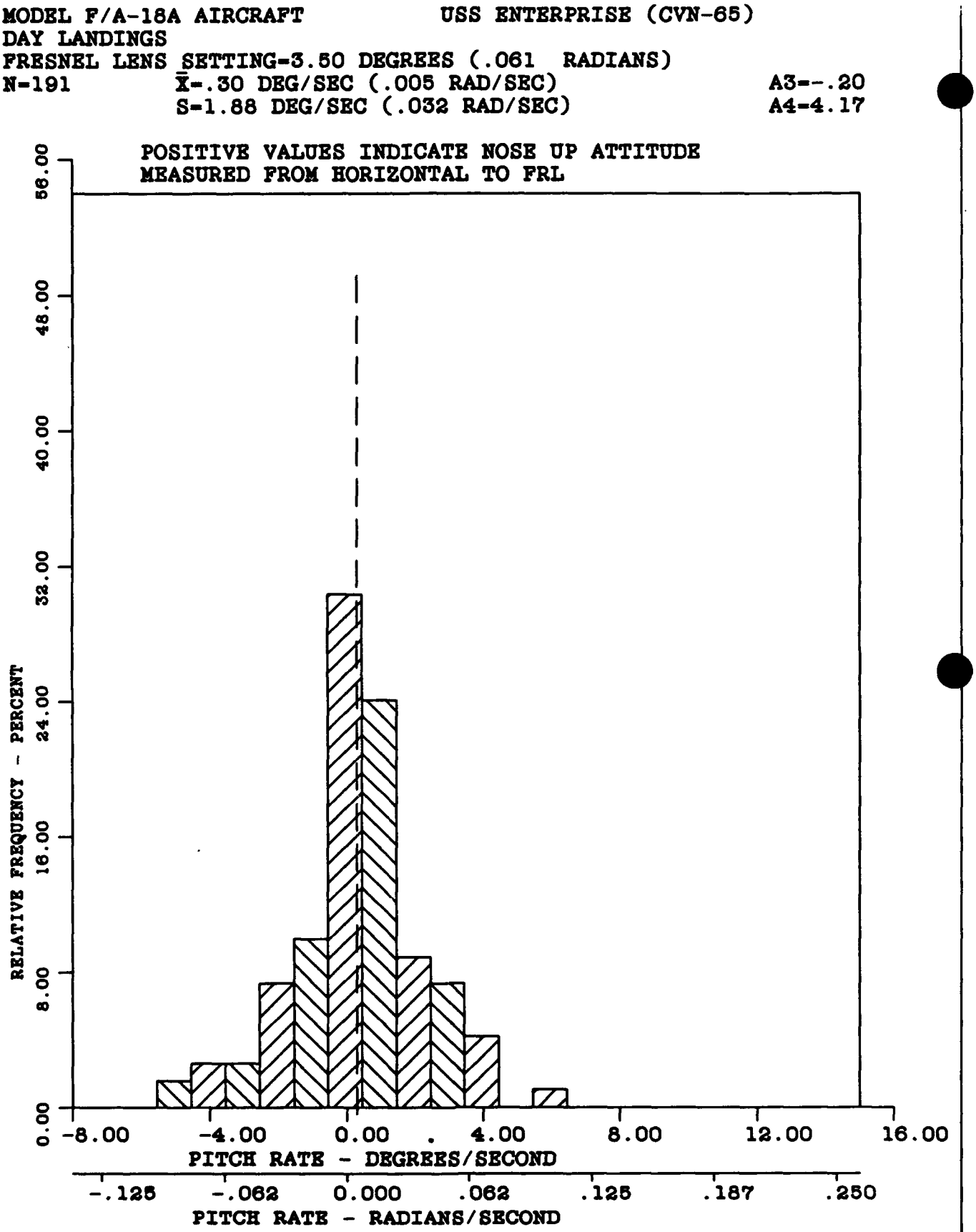


FIGURE D-51 FREQUENCY DISTRIBUTION OF PITCH RATE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-191 $\bar{X}$=-.30 DEG/SEC (.005 RAD/SEC) A3=-.20
S=1.88 DEG/SEC (.032 RAD/SEC) A4=4.17
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE NOSE UP ATTITUDE
MEASURED FROM HORIZONTAL TO FRL

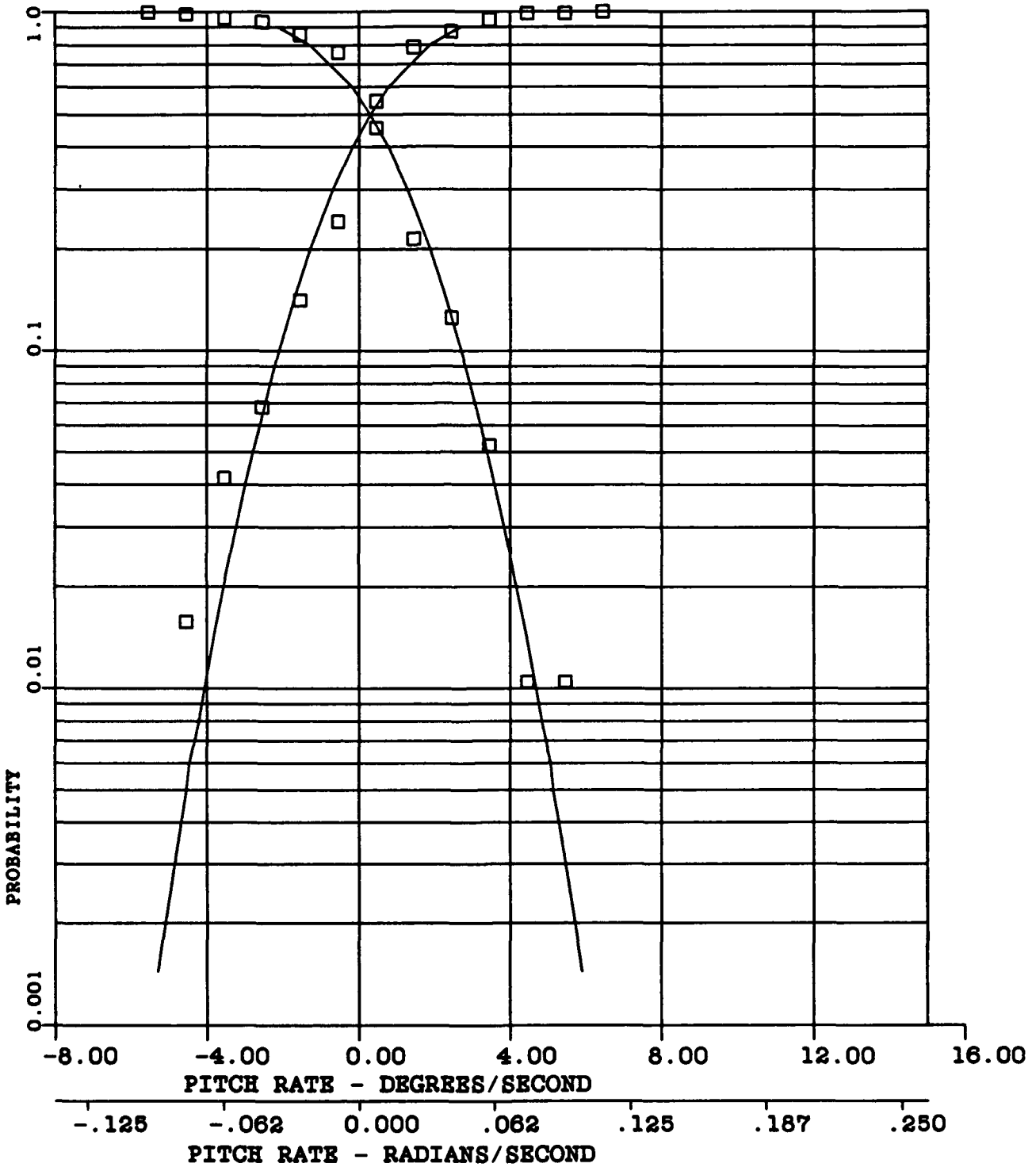


FIGURE D-52 PROBABILITY DISTRIBUTION OF PITCH RATE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=191 $\bar{X}$=-3.17 DEGREES (-.055 RADIANS) A3=.60
S=1.20 DEGREES (.020 RADIANS) A4=5.18

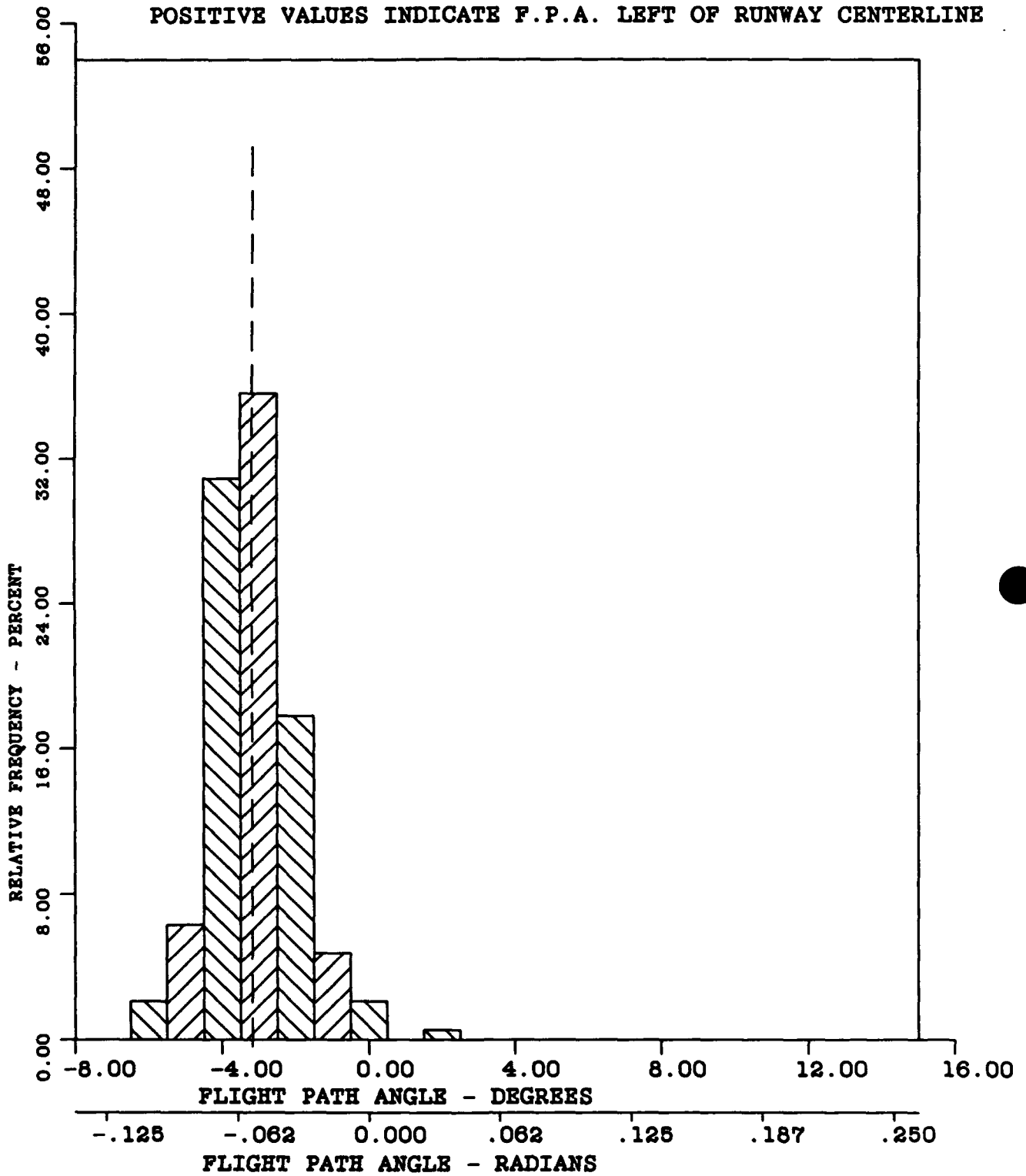


FIGURE D-53 FREQUENCY DISTRIBUTION OF AIRCRAFT FLIGHT PATH ANGLE AT TOUCHDOWN

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=191 $\bar{X}$=-3.17 DEGREES (-.055 RADIANS) A3=.60
S=1.20 DEGREES (.020 RADIANS) A4=5.18
CURVE FITTED - PEARSON TYPE III
POSITIVE VALUES INDICATE F.P.A. LEFT OF RUNWAY CENTERLINE

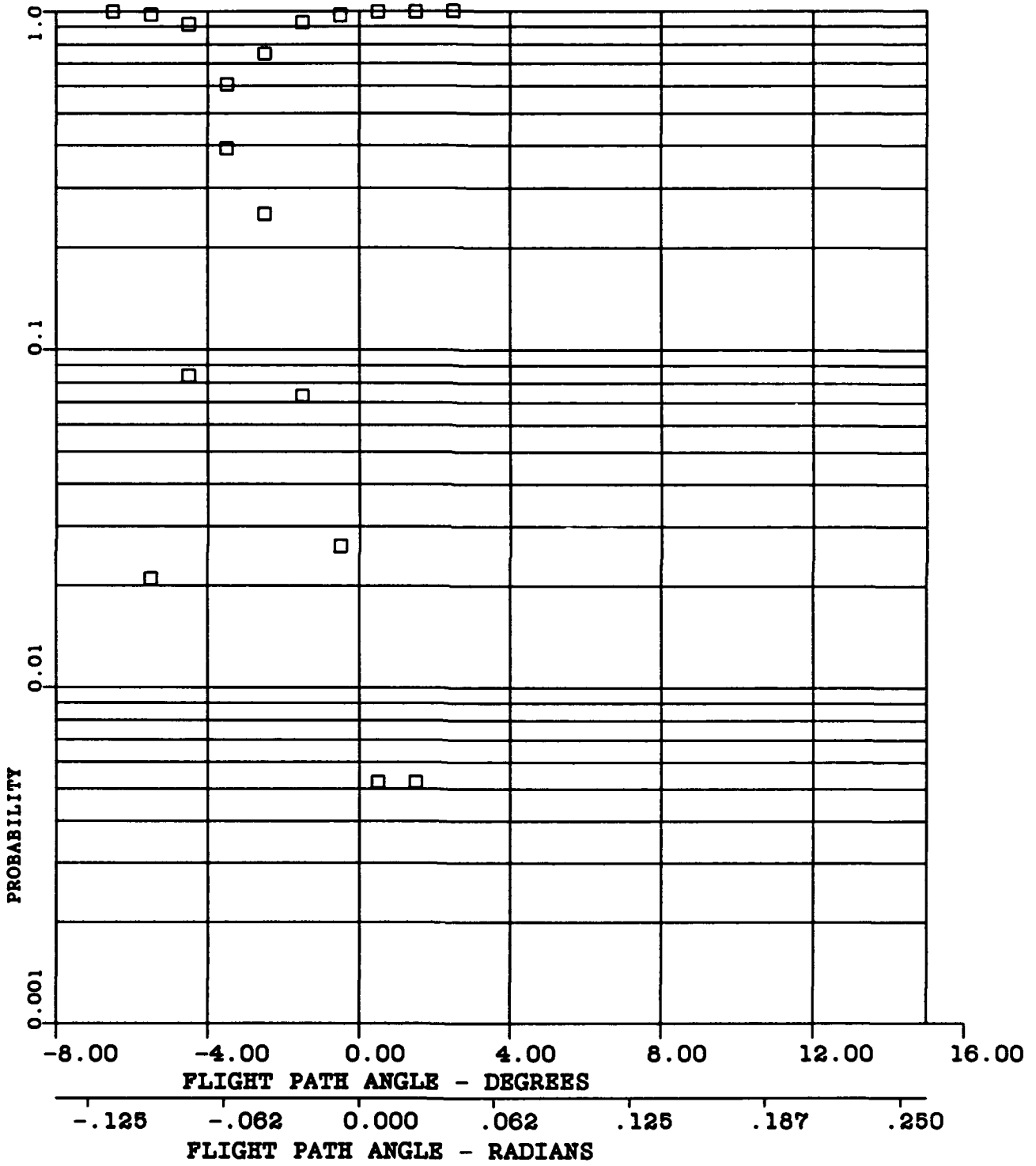


FIGURE D-54 PROBABILITY DISTRIBUTION OF AIRCRAFT FLIGHT PATH ANGLE AT TOUCHDOWN

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=191 $\bar{X}$=1.67 DEGREES (.029 RADIANS) A3=.57
S=3.46 DEGREES (.060 RADIANS) A4=2.93

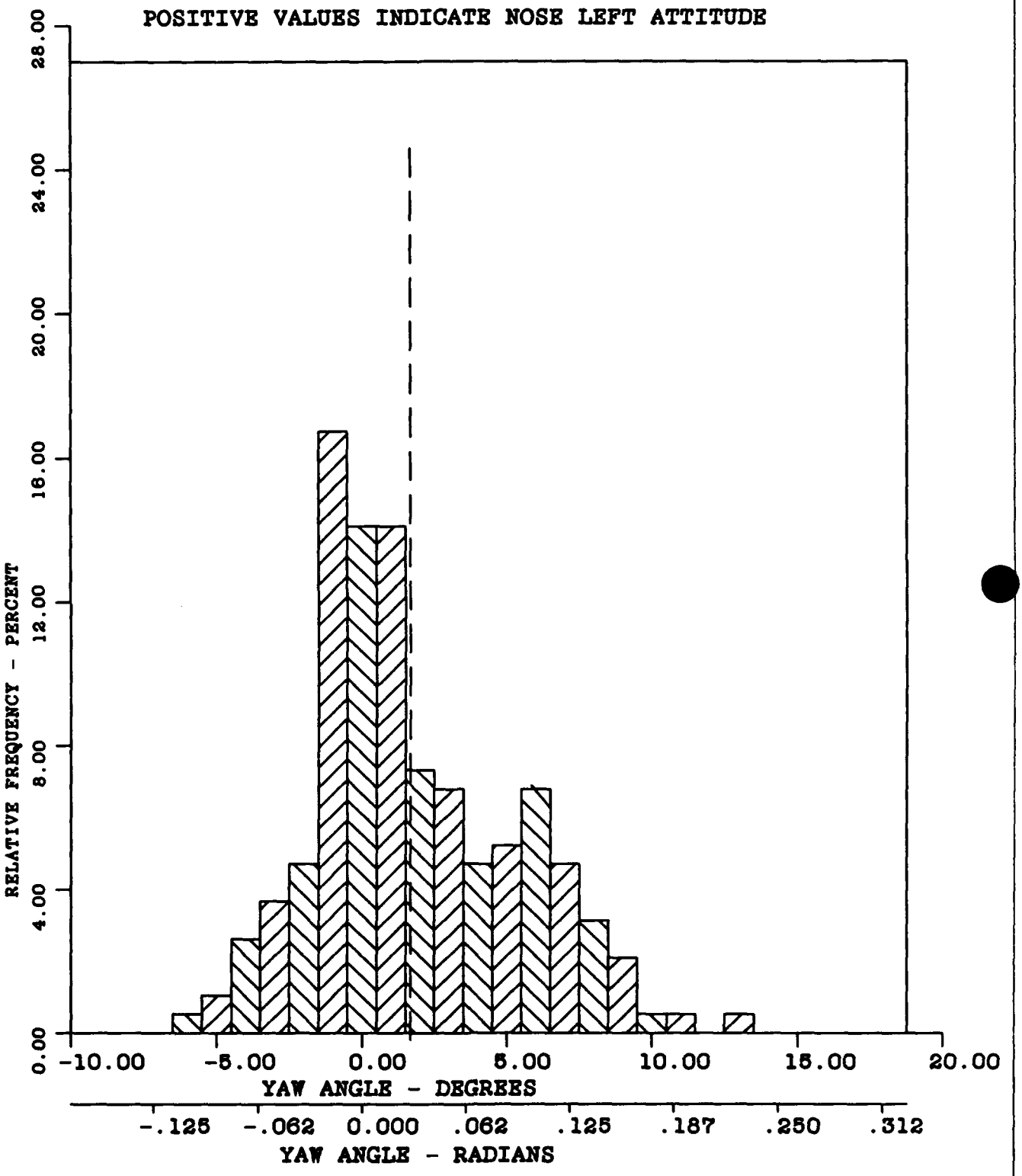


FIGURE D-55 FREQUENCY DISTRIBUTION OF AIRCRAFT YAW ANGLE

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-191 $\bar{X}$-1.67 DEGREES (.029 RADIANS) A3=.57
S-3.46 DEGREES (.060 RADIANS) A4-2.93
CURVE FITTED - PEARSON TYPE III
POSITIVE VALUES INDICATE NOSE LEFT ATTITUDE

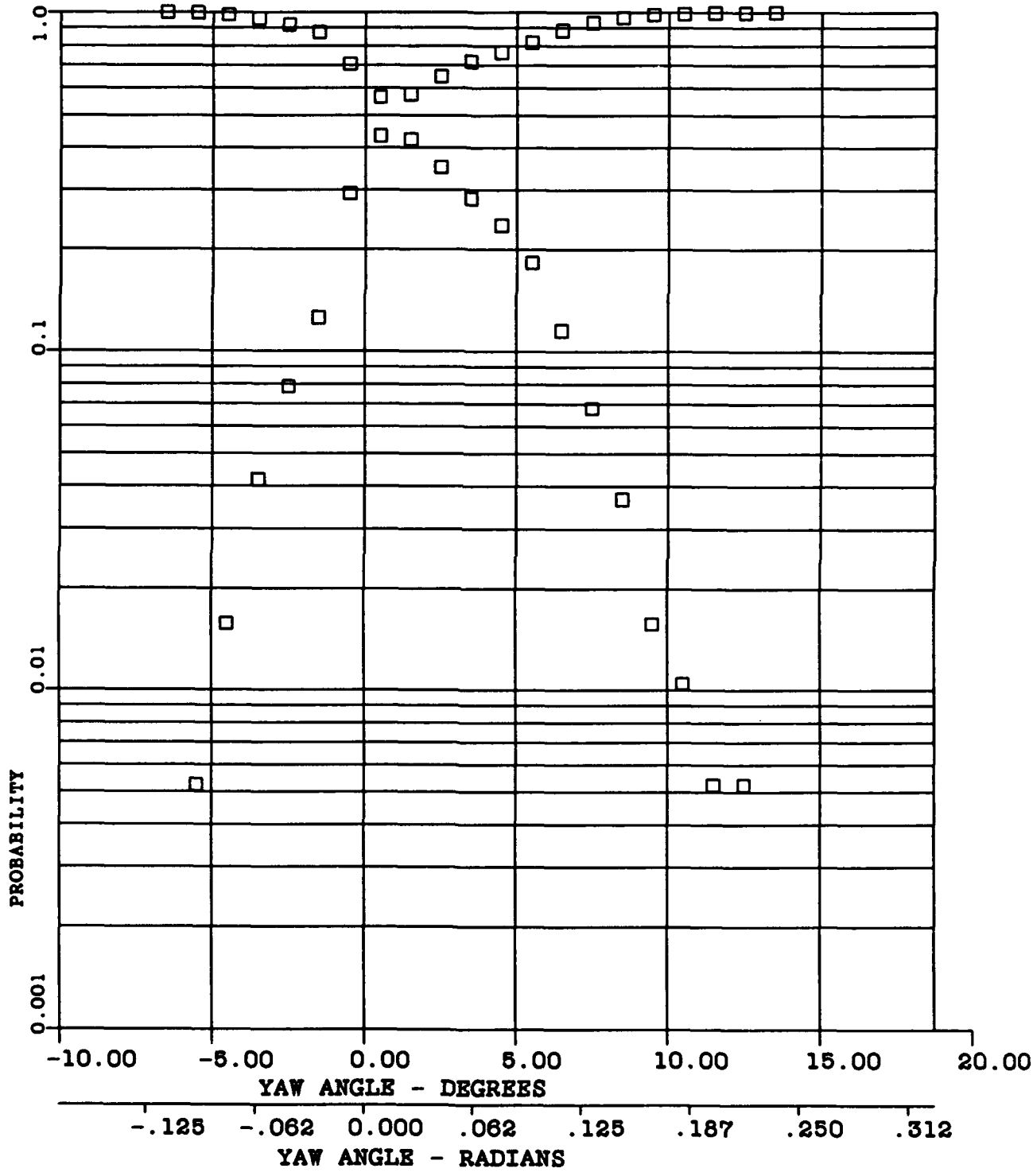


FIGURE D-56 PROBABILITY DISTRIBUTION OF AIRCRAFT YAW ANGLE

APPENDIX E

F-18 AIRCRAFT

NIGHT CARRIER LANDINGS

USS ENTERPRISE
CVN-65

Appendix E:

Frequency and Probability Distributions,
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MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (0.061 RADIANS)
N=76 $\bar{X}$=26.66 KNOTS (13.71 METRES/SEC) A3=-0.75
S= 3.10 KNOTS (1.59 METRES/SEC) A4=2.42

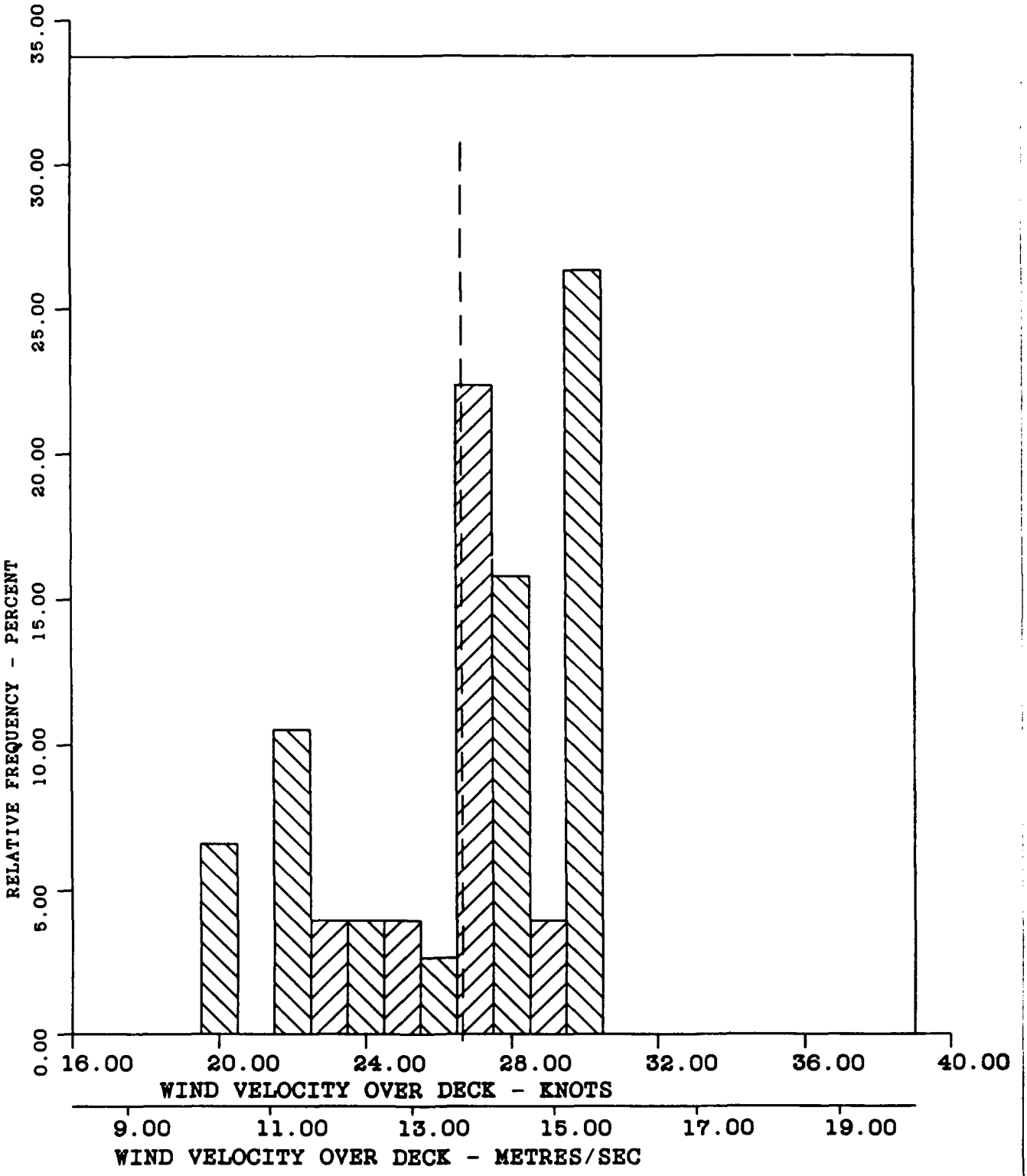


FIGURE E-1 FREQUENCY DISTRIBUTION OF WIND VELOCITY OVER THE DECK

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (0.061 RADIANS)
N=76 $\bar{X}$=26.66 KNOTS (13.71 METRES/SEC) A3=-0.75
S= 3.10 KNOTS (1.59 METRES/SEC) A4=2.42
CURVE FITTED - PEARSON TYPE III

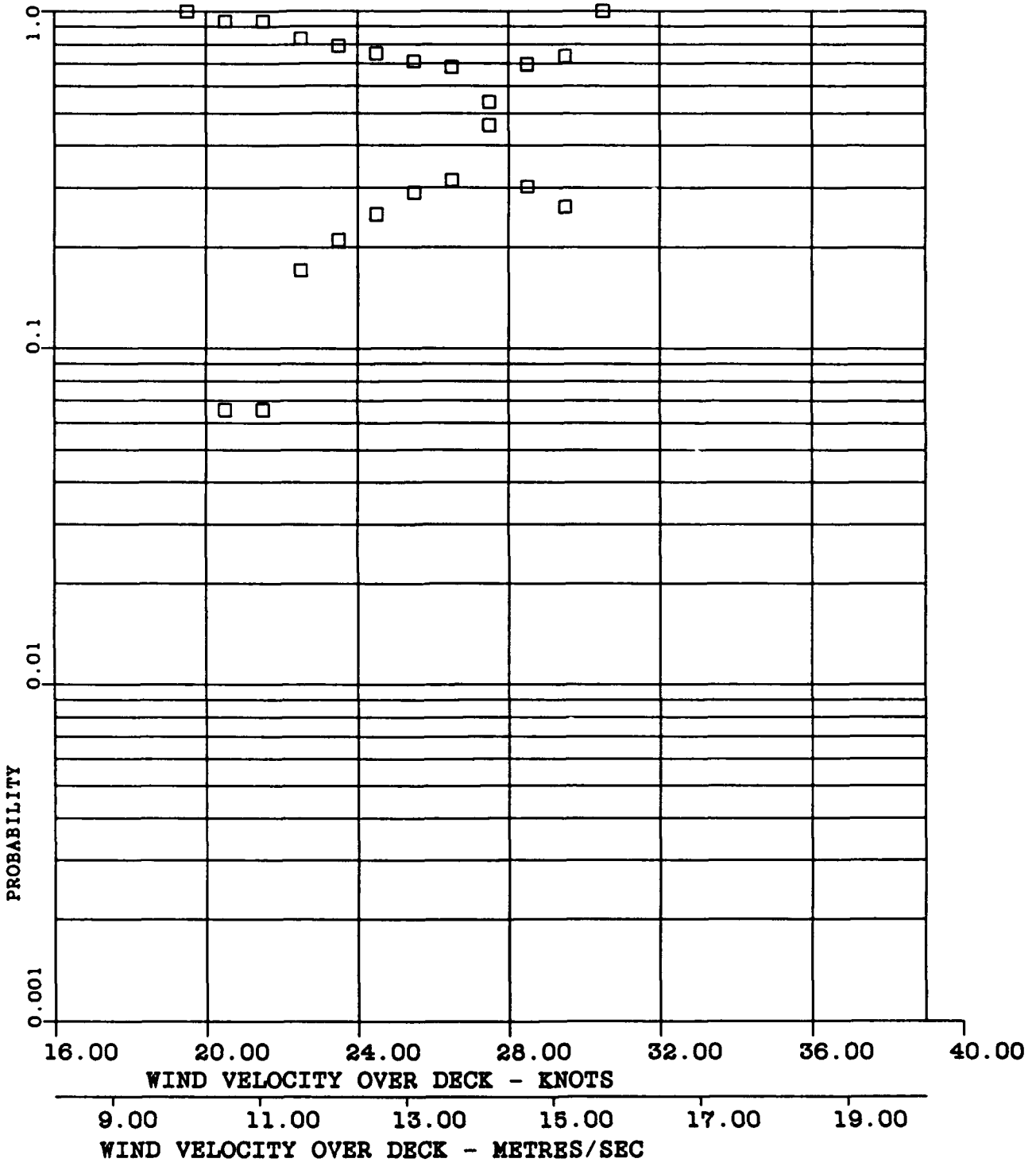


FIGURE E-2 PROBABILITY DISTRIBUTION OF WIND VELOCITY OVER THE DECK

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (0.061 RADIANS)
N=76 $\bar{X}$=147.96 KNOTS (76.11 METRES/SEC) A3=0.02
S= 6.34 KNOTS (3.26 METRES/SEC) A4=2.54

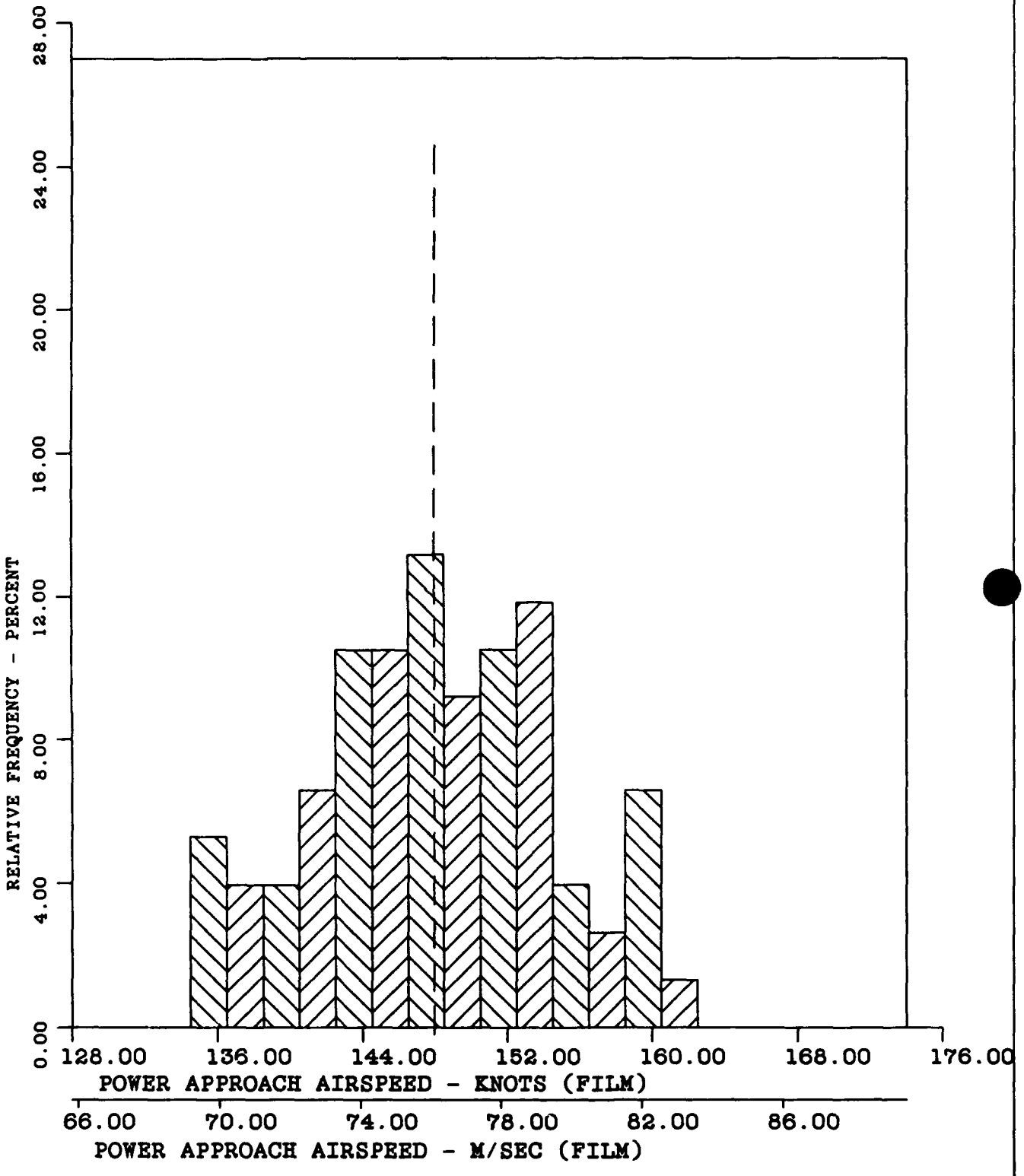


FIGURE E-3 FREQUENCY DISTRIBUTION OF FILM MEASURED POWER APPROACH AIRSPEED AT THE RAMP

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (0.061 RADIANS)
N=76 $\bar{X}$=147.96 KNOTS (76.11 METRES/SEC) A3=0.02
S= 6.34 KNOTS (3.26 METRES/SEC) A4=2.54
CURVE FITTED - NORMAL

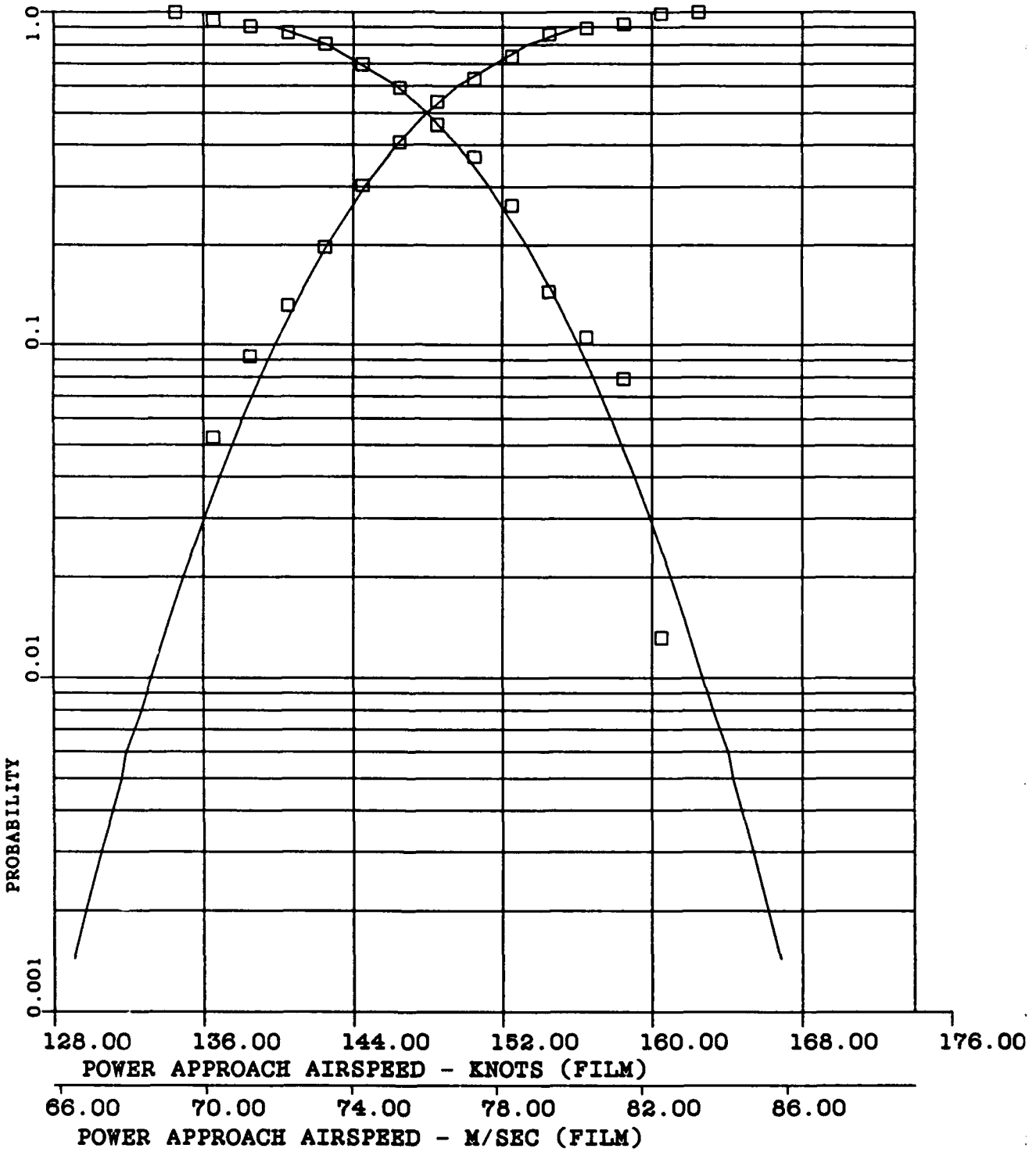


FIGURE E-4 PROBABILITY DISTRIBUTION OF POWER APPROACH AIRSPEED AT THE RAMP (FILM)

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (0.061 RADIANS)
N=76 $\bar{X}$=9.73 FEET/SEC (2.97 METRES/SEC) A3=-0.28
S= 2.50 FEET/SEC (0.76 METRES/SEC) A4=2.74

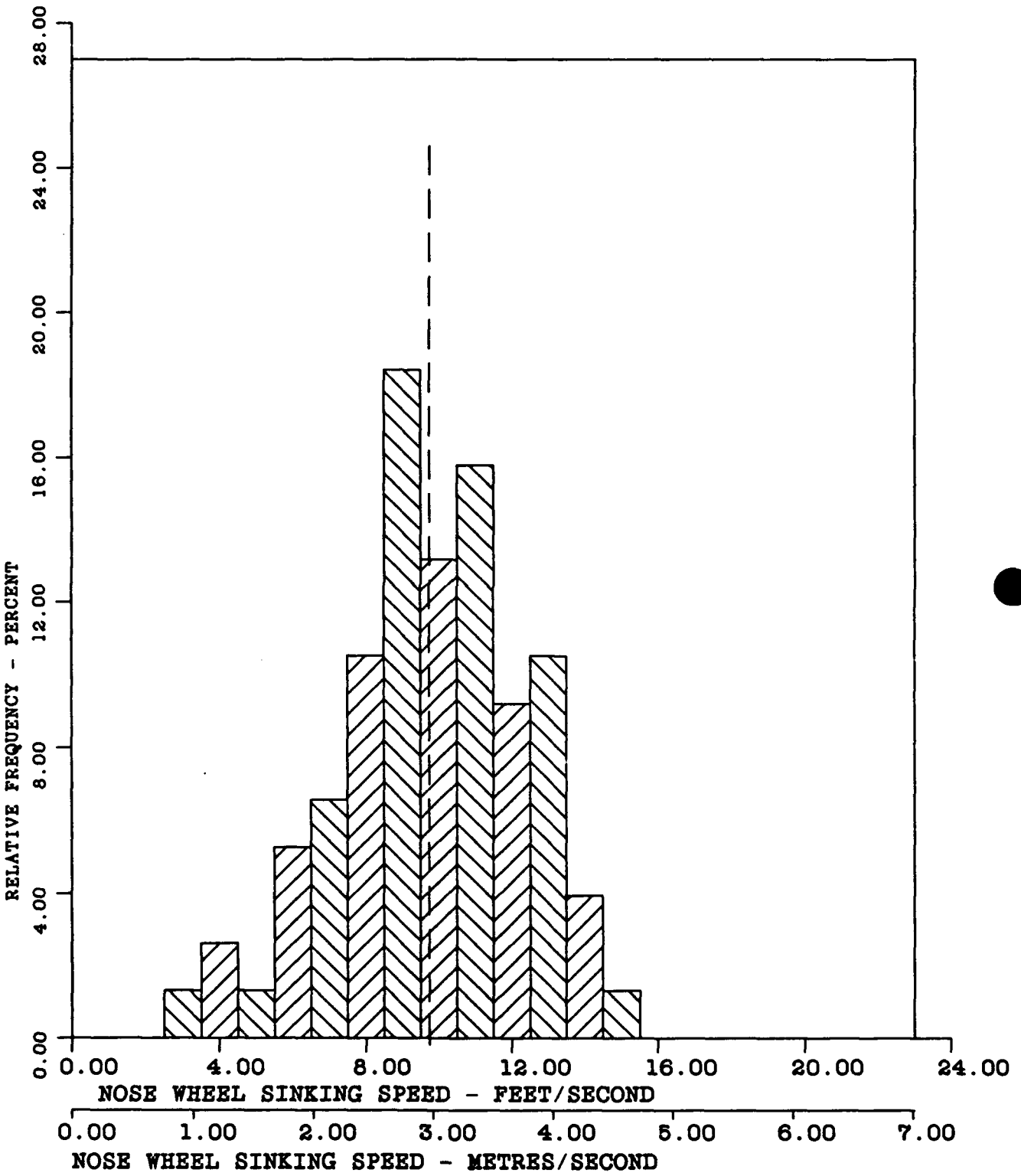


FIGURE E-5 FREQUENCY DISTRIBUTION OF NOSE WHEEL SINKING SPEED

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (0.061 RADIANS)
N=76 $\bar{X}$=9.73 FEET/SEC (2.97 METRES/SEC) A3=-0.28
S= 2.50 FEET/SEC (0.76 METRES/SEC) A4=2.74
CURVE FITTED - NORMAL

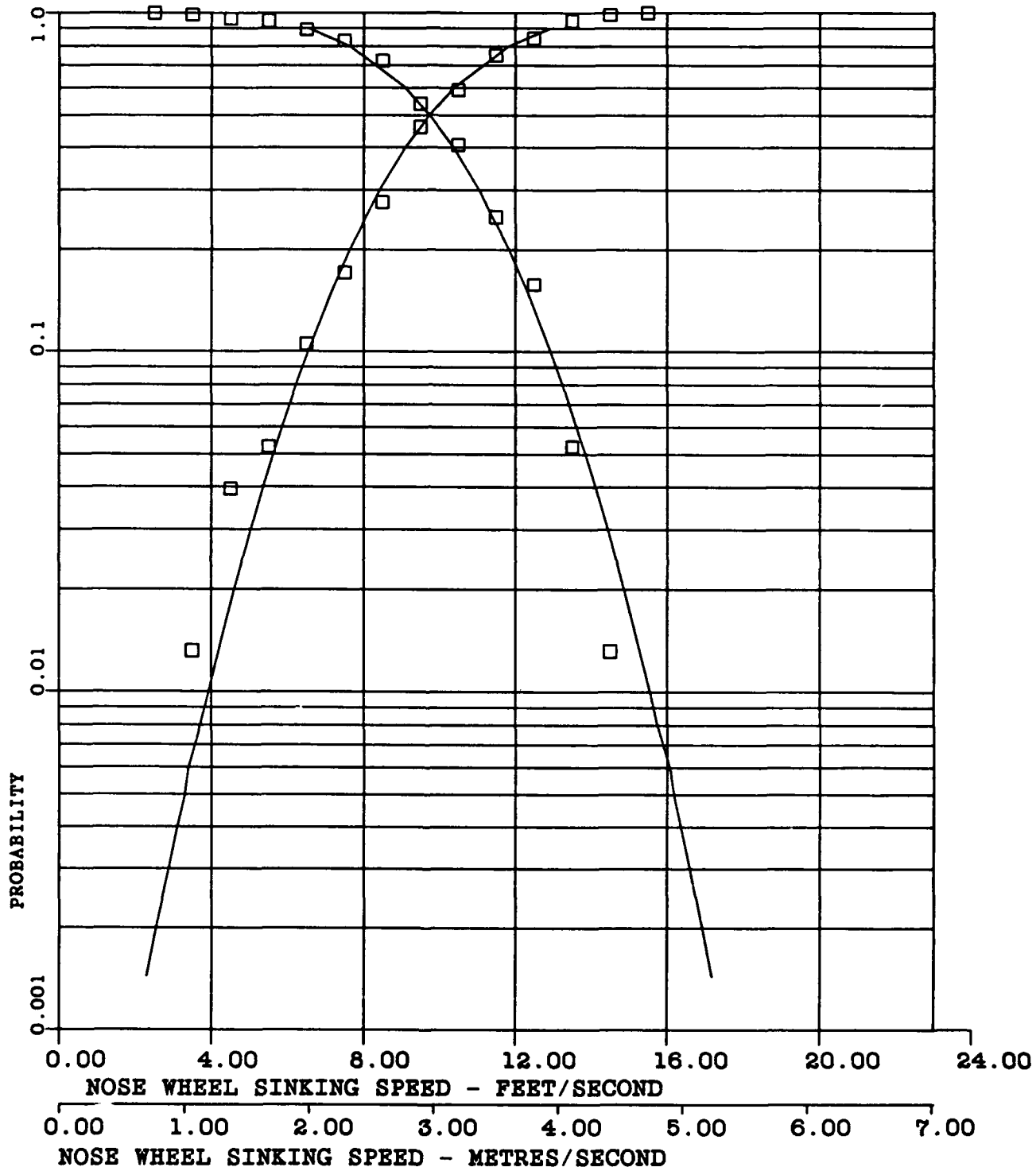


FIGURE E-6 PROBABILITY DISTRIBUTION OF NOSE WHEEL SINKING SPEED

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (0.061 RADIANS)
N=76 $\bar{X}$=10.68 FEET/SEC (3.26 METRES/SEC) A3=0.13
S= 2.63 FEET/SEC (0.80 METRES/SEC) A4=2.93

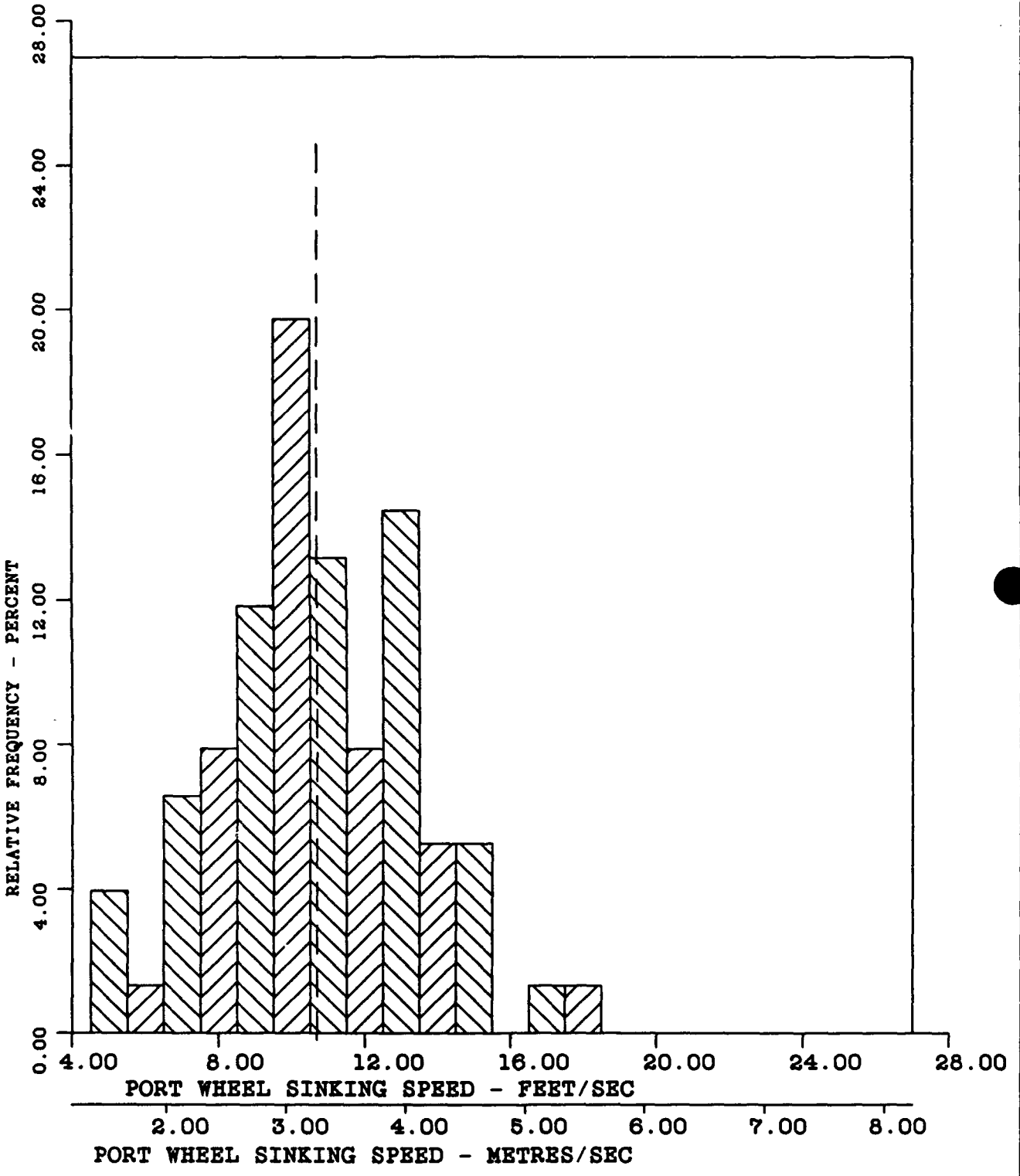


FIGURE E-7 FREQUENCY DISTRIBUTION OF PORT WHEEL SINKING SPEED AT PORT WHEEL TOUCHDOWN

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (0.061 RADIANS)
N=76 $\bar{X}$=10.68 FEET/SEC (3.26 METRES/SEC) A3=0.13
S= 2.63 FEET/SEC (0.80 METRES/SEC) A4=2.93
CURVE FITTED - NORMAL

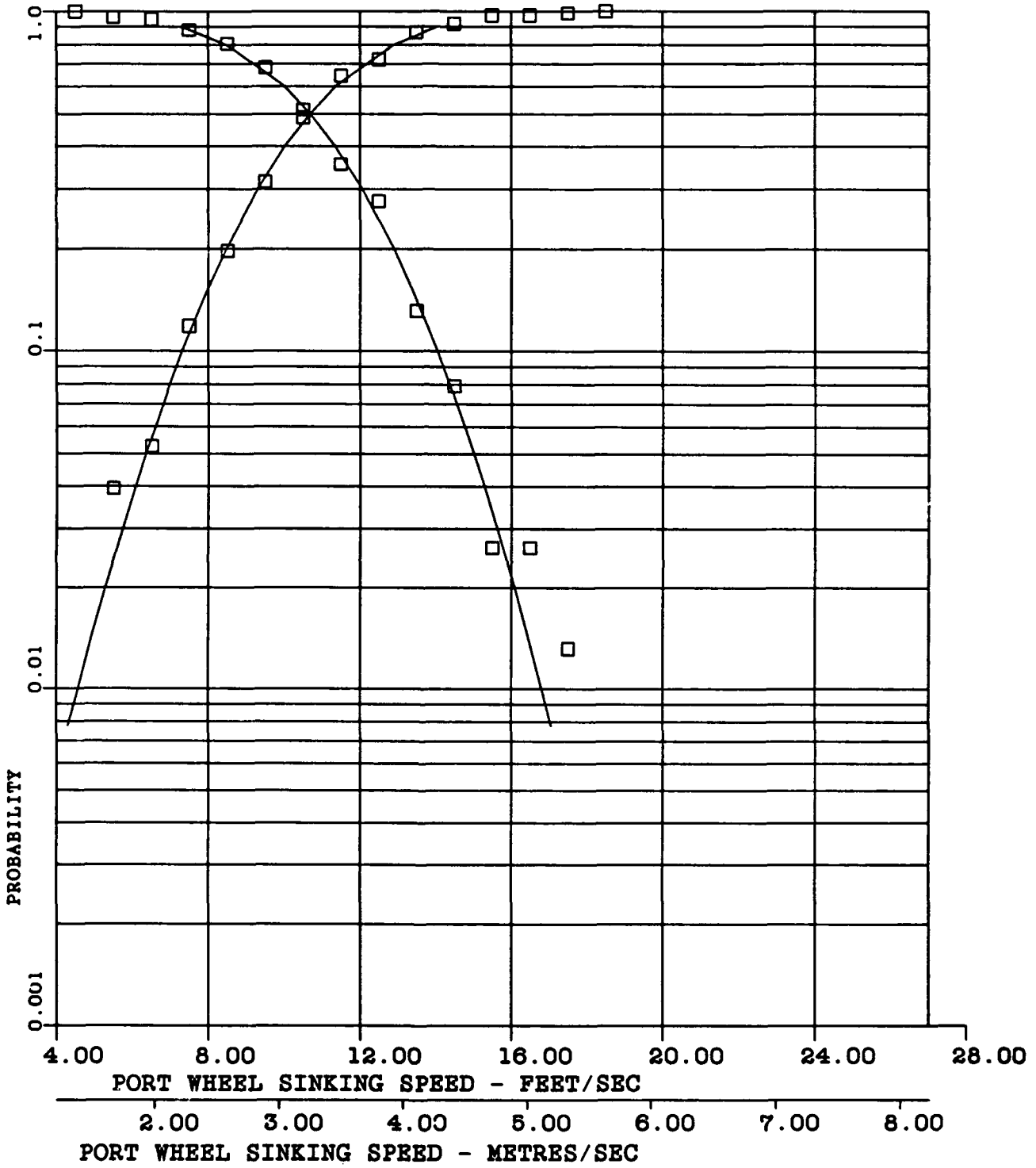


FIGURE E-8 PROBABILITY DISTRIBUTION OF PORT WHEEL SINKING SPEED

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (0.061 RADIANS)
N=76 $\bar{X}$=10.72 FEET/SEC (3.27 METRES/SEC) A3=0.22
S= 2.73 FEET/SEC (0.83 METRES/SEC) A4=2.80

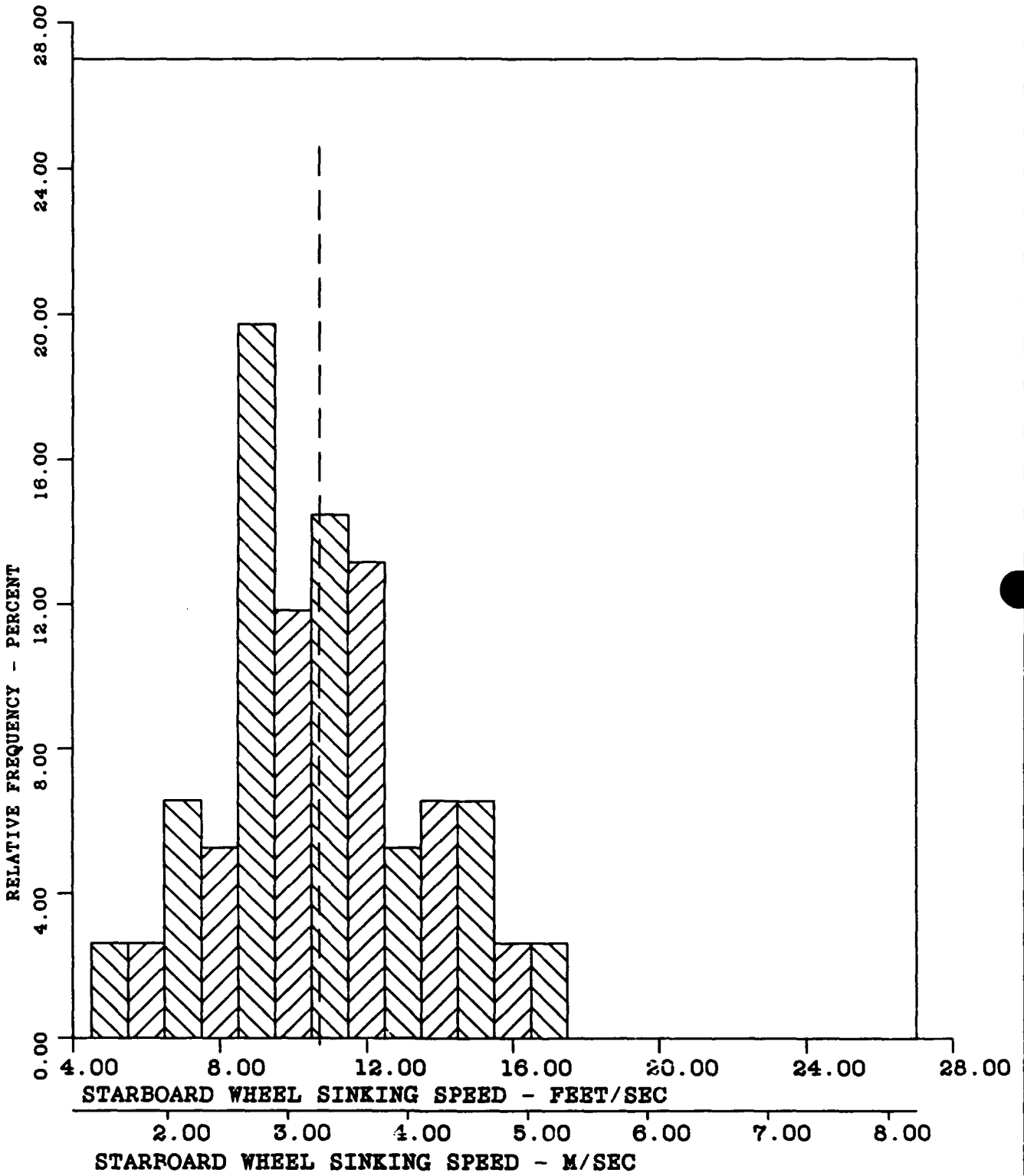


FIGURE E-9 FREQUENCY DISTRIBUTION OF STARBOARD WHEEL SINKING SPEED AT STARBOARD WHEEL TOUCHDOWN

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (0.061 RADIANS)
N=76 $\bar{X}$=10.72 FEET/SEC (3.27 METRES/SEC) A3=0.22
S= 2.73 FEET/SEC (0.83 METRES/SEC) A4=2.80
CURVE FITTED - NORMAL

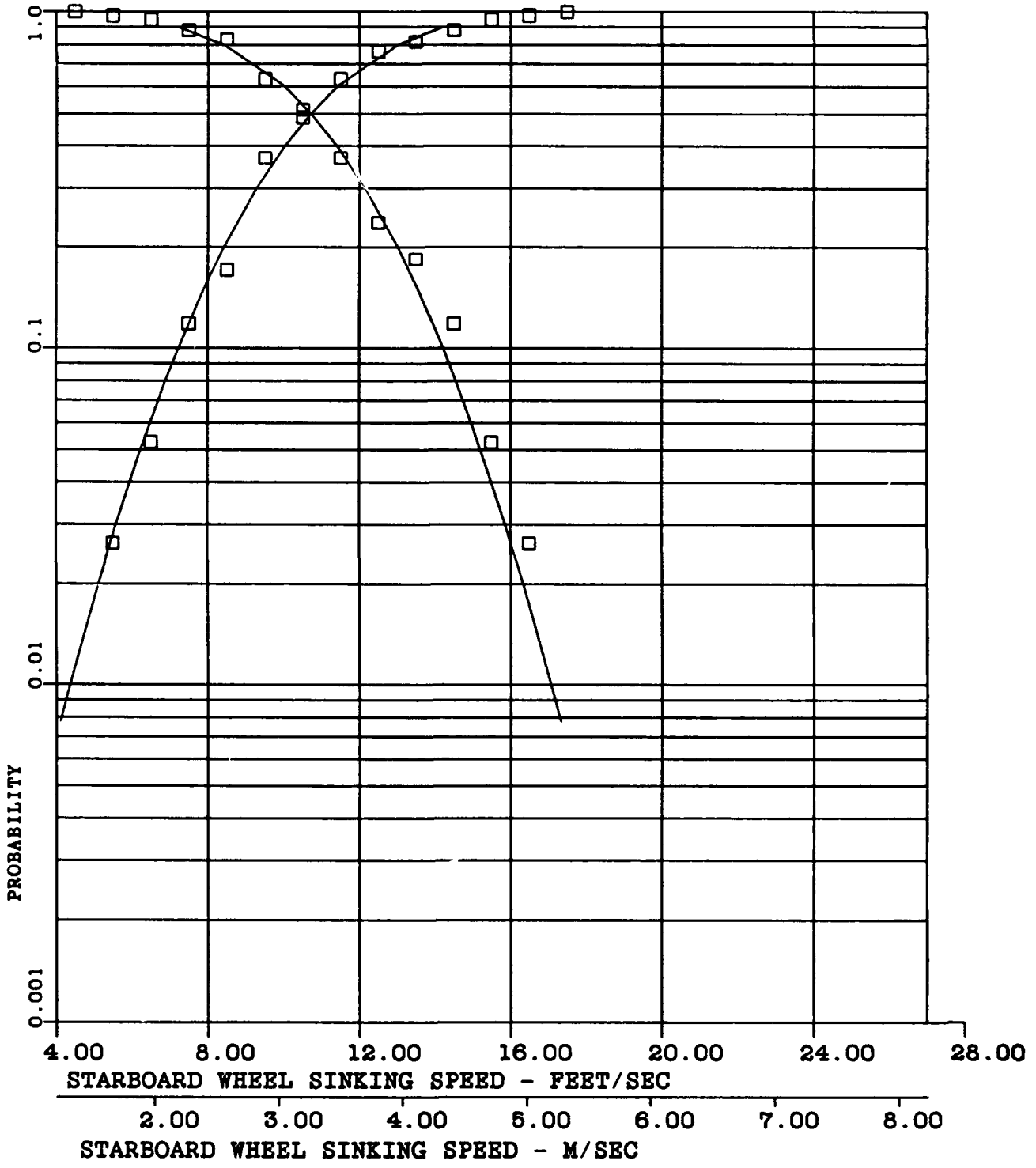


FIGURE E-10 PROBABILITY DISTRIBUTION OF STARBOARD WHEEL SINKING SPEED

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (0.061 RADIANS)
N=76 $\bar{X}$=10.80 FEET/SEC (3.29 METRES/SEC) A3=0.22
S= 2.67 FEET/SEC (0.81 METRES/SEC) A4=2.90

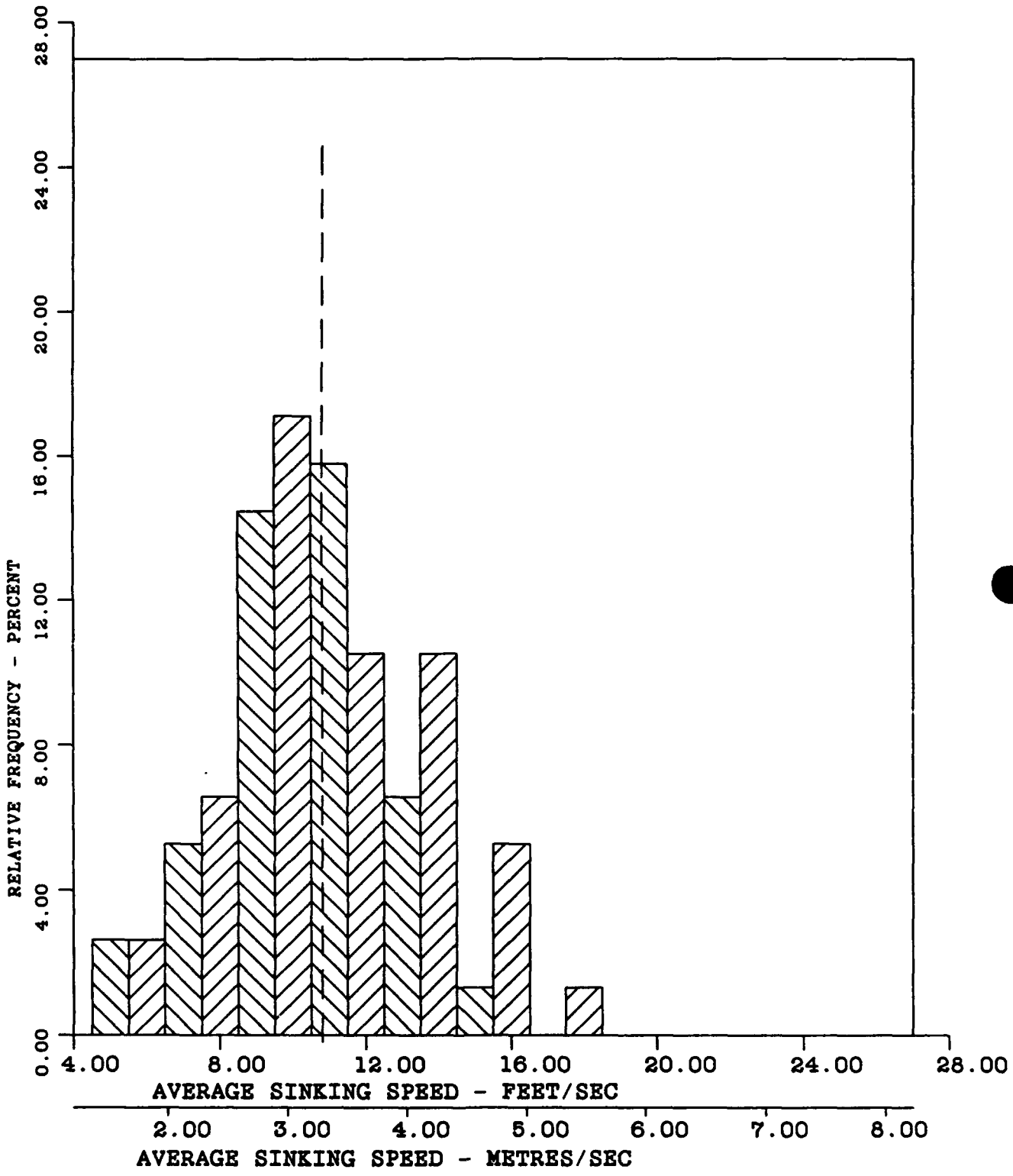


FIGURE E-11 FREQUENCY DISTRIBUTION OF AVG SINKING SPEED OF MAIN WHEEL AT FIRST MAIN WHEEL TOUCHDOWN

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (0.061 RADIANS)
N=76 $\bar{X}$=10.80 FEET/SEC (3.29 METRES/SEC) A3=0.22
S= 2.67 FEET/SEC (0.81 METRES/SEC) A4=2.90
CURVE FITTED - NORMAL

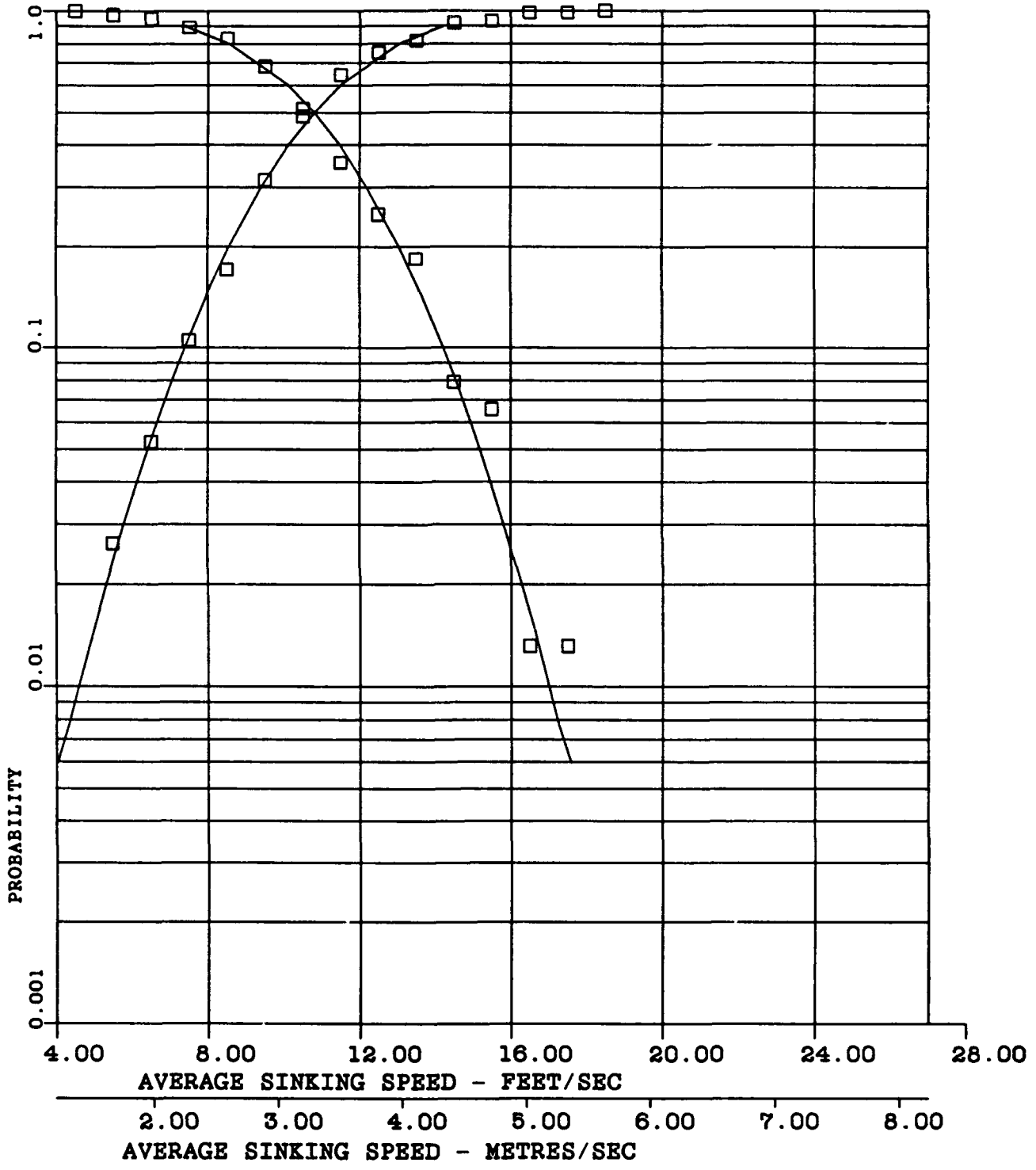


FIGURE E-12 PROBABILITY DISTRIBUTION OF AVERAGE SINKING SPEED AT FIRST MAIN WHEEL TOUCHDOWN

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (0.061 RADIANS)
N=2 $\bar{X}$=9.50 FEET/SEC (2.89 METRES/SEC) A3=0.00
S= 1.14 FEET/SEC (0.35 METRES/SEC) A4=1.00

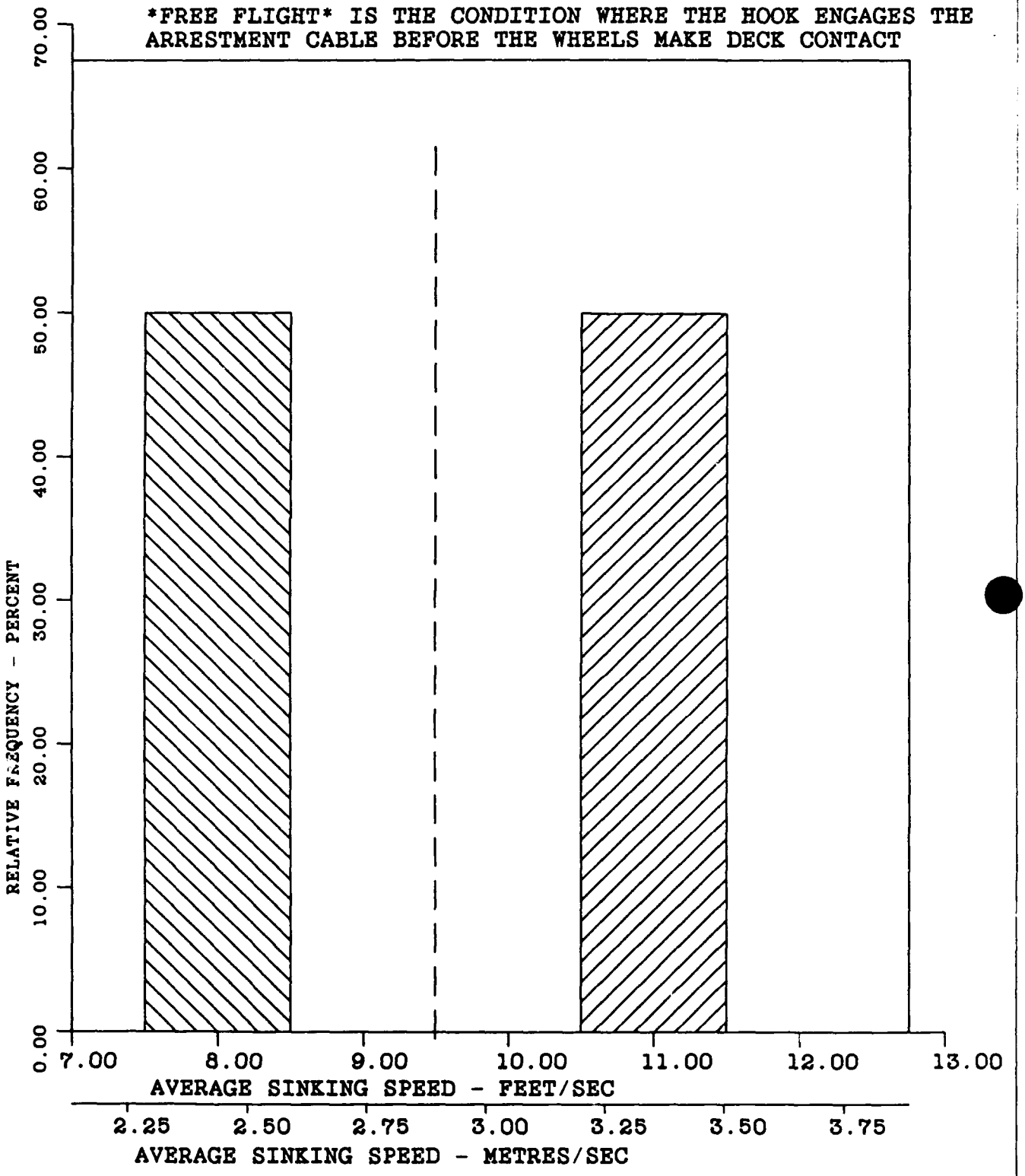


FIGURE E-13 FREQUENCY DISTRIBUTION OF AVERAGE SINKING SPEED OF MAIN WHEELS AT FREE FLIGHT

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (0.061 RADIANS)
N=2 $\bar{X}$=9.50 FEET/SEC (2.89 METRES/SEC) A3=0.00
S= 1.14 FEET/SEC (0.35 METRES/SEC) A4=1.00
CURVE FITTED - NORMAL
FREE FLIGHT IS THE CONDITION WHERE THE HOOK ENGAGES THE ARRESTMENT CABLE BEFORE THE WHEELS MAKE DECK CONTACT

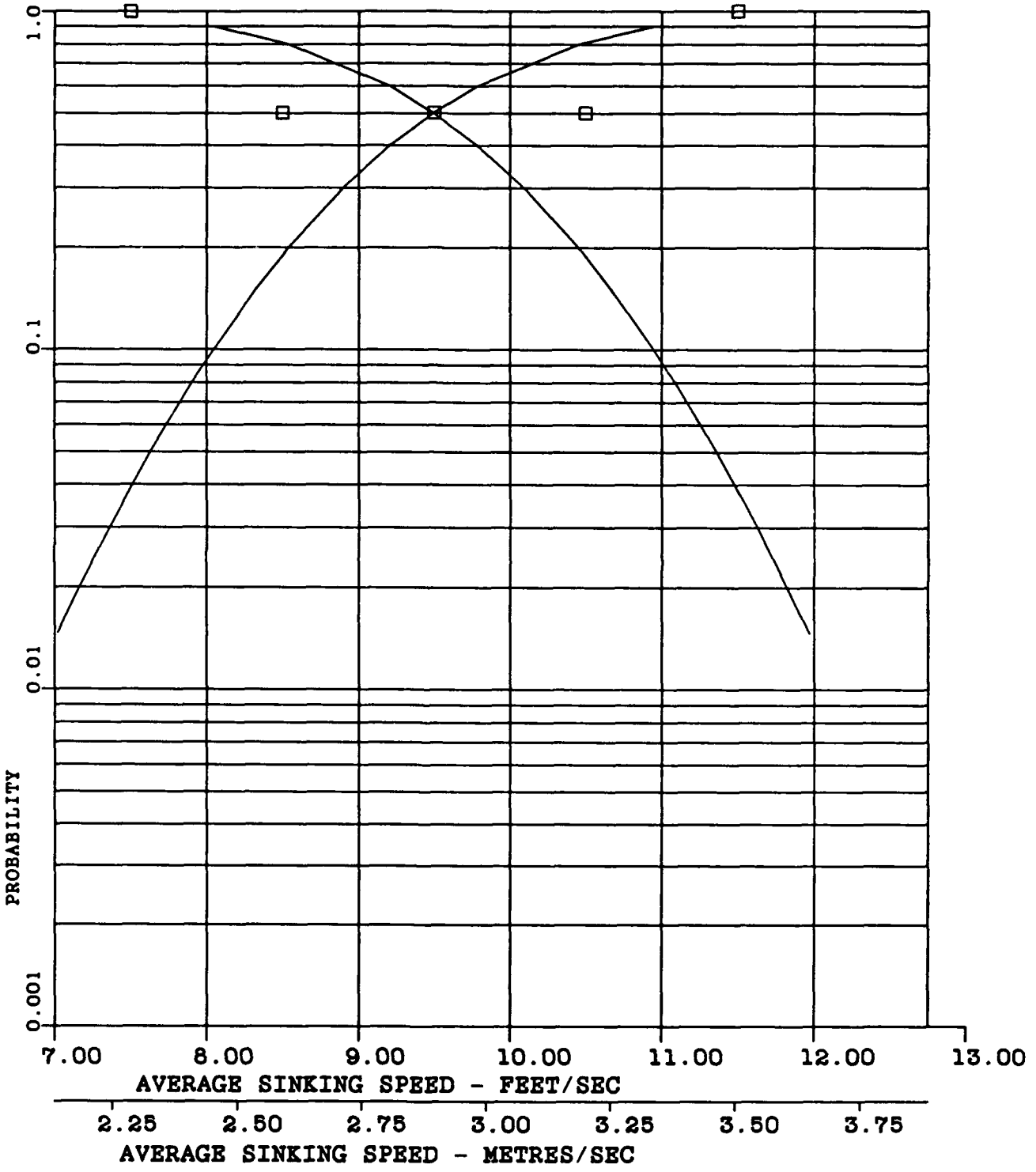


FIGURE E-14 PROBABILITY DISTRIBUTION OF AVERAGE SINKING SPEED AT FREE FLIGHT

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N=76 $\bar{X}$=1.06 A3=0.34
S= 0.11 A4=2.32

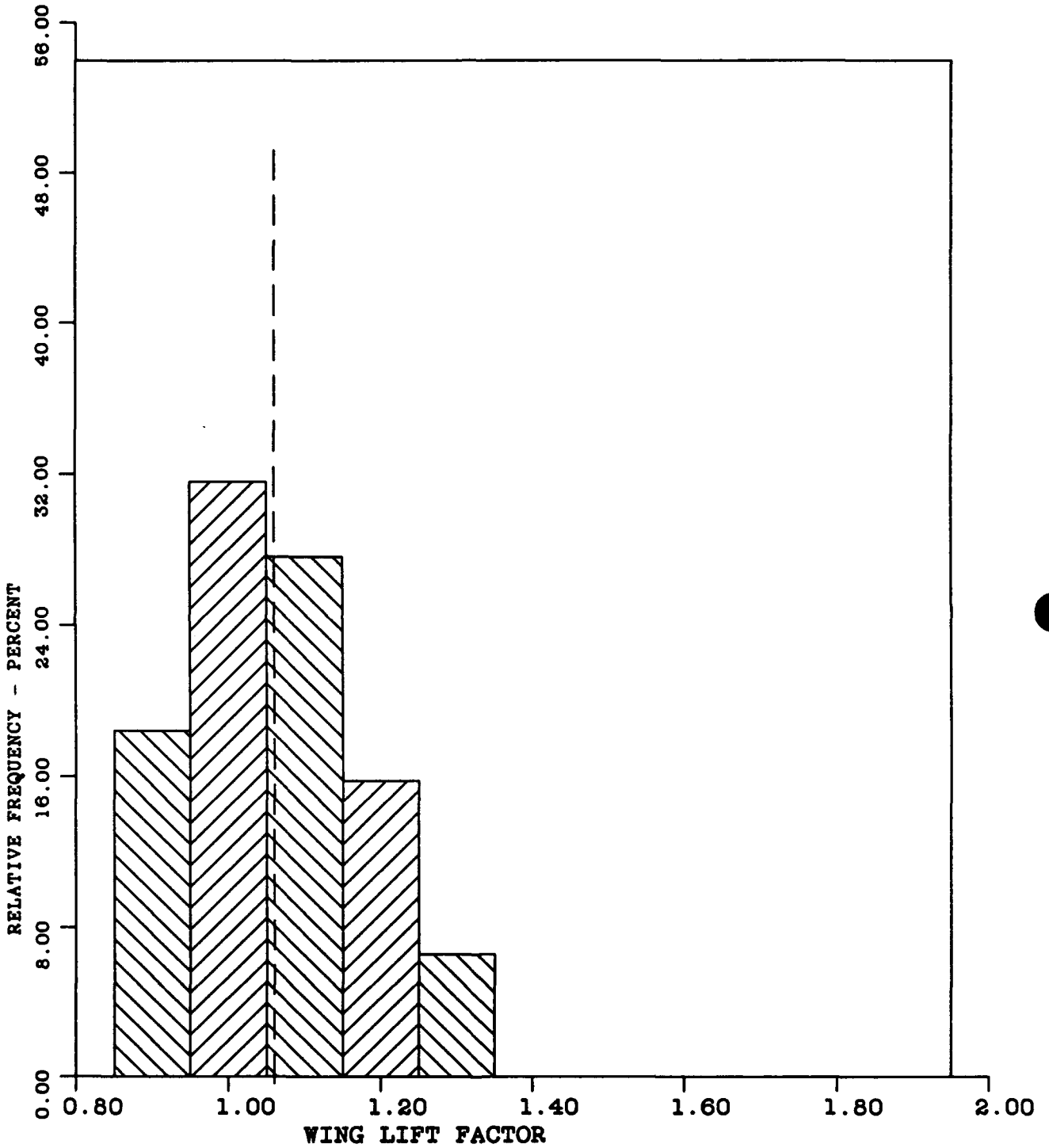


FIGURE E-15 FREQUENCY DISTRIBUTION OF WING LIFT FACTOR AT FIRST MAIN WHEEL TOUCHDOWN

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (0.061 RADIANS)
N=76 $\bar{X}$=1.06 A3=0.34
S= 0.11 A4=2.32
CURVE FITTED - NORMAL

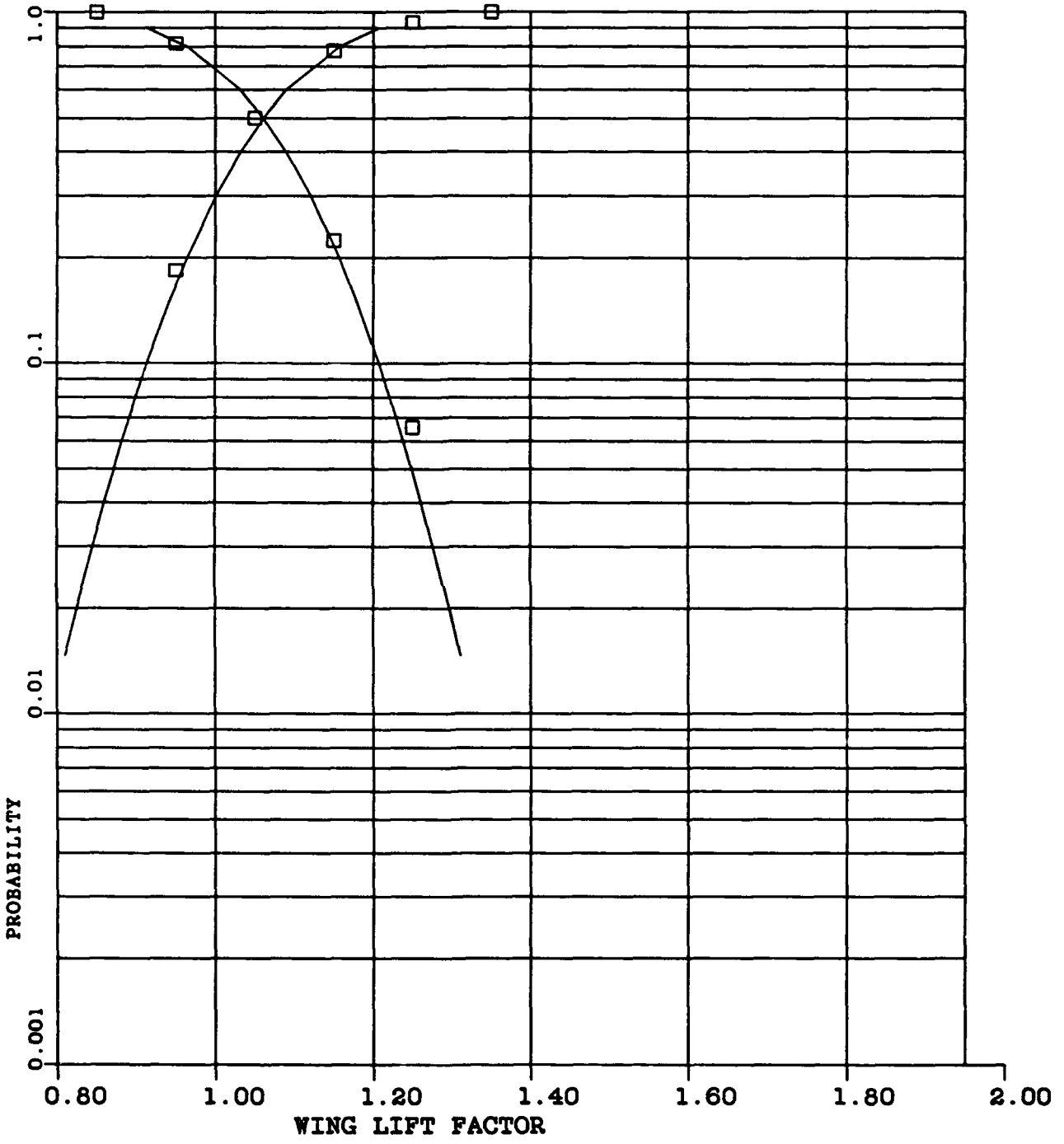


FIGURE E-16 PROBABILITY DISTRIBUTION OF WING LIFT FACTOR AT FIRST MAIN WHEEL TOUCHDOWN

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N=2 $\bar{X}$=1.05 A3=-0.00
S= 0.05 A4=1.00

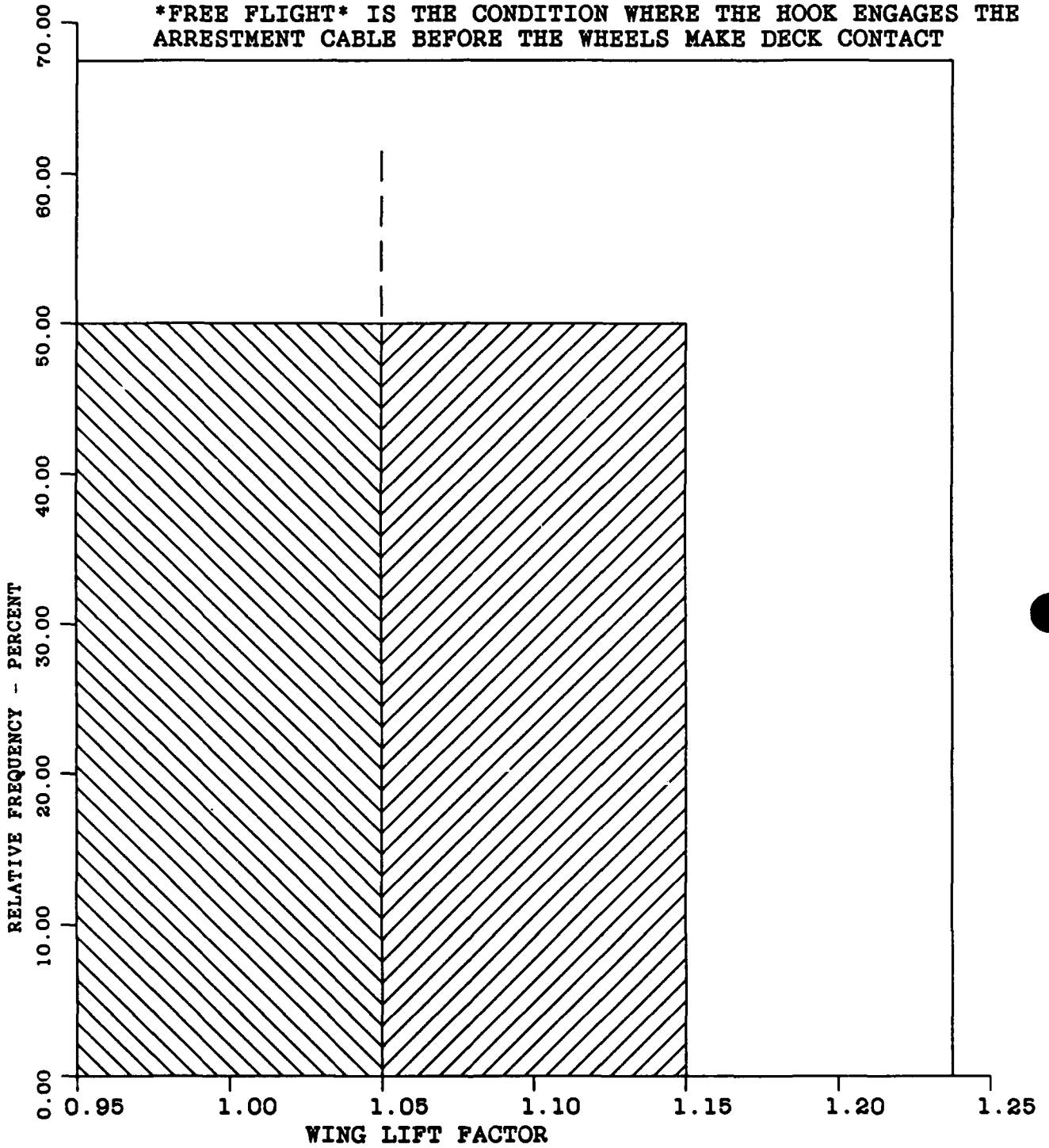


FIGURE E-17 FREQUENCY DISTRIBUTION OF WING LIFT FACTOR AT FREE FLIGHT

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (0.061 RADIANS)
N=2 $\bar{X}$=1.05 A3=-0.00
S= 0.05 A4=1.00
CURVE FITTED - NORMAL
FREE FLIGHT IS THE CONDITION WHERE THE HOOK ENGAGES THE ARRESTMENT CABLE BEFORE THE WHEELS MAKE DECK CONTACT

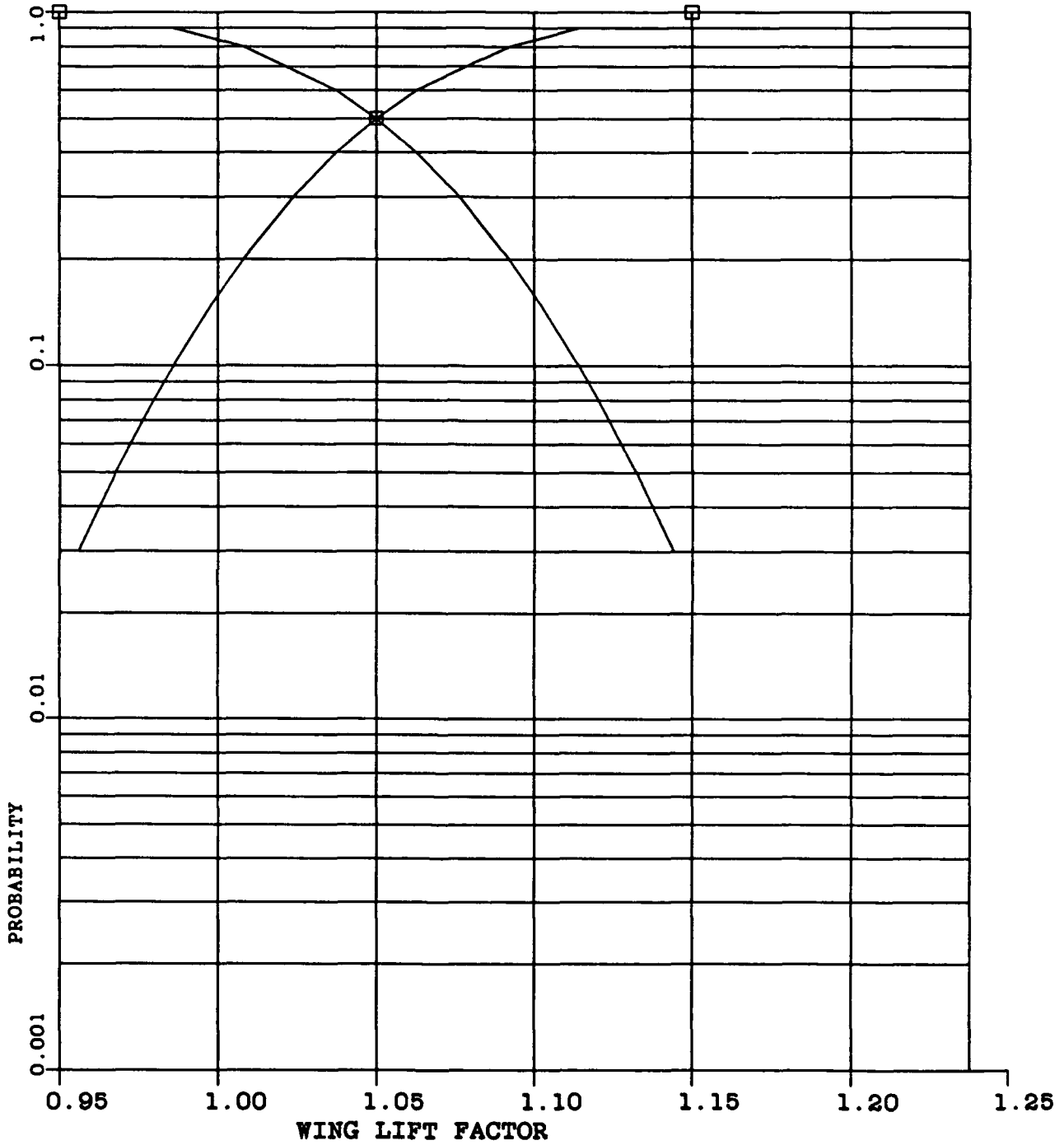


FIGURE E-18 PROBABILITY DISTRIBUTION OF WING LIFT FACTOR AT FREE FLIGHT

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N=76 $\bar{X}$=4.62 DEGREES (0.081 RADIANS) A3=-0.45
S= 0.86 DEGREES (0.015 RADIANS) A4=4.69

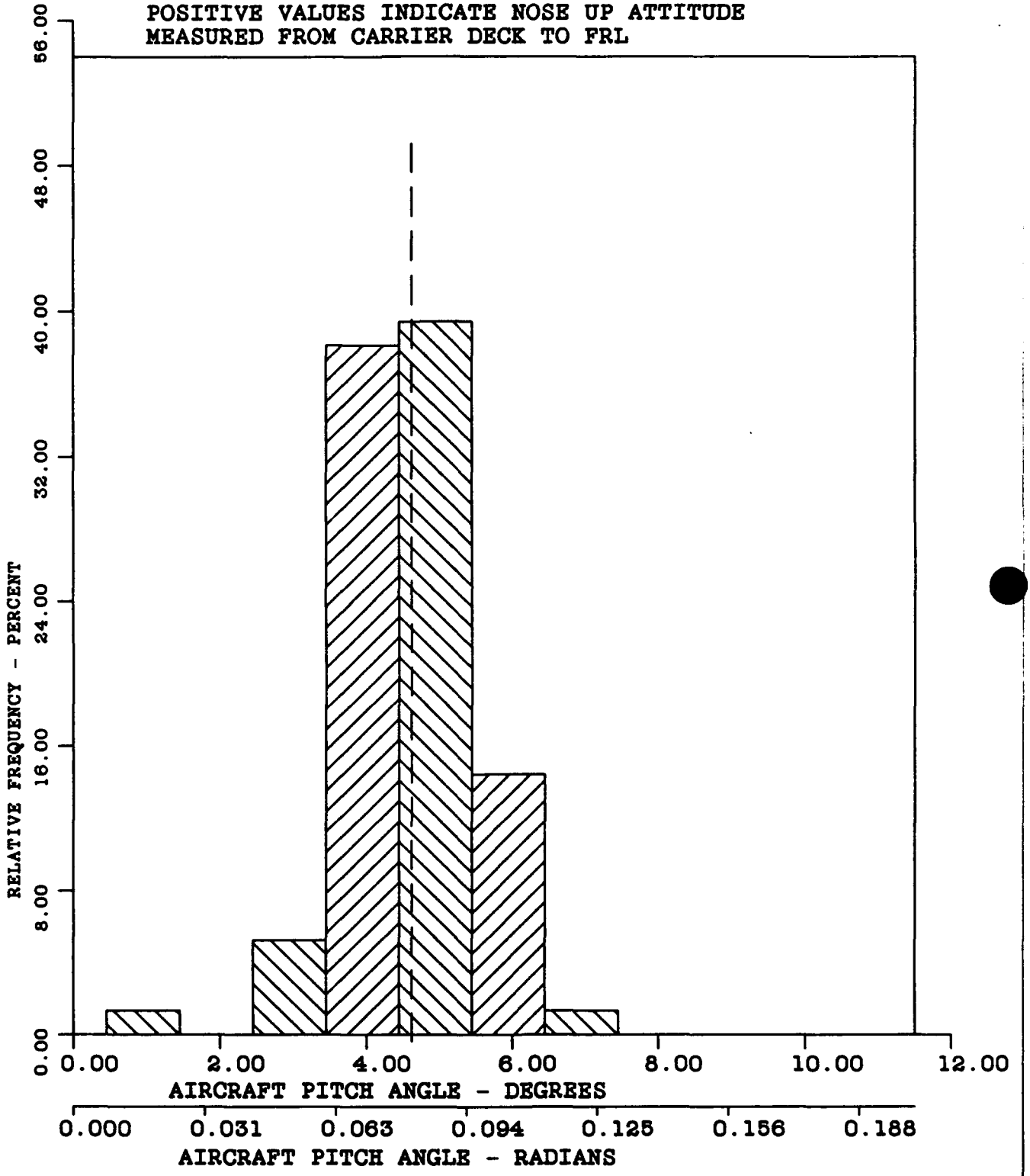


FIGURE E-19 FREQUENCY DISTRIBUTION OF AIRCRAFT PITCH ANGLE AT FIRST MAIN WHEEL TOUCHDOWN

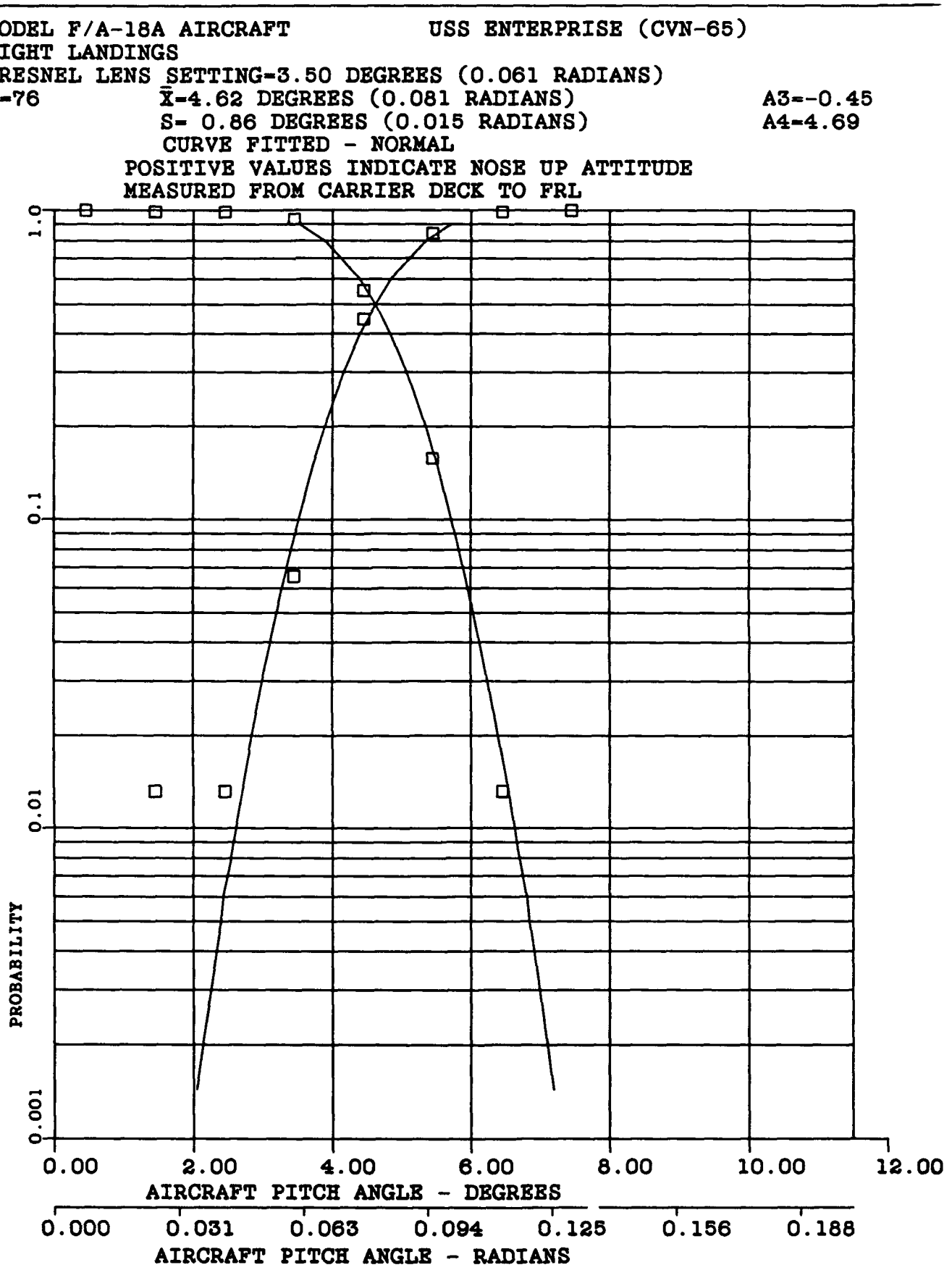


FIGURE E-20 PROBABILITY DISTRIBUTION OF AIRCRAFT PITCH ANGLE AT FIRST MAIN WHEEL TOUCHDOWN

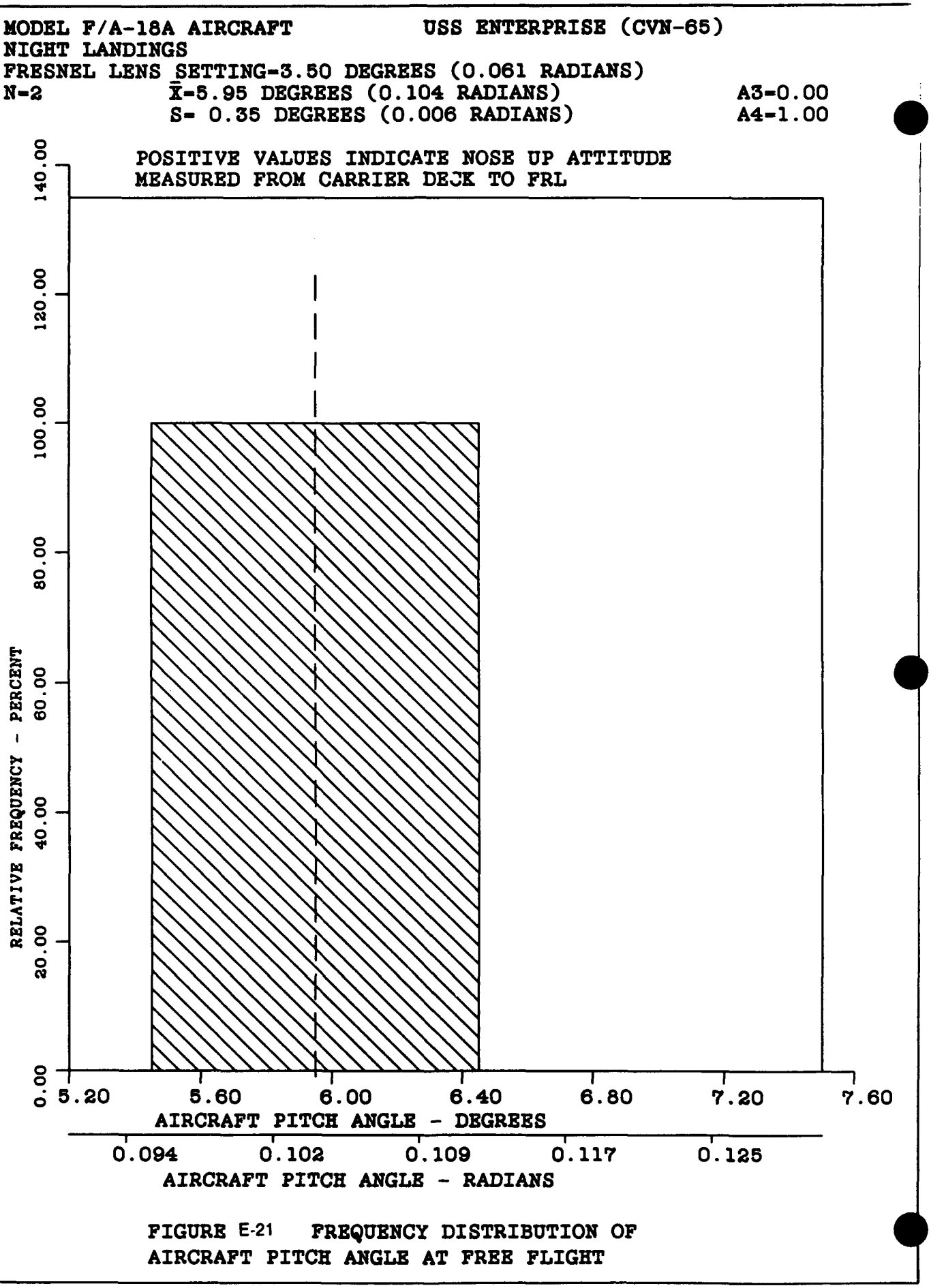


FIGURE E-21 FREQUENCY DISTRIBUTION OF AIRCRAFT PITCH ANGLE AT FREE FLIGHT

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (0.061 RADIANS)
N=2 $\bar{X}$=5.95 DEGREES (0.104 RADIANS) A3=0.00
S= 0.35 DEGREES (0.006 RADIANS) A4=1.00
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE NOSE UP ATTITUDE
MEASURED FROM CARRIER DECK TO FRL

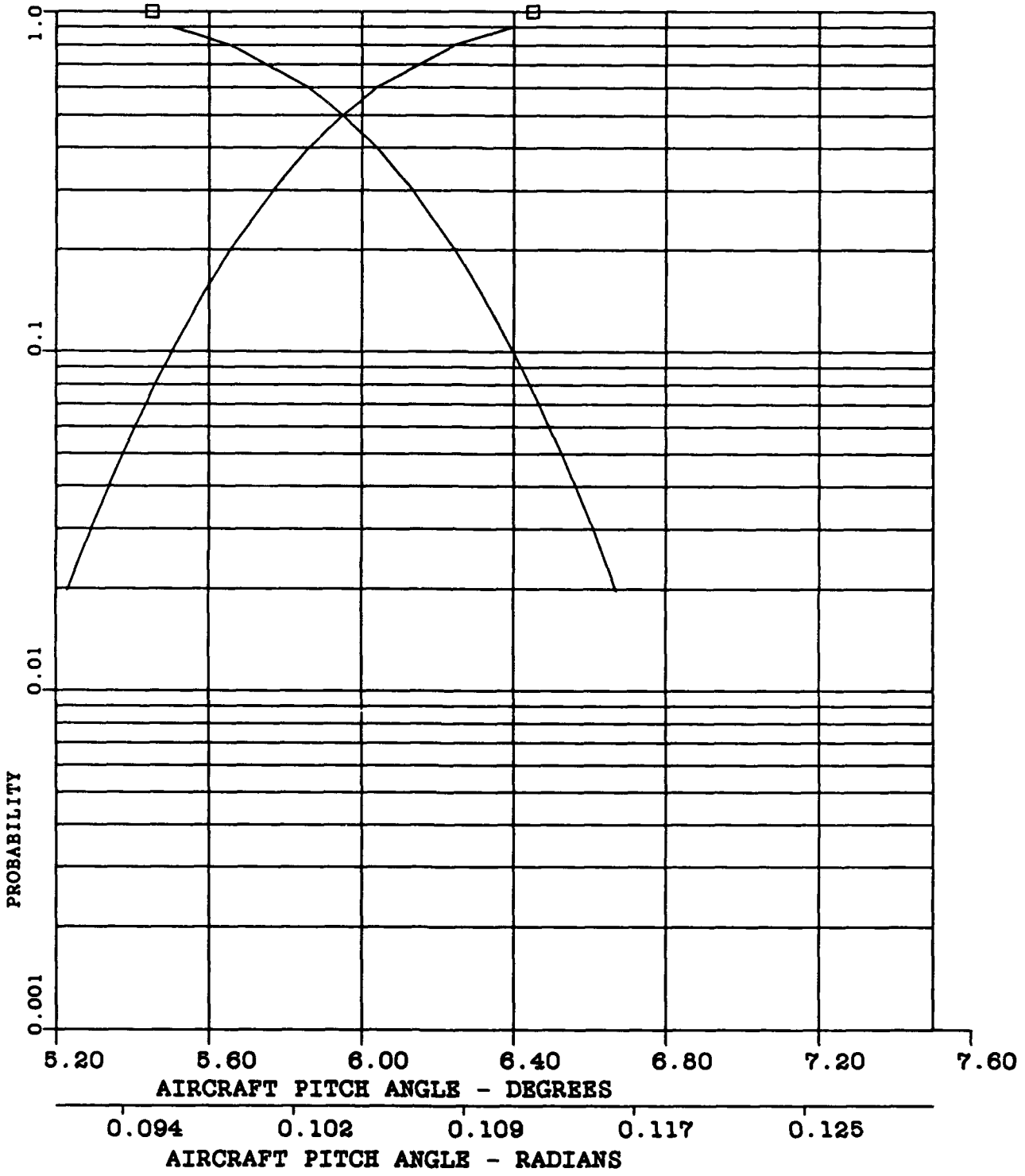


FIGURE E-22 PROBABILITY DISTRIBUTION OF AIRCRAFT PITCH ANGLE AT FREE FLIGHT

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (0.061 RADIANS)
N=76 $\bar{X}$=0.13 DEGREES (0.002 RADIANS) A3=-0.62
S= 2.61 DEGREES (0.046 RADIANS) A4=5.58

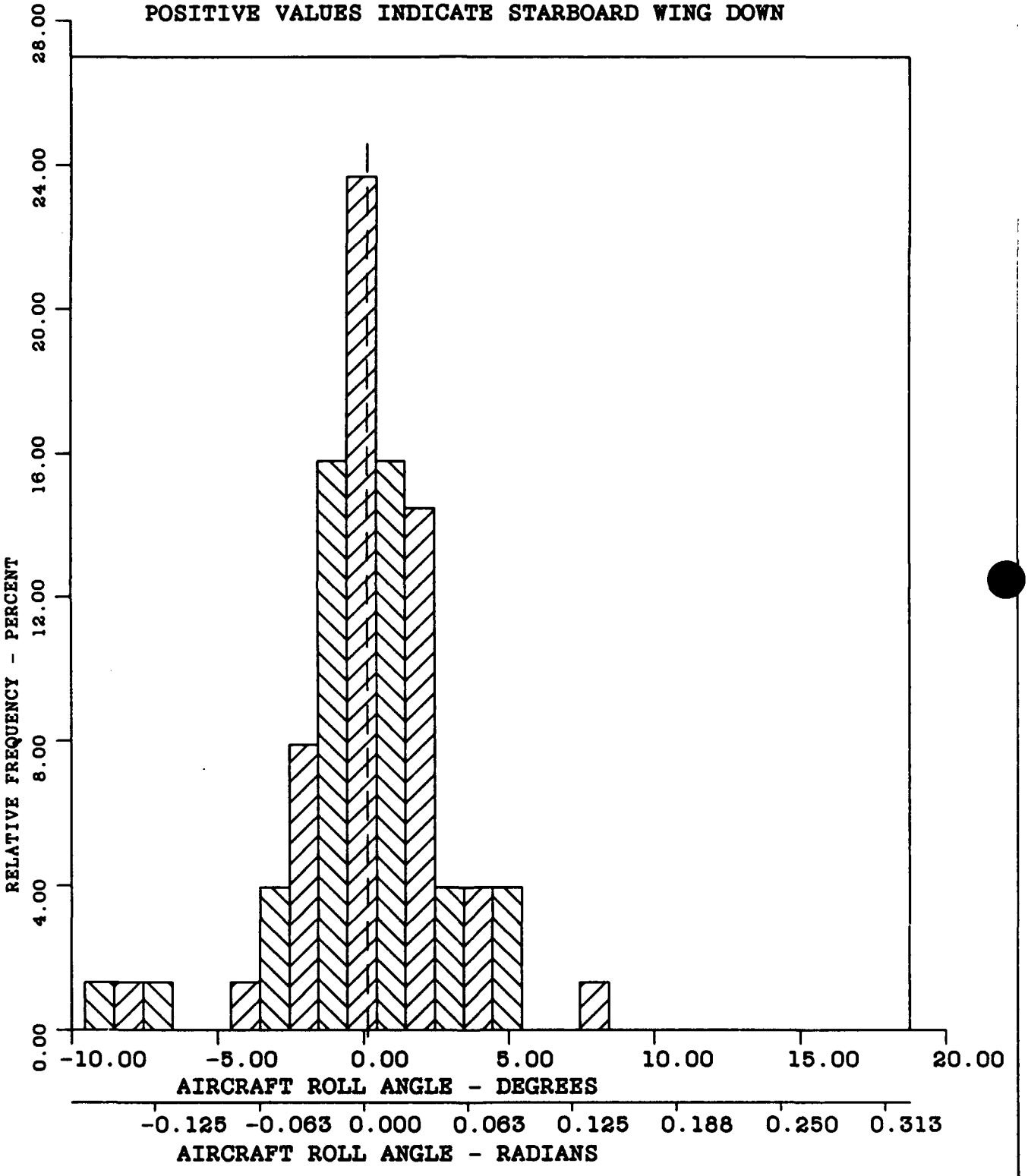


FIGURE E-23 FREQUENCY DISTRIBUTION OF AIRCRAFT ROLL ANGLE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (0.061 RADIANS)
N=76 $\bar{X}$=0.13 DEGREES (0.002 RADIANS) A3=-0.62
S= 2.61 DEGREES (0.046 RADIANS) A4=5.58
CURVE FITTED - PEARSON TYPE III
POSITIVE VALUES INDICATE STARBOARD WING DOWN

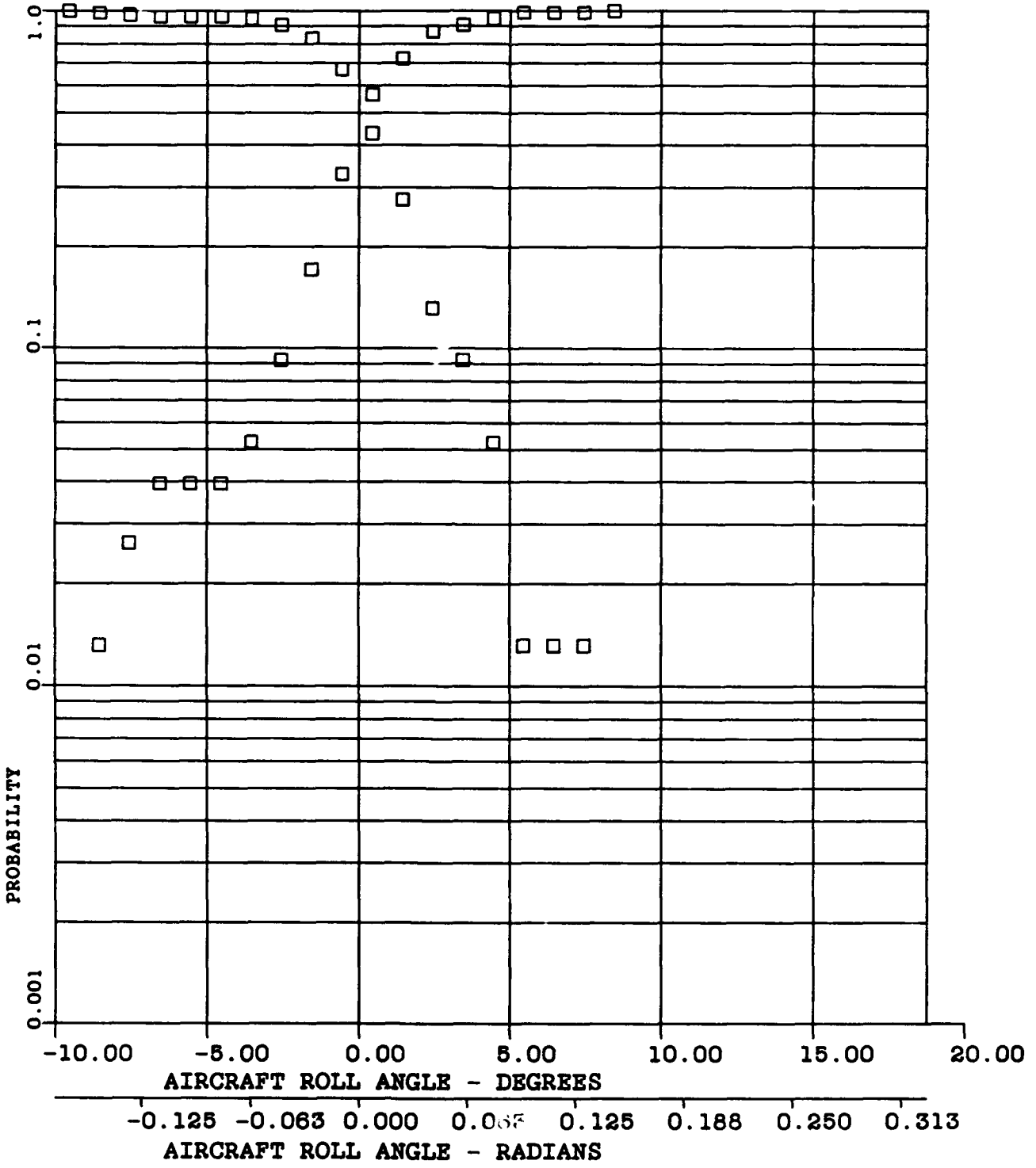


FIGURE E-24 PROBABILITY DISTRIBUTION OF AIRCRAFT ROLL ANGLE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N=2 $\bar{X}$=1.80 DEGREES (0.031 RADIANS) A3=-0.00
S= 0.40 DEGREES (0.007 RADIANS) A4=1.00

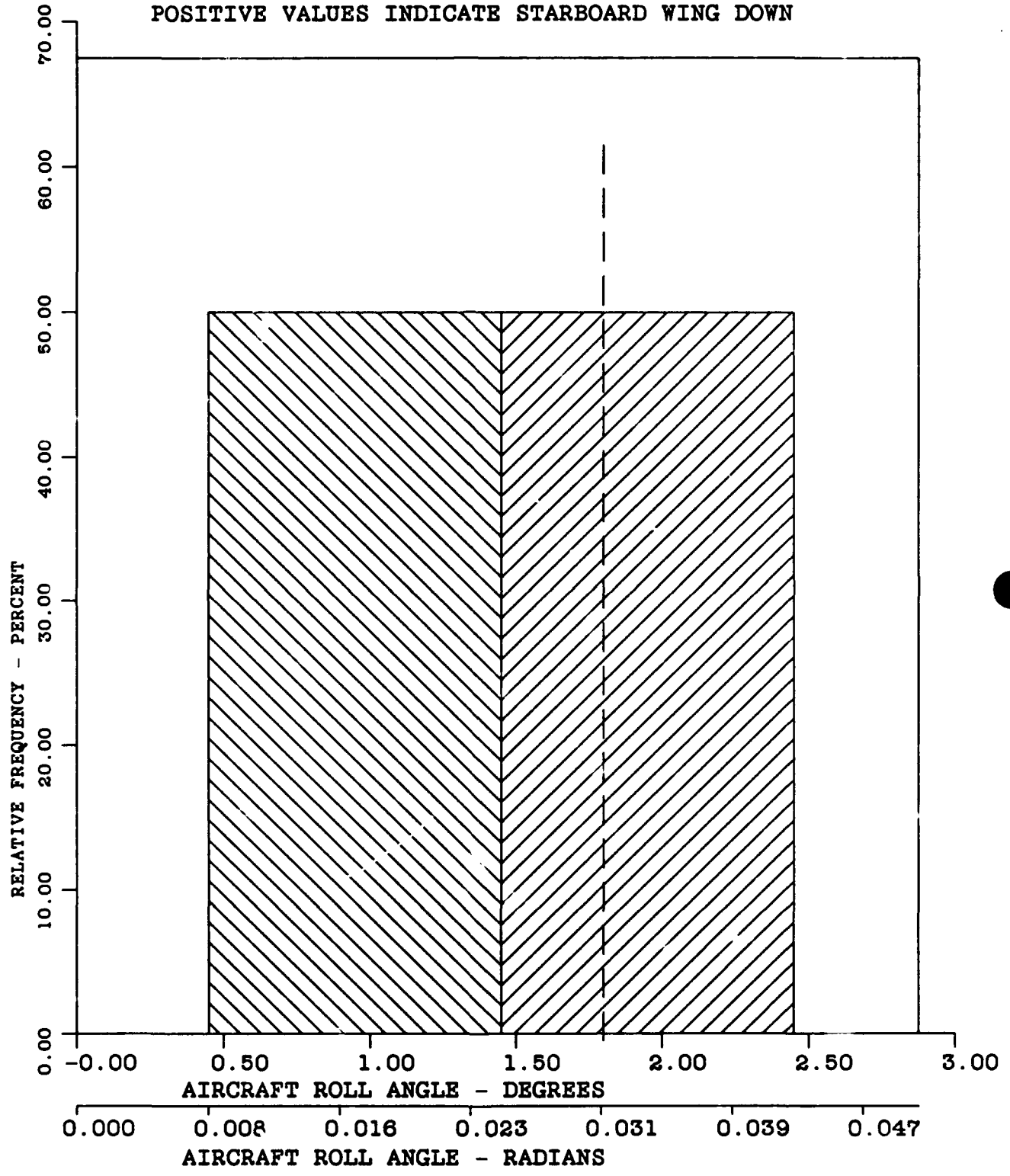


FIGURE E-25 FREQUENCY DISTRIBUTION OF AIRCRAFT ROLL ANGLE AT FREE FLIGHT

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (0.061 RADIANS)
N=2 $\bar{X}$=1.80 DEGREES (0.031 RADIANS) A3=-0.00
S= 0.40 DEGREES (0.007 RADIANS) A4=1.00
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE STARBOARD WING DOWN

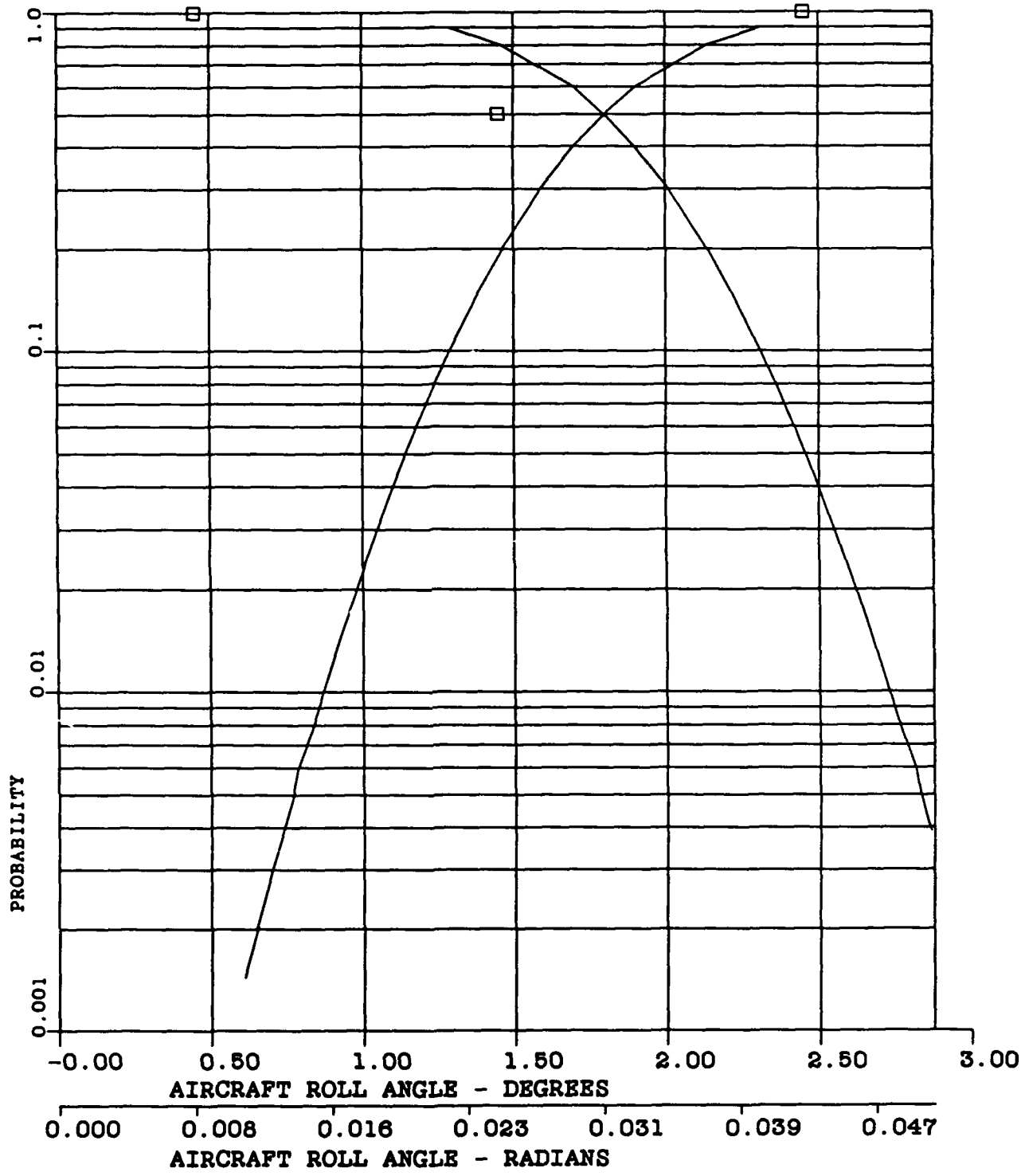


FIGURE E-26 PROBABILITY DISTRIBUTION OF AIRCRAFT ROLL ANGLE AT FREE FLIGHT

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N=76 $\bar{X}$-251.53 FEET (76.67 METRES) A3=-0.11
S= 39.35 FEET (11.99 METRES) A4=2.65

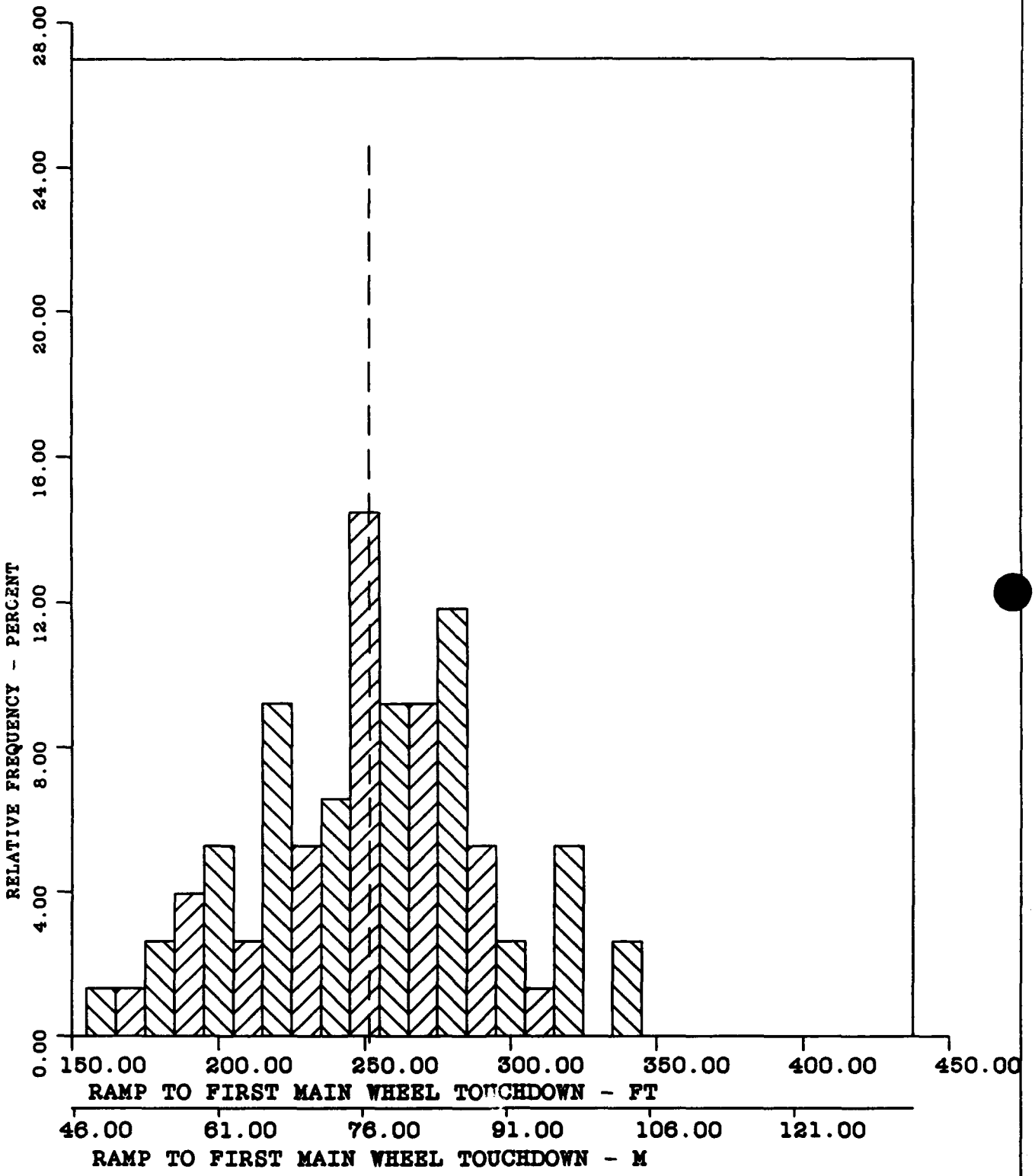


FIGURE E-27 FREQUENCY DISTRIBUTION OF DISTANCE FROM RAMP TO FIRST MAIN WHEEL TOUCHDOWN POINT

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N=76 $\bar{X}$=251.53 FEET (76.67 METRES) A3=-0.11
S= 39.35 FEET (11.99 METRES) A4=2.65
CURVE FITTED - NORMAL

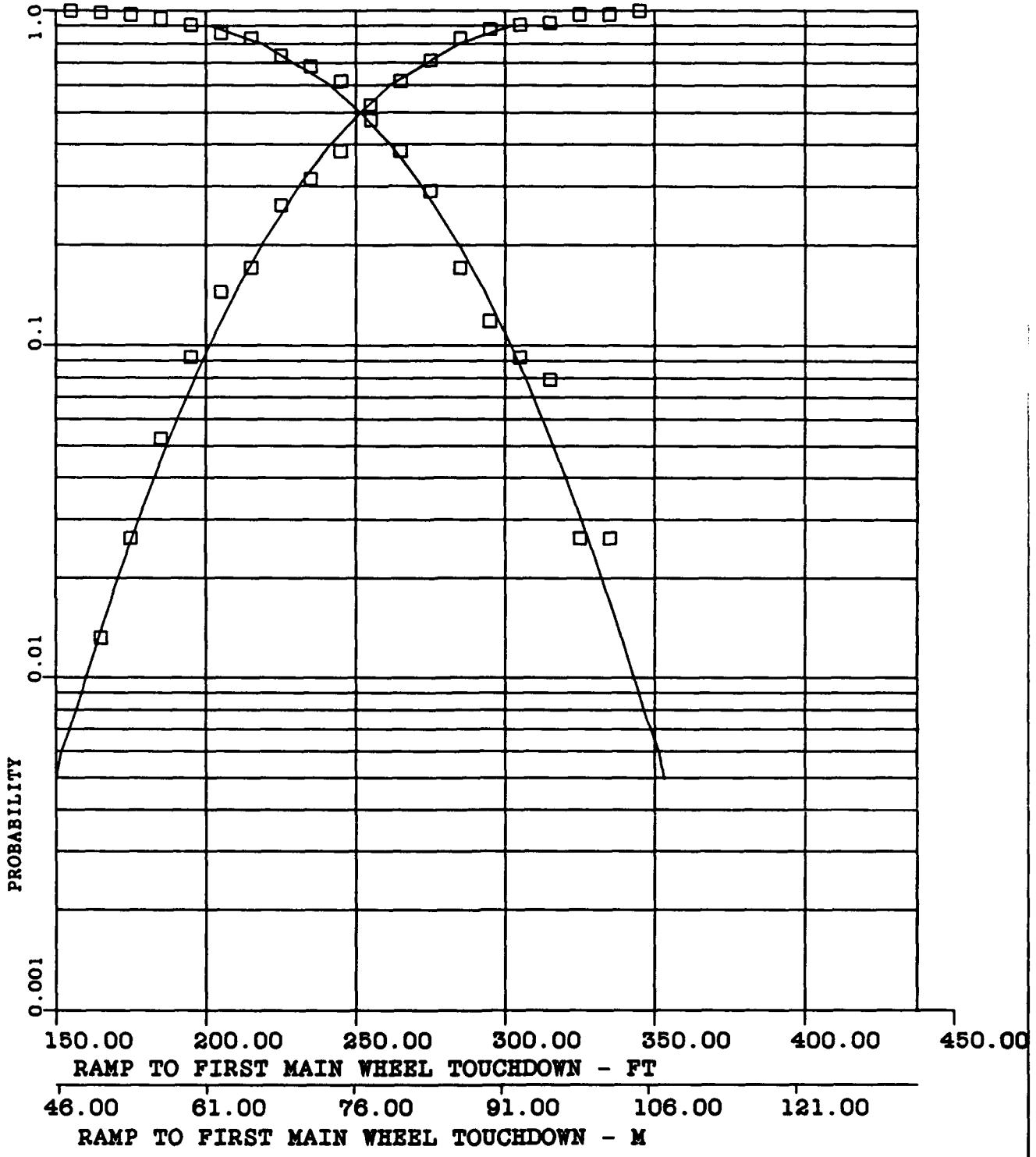


FIGURE E-28 PROBABILITY DISTRIBUTION OF DISTANCE FROM RAMP TO FIRST MAIN WHEEL TOUCHDOWN POINT

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N=76 $\bar{X}$=-12.47 FEET (-3.80 METRES) A3=-0.07
S= 4.38 FEET (1.33 METRES) A4=3.40

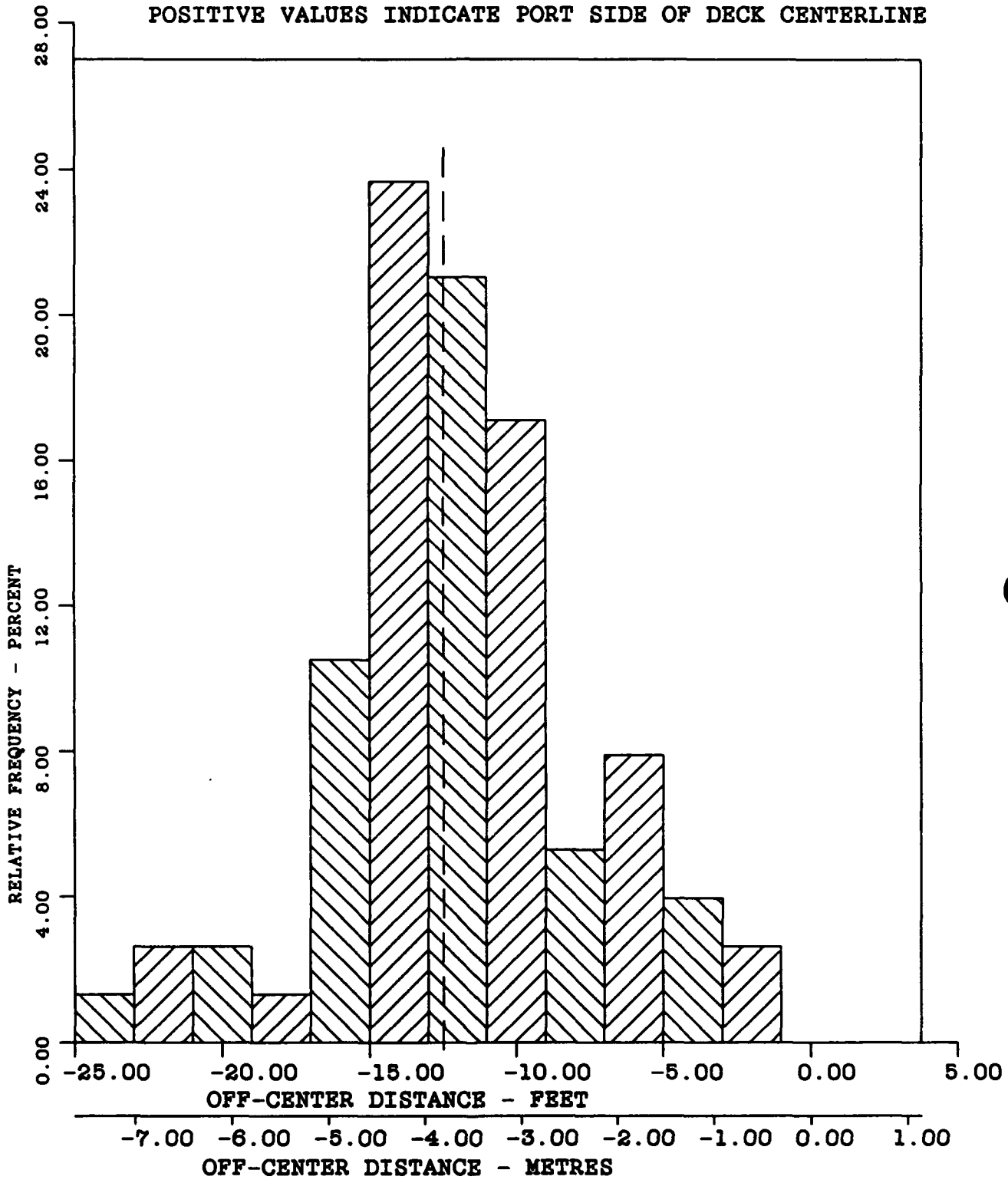


FIGURE E-29 FREQUENCY DISTRIBUTION OF AIRCRAFT CENTERLINE OFF-CNTR DISTANCE AT 1ST MAIN WHEEL TOUCHDOWN

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (0.061 RADIANS)
N=76 $\bar{X}$=-12.47 FEET (-3.80 METRES) A3=-0.07
S= 4.38 FEET (1.33 METRES) A4=3.40
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE PORT SIDE OF DECK CENTERLINE

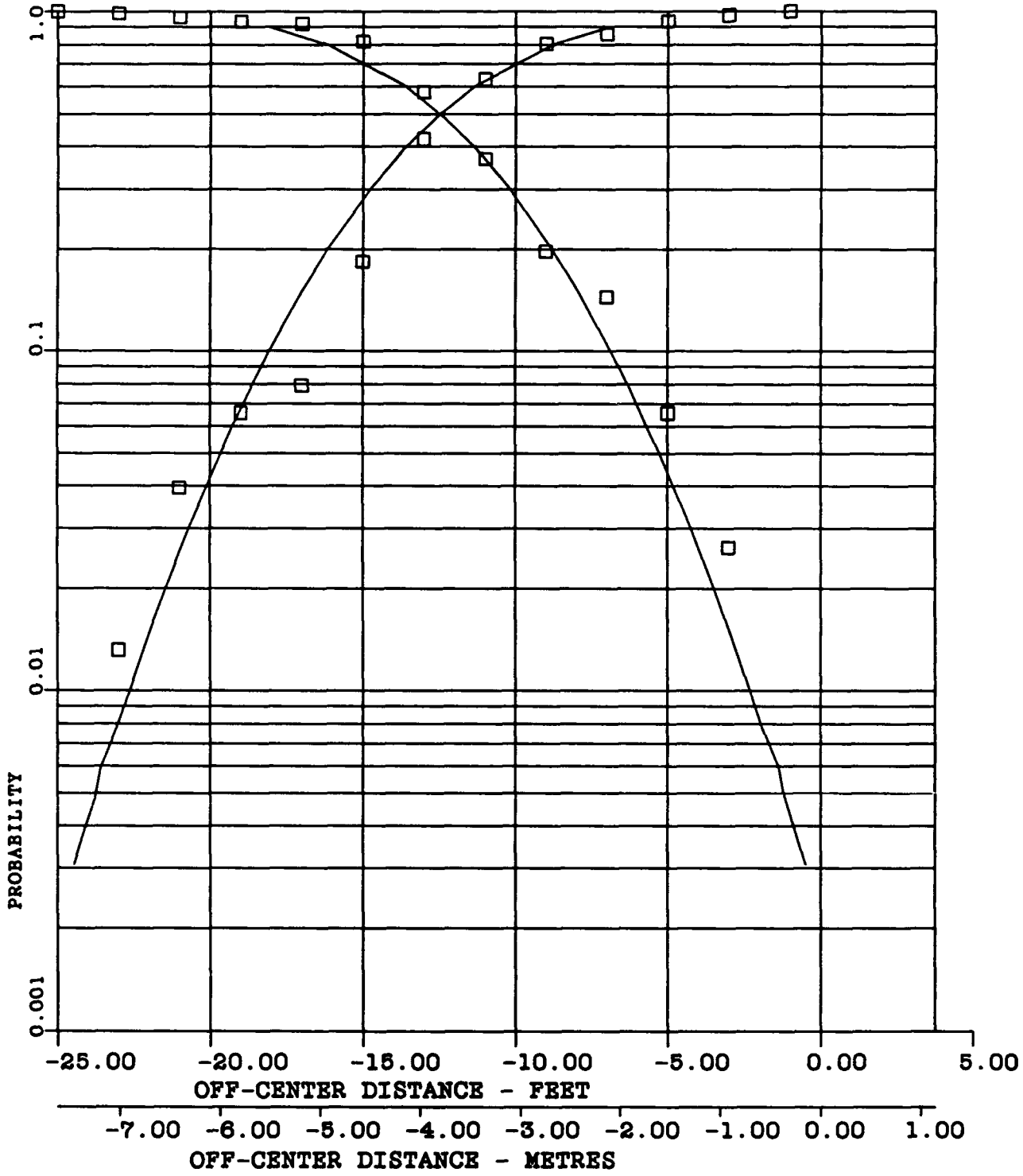


FIGURE E-30 PROBABILITY DISTRIBUTION OF AIRCRAFT OFF-CENTER DISTANCE AT 1ST MAIN WHEEL TOUCHDOWN

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (0.061 RADIANS)
N=62 $\bar{X}$=2.87 A3=0.22
S= 0.75 A4=1.80

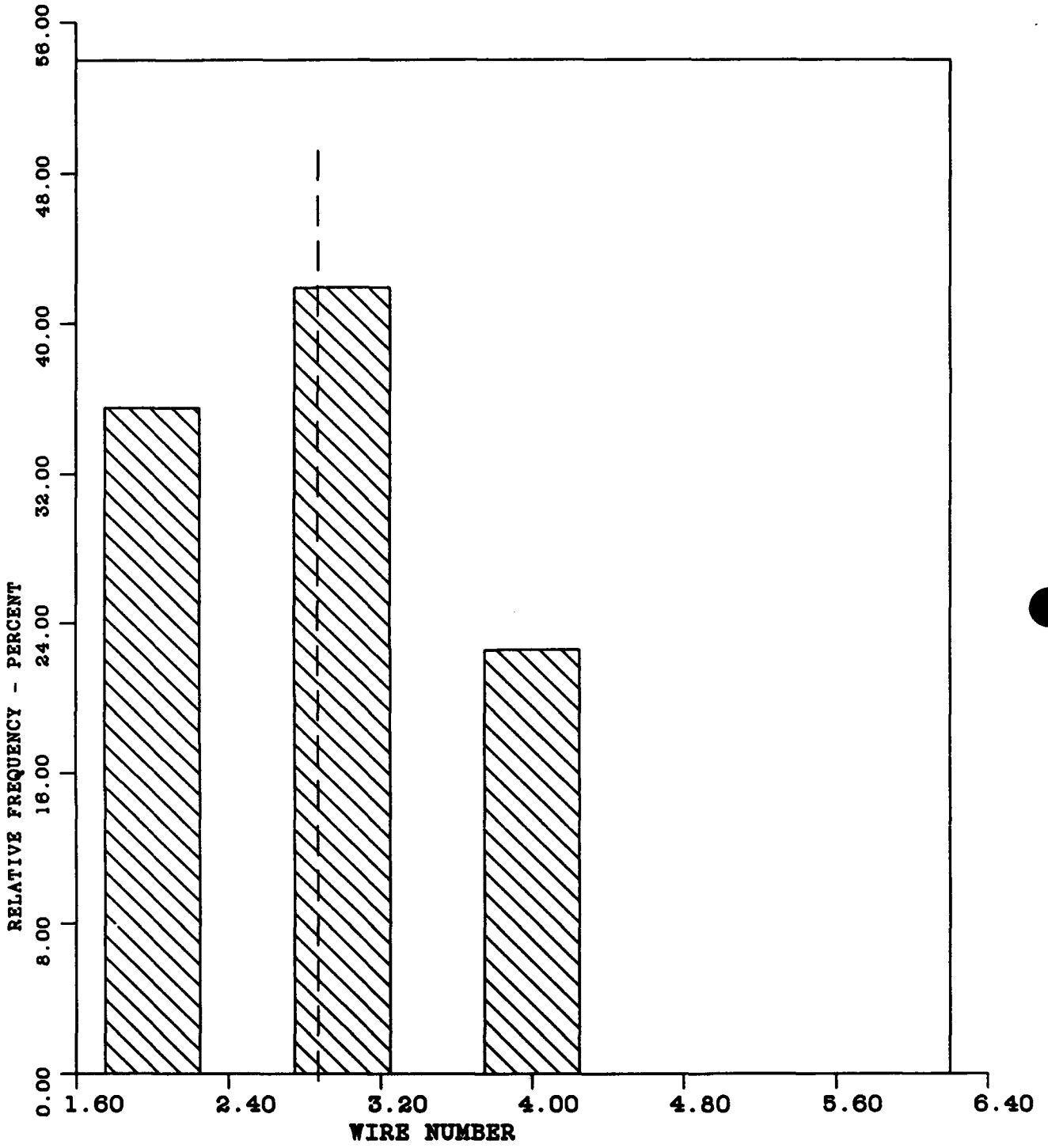


FIGURE E-31 FREQUENCY DISTRIBUTION OF ARRESTMENT WIRE NUMBER ENGAGED

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (0.061 RADIANS)
N=76 $\bar{X}$=2.65 DEGREES (0.046 RADIANS) A3=0.23
S= 0.76 DEGREES (0.013 RADIANS) A4=3.21

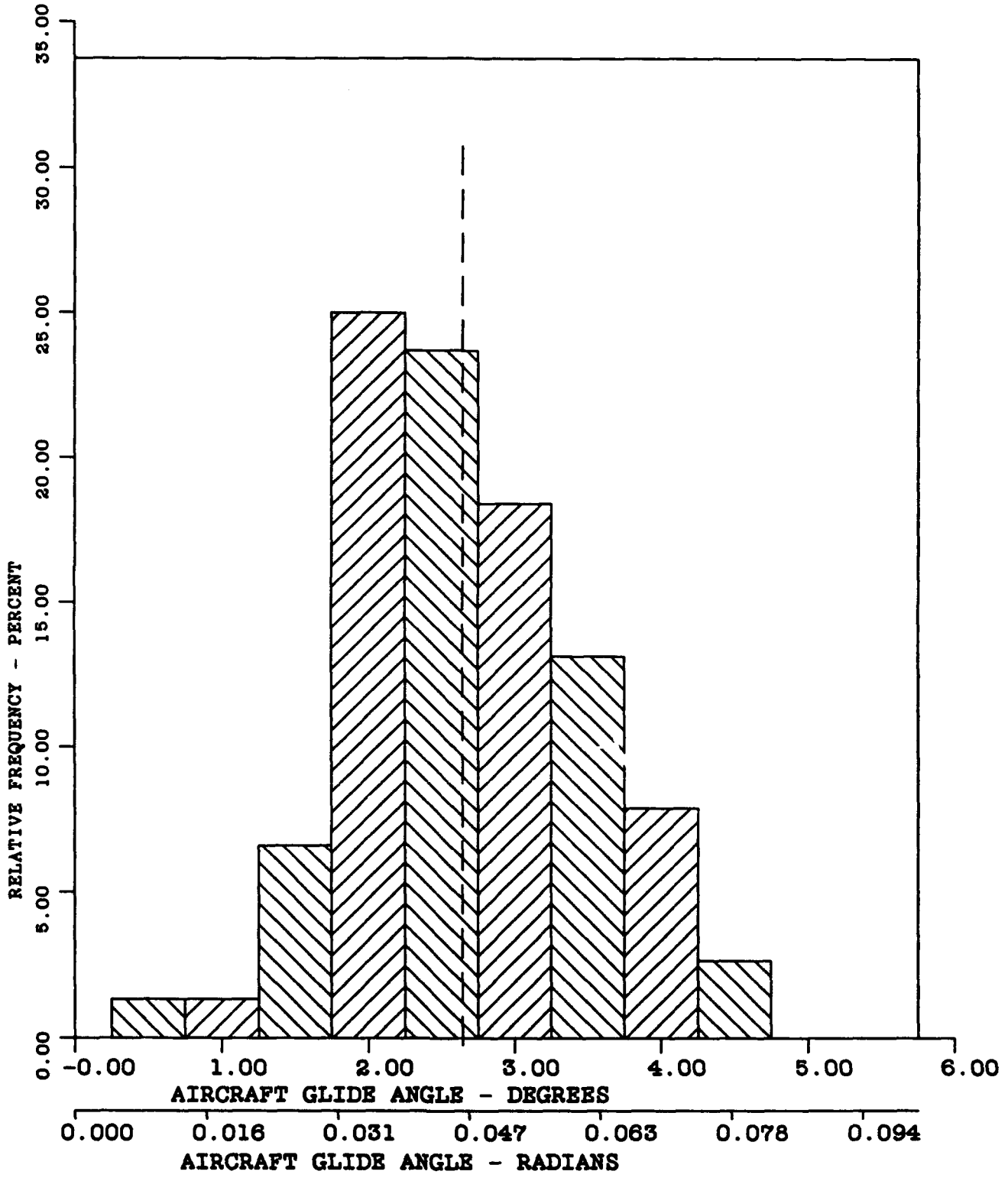


FIGURE E-32 FREQUENCY DISTRIBUTION OF AIRCRAFT GLIDE ANGLE - INSTANTANEOUS METHOD

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N=76 $\bar{X}$=121.30 KNOTS (62.40 METRES/SEC) A3=0.30
S= 5.38 KNOTS (2.77 METRES/SEC) A4=3.09

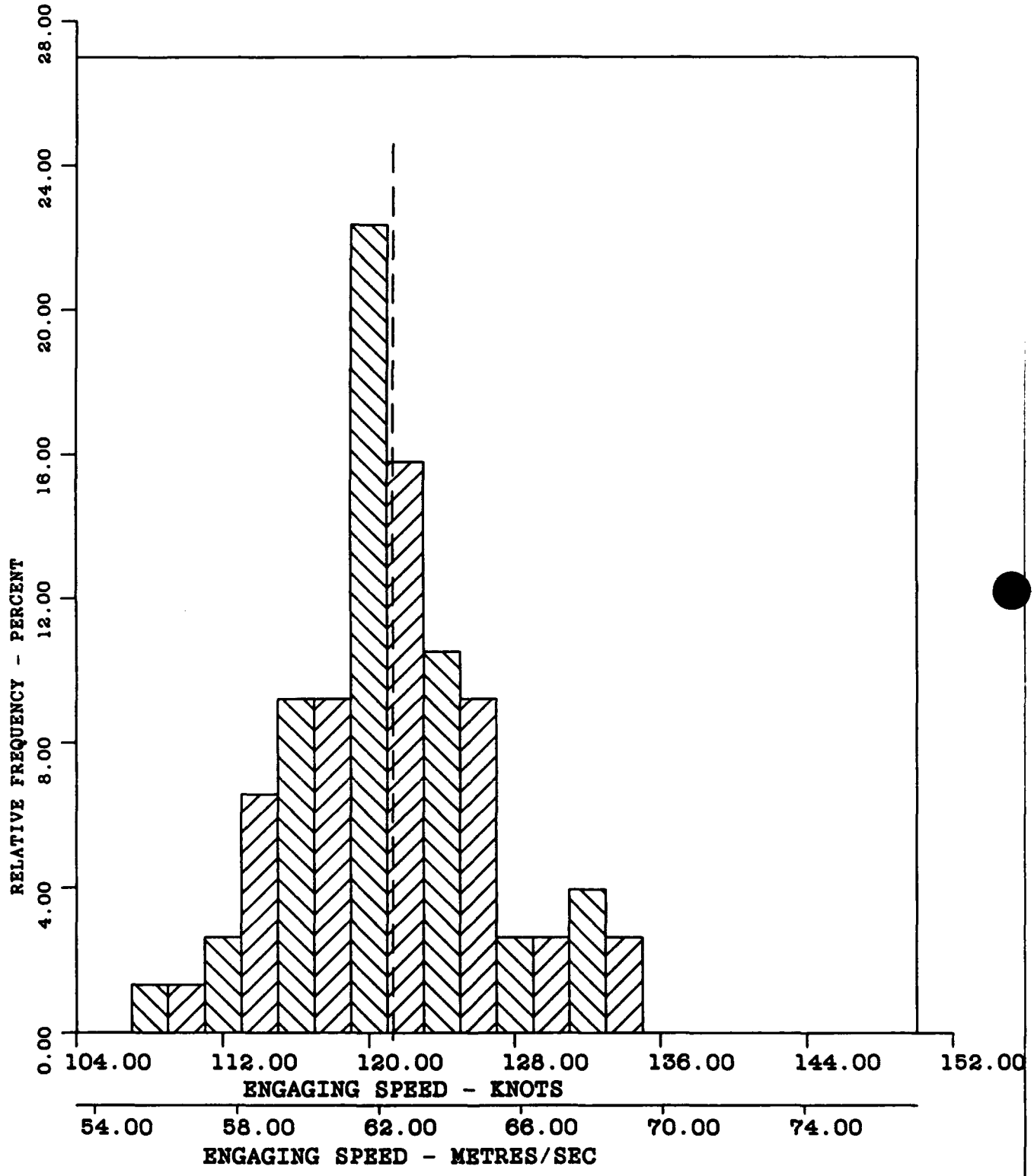


FIGURE E-33 FREQUENCY DISTRIBUTION OF AIRCRAFT ENGAGING SPEED AT FIRST MAIN WHEEL TOUCHDOWN

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-76 $\bar{X}$-121.30 KNOTS (62.40 METRES/SEC) A3=0.30
S= 5.38 KNOTS (2.77 METRES/SEC) A4=3.09
CURVE FITTED - NORMAL

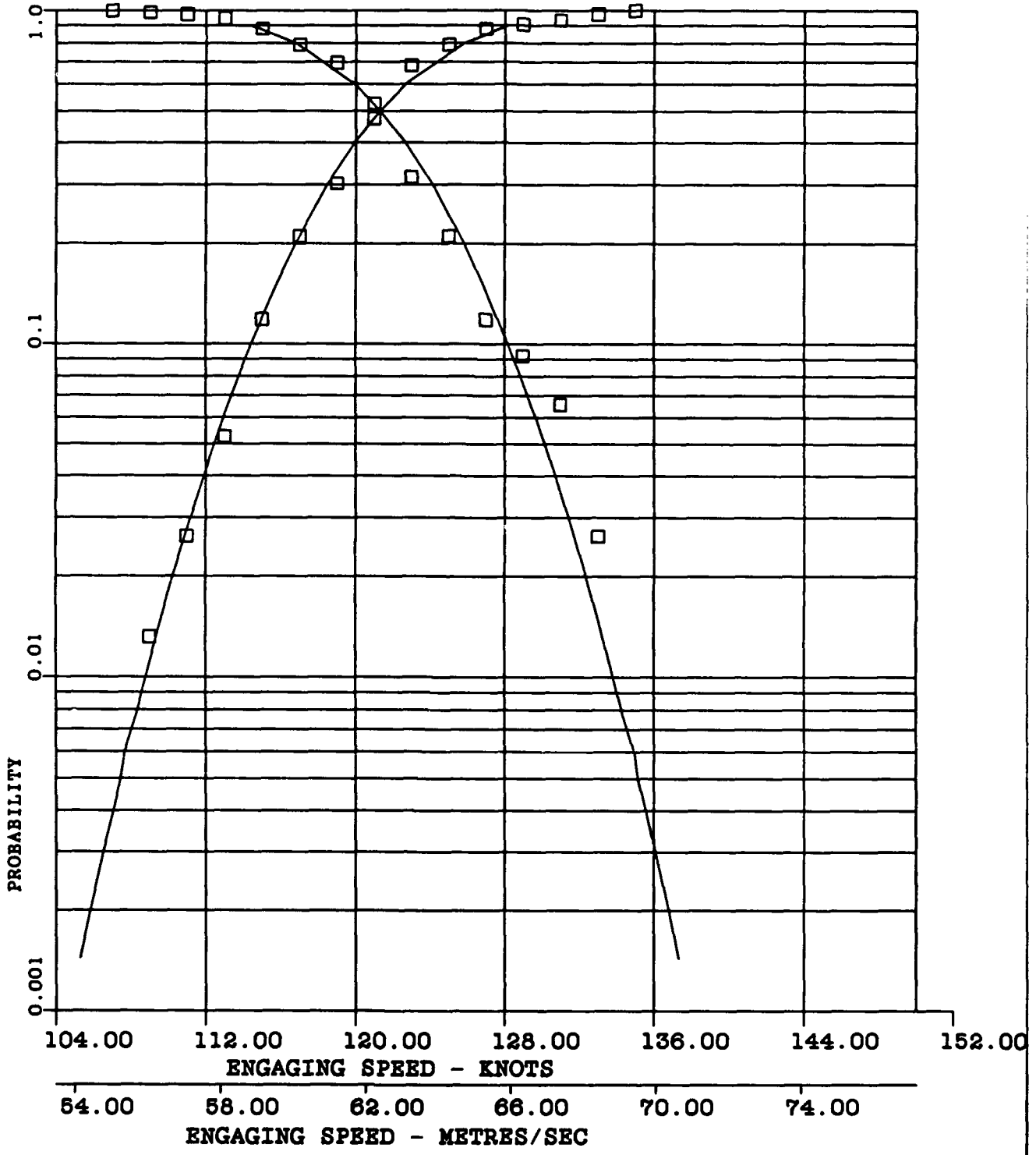


FIGURE E-34 PROBABILITY DISTRIBUTION OF ENGAGING SPEED AT FIRST MAIN WHEEL TOUCHDOWN

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N=76 $\bar{X}$=134.65 KNOTS (69.26 METRES/SEC) A3=0.23
S= 2.15 KNOTS (1.11 METRES/SEC) A4=2.92

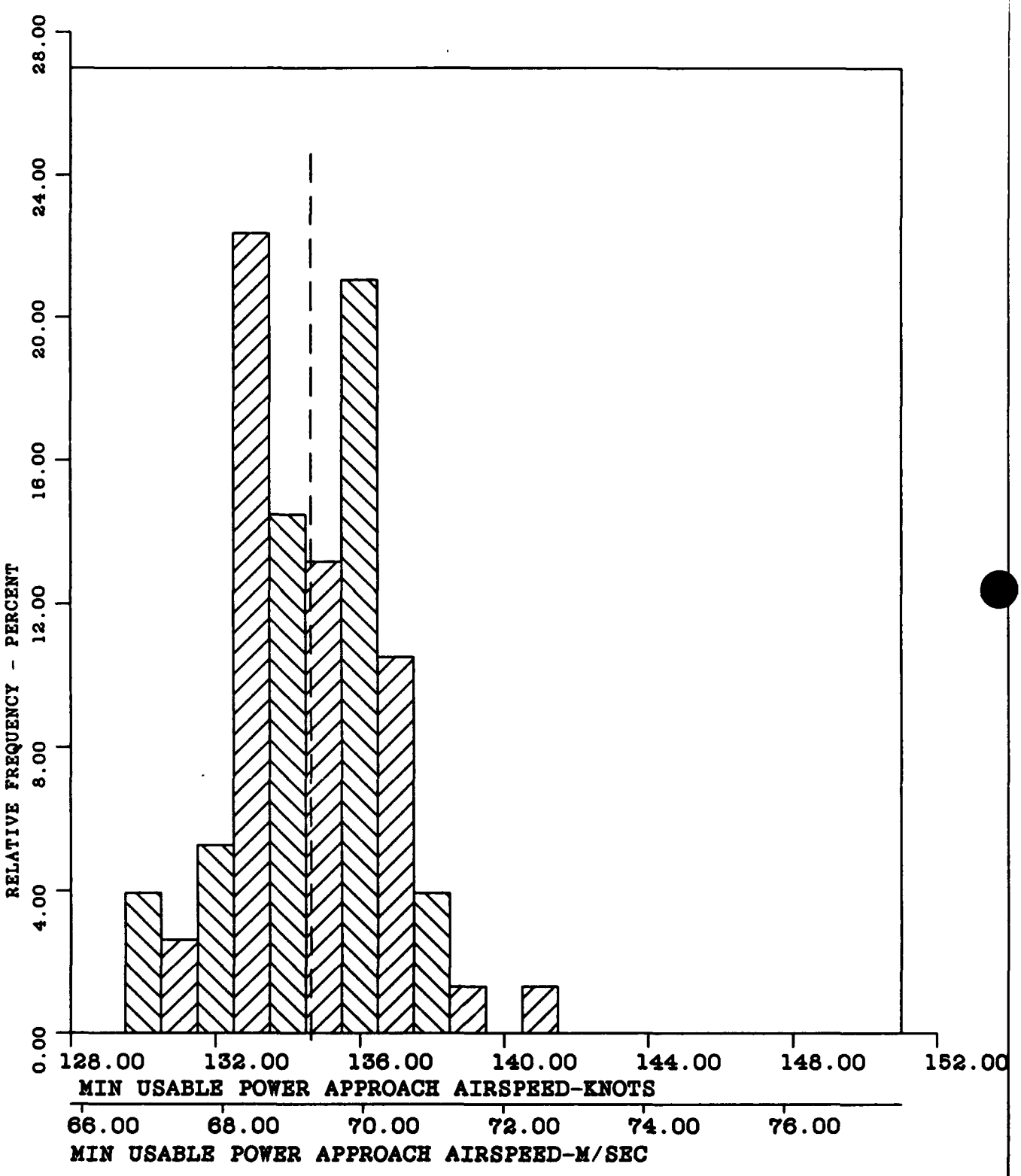


FIGURE E-35 FREQUENCY DISTRIBUTION OF MINIMUM USABLE POWER APPROACH AIRSPEED

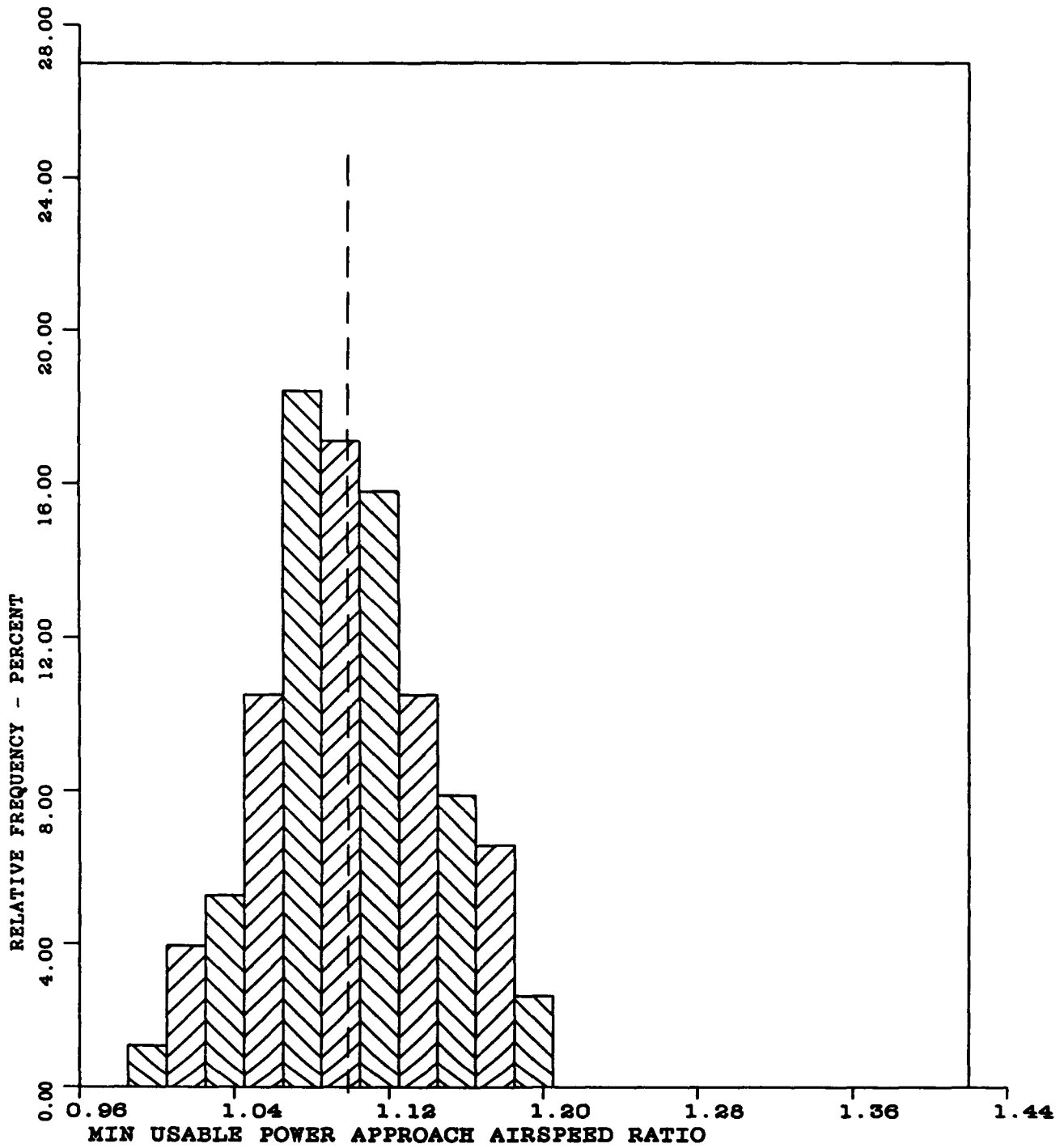


FIGURE E-36 FREQUENCY DISTRIBUTION OF MINIMUM USABLE POWER APPROACH AIRSPEED RATIO - FILM

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (0.061 RADIANS)
N=76 $\bar{X}$=-0.30 DEGREES (-0.005 RADIANS) A3=-0.57
S= 0.83 DEGREES (0.015 RADIANS) A4=3.73

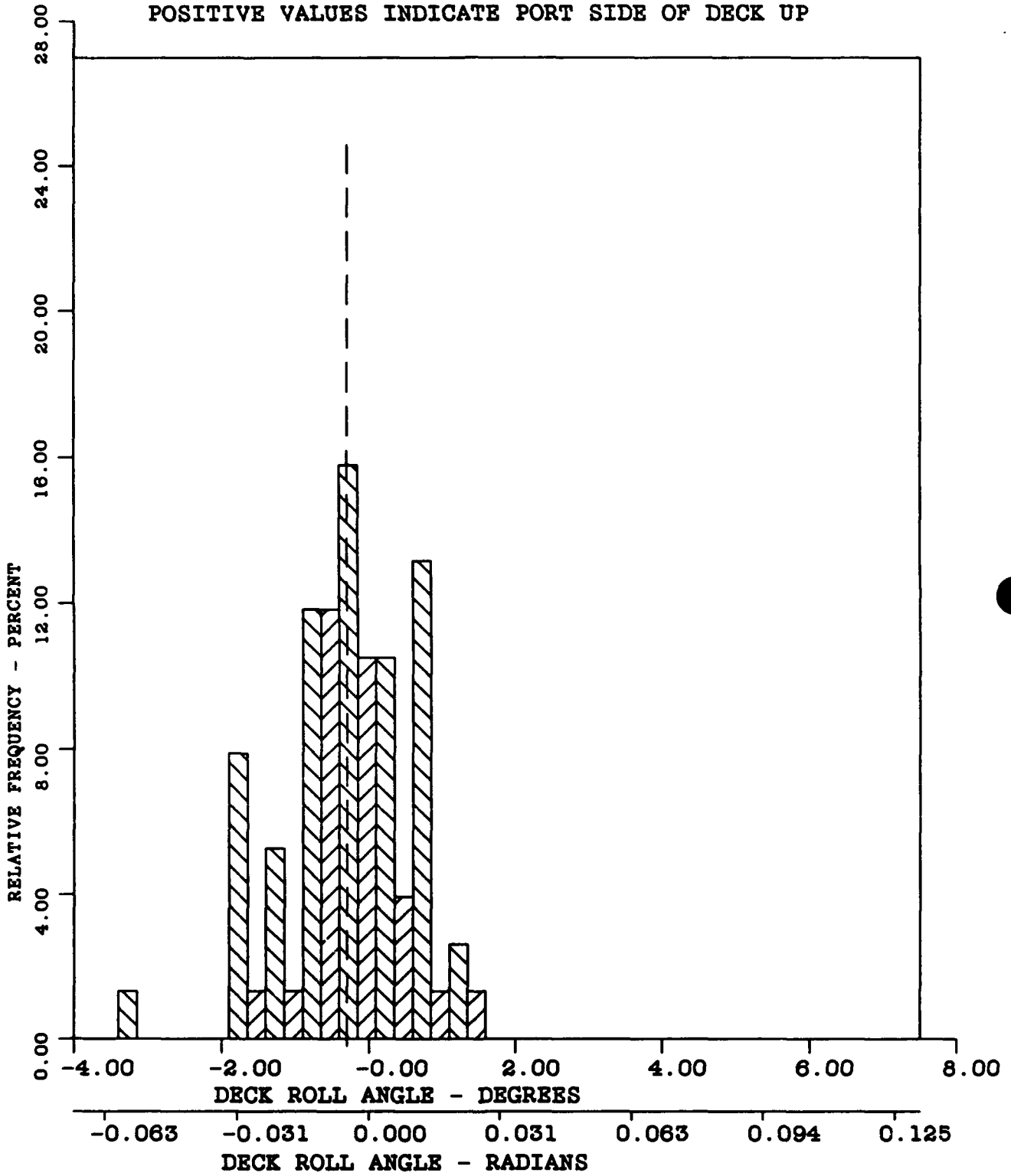


FIGURE E-37 FREQUENCY DISTRIBUTION OF CARRIER DECK ROLL MOTION

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (0.061 RADIANS)
N=76 $\bar{X}$=-0.30 DEGREES (-0.005 RADIANS) A3=-0.57
S= 0.83 DEGREES (0.015 RADIANS) A4=3.73
CURVE FITTED - PEARSON TYPE III
POSITIVE VALUES INDICATE PORT SIDE OF DECK UP

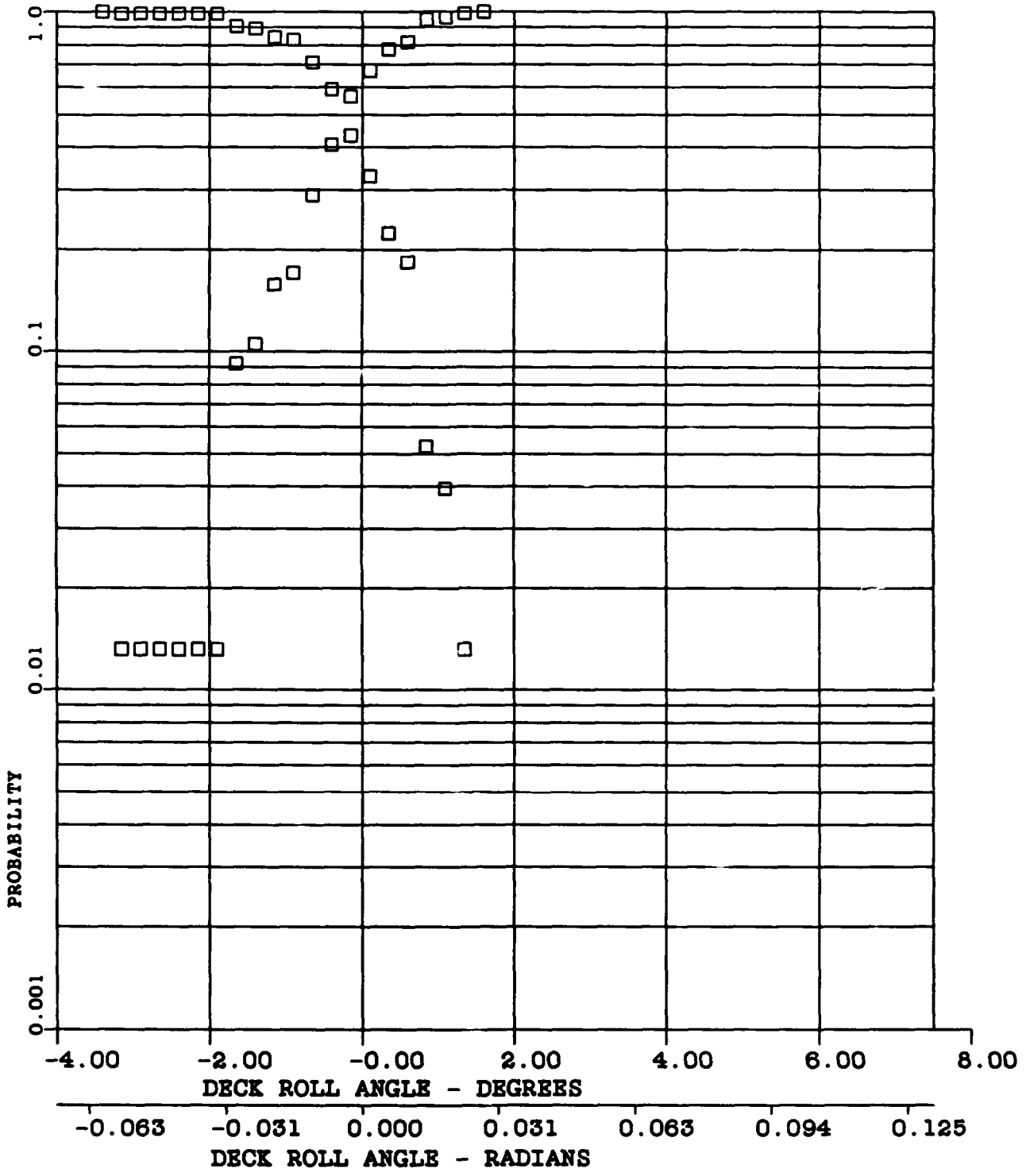


FIGURE E-38 PROBABILITY DISTRIBUTION OF CARRIER DECK ROLL MOTION

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N=76 $\bar{X}$=-0.38 DEGREES (-0.007 RADIANS) A3=-0.35
S= 0.19 DEGREES (0.003 RADIANS) A4=2.59

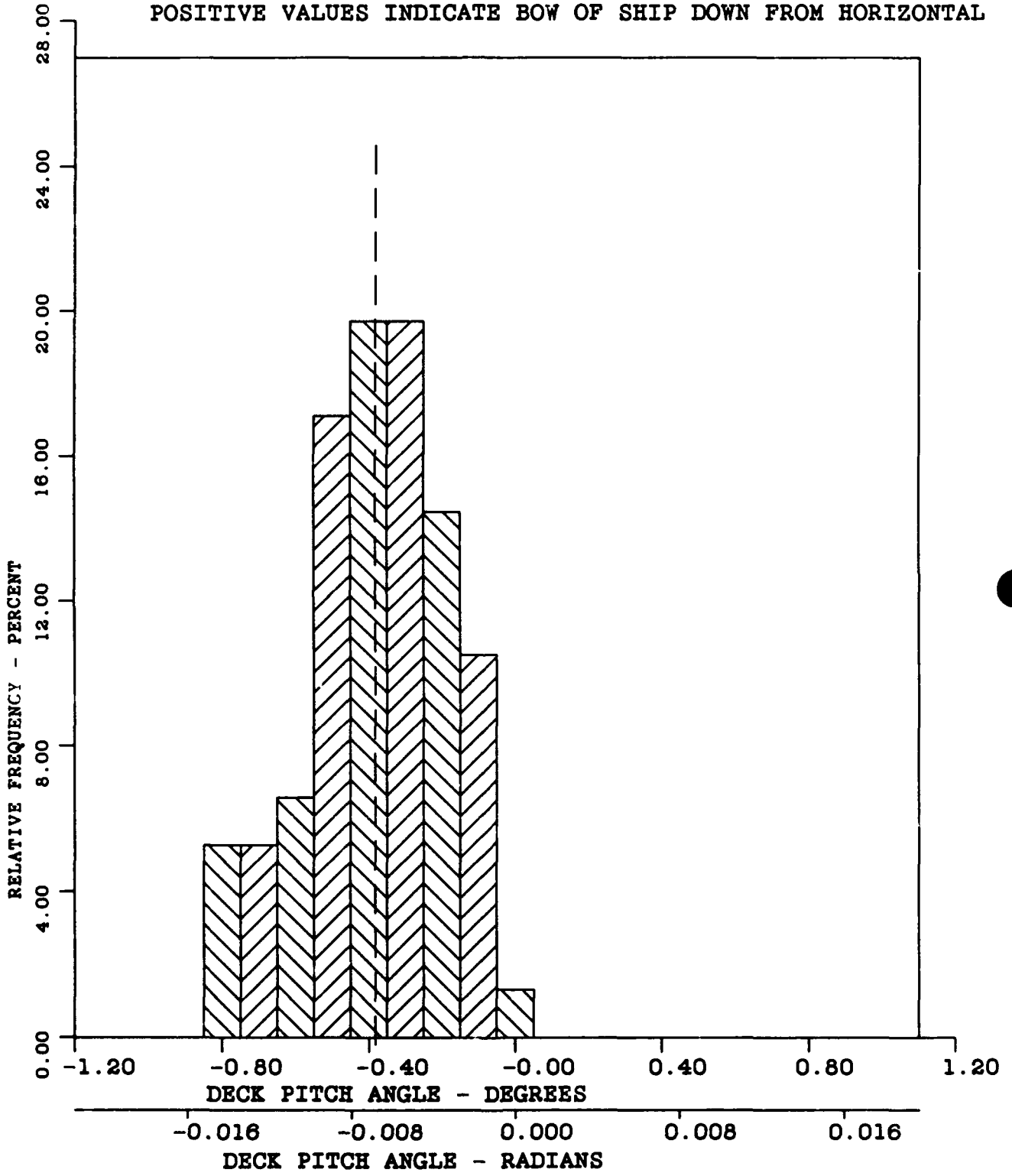


FIGURE E-39 FREQUENCY DISTRIBUTION OF CARRIER DECK PITCH MOTION

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (0.061 RADIANS)
N=76 $\bar{X}$=-0.38 DEGREES (-0.007 RADIANS) A3=-0.35
S= 0.19 DEGREES (0.003 RADIANS) A4=2.59
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE BOW OF SHIP DOWN FROM HORIZONTAL

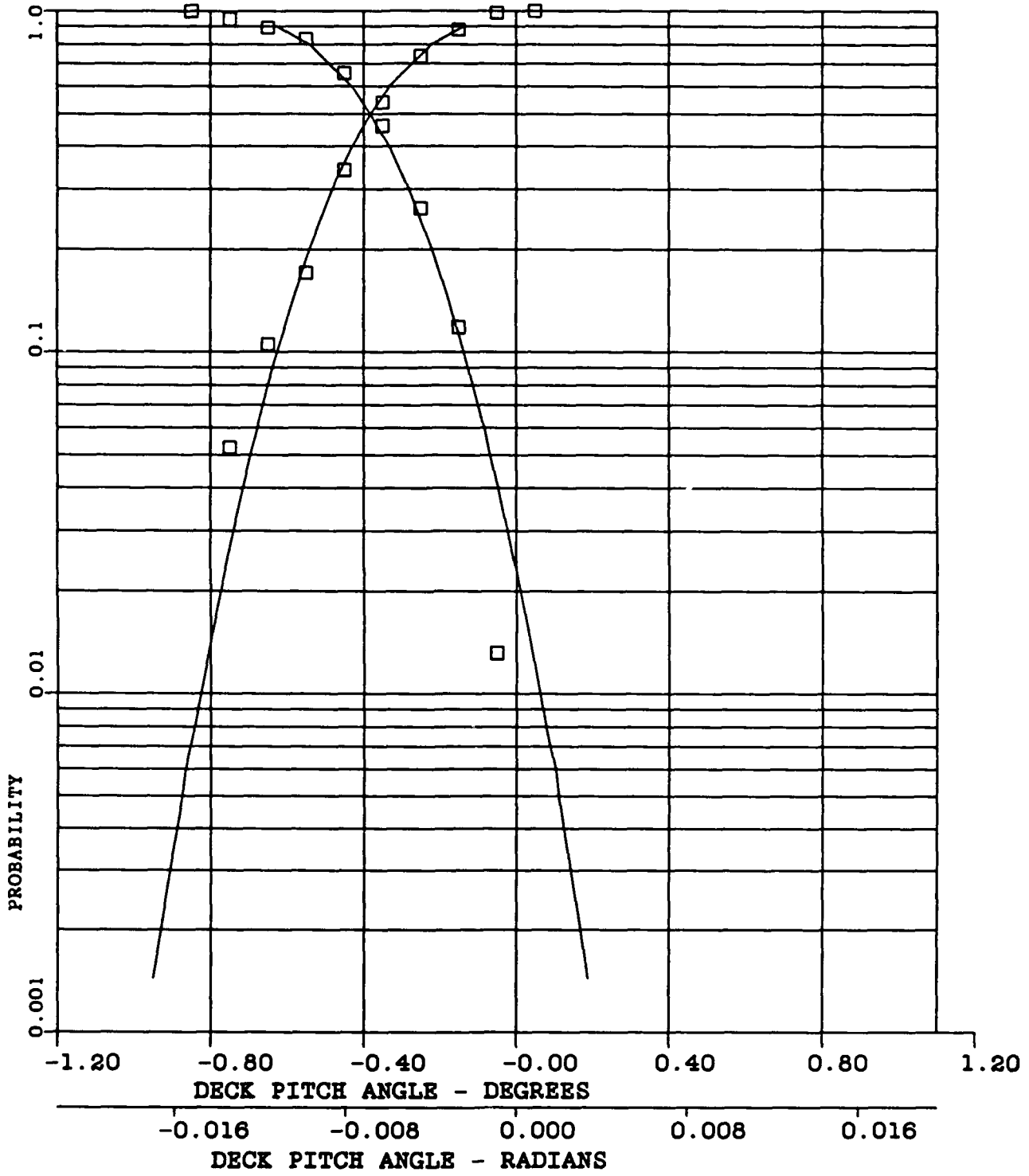


FIGURE E-40 PROBABILITY DISTRIBUTION OF CARRIER DECK PITCH MOTION

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N=76 $\bar{X}$=30907.90 POUNDS (14019.82 KILOGRAMS) A3=0.27
S= 989.48 POUNDS (448.83 KILOGRAMS) A4=2.99

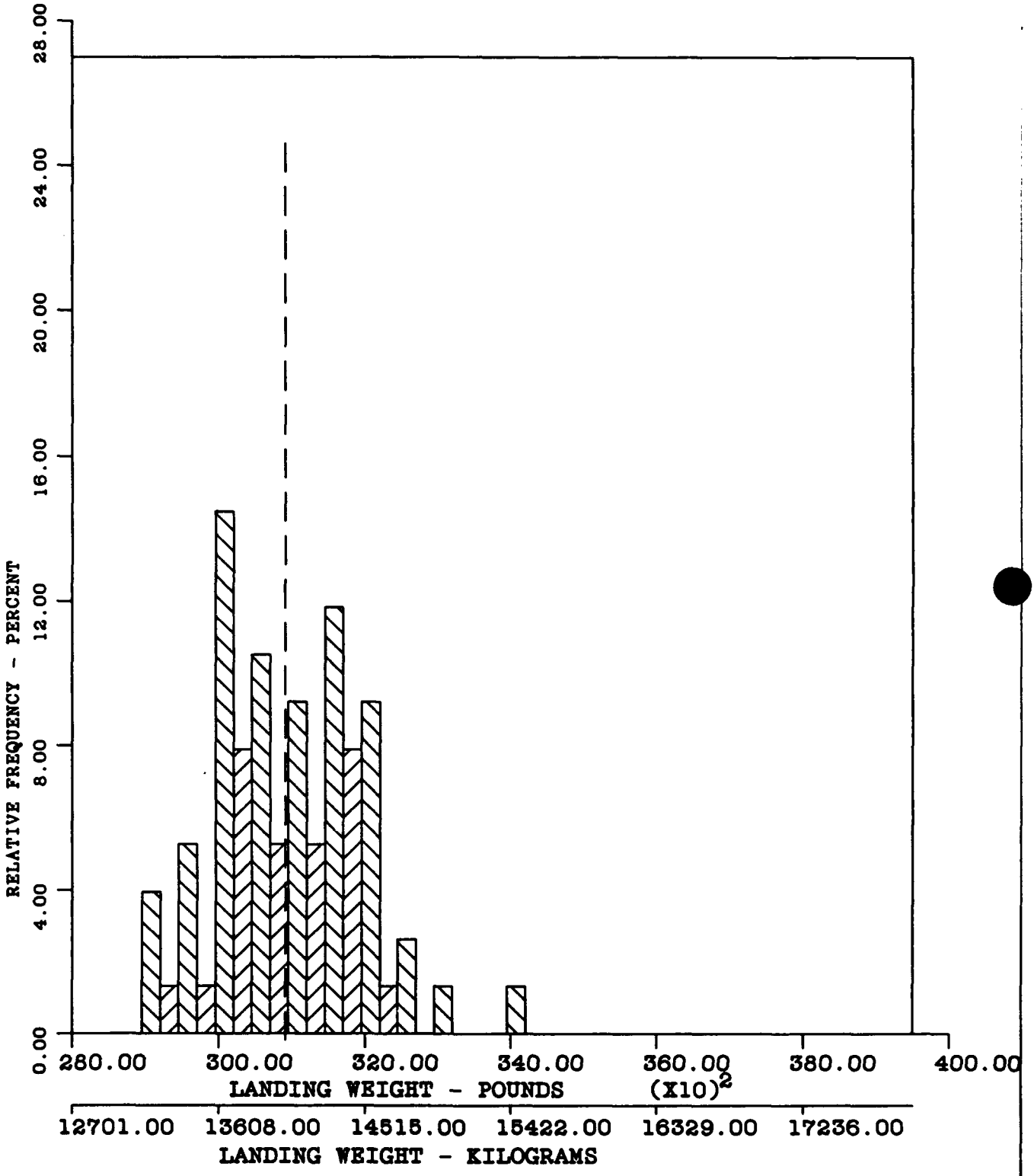


FIGURE E-41 FREQUENCY DISTRIBUTION OF AIRCRAFT LANDING WEIGHT

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (0.061 RADIANS)
N=76 $\bar{X}$=-0.60 DEG/SEC (-0.010 RAD/SEC) A3=0.58
S= 7.58 DEG/SEC (0.132 RAD/SEC) A4=5.78

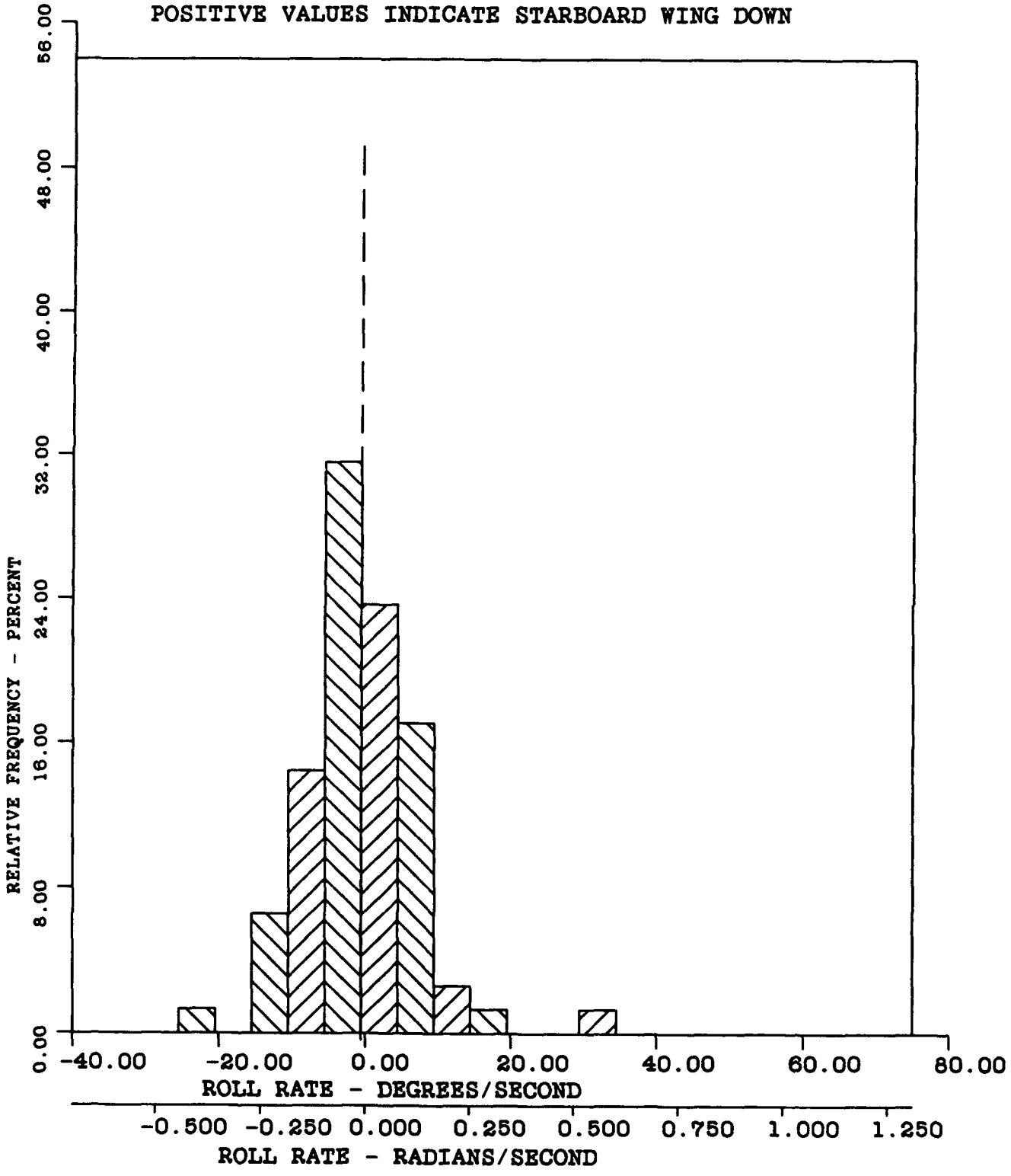


FIGURE E-42 FREQUENCY DISTRIBUTION OF ROLL RATE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (0.061 RADIANS)
N=76 $\bar{X}$=-0.60 DEG/SEC (-0.010 RAD/SEC) A3=0.58
S= 7.58 DEG/SEC (0.132 RAD/SEC) A4=5.78
CURVE FITTED - PEARSON TYPE III
POSITIVE VALUES INDICATE STARBOARD WING DOWN

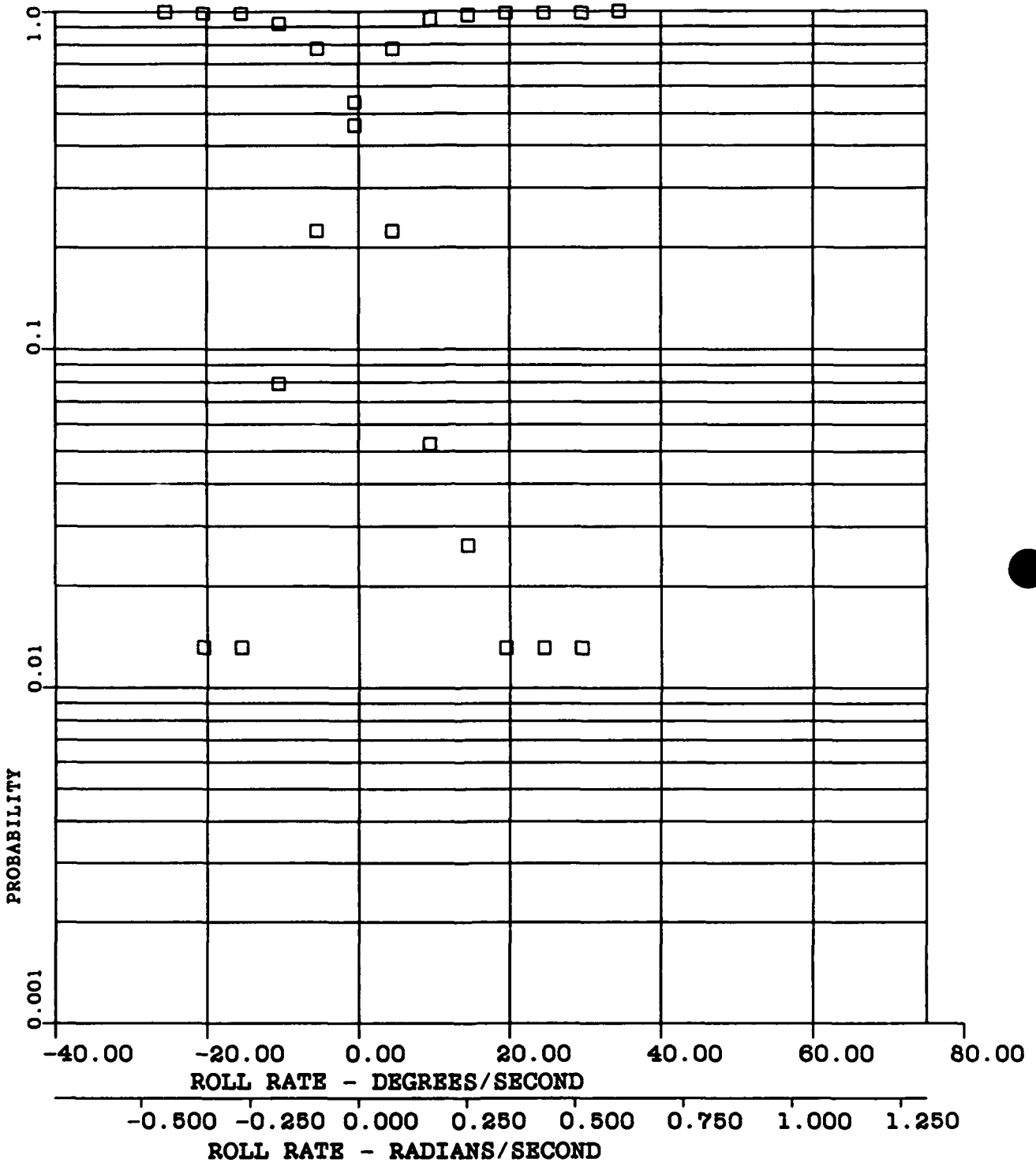


FIGURE E-43 PROBABILITY DISTRIBUTION OF ROLL RATE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (0.061 RADIANS)
N=76 $\bar{X}$=0.83 DEG/SEC (0.014 RAD/SEC) A3=-0.20
S= 2.57 DEG/SEC (0.045 RAD/SEC) A4=3.09

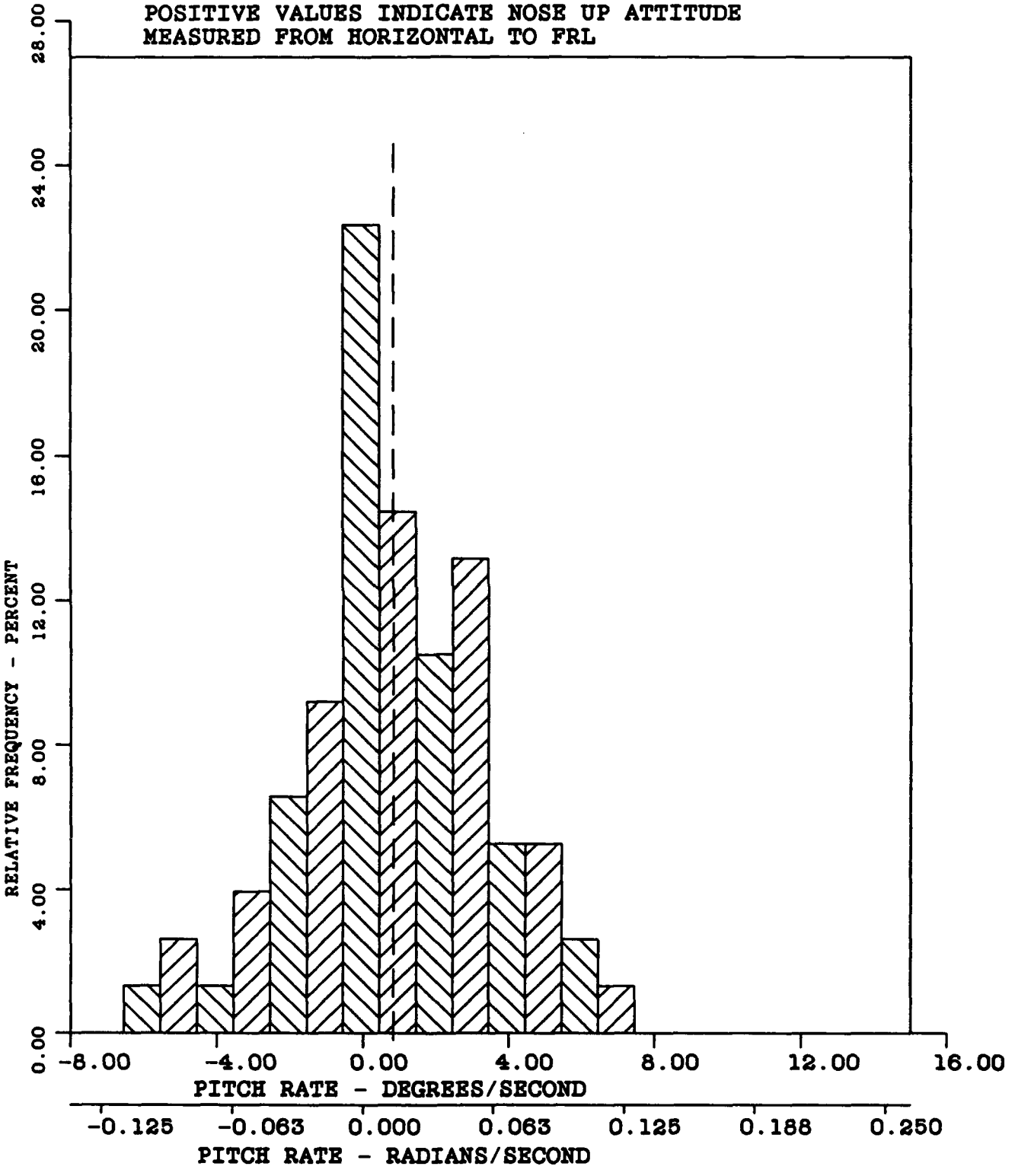


FIGURE E-44 FREQUENCY DISTRIBUTION OF PITCH RATE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (0.061 RADIANS)
N=76 $\bar{X}$=0.83 DEG/SEC (0.014 RAD/SEC) A3=-0.20
S= 2.57 DEG/SEC (0.045 RAD/SEC) A4=3.09
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE NOSE UP ATTITUDE
MEASURED FROM HORIZONTAL TO FRL

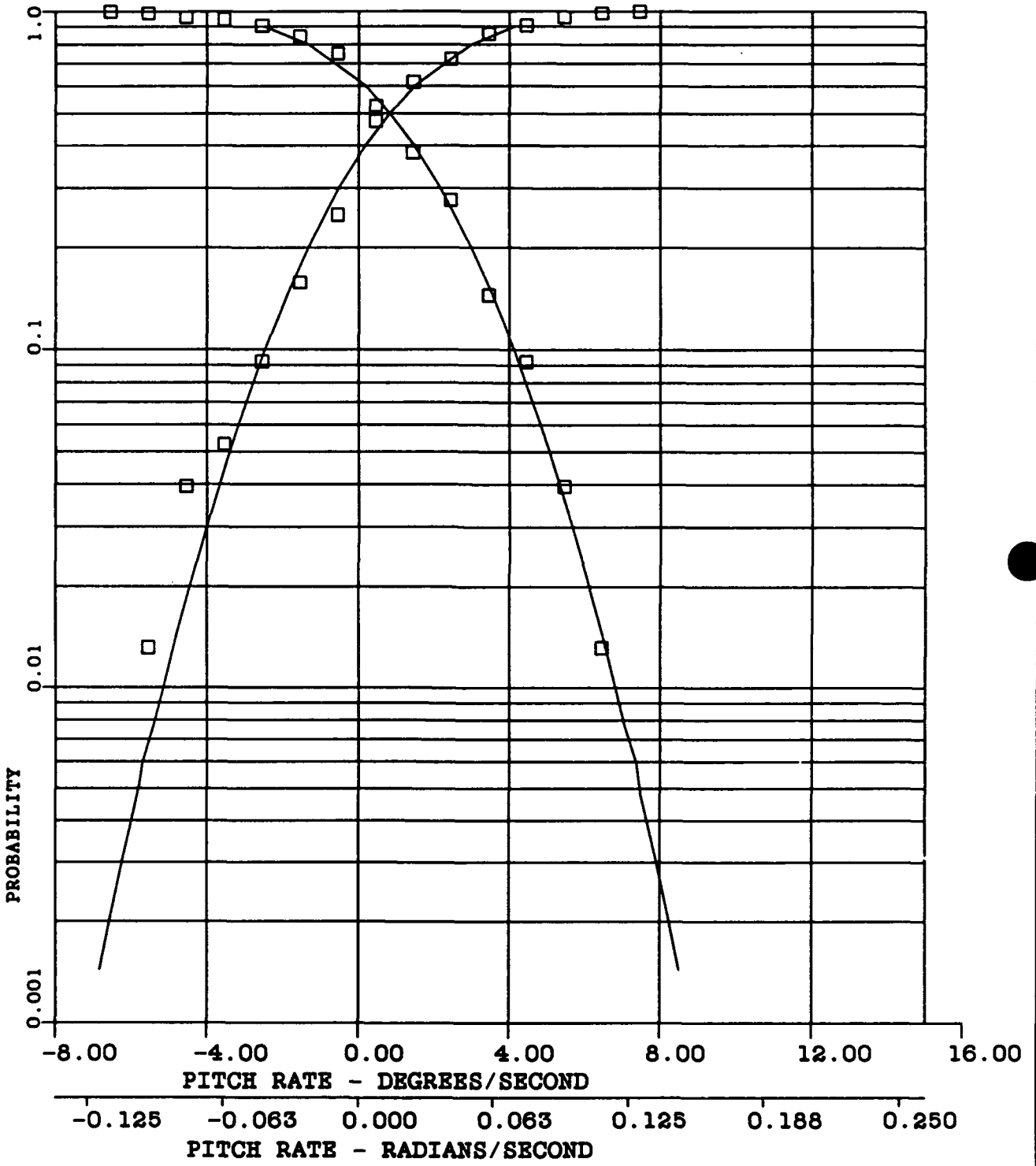


FIGURE E-45 PROBABILITY DISTRIBUTION OF PITCH RATE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (0.061 RADIANS)
N=76 $\bar{X}$=-3.74 DEGREES (-0.065 RADIANS) A3=0.03
S= 2.21 DEGREES (0.039 RADIANS) A4=3.82

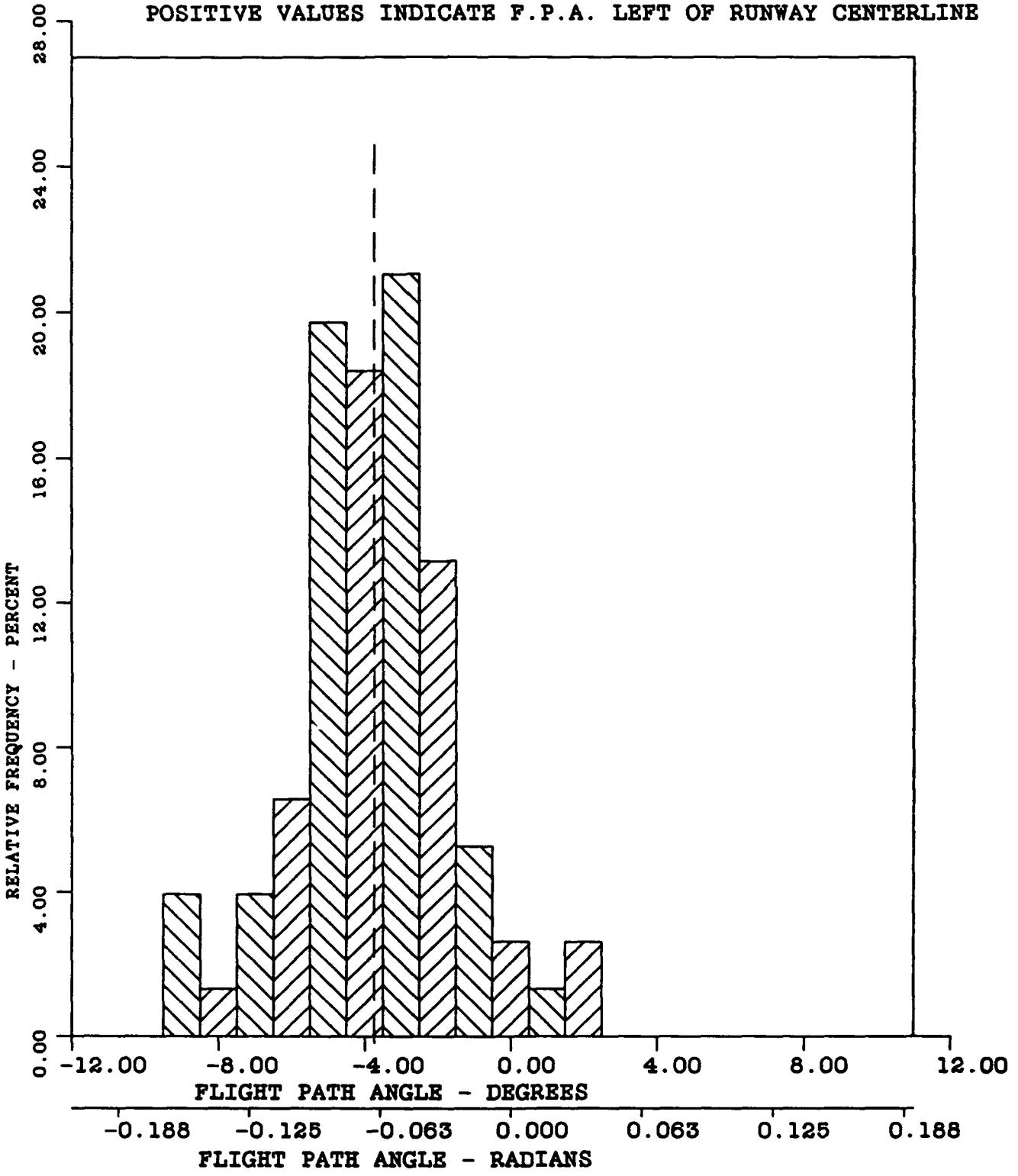


FIGURE E-46 FREQUENCY DISTRIBUTION OF AIRCRAFT FLIGHT PATH ANGLE AT TOUCHDOWN

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (0.061 RADIANS)
N=76 $\bar{X}$=-3.74 DEGREES (-0.065 RADIANS) A3=0.03
S= 2.21 DEGREES (0.039 RADIANS) A4=3.82
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE F.P.A. LEFT OF RUNWAY CENTERLINE

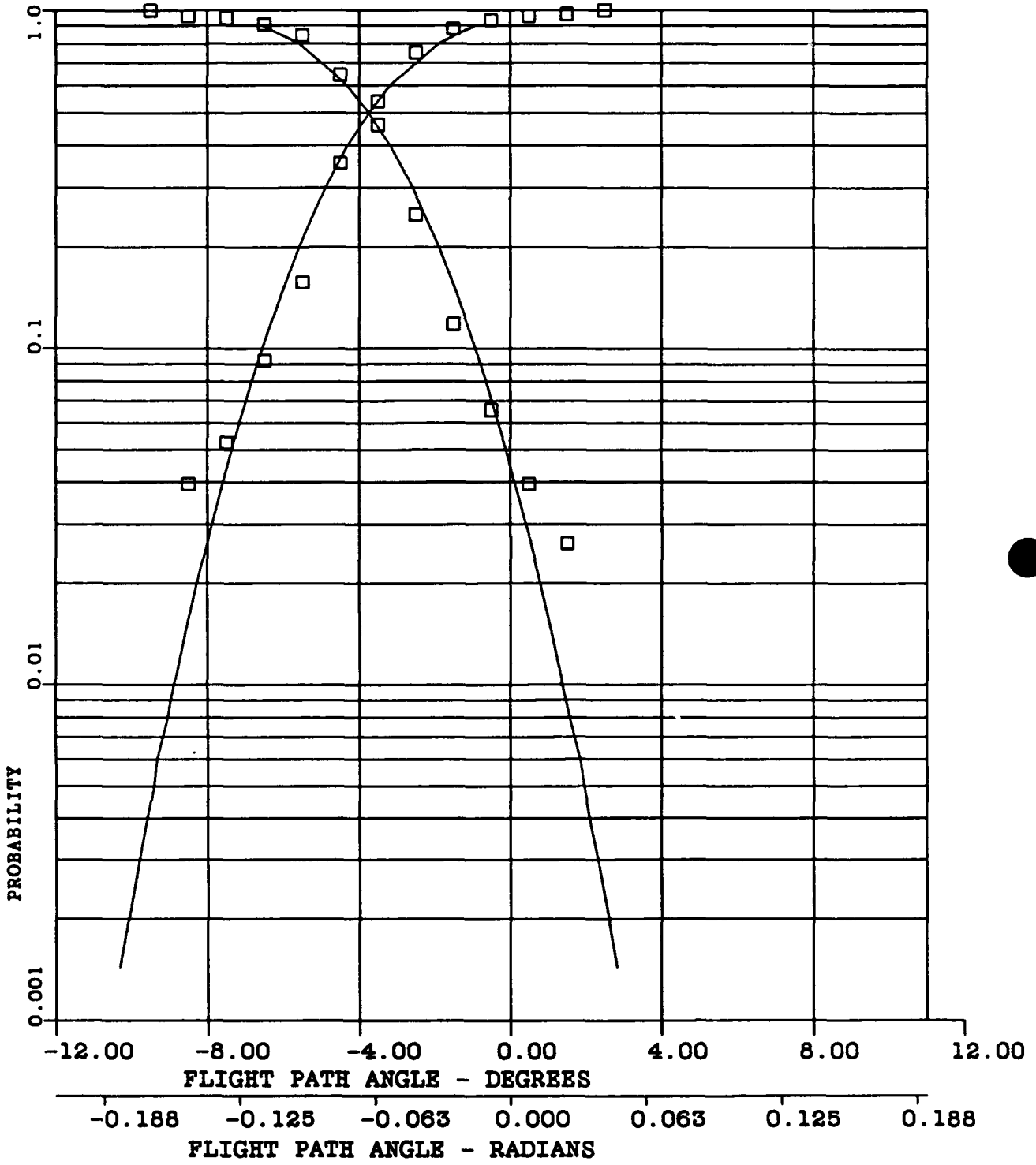


FIGURE E-47 PROBABILITY DISTRIBUTION OF AIRCRAFT FLIGHT PATH ANGLE AT TOUCHDOWN

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (0.061 RADIANS)
N=76 $\bar{X}$=2.84 DEGREES (0.050 RADIANS) A3=0.33
S= 3.95 DEGREES (0.069 RADIANS) A4=2.40

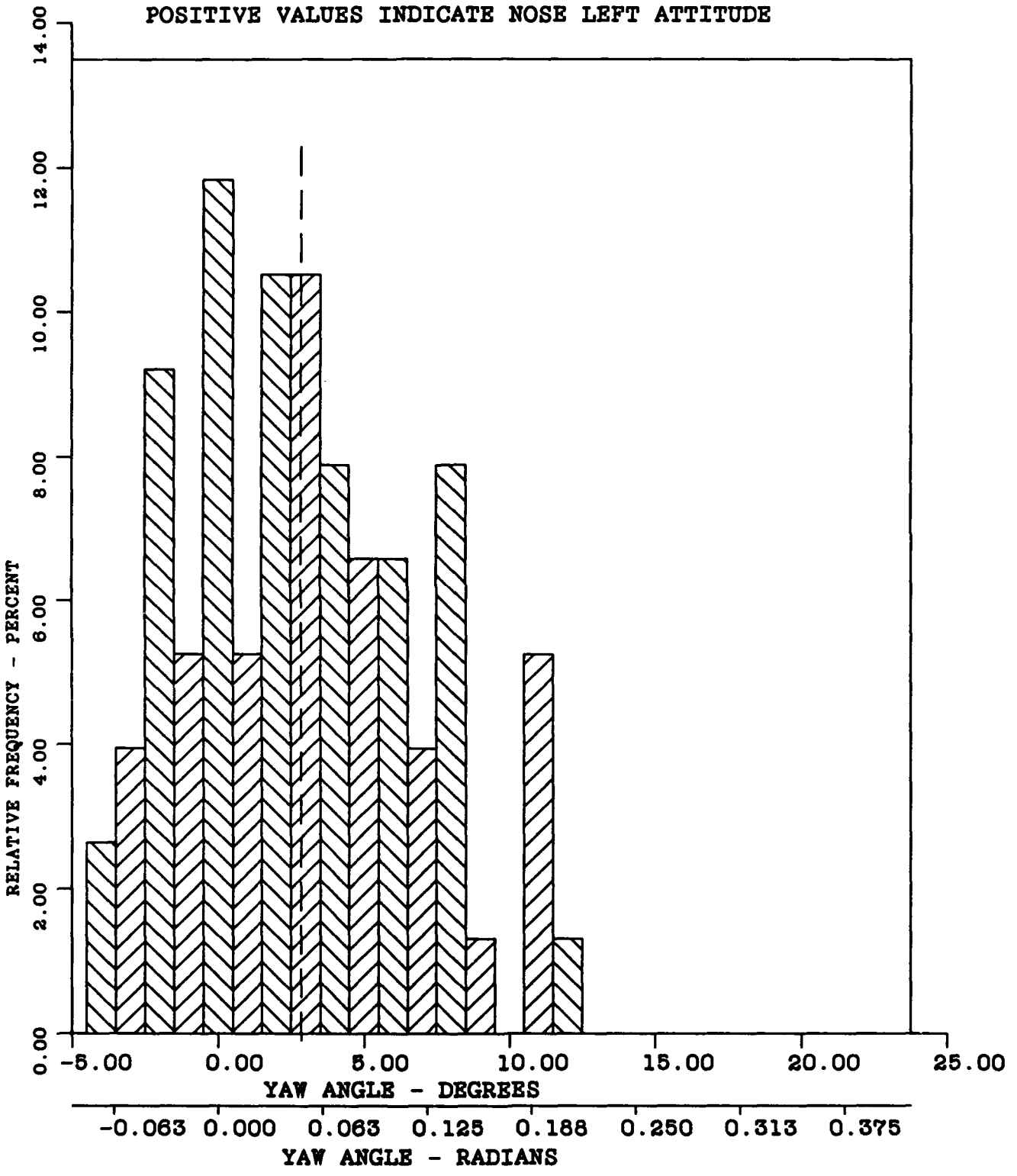


FIGURE E-48 FREQUENCY DISTRIBUTION OF AIRCRAFT YAW ANGLE

MODEL F/A-18A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (0.061 RADIANS)
N=76 $\bar{X}$=2.84 DEGREES (0.050 RADIANS) A3=0.33
S= 3.95 DEGREES (0.069 RADIANS) A4=2.40
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE NOSE LEFT ATTITUDE

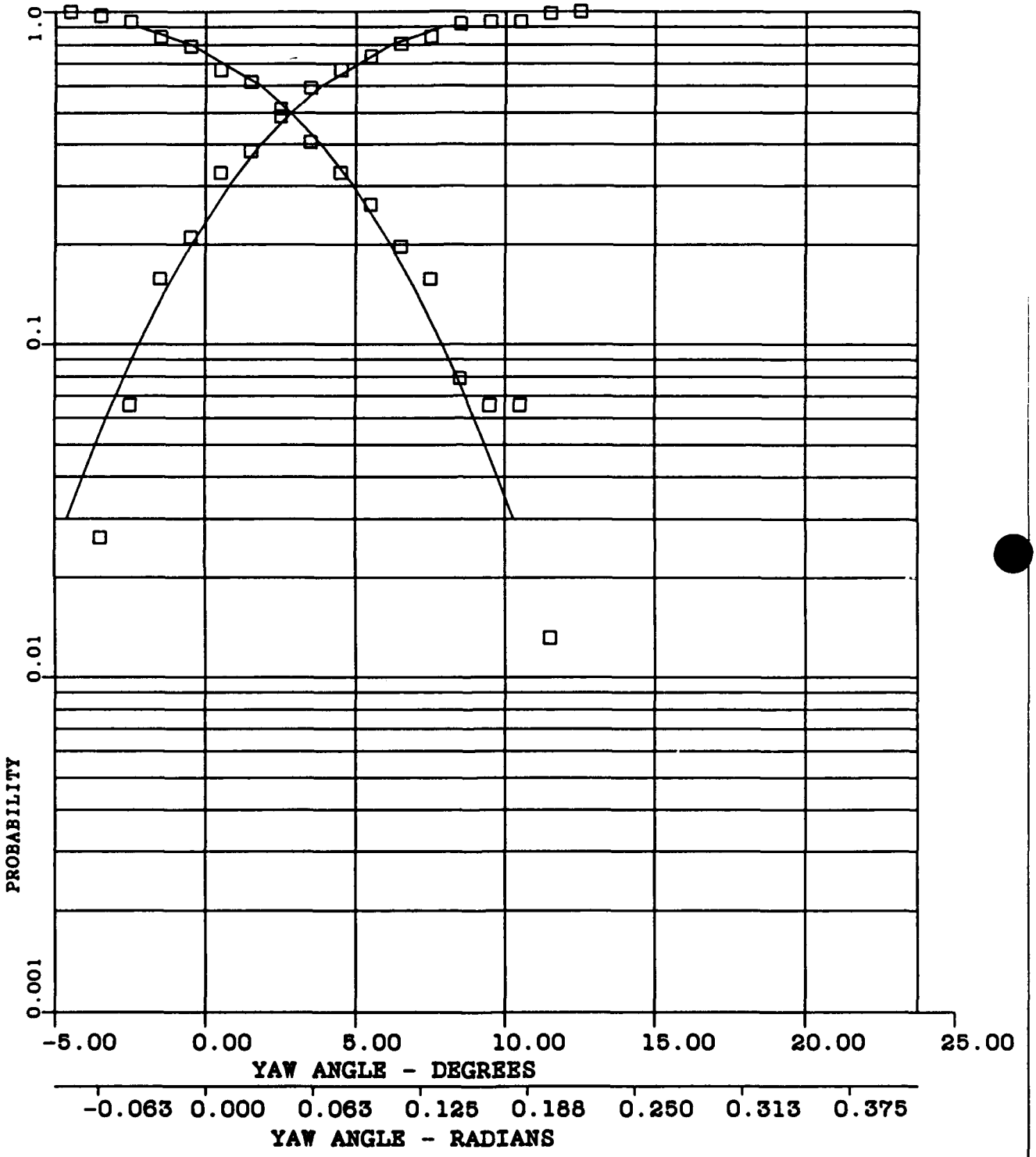


FIGURE E-49 PROBABILITY DISTRIBUTION OF AIRCRAFT YAW ANGLE

APPENDIX F

A-6E AIRCRAFT

DAY CARRIER LANDINGS

USS ENTERPRISE
CVN-65

Appendix F:

Frequency and Probability Distributions,
A-6E Aircraft, Day Landings

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29. Model A-6E Aircraft, Day Landings, Frequency Distribution of Aircraft Roll Angle at First Main Wheel Touchdown

30. Model A-6E Aircraft, Day Landings, Probability Distribution of Aircraft Roll Angle at First Main Wheel Touchdown

31. Model A-6E Aircraft, Day Landings, Frequency Distribution of Aircraft Roll Angle at Free Flight

32. Model A-6E Aircraft, Day Landings, Probability Distribution of Aircraft Roll Angle at Free Flight

33. Model A-6E Aircraft, Day Landings, Frequency Distribution of Distance from Ramp to First Main Wheel Touchdown Point

34. Model A-6E Aircraft, Day Landings, Probability Distribution of Distance from Ramp to First Main Wheel Touchdown Point

35. Model A-6E Aircraft, Day Landings, Frequency Distribution of Aircraft Off Center Distance at First Main Wheel Touchdown Point

36. Model A-6E Aircraft, Day Landings, Probability Distribution of Aircraft Off Center Distance at First Main Wheel Touchdown Point

37. Model A-6E Aircraft, Day Landings, Frequency Distribution Arresting Gear Wire Engaged

38. Model A-6E Aircraft, Day Landings, Frequency Distribution of Aircraft Glide Angle, Instantaneous Method

39. Model A-6E Aircraft, Day Landings, Frequency Distribution of Aircraft Glide Angle, Geometric Method

40. Model A-6E Aircraft, Day Landings, Frequency Distribution of Aircraft Arresting Hook above Carrier Ramp

41. Model A-6E Aircraft, Day Landings, Probability Distribution of Aircraft Arresting Hook above Carrier Ramp

42. Model A-6E Aircraft, Day Landings, Frequency Distribution of Aircraft Engaging Speed at First Main Wheel Touchdown

43. Model A-6E Aircraft, Day Landings, Probability Distribution of Aircraft Engaging Speed at First Main Wheel Touchdown

44. Model A-6E Aircraft, Day Landings, Frequency Distribution of Minimum Usable Power Approach Airspeed

45. Model A-6E Aircraft, Day Landings, Frequency Distribution of Minimum Usable Power Approach Speed Ratio

46. Model A-6E Aircraft, Day Landings, Frequency Distribution of Carrier Deck Roll Motion

47. Model A-6E Aircraft, Day Landings, Probability Distribution of Carrier Deck Roll Motion

48. Model A-6E Aircraft, Day Landings, Frequency Distribution of Carrier Deck Pitch Motion

49. Model A-6E Aircraft, Day Landings, Probability Distribution of Carrier Deck Pitch Motion

50. Model A-6E Aircraft, Day Landings, Frequency Distribution of Aircraft Landing Weight

51. Model A-6E Aircraft, Day Landings, Frequency Distribution of Aircraft Roll Rate

52. Model A-6E Aircraft, Day Landings, Probability Distribution of Aircraft Roll Rate

53. Model A-6E Aircraft, Day Landings, Frequency Distribution of Aircraft Pitch Rate

54. Model A-6E Aircraft, Day Landings, Probability Distribution of Aircraft Pitch Rate

55. Model A-6E Aircraft, Day Landings, Frequency Distribution of Aircraft Flight Path Angle at Touchdown

56. Model A-6E Aircraft, Day Landings, Probability Distribution of Aircraft Flight Path Angle at Touchdown

57. Model A-6E Aircraft, Day Landings, Frequency Distribution of Aircraft Yaw Angle at Touchdown

58. Model A-6E Aircraft, Day Landings, Probability Distribution of Aircraft Yaw Angle at Touchdown

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-68 $\bar{X}$-26.35 KNOTS (13.55 METRES/SEC) A3=.05
S-2.07 KNOTS (1.06 METRES/SEC) A4=2.52

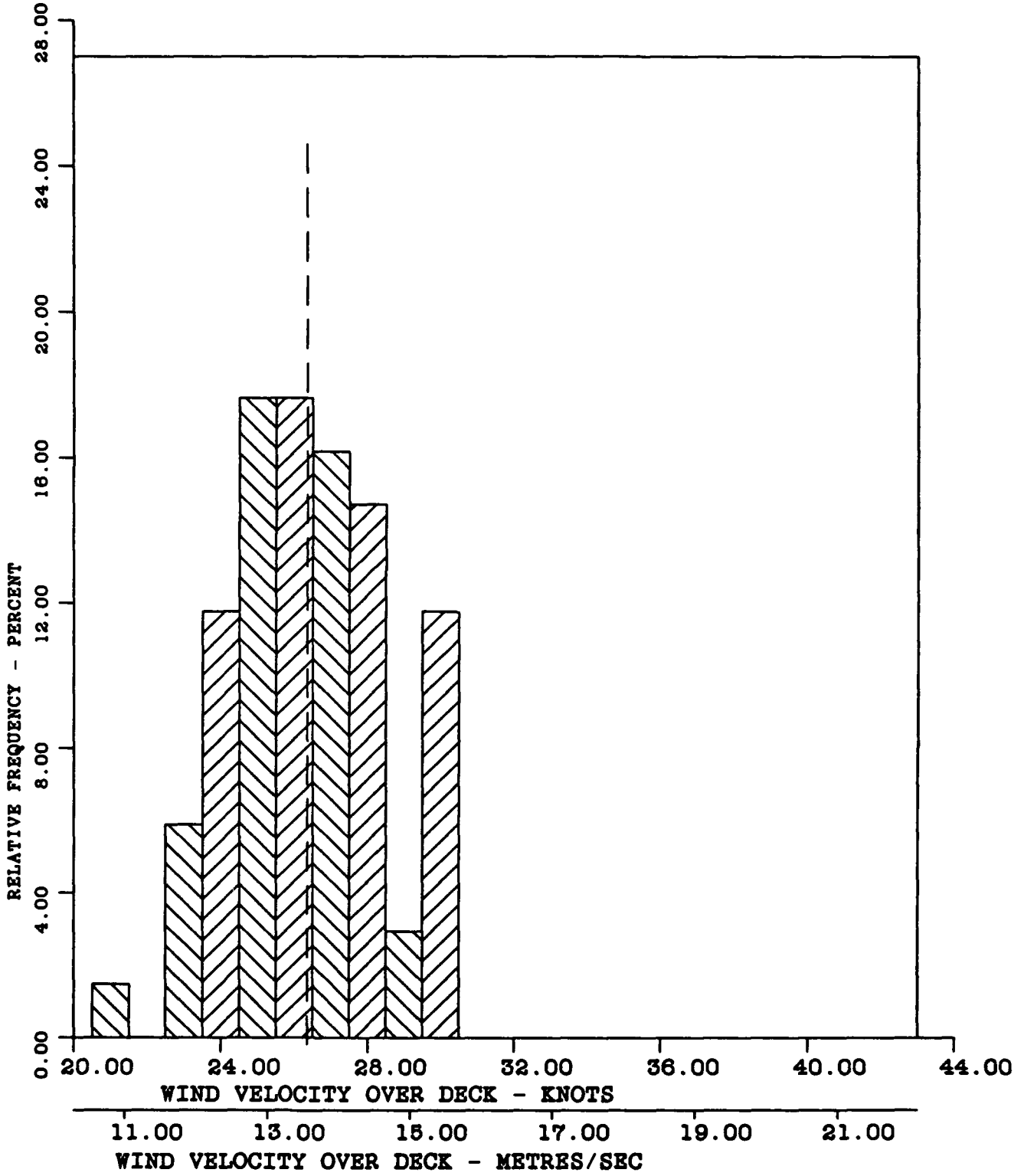


FIGURE F-1 FREQUENCY DISTRIBUTION OF WIND VELOCITY OVER THE DECK

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N=68 $\bar{X}$=26.35 KNOTS (13.55 METRES/SEC) A3=.05
S=2.07 KNOTS (1.06 METRES/SEC) A4=2.52
CURVE FITTED - NORMAL

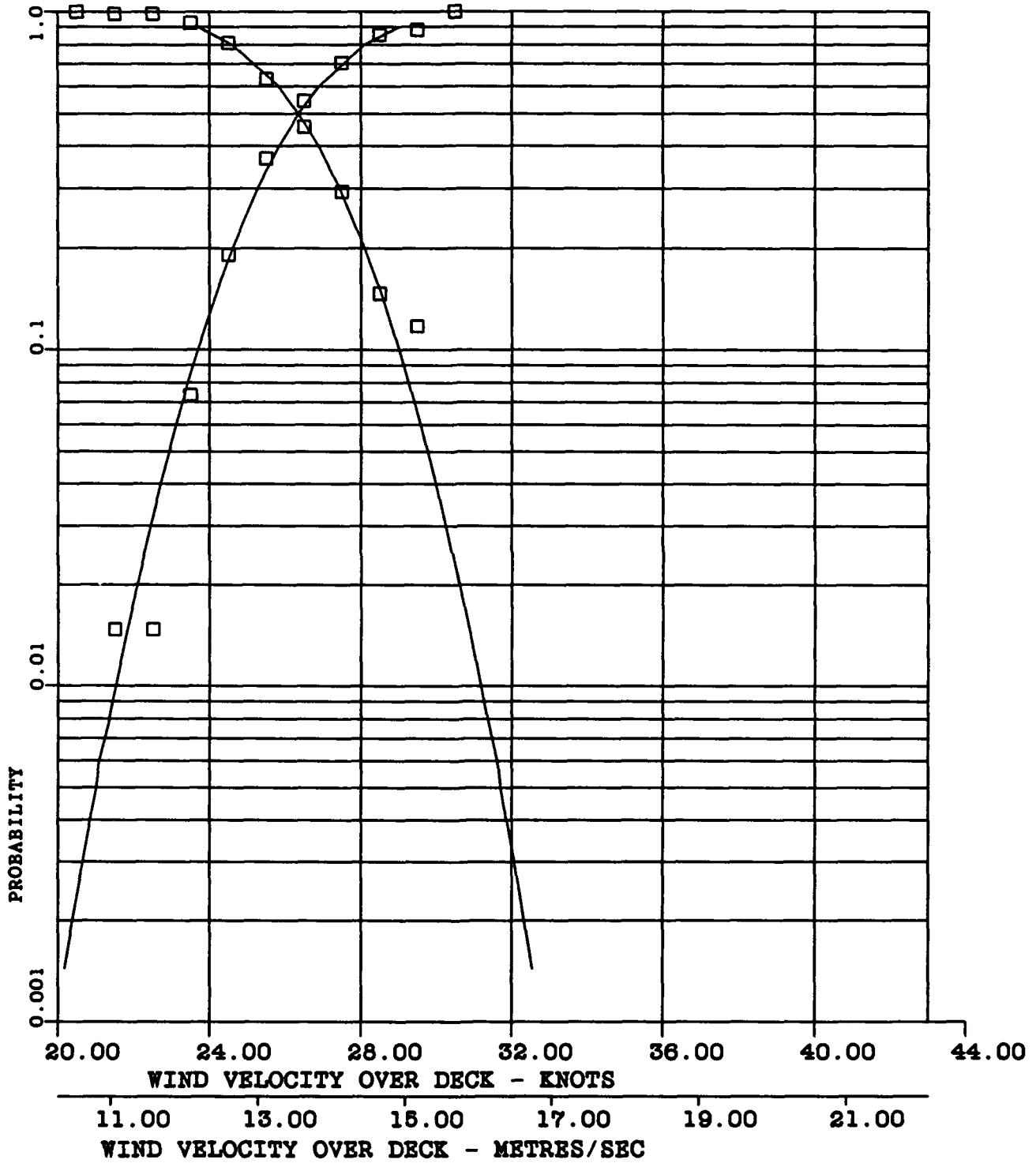


FIGURE F-2 PROBABILITY DISTRIBUTION OF WIND VELOCITY OVER THE DECK

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=68 $\bar{X}$=128.66 KNOTS (66.18 METRES/SEC) A3=.20
S=4.51 KNOTS (2.32 METRES/SEC) A4=2.75

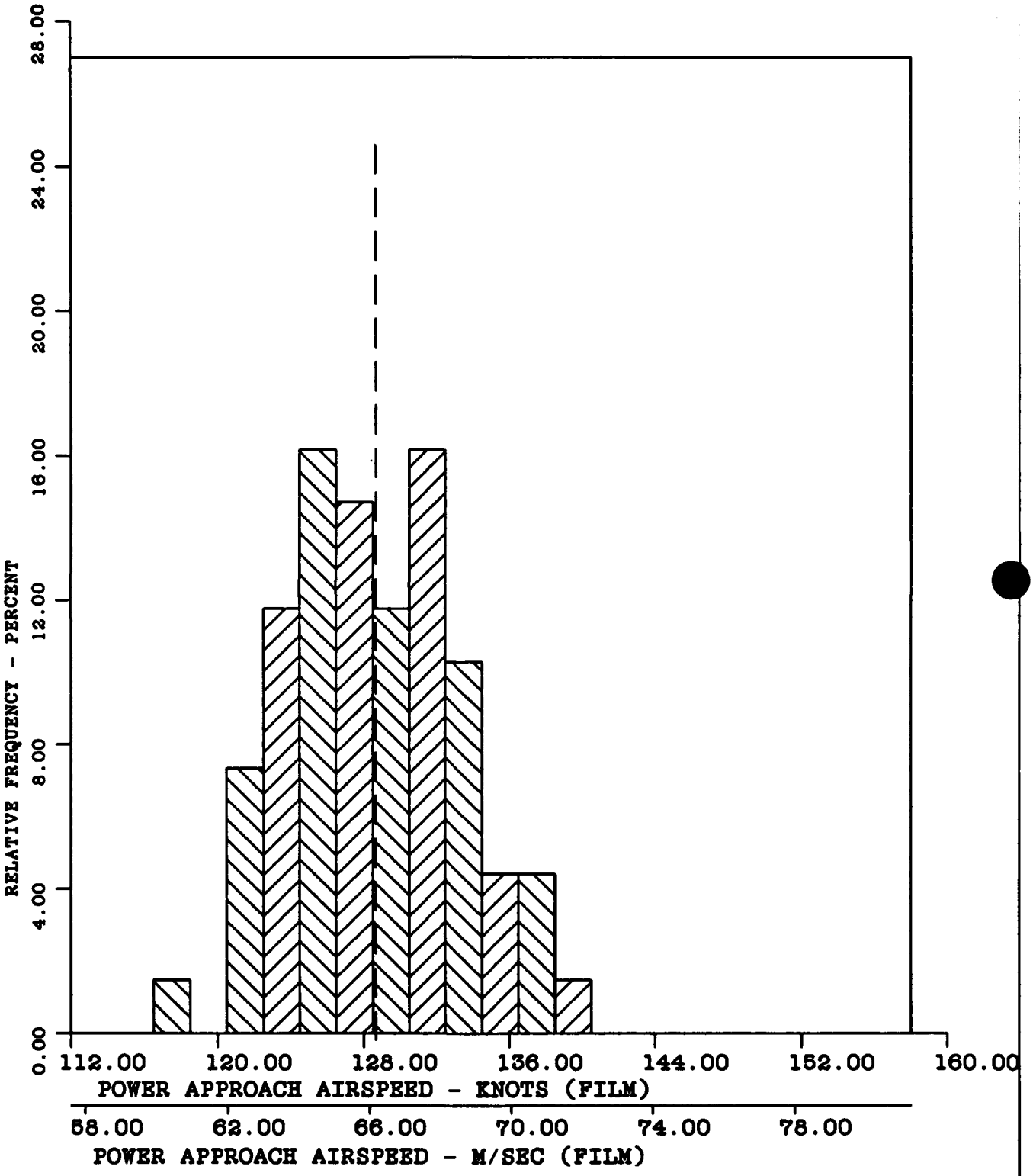


FIGURE F-3 FREQUENCY DISTRIBUTION OF FILM MEASURED POWER APPROACH AIRSPEED AT THE RAMP

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-68 $\bar{X}$-128.66 KNOTS (66.18 METRES/SEC) A3=.20
S-4.51 KNOTS (2.32 METRES/SEC) A4-2.75
CURVE FITTED - NORMAL

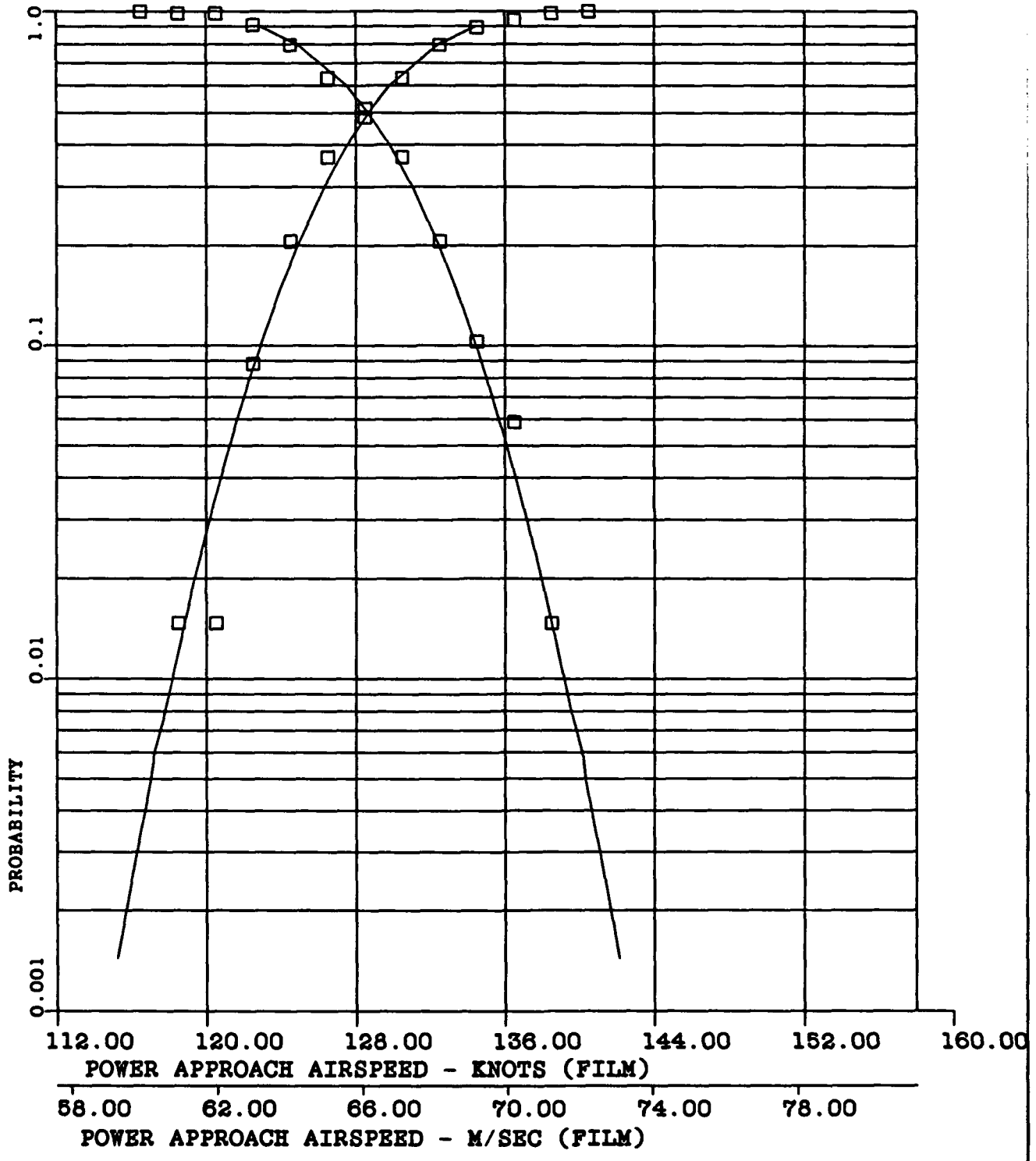


FIGURE F-4 PROBABILITY DISTRIBUTION OF POWER APPROACH AIRSPEED AT THE RAMP (FILM)

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-68 $\bar{X}$-16.62 FEET (5.06 METRES) A3=.88
S-2.50 FEET (.76 METRES) A4=4.38

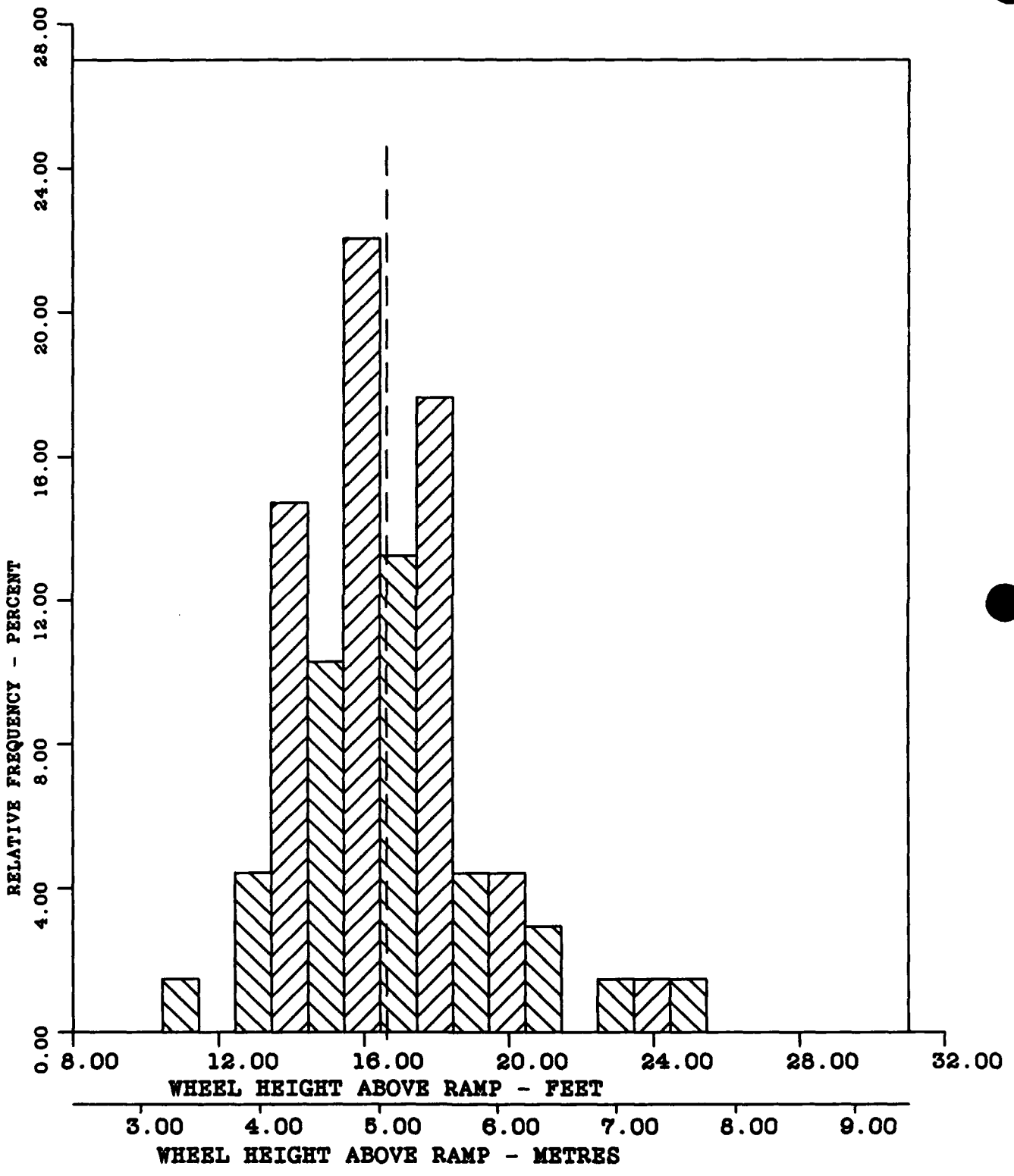


FIGURE F-5 FREQUENCY DISTRIBUTION OF AIRCRAFT WHEEL HEIGHT ABOVE CARRIER RAMP

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-68 $\bar{X}$-16.62 FEET (5.06 METRES) A3=.88
S-2.50 FEET (.76 METRES) A4=4.38
CURVE FITTED - PEARSON TYPE III

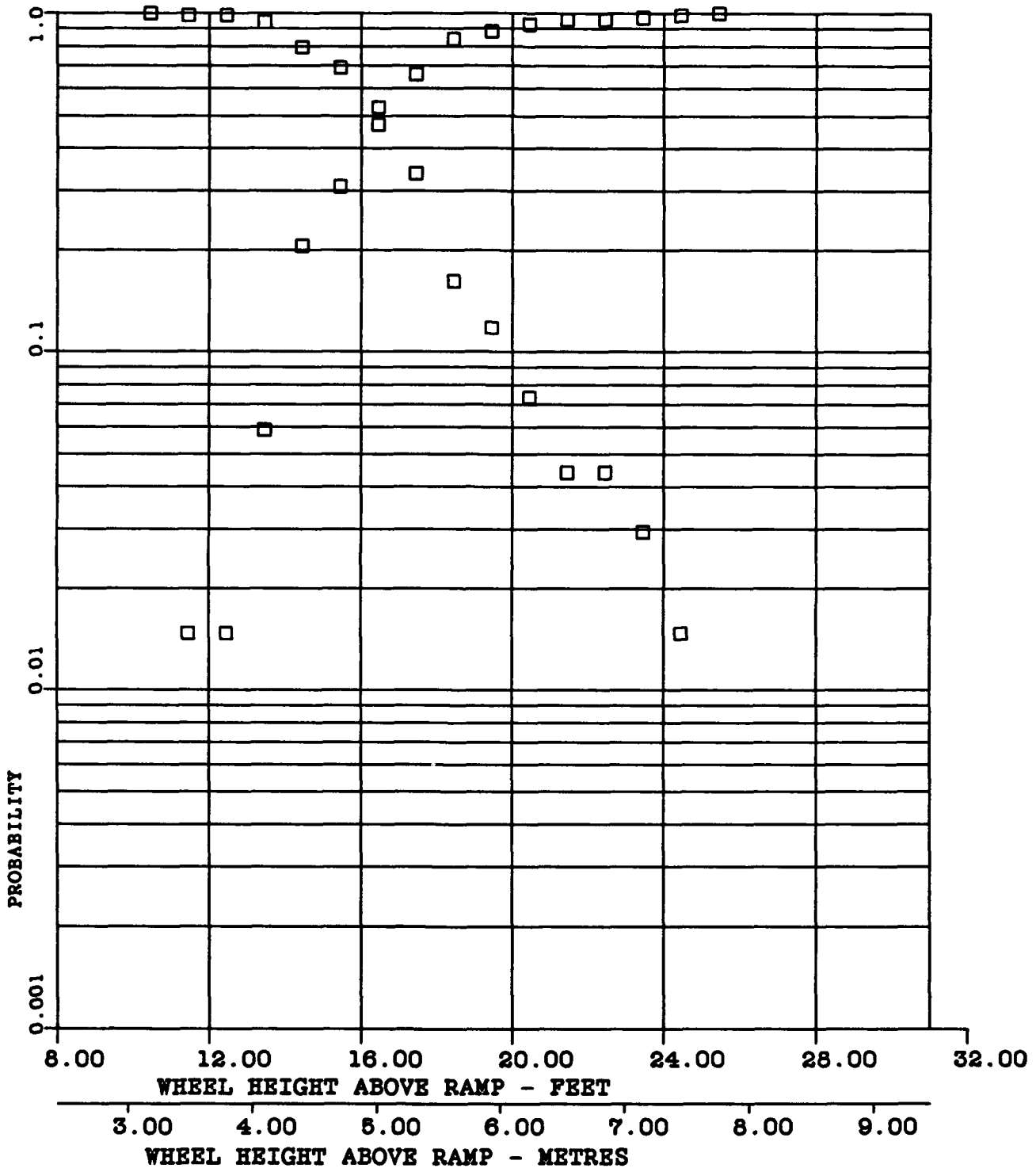


FIGURE F-6 PROBABILITY DISTRIBUTION OF AIRCRAFT WHEEL HEIGHT ABOVE CARRIER RAMP

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-68 $\bar{X}$-8.26 FEET/SEC (2.51 METRES/SEC) A3=-.70
S-2.39 FEET/SEC (.73 METRES/SEC) A4-5.59

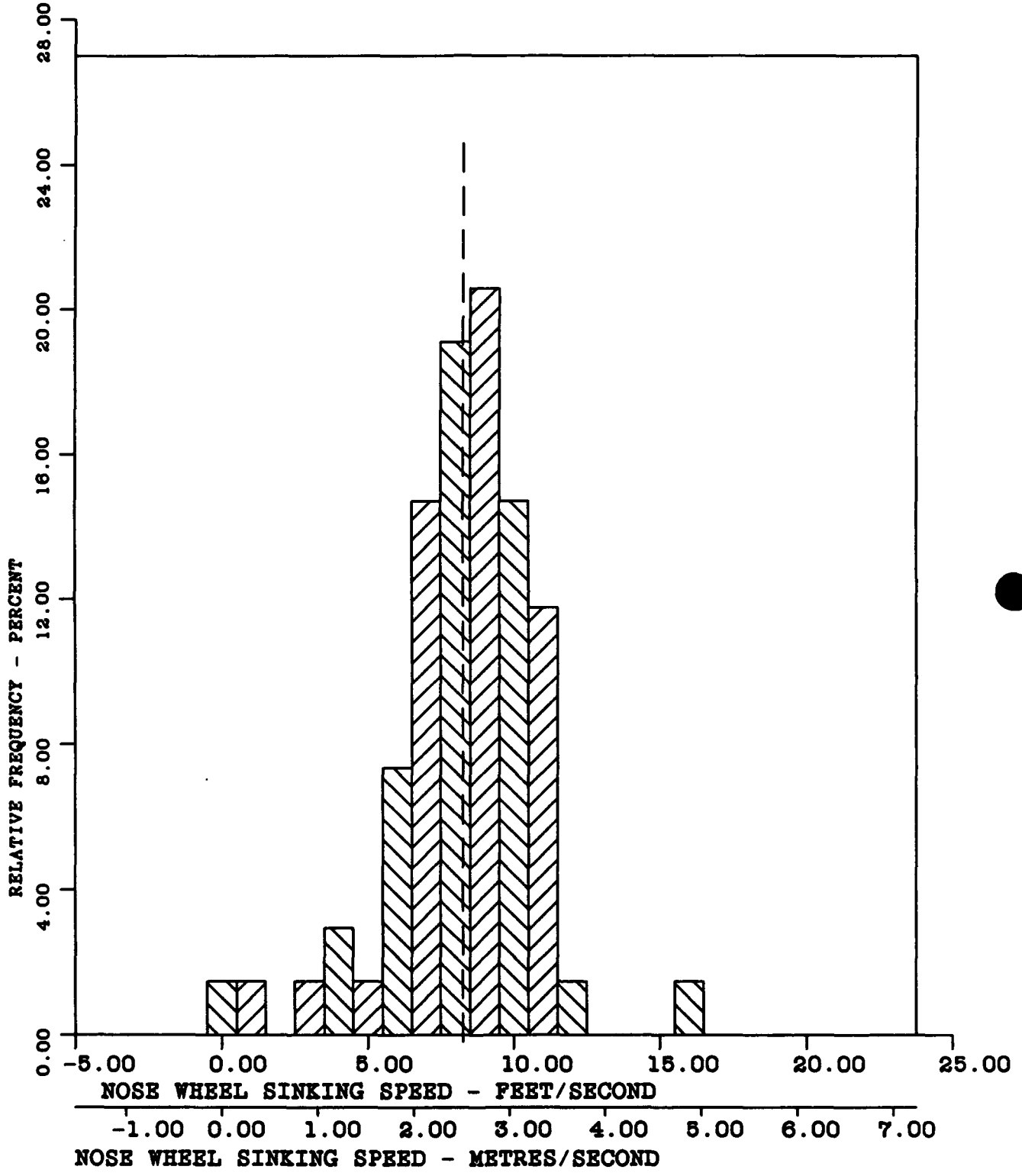


FIGURE F-7 FREQUENCY DISTRIBUTION OF NOSE WHEEL SINKING SPEED

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-68 $\bar{X}$-8.26 FEET/SEC (2.51 METRES/SEC) A3=-.70
S-2.39 FEET/SEC (.73 METRES/SEC) A4-5.59
CURVE FITTED - PEARSON TYPE III

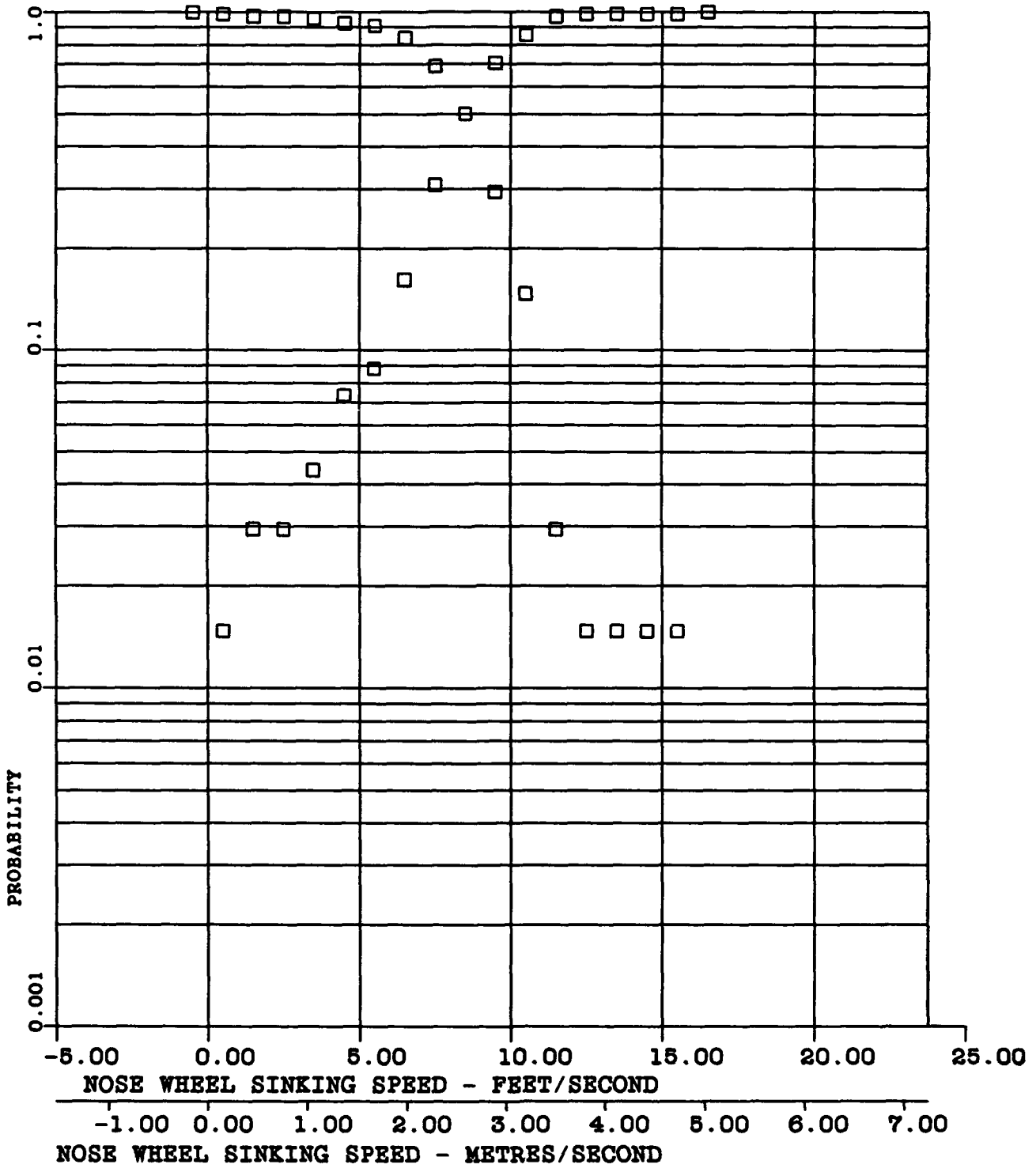


FIGURE F-8 PROBABILITY DISTRIBUTION OF NOSE WHEEL SINKING SPEED

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=68 $\bar{X}$=9.95 FEET/SEC (3.03 METRES/SEC) A3=-.07
S=1.65 FEET/SEC (.50 METRES/SEC) A4=2.72

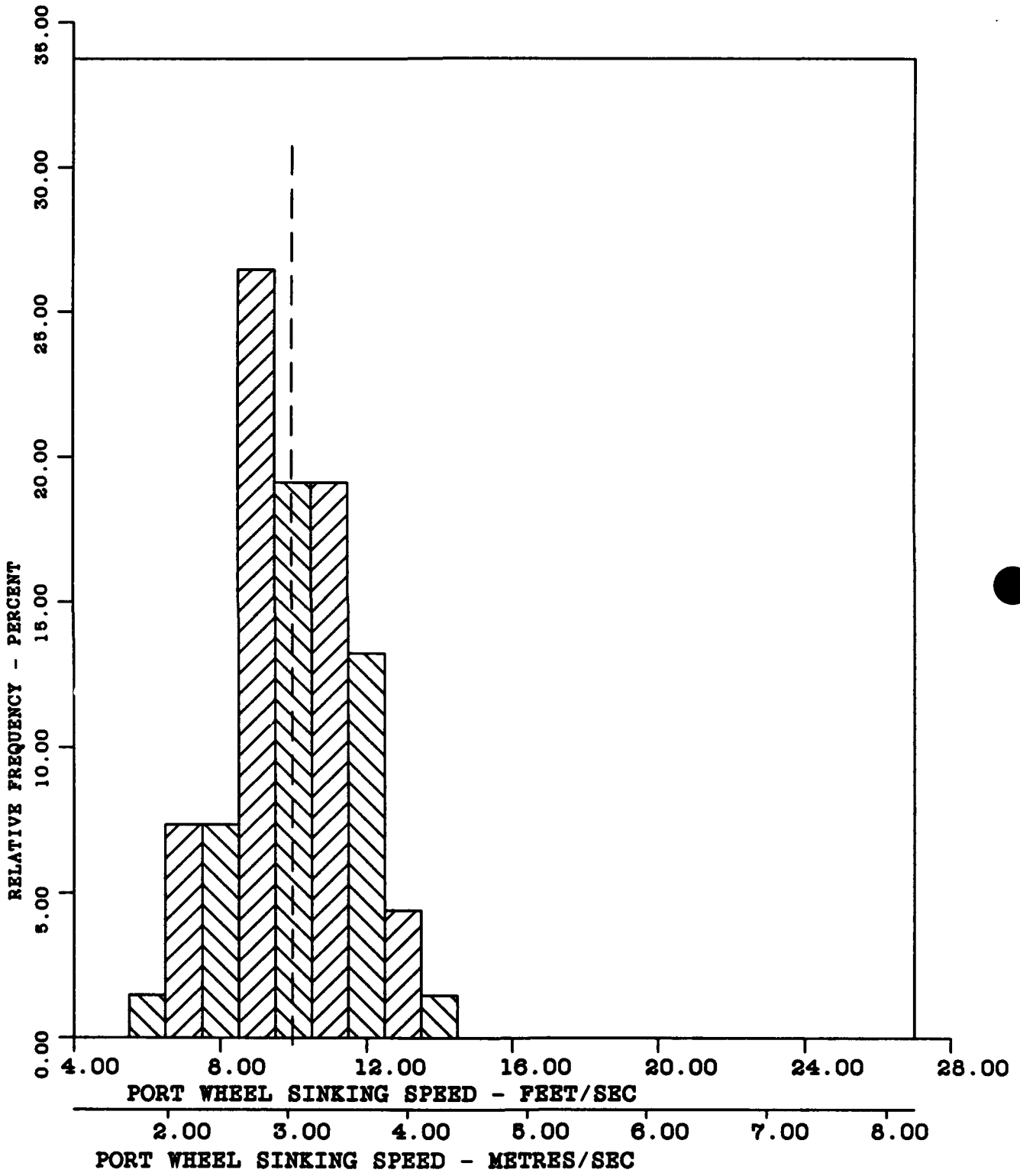


FIGURE F-9 FREQUENCY DISTRIBUTION OF PORT WHEEL SINKING SPEED AT PORT WHEEL TOUCHDOWN

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-68 $\bar{X}$-9.95 FEET/SEC (3.03 METRES/SEC) A3=-.07
S-1.65 FEET/SEC (.50 METRES/SEC) A4=2.72
CURVE FITTED - NORMAL

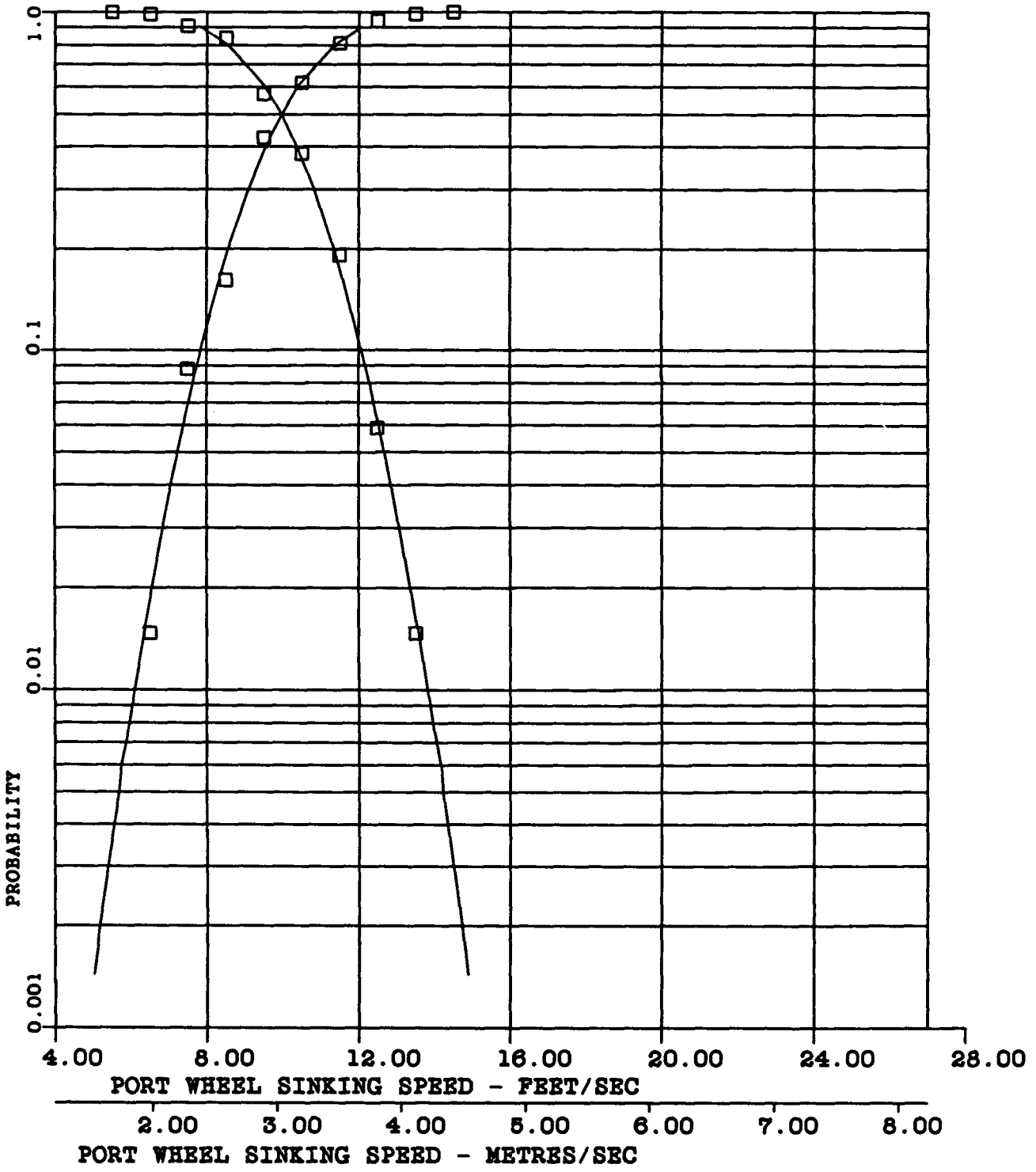


FIGURE F-10 PROBABILITY DISTRIBUTION OF PORT WHEEL SINKING SPEED

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N=68 $\bar{X}$=9.75 FEET/SEC (2.97 METRES/SEC) A3=.05
S=1.40 FEET/SEC (.42 METRES/SEC) A4=3.08

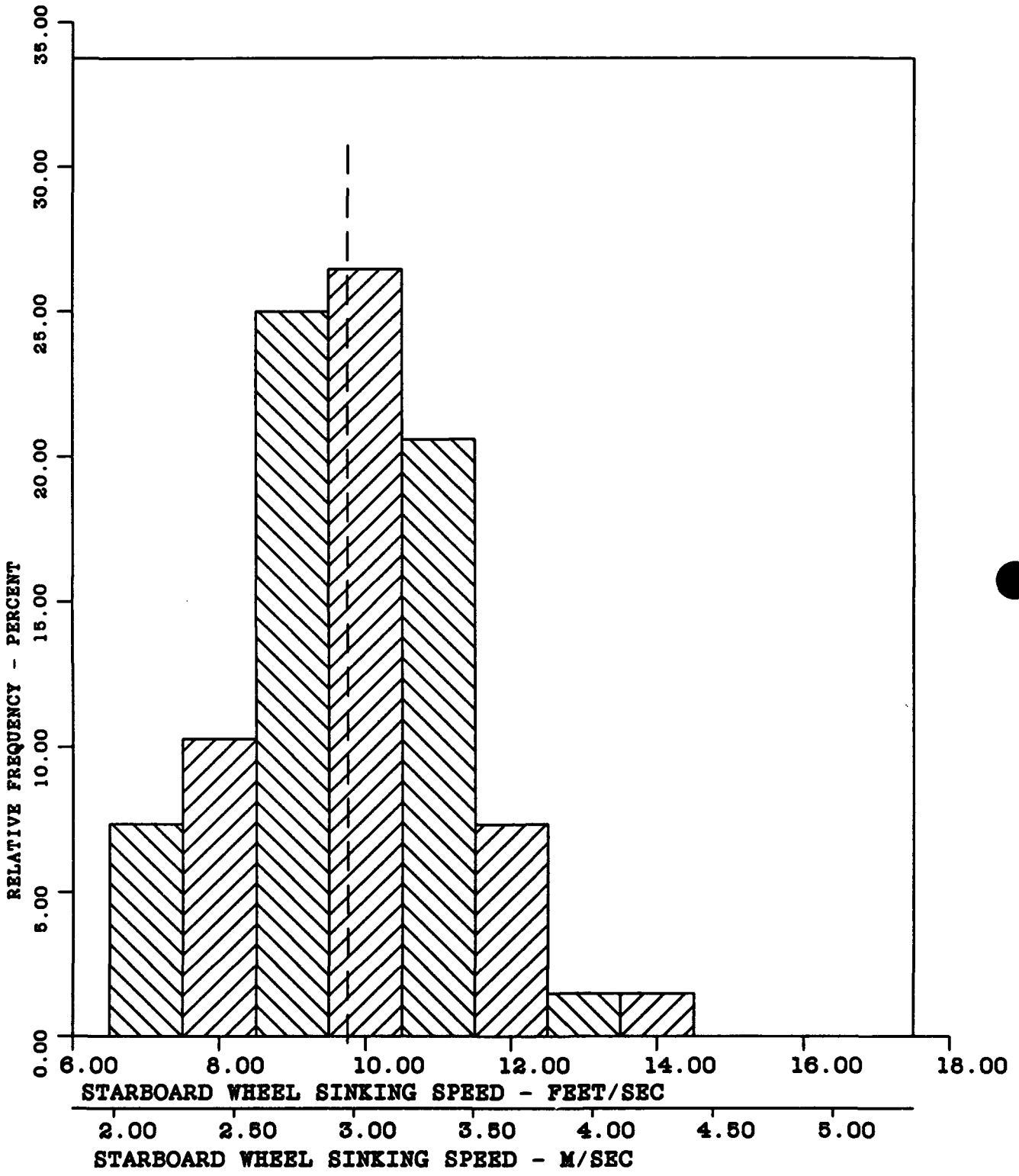


FIGURE F-11 FREQUENCY DISTRIBUTION OF STARBOARD WHEEL SINKING SPEED AT STARBOARD WHEEL TOUCHDOWN

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-68 $\bar{X}$-9.75 FEET/SEC (2.97 METRES/SEC) A3=.05
S-1.40 FEET/SEC (.42 METRES/SEC) A4-3.08
CURVE FITTED - NORMAL

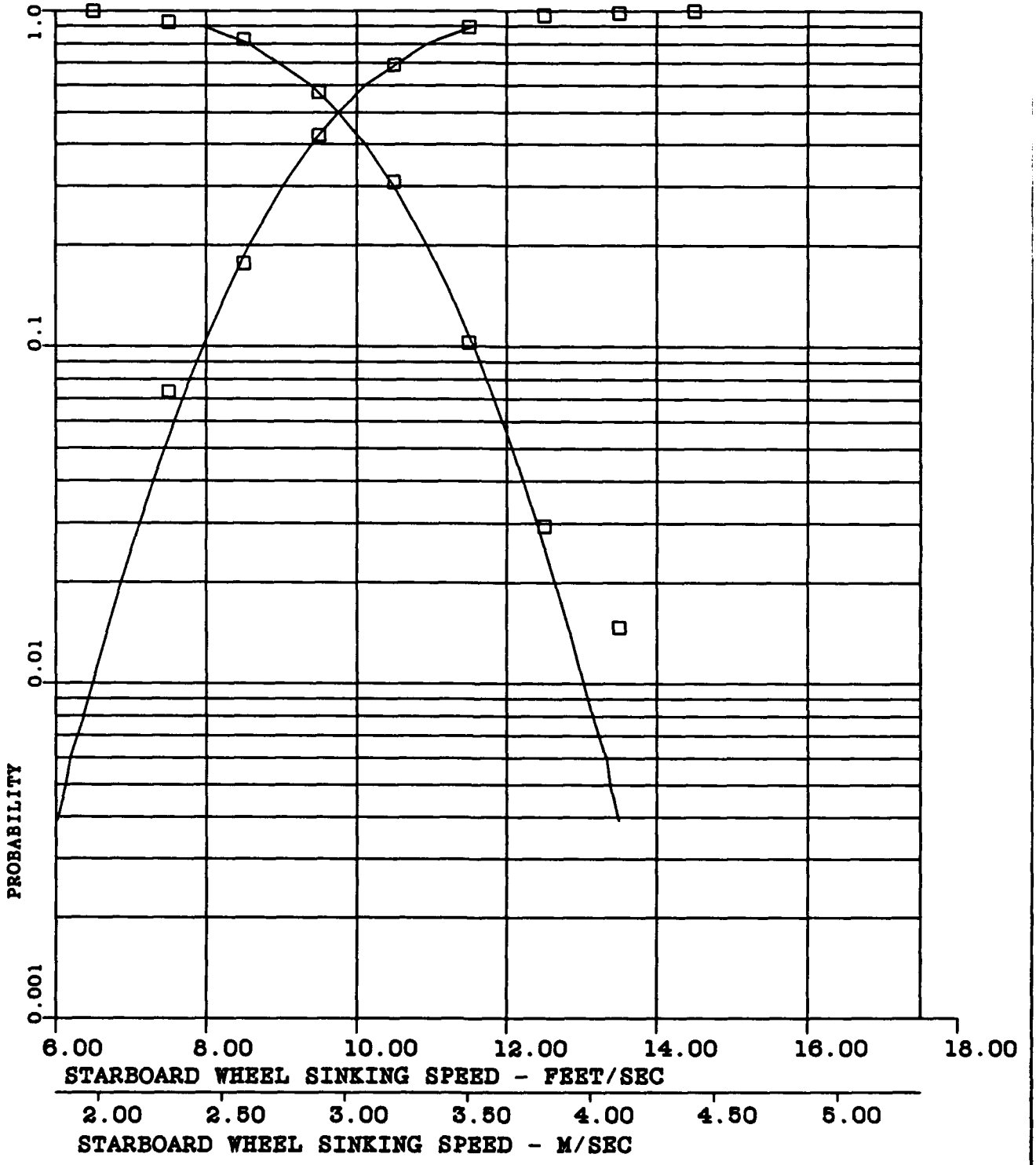


FIGURE F-12 PROBABILITY DISTRIBUTION OF STARBOARD WHEEL SINKING SPEED

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N=68 $\bar{X}$=9.87 FEET/SEC (3.00 METRES/SEC) A3=-.05
S=1.43 FEET/SEC (.43 METRES/SEC) A4=3.13

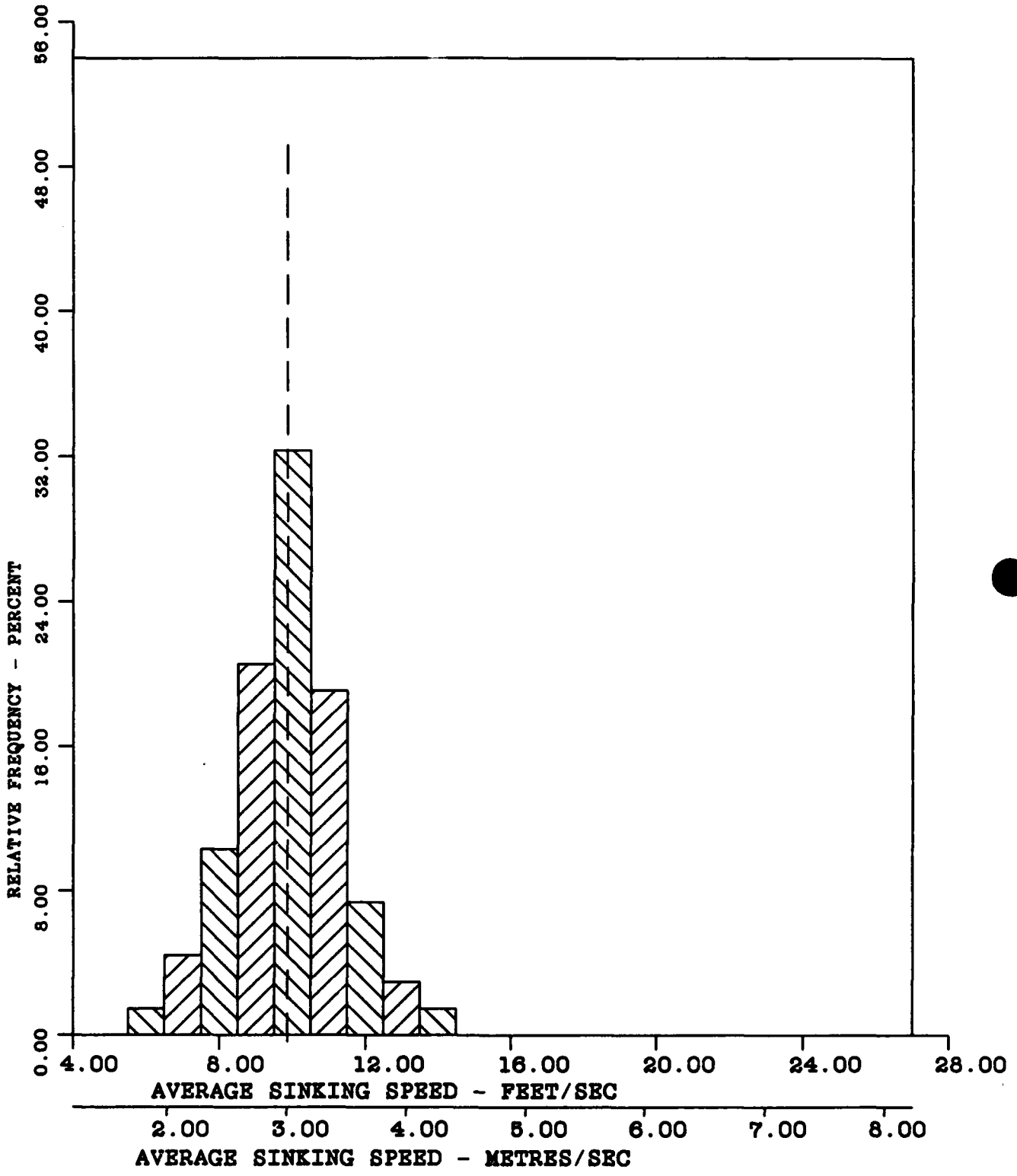


FIGURE F-13 FREQUENCY DISTRIBUTION OF AVG SINKING SPEED OF MAIN WHEEL AT FIRST MAIN WHEEL TOUCHDOWN

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=68 $\bar{X}$=9.87 FEET/SEC (3.00 METRES/SEC) A3=-.05
S=1.43 FEET/SEC (.43 METRES/SEC) A4=3.13
CURVE FITTED - NORMAL

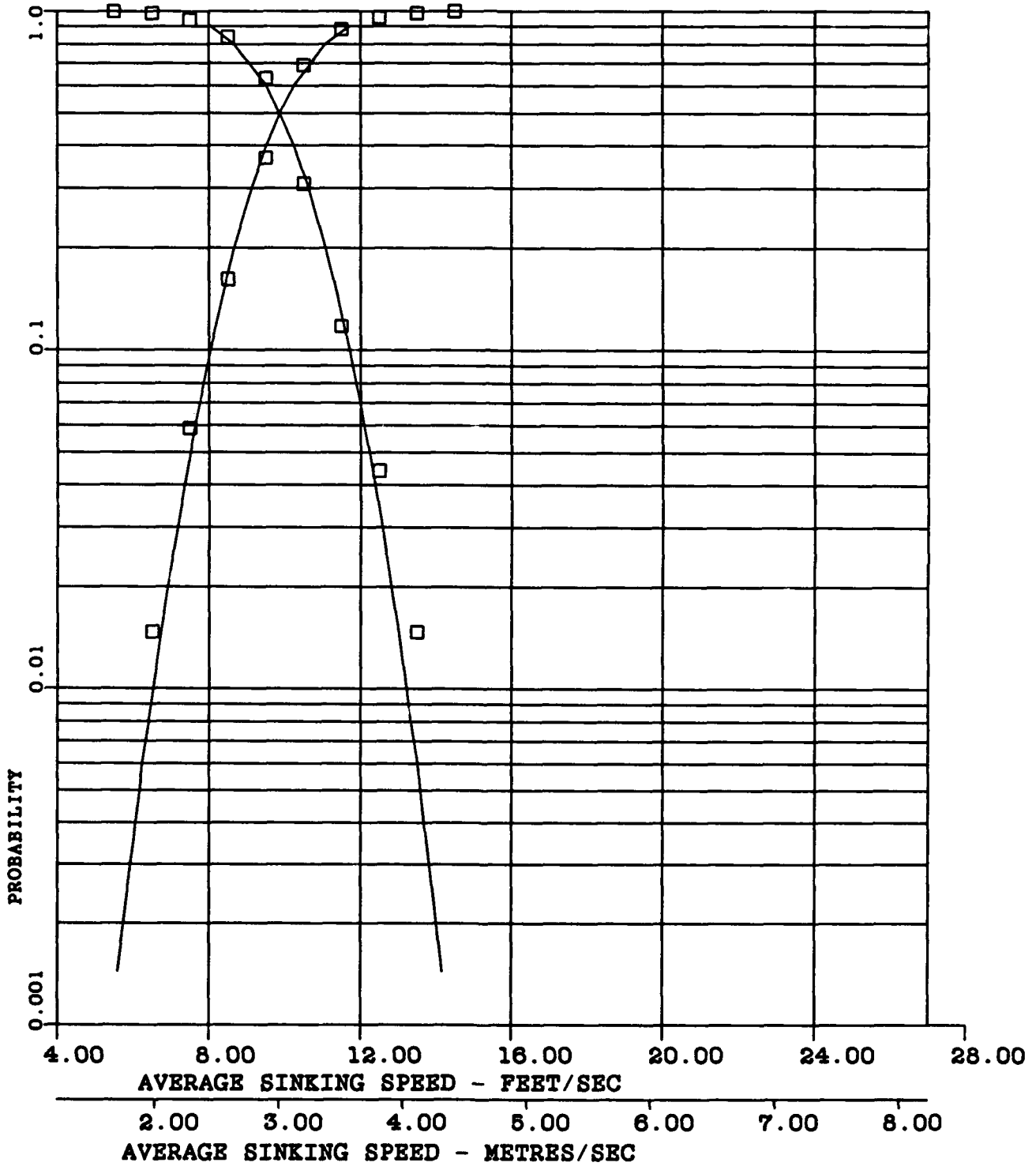


FIGURE F-14 PROBABILITY DISTRIBUTION OF AVERAGE SINKING SPEED AT FIRST MAIN WHEEL TOUCHDOWN

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=6 $\bar{X}$=10.13 FEET/SEC (3.08 METRES/SEC) A3=-.02
S=1.62 FEET/SEC (.49 METRES/SEC) A4=1.66

FREE FLIGHT IS THE CONDITION WHERE THE HOOK ENGAGES THE ARRESTMENT CABLE BEFORE THE WHEELS MAKE DECK CONTACT

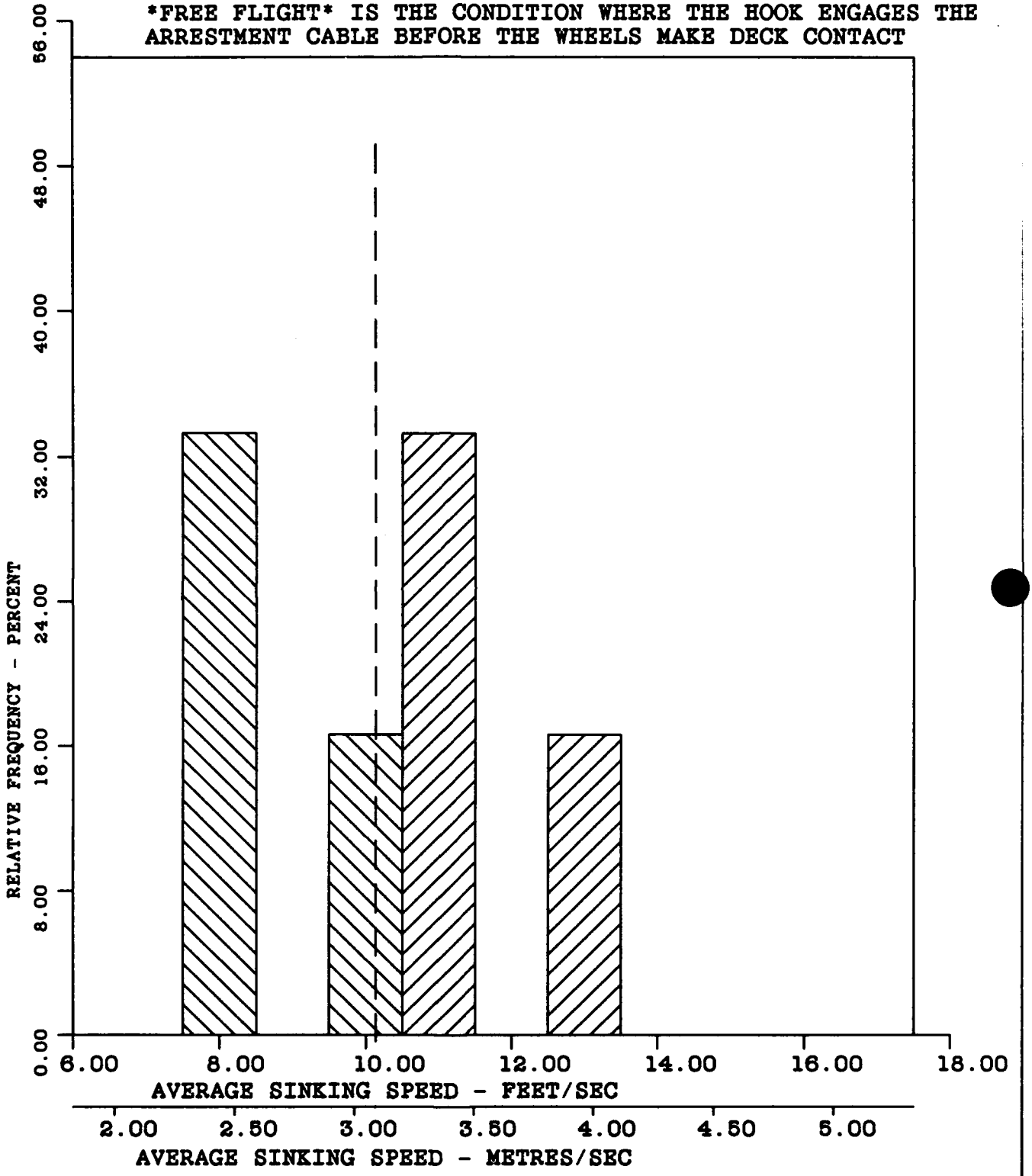


FIGURE F-15 FREQUENCY DISTRIBUTION OF AVERAGE SINKING SPEED OF MAIN WHEELS AT FREE FLIGHT

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=6 $\bar{X}$=10.13 FEET/SEC (3.08 METRES/SEC) A3=-.02
S=1.62 FEET/SEC (.49 METRES/SEC) A4=1.66
CURVE FITTED - NORMAL
FREE FLIGHT IS THE CONDITION WHERE THE HOOK ENGAGES THE ARRESTMENT CABLE BEFORE THE WHEELS MAKE DECK CONTACT

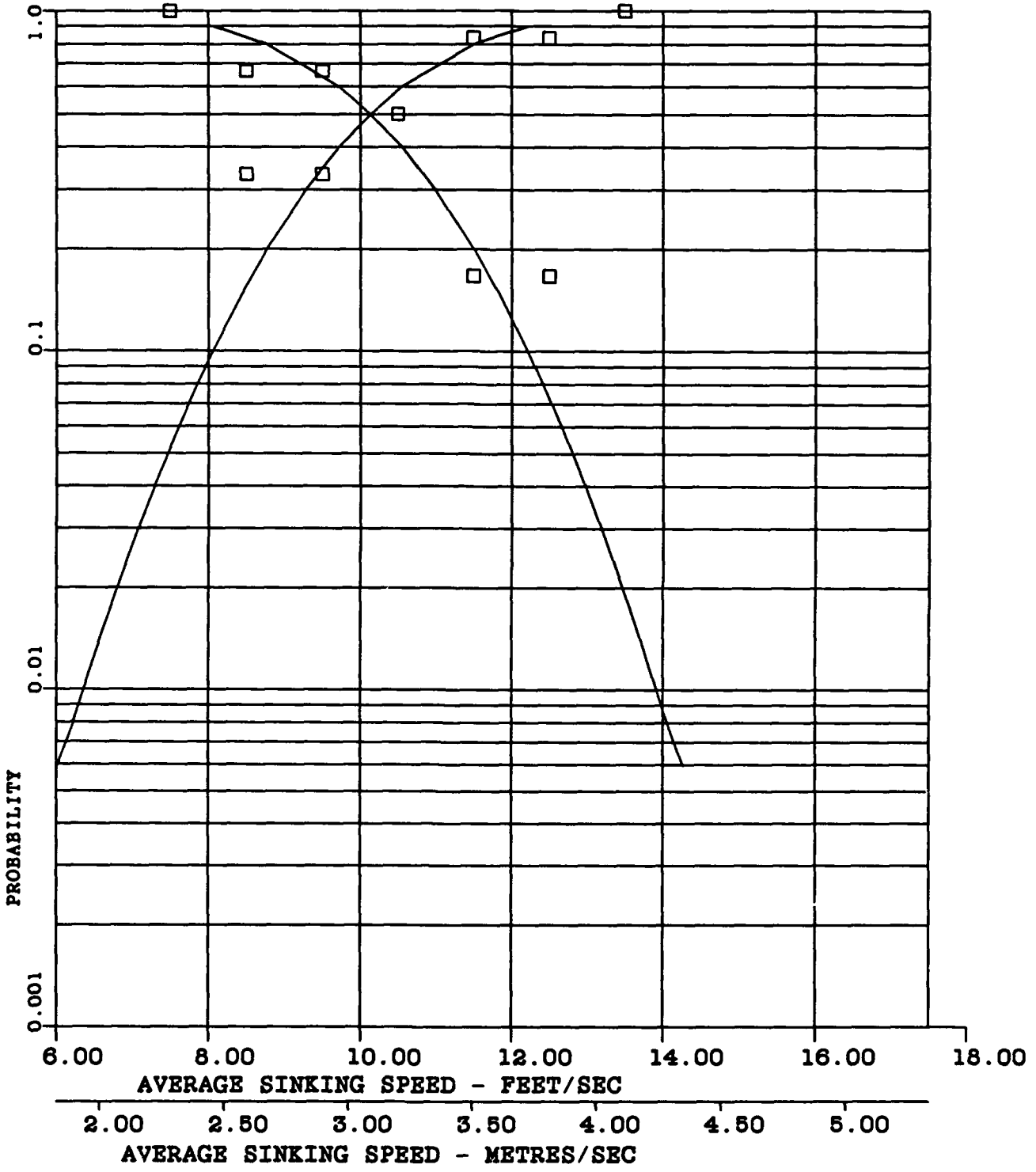


FIGURE F-16 PROBABILITY DISTRIBUTION OF AVERAGE SINKING SPEED AT FREE FLIGHT

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N=68 $\bar{X}$=1.01 A3=-.05
S=.07 A4=2.33

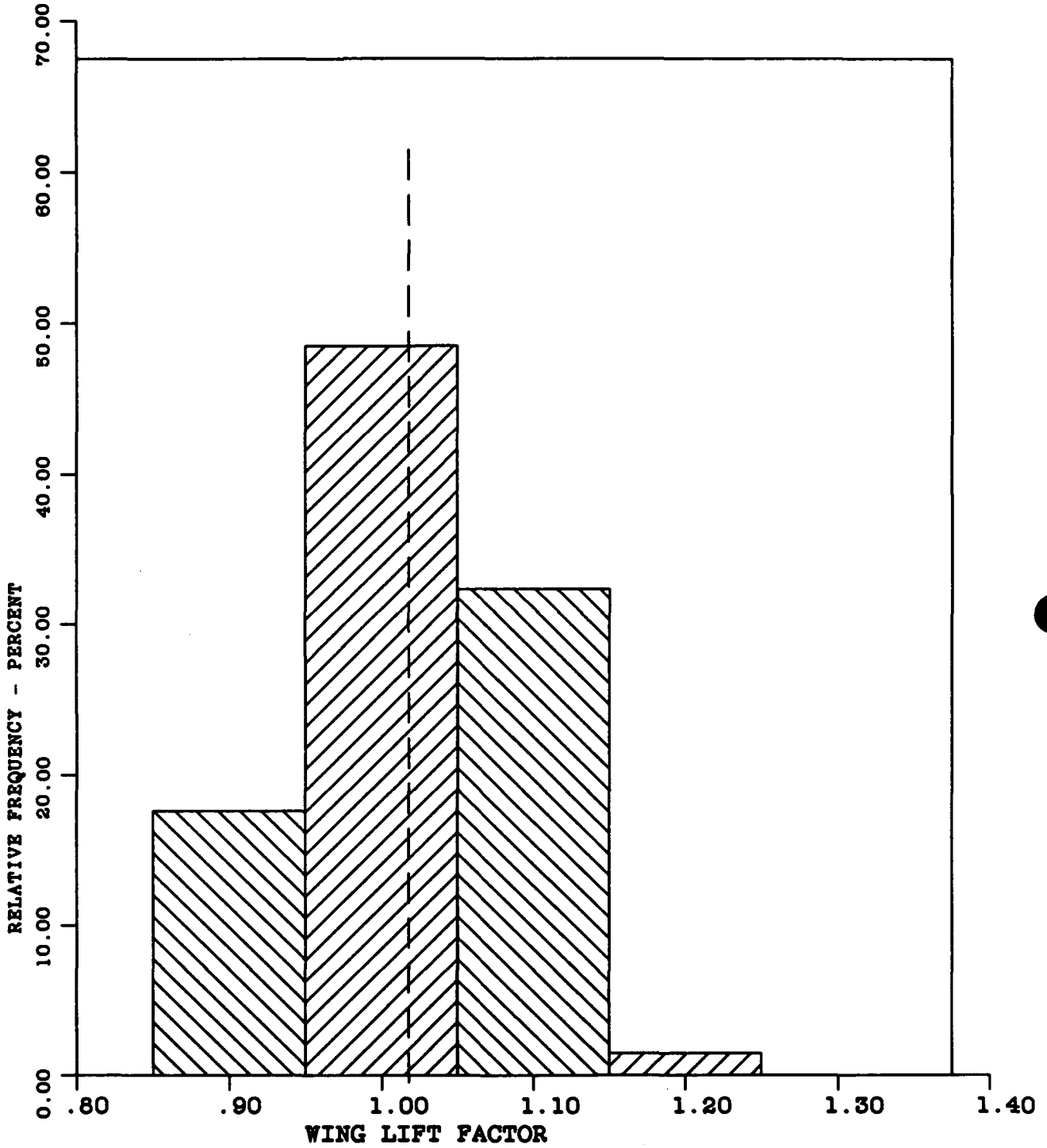


FIGURE F-17 FREQUENCY DISTRIBUTION OF WING LIFT FACTOR AT FIRST MAIN WHEEL TOUCHDOWN

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N=68 $\bar{X}$=1.01 A3=-.05
S=.07 A4=2.33
CURVE FITTED - NORMAL

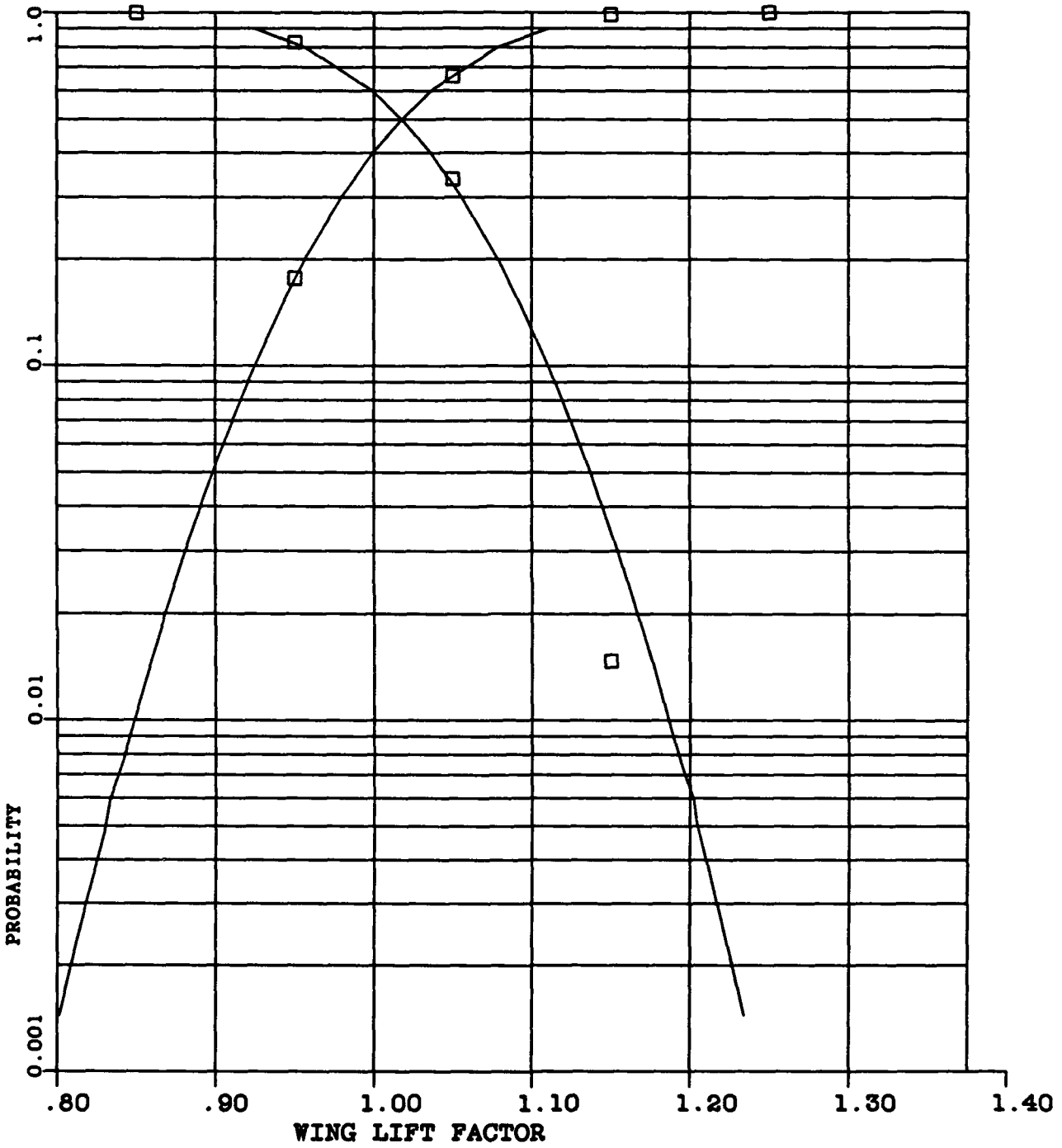


FIGURE F-18 PROBABILITY DISTRIBUTION OF WING LIFT FACTOR AT FIRST MAIN WHEEL TOUCHDOWN

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=6 $\bar{X}$=1.01 A3=-.22
S=.06 A4=2.10

FREE FLIGHT IS THE CONDITION WHERE THE HOOK ENGAGES THE ARRESTMENT CABLE BEFORE THE WHEELS MAKE DECK CONTACT

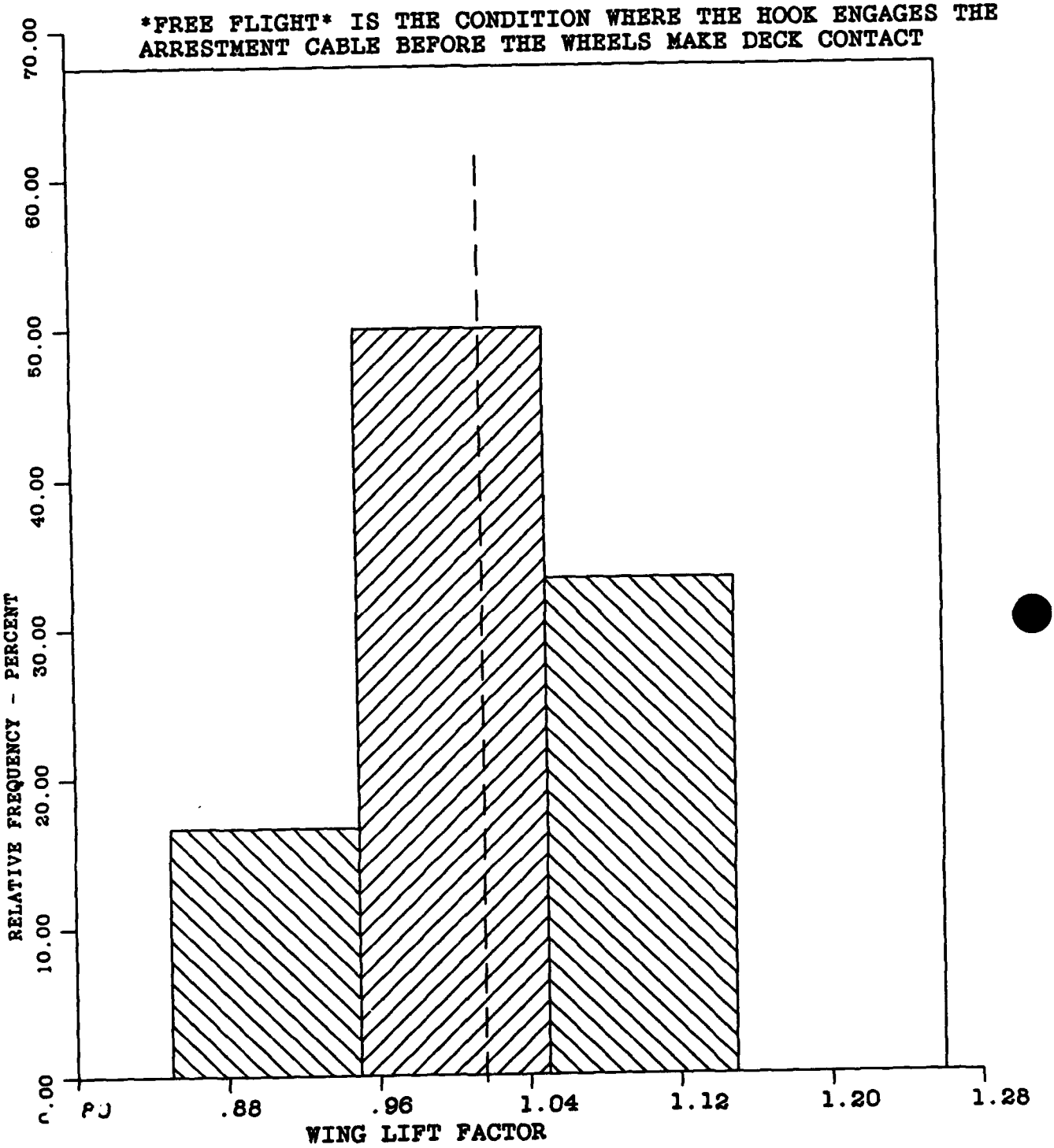


FIGURE F-19 FREQUENCY DISTRIBUTION OF WING LIFT FACTOR AT FREE FLIGHT

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-6 $\bar{X}$-1.01 A3=-.22
S=.06 A4=2.10
CURVE FITTED - NORMAL
FREE FLIGHT IS THE CONDITION WHERE THE HOOK ENGAGES THE ARRESTMENT CABLE BEFORE THE WHEELS MAKE DECK CONTACT

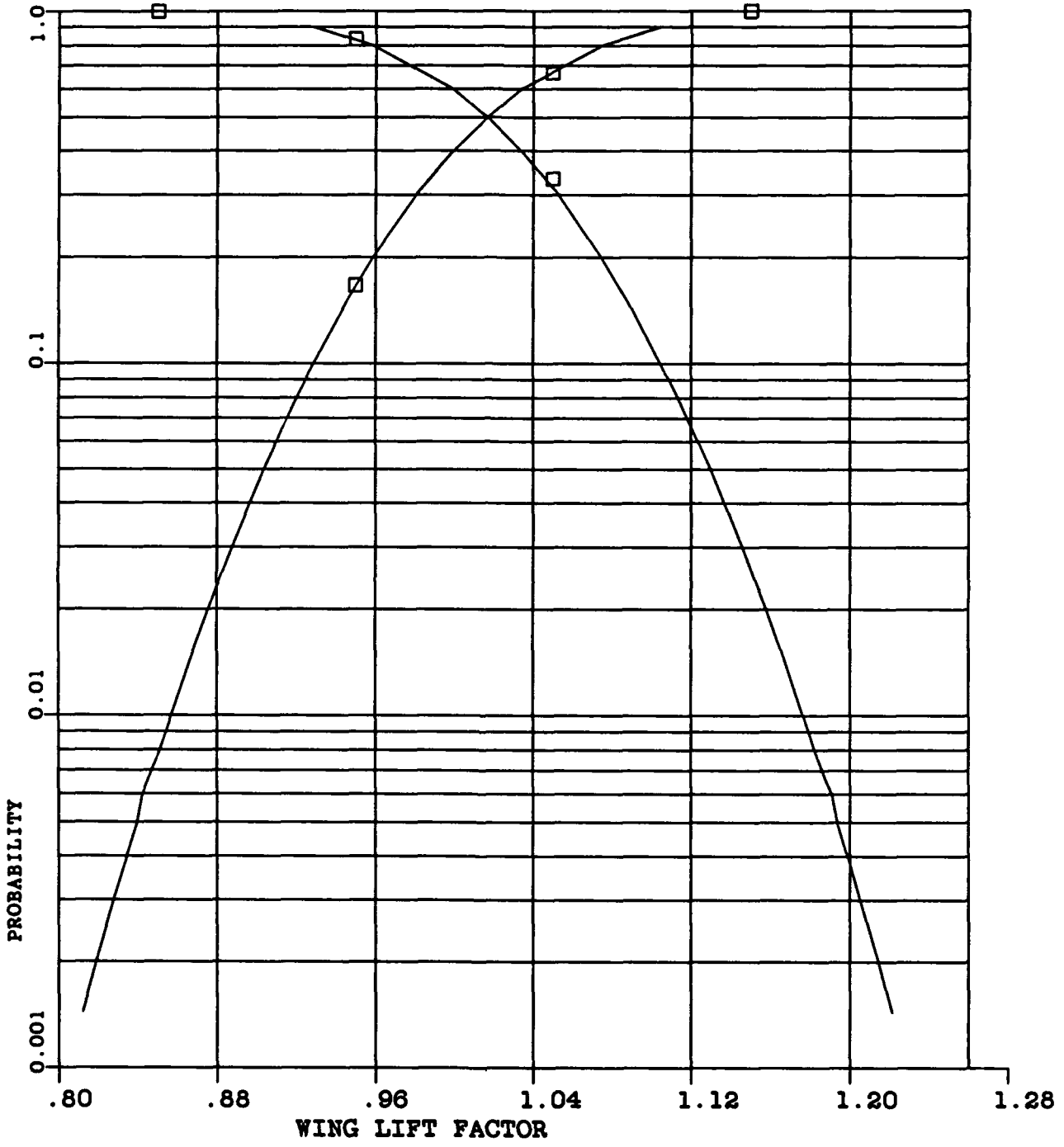


FIGURE F-20 PROBABILITY DISTRIBUTION OF WING LIFT FACTOR AT FREE FLIGHT

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-68 $\bar{X}$-9.76 DEGREES (.170 RADIANS) A3=.00
S=.88 DEGREES (.015 RADIANS) A4=3.24

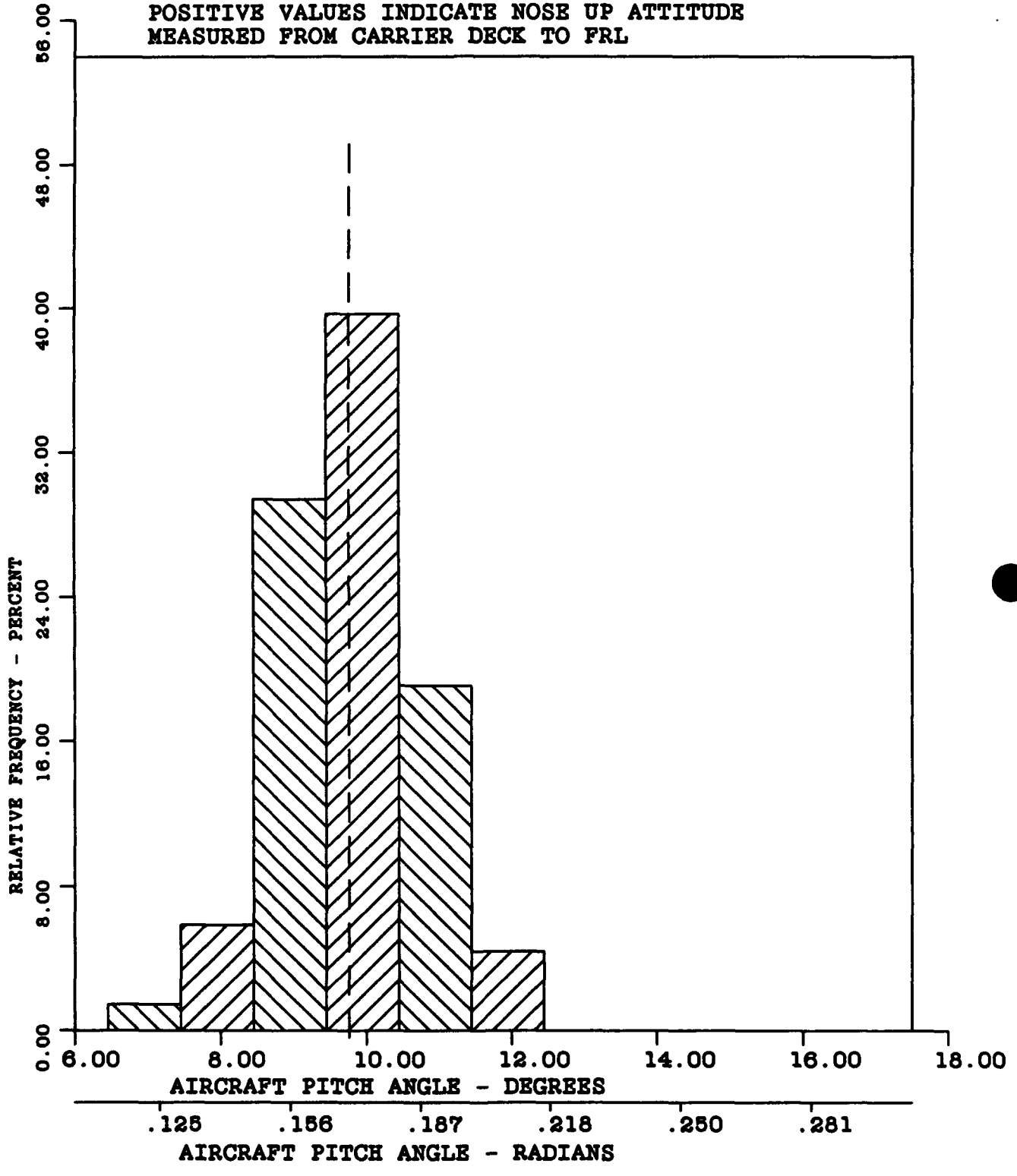


FIGURE F-21 FREQUENCY DISTRIBUTION OF AIRCRAFT PITCH ANGLE AT THE RAMP

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-68 $\bar{X}$-9.76 DEGREES (.170 RADIANS) A3=.00
S=.88 DEGREES (.015 RADIANS) A4-3.24
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE NOSE UP ATTITUDE
MEASURED FROM CARRIER DECK TO FRL

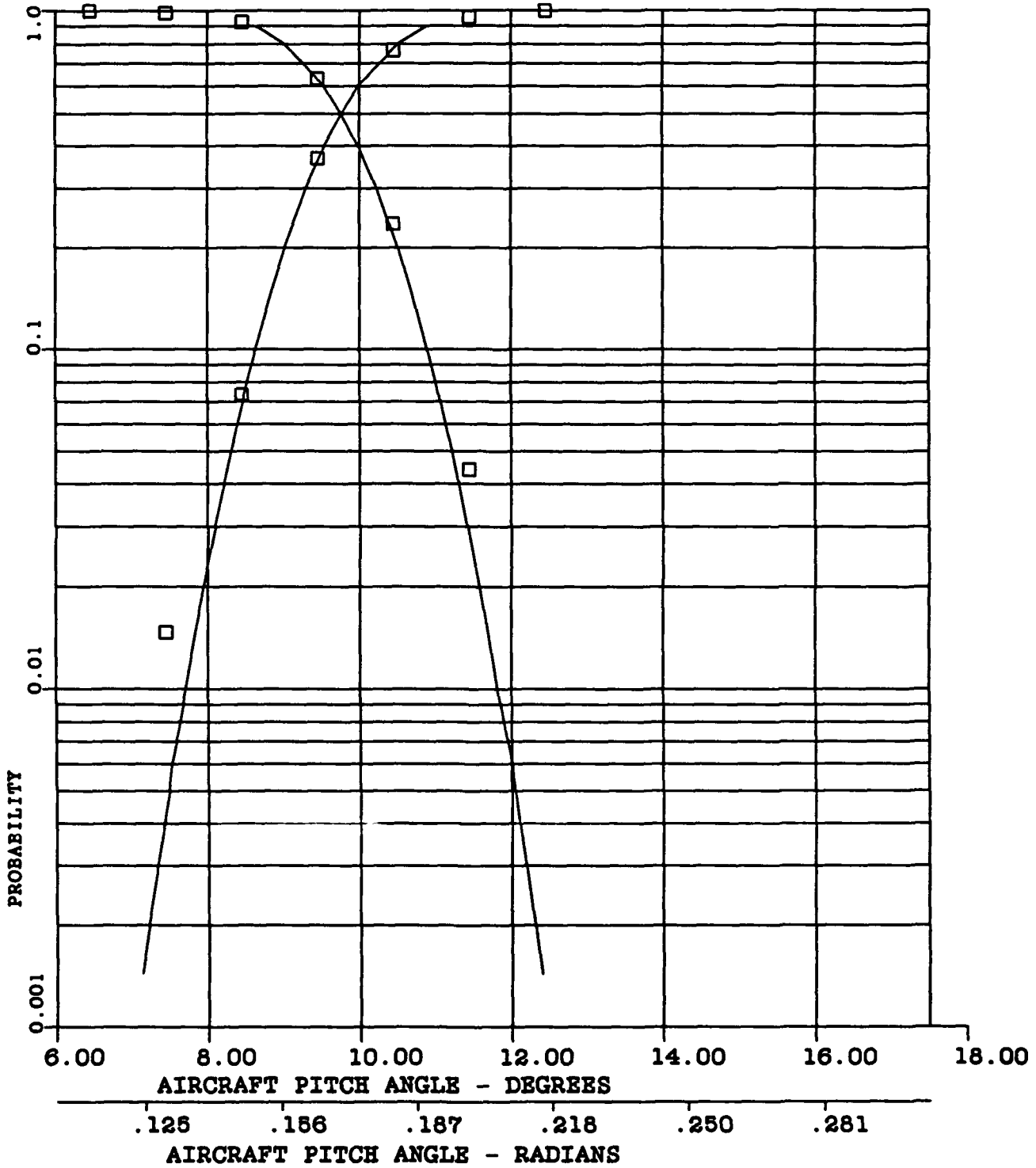


FIGURE F-22 PROBABILITY DISTRIBUTION OF AIRCRAFT PITCH ANGLE AT THE RAMP

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-68 $\bar{X}$-8.32 DEGREES (.145 RADIANS) A3=-.27
S-1.16 DEGREES (.020 RADIANS) A4=2.60

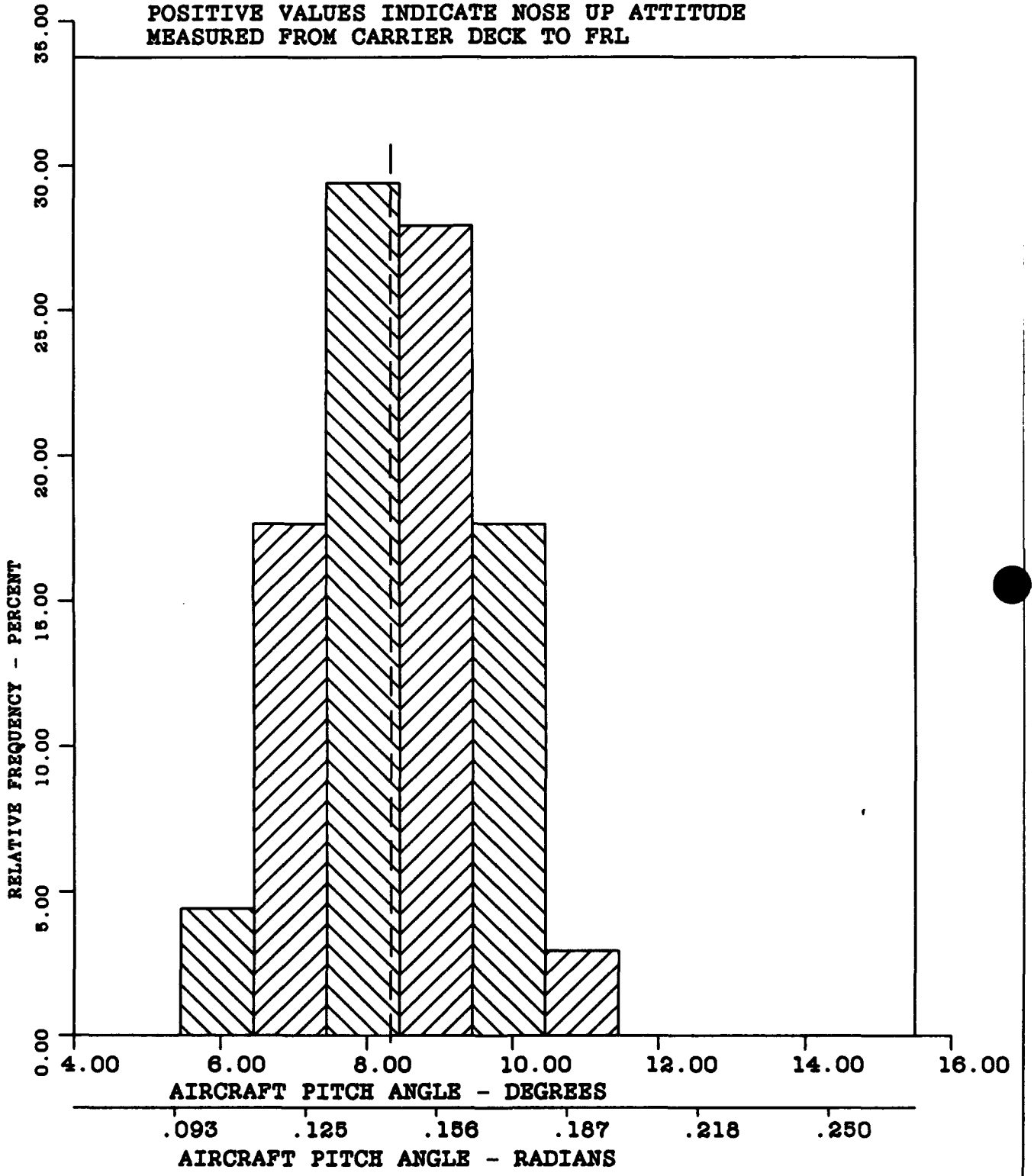


FIGURE F-23 FREQUENCY DISTRIBUTION OF AIRCRAFT PITCH ANGLE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-68 $\bar{X}$-8.32 DEGREES (.145 RADIANS) A3=-.27
S-1.16 DEGREES (.020 RADIANS) A4-2.60
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE NOSE UP ATTITUDE
MEASURED FROM CARRIER DECK TO FRL

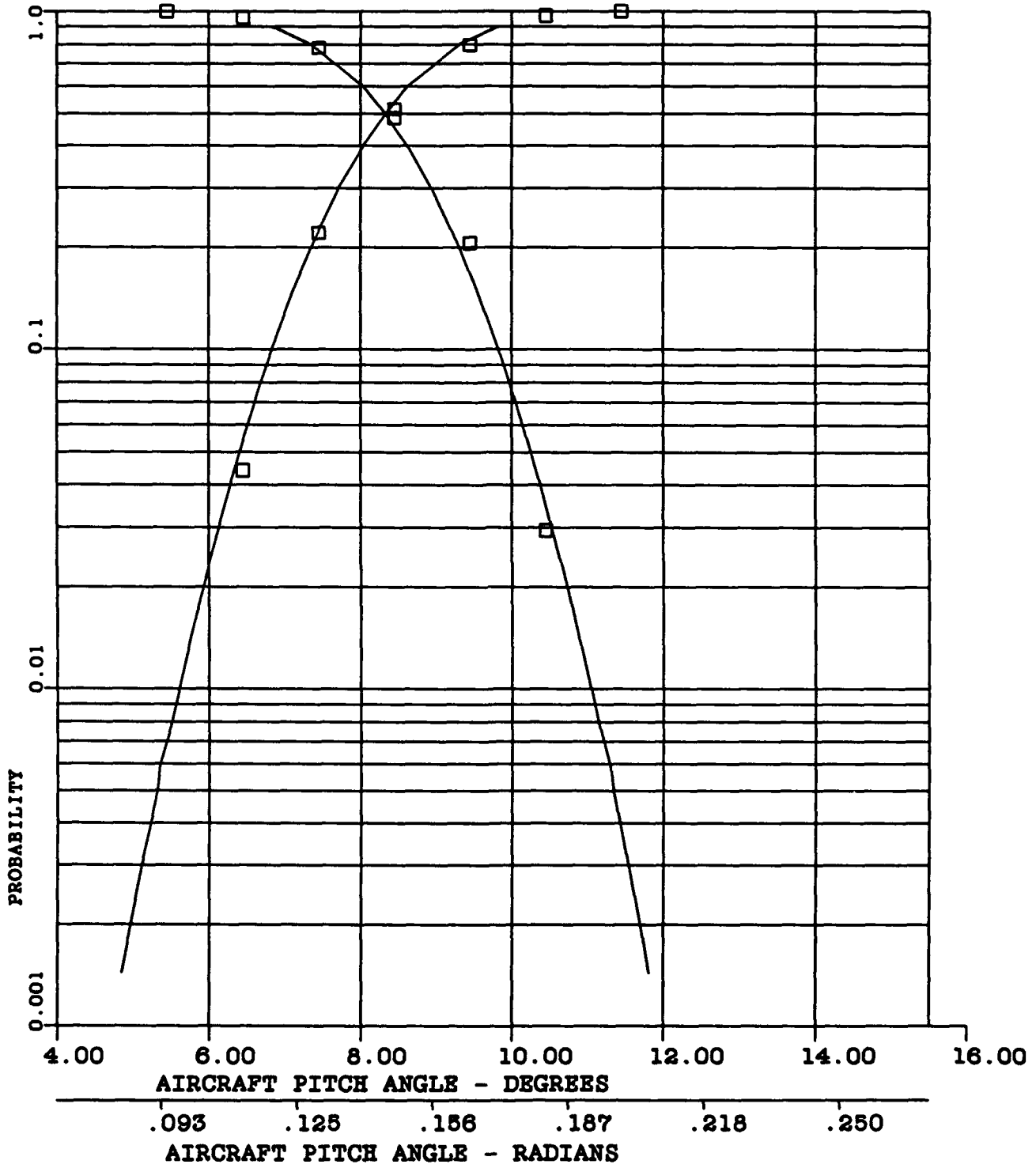


FIGURE F-24 PROBABILITY DISTRIBUTION OF AIRCRAFT PITCH ANGLE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-6 $\bar{X}$-8.63 DEGREES (.150 RADIANS) A3=-.17
S=1.15 DEGREES (.020 RADIANS) A4=1.43

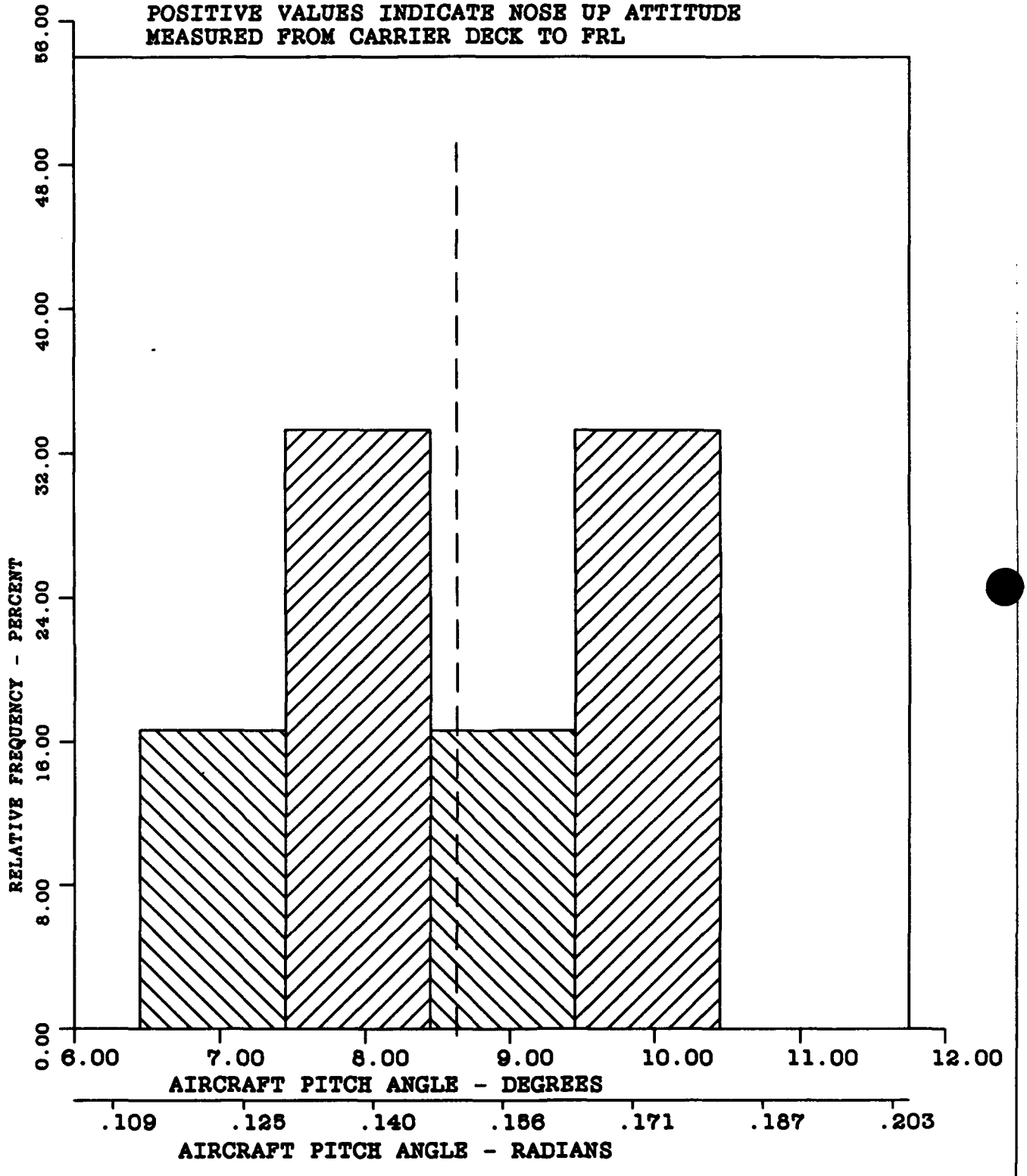


FIGURE F-25 FREQUENCY DISTRIBUTION OF AIRCRAFT PITCH ANGLE AT FREE FLIGHT

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-6 $\bar{X}$-8.63 DEGREES (.150 RADIANS) A3=-.17
S-1.15 DEGREES (.020 RADIANS) A4=1.43
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE NOSE UP ATTITUDE
MEASURED FROM CARRIER DECK TO FRL

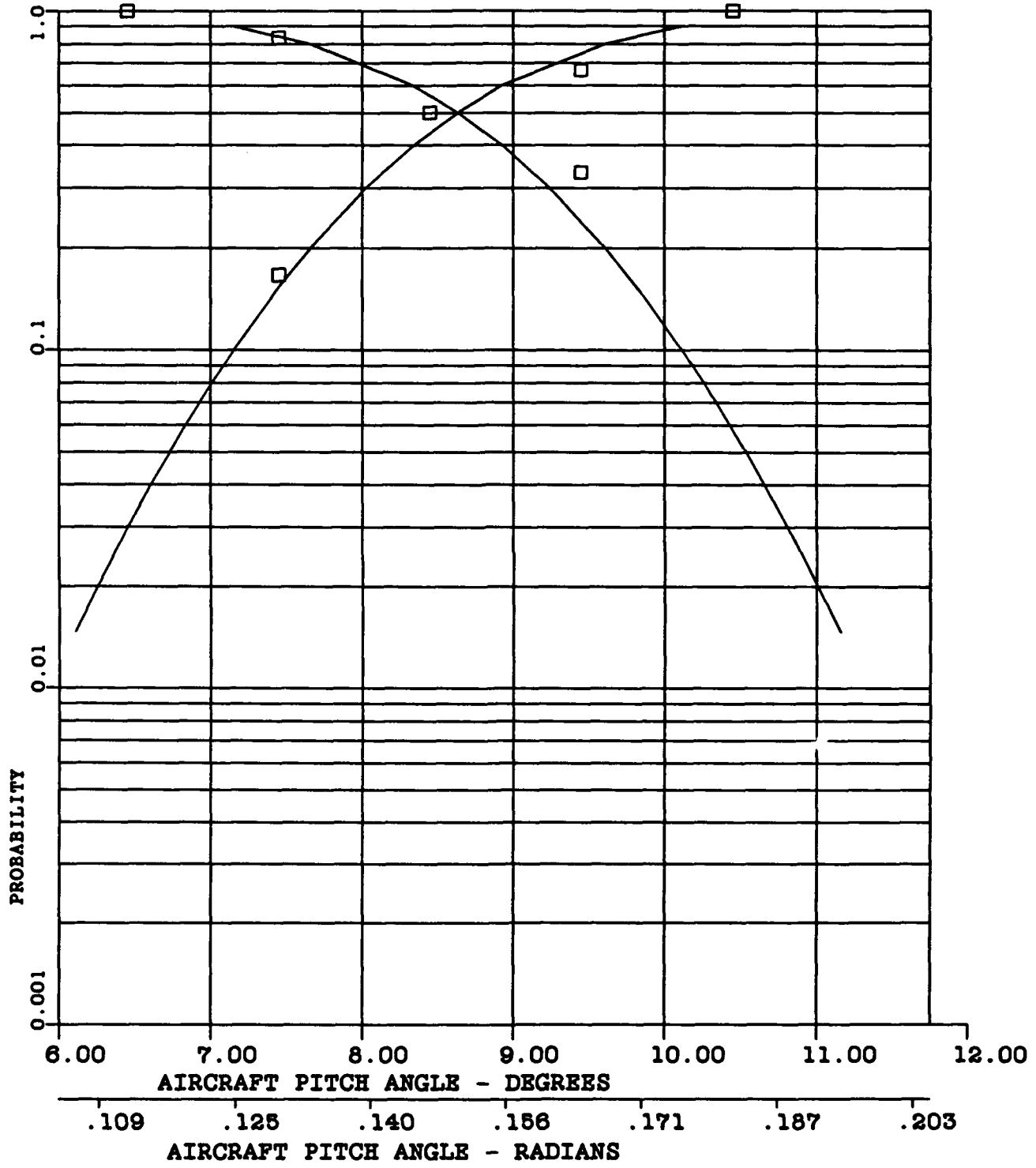


FIGURE F-26 PROBABILITY DISTRIBUTION OF AIRCRAFT PITCH ANGLE AT FREE FLIGHT

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=68 $\bar{X}$=.41 DEGREES (.007 RADIANS) A3=.85
S=2.17 DEGREES (.037 RADIANS) A4=4.10

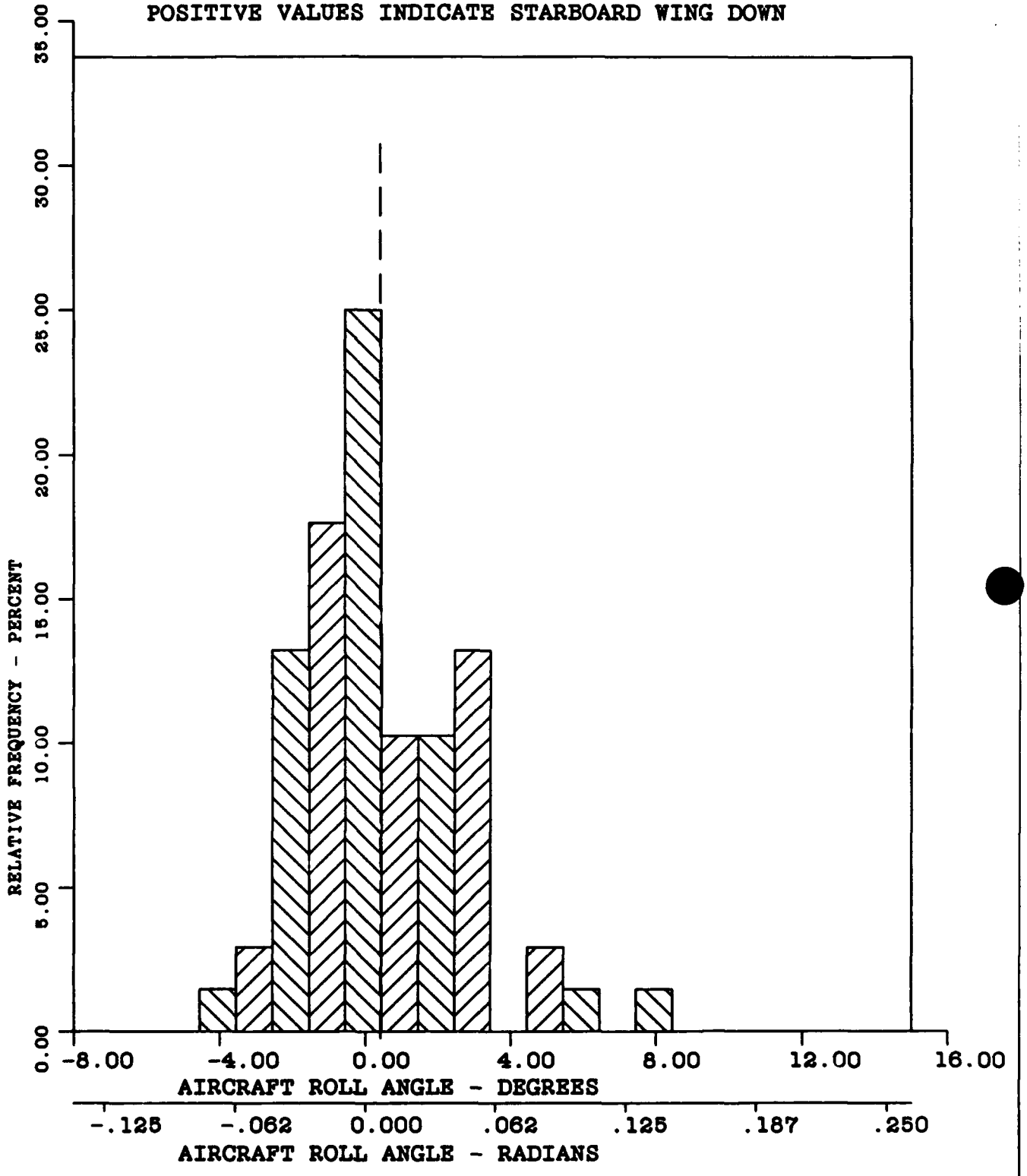


FIGURE F-27 FREQUENCY DISTRIBUTION OF AIRCRAFT ROLL ANGLE AT THE RAMP

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=68 $\bar{X}$=.41 DEGREES (.007 RADIANS) A3=.85
S=2.17 DEGREES (.037 RADIANS) A4=4.10
CURVE FITTED - PEARSON TYPE III
POSITIVE VALUES INDICATE STARBOARD WING DOWN

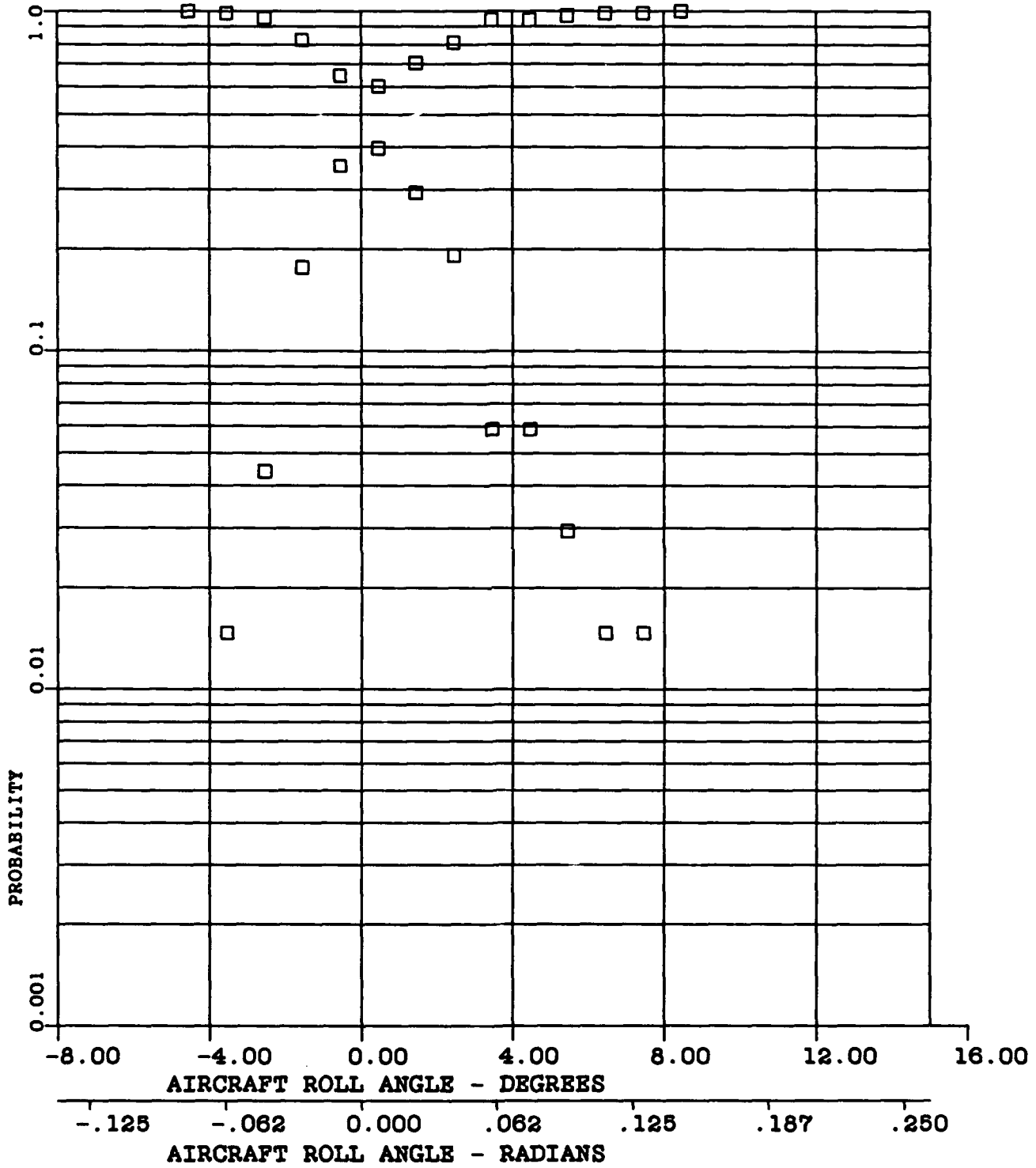


FIGURE F-28 PROBABILITY DISTRIBUTION OF AIRCRAFT ROLL ANGLE AT THE RAMP

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=68 $\bar{X}$=.22 DEGREES (.003 RADIANS) A3=1.28
S=1.78 DEGREES (.031 RADIANS) A4=6.25

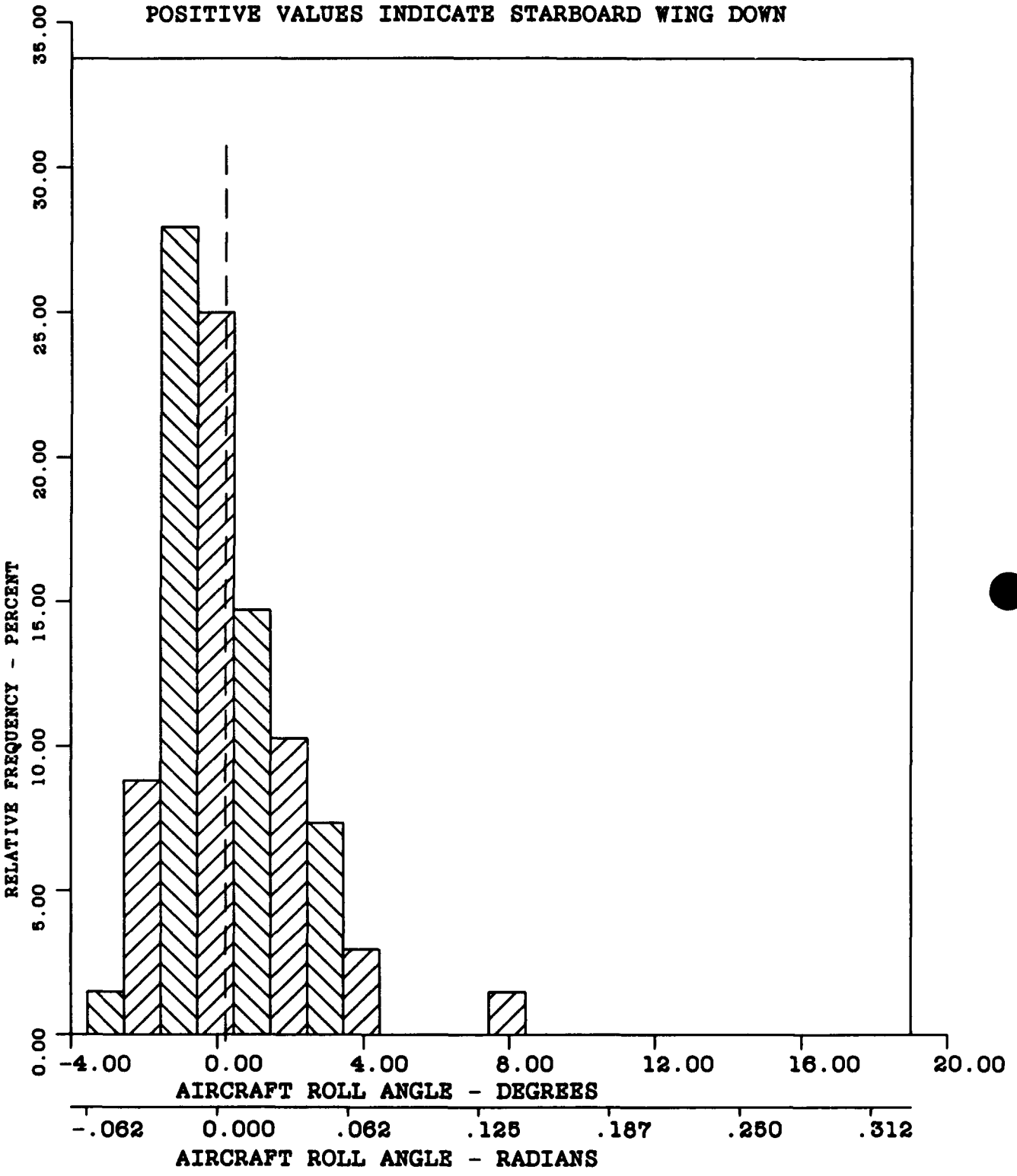


FIGURE F-29 FREQUENCY DISTRIBUTION OF AIRCRAFT ROLL ANGLE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-68 $\bar{X}$-.22 DEGREES (.003 RADIANS) A3-1.28
S-1.78 DEGREES (.031 RADIANS) A4-6.25
CURVE FITTED - PEARSON TYPE III
POSITIVE VALUES INDICATE STARBOARD WING DOWN

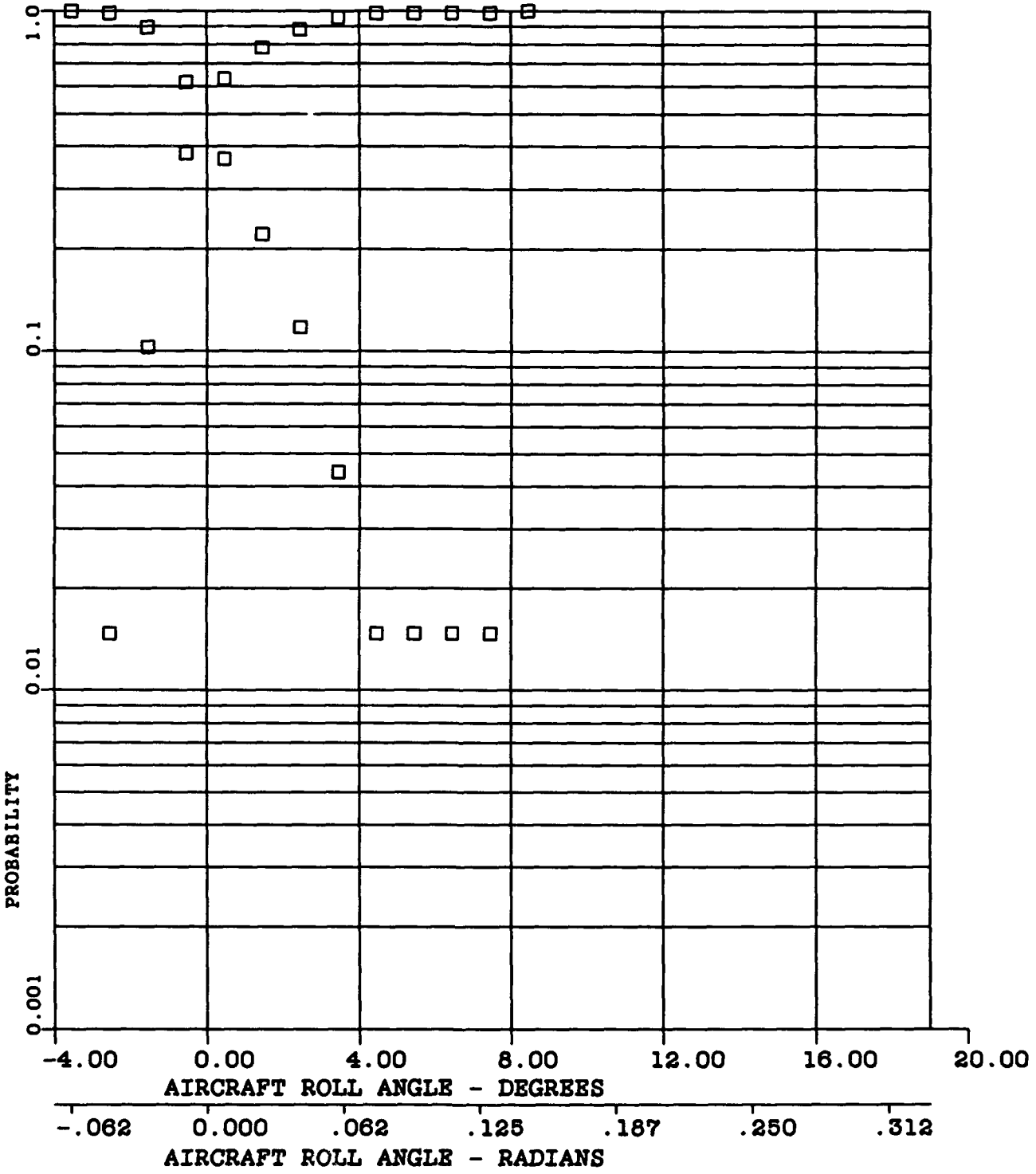


FIGURE F-30 PROBABILITY DISTRIBUTION OF AIRCRAFT ROLL ANGLE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=6 $\bar{X}$=.33 DEGREES (.005 RADIANS) A3=-.11
S=1.58 DEGREES (.027 RADIANS) A4=1.82

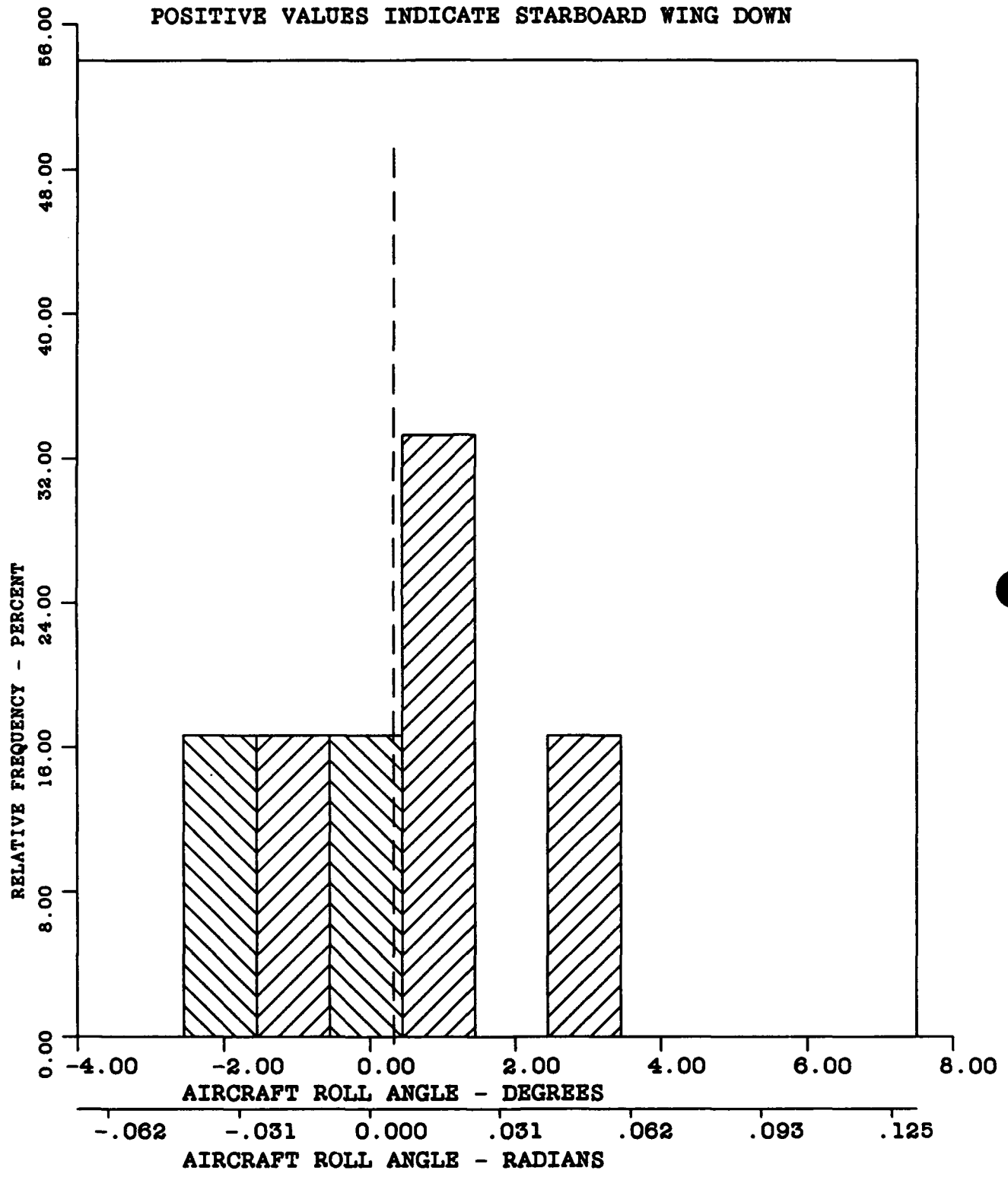


FIGURE F-31 FREQUENCY DISTRIBUTION OF AIRCRAFT ROLL ANGLE AT FREE FLIGHT

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-6 $\bar{X}$=-.33 DEGREES (.005 RADIANS) A3=-.11
S=1.58 DEGREES (.027 RADIANS) A4=1.82
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE STARBOARD WING DOWN

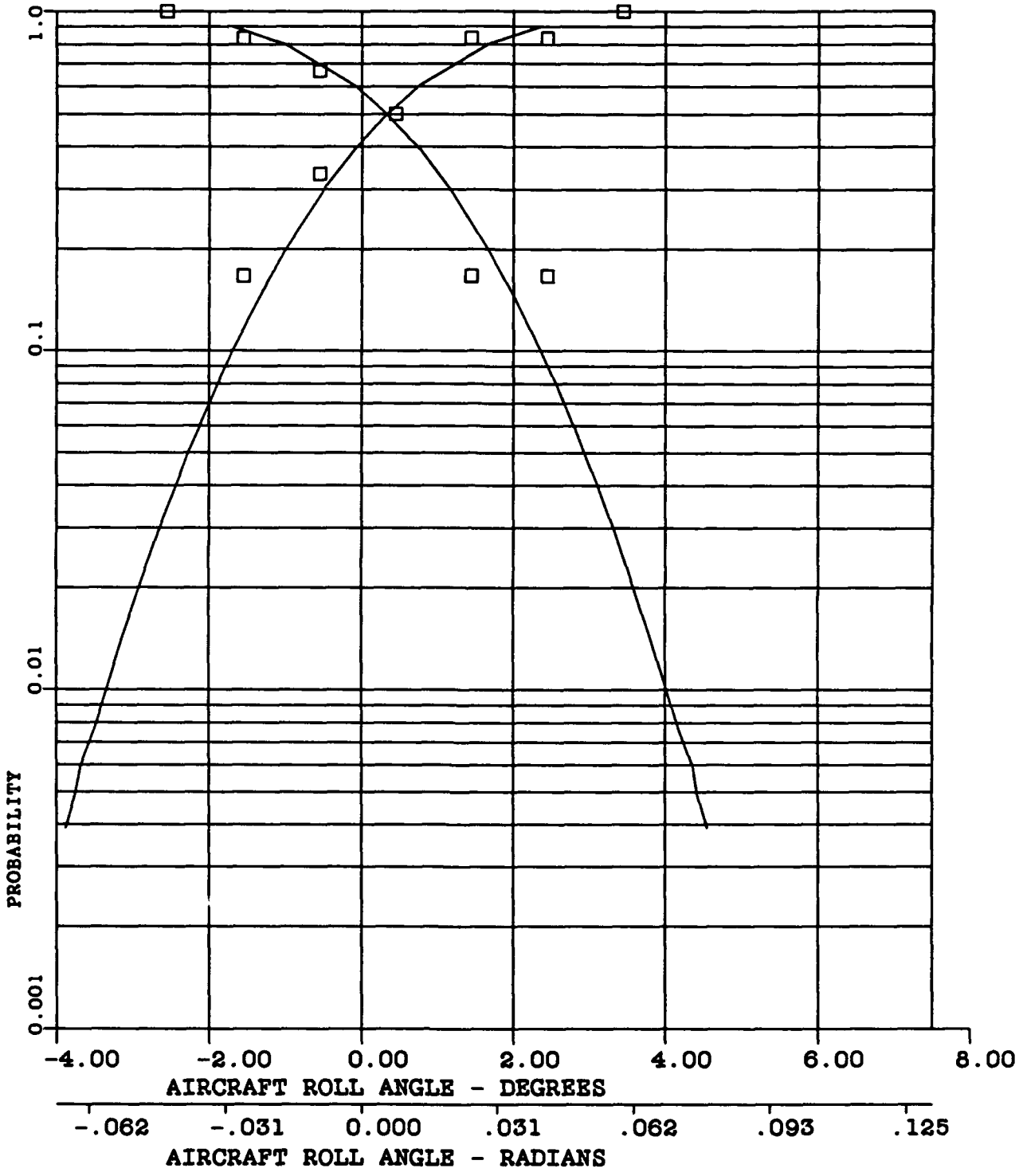


FIGURE F-32 PROBABILITY DISTRIBUTION OF AIRCRAFT ROLL ANGLE AT FREE FLIGHT

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-68 $\bar{X}$-267.85 FEET (81.64 METRES) A3=-.20
S-23.26 FEET (7.09 METRES) A4-3.53

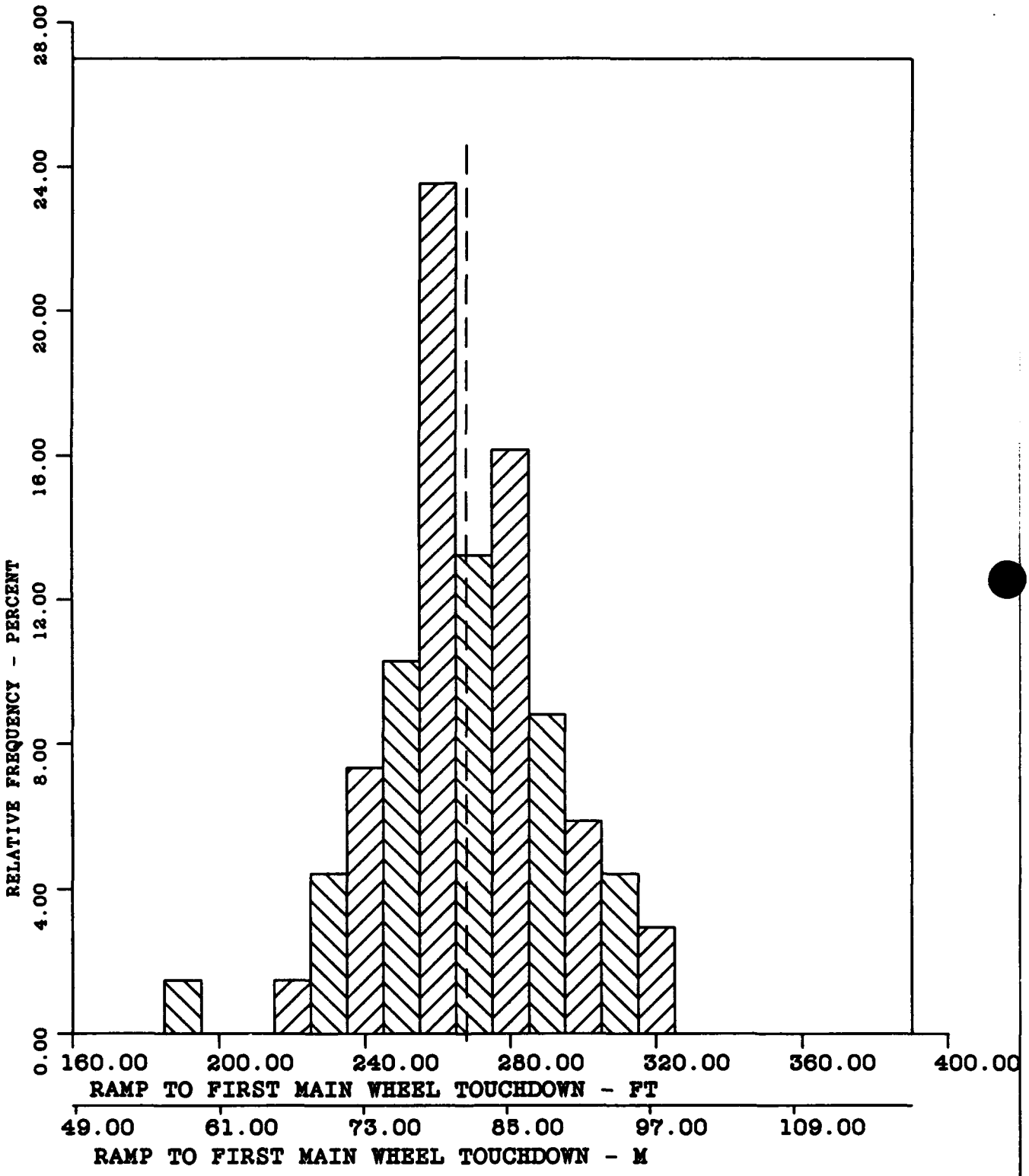


FIGURE F-33 FREQUENCY DISTRIBUTION OF DISTANCE FROM RAMP TO FIRST MAIN WHEEL TOUCHDOWN POINT

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-68 $\bar{X}$-267.85 FEET (81.64 METRES) A3=-.20
S-23.26 FEET (7.09 METRES) A4=3.53
CURVE FITTED - NORMAL

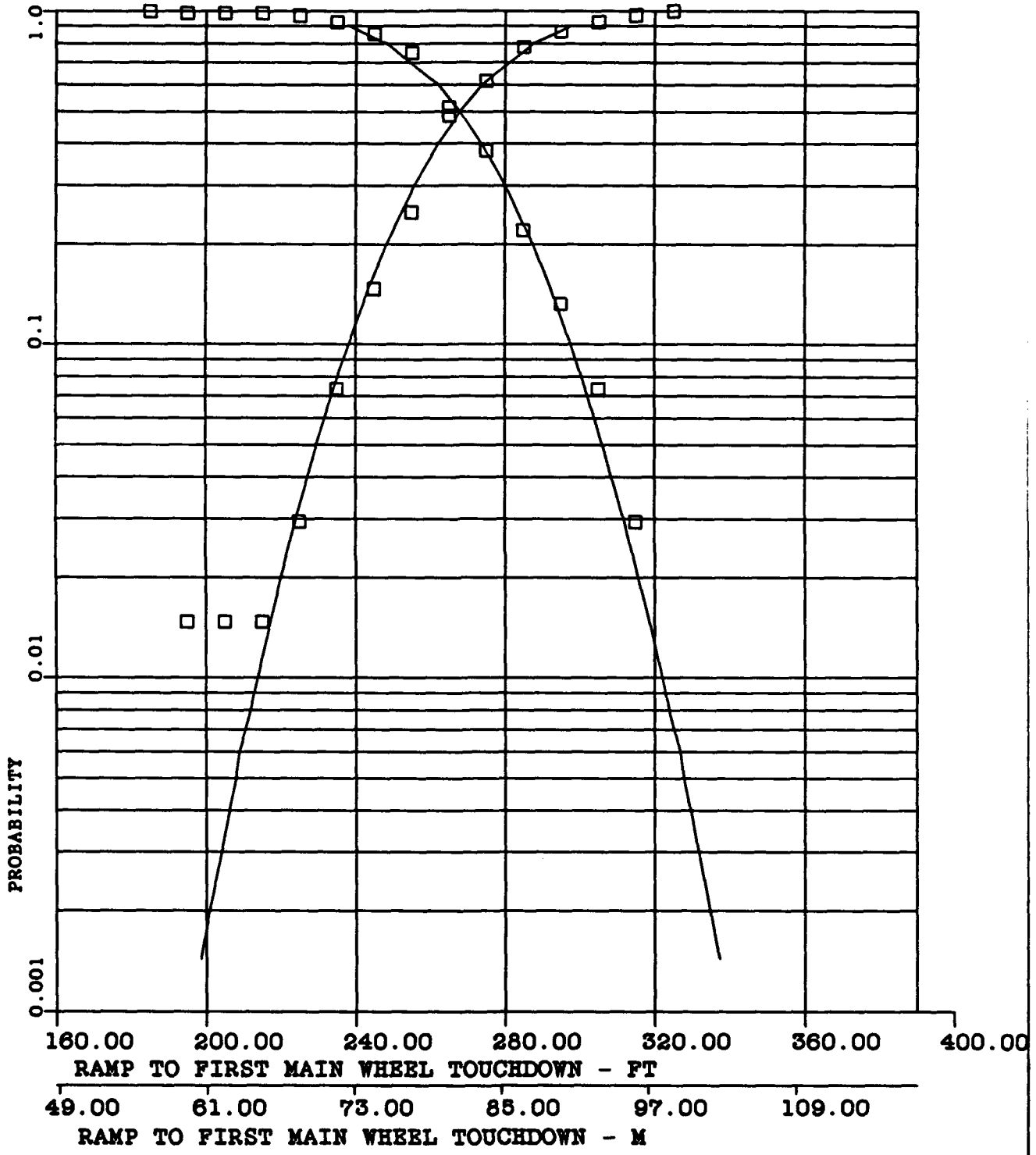


FIGURE F-34 PROBABILITY DISTRIBUTION OF DISTANCE FROM RAMP TO FIRST MAIN WHEEL TOUCHDOWN POINT

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-68 $\bar{X}$=-10.79 FEET (-3.29 METRES) A3=.64
S=2.87 FEET (.87 METRES) A4=3.76

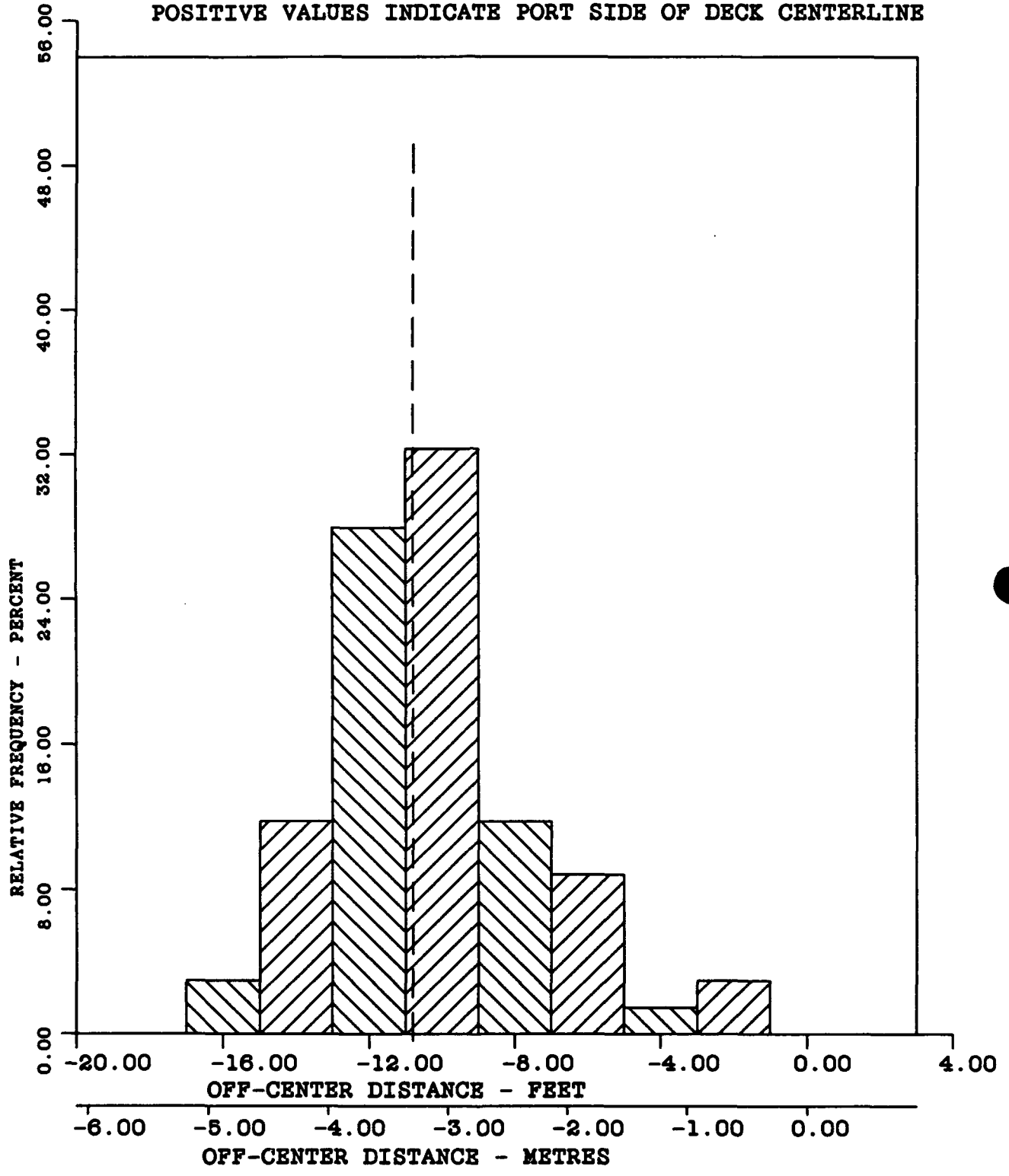


FIGURE F-35 FREQUENCY DISTRIBUTION OF AIRCRAFT CENTERLINE OFF-CNTR DISTANCE AT 1ST MAIN WHEEL TOUCHDOWN

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N=68 $\bar{X}$=-10.79 FEET (-3.29 METRES) A3=.64
S=2.87 FEET (.87 METRES) A4=3.76
CURVE FITTED - PEARSON TYPE III
POSITIVE VALUES INDICATE PORT SIDE OF DECK CENTERLINE

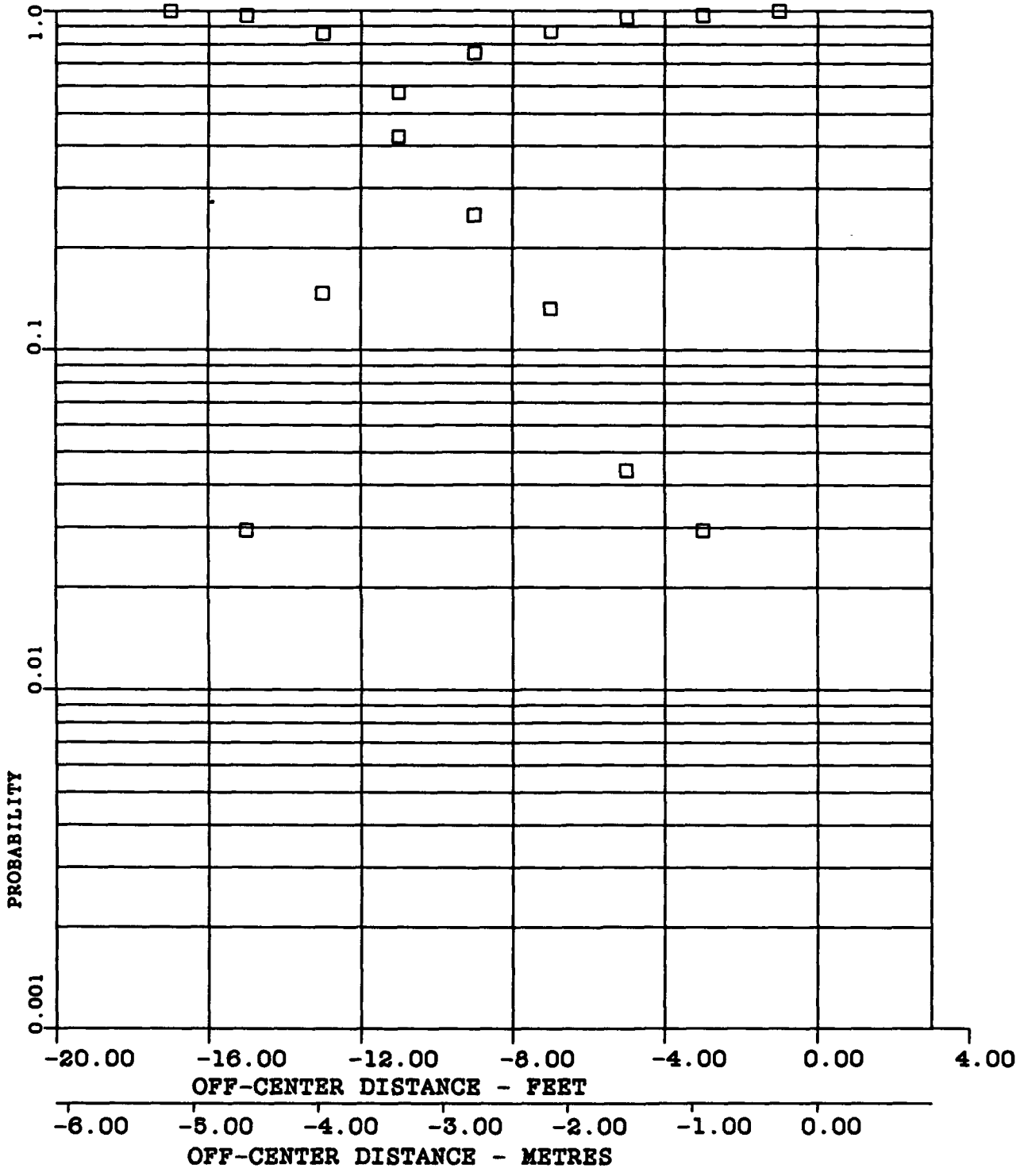


FIGURE F-36 PROBABILITY DISTRIBUTION OF AIRCRAFT OFF-CENTER DISTANCE AT 1ST MAIN WHEEL TOUCHDOWN

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N=54 $\bar{X}$=3.27 A3=-.40
S=.67 A4=2.17

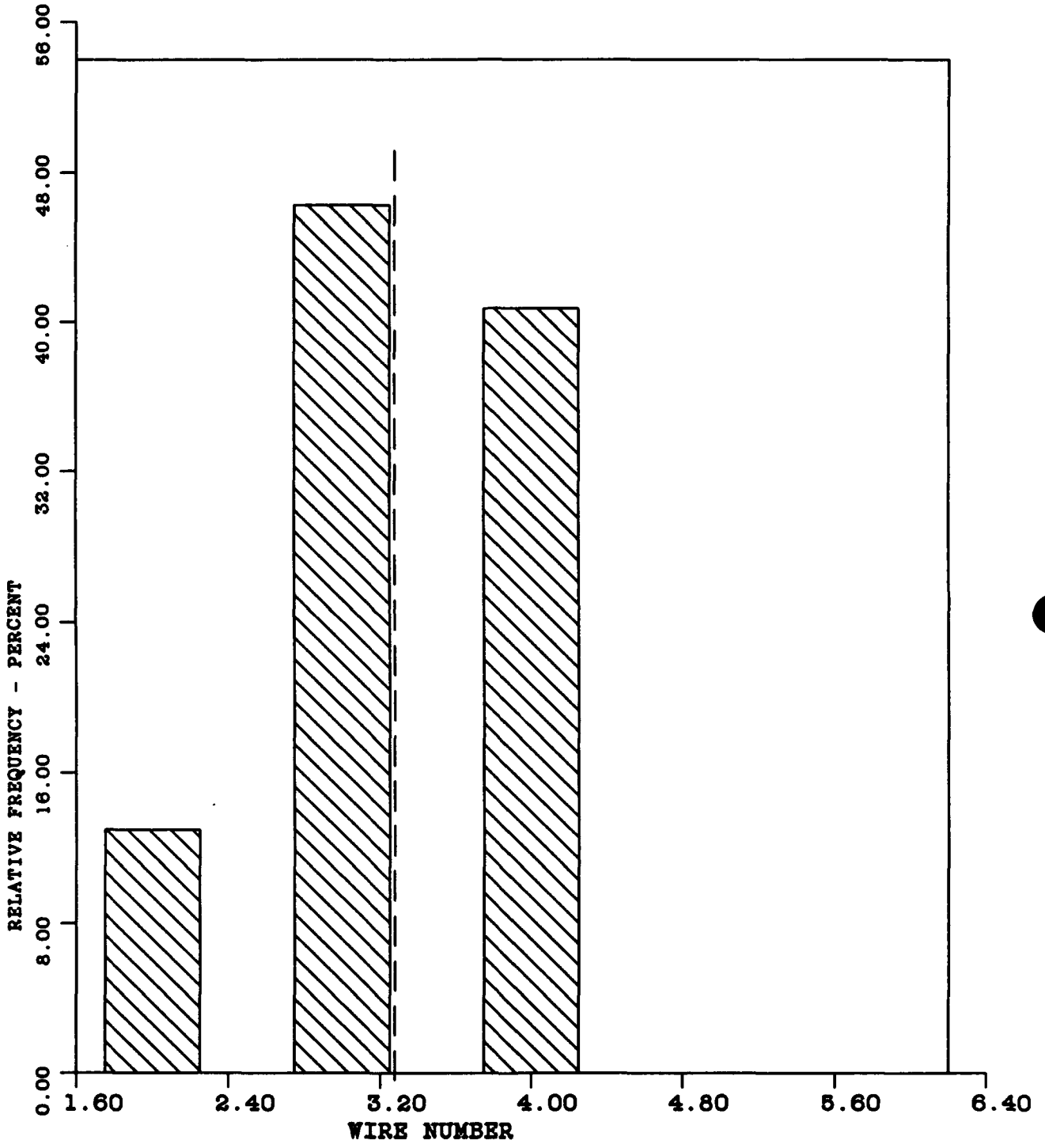


FIGURE F-37 FREQUENCY DISTRIBUTION OF ARRESTMENT WIRE NUMBER ENGAGED

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N=68 $\bar{X}$=3.15 DEGREES (.055 RADIANS) A3=-.44
S=.49 DEGREES (.008 RADIANS) A4=2.90

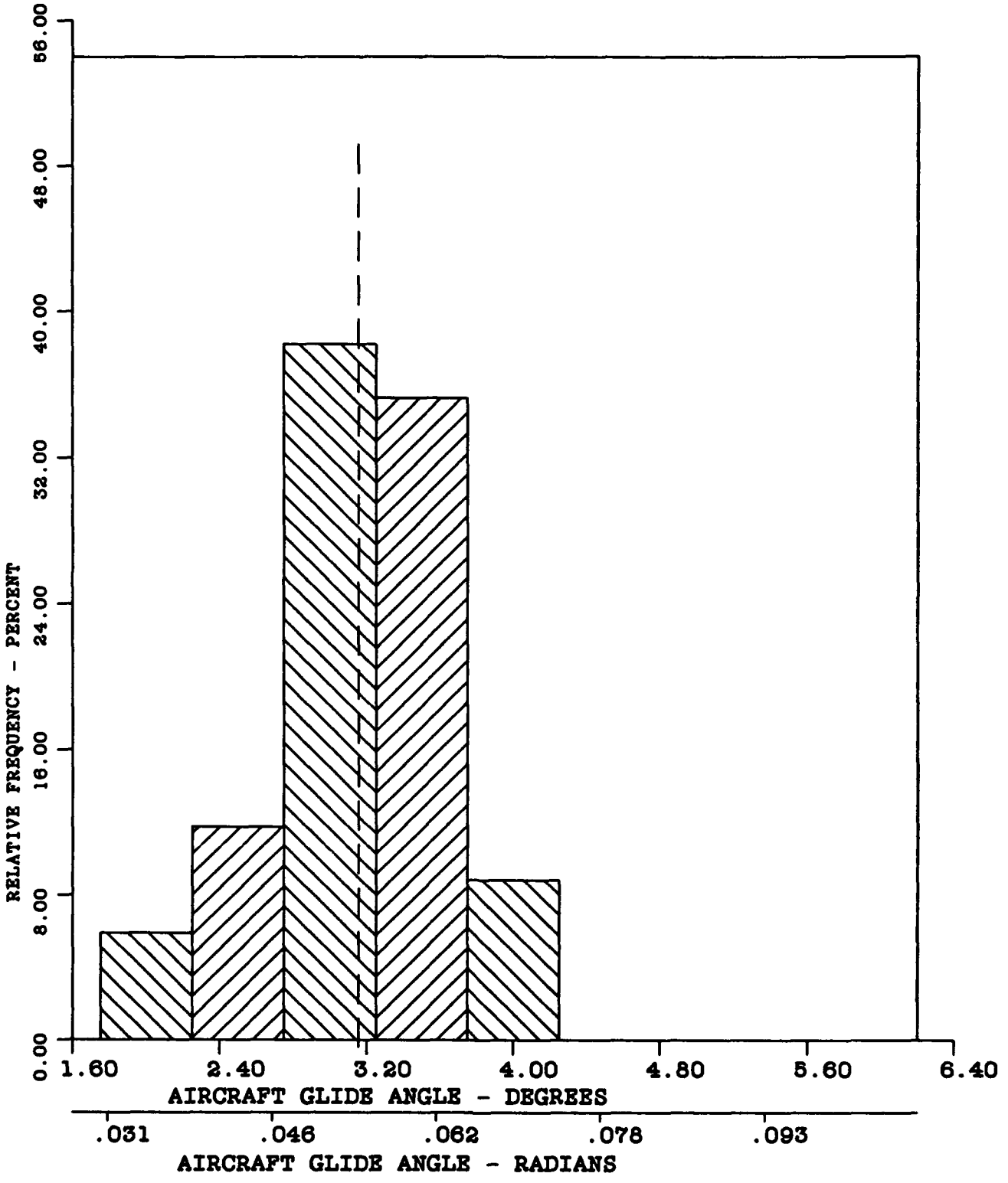


FIGURE F-38 FREQUENCY DISTRIBUTION OF AIRCRAFT GLIDE ANGLE - INSTANTANEOUS METHOD

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-68 $\bar{X}$-3.29 DEGREES (.057 RADIANS) A3=.28
S=.44 DEGREES (.007 RADIANS) A4-3.01

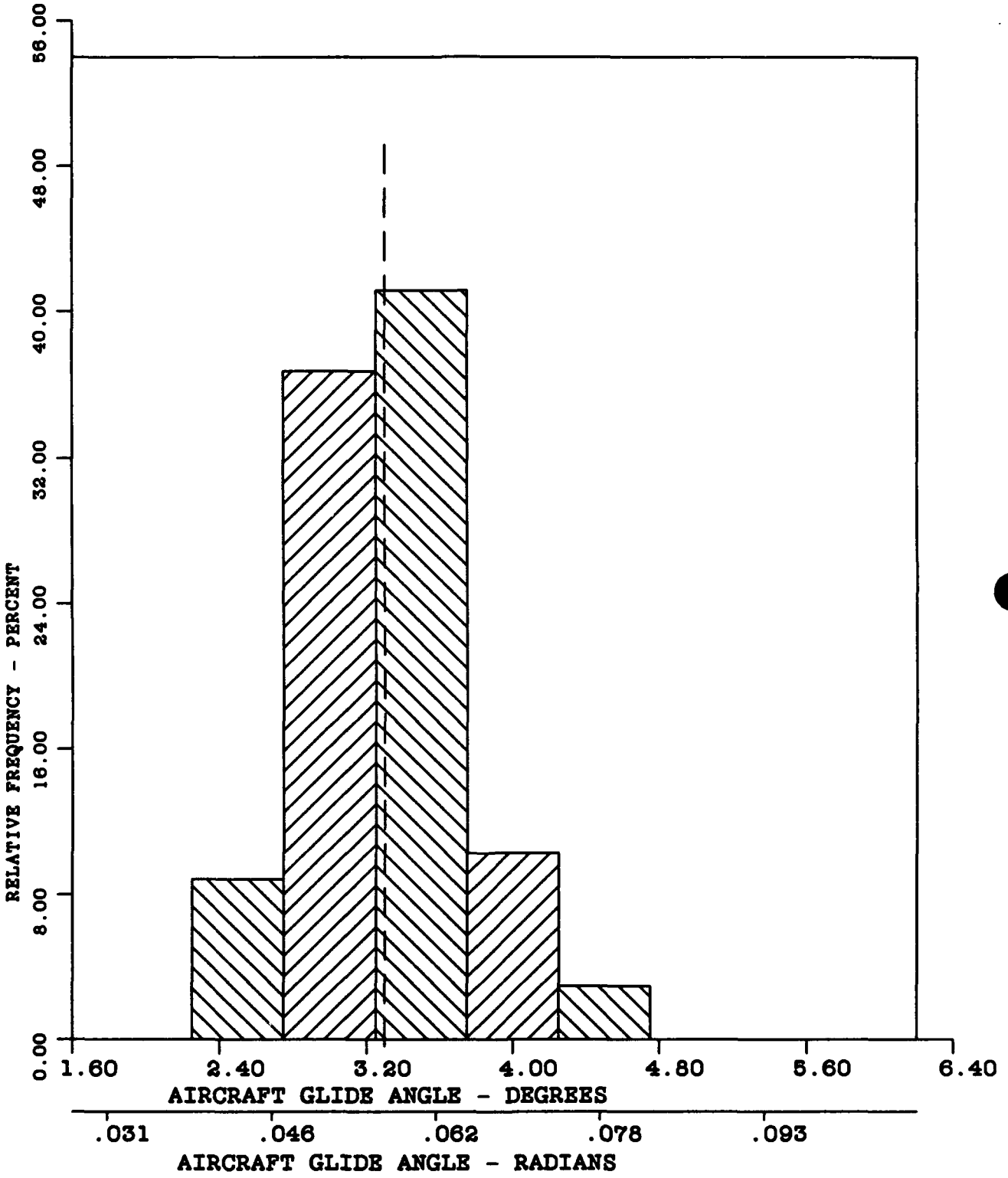


FIGURE F-39 FREQUENCY DISTRIBUTION OF AIRCRAFT GLIDE ANGLE - GEOMETRIC METHOD

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=68 $\bar{X}$=11.32 FEET (3.45 METRES) A3=.84
S=2.55 FEET (.77 METRES) A4=4.19

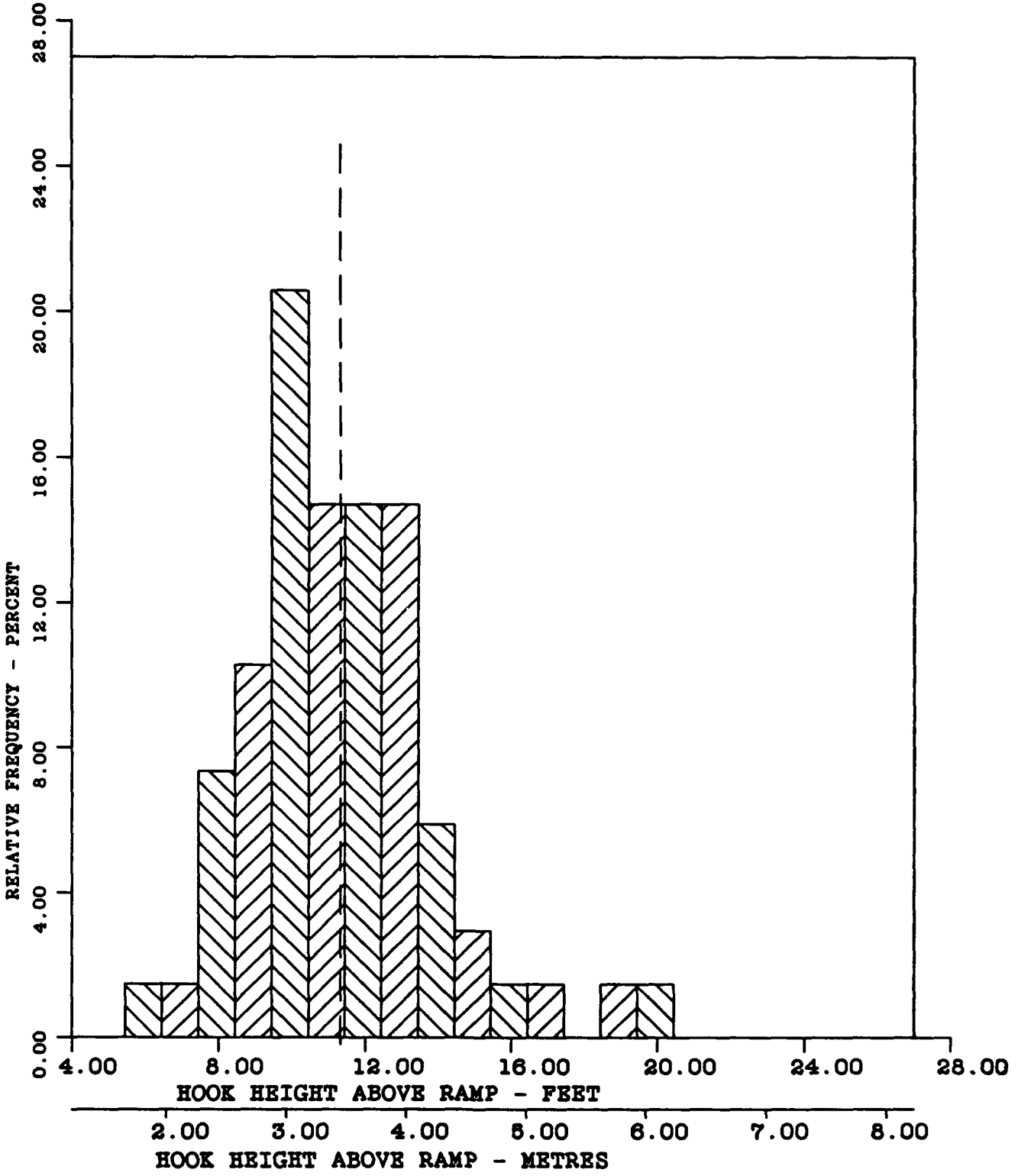


FIGURE F-40 FREQUENCY DISTRIBUTION OF AIRCRAFT ARRESTMENT HOOK HEIGHT ABOVE CARRIER RAMP

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-68 $\bar{X}$-11.32 FEET (3.45 METRES) A3=.84
S-2.55 FEET (.77 METRES) A4=4.19
CURVE FITTED - PEARSON TYPE III

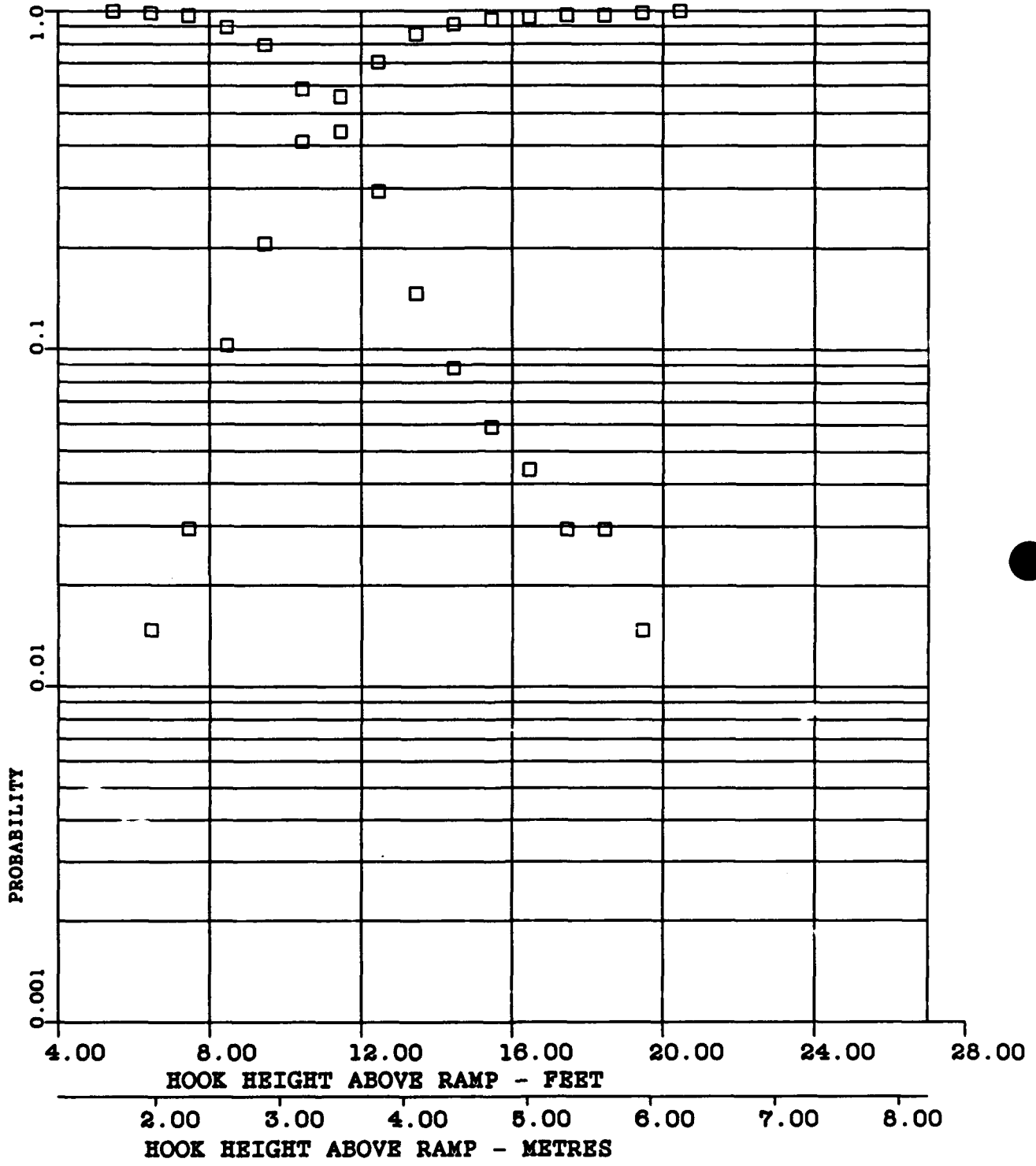


FIGURE F-41 PROBABILITY DISTRIBUTION OF ARRESTMENT HOOK HEIGHT ABOVE CARRIER RAMP

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-68 $\bar{X}$-102.31 KNOTS (52.63 METRES/SEC) A3=.01
S-3.91 KNOTS (2.01 METRES/SEC) A4-2.58

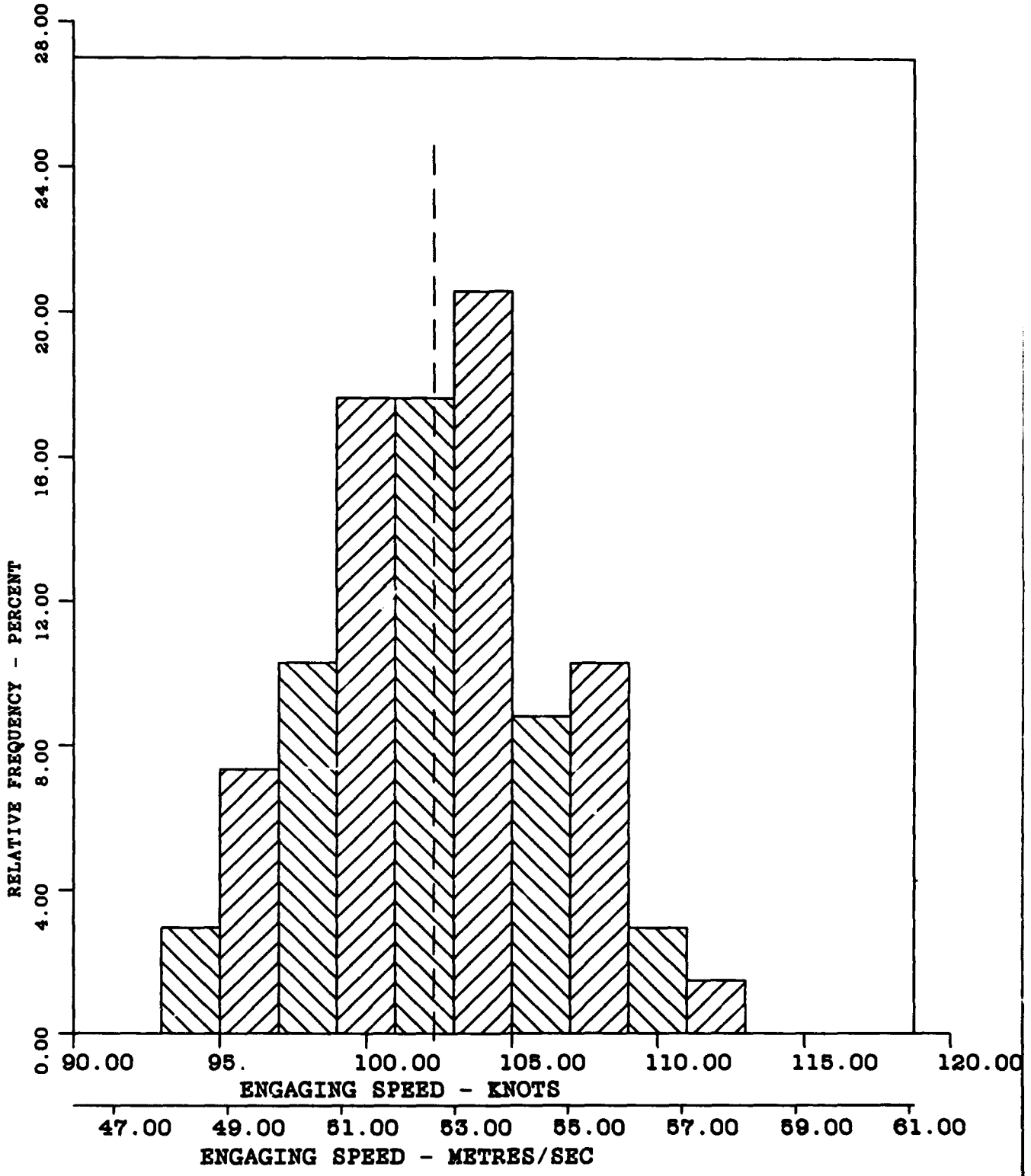


FIGURE F-42 FREQUENCY DISTRIBUTION OF AIRCRAFT ENGAGING SPEED AT FIRST MAIN WHEEL TOUCHDOWN

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-68 $\bar{X}$-102.31 KNOTS (52.63 METRES/SEC) A3=.01
S-3.91 KNOTS (2.01 METRES/SEC) A4-2.58
CURVE FITTED - NORMAL

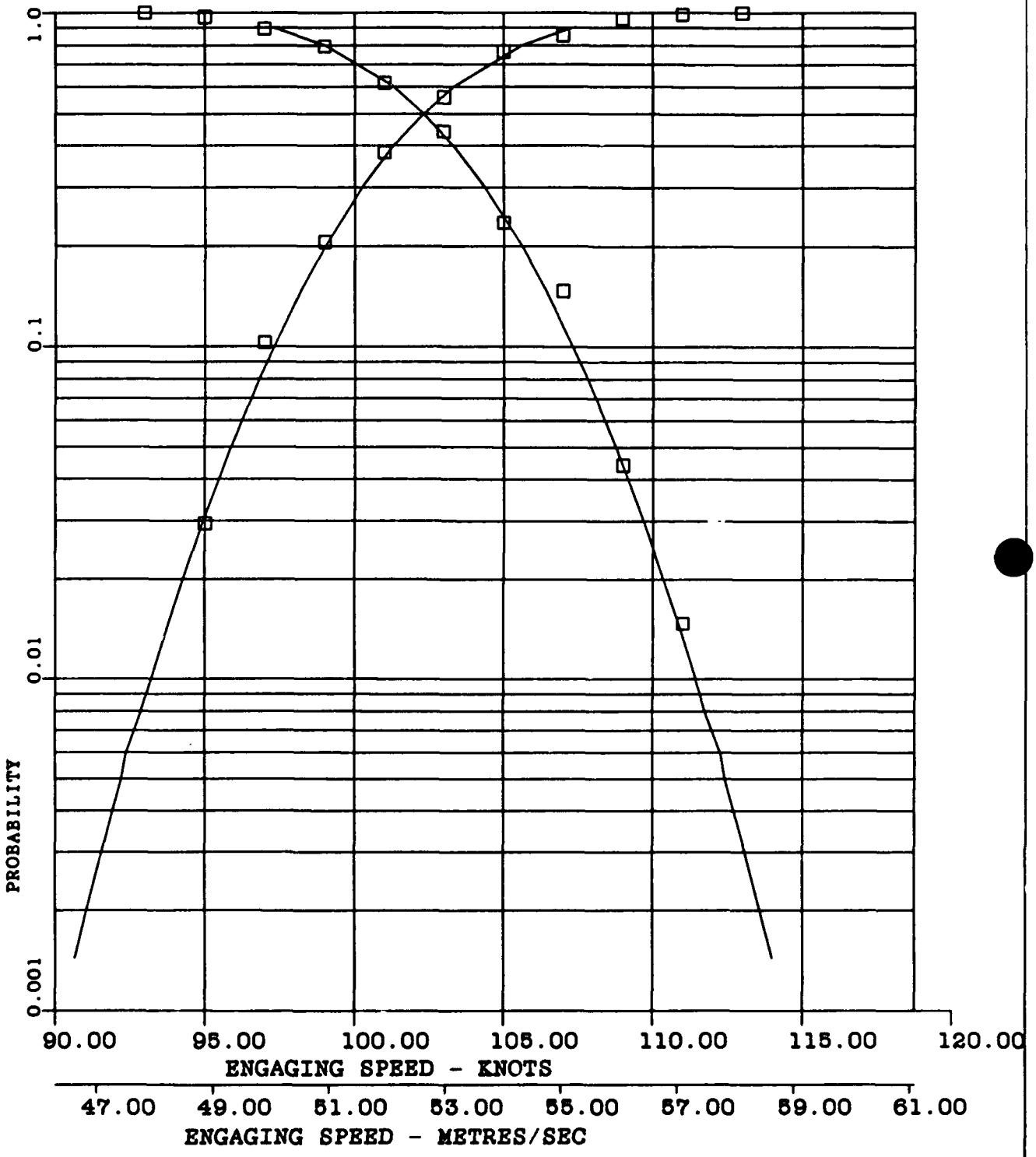


FIGURE F-43 PROBABILITY DISTRIBUTION OF ENGAGING SPEED AT FIRST MAIN WHEEL TOUCHDOWN

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-68 $\bar{X}$-108.52 KNOTS (55.82 METRES/SEC) A3=-.17
S-1.79 KNOTS (.92 METRES/SEC) A4=2.16

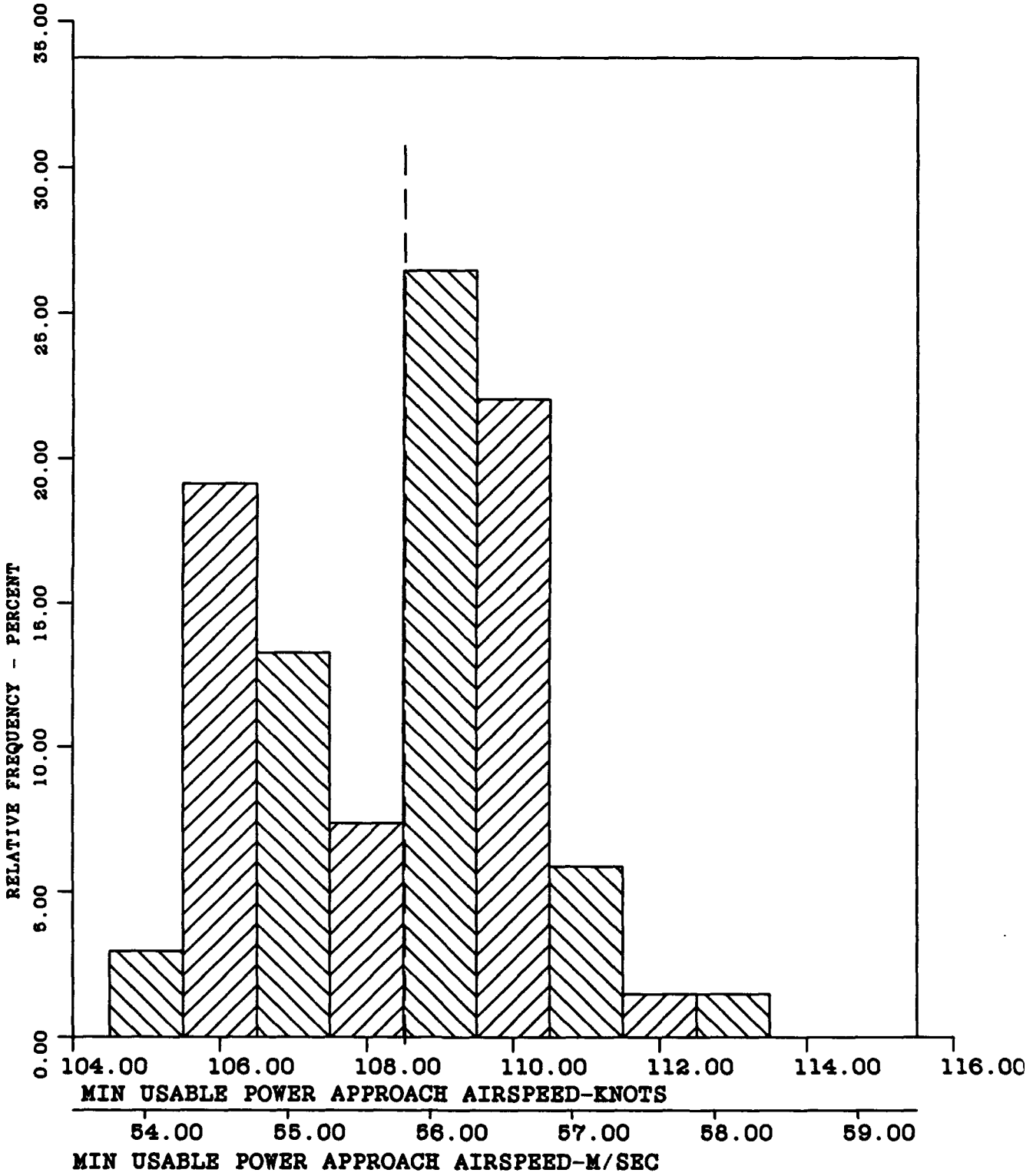


FIGURE F-44 FREQUENCY DISTRIBUTION OF MINIMUM USABLE POWER APPROACH AIRSPEED

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=68 $\bar{X}$=1.18 A3=-.20
S=.03 A4=2.97

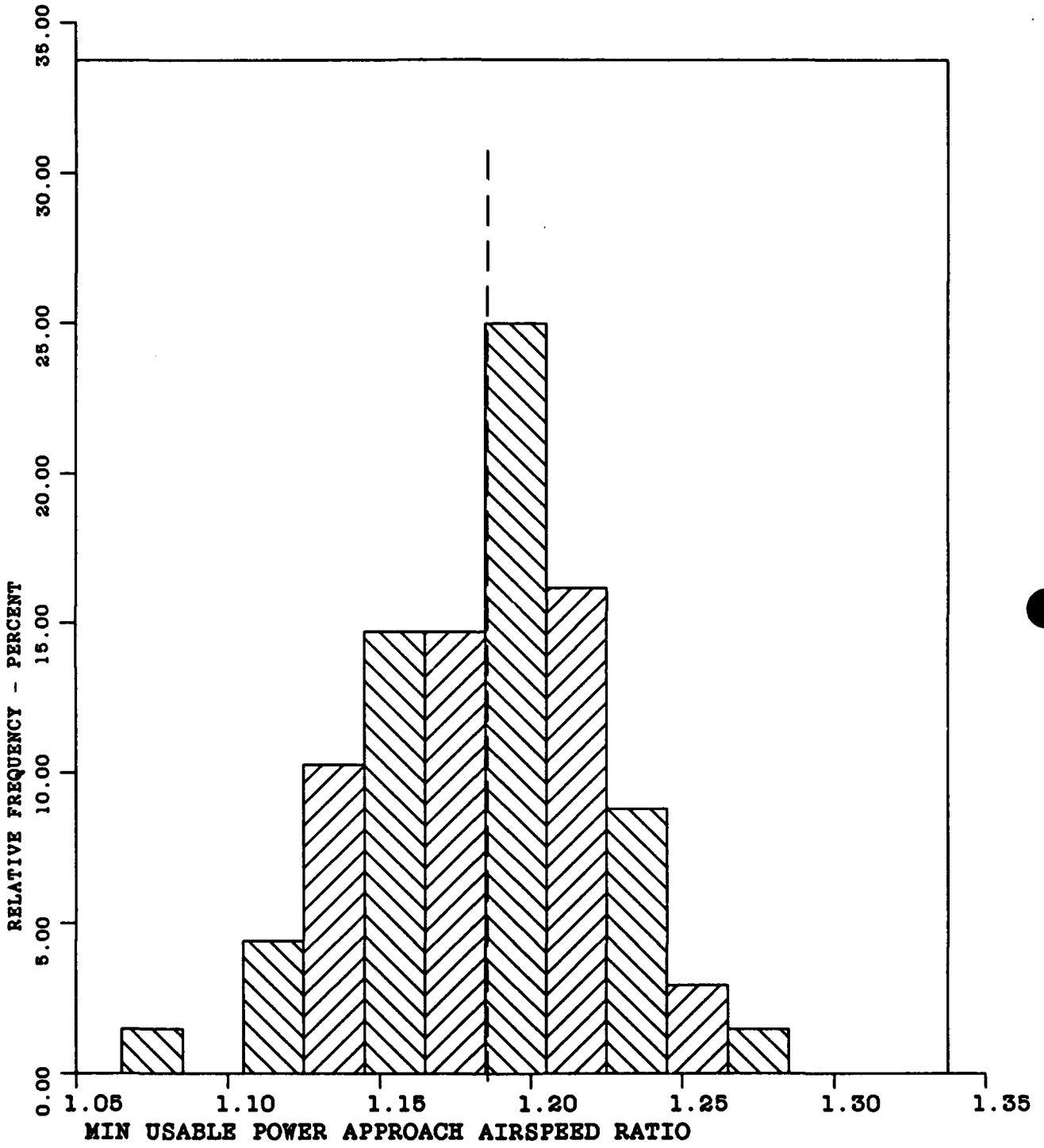


FIGURE F-45 FREQUENCY DISTRIBUTION OF MINIMUM USABLE POWER APPROACH AIRSPEED RATIO - FILM

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-51 $\bar{X}$=-.39 DEGREES (-.006 RADIANS) A3=.99
S=.63 DEGREES (.011 RADIANS) A4=8.12

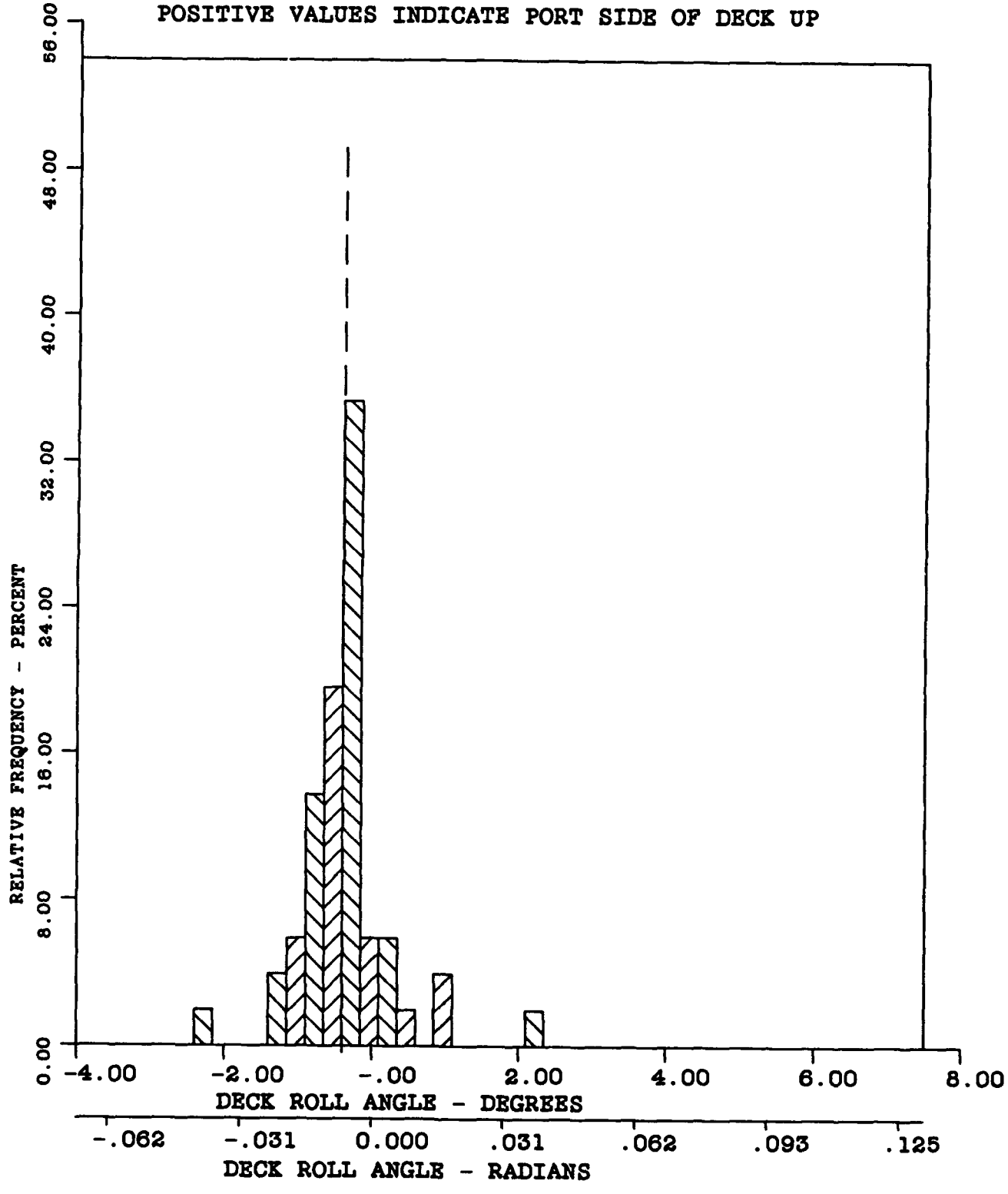


FIGURE F-46 FREQUENCY DISTRIBUTION OF CARRIER DECK ROLL MOTION

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=51 $\bar{X}$=-.39 DEGREES (-.006 RADIANS) A3=.99
S=.63 DEGREES (.011 RADIANS) A4=8.12
CURVE FITTED - PEARSON TYPE III
POSITIVE VALUES INDICATE PORT SIDE OF DECK UP

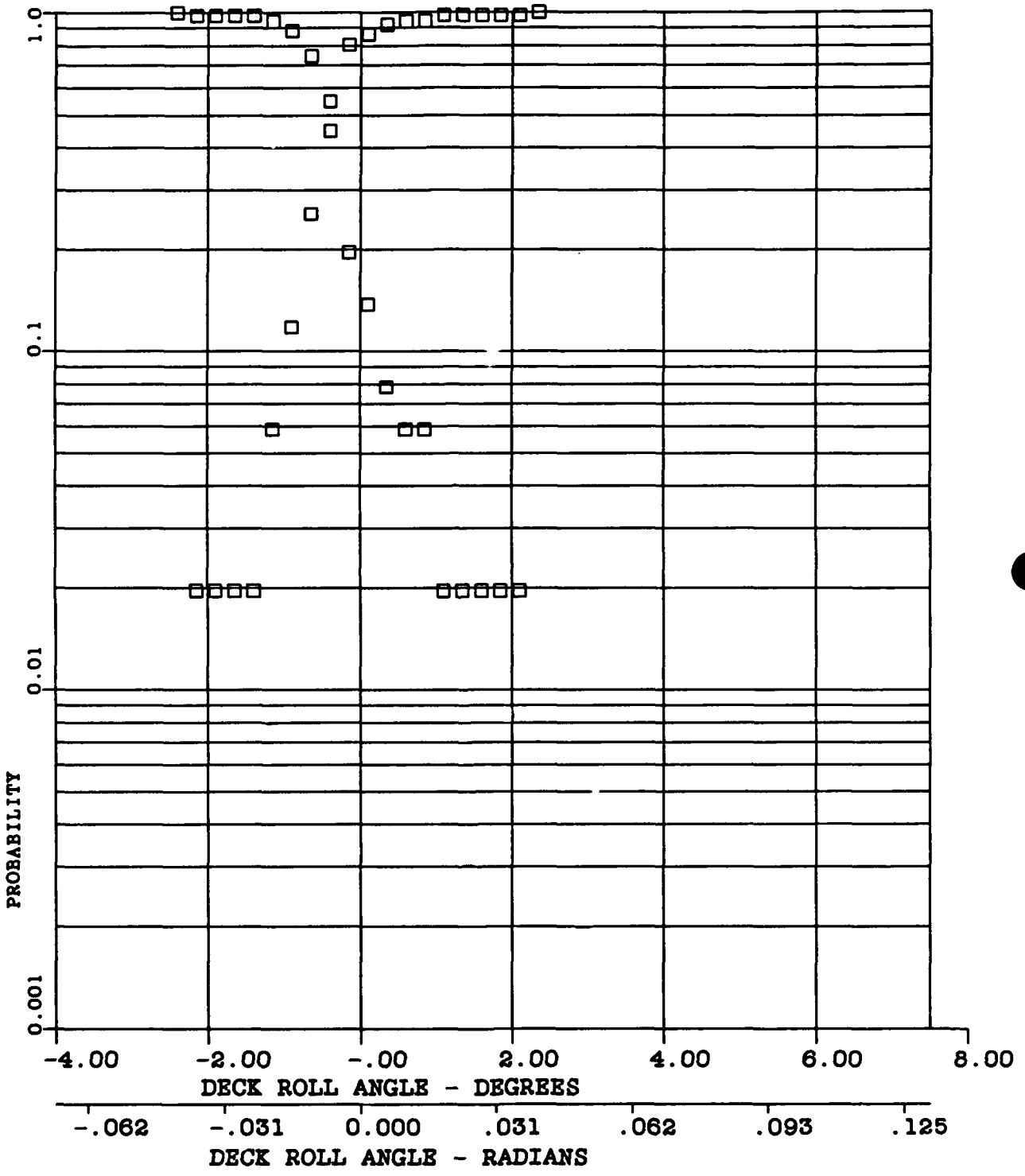


FIGURE F-47 PROBABILITY DISTRIBUTION OF CARRIER DECK ROLL MOTION

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-51 $\bar{X}$=-.15 DEGREES (-.002 RADIANS) A3=-.15
S=.21 DEGREES (.003 RADIANS) A4=3.91

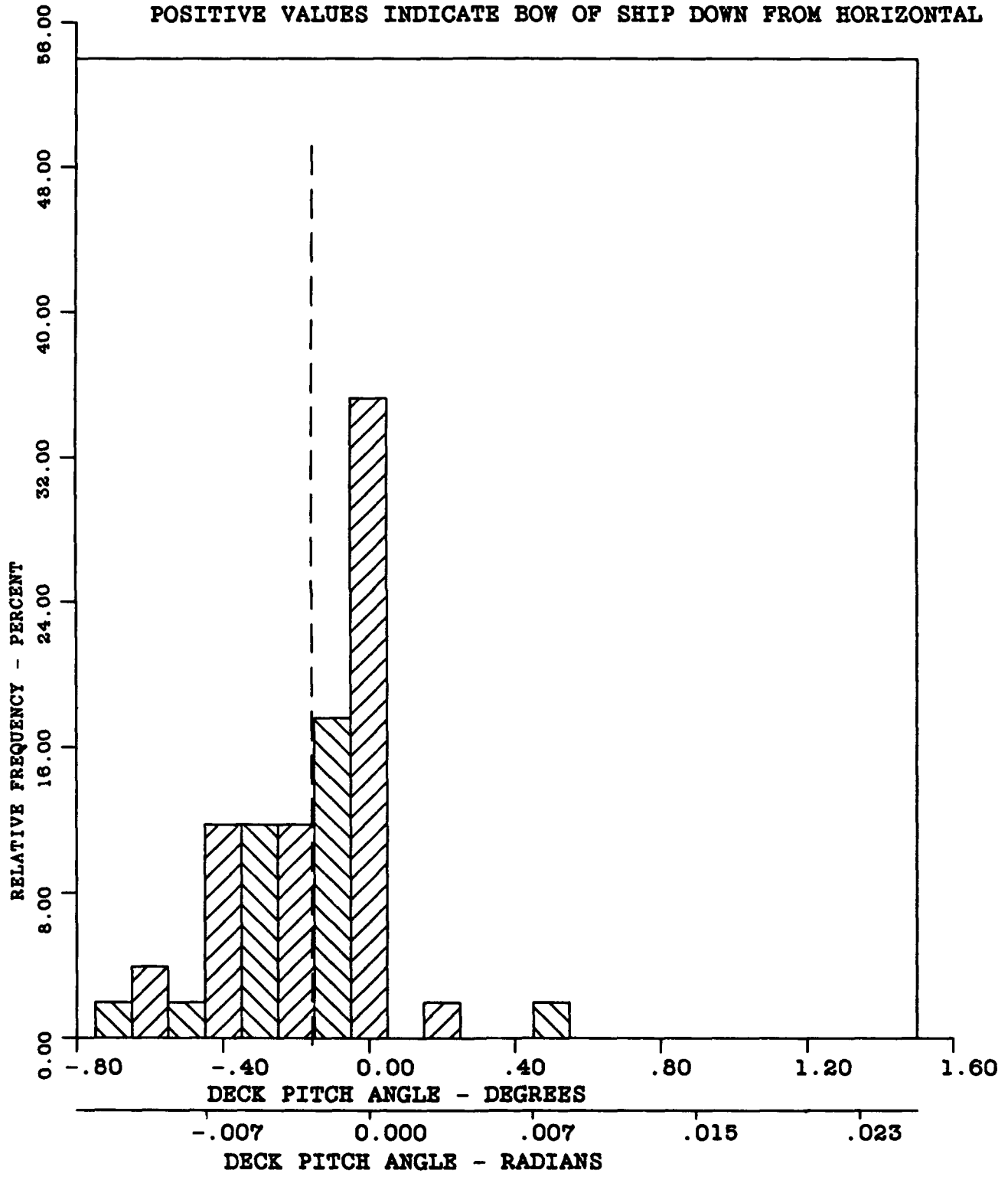


FIGURE F-48 FREQUENCY DISTRIBUTION OF CARRIER DECK PITCH MOTION

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=51 $\bar{X}$=-.15 DEGREES (-.002 RADIANS) A3=-.15
S=.21 DEGREES (.003 RADIANS) A4=3.91
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE BOW OF SHIP DOWN FROM HORIZONTAL

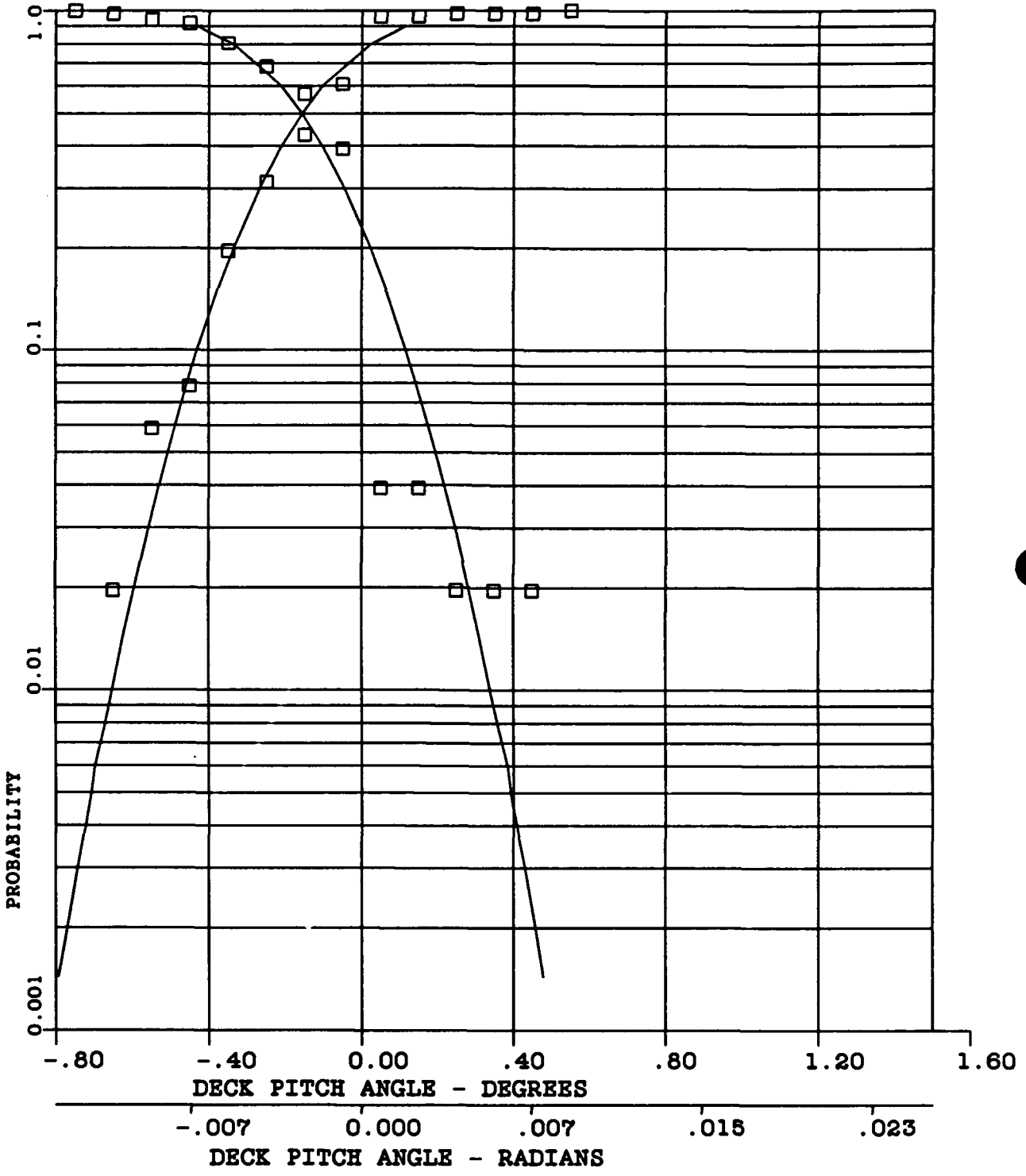


FIGURE F-49 PROBABILITY DISTRIBUTION OF CARRIER DECK PITCH MOTION

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-68 $\bar{X}$-32722.16 POUNDS (14842.77 KILOGRAMS) A3=-.14
S-1080.83 POUNDS (490.26 KILOGRAMS) A4-2.17

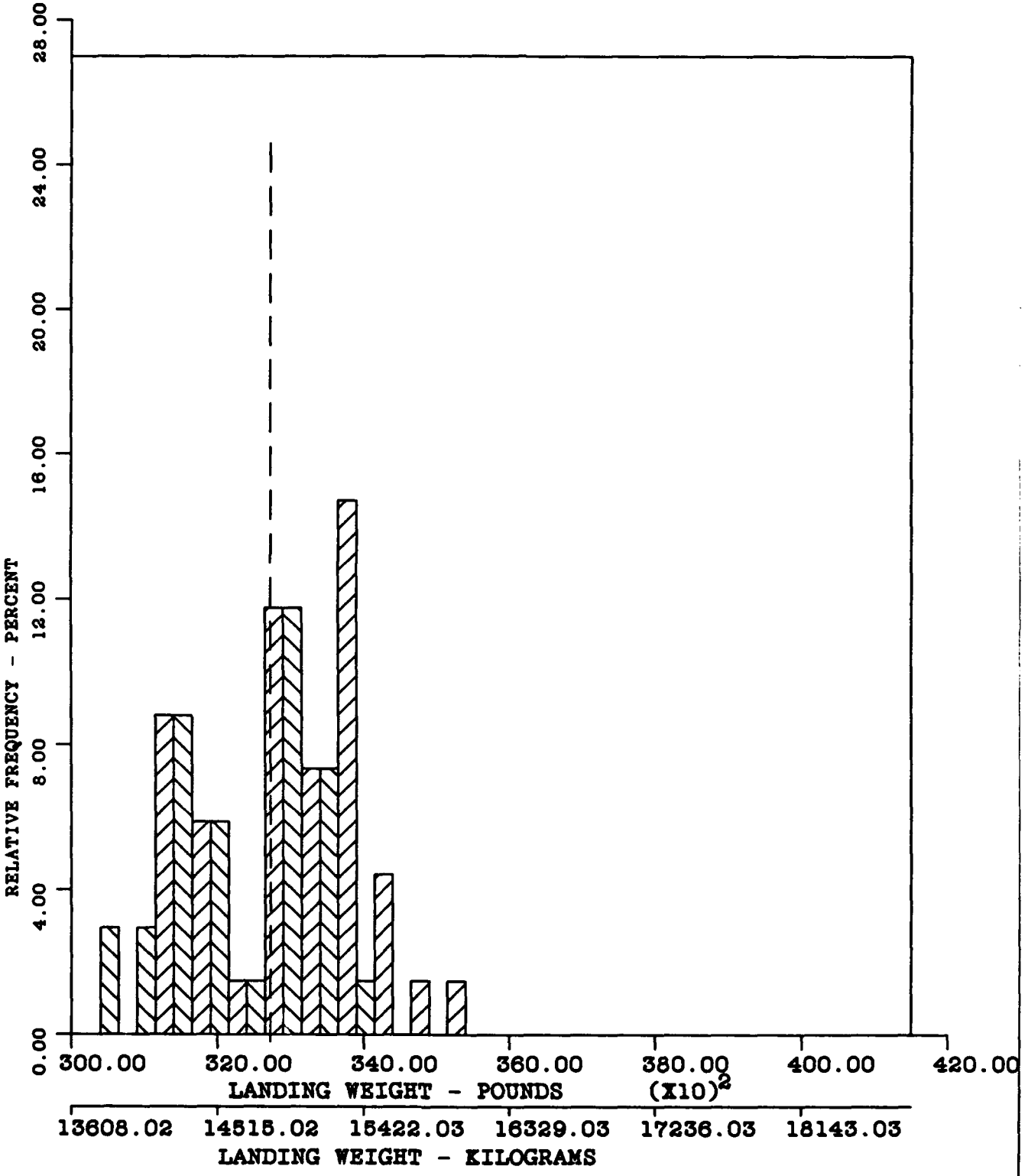


FIGURE F-50 FREQUENCY DISTRIBUTION OF AIRCRAFT LANDING WEIGHT

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=68 $\bar{X}$=.55 DEG/SEC (.009 RAD/SEC) A3=.01
S=5.07 DEG/SEC (.088 RAD/SEC) A4=4.53

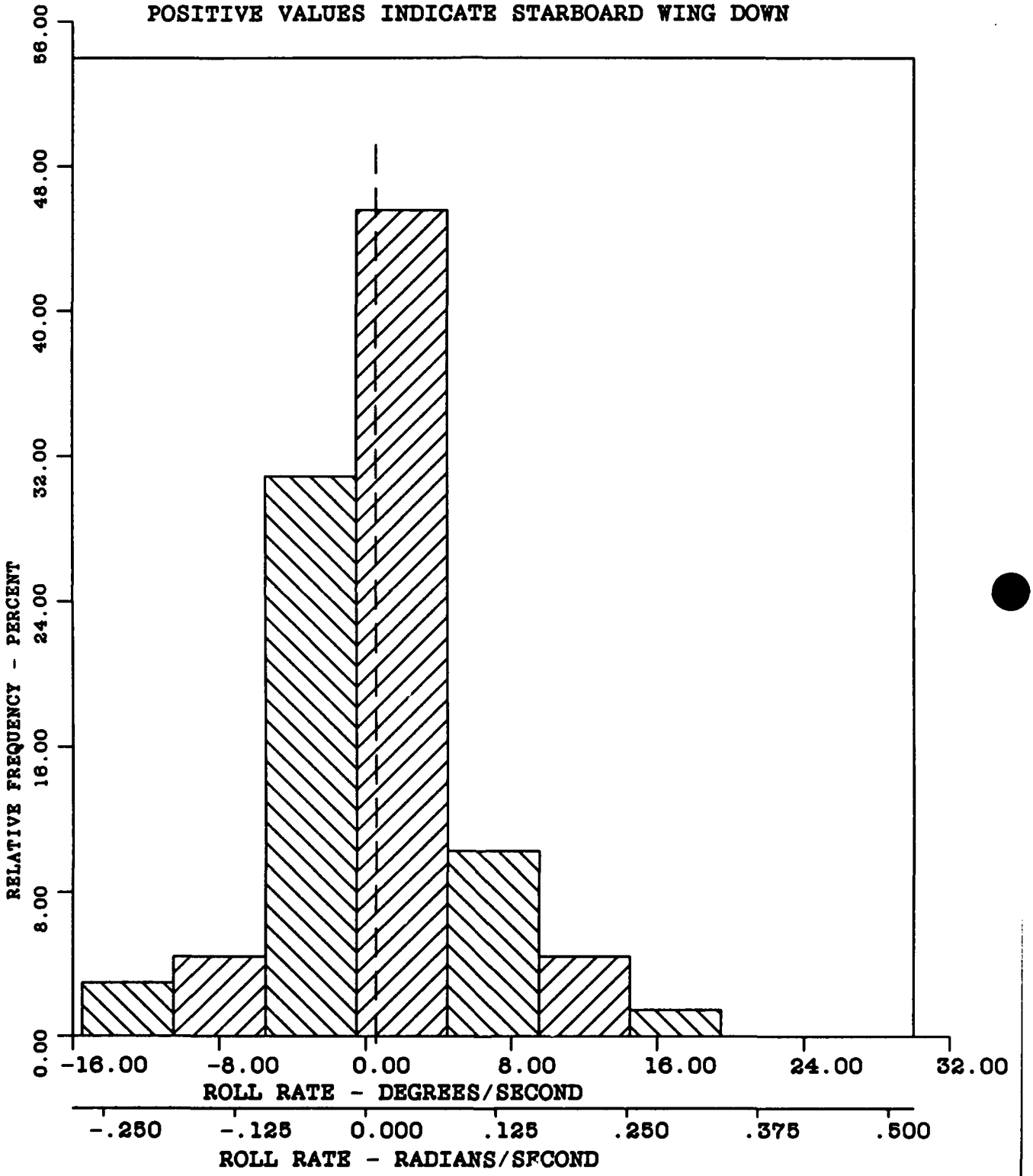


FIGURE F-51 FREQUENCY DISTRIBUTION OF ROLL RATE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=68 $\bar{X}$=.55 DEG/SEC (.009 RAD/SEC) A3=.01
S=5.07 DEG/SEC (.088 RAD/SEC) A4=4.53
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE STARBOARD WING DOWN

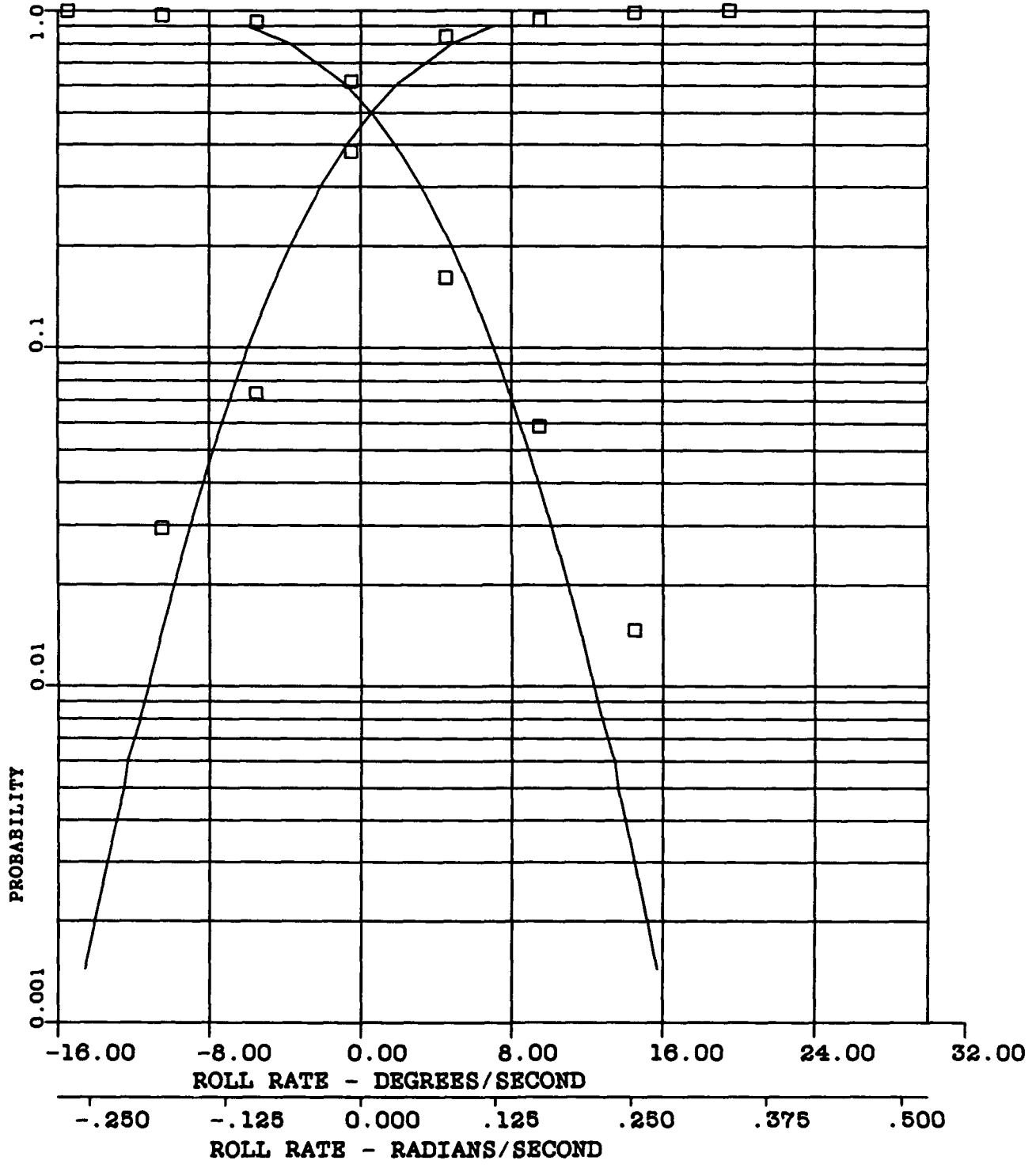


FIGURE F-52 PROBABILITY DISTRIBUTION OF ROLL RATE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=68 $\bar{X}$=.51 DEG/SEC (.008 RAD/SEC) A3=-.20
S=2.05 DEG/SEC (.035 RAD/SEC) A4=2.96

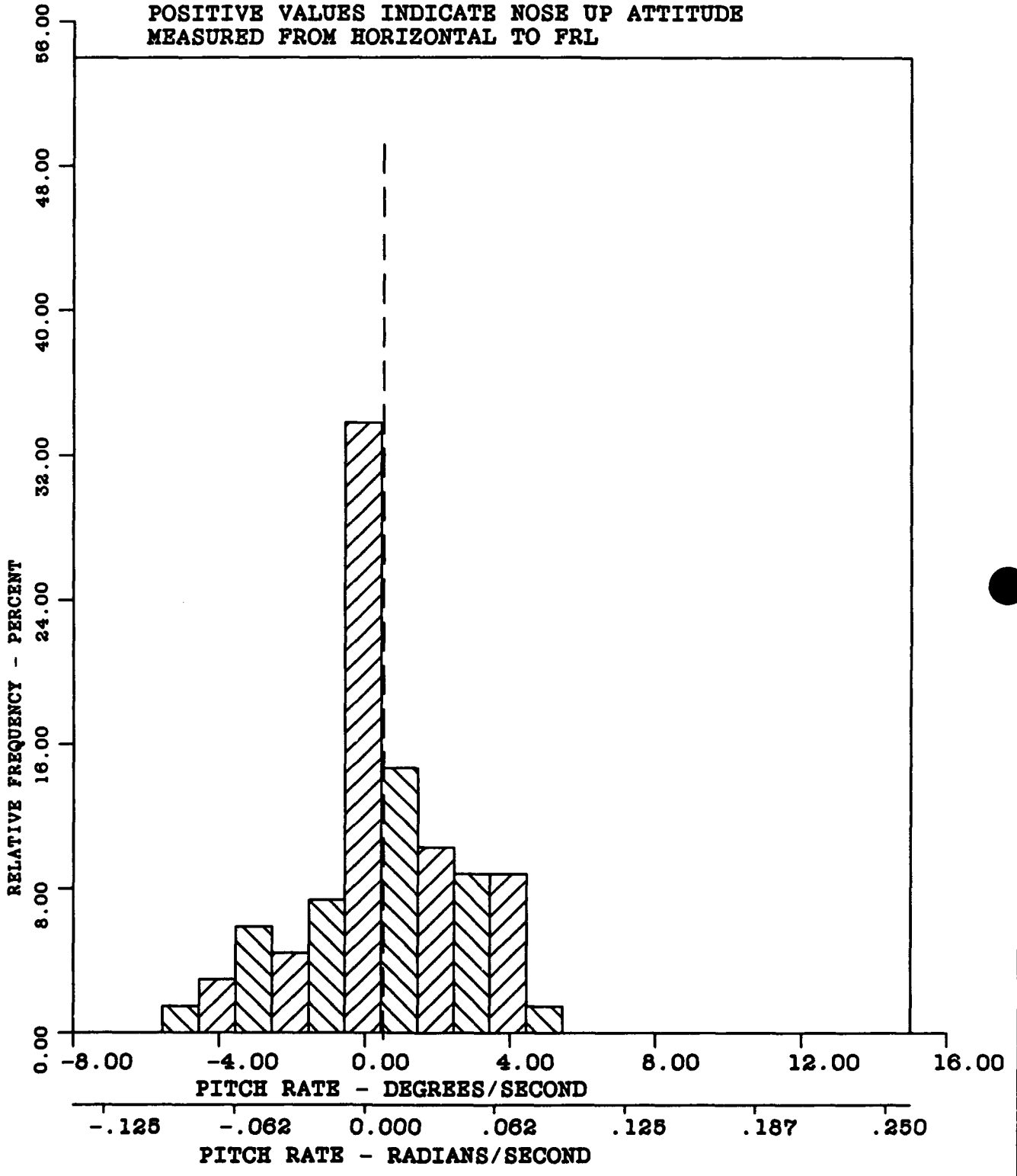


FIGURE F-53 FREQUENCY DISTRIBUTION OF PITCH RATE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-68 $\bar{X}$=-.51 DEG/SEC (.008 RAD/SEC) A3=-.20
S=2.05 DEG/SEC (.035 RAD/SEC) A4=2.96
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE NOSE UP ATTITUDE
MEASURED FROM HORIZONTAL TO FRL

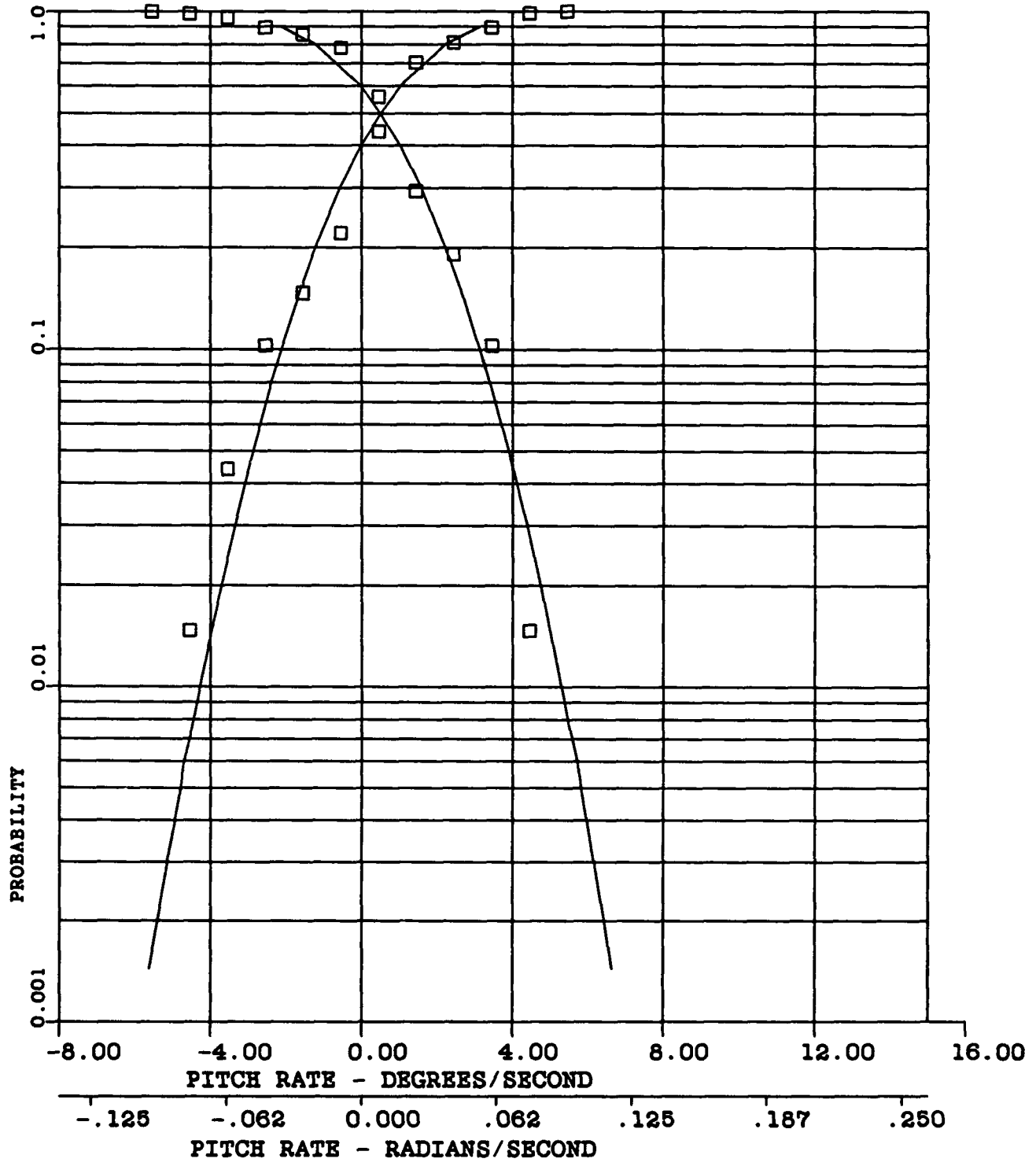


FIGURE F-54 PROBABILITY DISTRIBUTION OF PITCH RATE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=68 $\bar{X}$=-3.21 DEGREES (-.056 RADIANS) A3=1.07
S=.89 DEGREES (.015 RADIANS) A4=5.55

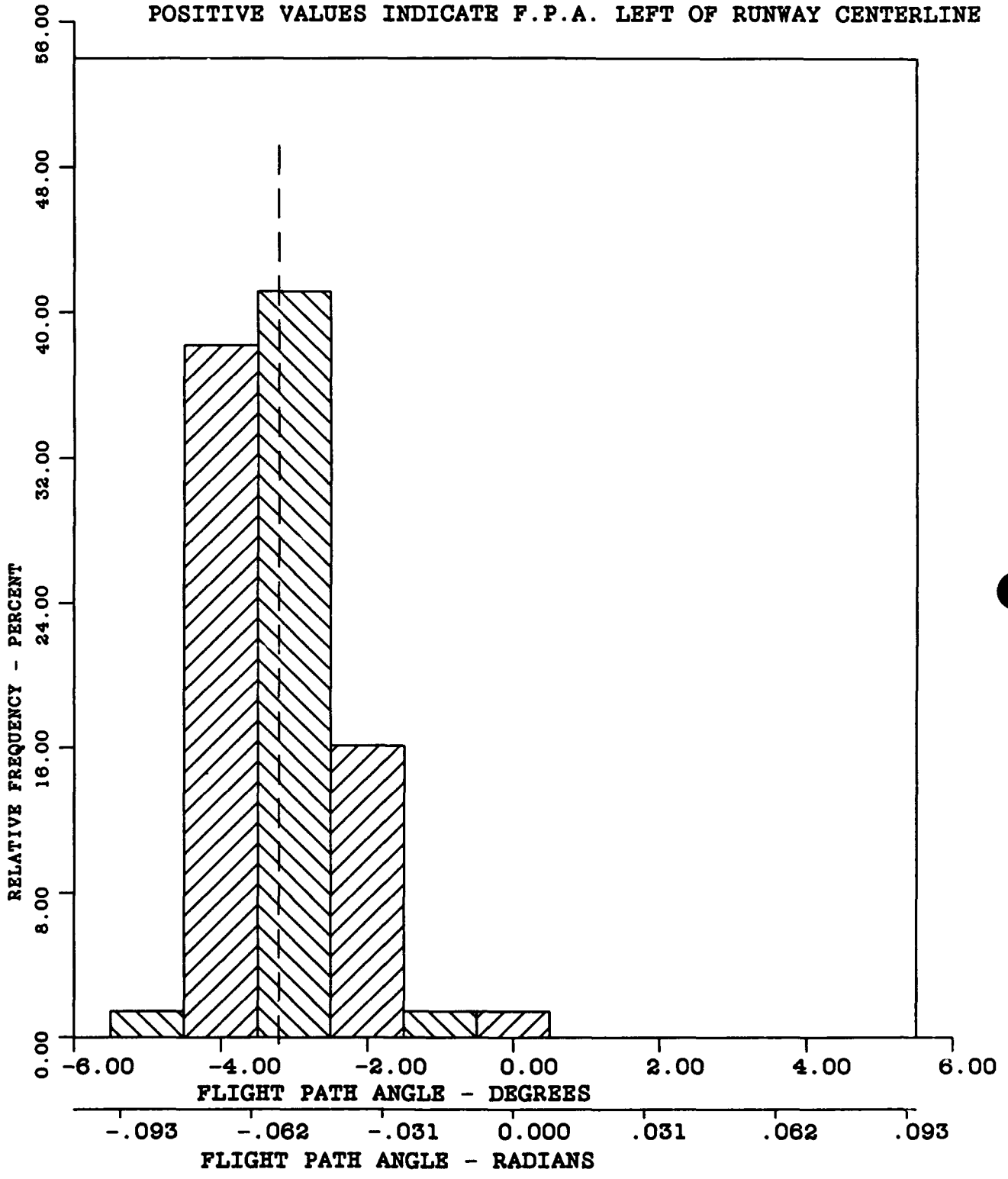


FIGURE F-55 FREQUENCY DISTRIBUTION OF AIRCRAFT FLIGHT PATH ANGLE AT TOUCHDOWN

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=68 $\bar{X}$=-3.21 DEGREES (-.056 RADIANS) A3=1.07
S=.89 DEGREES (.015 RADIANS) A4=5.55
CURVE FITTED - PEARSON TYPE III
POSITIVE VALUES INDICATE F.P.A. LEFT OF RUNWAY CENTERLINE

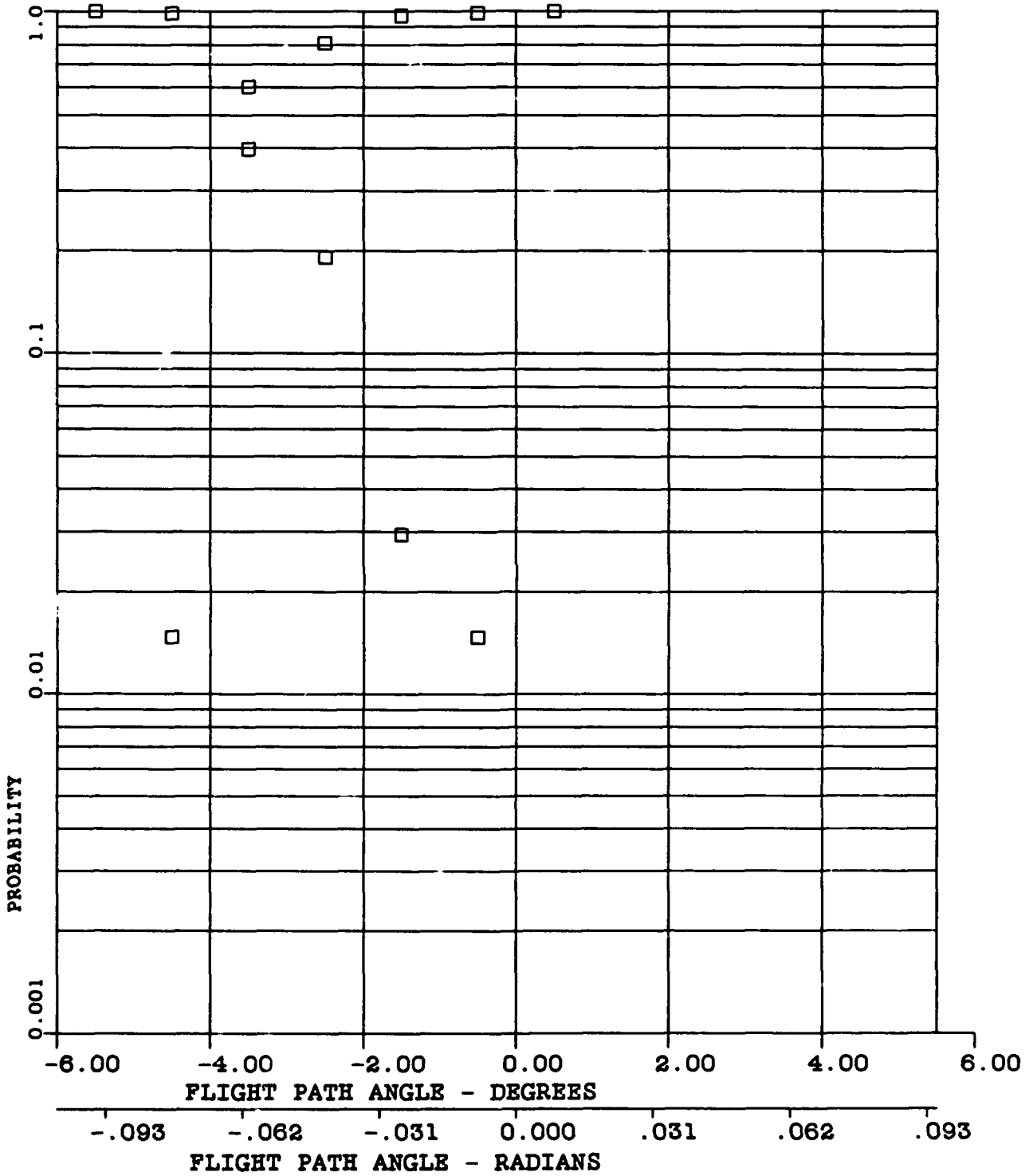


FIGURE F-56 PROBABILITY DISTRIBUTION OF AIRCRAFT FLIGHT PATH ANGLE AT TOUCHDOWN

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-68 $\bar{X}$-.56 DEGREES (.009 RADIANS) A3=.07
S-3.52 DEGREES (.061 RADIANS) A4=1.76

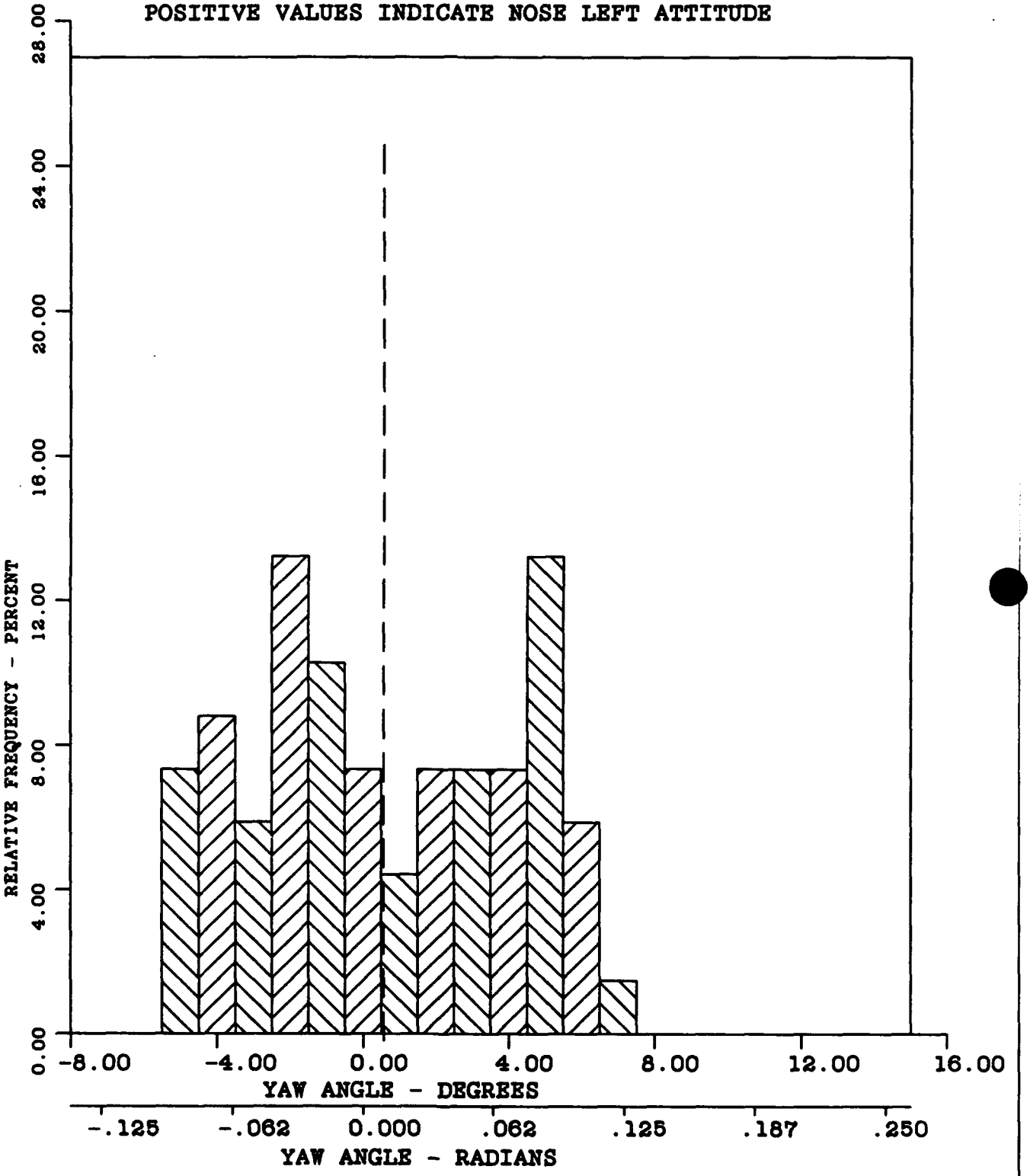


FIGURE F-57 FREQUENCY DISTRIBUTION OF AIRCRAFT YAW ANGLE

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-68 $\bar{X}$-.56 DEGREES (.009 RADIANS) A3=.07
S-3.52 DEGREES (.061 RADIANS) A4=1.76
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE NOSE LEFT ATTITUDE

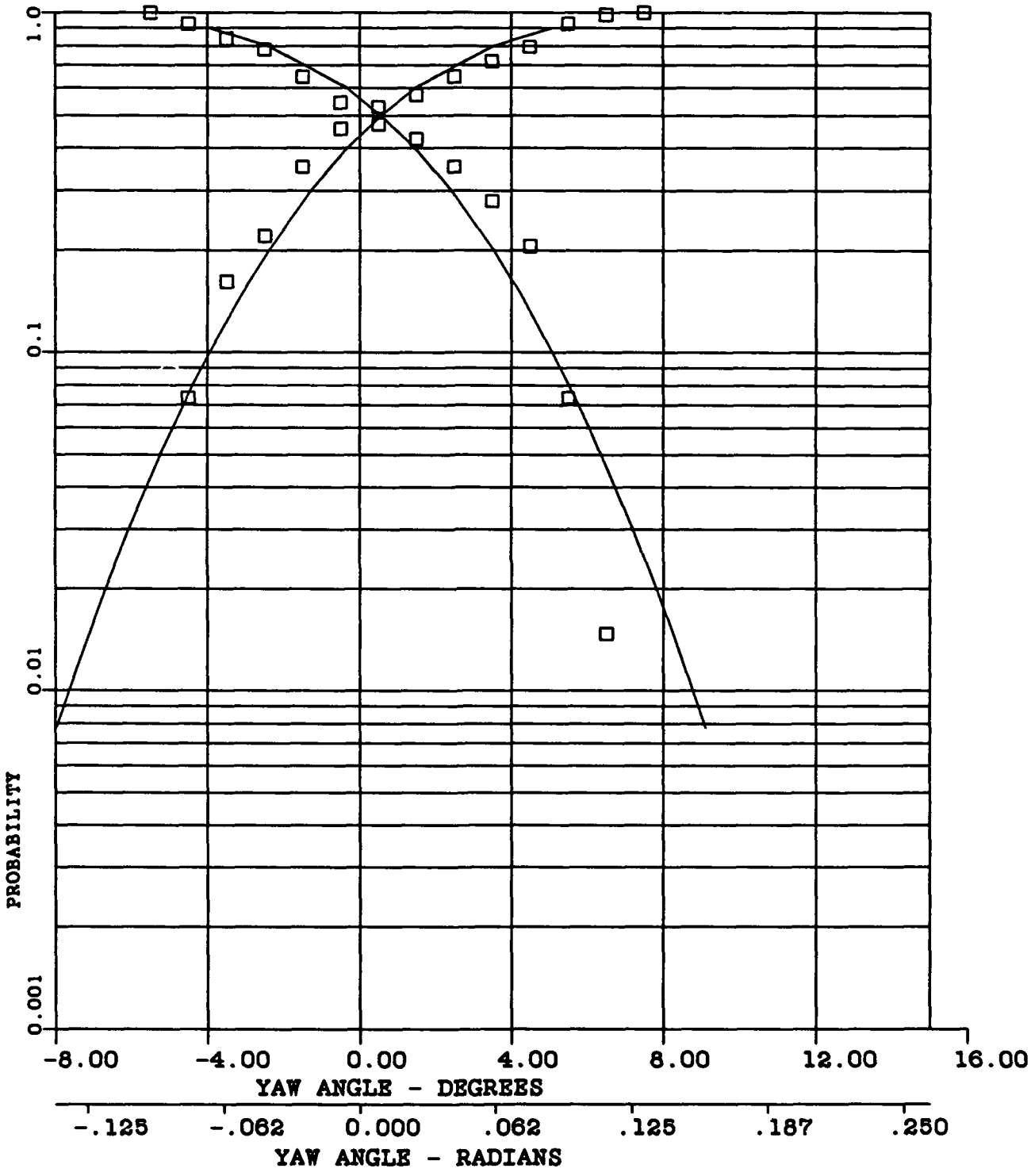


FIGURE F-58 PROBABILITY DISTRIBUTION OF AIRCRAFT YAW ANGLE

APPENDIX G

A-6E AIRCRAFT

NIGHT CARRIER LANDINGS

USS ENTERPRISE
CVN-65

Appendix G:

Frequency and Probability Distributions,
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MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=39 $\bar{X}$=26.07 KNOTS (13.41 METRES/SEC) A3=1.45
S=2.74 KNOTS (1.41 METRES/SEC) A4=3.52

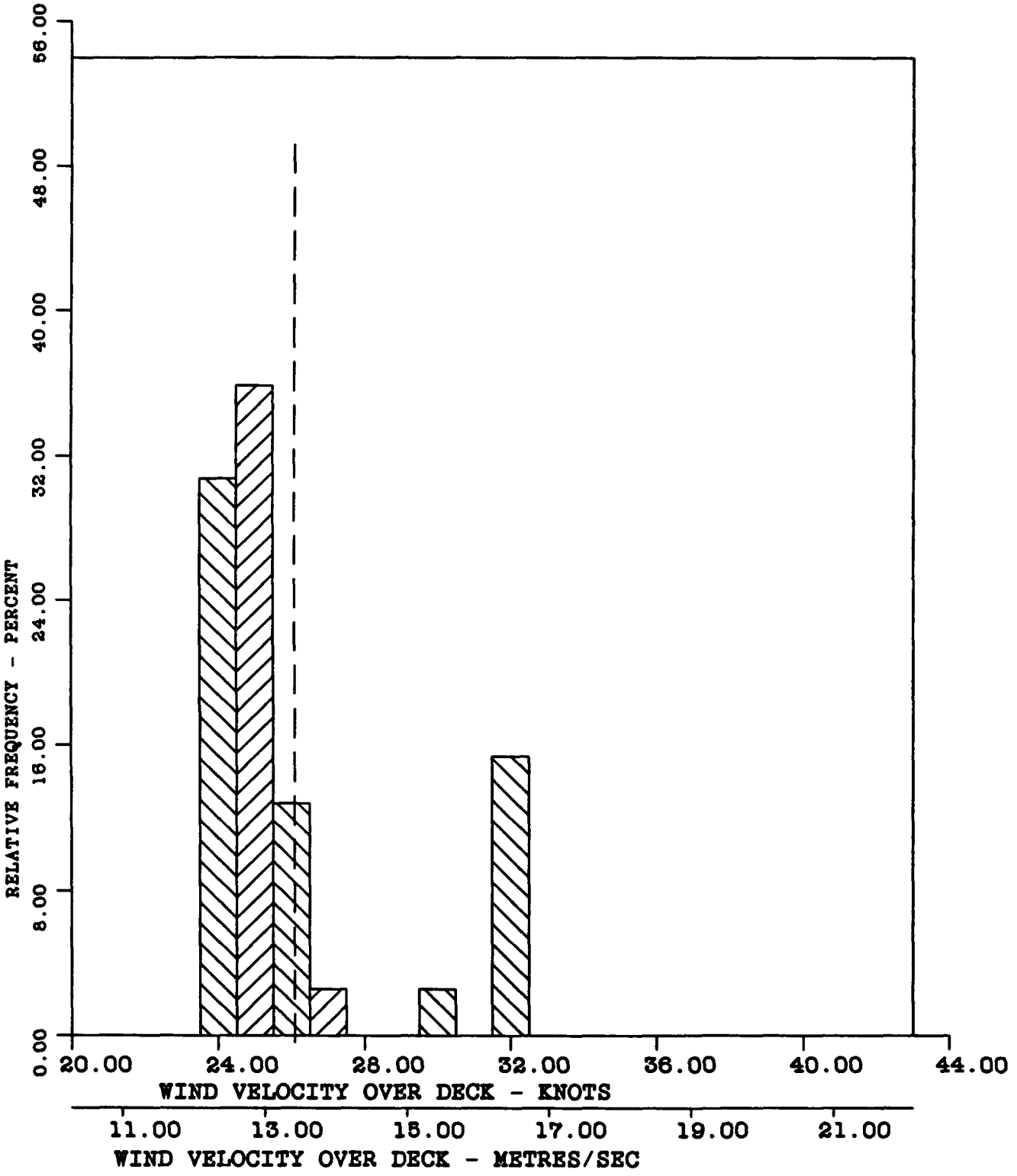


FIGURE G-1 FREQUENCY DISTRIBUTION OF WIND VELOCITY OVER THE DECK

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=39 $\bar{X}$=26.07 KNOTS (13.41 METRES/SEC) A3=1.45
S=2.74 KNOTS (1.41 METRES/SEC) A4=3.52
CURVE FITTED - PEARSON TYPE III

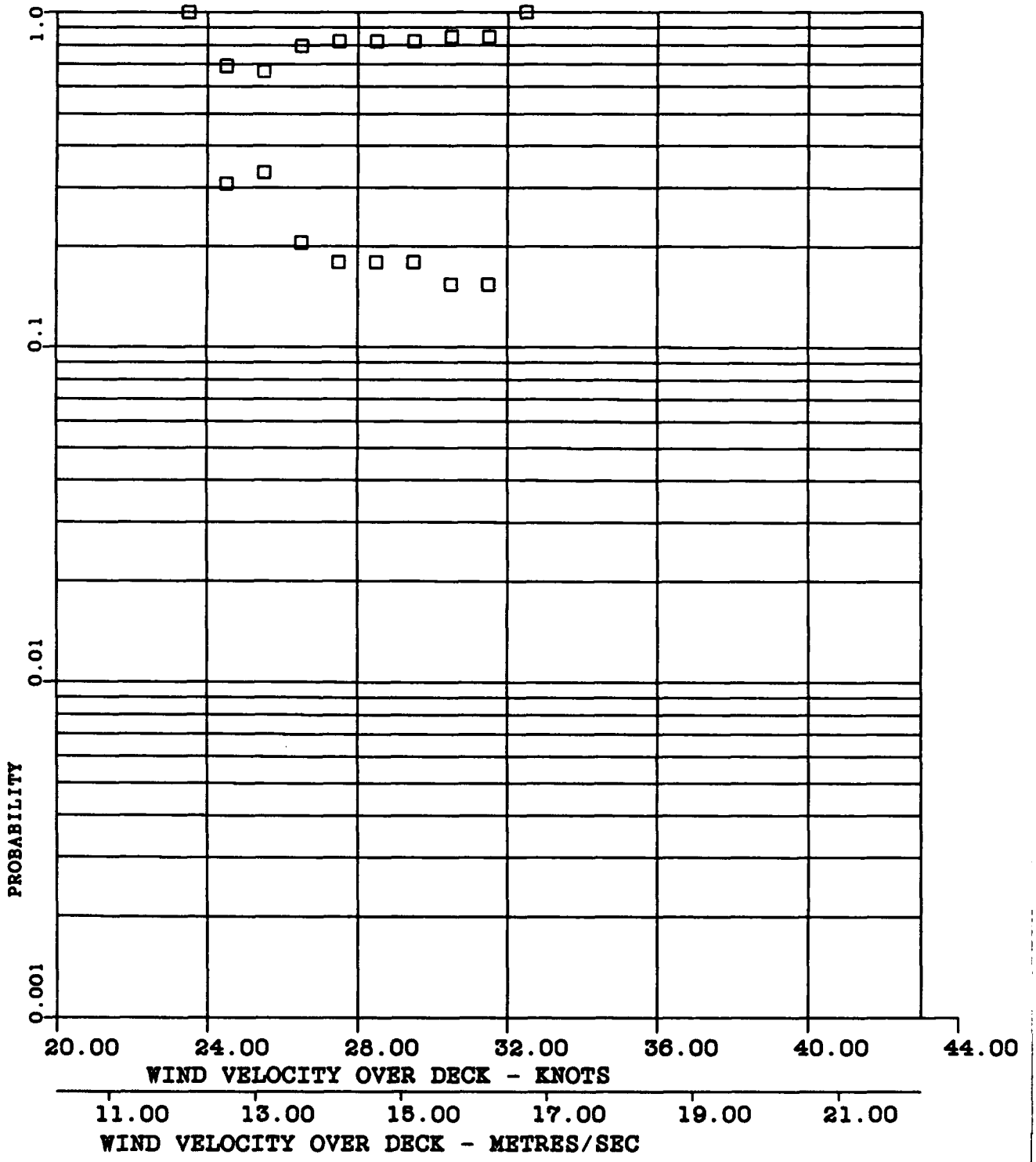


FIGURE G-2 PROBABILITY DISTRIBUTION OF WIND VELOCITY OVER THE DECK

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-39 $\bar{X}$-126.72 KNOTS (65.18 METRES/SEC) A3=-.23
S-3.96 KNOTS (2.03 METRES/SEC) A4-2.64

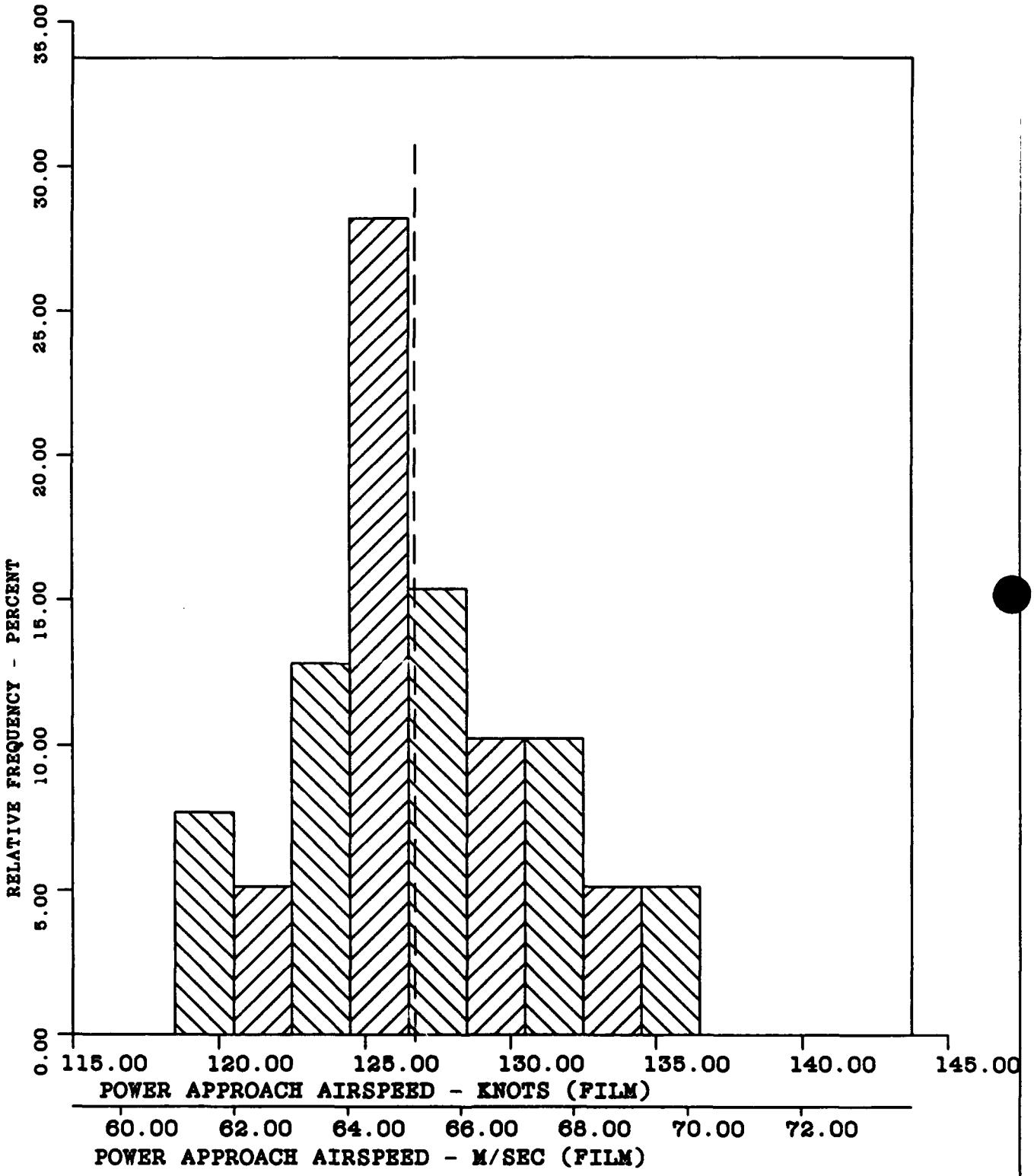


FIGURE G-3 FREQUENCY DISTRIBUTION OF FILM MEASURED POWER APPROACH AIRSPEED AT THE RAMP

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-39 $\bar{X}$-126.72 KNOTS (65.18 METRES/SEC) A3=.23
S-3.96 KNOTS (2.03 METRES/SEC) A4=2.64
CURVE FITTED - NORMAL

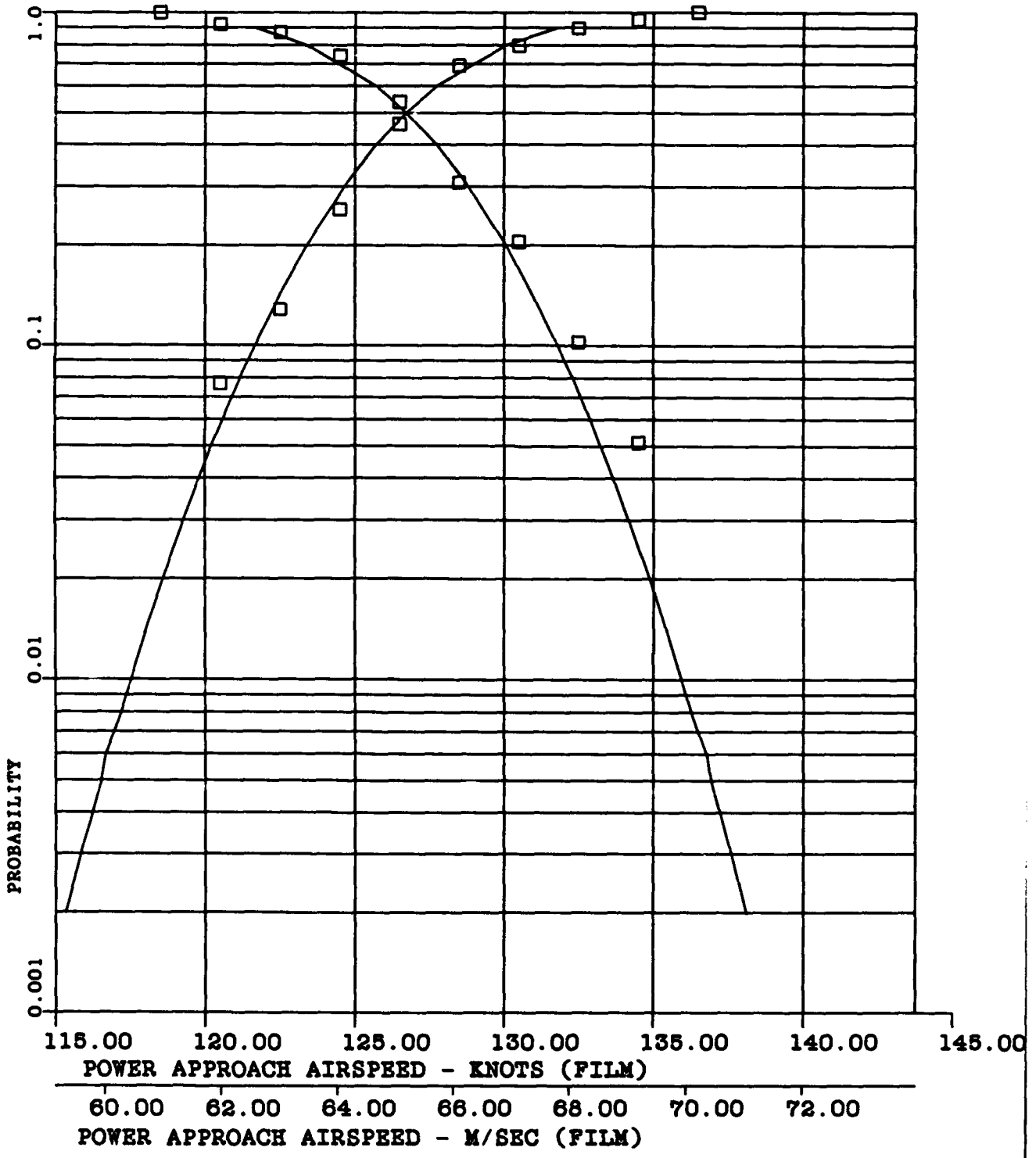


FIGURE G-4 PROBABILITY DISTRIBUTION OF POWER APPROACH AIRSPEED AT THE RAMP (FILM)

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-39 $\bar{X}$-9.28 FEET/SEC (2.83 METRES/SEC) A3=-.03
S-2.38 FEET/SEC (.72 METRES/SEC) A4-2.81

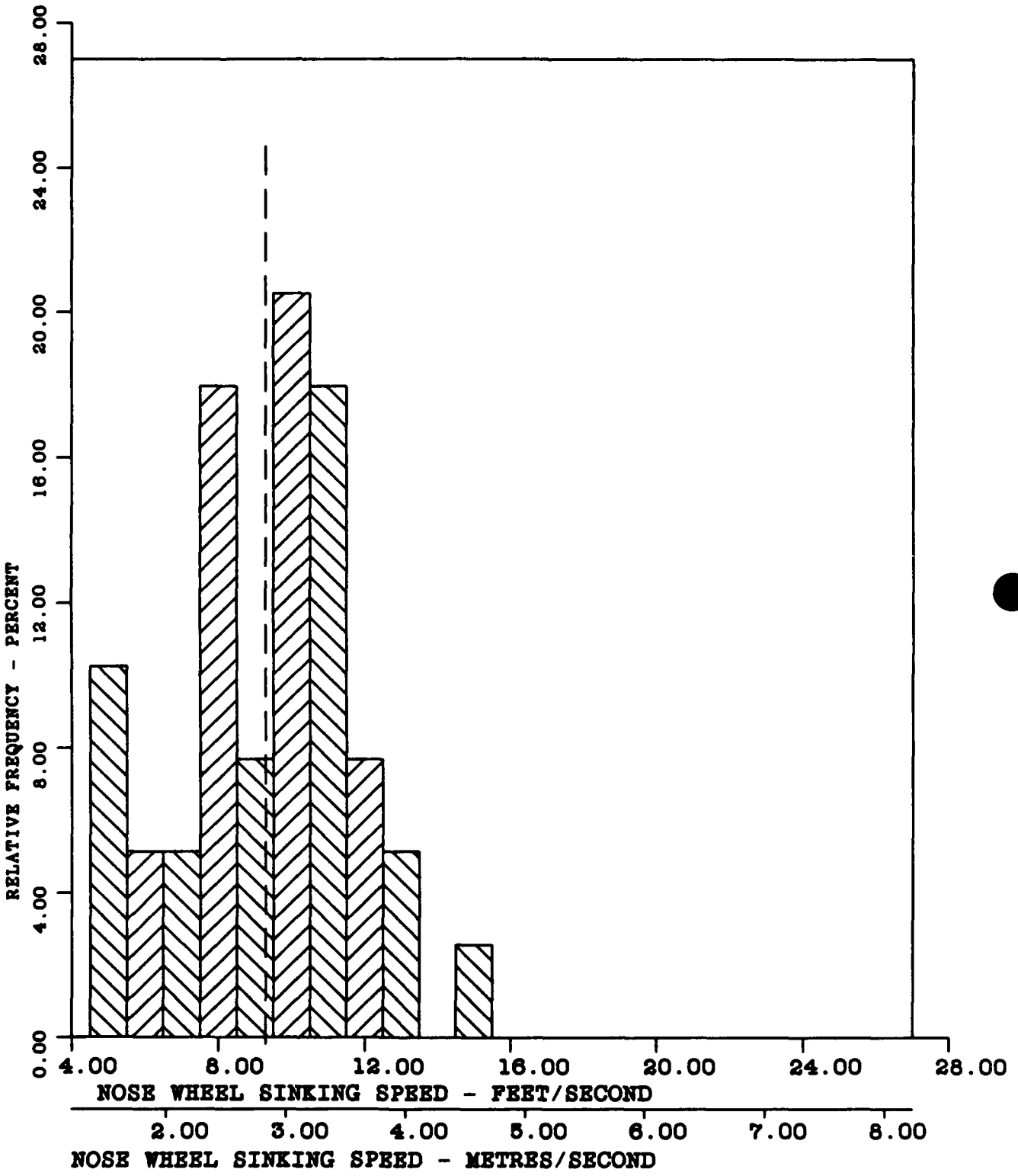


FIGURE G-5 FREQUENCY DISTRIBUTION OF NOSE WHEEL SINKING SPEED

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=39 $\bar{X}$=9.28 FEET/SEC (2.83 METRES/SEC) A3=-.03
S=2.38 FEET/SEC (.72 METRES/SEC) A4=2.81
CURVE FITTED - NORMAL

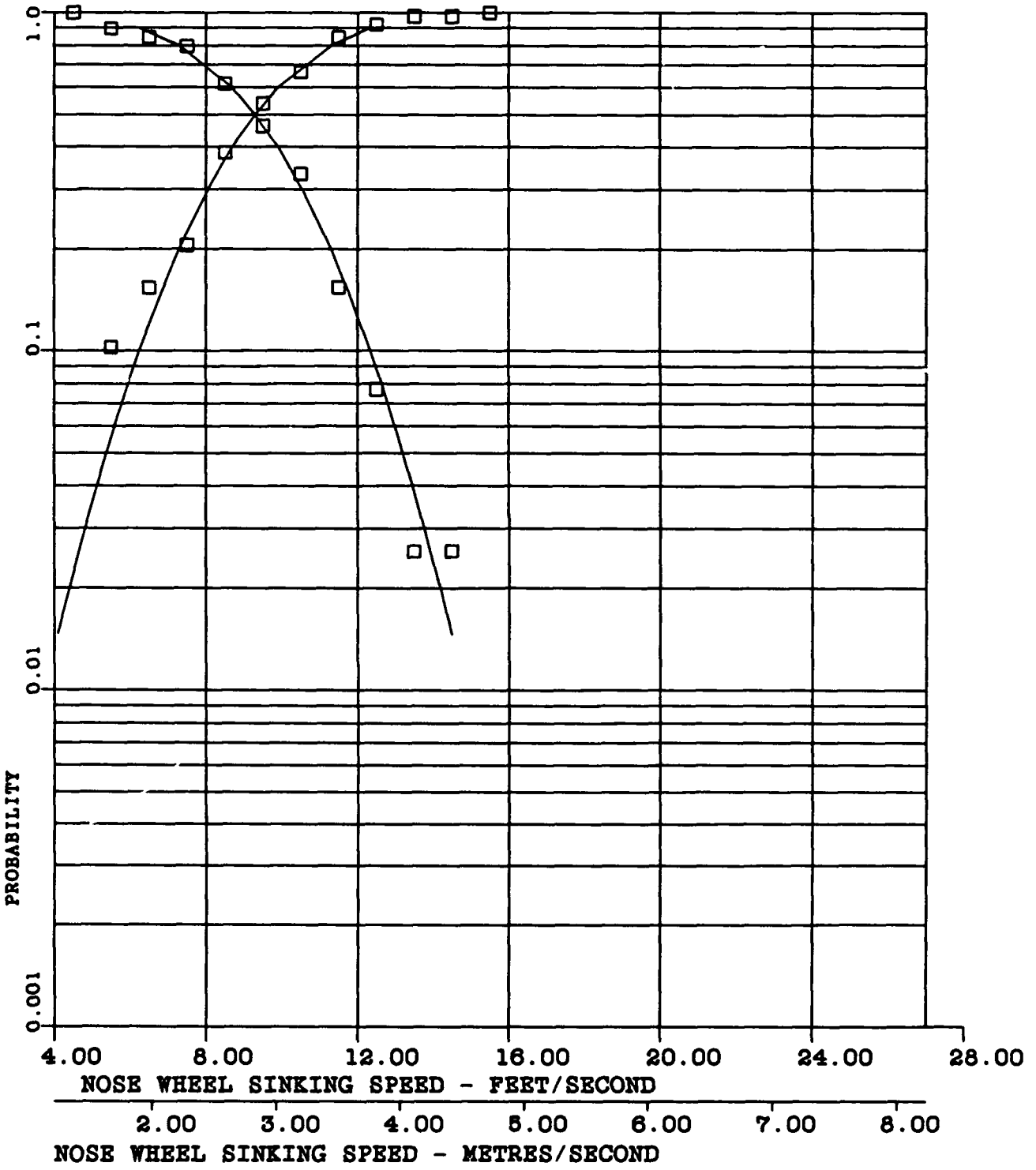


FIGURE G-6 PROBABILITY DISTRIBUTION OF NOSE WHEEL SINKING SPEED

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-39 $\bar{X}$-10.93 FEET/SEC (3.33 METRES/SEC) A3=-.08
S-2.05 FEET/SEC (.62 METRES/SEC) A4-2.82

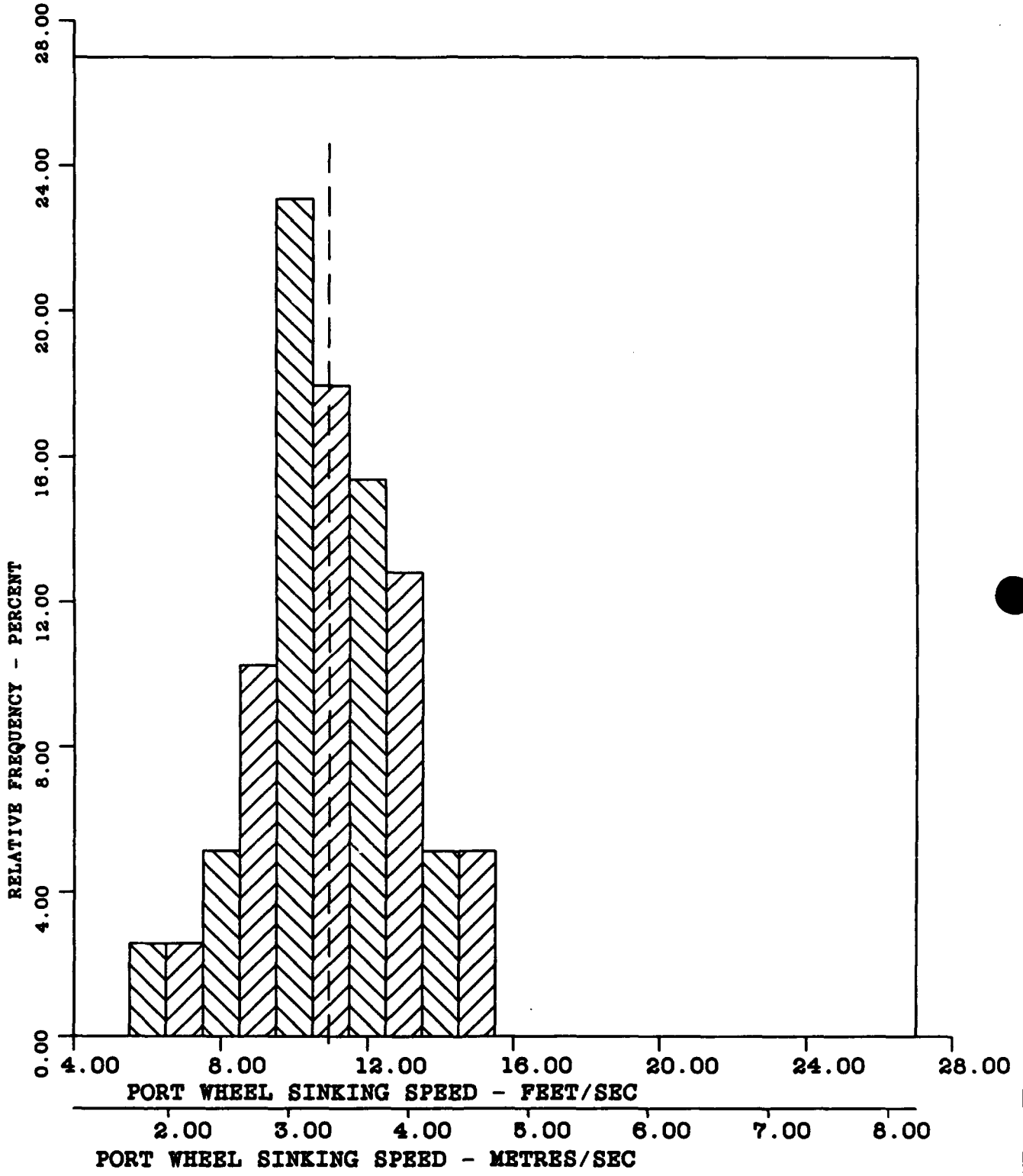


FIGURE G-7 FREQUENCY DISTRIBUTION OF PORT WHEEL SINKING SPEED AT PORT WHEEL TOUCHDOWN

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=39 $\bar{X}$=10.93 FEET/SEC (3.33 METRES/SEC) A3=-.08
S=2.05 FEET/SEC (.62 METRES/SEC) A4=2.82
CURVE FITTED - NORMAL

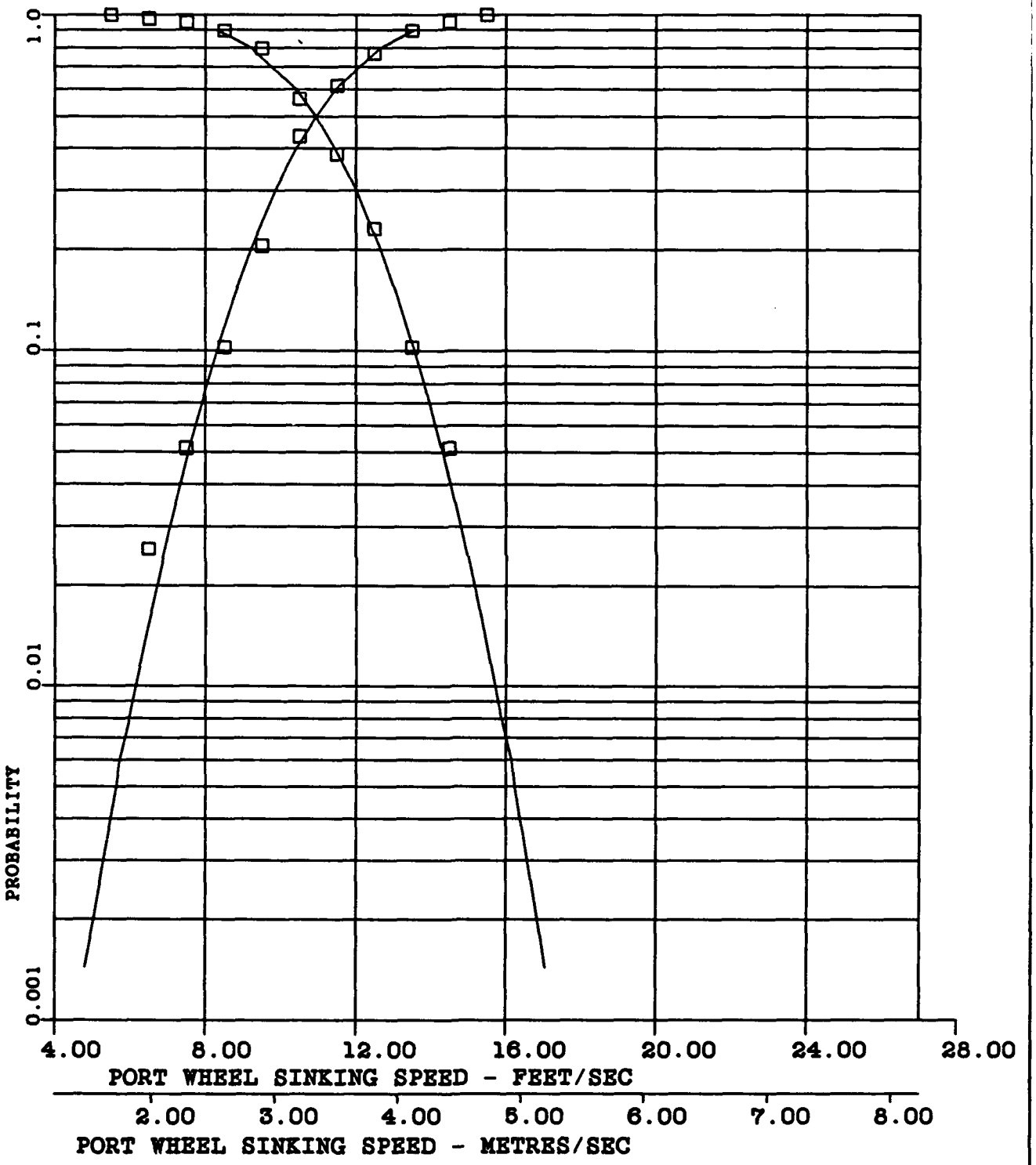


FIGURE G-8 PROBABILITY DISTRIBUTION OF PORT WHEEL SINKING SPEED

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=39 $\bar{X}$=10.79 FEET/SEC (3.28 METRES/SEC) A3=-.26
S=1.99 FEET/SEC (.60 METRES/SEC) A4=3.27

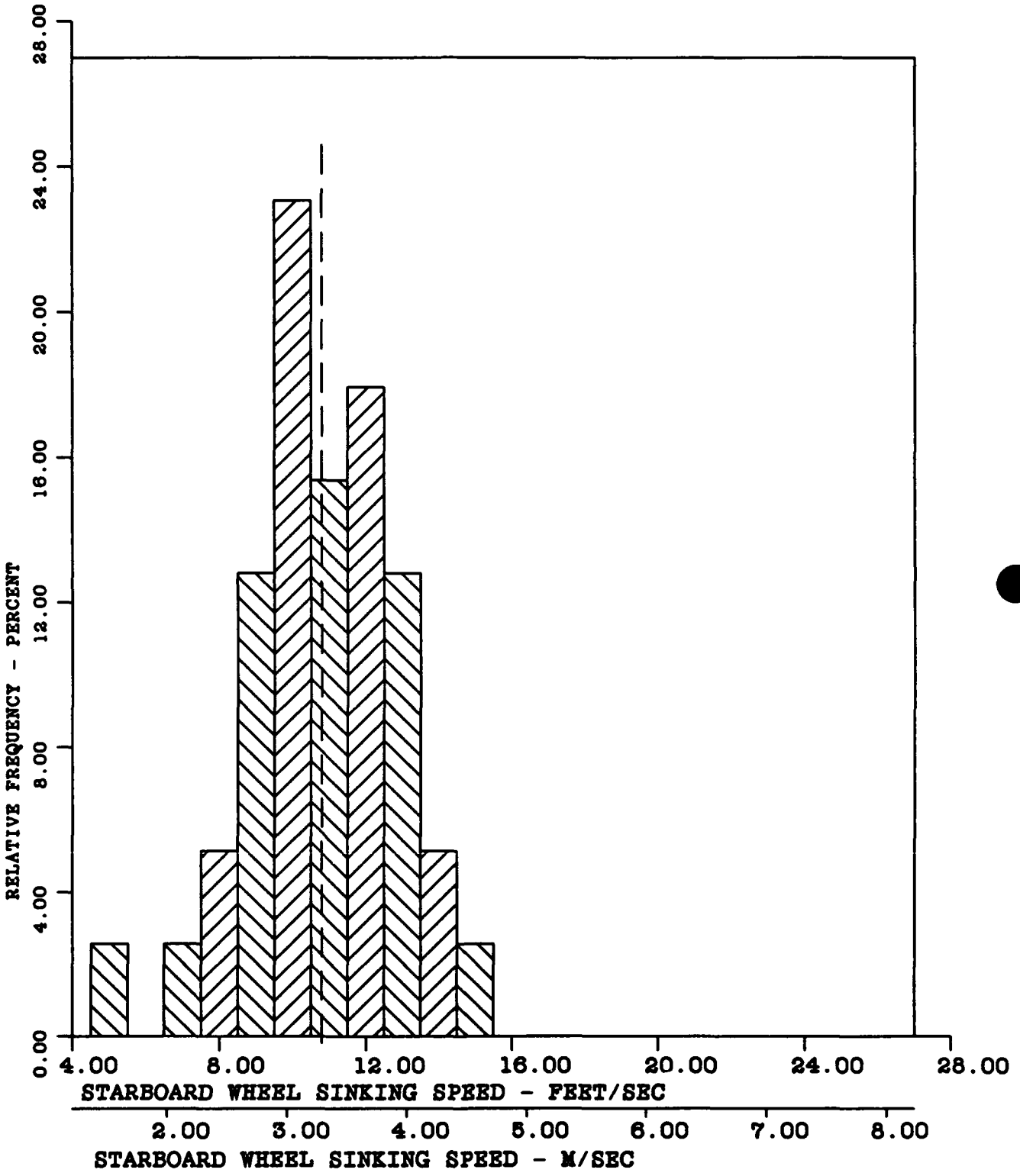


FIGURE G-9 FREQUENCY DISTRIBUTION OF STARBOARD WHEEL SINKING SPEED AT STARBOARD WHEEL TOUCHDOWN

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=39 $\bar{X}$=10.79 FEET/SEC (3.28 METRES/SEC) A3=-.26
S=1.99 FEET/SEC (.60 METRES/SEC) A4=3.27
CURVE FITTED - NORMAL

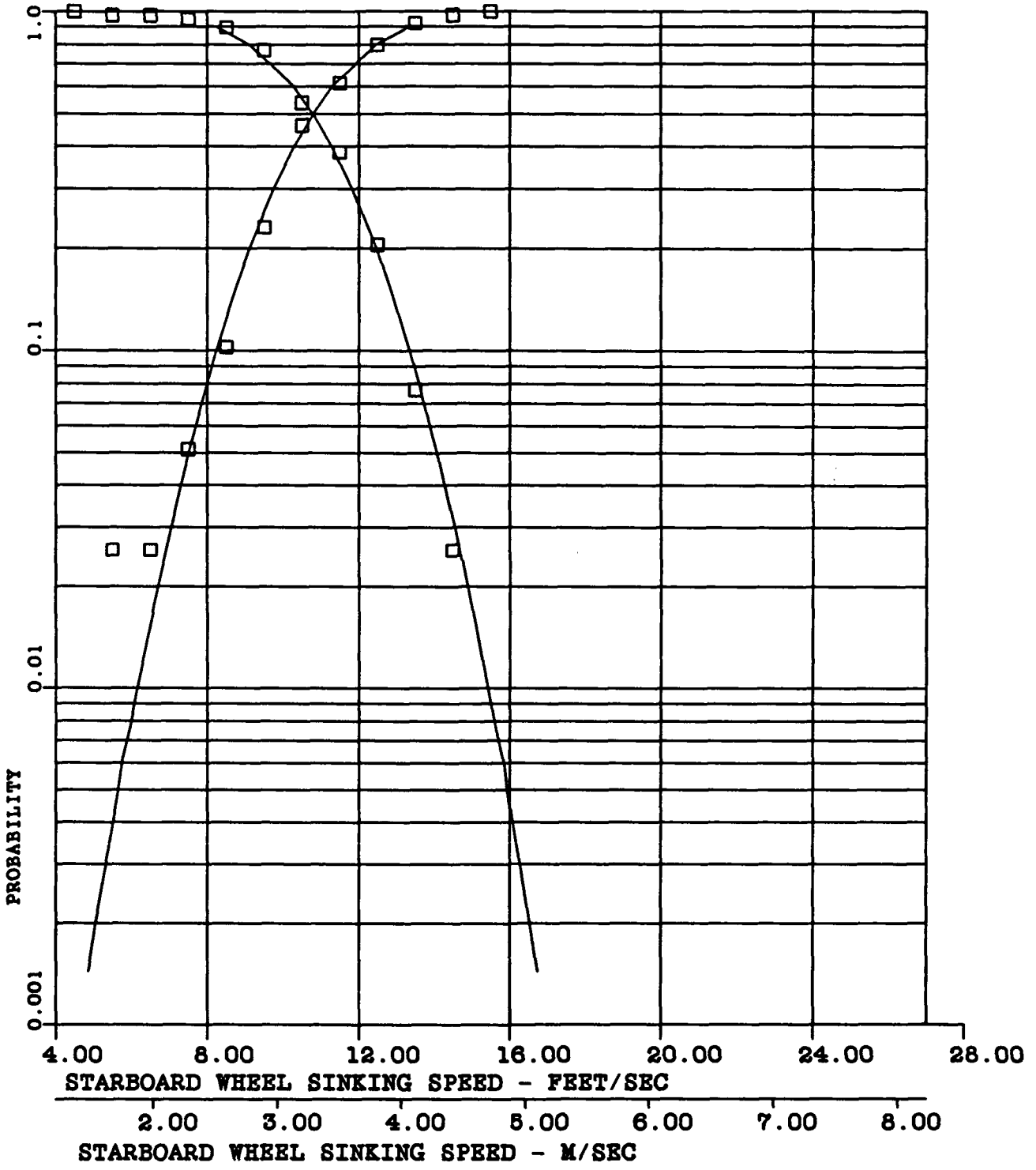


FIGURE G-10 PROBABILITY DISTRIBUTION OF STARBOARD WHEEL SINKING SPEED

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-39 $\bar{X}$-10.85 FEET/SEC (3.30 METRES/SEC) A3=-.26
S-2.00 FEET/SEC (.61 METRES/SEC) A4-3.08

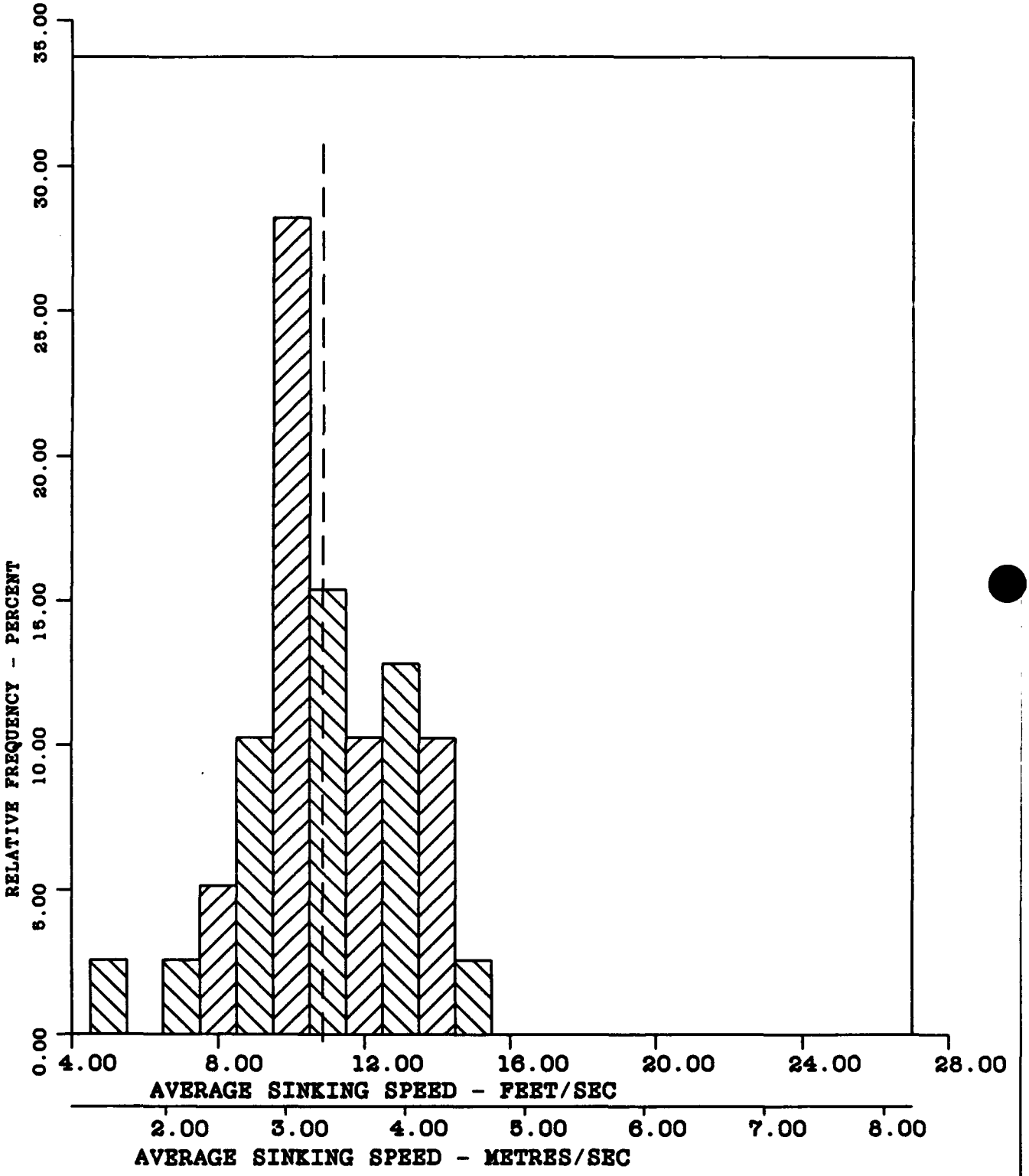


FIGURE G-11 FREQUENCY DISTRIBUTION OF AVG SINKING SPEED OF MAIN WHEEL AT FIRST MAIN WHEEL TOUCHDOWN

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-39 $\bar{X}$-10.85 FEET/SEC (3.30 METRES/SEC) A3=-.26
S-2.00 FEET/SEC (.61 METRES/SEC) A4-3.08
CURVE FITTED - NORMAL

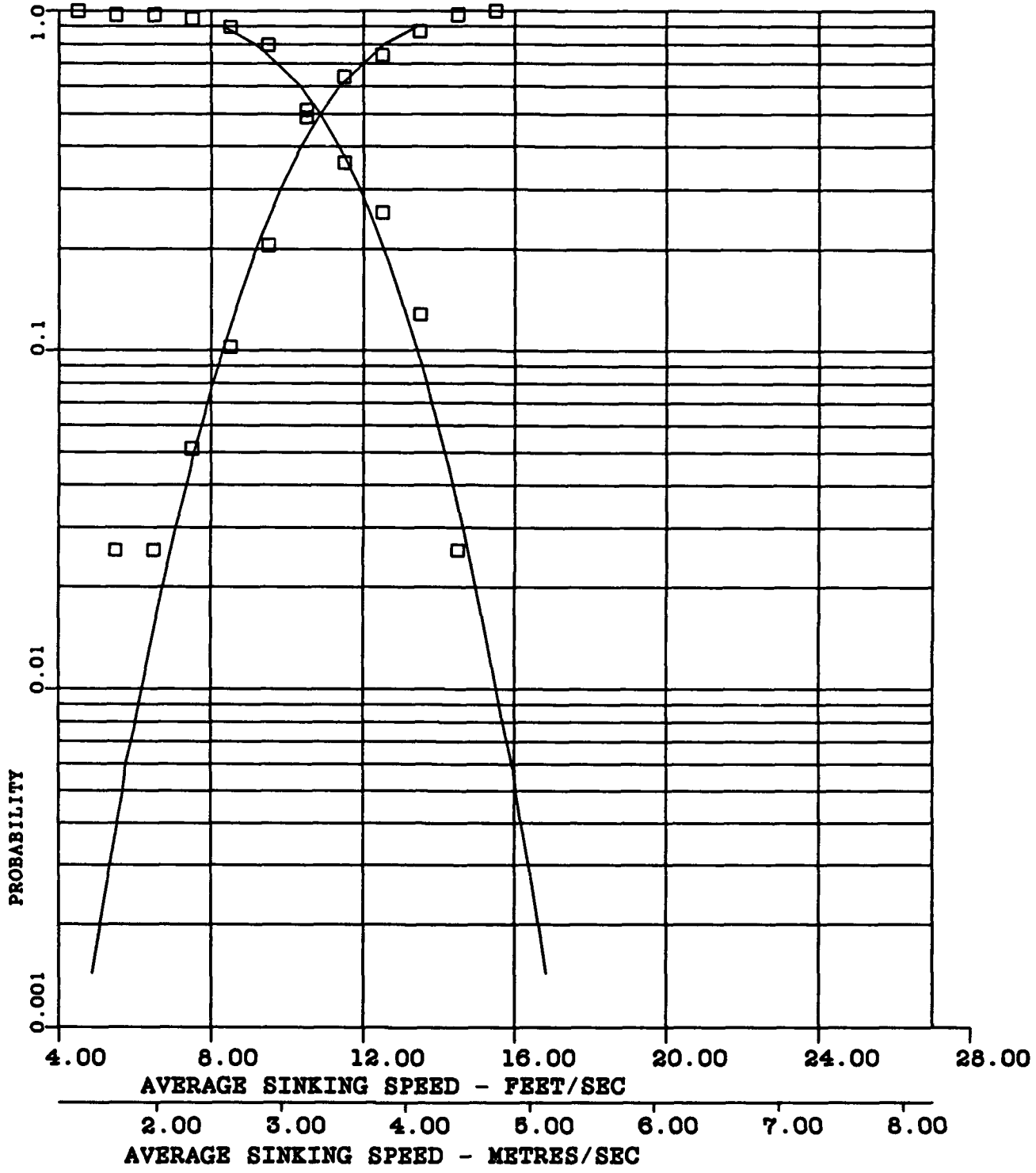


FIGURE G-12 PROBABILITY DISTRIBUTION OF AVERAGE SINKING SPEED AT FIRST MAIN WHEEL TOUCHDOWN

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-7 $\bar{X}$-8.74 FEET/SEC (2.66 METRES/SEC) A3=-1.21
S-2.16 FEET/SEC (.65 METRES/SEC) A4-2.95

FREE FLIGHT IS THE CONDITION WHERE THE HOOK ENGAGES THE ARRESTMENT CABLE BEFORE THE WHEELS MAKE DECK CONTACT

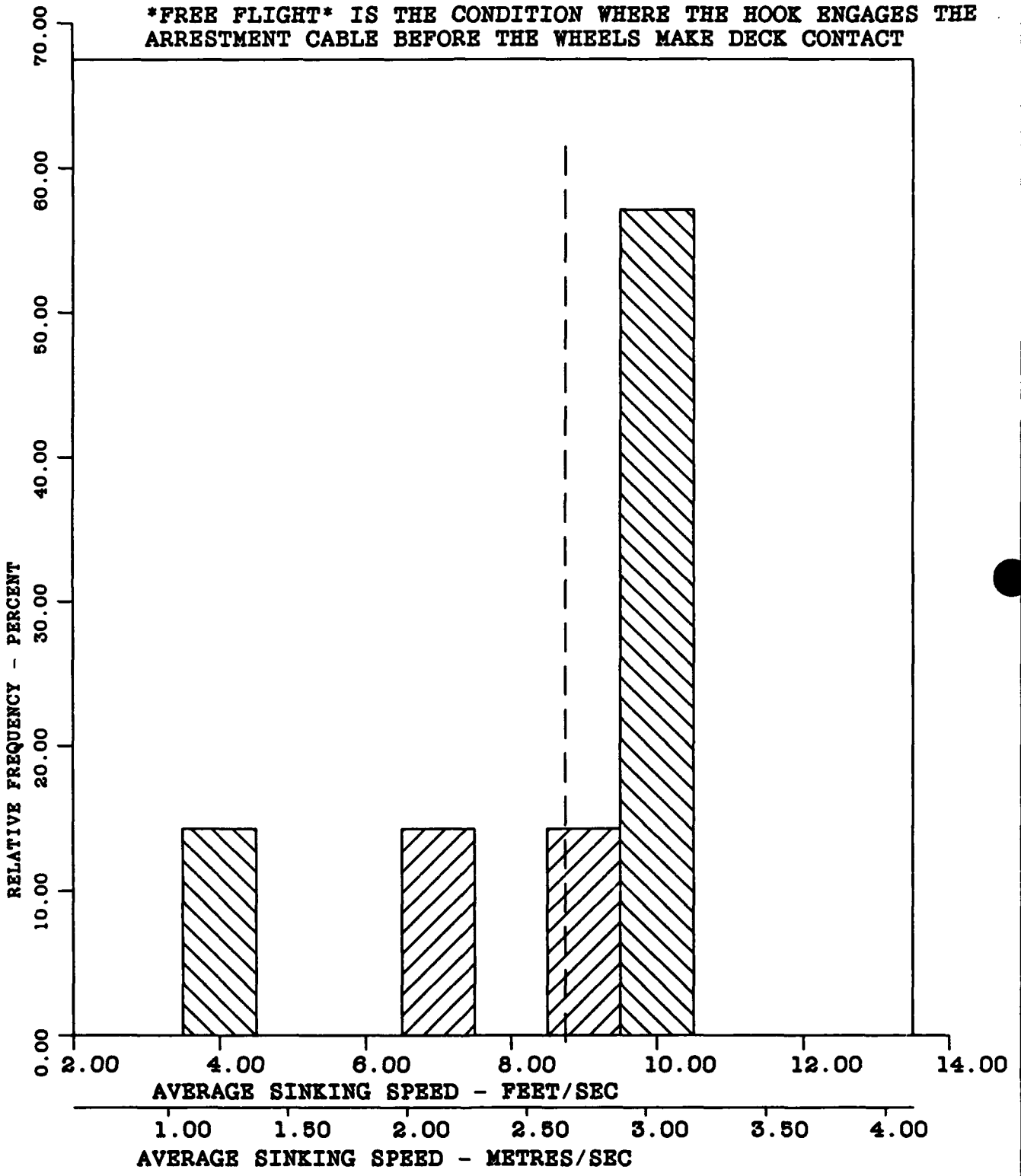


FIGURE G-13 FREQUENCY DISTRIBUTION OF AVERAGE SINKING SPEED OF MAIN WHEELS AT FREE FLIGHT

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-7 $\bar{X}$-8.74 FEET/SEC (2.66 METRES/SEC) A3=-1.21
S-2.16 FEET/SEC (.65 METRES/SEC) A4=2.95
CURVE FITTED - NORMAL
FREE FLIGHT IS THE CONDITION WHERE THE HOOK ENGAGES THE ARRESTMENT CABLE BEFORE THE WHEELS MAKE DECK CONTACT

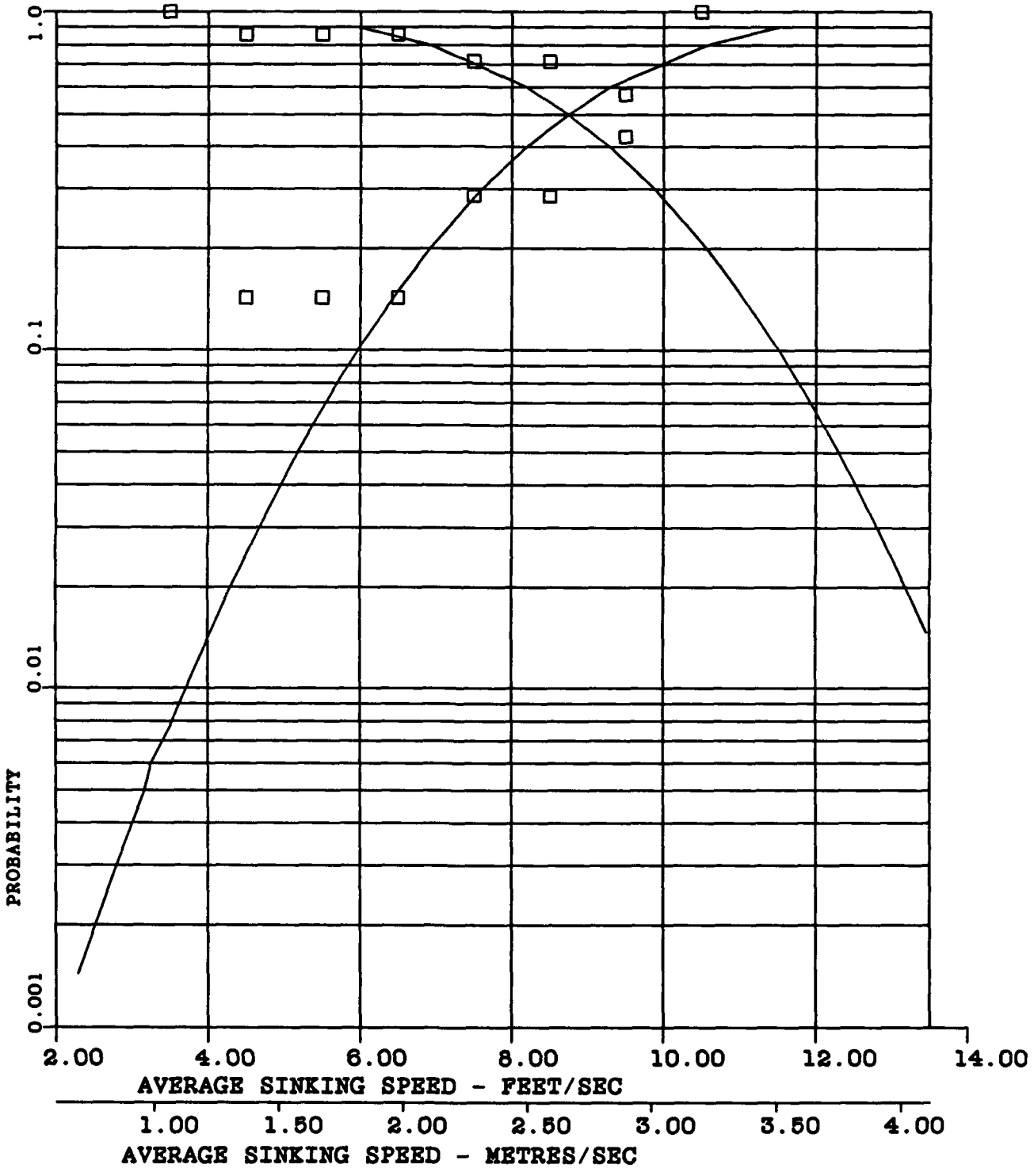


FIGURE G-14 PROBABILITY DISTRIBUTION OF AVERAGE SINKING SPEED AT FREE FLIGHT

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-39 $\bar{X}$-1.04 A3-.82
S-.10 A4-3.53

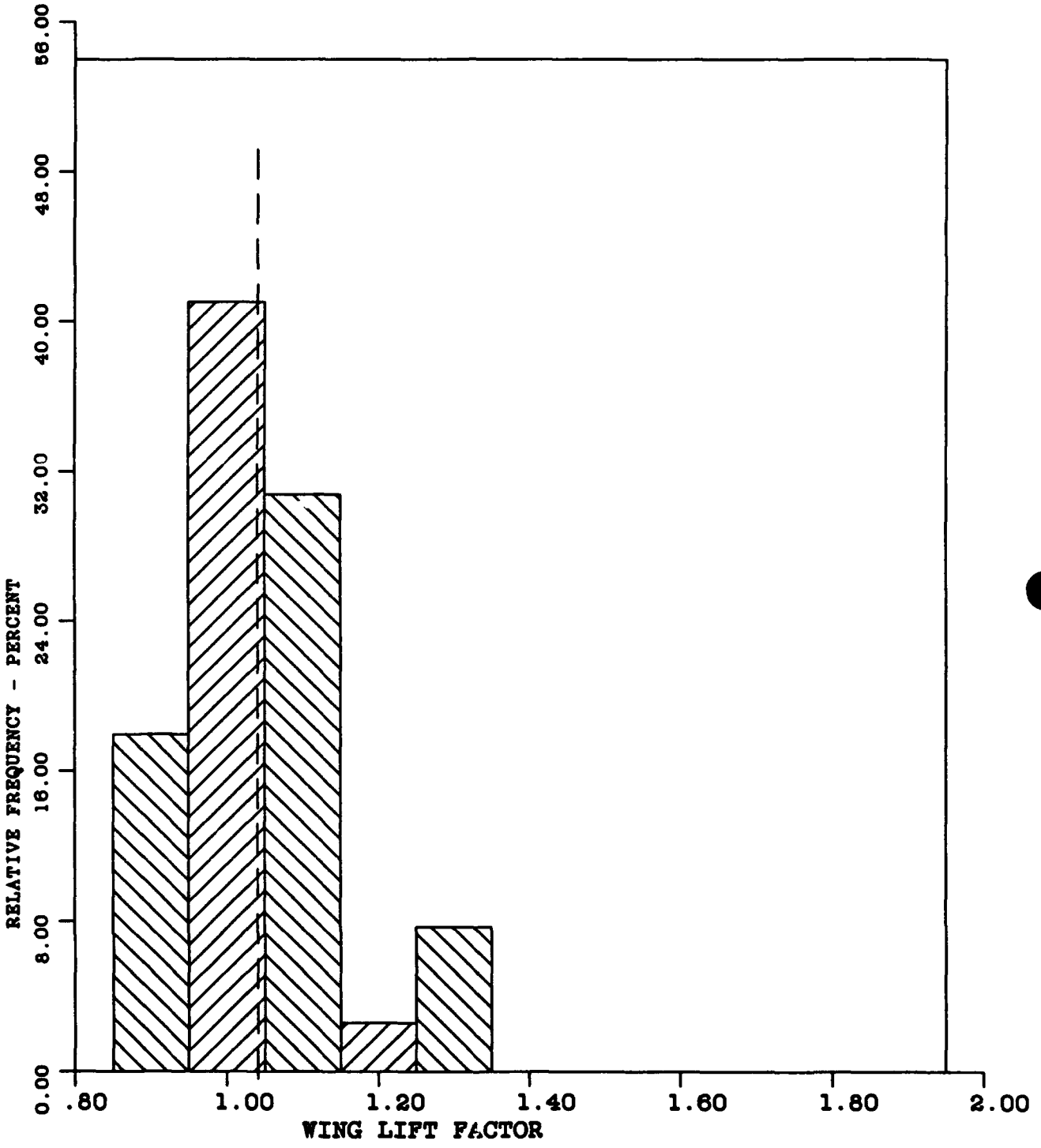


FIGURE G-15 FREQUENCY DISTRIBUTION OF WING LIFT FACTOR AT FIRST MAIN WHEEL TOUCHDOWN

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=39 $\bar{X}$=1.04 A3=.82
S=.10 A4=3.53
CURVE FITTED - PEARSON TYPE III

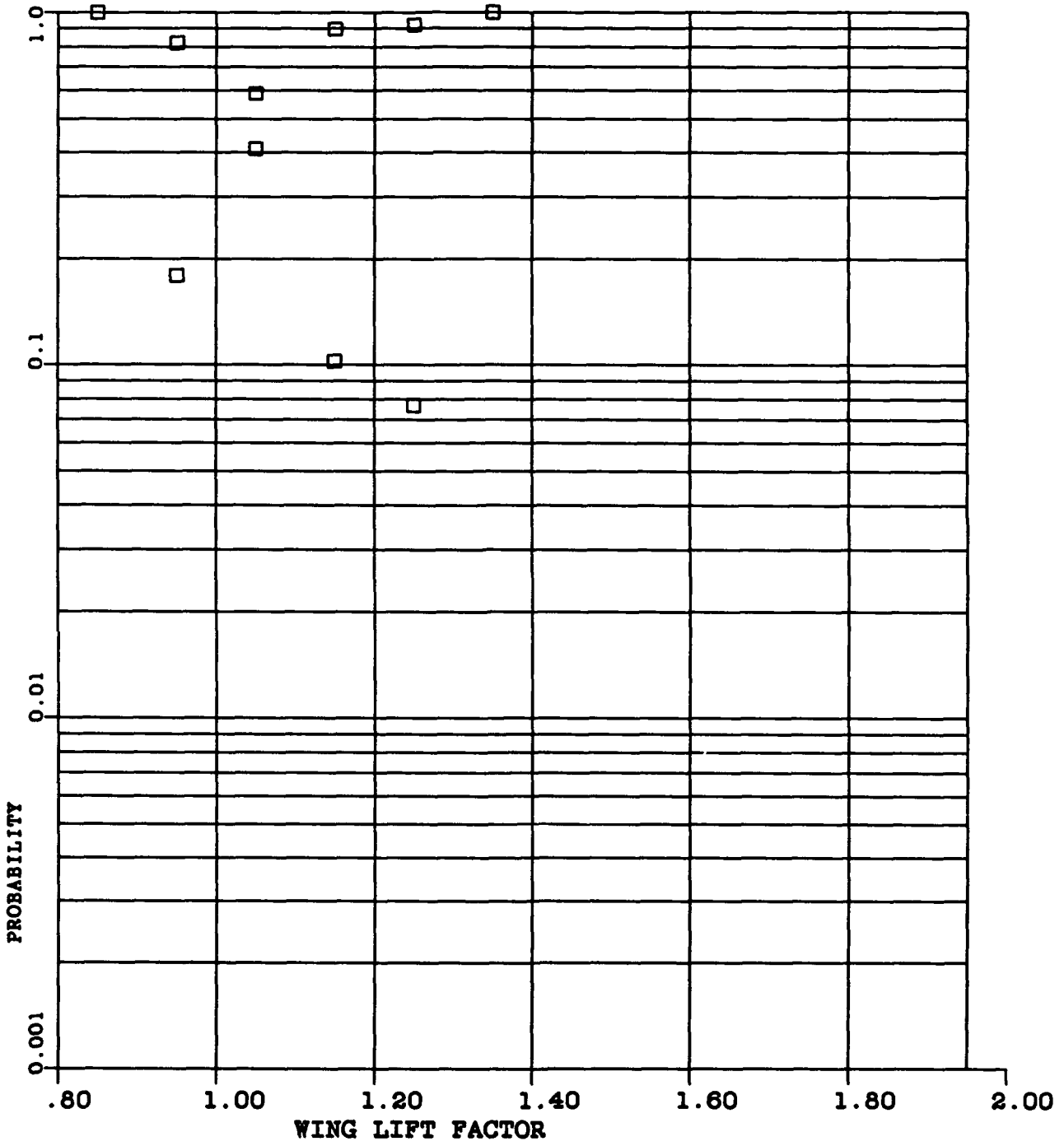


FIGURE G-16 PROBABILITY DISTRIBUTION OF WING LIFT FACTOR AT FIRST MAIN WHEEL TOUCHDOWN

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-7 $\bar{X}$-1.08 A3=.88
S=.11 A4=2.22

FREE FLIGHT IS THE CONDITION WHERE THE HOOK ENGAGES THE ARRESTMENT CABLE BEFORE THE WHEELS MAKE DECK CONTACT

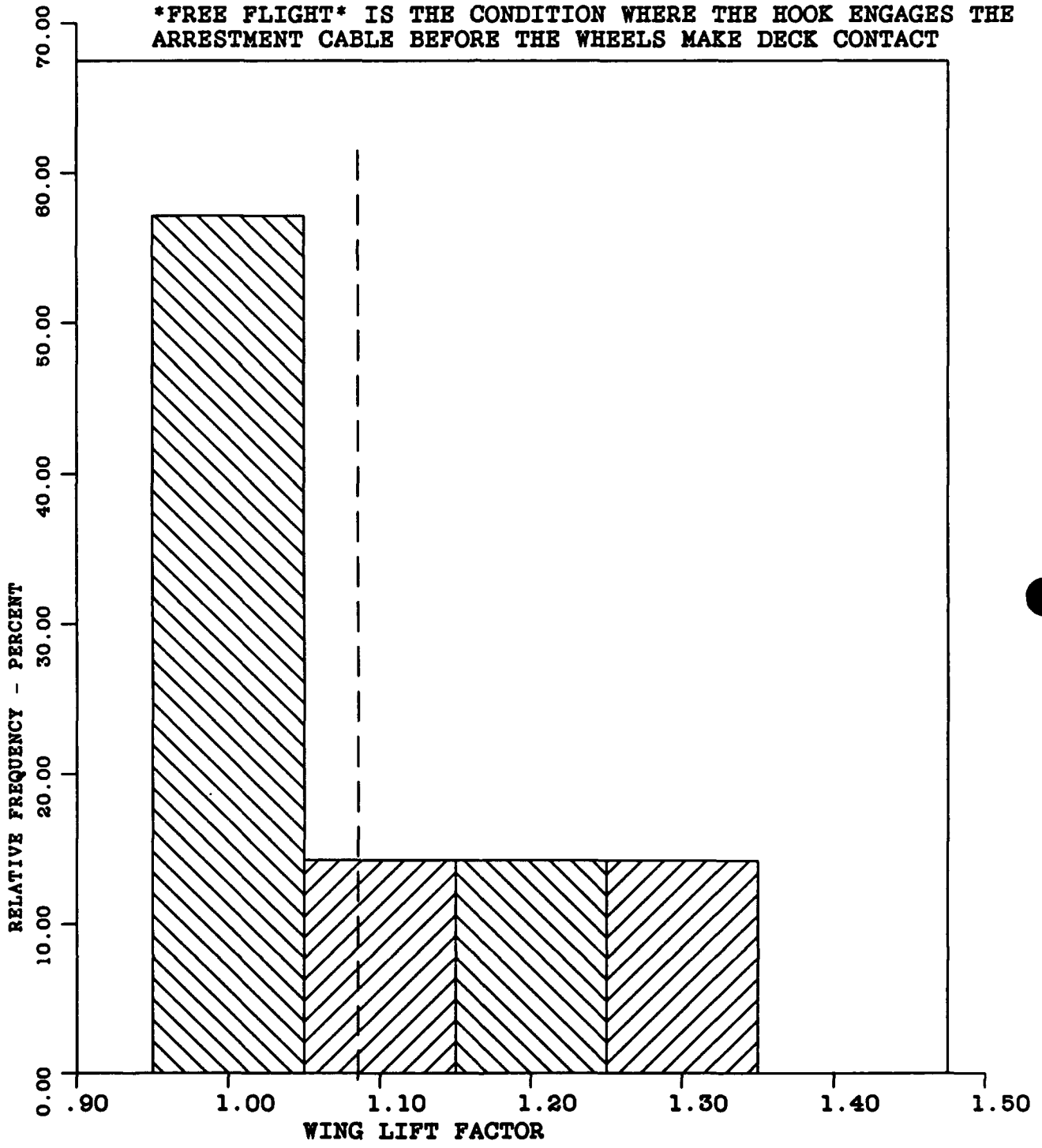


FIGURE G-17 FREQUENCY DISTRIBUTION OF WING LIFT FACTOR AT FREE FLIGHT

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=7 $\bar{X}$=1.08 A3=.88
S=.11 A4=2.22
CURVE FITTED - NORMAL
FREE FLIGHT IS THE CONDITION WHERE THE HOOK ENGAGES THE ARRESTMENT CABLE BEFORE THE WHEELS MAKE DECK CONTACT

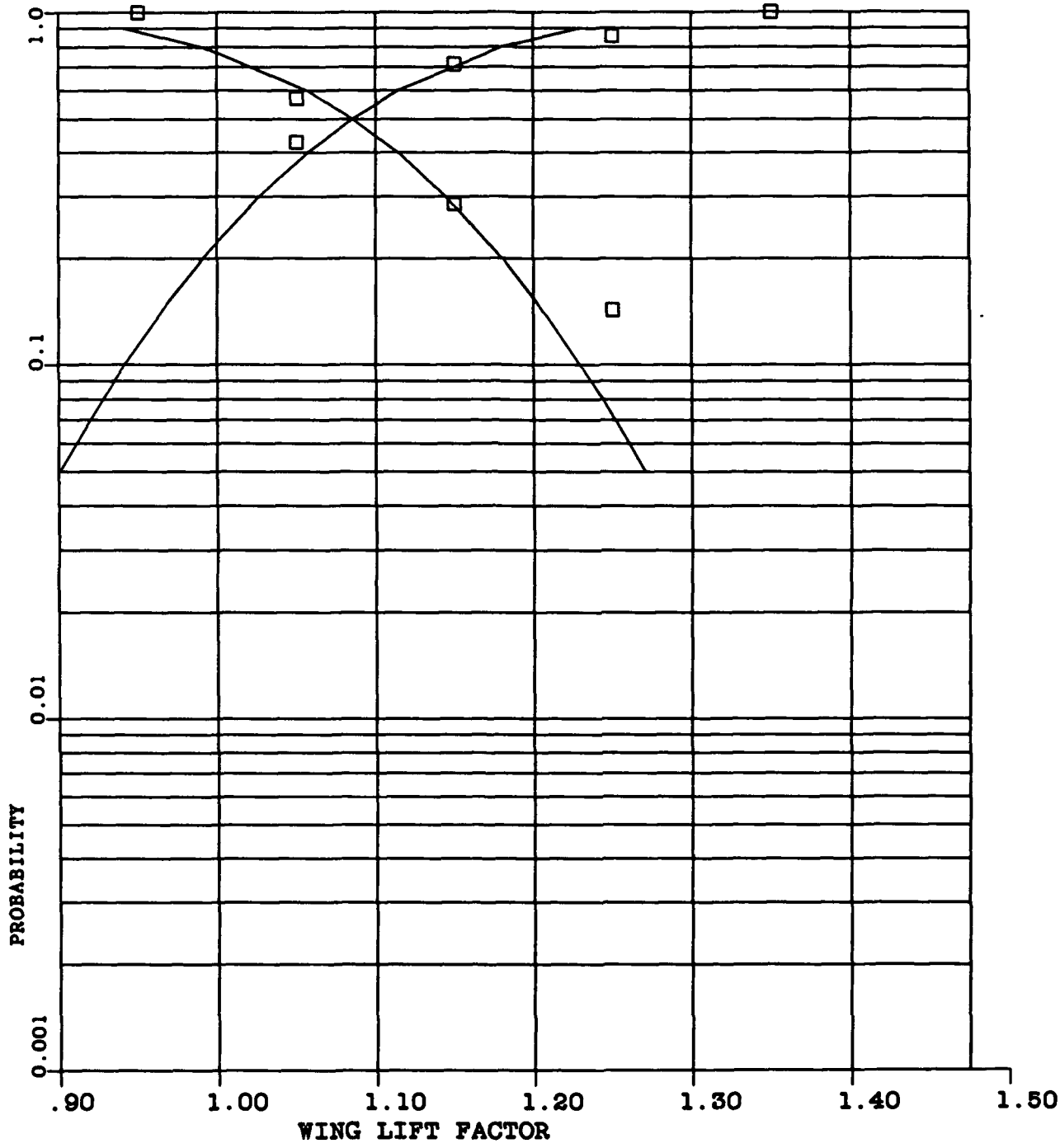


FIGURE G-18 PROBABILITY DISTRIBUTION OF WING LIFT FACTOR AT FREE FLIGHT

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-39 $\bar{X}$-8.16 DEGREES (.142 RADIANS) A3=.52
S-1.17 DEGREES (.020 RADIANS) A4=4.93

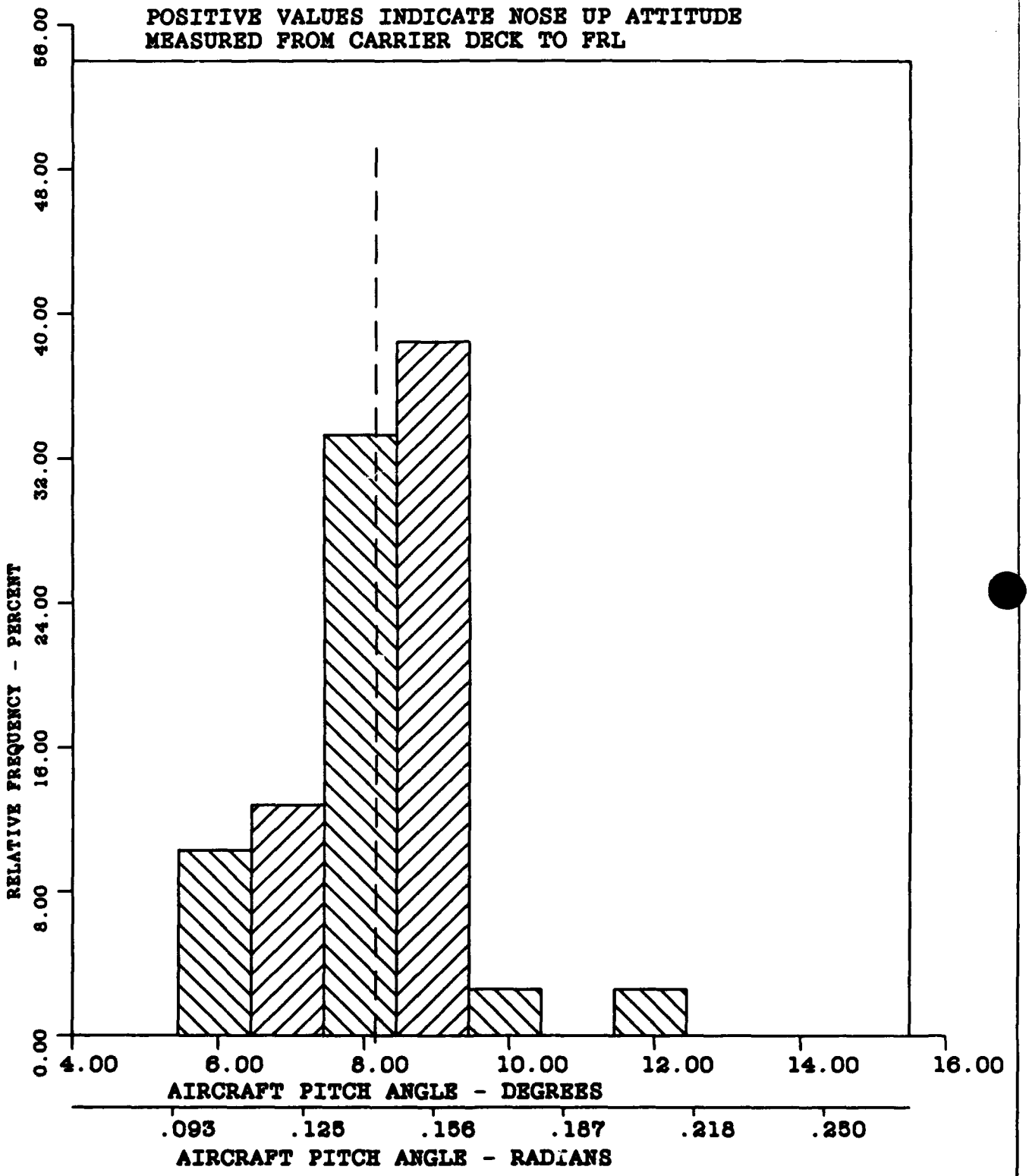


FIGURE G-19 FREQUENCY DISTRIBUTION OF AIRCRAFT PITCH ANGLE AT FIRST MAIN WHEEL TOUCHDOWN

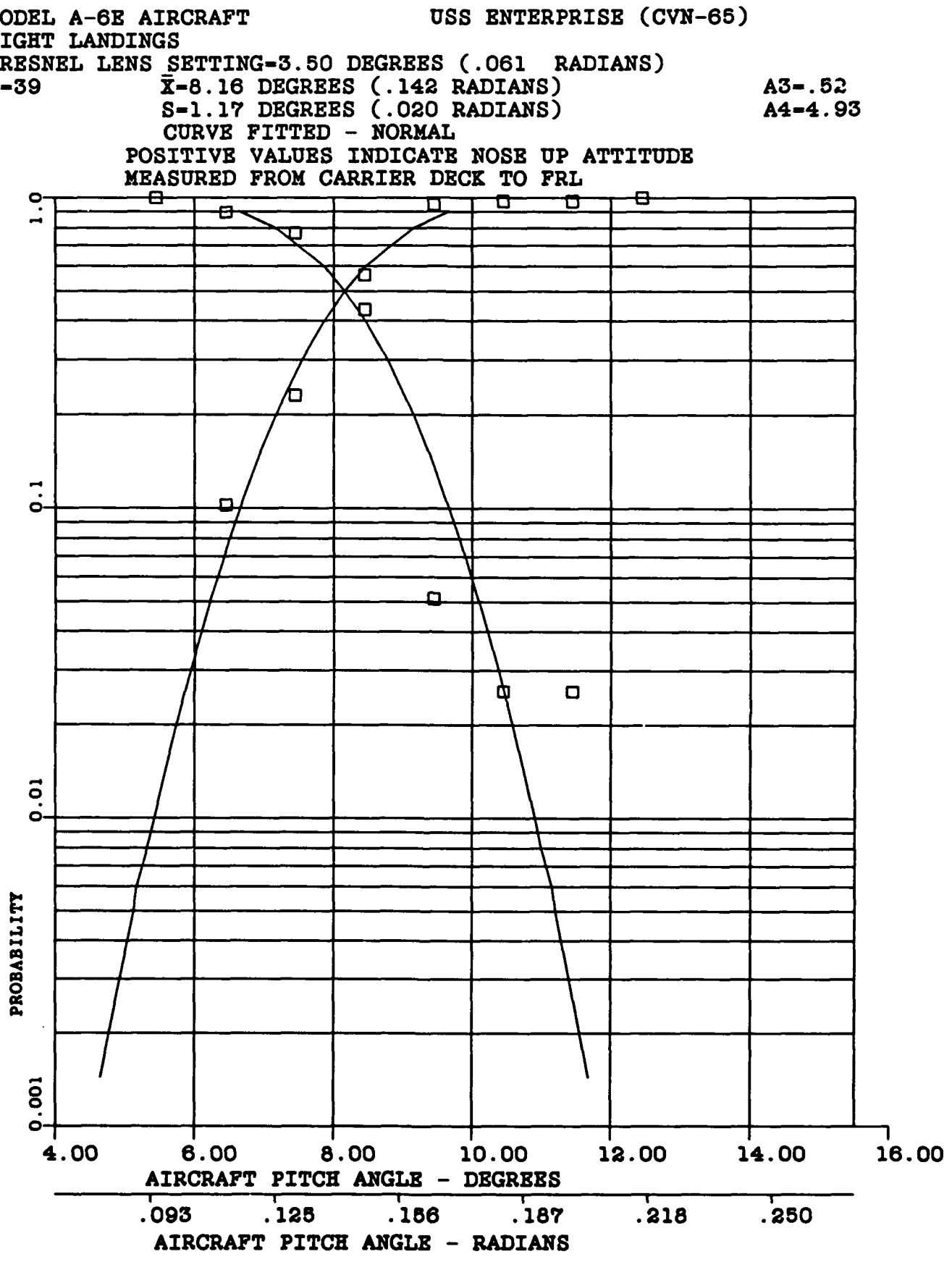


FIGURE G-20 PROBABILITY DISTRIBUTION OF AIRCRAFT PITCH ANGLE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=7 $\bar{X}$=8.51 DEGREES (.148 RADIANS) A3=.08
S=.70 DEGREES (.012 RADIANS) A4=2.05

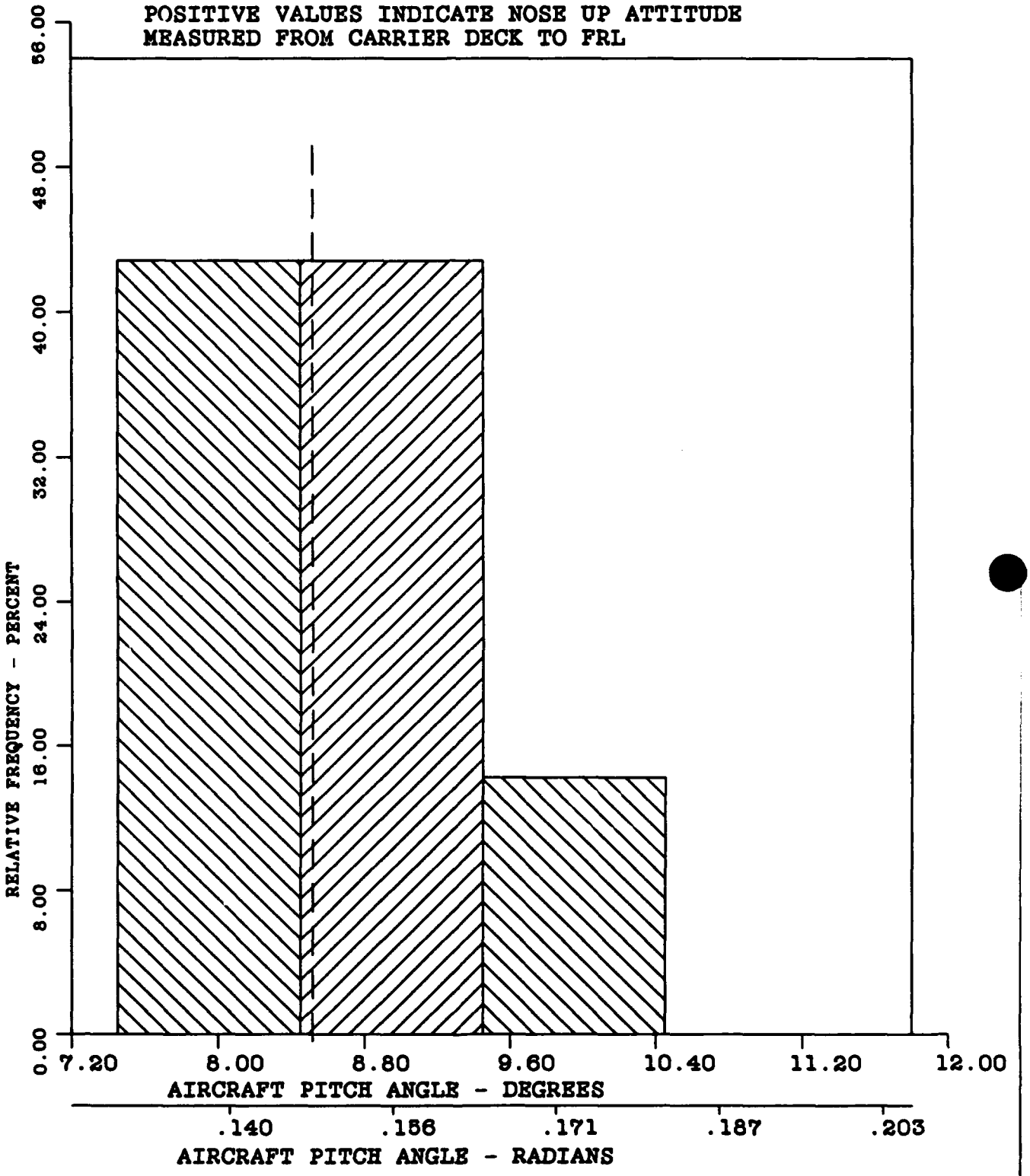


FIGURE G-21 FREQUENCY DISTRIBUTION OF AIRCRAFT PITCH ANGLE AT FREE FLIGHT

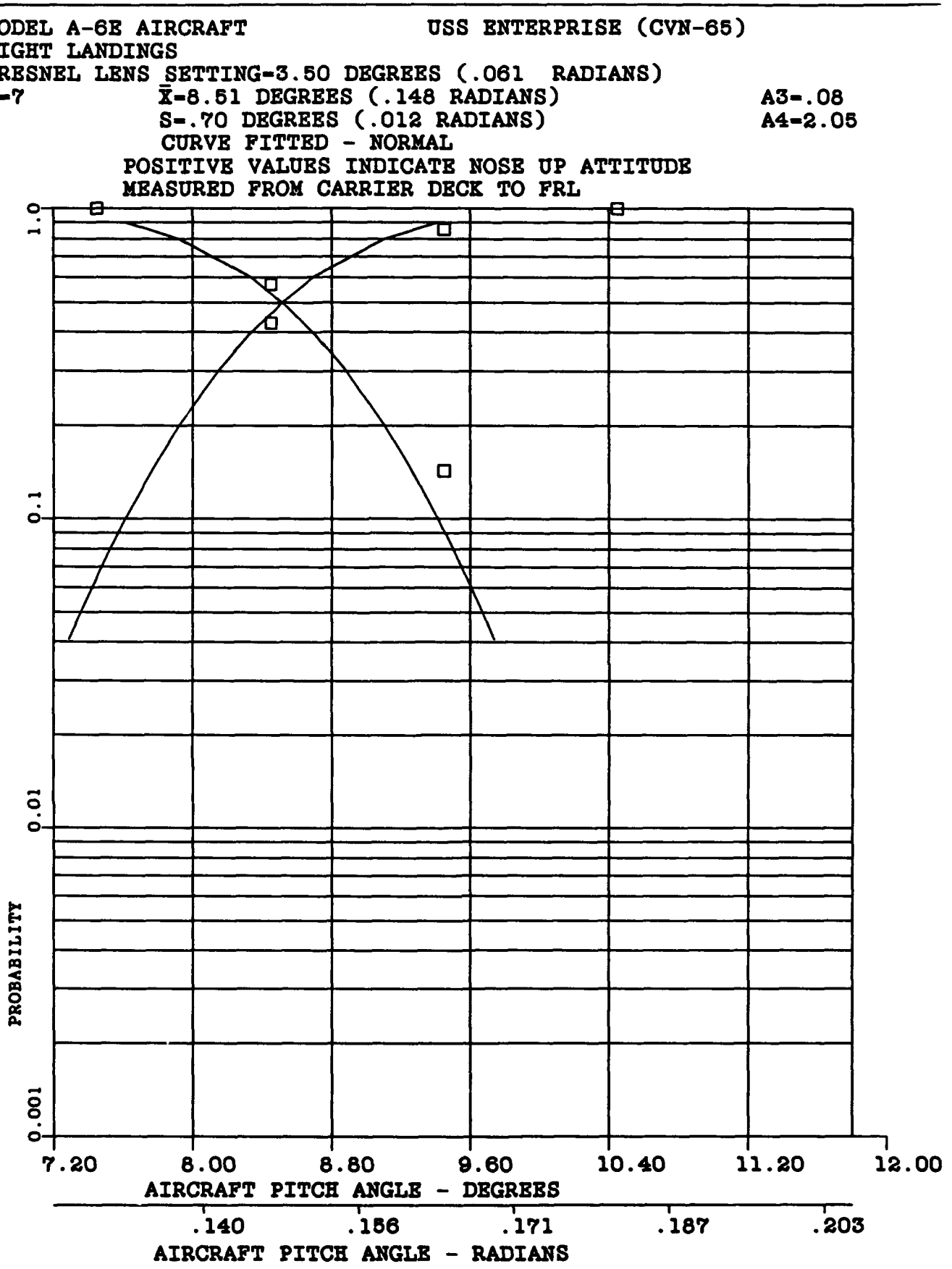


FIGURE G-22 PROBABILITY DISTRIBUTION OF AIRCRAFT PITCH ANGLE AT FREE FLIGHT

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-39 $\bar{X}$-.39 DEGREES (.006 RADIANS) A3=-.04
S-1.74 DEGREES (.030 RADIANS) A4-2.28

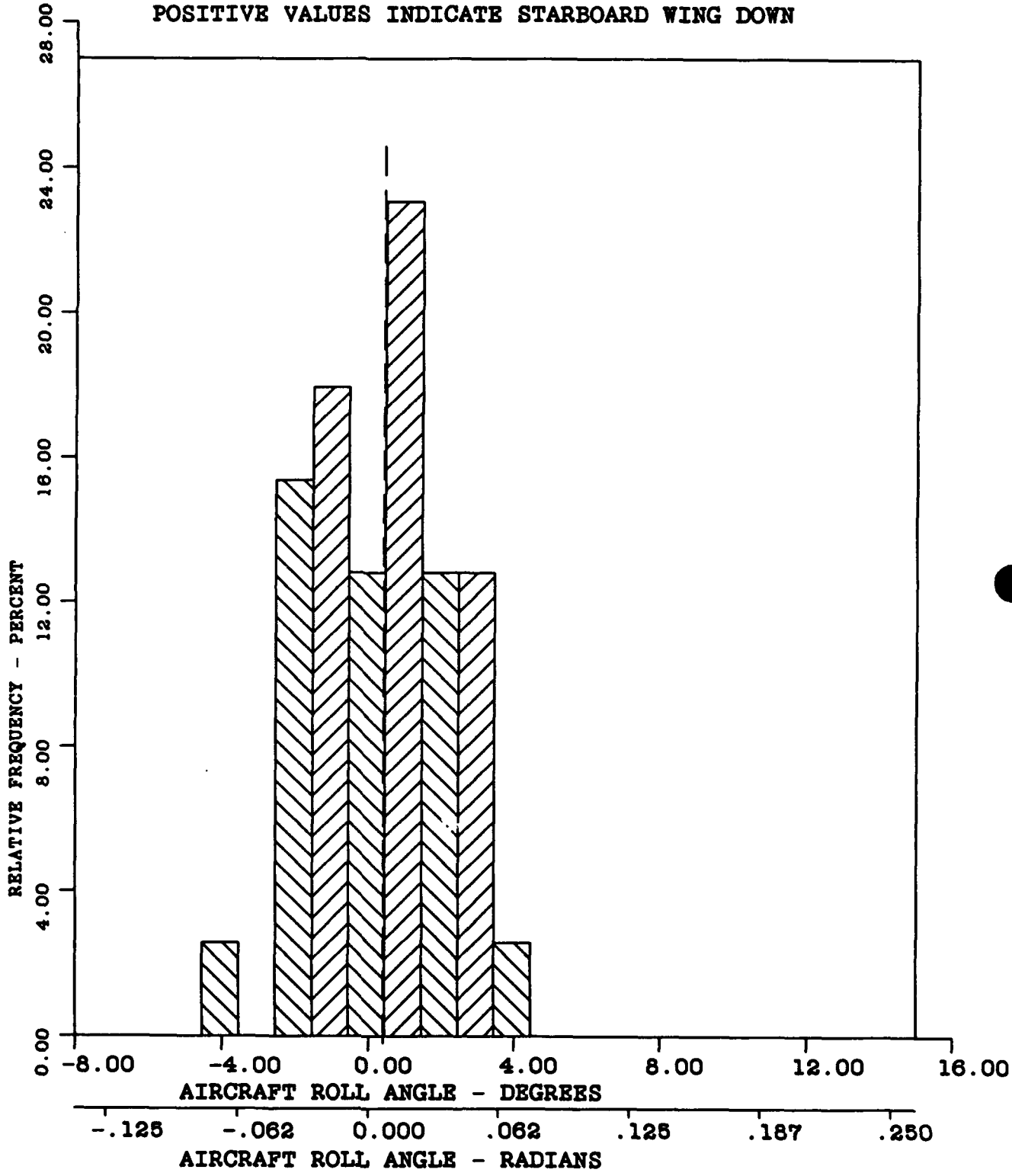


FIGURE G-23 FREQUENCY DISTRIBUTION OF AIRCRAFT ROLL ANGLE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-39 $\bar{X}$=.39 DEGREES (.006 RADIANS) A3=-.04
S=1.74 DEGREES (.030 RADIANS) A4=2.28
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE STARBOARD WING DOWN

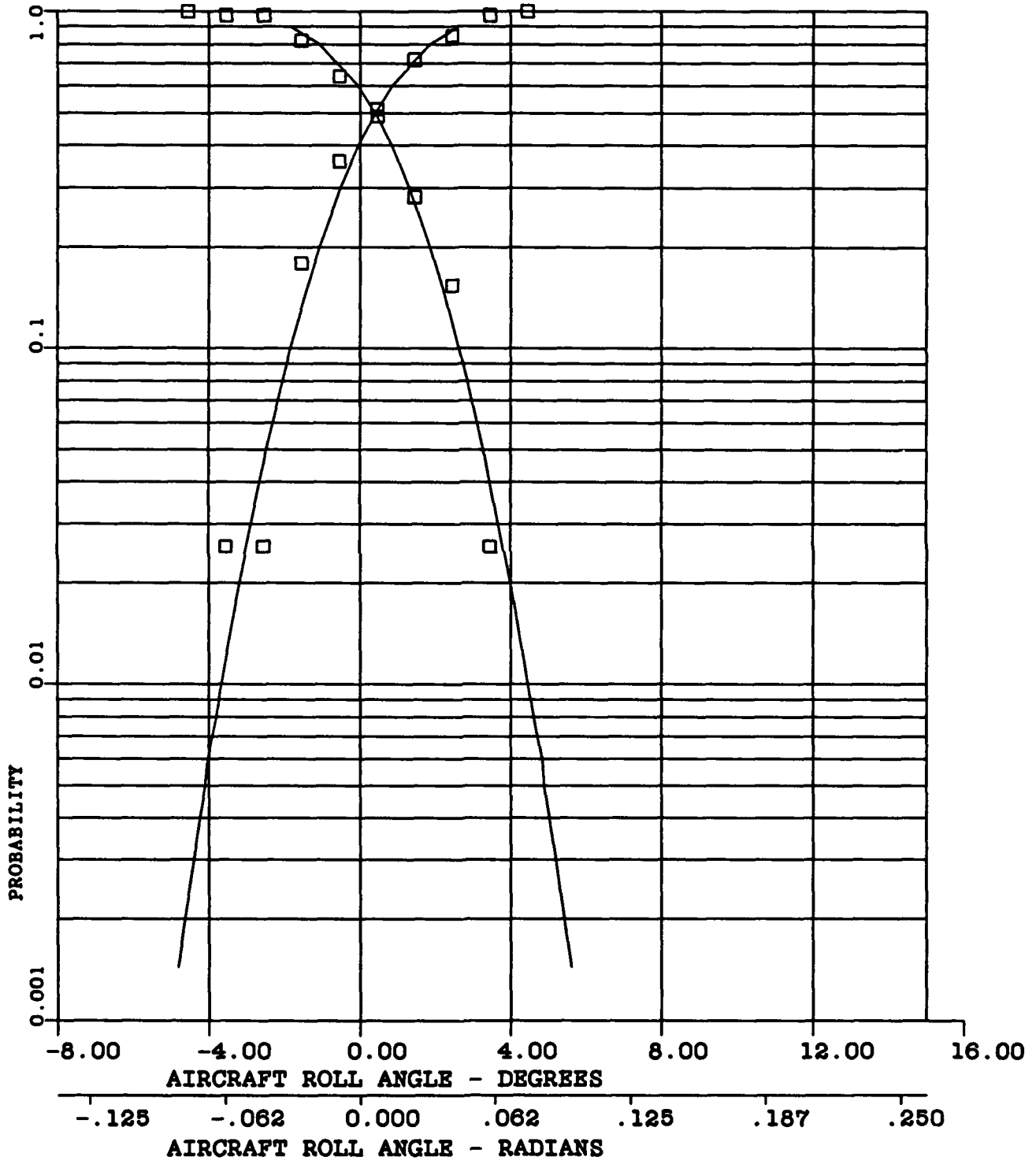


FIGURE G-24 PROBABILITY DISTRIBUTION OF AIRCRAFT ROLL ANGLE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-7 $\bar{X}$-.21 DEGREES (.003 RADIANS) A3=-.04
S-1.63 DEGREES (.028 RADIANS) A4-1.33

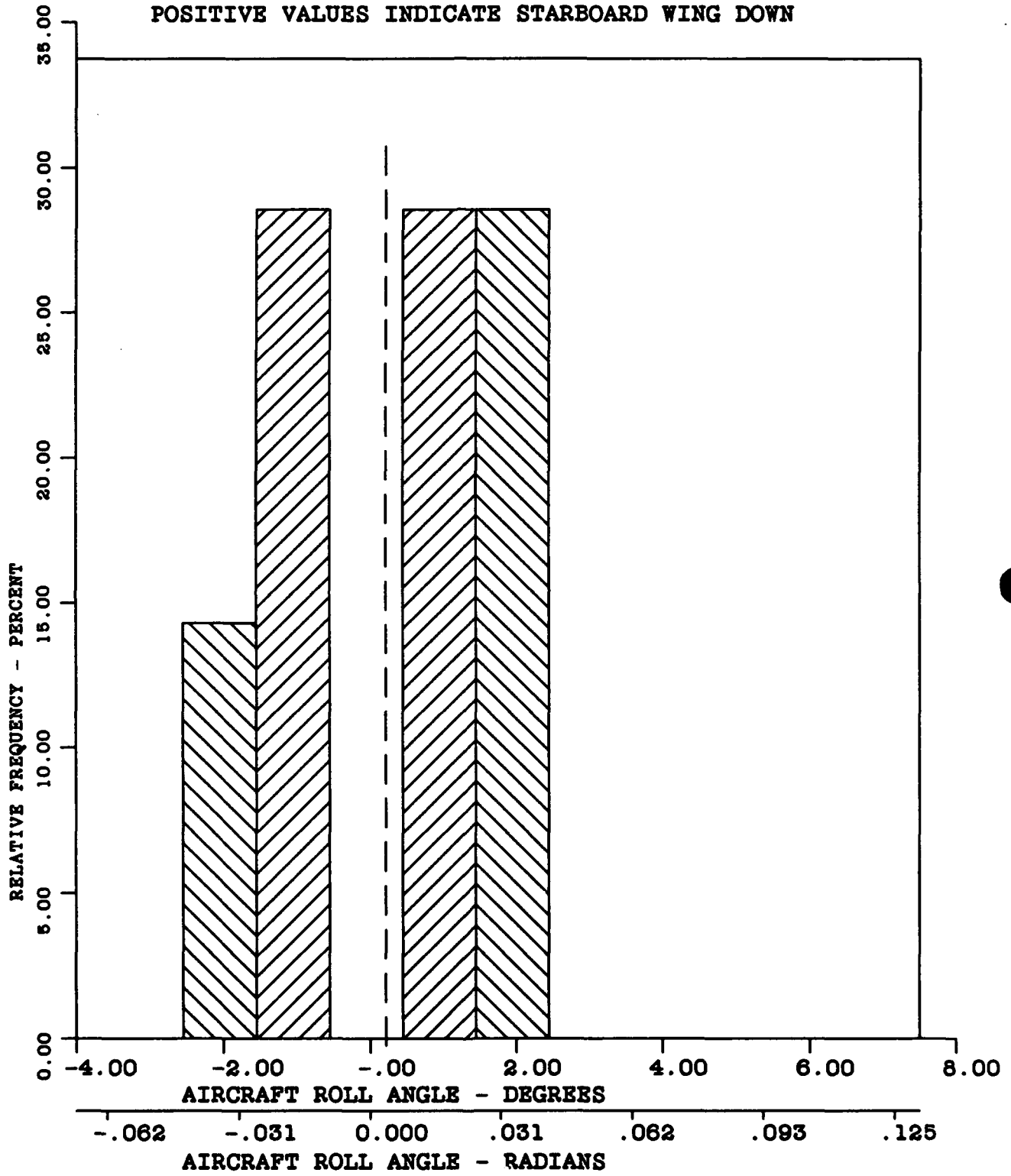


FIGURE G-25 FREQUENCY DISTRIBUTION OF AIRCRAFT ROLL ANGLE AT FREE FLIGHT

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N=7 $\bar{X}$=.21 DEGREES (.003 RADIANS) A3=-.04
S=1.63 DEGREES (.028 RADIANS) A4=1.33
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE STARBOARD WING DOWN

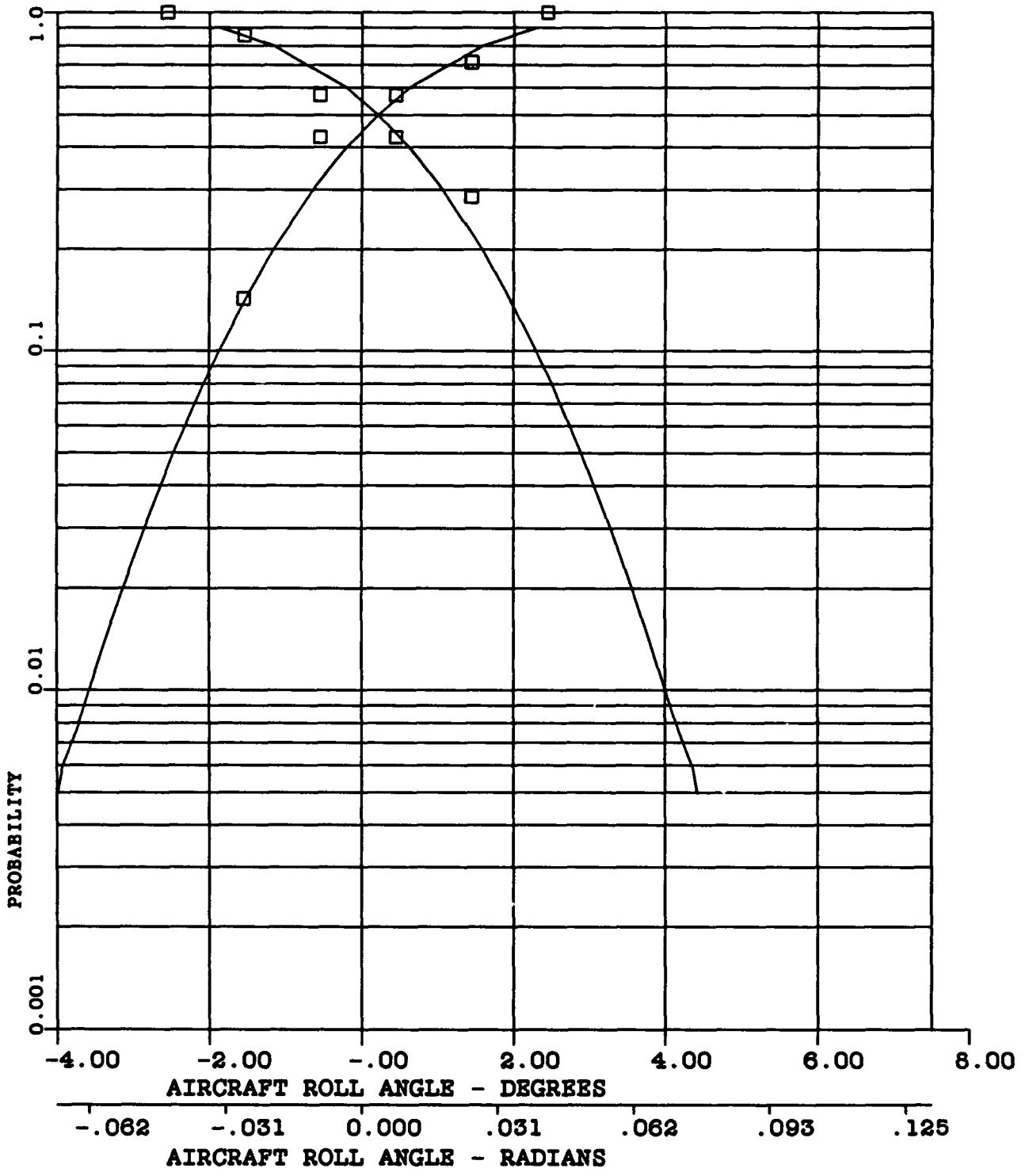


FIGURE G-26 PROBABILITY DISTRIBUTION OF AIRCRAFT ROLL ANGLE AT FREE FLIGHT

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N-39 $\bar{X}$=265.38 FEET (80.88 METRES) A3=.51
S=27.57 FEET (8.40 METRES) A4=2.51

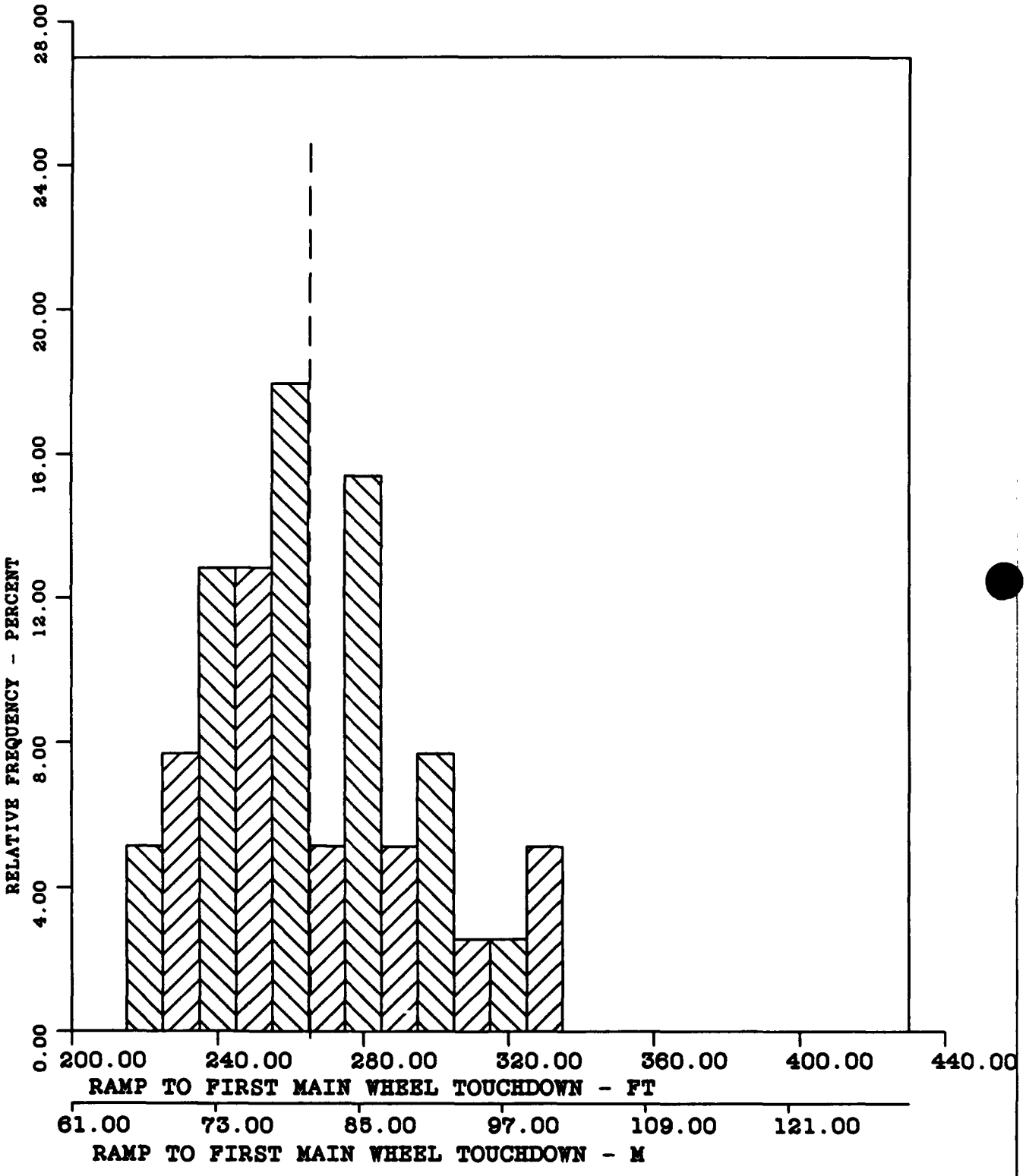


FIGURE G-27 FREQUENCY DISTRIBUTION OF DISTANCE FROM RAMP TO FIRST MAIN WHEEL TOUCHDOWN POINT

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-39 $\bar{X}$=265.38 FEET (80.88 METRES) A3=.51
S=27.57 FEET (8.40 METRES) A4=2.51
CURVE FITTED - NORMAL

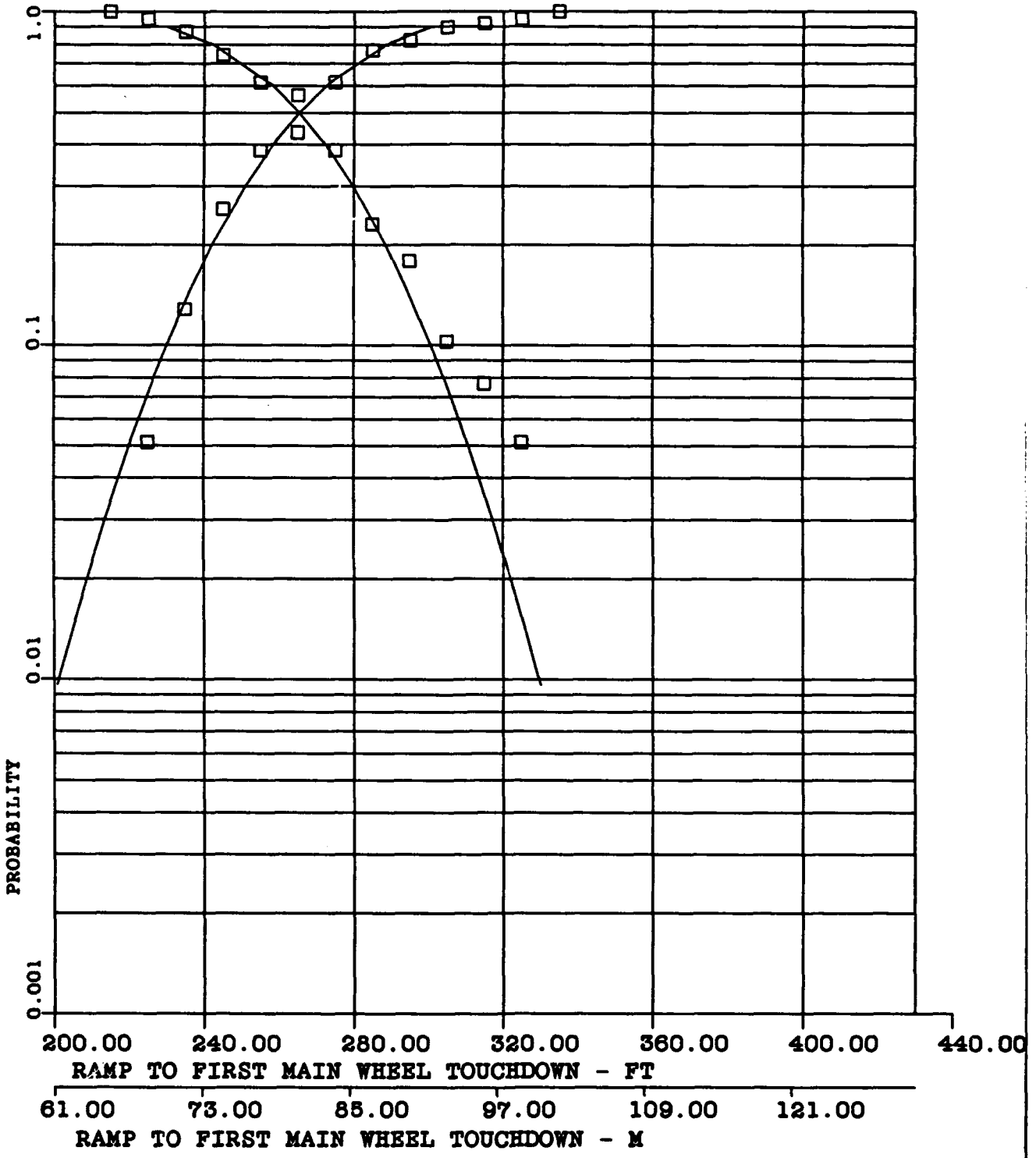


FIGURE G-28 PROBABILITY DISTRIBUTION OF DISTANCE FROM RAMP TO FIRST MAIN WHEEL TOUCHDOWN POINT

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-39 $\bar{X}$=-11.00 FEET (-3.35 METRES) A3=-.03
S=3.86 FEET (1.17 METRES) A4=2.88

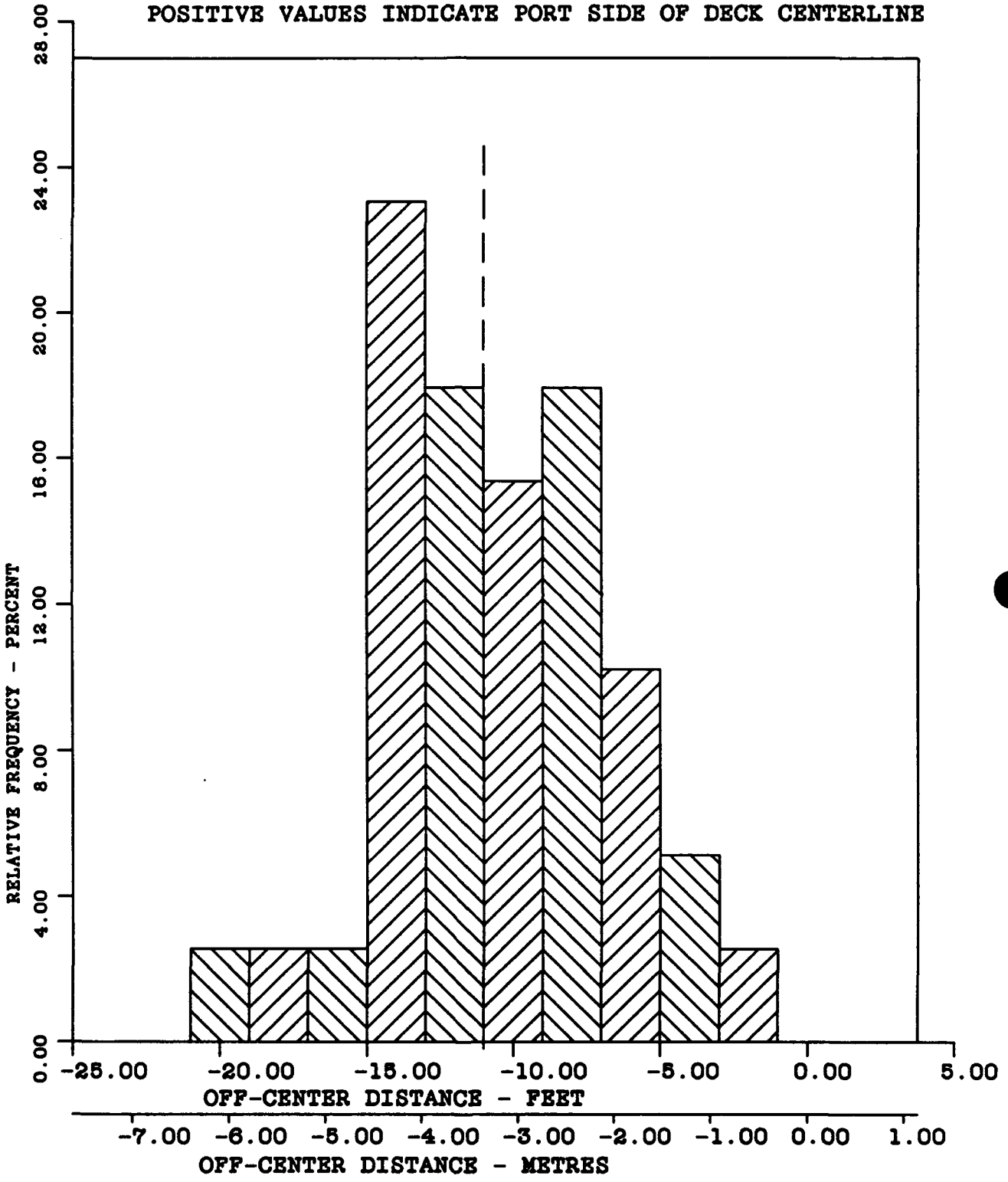


FIGURE G-29 FREQUENCY DISTRIBUTION OF AIRCRAFT CENTERLINE OFF-CNTR DISTANCE AT 1ST MAIN WHEEL TOUCHDOWN

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=39 $\bar{X}$=-11.00 FEET (-3.35 METRES) A3=-.03
S=3.86 FEET (1.17 METRES) A4=2.88
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE PORT SIDE OF DECK CENTERLINE

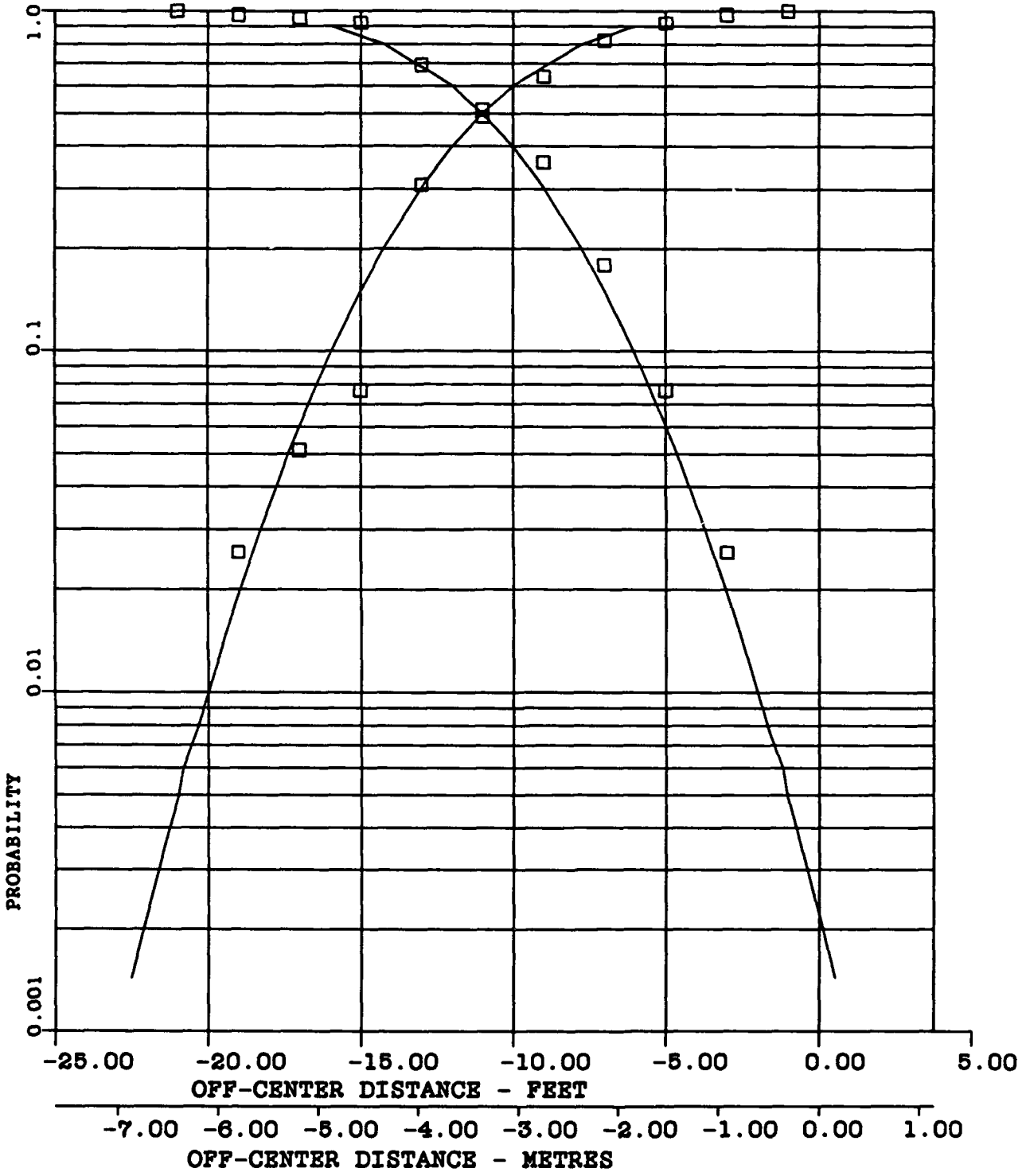


FIGURE G-30 PROBABILITY DISTRIBUTION OF AIRCRAFT OFF-CENTER DISTANCE AT 1ST MAIN WHEEL TOUCHDOWN

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-31 $\bar{X}$-3.06 A3=-.11
S=.80 A4=1.56

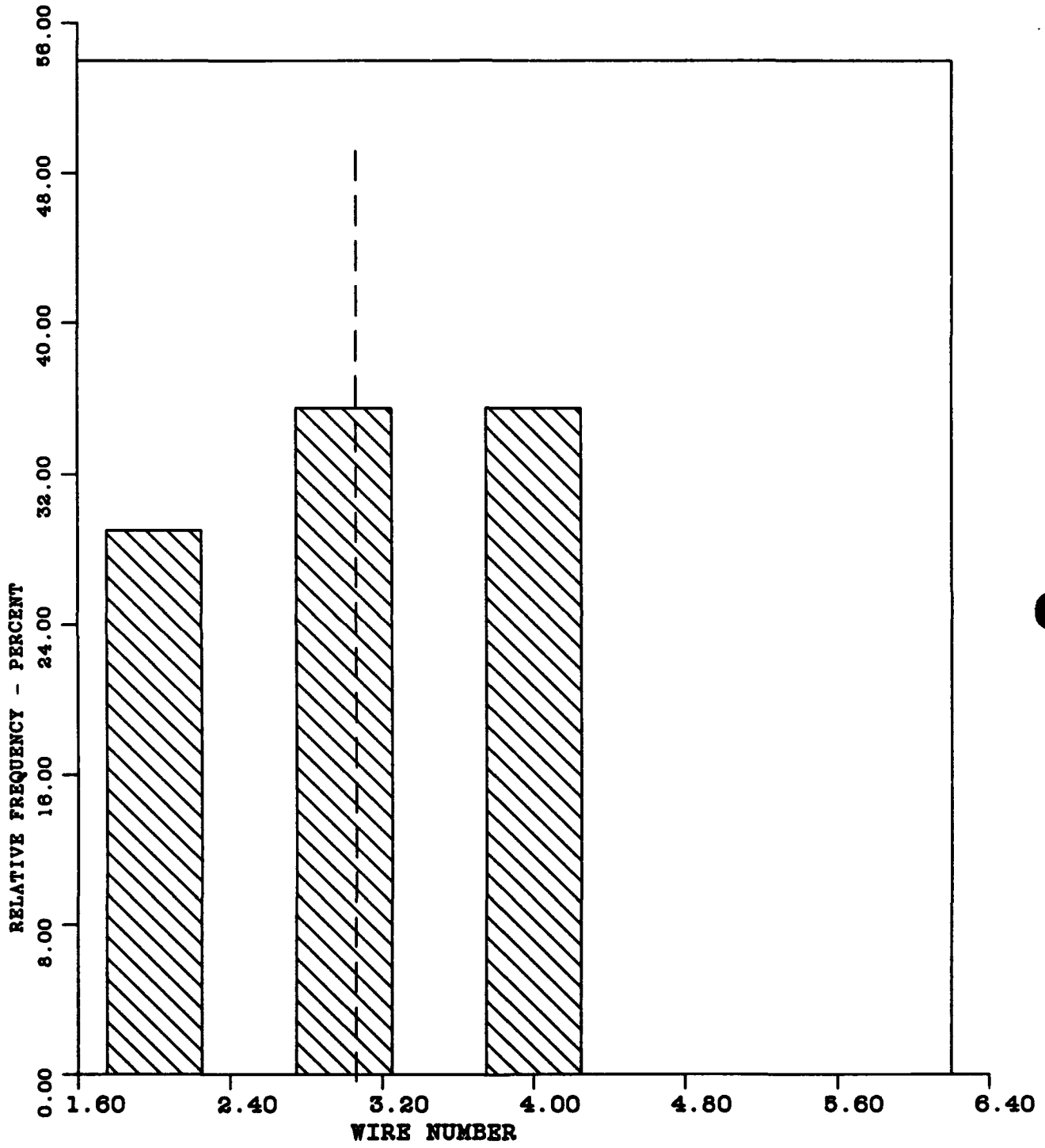


FIGURE G-31 FREQUENCY DISTRIBUTION OF ARRESTMENT WIRE NUMBER ENGAGED

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N=39 $\bar{X}$=3.49 DEGREES (.061 RADIANS) A3=-.17
S=.78 DEGREES (.013 RADIANS) A4=2.39

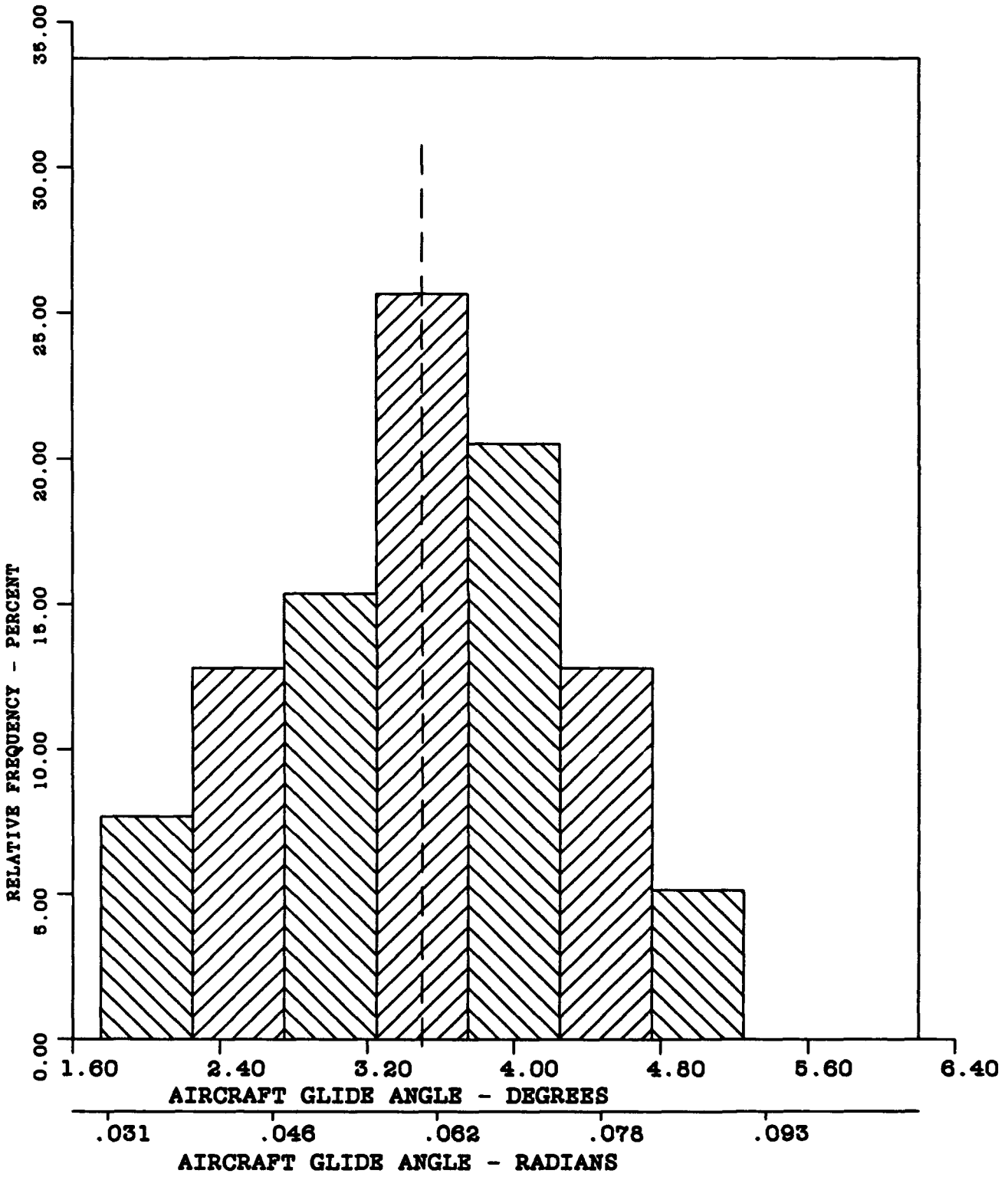


FIGURE G-32 FREQUENCY DISTRIBUTION OF AIRCRAFT GLIDE ANGLE - INSTANTANEOUS METHOD

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-39 $\bar{X}$-100.64 KNOTS (51.77 METRES/SEC) A3=.64
S-3.64 KNOTS (1.87 METRES/SEC) A4=3.44

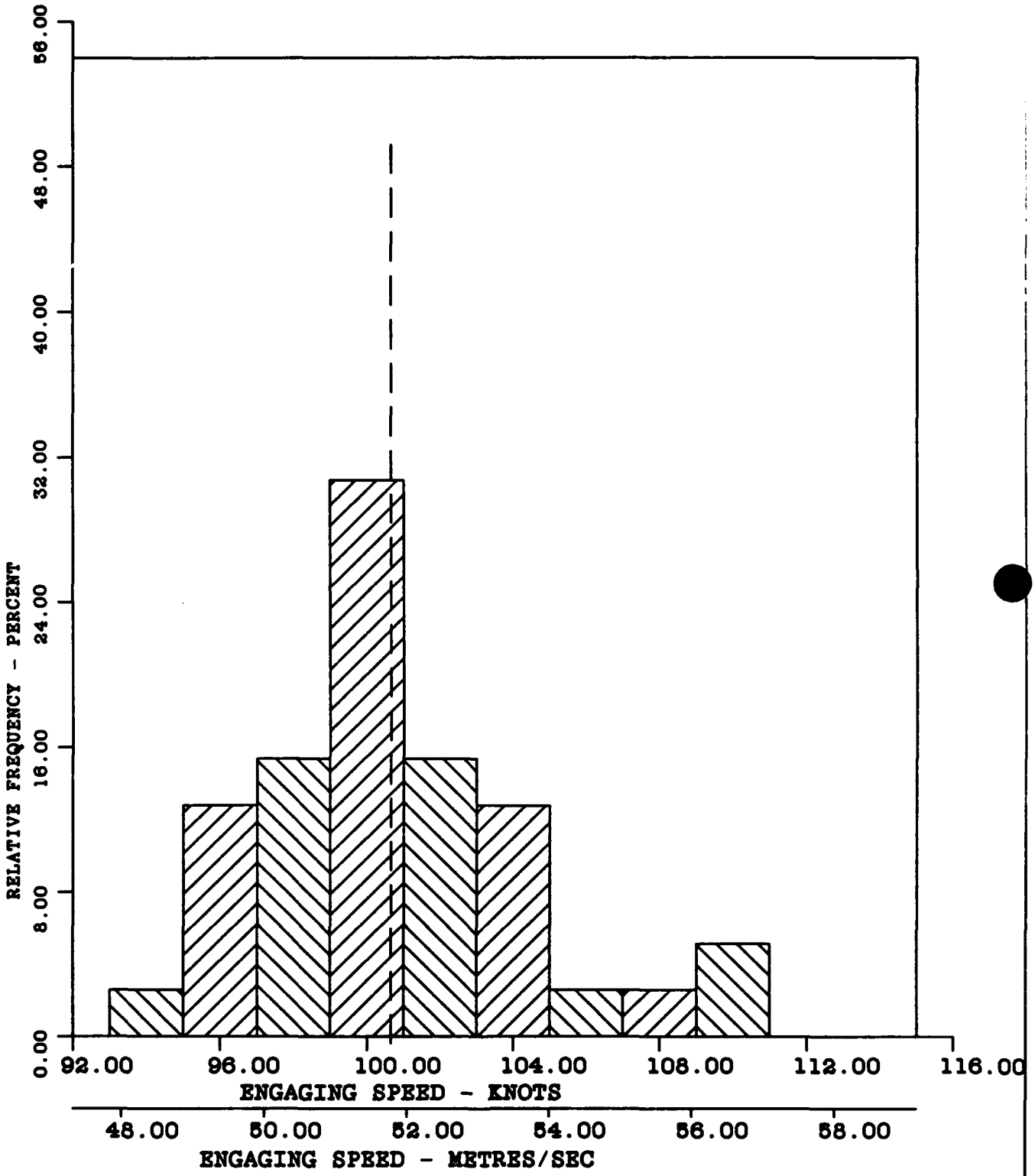


FIGURE G-33 FREQUENCY DISTRIBUTION OF AIRCRAFT ENGAGING SPEED AT FIRST MAIN WHEEL TOUCHDOWN

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N=39 $\bar{X}$=100.64 KNOTS (51.77 METRES/SEC) A3=.64
S=3.64 KNOTS (1.87 METRES/SEC) A4=3.44
CURVE FITTED - NORMAL

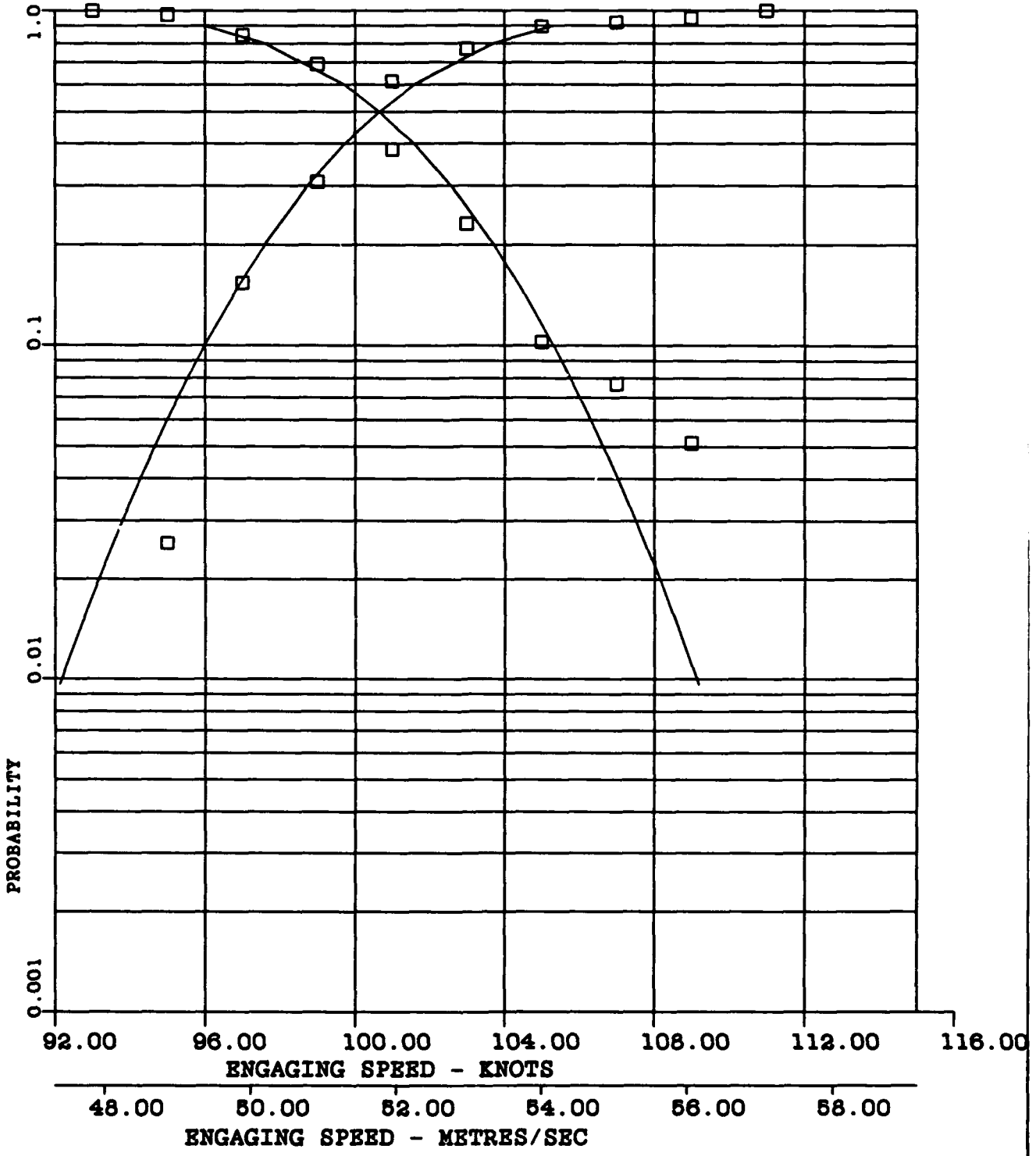


FIGURE G-34 PROBABILITY DISTRIBUTION OF ENGAGING SPEED AT FIRST MAIN WHEEL TOUCHDOWN

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=39 $\bar{X}$=110.85 KNOTS (57.02 METRES/SEC) A3=-2.14
S=1.91 KNOTS (.98 METRES/SEC) A4=9.66

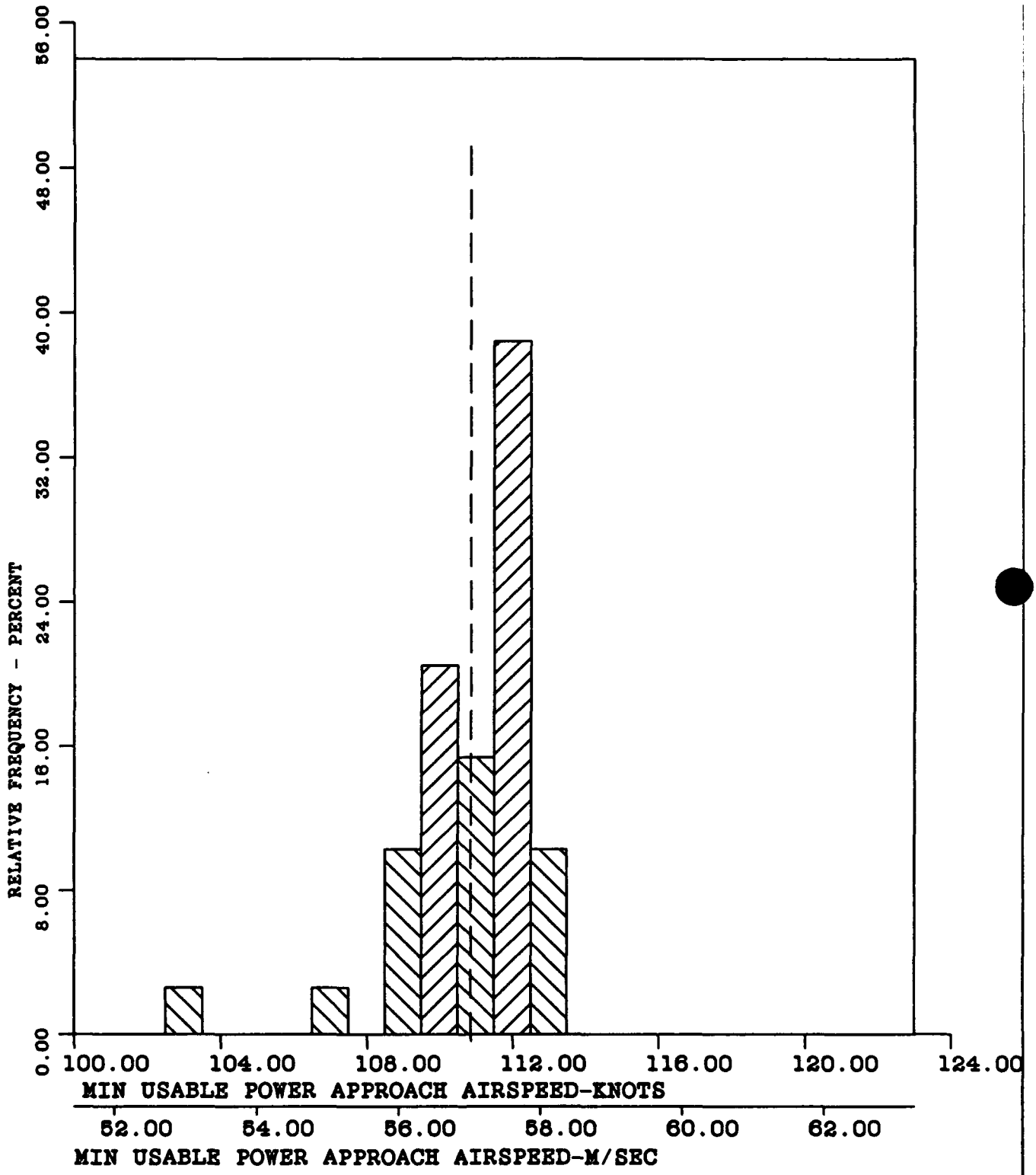


FIGURE G-35 FREQUENCY DISTRIBUTION OF MINIMUM USABLE POWER APPROACH AIRSPEED

G-41

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=39 $\bar{X}$=1.14 A3=.22
S=.03 A4=2.43

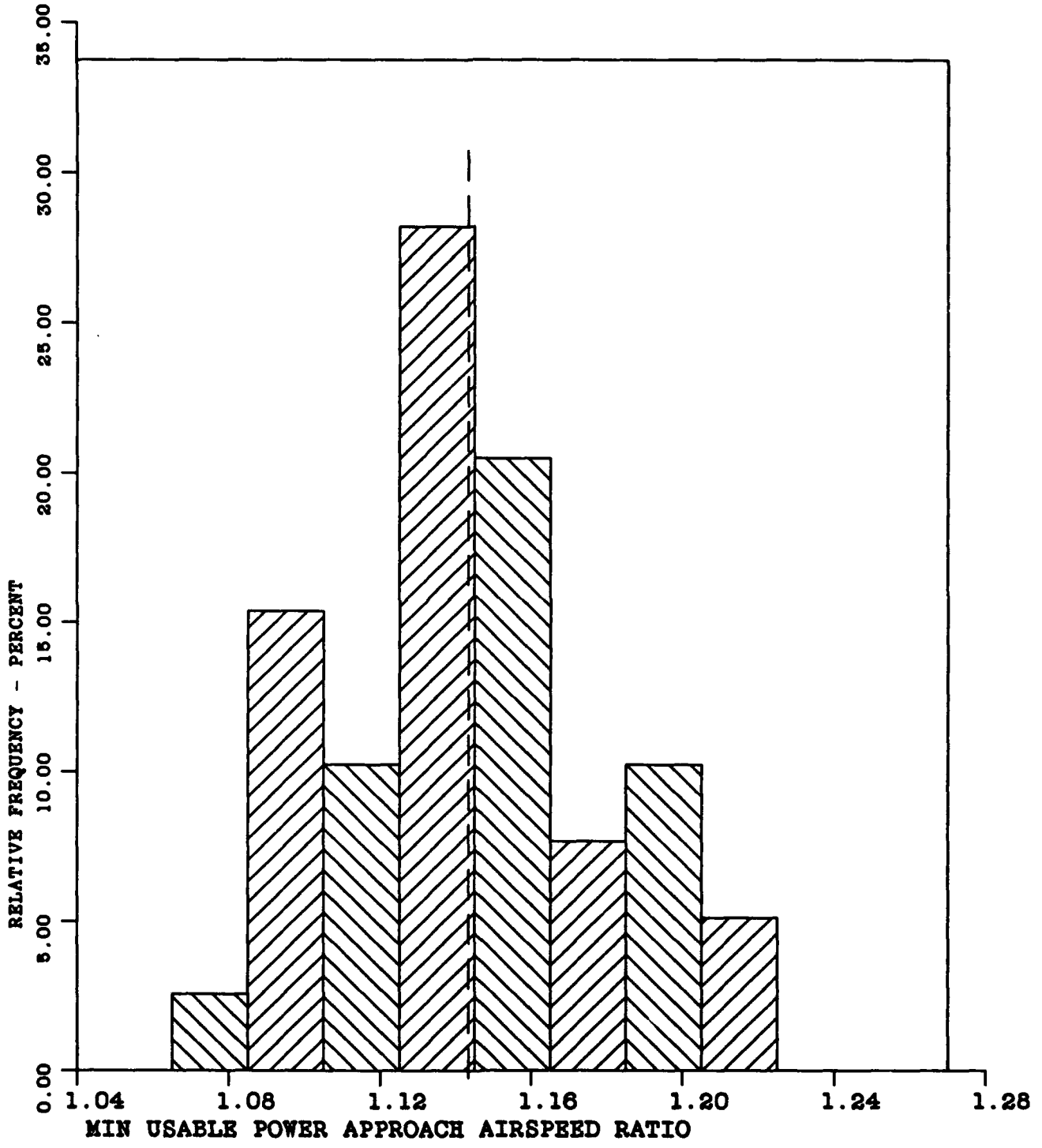


FIGURE G-36 FREQUENCY DISTRIBUTION OF MINIMUM USABLE POWER APPROACH AIRSPEED RATIO - FILM

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-39 $\bar{X}$=-.39 DEGREES (-.006 RADIANS) A3=-.63
S=.69 DEGREES (.012 RADIANS) A4=6.97

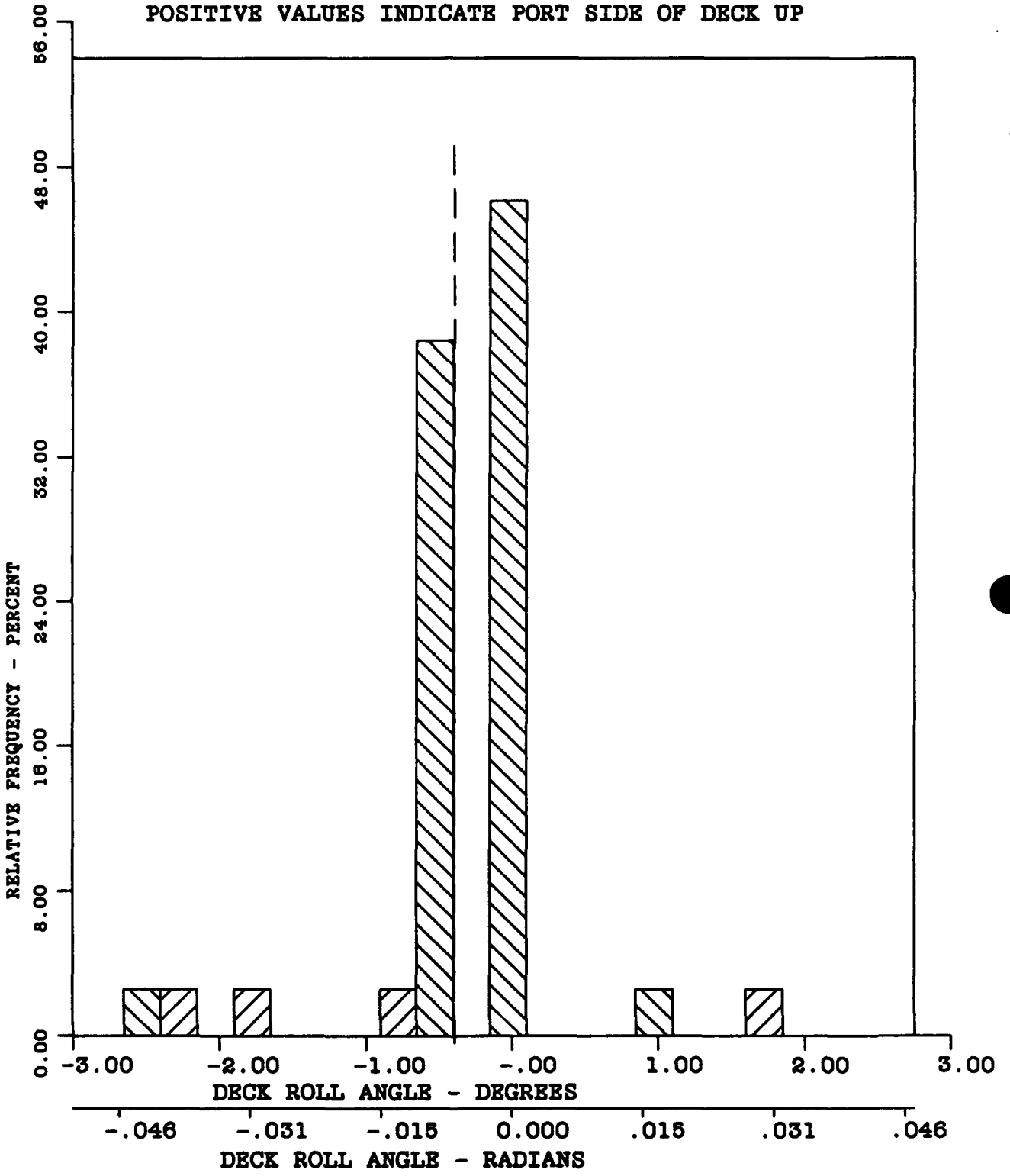


FIGURE G-37 FREQUENCY DISTRIBUTION OF CARRIER DECK ROLL MOTION

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=39 $\bar{X}$=-.39 DEGREES (-.006 RADIANS) A3=-.63
S=.69 DEGREES (.012 RADIANS) A4=6.97
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE PORT SIDE OF DECK UP

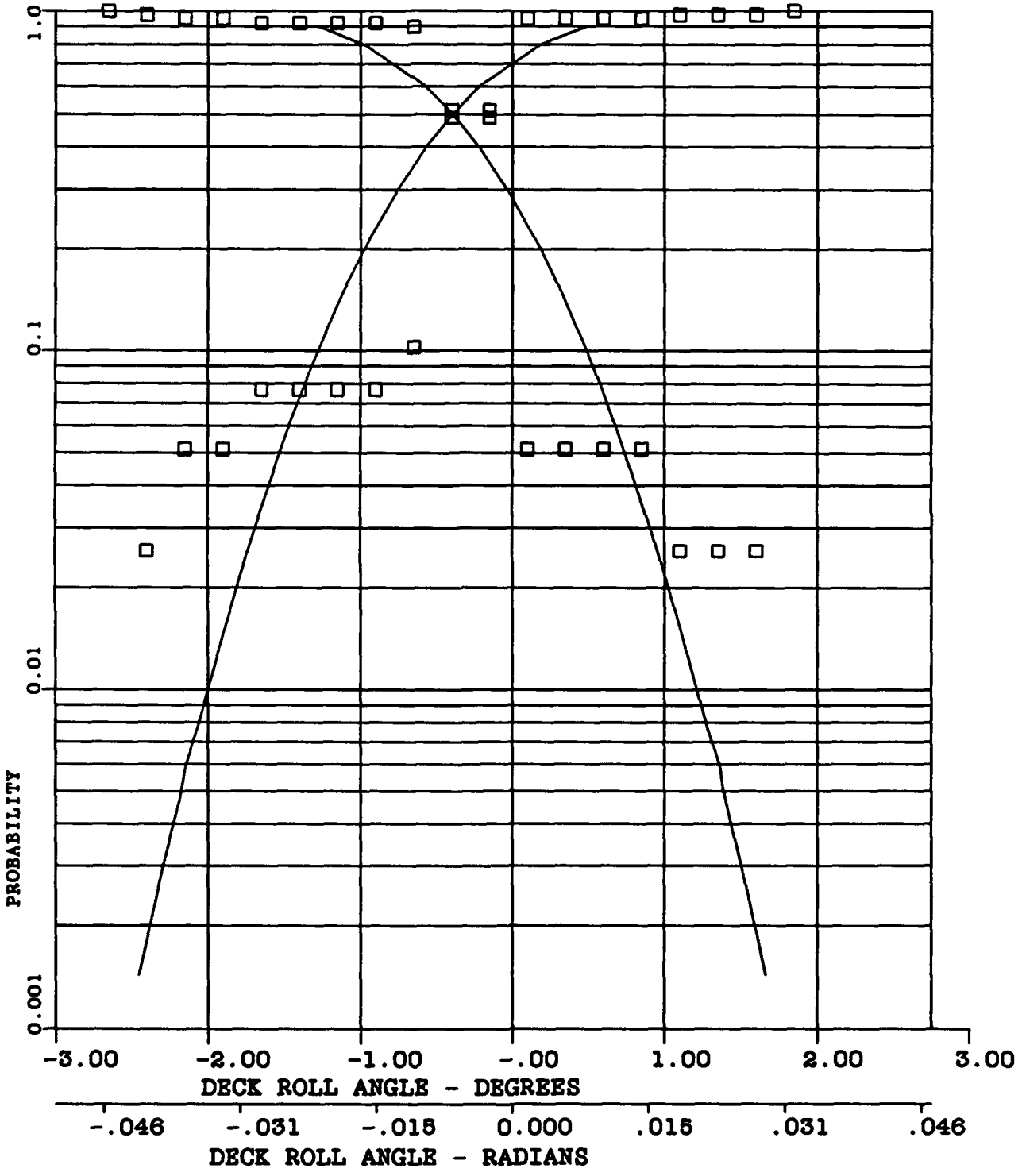


FIGURE G-38 PROBABILITY DISTRIBUTION OF CARRIER DECK ROLL MOTION

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-39 $\bar{X}$=-.16 DEGREES (-.002 RADIANS) A3=.06
S=.31 DEGREES (.005 RADIANS) A4=1.21

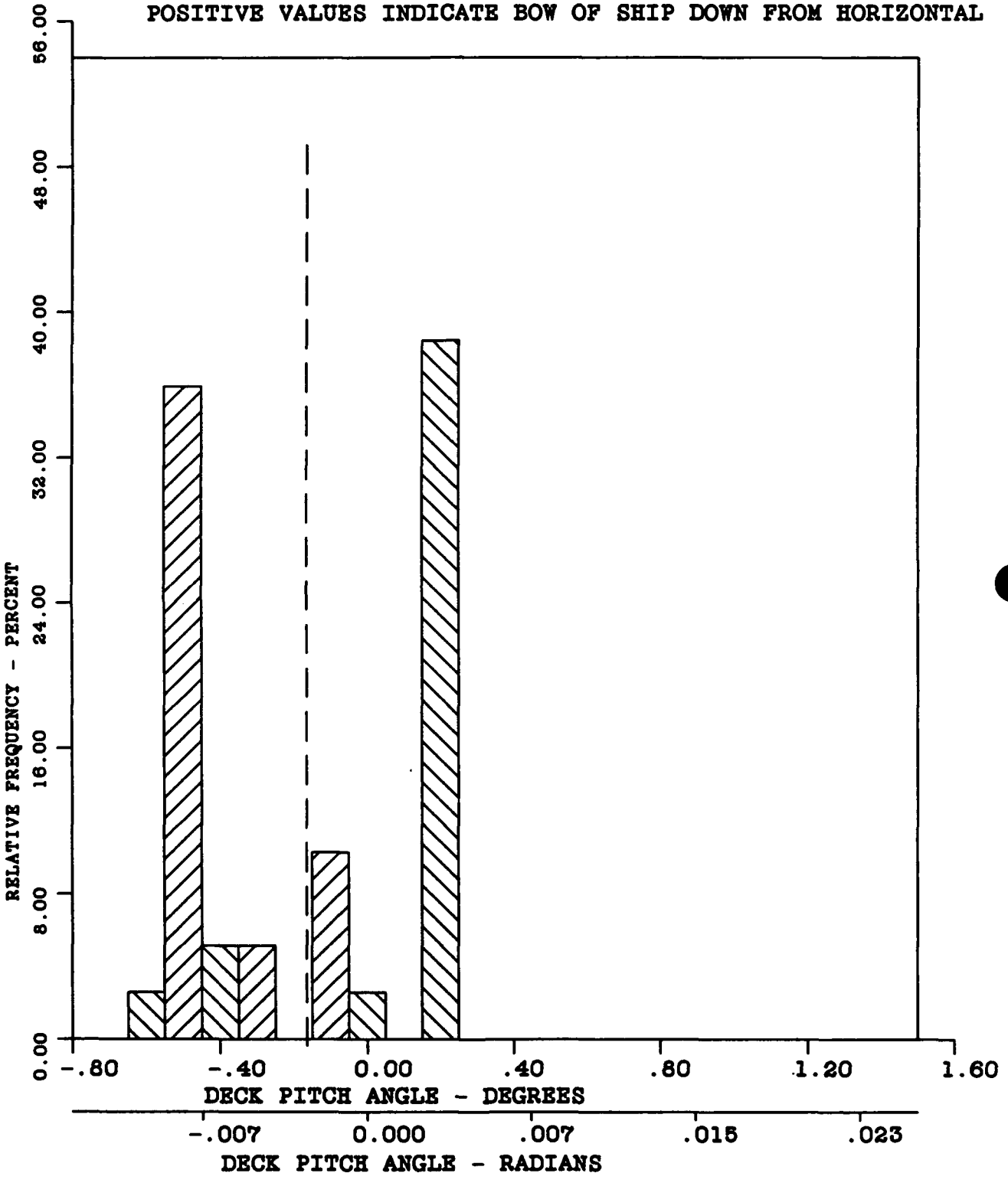


FIGURE G-39 FREQUENCY DISTRIBUTION OF CARRIER DECK PITCH MOTION

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-39 $\bar{X}$=-.16 DEGREES (-.002 RADIANS) A3=.06
S=.31 DEGREES (.005 RADIANS) A4=1.21
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE BOW OF SHIP DOWN FROM HORIZONTAL

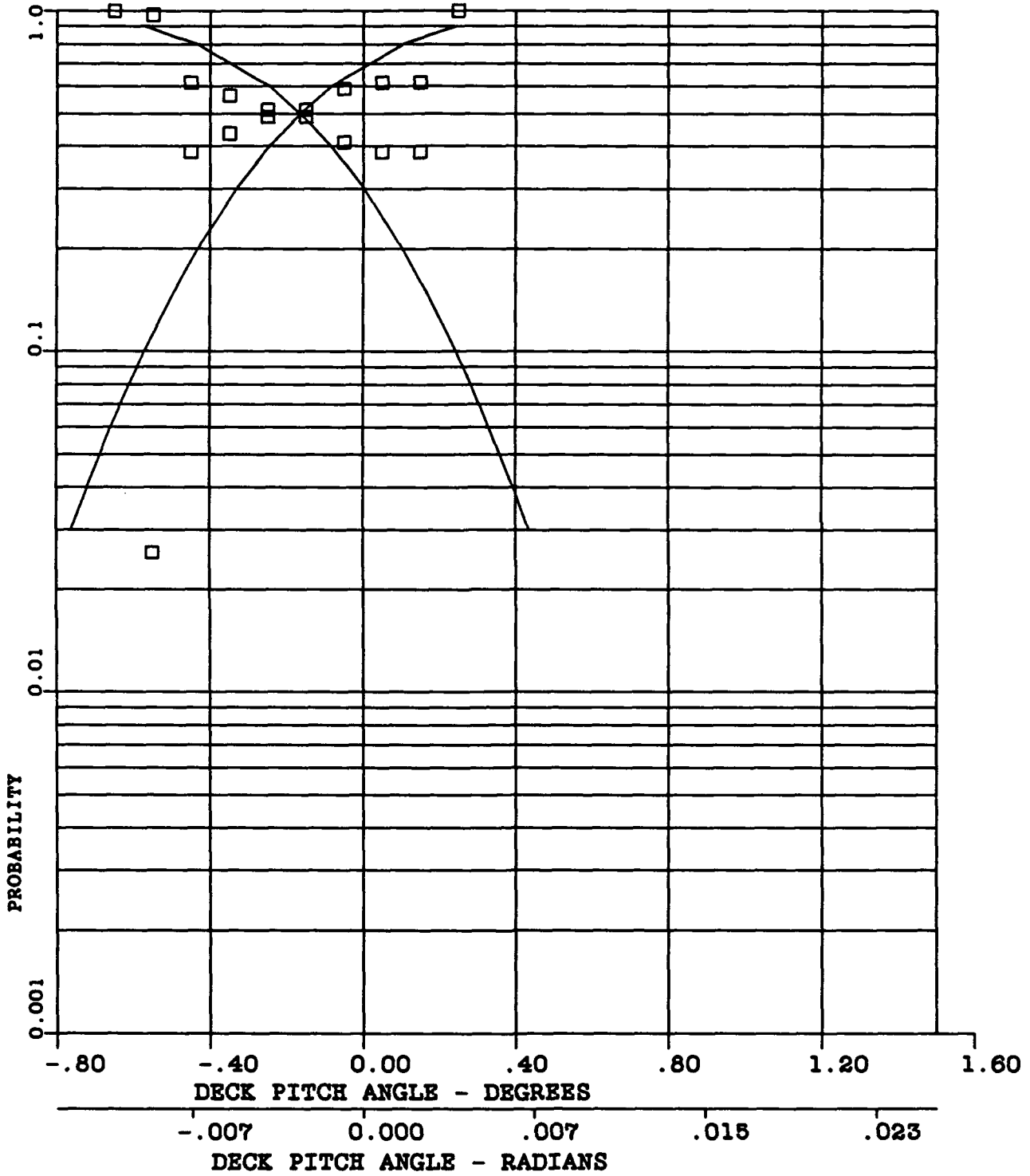


FIGURE G-40 PROBABILITY DISTRIBUTION OF CARRIER DECK PITCH MOTION

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-39 $\bar{X}$-34146.26 POUNDS (15488.74 KILOGRAMS) A3=-2.03
S-1160.65 POUNDS (526.47 KILOGRAMS) A4-9.07

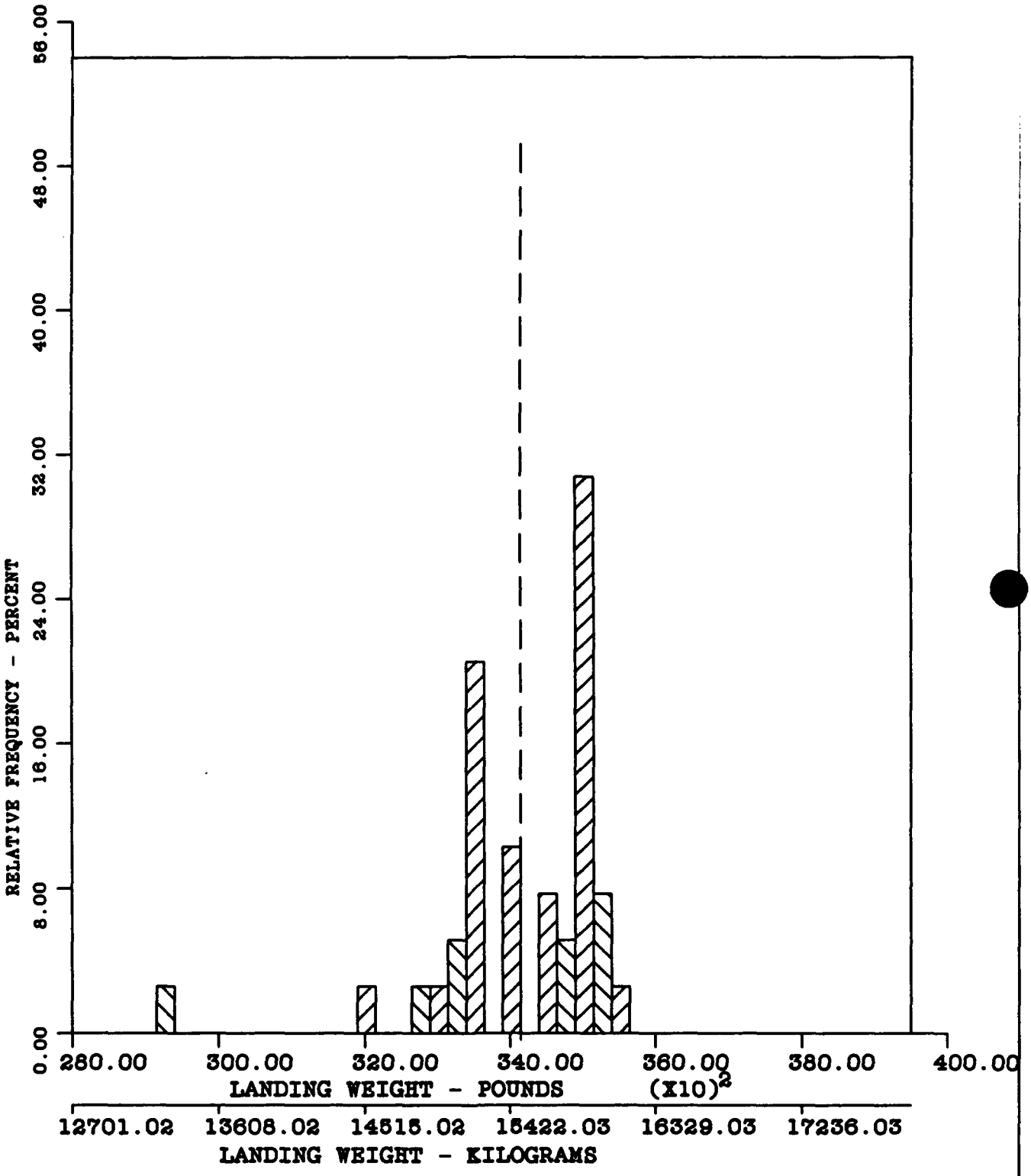


FIGURE G-41 FREQUENCY DISTRIBUTION OF AIRCRAFT LANDING WEIGHT

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N=39 $\bar{X}$=.85 DEG/SEC (.014 RAD/SEC) A3=.17
S=4.61 DEG/SEC (.080 RAD/SEC) A4=3.99

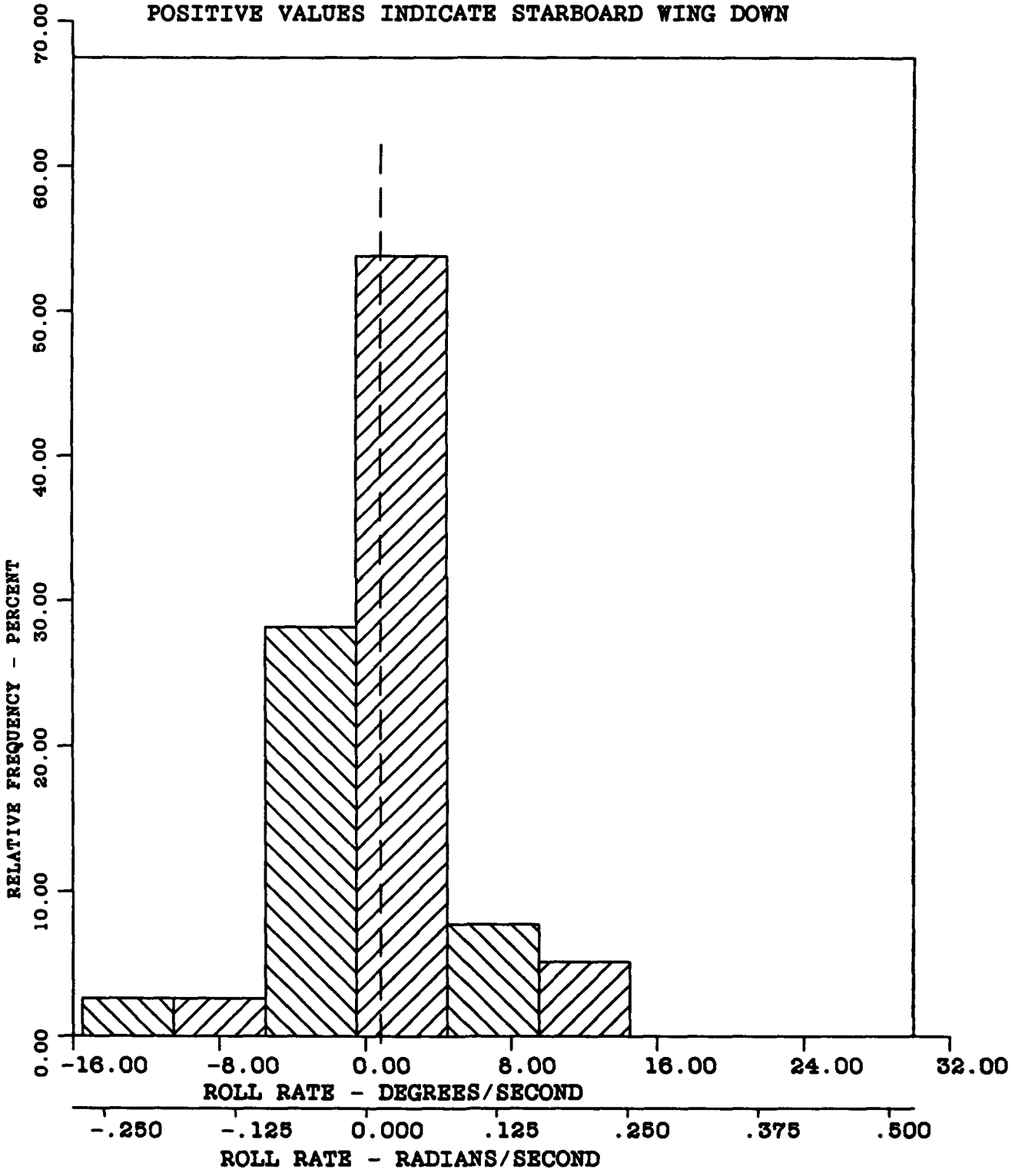


FIGURE G-42 FREQUENCY DISTRIBUTION OF ROLL RATE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-39 $\bar{X}$=.85 DEG/SEC (.014 RAD/SEC) A3=.17
S=4.61 DEG/SEC (.080 RAD/SEC) A4=3.99
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE STARBOARD WING DOWN

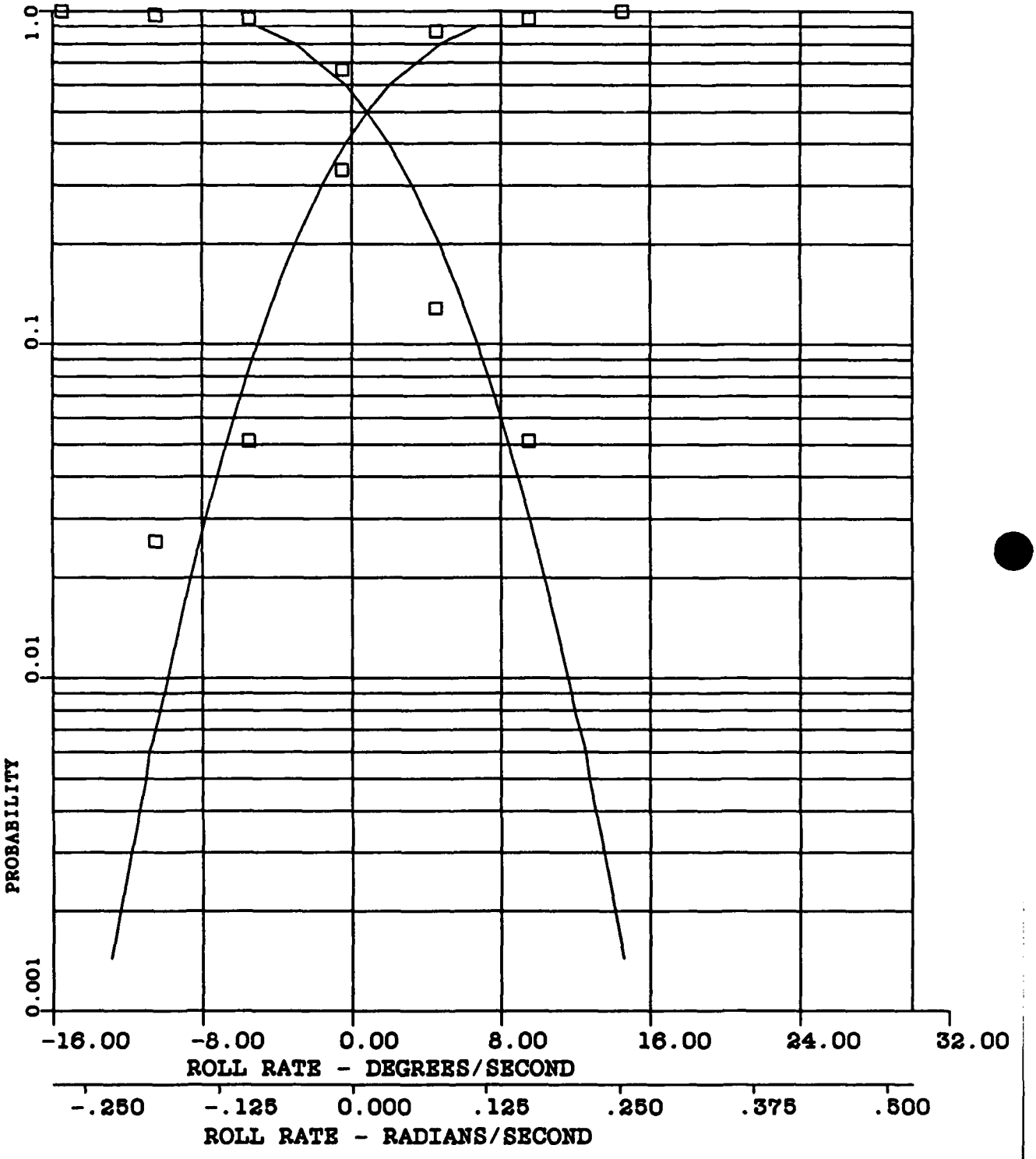


FIGURE G-43 PROBABILITY DISTRIBUTION OF ROLL RATE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-39 $\bar{X}$-.74 DEG/SEC (.013 RAD/SEC) A3=.26
S-2.82 DEG/SEC (.049 RAD/SEC) A4=3.51

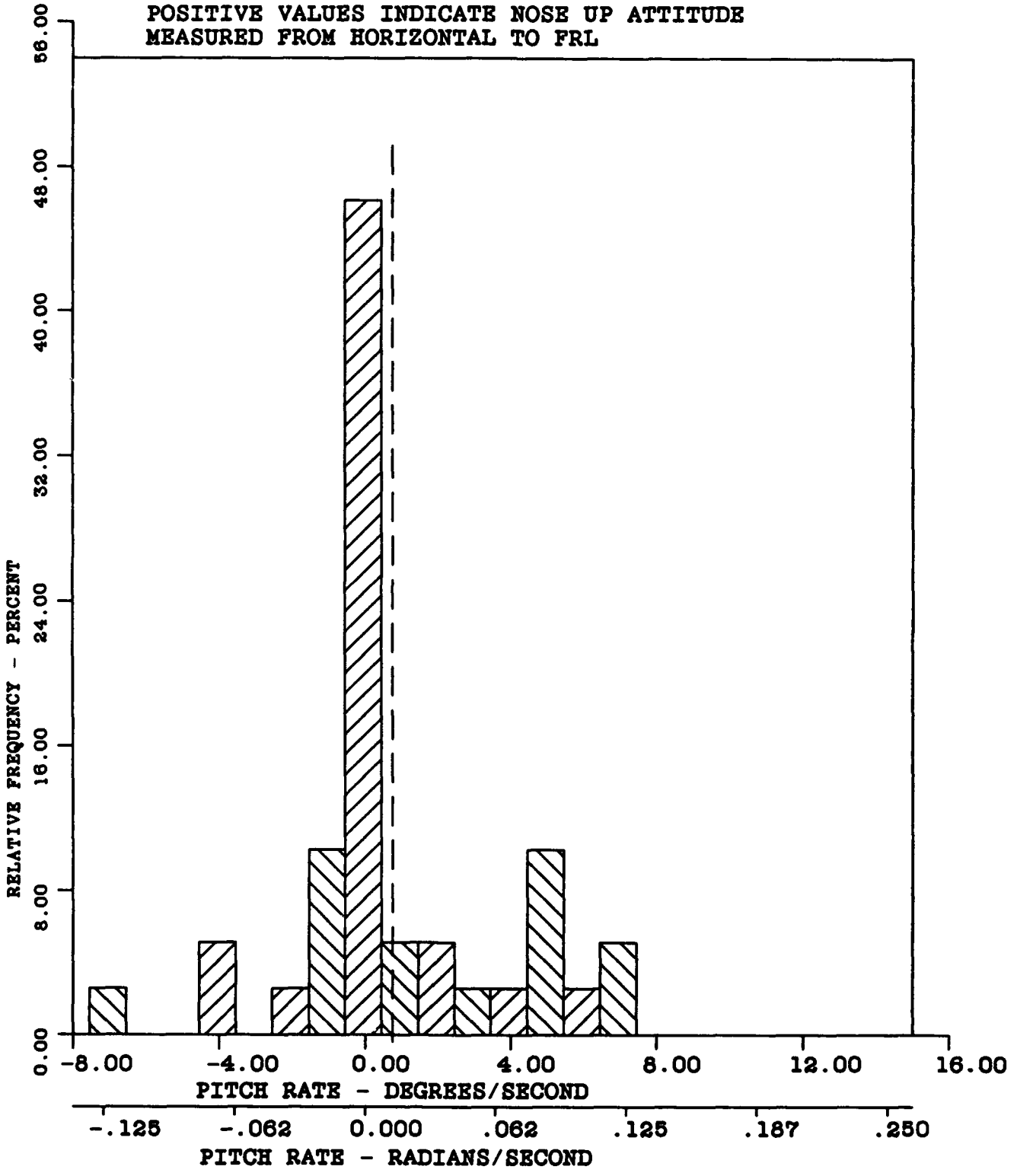


FIGURE G-44 FREQUENCY DISTRIBUTION OF PITCH RATE AT FIRST MAIN WHEEL TOUCHDOWN

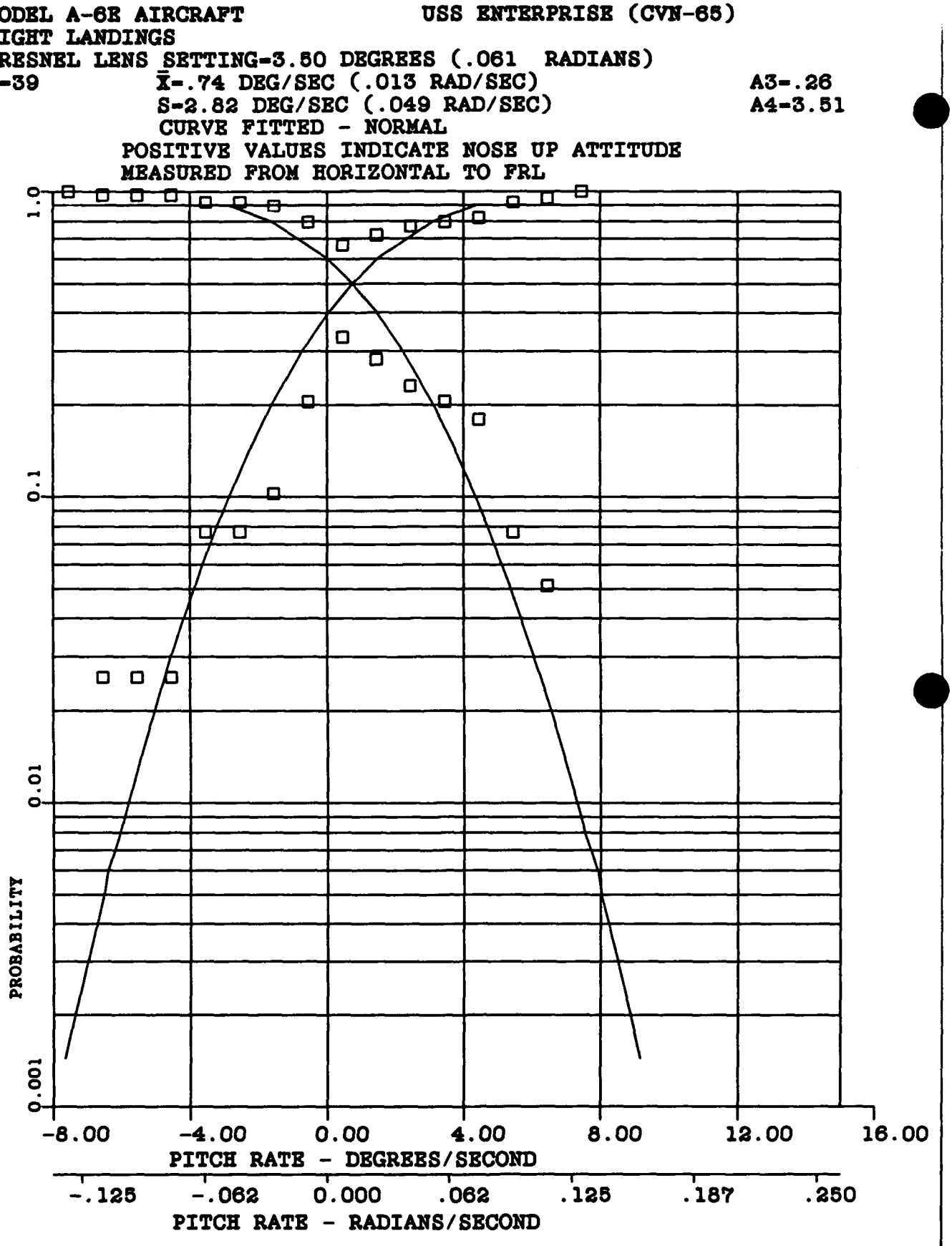


FIGURE G-45 PROBABILITY DISTRIBUTION OF PITCH RATE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=39 $\bar{X}$=-2.79 DEGREES (-.048 RADIANS) A3=.66
S=1.18 DEGREES (.020 RADIANS) A4=3.12

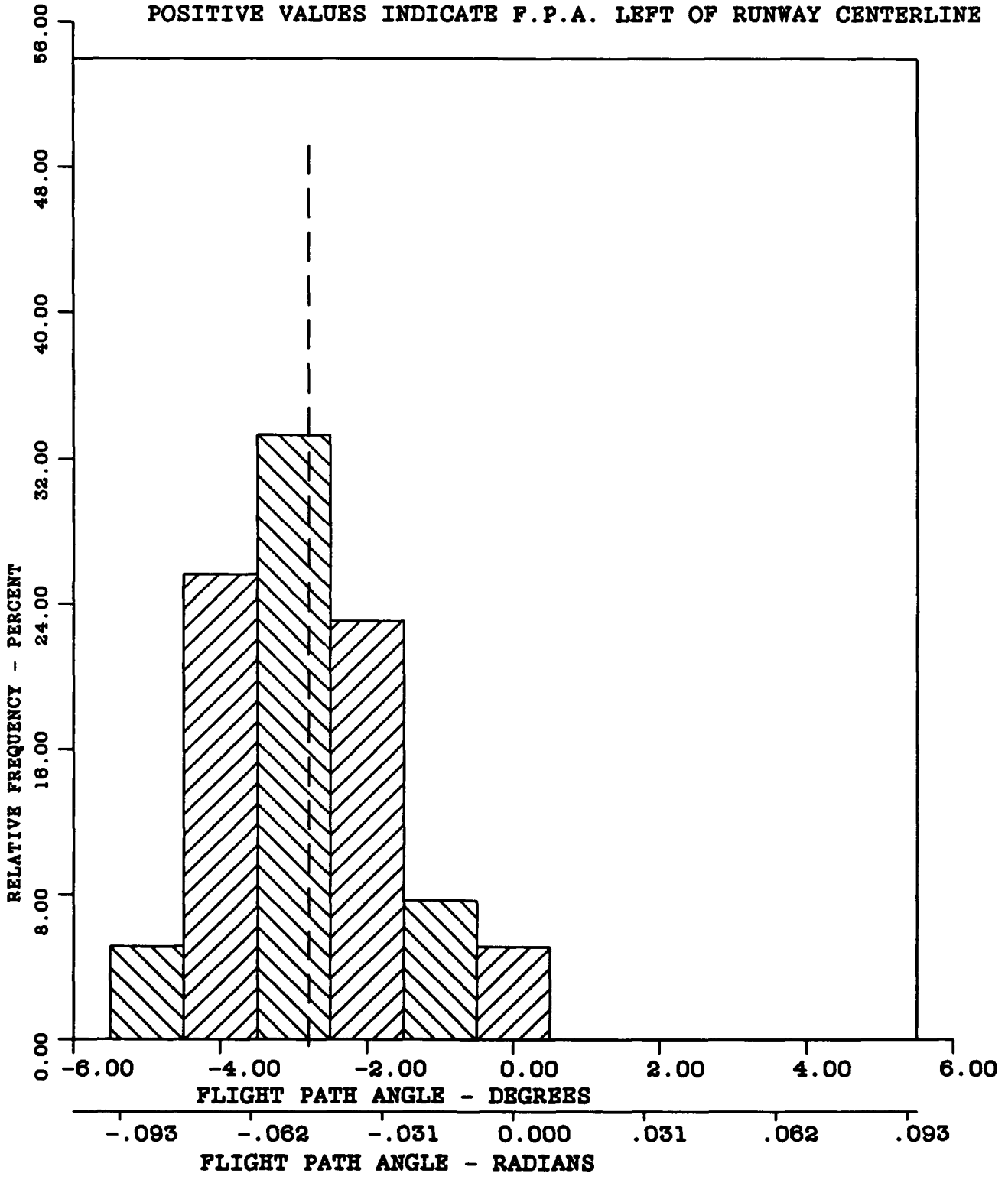


FIGURE G-46 FREQUENCY DISTRIBUTION OF AIRCRAFT FLIGHT PATH ANGLE AT TOUCHDOWN

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=39 $\bar{X}$=-2.79 DEGREES (-.048 RADIANS) A3=.66
S=1.18 DEGREES (.020 RADIANS) A4=3.12
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE F.P.A. LEFT OF RUNWAY CENTERLINE

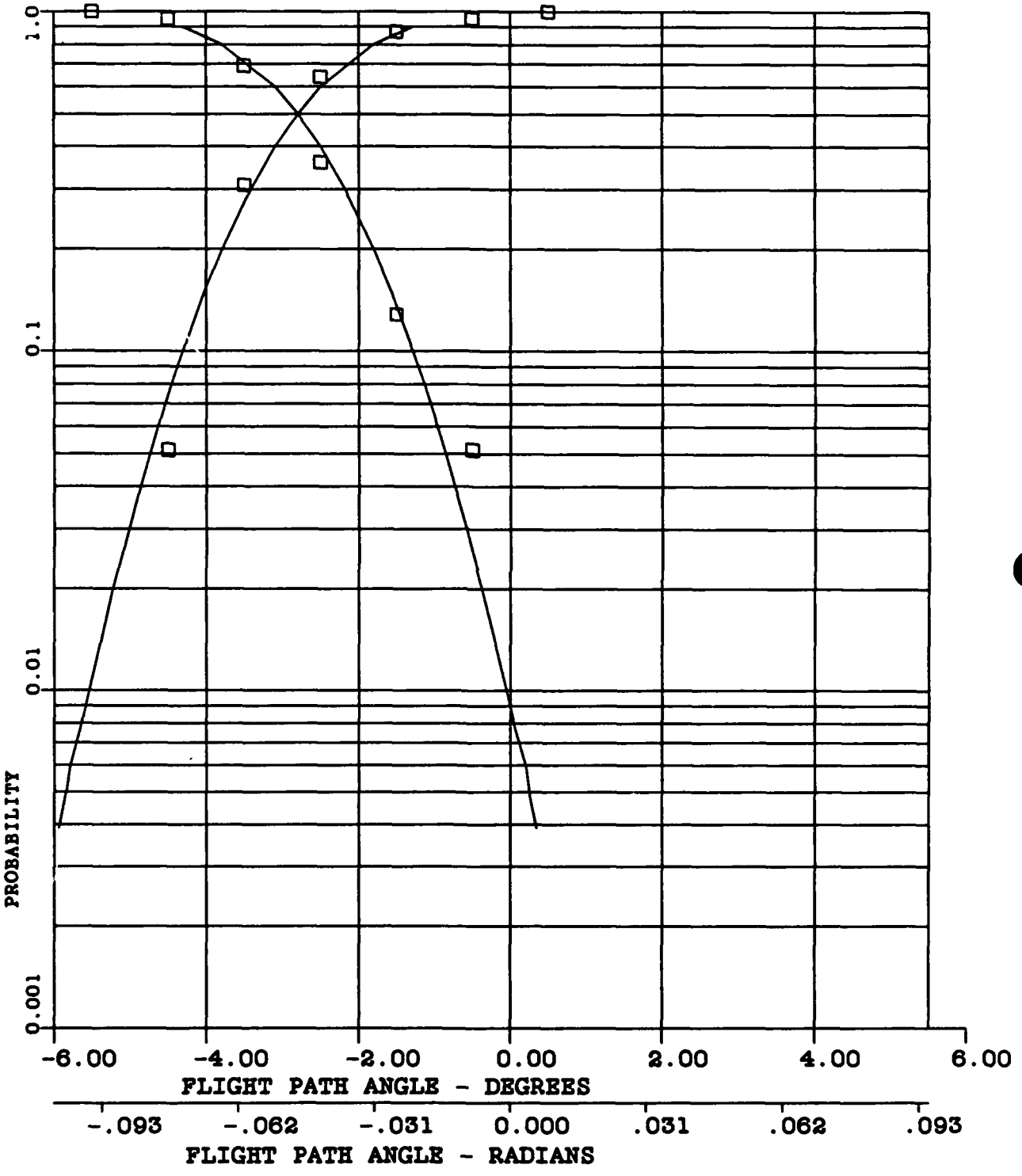


FIGURE G-47 PROBABILITY DISTRIBUTION OF AIRCRAFT FLIGHT PATH ANGLE AT TOUCHDOWN

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N=39 $\bar{X}$=1.33 DEGREES (.023 RADIANS) A3=-.61
S=4.18 DEGREES (.073 RADIANS) A4=2.53

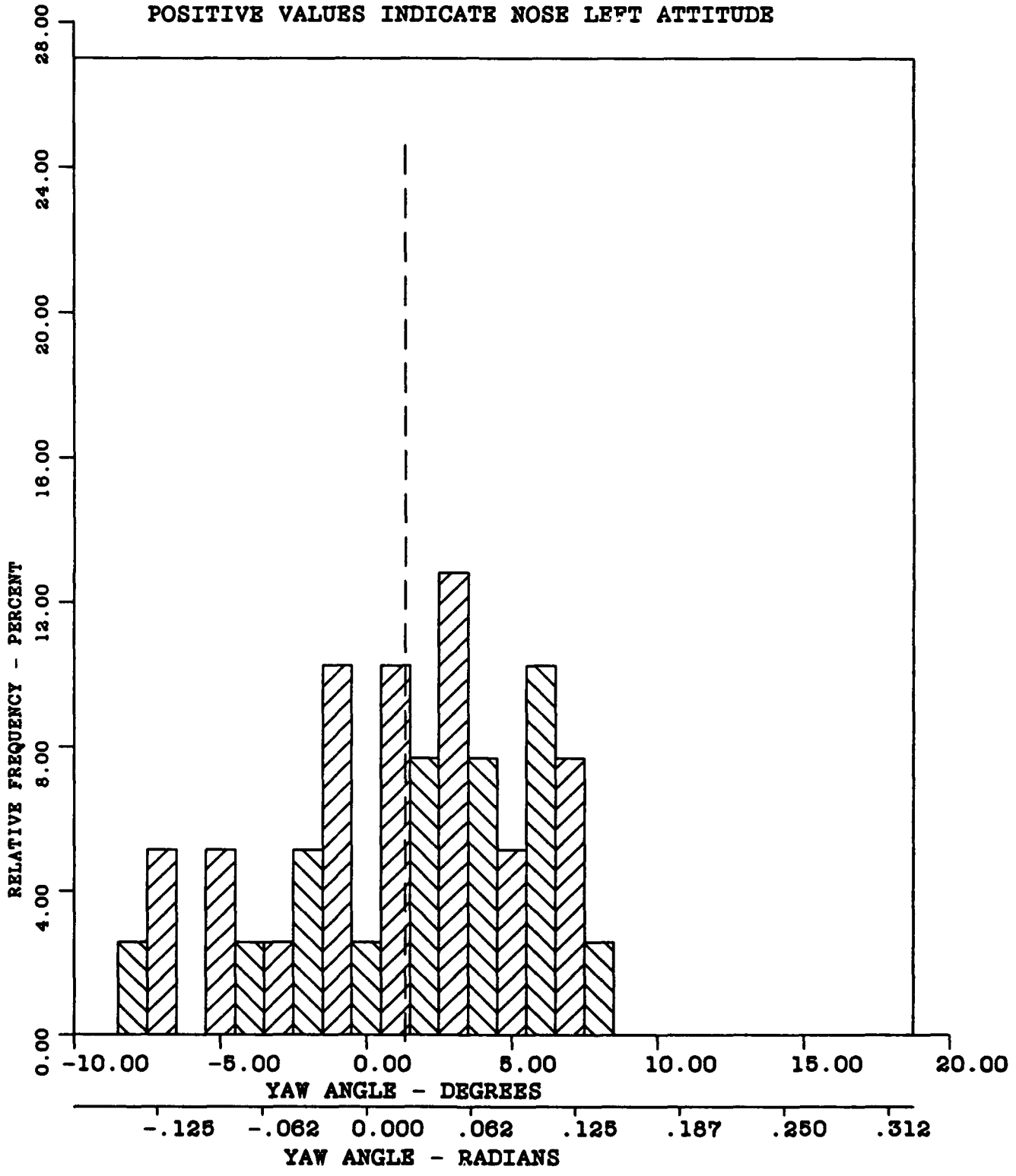


FIGURE G-48 FREQUENCY DISTRIBUTION OF AIRCRAFT YAW ANGLE

MODEL A-6E AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-39 $\bar{X}$-1.33 DEGREES (.023 RADIANS) A3=-.61
S=4.18 DEGREES (.073 RADIANS) A4=2.53
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE NOSE LEFT ATTITUDE

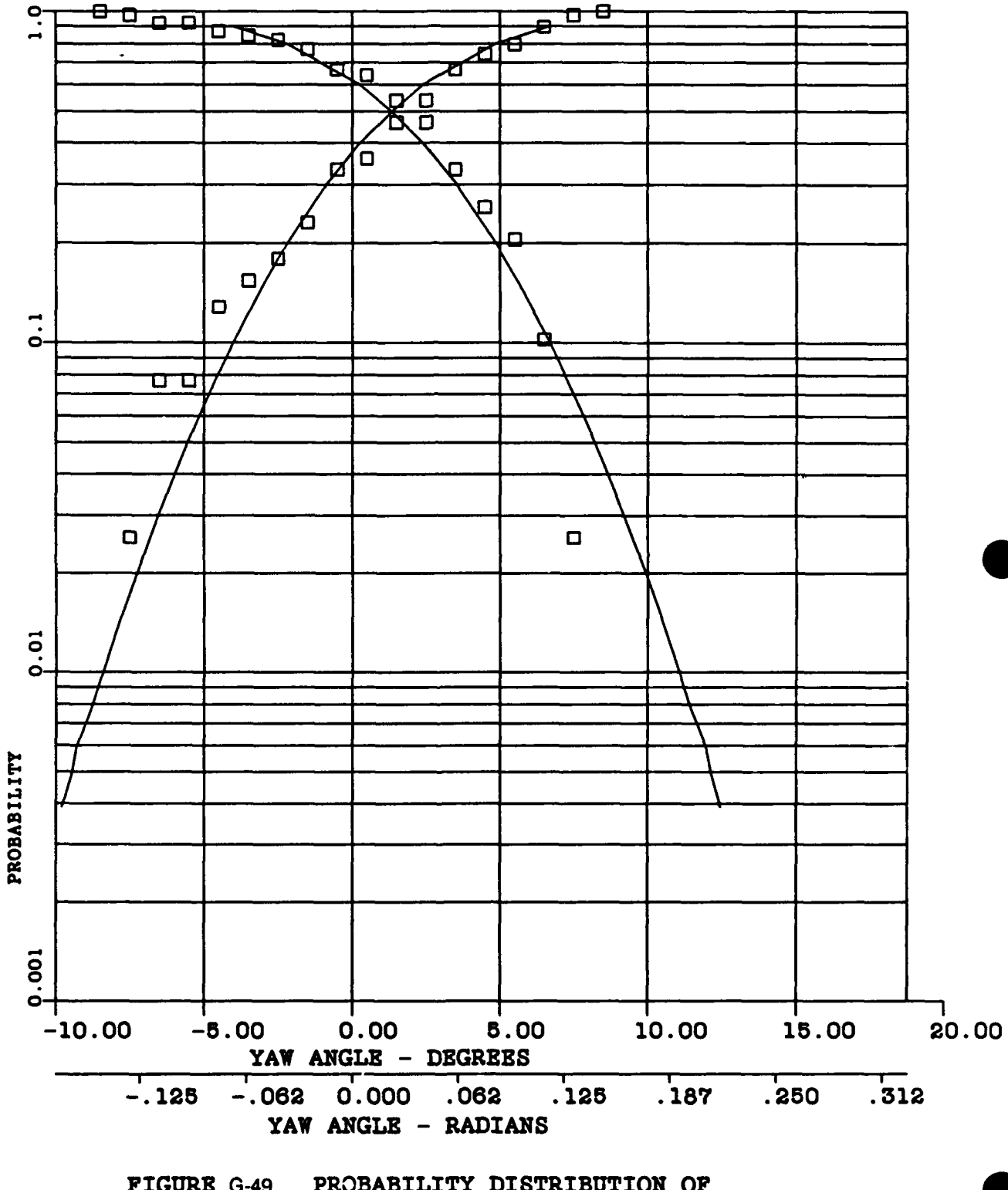


FIGURE G-49 PROBABILITY DISTRIBUTION OF AIRCRAFT YAW ANGLE

APPENDIX H

A-7E AIRCRAFT

DAY CARRIER LANDINGS

USS ENTERPRISE
CVN-65

Appendix H:

Frequency and Probability Distributions,
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31. Model Aircraft, A-7E Day Landings, Frequency Distribution of Aircraft Roll Angle at Free Flight

32. Model Aircraft, A-7E Day Landings, Probability Distribution of Aircraft Roll Angle at Free Flight

33. Model Aircraft, A-7E Day Landings, Frequency Distribution of Distance from Ramp to First Main Wheel Touchdown Point

34. Model Aircraft, A-7E Day Landings, Probability Distribution of Distance from Ramp to First Main Wheel Touchdown Point

35. Model Aircraft, A-7E Day Landings, Frequency Distribution of Aircraft Off Center Distance at First Main Wheel Touchdown Point

36. Model Aircraft, A-7E Day Landings, Probability Distribution of Aircraft Off Center Distance at First Main Wheel Touchdown Point

37. Model Aircraft, A-7E Day Landings, Frequency Distribution Arresting Gear Wire Engaged

38. Model Aircraft, A-7E Day Landings, Frequency Distribution of Aircraft Glide Angle, Instantaneous Method

39. Model Aircraft, A-7E Day Landings, Frequency Distribution of Aircraft Glide Angle, Geometric Method

40. Model Aircraft, A-7E Day Landings, Frequency Distribution of Aircraft Arresting Hook above Carrier Ramp

41. Model Aircraft, A-7E Day Landings, Probability Distribution of Aircraft Arresting Hook above Carrier Ramp

42. Model Aircraft, A-7E Day Landings, Frequency Distribution of Aircraft Engaging Speed at First Main Wheel Touchdown

43. Model Aircraft, A-7E Day Landings, Probability Distribution of Aircraft Engaging Speed at First Main Wheel Touchdown

44. Model Aircraft, A-7E Day Landings, Frequency Distribution of Minimum Usable Power Approach Airspeed

45. Model Aircraft, A-7E Day Landings, Frequency Distribution of Minimum Usable Power Approach Speed Ratio

46. Model Aircraft, A-7E Day Landings, Frequency Distribution of Carrier Deck Roll Motion

47. Model Aircraft, A-7E Day Landings, Probability Distribution of Carrier Deck Roll Motion

48. Model Aircraft, A-7E Day Landings, Frequency Distribution of Carrier Deck Pitch Motion

49. Model Aircraft, A-7E Day Landings, Probability Distribution of Carrier Deck Pitch Motion

50. Model Aircraft, A-7E Day Landings, Frequency Distribution of Aircraft Landing Weight

51. Model Aircraft, A-7E Day Landings, Frequency Distribution of Aircraft Roll Rate

52. Model Aircraft, A-7E Day Landings, Probability Distribution of Aircraft Roll Rate

53. Model Aircraft, A-7E Day Landings, Frequency Distribution of Aircraft Pitch Rate

54. Model Aircraft, A-7E Day Landings, Probability Distribution of Aircraft Pitch Rate

55. Model Aircraft, A-7E Day Landings, Frequency Distribution of Aircraft Flight Path Angle at Touchdown

56. Model Aircraft, A-7E Day Landings, Probability Distribution of Aircraft Flight Path Angle at Touchdown

57. Model Aircraft, A-7E Day Landings, Frequency Distribution of Aircraft Yaw Angle at Touchdown

58. Model Aircraft, A-7E Day Landings, Probability Distribution of Aircraft Yaw Angle at Touchdown

MODEL A-7 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-151 $\bar{X}$-25.65 KNOTS (13.19 METRES/SEC) A3-1.33
S-1.92 KNOTS (.99 METRES/SEC) A4-5.89

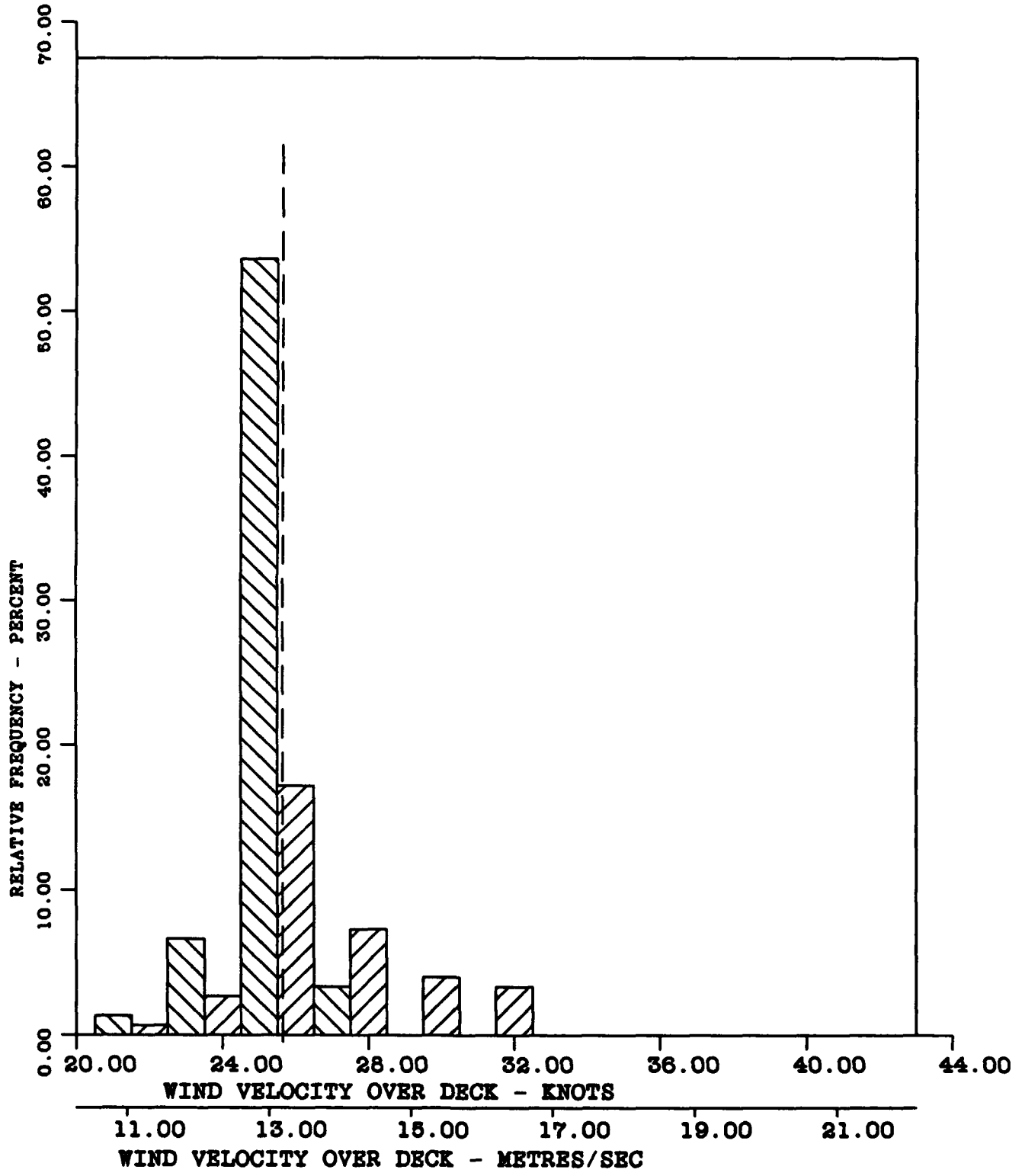


FIGURE H-1 FREQUENCY DISTRIBUTION OF WIND VELOCITY OVER THE DECK

MODEL A-7 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-151 $\bar{X}$-25.65 KNOTS (13.19 METRES/SEC) A3-1.33
S-1.92 KNOTS (.99 METRES/SEC) A4-5.89
CURVE FITTED - PEARSON TYPE III

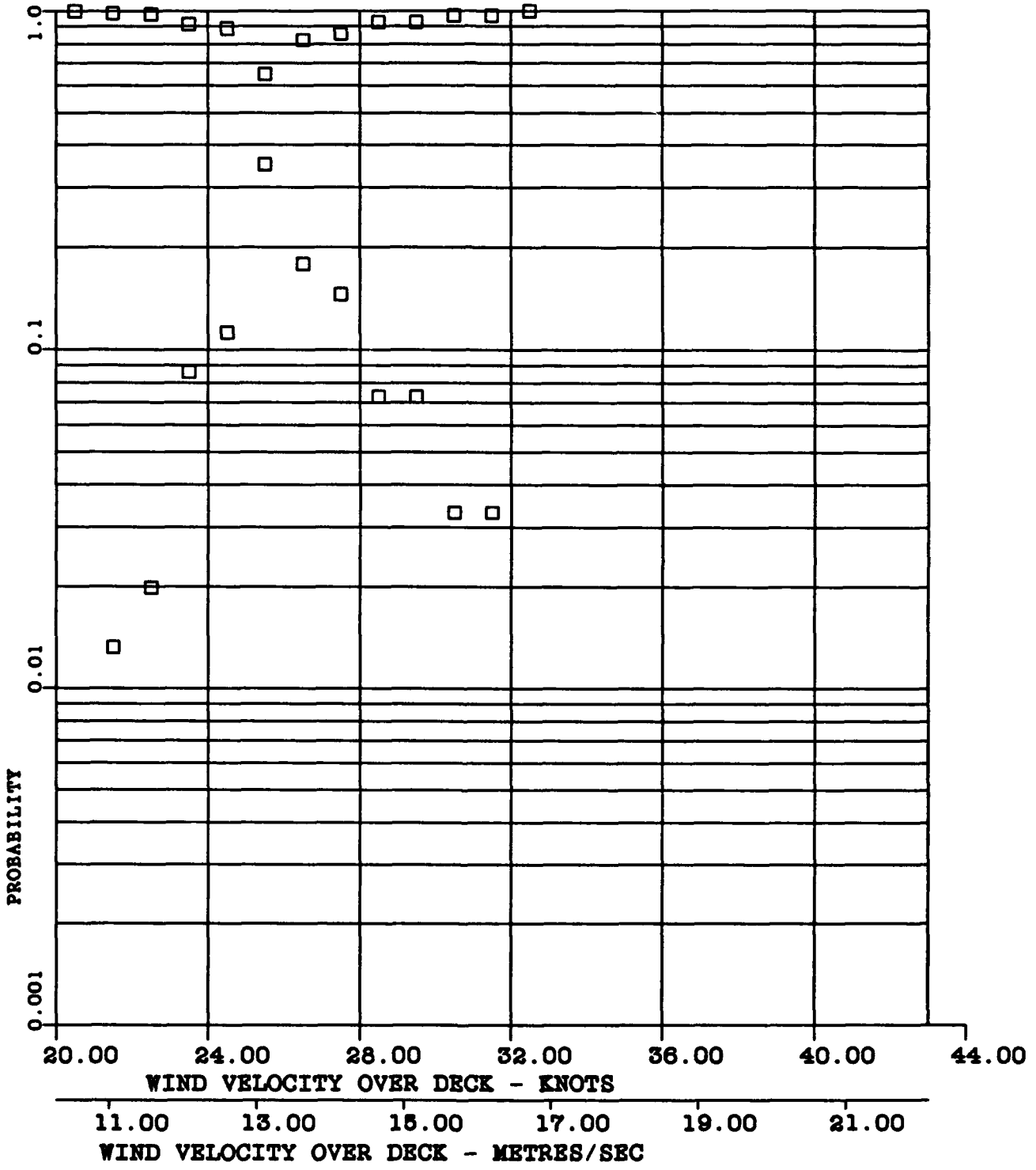


FIGURE H-2 PROBABILITY DISTRIBUTION OF WIND VELOCITY OVER THE DECK

MODEL A-7 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-151 $\bar{X}$-144.86 KNOTS (74.51 METRES/SEC) A3=.08
S-5.29 KNOTS (2.72 METRES/SEC) A4-3.30

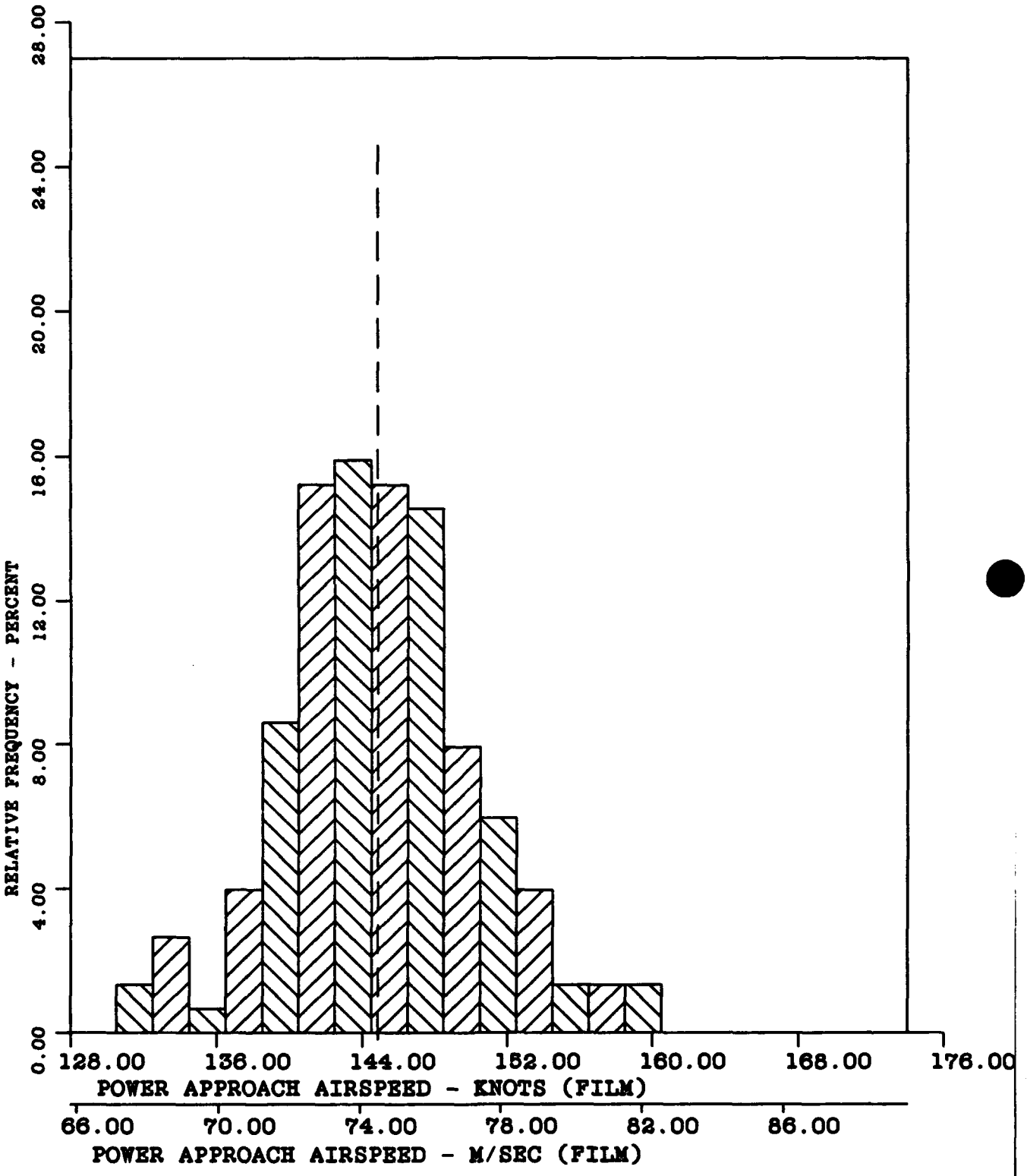


FIGURE H-3 FREQUENCY DISTRIBUTION OF FILM MEASURED POWER APPROACH AIRSPEED AT THE RAMP

MODEL A-7 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-151 $\bar{X}$-144.86 KNOTS (74.51 METRES/SEC) A3=.08
S-5.29 KNOTS (2.72 METRES/SEC) A4=3.30
CURVE FITTED - NORMAL

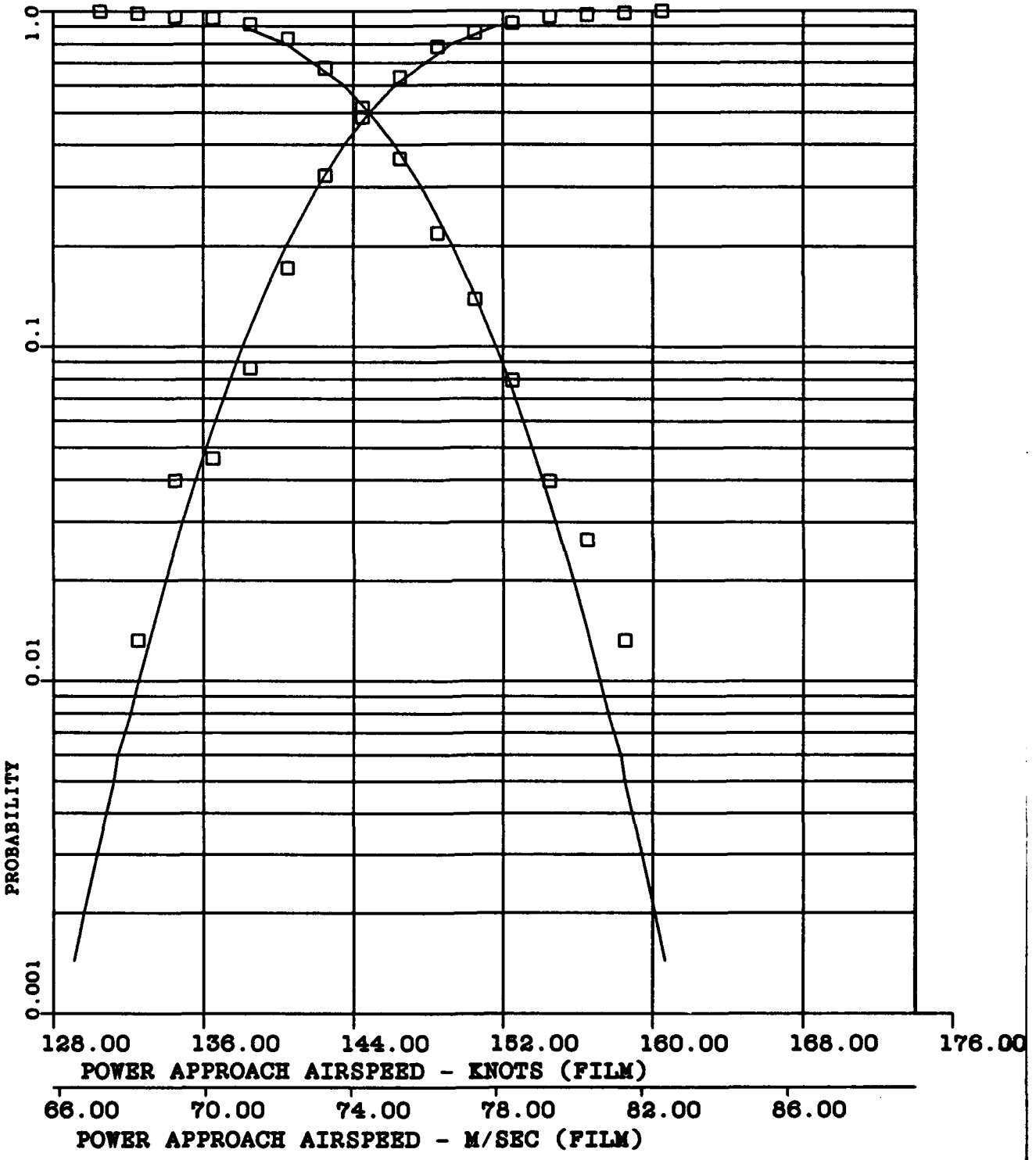


FIGURE H-4 PROBABILITY DISTRIBUTION OF POWER APPROACH AIRSPEED AT THE RAMP (FILM)

MODEL A-7 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-147 $\bar{X}$-16.25 FEET (4.95 METRES) A3=.01
S-2.48 FEET (.75 METRES) A4-3.43

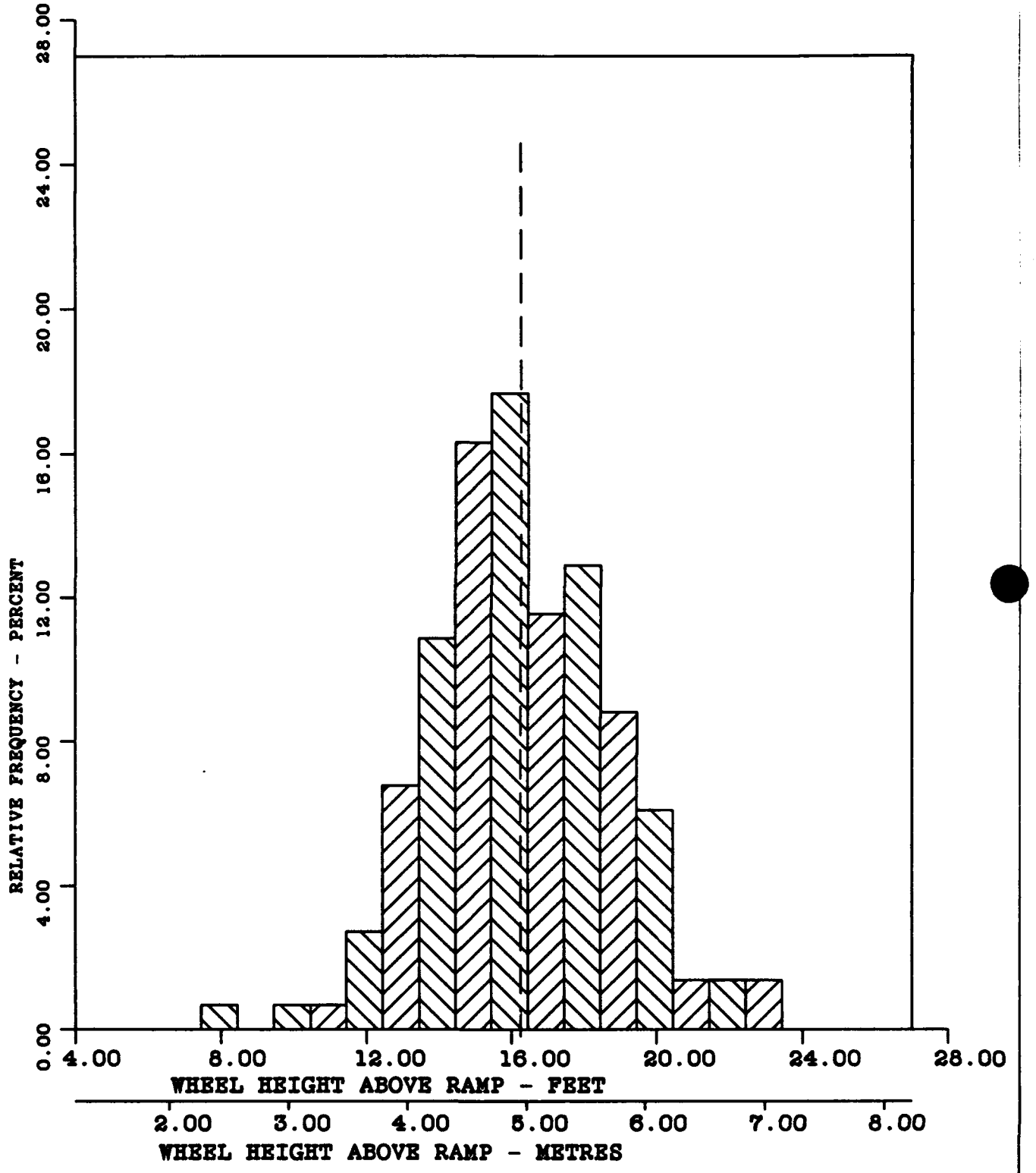


FIGURE H-5 FREQUENCY DISTRIBUTION OF AIRCRAFT WHEEL HEIGHT ABOVE CARRIER RAMP

MODEL A-7 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=147 $\bar{X}$=16.25 FEET (4.95 METRES) A3=.01
S=2.48 FEET (.75 METRES) A4=3.43
CURVE FITTED - NORMAL

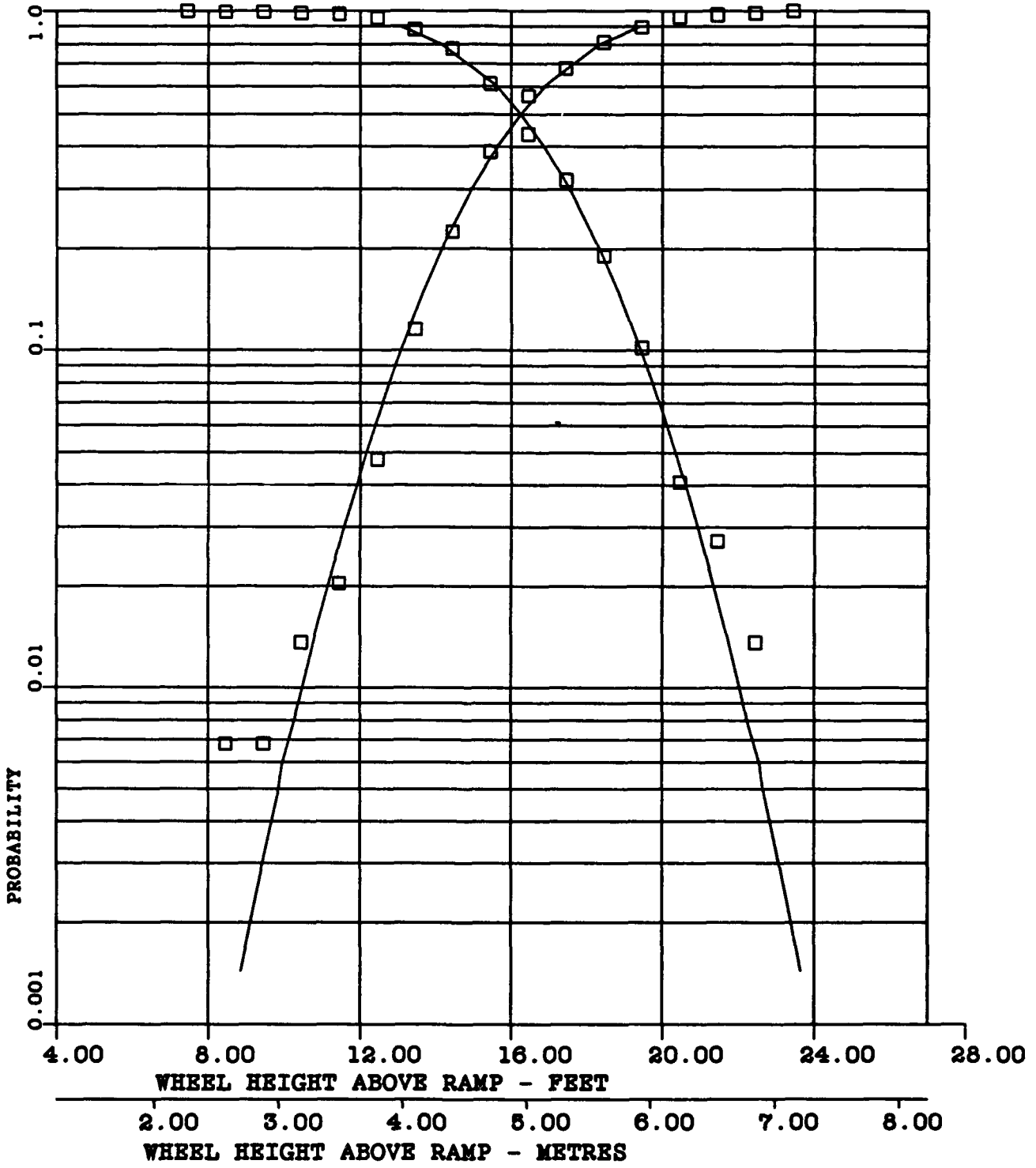


FIGURE H-6 PROBABILITY DISTRIBUTION OF AIRCRAFT WHEEL HEIGHT ABOVE CARRIER RAMP

MODEL A-7 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=151 $\bar{X}$=11.52 FEET/SEC (3.51 METRES/SEC) A3=-.73
S=2.00 FEET/SEC (.61 METRES/SEC) A4=4.56

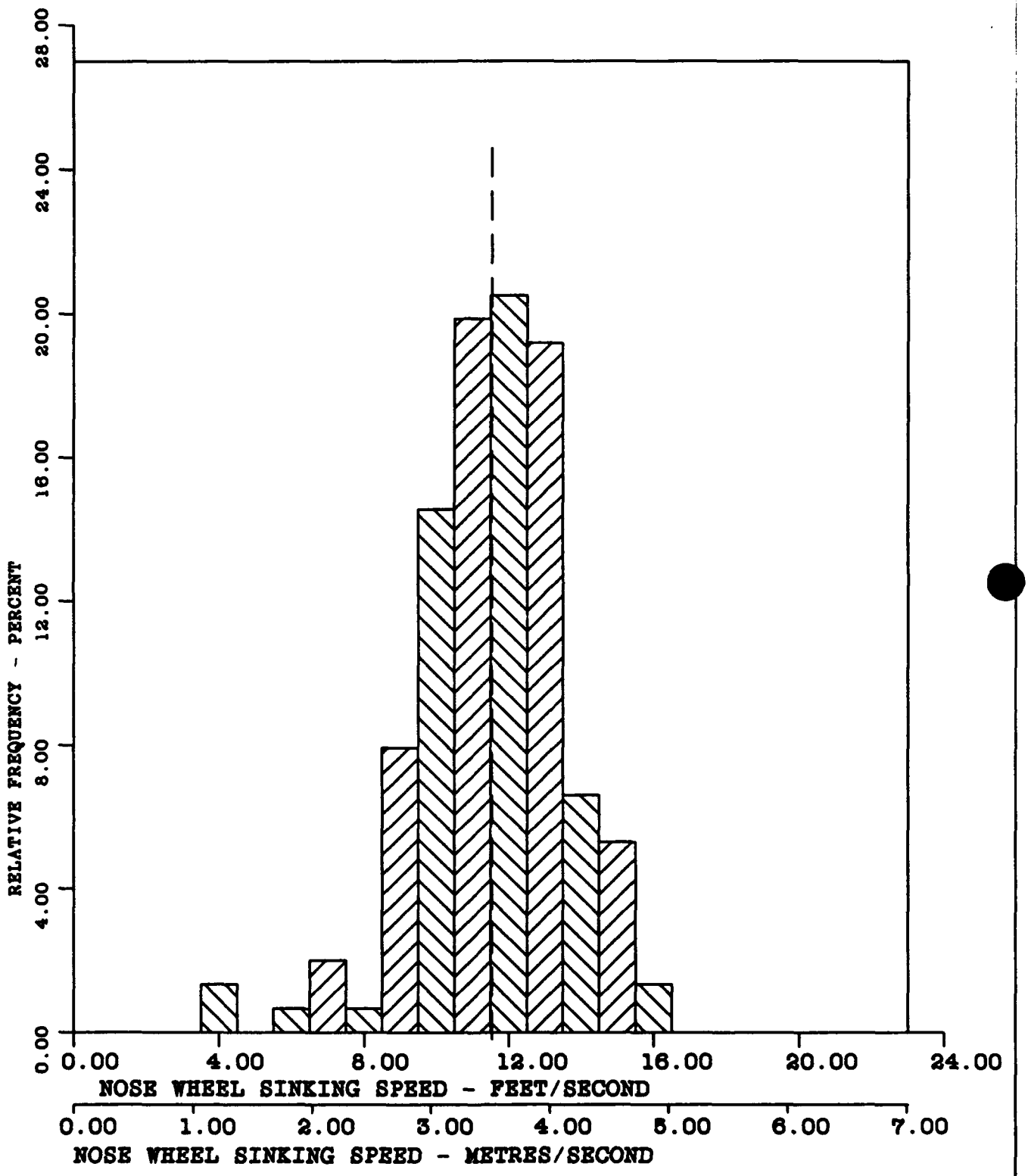


FIGURE H-7 FREQUENCY DISTRIBUTION OF NOSE WHEEL SINKING SPEED

MODEL A-7 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-151 $\bar{X}$-11.52 FEET/SEC (3.51 METRES/SEC) A3=-.73
S-2.00 FEET/SEC (.61 METRES/SEC) A4-4.56
CURVE FITTED - PEARSON TYPE III

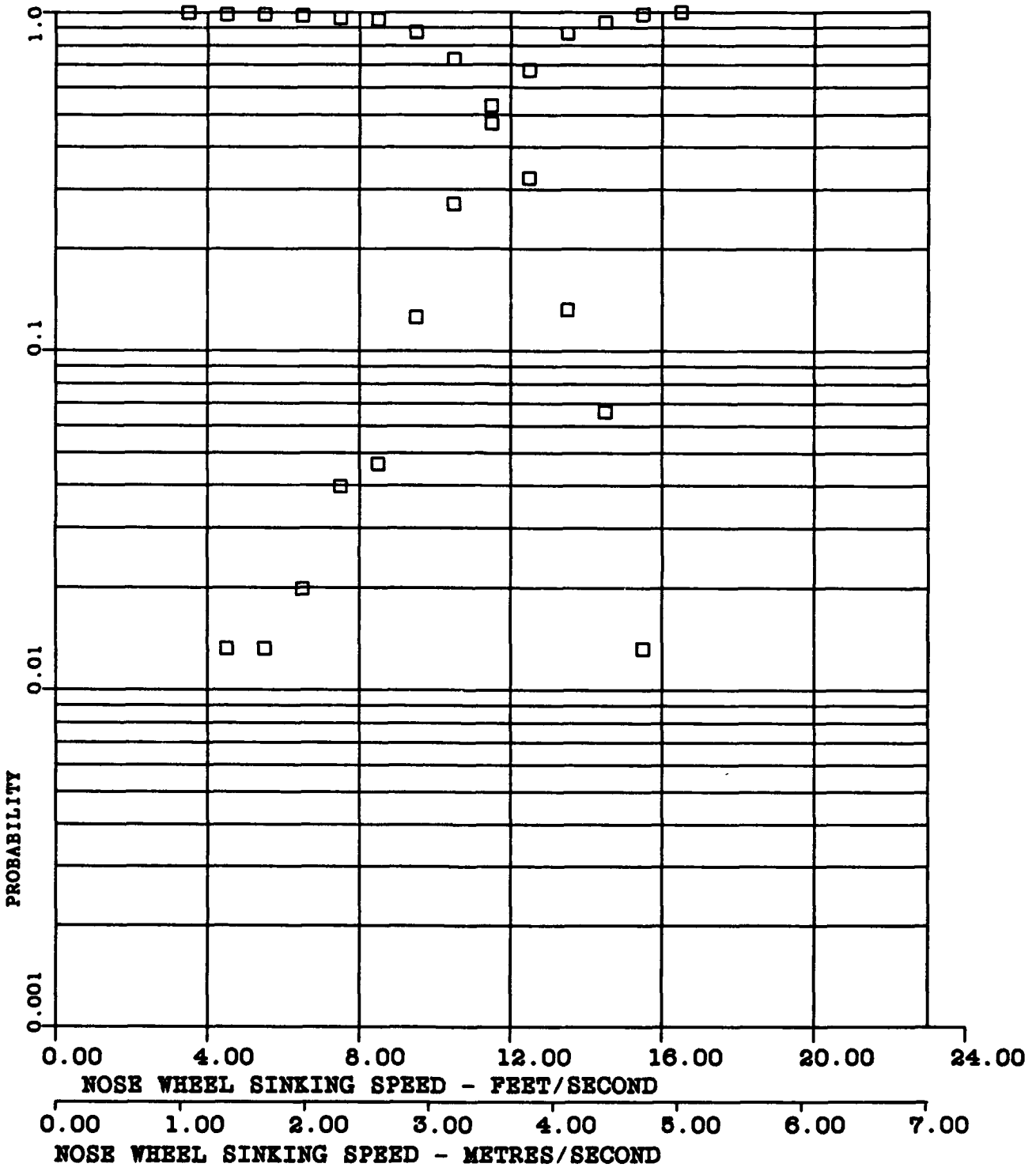


FIGURE H-8 PROBABILITY DISTRIBUTION OF NOSE WHEEL SINKING SPEED

MODEL A-7 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-151 $\bar{X}$-11.62 FEET/SEC (3.54 METRES/SEC) A3=-.05
S-1.79 FEET/SEC (.54 METRES/SEC) A4-2.63

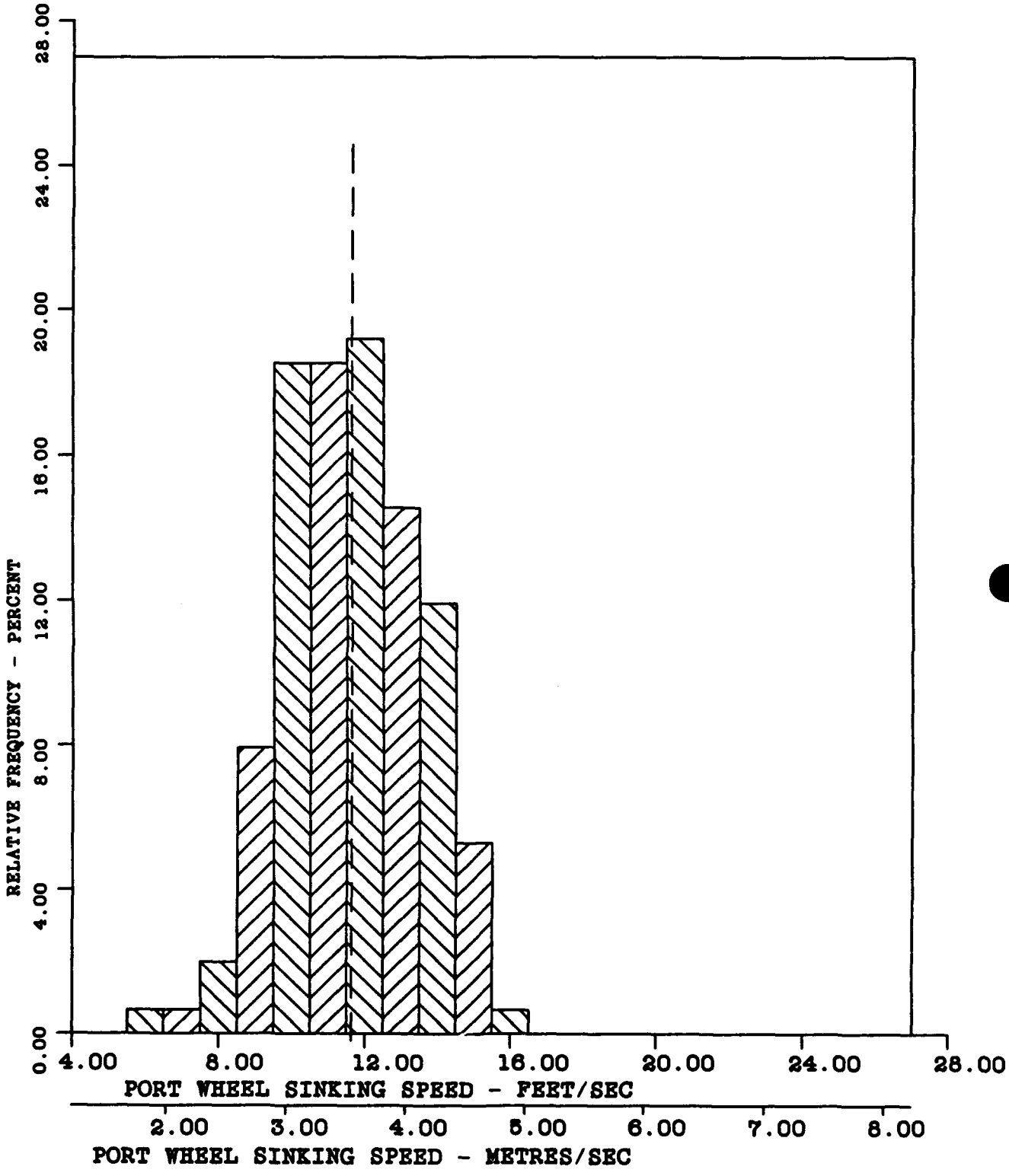


FIGURE H-9 FREQUENCY DISTRIBUTION OF PORT WHEEL SINKING SPEED AT PORT WHEEL TOUCHDOWN

MODEL A-7 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-151 $\bar{X}$-11.62 FEET/SEC (3.54 METRES/SEC) A3=-.05
S-1.79 FEET/SEC (.54 METRES/SEC) A4-2.63
CURVE FITTED - NORMAL

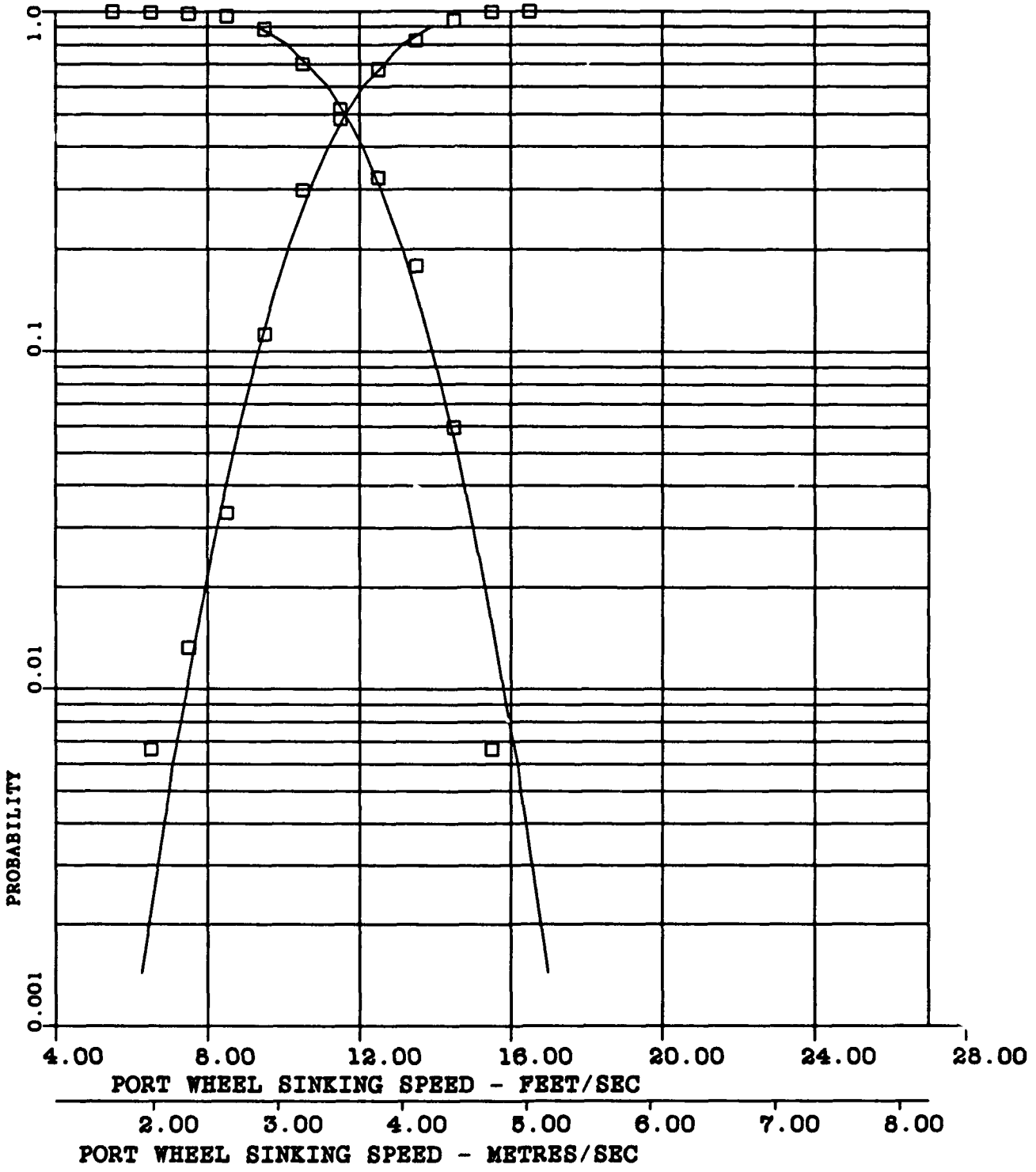


FIGURE H-10 PROBABILITY DISTRIBUTION OF PORT WHEEL SINKING SPEED

MODEL A-7 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N=151 $\bar{X}$=11.35 FEET/SEC (3.46 METRES/SEC) A3=-.29
S=1.86 FEET/SEC (.56 METRES/SEC) A4=3.70

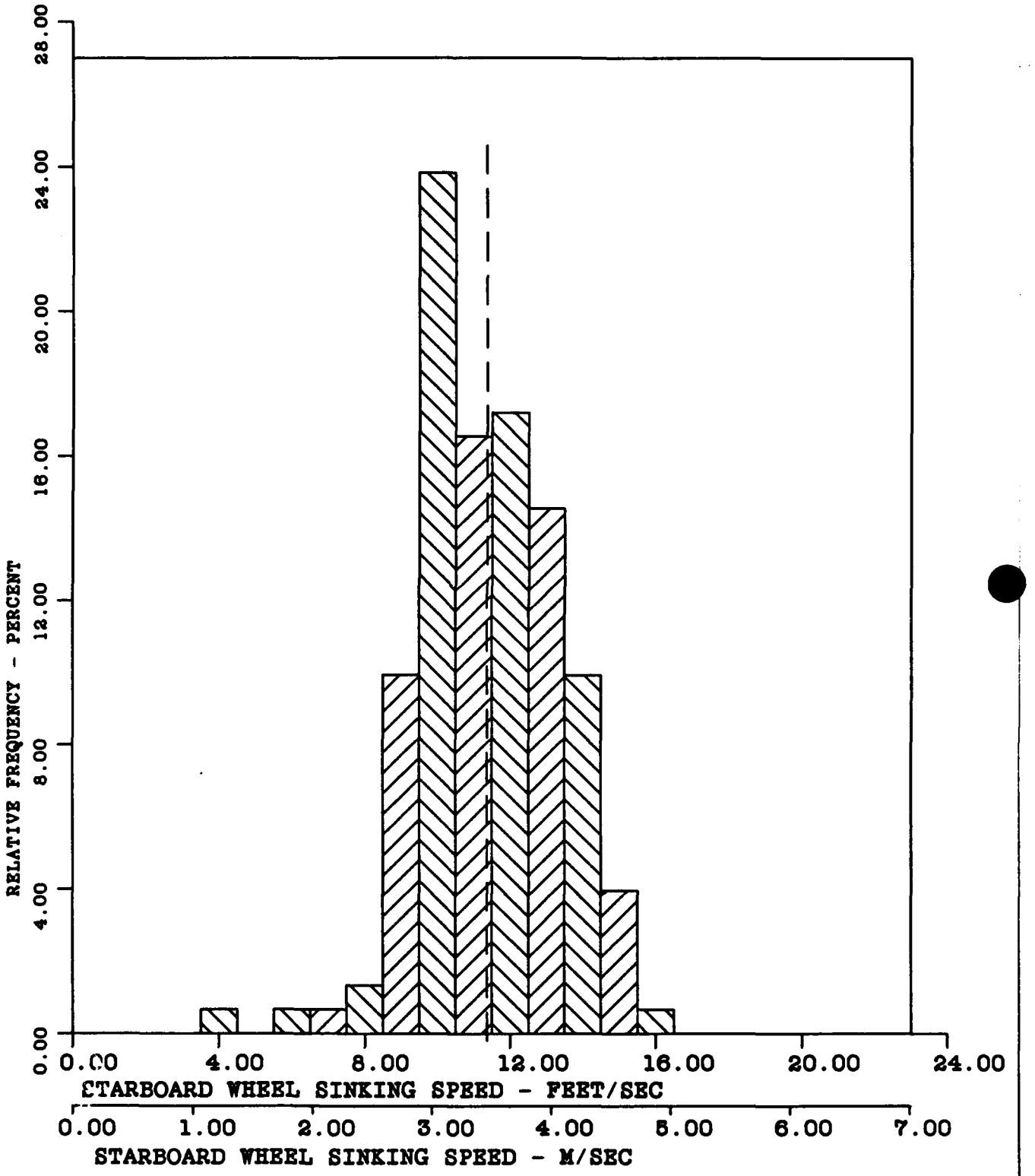


FIGURE H-11 FREQUENCY DISTRIBUTION OF STARBOARD WHEEL SINKING SPEED AT STARBOARD WHEEL TOUCHDOWN

MODEL A-7 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-151 $\bar{X}$-11.35 FEET/SEC (3.46 METRES/SEC) A3=-.29
S-1.86 FEET/SEC (.56 METRES/SEC) A4-3.70
CURVE FITTED - NORMAL

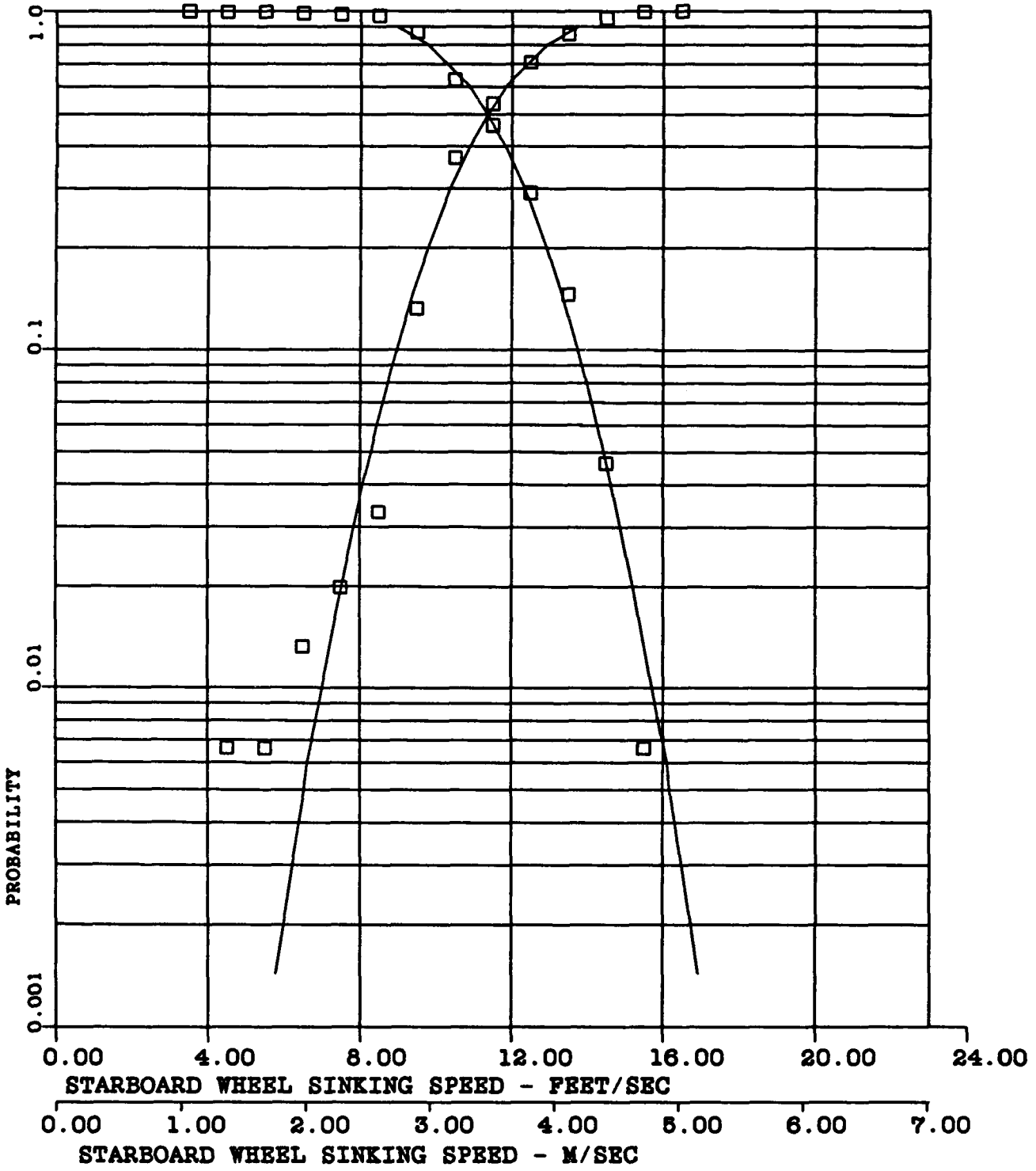


FIGURE H-12 PROBABILITY DISTRIBUTION OF STARBOARD WHEEL SINKING SPEED

MODEL A-7 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-151 $\bar{X}$-11.52 FEET/SEC (3.51 METRES/SEC) A3=-.15
S-1.76 FEET/SEC (.53 METRES/SEC) A4-3.26

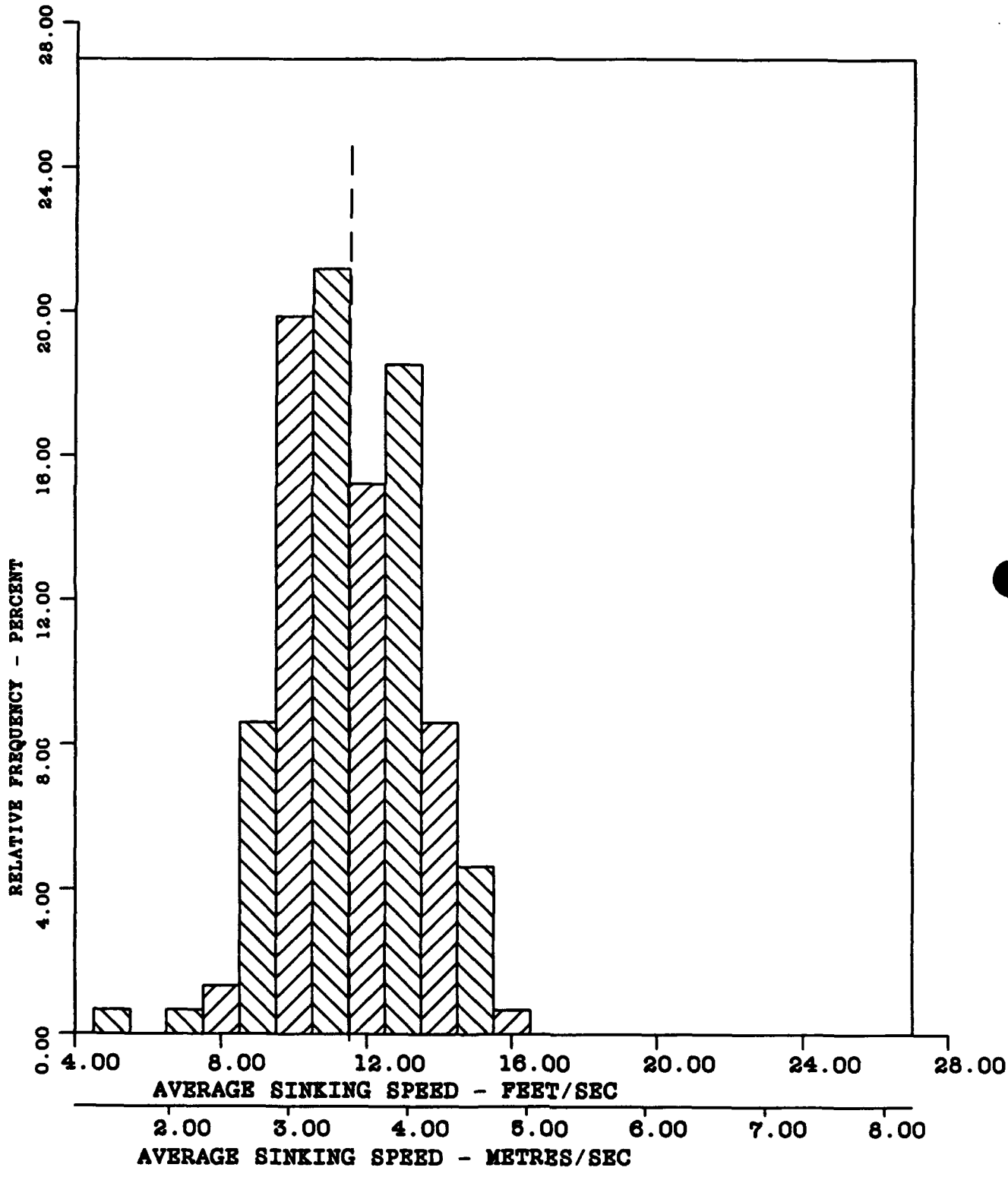


FIGURE H-13 FREQUENCY DISTRIBUTION OF AVG SINKING SPEED OF MAIN WHEEL AT FIRST MAIN WHEEL TOUCHDOWN

MODEL A-7 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-151 $\bar{X}$-11.52 FEET/SEC (3.51 METRES/SEC) A3=-.15
S-1.76 FEET/SEC (.53 METRES/SEC) A4-3.26
CURVE FITTED - NORMAL

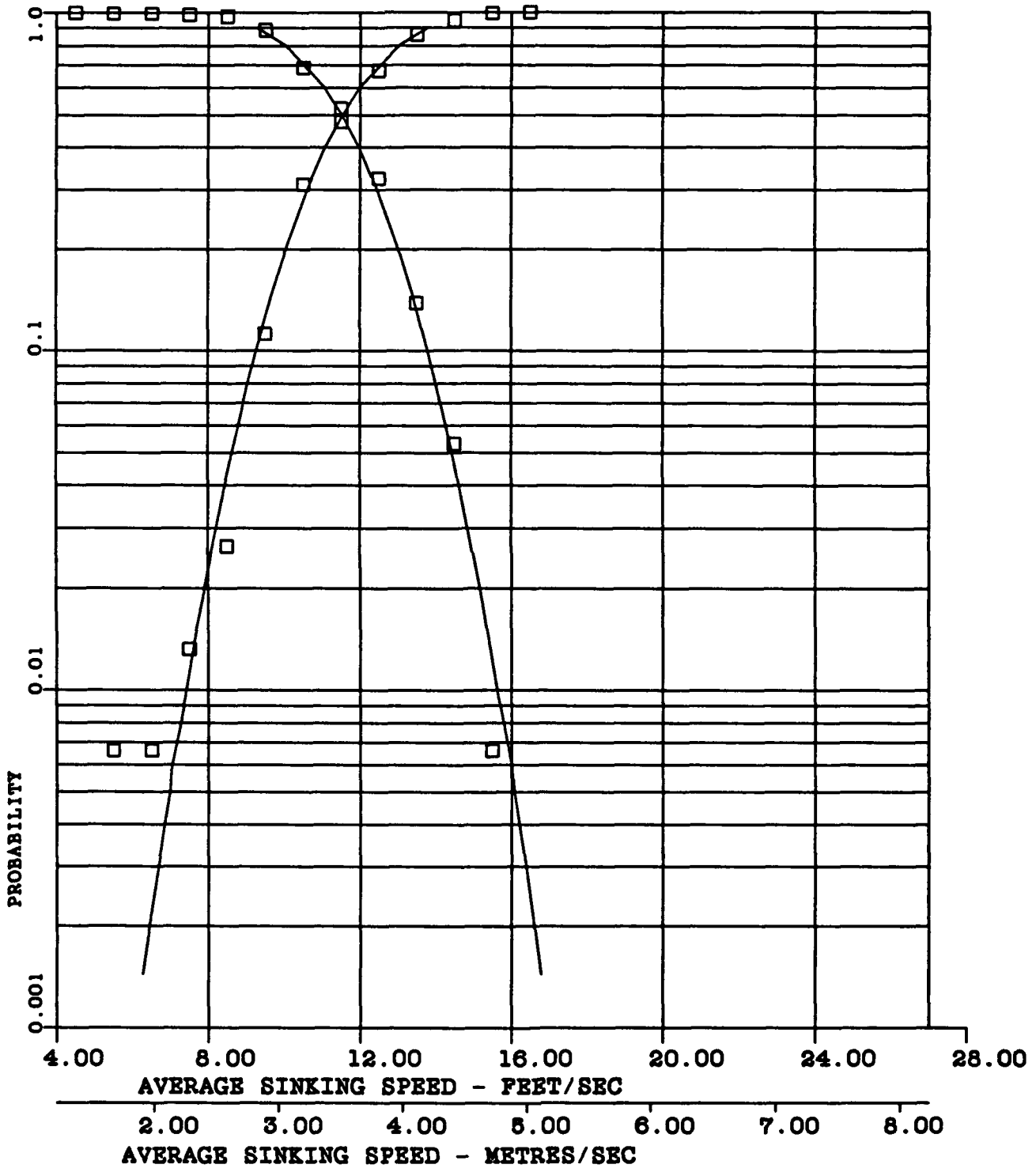


FIGURE H-14 PROBABILITY DISTRIBUTION OF AVERAGE SINKING SPEED AT FIRST MAIN WHEEL TOUCHDOWN

MODEL A-7 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-7 $\bar{X}$-10.48 FEET/SEC (3.19 METRES/SEC) A3=.35
S=1.34 FEET/SEC (.40 METRES/SEC) A4=1.81

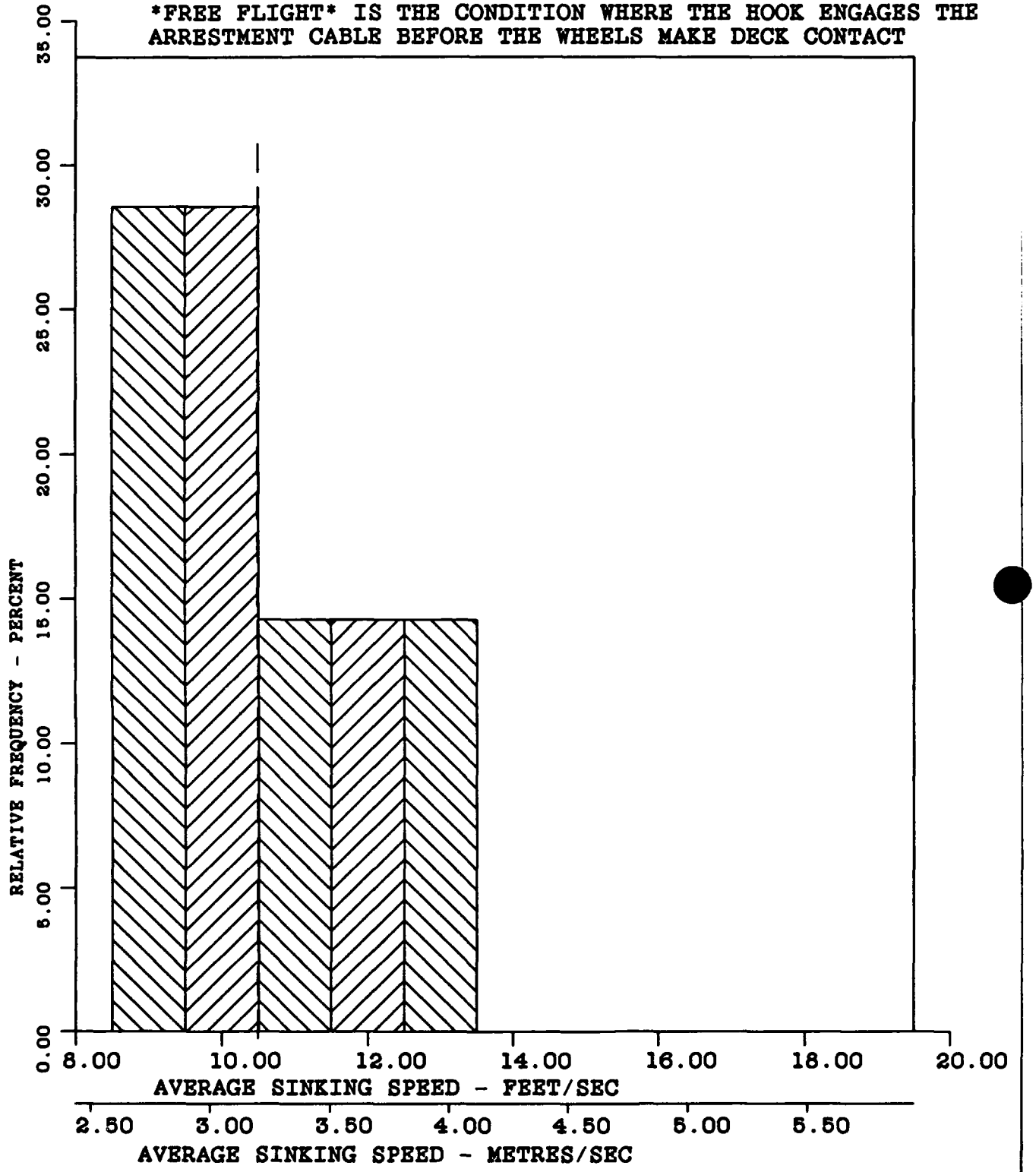


FIGURE H-15 FREQUENCY DISTRIBUTION OF AVERAGE SINKING SPEED OF MAIN WHEELS AT FREE FLIGHT

MODEL A-7 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=7 $\bar{X}$=10.48 FEET/SEC (3.19 METRES/SEC) A3=.35
S=1.34 FEET/SEC (.40 METRES/SEC) A4=1.81
CURVE FITTED - NORMAL
FREE FLIGHT IS THE CONDITION WHERE THE HOOK ENGAGES THE ARRESTMENT CABLE BEFORE THE WHEELS MAKE DECK CONTACT

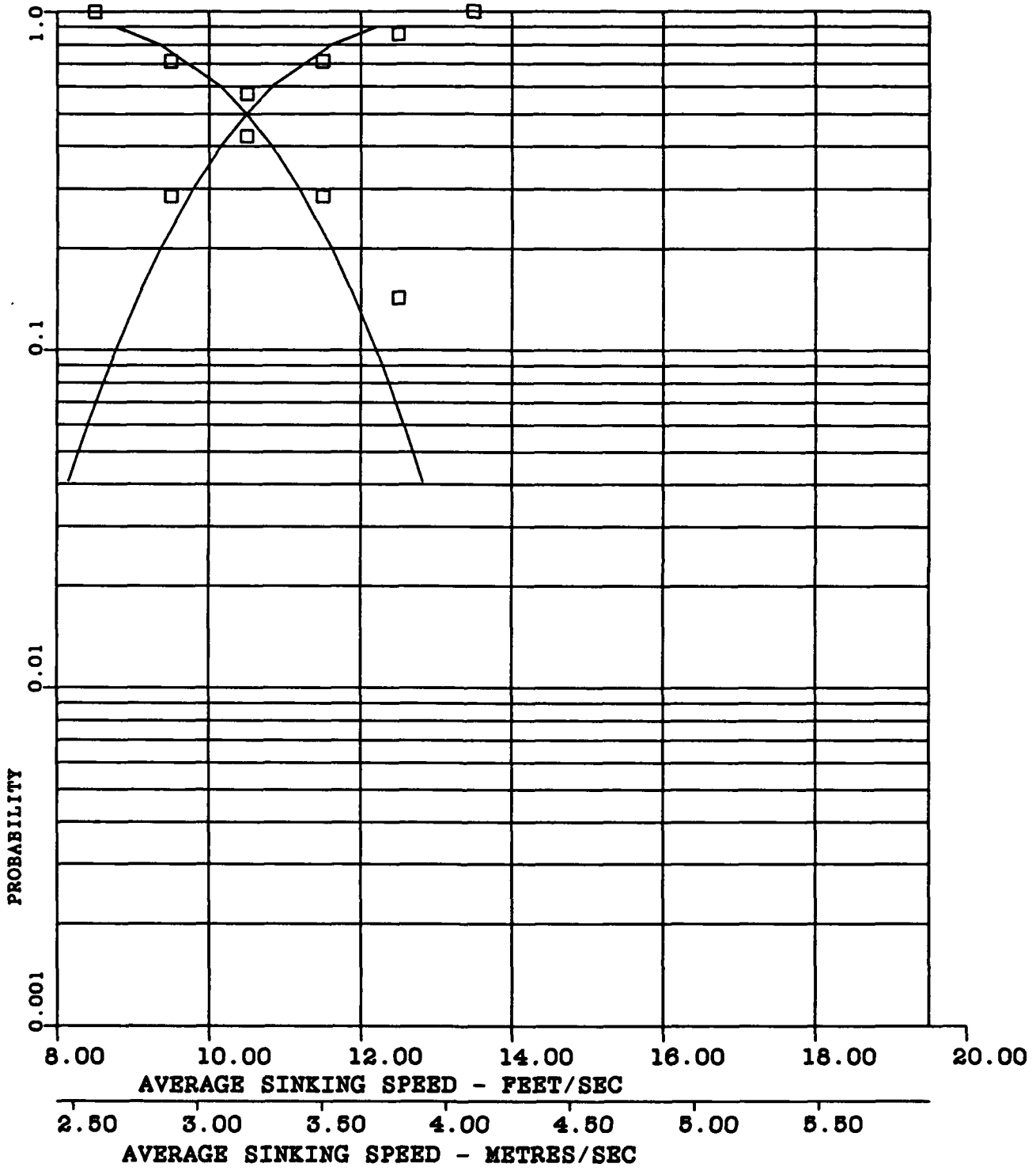


FIGURE H-16 PROBABILITY DISTRIBUTION OF AVERAGE SINKING SPEED AT FREE FLIGHT

MODEL A-7 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N=151 $\bar{X}$=1.06 A3=.73
S=.08 A4=4.65

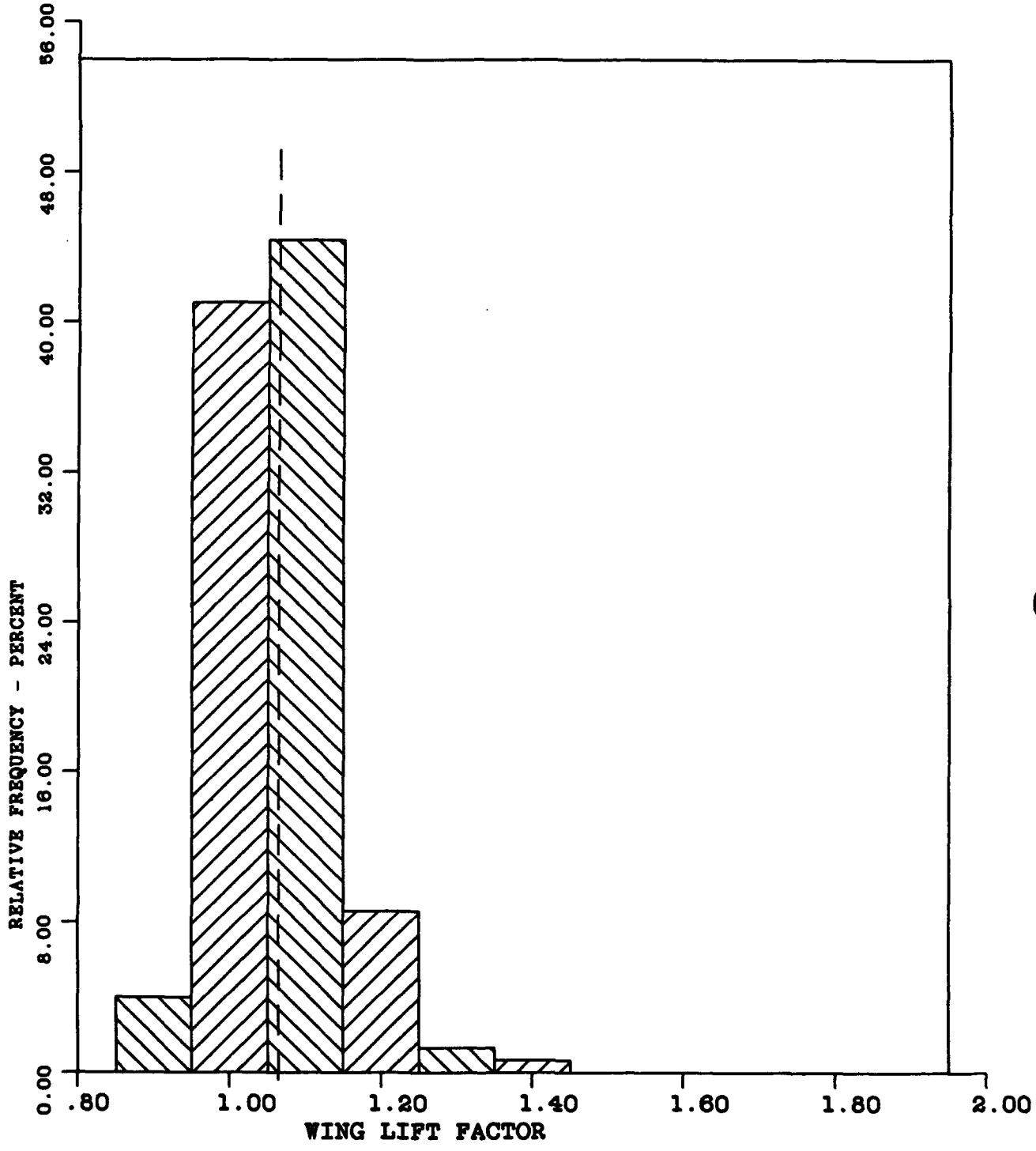


FIGURE H-17 FREQUENCY DISTRIBUTION OF WING LIFT FACTOR AT FIRST MAIN WHEEL TOUCHDOWN

MODEL A-7 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-151 $\bar{X}$-1.06 A3-.73
S-.08 A4-4.65
CURVE FITTED - PEARSON TYPE III

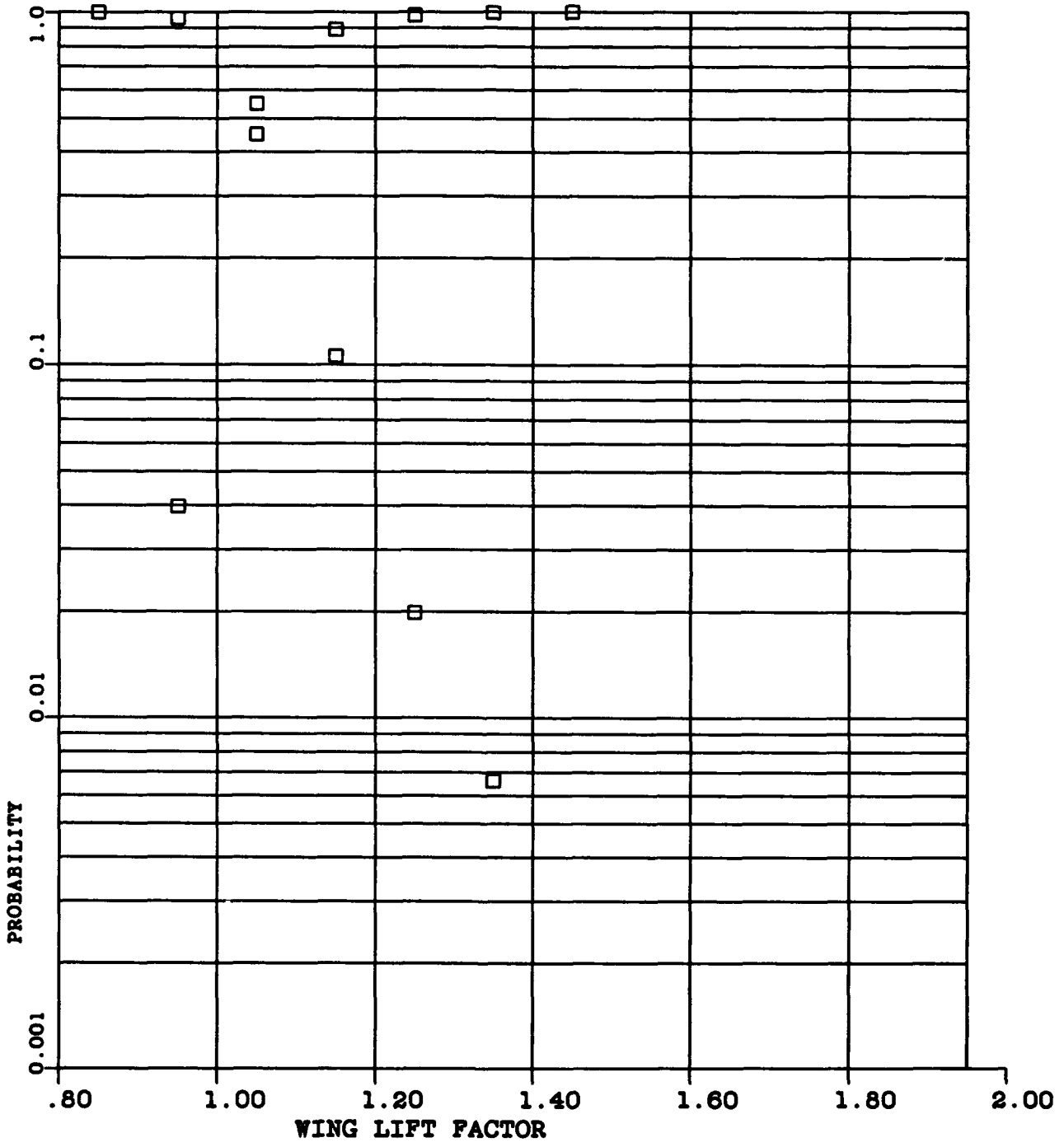


FIGURE H-18 PROBABILITY DISTRIBUTION OF WING LIFT FACTOR AT FIRST MAIN WHEEL TOUCHDOWN

MODEL A-7 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-7 $\bar{X}$-1.11 A3=-.27
S=.08 A4=1.49

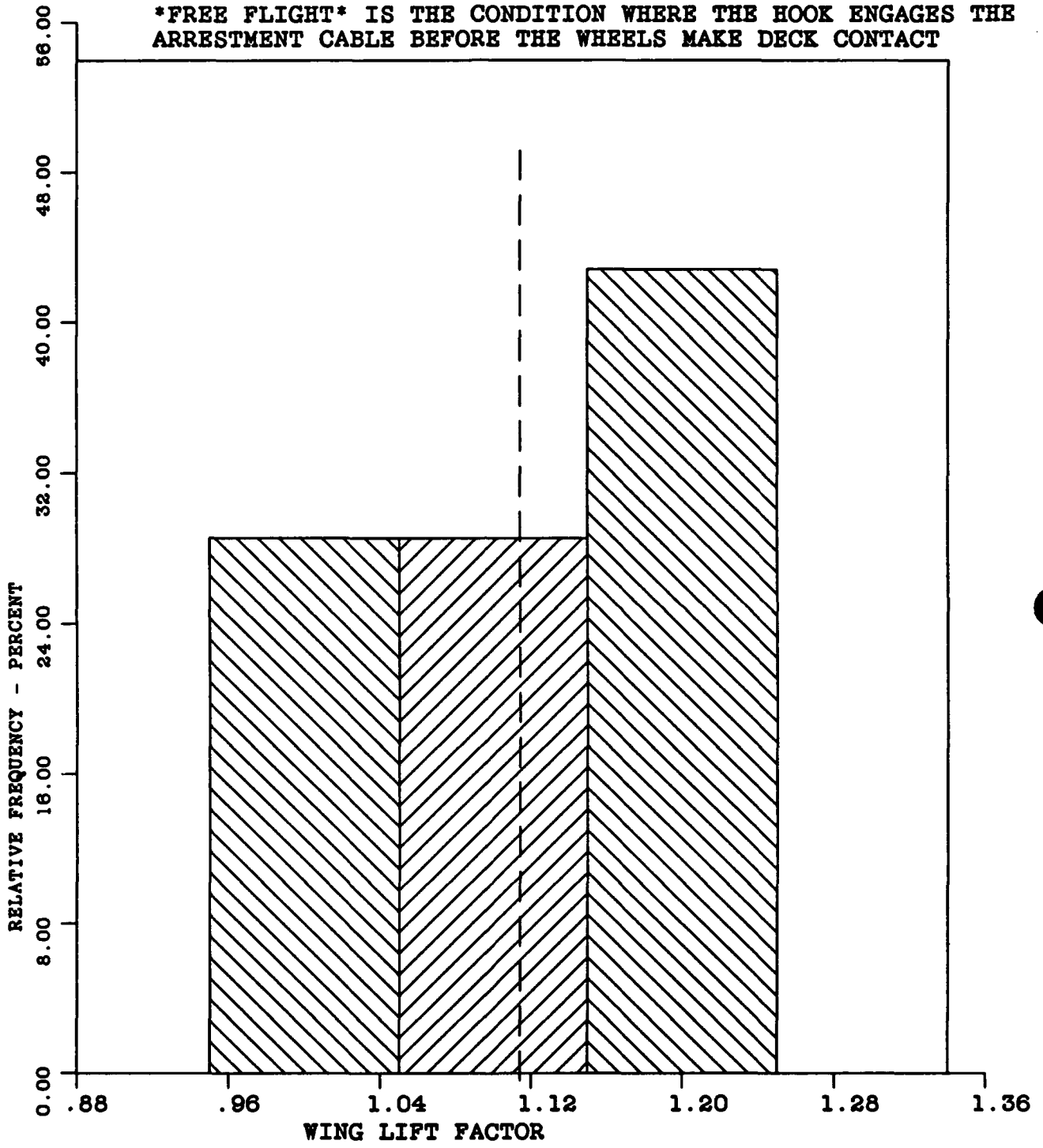


FIGURE H-19 FREQUENCY DISTRIBUTION OF WING LIFT FACTOR AT FREE FLIGHT

MODEL A-7 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-7 $\bar{X}$-1.11 A3=-.27
S=.08 A4=1.49
CURVE FITTED - NORMAL
FREE FLIGHT IS THE CONDITION WHERE THE HOOK ENGAGES THE ARRESTMENT CABLE BEFORE THE WHEELS MAKE DECK CONTACT

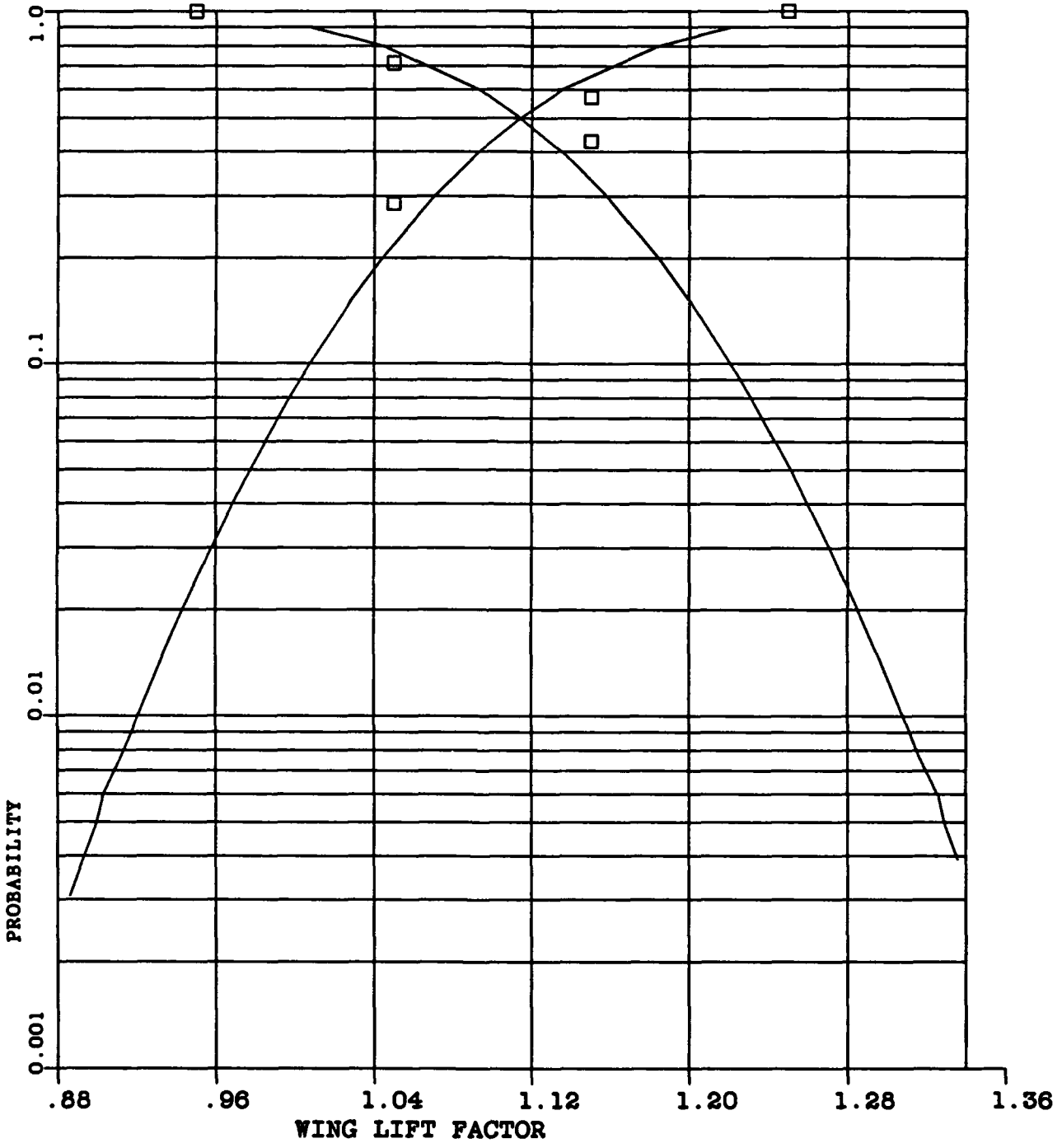


FIGURE H-20 PROBABILITY DISTRIBUTION OF WING LIFT FACTOR AT FREE FLIGHT

MODEL A-7 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-147 $\bar{X}$-8.80 DEGREES (.153 RADIANS) A3-.03
S-1.05 DEGREES (.018 RADIANS) A4-3.40

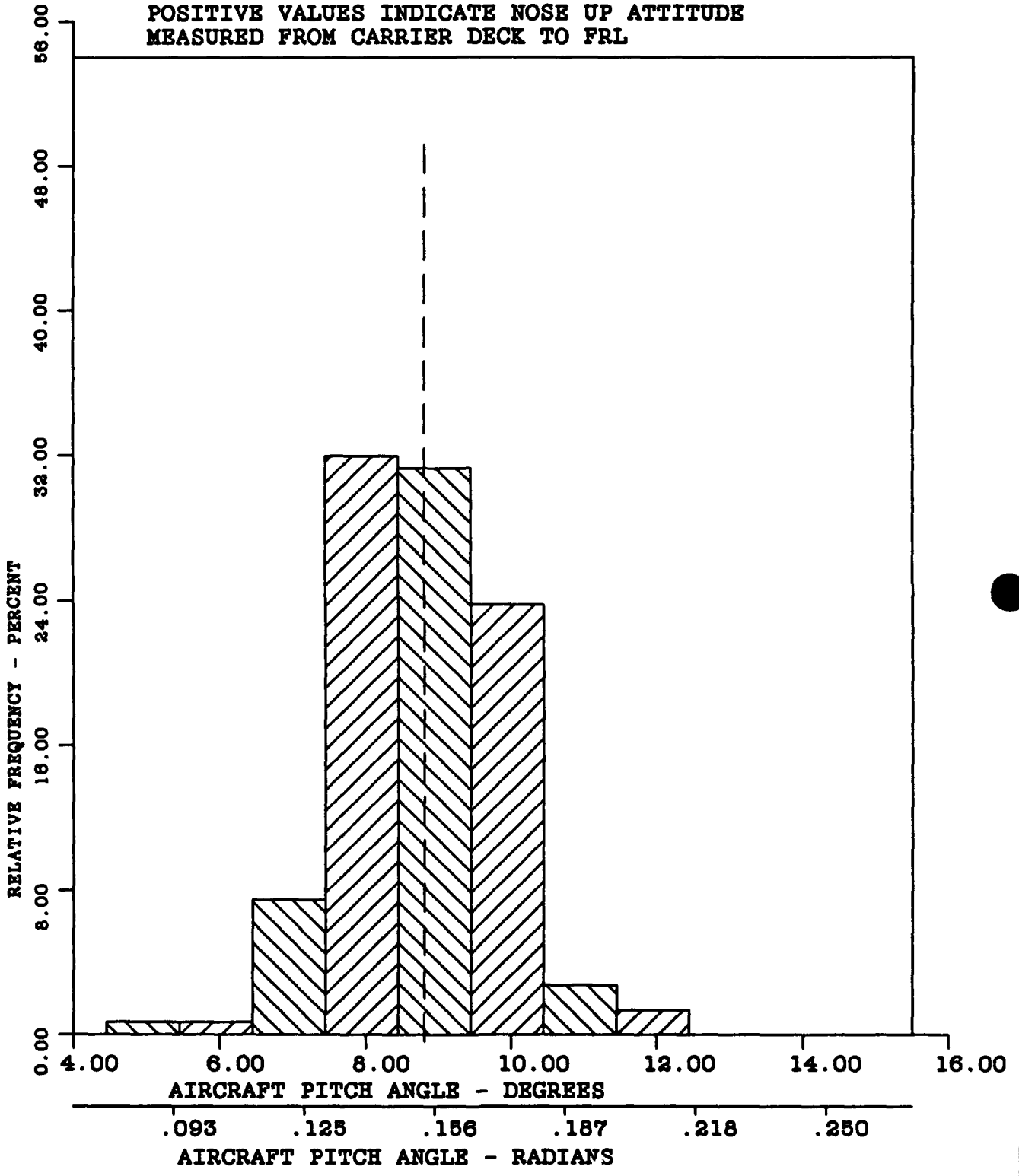


FIGURE H-21 FREQUENCY DISTRIBUTION OF AIRCRAFT PITCH ANGLE AT THE RAMP

MODEL A-7 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-147 $\bar{X}$-8.80 DEGREES (.153 RADIANS) A3=.03
S-1.05 DEGREES (.018 RADIANS) A4=3.40
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE NOSE UP ATTITUDE
MEASURED FROM CARRIER DECK TO FRL

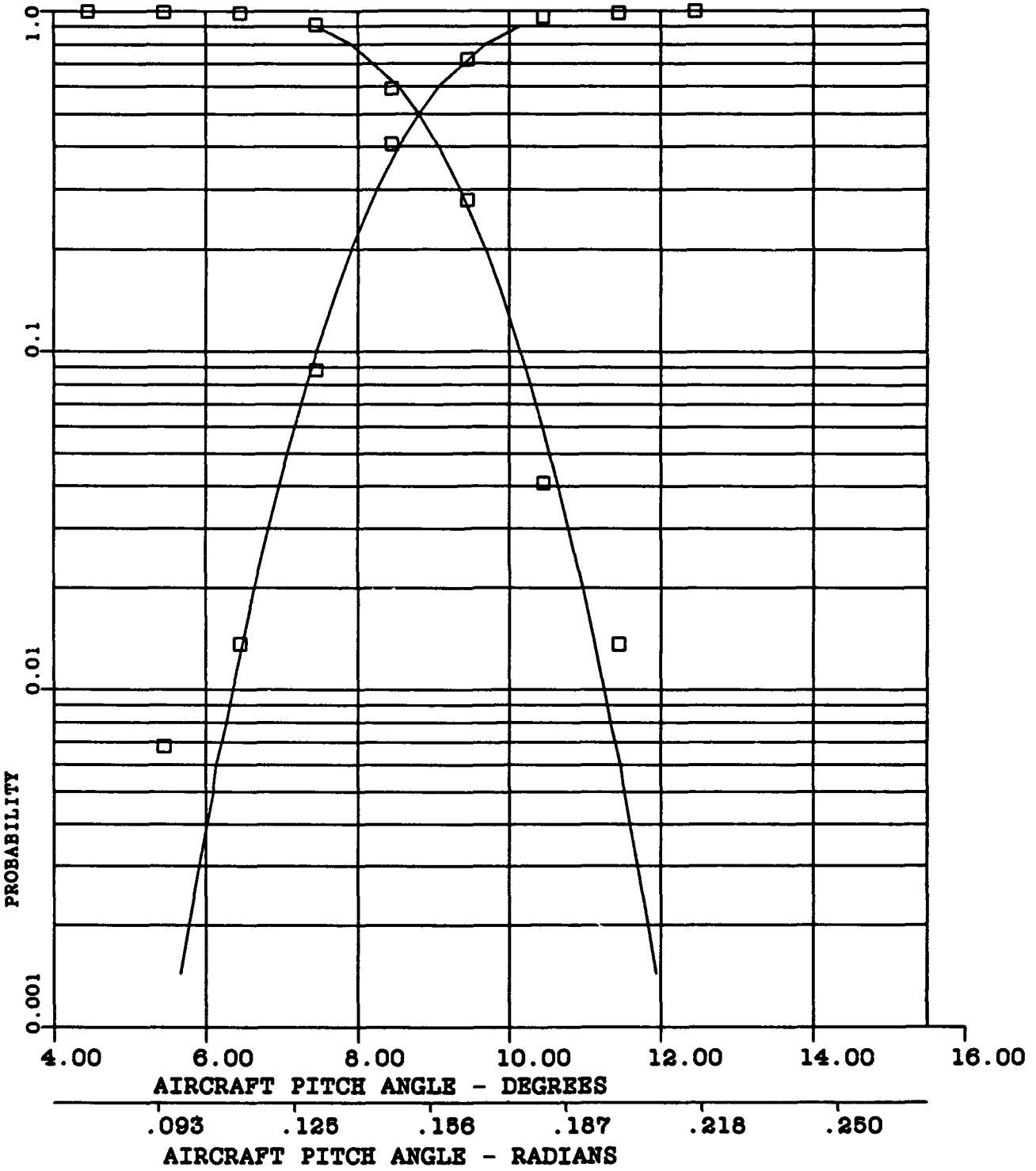


FIGURE H-22 PROBABILITY DISTRIBUTION OF AIRCRAFT PITCH ANGLE AT THE RAMP

MODEL A-7 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-151 $\bar{X}$-8.18 DEGREES (.142 RADIANS) A3-.23
S-1.38 DEGREES (.024 RADIANS) A4-3.03

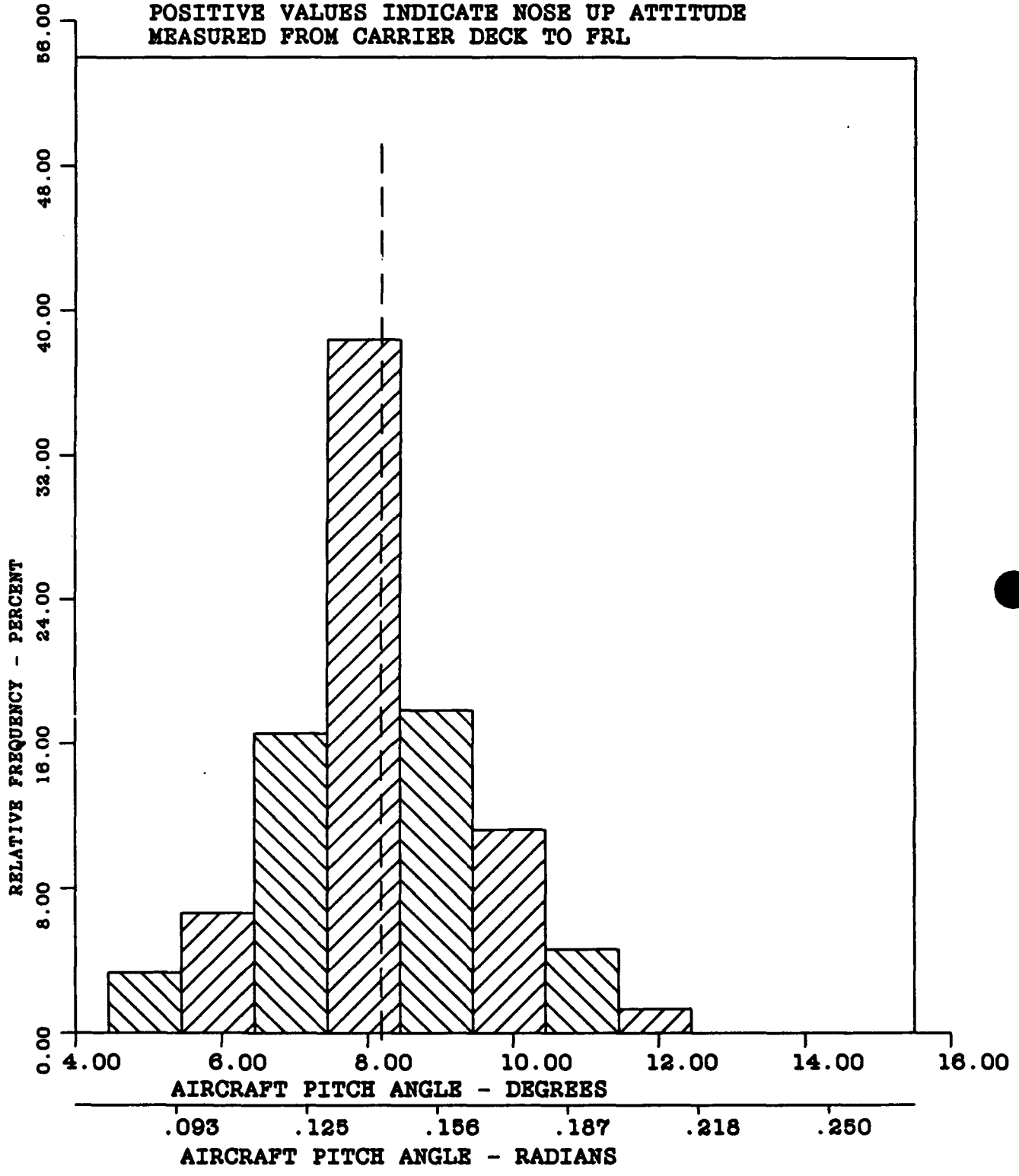


FIGURE H-23 FREQUENCY DISTRIBUTION OF AIRCRAFT PITCH ANGLE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL A-7 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N=151 $\bar{X}$=8.18 DEGREES (.142 RADIANS) A3=.23
S=1.38 DEGREES (.024 RADIANS) A4=3.03
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE NOSE UP ATTITUDE
MEASURED FROM CARRIER DECK TO FRL

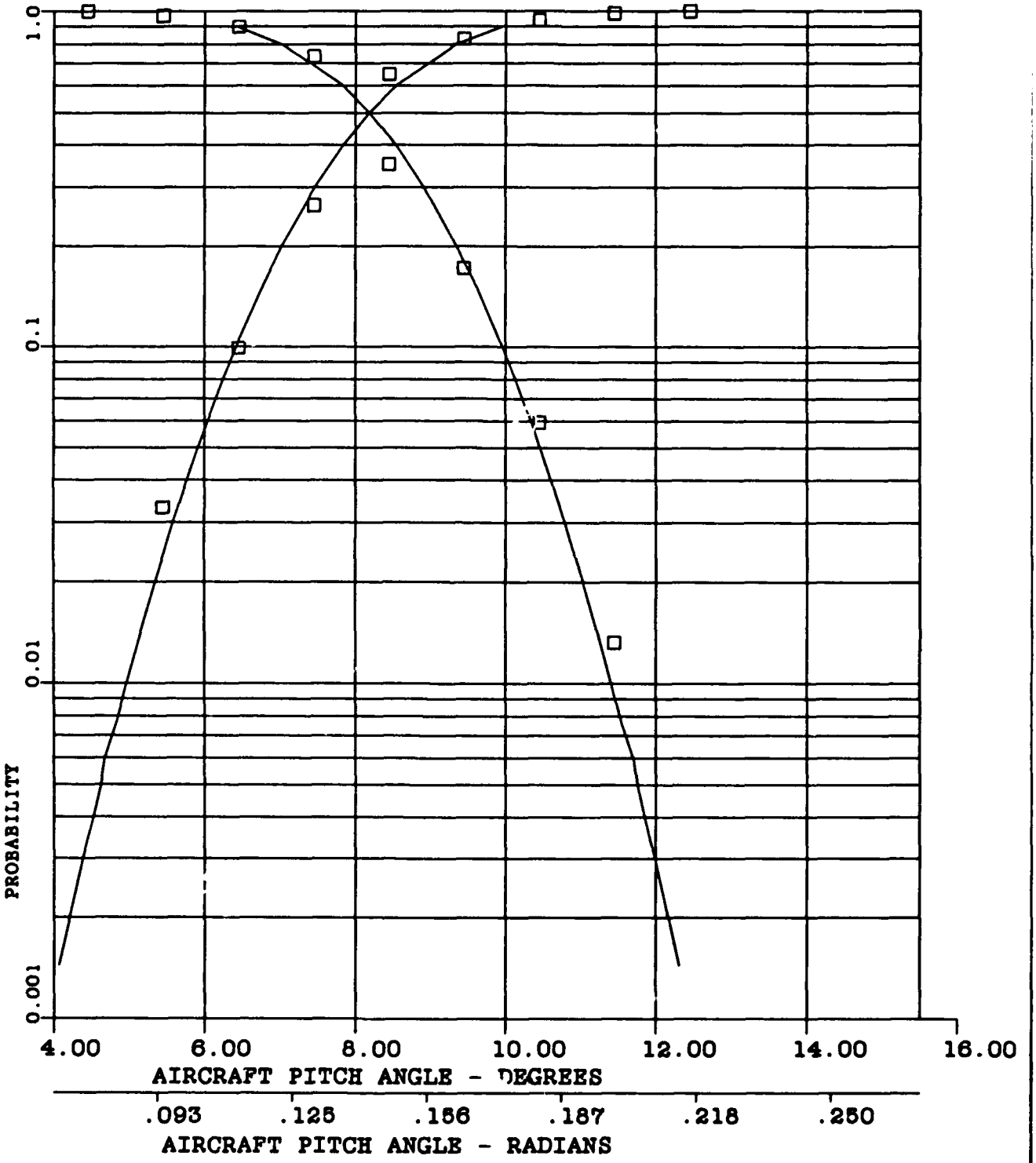


FIGURE H-24 PROBABILITY DISTRIBUTION OF AIRCRAFT PITCH ANGLE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL A-7 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-7 $\bar{X}$-10.34 DEGREES (.180 RADIANS) A3=.69
S-1.32 DEGREES (.023 RADIANS) A4=2.42

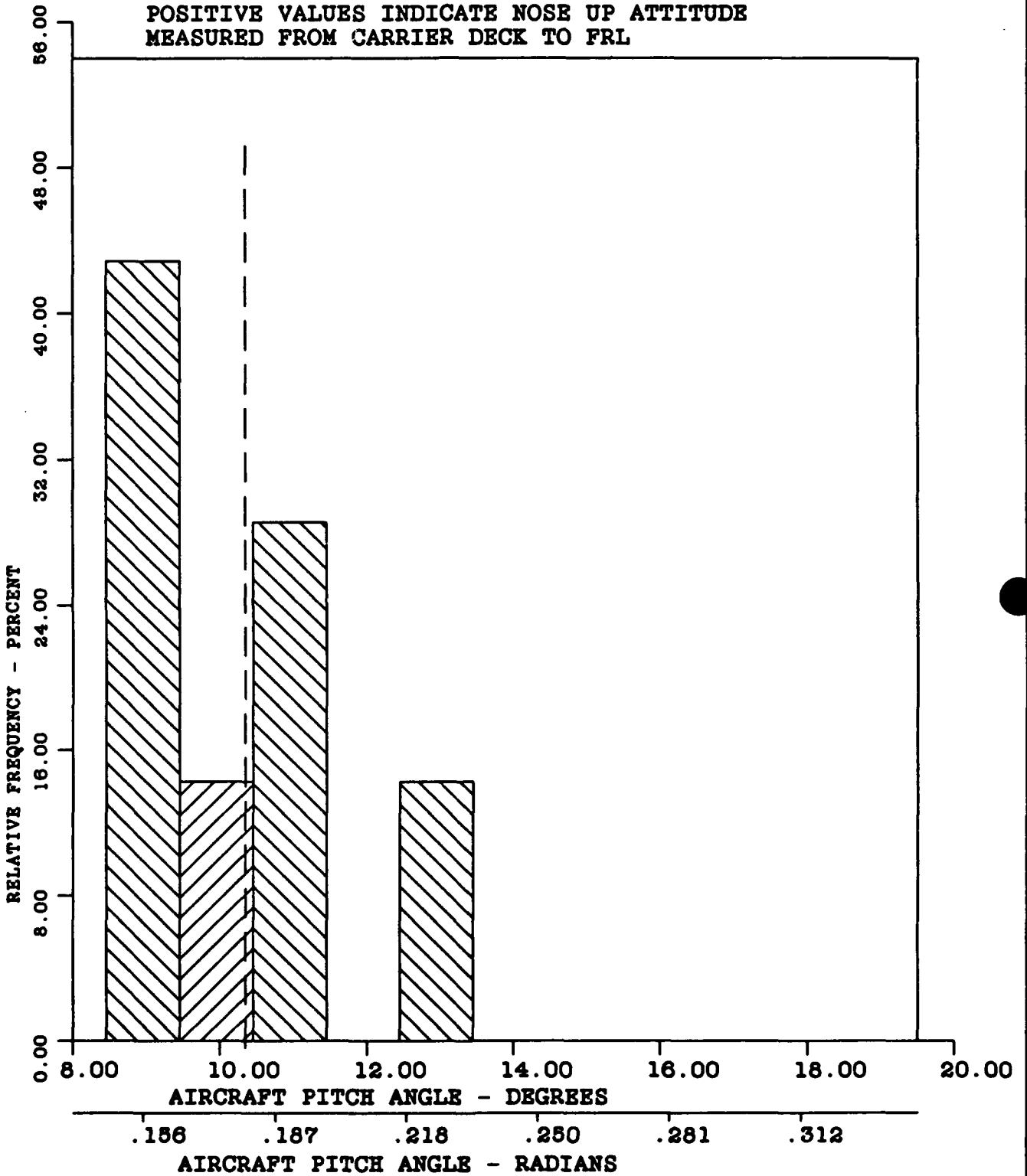


FIGURE H-25 FREQUENCY DISTRIBUTION OF AIRCRAFT PITCH ANGLE AT FREE FLIGHT

MODEL A-7 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-7 $\bar{X}$-10.34 DEGREES (.180 RADIANS) A3-.69
S-1.32 DEGREES (.023 RADIANS) A4-2.42
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE NOSE UP ATTITUDE
MEASURED FROM CARRIER DECK TO FRL

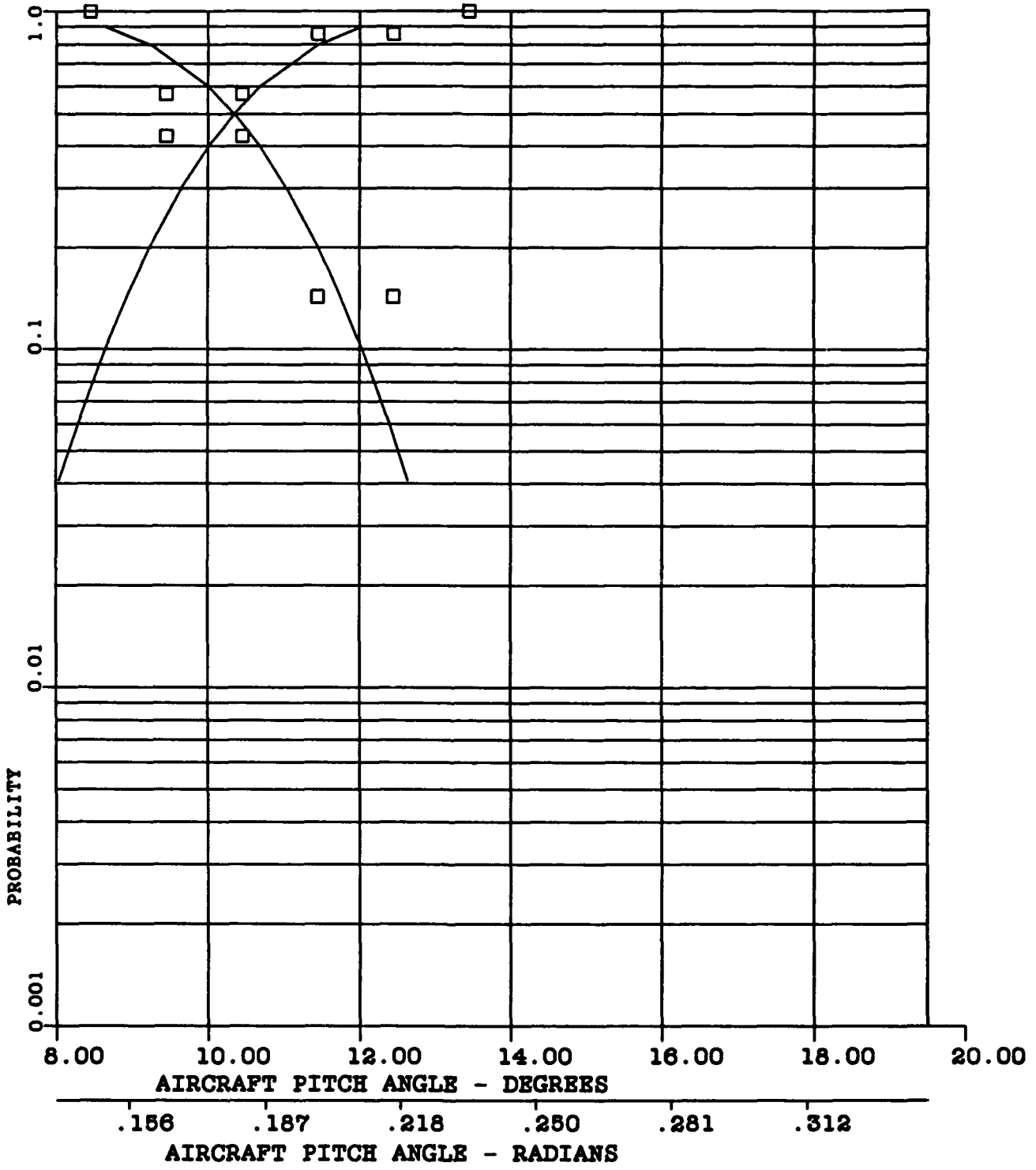


FIGURE H-26 PROBABILITY DISTRIBUTION OF AIRCRAFT PITCH ANGLE AT FREE FLIGHT

MODEL A-7 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-147 $\bar{X}$-.56 DEGREES (.009 RADIANS) A3=-.17
S-2.57 DEGREES (.044 RADIANS) A4-2.85

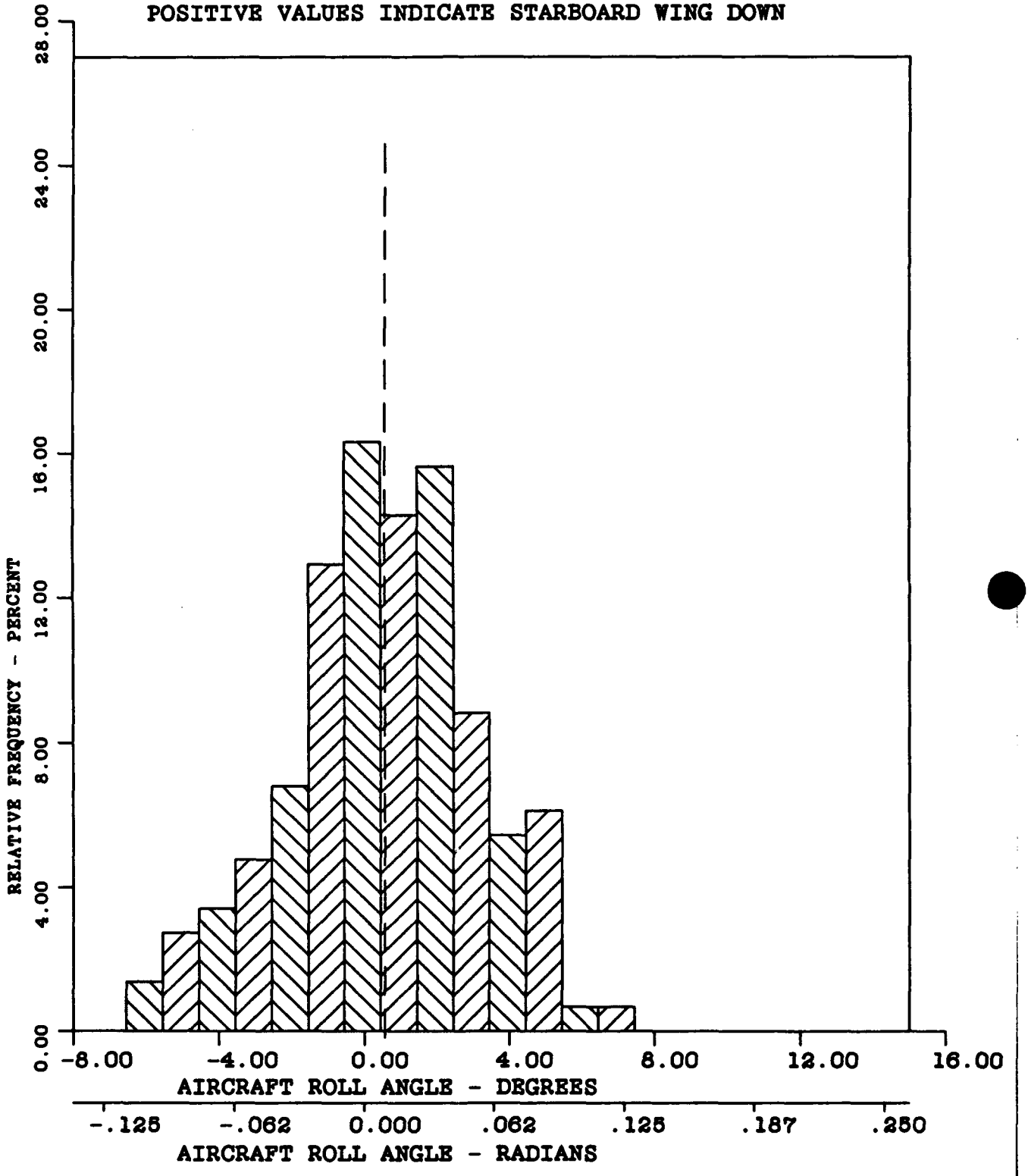


FIGURE H-27 FREQUENCY DISTRIBUTION OF AIRCRAFT ROLL ANGLE AT THE RAMP

MODEL A-7 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-147 $\bar{X}$-.56 DEGREES (.009 RADIANS) A3=-.17
S-2.57 DEGREES (.044 RADIANS) A4-2.85
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE STARBOARD WING DOWN

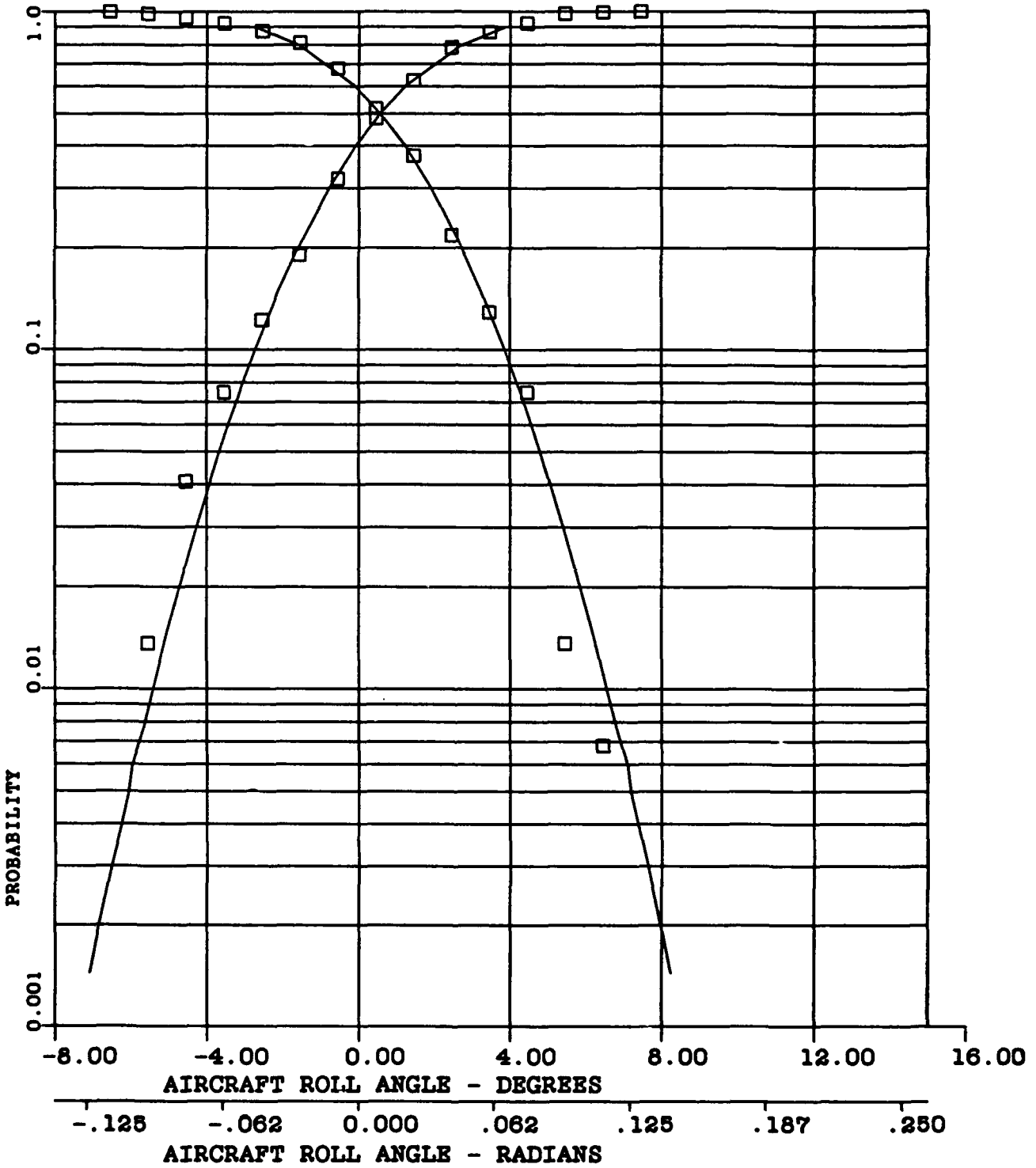


FIGURE H-28 PROBABILITY DISTRIBUTION OF AIRCRAFT ROLL ANGLE AT THE RAMP

MODEL A-7 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-151 $\bar{X}$=-.55 DEGREES (-.009 RADIANS) A3=.21
S=1.98 DEGREES (.034 RADIANS) A4=3.66

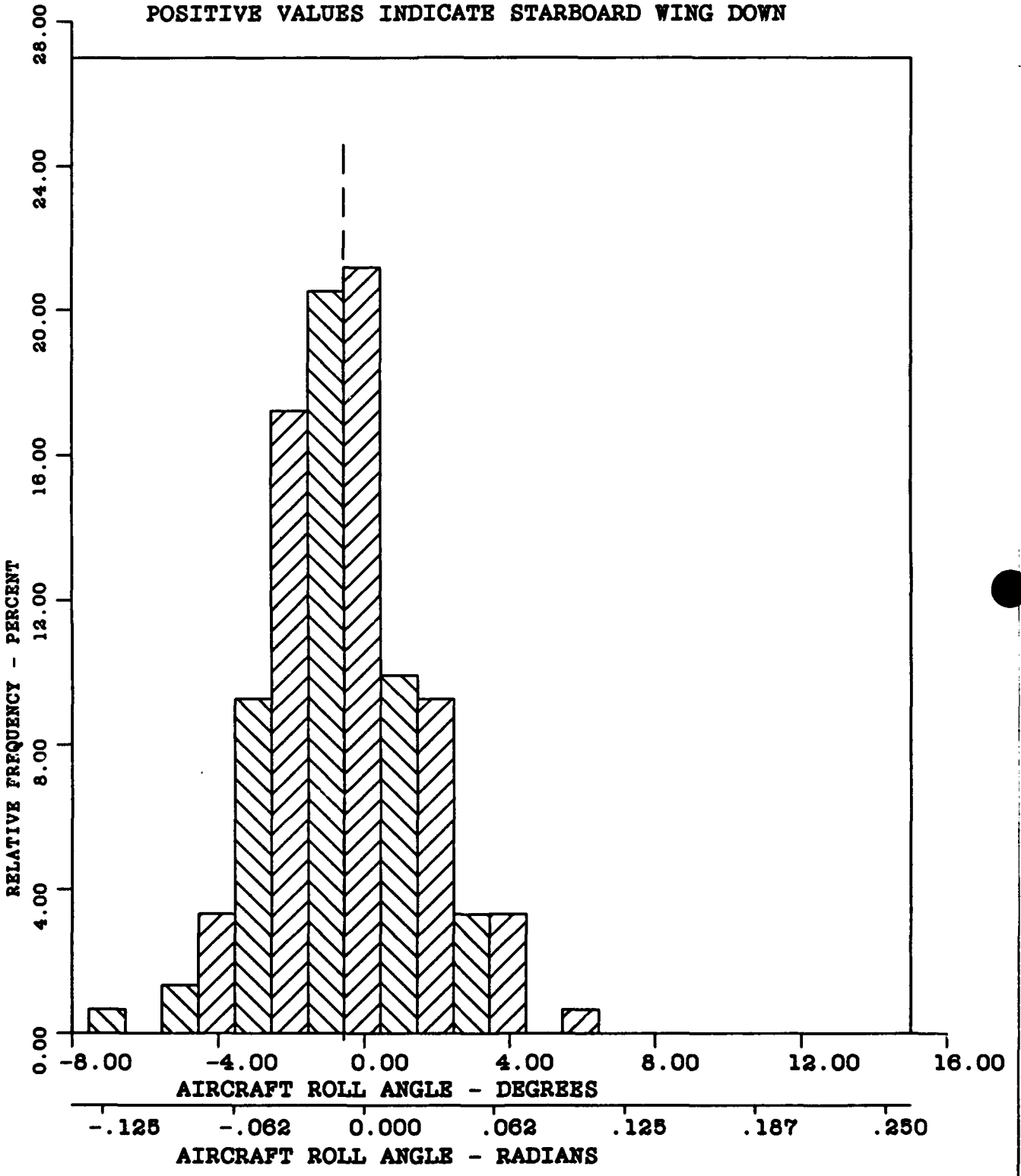


FIGURE H-29 FREQUENCY DISTRIBUTION OF AIRCRAFT ROLL ANGLE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL A-7 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-151 $\bar{X}$=-.55 DEGREES (-.009 RADIANS) A3=.21
S=1.98 DEGREES (.034 RADIANS) A4=3.66
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE STARBOARD WING DOWN

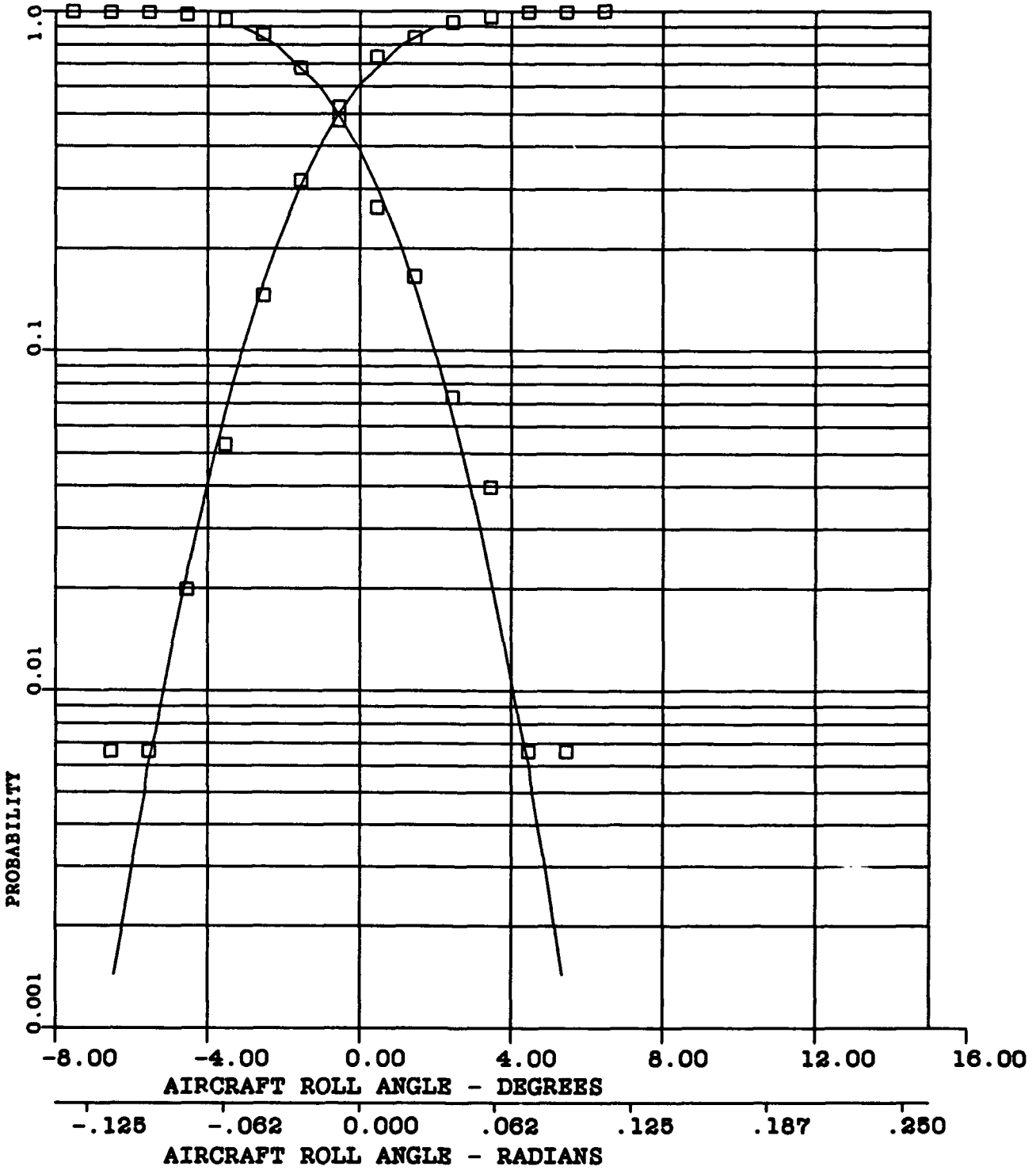


FIGURE H-30 PROBABILITY DISTRIBUTION OF AIRCRAFT ROLL ANGLE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL A-7 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=7 $\bar{X}$=.34 DEGREES (.005 RADIANS) A3=-1.56
S=1.49 DEGREES (.026 RADIANS) A4=4.08

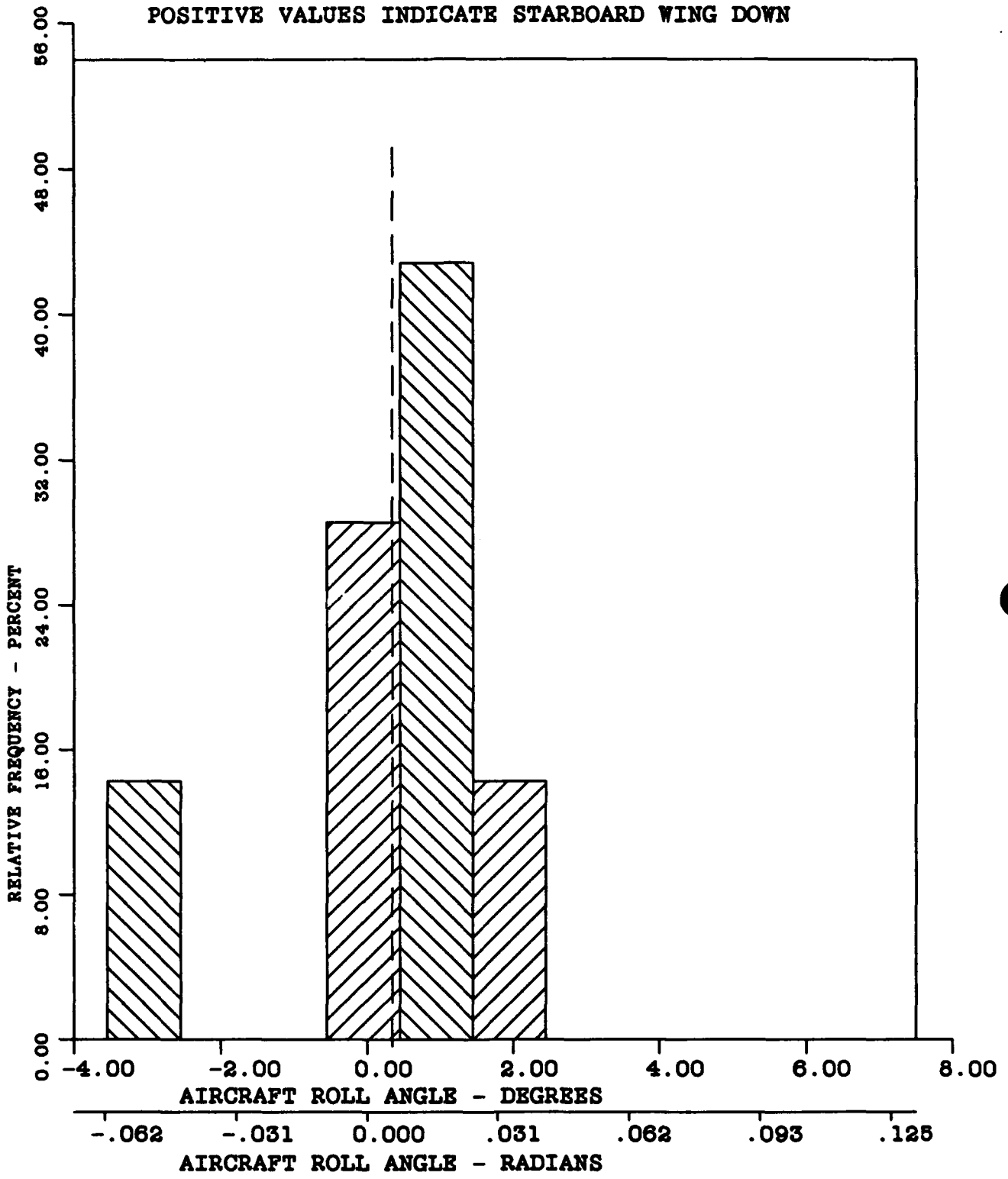


FIGURE H-31 FREQUENCY DISTRIBUTION OF AIRCRAFT ROLL ANGLE AT FREE FLIGHT

MODEL A-7 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-7 $\bar{X}$=.34 DEGREES (.005 RADIANS) A3=-1.56
S=1.49 DEGREES (.026 RADIANS) A4=4.08
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE STARBOARD WING DOWN

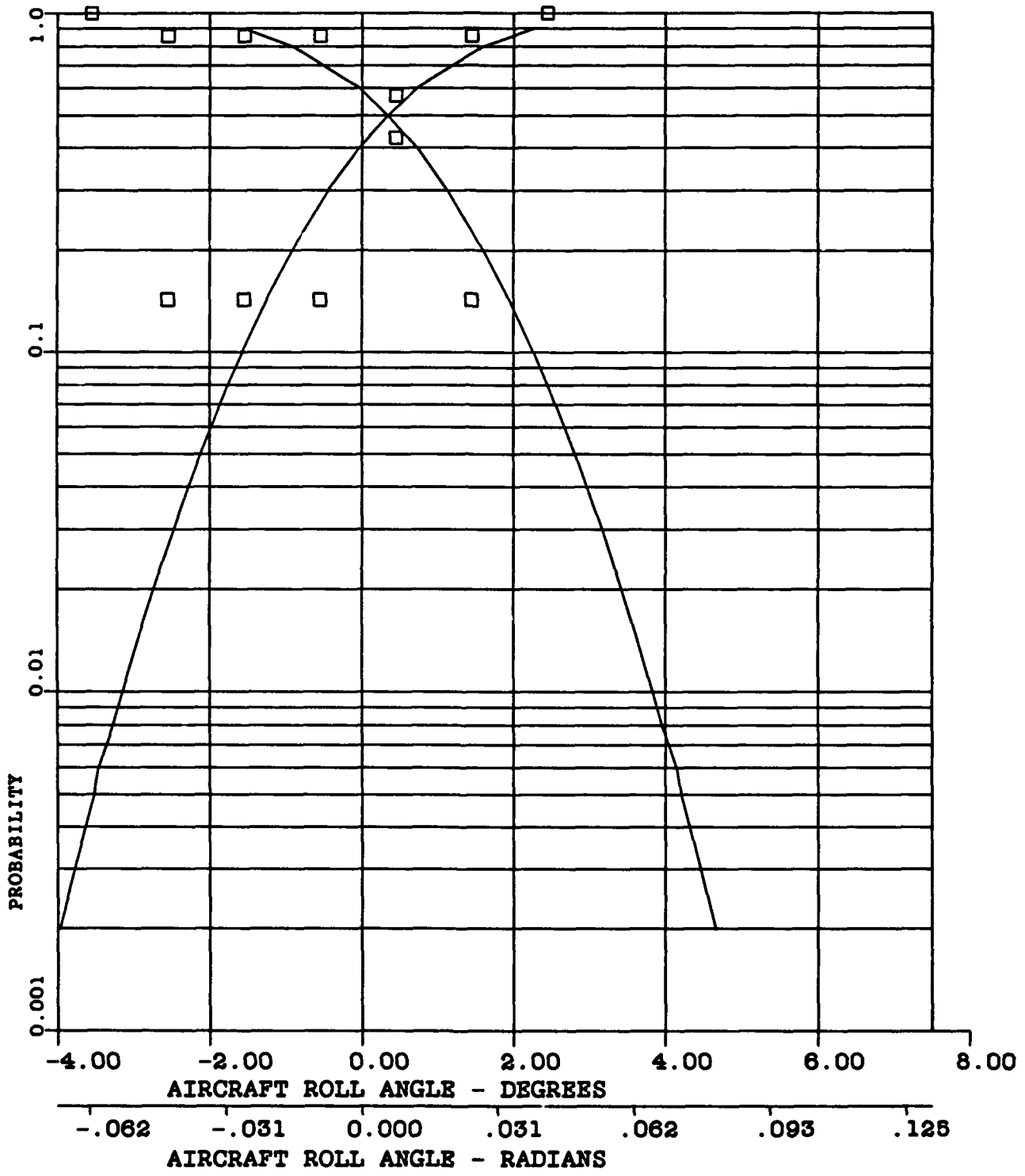


FIGURE H-32 PROBABILITY DISTRIBUTION OF AIRCRAFT ROLL ANGLE AT FREE FLIGHT

MODEL A-7 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-151 $\bar{X}$-253.10 FEET (77.14 METRES) A3=-.13
S-32.92 FEET (10.03 METRES) A4-3.01

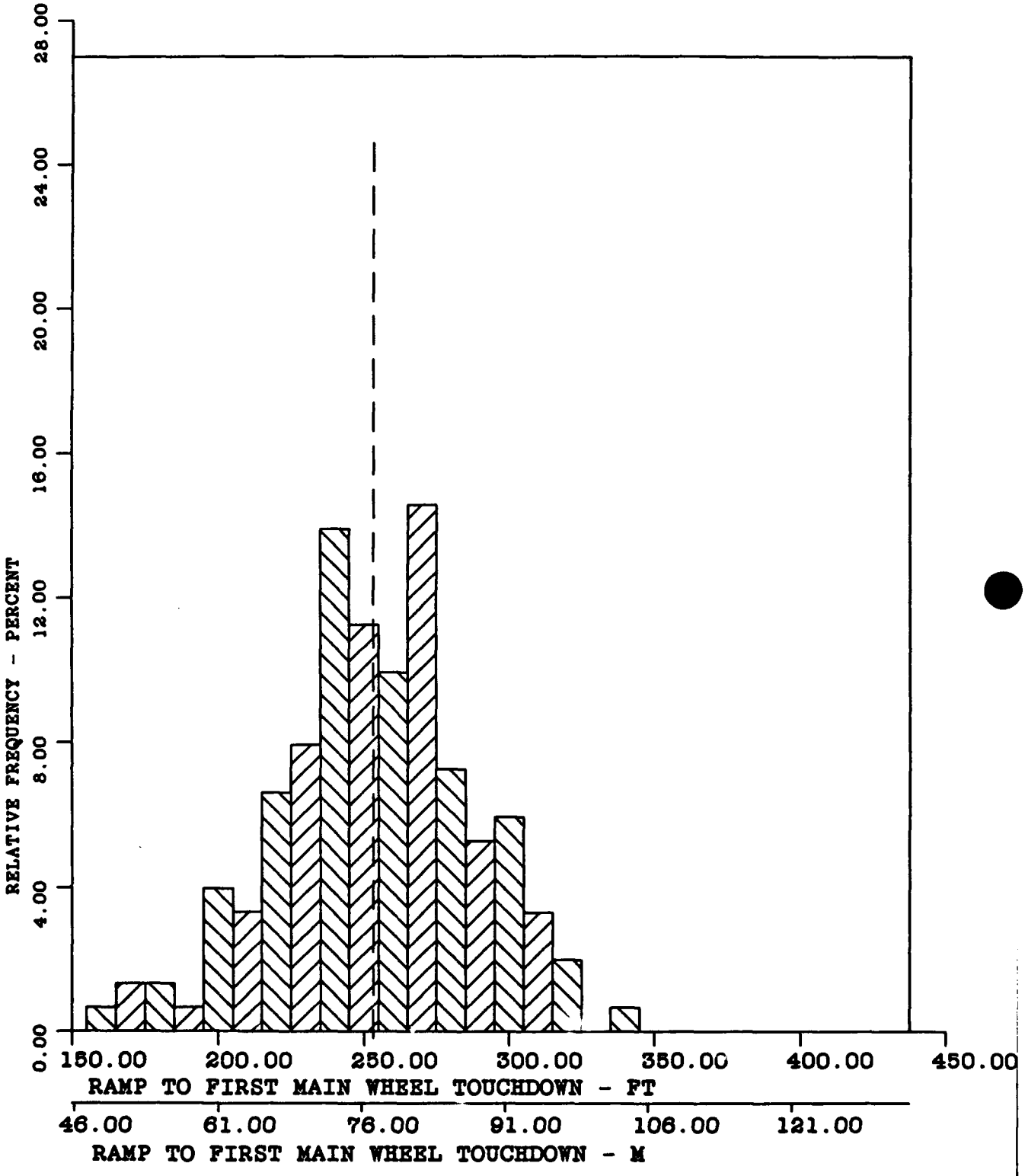


FIGURE H-33 FREQUENCY DISTRIBUTION OF DISTANCE FROM RAMP TO FIRST MAIN WHEEL TOUCHDOWN POINT

MODEL A-7 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-151 $\bar{X}$-253.10 FEET (77.14 METRES) A3=-.13
S-32.92 FEET (10.03 METRES) A4-3.01
CURVE FITTED - NORMAL

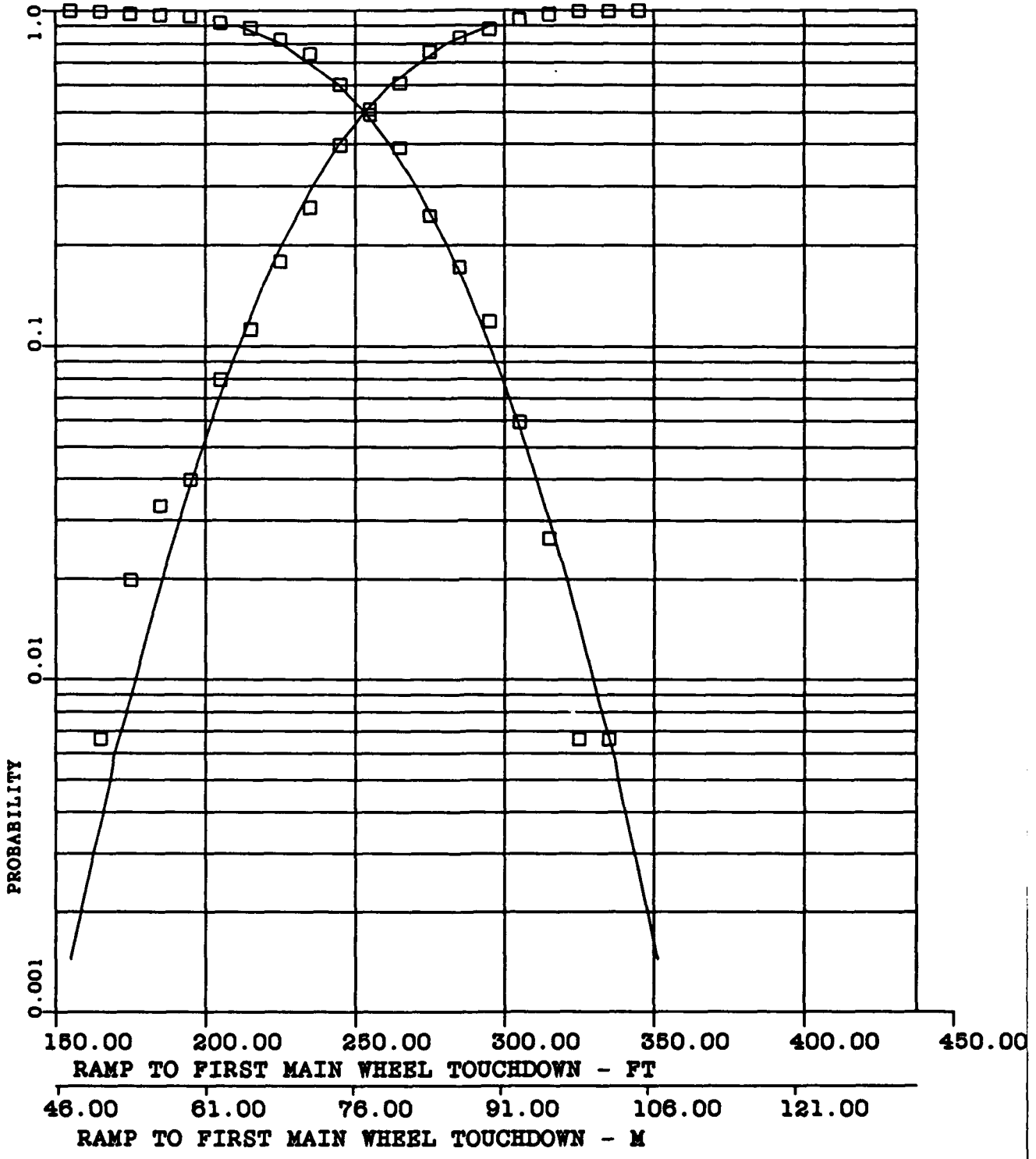


FIGURE H-34 PROBABILITY DISTRIBUTION OF DISTANCE FROM RAMP TO FIRST MAIN WHEEL TOUCHDOWN POINT

MODEL A-7 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=151 $\bar{X}$=-9.22 FEET (-2.81 METRES) A3=1.08
S=4.15 FEET (1.26 METRES) A4=6.11

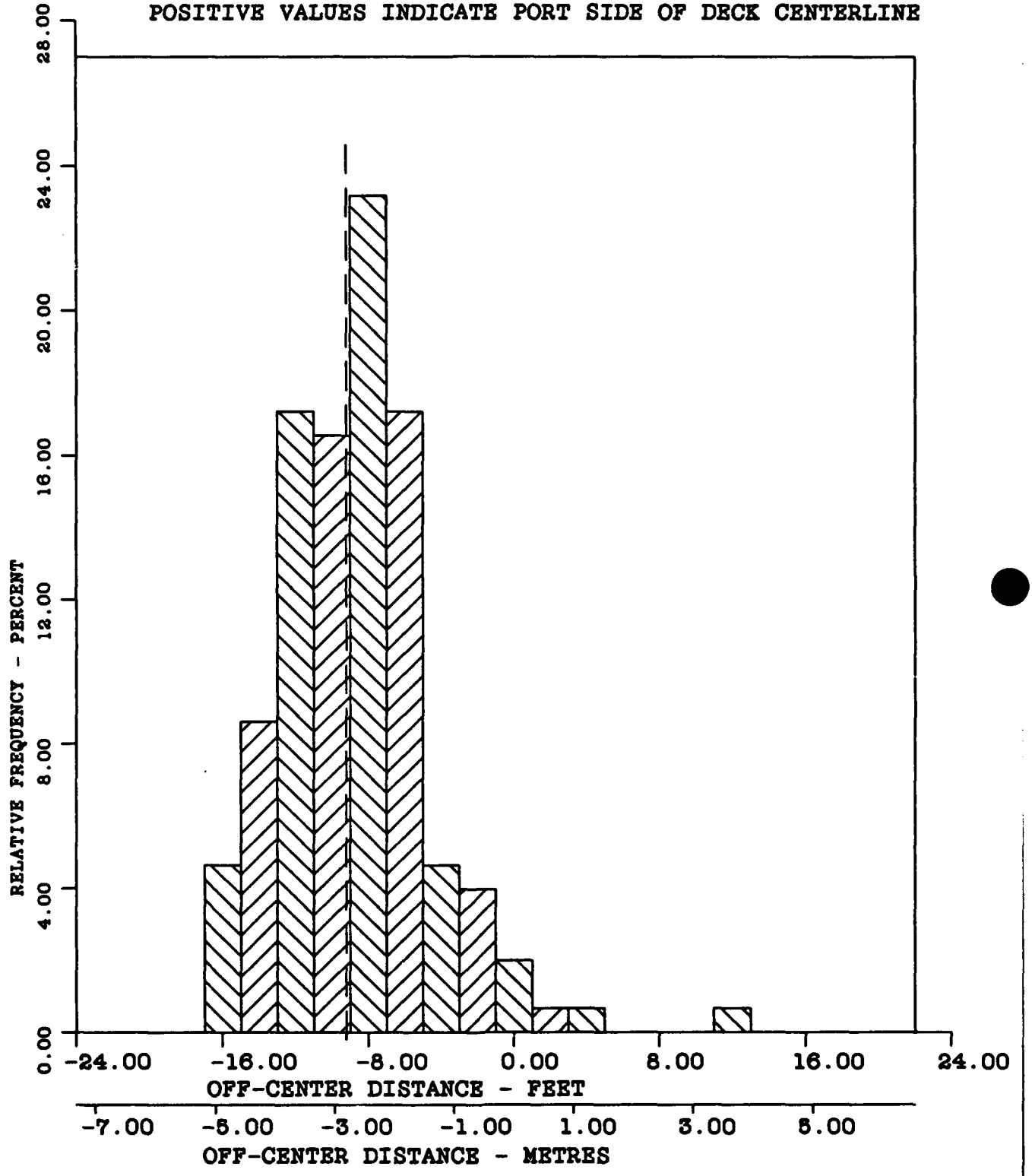


FIGURE H-35 FREQUENCY DISTRIBUTION OF AIRCRAFT CENTERLINE OFF-CNTR DISTANCE AT 1ST MAIN WHEEL TOUCHDOWN

MODEL A-7 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=151 $\bar{X}$=-9.22 FEET (-2.81 METRES) A3=1.08
S=4.15 FEET (1.26 METRES) A4=6.11
CURVE FITTED - PEARSON TYPE III
POSITIVE VALUES INDICATE PORT SIDE OF DECK CENTERLINE

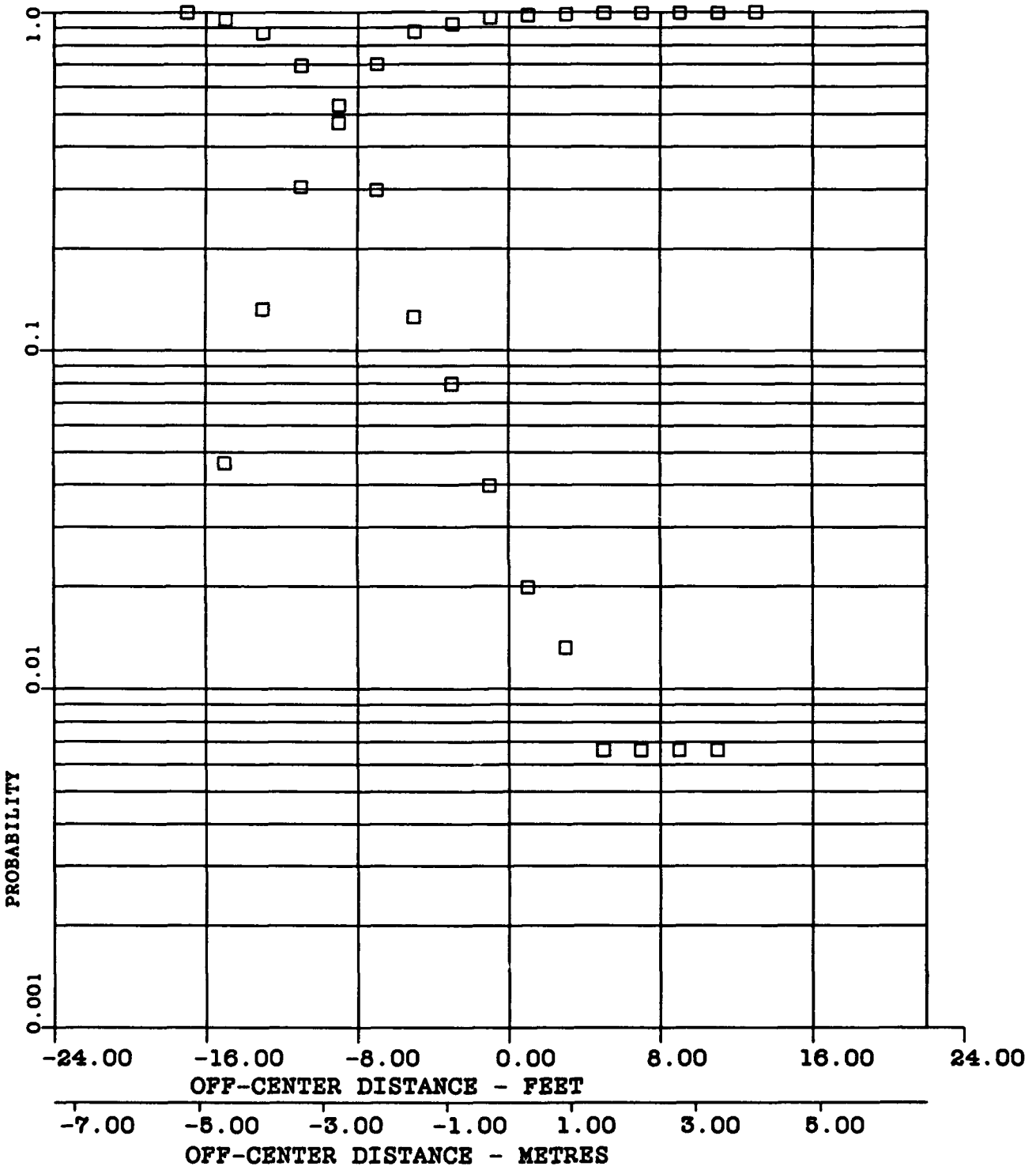


FIGURE H-36 PROBABILITY DISTRIBUTION OF AIRCRAFT OFF-CENTER DISTANCE AT 1ST MAIN WHEEL TOUCHDOWN

MODEL A-7 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=119 $\bar{X}$=2.89 A3=-.23
S=.72 A4=2.76

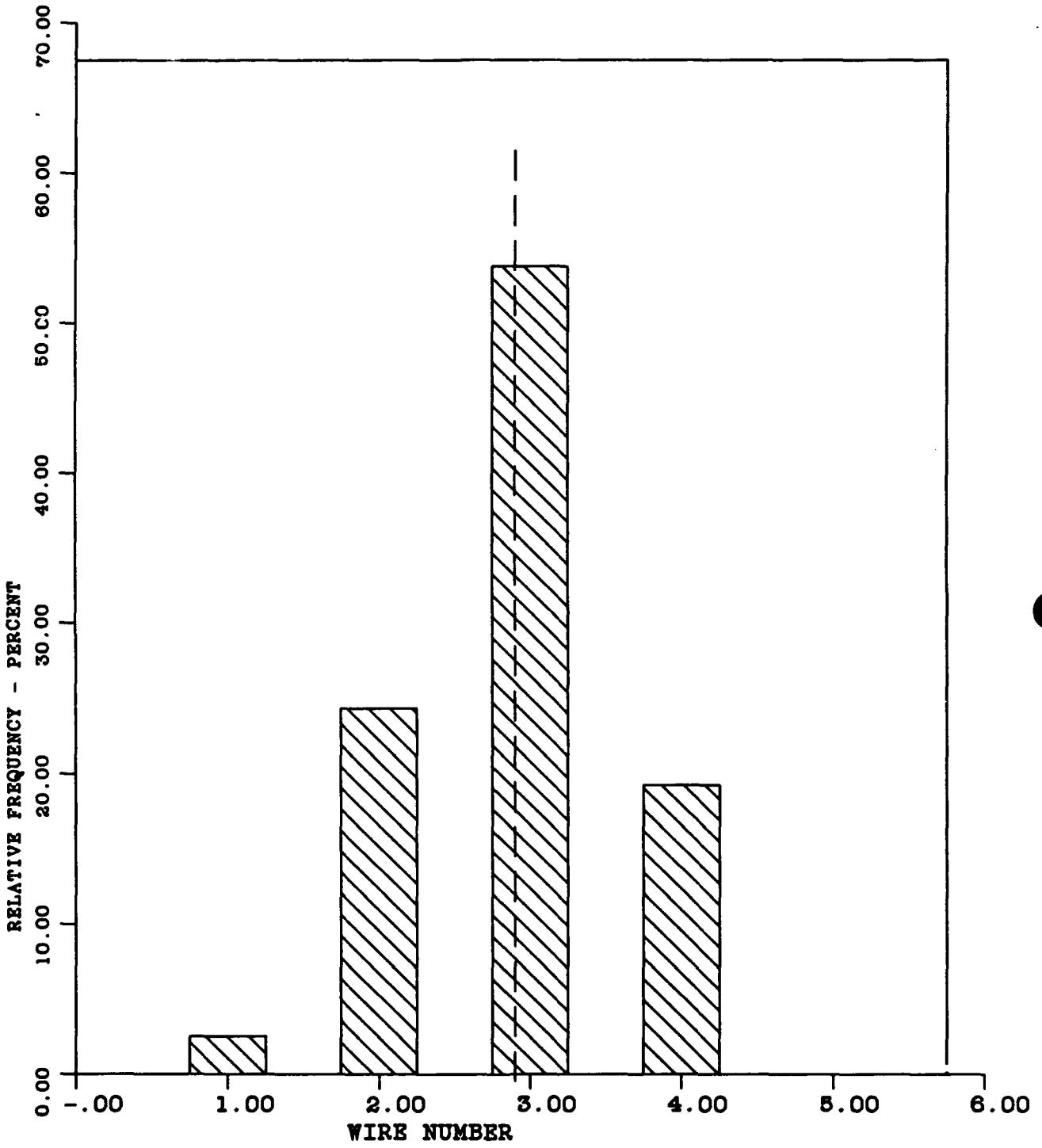


FIGURE H-37 FREQUENCY DISTRIBUTION OF ARRESTMENT WIRE NUMBER ENGAGED

MODEL A-7 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-151 $\bar{X}$-3.10 DEGREES (.054 RADIANS) A3=-.05
S=.52 DEGREES (.009 RADIANS) A4=3.02

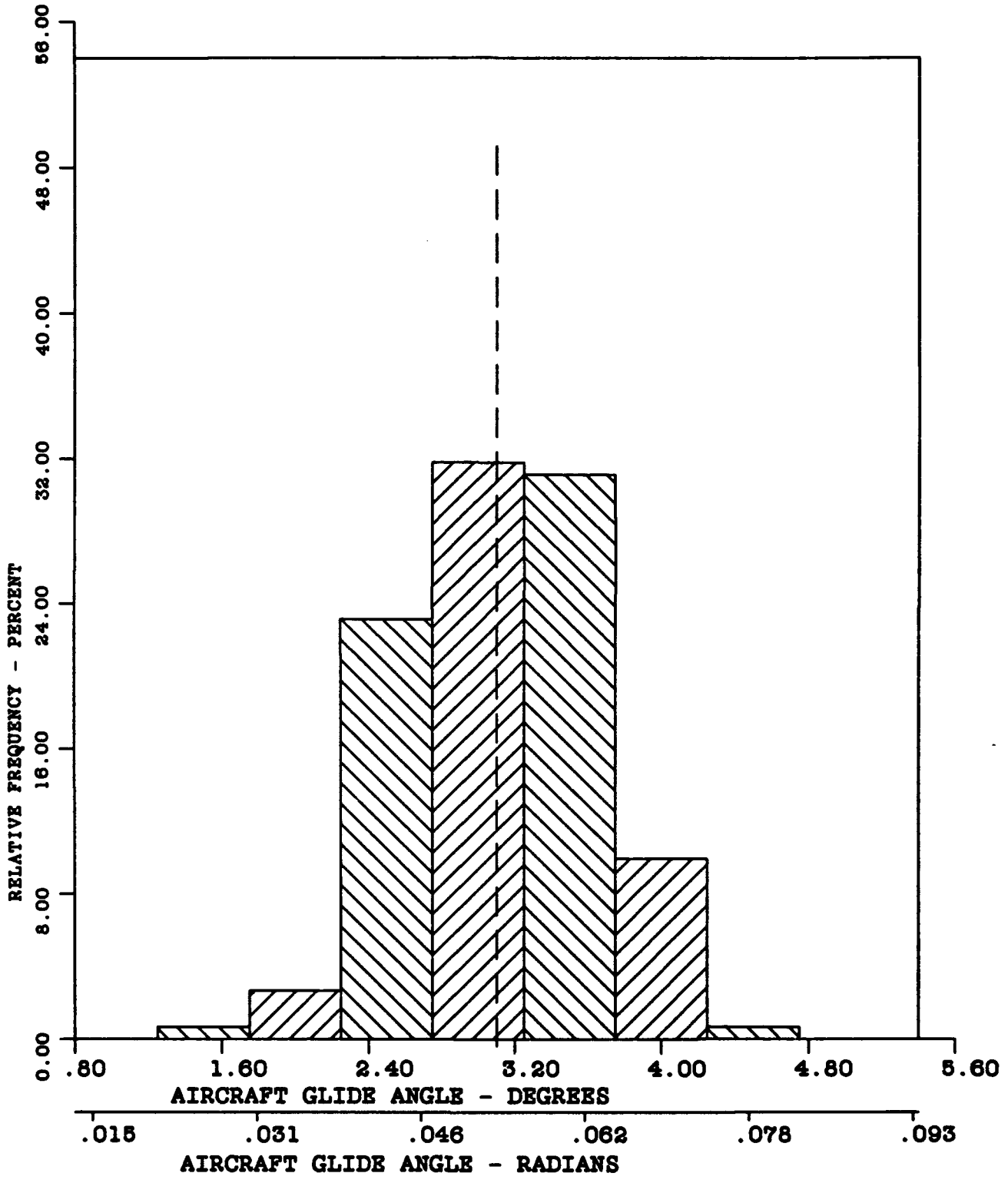


FIGURE H-38 FREQUENCY DISTRIBUTION OF AIRCRAFT GLIDE ANGLE - INSTANTANEOUS METHOD

MODEL A-7 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-147 $\bar{X}$-3.39 DEGREES (.059 RADIANS) A3=-.33
S=.44 DEGREES (.007 RADIANS) A4=3.00

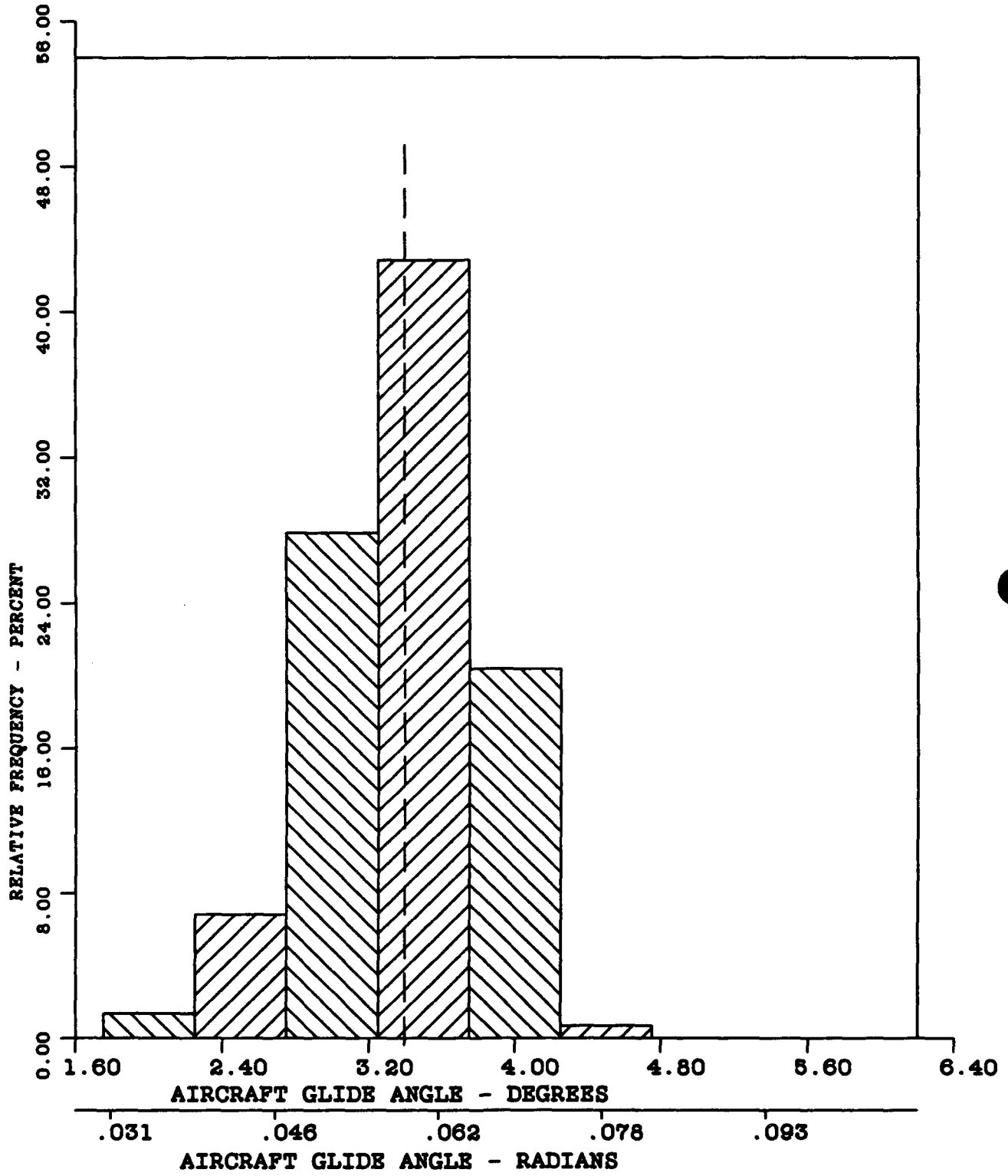


FIGURE H-39 FREQUENCY DISTRIBUTION OF AIRCRAFT GLIDE ANGLE - GEOMETRIC METHOD

MODEL A-7 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-147 $\bar{X}$-12.90 FEET (3.93 METRES) A3=-.05
S-2.50 FEET (.76 METRES) A4-3.51

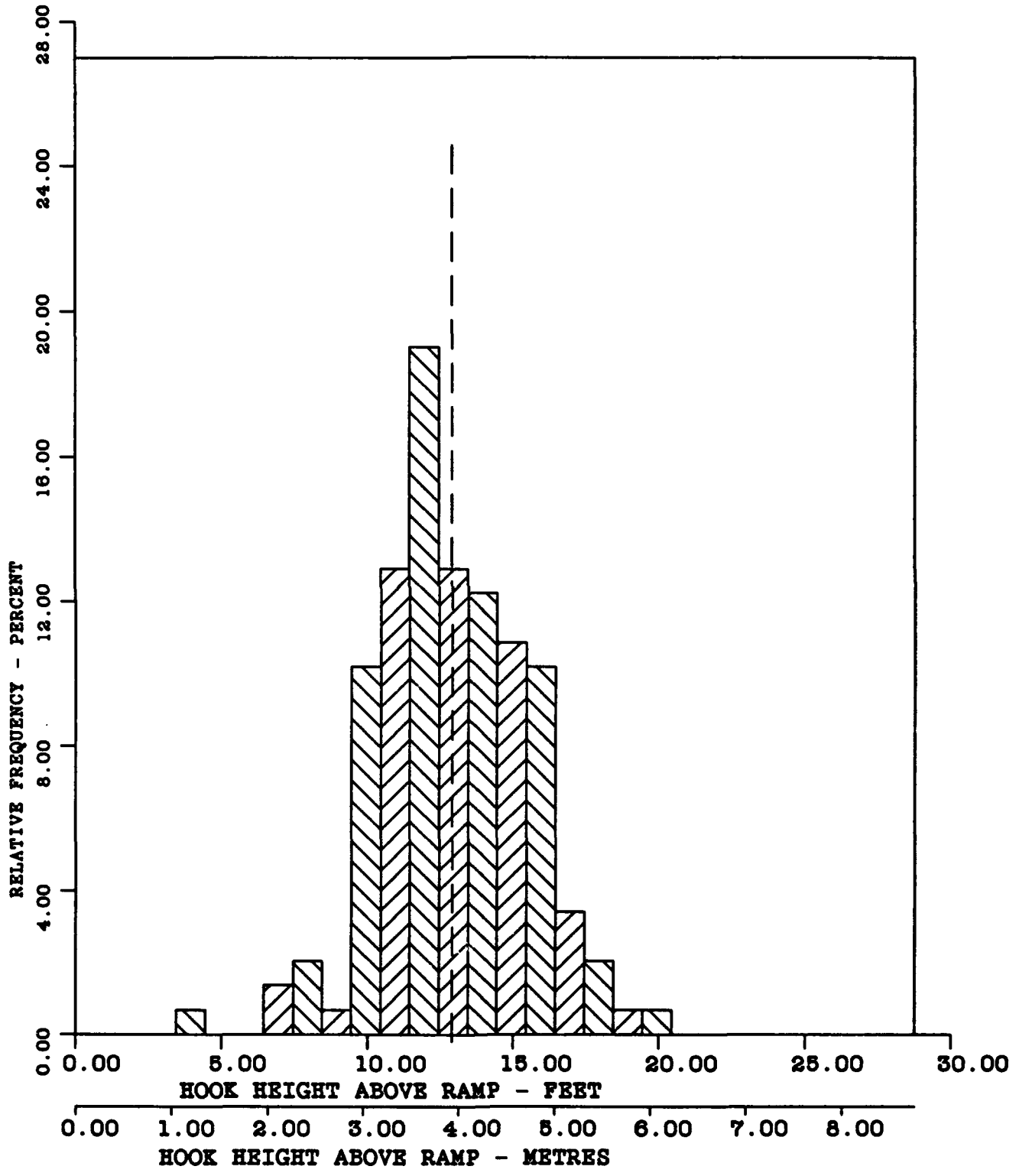


FIGURE H-40 FREQUENCY DISTRIBUTION OF AIRCRAFT ARRESTMENT HOOK HEIGHT ABOVE CARRIER RAMP

MODEL A-7 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-147 $\bar{X}$-12.90 FEET (3.93 METRES) A3=-.05
S-2.50 FEET (.76 METRES) A4-3.51
CURVE FITTED - NORMAL

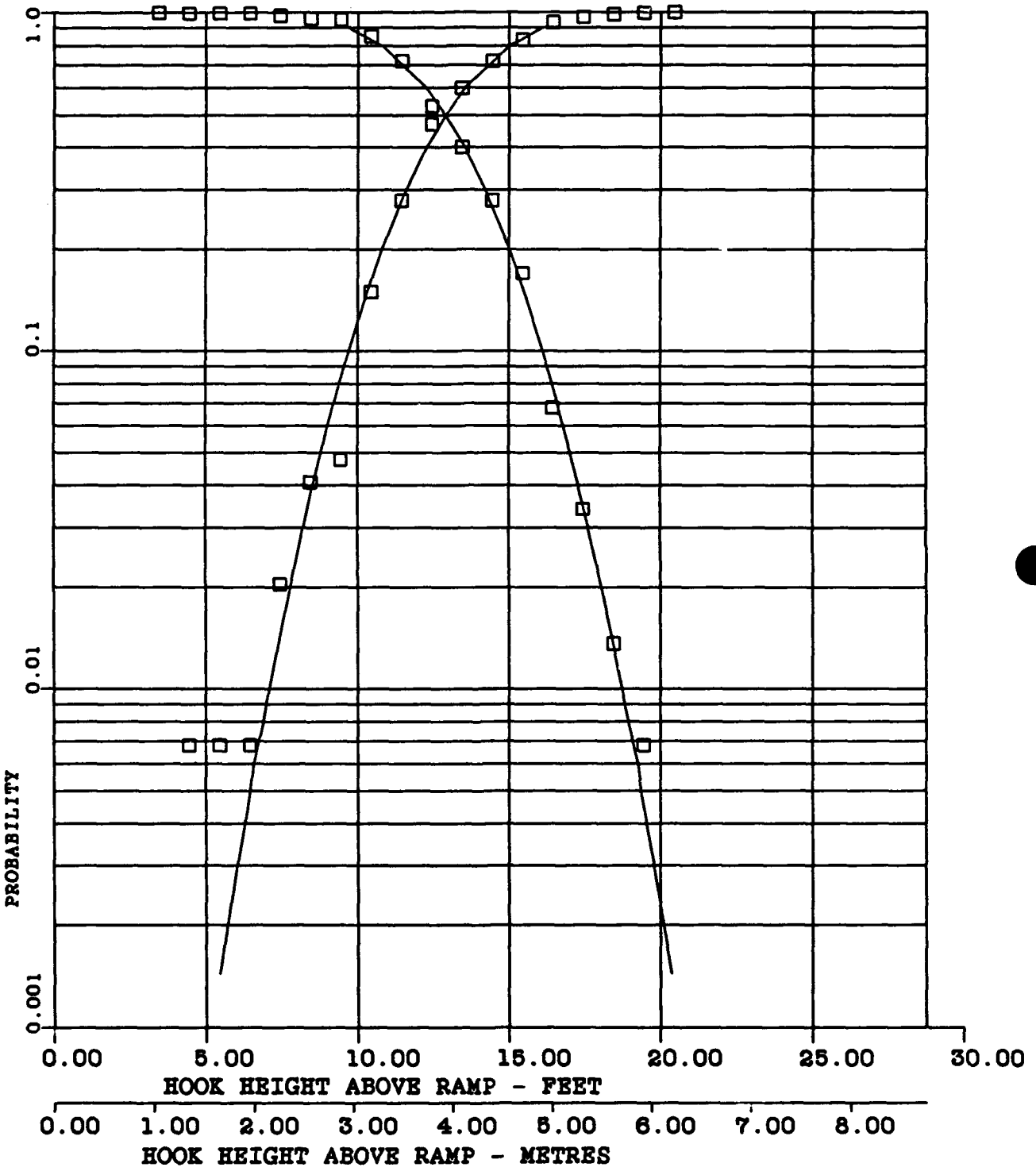


FIGURE H-41 PROBABILITY DISTRIBUTION OF ARRESTMENT
HOOK HEIGHT ABOVE CARRIER RAMP

MODEL A-7 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=151 $\bar{X}$=119.20 KNOTS (61.32 METRES/SEC) A3=-.35
S=5.35 KNOTS (2.75 METRES/SEC) A4=3.49

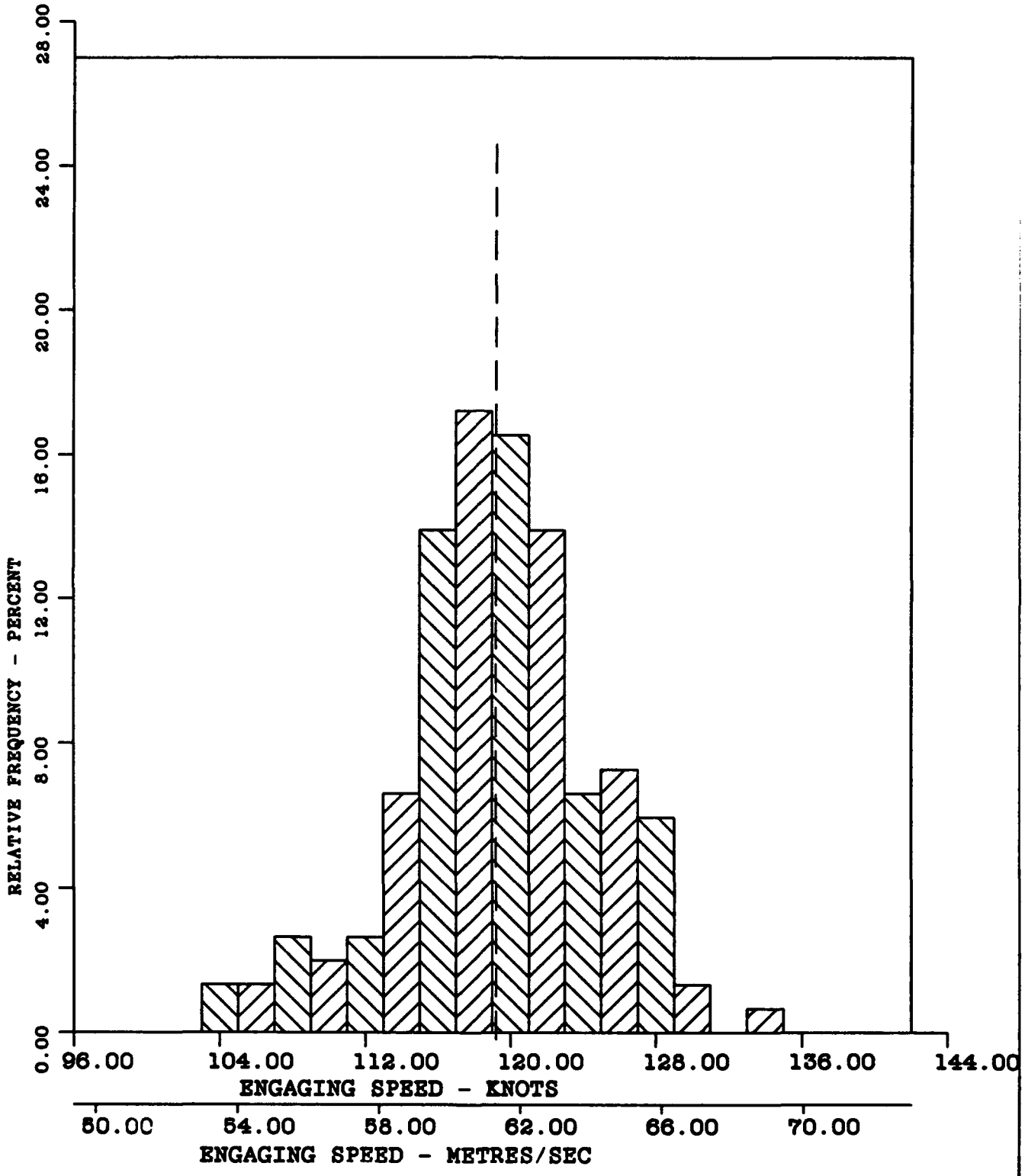


FIGURE H-42 FREQUENCY DISTRIBUTION OF AIRCRAFT ENGAGING SPEED AT FIRST MAIN WHEEL TOUCHDOWN

MODEL A-7 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-151 $\bar{X}$-119.20 KNOTS (61.32 METRES/SEC) A3=-.35
S-5.35 KNOTS (2.75 METRES/SEC) A4-3.49
CURVE FITTED - NORMAL

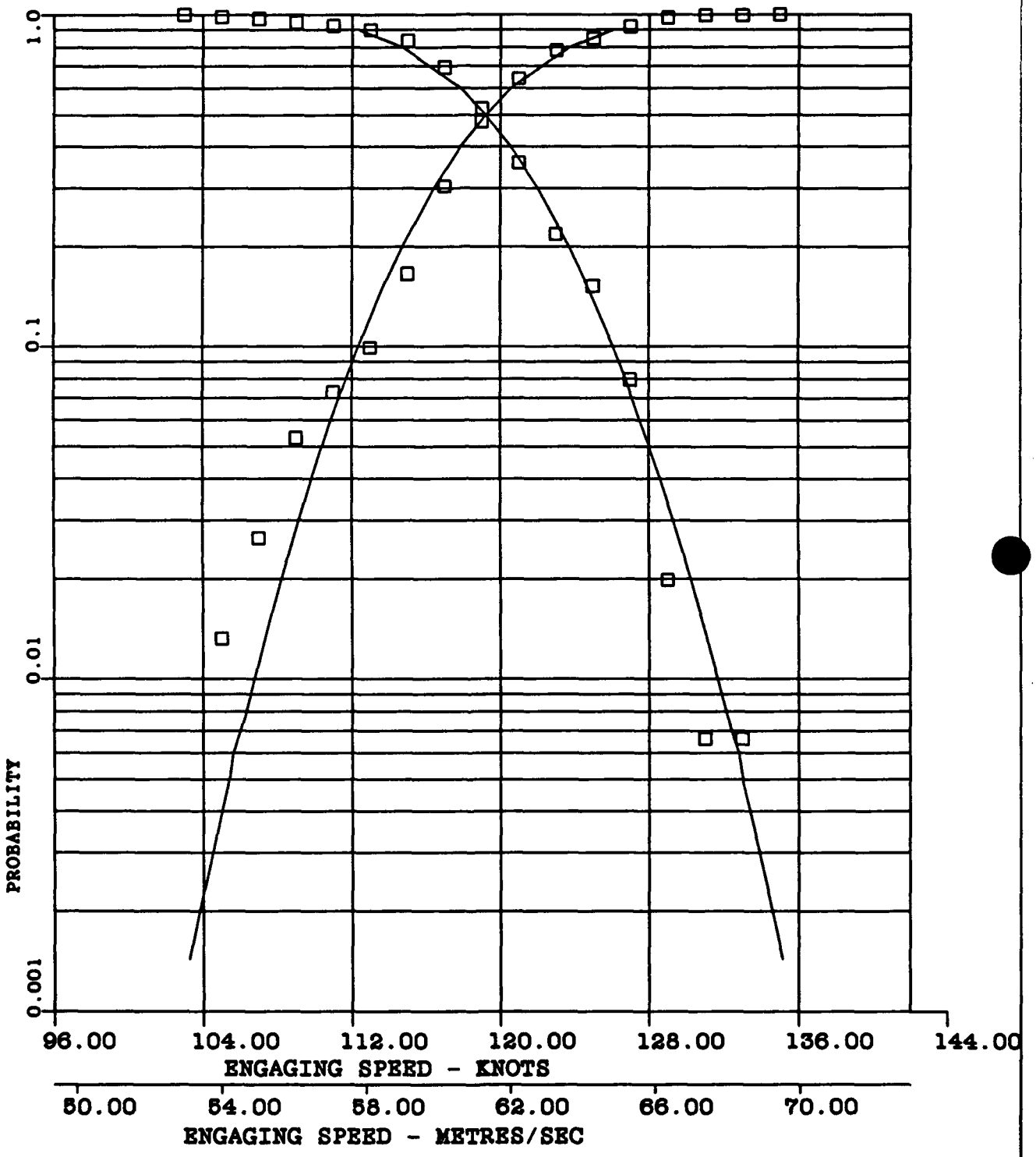


FIGURE H-43 PROBABILITY DISTRIBUTION OF ENGAGING SPEED AT FIRST MAIN WHEEL TOUCHDOWN

MODEL A-7 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-141 $\bar{X}$-134.34 KNOTS (69.10 METRES/SEC) A3=-.47
S-2.62 KNOTS (1.35 METRES/SEC) A4-2.37

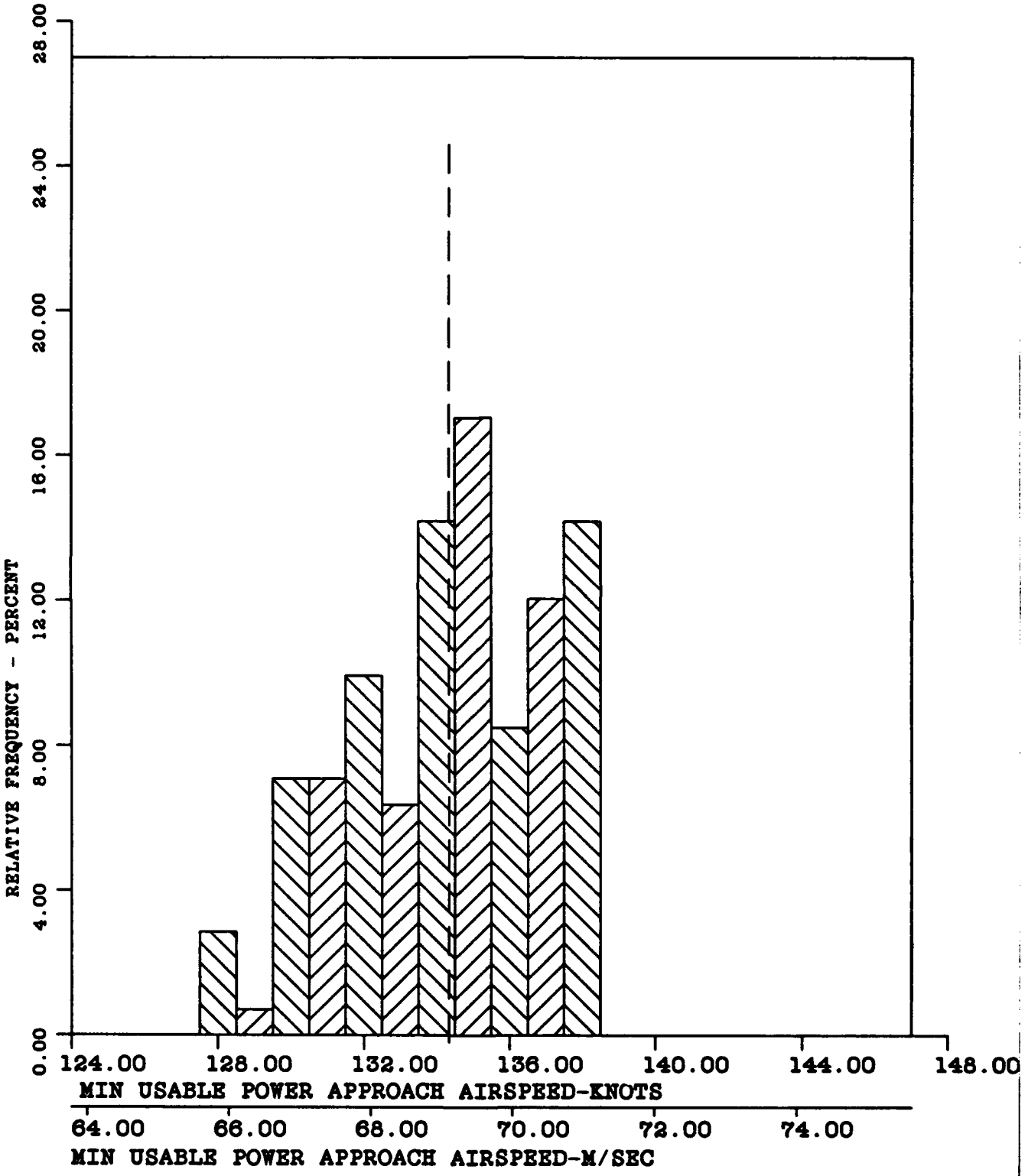


FIGURE H-44 FREQUENCY DISTRIBUTION OF MINIMUM USABLE POWER APPROACH AIRSPEED

MODEL A-7 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-141 $\bar{X}$-1.07 A3=-.17
S=.03 A4=3.92

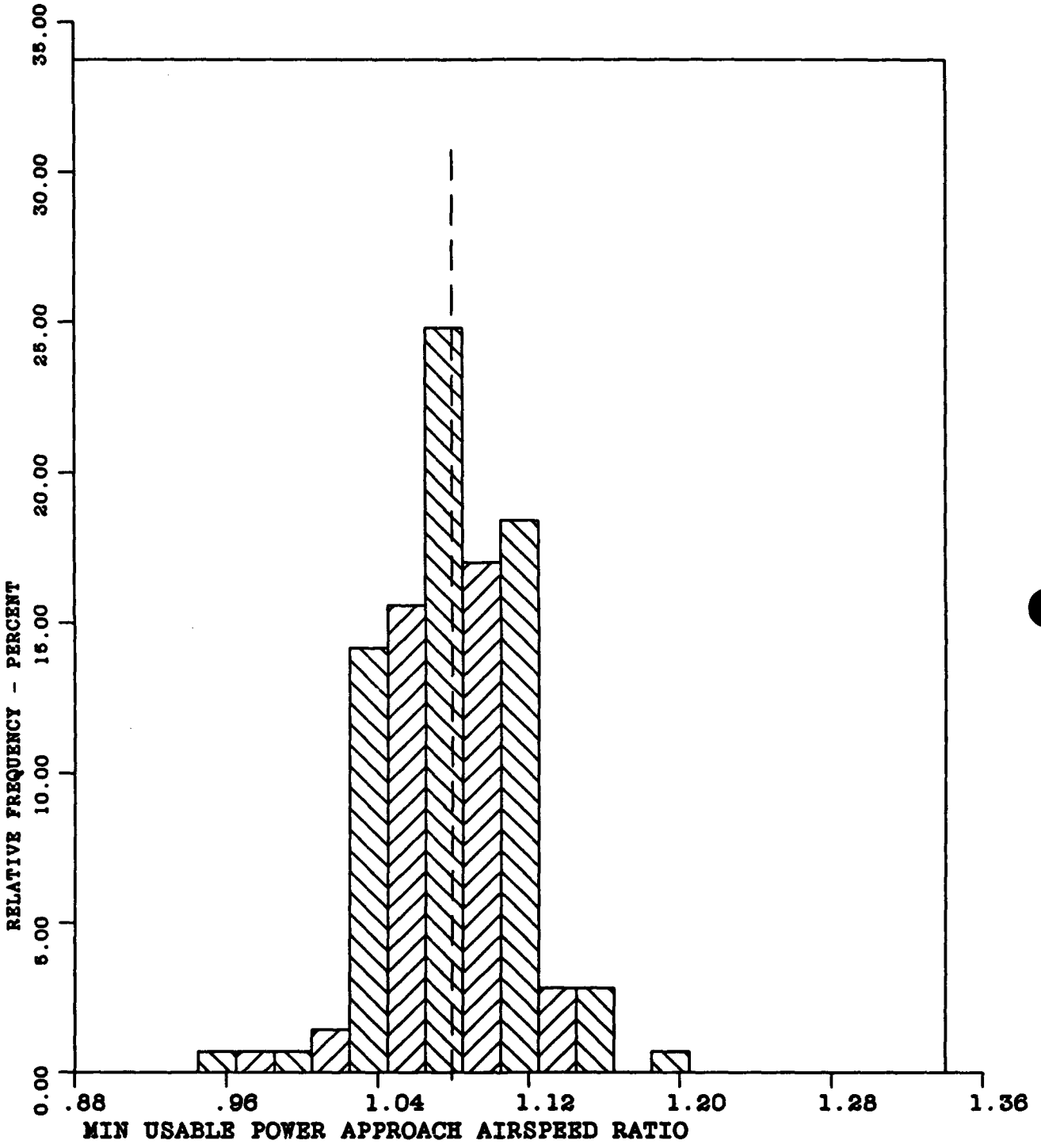


FIGURE H-45 FREQUENCY DISTRIBUTION OF MINIMUM USABLE POWER APPROACH AIRSPEED RATIO - FILM

MODEL A-7 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=128 $\bar{X}$=-.49 DEGREES (-.008 RADIANS) A3=1.41
S=.62 DEGREES (.010 RADIANS) A4=7.45

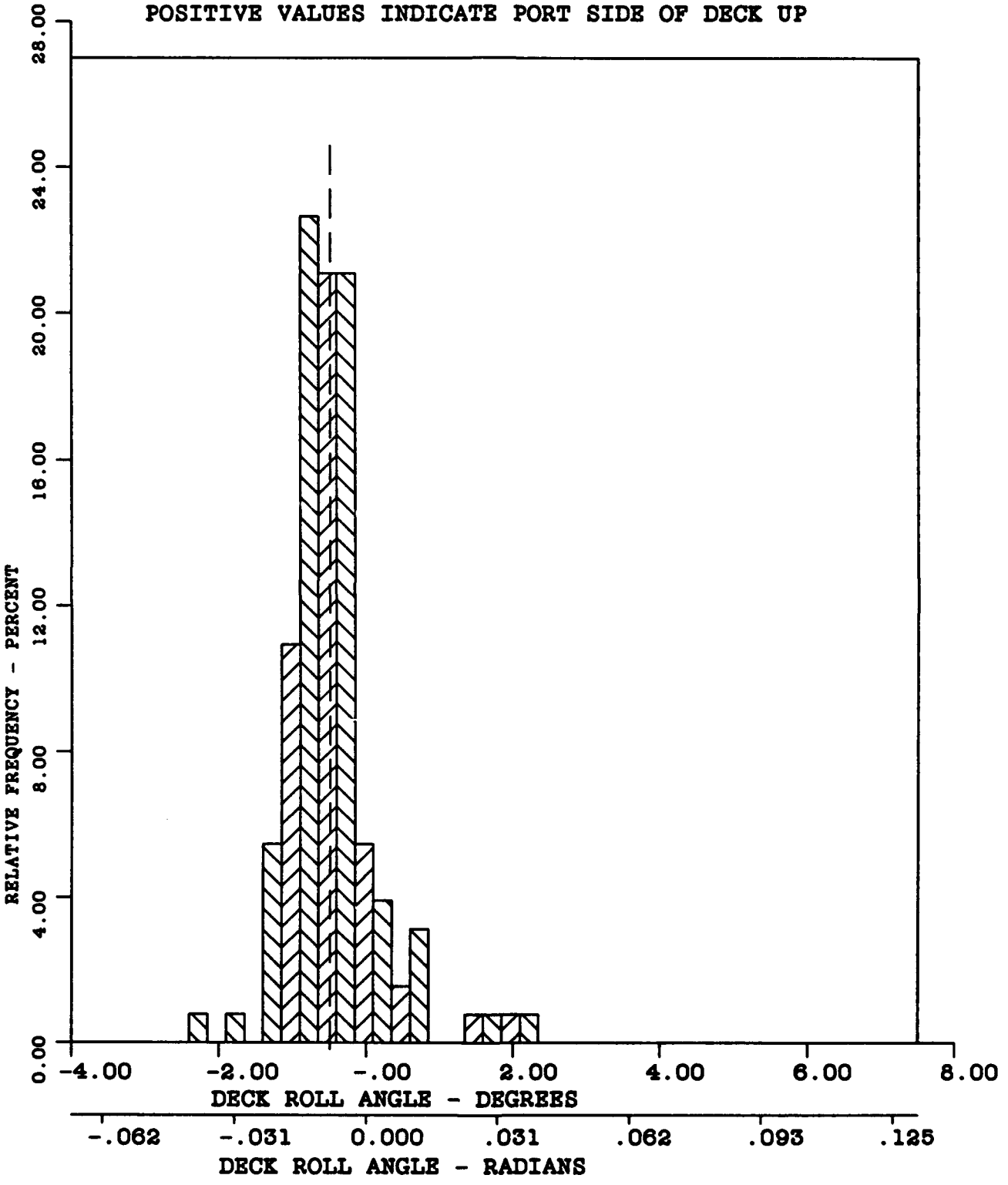


FIGURE H-46 FREQUENCY DISTRIBUTION OF CARRIER DECK ROLL MOTION

MODEL A-7 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-128 $\bar{X}$=-.49 DEGREES (-.008 RADIANS) A3-1.41
S=.62 DEGREES (.010 RADIANS) A4-7.45
CURVE FITTED - PEARSON TYPE III
POSITIVE VALUES INDICATE PORT SIDE OF DECK UP

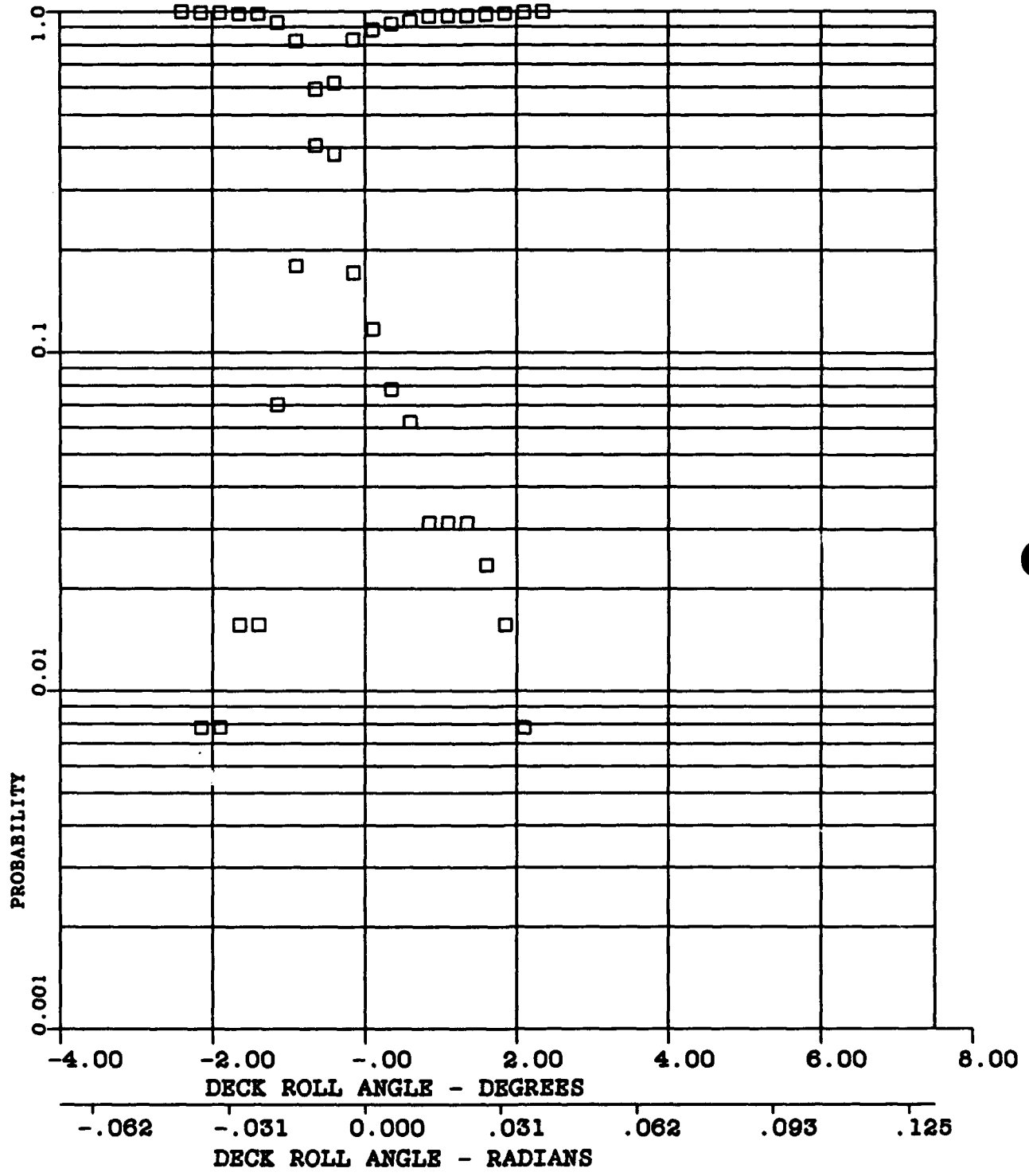


FIGURE H-47 PROBABILITY DISTRIBUTION OF CARRIER DECK ROLL MOTION

MODEL A-7 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=128 $\bar{X}$=-.21 DEGREES (-.003 RADIANS) A3=-.48
S=.17 DEGREES (.002 RADIANS) A4=3.98

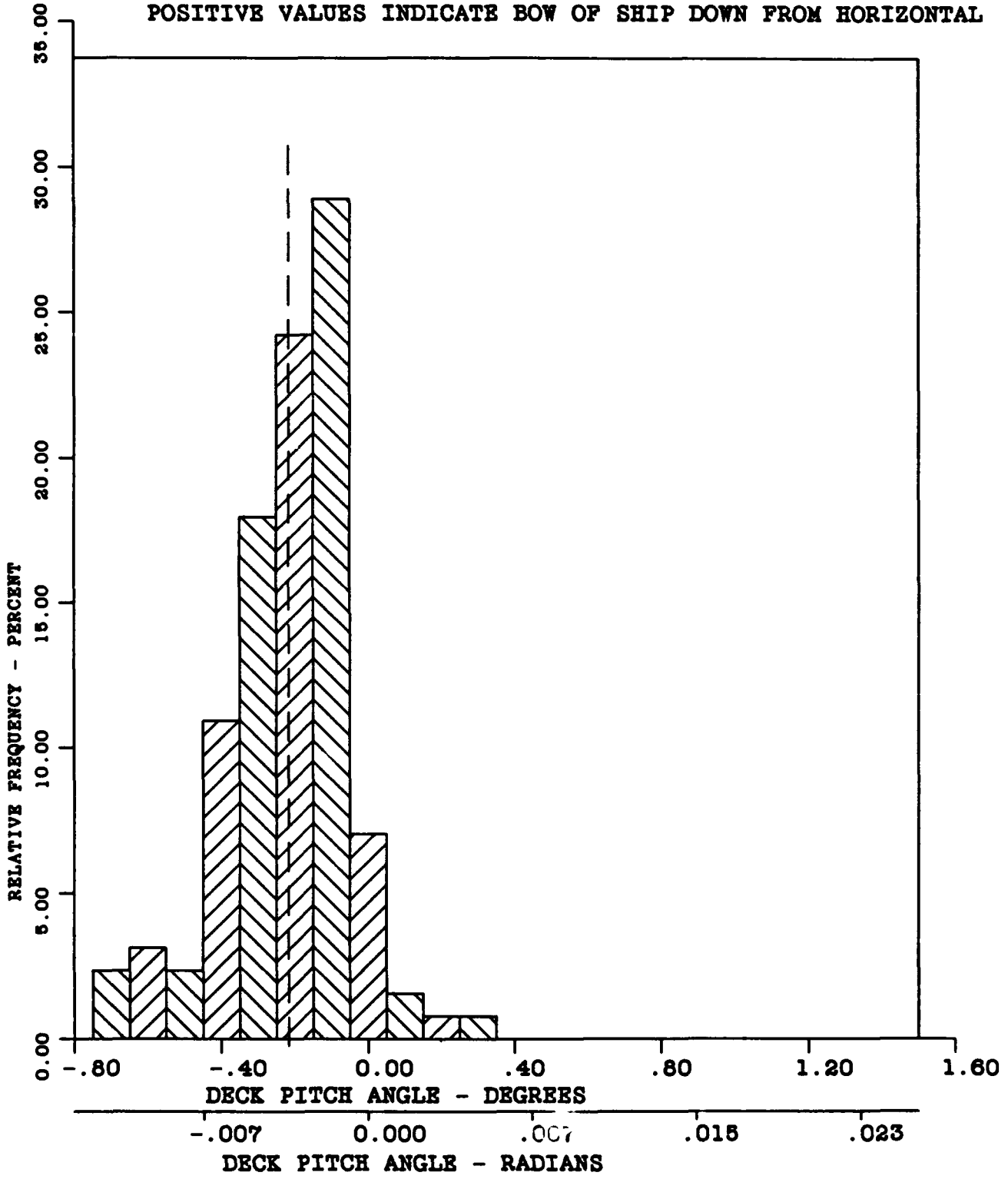


FIGURE H-48 FREQUENCY DISTRIBUTION OF CARRIER DECK PITCH MOTION

MODEL A-7 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-128 $\bar{X}$=-.21 DEGREES (-.003 RADIANS) A3=-.48
S=.17 DEGREES (.002 RADIANS) A4=3.98
CURVE FITTED - PEARSON TYPE III
POSITIVE VALUES INDICATE BOW OF SHIP DOWN FROM HORIZONTAL

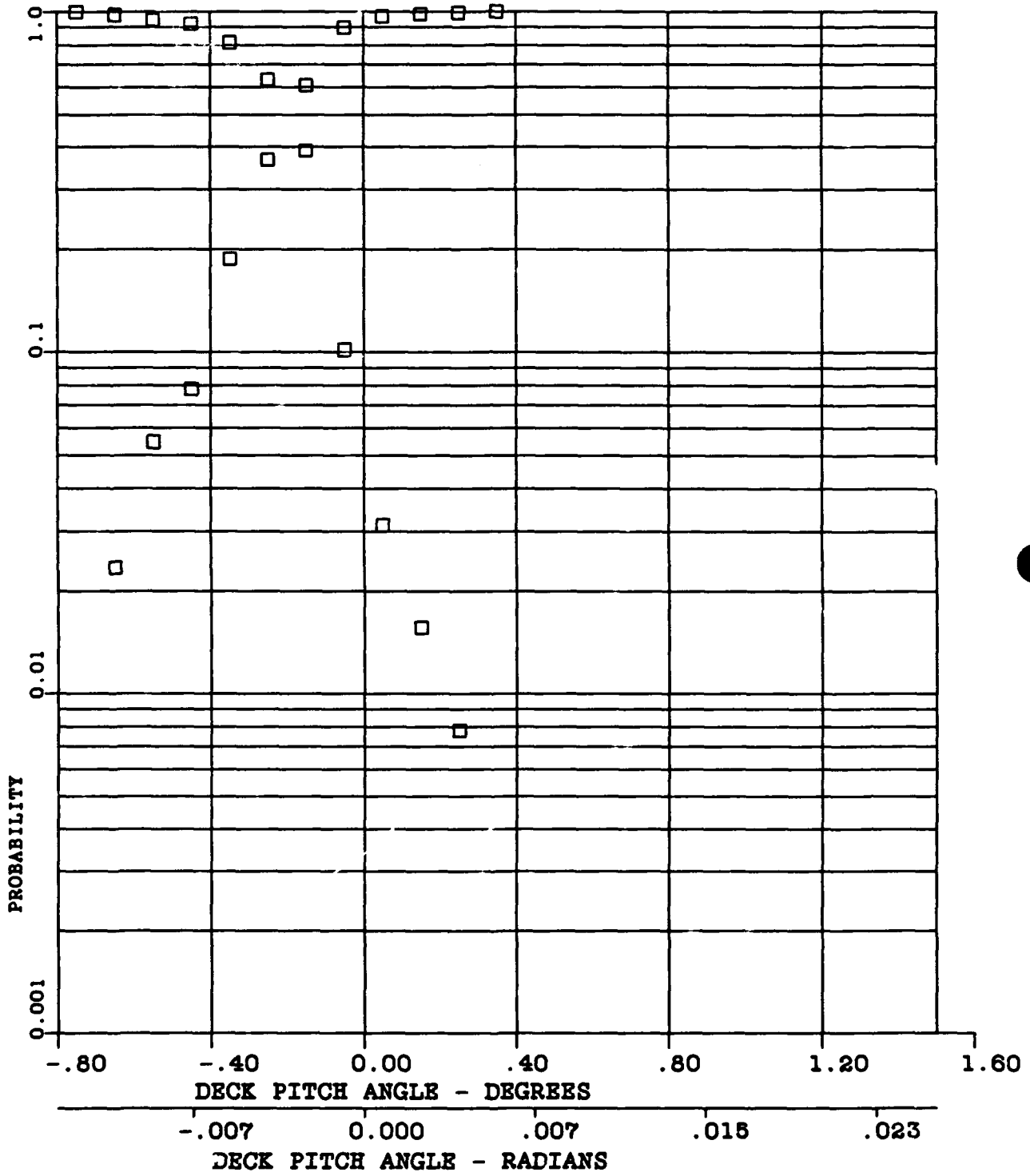


FIGURE H-49 PROBABILITY DISTRIBUTION OF CARRIER DECK PITCH MOTION

MODEL A-7 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-141 $\bar{X}$-23798.74 POUNDS (10795.11 KILOGRAMS) A3=-.43
S-927.18 POUNDS (420.57 KILOGRAMS) A4-2.33

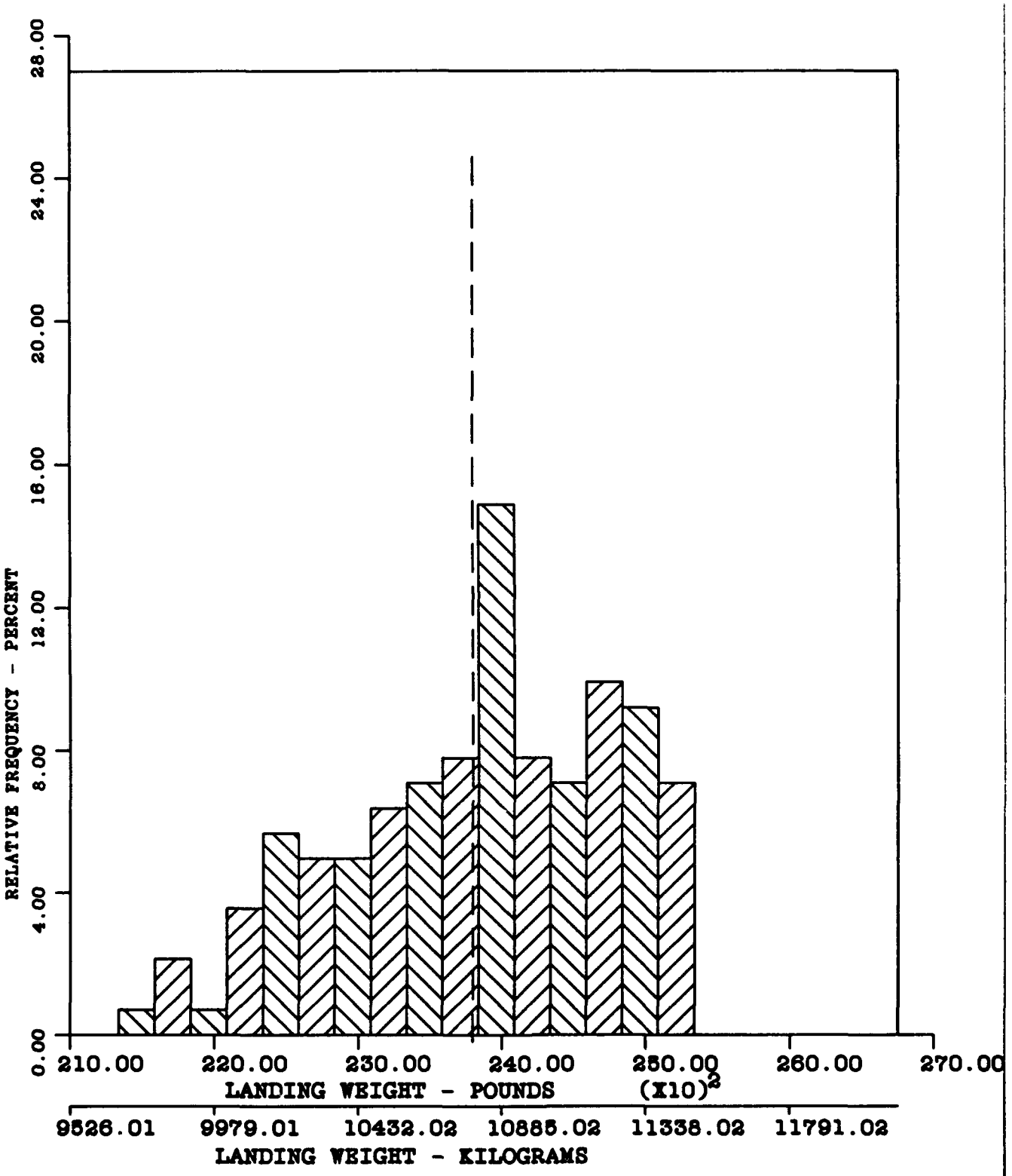


FIGURE H-50 FREQUENCY DISTRIBUTION OF AIRCRAFT LANDING WEIGHT

MODEL A-7 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-151 $\bar{X}$-1.92 DEG/SEC (.033 RAD/SEC) A3-.05
S-5.40 DEG/SEC (.094 RAD/SEC) A4-4.65

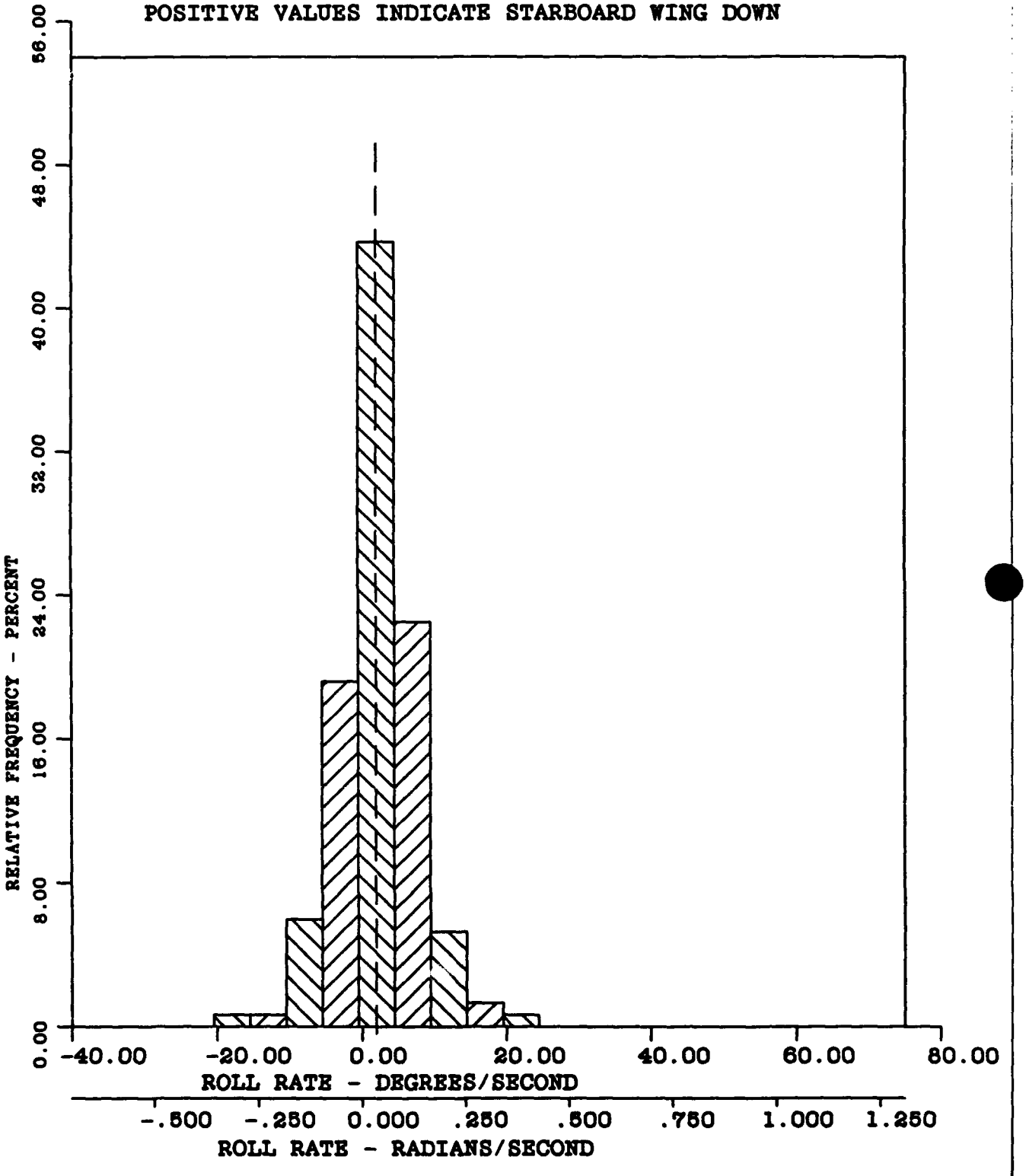


FIGURE H-51 FREQUENCY DISTRIBUTION OF ROLL RATE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL A-7 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=151 $\bar{X}$=1.92 DEG/SEC (.033 RAD/SEC) A3=.05
S=5.40 DEG/SEC (.094 RAD/SEC) A4=4.65
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE STARBOARD WING DOWN

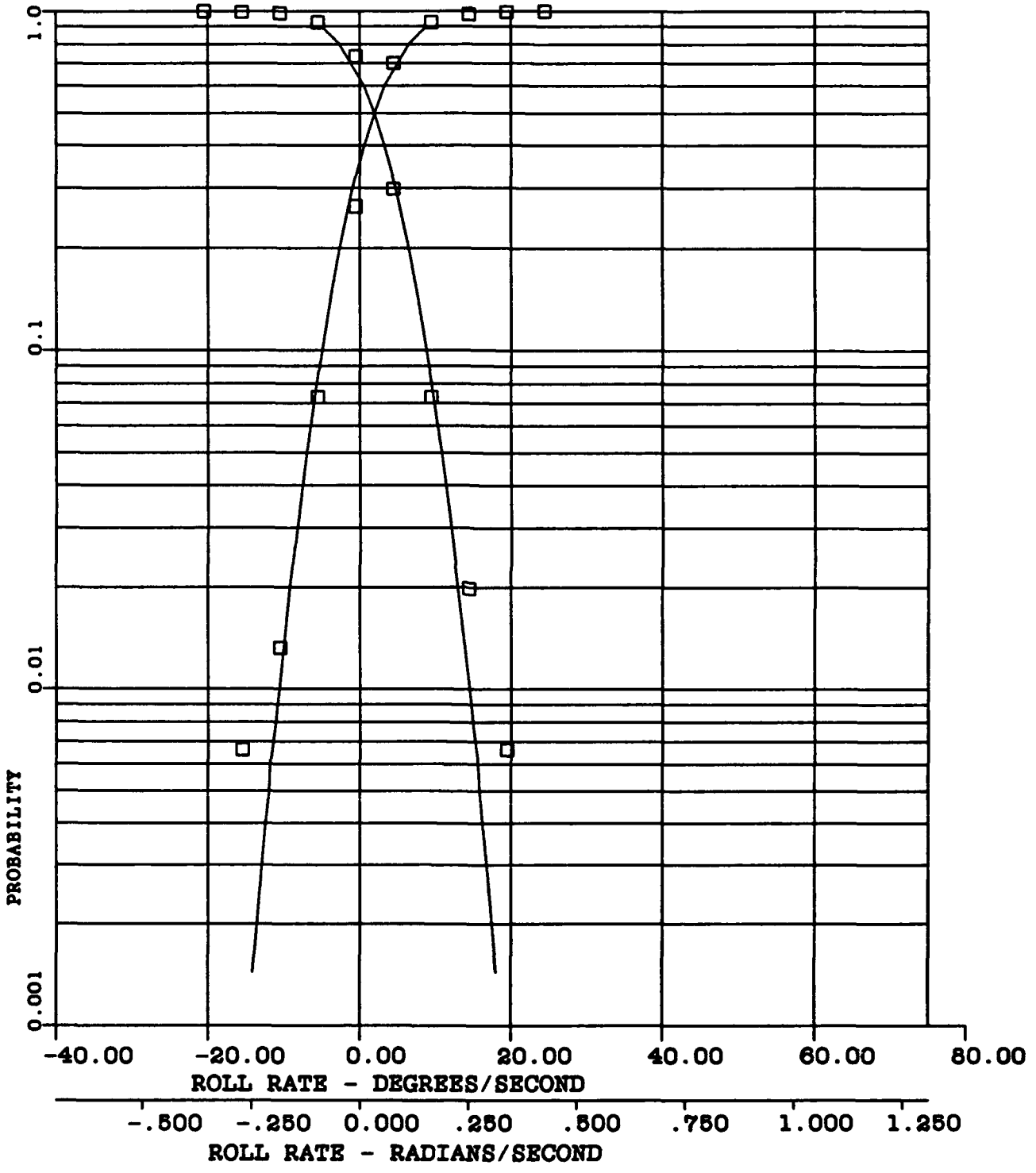


FIGURE H-52 PROBABILITY DISTRIBUTION OF ROLL RATE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL A-7 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-151 $\bar{X}$-1.03 DEG/SEC (.018 RAD/SEC) A3=-.05
S-2.99 DEG/SEC (.052 RAD/SEC) A4-3.32

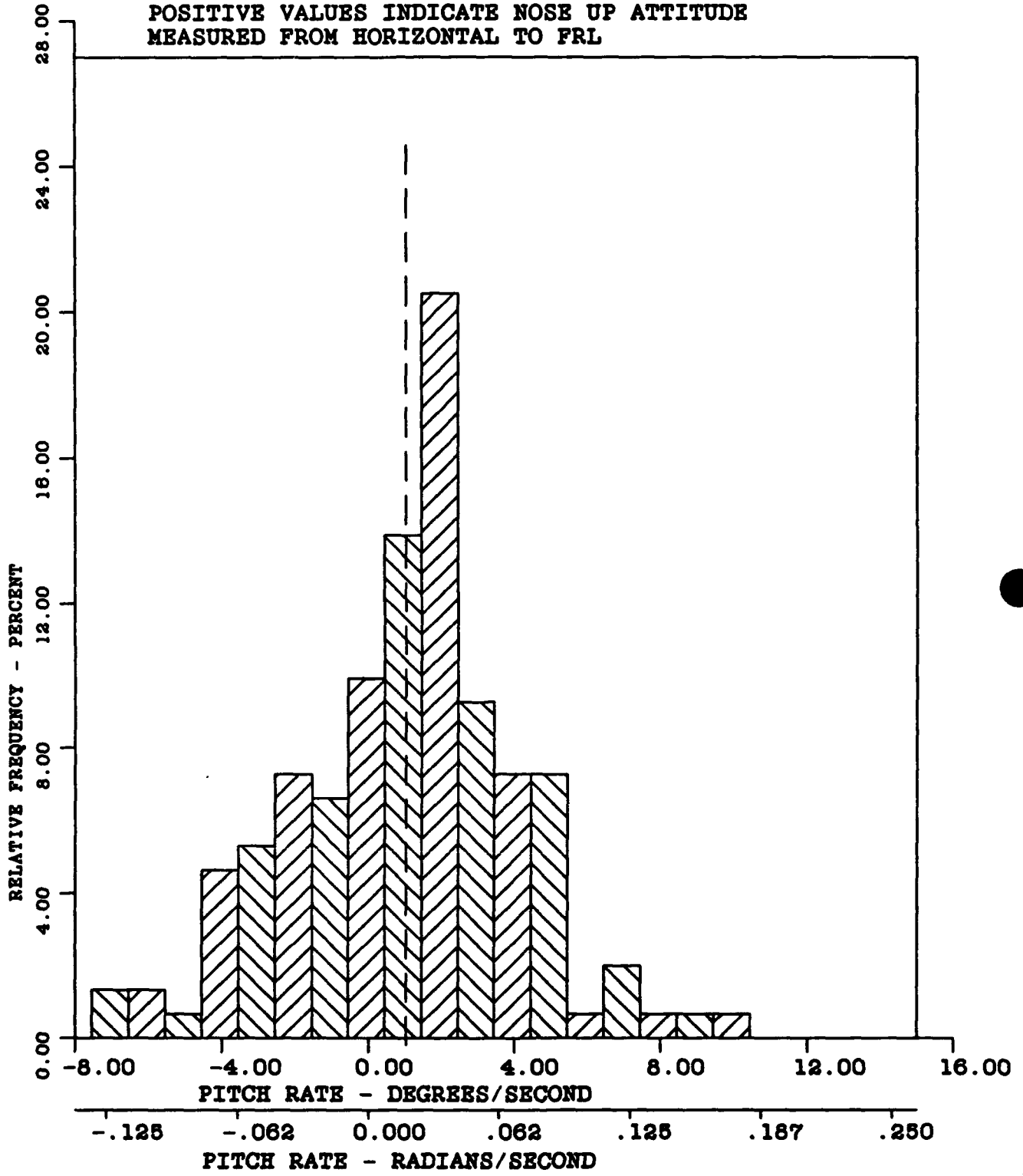


FIGURE H-53 FREQUENCY DISTRIBUTION OF PITCH RATE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL A-7 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=151 $\bar{X}$=1.03 DEG/SEC (.018 RAD/SEC) A3=-.05
S=2.99 DEG/SEC (.052 RAD/SEC) A4=3.32
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE NOSE UP ATTITUDE
MEASURED FROM HORIZONTAL TO FRL

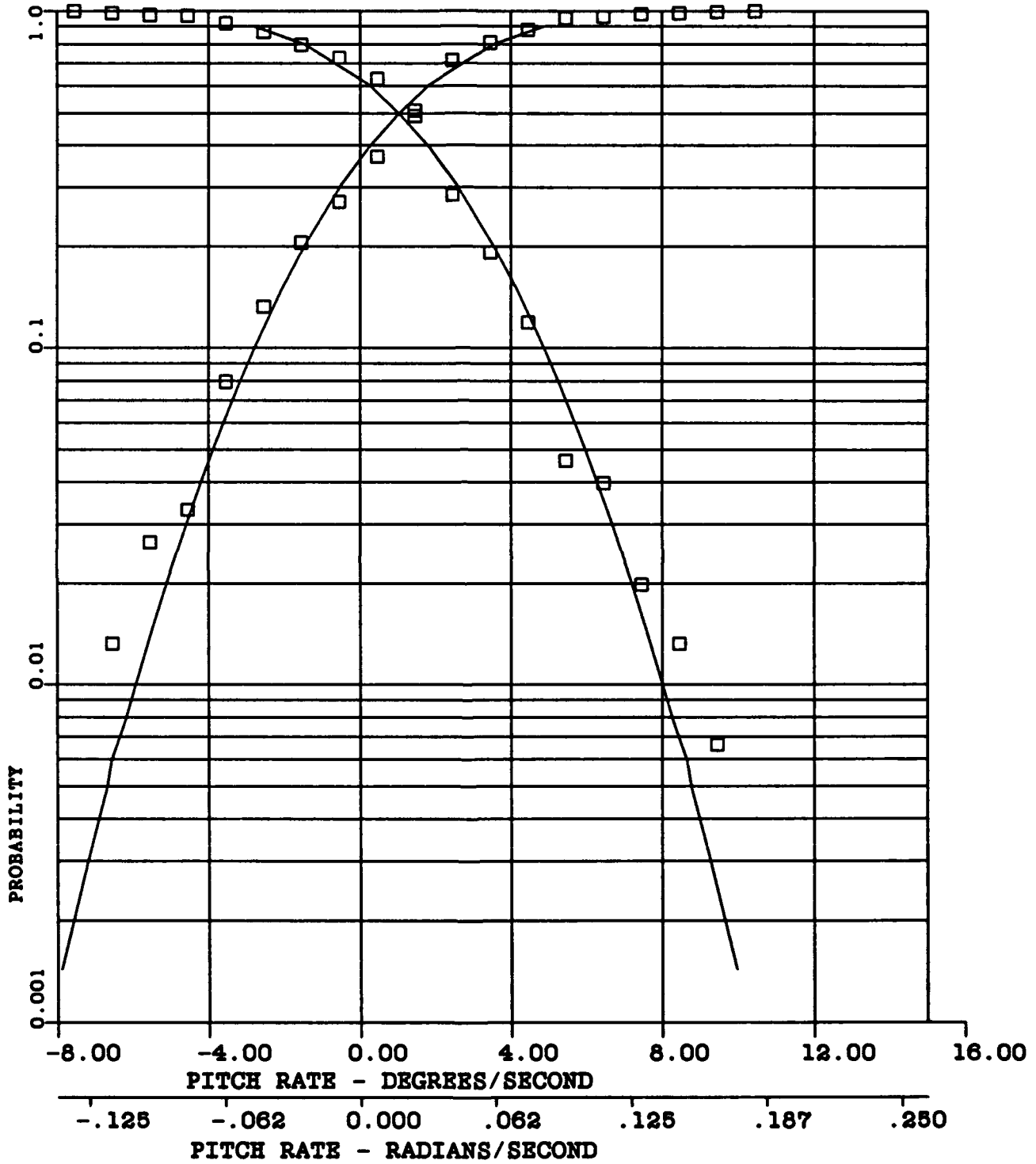


FIGURE H-54 PROBABILITY DISTRIBUTION OF PITCH RATE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL A-7 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-151 $\bar{X}$=-3.44 DEGREES (-.060 RADIANS) A3=-.64
S=.79 DEGREES (.013 RADIANS) A4=7.03

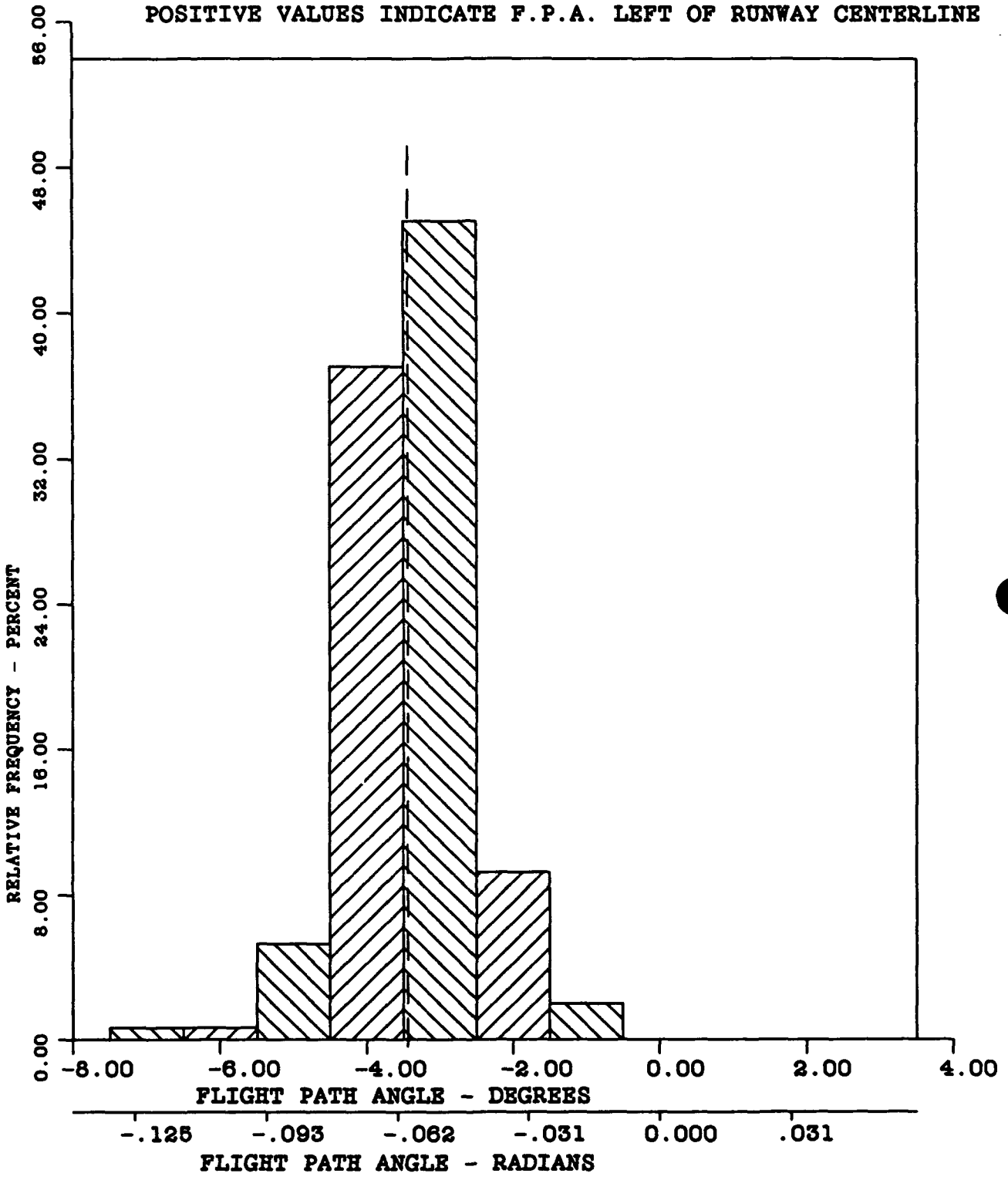


FIGURE H-55 FREQUENCY DISTRIBUTION OF AIRCRAFT FLIGHT PATH ANGLE AT TOUCHDOWN

MODEL A-7 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=151 $\bar{X}$=-3.44 DEGREES (-.060 RADIANS) A3=-.64
S=.79 DEGREES (.013 RADIANS) A4=7.03
CURVE FITTED - PEARSON TYPE III
POSITIVE VALUES INDICATE F.P.A. LEFT OF RUNWAY CENTERLINE

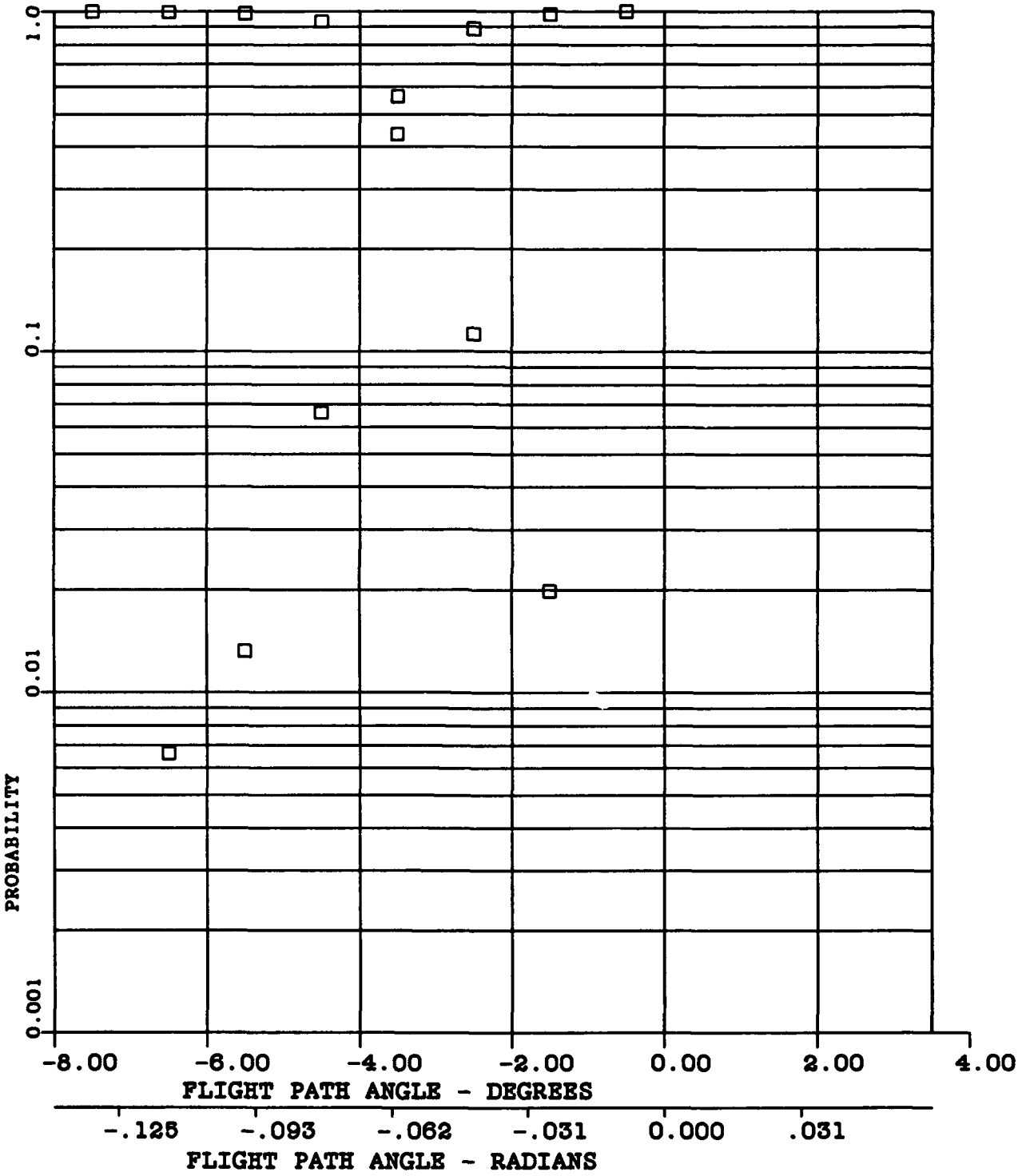


FIGURE H-56 PROBABILITY DISTRIBUTION OF AIRCRAFT FLIGHT PATH ANGLE AT TOUCHDOWN

MODEL A-7 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-151 $\bar{X}$-1.17 DEGREES (.020 RADIANS) A3=.56
S-2.86 DEGREES (.049 RADIANS) A4=3.19

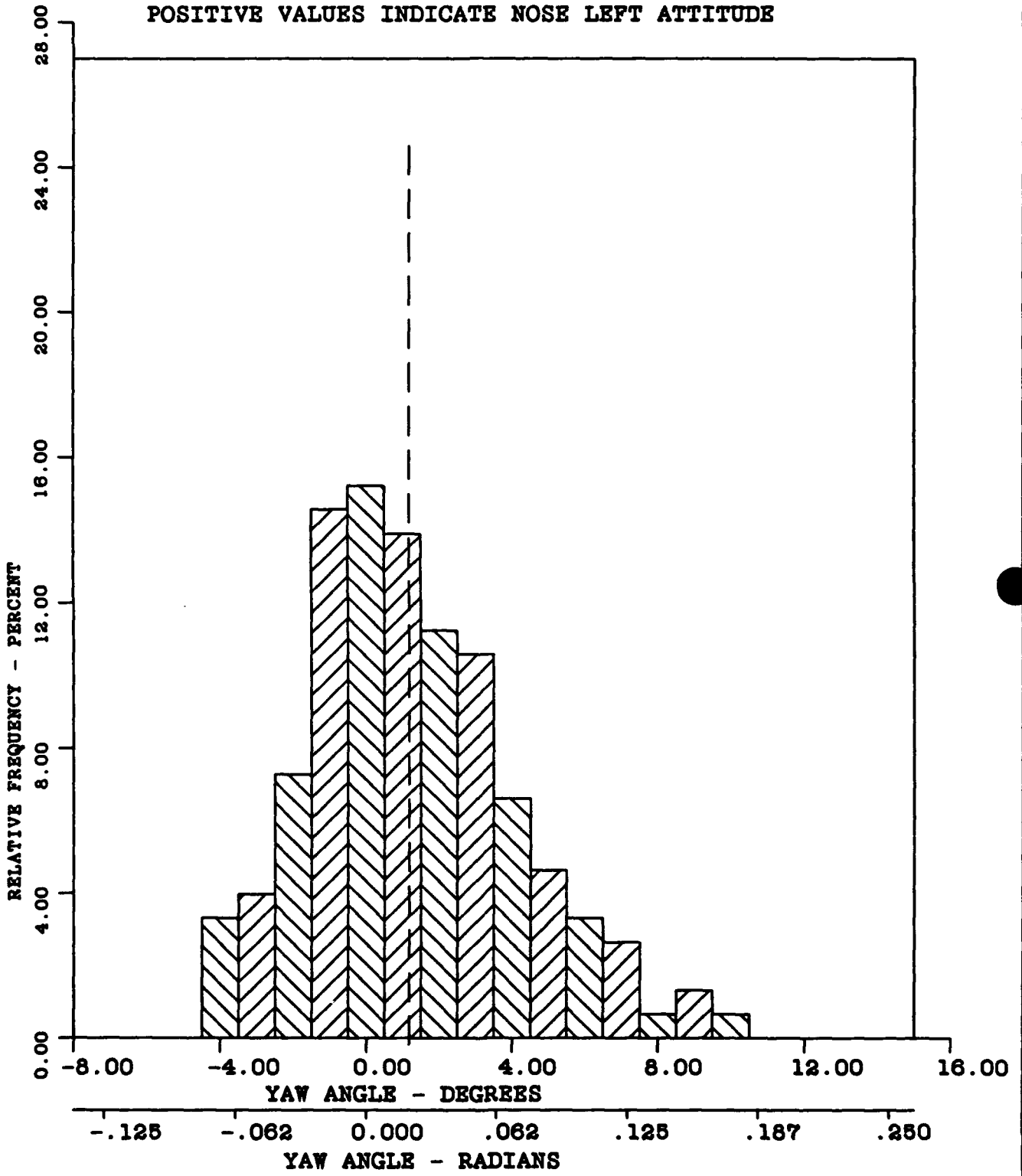


FIGURE H-57 FREQUENCY DISTRIBUTION OF AIRCRAFT YAW ANGLE

MODEL A-7 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=151 $\bar{X}$=1.17 DEGREES (.020 RADIANS) A3=.56
S=2.86 DEGREES (.049 RADIANS) A4=3.19
CURVE FITTED - PEARSON TYPE III
POSITIVE VALUES INDICATE NOSE LEFT ATTITUDE

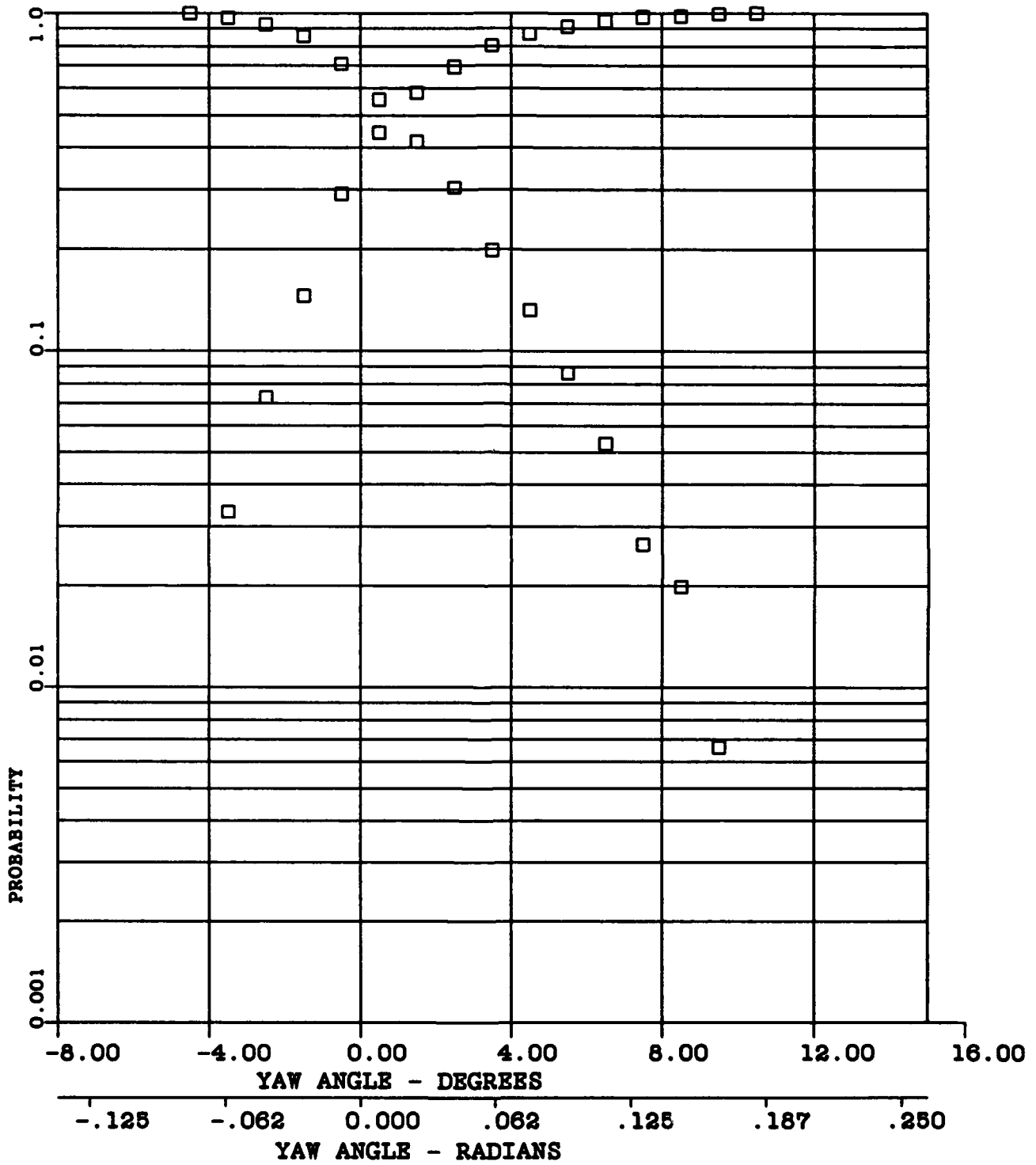


FIGURE H-58 PROBABILITY DISTRIBUTION OF AIRCRAFT YAW ANGLE

APPENDIX I

A-7E AIRCRAFT

NIGHT CARRIER LANDINGS

USS ENTERPRISE
CVN-65

Appendix I:

Frequency and Probability Distributions,
A-7E Aircraft, Night Landings

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43. Model A-7E Aircraft, Night Landings, Probability Distribution of Aircraft Yaw Angle at Touchdown

MODEL A-7 AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-58 $\bar{X}$-28.71 KNOTS (14.77 METRES/SEC) A3=-0.02
S- 3.71 KNOTS (1.91 METRES/SEC) A4=1.16

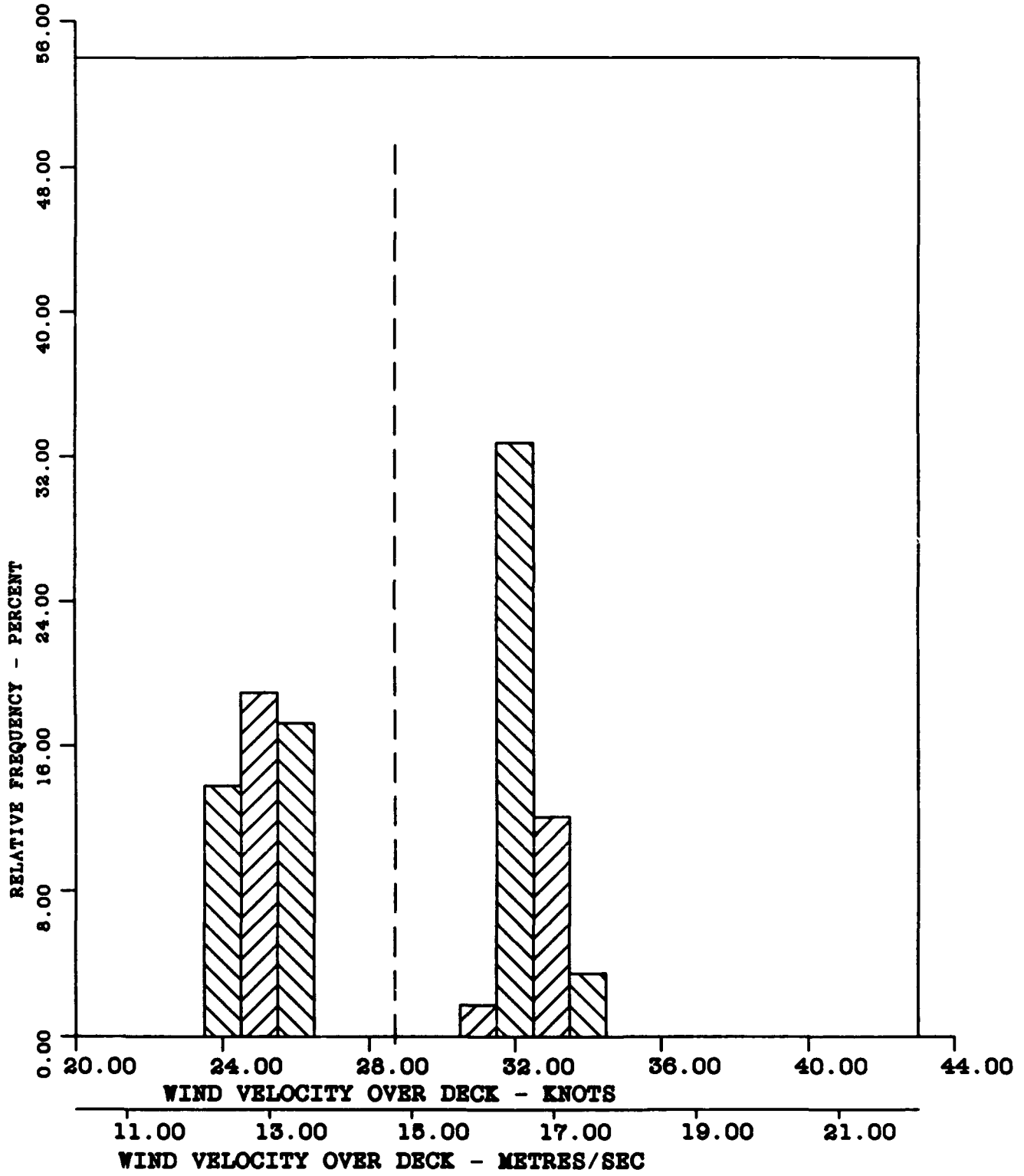


FIGURE I-1 FREQUENCY DISTRIBUTION OF WIND VELOCITY OVER THE DECK

MODEL A-7 AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N=58 $\bar{X}$=28.71 KNOTS (14.77 METRES/SEC) A3=-0.02
S= 3.71 KNOTS (1.91 METRES/SEC) A4=1.16
CURVE FITTED - NORMAL

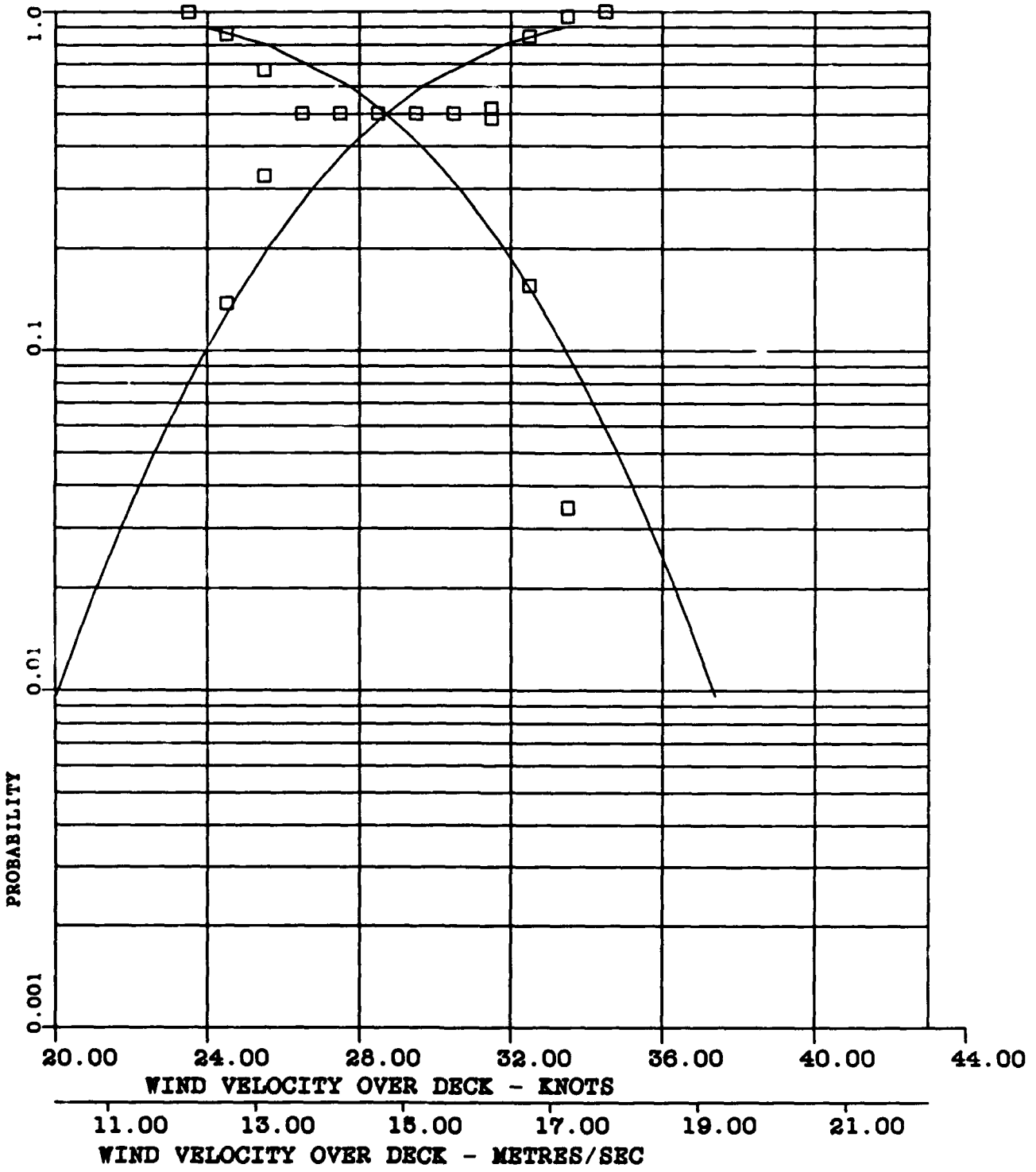


FIGURE I-2 PROBABILITY DISTRIBUTION OF WIND VELOCITY OVER THE DECK

MODEL A-7 AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-58 $\bar{X}$-140.36 KNOTS (72.20 METRES/SEC) A3-1.20
S- 9.49 KNOTS (4.88 METRES/SEC) A4-5.34

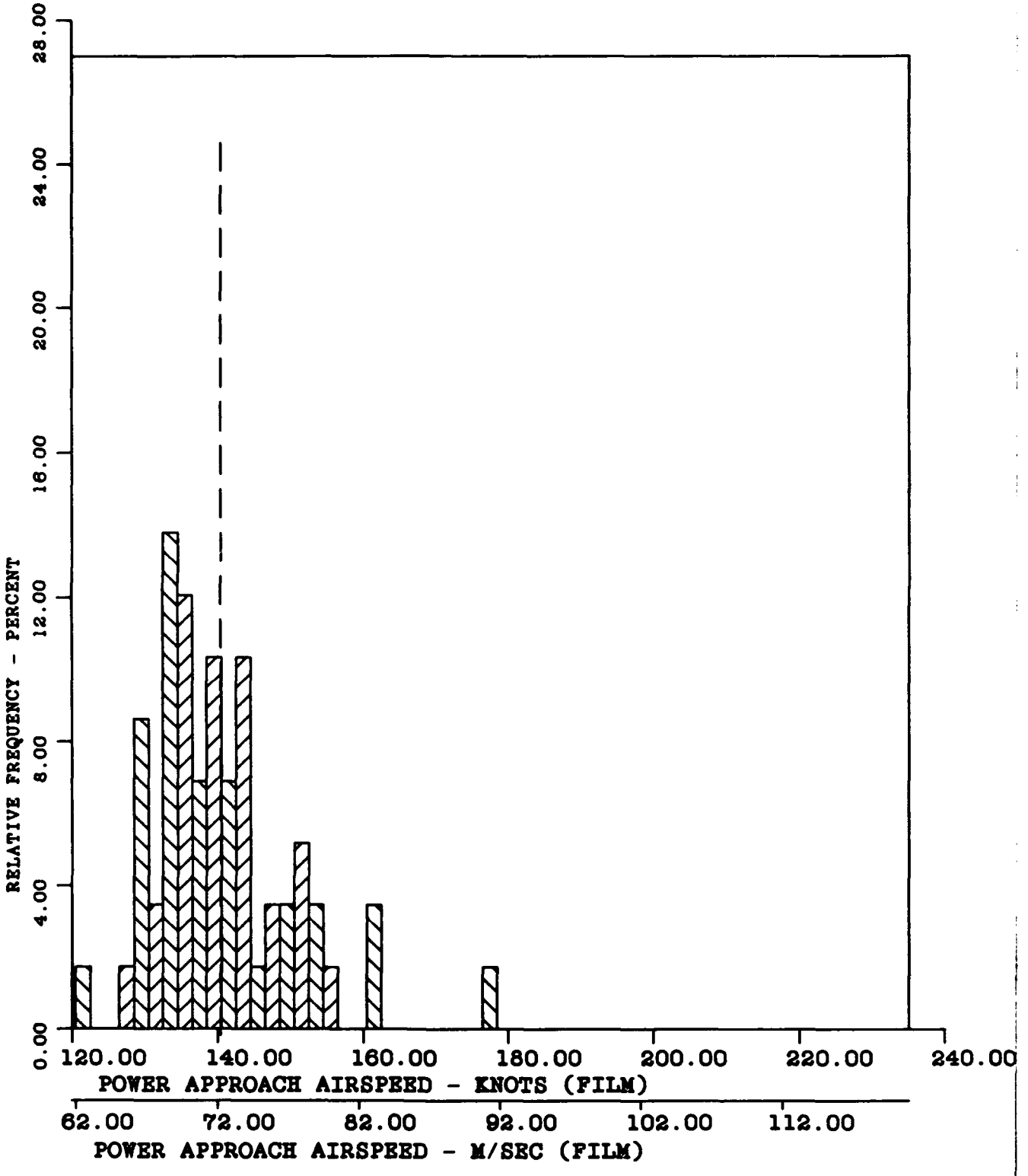


FIGURE I-3 FREQUENCY DISTRIBUTION OF FILM MEASURED POWER APPROACH AIRSPEED AT THE RAMP

MODEL A-7 AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-58 $\bar{X}$-140.36 KNOTS (72.20 METRES/SEC) A3-1.20
S- 9.49 KNOTS (4.88 METRES/SEC) A4-5.34
CURVE FITTED - PEARSON TYPE III

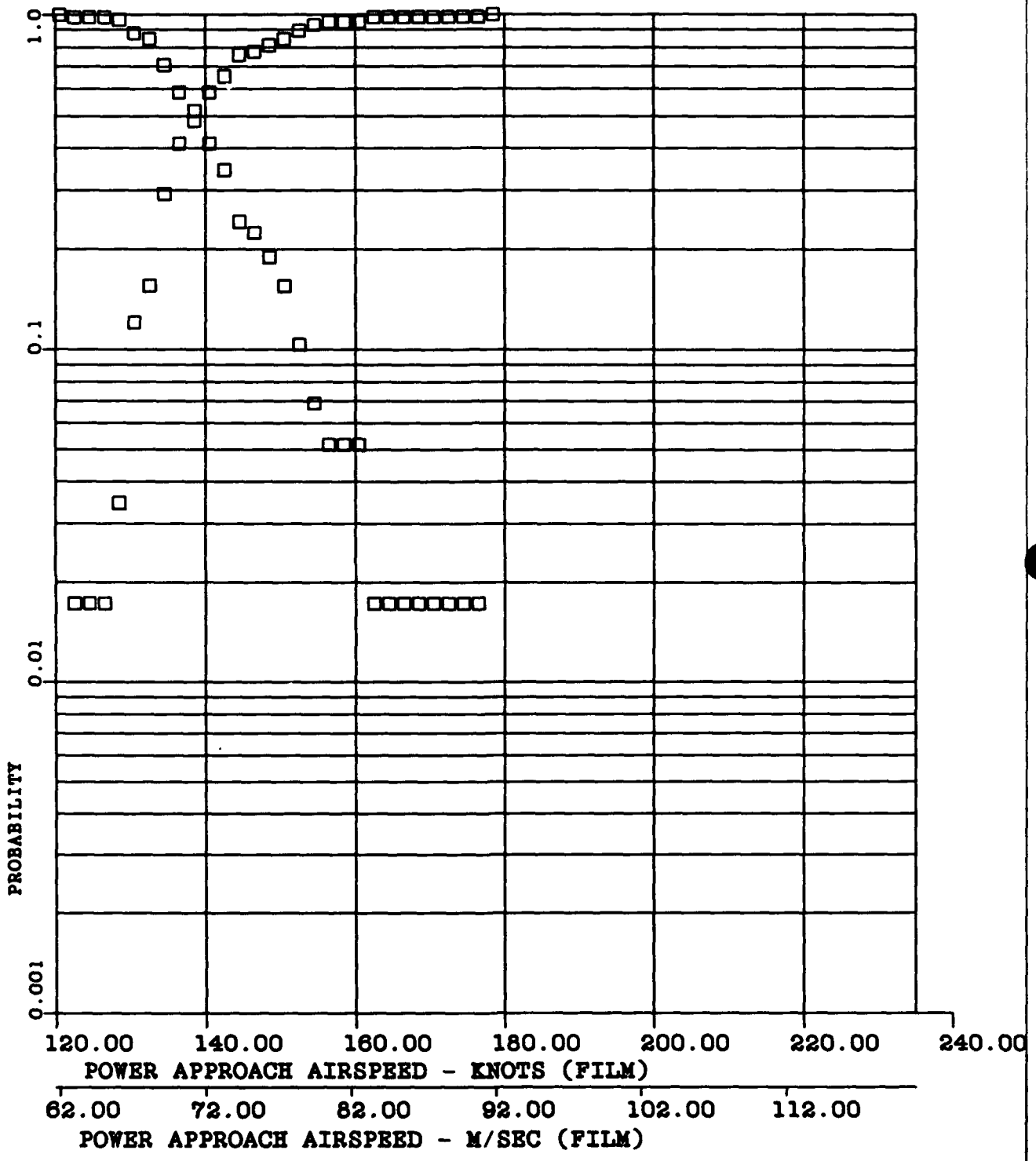


FIGURE I-4 PROBABILITY DISTRIBUTION OF POWER APPROACH AIRSPEED AT THE RAMP (FILM)

MODEL A-7 AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N=58 $\bar{X}$=11.17 FEET/SEC (3.41 METRES/SEC) A3=-0.36
S= 2.40 FEET/SEC (0.73 METRES/SEC) A4=2.76

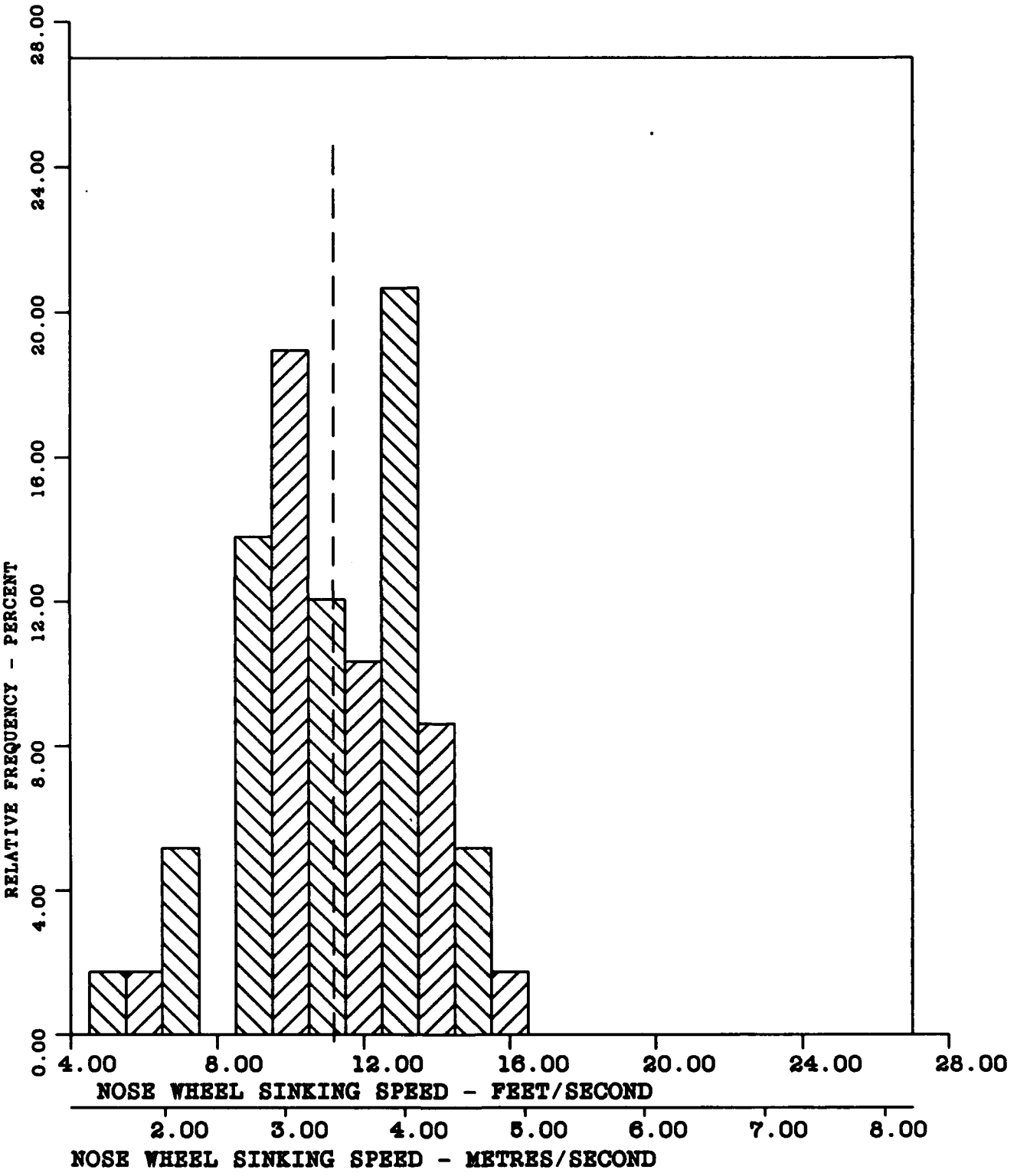


FIGURE I-5 FREQUENCY DISTRIBUTION OF NOSE WHEEL SINKING SPEED

MODEL A-7 AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-58 $\bar{X}$-11.17 FEET/SEC (3.41 METRES/SEC) A3=-0.36
S= 2.40 FEET/SEC (0.73 METRES/SEC) A4-2.76
CURVE FITTED - NORMAL

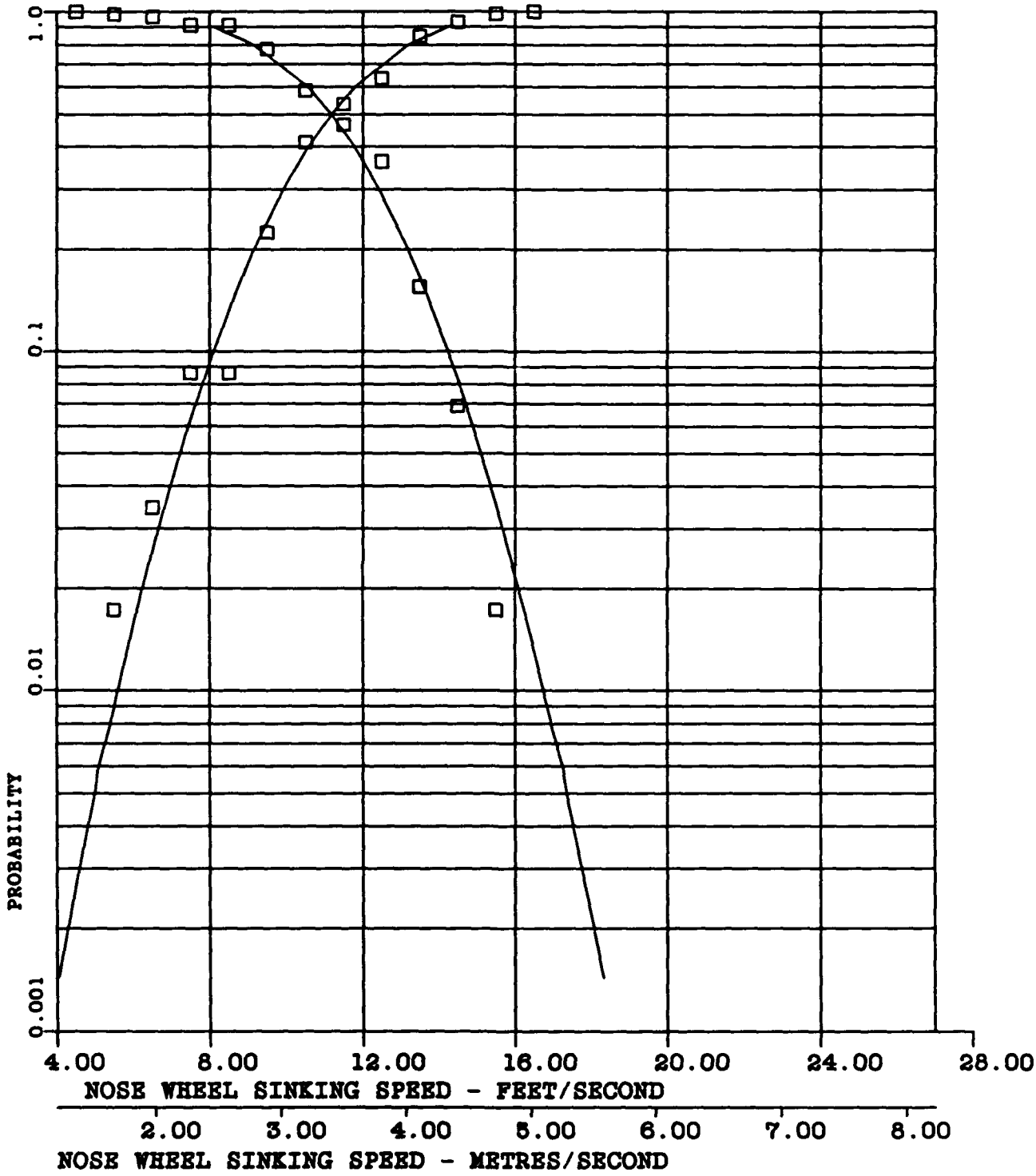


FIGURE I-6 PROBABILITY DISTRIBUTION OF NOSE WHEEL SINKING SPEED

MODEL A-7 AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N=58 $\bar{X}$=11.31 FEET/SEC (3.45 METRES/SEC) A3=-0.05
S= 2.54 FEET/SEC (0.78 METRES/SEC) A4=2.02

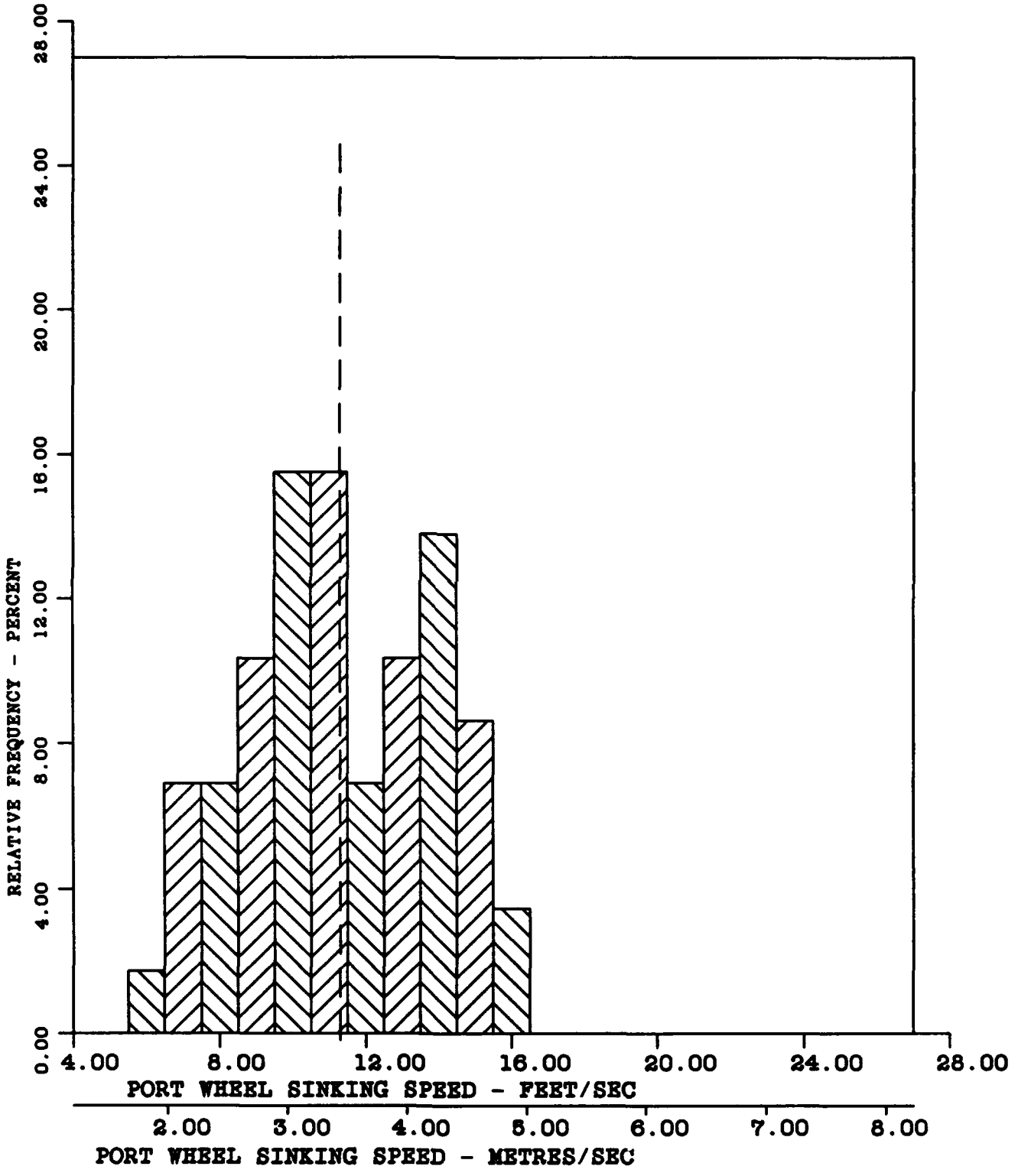


FIGURE I-7 FREQUENCY DISTRIBUTION OF PORT WHEEL SINKING SPEED AT PORT WHEEL TOUCHDOWN

MODEL A-7 AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-58 $\bar{X}$-11.31 FEET/SEC (3.45 METRES/SEC) A3=-0.05
S= 2.54 FEET/SEC (0.78 METRES/SEC) A4=2.02
CURVE FITTED - NORMAL

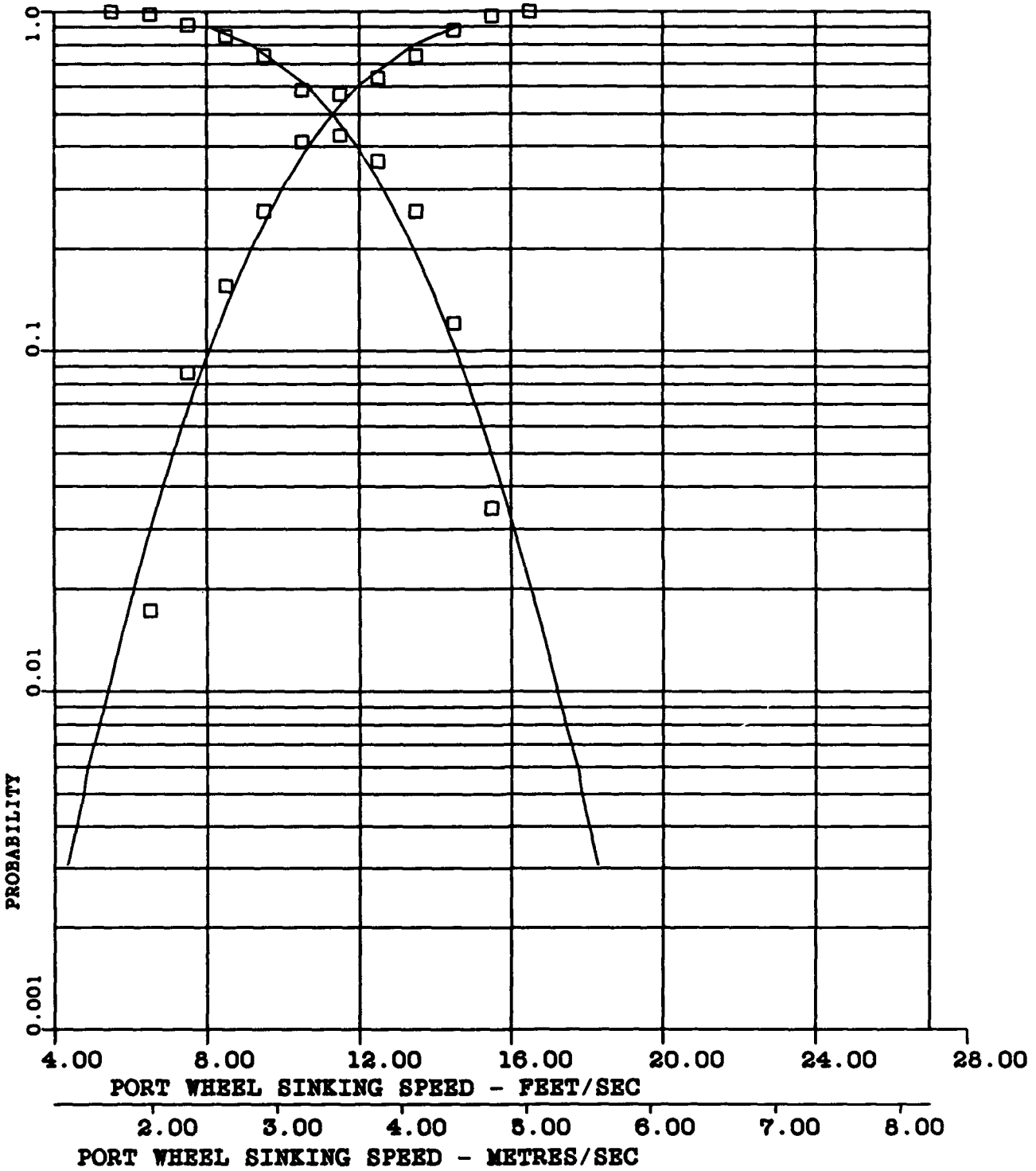


FIGURE I-8 PROBABILITY DISTRIBUTION OF PORT WHEEL SINKING SPEED

MODEL A-7 AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-58 $\bar{X}$-11.24 FEET/SEC (3.43 METRES/SEC) A3=-0.01
S= 2.51 FEET/SEC (0.76 METRES/SEC) A4=2.75

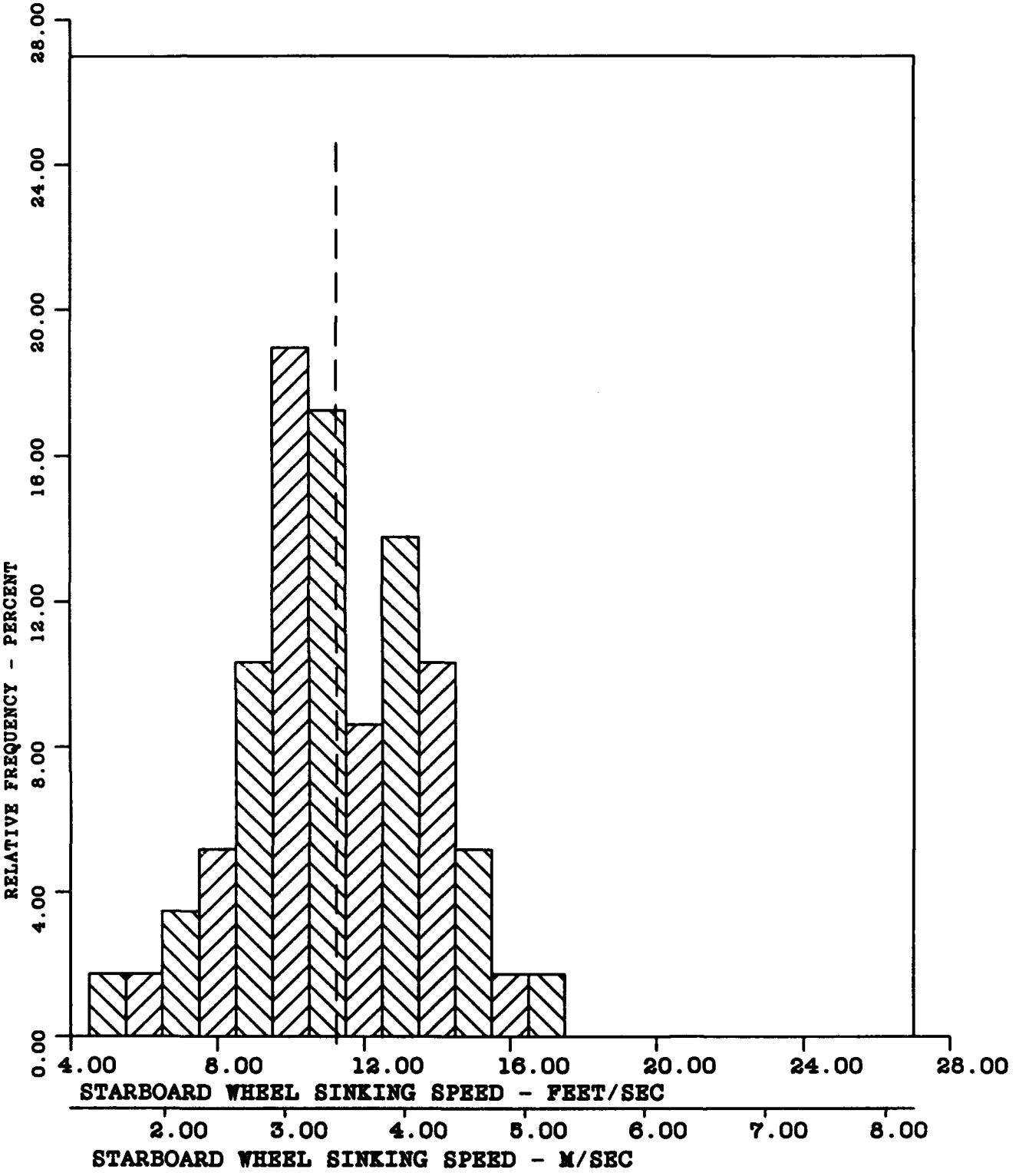


FIGURE I-9 FREQUENCY DISTRIBUTION OF STARBOARD WHEEL SINKING SPEED AT STARBOARD WHEEL TOUCHDOWN

MODEL A-7 AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-58 $\bar{X}$-11.24 FEET/SEC (3.43 METRES/SEC) A3=-0.01
S= 2.51 FEET/SEC (0.76 METRES/SEC) A4=2.75
CURVE FITTED - NORMAL

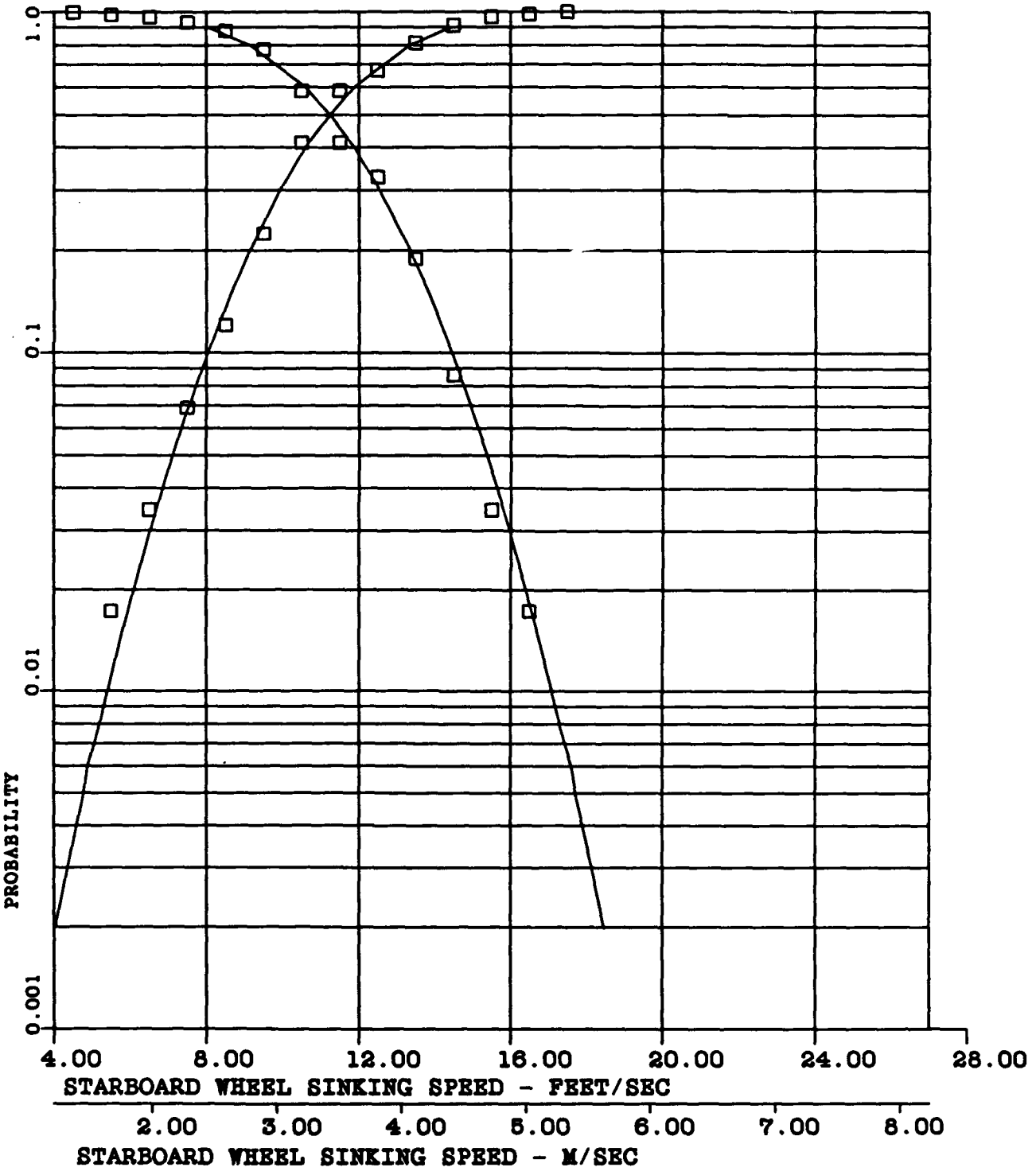


FIGURE I-10 PROBABILITY DISTRIBUTION OF STARBOARD WHEEL SINKING SPEED

MODEL A-7 AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N=58 $\bar{X}$=11.31 FEET/SEC (3.45 METRES/SEC) A3=-0.04
S= 2.46 FEET/SEC (0.75 METRES/SEC) A4=2.36

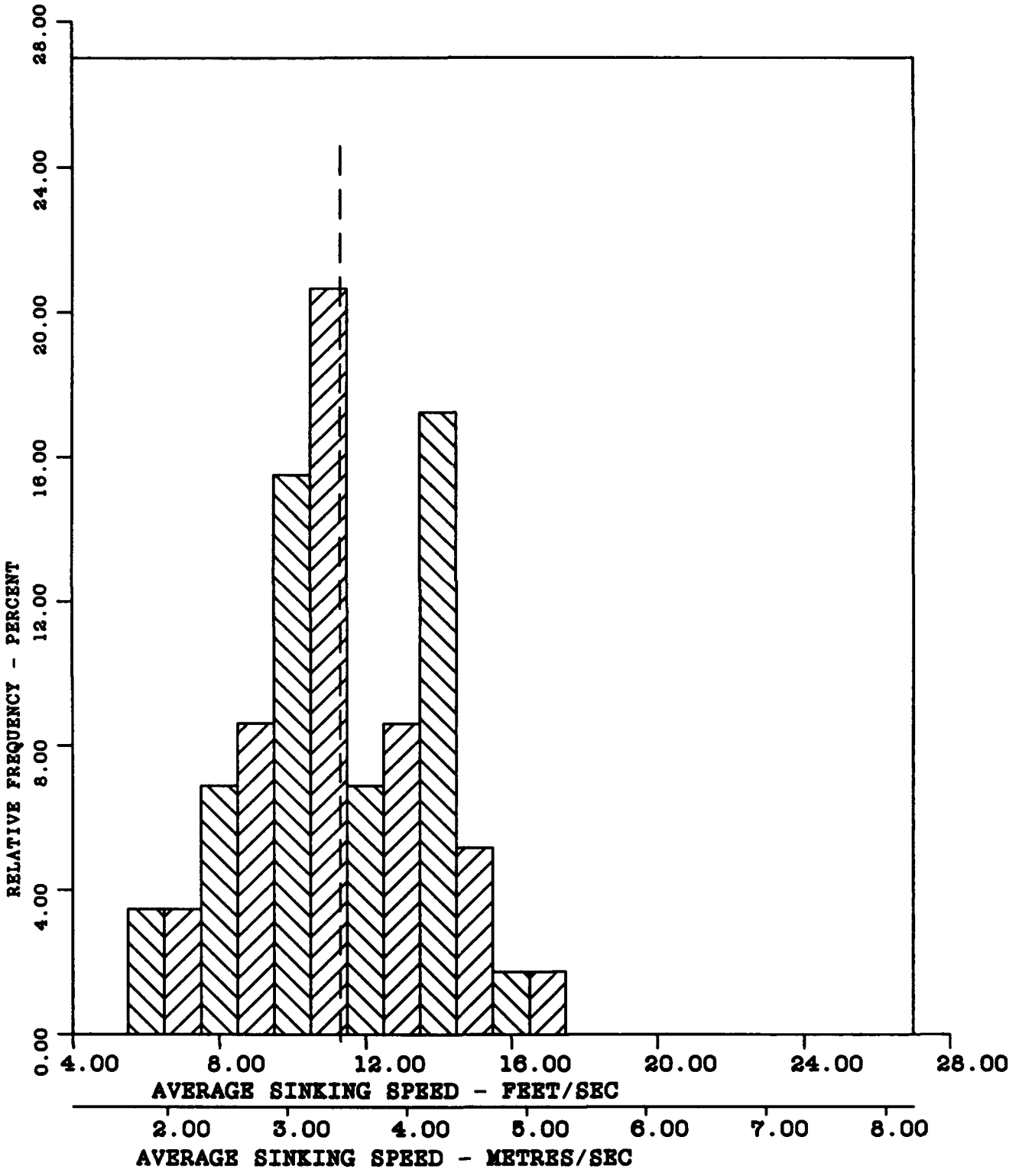


FIGURE I-11 FREQUENCY DISTRIBUTION OF AVG SINKING SPEED OF MAIN WHEEL AT FIRST MAIN WHEEL TOUCHDOWN

MODEL A-7 AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-58 $\bar{X}$-11.31 FEET/SEC (3.45 METRES/SEC) A3=-0.04
S= 2.46 FEET/SEC (0.75 METRES/SEC) A4-2.36
CURVE FITTED - NORMAL

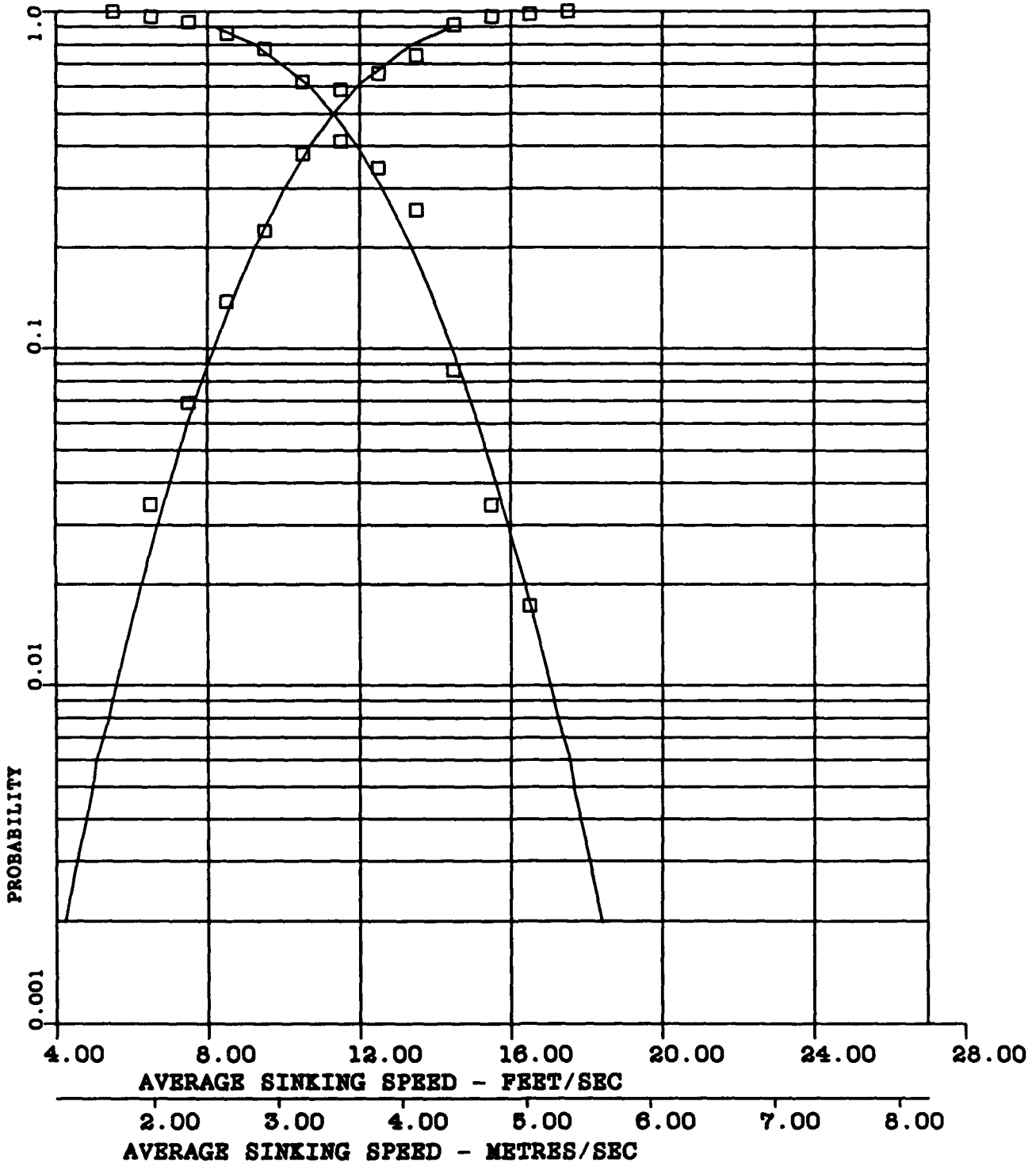


FIGURE I-12 PROBABILITY DISTRIBUTION OF AVERAGE SINKING SPEED AT FIRST MAIN WHEEL TOUCHDOWN

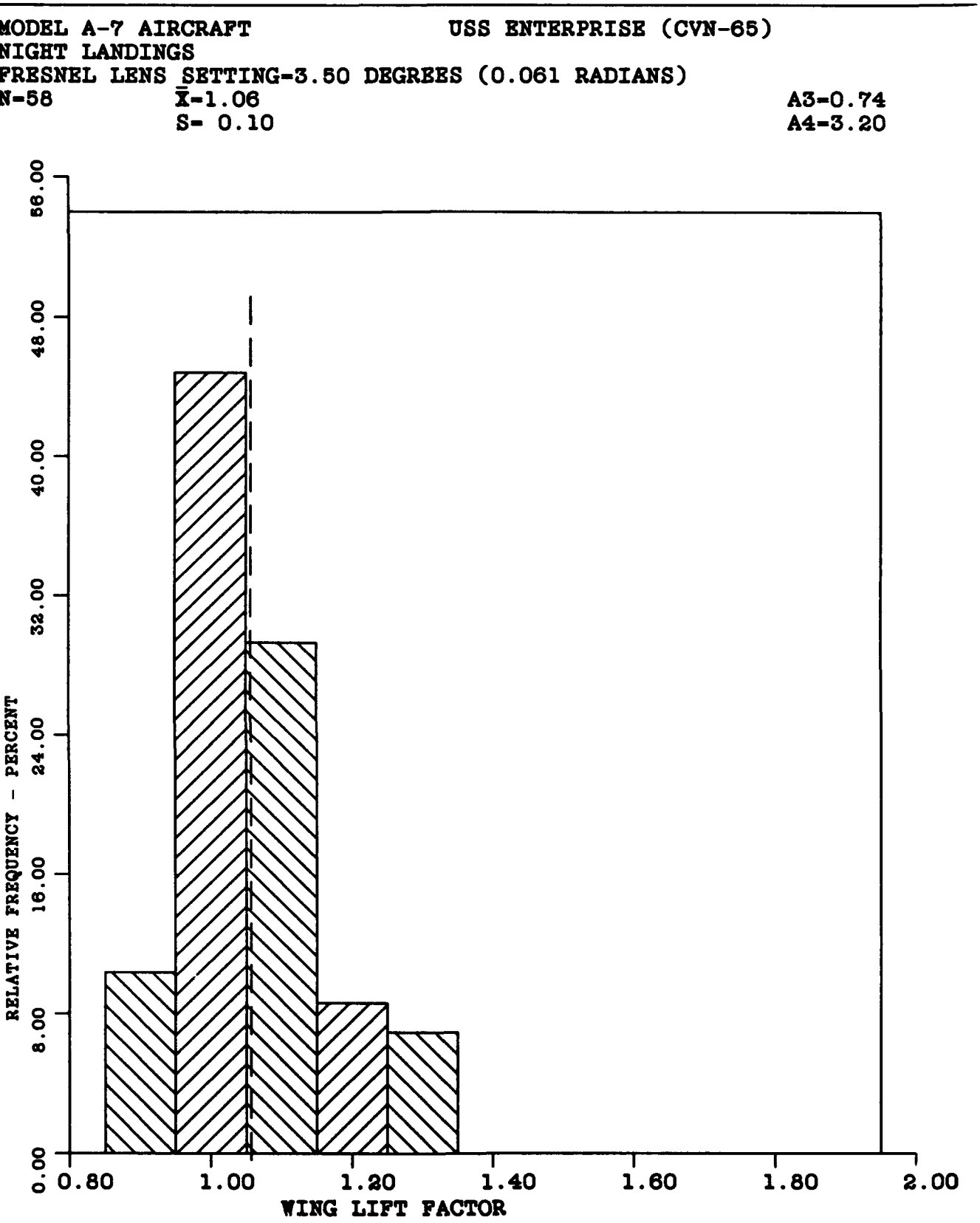


FIGURE I-13 FREQUENCY DISTRIBUTION OF WING LIFT FACTOR AT FIRST MAIN WHEEL TOUCHDOWN

MODEL A-7 AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-58 $\bar{X}$-1.06 A3-0.74
S= 0.10 A4-3.20
CURVE FITTED - PEARSON TYPE III

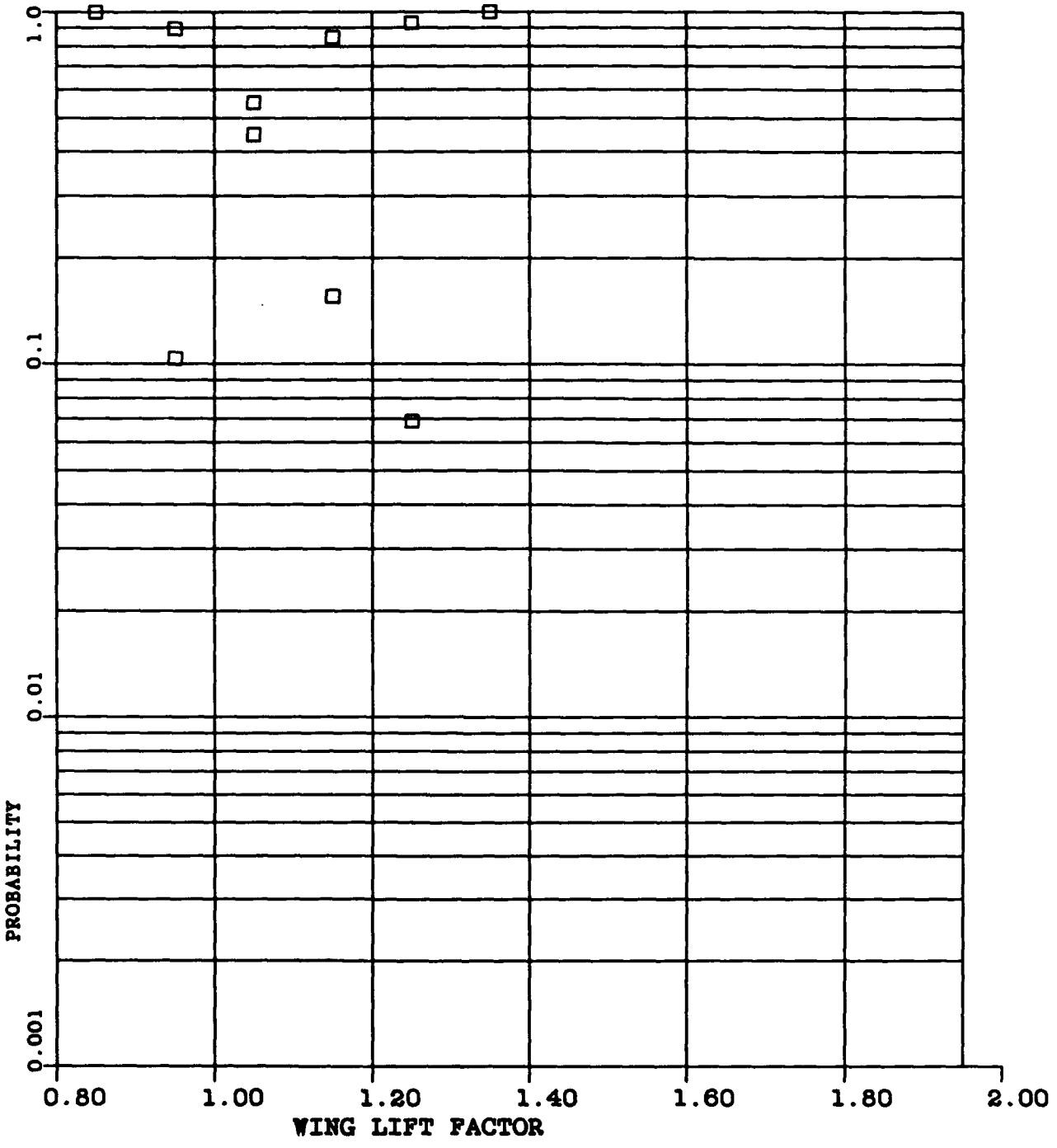


FIGURE I-14 PROBABILITY DISTRIBUTION OF WING LIFT FACTOR AT FIRST MAIN WHEEL TOUCHDOWN

MODEL A-7 AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N=58 $\bar{X}$=7.95 DEGREES (0.139 RADIANS) A3=0.63
S= 1.59 DEGREES (0.028 RADIANS) A4=3.36

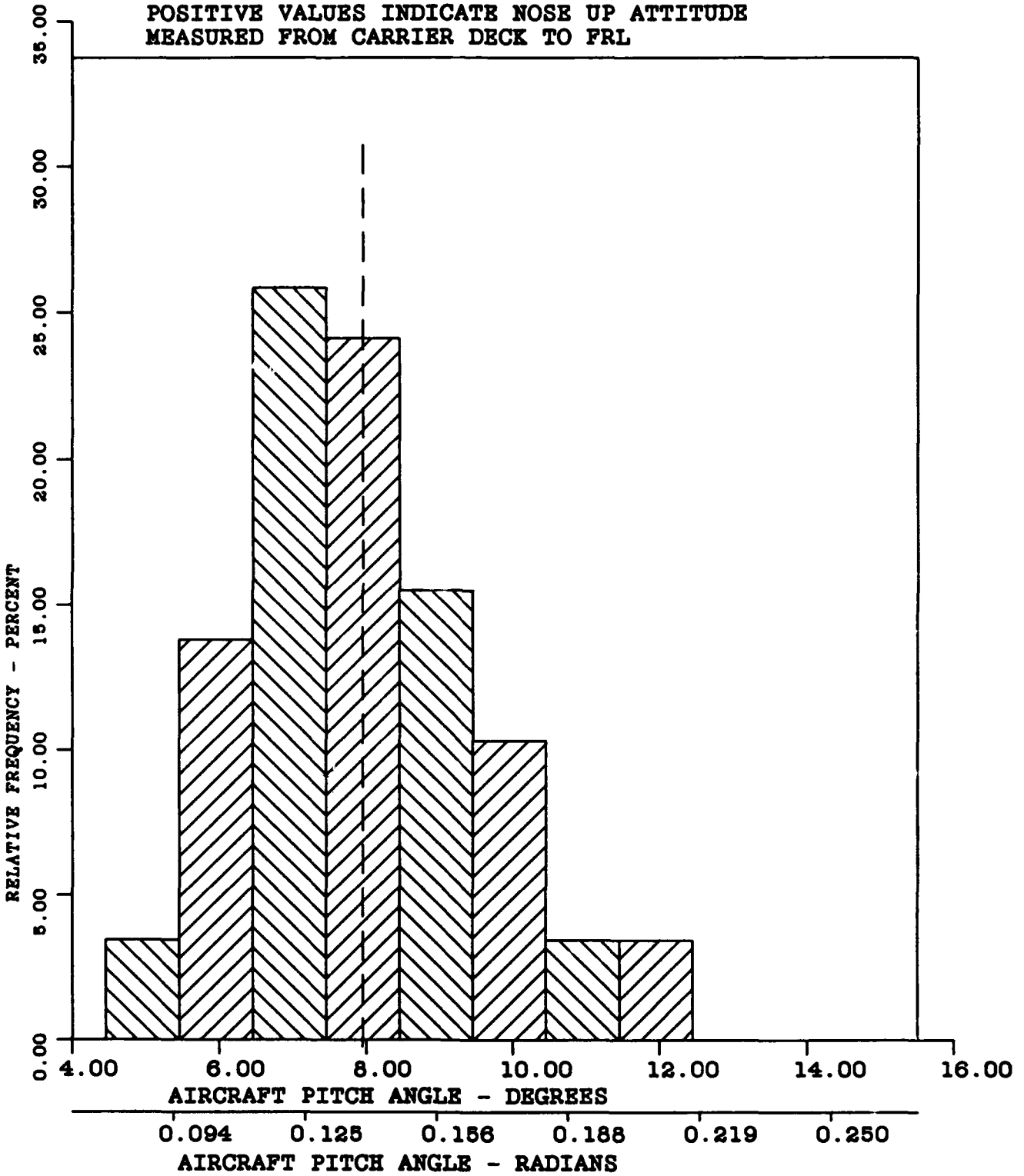


FIGURE I-15 FREQUENCY DISTRIBUTION OF AIRCRAFT PITCH ANGLE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL A-7 AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N=58 $\bar{X}$=7.95 DEGREES (0.139 RADIANS) A3=0.63
S= 1.59 DEGREES (0.028 RADIANS) A4=3.36
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE NOSE UP ATTITUDE
MEASURED FROM CARRIER DECK TO FRL

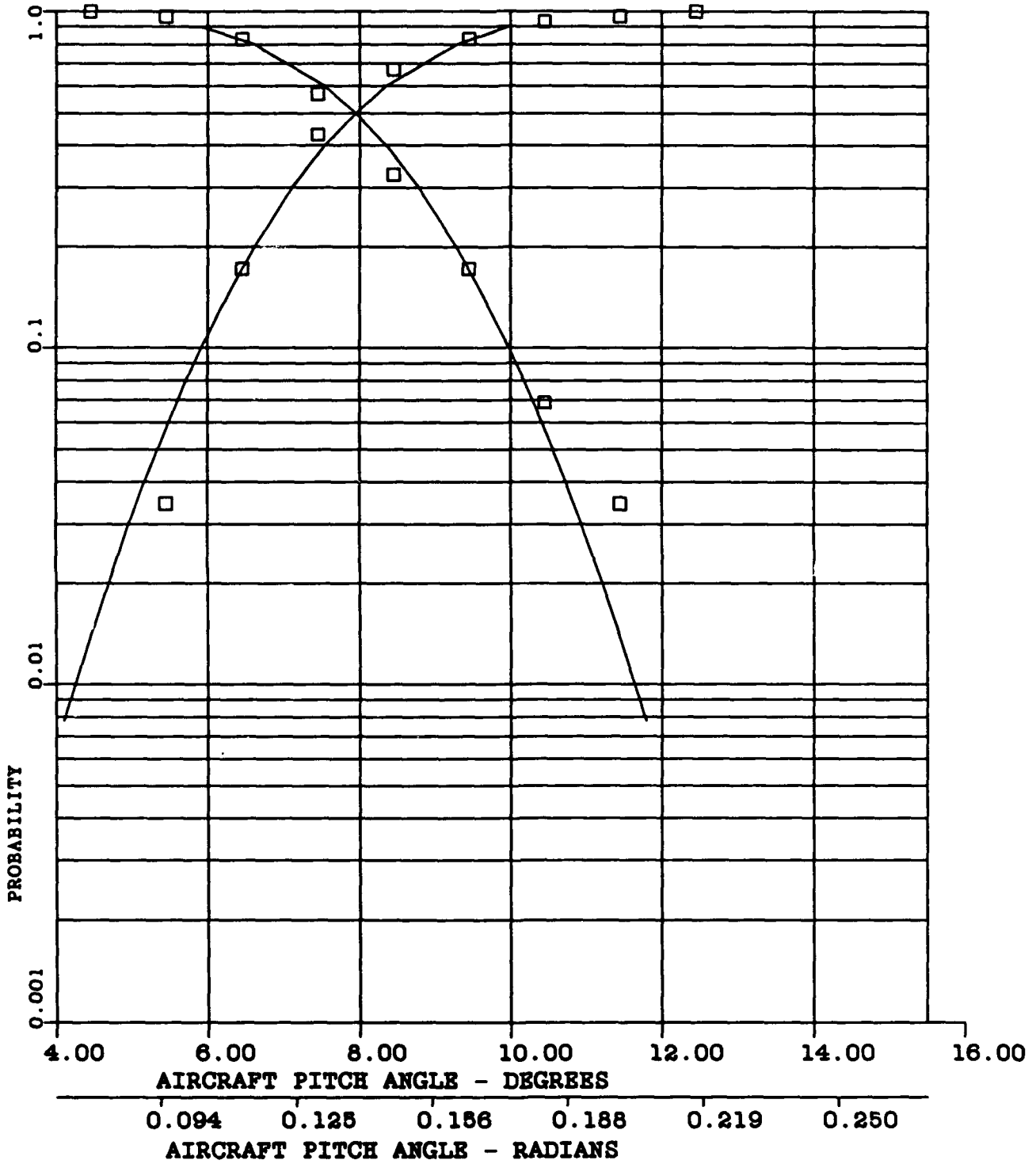


FIGURE I-16 PROBABILITY DISTRIBUTION OF AIRCRAFT PITCH ANGLE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL A-7 AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (0.061 RADIANS)
N=58 $\bar{X}$=-0.57 DEGREES (-0.010 RADIANS) A3=-0.42
S= 1.72 DEGREES (0.030 RADIANS) A4=3.03

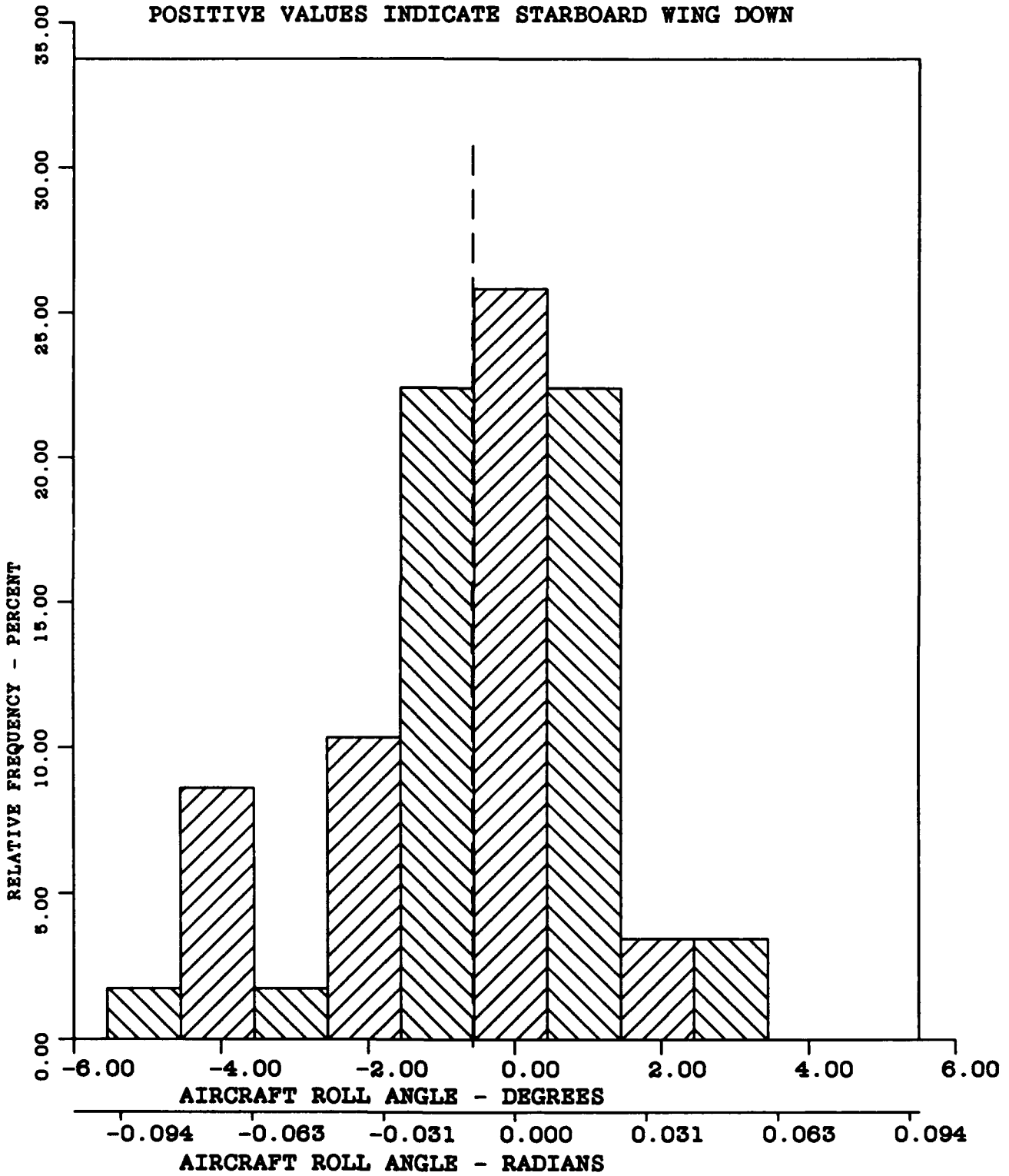


FIGURE I-17 FREQUENCY DISTRIBUTION OF AIRCRAFT ROLL ANGLE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL A-7 AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N=58 $\bar{X}$=-0.57 DEGREES (-0.010 RADIANS) A3=-0.42
S= 1.72 DEGREES (0.030 RADIANS) A4=3.03
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE STARBOARD WING DOWN

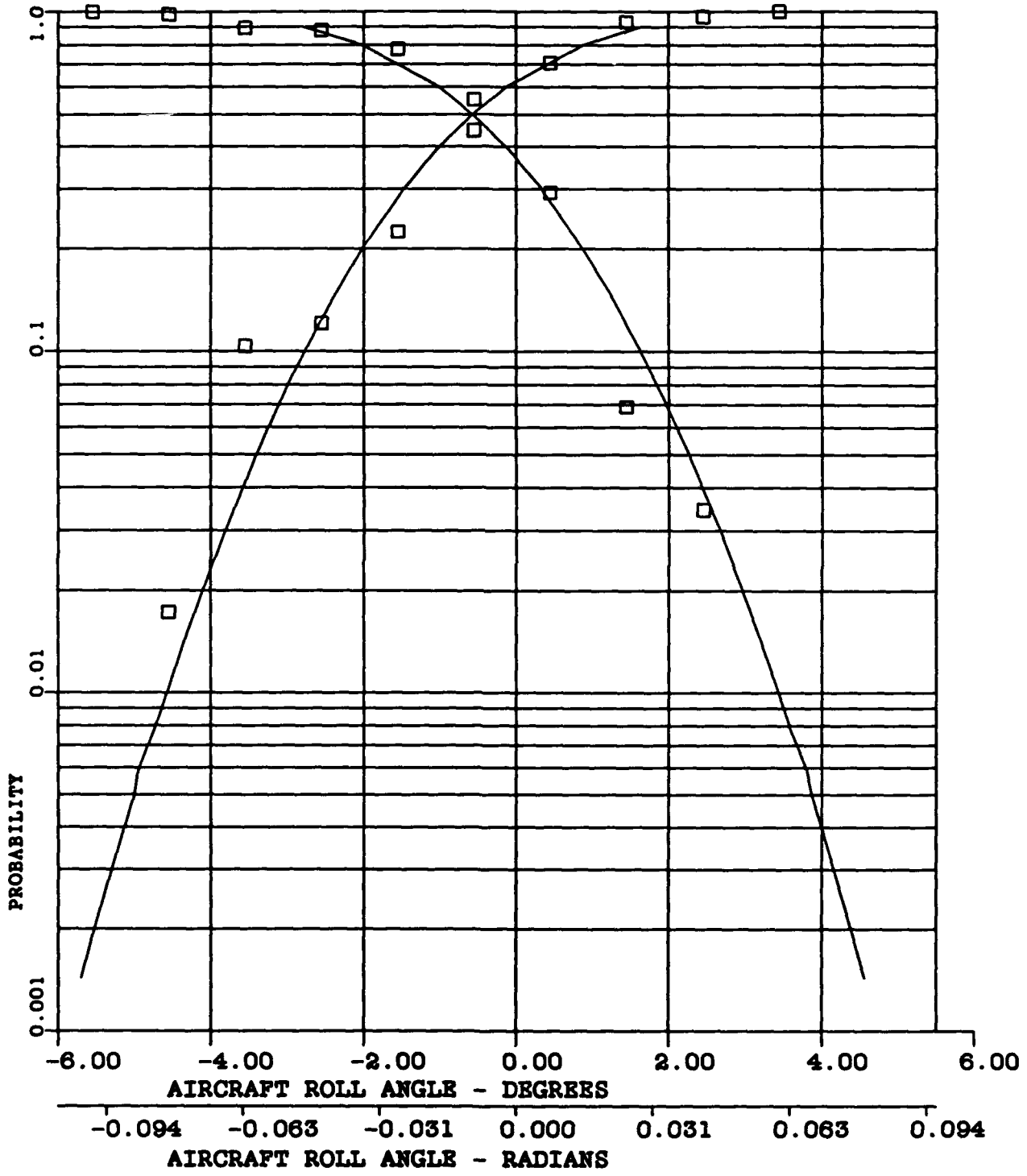


FIGURE I-18 PROBABILITY DISTRIBUTION OF AIRCRAFT ROLL ANGLE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL A-7 AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-58 $\bar{X}$-270.55 FEET (82.46 METRES) A3=-0.51
S= 35.51 FEET (10.82 METRES) A4-2.78

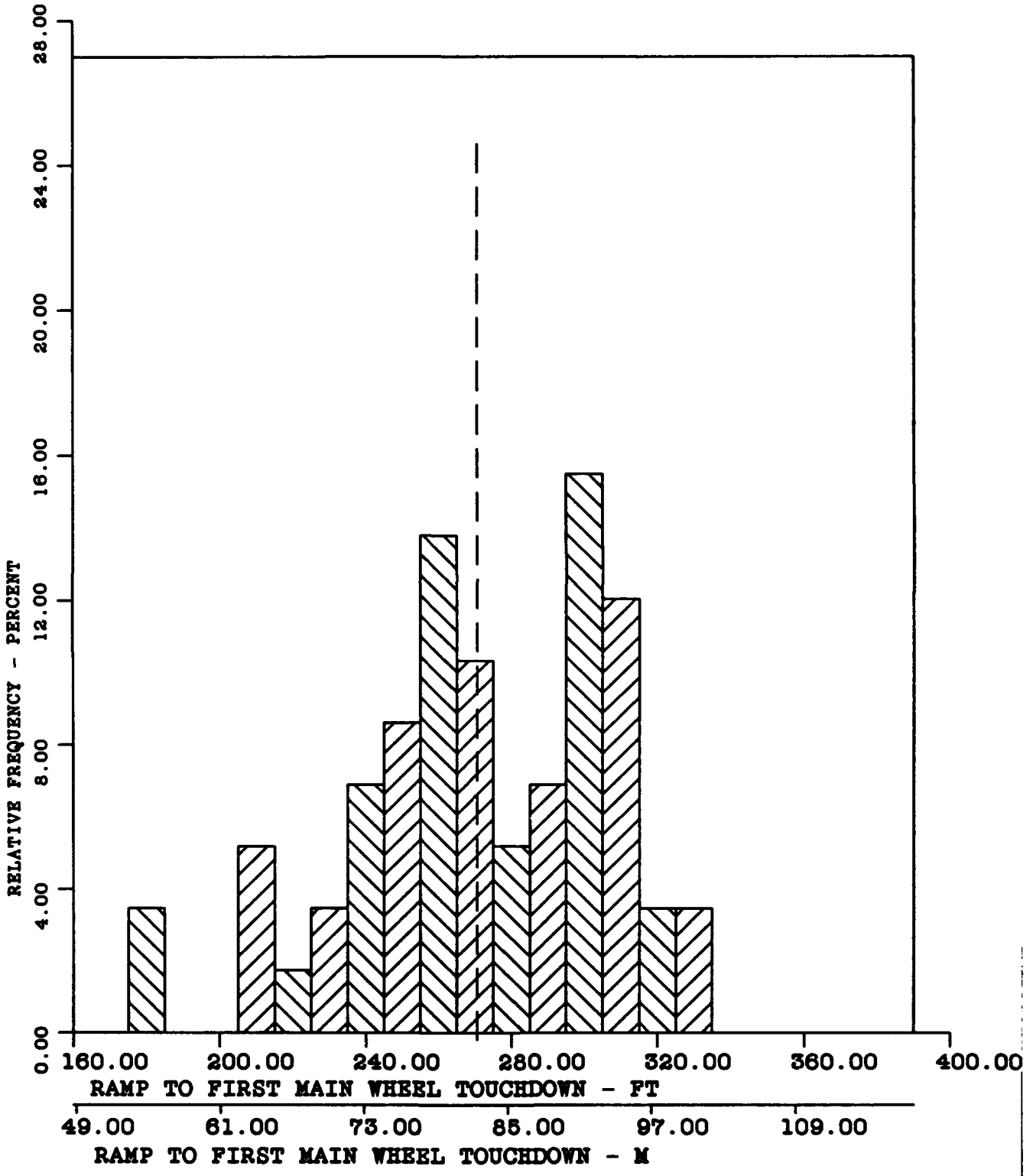


FIGURE I-19 FREQUENCY DISTRIBUTION OF DISTANCE FROM RAMP TO FIRST MAIN WHEEL TOUCHDOWN POINT

MODEL A-7 AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-58 $\bar{X}$-270.55 FEET (82.46 METRES) A3=-0.51
S= 35.51 FEET (10.82 METRES) A4-2.78
CURVE FITTED - NORMAL

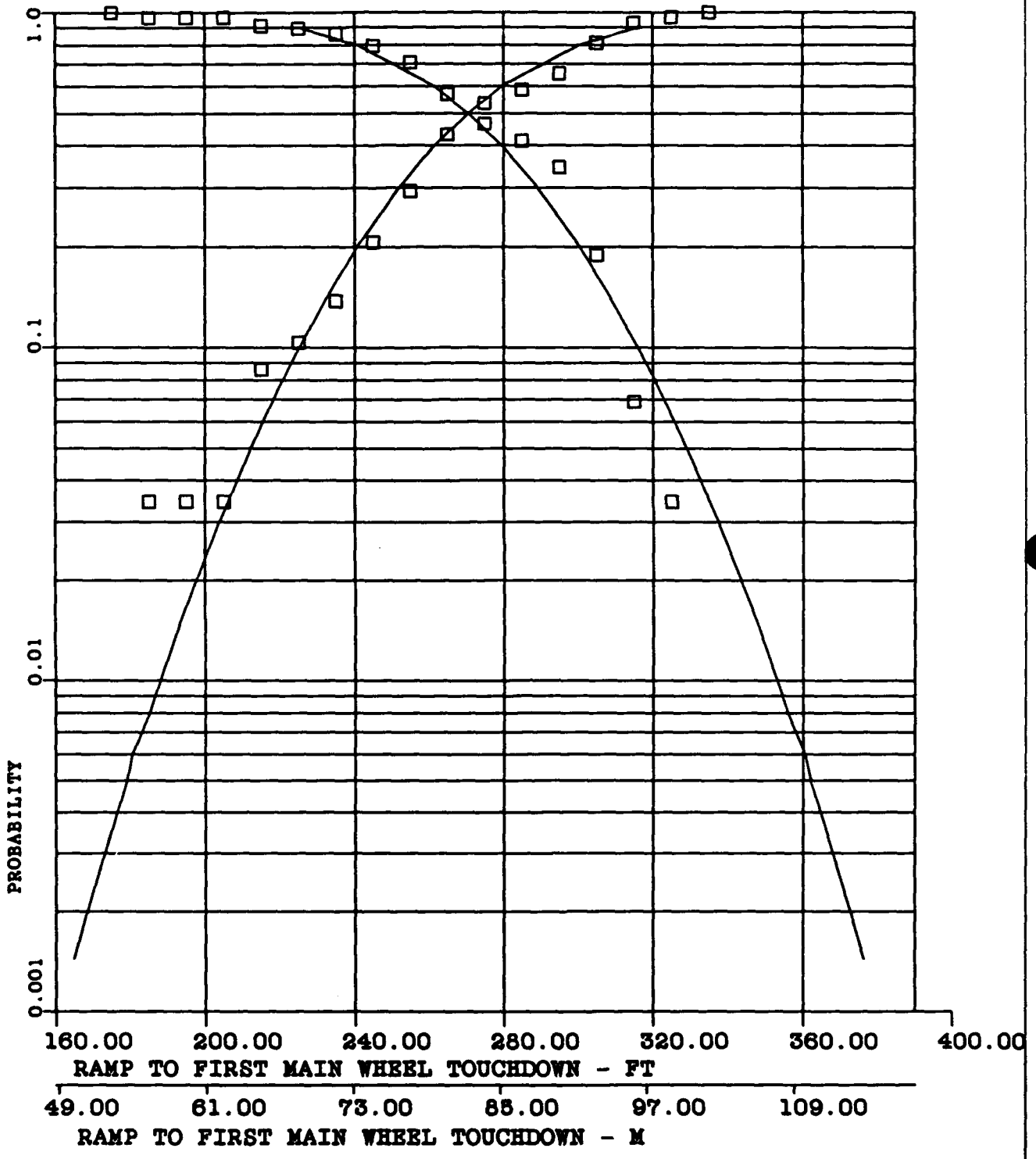


FIGURE I-20 PROBABILITY DISTRIBUTION OF DISTANCE FROM RAMP TO FIRST MAIN WHEEL TOUCHDOWN POINT

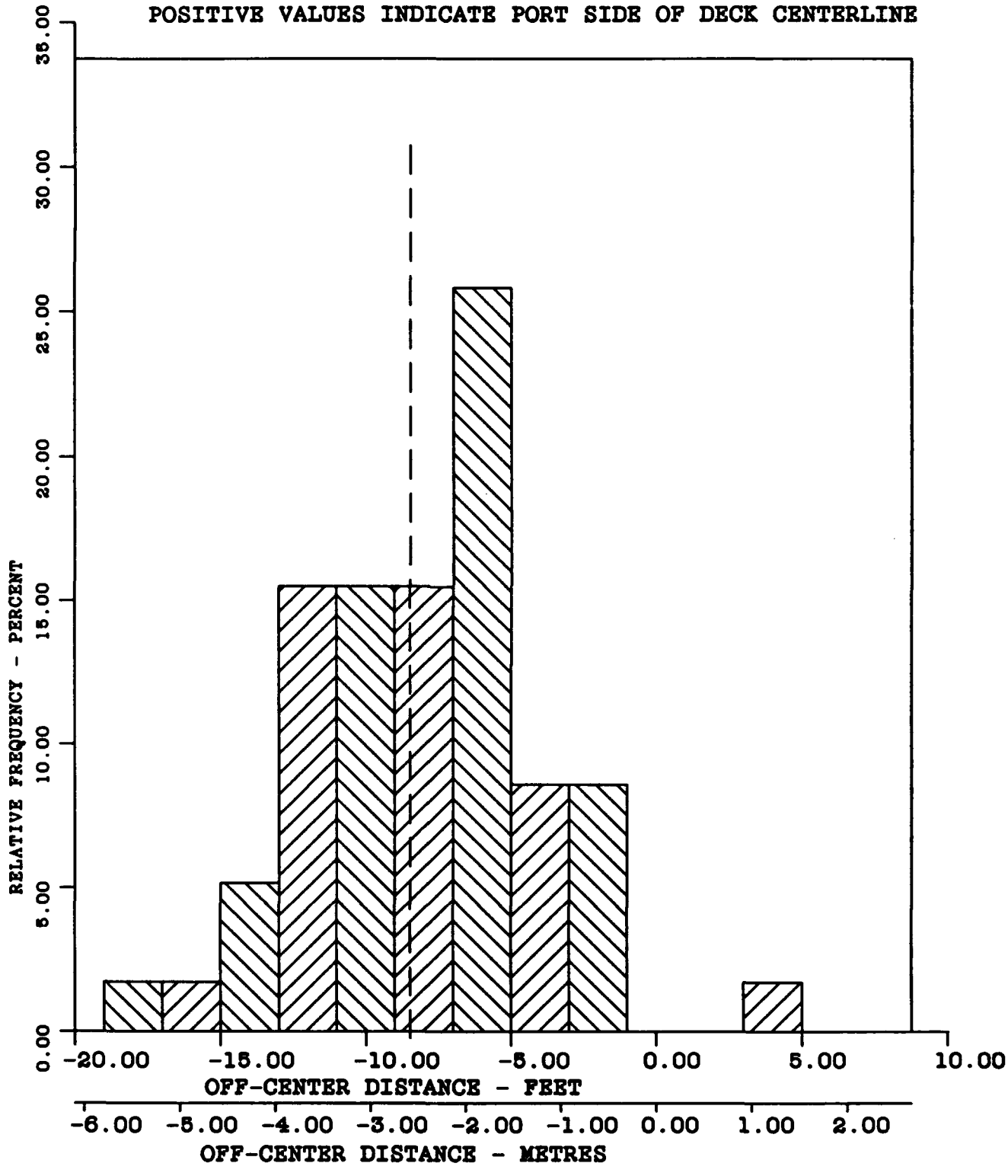


FIGURE I-21 FREQUENCY DISTRIBUTION OF AIRCRAFT CENTERLINE OFF-CNTR DISTANCE AT 1ST MAIN WHEEL TOUCHDOWN

MODEL A-7 AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N=58 $\bar{X}$=-8.48 FEET (-2.59 METRES) A3=0.12
S= 4.01 FEET (1.22 METRES) A4=3.54
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE PORT SIDE OF DECK CENTERLINE

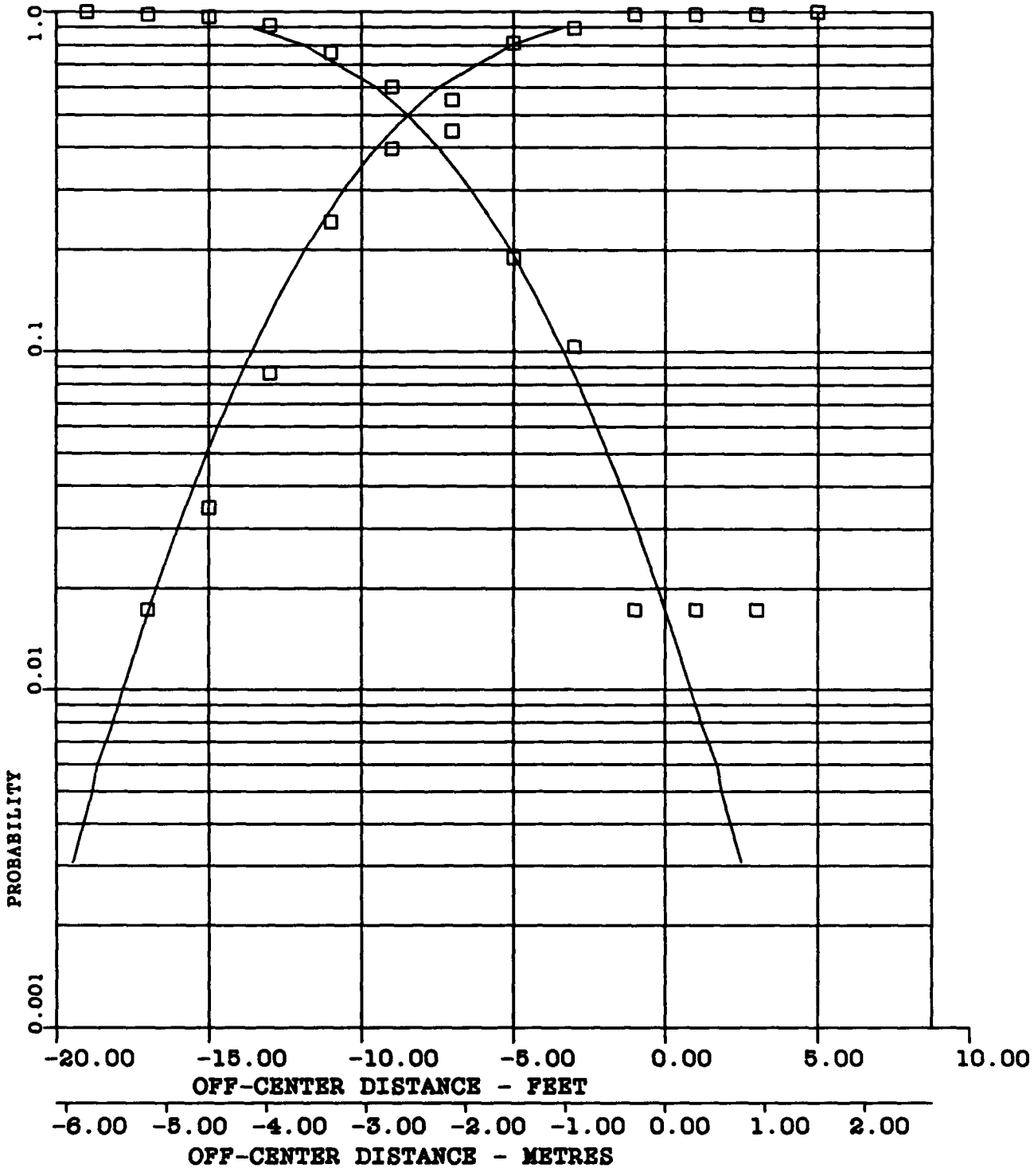


FIGURE I-22 PROBABILITY DISTRIBUTION OF AIRCRAFT OFF-CENTER DISTANCE AT 1ST MAIN WHEEL TOUCHDOWN

MODEL A-7 AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (0.061 RADIANS)
N=47 $\bar{X}$=3.15 A3=-0.67
S= 0.87 A4=2.50

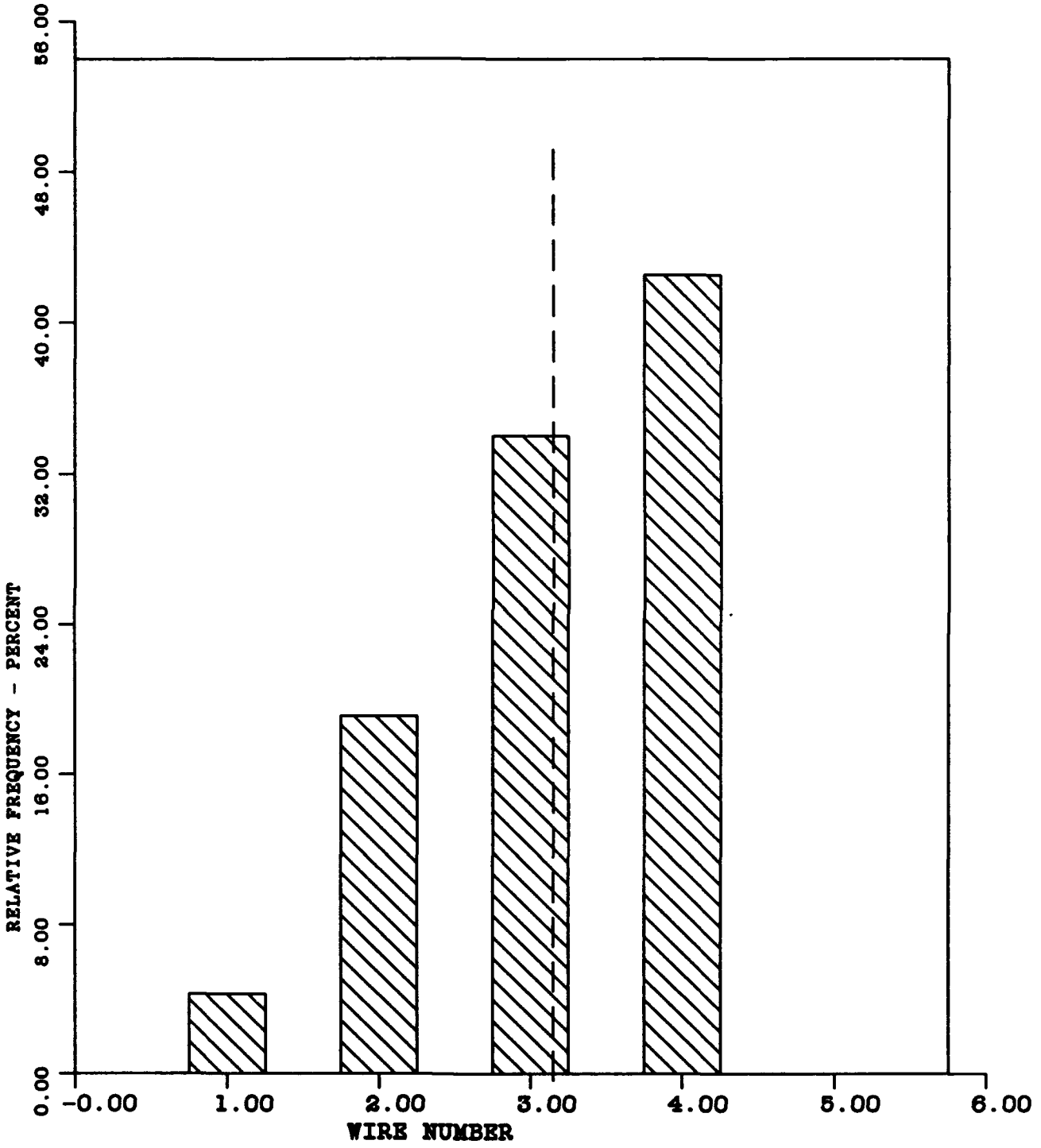


FIGURE I-23 FREQUENCY DISTRIBUTION OF ARRESTMENT WIRE NUMBER ENGAGED

MODEL A-7 AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-58 $\bar{X}$-3.25 DEGREES (0.057 RADIANS) A3-0.02
S= 0.82 DEGREES (0.014 RADIANS) A4-2.68

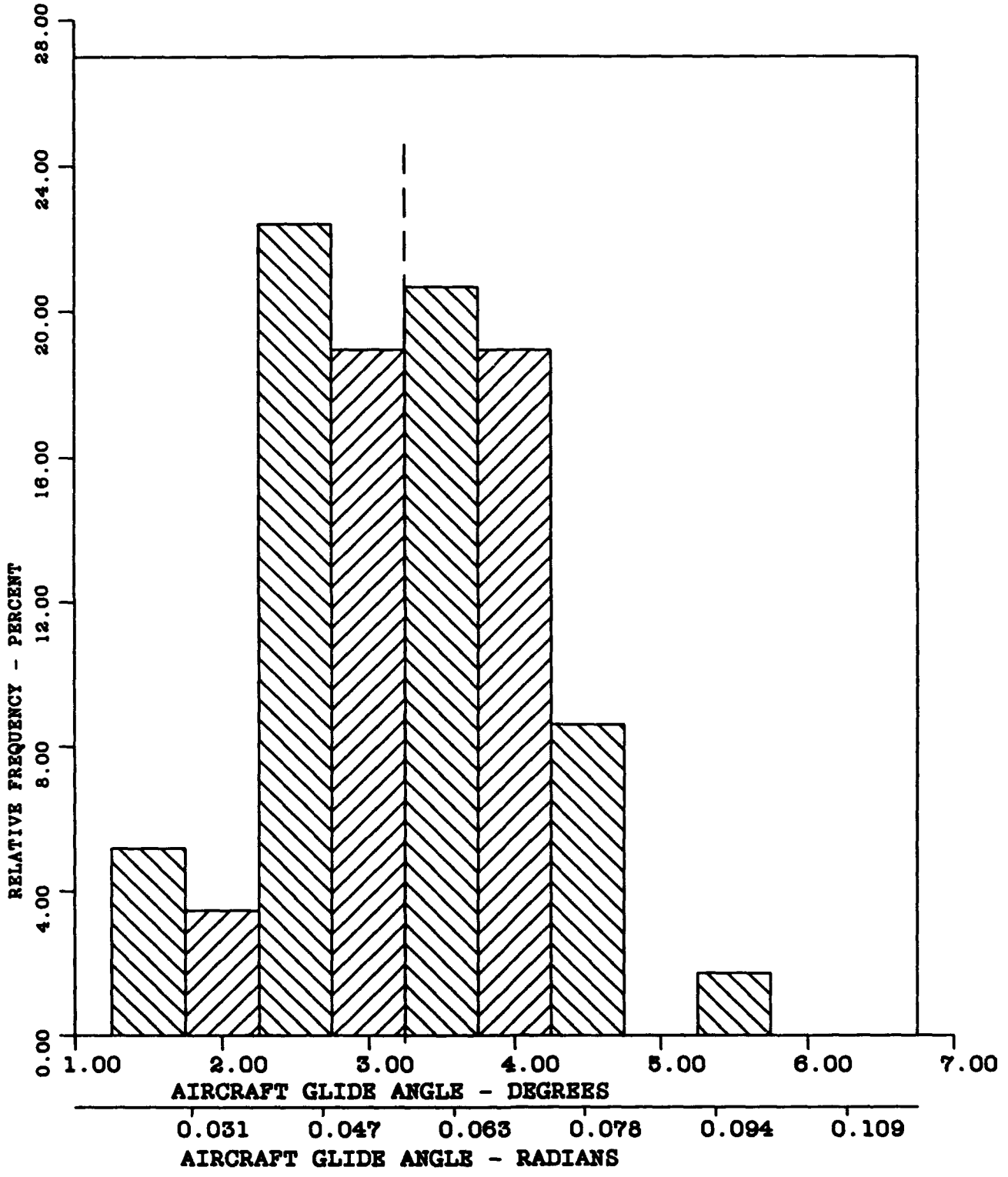


FIGURE I-24 FREQUENCY DISTRIBUTION OF AIRCRAFT GLIDE ANGLE - INSTANTANEOUS METHOD

MODEL A-7 AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N=58 $\bar{X}$=111.66 KNOTS (57.44 METRES/SEC) A3=0.70
S= 8.72 KNOTS (4.49 METRES/SEC) A4=5.26

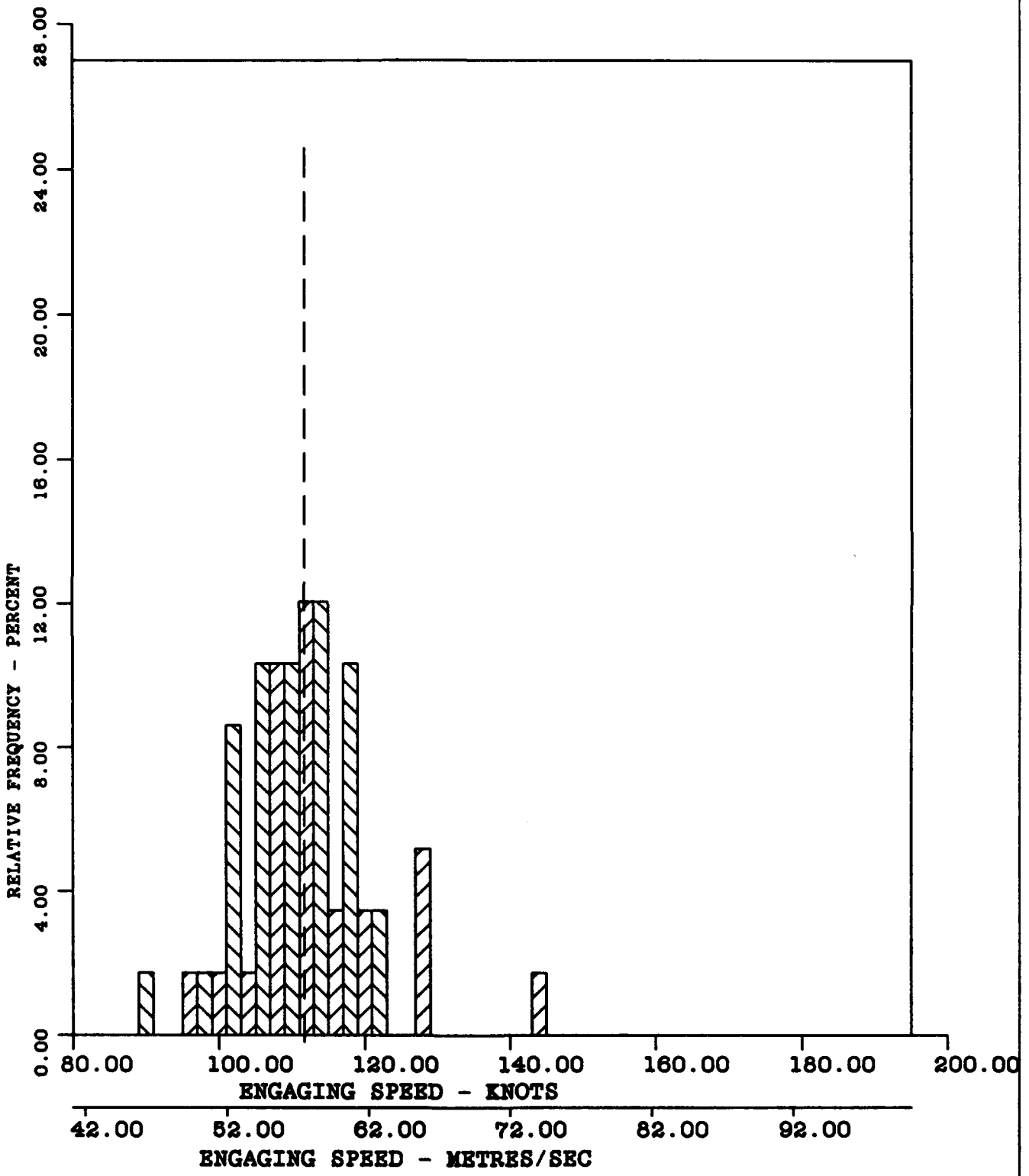


FIGURE I-25 FREQUENCY DISTRIBUTION OF AIRCRAFT ENGAGING SPEED AT FIRST MAIN WHEEL TOUCHDOWN

MODEL A-7 AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (0.061 RADIANS)
N=58 $\bar{X}$=111.66 KNOTS (57.44 METRES/SEC) A3=0.70
S= 8.72 KNOTS (4.49 METRES/SEC) A4=5.26
CURVE FITTED - PEARSON TYPE III

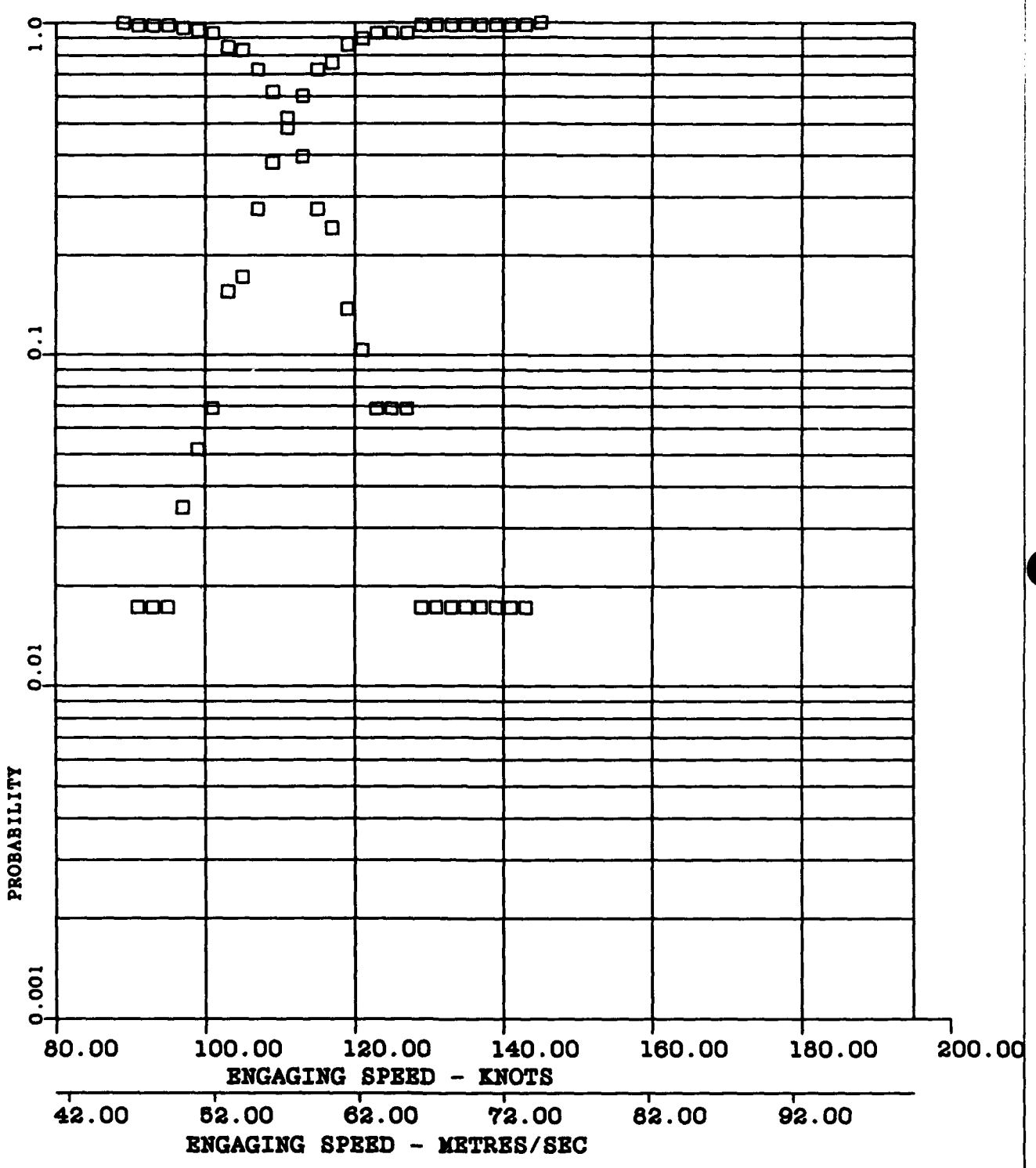


FIGURE I-26 PROBABILITY DISTRIBUTION OF ENGAGING SPEED AT FIRST MAIN WHEEL TOUCHDOWN

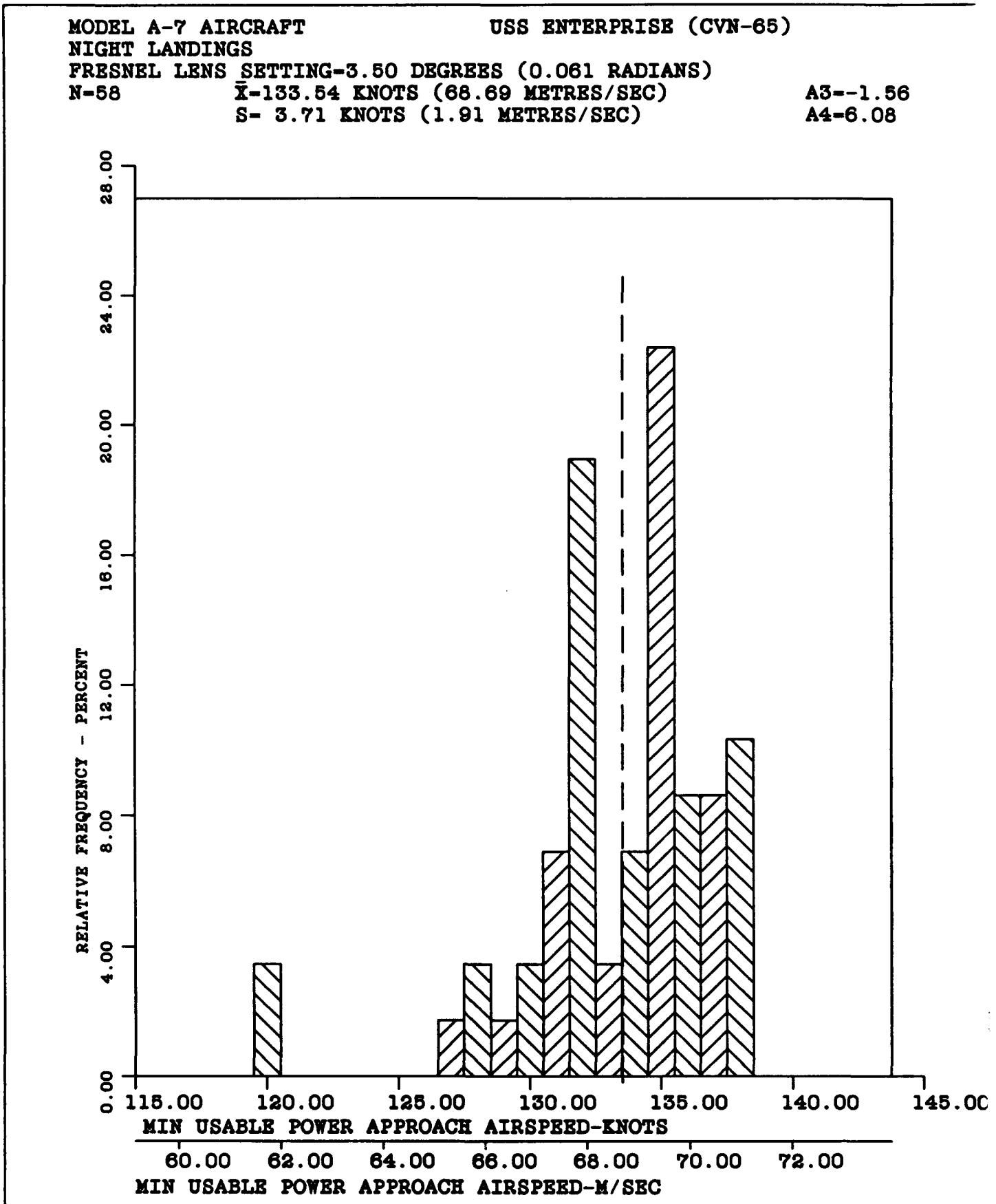


FIGURE I-27 FREQUENCY DISTRIBUTION OF MINIMUM USABLE POWER APPROACH AIRSPEED

MODEL A-7 AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N=58 $\bar{X}$=1.05 A3=1.00
S= 0.07 A4=4.28

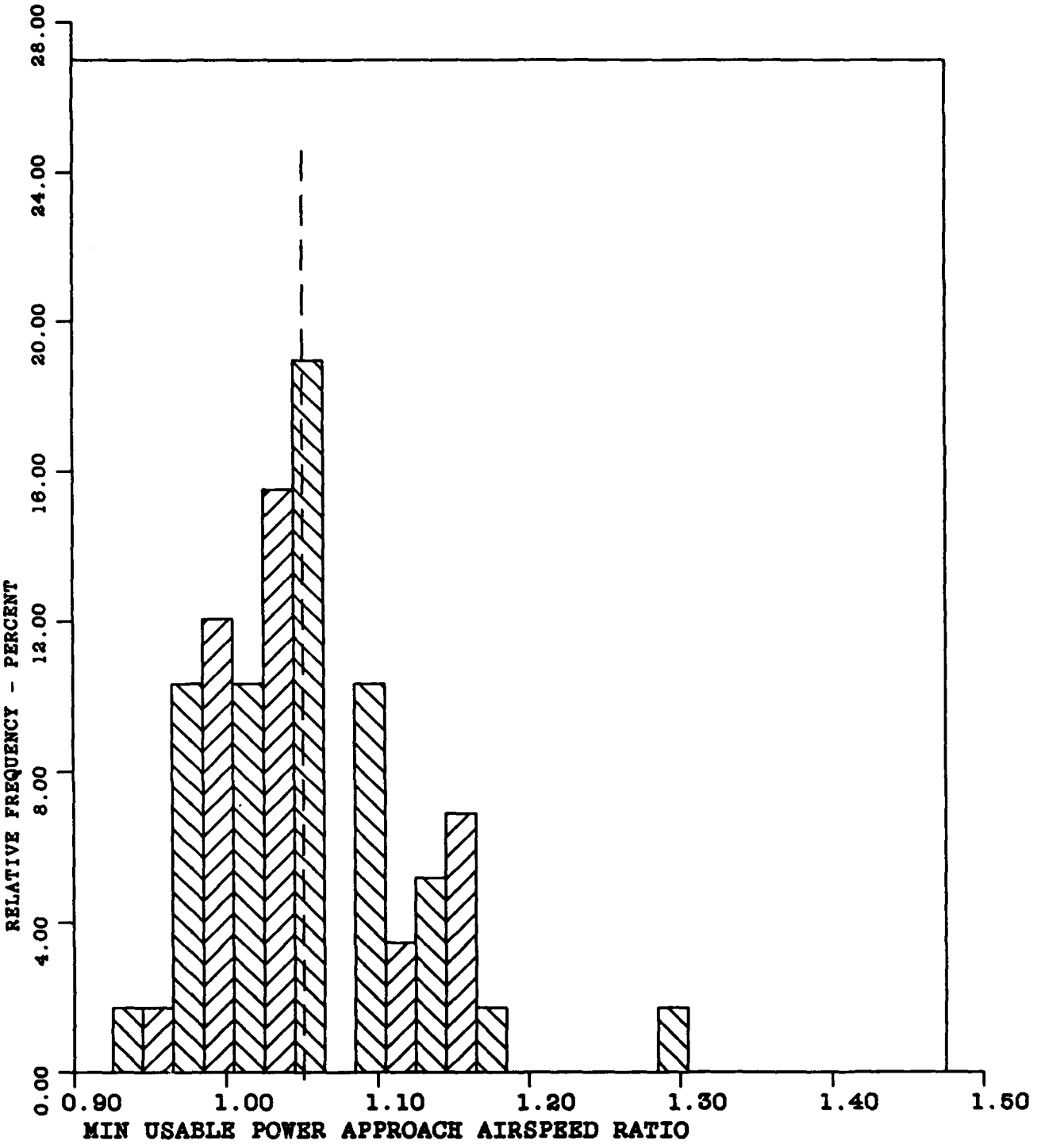


FIGURE I-28 FREQUENCY DISTRIBUTION OF MINIMUM USABLE POWER APPROACH AIRSPEED RATIO - FILM

MODEL A-7 AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (0.061 RADIANS)
N=58 $\bar{X}$=0.18 DEGREES (0.003 RADIANS) A3=1.10
S= 0.84 DEGREES (0.015 RADIANS) A4=3.89

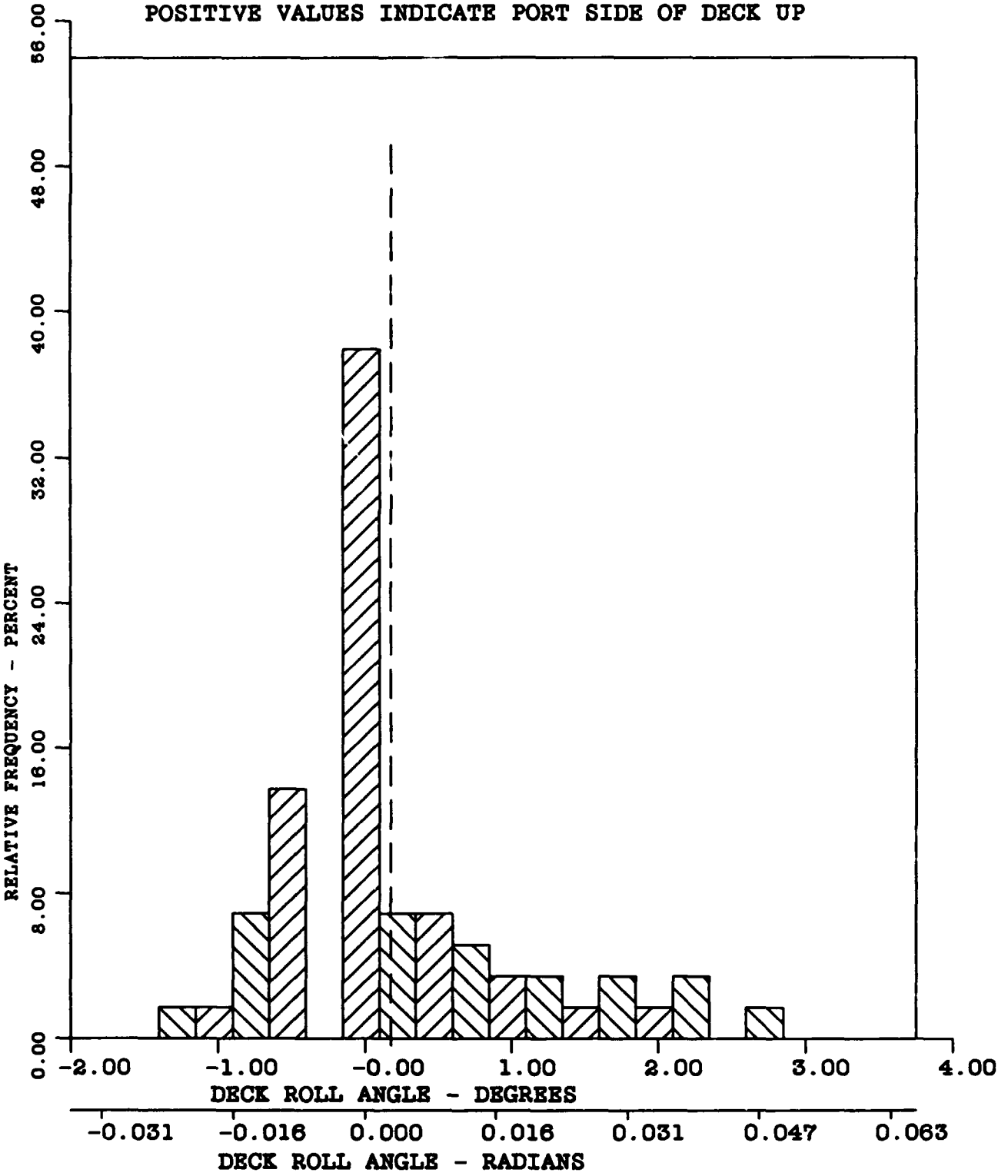


FIGURE I-29 FREQUENCY DISTRIBUTION OF CARRIER DECK ROLL MOTION

MODEL A-7 AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N=58 $\bar{X}$=0.18 DEGREES (0.003 RADIANS) A3=1.10
S= 0.84 DEGREES (0.015 RADIANS) A4=3.89
CURVE FITTED - PEARSON TYPE III
POSITIVE VALUES INDICATE PORT SIDE OF DECK UP

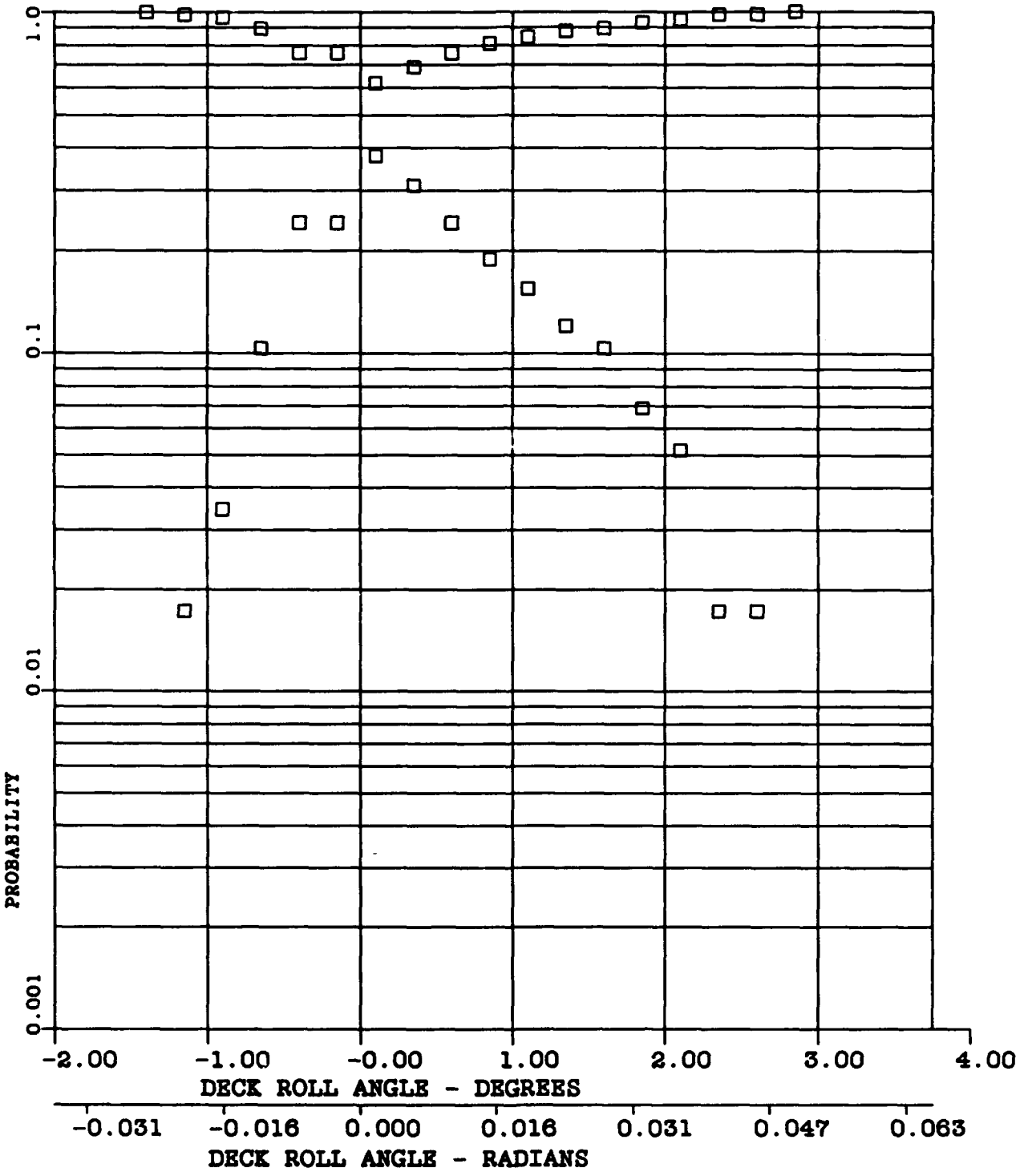


FIGURE I-30 PROBABILITY DISTRIBUTION OF CARRIER DECK ROLL MOTION

MODEL A-7 AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-58 $\bar{X}$=-0.19 DEGREES (-0.003 RADIANS) A3=-0.23
S= 0.23 DEGREES (0.004 RADIANS) A4=2.68

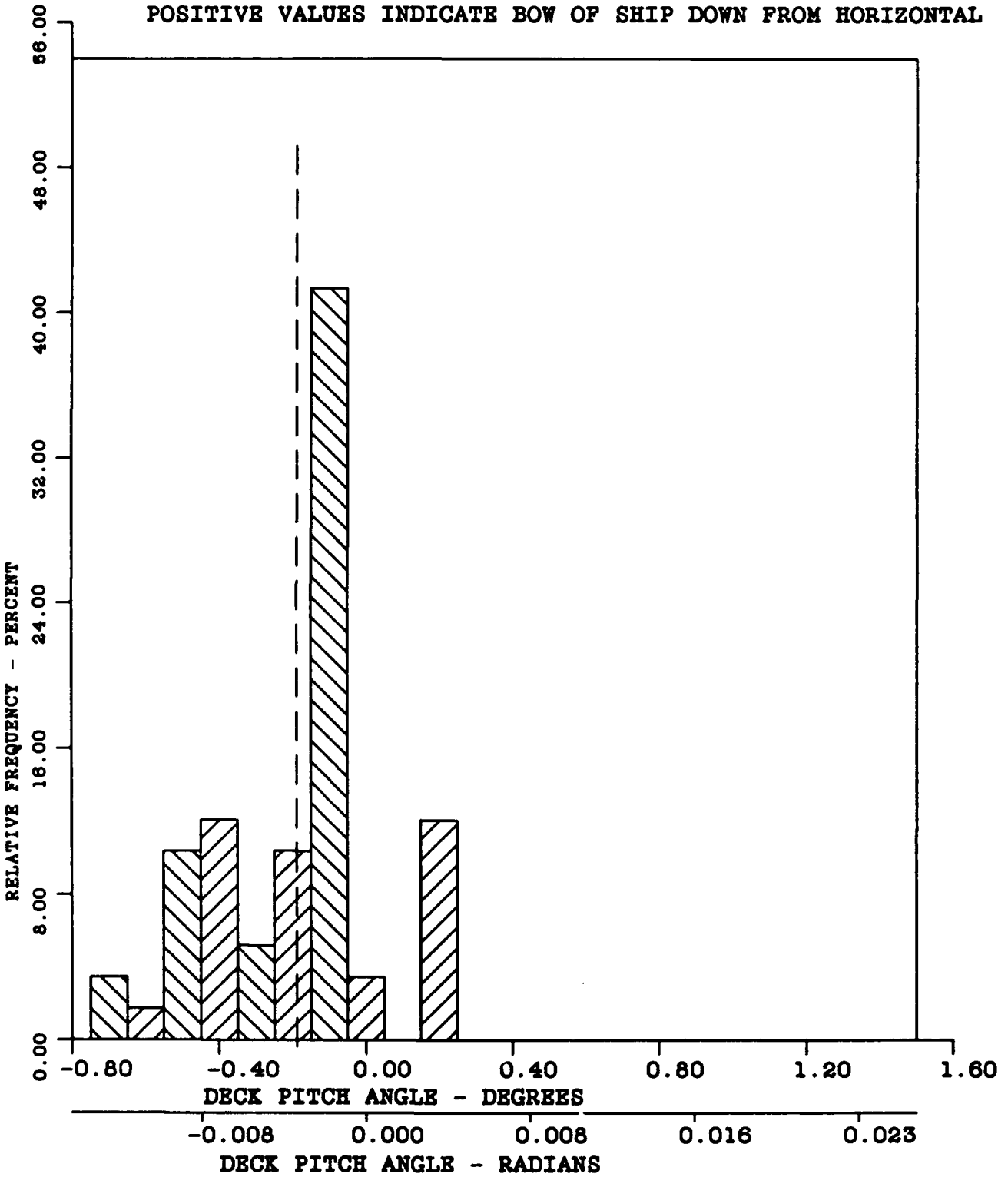


FIGURE I-31 FREQUENCY DISTRIBUTION OF CARRIER DECK PITCH MOTION

MODEL A-7 AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-58 $\bar{X}$=-0.19 DEGREES (-0.003 RADIANS) A3=-0.23
S= 0.23 DEGREES (0.004 RADIANS) A4=2.68
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE BOW OF SHIP DOWN FROM HORIZONTAL

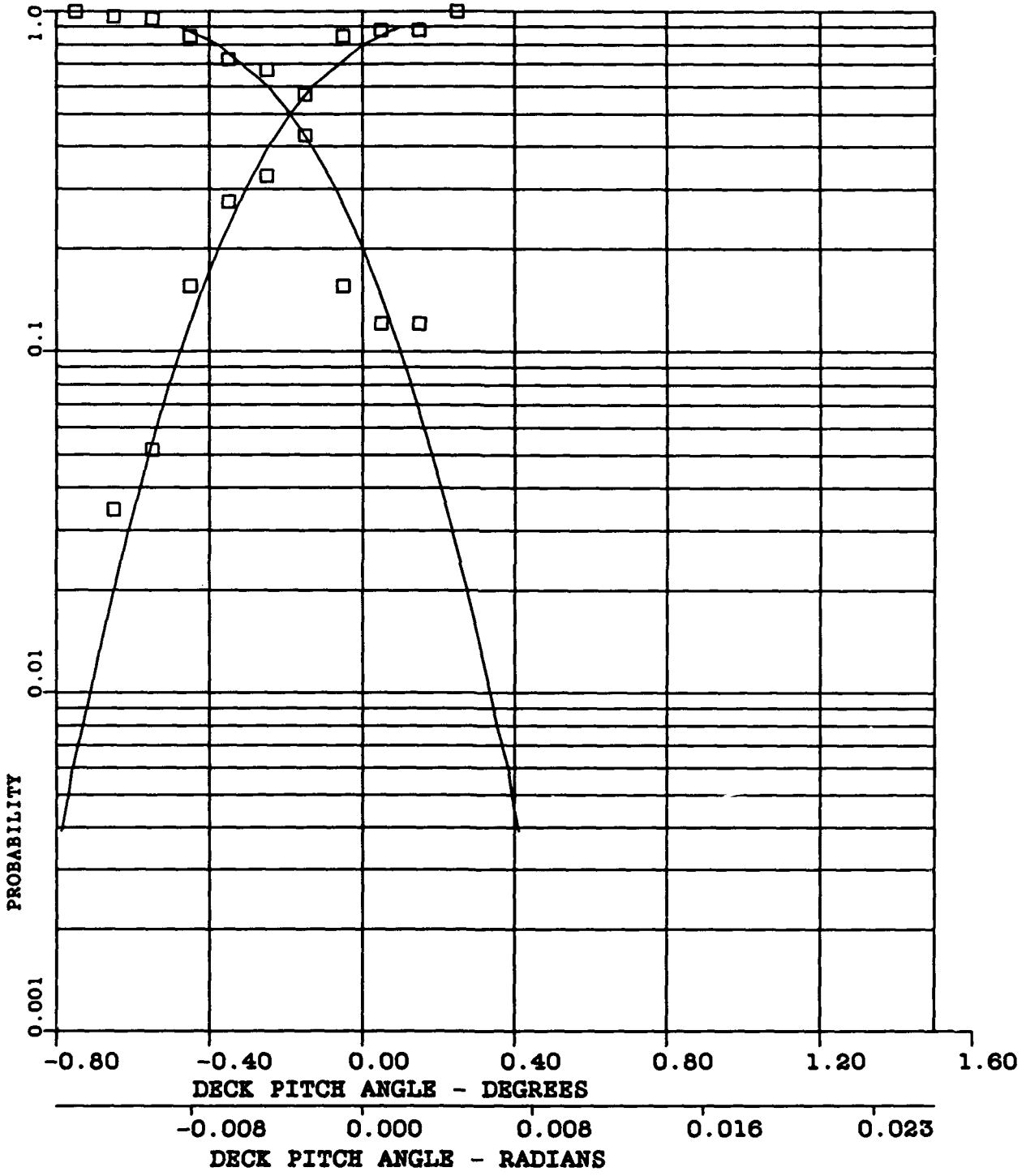


FIGURE I-32 PROBABILITY DISTRIBUTION OF CARRIER DECK PITCH MOTION

MODEL A-7 AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-58 $\bar{X}$-23524.90 POUNDS (10670.89 KILOGRAMS) A3=-1.45
S= 1279.69 POUNDS (580.47 KILOGRAMS) A4-5.64

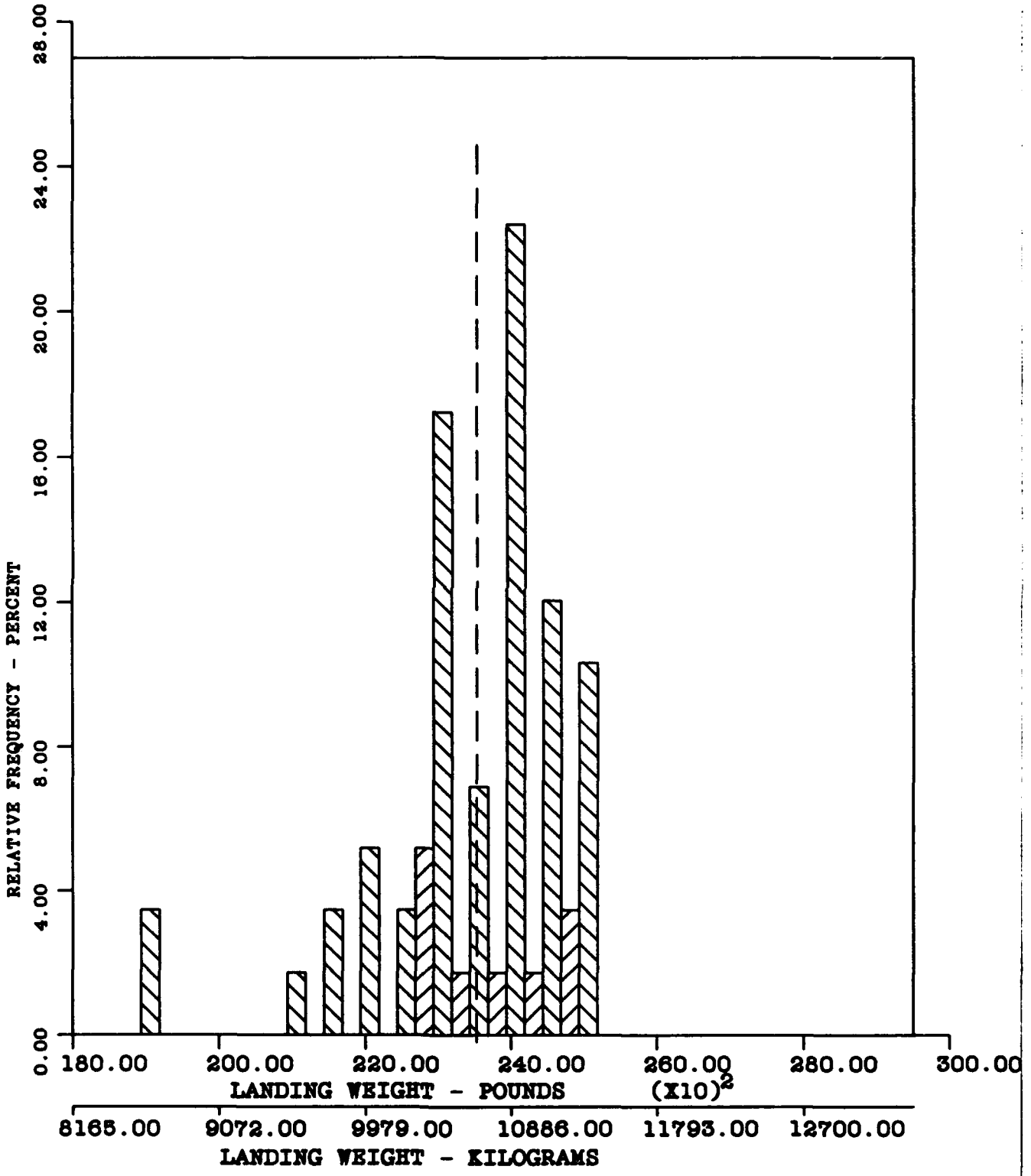


FIGURE I-33 FREQUENCY DISTRIBUTION OF AIRCRAFT LANDING WEIGHT

MODEL A-7 AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-58 $\bar{X}$-0.85 DEG/SEC (0.015 RAD/SEC) A3=-0.46
S= 8.10 DEG/SEC (0.141 RAD/SEC) A4-3.12

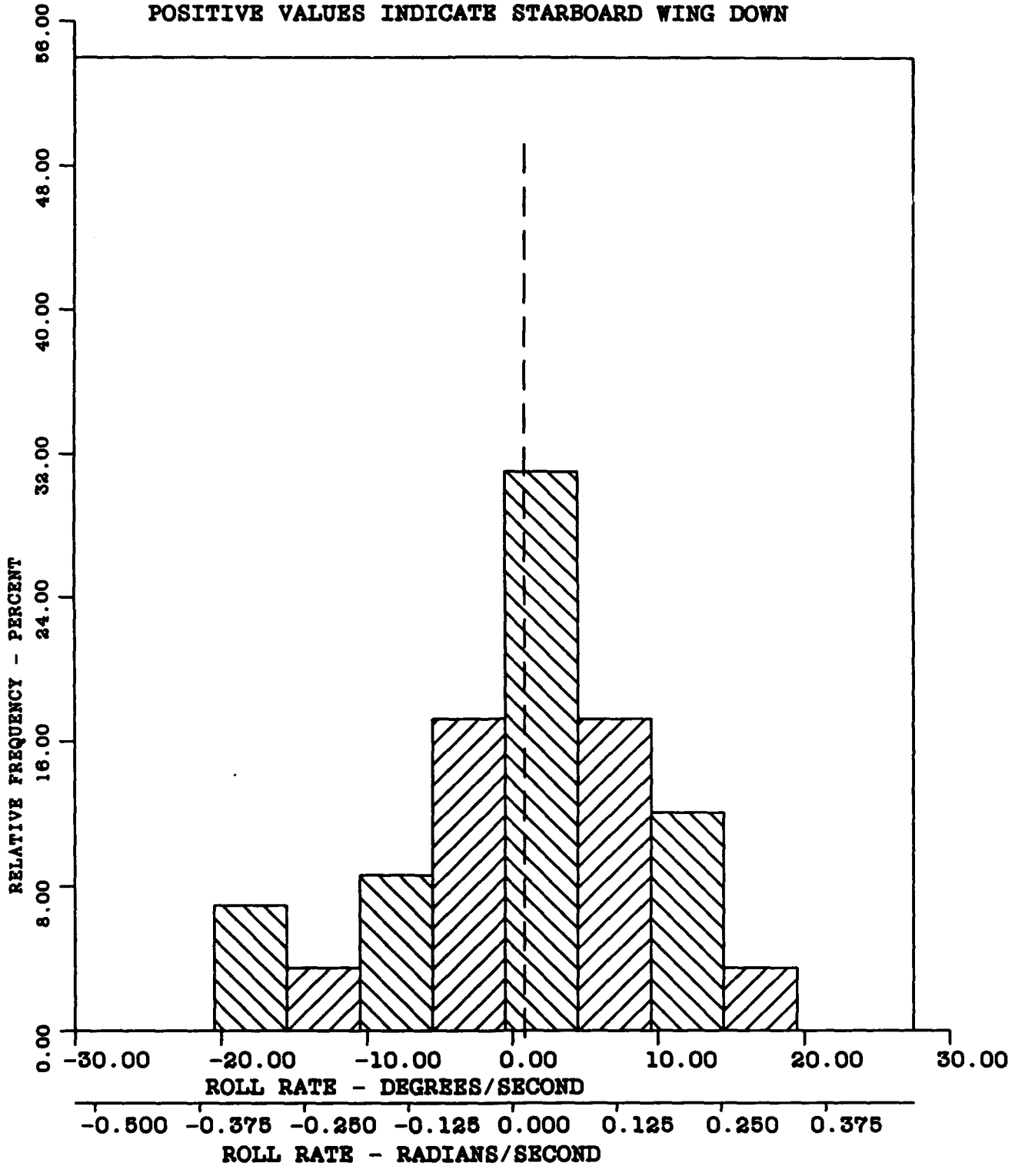


FIGURE I-34 FREQUENCY DISTRIBUTION OF ROLL RATE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL A-7 AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-58 $\bar{X}$-0.85 DEG/SEC (0.015 RAD/SEC) A3=-0.46
S= 8.10 DEG/SEC (0.141 RAD/SEC) A4-3.12
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE STARBOARD WING DOWN

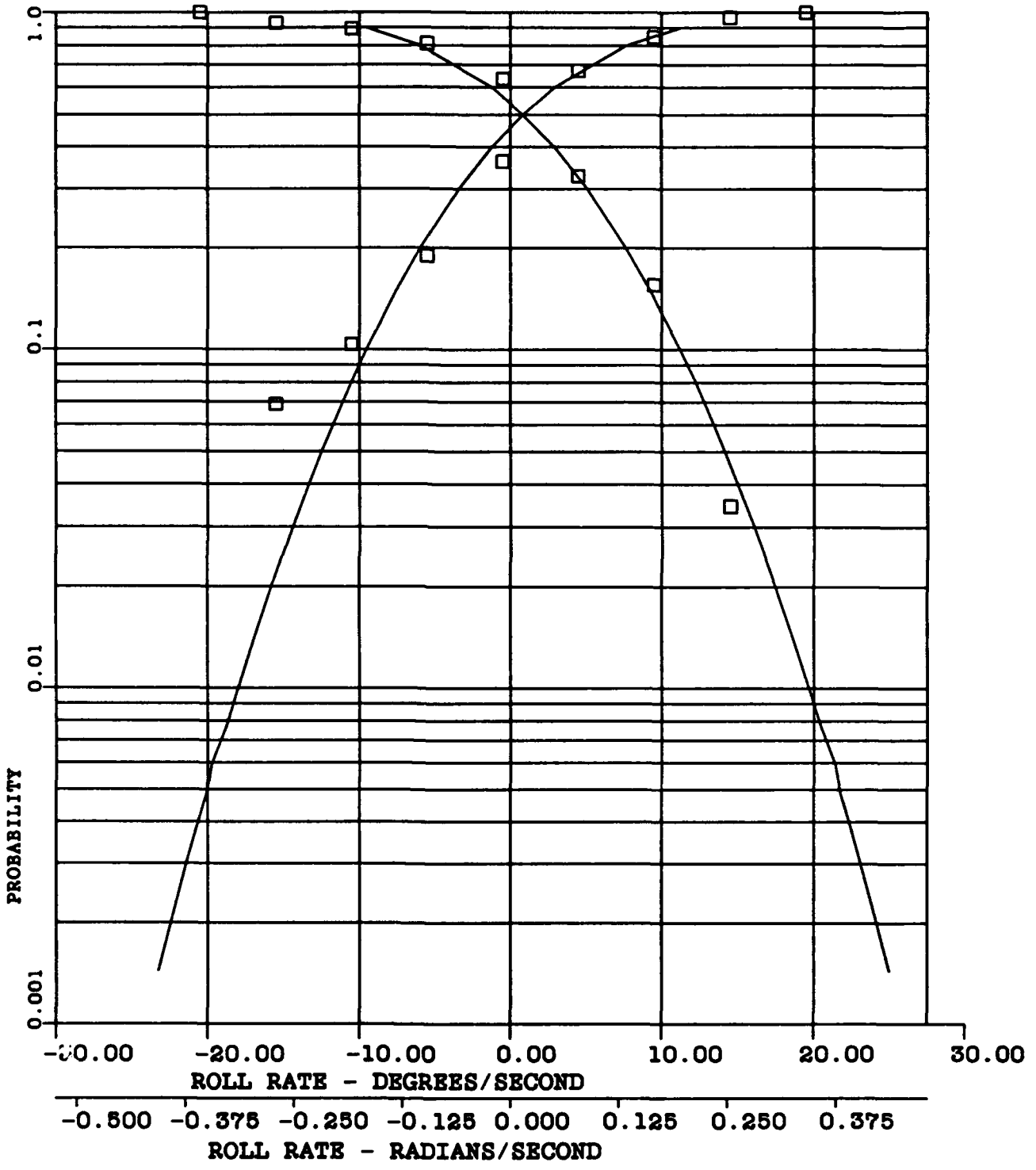


FIGURE I-35 PROBABILITY DISTRIBUTION OF ROLL RATE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL A-7 AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N=58 $\bar{X}$=0.44 DEG/SEC (0.008 RAD/SEC) A3=0.18
S= 3.00 DEG/SEC (0.052 RAD/SEC) A4=3.60

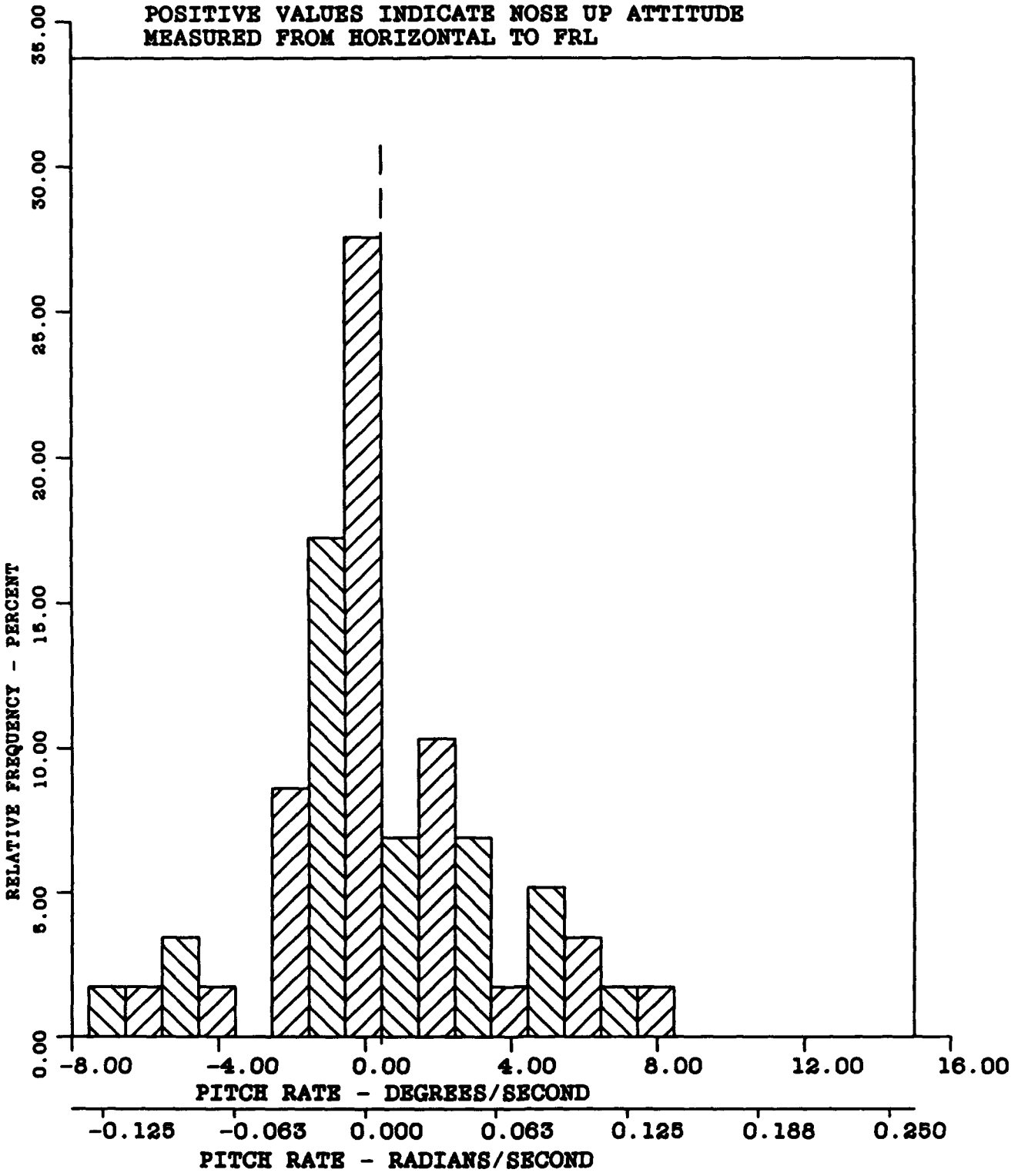


FIGURE I-36 FREQUENCY DISTRIBUTION OF PITCH RATE AT FIRST MAIN WHEEL TOUCHDOWN

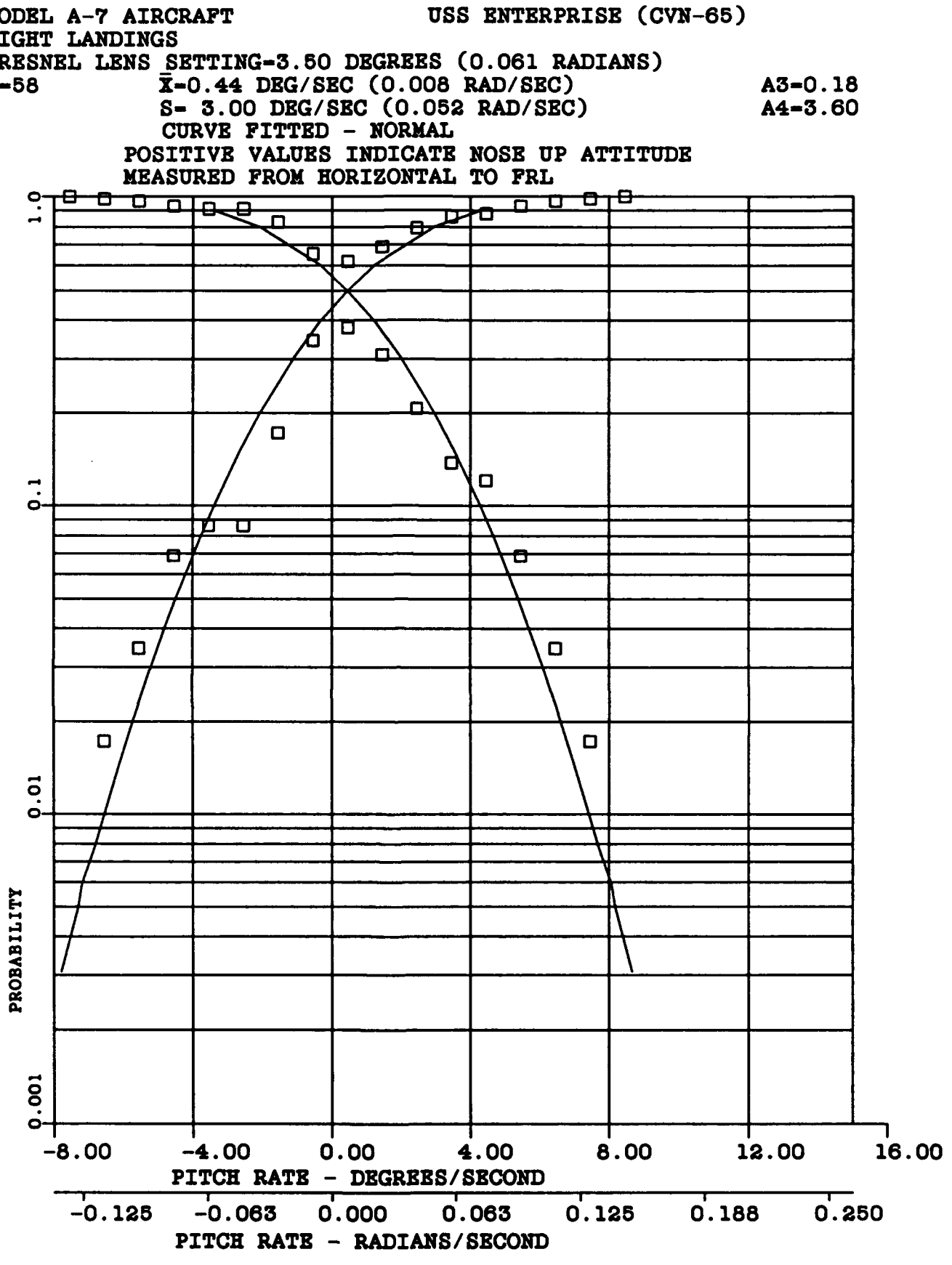


FIGURE I-37 PROBABILITY DISTRIBUTION OF PITCH RATE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL A-7 AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N=58 $\bar{X}$=-3.26 DEGREES (-0.057 RADIANS) A3=0.72
S= 2.22 DEGREES (0.039 RADIANS) A4=4.51

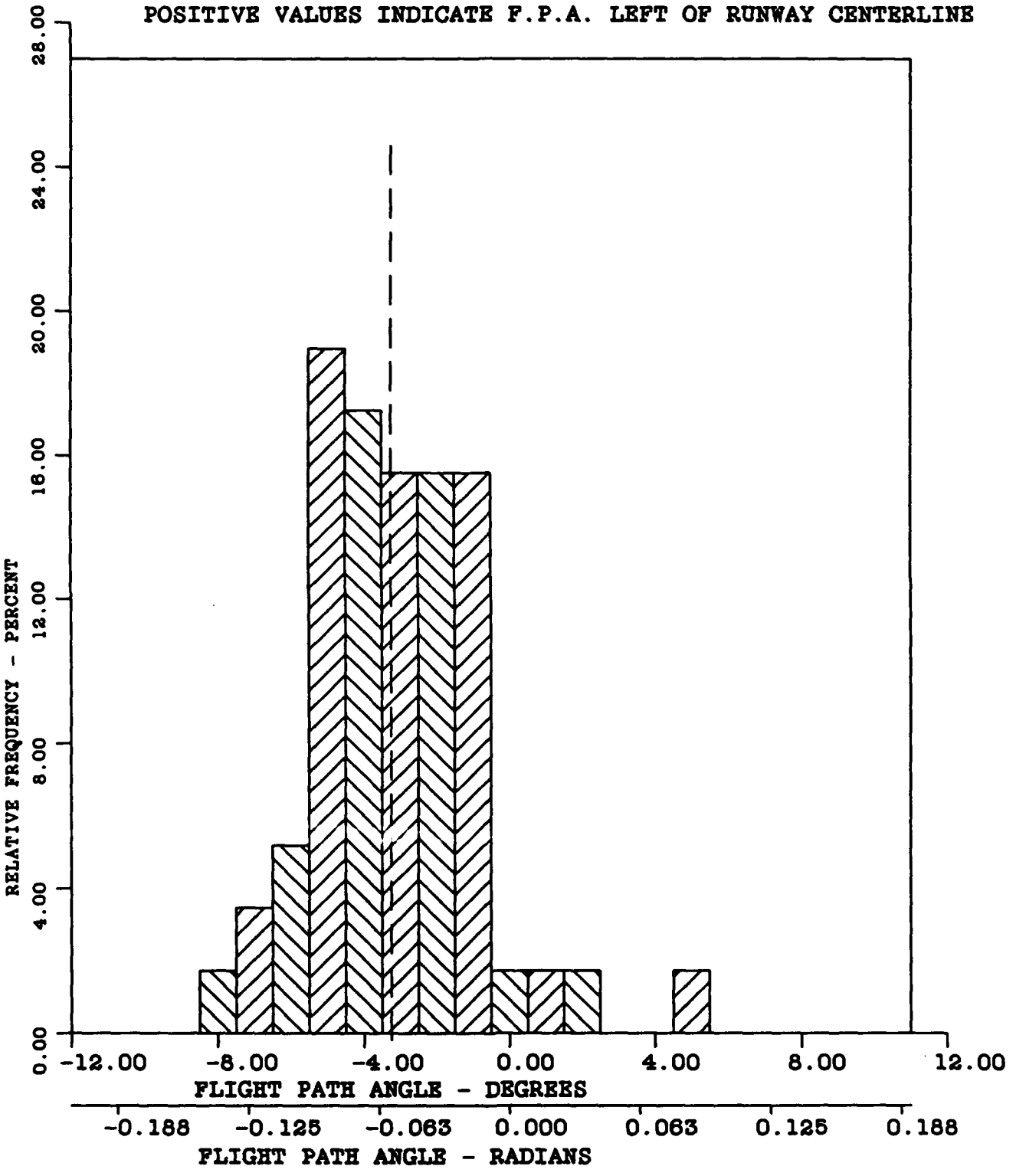


FIGURE I-38 FREQUENCY DISTRIBUTION OF AIRCRAFT FLIGHT PATH ANGLE AT TOUCHDOWN

MODEL A-7 AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-58 $\bar{X}$=-3.26 DEGREES (-0.057 RADIANS) A3=0.72
S= 2.22 DEGREES (0.039 RADIANS) A4=4.51
CURVE FITTED - PEARSON TYPE III
POSITIVE VALUES INDICATE F.P.A. LEFT OF RUNWAY CENTERLINE

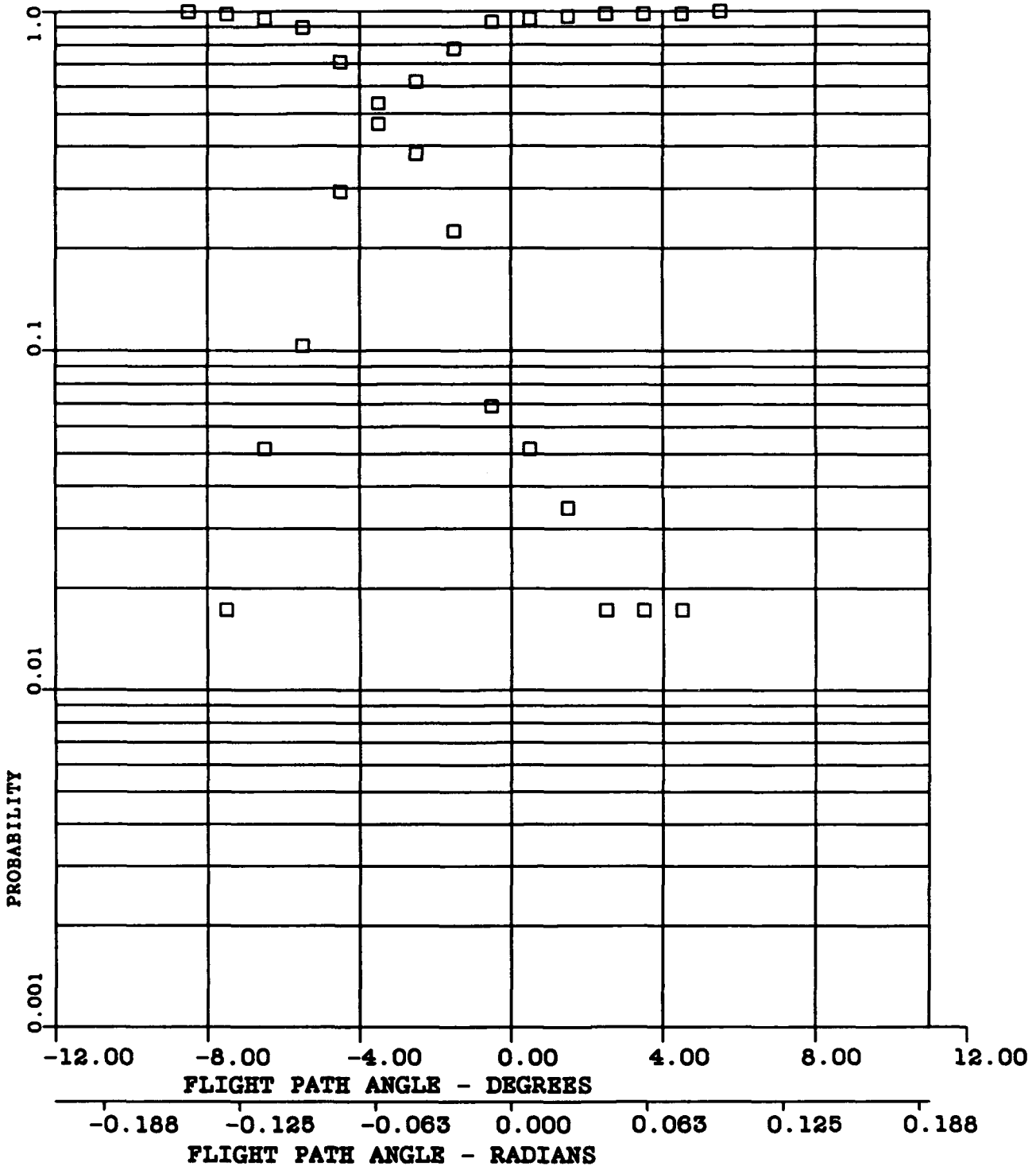


FIGURE I-39 PROBABILITY DISTRIBUTION OF AIRCRAFT FLIGHT PATH ANGLE AT TOUCHDOWN

MODEL A-7 AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (0.061 RADIANS)
N=58 $\bar{X}$=5.54 DEGREES (0.097 RADIANS) A3=-0.37
S= 2.68 DEGREES (0.047 RADIANS) A4=2.58

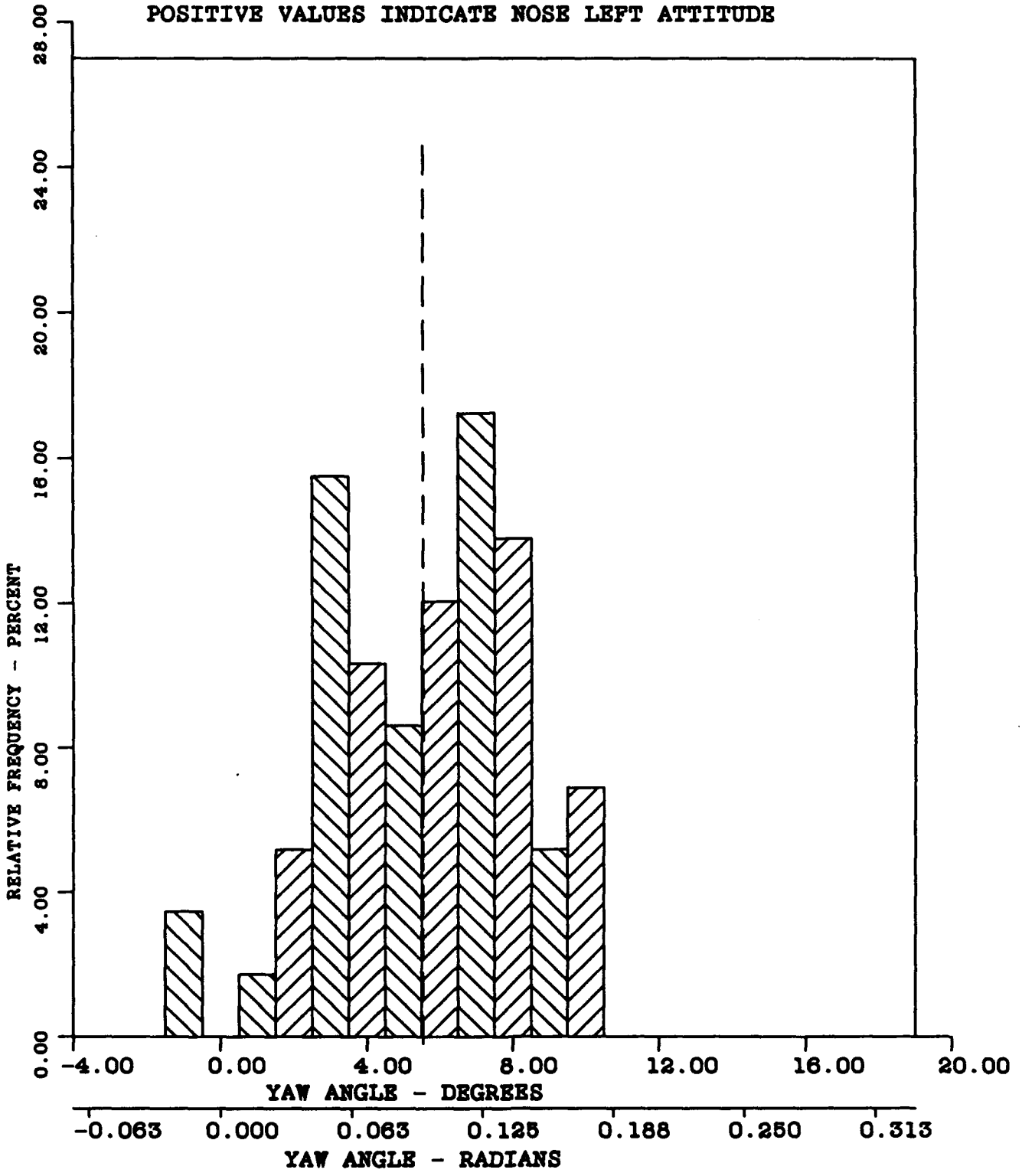


FIGURE I-40 FREQUENCY DISTRIBUTION OF AIRCRAFT YAW ANGLE

MODEL A-7 AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N=58 $\bar{X}$-5.54 DEGREES (0.097 RADIANS) A3=-0.37
S= 2.68 DEGREES (0.047 RADIANS) A4=2.58
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE NOSE LEFT ATTITUDE

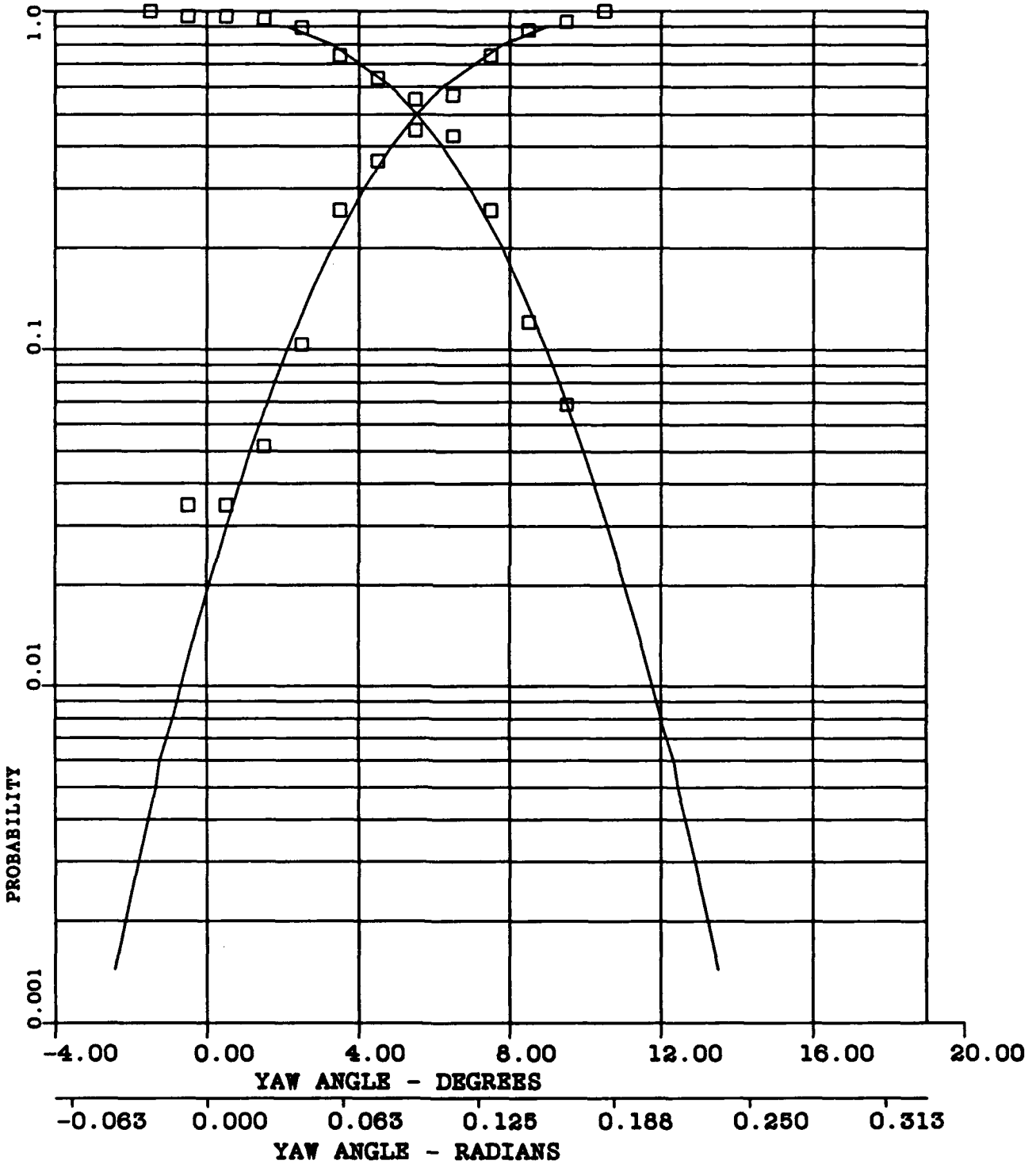


FIGURE I-41 PROBABILITY DISTRIBUTION OF AIRCRAFT YAW ANGLE

APPENDIX J

EA-6B AIRCRAFT

DAY CARRIER LANDINGS

USS ENTERPRISE
CVN-65

Appendix J:

Frequency and Probability Distributions,
EA-6B Aircraft, Day Landings

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MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-56 $\bar{X}$-26.89 KNOTS (13.83 METRES/SEC) A3-0.02
S-3.66 KNOTS (1.88 METRES/SEC) A4-1.62

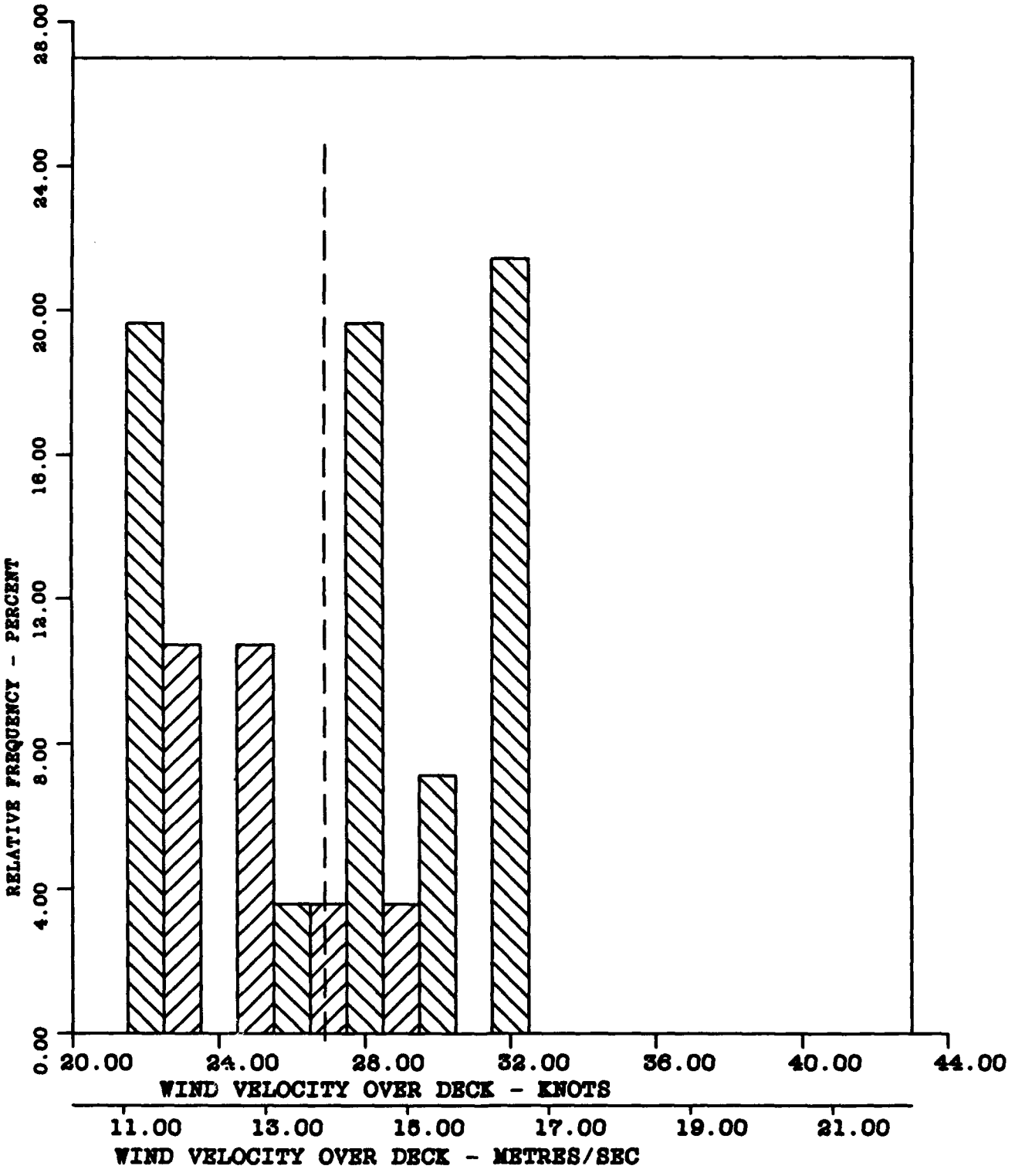


FIGURE J-1 FREQUENCY DISTRIBUTION OF WIND VELOCITY OVER THE DECK

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-56 $\bar{X}$-26.89 KNOTS (13.83 METRES/SEC) A3-0.02
S-3.66 KNOTS (1.88 METRES/SEC) A4-1.62
CURVE FITTED - NORMAL

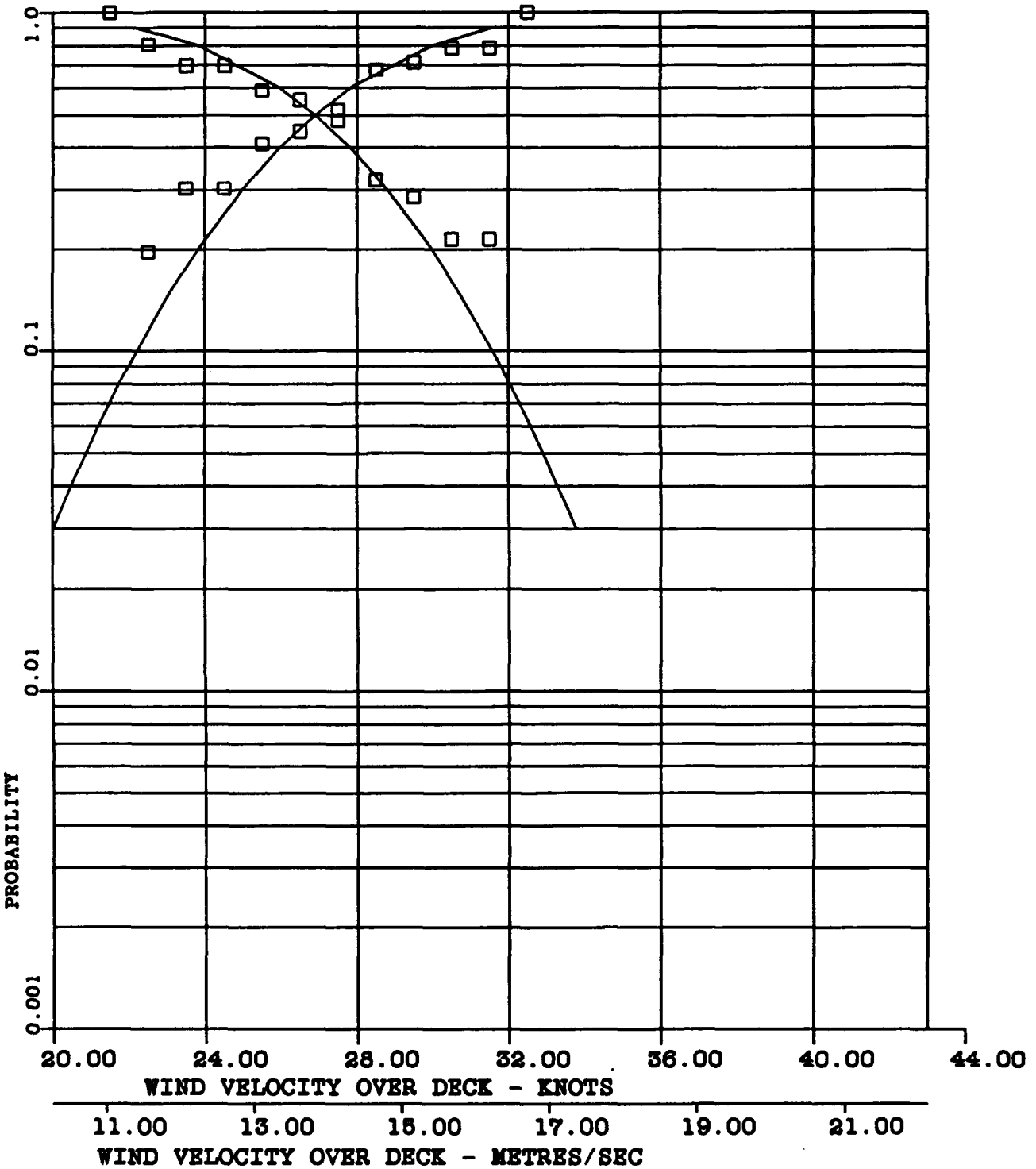


FIGURE J-2 PROBABILITY DISTRIBUTION OF WIND VELOCITY OVER THE DECK

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-56 $\bar{X}$-134.04 KNOTS (68.95 METRES/SEC) A3-0.16
S-6.08 KNOTS (3.13 METRES/SEC) A4-2.55

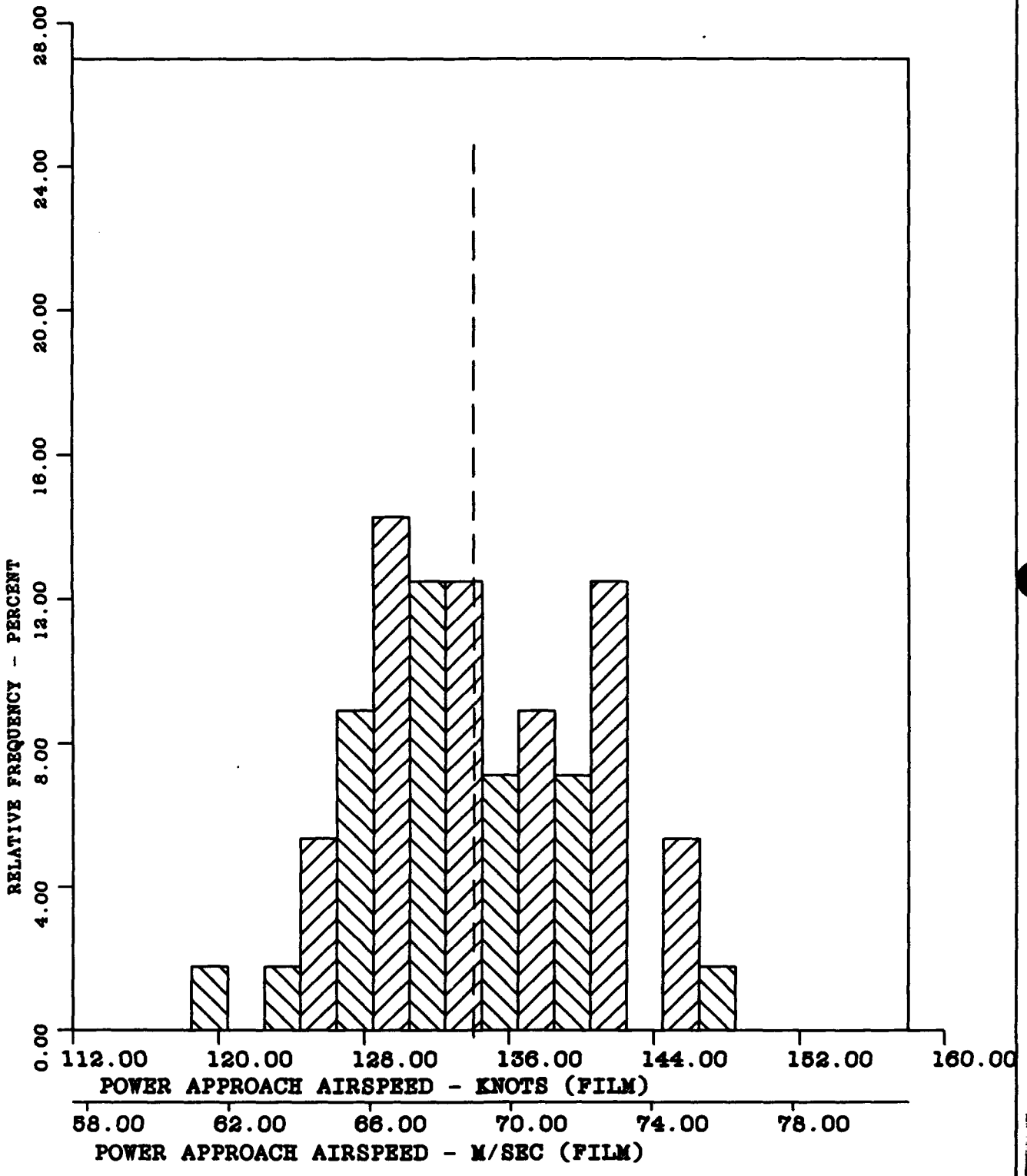


FIGURE J-3 FREQUENCY DISTRIBUTION OF FILM MEASURED POWER APPROACH AIRSPEED AT THE RAMP

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-56 $\bar{X}$-134.04 KNOTS (68.95 METRES/SEC) A3-0.16
S-6.08 KNOTS (3.13 METRES/SEC) A4-2.55
CURVE FITTED - NORMAL

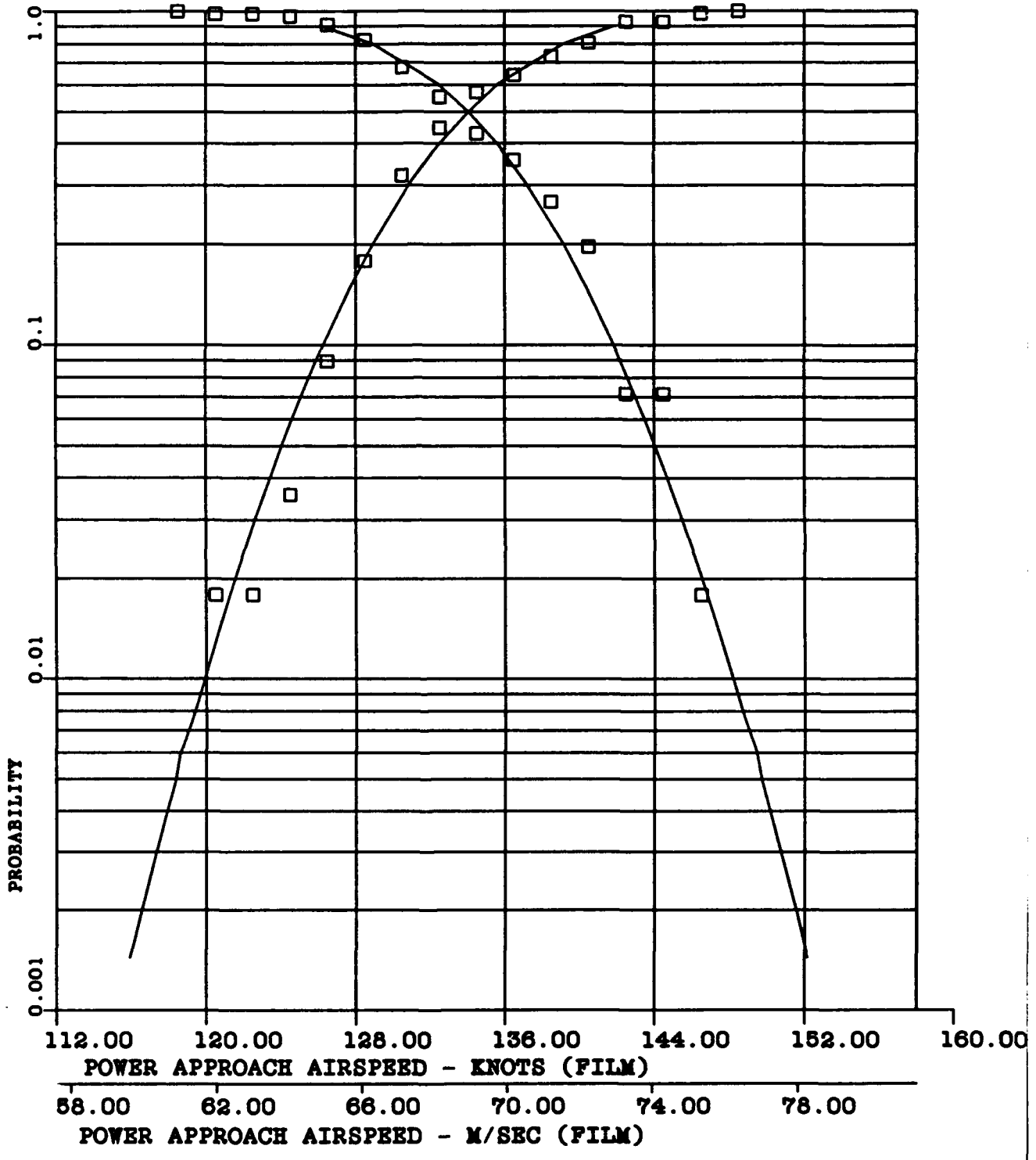


FIGURE J-4 PROBABILITY DISTRIBUTION OF POWER APPROACH AIRSPEED AT THE RAMP (FILM)

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-56 $\bar{X}$-15.76 FEET (4.80 METRES) A3-0.71
S-2.27 FEET (0.69 METRES) A4-3.46

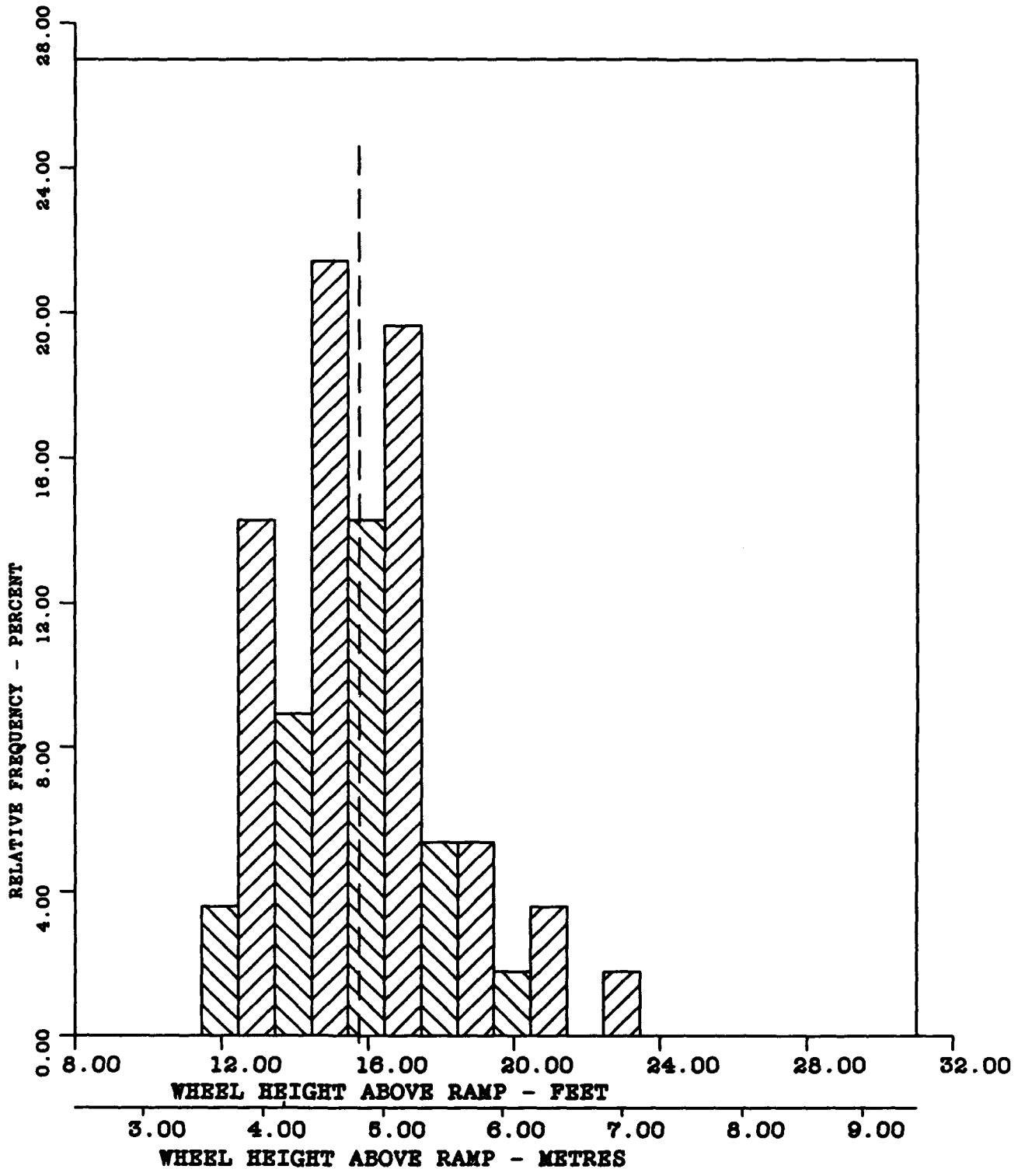


FIGURE J-5 FREQUENCY DISTRIBUTION OF AIRCRAFT WHEEL HEIGHT ABOVE CARRIER RAMP

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-56 $\bar{X}$-16.76 FEET (4.80 METRES) A3-0.71
S-2.27 FEET (0.69 METRES) A4-3.46
CURVE FITTED - PEARSON TYPE III

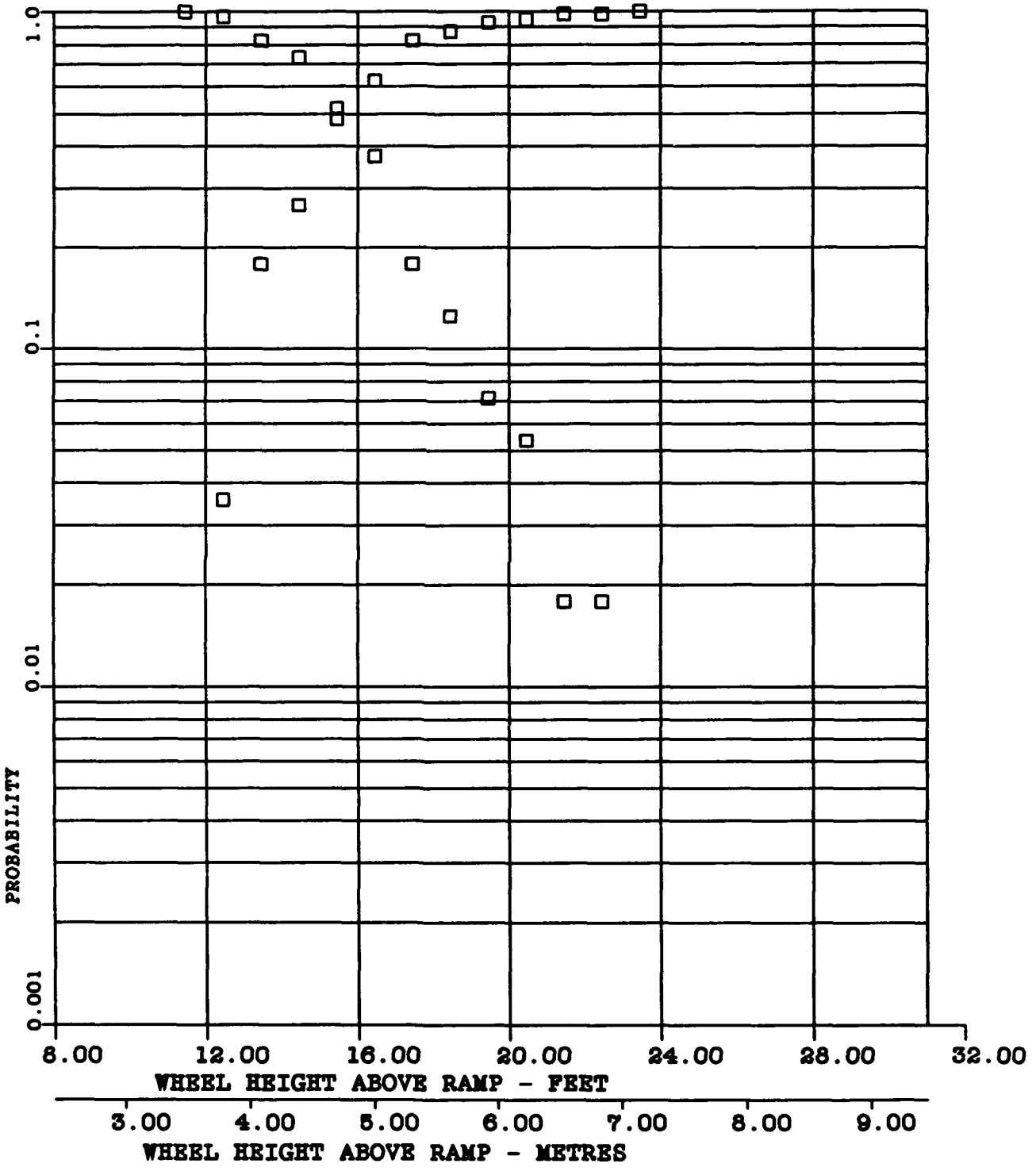


FIGURE J-6 PROBABILITY DISTRIBUTION OF AIRCRAFT WHEEL HEIGHT ABOVE CARRIER RAMP

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-56 $\bar{X}$-6.56 FEET/SEC (2.00 METRES/SEC) A3=-0.23
S-3.42 FEET/SEC (1.04 METRES/SEC) A4-1.79

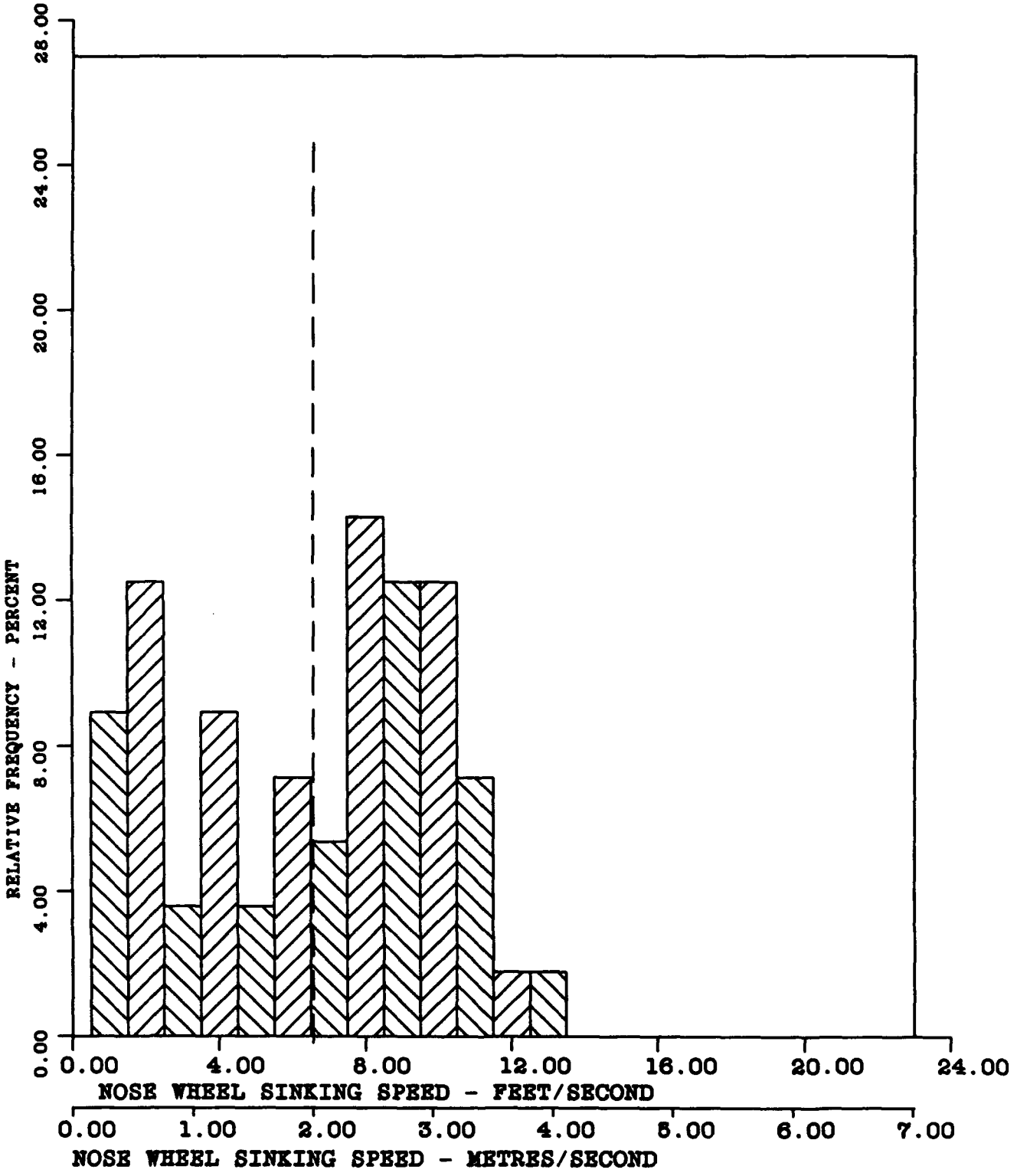


FIGURE J-7 FREQUENCY DISTRIBUTION OF NOSE WHEEL SINKING SPEED

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-56 $\bar{X}$-6.56 FEET/SEC (2.00 METRES/SEC) A3=-0.23
S-3.42 FEET/SEC (1.04 METRES/SEC) A4-1.79
CURVE FITTED - NORMAL

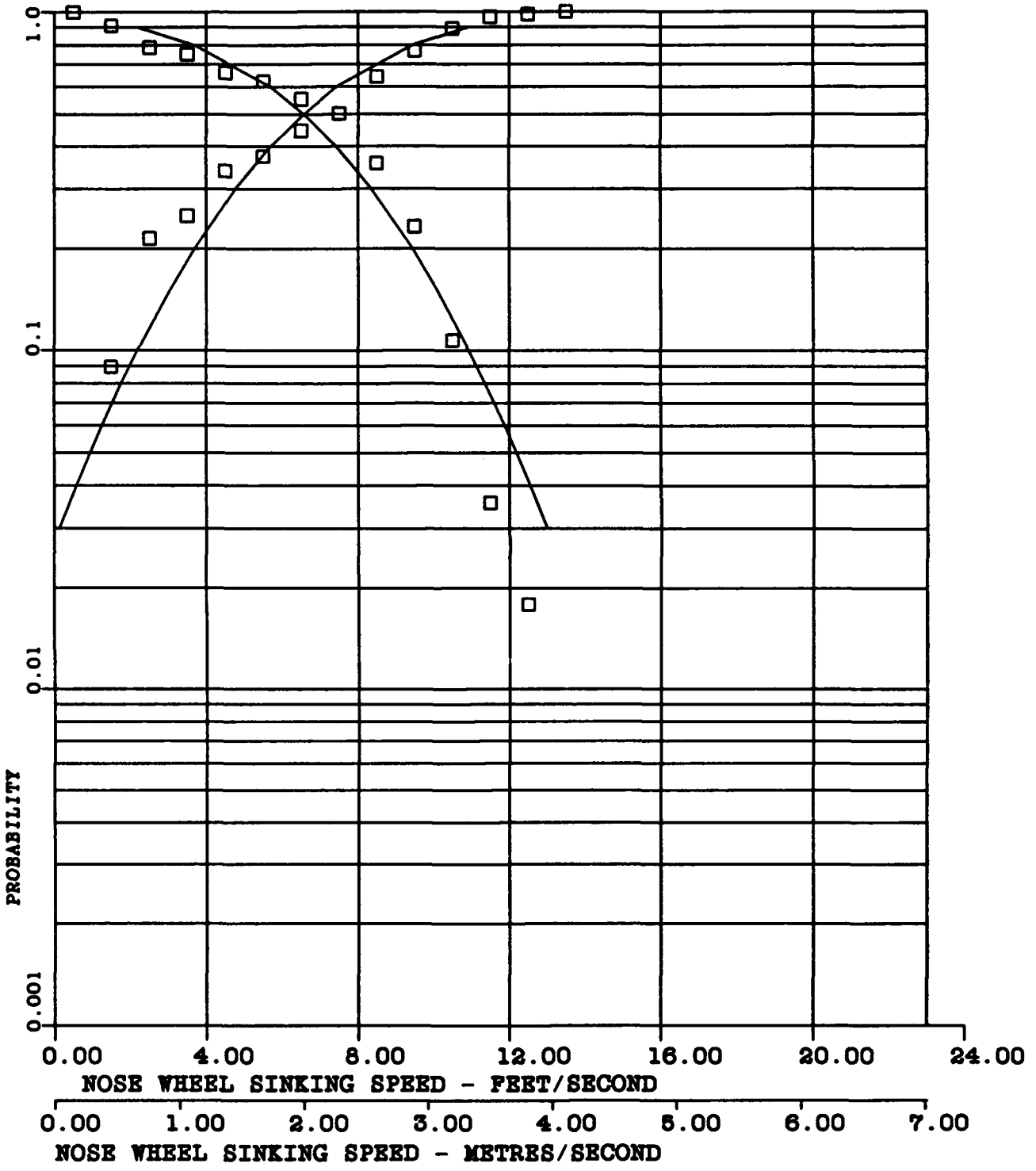


FIGURE J-8 PROBABILITY DISTRIBUTION OF NOSE WHEEL SINKING SPEED

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (0.061 RADIANS)
N=56 $\bar{X}$=10.60 FEET/SEC (3.23 METRES/SEC) A3=-0.17
S=1.86 FEET/SEC (0.57 METRES/SEC) A4=2.76

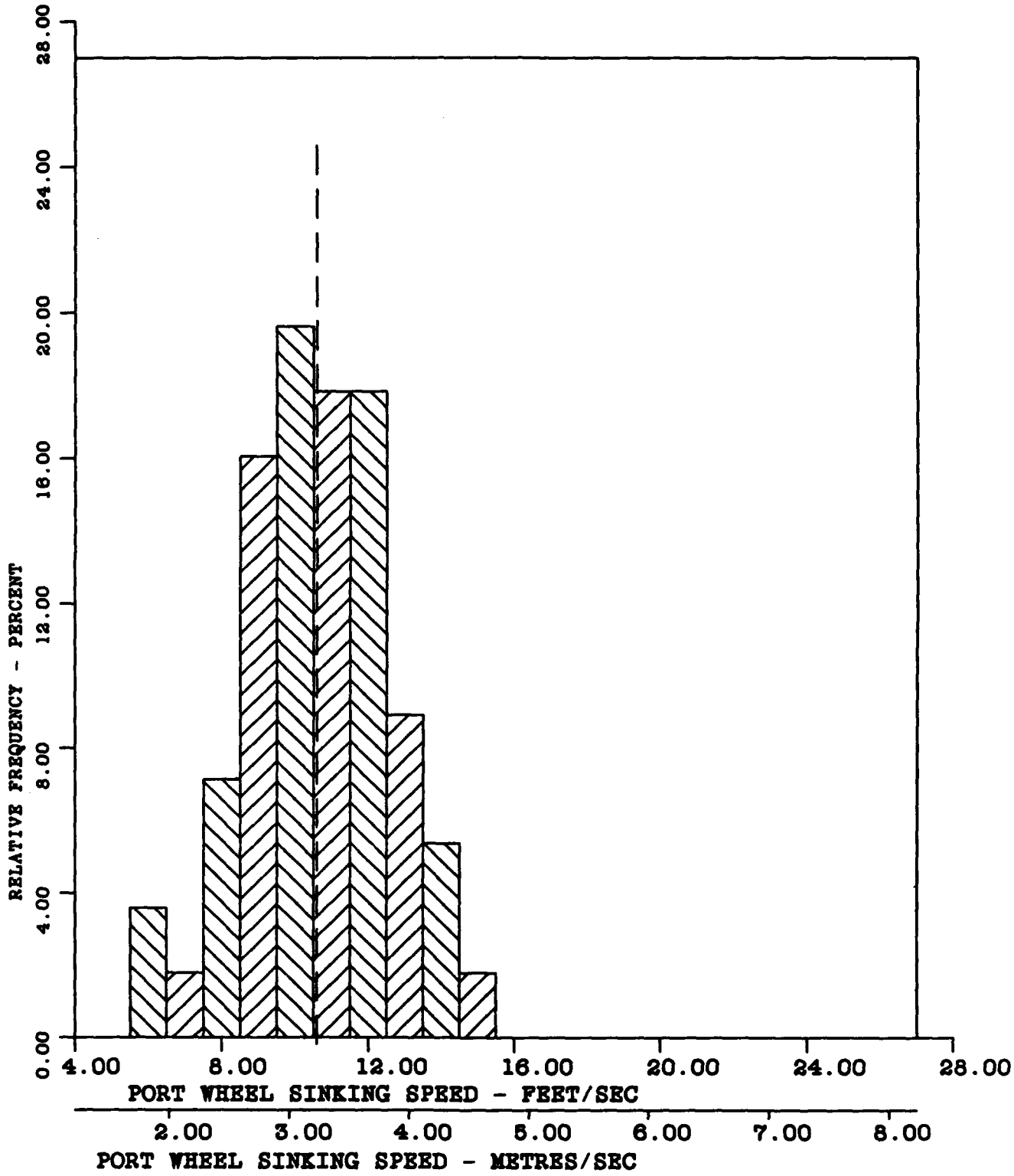


FIGURE J-9 FREQUENCY DISTRIBUTION OF PORT WHEEL SINKING SPEED AT PORT WHEEL TOUCHDOWN

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-56 $\bar{X}$-10.60 FEET/SEC (3.23 METRES/SEC) A3=-0.17
S-1.86 FEET/SEC (0.57 METRES/SEC) A4-2.76
CURVE FITTED - NORMAL

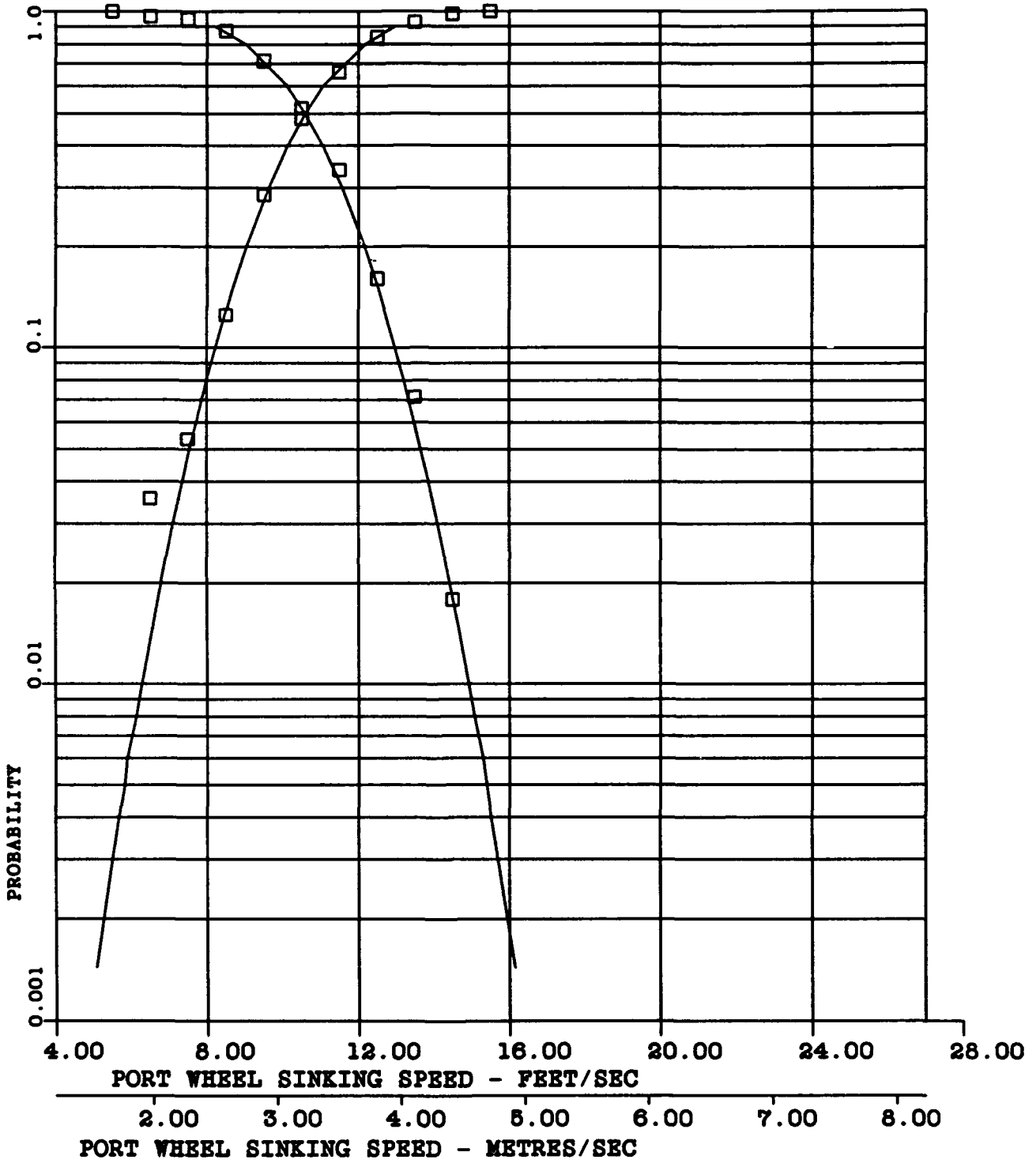


FIGURE J-10 PROBABILITY DISTRIBUTION OF PORT WHEEL SINKING SPEED

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-56 $\bar{X}$-10.26 FEET/SEC (3.13 METRES/SEC) A3-0.51
S-1.81 FEET/SEC (0.55 METRES/SEC) A4-3.39

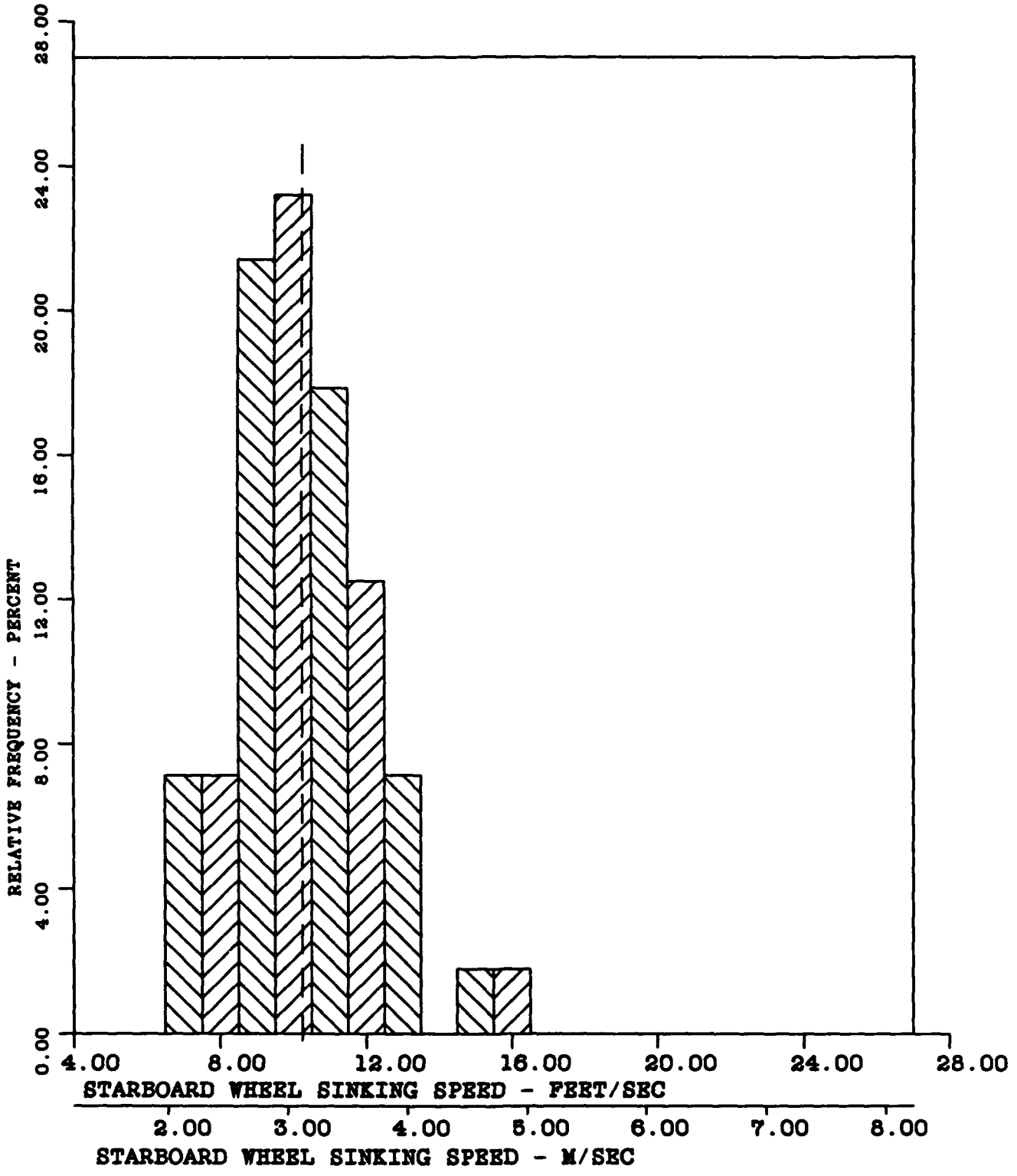


FIGURE J-11 FREQUENCY DISTRIBUTION OF STARBOARD WHEEL SINKING SPEED AT STARBOARD WHEEL TOUCHDOWN

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-56 $\bar{X}$-10.26 FEET/SEC (3.13 METRES/SEC) A3-0.51
S-1.81 FEET/SEC (0.55 METRES/SEC) A4-3.39
CURVE FITTED - NORMAL

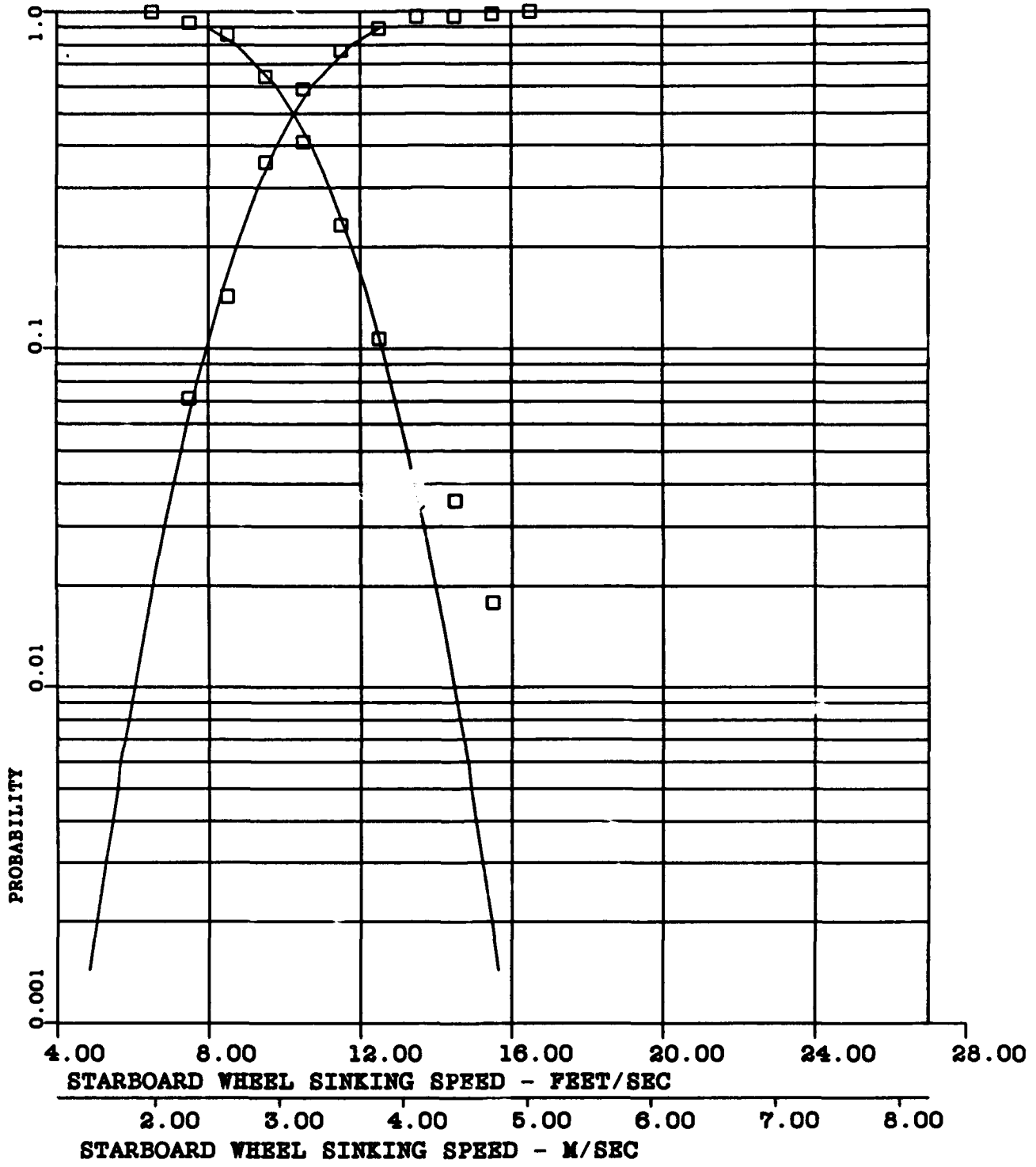


FIGURE J-12 PROBABILITY DISTRIBUTION OF STARBOARD WHEEL SINKING SPEED

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (0.061 RADIANS)
N=56 $\bar{X}$=10.43 FEET/SEC (3.18 METRES/SEC) A3=0.03
S=1.73 FEET/SEC (0.53 METRES/SEC) A4=2.77

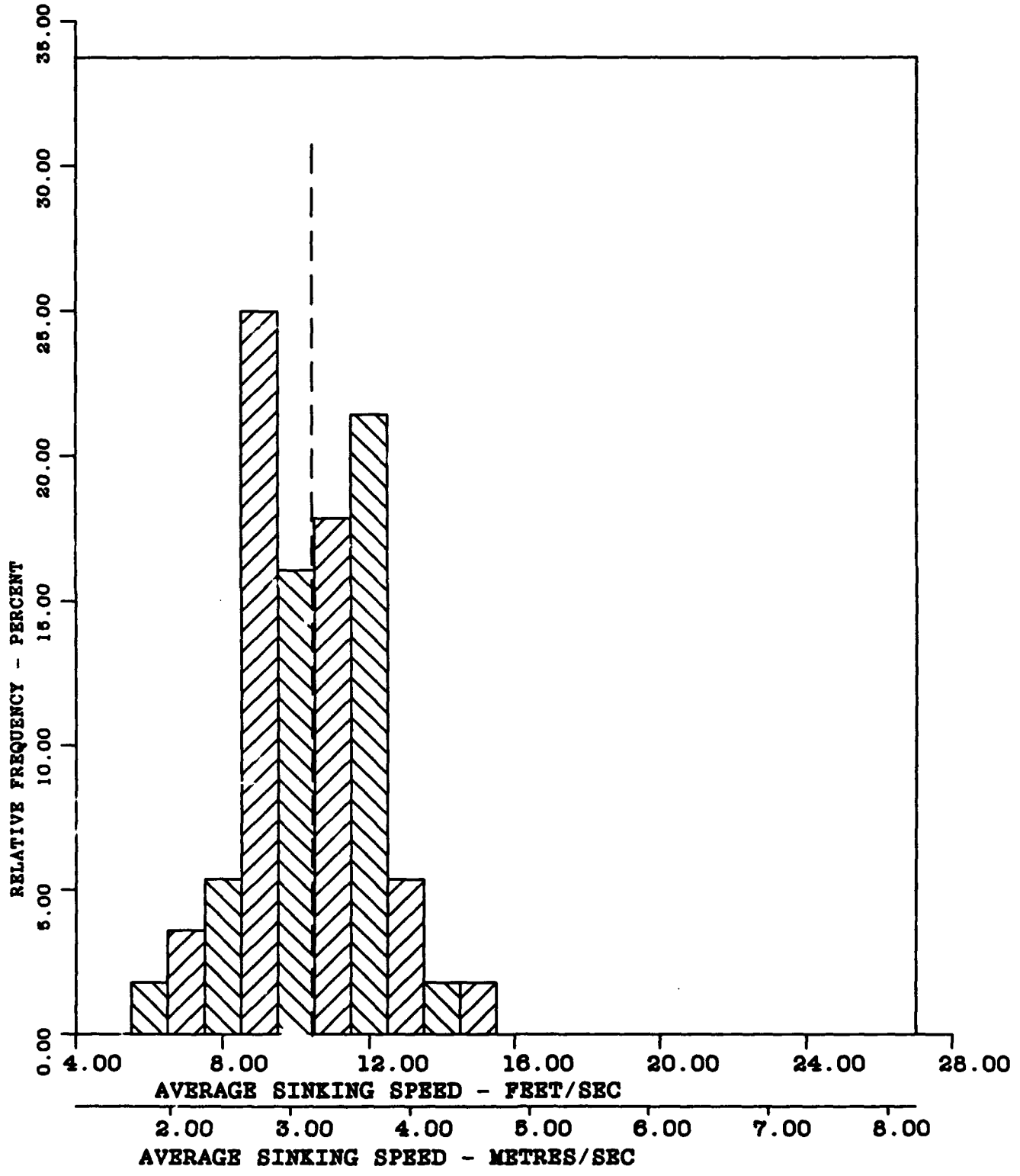


FIGURE J-13 FREQUENCY DISTRIBUTION OF AVG SINKING SPEED OF MAIN WHEEL AT FIRST MAIN WHEEL TOUCHDOWN

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-56 $\bar{X}$-10.43 FEET/SEC (3.18 METRES/SEC) A3-0.03
S-1.73 FEET/SEC (0.53 METRES/SEC) A4-2.77
CURVE FITTED - NORMAL

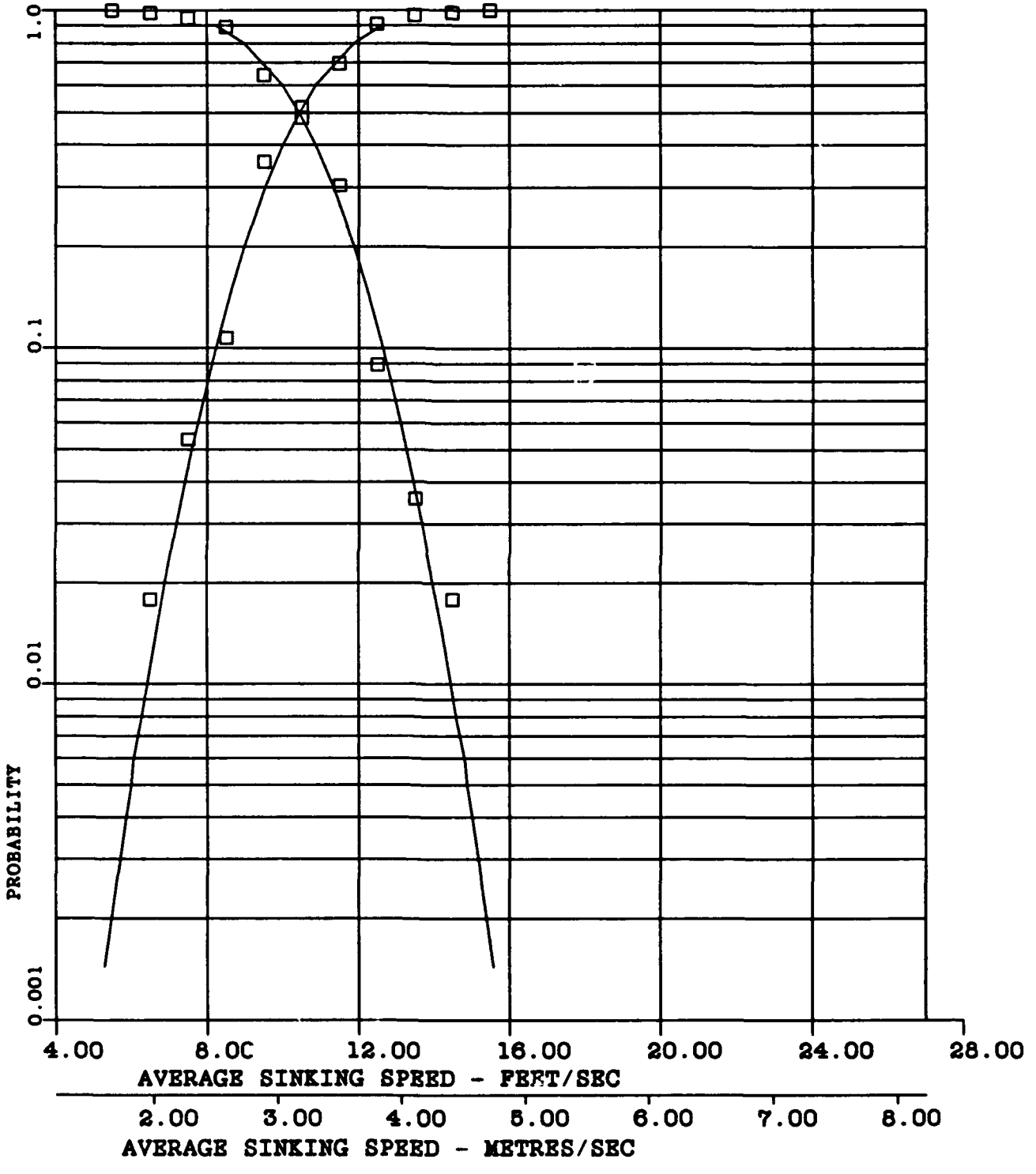


FIGURE J-14 PROBABILITY DISTRIBUTION OF AVERAGE SINKING SPEED AT FIRST MAIN WHEEL TOUCHDOWN

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-5 $\bar{X}$-8.20 FEET/SEC (2.50 METRES/SEC) A3=0.22
S-1.63 FEET/SEC (0.50 METRES/SEC) A4=1.38

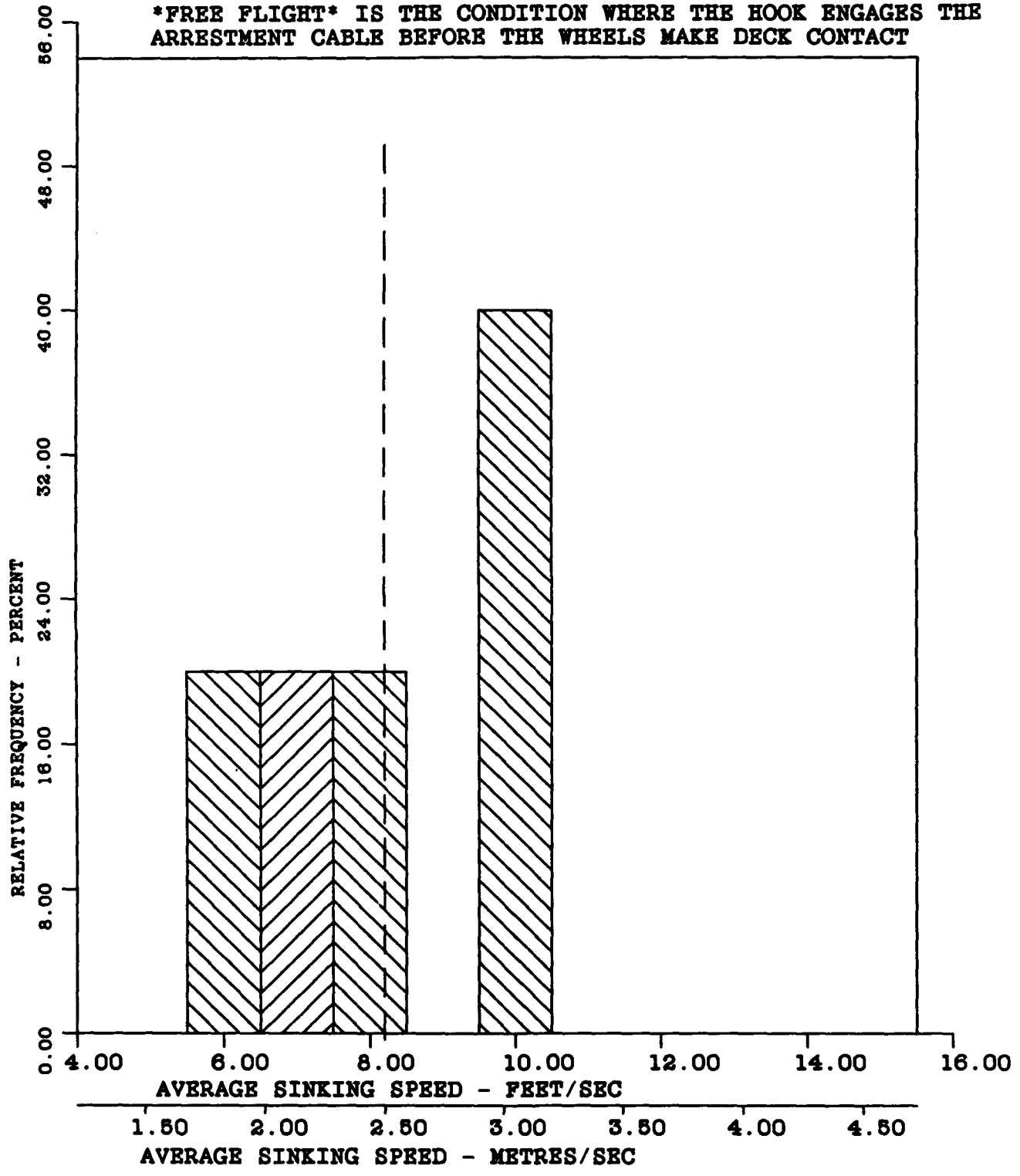


FIGURE J-15 FREQUENCY DISTRIBUTION OF AVERAGE SINKING SPEED OF MAIN WHEELS AT FREE FLIGHT

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (0.061 RADIANS)
N=5 $\bar{X}$=8.20 FEET/SEC (2.50 METRES/SEC) A3=0.22
S=1.63 FEET/SEC (0.50 METRES/SEC) A4=1.38
CURVE FITTED - NORMAL
FREE FLIGHT IS THE CONDITION WHERE THE HOOK ENGAGES THE ARRESTMENT CABLE BEFORE THE WHEELS MAKE DECK CONTACT

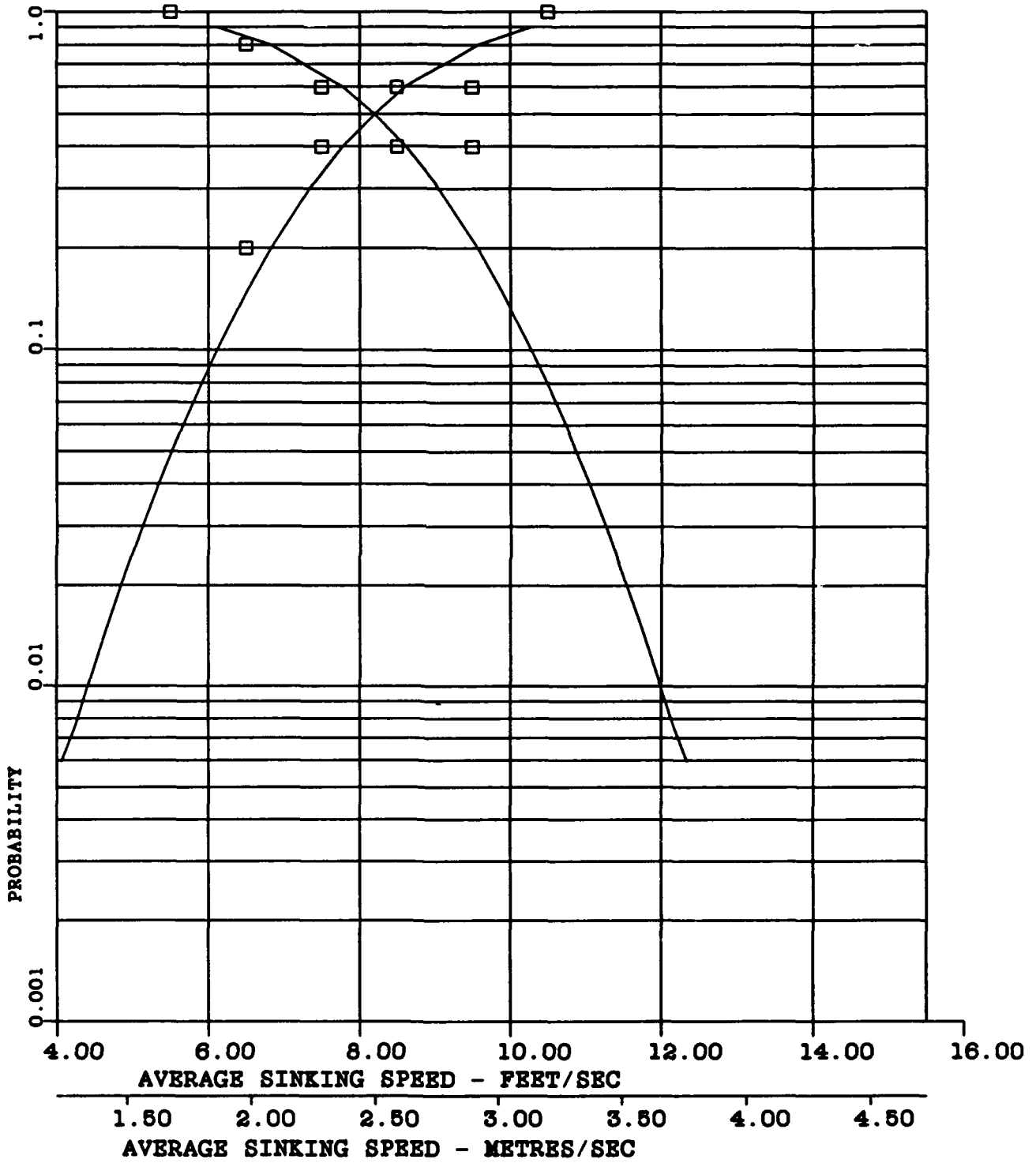


FIGURE J-16 PROBABILITY DISTRIBUTION OF AVERAGE SINKING SPEED AT FREE FLIGHT

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N=56 $\bar{X}$=1.03 A3=0.19
S=0.09 A4=2.18

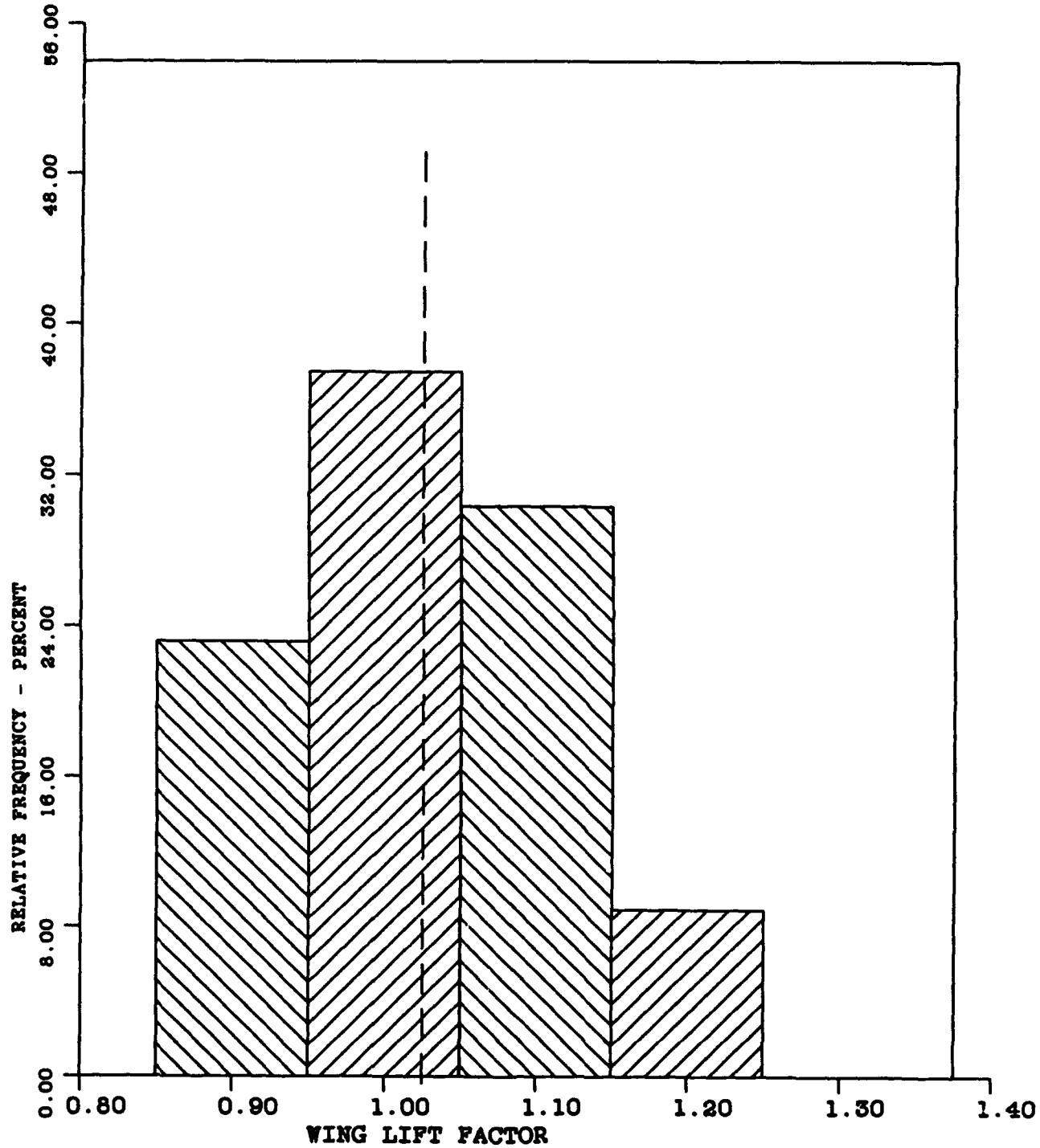


FIGURE J-17 FREQUENCY DISTRIBUTION OF WING LIFT FACTOR AT FIRST MAIN WHEEL TOUCHDOWN

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (0.061 RADIANS)
N=56 $\bar{X}$=1.03 A3=0.19
S=0.09 A4=2.18
CURVE FITTED - NORMAL

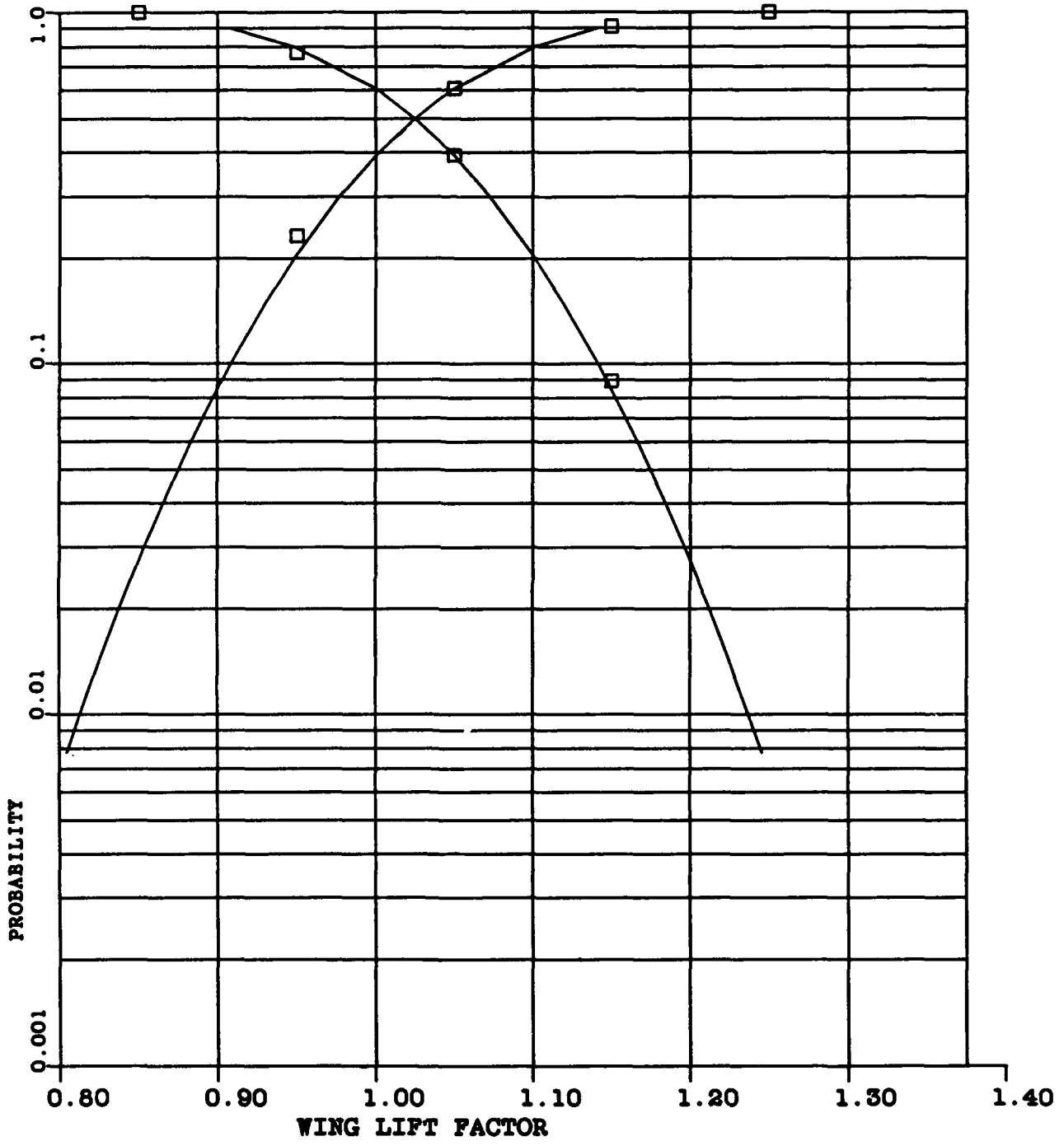


FIGURE J-18 PROBABILITY DISTRIBUTION OF WING LIFT FACTOR AT FIRST MAIN WHEEL TOUCHDOWN

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-5 $\bar{X}$-1.08 A3-0.34
S-0.07 A4-1.85

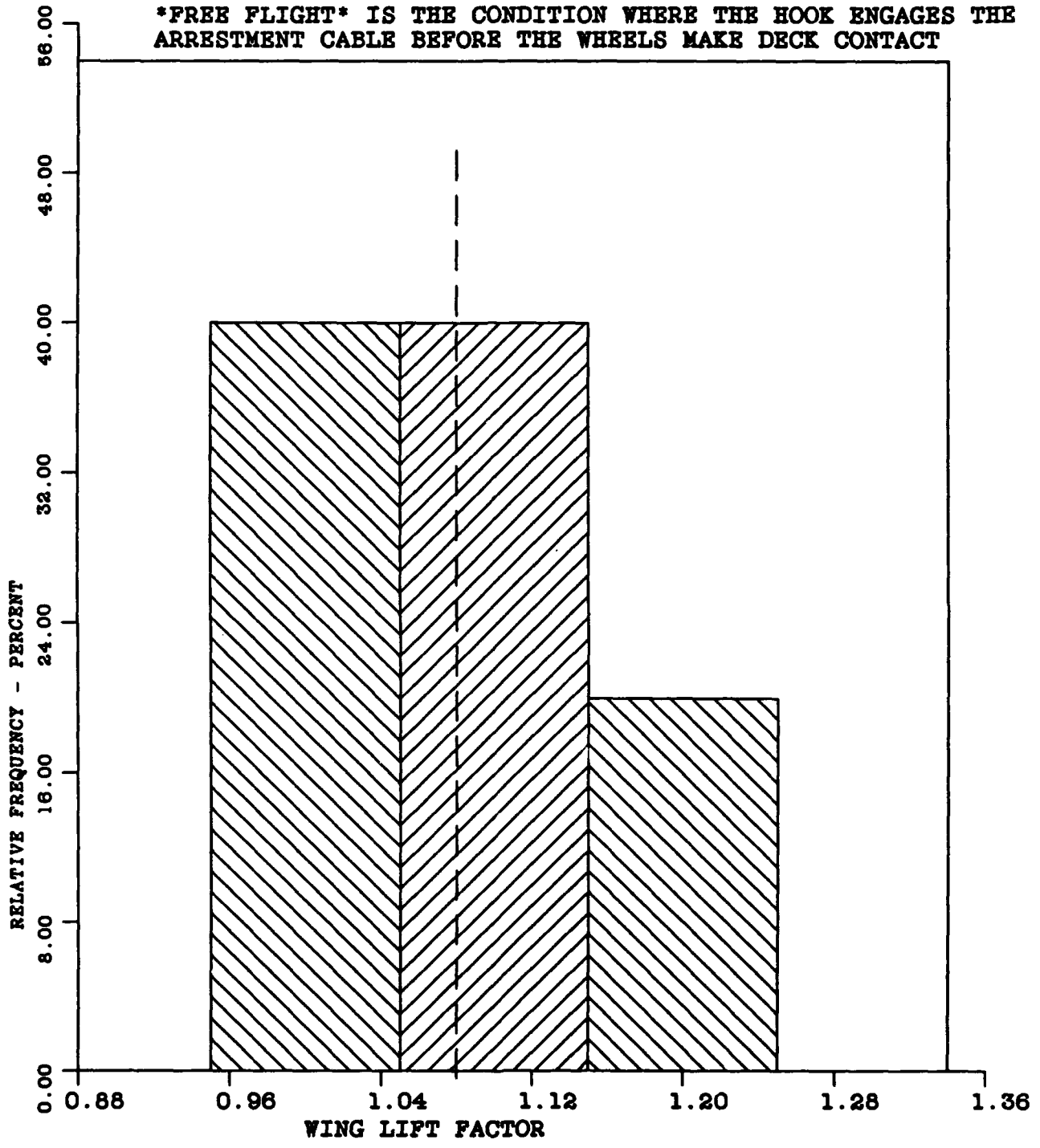


FIGURE J-19 FREQUENCY DISTRIBUTION OF WING LIFT FACTOR AT FREE FLIGHT

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-5 $\bar{X}$-1.08 A3-0.34
S-0.07 A4-1.85
CURVE FITTED - NORMAL
FREE FLIGHT IS THE CONDITION WHERE THE HOOK ENGAGES THE ARRESTMENT CABLE BEFORE THE WHEELS MAKE DECK CONTACT

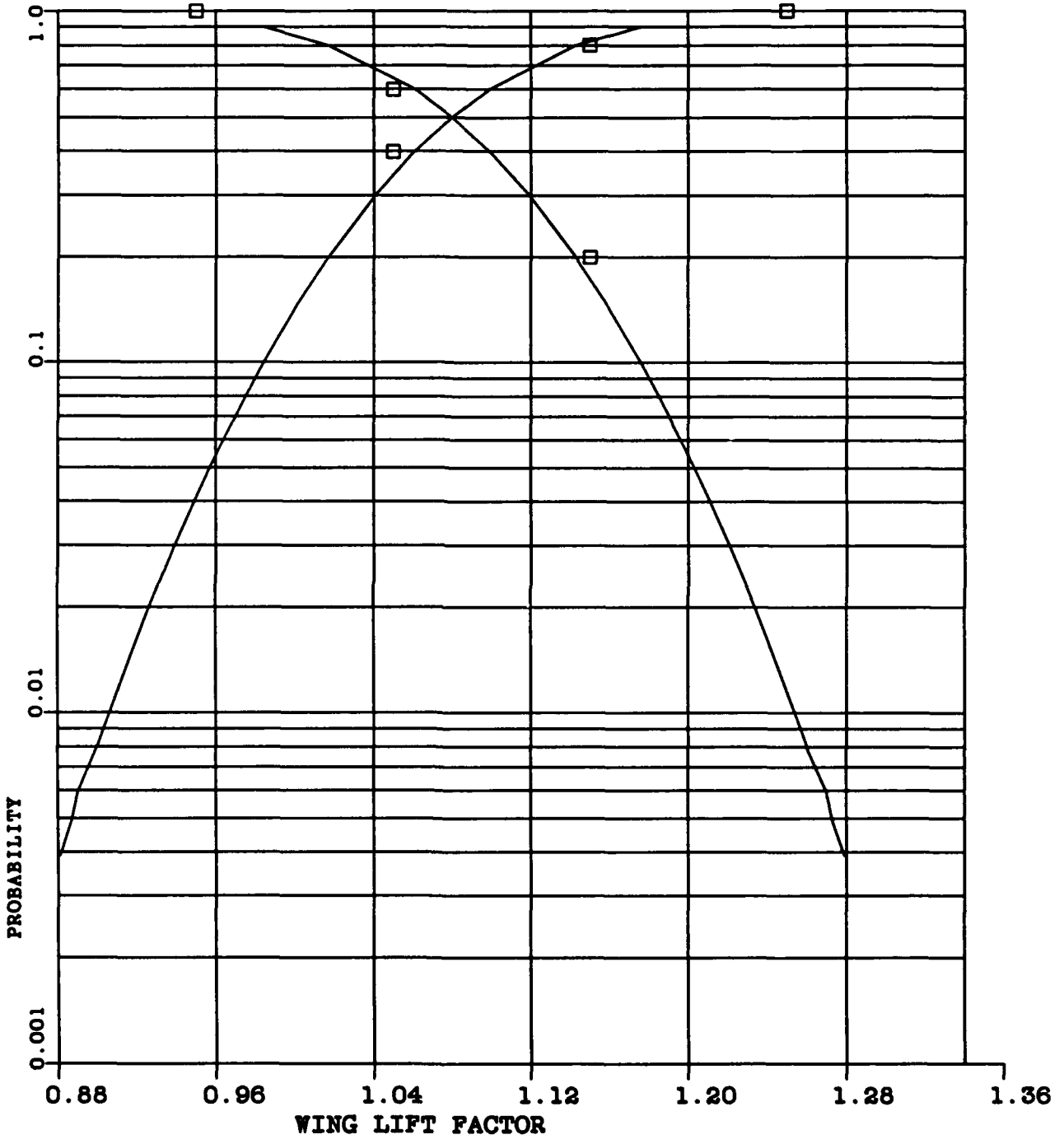


FIGURE J-20 PROBABILITY DISTRIBUTION OF WING LIFT FACTOR AT FREE FLIGHT

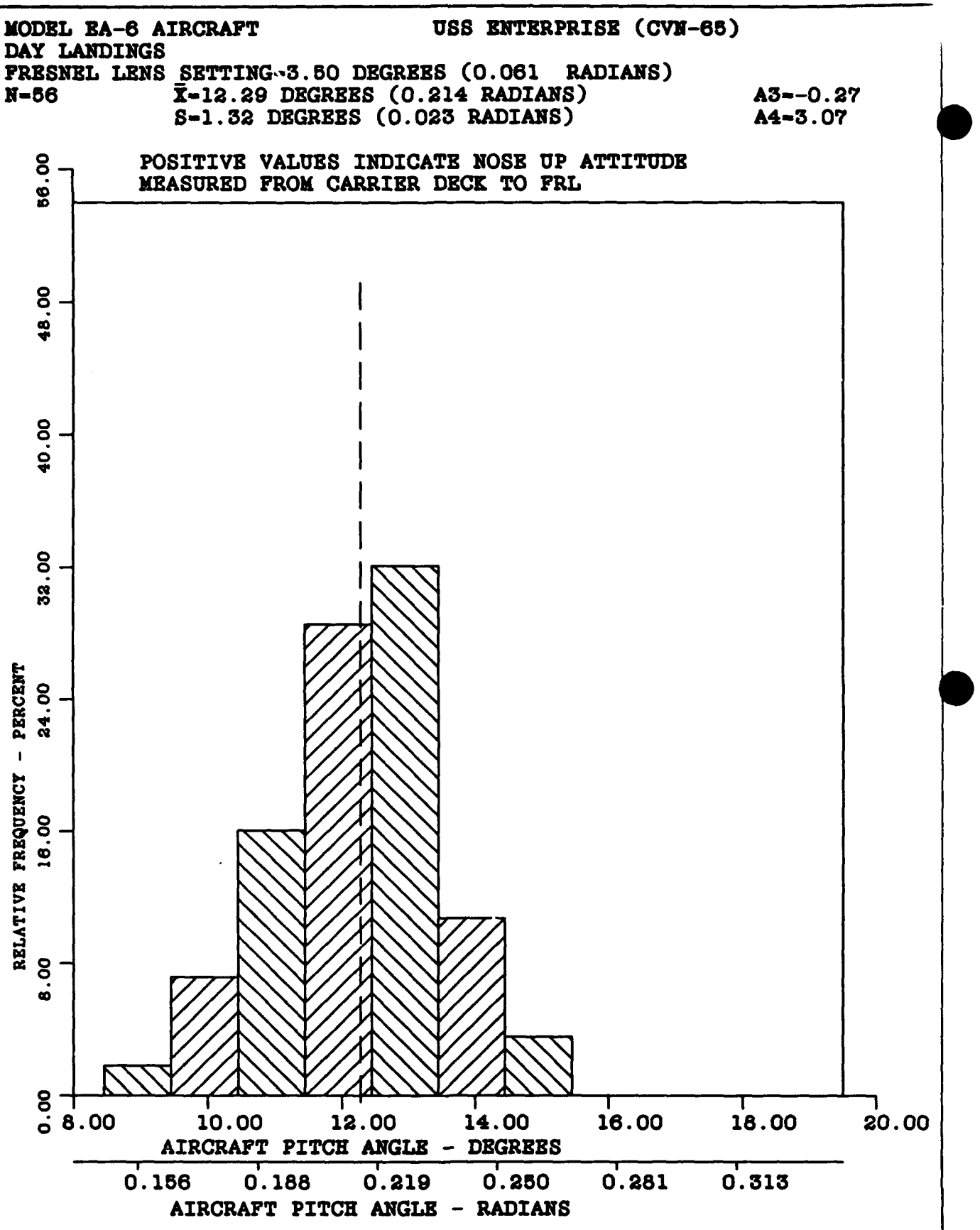


FIGURE J-21 FREQUENCY DISTRIBUTION OF AIRCRAFT PITCH ANGLE AT THE RAMP

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-56 $\bar{X}$-12.29 DEGREES (0.214 RADIANS) A3=-0.27
S-1.32 DEGREES (0.023 RADIANS) A4-3.07
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE NOSE UP ATTITUDE
MEASURED FROM CARRIER DECK TO FRL

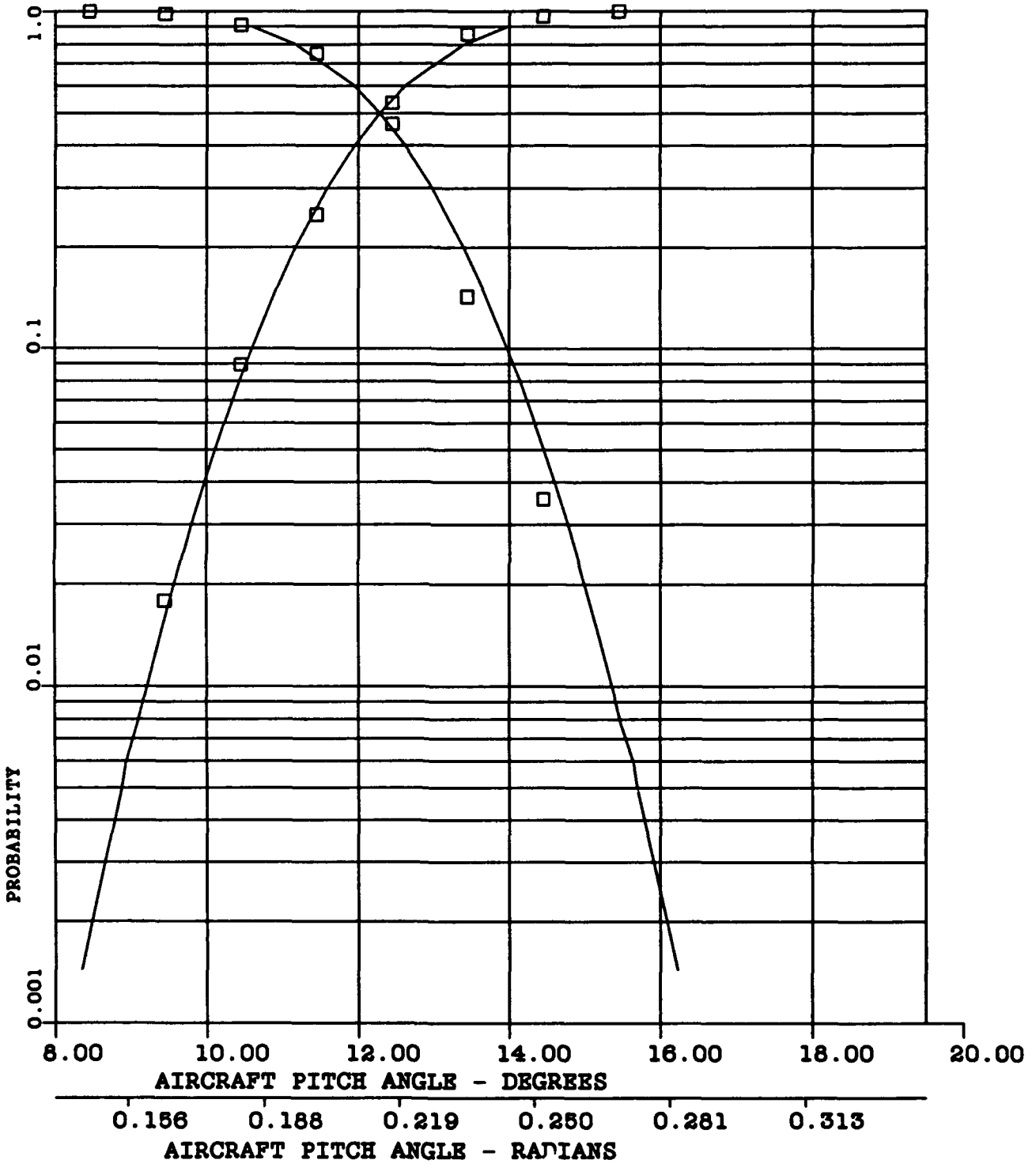


FIGURE J-22 PROBABILITY DISTRIBUTION OF AIRCRAFT PITCH ANGLE AT THE RAMP

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (0.061 RADIANS)
N=56 $\bar{X}$=10.82 DEGREES (0.189 RADIANS) A3=0.07
S=1.41 DEGREES (0.025 RADIANS) A4=2.46

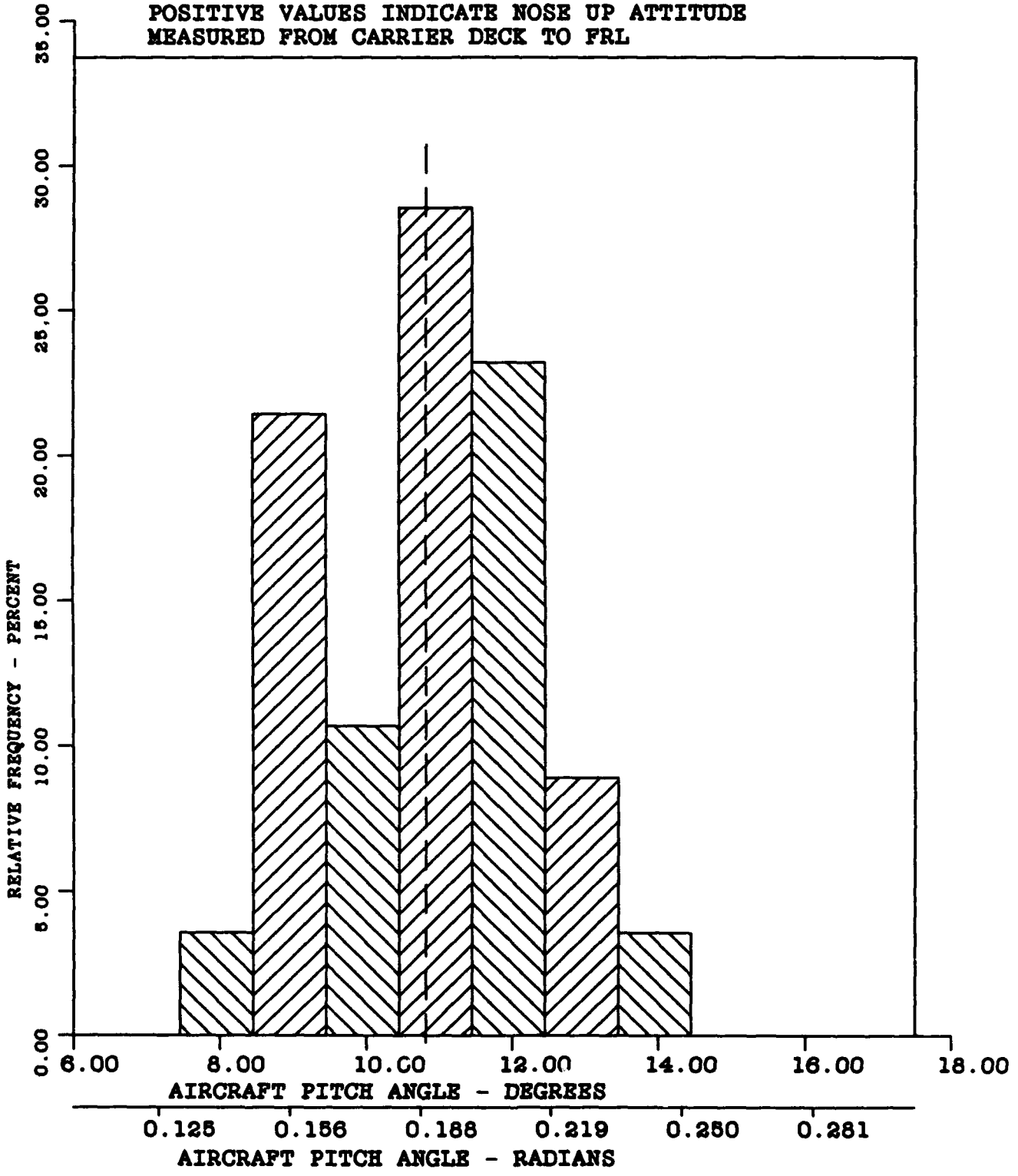


FIGURE J-23 FREQUENCY DISTRIBUTION OF AIRCRAFT PITCH ANGLE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-56 $\bar{X}$-10.82 DEGREES (0.189 RADIANS) A3-0.07
S-1.41 DEGREES (0.025 RADIANS) A4-2.46
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE NOSE UP ATTITUDE
MEASURED FROM CARRIER DECK TO FRL

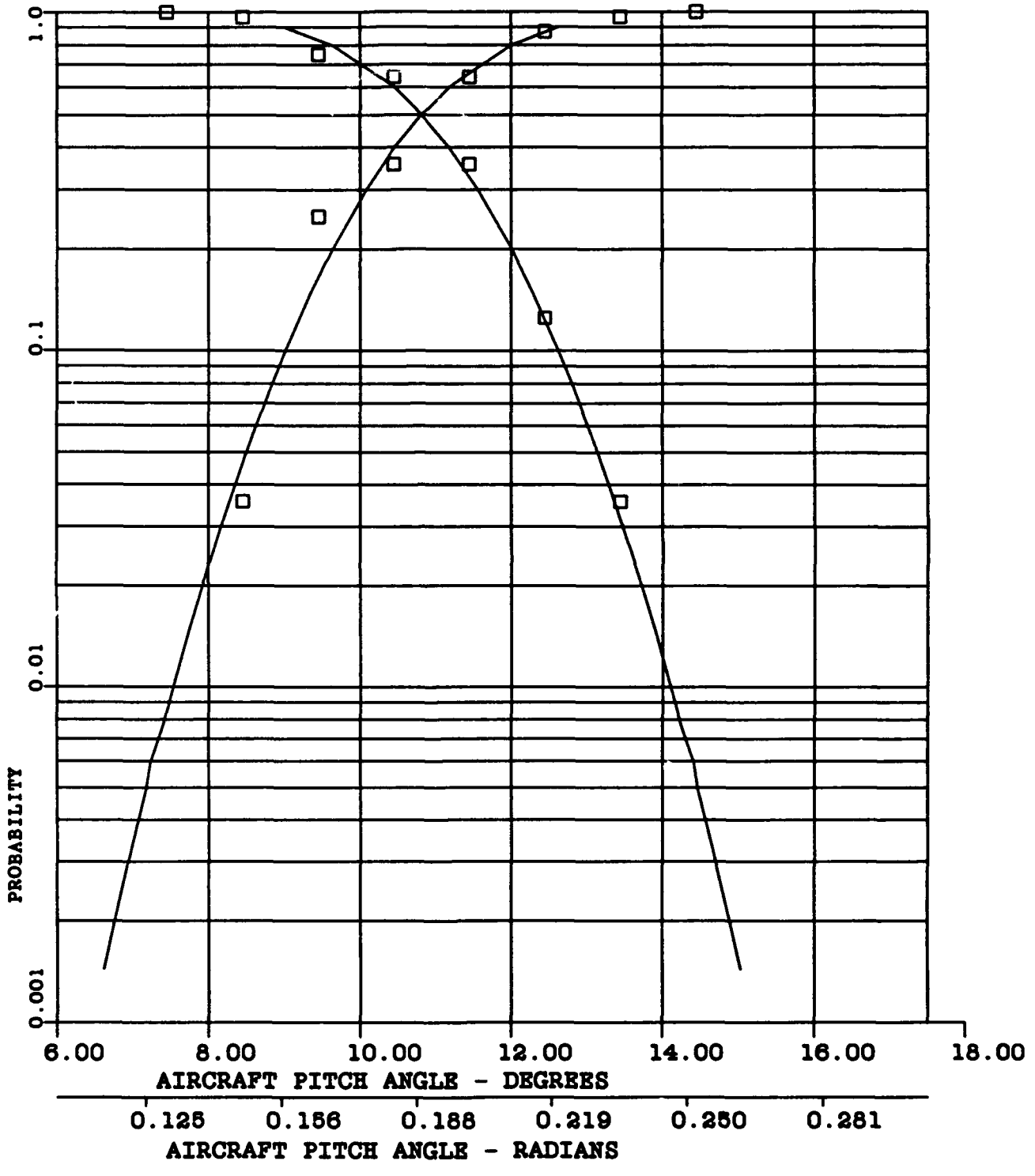


FIGURE J-24 PROBABILITY DISTRIBUTION OF AIRCRAFT PITCH ANGLE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-5 $\bar{X}$-11.66 DEGREES (0.203 RADIANS) A3--0.41
S-0.40 DEGREES (0.007 RADIANS) A4-2.20

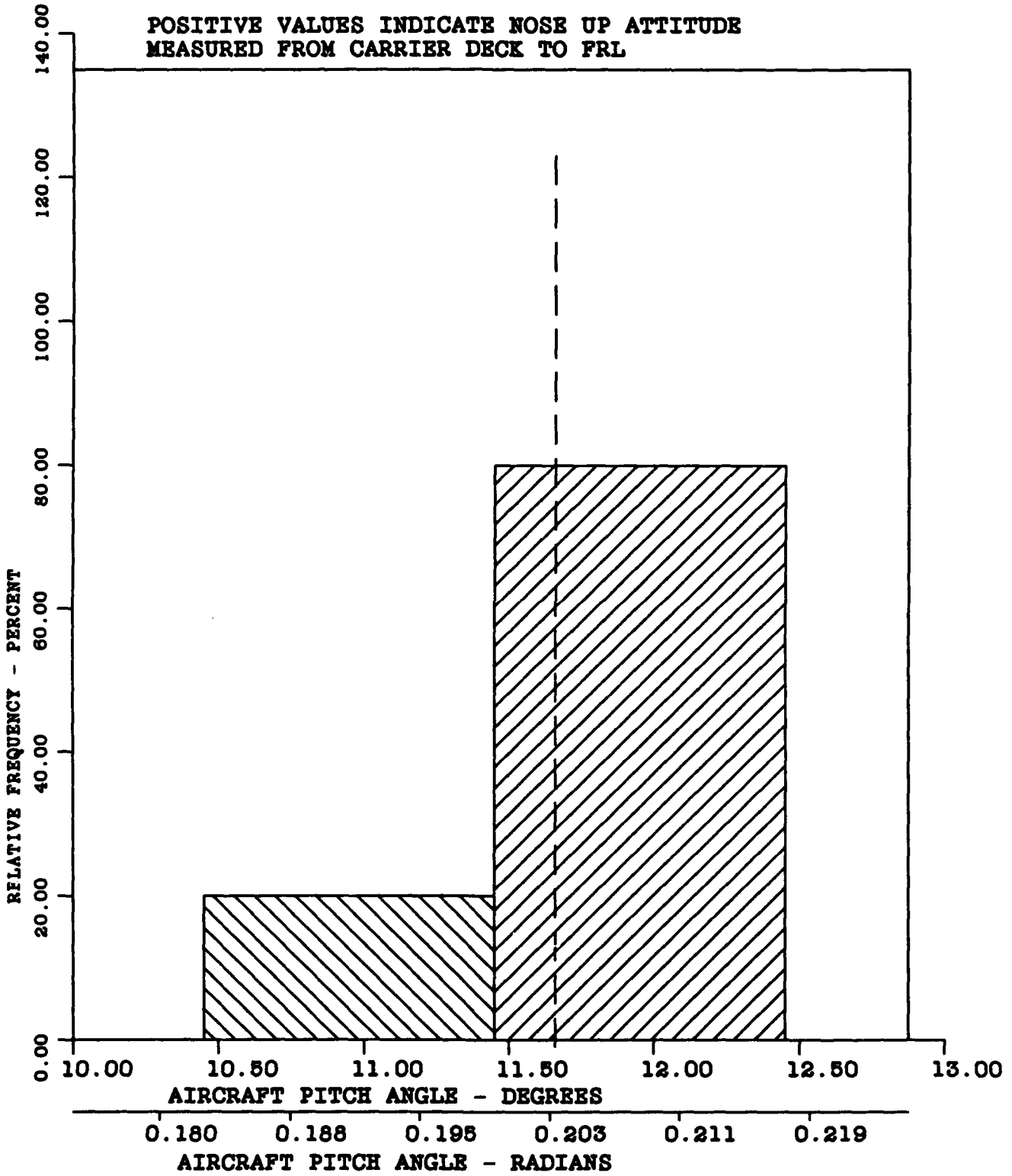


FIGURE J-25 FREQUENCY DISTRIBUTION OF AIRCRAFT PITCH ANGLE AT FREE FLIGHT

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (0.061 RADIANS)
N=5 $\bar{X}$=11.66 DEGREES (0.203 RADIANS) A3=-0.41
S=0.40 DEGREES (0.007 RADIANS) A4=2.20
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE NOSE UP ATTITUDE
MEASURED FROM CARRIER DECK TO FRL

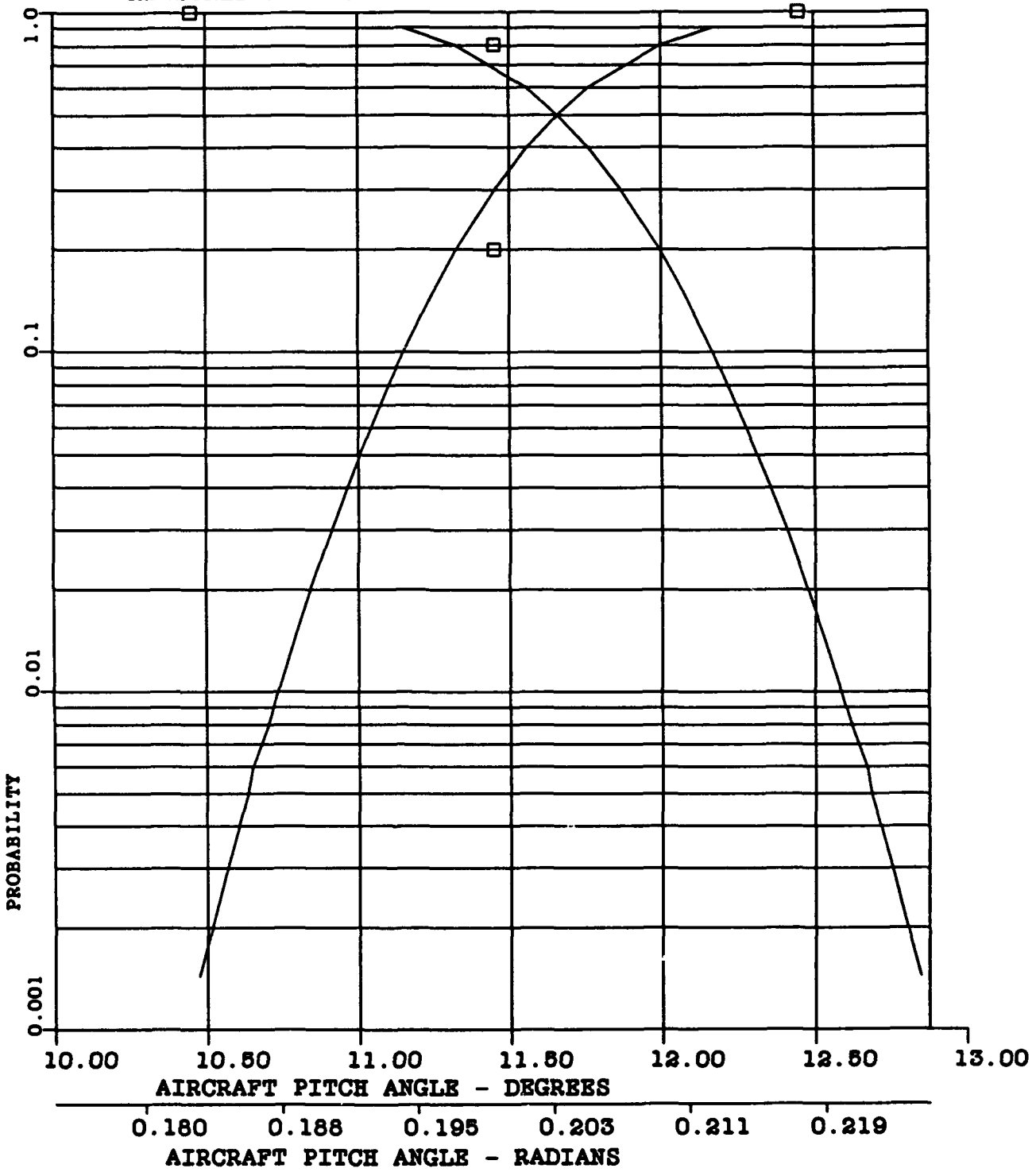


FIGURE J-26 PROBABILITY DISTRIBUTION OF AIRCRAFT PITCH ANGLE AT FREE FLIGHT

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (0.061 RADIANS)
N=56 $\bar{X}$=0.70 DEGREES (0.012 RADIANS) A3=0.19
S=2.91 DEGREES (0.051 RADIANS) A4=2.40

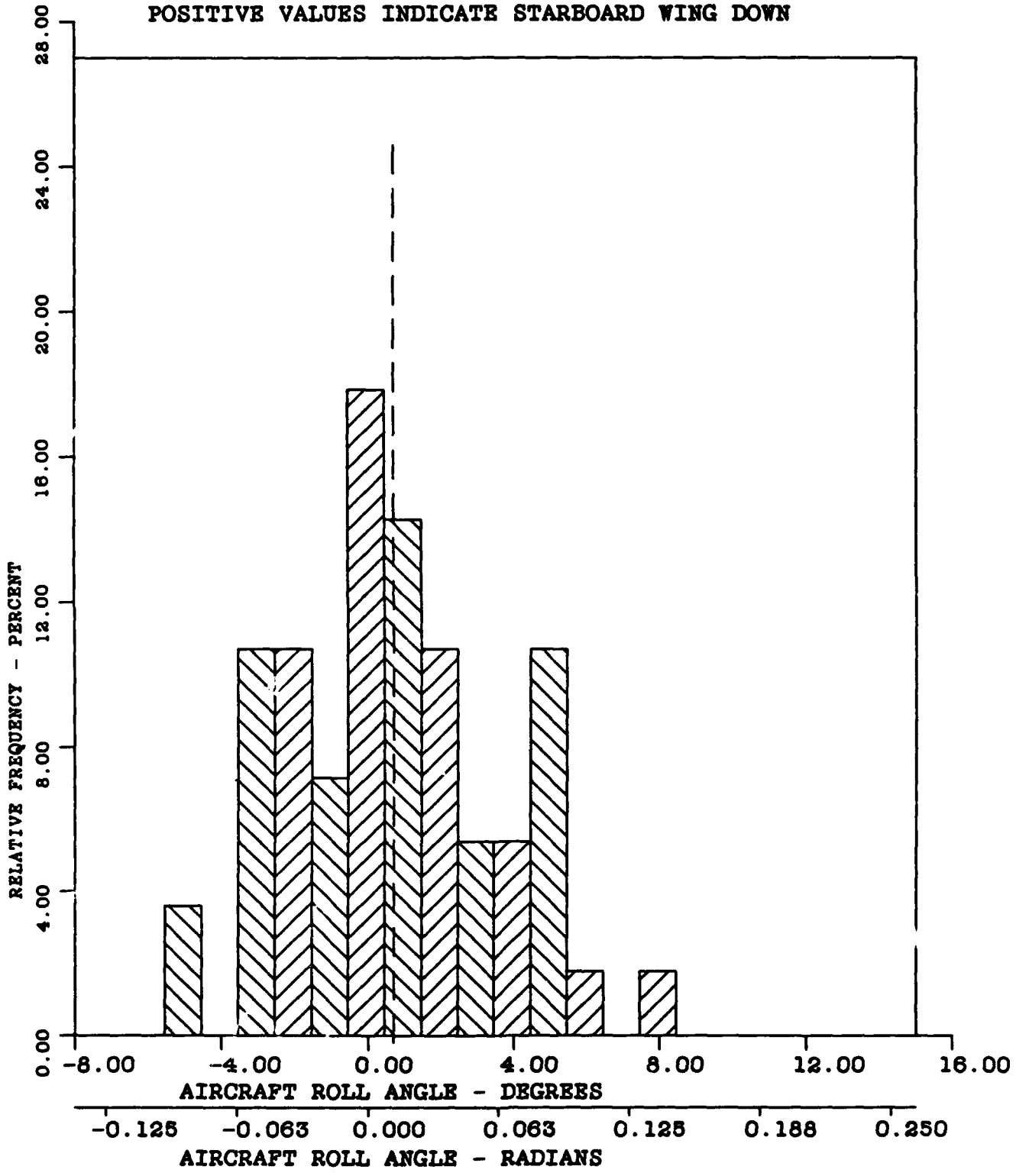


FIGURE J-27 FREQUENCY DISTRIBUTION OF AIRCRAFT ROLL ANGLE AT THE RAMP

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-56 $\bar{X}$-0.70 DEGREES (0.012 RADIANS) A3-0.19
S-2.91 DEGREES (0.051 RADIANS) A4-2.40
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE STARBOARD WING DOWN

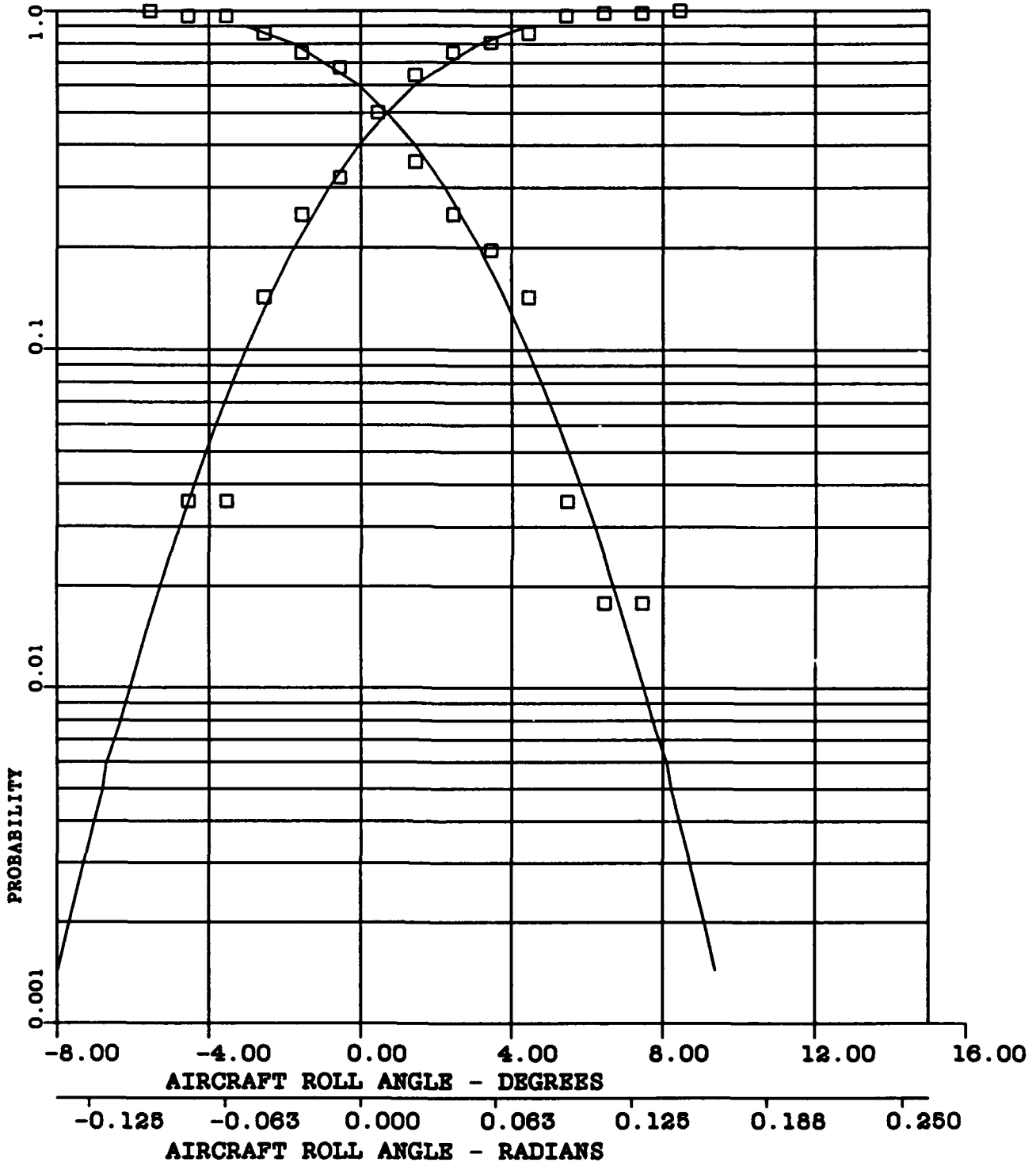


FIGURE J-28 PROBABILITY DISTRIBUTION OF AIRCRAFT ROLL ANGLE AT THE RAMP

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-56 $\bar{X}$=-0.01 DEGREES (-0.000 RADIANS) A3=1.03
S=2.62 DEGREES (0.046 RADIANS) A4=4.84

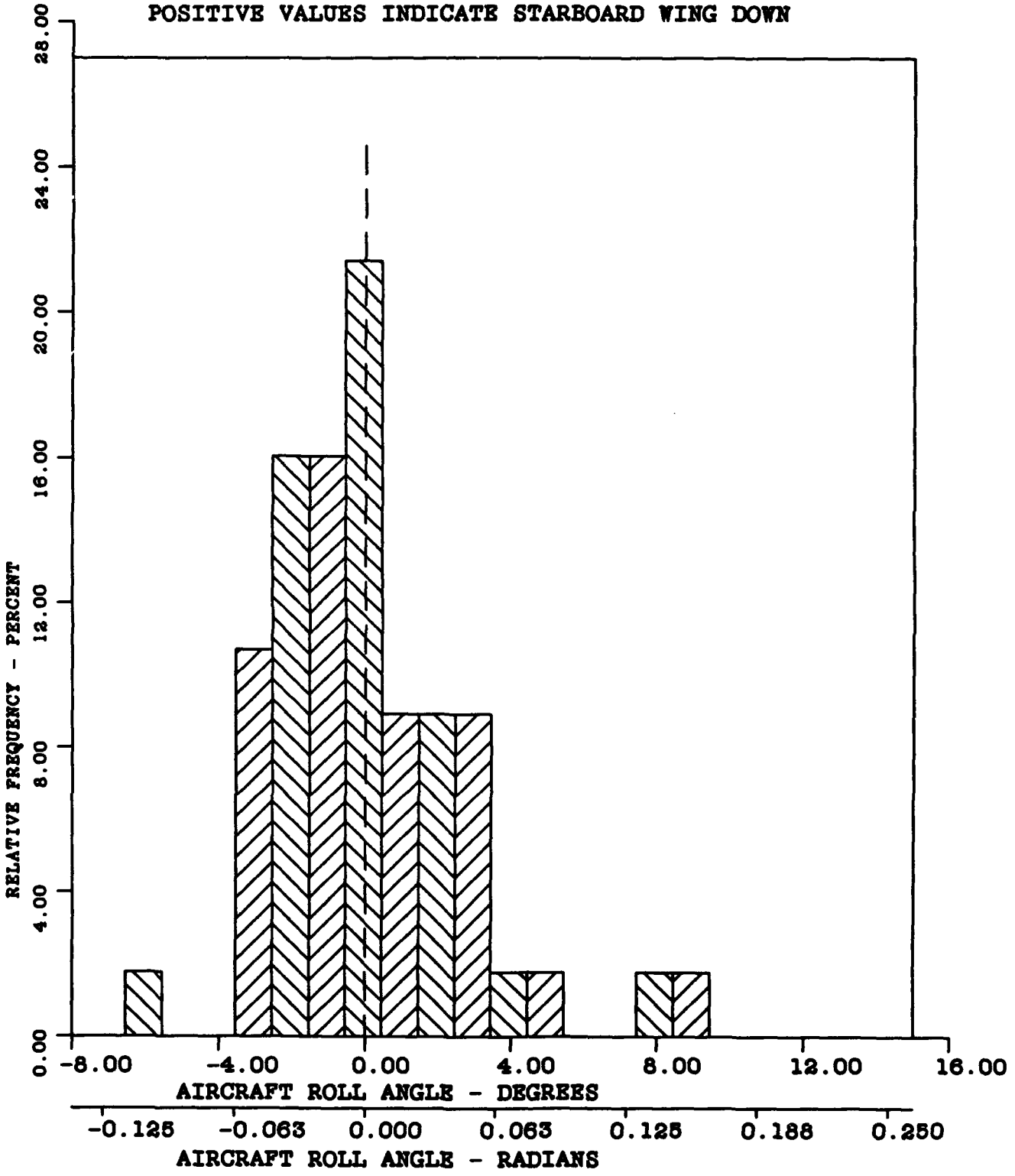


FIGURE J-29 FREQUENCY DISTRIBUTION OF AIRCRAFT ROLL ANGLE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-56 $\bar{X}$--0.01 DEGREES (-0.000 RADIANS) A3-1.03
S-2.62 DEGREES (0.046 RADIANS) A4-4.84
CURVE FITTED - PEARSON TYPE III
POSITIVE VALUES INDICATE STARBOARD WING DOWN

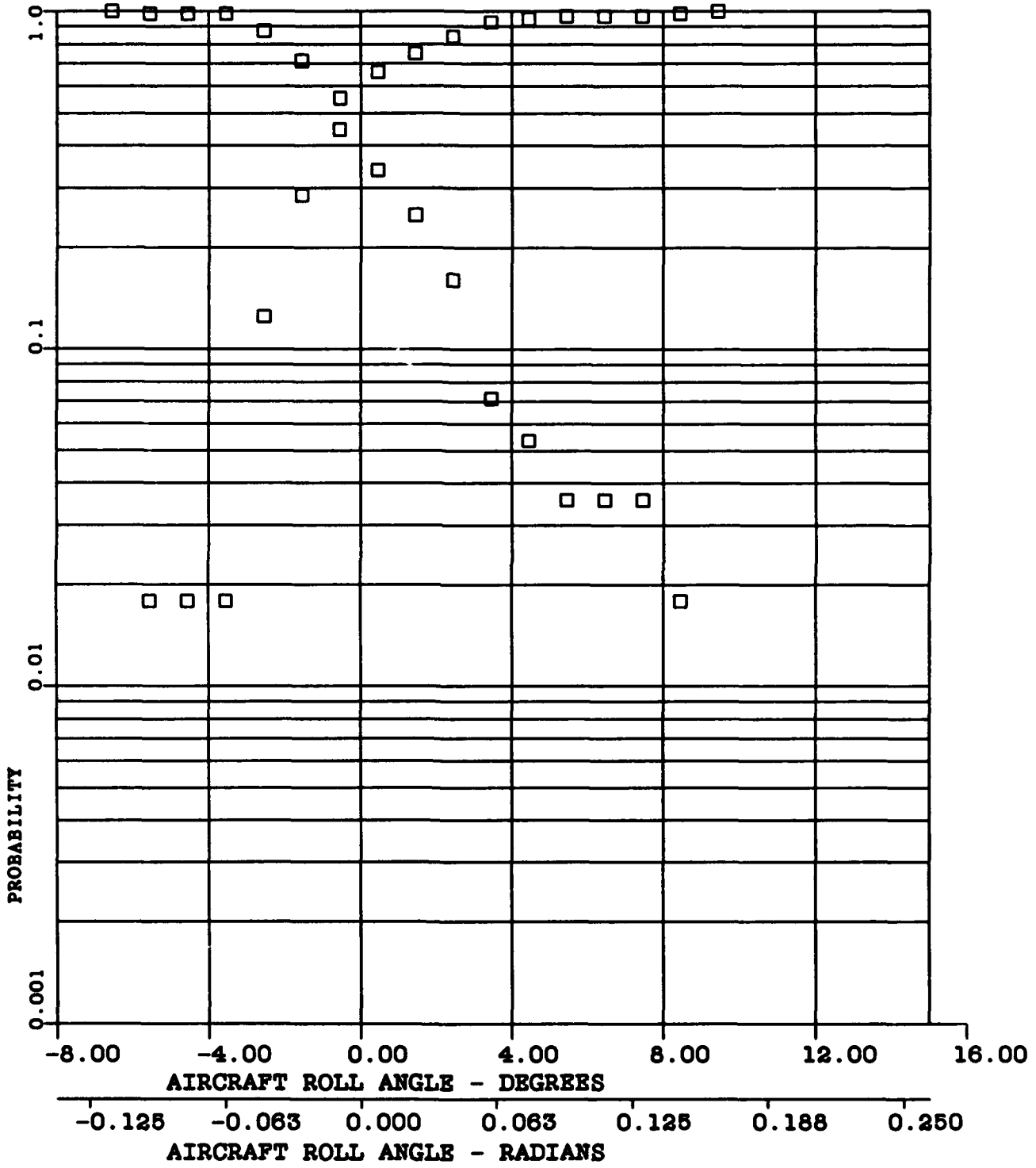


FIGURE J-30 PROBABILITY DISTRIBUTION OF AIRCRAFT ROLL ANGLE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL RA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N=5 $\bar{X}$=-0.75 DEGREES (-0.013 RADIANS) A3=0.12
S=0.42 DEGREES (0.007 RADIANS) A4=1.78

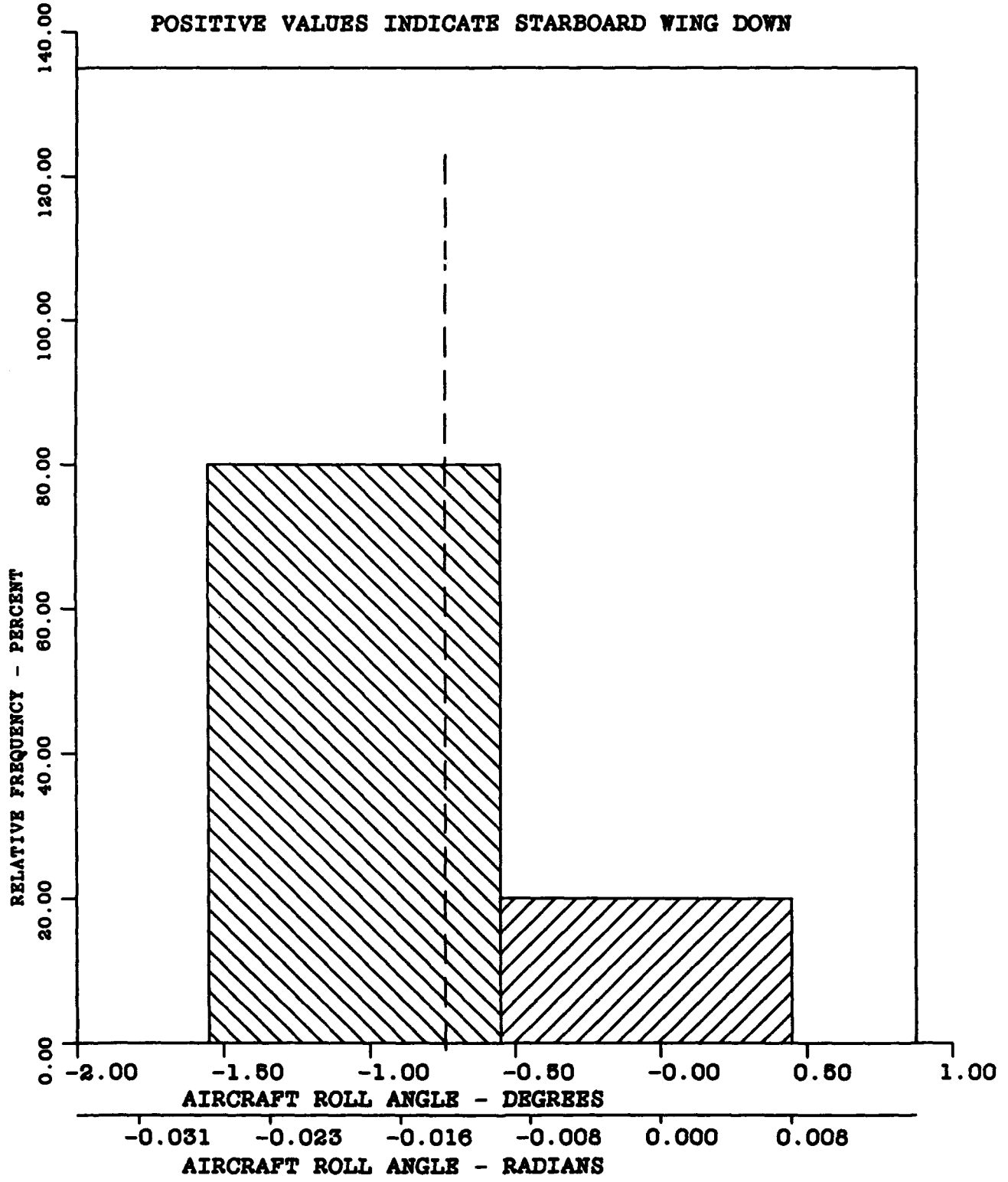


FIGURE J-31 FREQUENCY DISTRIBUTION OF AIRCRAFT ROLL ANGLE AT FREE FLIGHT

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-5 $\bar{X}$=-0.75 DEGREES (-0.013 RADIANS) A3-0.12
S-0.42 DEGREES (0.007 RADIANS) A4-1.78
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE STARBOARD WING DOWN

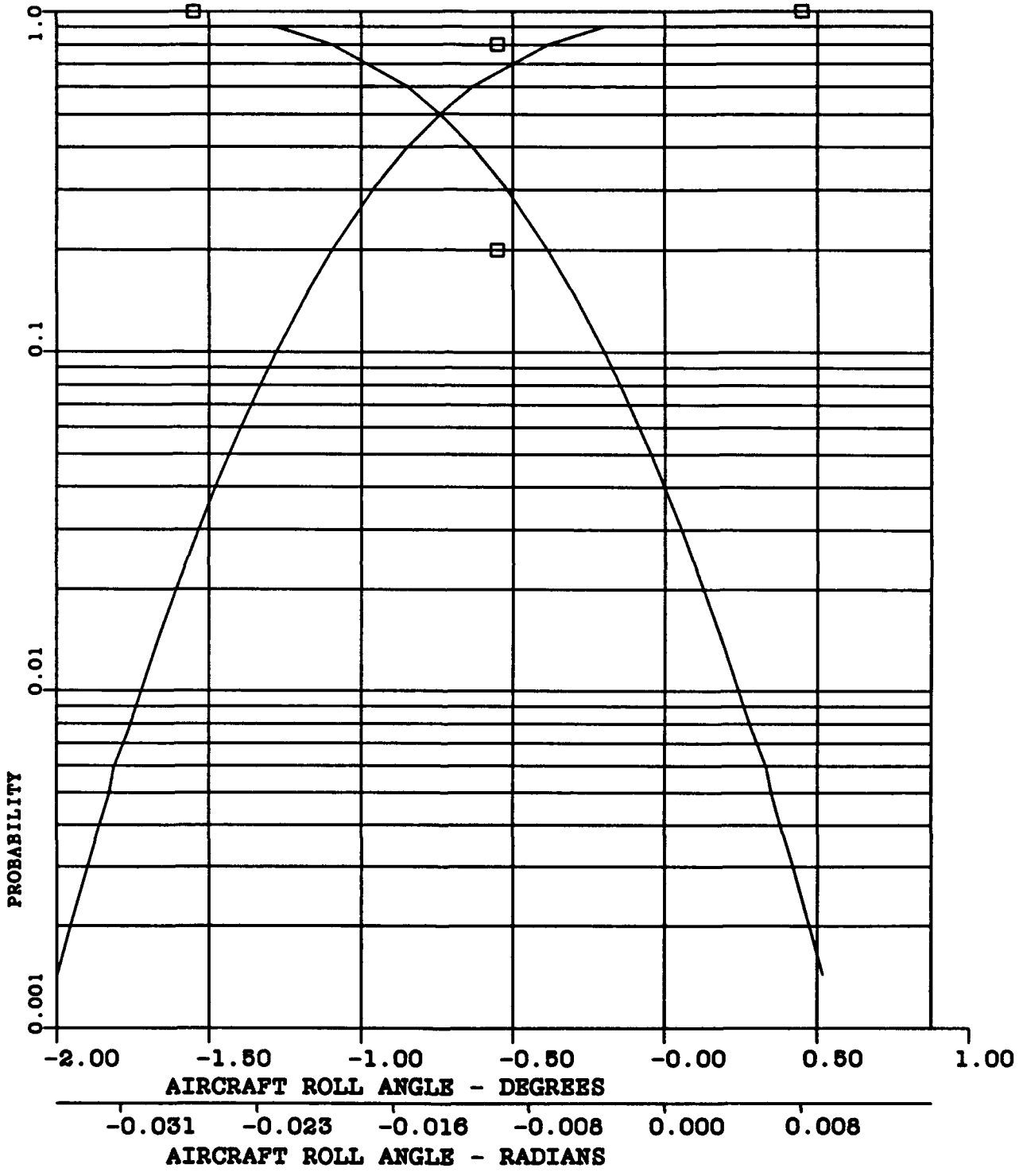


FIGURE J-32 PROBABILITY DISTRIBUTION OF AIRCRAFT ROLL ANGLE AT FREE FLIGHT

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-56 $\bar{X}$-245.98 FEET (74.98 METRES) A3--0.81
S-33.75 FEET (10.28 METRES) A4-3.93

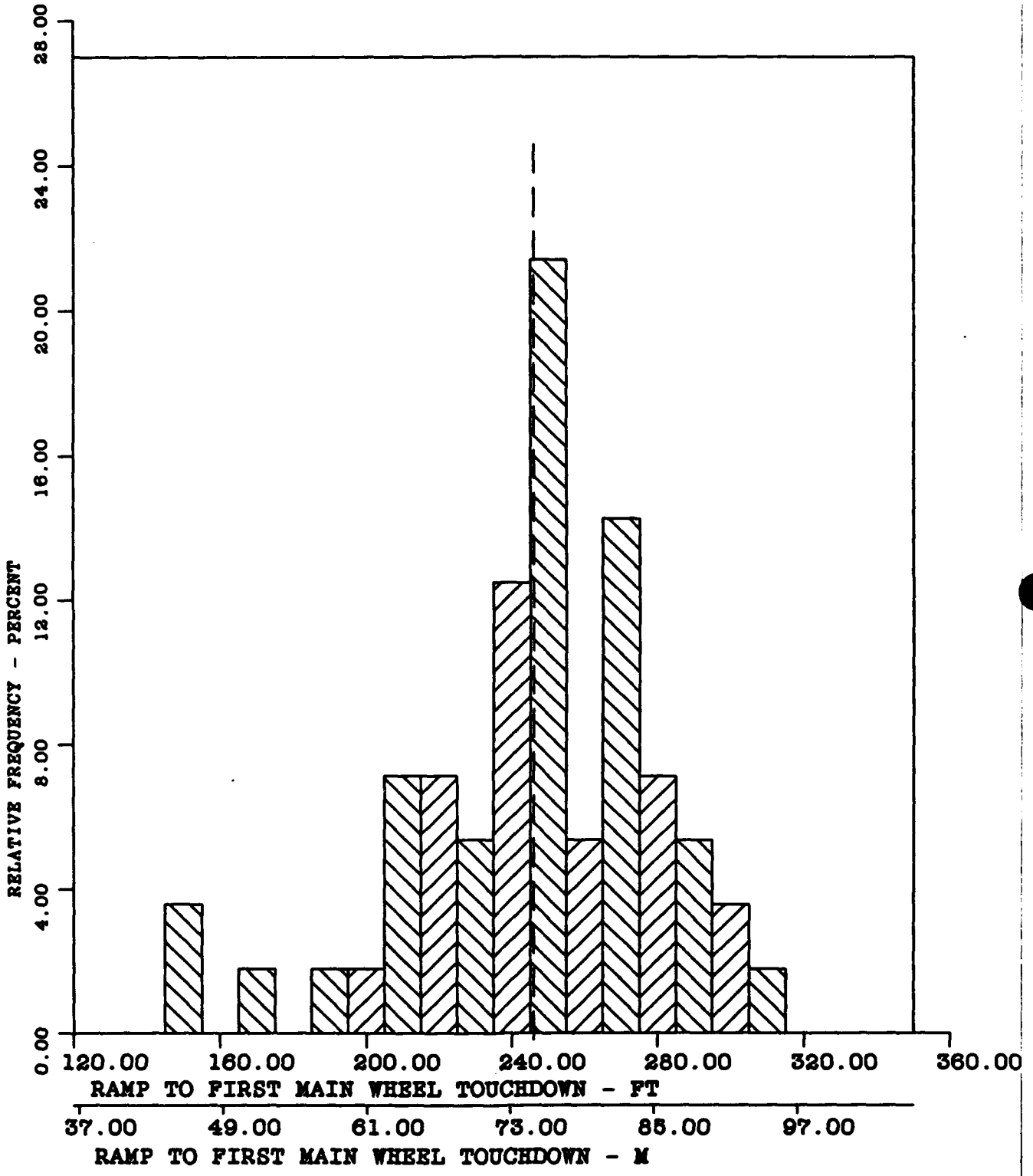


FIGURE J-33 FREQUENCY DISTRIBUTION OF DISTANCE FROM RAMP TO FIRST MAIN WHEEL TOUCHDOWN POINT

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-56 $\bar{X}$-245.98 FEET (74.98 METRES) A3=-0.81
S-33.75 FEET (10.28 METRES) A4-3.93
CURVE FITTED - PEARSON TYPE III

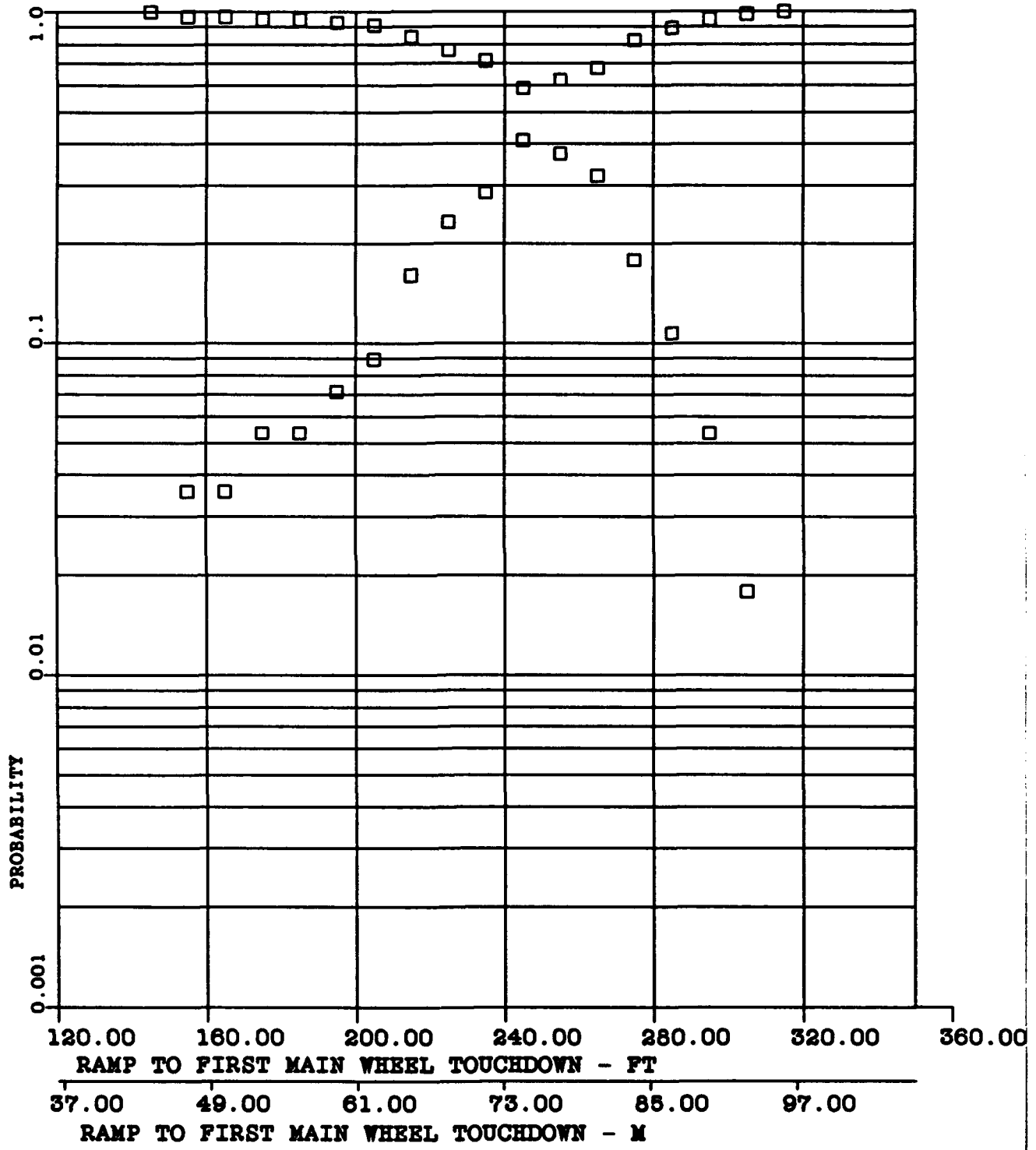


FIGURE J-34 PROBABILITY DISTRIBUTION OF DISTANCE FROM RAMP TO FIRST MAIN WHEEL TOUCHDOWN POINT

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (0.061 RADIANS)
N=56 $\bar{X}$=-9.57 FEET (-2.92 METRES) A3=0.43
S=4.60 FEET (1.40 METRES) A4=3.57

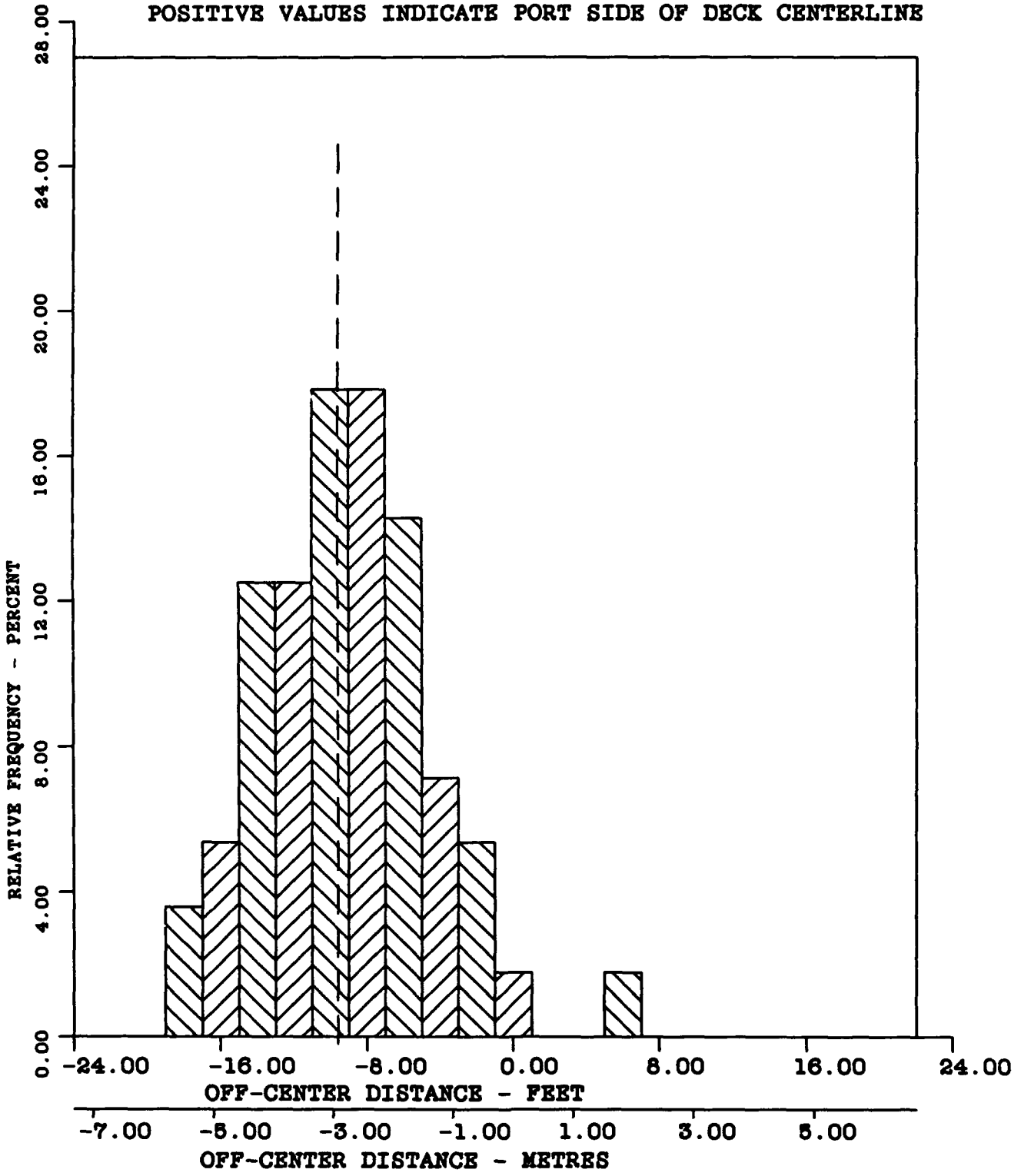


FIGURE J-35 FREQUENCY DISTRIBUTION OF AIRCRAFT CENTERLINE OFF-CNTR DISTANCE AT 1ST MAIN WHEEL TOUCHDOWN

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-56 $\bar{X}$=-9.57 FEET (-2.92 METRES) A3=0.43
S=4.60 FEET (1.40 METRES) A4=3.57
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE PORT SIDE OF DECK CENTERLINE

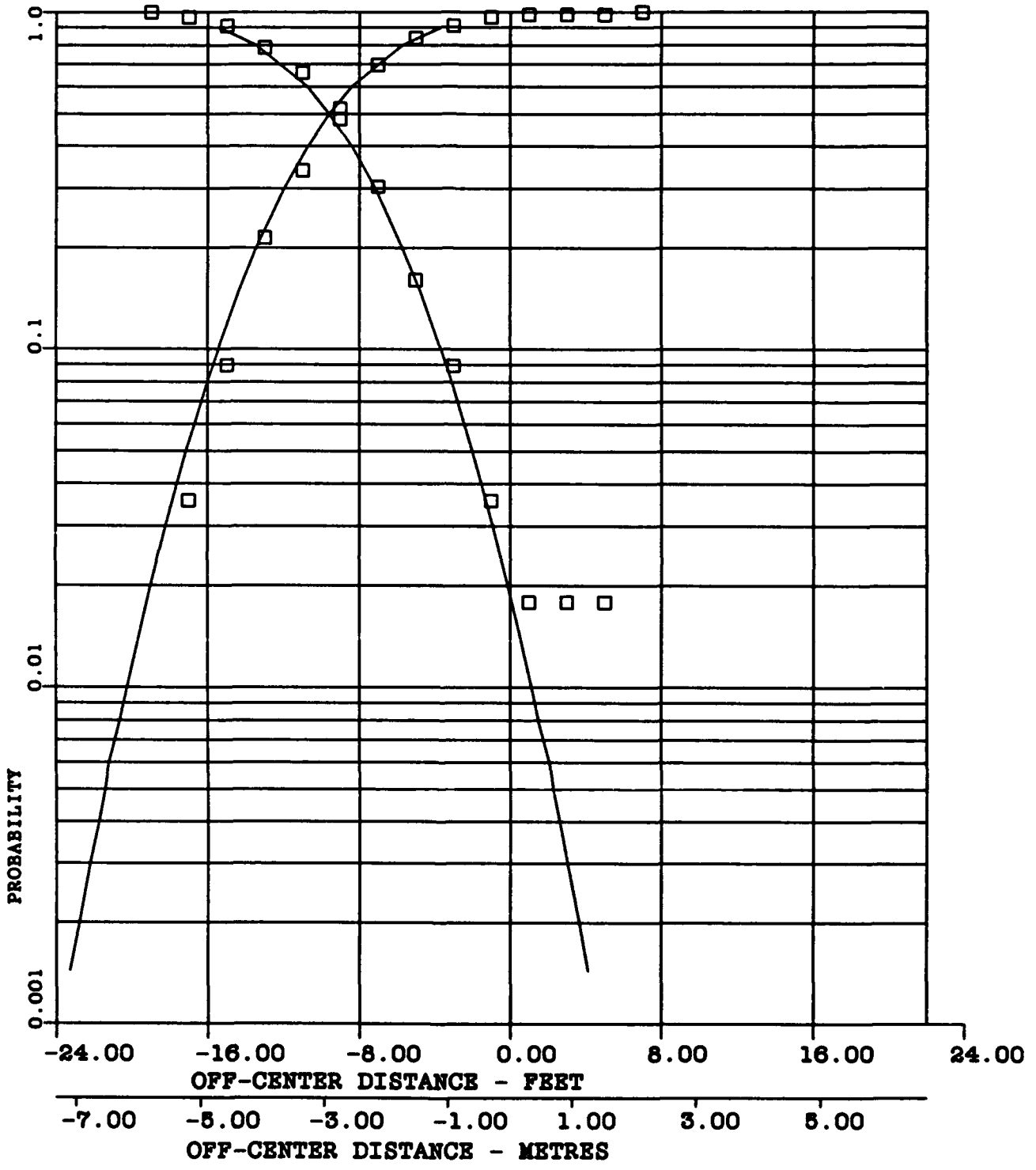


FIGURE J-36 PROBABILITY DISTRIBUTION OF AIRCRAFT OFF-CENTER DISTANCE AT 1ST MAIN WHEEL TOUCHDOWN

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-49 $\bar{X}$-3.12 A3=-0.16
S-0.69 A4-2.10

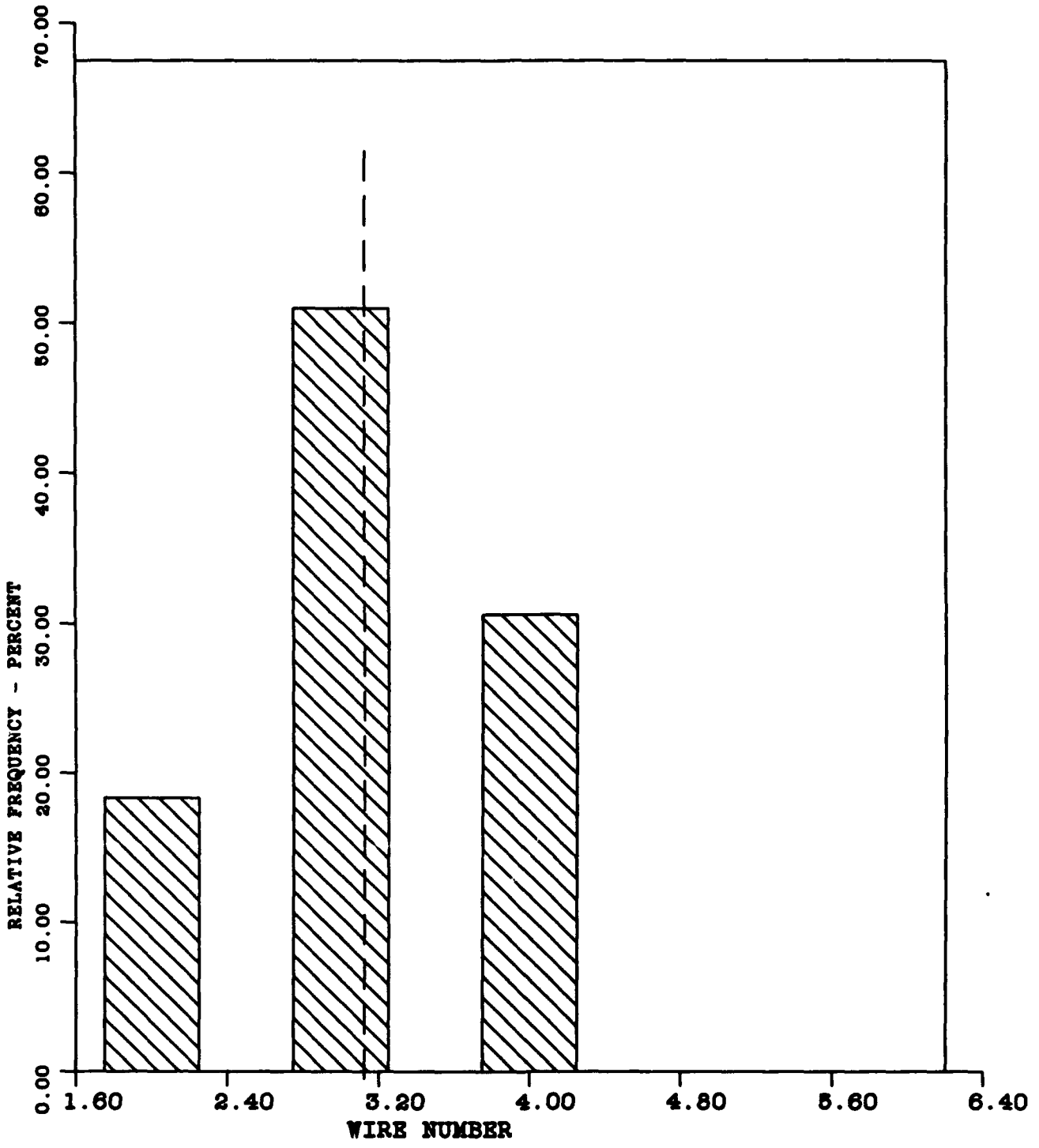


FIGURE J-37 FREQUENCY DISTRIBUTION OF ARRESTMENT WIRE NUMBER ENGAGED

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-56 $\bar{X}$-2.97 DEGREES (0.052 RADIANS) A3=-0.47
S-0.57 DEGREES (0.010 RADIANS) A4-3.04

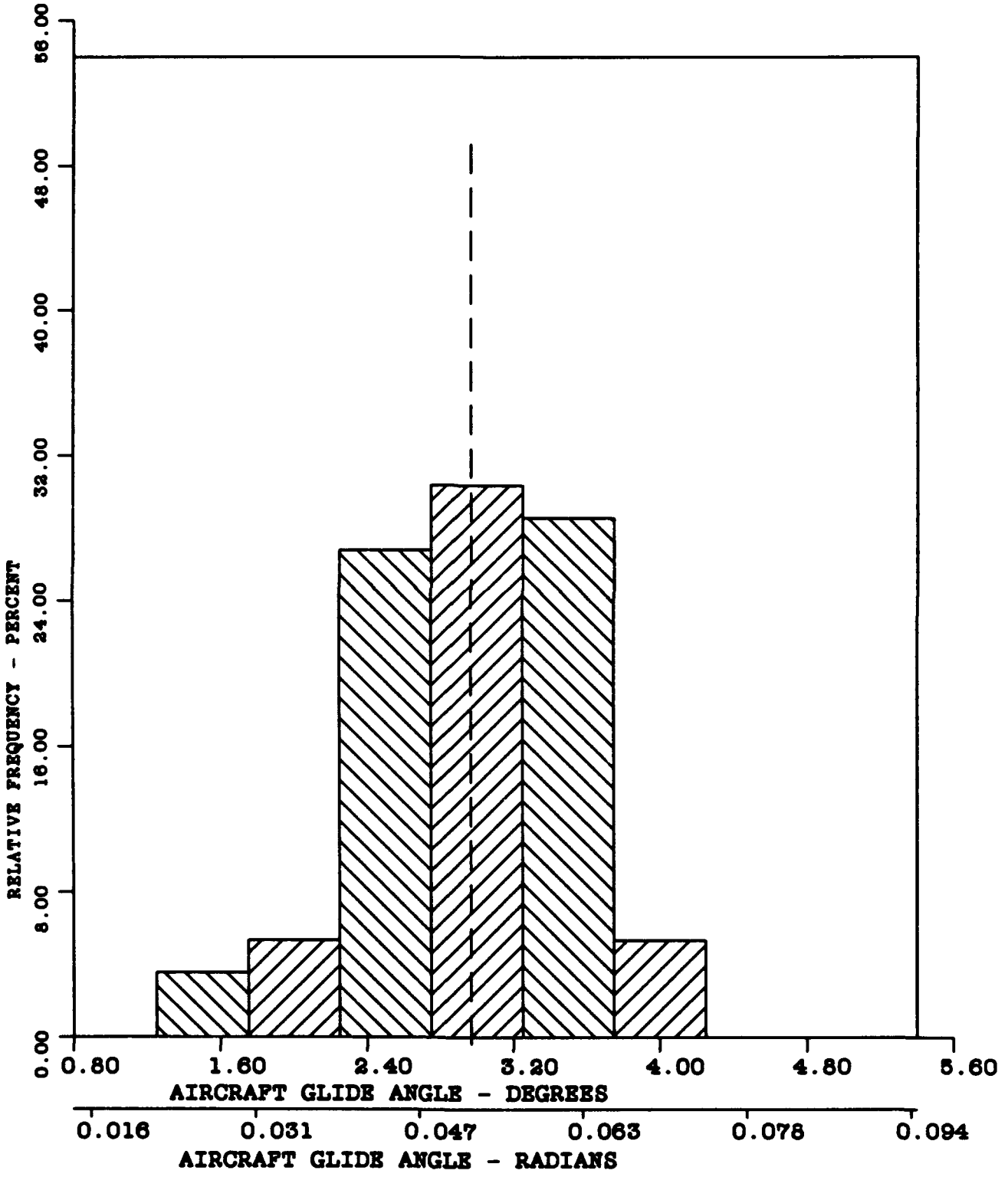


FIGURE J-38 FREQUENCY DISTRIBUTION OF AIRCRAFT GLIDE ANGLE - INSTANTANEOUS METHOD

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (0.061 RADIANS)
N=56 $\bar{X}$=3.06 DEGREES (0.053 RADIANS) A3=0.86
S=0.52 DEGREES (0.009 RADIANS) A4=5.44

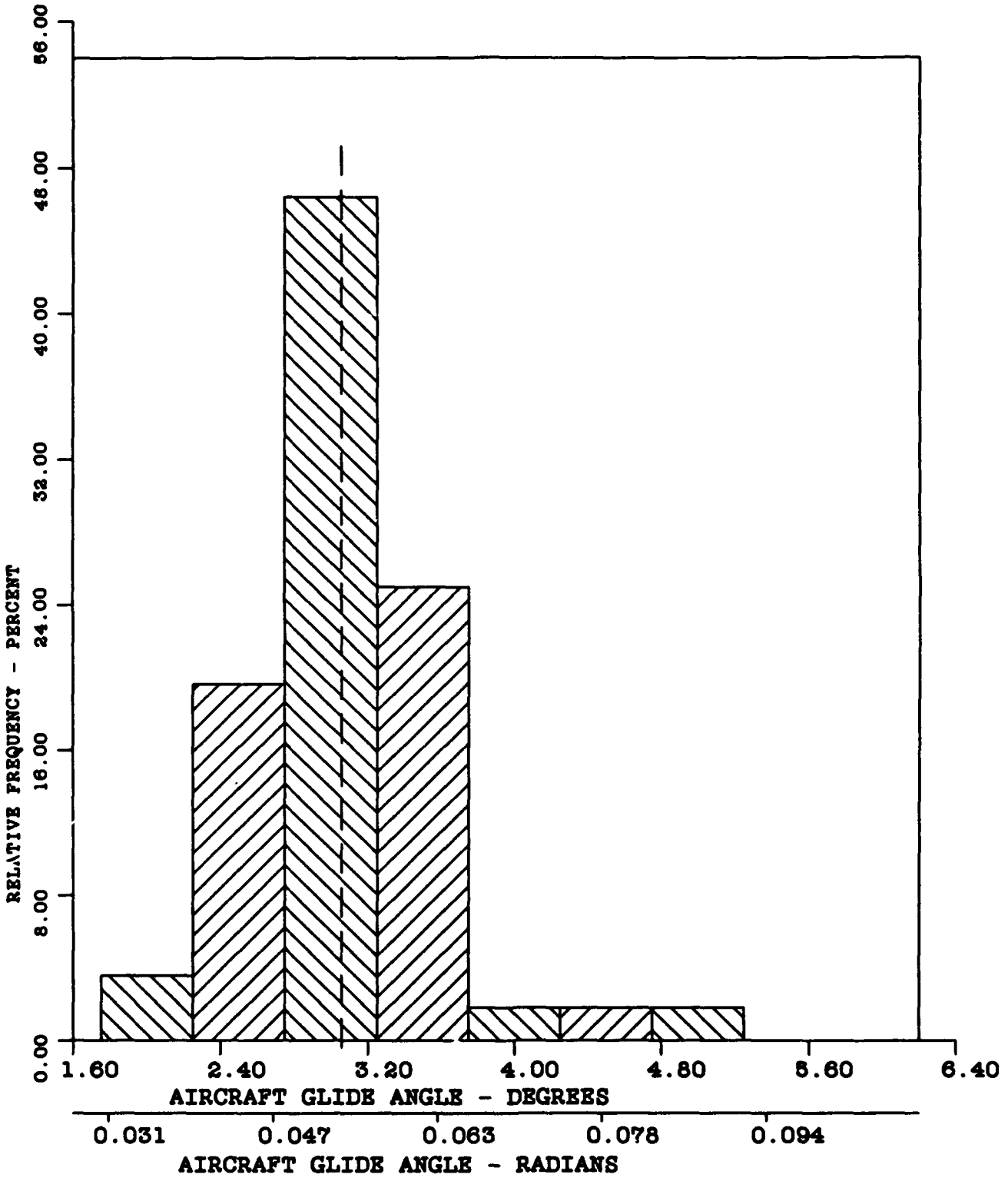


FIGURE J-39 FREQUENCY DISTRIBUTION OF AIRCRAFT GLIDE ANGLE - GEOMETRIC METHOD

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (0.061 RADIANS)
N=56 $\bar{X}$=9.82 FEET (3.00 METRES) A3=0.60
S=2.41 FEET (0.73 METRES) A4=3.20

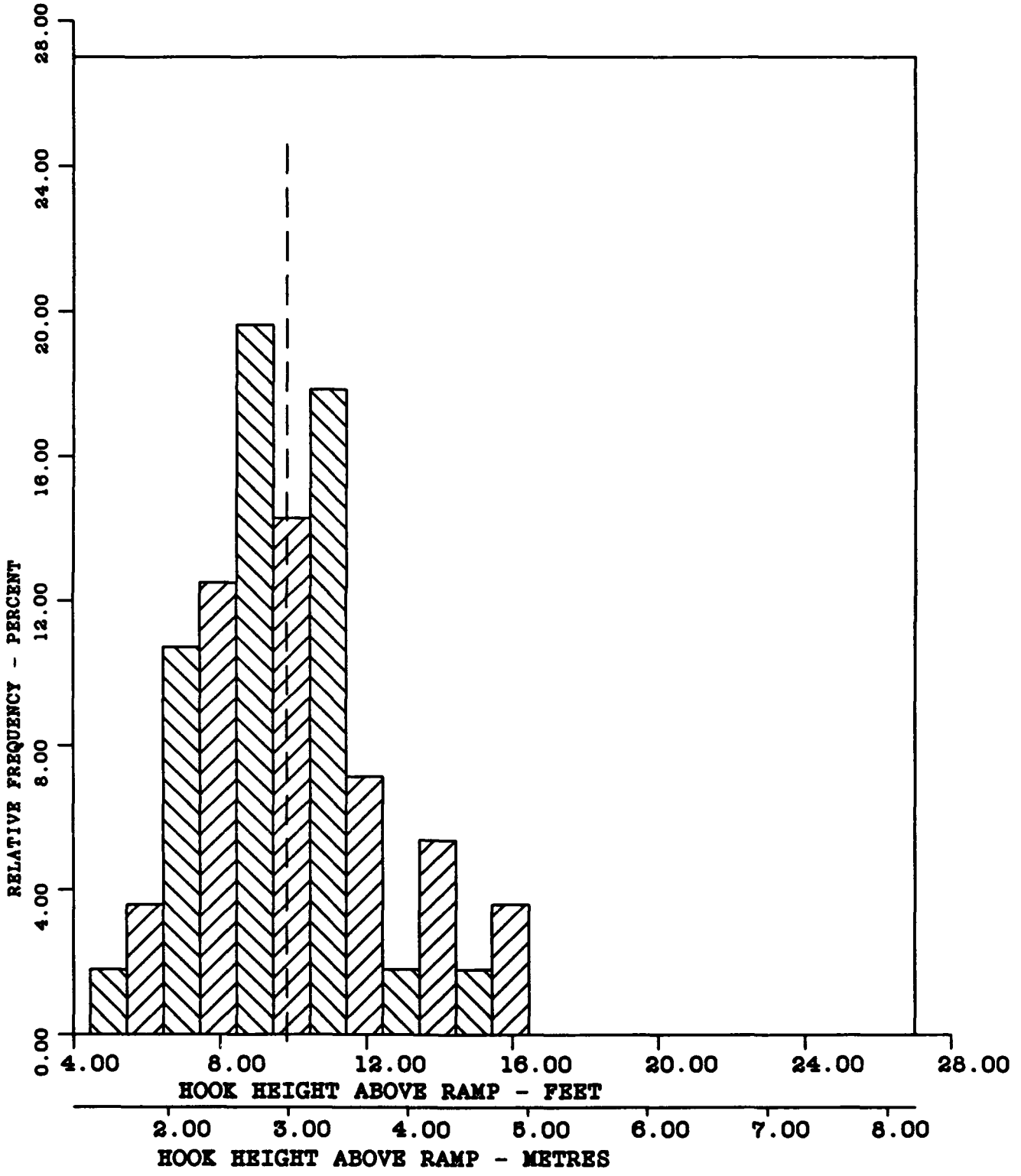


FIGURE J-40 FREQUENCY DISTRIBUTION OF AIRCRAFT ARRESTMENT HOOK HEIGHT ABOVE CARRIER RAMP

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-56 $\bar{X}$-9.82 FEET (3.00 METRES) A3-0.60
S-2.41 FEET (0.73 METRES) A4-3.20
CURVE FITTED - NORMAL

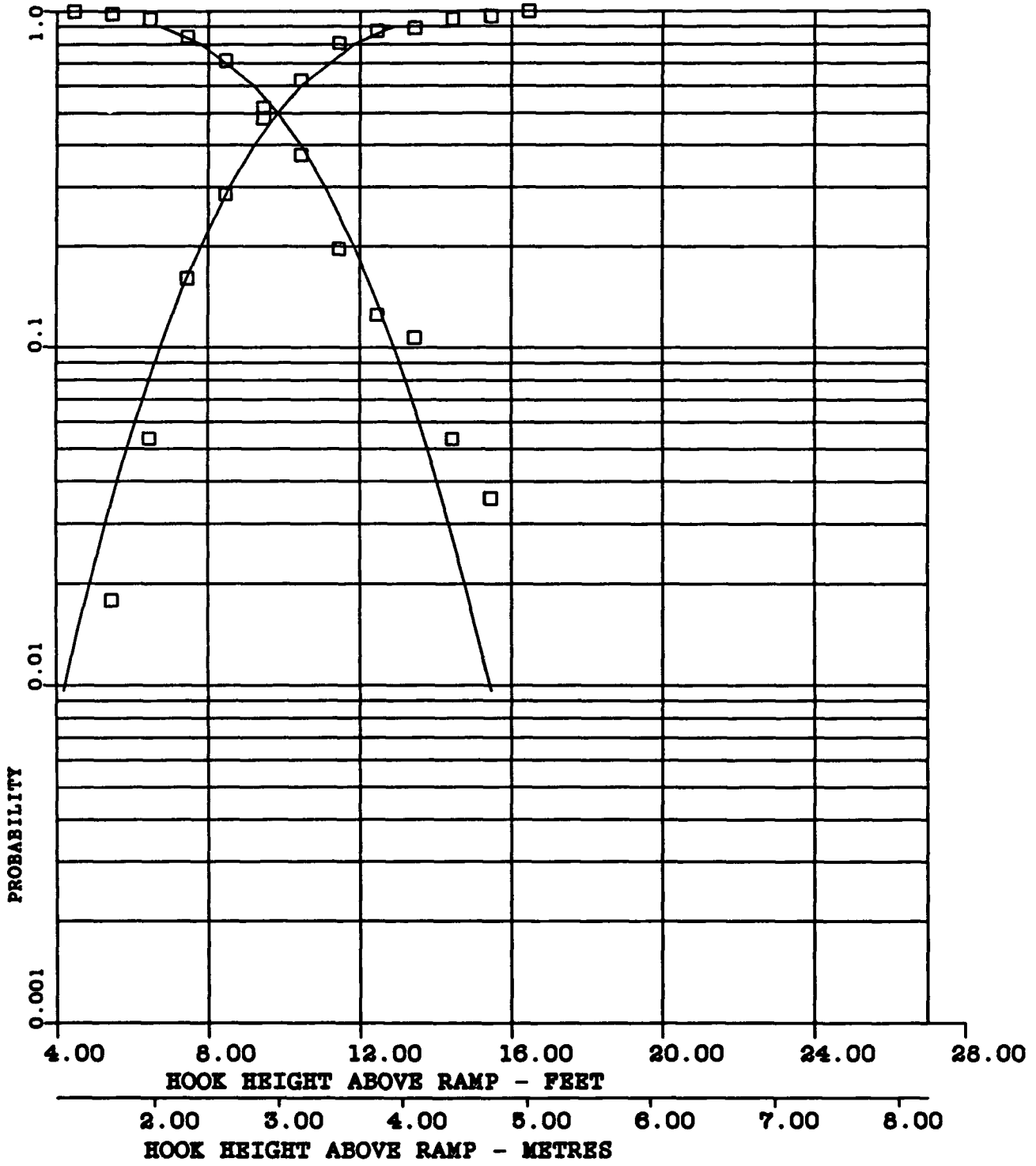


FIGURE J-41 PROBABILITY DISTRIBUTION OF ARRESTMENT HOOK HEIGHT ABOVE CARRIER RAMP

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-56 $\bar{X}$-107.15 KNOTS (55.12 METRES/SEC) A3-0.53
S-5.32 KNOTS (2.73 METRES/SEC) A4-3.23

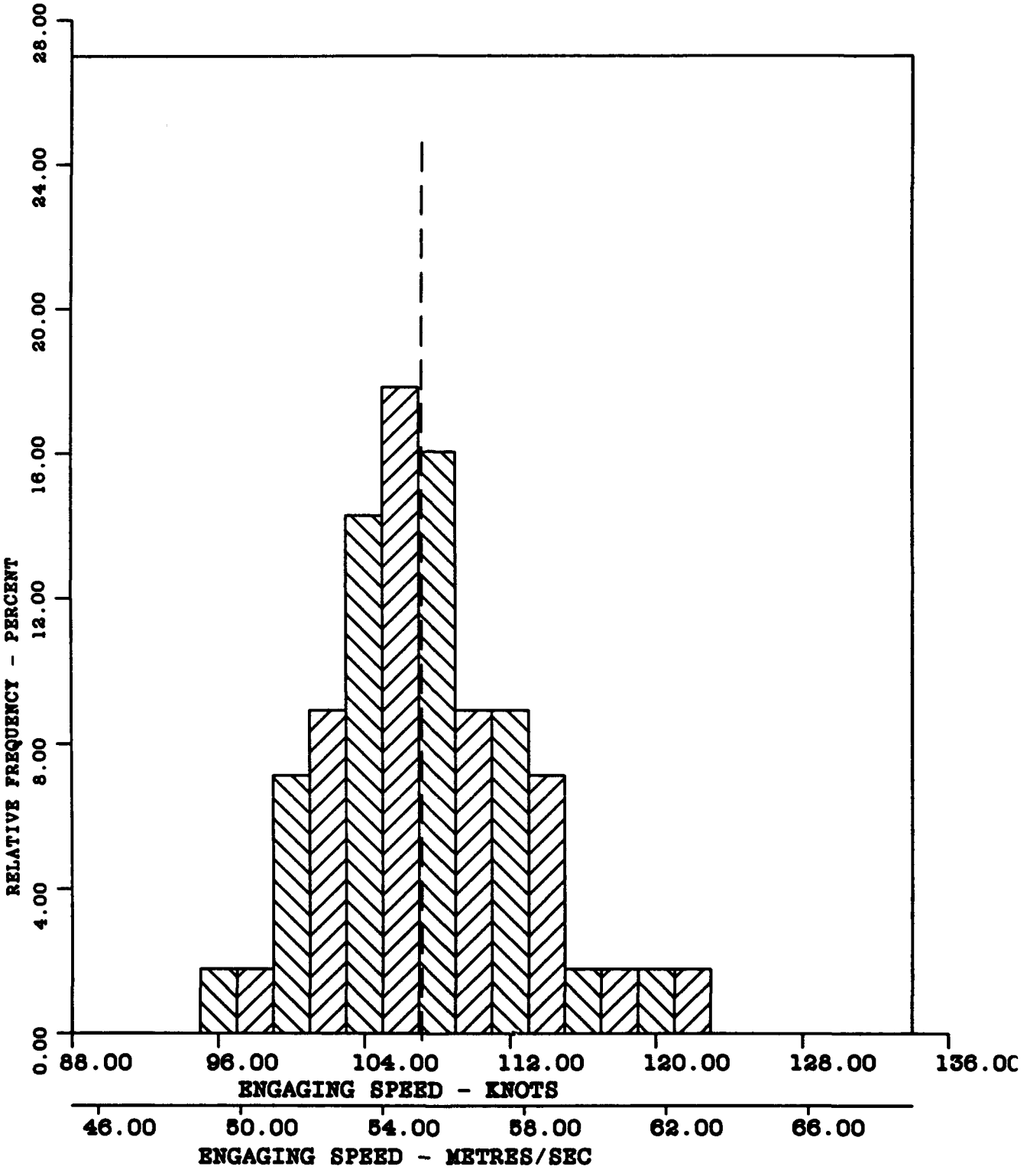


FIGURE J-42. FREQUENCY DISTRIBUTION OF AIRCRAFT ENGAGING SPEED AT FIRST MAIN WHEEL TOUCHDOWN

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-56 $\bar{X}$-107.15 KNOTS (55.12 METRES/SEC) A3-0.53
S-5.32 KNOTS (2.73 METRES/SEC) A4-3.23
CURVE FITTED - NORMAL

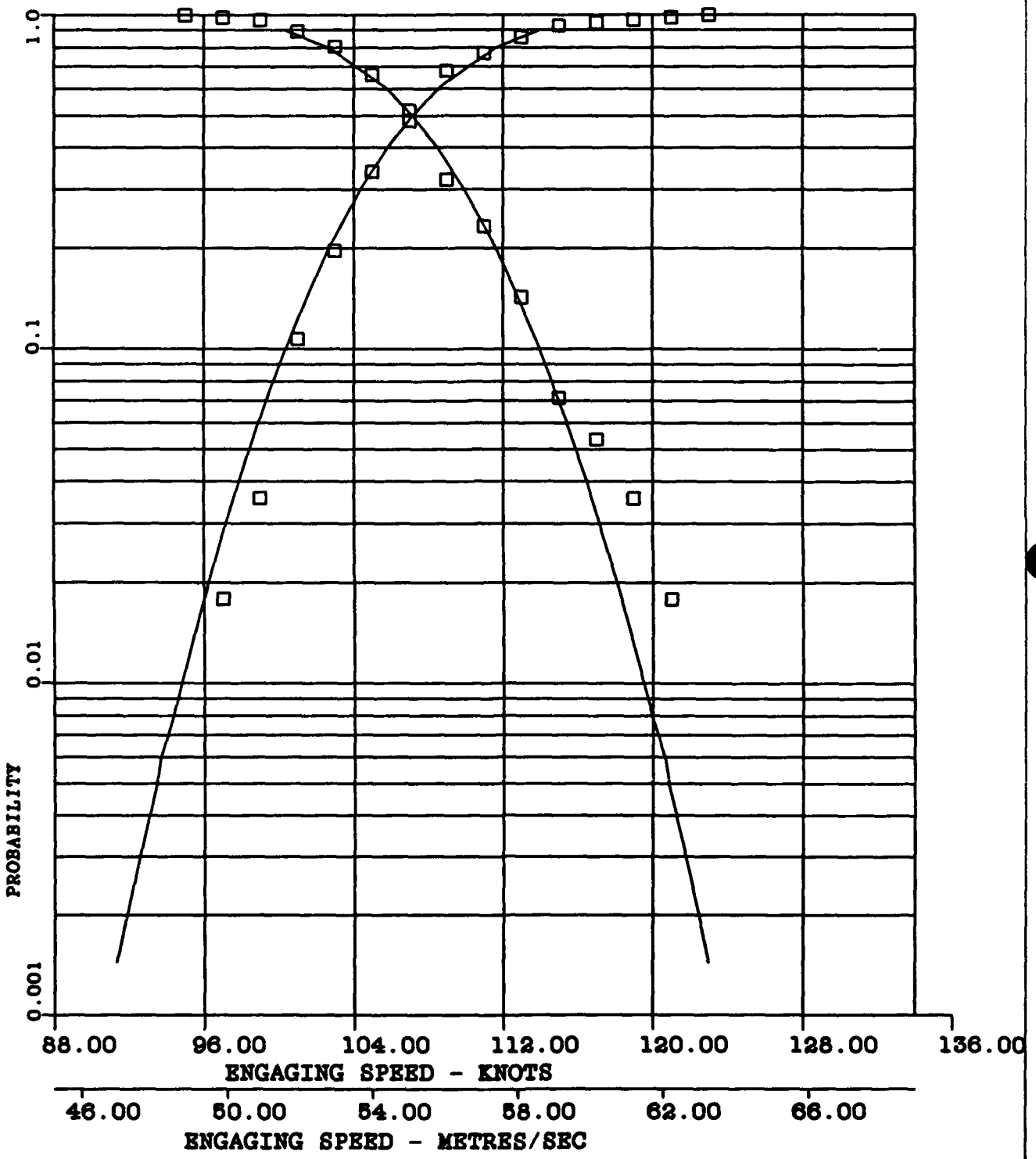


FIGURE J-43 PROBABILITY DISTRIBUTION OF ENGAGING SPEED AT FIRST MAIN WHEEL TOUCHDOWN

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-53 $\bar{X}$-118.67 KNOTS (61.04 METRES/SEC) A3-0.29
S-2.39 KNOTS (1.23 METRES/SEC) A4-3.22

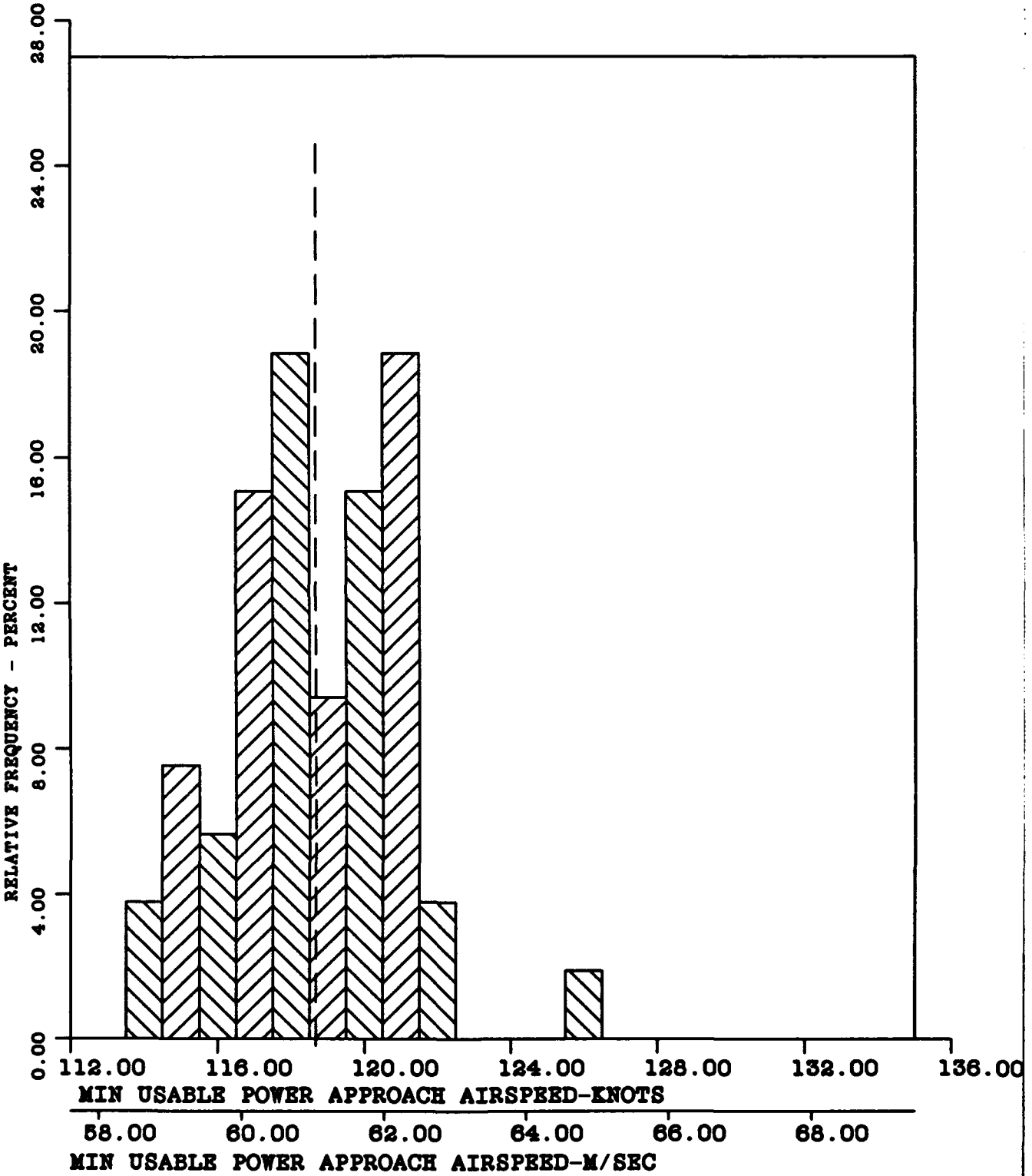


FIGURE J-44 FREQUENCY DISTRIBUTION OF MINIMUM USABLE POWER APPROACH AIRSPEED

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N=53 $\bar{X}$=1.13 A3=0.28
S=0.05 A4=2.98

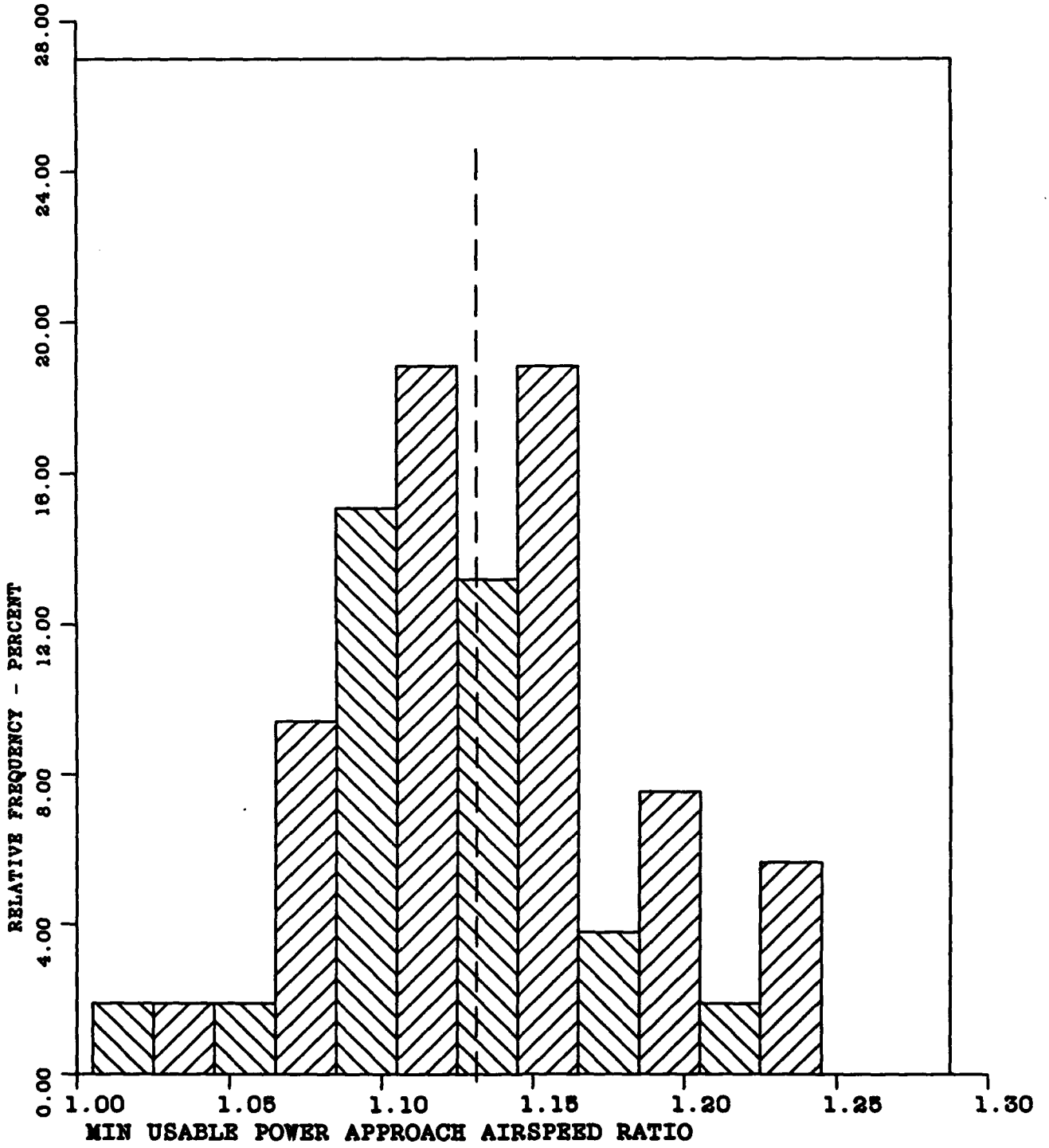


FIGURE J-45 FREQUENCY DISTRIBUTION OF MINIMUM USABLE POWER APPROACH AIRSPEED RATIO - FILM

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-56 $\bar{X}$=-0.43 DEGREES (-0.007 RADIANS) A3=-0.44
S=0.86 DEGREES (0.015 RADIANS) A4=4.05

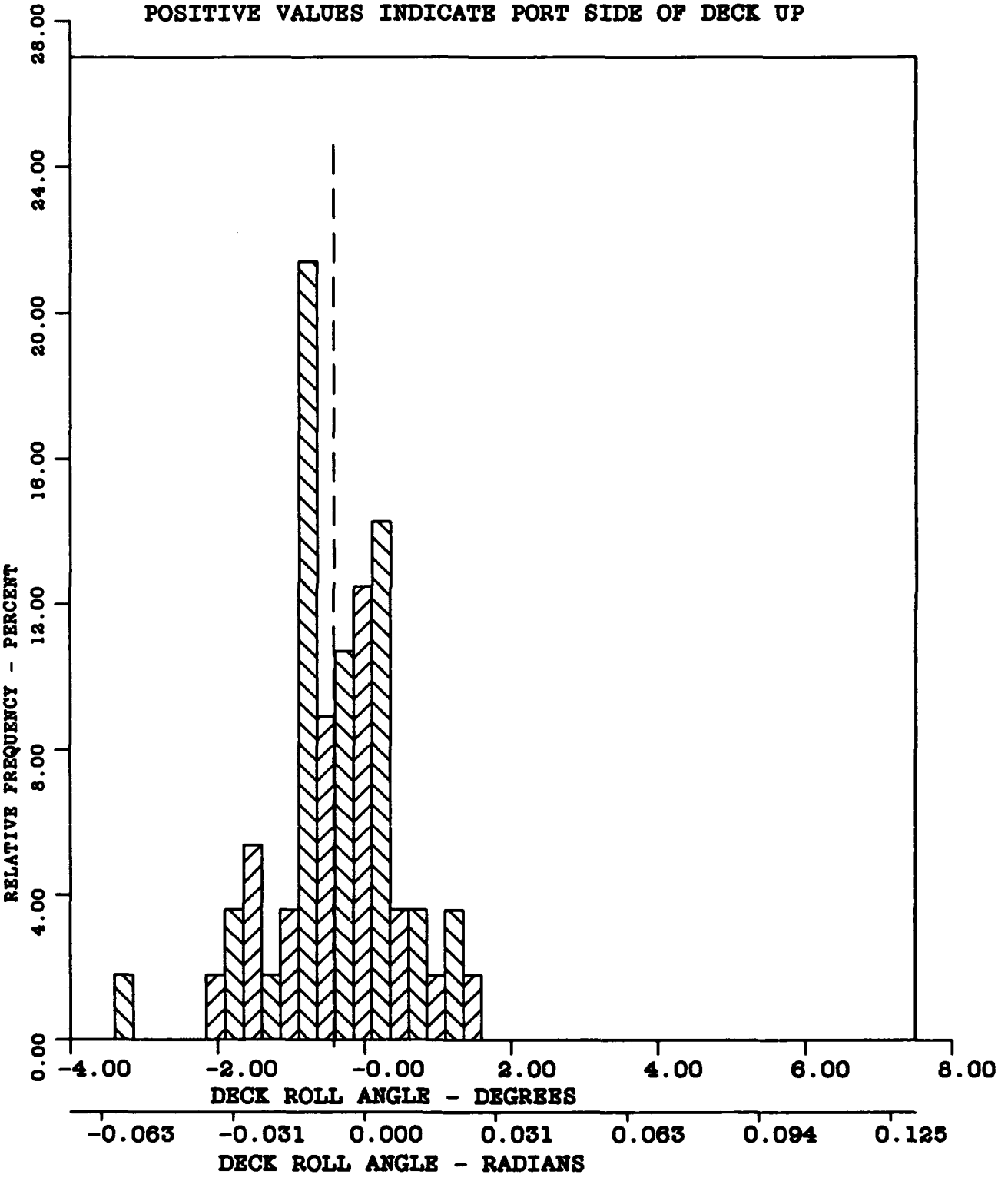


FIGURE J-46 FREQUENCY DISTRIBUTION OF CARRIER DECK ROLL MOTION

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-56 $\bar{X}$=-0.43 DEGREES (-0.007 RADIANS) A3=-0.44
S=0.86 DEGREES (0.015 RADIANS) A4=4.05
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE PORT SIDE OF DECK UP

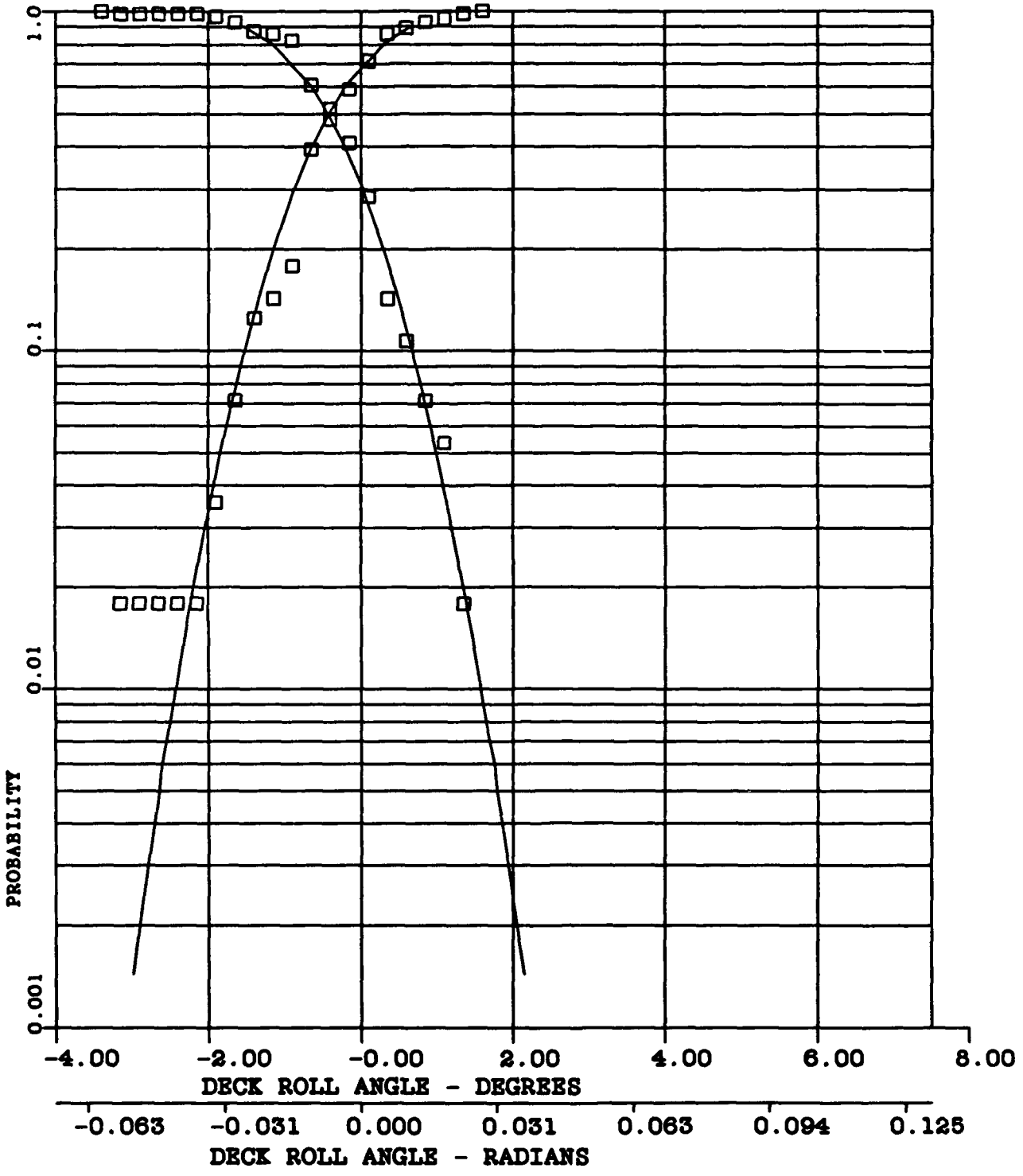


FIGURE J-47 PROBABILITY DISTRIBUTION OF CARRIER DECK ROLL MOTION

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N=56 $\bar{X}$=-0.33 DEGREES (-0.006 RADIANS) A3=-0.19
S=0.17 DEGREES (0.003 RADIANS) A4=3.41

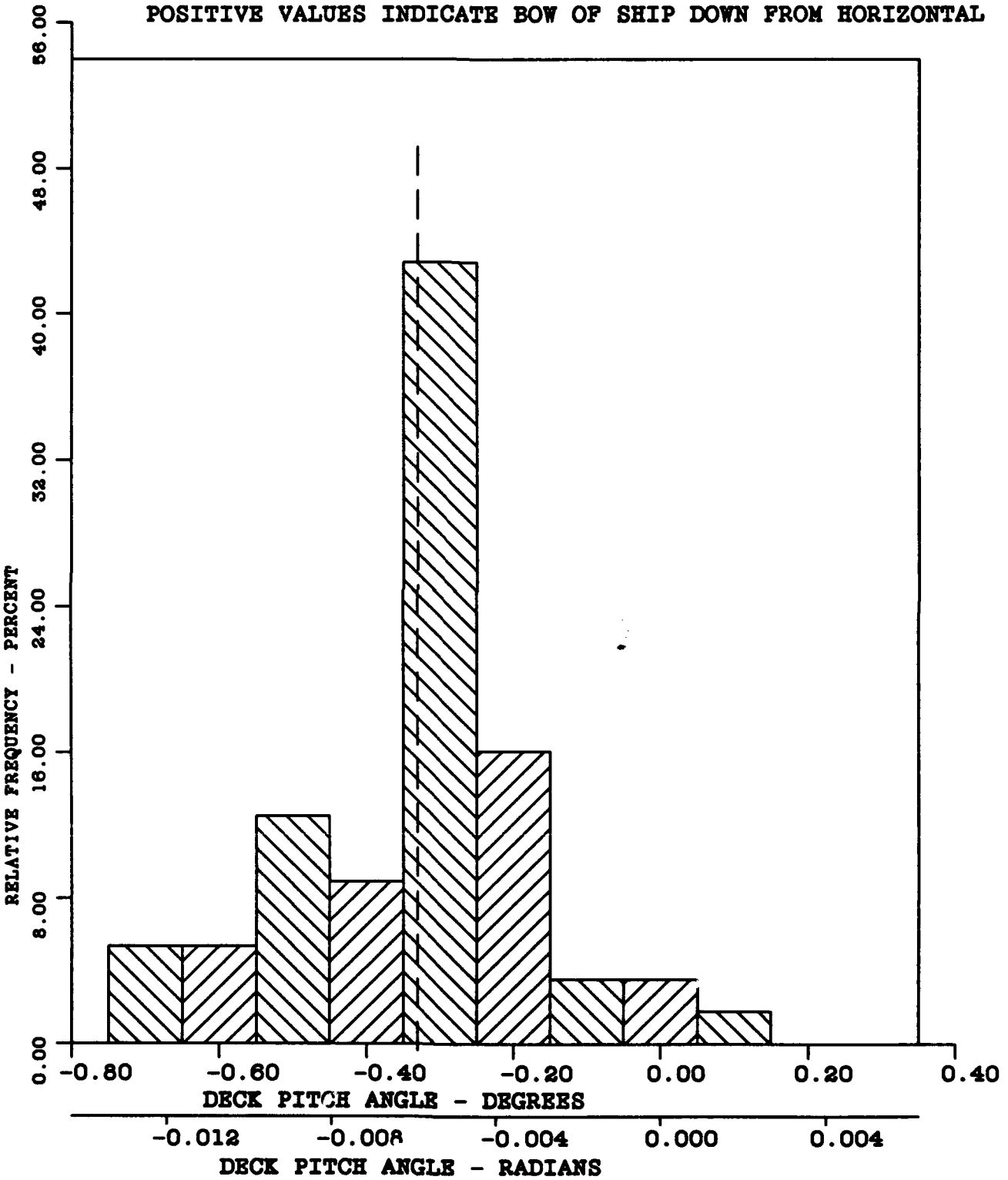


FIGURE J-48 FREQUENCY DISTRIBUTION OF CARRIER DECK PITCH MOTION

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-56 $\bar{X}$=-0.33 DEGREES (-0.006 RADIANS) A3=-0.19
S-0.17 DEGREES (0.003 RADIANS) A4=3.41
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE BOW OF SHIP DOWN FROM HORIZONTAL

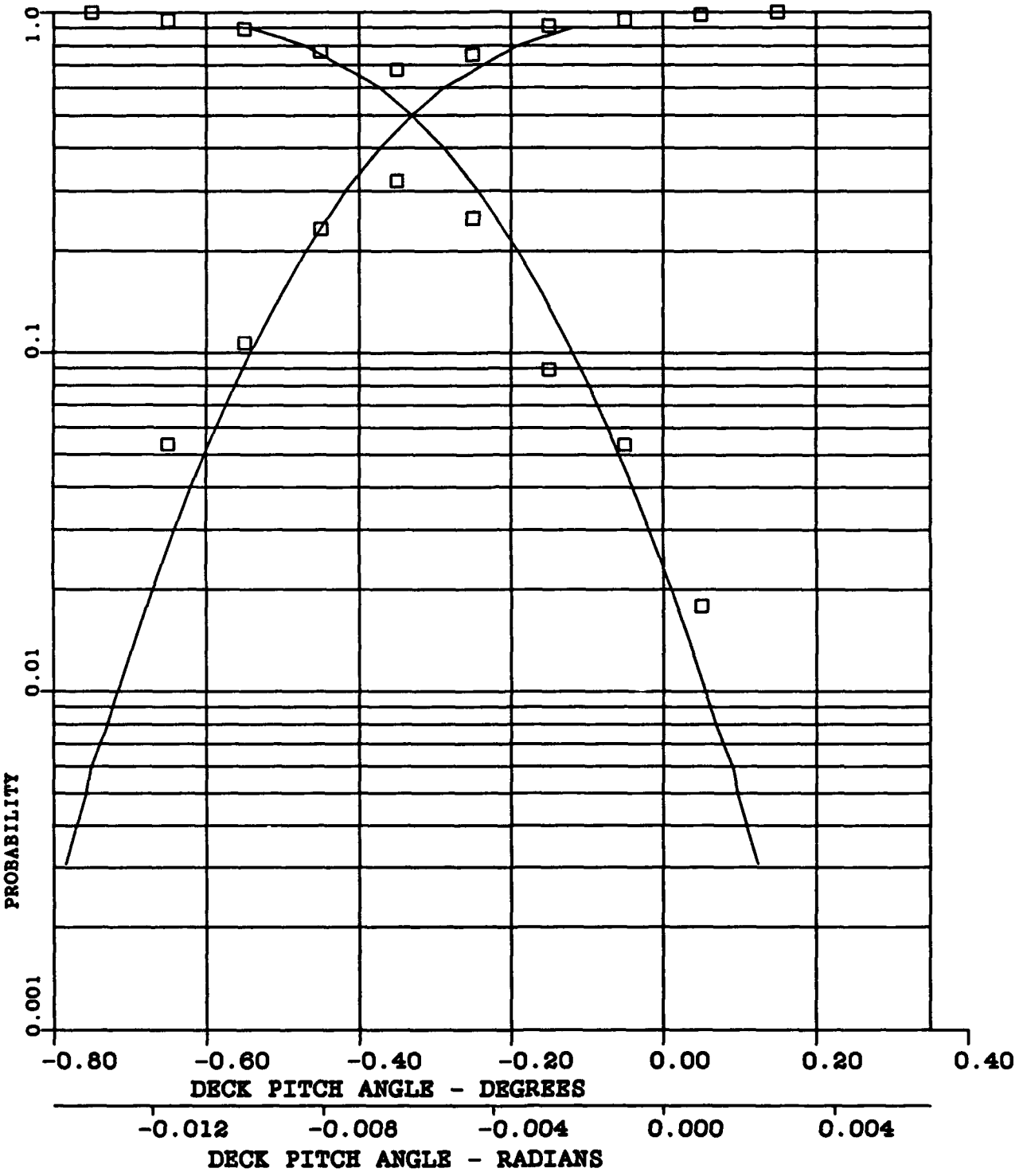


FIGURE J-49 PROBABILITY DISTRIBUTION OF CARRIER DECK PITCH MOTION

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-53 $\bar{X}$-39132.18 POUNDS (17750.36 KILOGRAMS) A3-0.35
S-1578.60 POUNDS (716.05 KILOGRAMS) A4-3.36

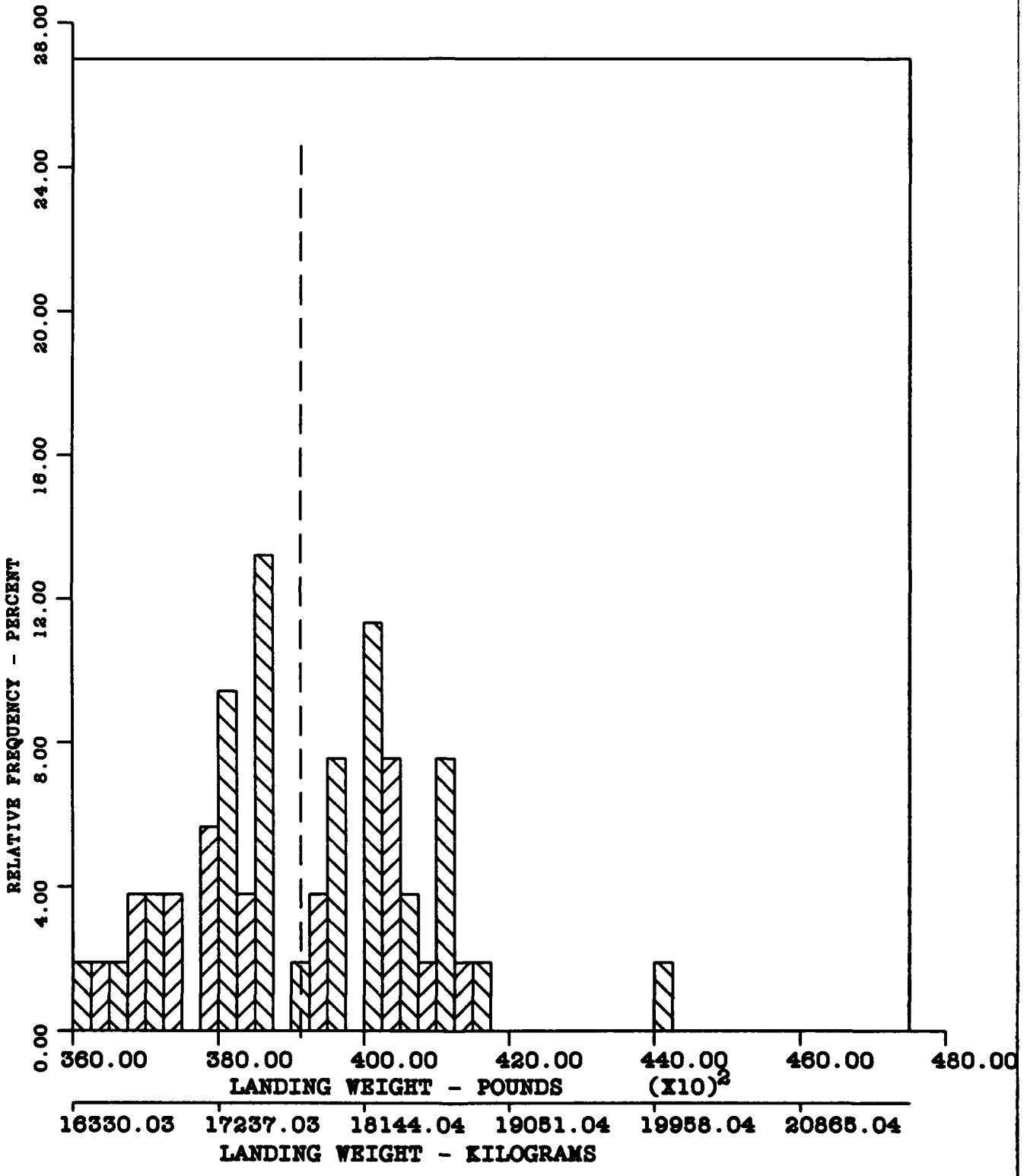


FIGURE J-50 FREQUENCY DISTRIBUTION OF AIRCRAFT LANDING WEIGHT

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-56 $\bar{X}$-1.08 DEG/SEC (0.019 RAD/SEC) A3-0.31
S-4.84 DEG/SEC (0.084 RAD/SEC) A4-3.78

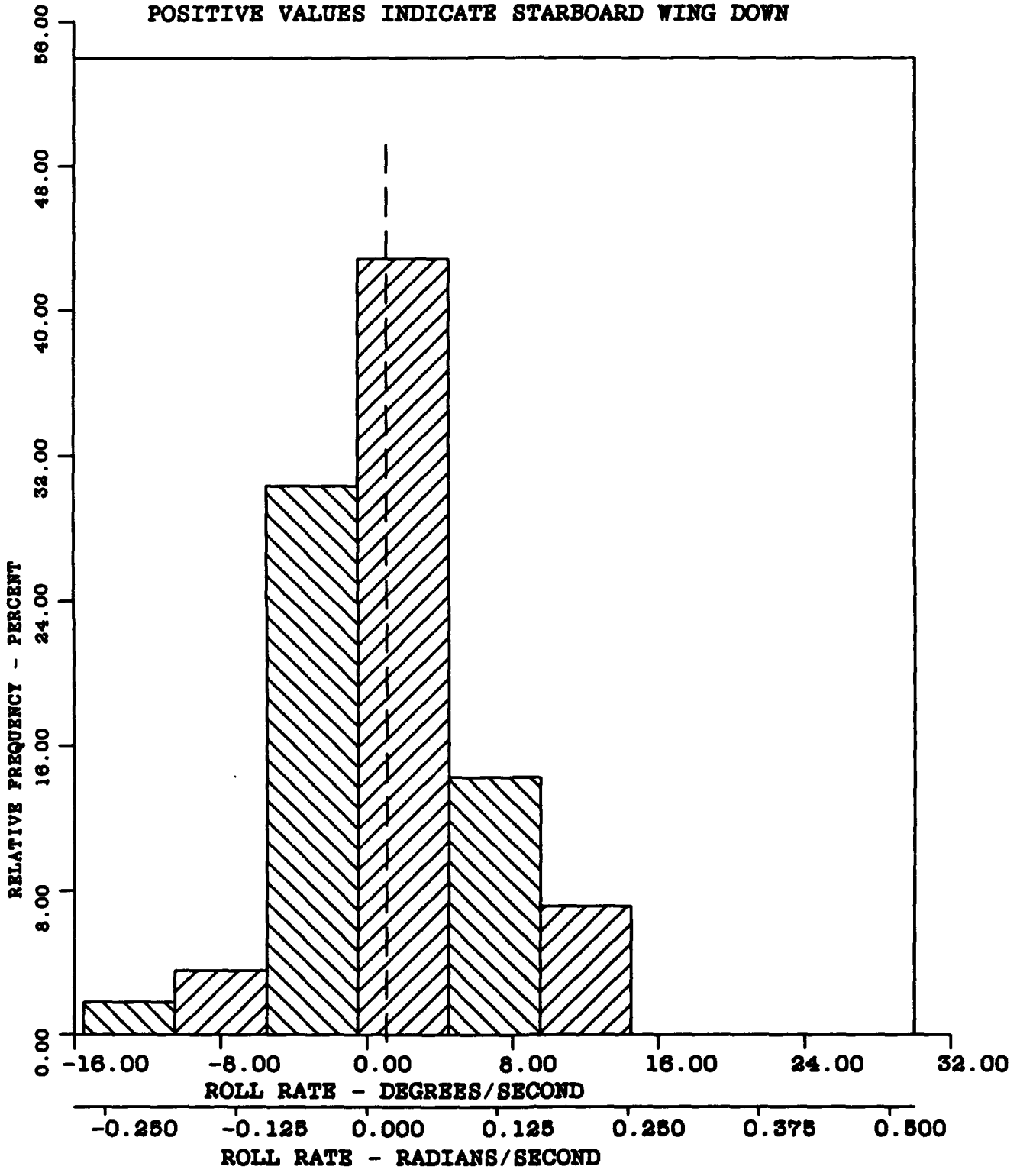


FIGURE J-51 FREQUENCY DISTRIBUTION OF ROLL RATE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-56 $\bar{X}$-1.08 DEG/SEC (0.019 RAD/SEC) A3-0.31
S-4.84 DEG/SEC (0.084 RAD/SEC) A4-3.78
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE STARBOARD WING DOWN

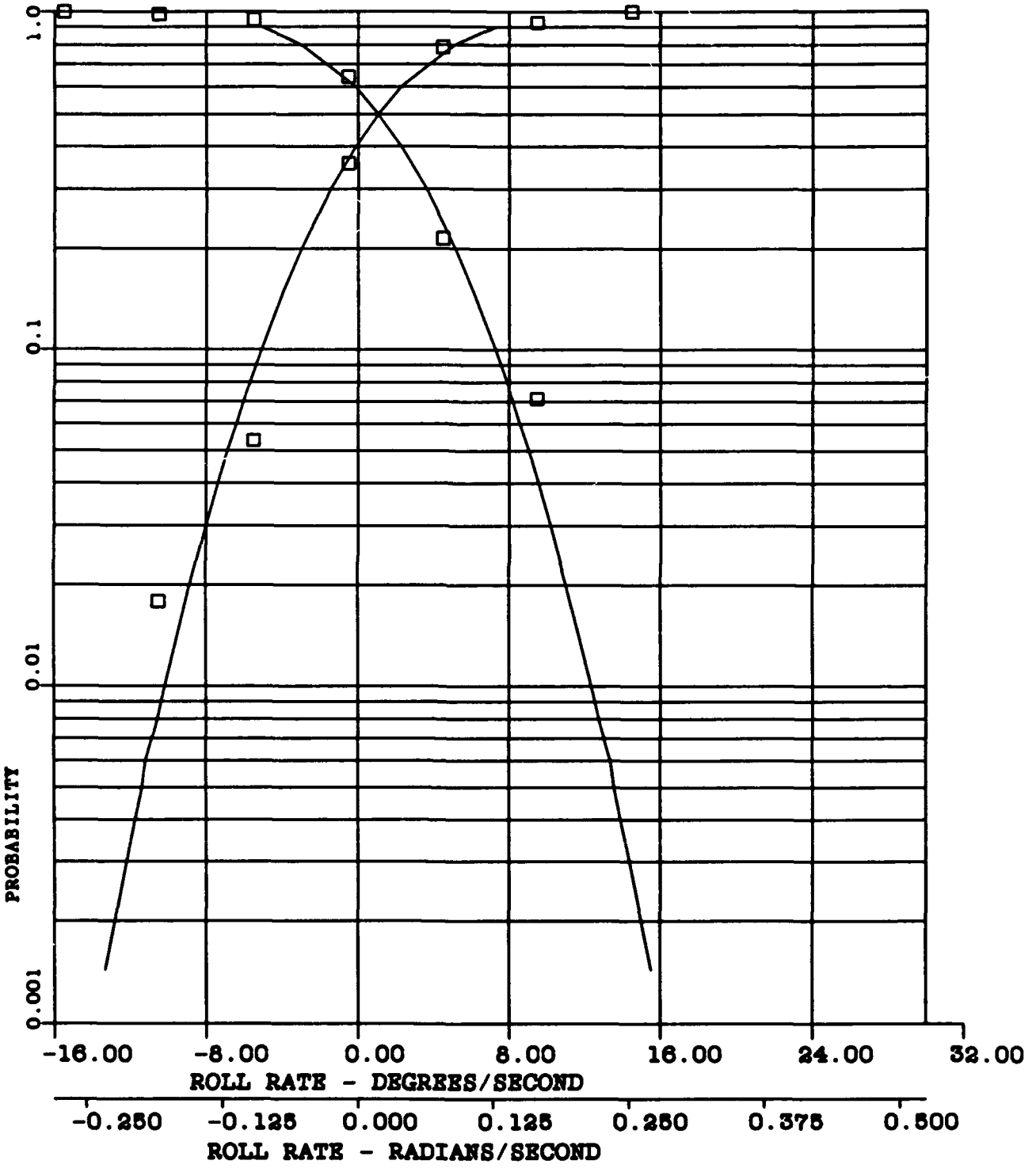


FIGURE J-52 PROBABILITY DISTRIBUTION OF ROLL RATE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-56 $\bar{X}$-1.57 DEG/SEC (0.027 RAD/SEC) A3-0.68
S-2.33 DEG/SEC (0.041 RAD/SEC) A4-3.30

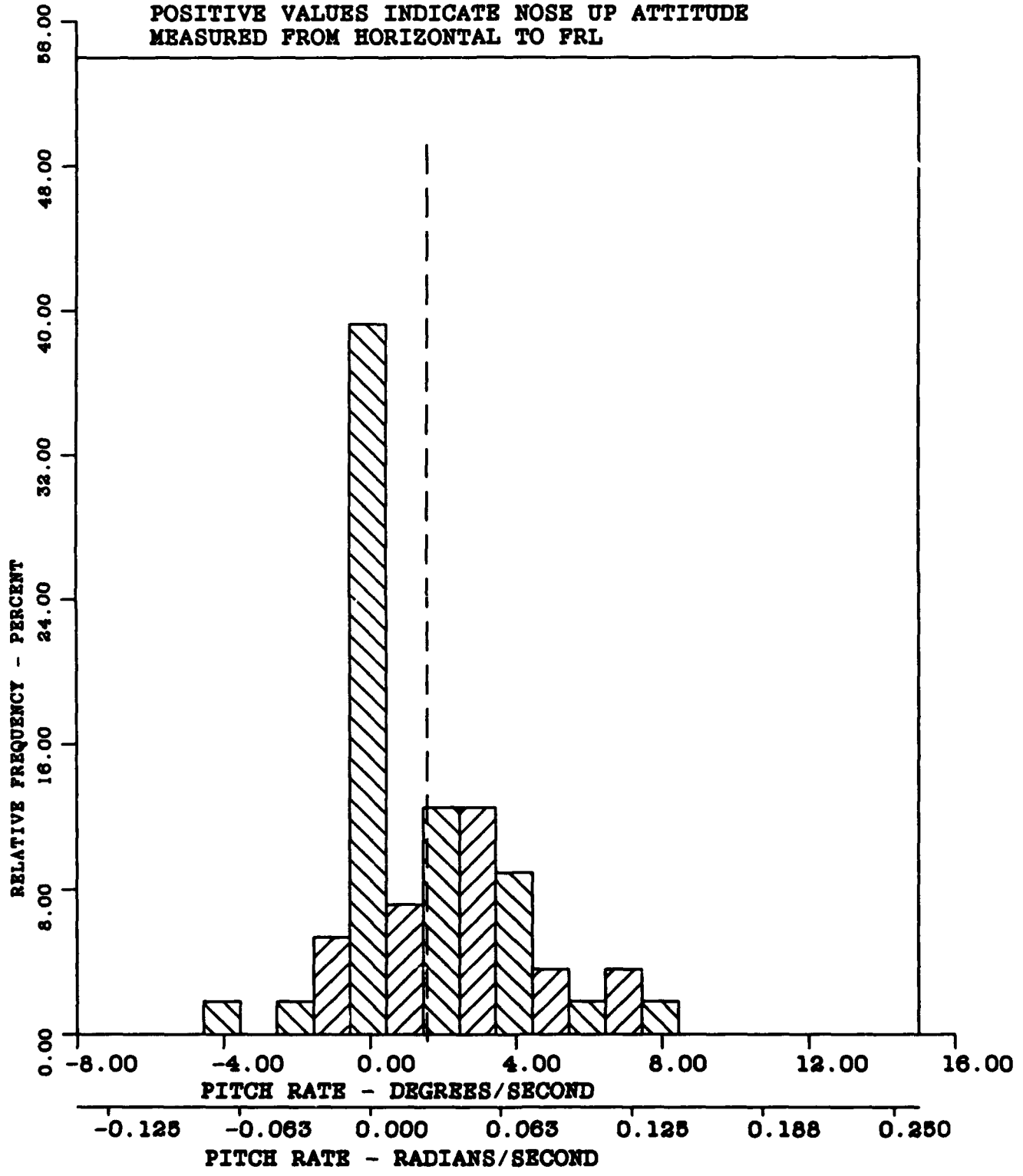


FIGURE J-53 FREQUENCY DISTRIBUTION OF PITCH RATE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N=56 $\bar{X}$=1.57 DEG/SEC (0.027 RAD/SEC) A3=0.68
S=2.33 DEG/SEC (0.041 RAD/SEC) A4=3.30
CURVE FITTED - PEARSON TYPE III
POSITIVE VALUES INDICATE NOSE UP ATTITUDE
MEASURED FROM HORIZONTAL TO FRL

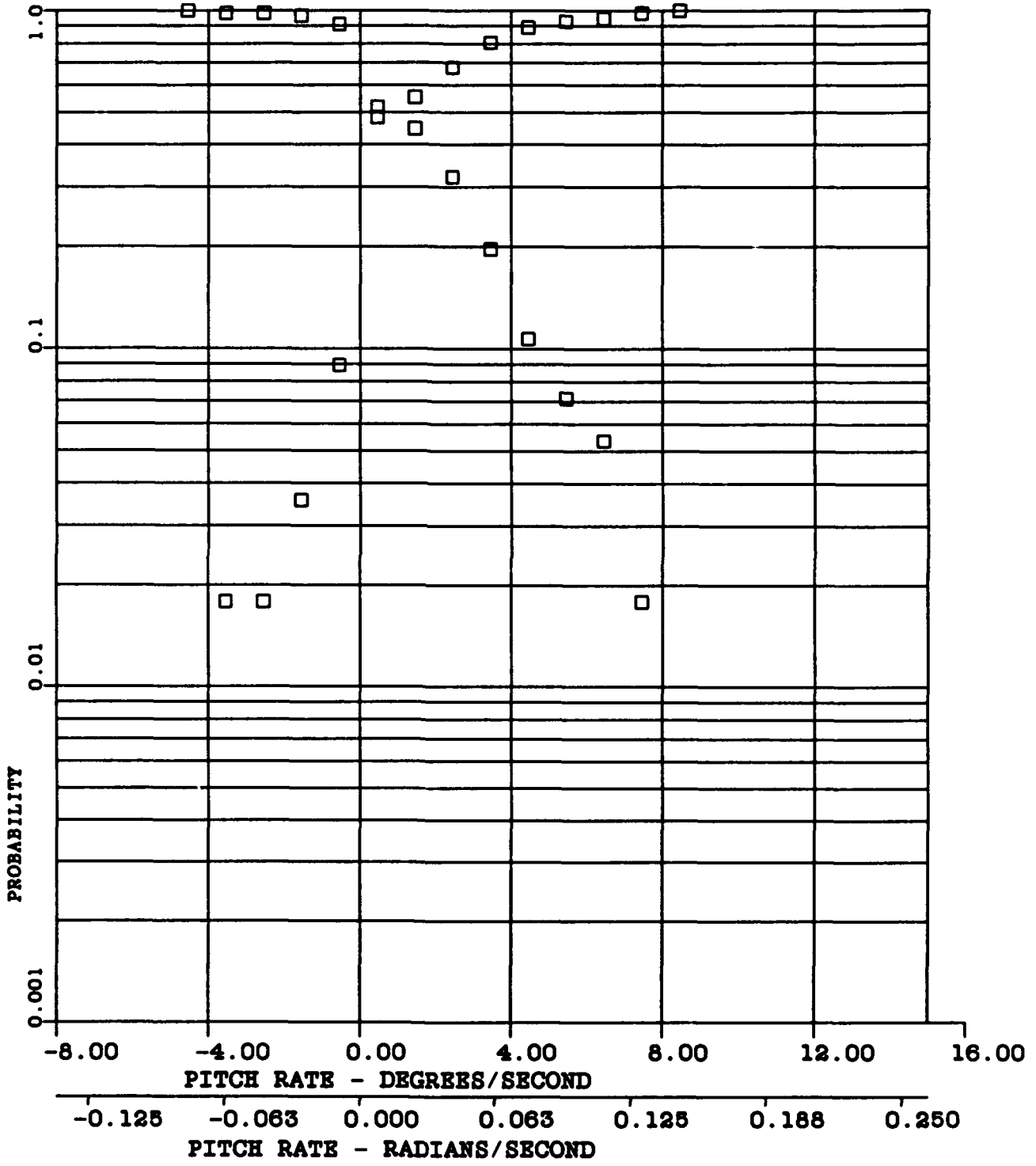


FIGURE J-54 PROBABILITY DISTRIBUTION OF PITCH RATE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N=56 $\bar{X}$=-2.69 DEGREES (-0.050 RADIANS) A3=-0.69
S=1.43 DEGREES (0.025 RADIANS) A4=6.25

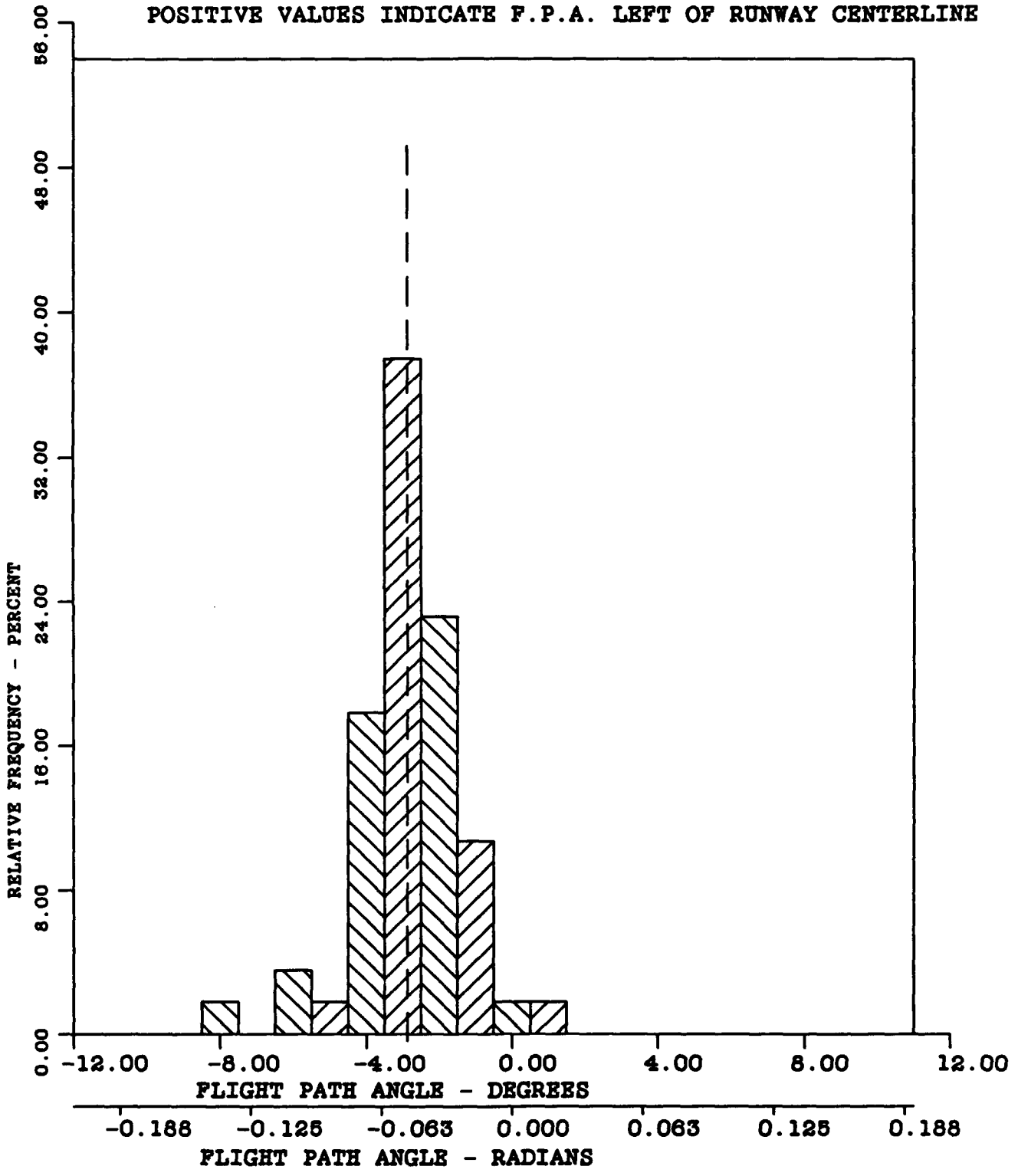


FIGURE J-55 FREQUENCY DISTRIBUTION OF AIRCRAFT FLIGHT PATH ANGLE AT TOUCHDOWN

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-56 $\bar{X}$=-2.89 DEGREES (-0.050 RADIANS) A3=-0.69
S=1.43 DEGREES (0.025 RADIANS) A4=6.25
CURVE FITTED - PEARSON TYPE III
POSITIVE VALUES INDICATE F.P.A. LEFT OF RUNWAY CENTERLINE

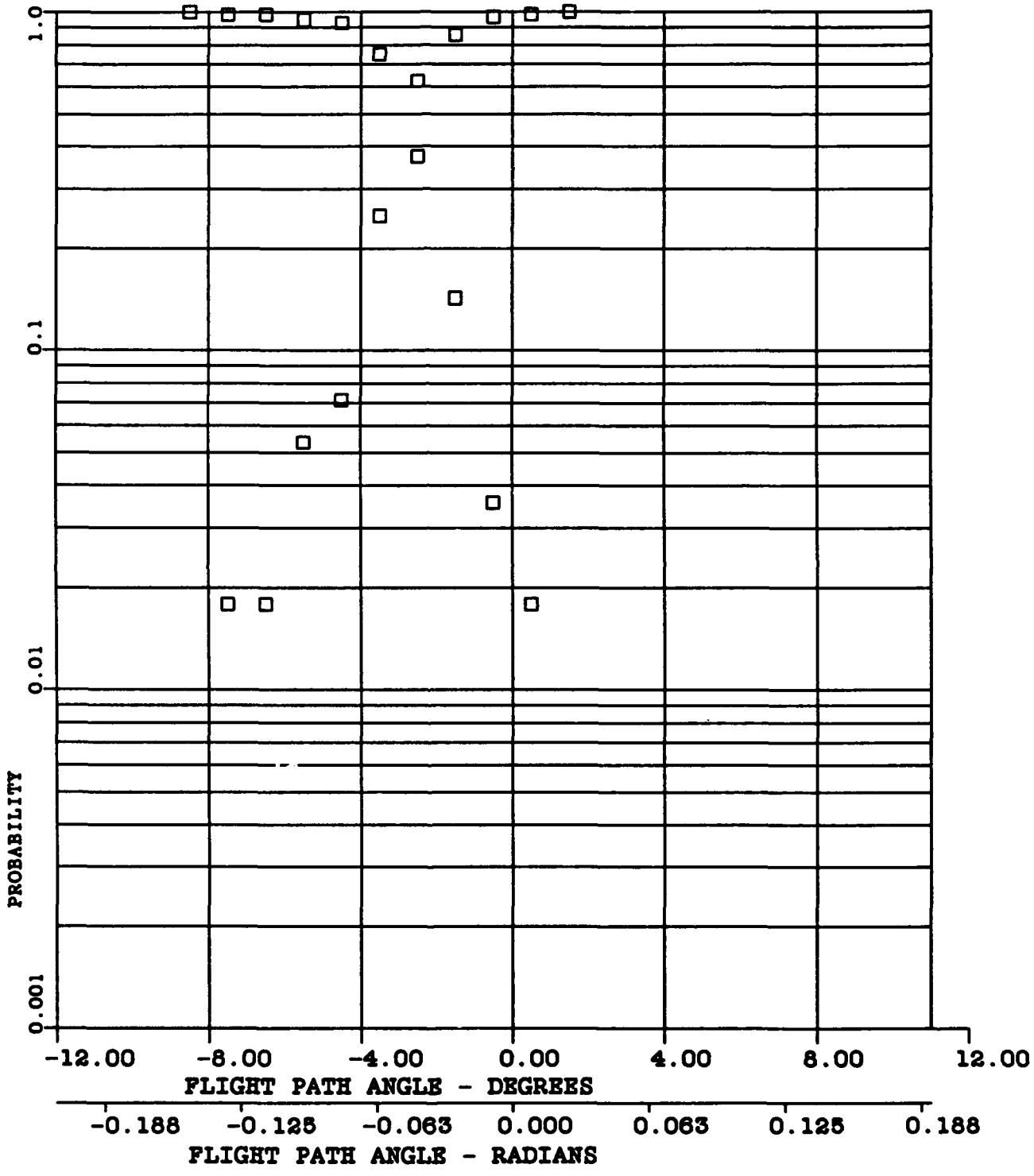


FIGURE J-56 PROBABILITY DISTRIBUTION OF AIRCRAFT FLIGHT PATH ANGLE AT TOUCHDOWN

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-56 $\bar{X}$-3.03 DEGREES (0.053 RADIANS) A3-0.31
S-2.60 DEGREES (0.045 RADIANS) A4-4.65

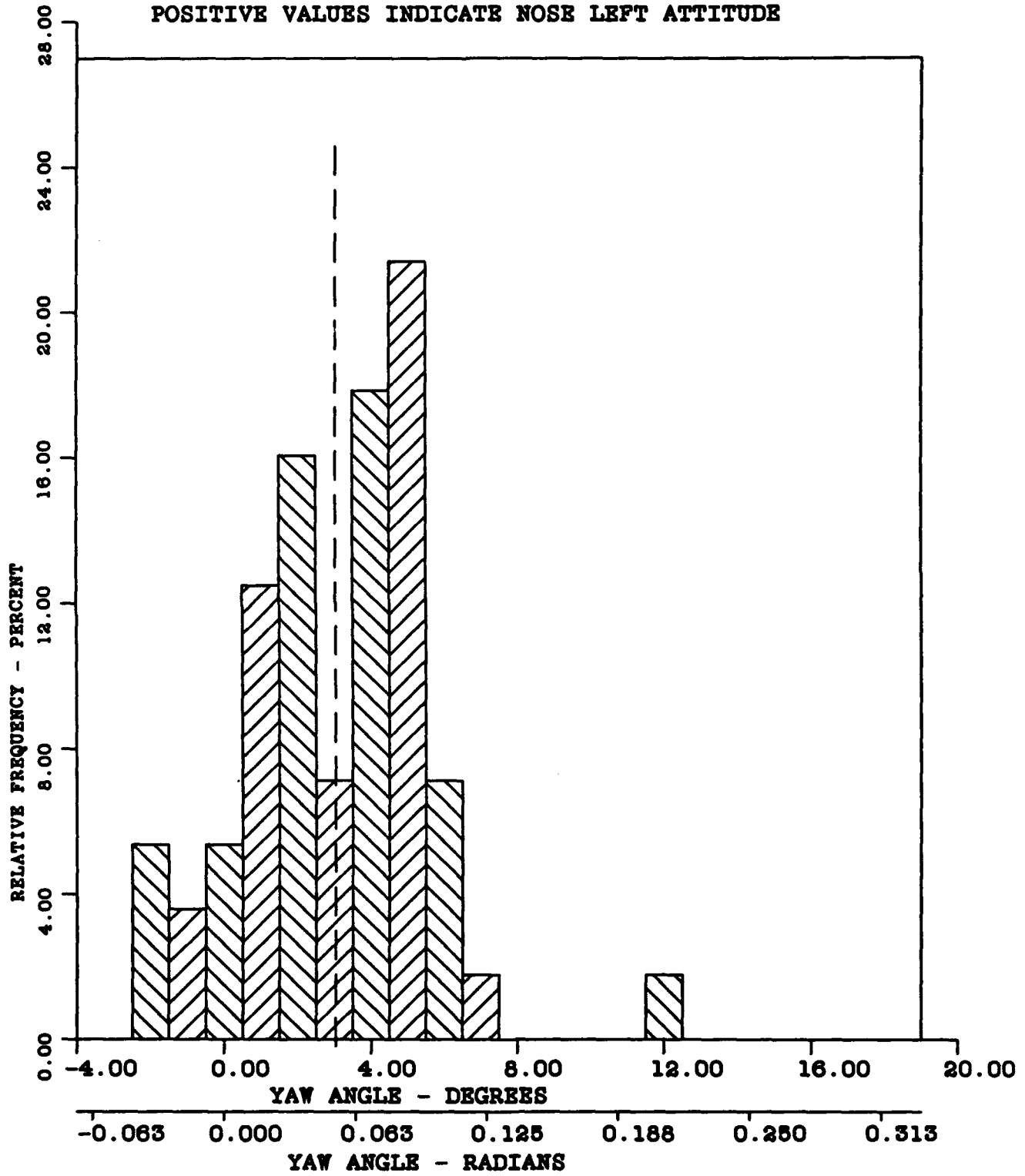


FIGURE J-57 FREQUENCY DISTRIBUTION OF AIRCRAFT YAW ANGLE

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-56 $\bar{X}$-3.03 DEGREES (0.053 RADIANS) A3-0.31
S-2.60 DEGREES (0.045 RADIANS) A4-4.65
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE NOSE LEFT ATTITUDE

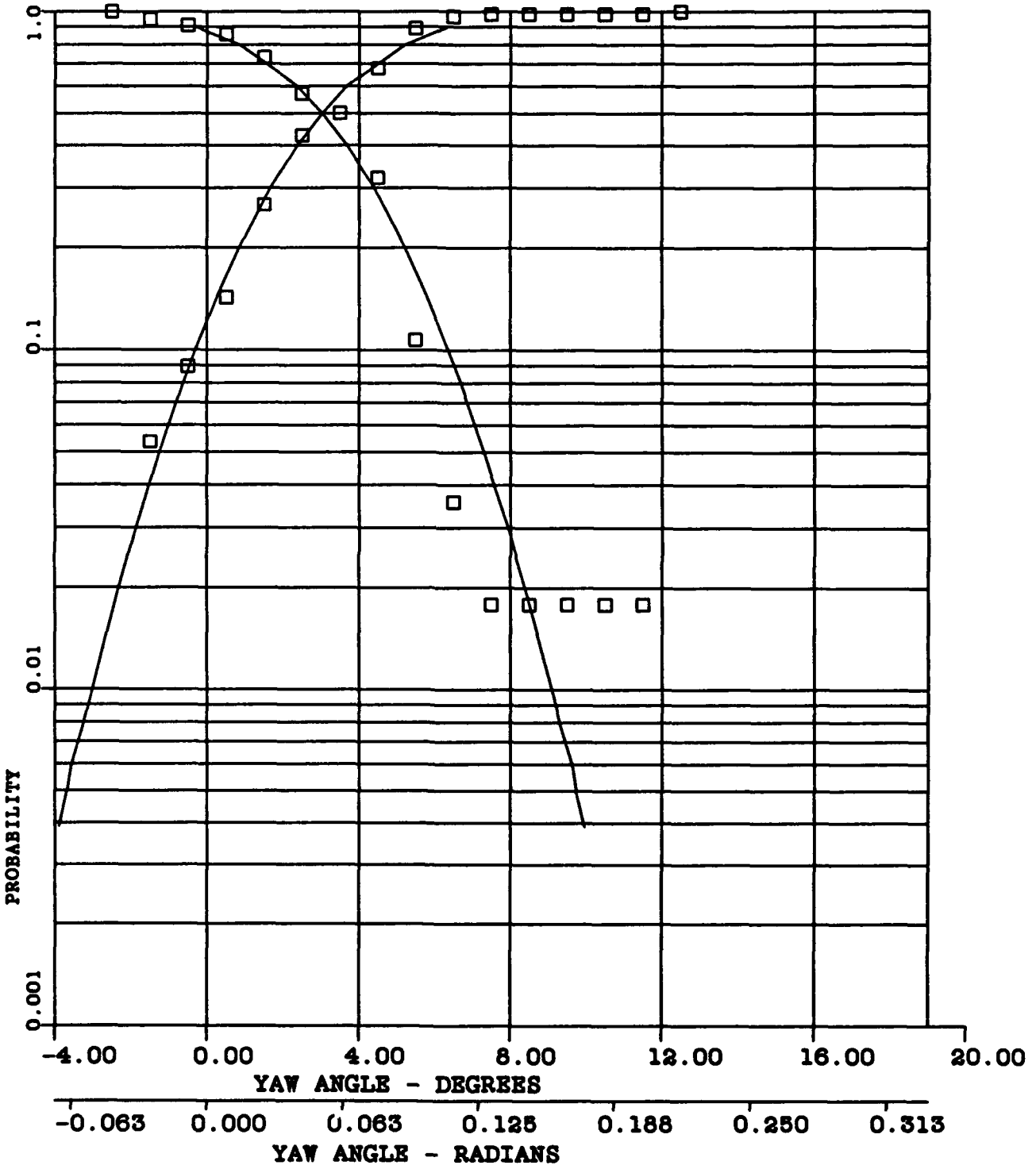


FIGURE J-58 PROBABILITY DISTRIBUTION OF AIRCRAFT YAW ANGLE

APPENDIX K

EA-6B AIRCRAFT

NIGHT CARRIER LANDINGS

USS ENTERPRISE
CVN-65

Appendix K:

Frequency and Probability Distributions,
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MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-37 $\bar{X}$-28.59 KNOTS (14.71 METRES/SEC) A3=-0.63
S-1.62 KNOTS (0.83 METRES/SEC) A4-2.42

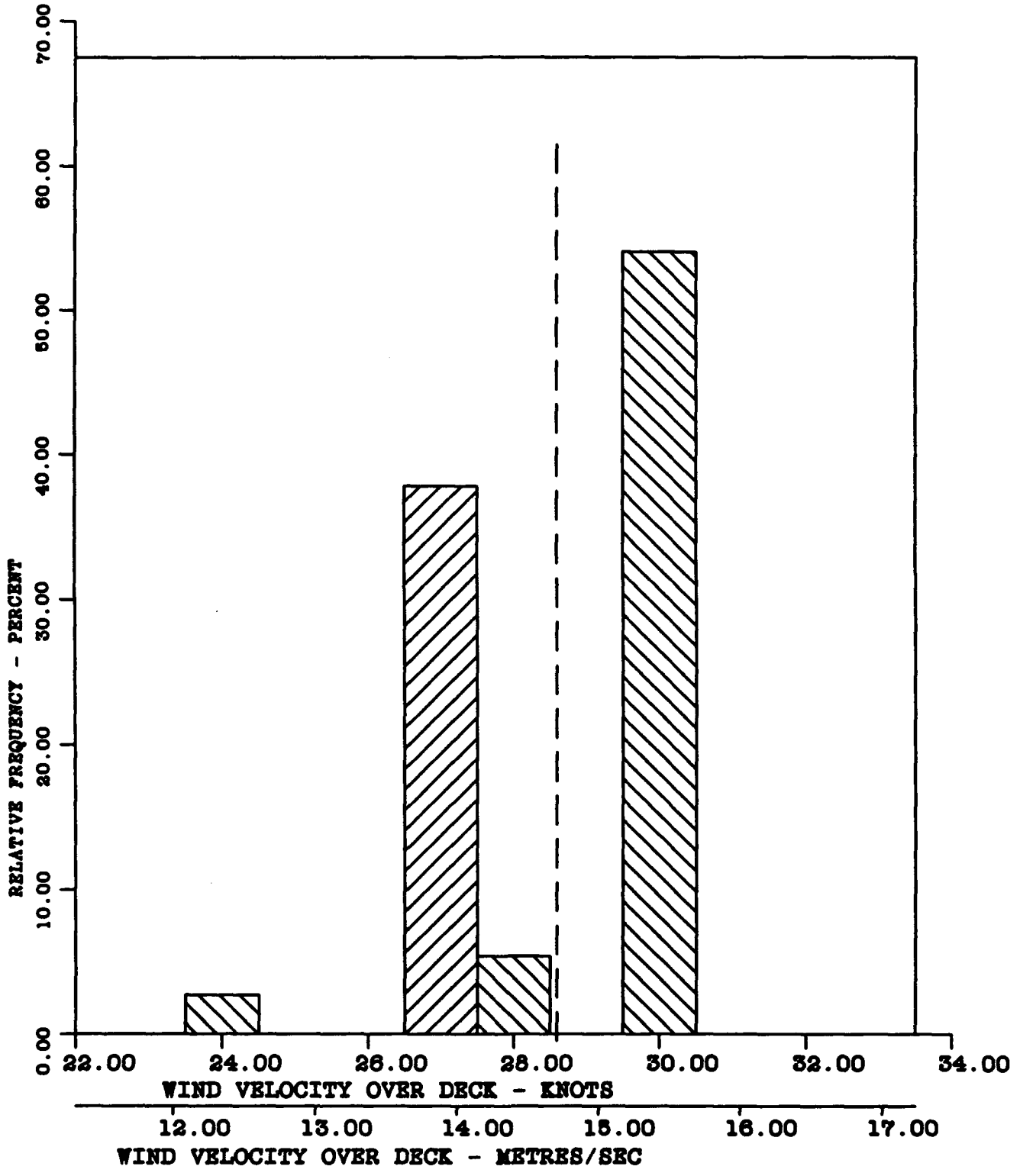


FIGURE K-1 FREQUENCY DISTRIBUTION OF WIND VELOCITY OVER THE DECK

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-37 $\bar{X}$-28.59 KNOTS (14.71 METRES/SEC) A3=-0.63
S-1.62 KNOTS (0.83 METRES/SEC) A4-2.42
CURVE FITTED - NORMAL

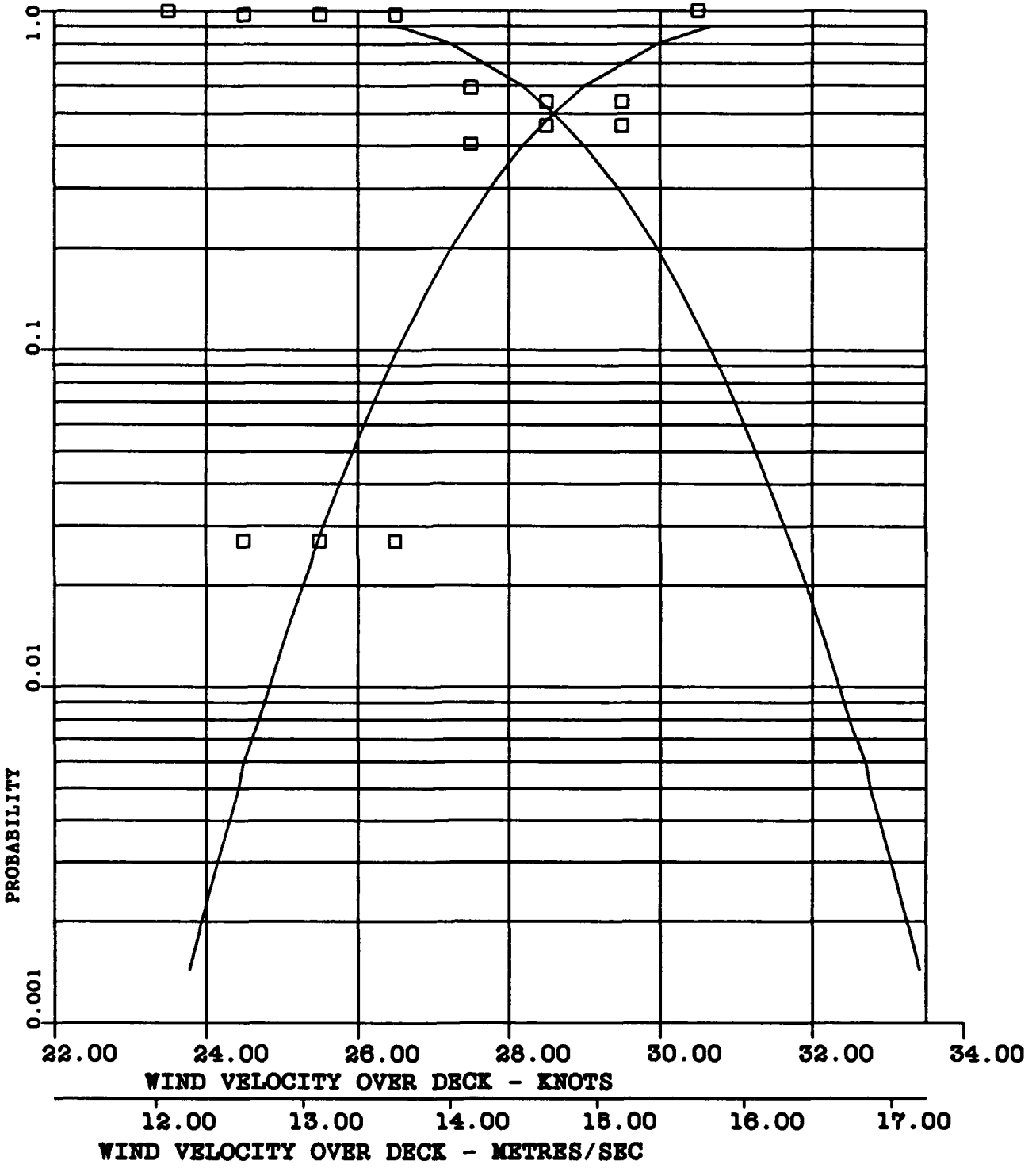


FIGURE K-2 PROBABILITY DISTRIBUTION OF WIND VELOCITY OVER THE DECK

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-37 $\bar{X}$-137.28 KNOTS (70.62 METRES/SEC) A3-2.20
S-6.65 KNOTS (3.42 METRES/SEC) A4-10.97

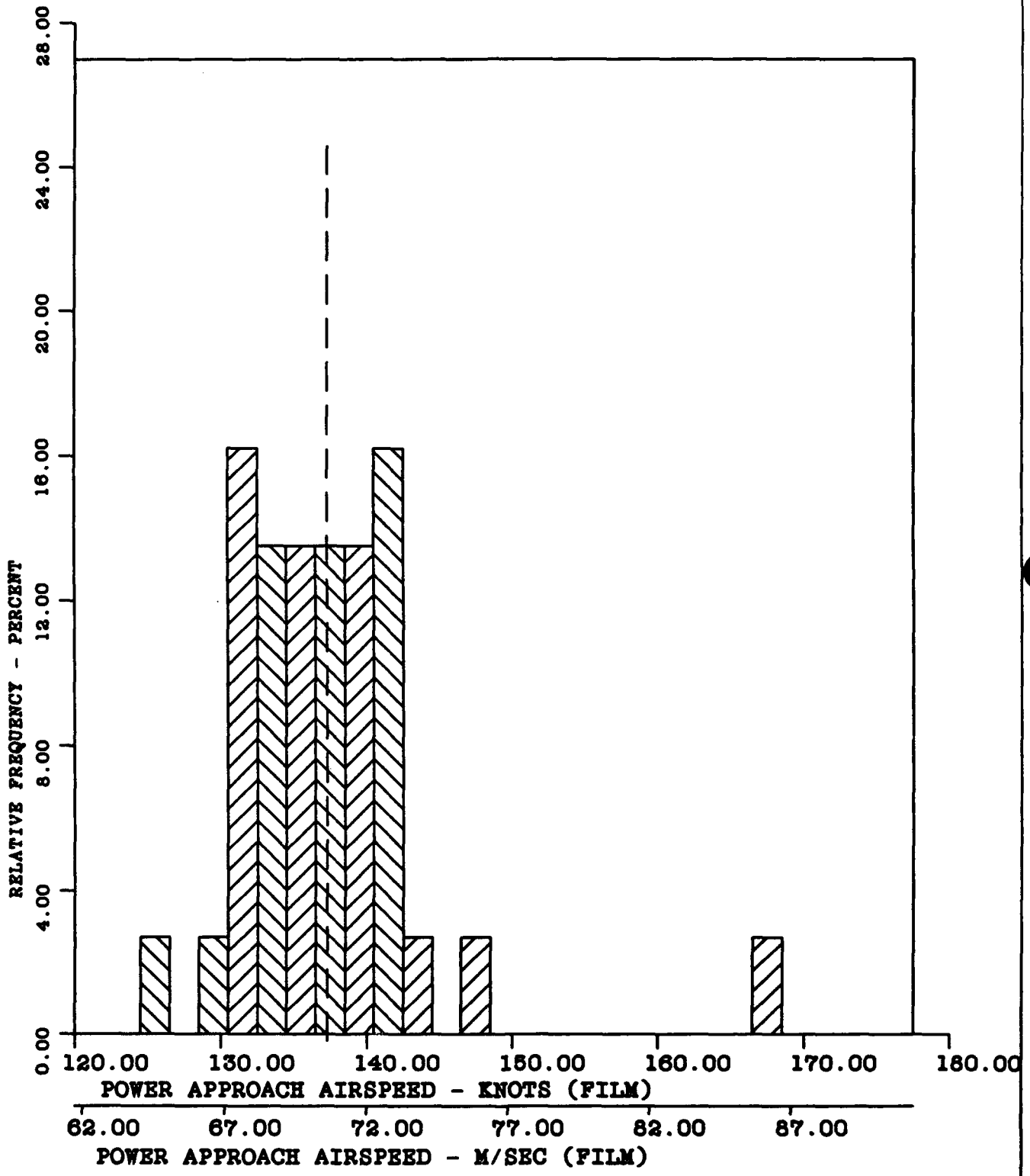


FIGURE K-3 FREQUENCY DISTRIBUTION OF FILM MEASURED POWER APPROACH AIRSPEED AT THE RAMP

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-37 $\bar{X}$-137.28 KNOTS (70.62 METRES/SEC) A3-2.20
S-6.65 KNOTS (3.42 METRES/SEC) A4-10.97
CURVE FITTED - PEARSON TYPE III

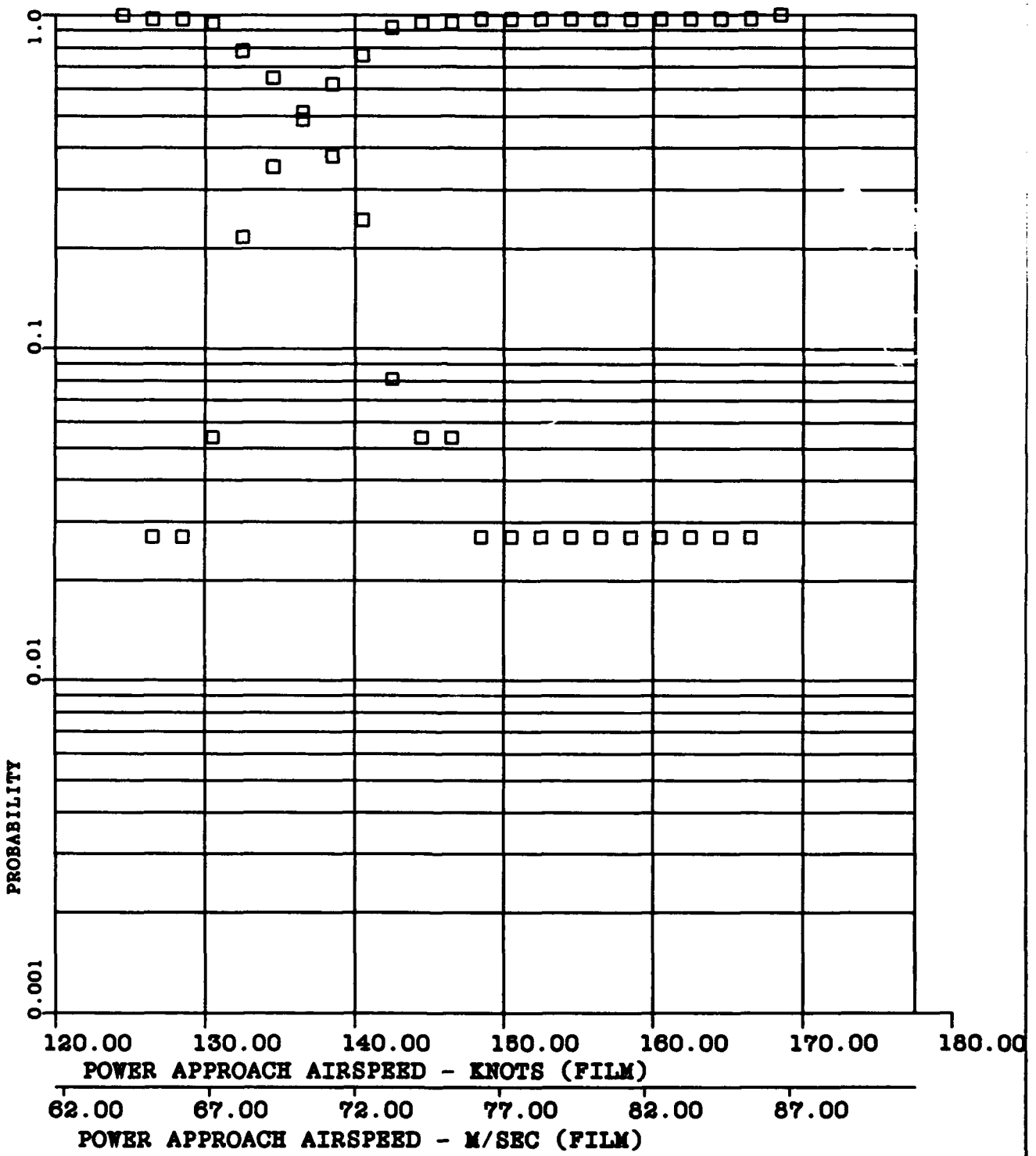


FIGURE K-4 PROBABILITY DISTRIBUTION OF POWER APPROACH AIRSPEED AT THE RAMP (FILM)

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-37 $\bar{X}$-6.65 FEET/SEC (2.03 METRES/SEC) A3-0.31
S-3.41 FEET/SEC (1.04 METRES/SEC) A4-2.81

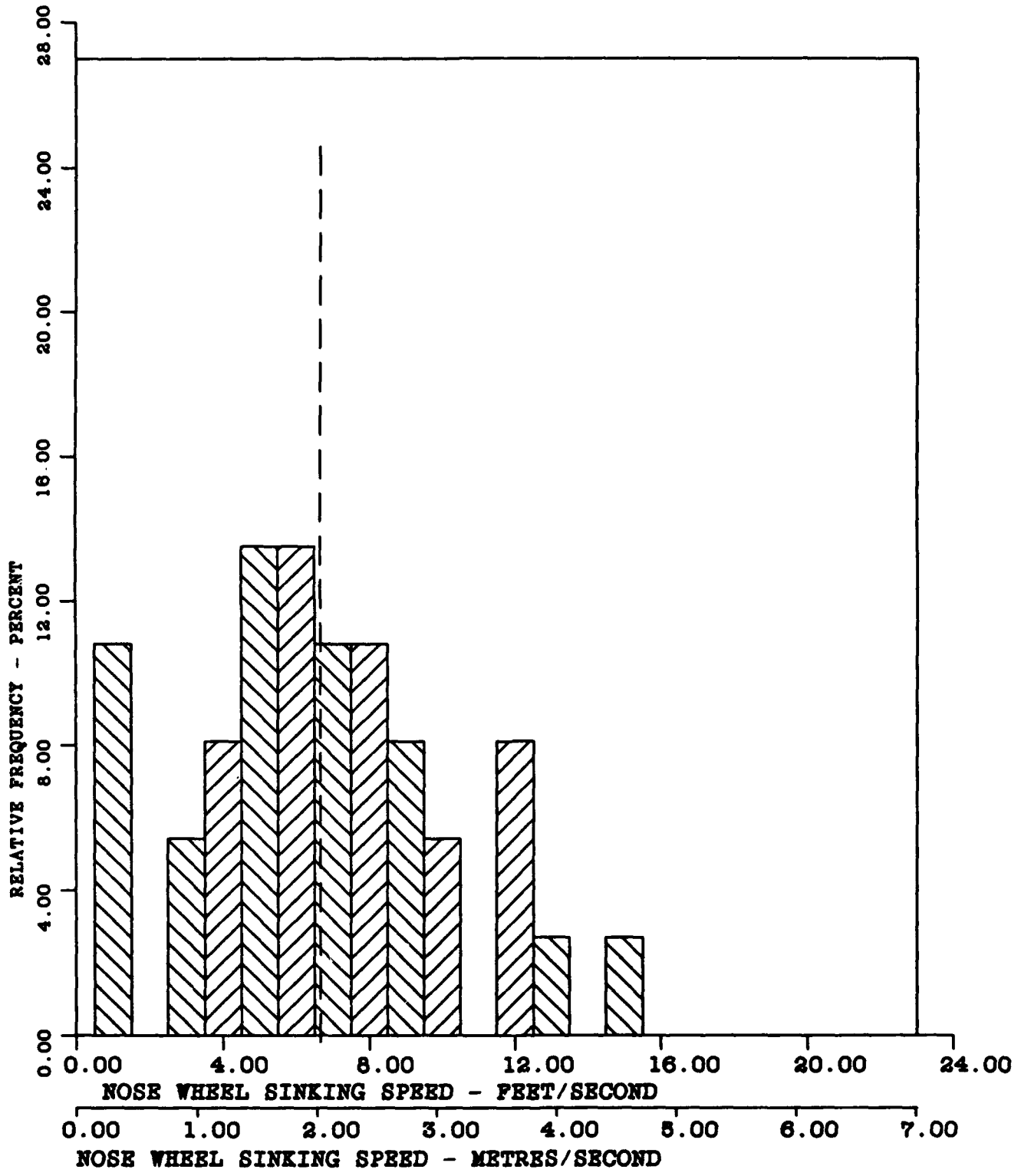


FIGURE K-5 FREQUENCY DISTRIBUTION OF NOSE WHEEL SINKING SPEED

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-37 $\bar{X}$-6.66 FEET/SEC (2.03 METRES/SEC) A3-0.31
S-3.41 FEET/SEC (1.04 METRES/SEC) A4-2.81
CURVE FITTED - NORMAL

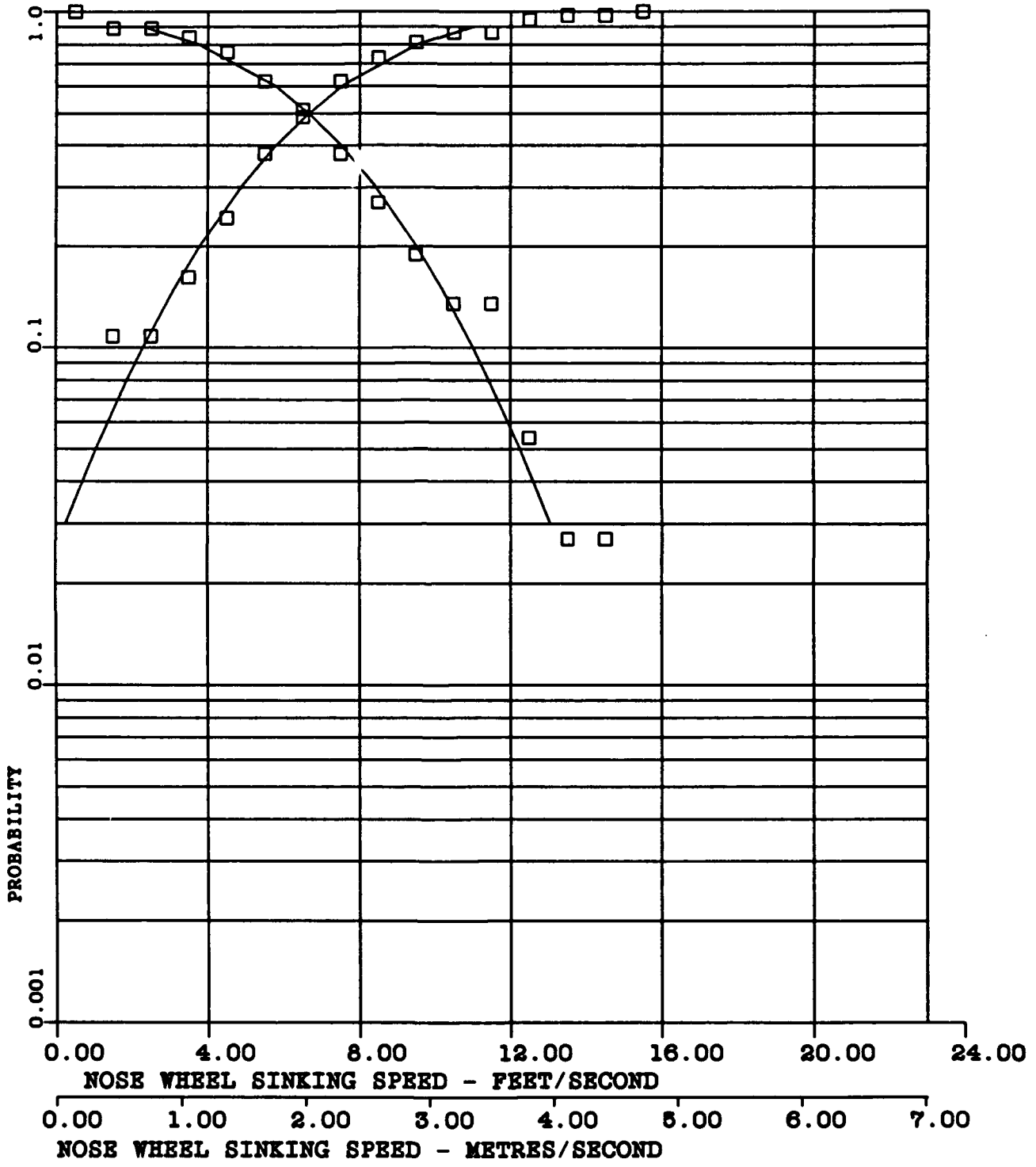


FIGURE K-6 PROBABILITY DISTRIBUTION OF NOSE WHEEL SINKING SPEED

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N=37 $\bar{X}$=10.27 FEET/SEC (3.13 METRES/SEC) A3=-0.01
S=2.50 FEET/SEC (0.76 METRES/SEC) A4=1.98

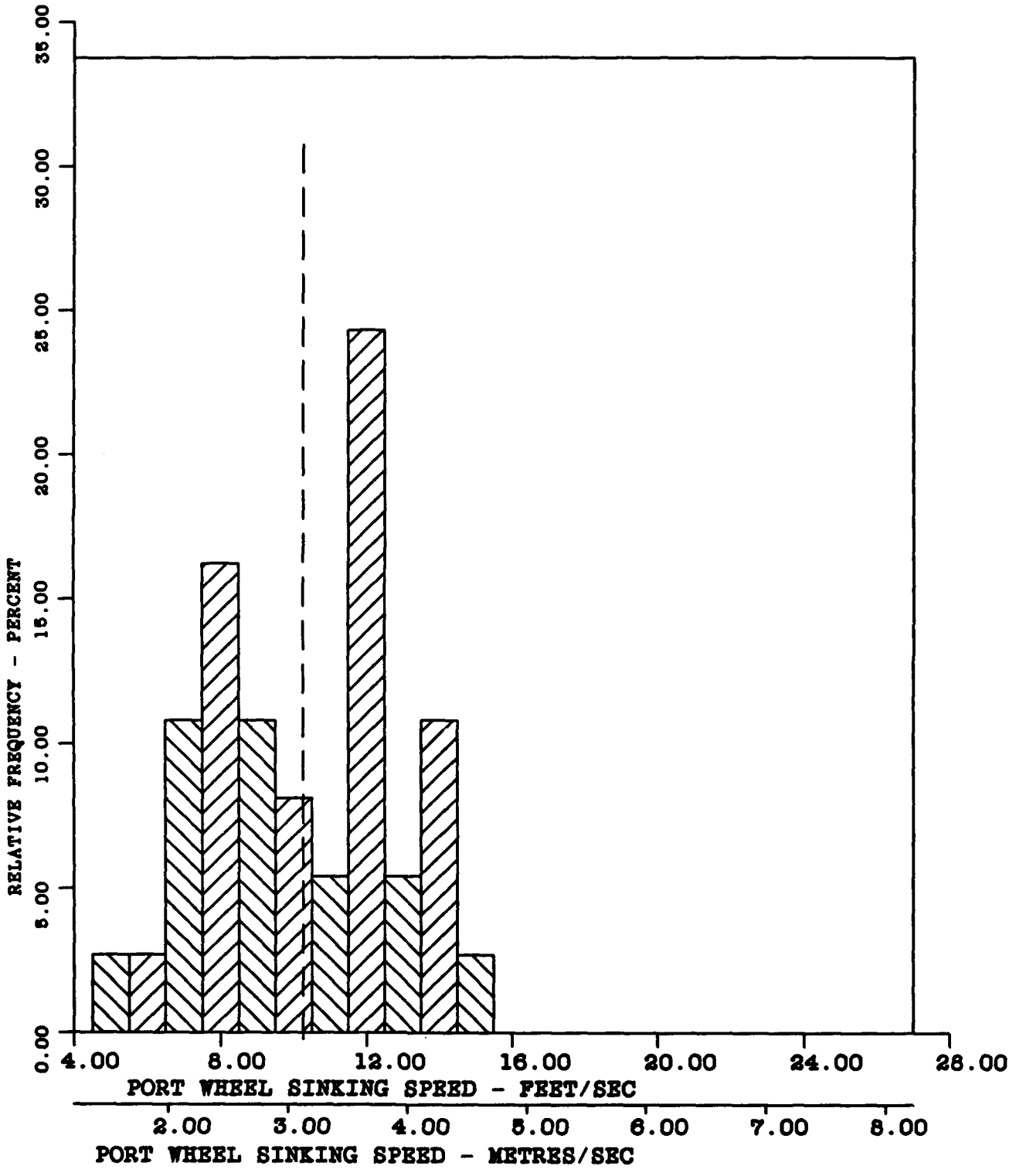


FIGURE K-7 FREQUENCY DISTRIBUTION OF PORT WHEEL SINKING SPEED AT PORT WHEEL TOUCHDOWN

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-37 $\bar{X}$-10.27 FEET/SEC (3.13 METRES/SEC) A3=-0.01
S-2.50 FEET/SEC (0.76 METRES/SEC) A4=1.98
CURVE FITTED - NORMAL

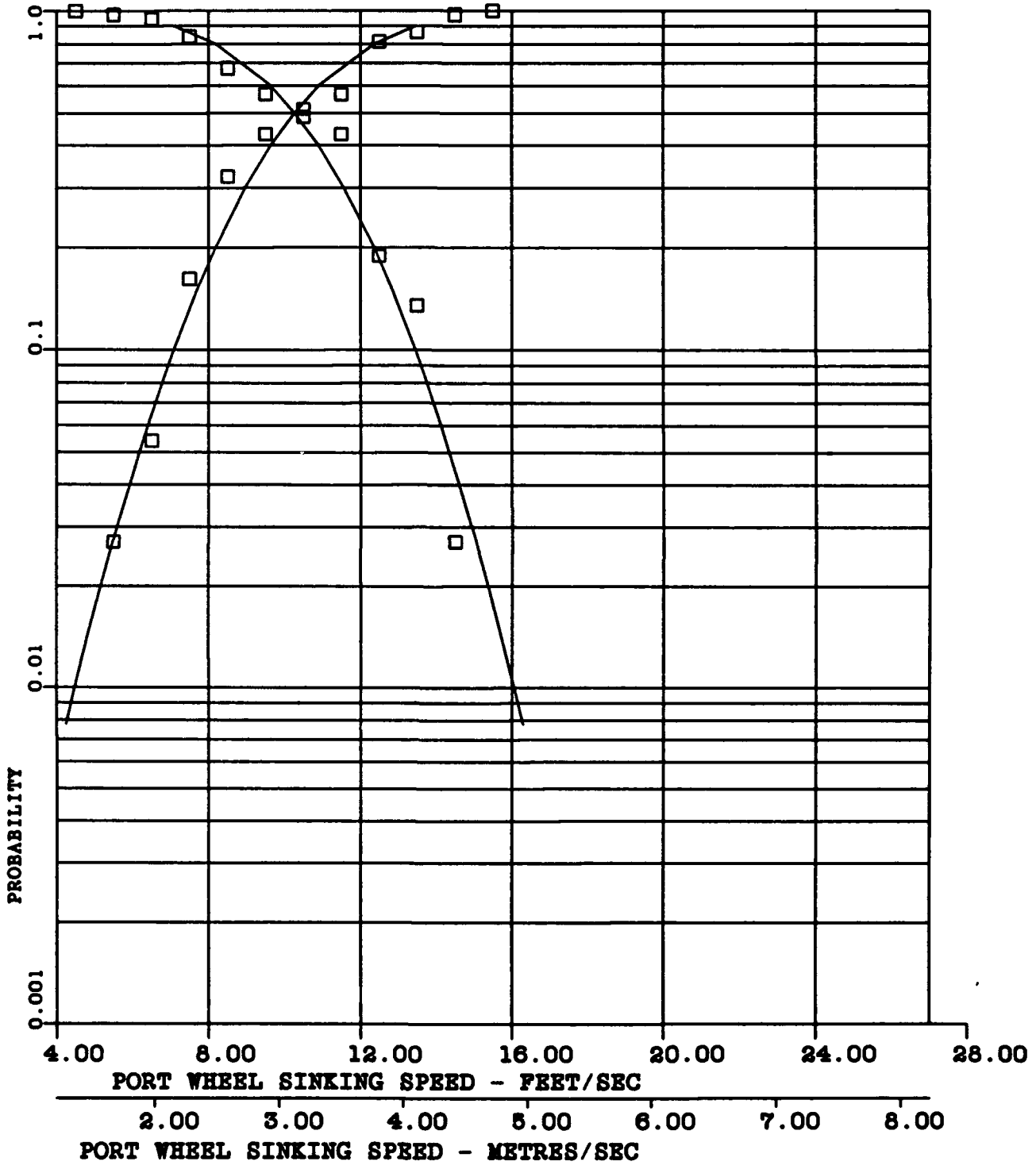


FIGURE K-8 PROBABILITY DISTRIBUTION OF PORT WHEEL SINKING SPEED

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-37 $\bar{X}$-9.85 FEET/SEC (3.00 METRES/SEC) A3-0.20
S-2.12 FEET/SEC (0.65 METRES/SEC) A4-2.17

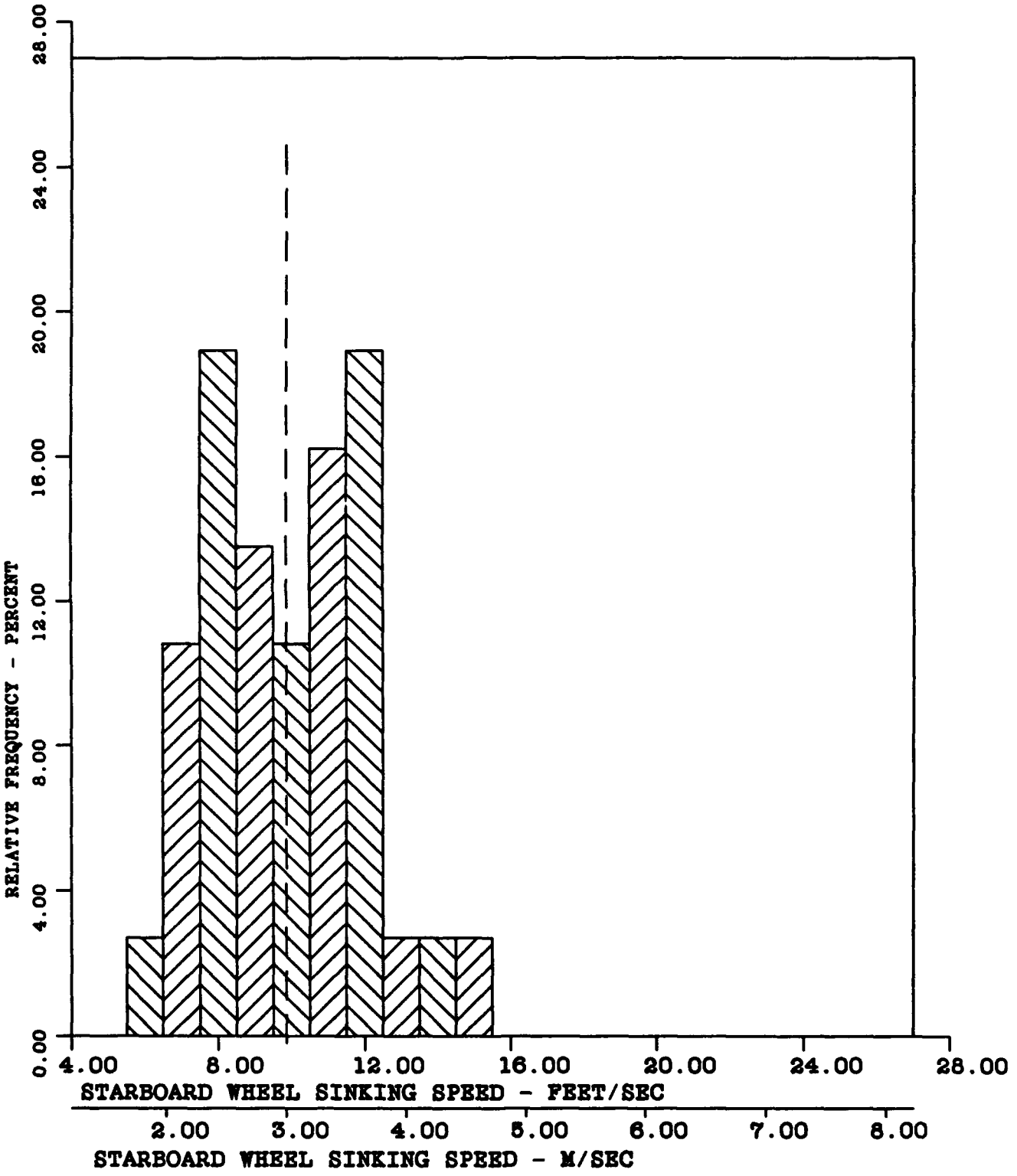


FIGURE K-9 FREQUENCY DISTRIBUTION OF STARBOARD WHEEL SINKING SPEED AT STARBOARD WHEEL TOUCHDOWN

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-37 $\bar{X}$-9.85 FEET/SEC (3.00 METRES/SEC) A3-0.20
S-2.12 FEET/SEC (0.65 METRES/SEC) A4-2.17
CURVE FITTED - NORMAL

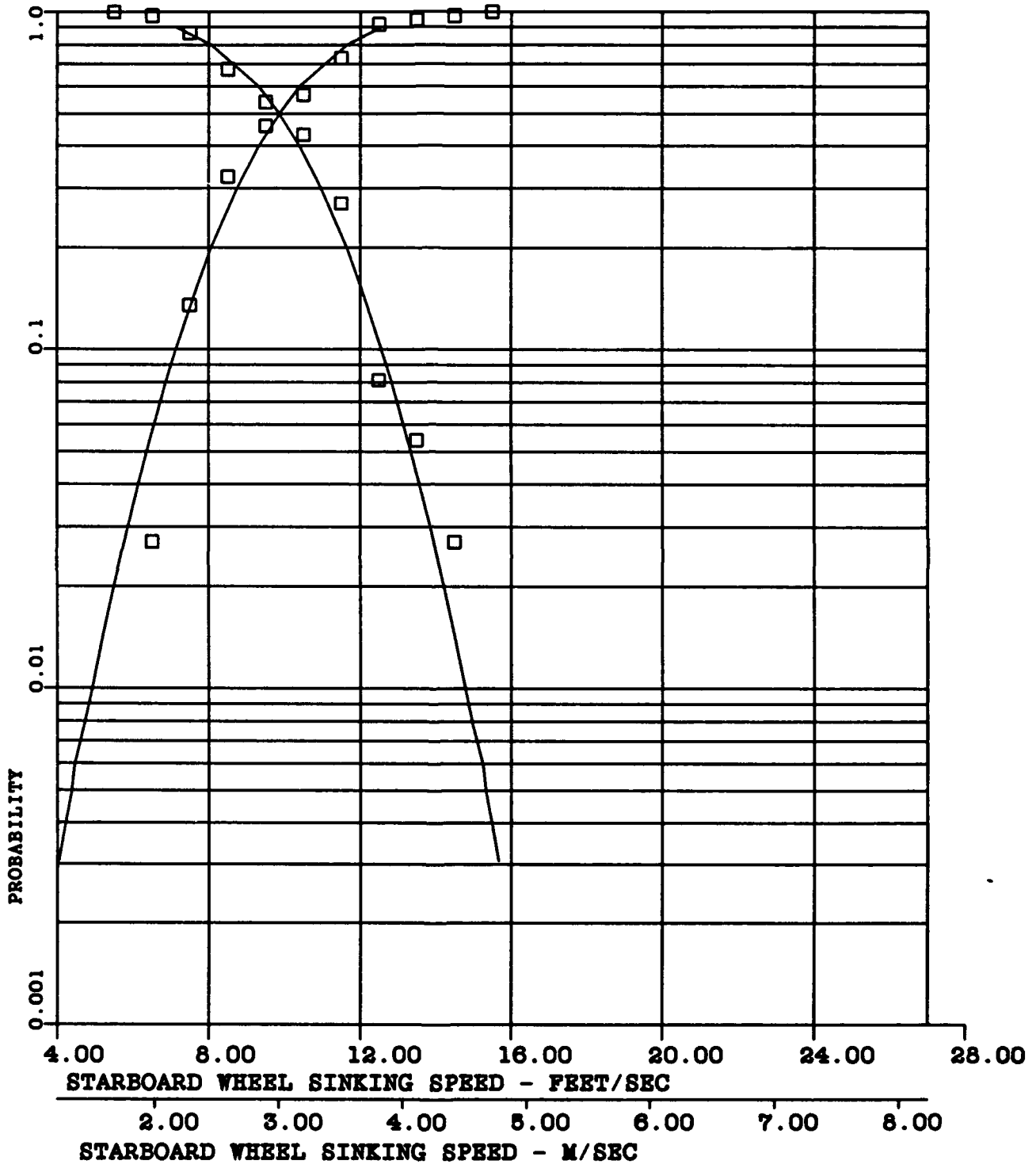


FIGURE K-10. PROBABILITY DISTRIBUTION OF STARBOARD WHEEL SINKING SPEED

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-37 $\bar{X}$-10.12 FEET/SEC (3.09 METRES/SEC) A3-0.02
S-2.21 FEET/SEC (0.67 METRES/SEC) A4-2.08

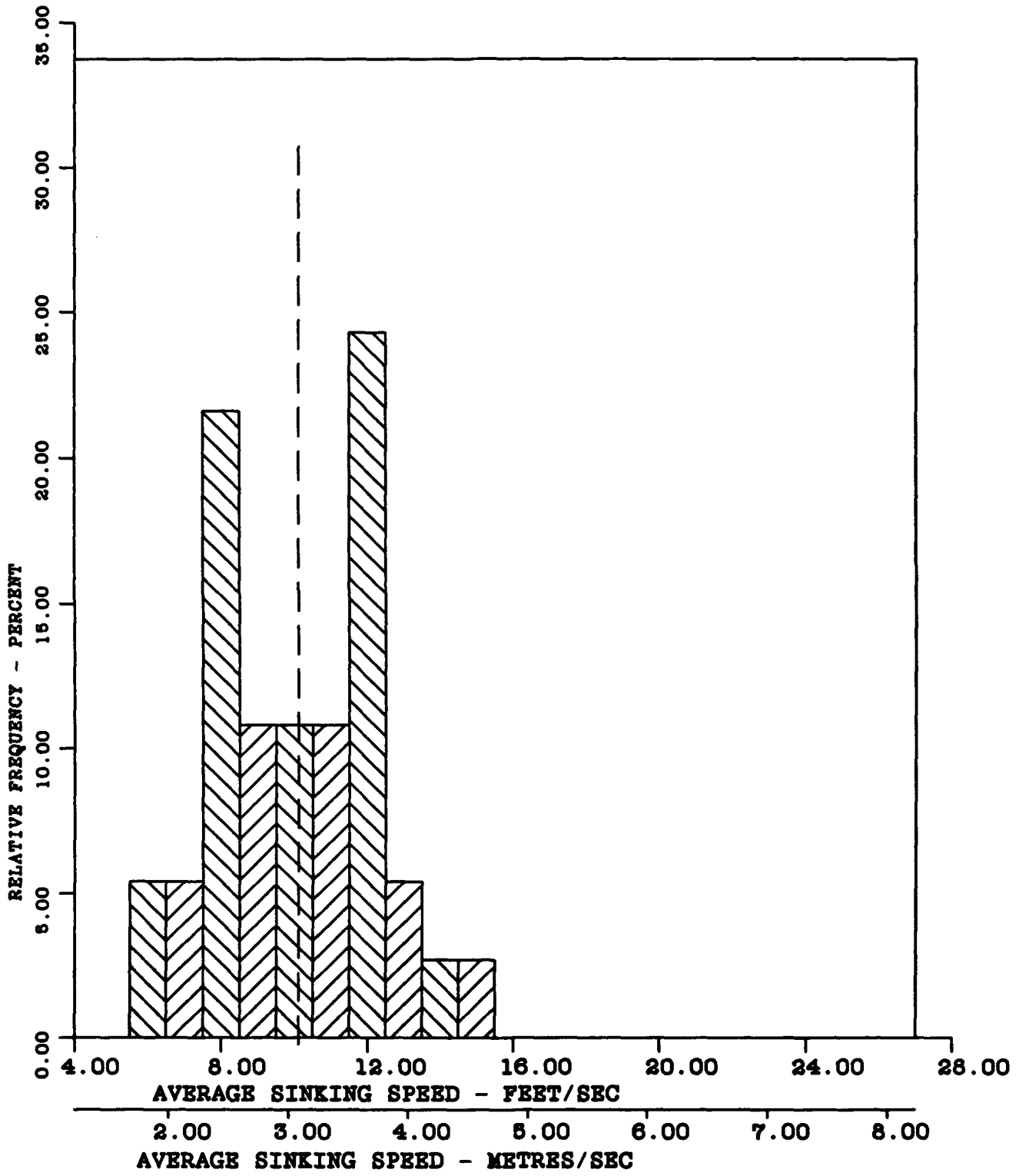


FIGURE K-11 FREQUENCY DISTRIBUTION OF AVG SINKING SPEED OF MAIN WHEEL AT FIRST MAIN WHEEL TOUCHDOWN

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-37 $\bar{X}$-10.12 FEET/SEC (3.09 METRES/SEC) A3-0.02
S-2.21 FEET/SEC (0.67 METRES/SEC) A4-2.08
CURVE FITTED - NORMAL

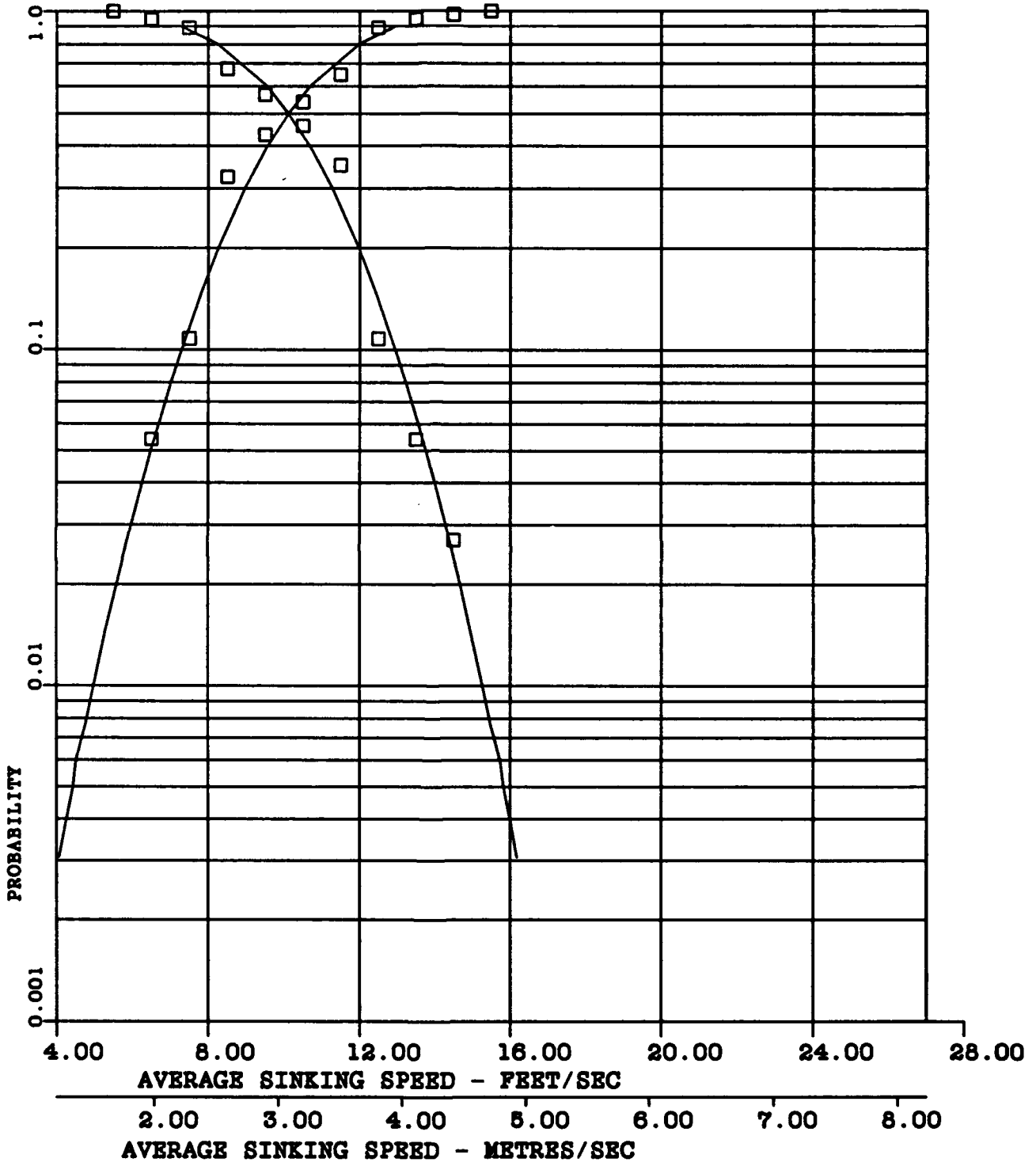


FIGURE K-12 PROBABILITY DISTRIBUTION OF AVERAGE SINKING SPEED AT FIRST MAIN WHEEL TOUCHDOWN

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (0.061 RADIANS)
N-3 $\bar{X}$-9.34 FEET/SEC (2.85 METRES/SEC) A3-0.34
S-2.96 FEET/SEC (0.90 METRES/SEC) A4-1.50

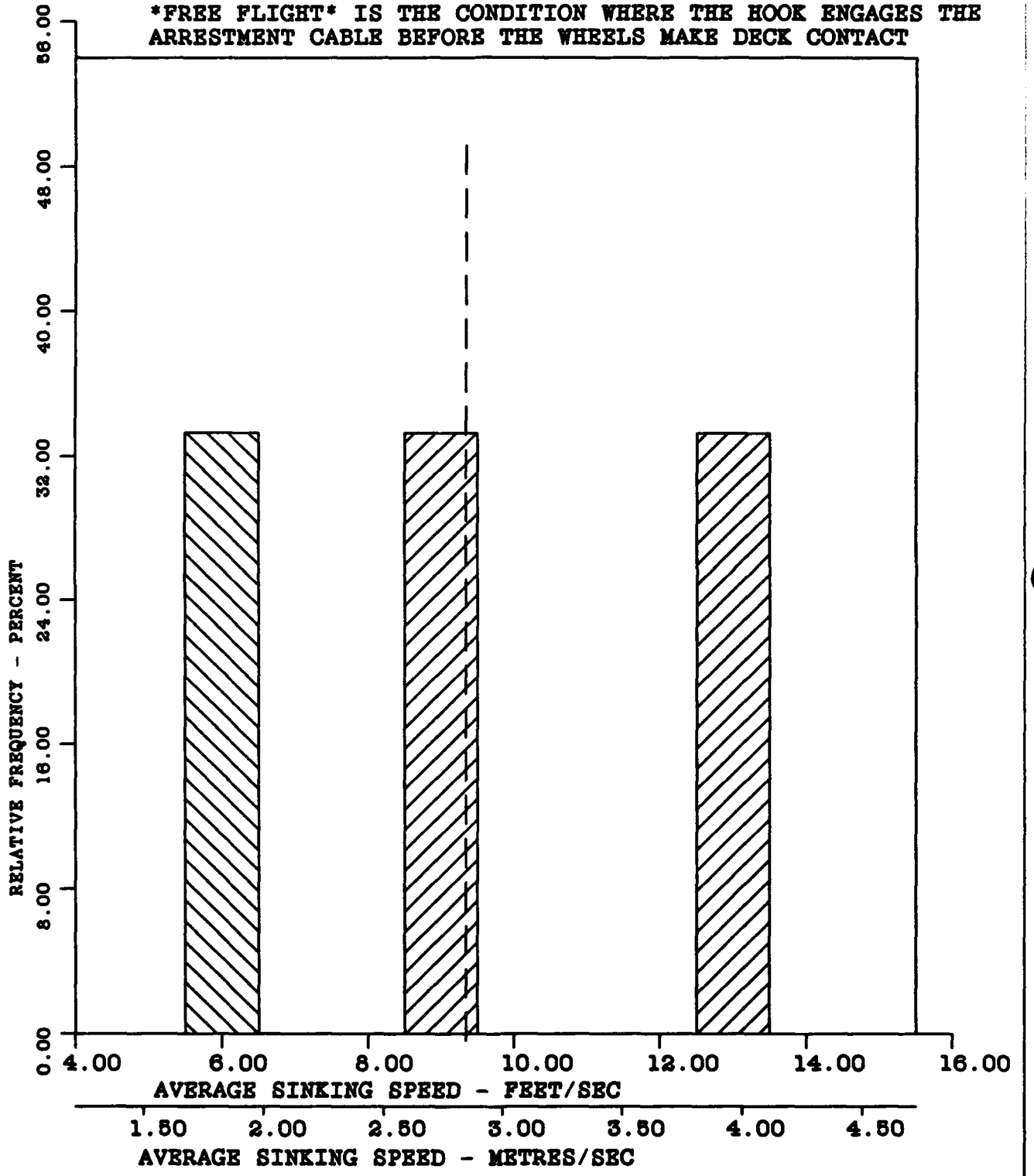


FIGURE K-13 FREQUENCY DISTRIBUTION OF AVERAGE SINKING SPEED OF MAIN WHEELS AT FREE FLIGHT

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (0.061 RADIANS)
N-3 $\bar{X}$=9.34 FEET/SEC (2.85 METRES/SEC) A3=0.34
S=2.96 FEET/SEC (0.90 METRES/SEC) A4=1.50
CURVE FITTED - NORMAL

FREE FLIGHT IS THE CONDITION WHERE THE HOOK ENGAGES THE ARRESTMENT CABLE BEFORE THE WHEELS MAKE DECK CONTACT

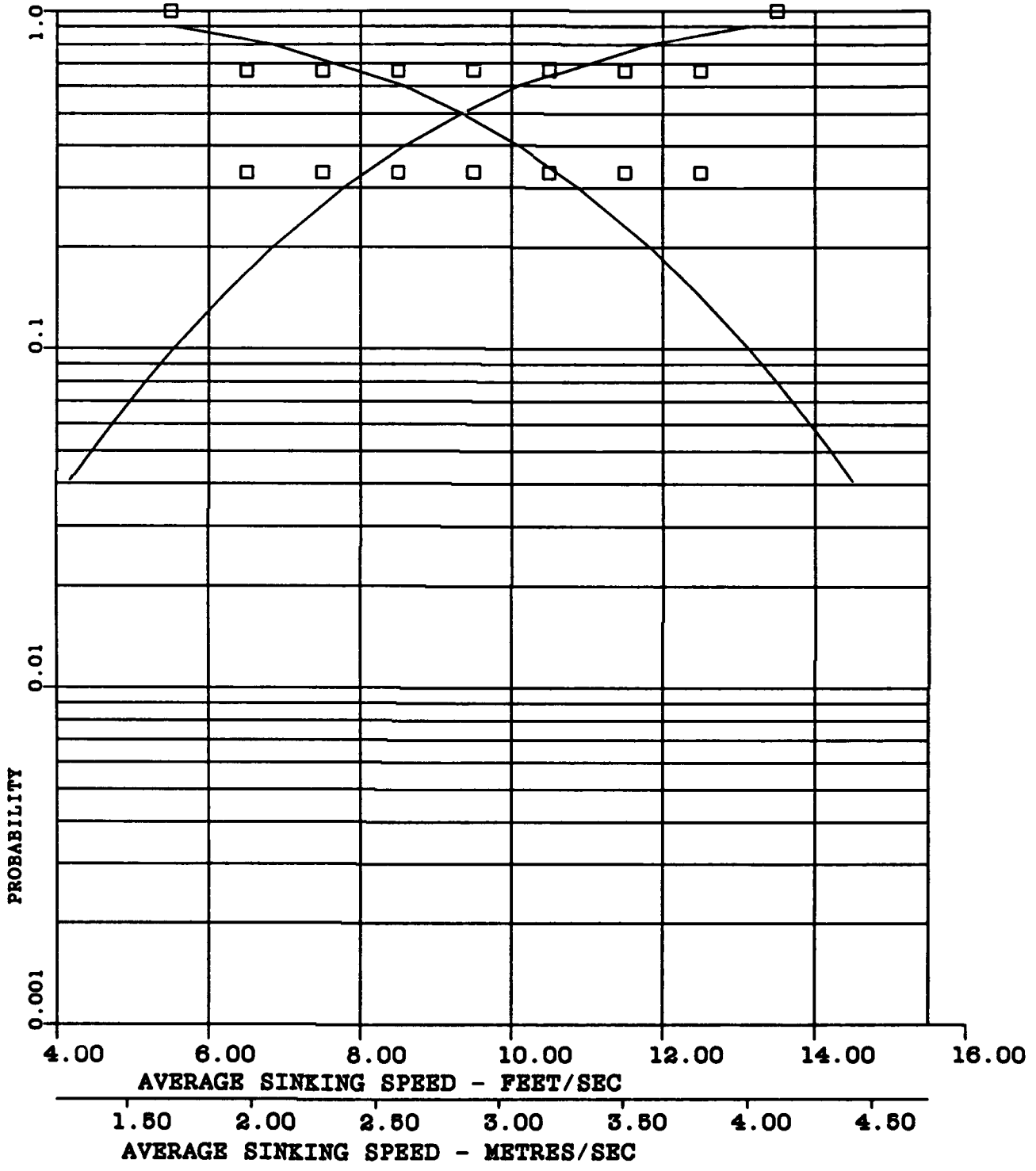


FIGURE K-14 PROBABILITY DISTRIBUTION OF AVERAGE SINKING SPEED AT FREE FLIGHT

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-37 $\bar{X}$-1.09 A3-0.47
S-0.09 A4-2.59

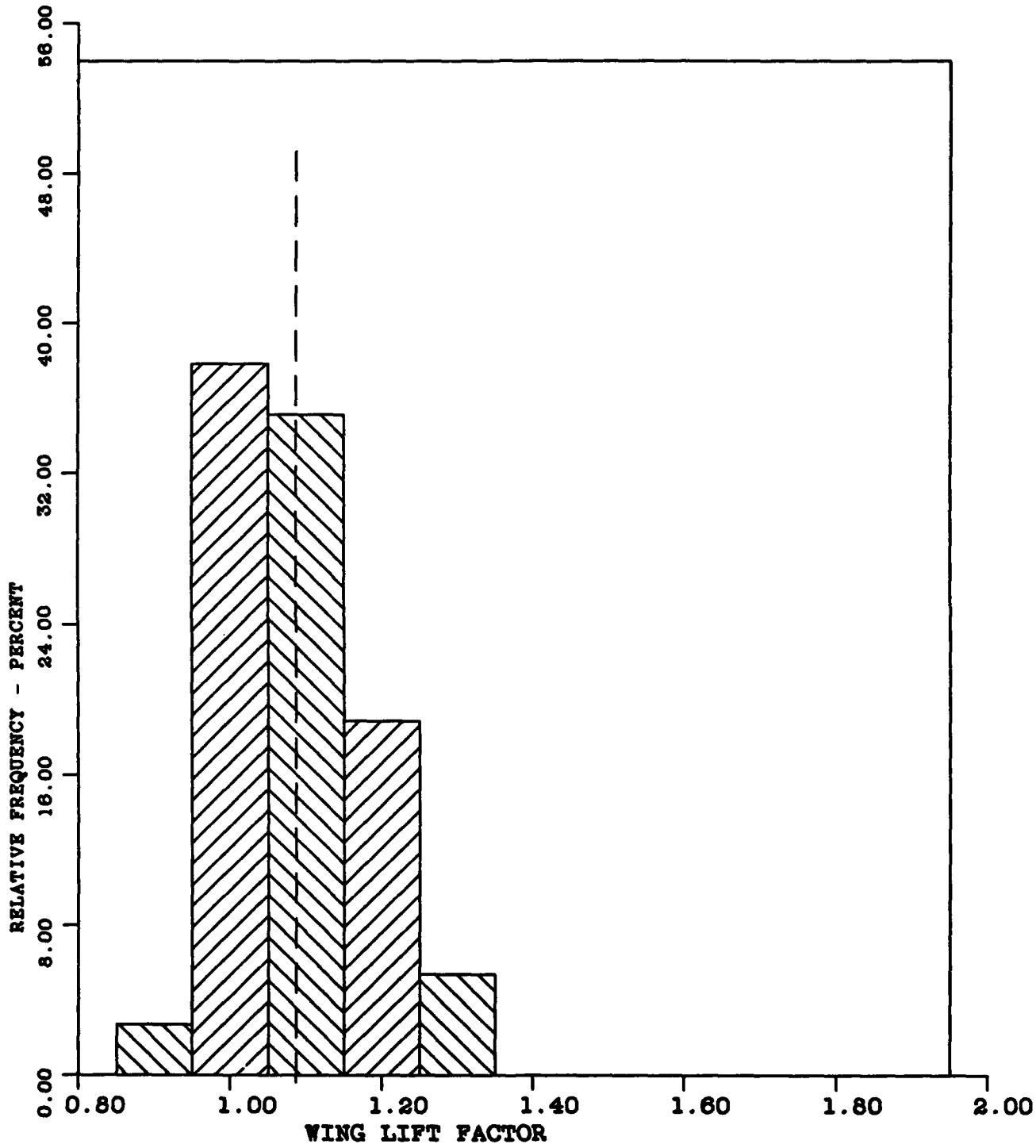


FIGURE K-15 FREQUENCY DISTRIBUTION OF WING LIFT FACTOR AT FIRST MAIN WHEEL TOUCHDOWN

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (0.061 RADIANS)
N=37 $\bar{X}$=1.09 A3=0.47
S=0.09 A4=2.59
CURVE FITTED - NORMAL

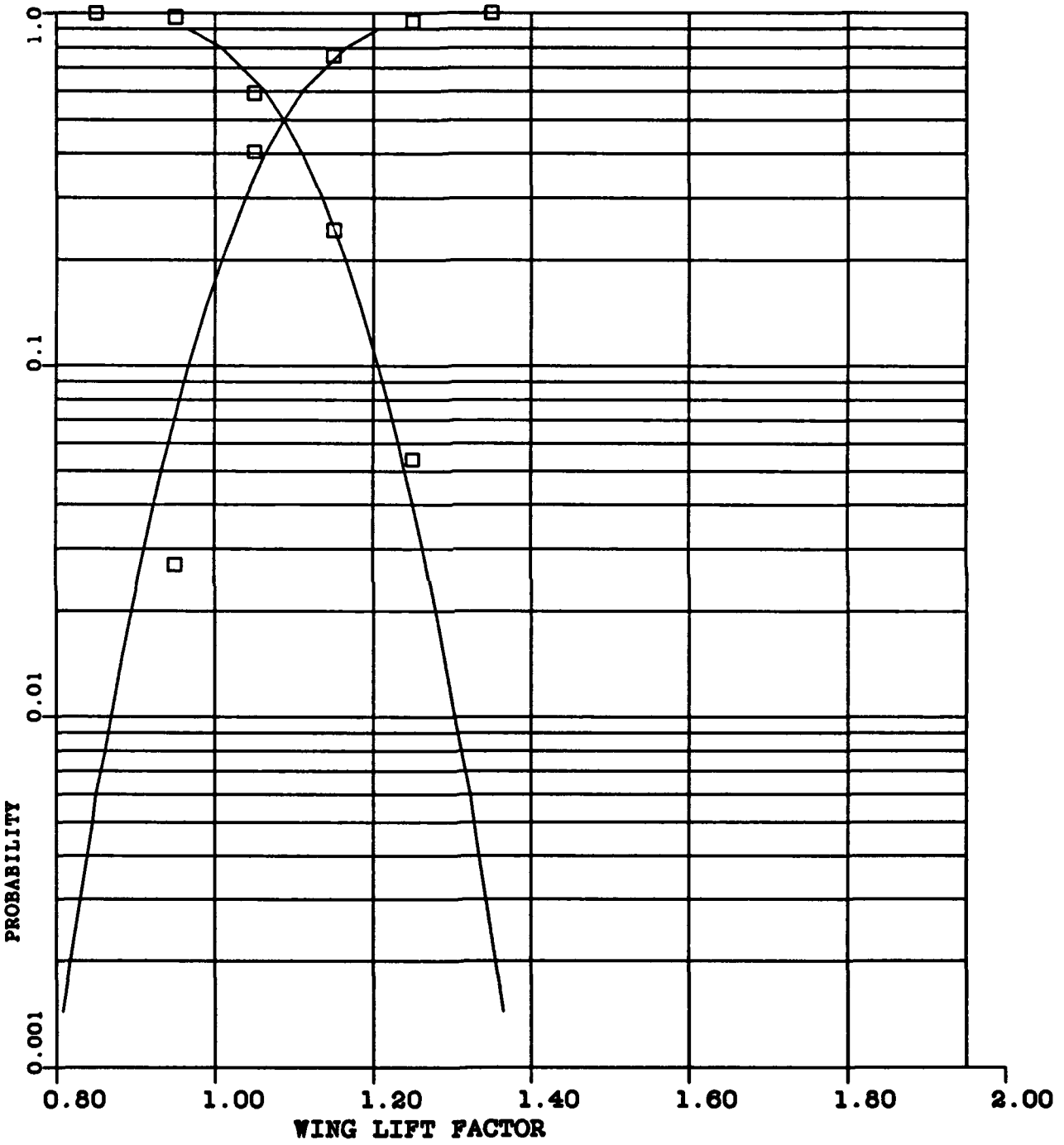


FIGURE K-16 PROBABILITY DISTRIBUTION OF WING LIFT FACTOR AT FIRST MAIN WHEEL TOUCHDOWN

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N=3 $\bar{X}$=1.13 A3=-0.71
S=0.09 A4=1.50

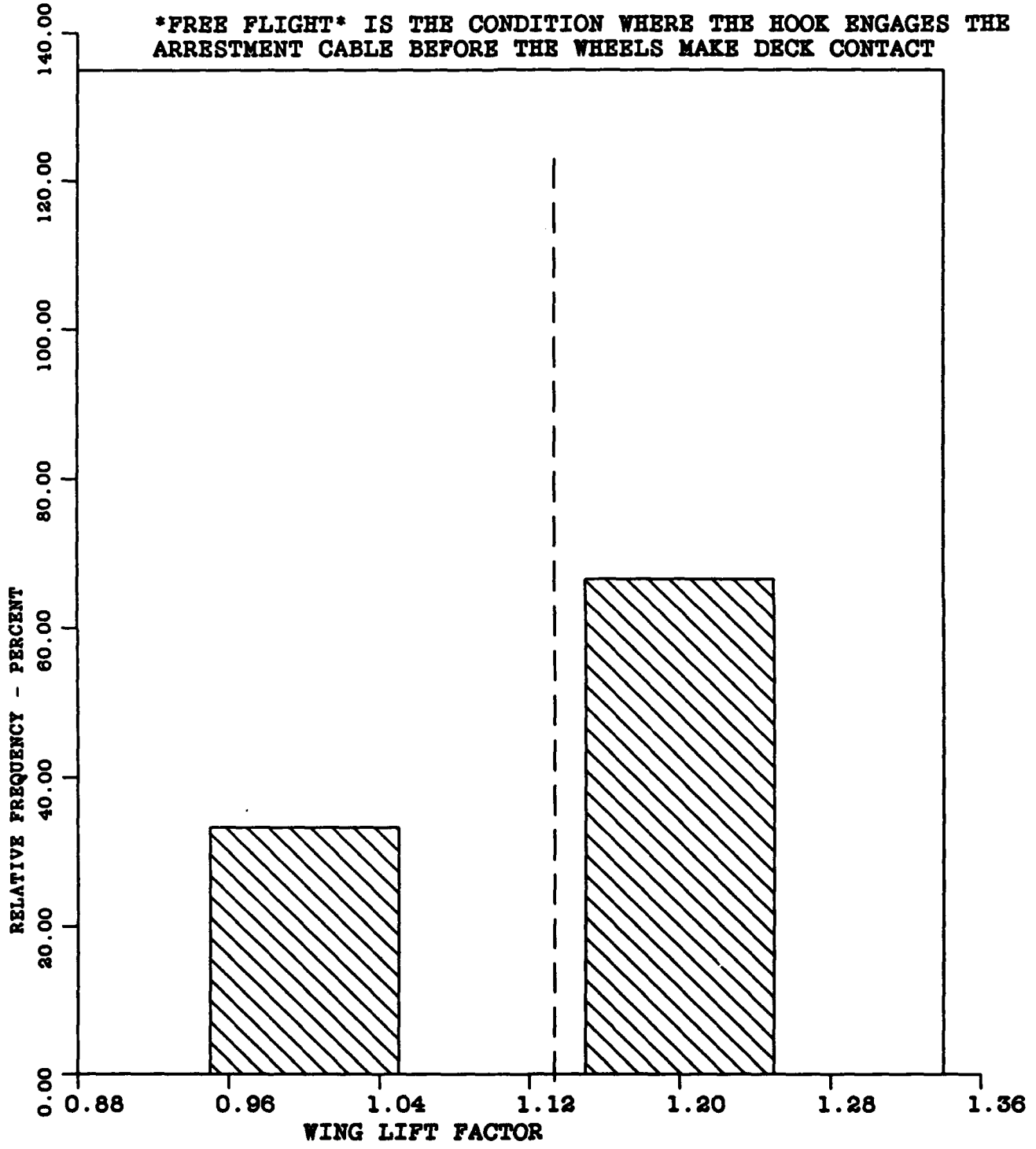


FIGURE K-17 FREQUENCY DISTRIBUTION OF WING LIFT FACTOR AT FREE FLIGHT

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (0.061 RADIANS)
N=3 $\bar{X}$=1.13 A3=-0.71
S=0.09 A4=1.50
CURVE FITTED - NORMAL
FREE FLIGHT IS THE CONDITION WHERE THE HOOK ENGAGES THE ARRESTMENT CABLE BEFORE THE WHEELS MAKE DECK CONTACT

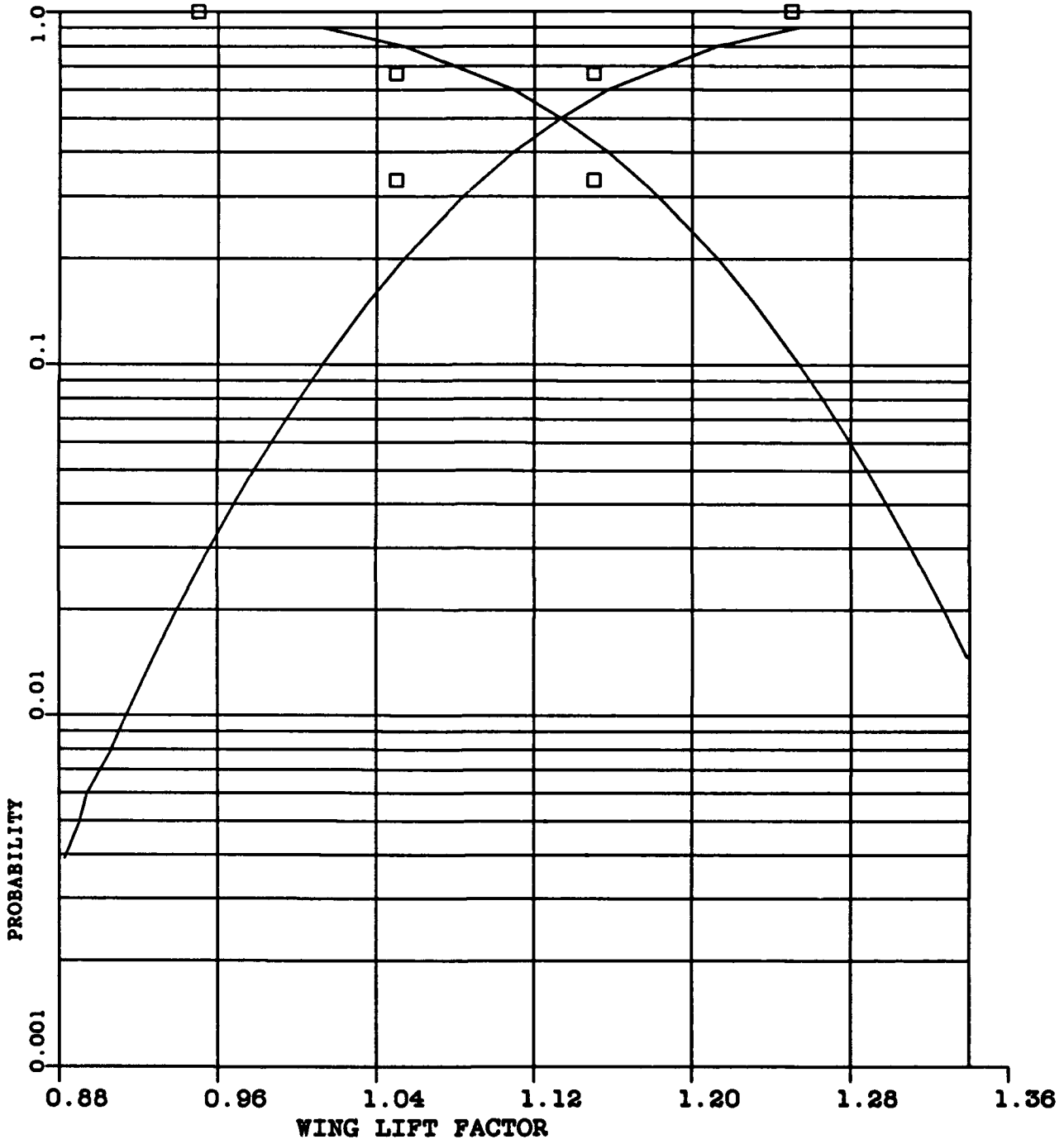


FIGURE K-18 PROBABILITY DISTRIBUTION OF WING LIFT FACTOR AT FREE FLIGHT

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-37 $\bar{X}$-10.19 DEGREES (0.178 RADIANS) A3-0.21
S-1.63 DEGREES (0.028 RADIANS) A4-2.50

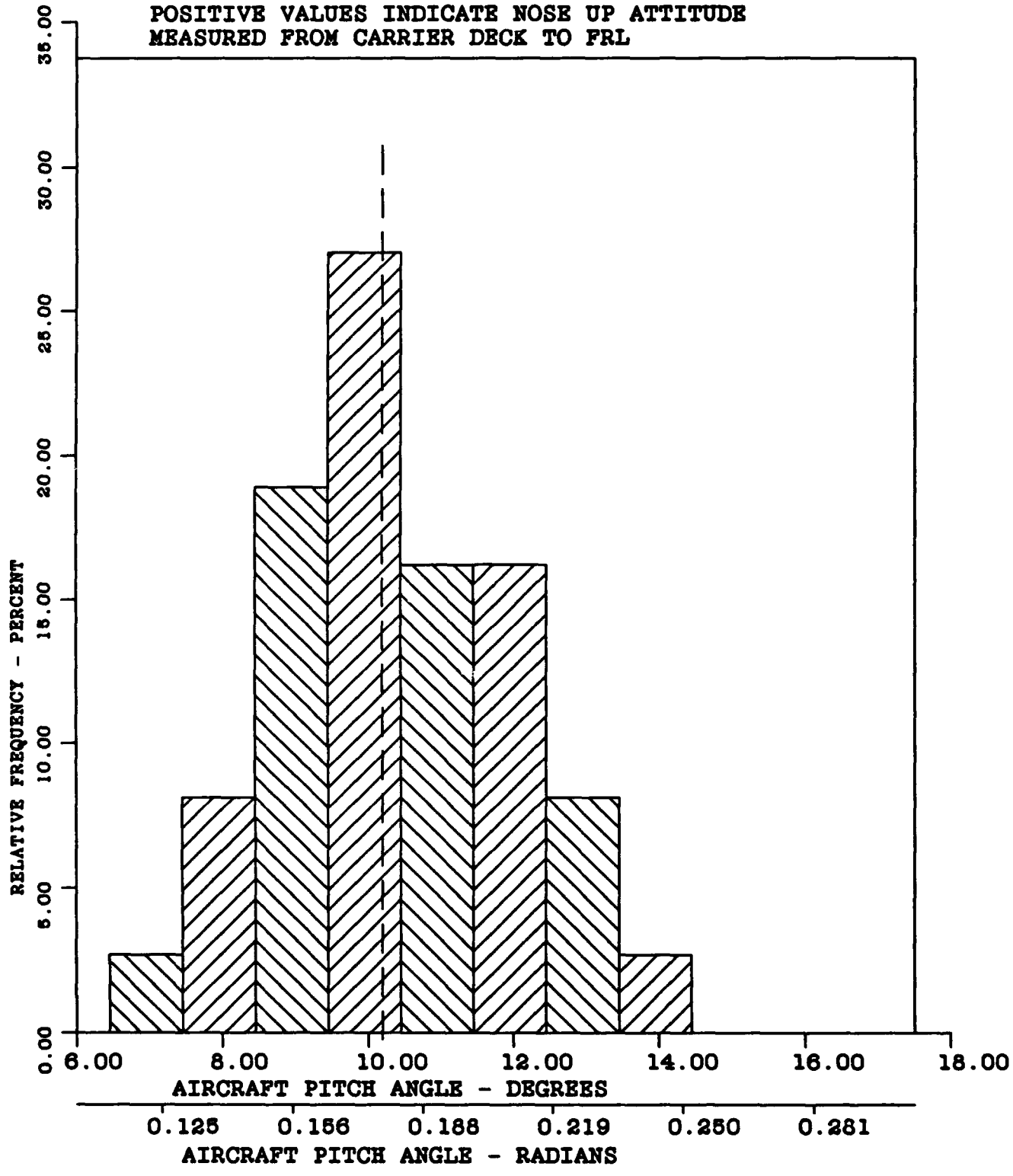


FIGURE K-19 FREQUENCY DISTRIBUTION OF AIRCRAFT PITCH ANGLE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-37 $\bar{X}$-10.19 DEGREES (0.178 RADIANS) A3-0.21
S-1.63 DEGREES (0.028 RADIANS) A4-2.50
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE NOSE UP ATTITUDE
MEASURED FROM CARRIER DECK TO FRL

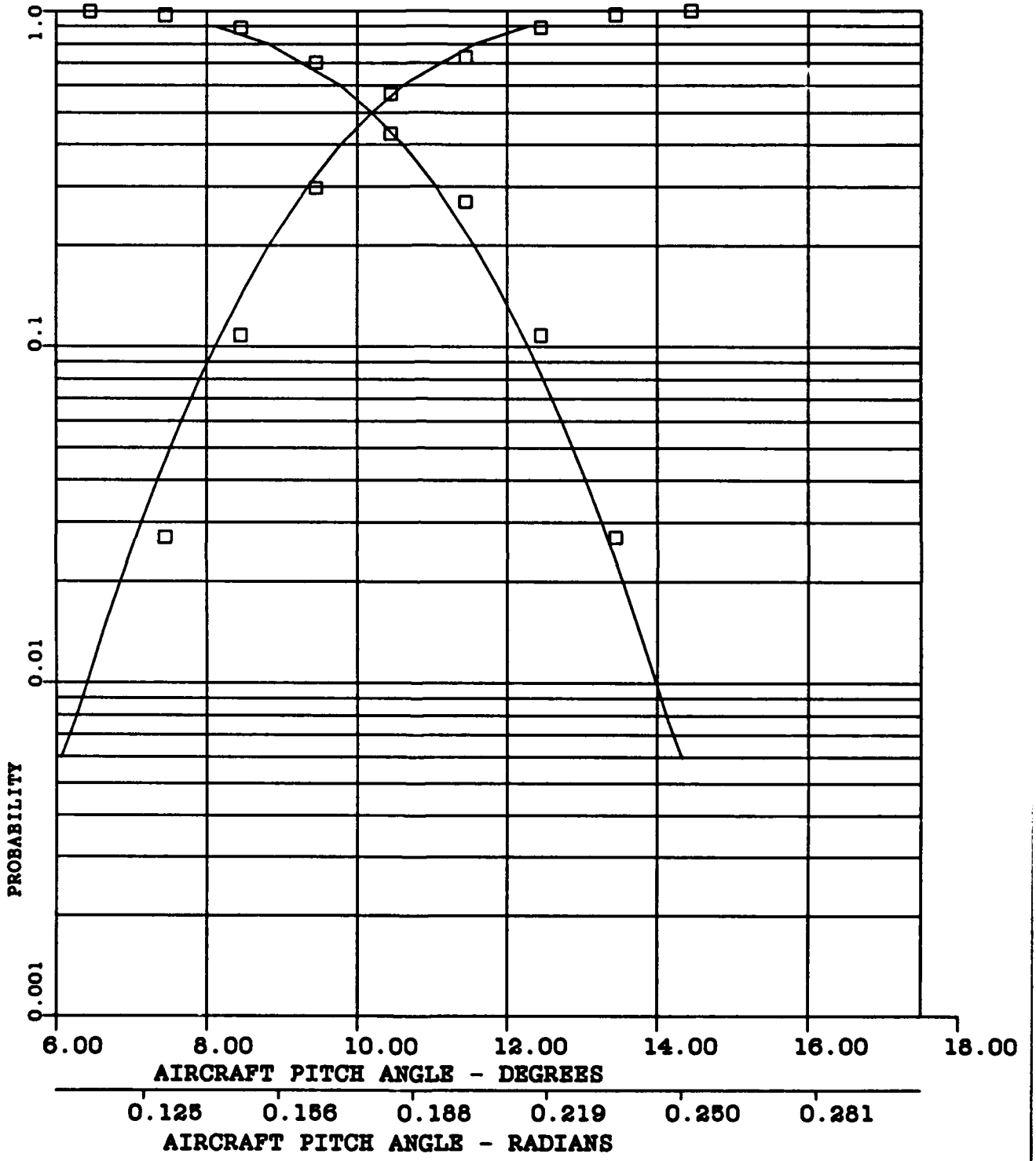


FIGURE K-20 PROBABILITY DISTRIBUTION OF AIRCRAFT PITCH ANGLE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N=3 $\bar{X}$=11.77 DEGREES (0.205 RADIANS) A3=-0.63
S=1.05 DEGREES (0.018 RADIANS) A4=1.50

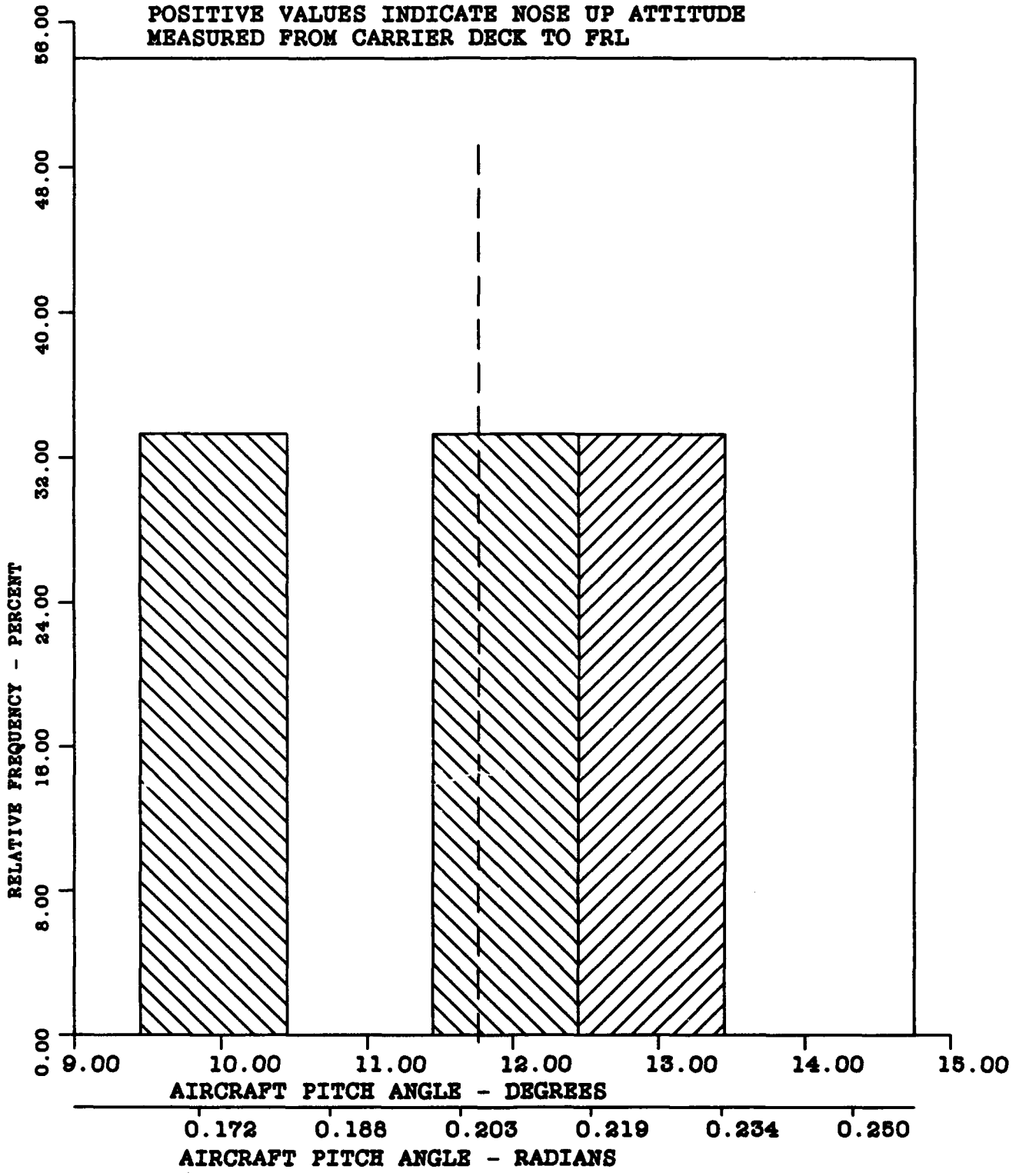


FIGURE K-21 FREQUENCY DISTRIBUTION OF AIRCRAFT PITCH ANGLE AT FREE FLIGHT

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MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.60 DEGREES (0.061 RADIANS)
N=3 $\bar{X}$=11.77 DEGREES (0.205 RADIANS) A3=-0.63
S=1.05 DEGREES (0.018 RADIANS) A4=1.50
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE NOSE UP ATTITUDE
MEASURED FROM CARRIER DECK TO FRL

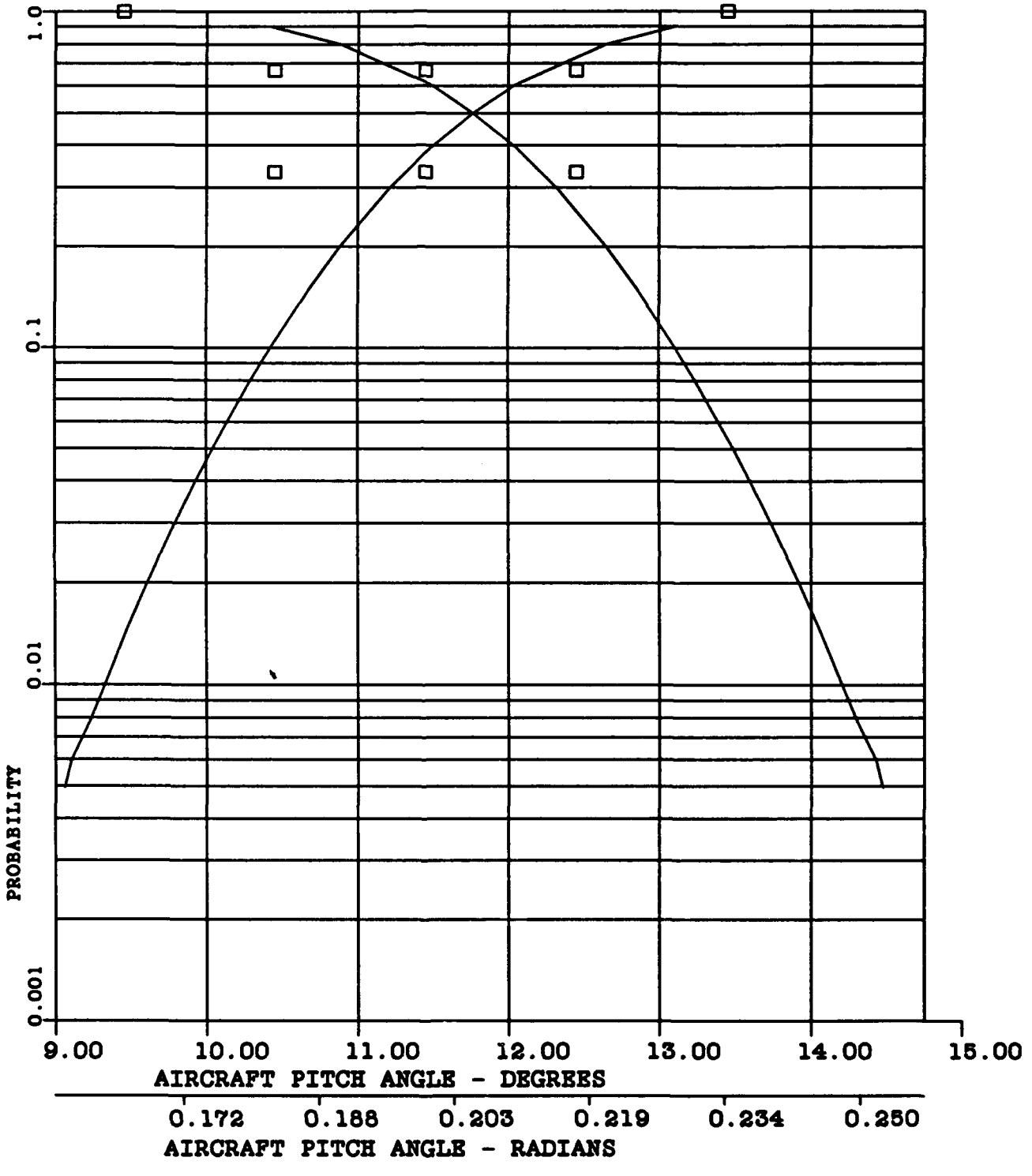


FIGURE K-22 PROBABILITY DISTRIBUTION OF AIRCRAFT PITCH ANGLE AT FREE FLIGHT

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-37 $\bar{X}$-1.12 DEGREES (0.020 RADIANS) A3=-0.07
S-2.33 DEGREES (0.041 RADIANS) A4-2.65

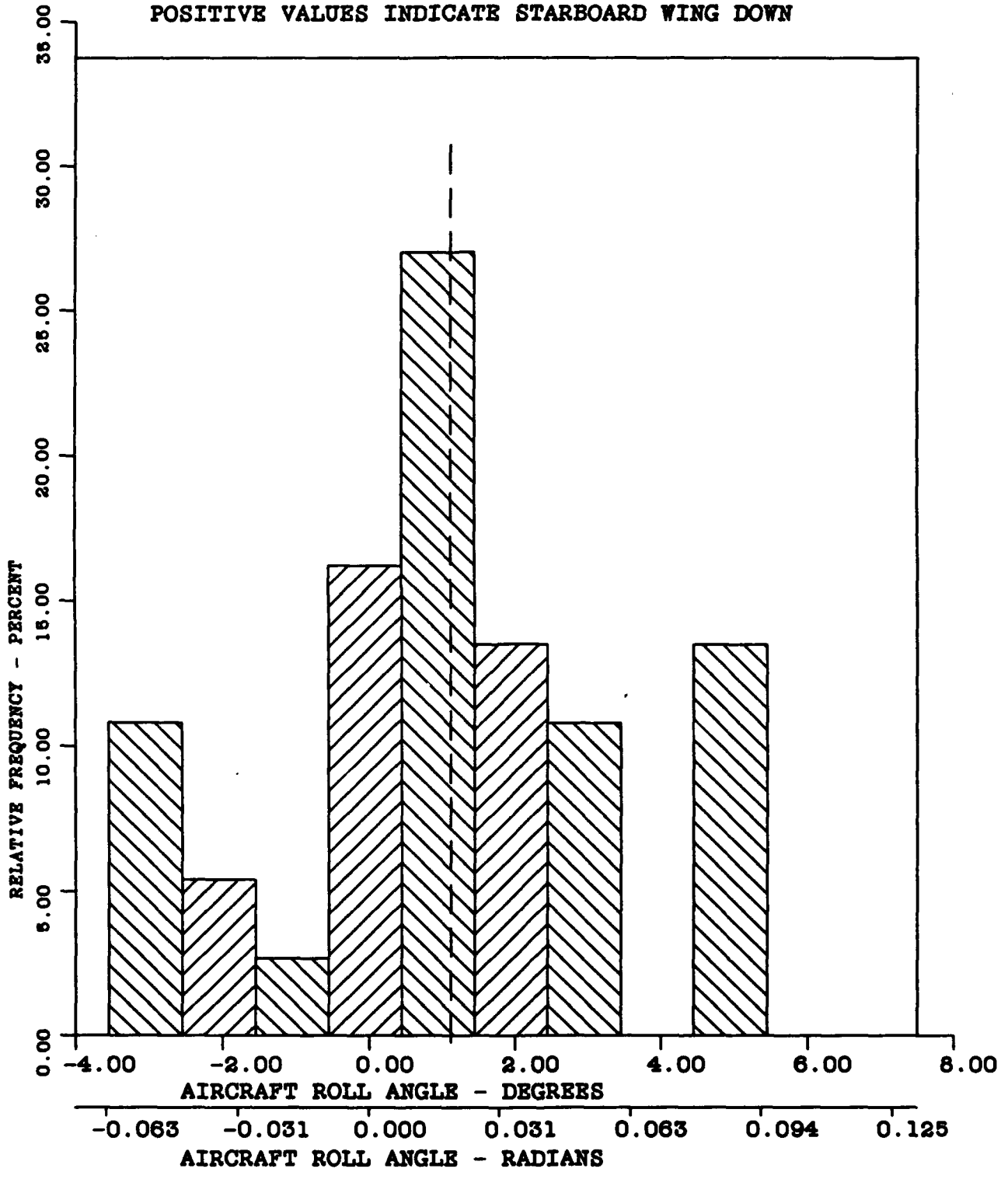


FIGURE K-23 FREQUENCY DISTRIBUTION OF AIRCRAFT ROLL ANGLE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N=37 $\bar{X}$=1.12 DEGREES (0.020 RADIANS) A3=-0.07
S=2.33 DEGREES (0.041 RADIANS) A4=2.65
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE STARBOARD WING DOWN

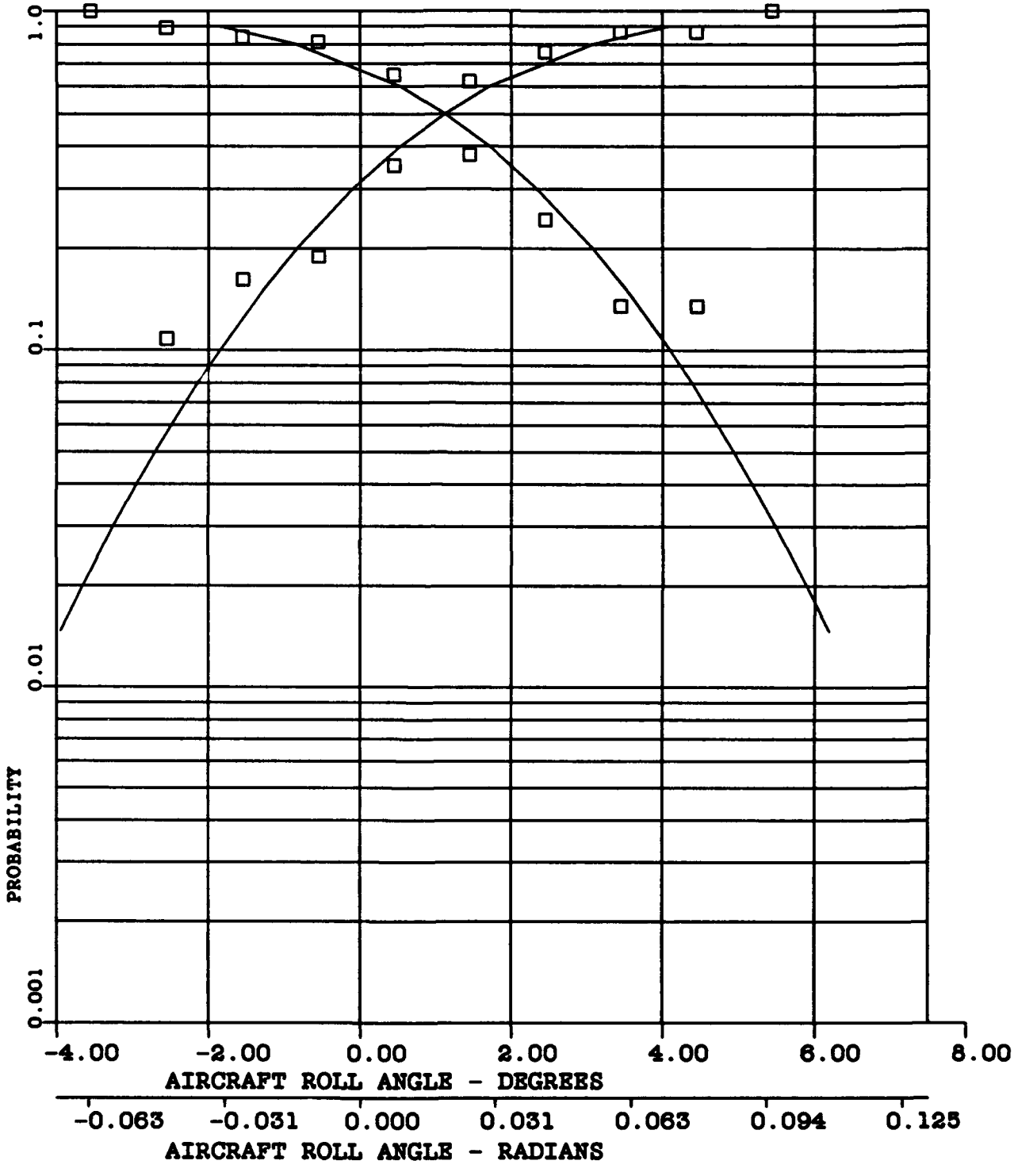


FIGURE K-24 PROBABILITY DISTRIBUTION OF AIRCRAFT ROLL ANGLE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-3 $\bar{X}$=-1.47 DEGREES (-0.026 RADIANS) A3=0.02
S=2.00 DEGREES (0.035 RADIANS) A4=1.50

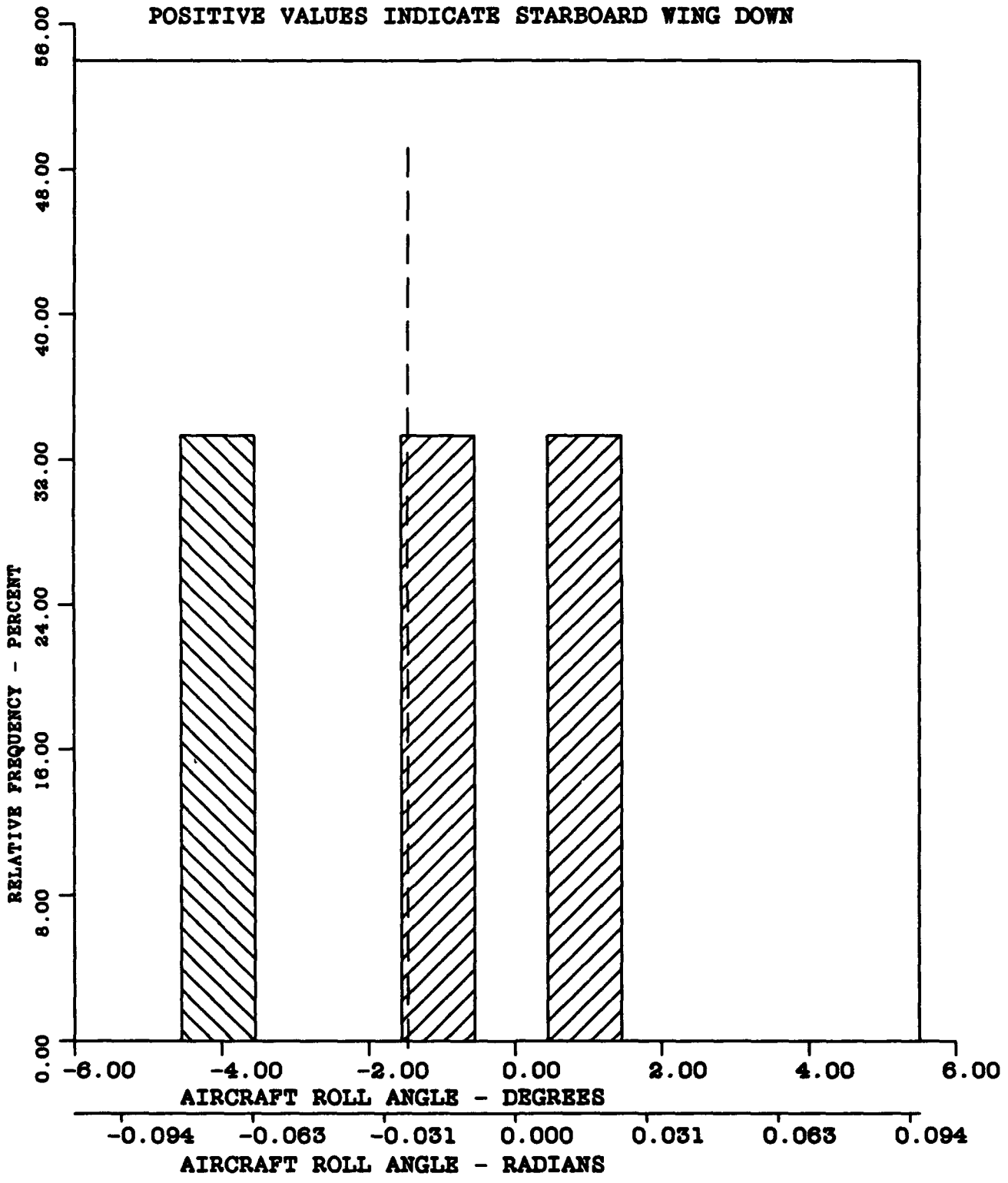


FIGURE K-25 FREQUENCY DISTRIBUTION OF AIRCRAFT ROLL ANGLE AT FREE FLIGHT

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N=3 $\bar{X}$=-1.47 DEGREES (-0.026 RADIANS) A3=0.02
S=2.00 DEGREES (0.035 RADIANS) A4=1.50
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE STARBOARD WING DOWN

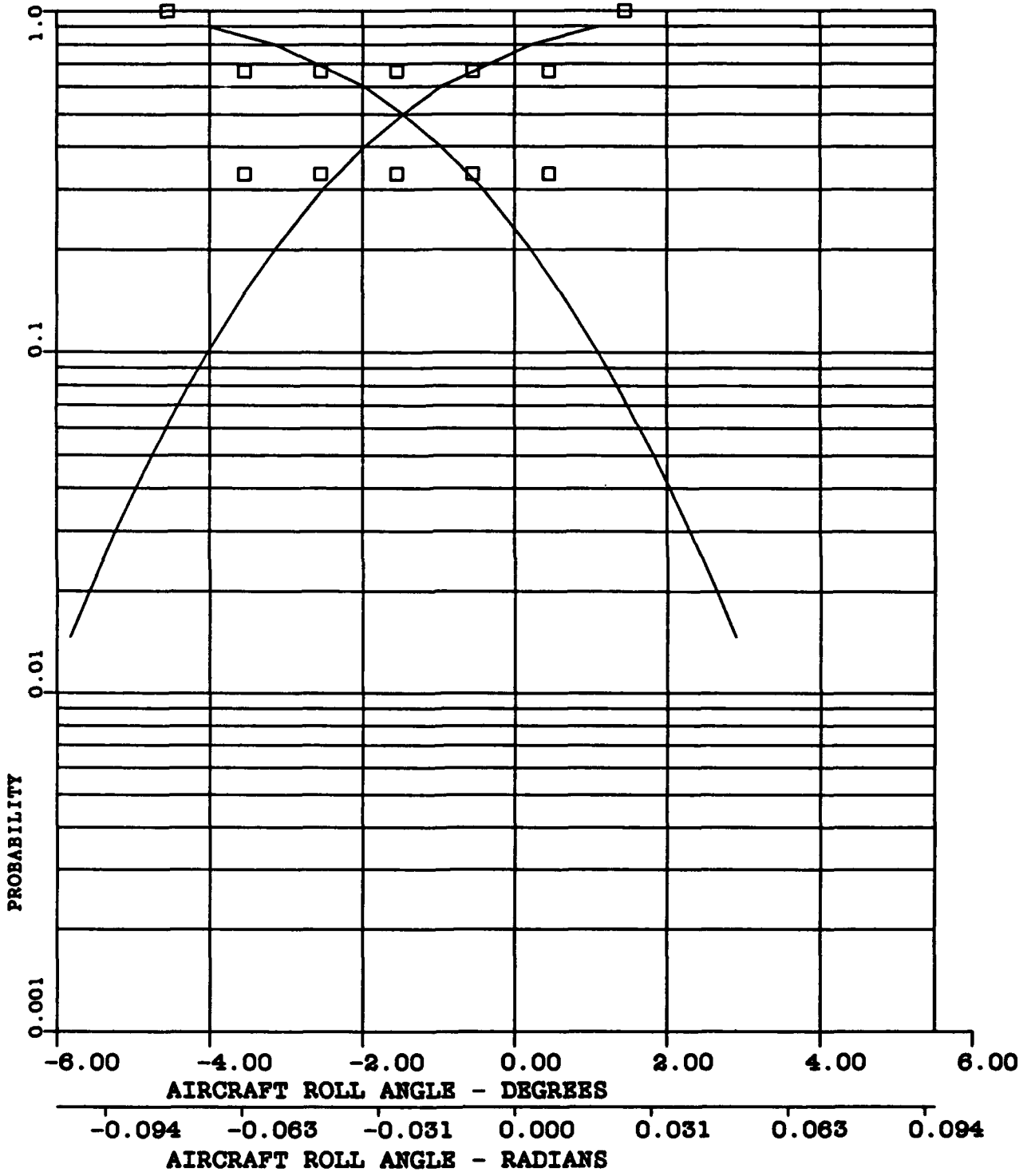


FIGURE K-26 PROBABILITY DISTRIBUTION OF AIRCRAFT ROLL ANGLE AT FREE FLIGHT

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-37 $\bar{X}$-249.46 FEET (76.04 METRES) A3-0.08
S-39.91 FEET (12.16 METRES) A4-2.90

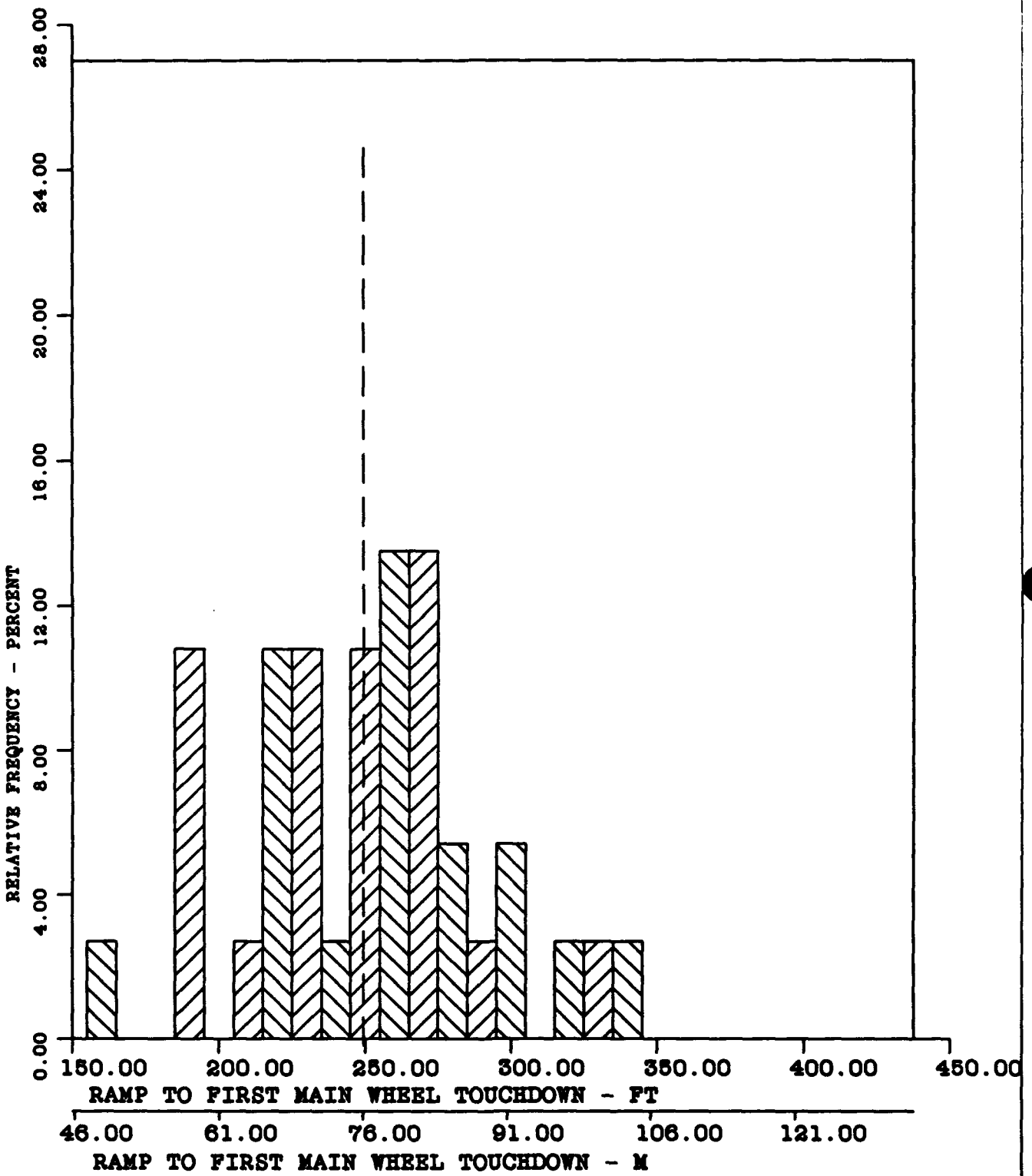


FIGURE K-27 FREQUENCY DISTRIBUTION OF DISTANCE FROM RAMP TO FIRST MAIN WHEEL TOUCHDOWN POINT

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-37 $\bar{X}$-249.46 FEET (76.04 METRES) A3-0.08
S-39.91 FEET (12.16 METRES) A4-2.90
CURVE FITTED - NORMAL

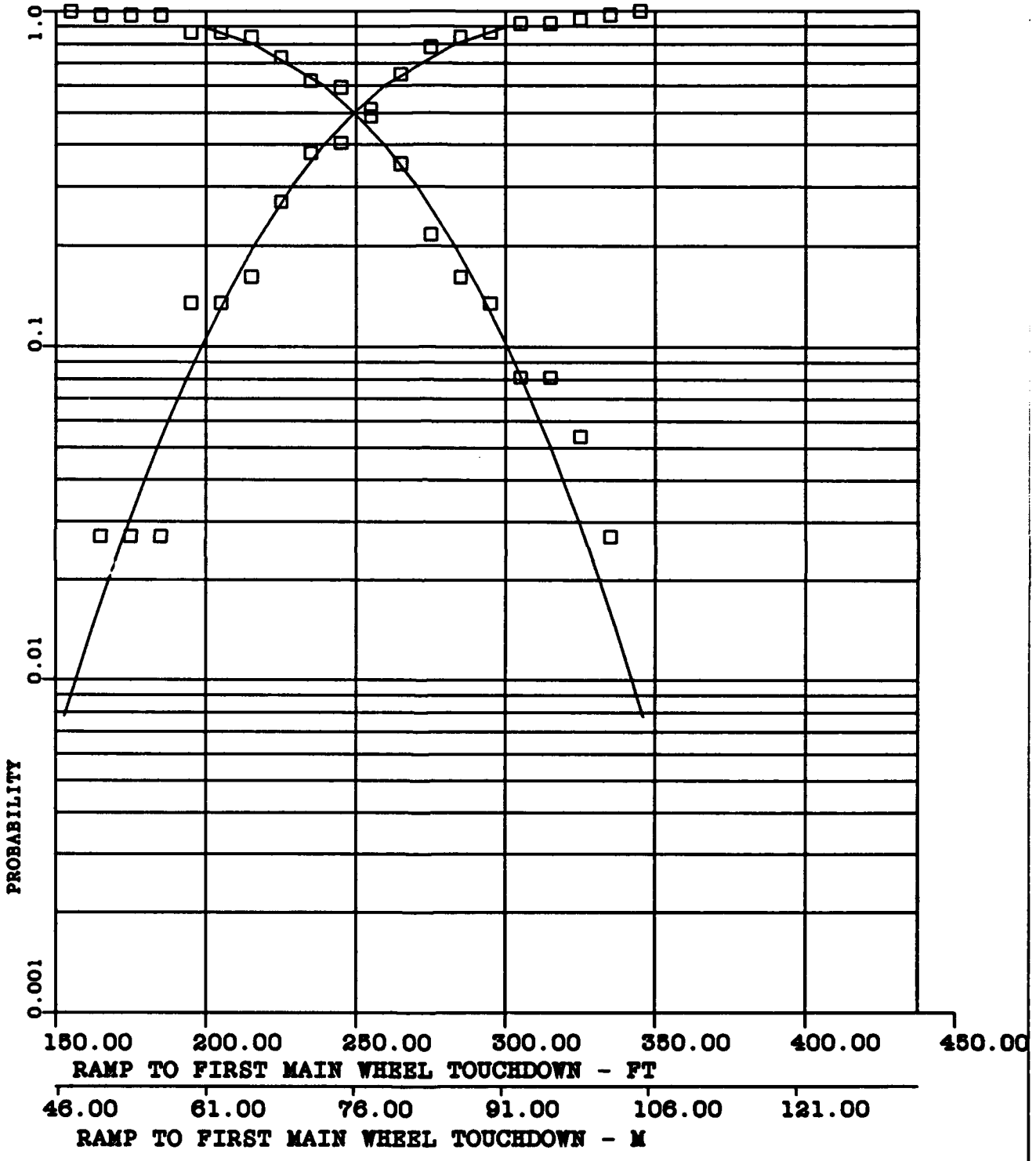


FIGURE K-28 PROBABILITY DISTRIBUTION OF DISTANCE FROM RAMP TO FIRST MAIN WHEEL TOUCHDOWN POINT

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-37 $\bar{X}$=-11.84 FEET (-3.61 METRES) A3-0.46
S-3.88 FEET (1.18 METRES) A4-3.66

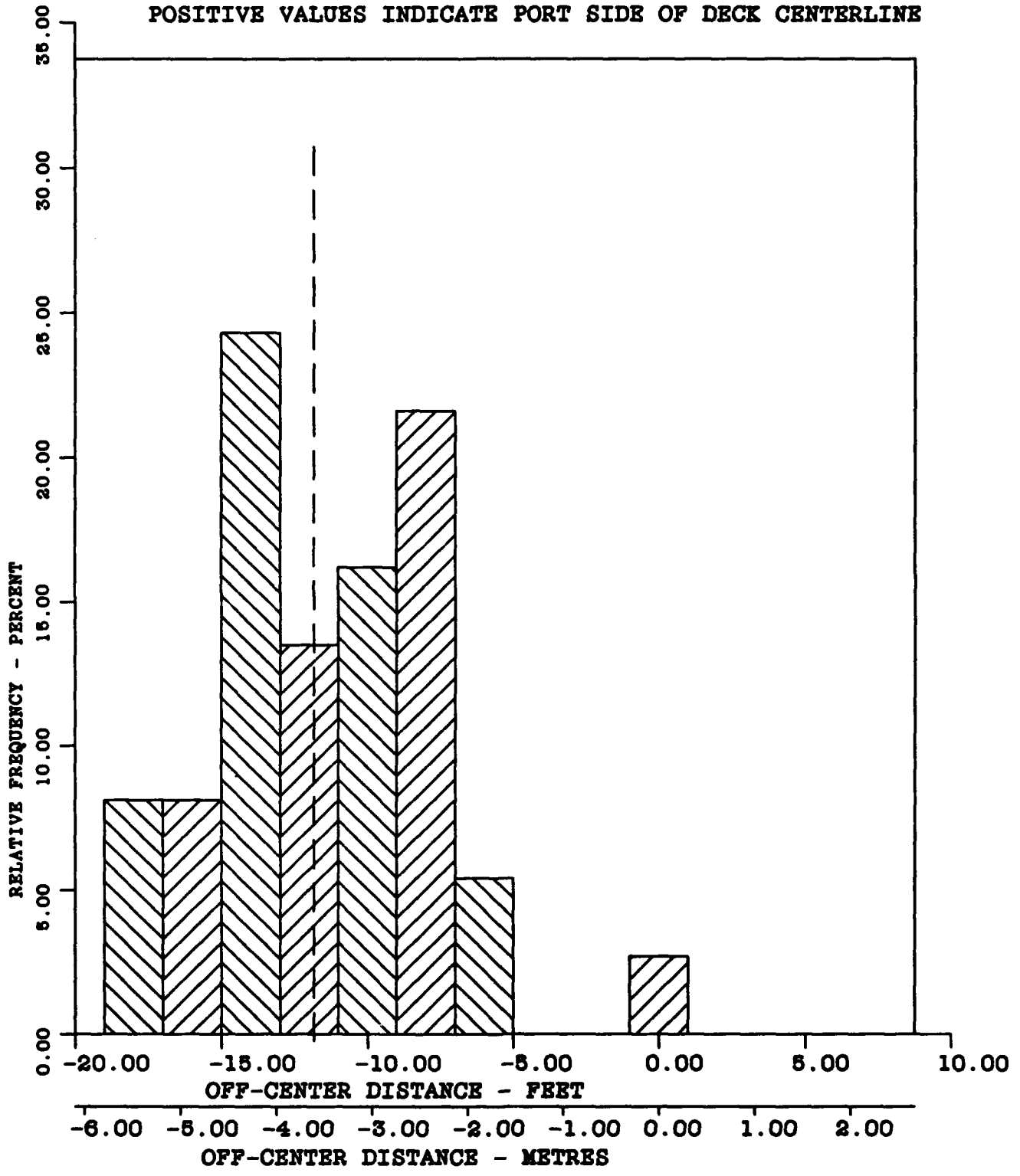


FIGURE K-29 FREQUENCY DISTRIBUTION OF AIRCRAFT CENTERLINE OFF-CNTR DISTANCE AT 1ST MAIN WHEEL TOUCHDOWN

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (0.061 RADIANS)
N=37 $\bar{X}$=-11.84 FEET (-3.61 METRES) A3=0.46
S=3.88 FEET (1.18 METRES) A4=3.66
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE PORT SIDE OF DECK CENTERLINE

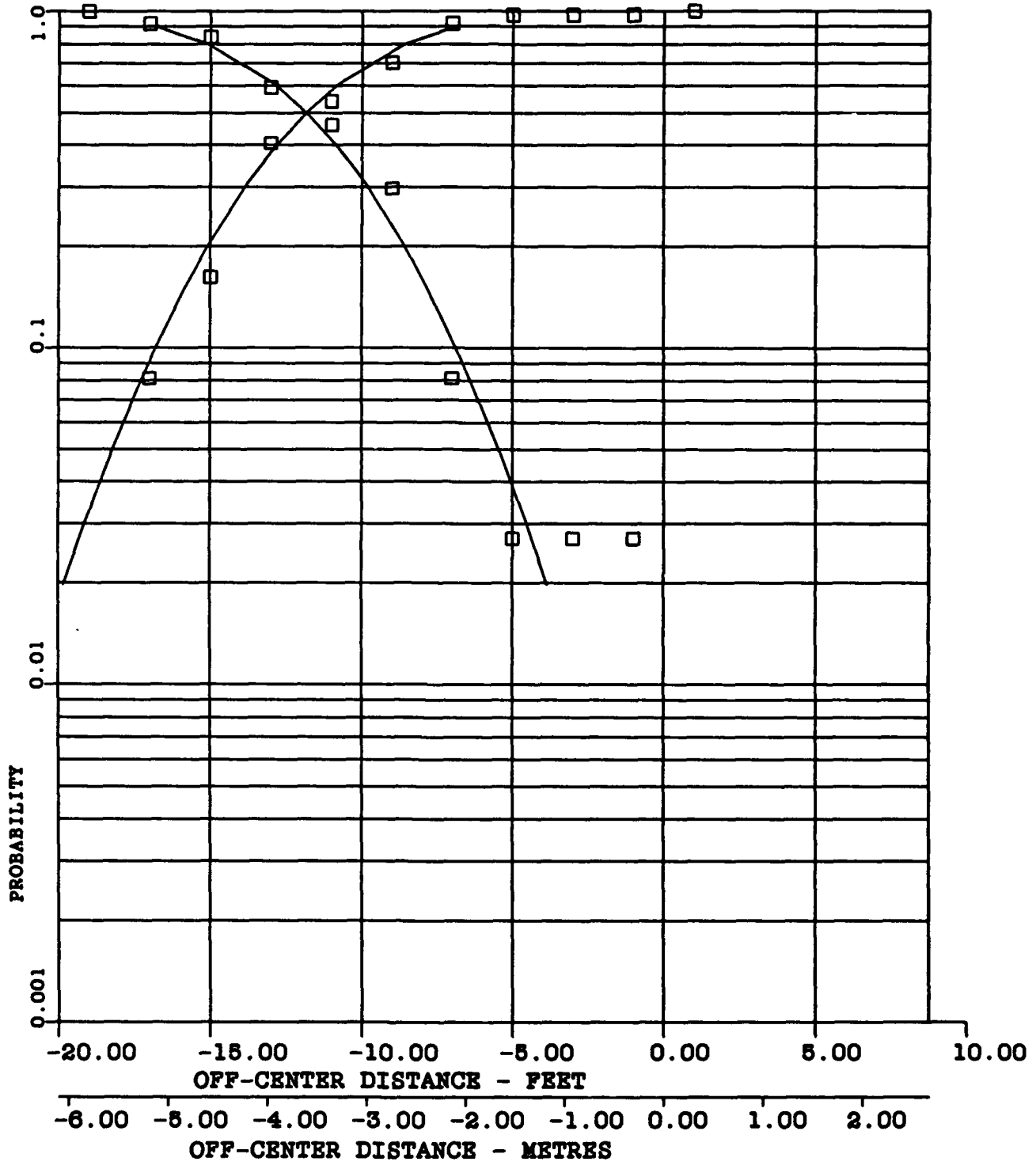


FIGURE K-30 PROBABILITY DISTRIBUTION OF AIRCRAFT OFF-CENTER DISTANCE AT 1ST MAIN WHEEL TOUCHDOWN

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-27 $\bar{X}$-2.63 A3-0.78
S-0.82 A4-1.92

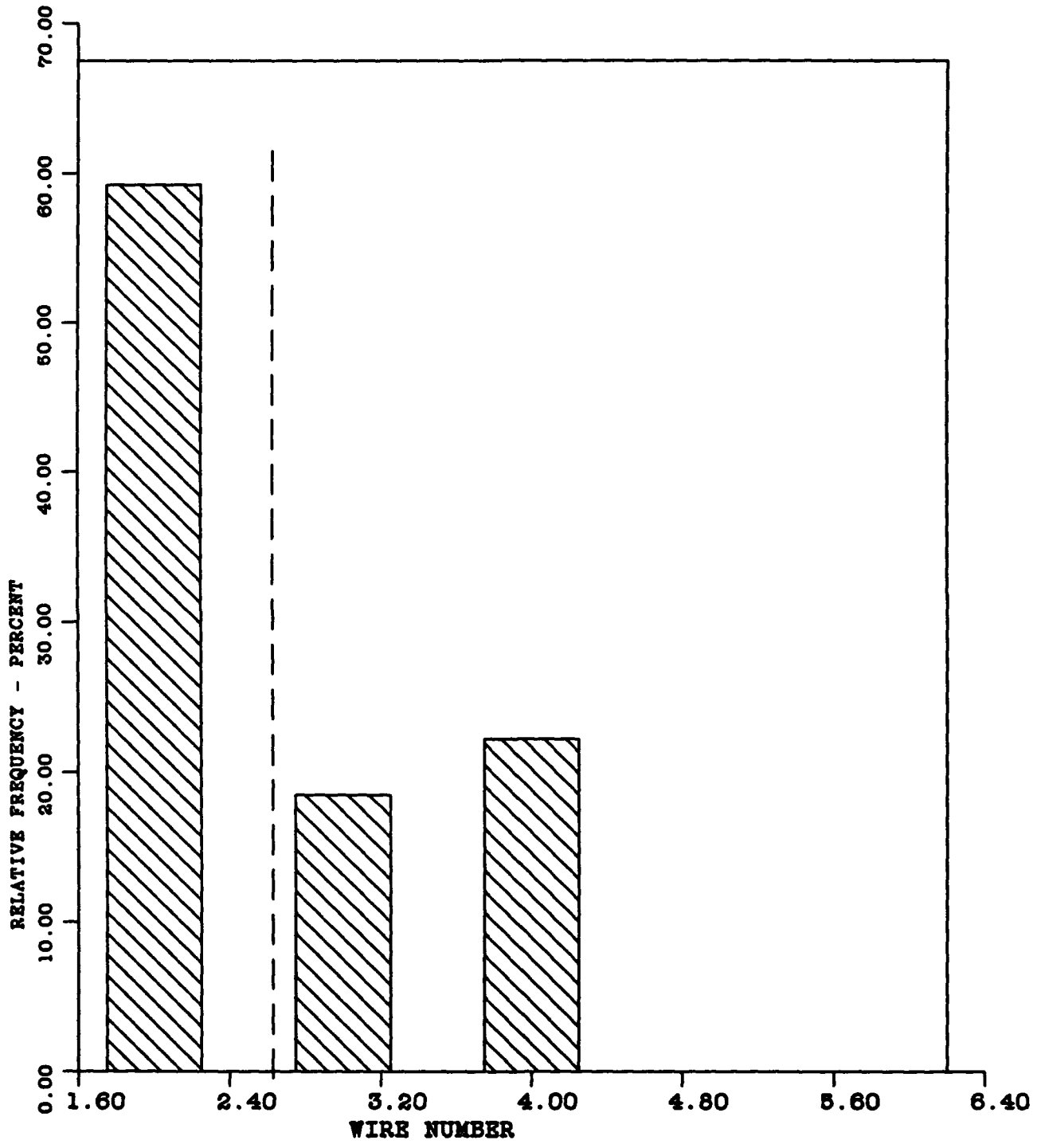


FIGURE K-31 FREQUENCY DISTRIBUTION OF ARRESTMENT WIRE NUMBER ENGAGED

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (0.061 RADIANS)
N=37 $\bar{X}$=2.75 DEGREES (0.048 RADIANS) A3=-0.23
S=0.69 DEGREES (0.012 RADIANS) A4=2.23

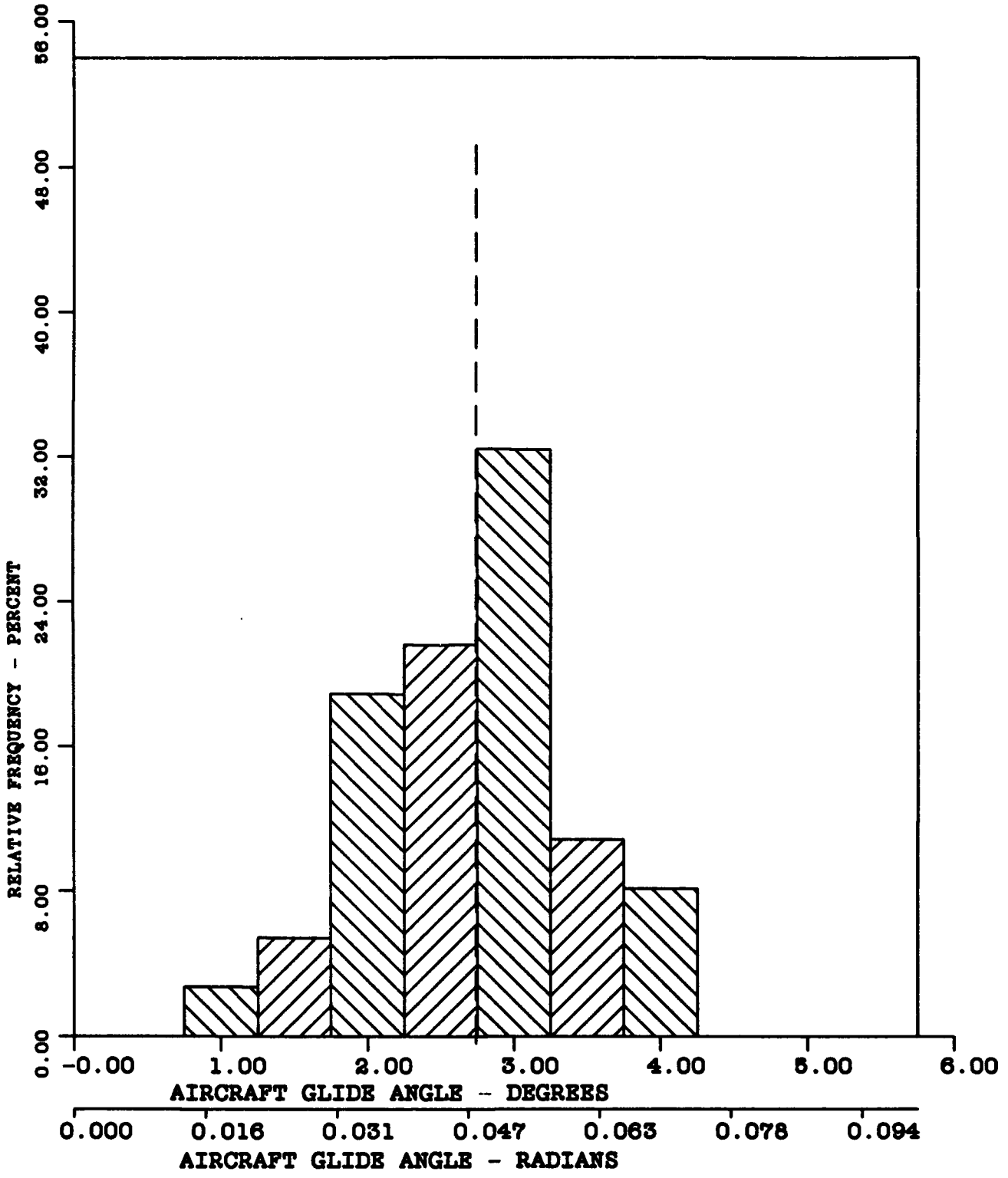


FIGURE K-32 FREQUENCY DISTRIBUTION OF AIRCRAFT GLIDE ANGLE - INSTANTANEOUS METHOD

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (0.061 RADIANS)
N=37 $\bar{X}$=108.69 KNOTS (55.91 METRES/SEC) A3=1.77
S=6.63 KNOTS (3.41 METRES/SEC) A4=9.45

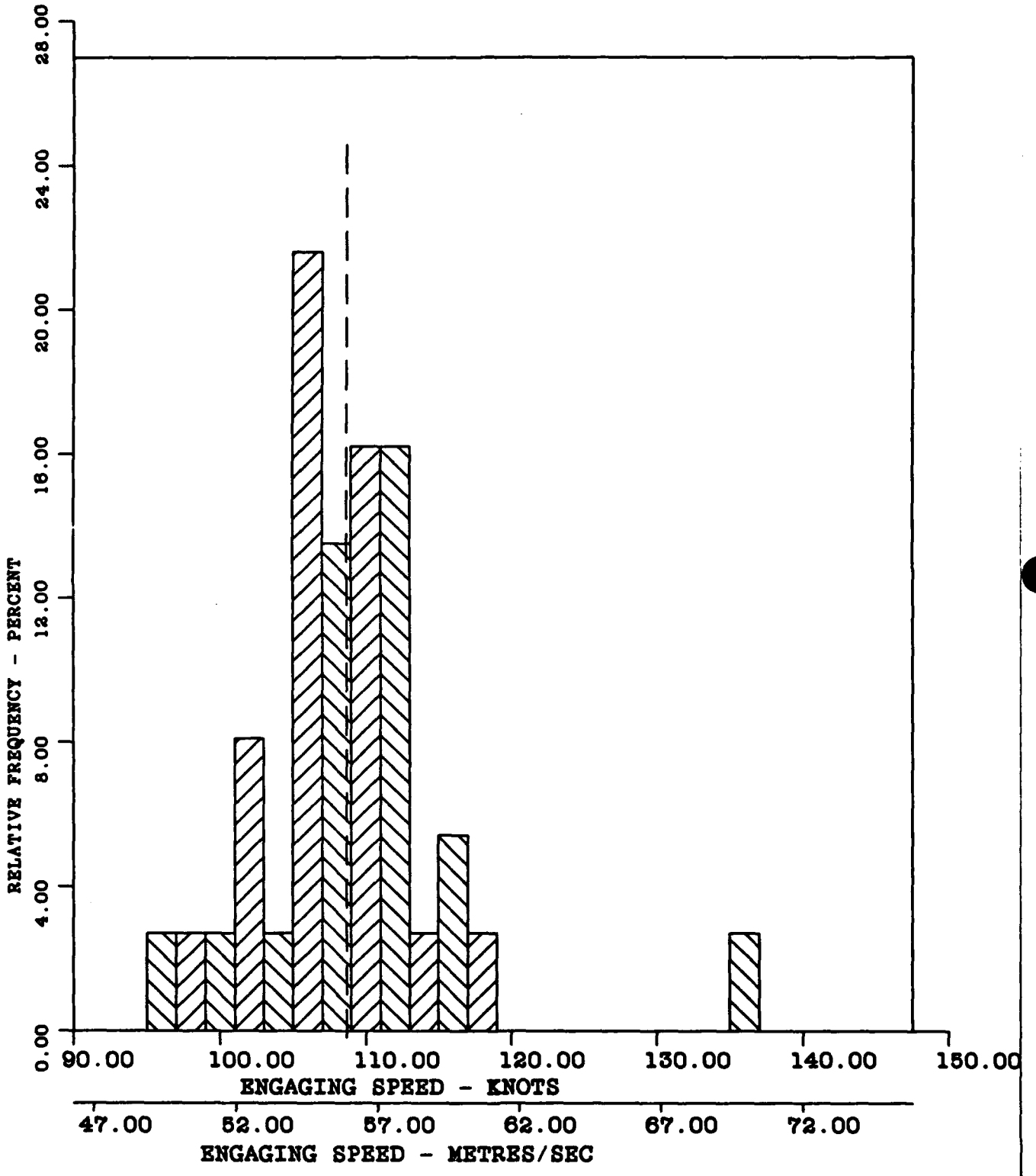


FIGURE K-33 FREQUENCY DISTRIBUTION OF AIRCRAFT ENGAGING SPEED AT FIRST MAIN WHEEL TOUCHDOWN

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (0.061 RADIANS)
N=37 $\bar{X}$=108.69 KNOTS (55.91 METRES/SEC) A3=1.77
S=6.63 KNOTS (3.41 METRES/SEC) A4=9.45
CURVE FITTED - PEARSON TYPE III

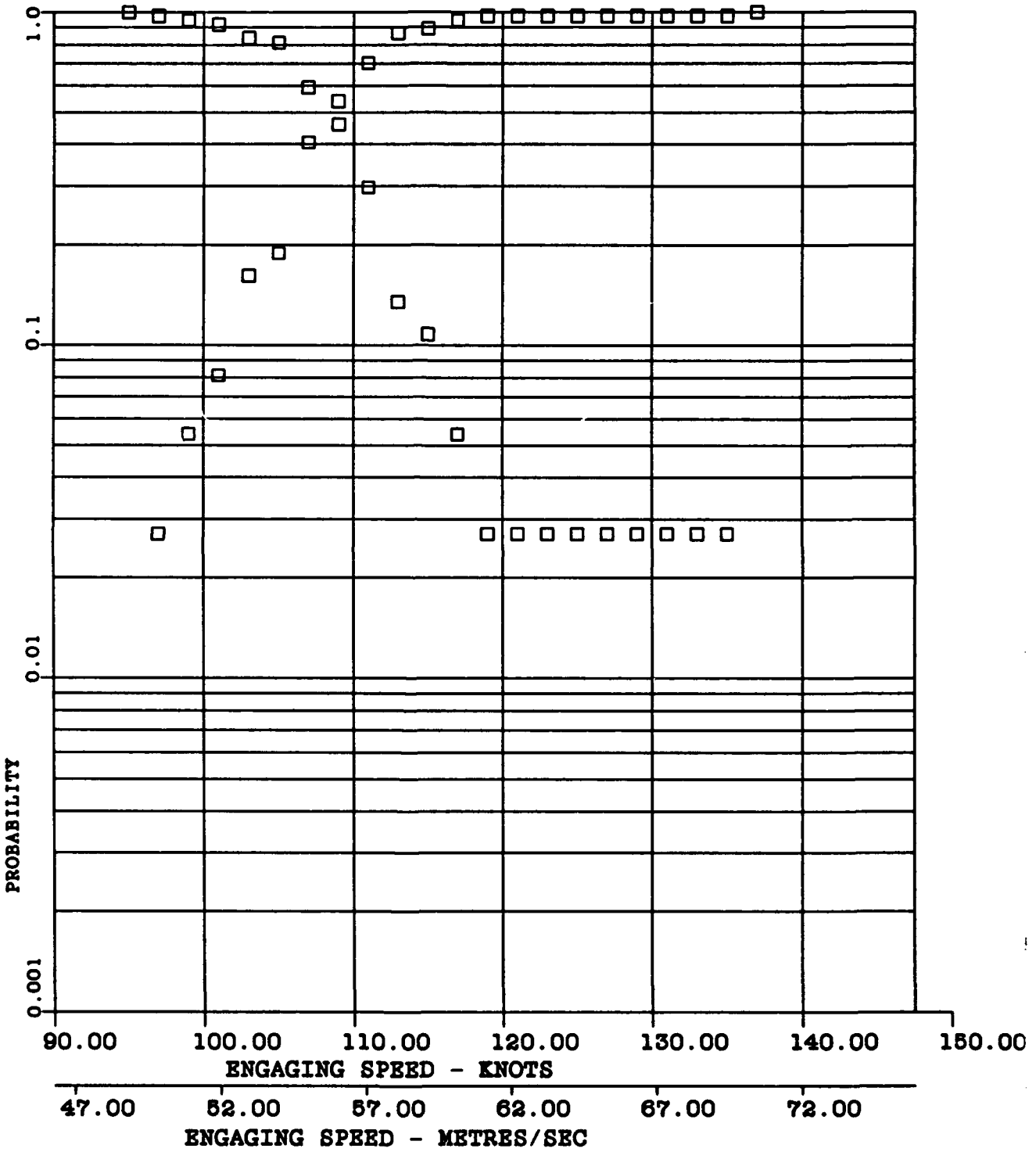


FIGURE K-34 PROBABILITY DISTRIBUTION OF ENGAGING SPEED AT FIRST MAIN WHEEL TOUCHDOWN

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-37 $\bar{X}$-120.11 KNOTS (61.78 METRES/SEC) A3=-0.62
S-2.22 KNOTS (1.14 METRES/SEC) A4-3.42

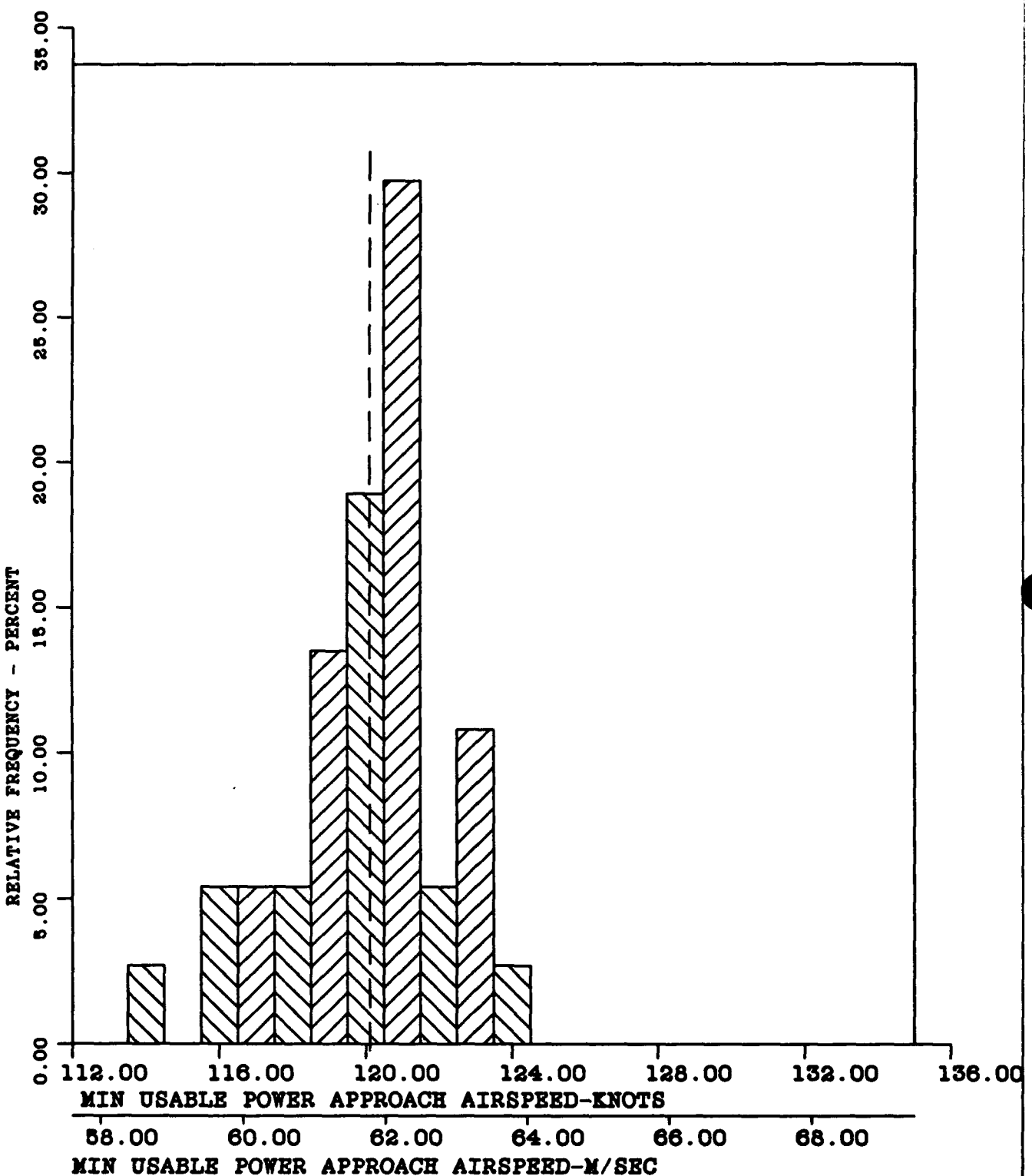


FIGURE K-35 FREQUENCY DISTRIBUTION OF MINIMUM USABLE POWER APPROACH AIRSPEED

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N=37 $\bar{X}$=1.14 A3=2.79
S=0.07 A4=13.86

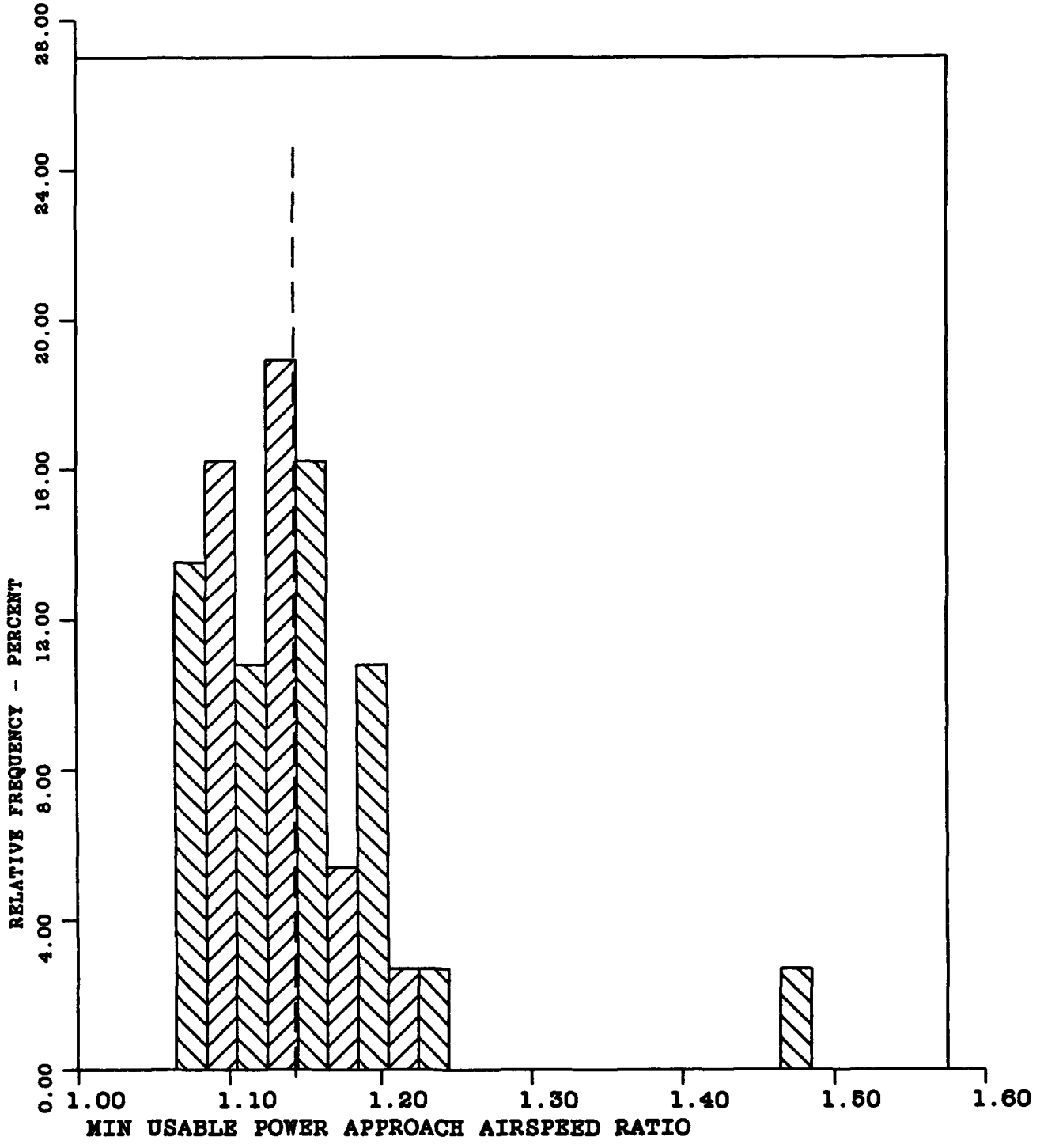


FIGURE K-36 FREQUENCY DISTRIBUTION OF MINIMUM USABLE POWER APPROACH AIRSPEED RATIO - FILM

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (0.061 RADIANS)
N=37 $\bar{X}$=-0.06 DEGREES (-0.001 RADIANS) A3=0.01
S=0.83 DEGREES (0.014 RADIANS) A4=2.68

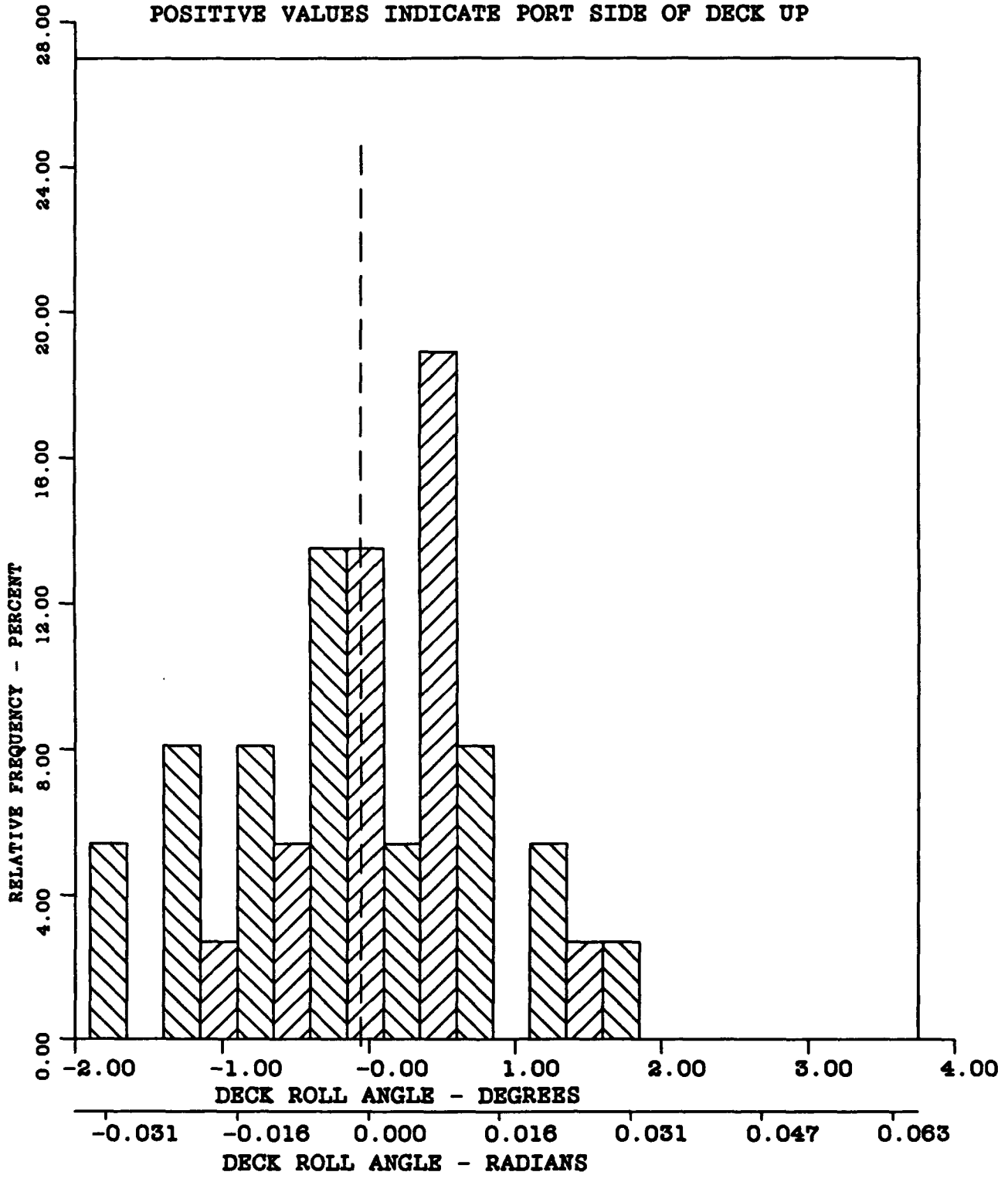


FIGURE K-37 FREQUENCY DISTRIBUTION OF CARRIER DECK ROLL MOTION

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (0.061 RADIANS)
N=37 $\bar{X}$=-0.06 DEGREES (-0.001 RADIANS) A3=0.01
S=0.83 DEGREES (0.014 RADIANS) A4=2.68
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE PORT SIDE OF DECK UP

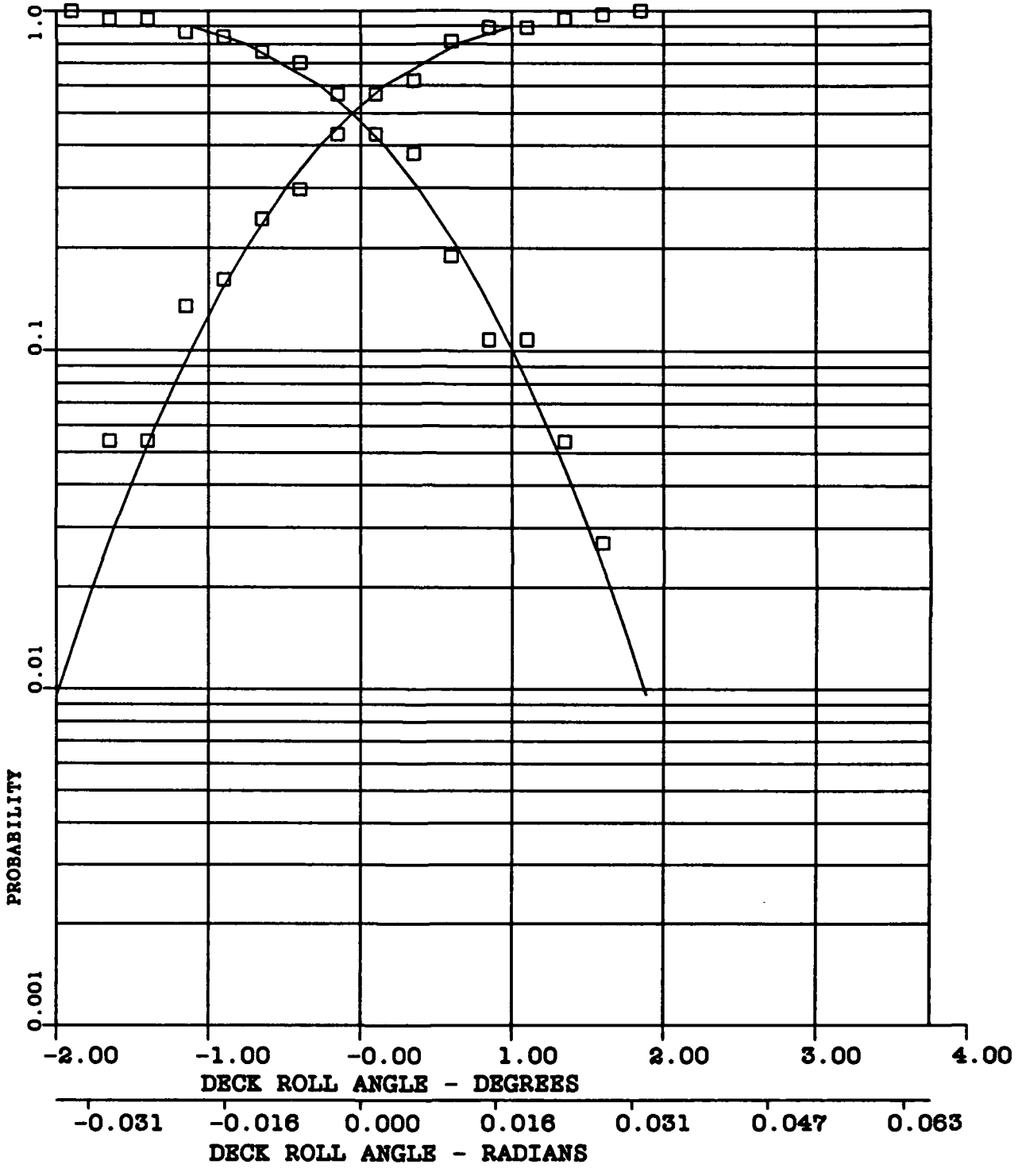


FIGURE K-38 PROBABILITY DISTRIBUTION OF CARRIER DECK ROLL MOTION

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N=37 $\bar{X}$=-0.42 DEGREES (-0.007 RADIANS) A3=0.69
S=0.20 DEGREES (0.003 RADIANS) A4=4.23

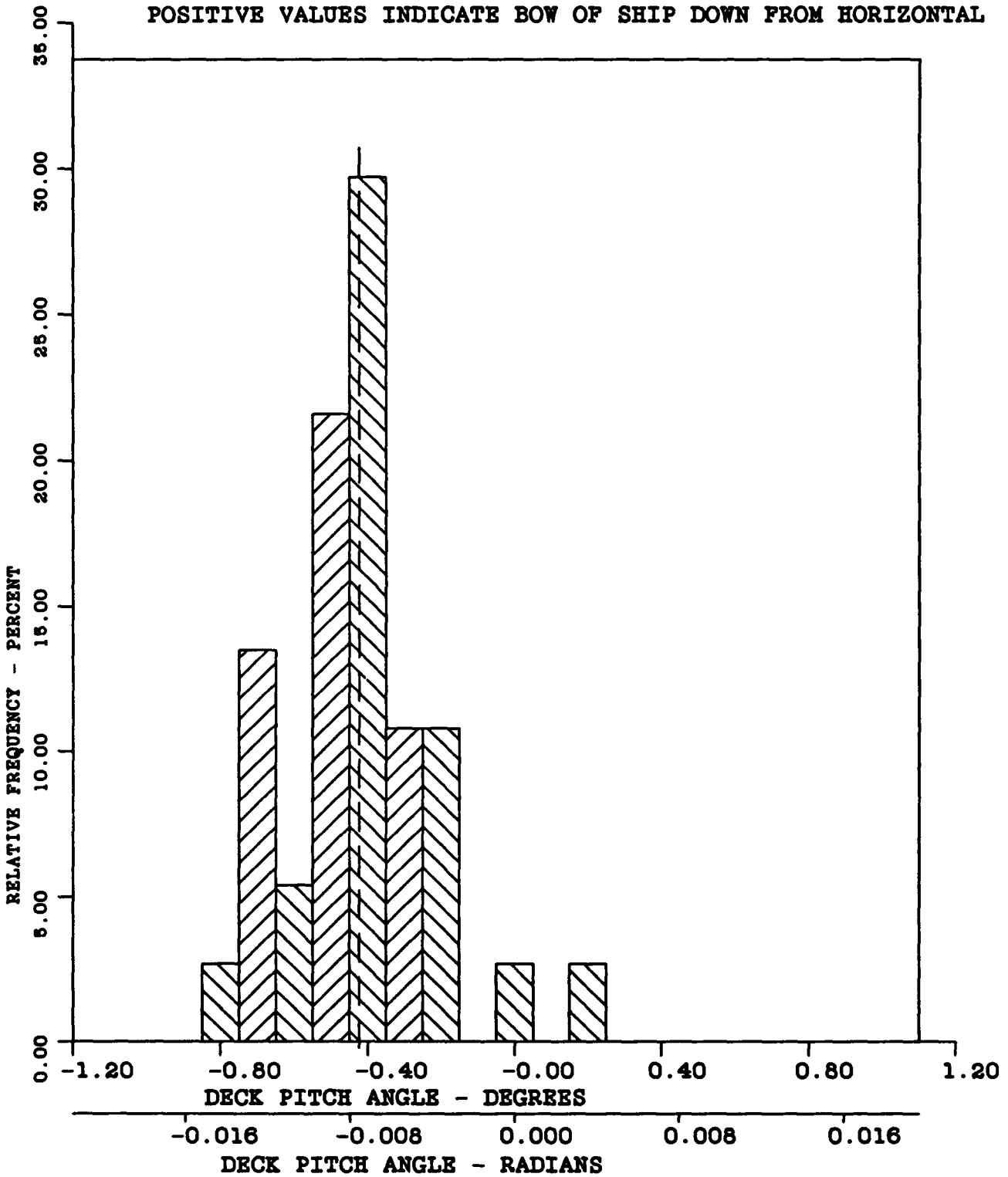


FIGURE K-39 FREQUENCY DISTRIBUTION OF CARRIER DECK PITCH MOTION

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-37 $\bar{X}$--0.42 DEGREES (-0.007 RADIANS) A3-0.69
S-0.20 DEGREES (0.003 RADIANS) A4-4.23
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE BOW OF SHIP DOWN FROM HORIZONTAL

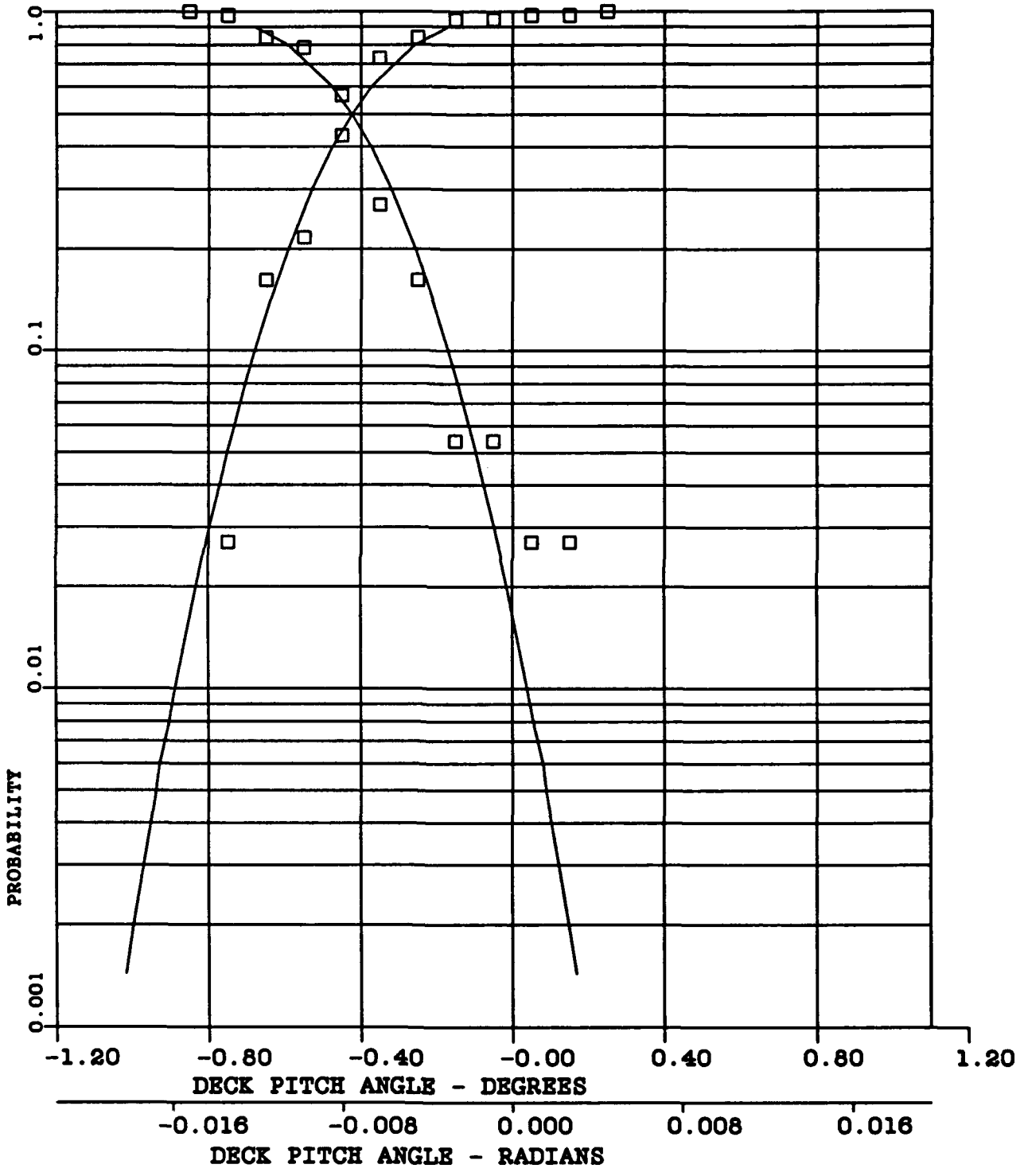


FIGURE K-40 PROBABILITY DISTRIBUTION OF CARRIER DECK PITCH MOTION

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N=37 $\bar{X}$=40086.58 POUNDS (18183.27 KILOGRAMS) A3=-0.57
S=1475.96 POUNDS (669.50 KILOGRAMS) A4=3.32

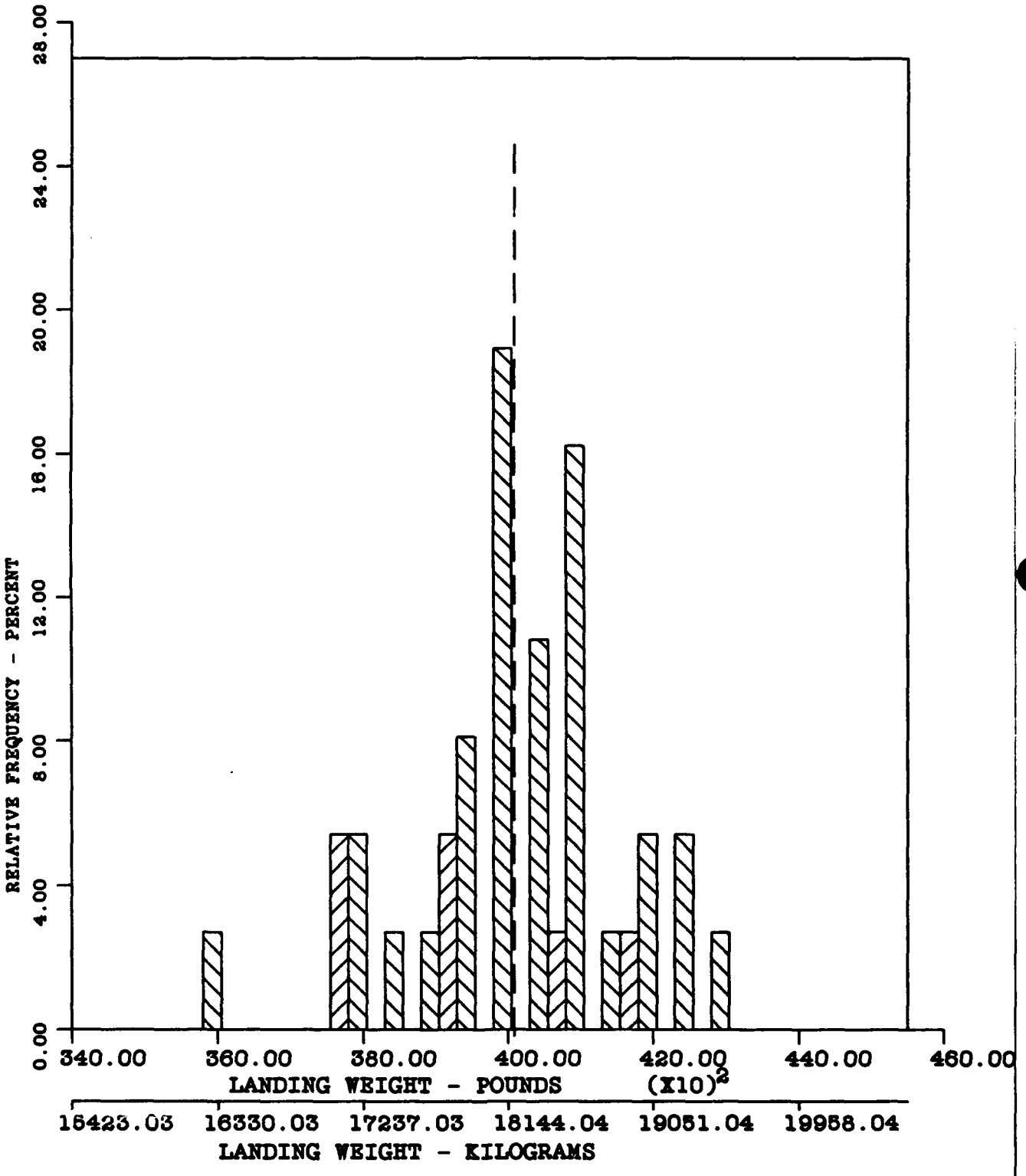


FIGURE K-41 FREQUENCY DISTRIBUTION OF AIRCRAFT LANDING WEIGHT

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-37 $\bar{X}$-2.44 DEG/SEC (0.043 RAD/SEC) A3-0.71
S-3.20 DEG/SEC (0.056 RAD/SEC) A4-2.70

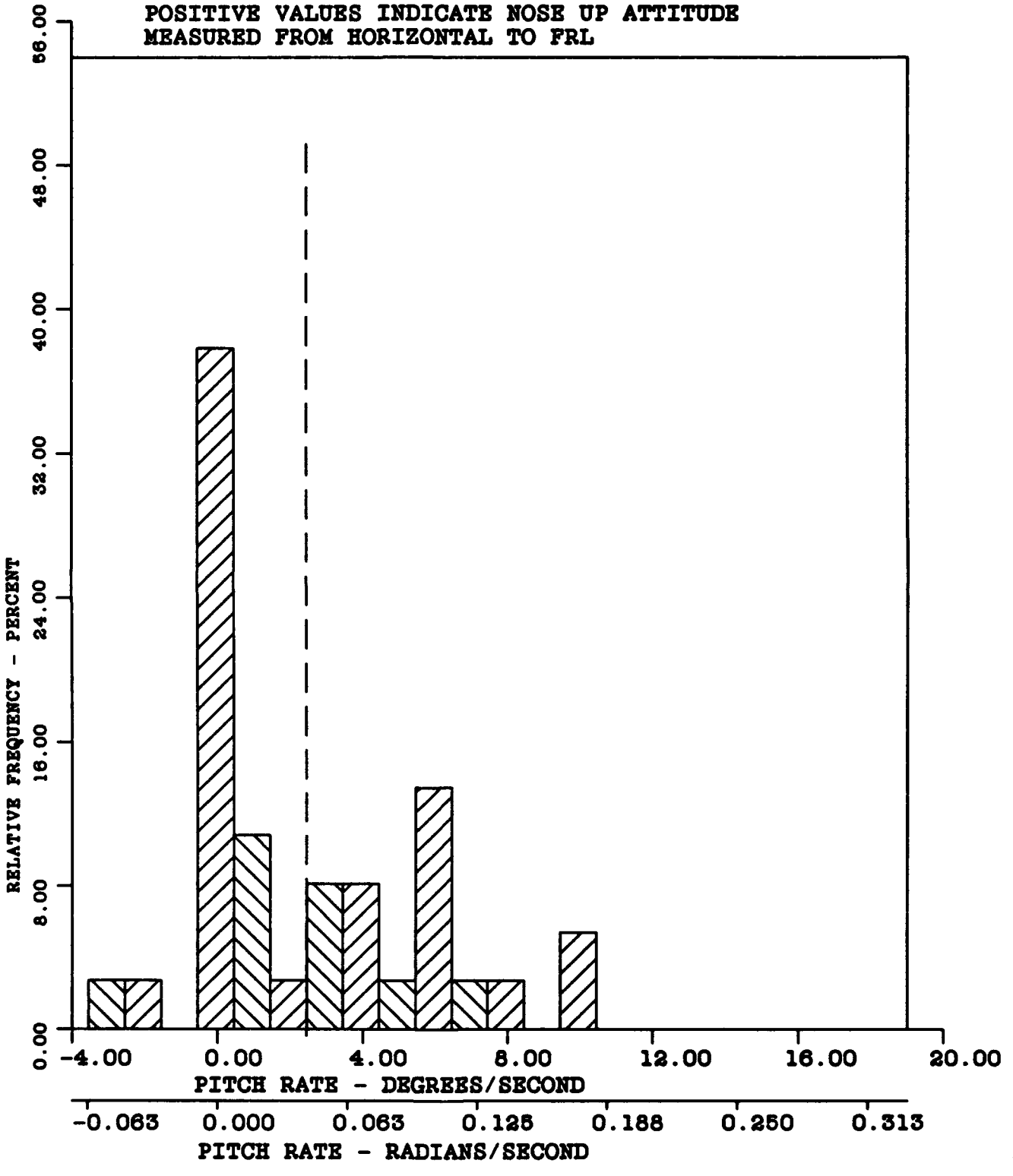


FIGURE K-42 FREQUENCY DISTRIBUTION OF PITCH RATE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (0.061 RADIANS)
N=37 $\bar{X}$=2.44 DEG/SEC (0.043 RAD/SEC) A3=0.71
S=3.20 DEG/SEC (0.056 RAD/SEC) A4=2.70
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE NOSE UP ATTITUDE
MEASURED FROM HORIZONTAL TO FRL

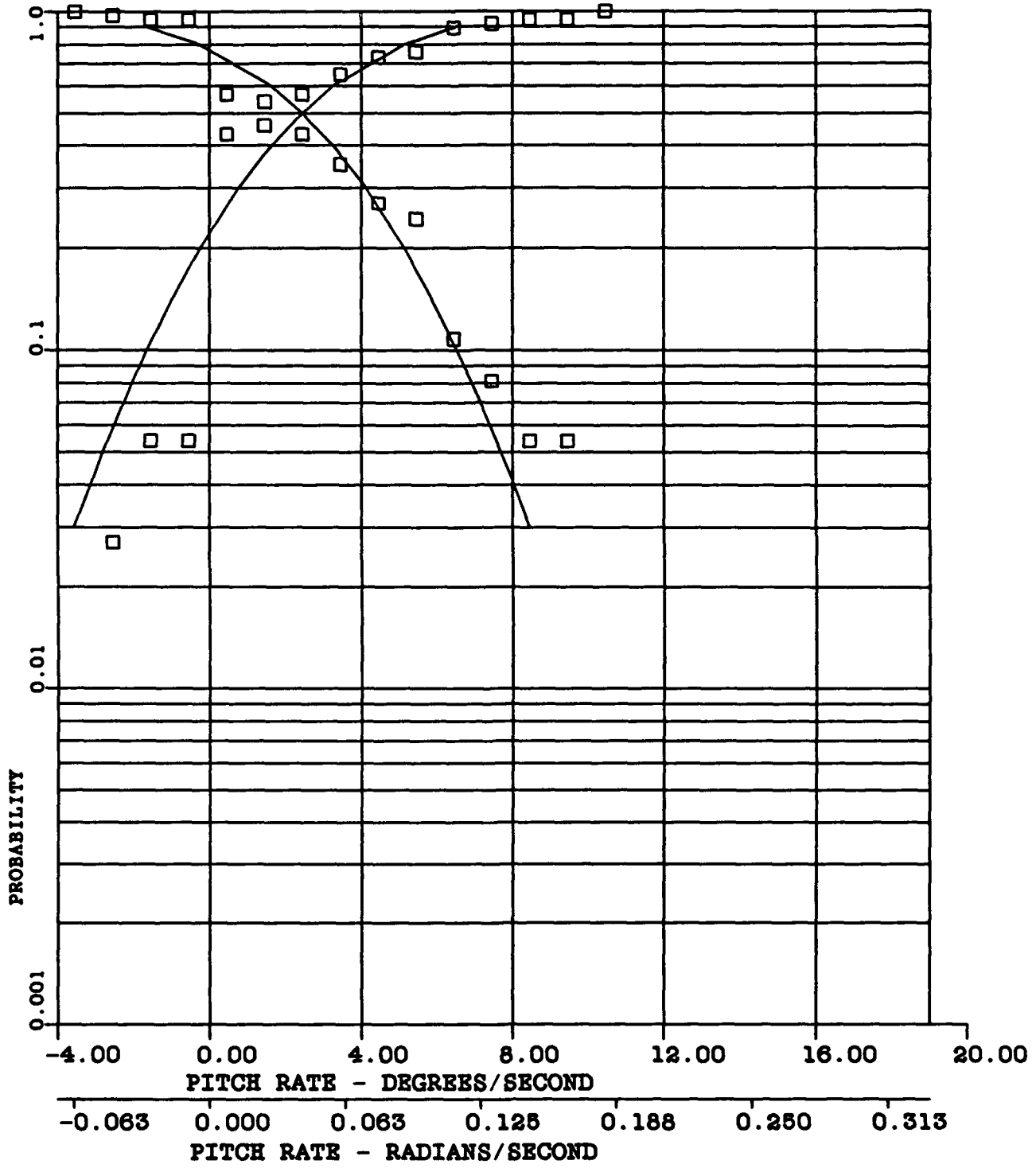


FIGURE K-43 PROBABILITY DISTRIBUTION OF PITCH RATE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (0.061 RADIANS)
N=37 $\bar{X}$=-3.92 DEGREES (-0.068 RADIANS) A3=1.15
S=1.80 DEGREES (0.031 RADIANS) A4=5.27

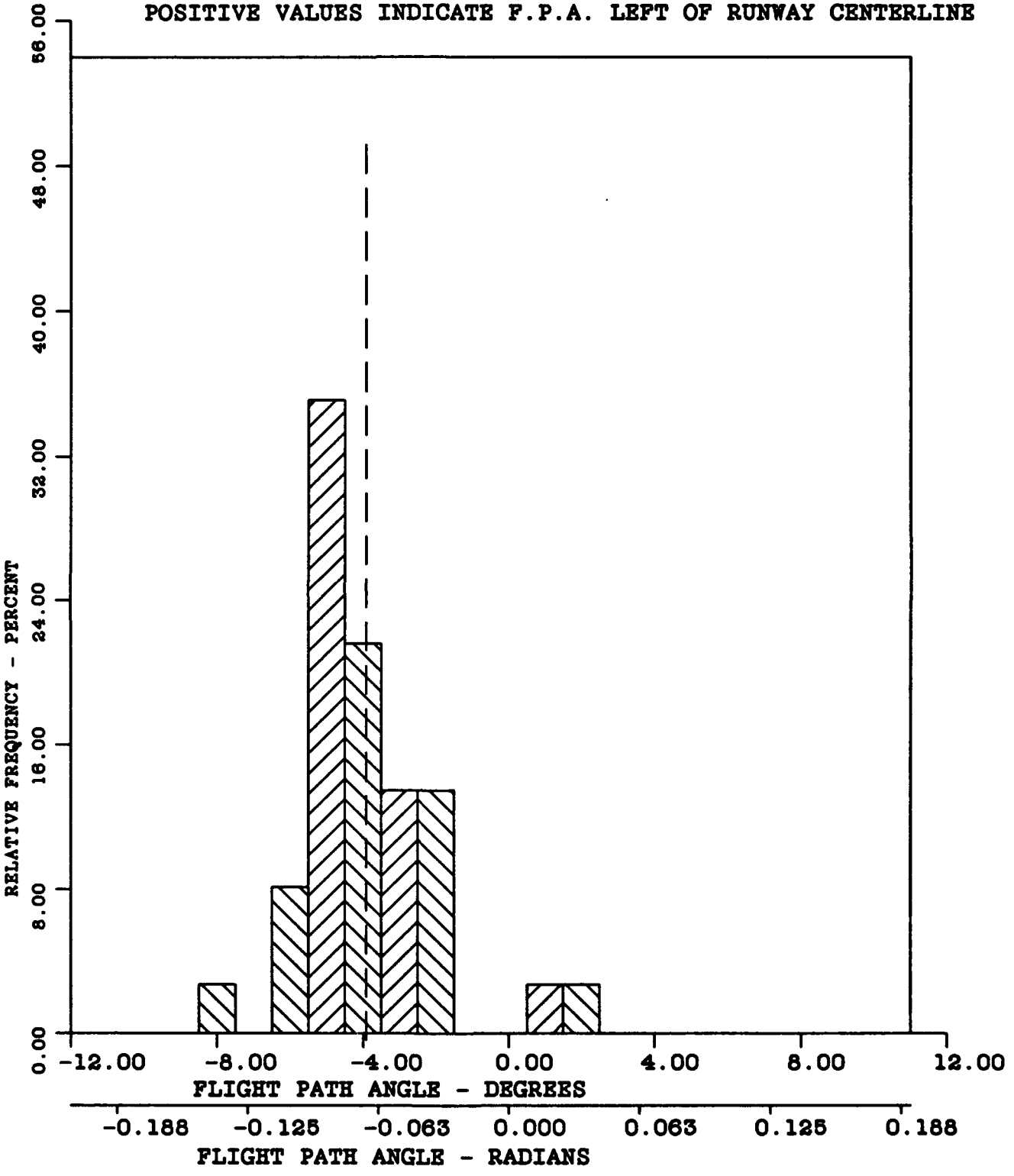


FIGURE K-44 FREQUENCY DISTRIBUTION OF AIRCRAFT FLIGHT PATH ANGLE AT TOUCHDOWN

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (0.061 RADIANS)
N=37 $\bar{X}$=-3.92 DEGREES (-0.068 RADIANS) A3=1.15
S=1.80 DEGREES (0.031 RADIANS) A4=5.27
CURVE FITTED - PEARSON TYPE III
POSITIVE VALUES INDICATE F.P.A. LEFT OF RUNWAY CENTERLINE

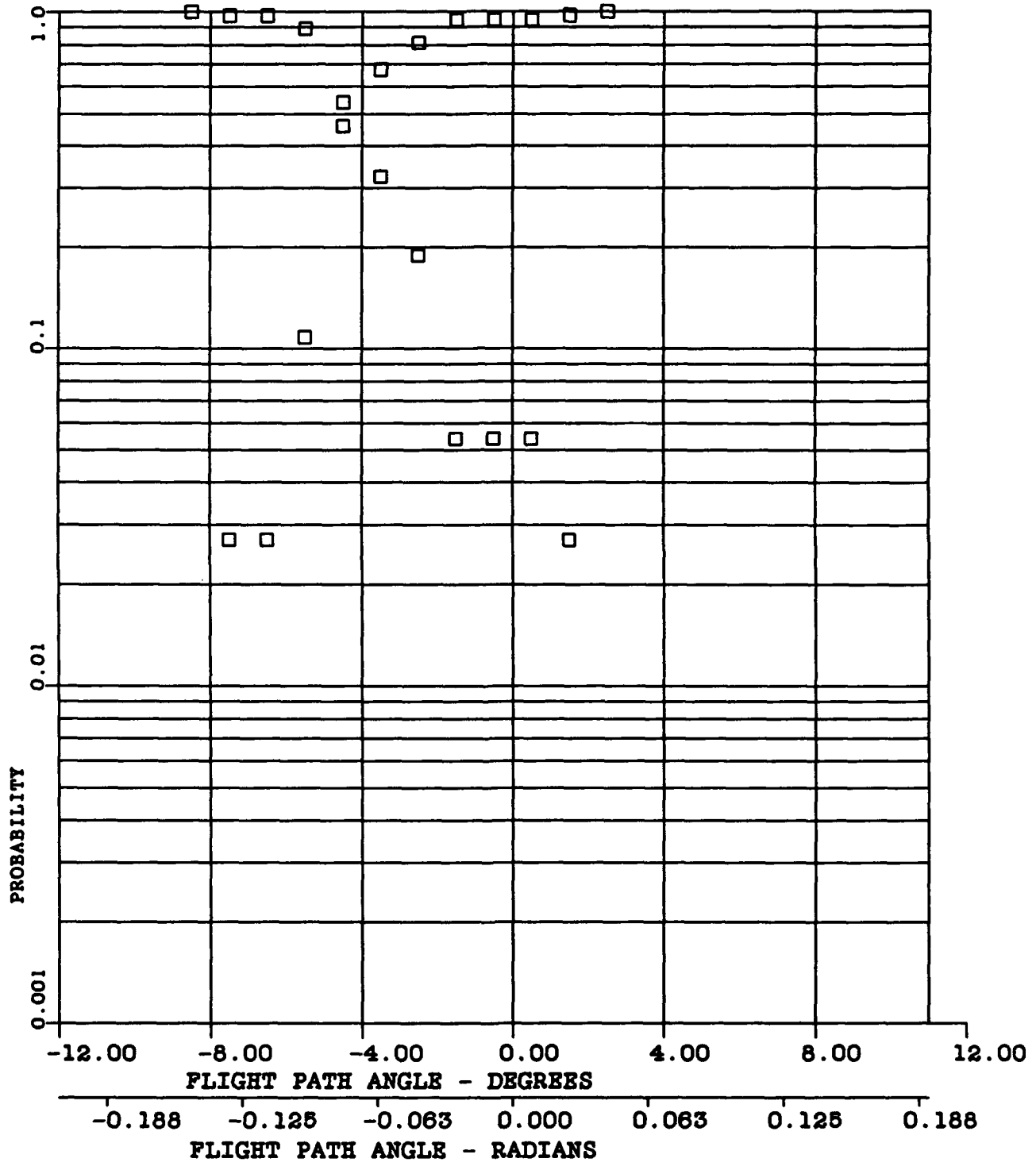


FIGURE K-45 PROBABILITY DISTRIBUTION OF AIRCRAFT FLIGHT PATH ANGLE AT TOUCHDOWN

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-37 $\bar{X}$-2.21 DEGREES (0.038 RADIANS) A3=0.36
S-3.62 DEGREES (0.063 RADIANS) A4=2.23

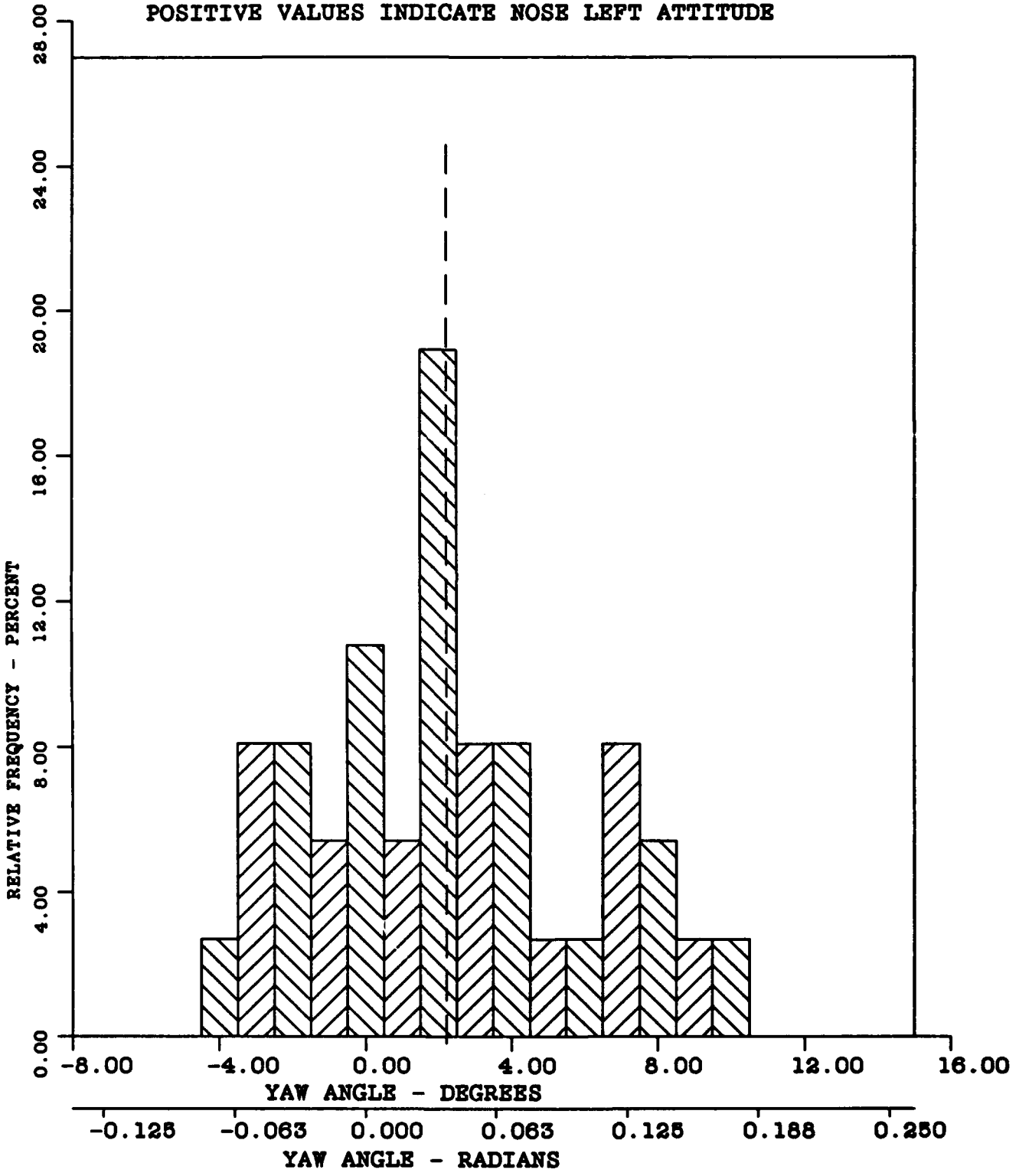


FIGURE K-46 FREQUENCY DISTRIBUTION OF AIRCRAFT YAW ANGLE

MODEL EA-6 AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (0.061 RADIANS)
N=37 $\bar{X}$=2.21 DEGREES (0.038 RADIANS) A3=0.36
S=3.62 DEGREES (0.063 RADIANS) A4=2.23
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE NOSE LEFT ATTITUDE

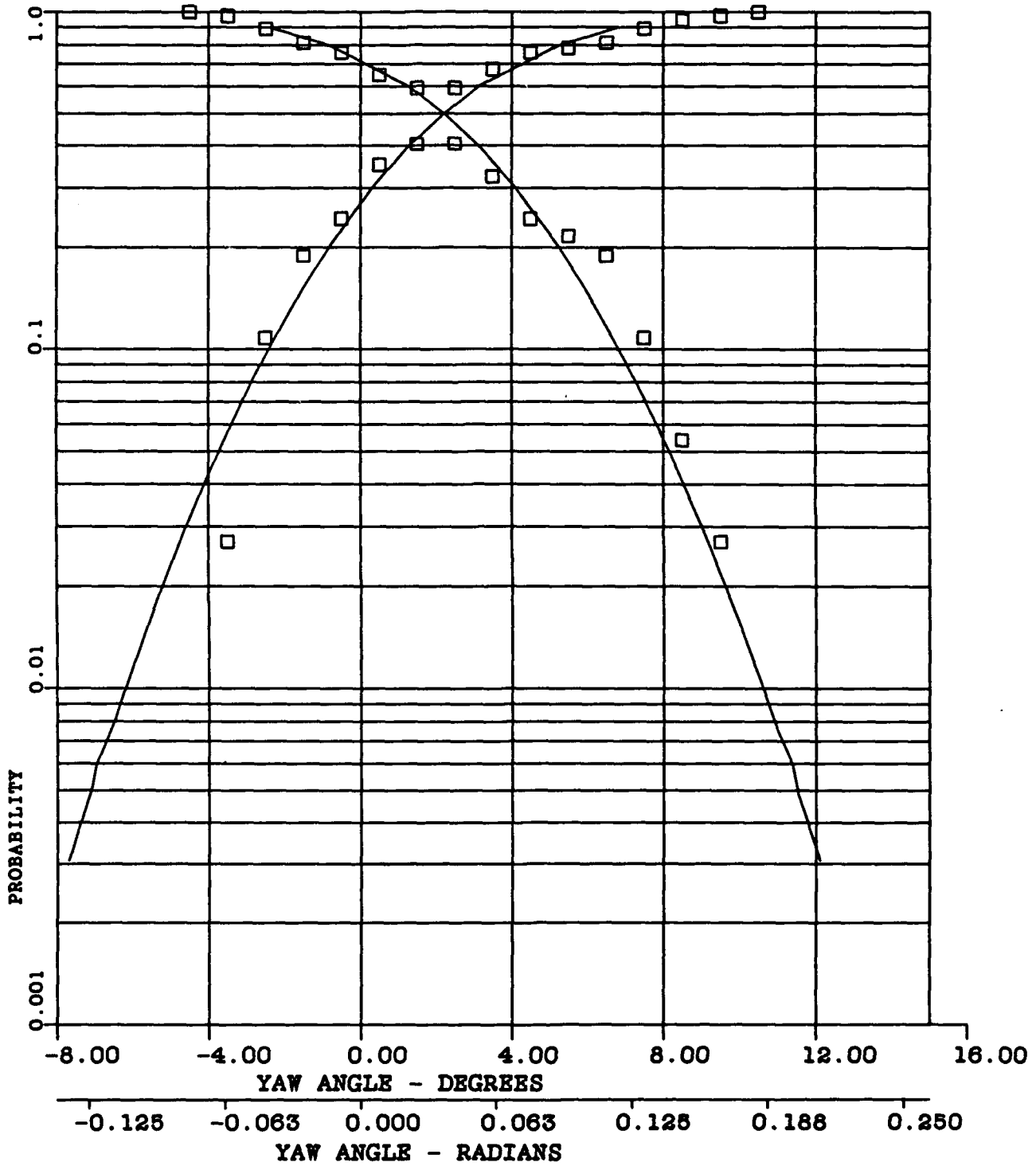


FIGURE K-47 PROBABILITY DISTRIBUTION OF AIRCRAFT YAW ANGLE

APPENDIX L

E-2C AIRCRAFT

DAY CARRIER LANDINGS

USS ENTERPRISE
CVN-65

Appendix L:

Frequency and Probability Distributions,
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MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-79 $\bar{X}$-24.10 KNOTS (12.39 METRES/SEC) A3=-1.43
S-1.23 KNOTS (.63 METRES/SEC) A4=4.50

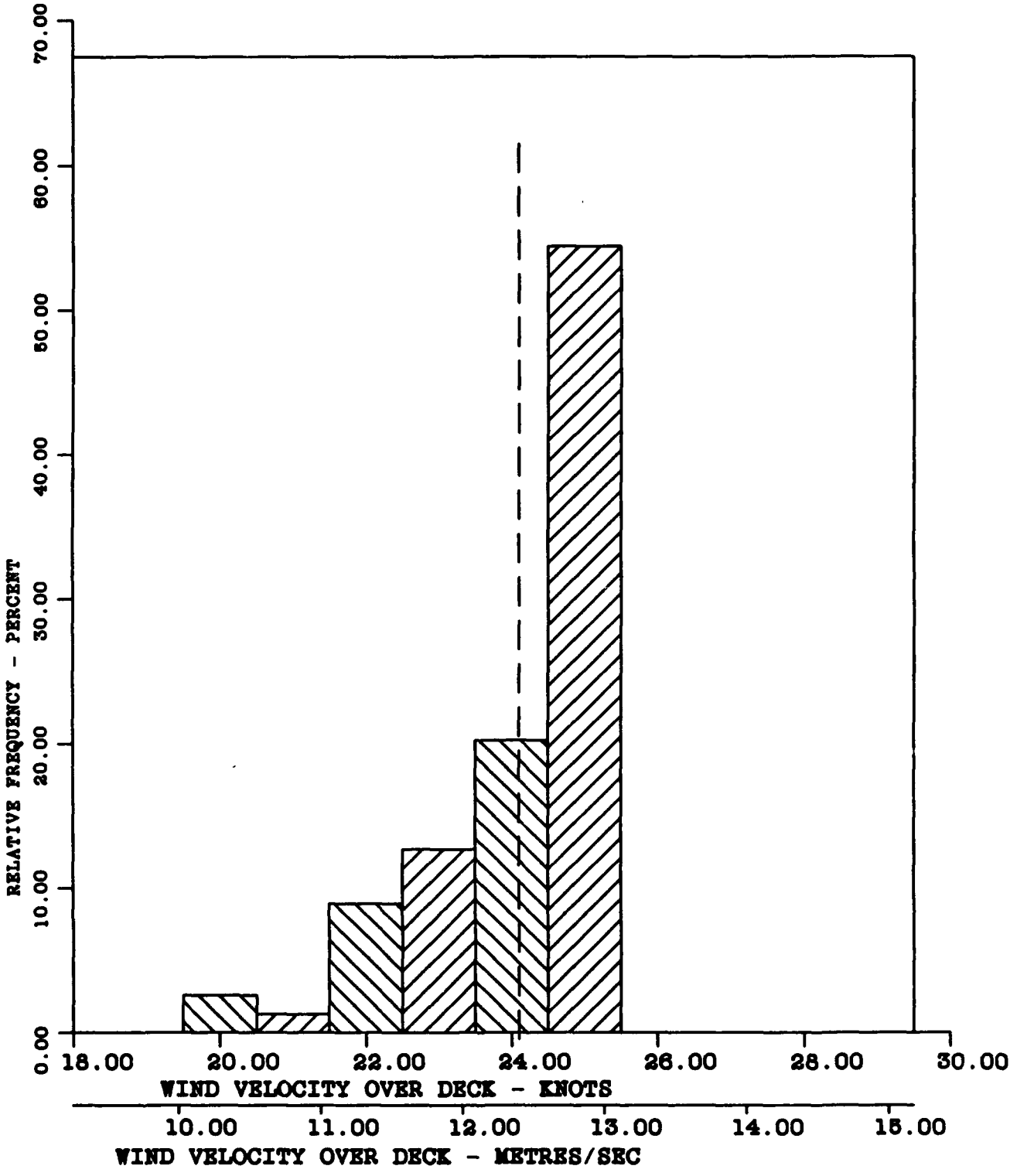


FIGURE L-1 FREQUENCY DISTRIBUTION OF WIND VELOCITY OVRR THE DECK

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=79 $\bar{X}$=24.10 KNOTS (12.39 METRES/SEC) A3=-1.43
S=1.23 KNOTS (.63 METRES/SEC) A4=4.50
CURVE FITTED - PEARSON TYPE III

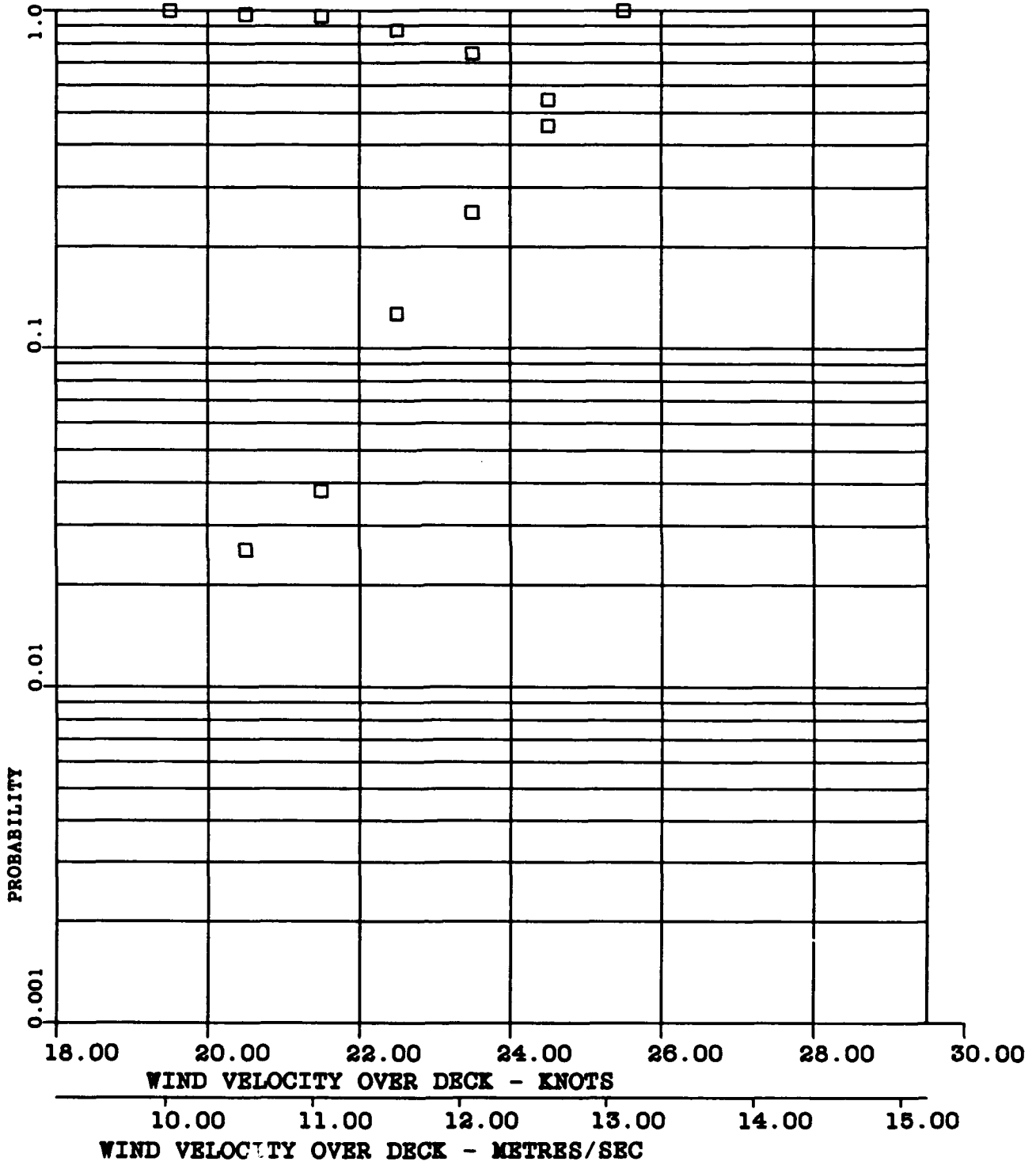


FIGURE L-2 PROBABILITY DISTRIBUTION OF WIND VELOCITY OVER THE DECK

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-79 $\bar{X}$-107.55 KNOTS (55.32 METRES/SEC) A3=-.72
S-4.30 KNOTS (2.21 METRES/SEC) A4=8.74

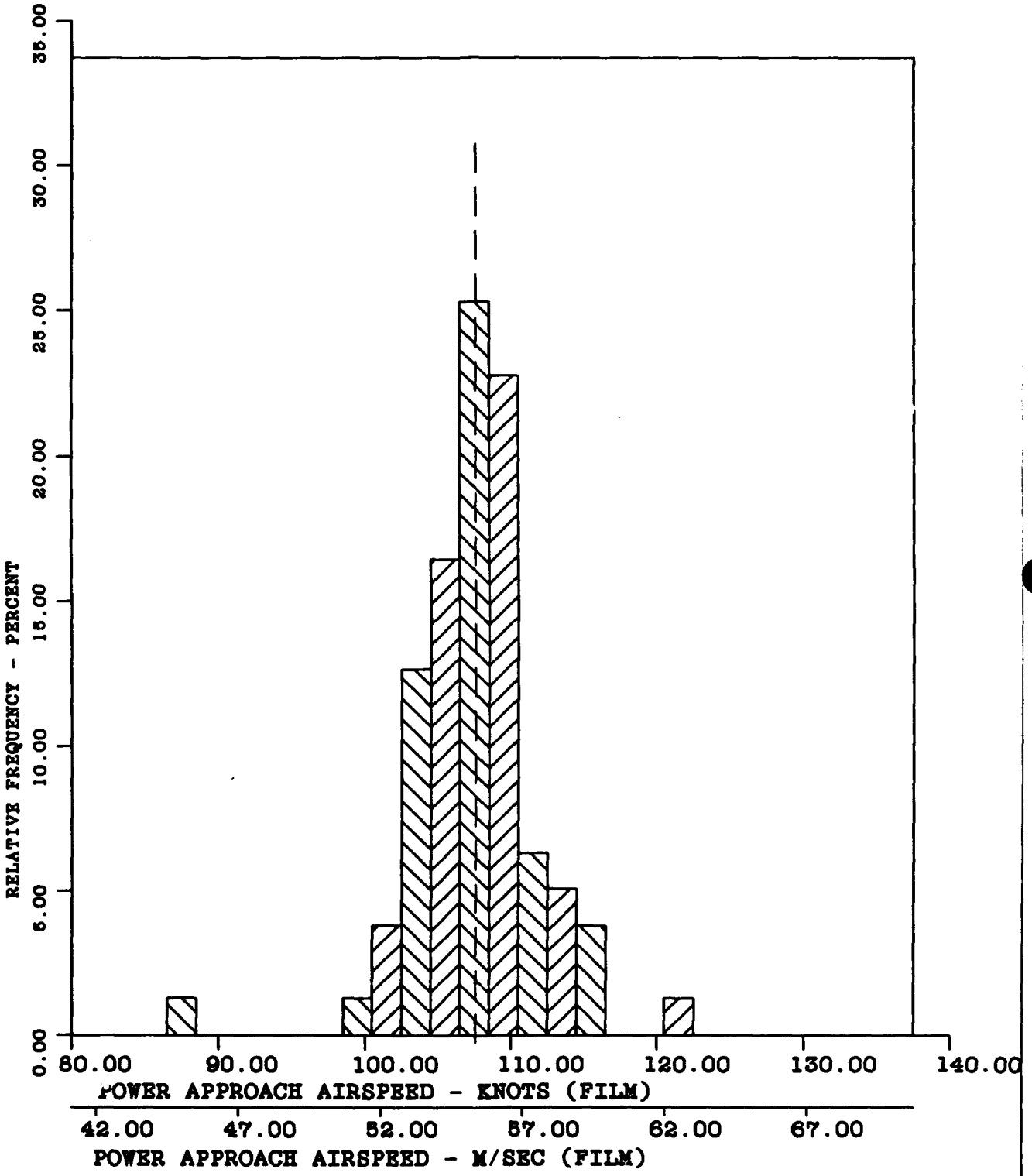


FIGURE L-3 FREQUENCY DISTRIBUTION OF FILM MEASURED POWER APPROACH AIRSPEED AT THE RAMP

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N=79 $\bar{X}$=107.55 KNOTS (55.32 METRES/SEC) A3=-.72
S=4.30 KNOTS (2.21 METRES/SEC) A4=8.74
CURVE FITTED - PEARSON TYPE III

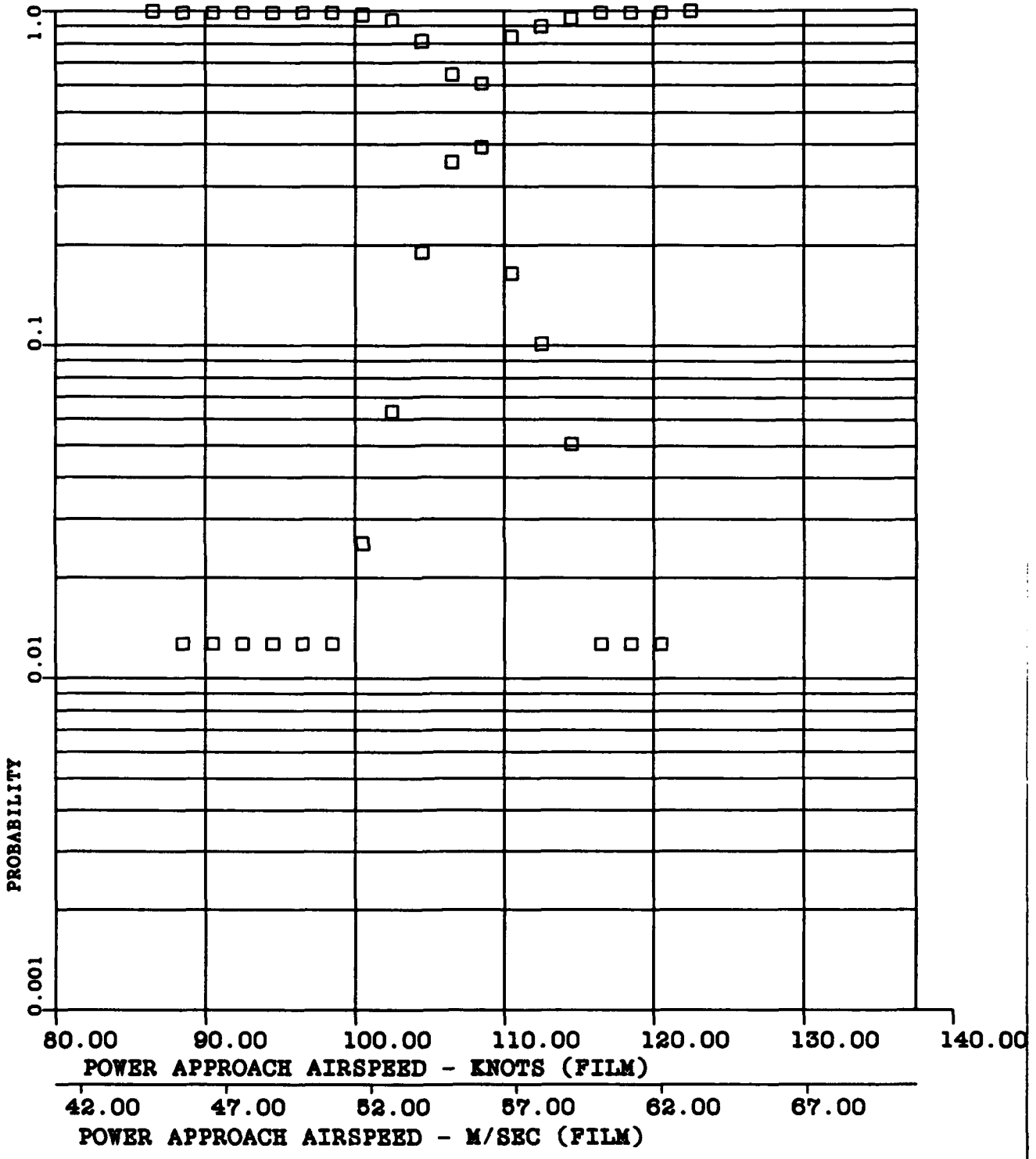


FIGURE L-4 PROBABILITY DISTRIBUTION OF POWER APPROACH AIRSPEED AT THE RAMP (FILM)

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-75 $\bar{X}$-15.19 FEET (4.63 METRES) A3=.16
S-2.43 FEET (.74 METRES) A4-2.70

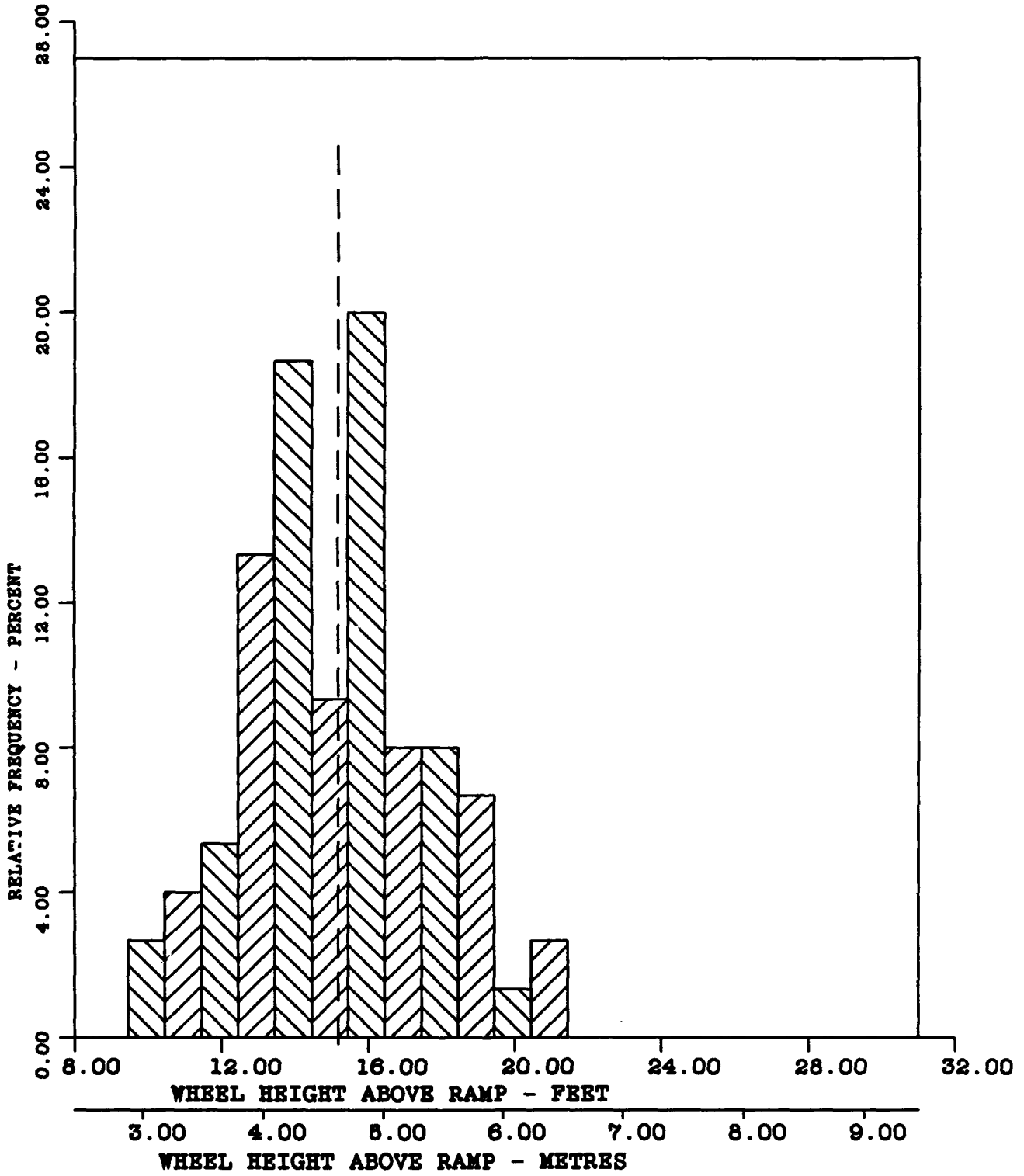


FIGURE L-5 FREQUENCY DISTRIBUTION OF AIRCRAFT WHEEL HEIGHT ABOVE CARRIER RAMP

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N=75 $\bar{X}$=15.19 FEET (4.63 METRES) A3=.16
S=2.43 FEET (.74 METRES) A4=2.70
CURVE FITTED - NORMAL

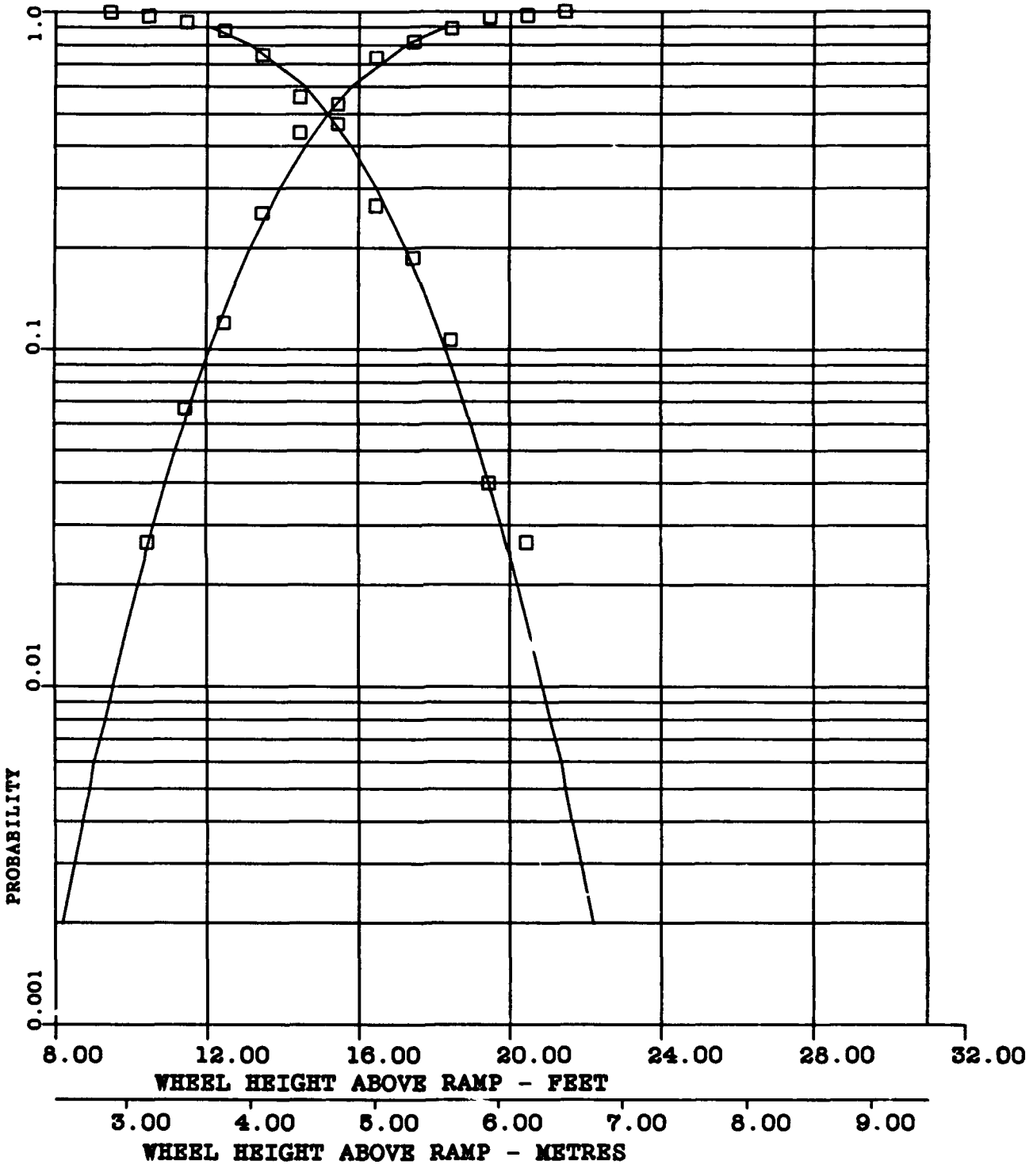


FIGURE L-6 PROBABILITY DISTRIBUTION OF AIRCRAFT WHEEL HEIGHT ABOVE CARRIER RAMP

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=79 $\bar{X}$=6.17 FEET/SEC (1.88 METRES/SEC) A3=-.38
S=2.28 FEET/SEC (.69 METRES/SEC) A4=3.10

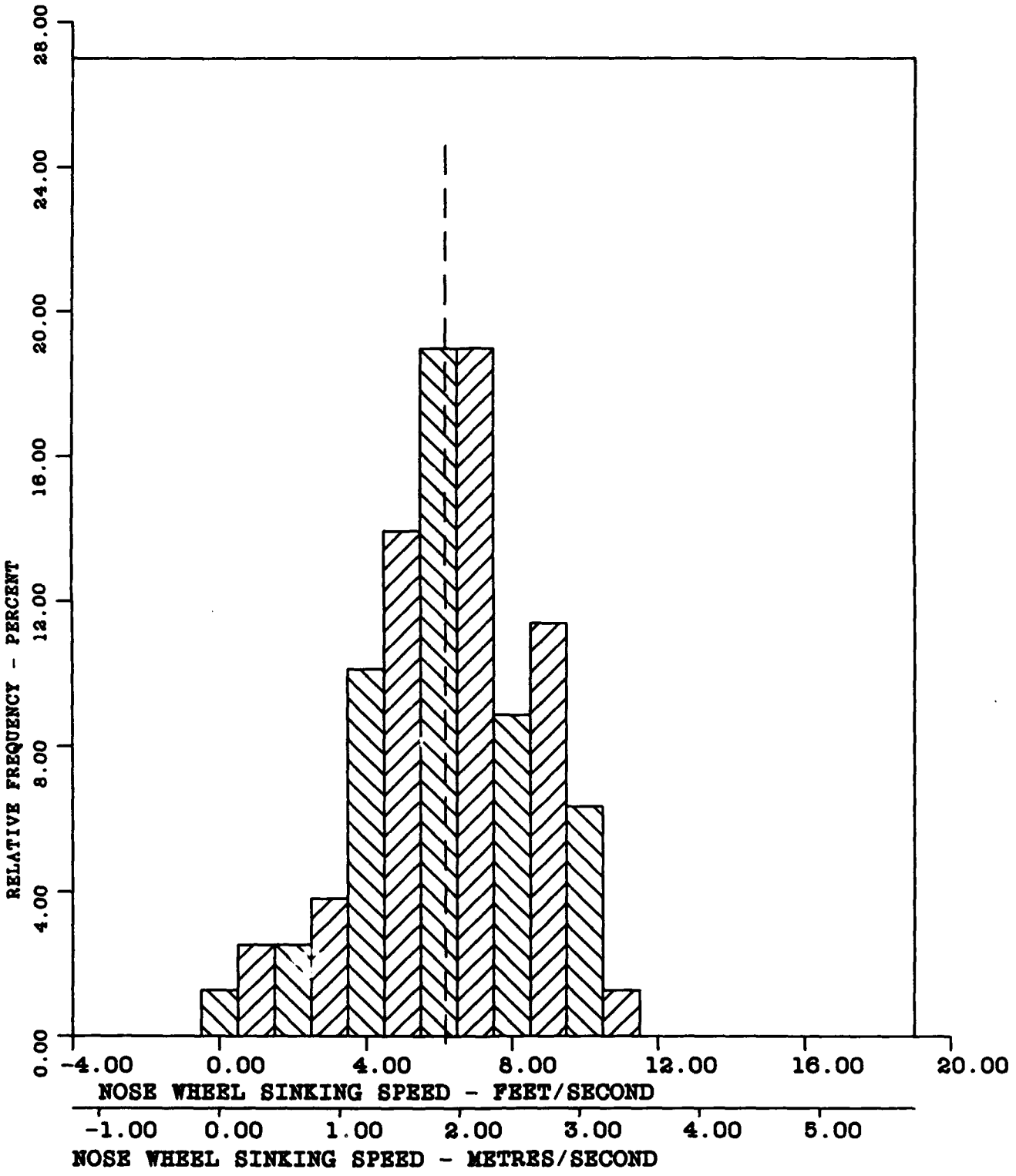


FIGURE L-7 FREQUENCY DISTRIBUTION OF NOSE WHEEL SINKING SPEED

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=79 $\bar{X}$=6.17 FEET/SEC (1.88 METRES/SEC) A3=-.38
S=2.28 FEET/SEC (.69 METRES/SEC) A4=3.10
CURVE FITTED - NORMAL

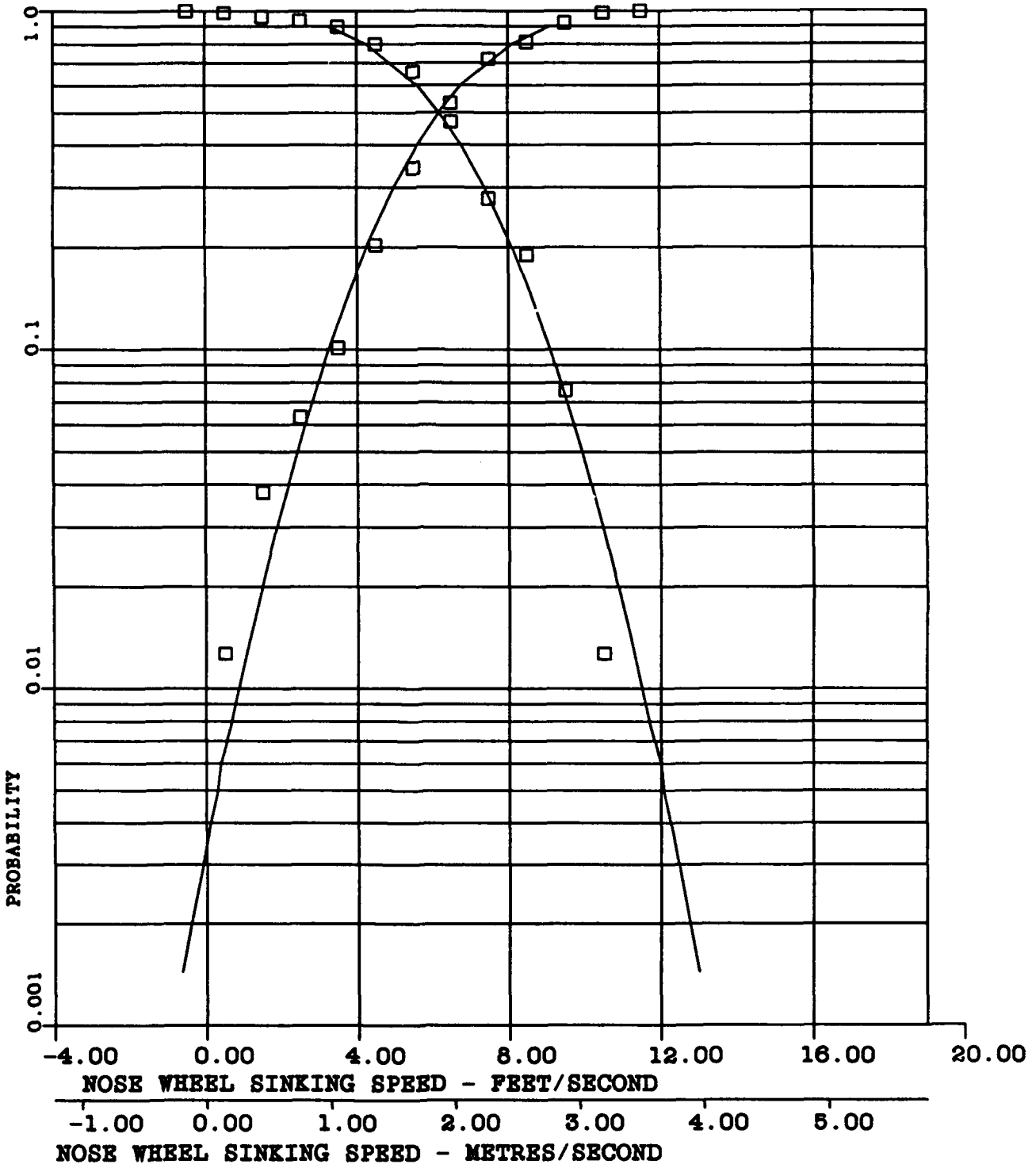


FIGURE L-8 PROBABILITY DISTRIBUTION OF NOSE WHEEL SINKING SPEED

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-79 $\bar{X}$-7.68 FEET/SEC (2.34 METRES/SEC) A3=-.08
S-1.92 FEET/SEC (.58 METRES/SEC) A4-2.76

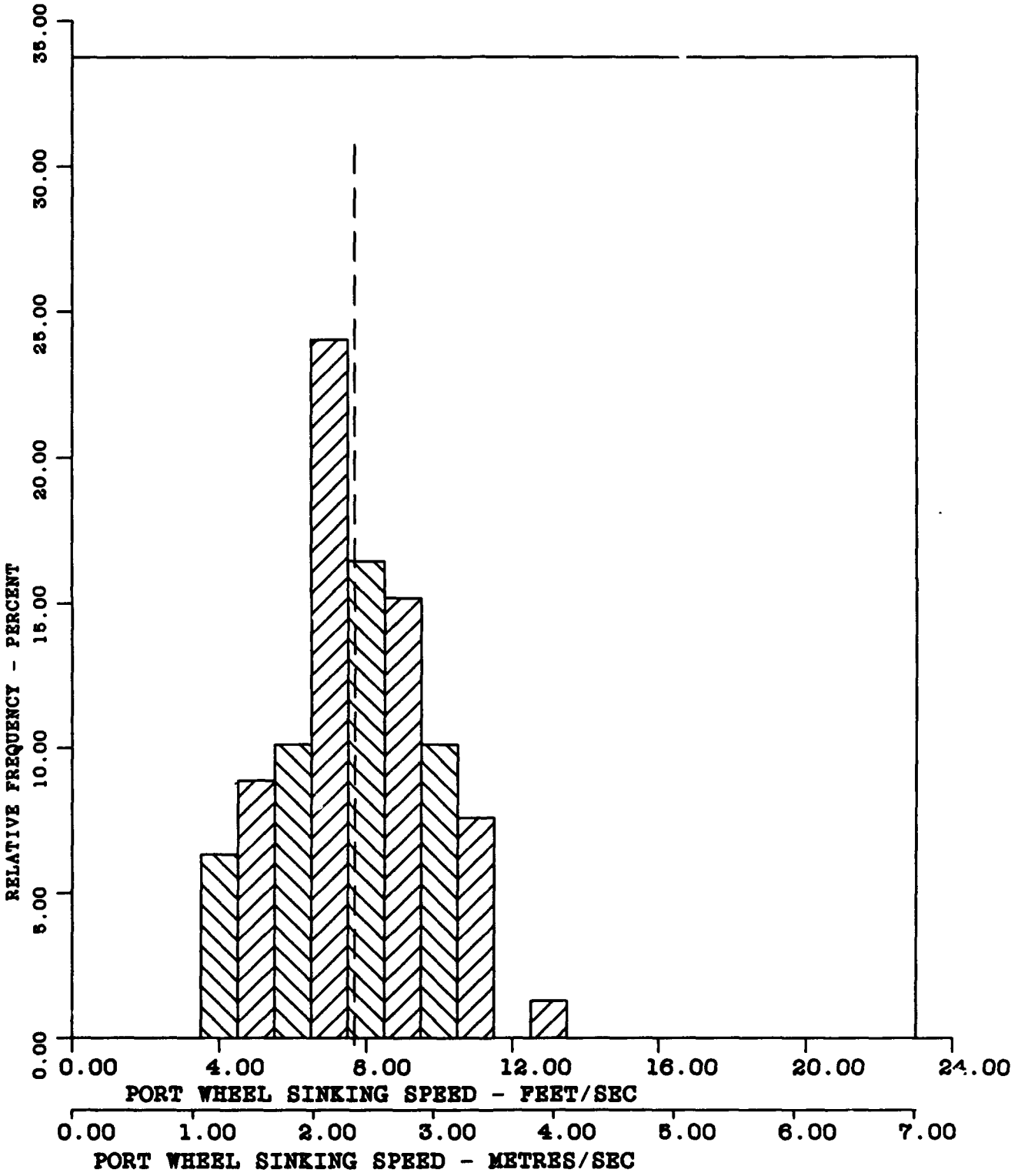


FIGURE L-9 FREQUENCY DISTRIBUTION OF PORT WHEEL SINKING SPEED AT PORT WHEEL TOUCHDOWN

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-79 $\bar{X}$-7.68 FEET/SEC (2.34 METRES/SEC) A3=-.08
S-1.92 FEET/SEC (.58 METRES/SEC) A4=2.76
CURVE FITTED - NORMAL

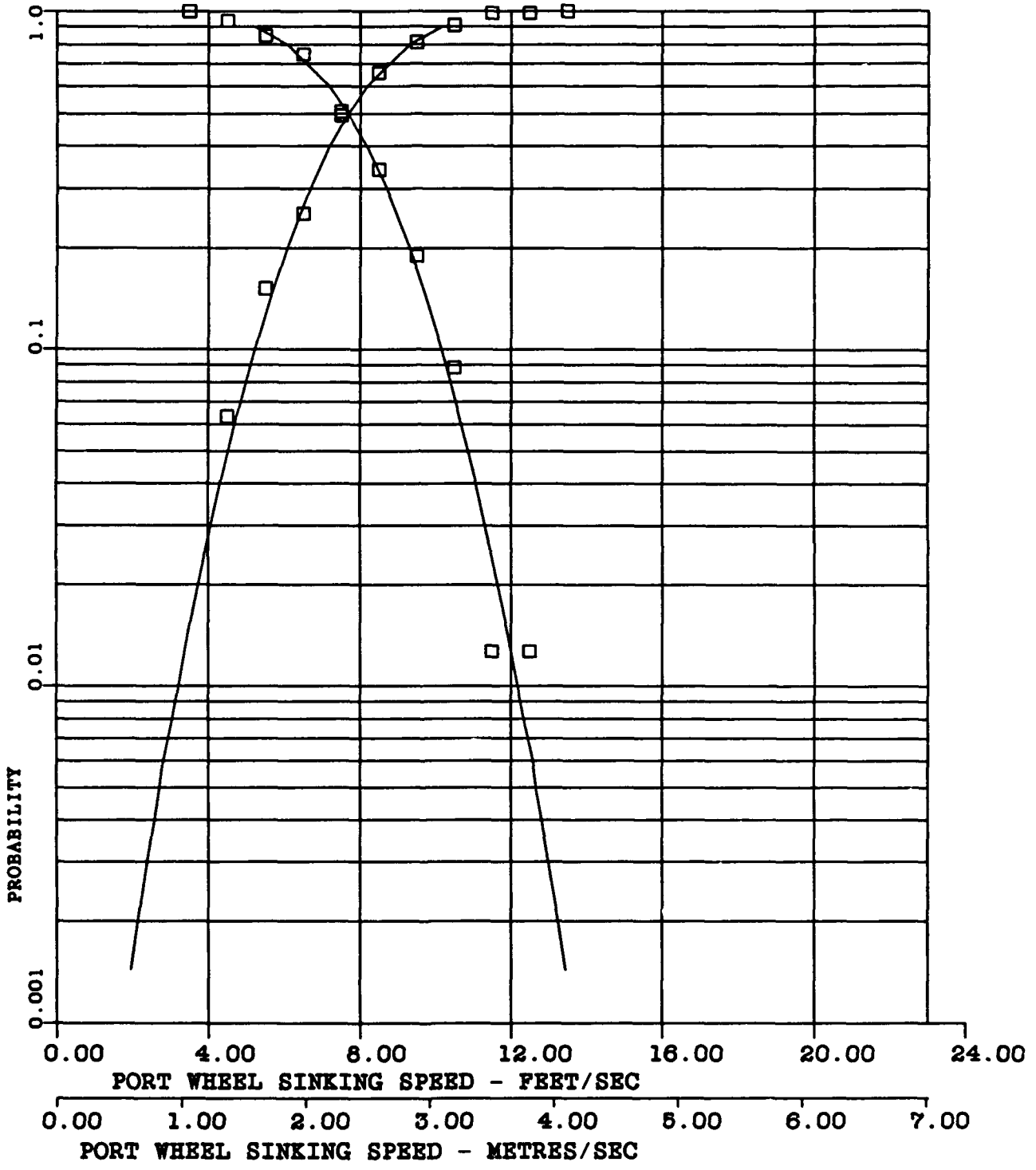


FIGURE L-10 PROBABILITY DISTRIBUTION OF PORT WHEEL SINKING SPEED

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-79 $\bar{X}$-7.53 FEET/SEC (2.29 METRES/SEC) A3=.09
S-1.94 FEET/SEC (.59 METRES/SEC) A4=4.09

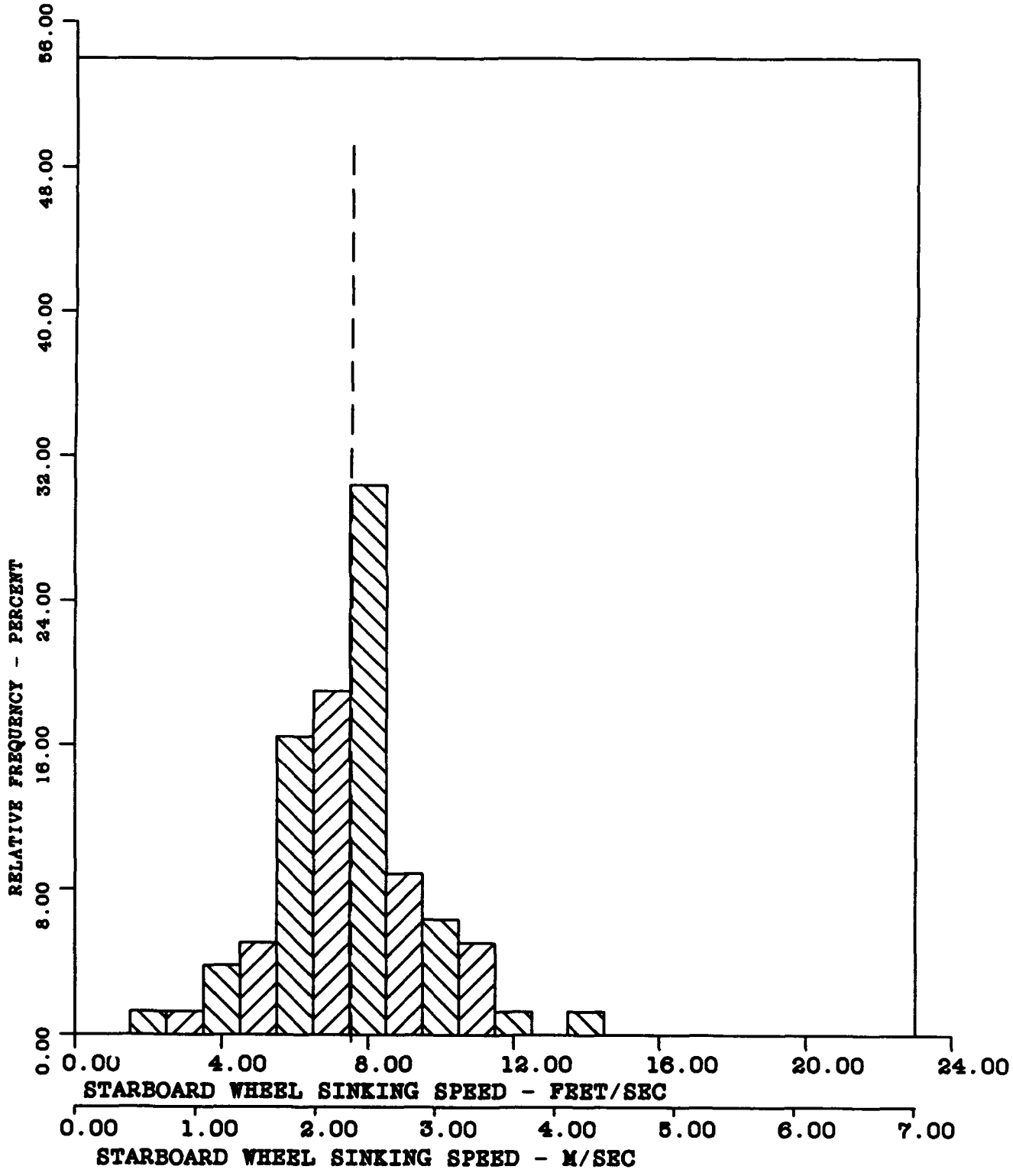


FIGURE L-11 FREQUENCY DISTRIBUTION OF STARBOARD WHEEL SINKING SPEED AT STARBOARD WHEEL TOUCHDOWN

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-79 $\bar{X}$-7.53 FEET/SEC (2.29 METRES/SEC) A3=.09
S-1.94 FEET/SEC (.59 METRES/SEC) A4=4.09
CURVE FITTED - NORMAL

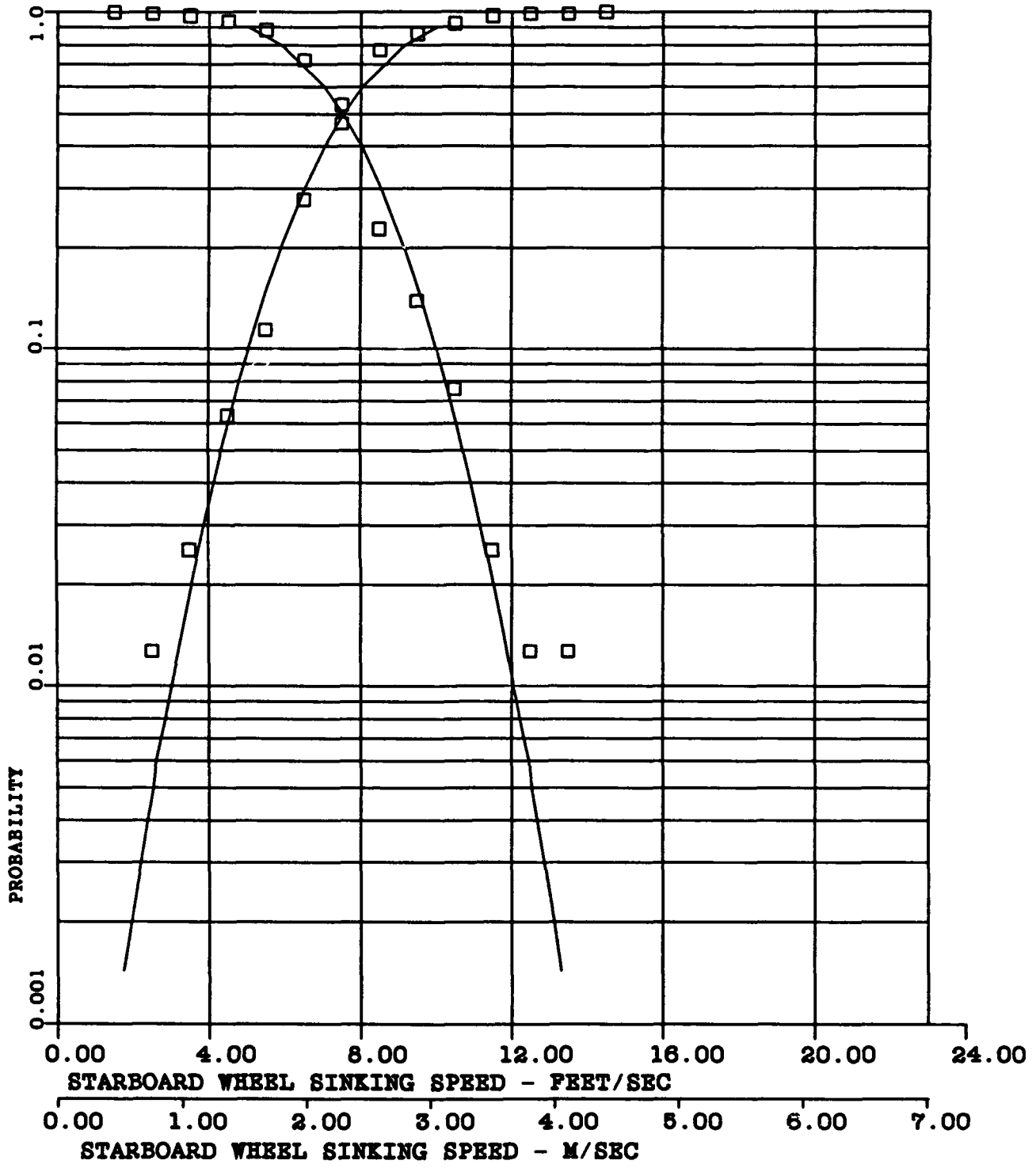


FIGURE L-12 PROBABILITY DISTRIBUTION OF STARBOARD WHEEL SINKING SPEED

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-79 $\bar{X}$-7.53 FEET/SEC (2.29 METRES/SEC) A3=-.31
S-1.75 FEET/SEC (.53 METRES/SEC) A4=3.17

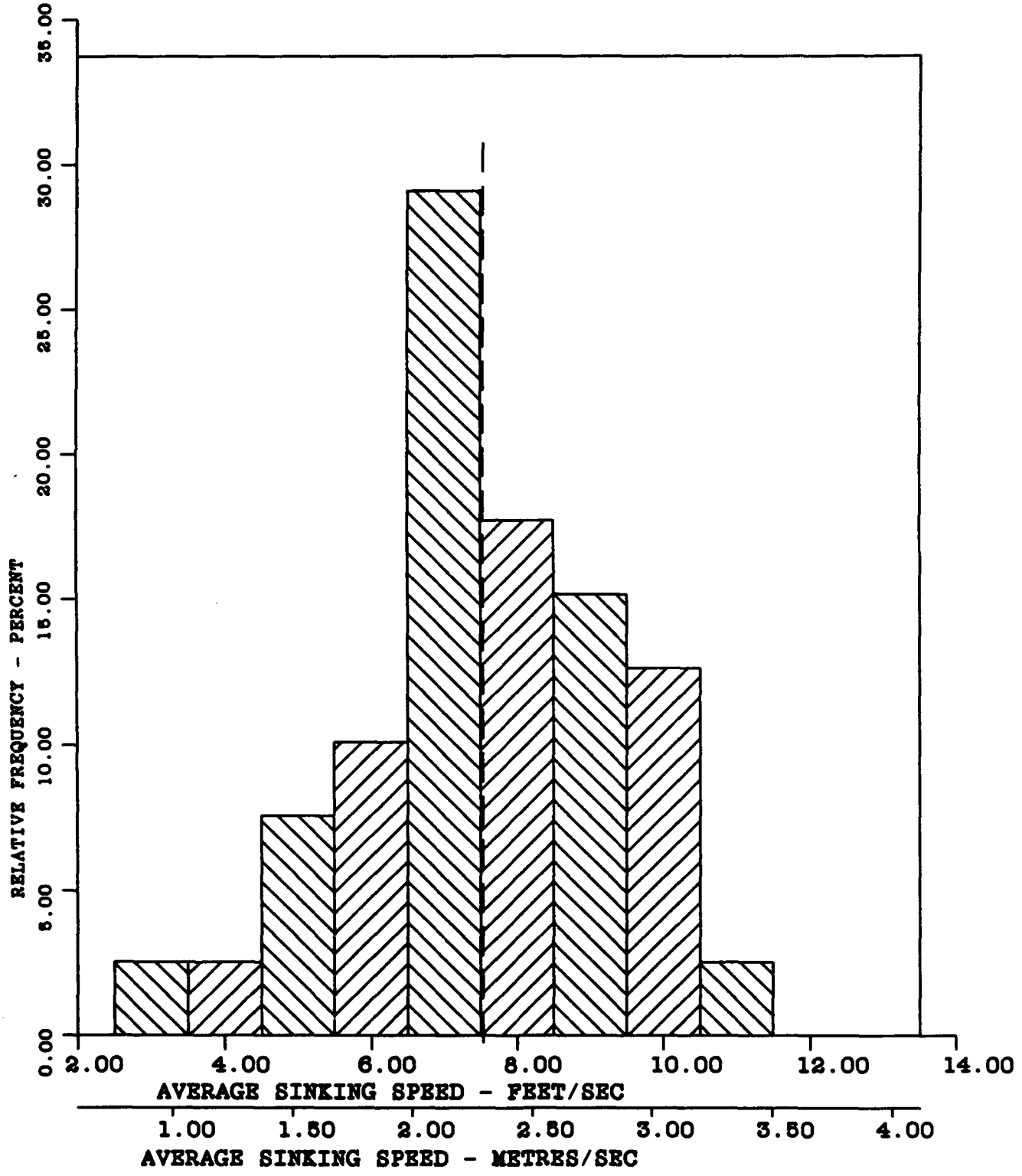


FIGURE L-13 FREQUENCY DISTRIBUTION OF AVG SINKING SPEED OF MAIN WHEEL AT FIRST MAIN WHEEL TOUCHDOWN

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-79 $\bar{X}$-7.53 FEET/SEC (2.29 METRES/SEC) A3=-.31
S-1.75 FEET/SEC (.53 METRES/SEC) A4-3.17
CURVE FITTED - NORMAL

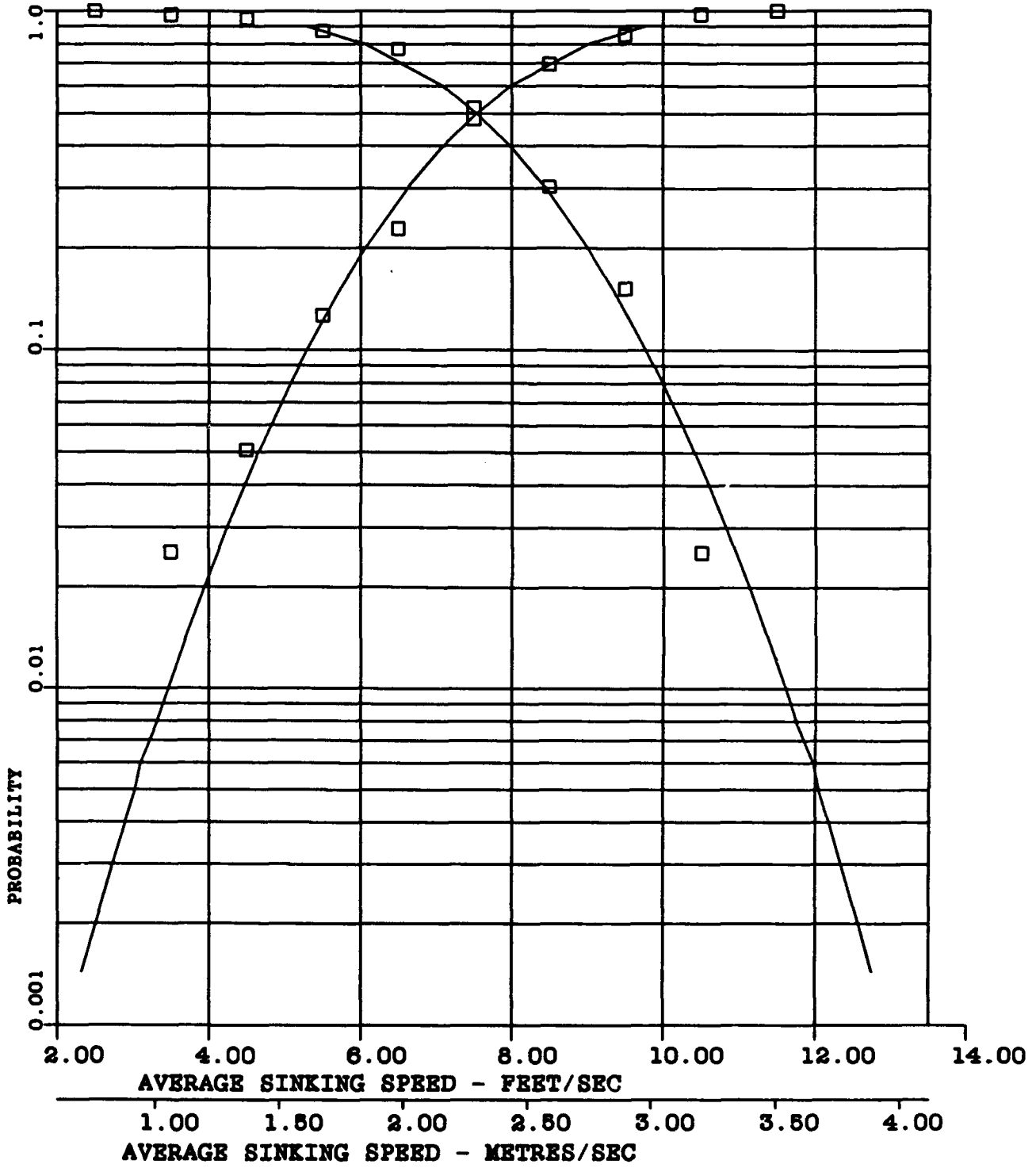


FIGURE L-14 PROBABILITY DISTRIBUTION OF AVERAGE SINKING SPEED AT FIRST MAIN WHEEL TOUCHDOWN

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N=4 $\bar{X}$=6.67 FEET/SEC (2.03 METRES/SEC) A3=.37
S=1.16 FEET/SEC (.35 METRES/SEC) A4=1.93

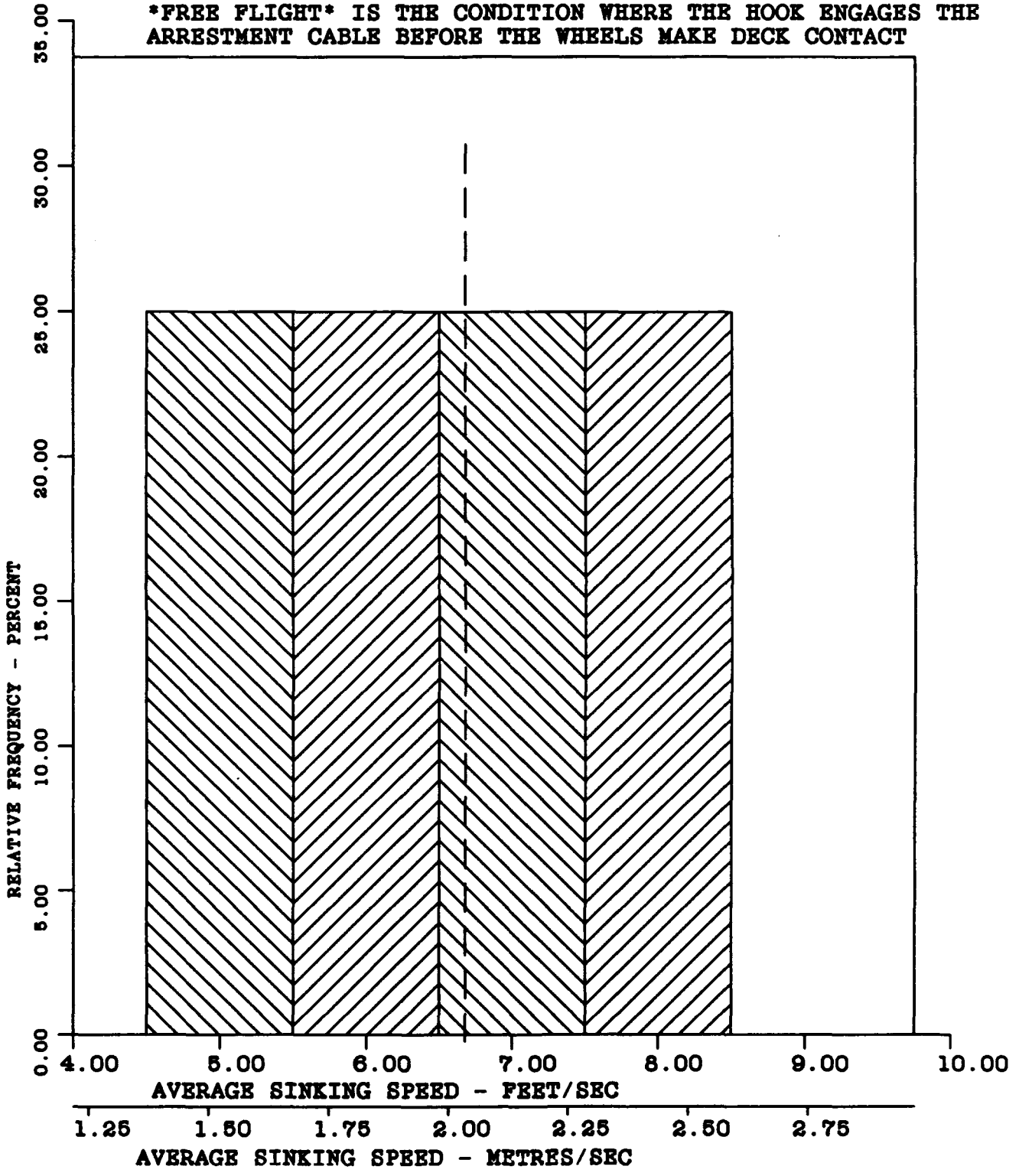


FIGURE L-15 FREQUENCY DISTRIBUTION OF AVERAGE SINKING SPEED OF MAIN WHEELS AT FREE FLIGHT

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-4 $\bar{X}$-6.67 FEET/SEC (2.03 METRES/SEC) A3=.37
S-1.16 FEET/SEC (.35 METRES/SEC) A4-1.93
CURVE FITTED - NORMAL
FREE FLIGHT IS THE CONDITION WHERE THE HOOK ENGAGES THE ARRESTMENT CABLE BEFORE THE WHEELS MAKE DECK CONTACT

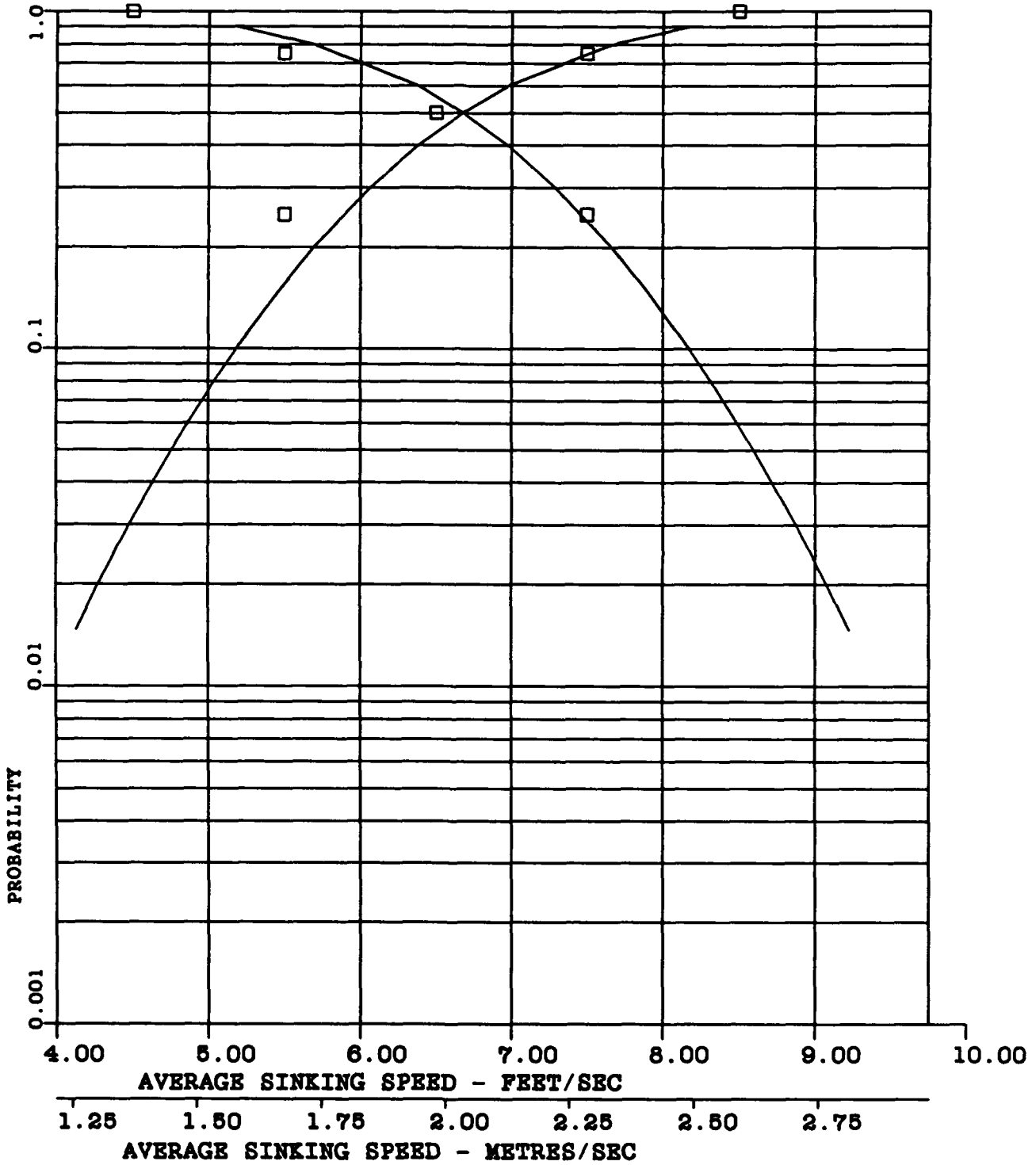


FIGURE L-16 PROBABILITY DISTRIBUTION OF AVERAGE SINKING SPEED AT FREE FLIGHT

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-79 $\bar{X}$-.98 A3-.45
S-.10 A4-3.15

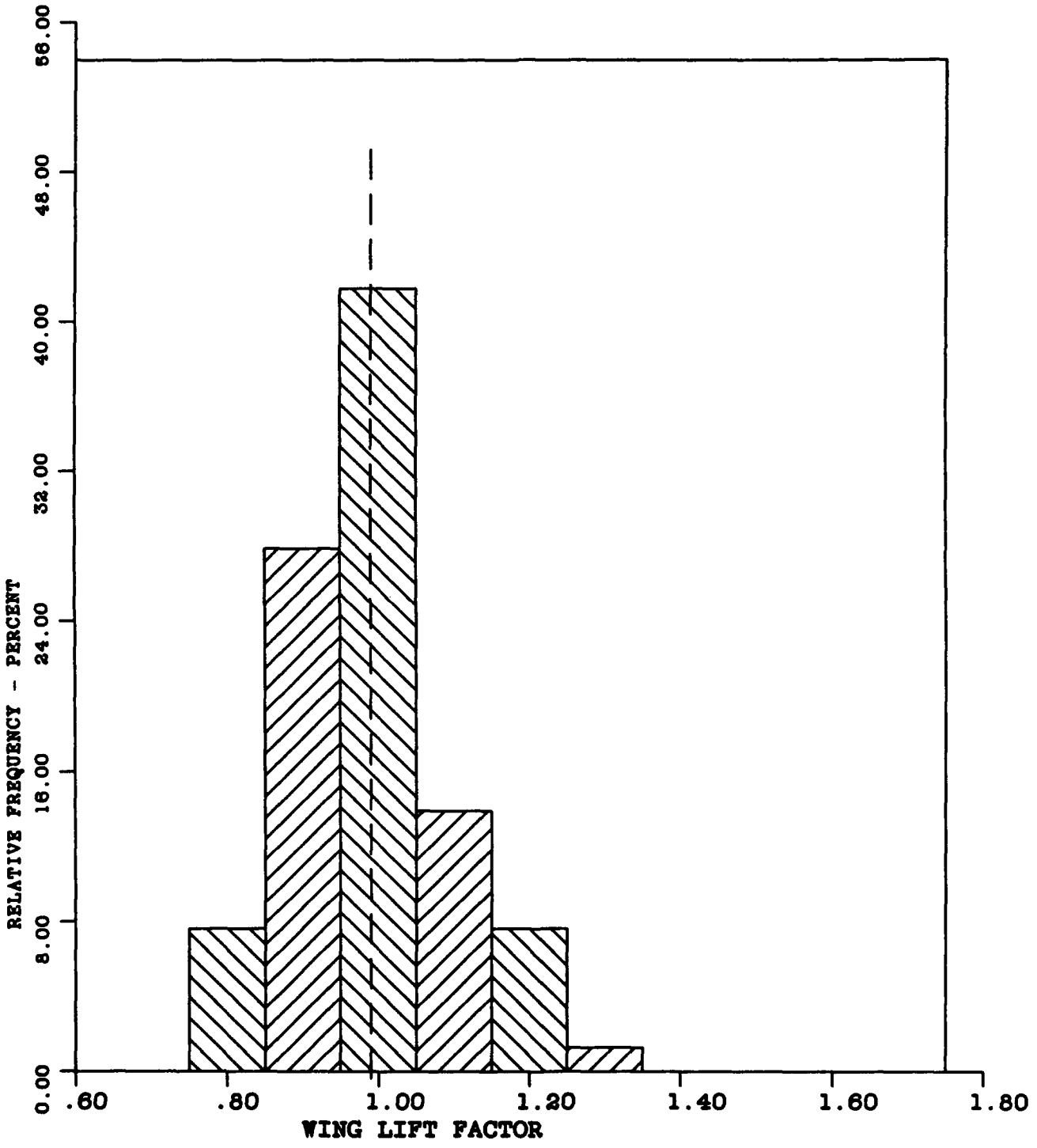


FIGURE L-17 FREQUENCY DISTRIBUTION OF WING LIFT FACTOR AT FIRST MAIN WHEEL TOUCHDOWN

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-79 $\bar{X}$=.98 A3=.45
S=.10 A4=3.15
CURVE FITTED - NORMAL

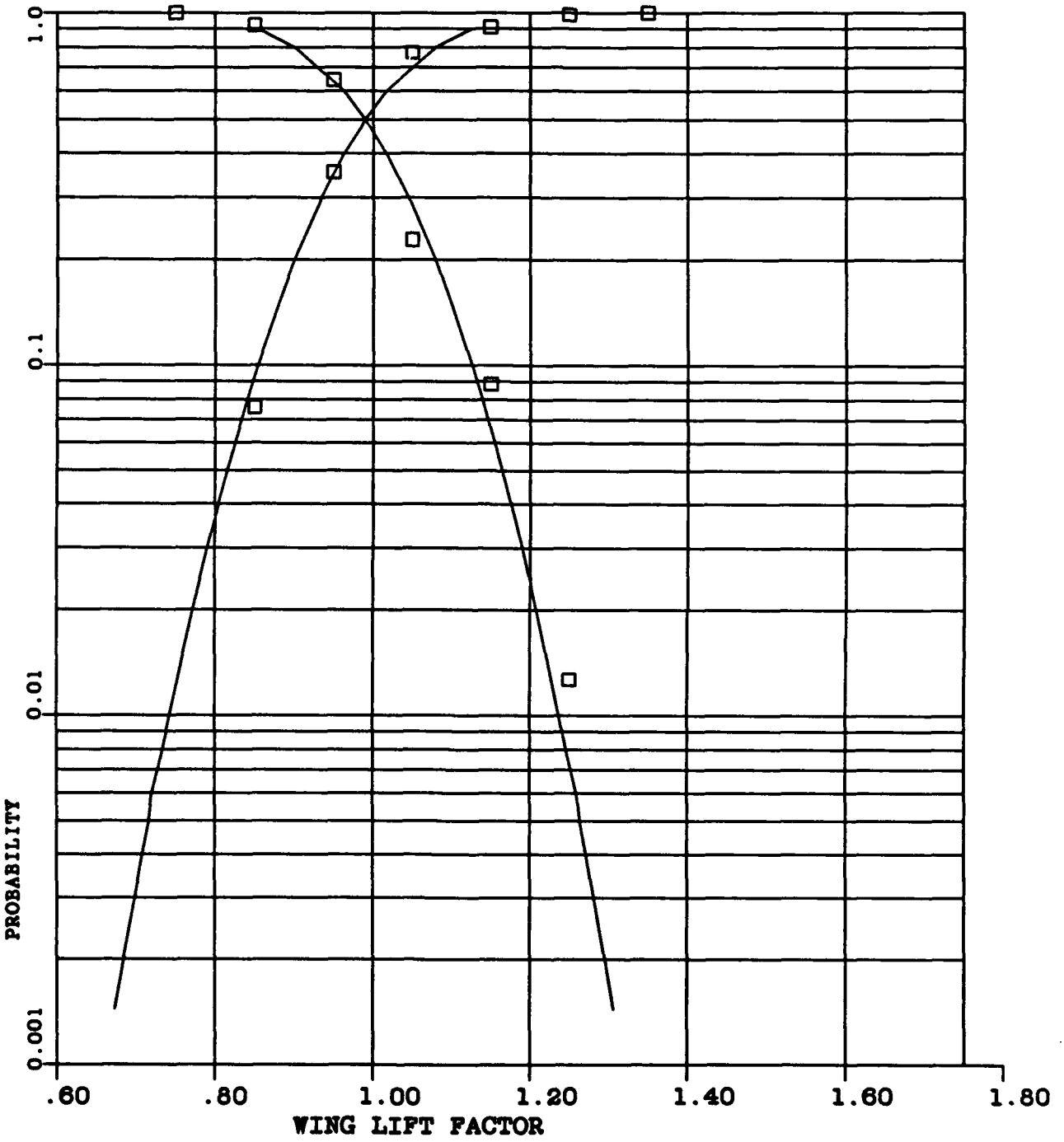


FIGURE L-18 PROBABILITY DISTRIBUTION OF WING LIFT FACTOR AT FIRST MAIN WHEEL TOUCHDOWN

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N=4 $\bar{X}$=1.07 A3=.49
S=.08 A4=1.62

FREE FLIGHT IS THE CONDITION WHERE THE HOOK ENGAGES THE ARRESTMENT CABLE BEFORE THE WHEELS MAKE DECK CONTACT

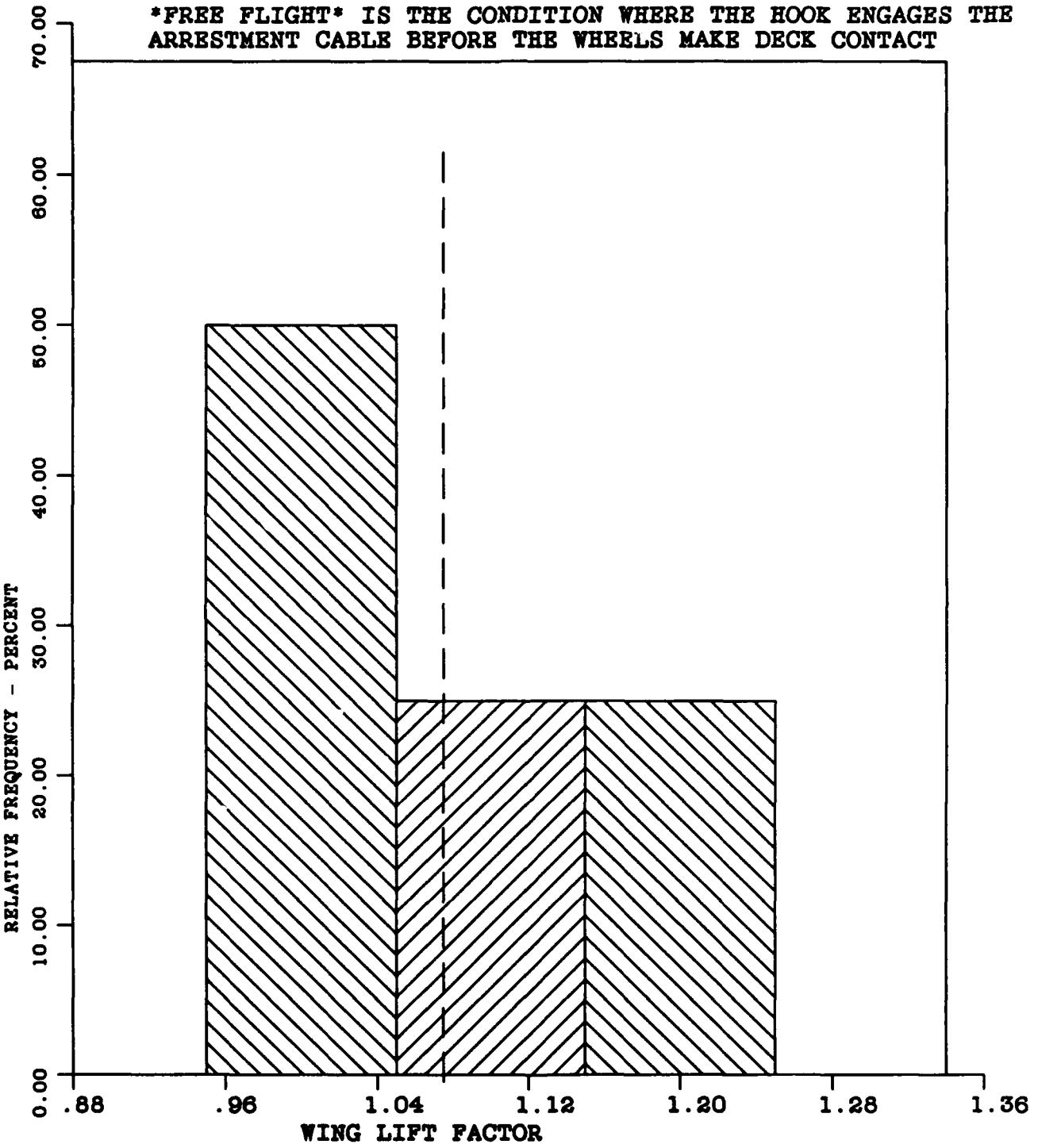


FIGURE L-19 FREQUENCY DISTRIBUTION OF WING LIFT FACTOR AT FREE FLIGHT

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=4 $\bar{X}$=1.07 A3=.49
S=.08 A4=1.62
CURVE FITTED - NORMAL
FREE FLIGHT IS THE CONDITION WHERE THE HOOK ENGAGES THE ARRESTMENT CABLE BEFORE THE WHEELS MAKE DECK CONTACT

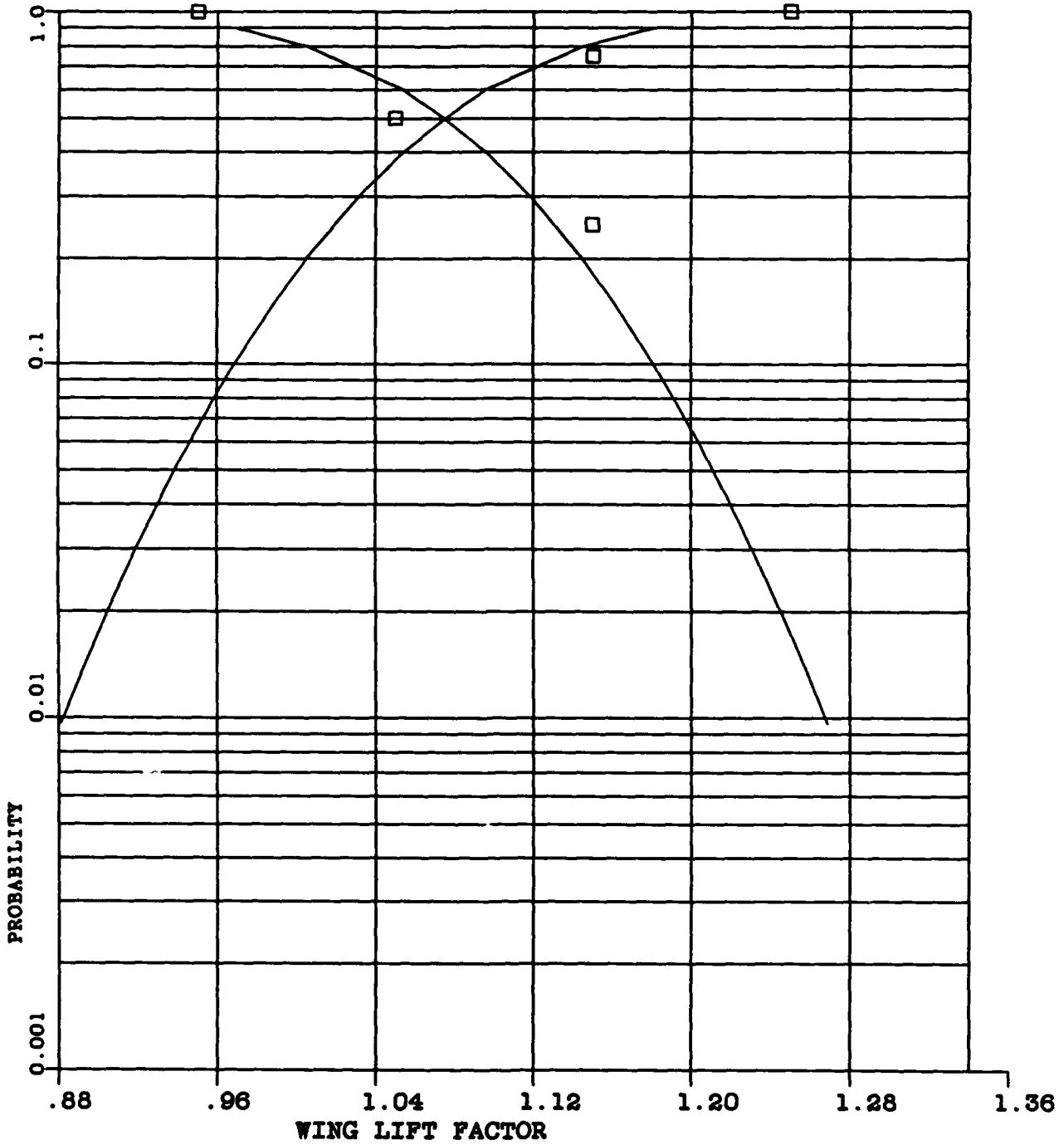


FIGURE L-20 PROBABILITY DISTRIBUTION OF WING LIFT FACTOR AT FREE FLIGHT

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-75 $\bar{X}$-9.02 DEGREES (.157 RADIANS) A3=-1.82
S-1.53 DEGREES (.026 RADIANS) A4-11.77

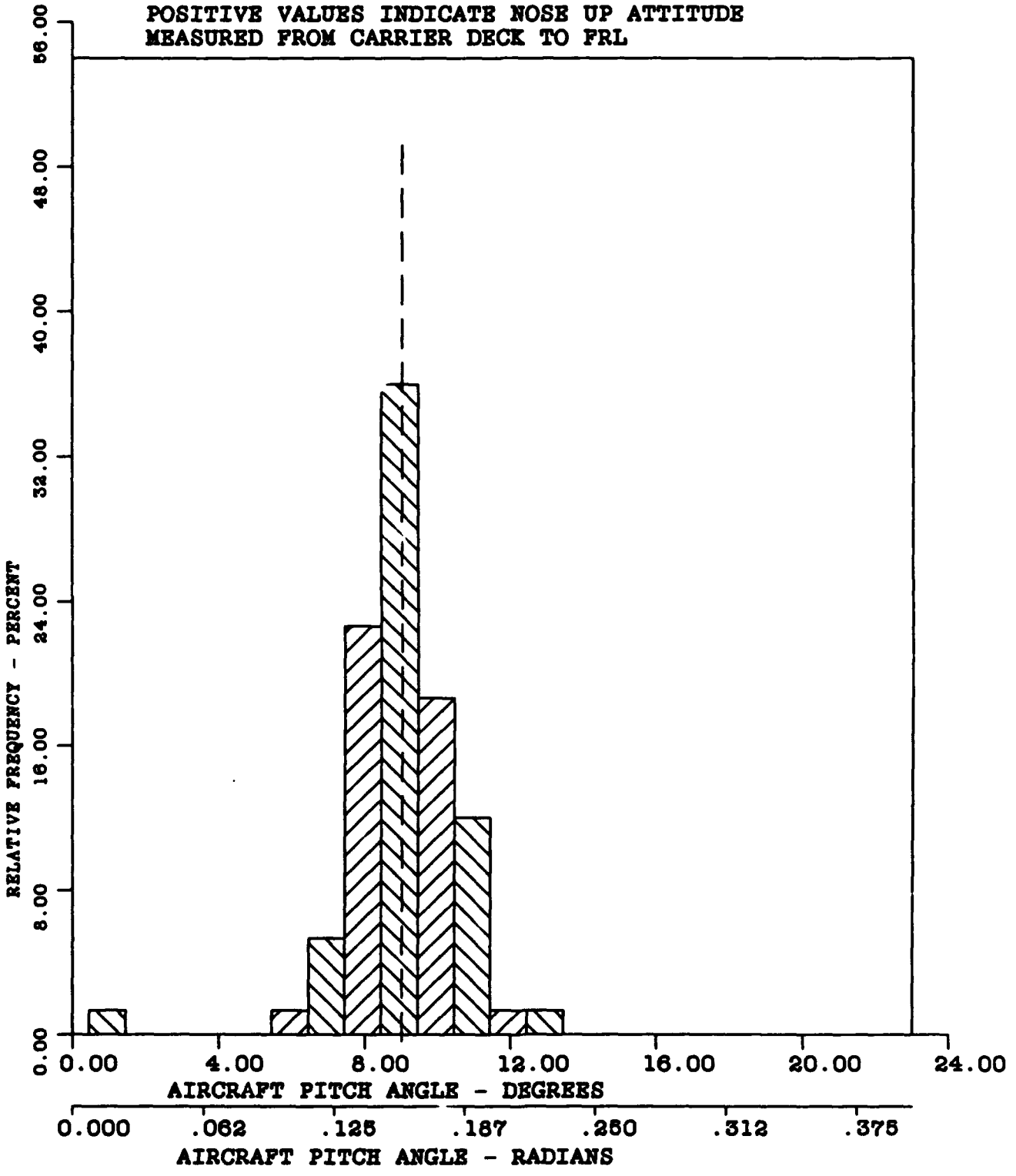


FIGURE L-21 FREQUENCY DISTRIBUTION OF AIRCRAFT PITCH ANGLE AT THE RAMP

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=75 $\bar{X}$=9.02 DEGREES (.157 RADIANS) A3=-1.82
S=1.53 DEGREES (.026 RADIANS) A4=11.77
CURVE FITTED - PEARSON TYPE III
POSITIVE VALUES INDICATE NOSE UP ATTITUDE
MEASURED FROM CARRIER DECK TO FRL

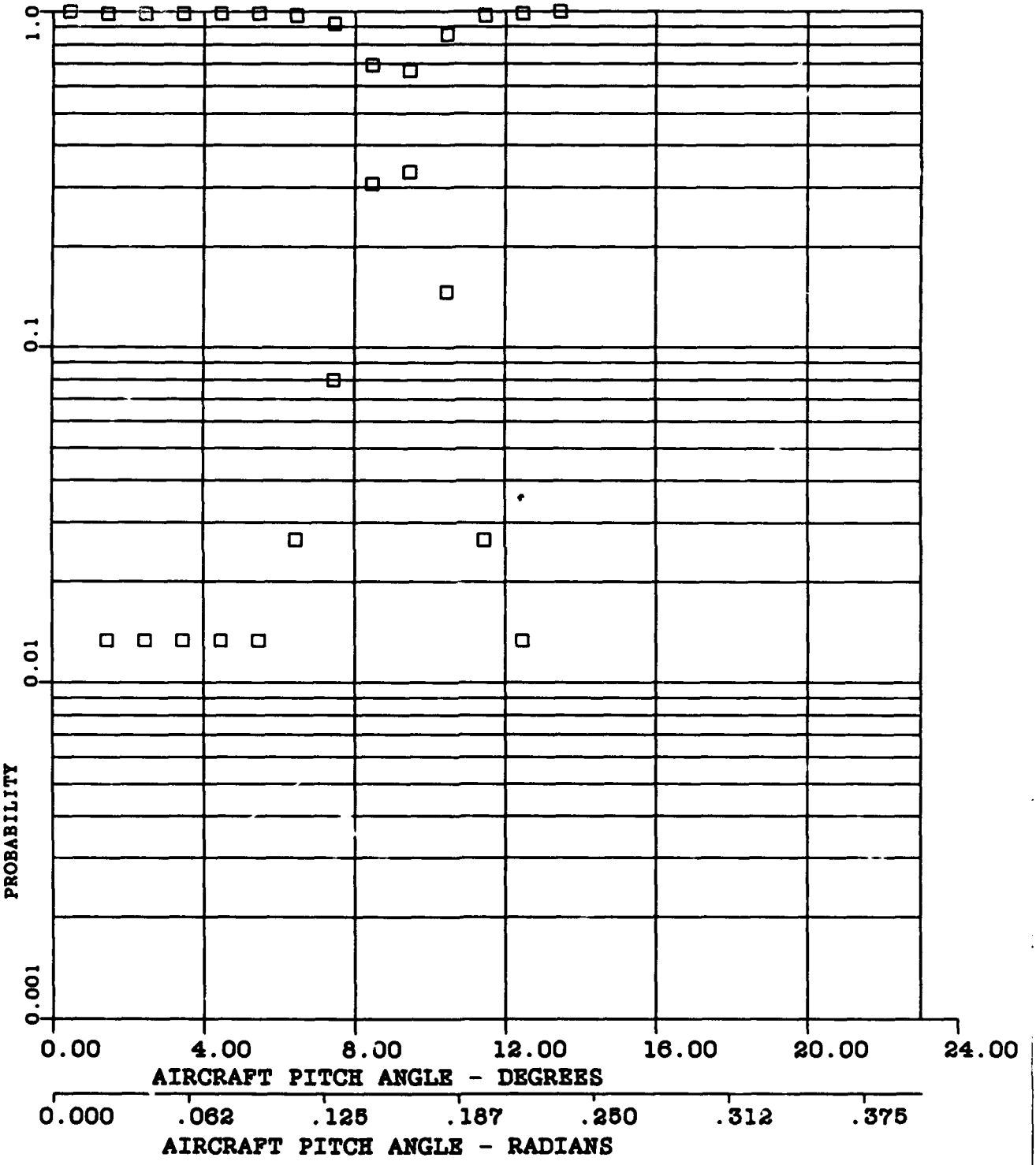


FIGURE L-22 PROBABILITY DISTRIBUTION OF AIRCRAFT PITCH ANGLE AT THE RAMP

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-79 $\bar{X}$-7.55 DEGREES (.131 RADIANS) A3=-1.03
S-1.18 DEGREES (.020 RADIANS) A4-7.78

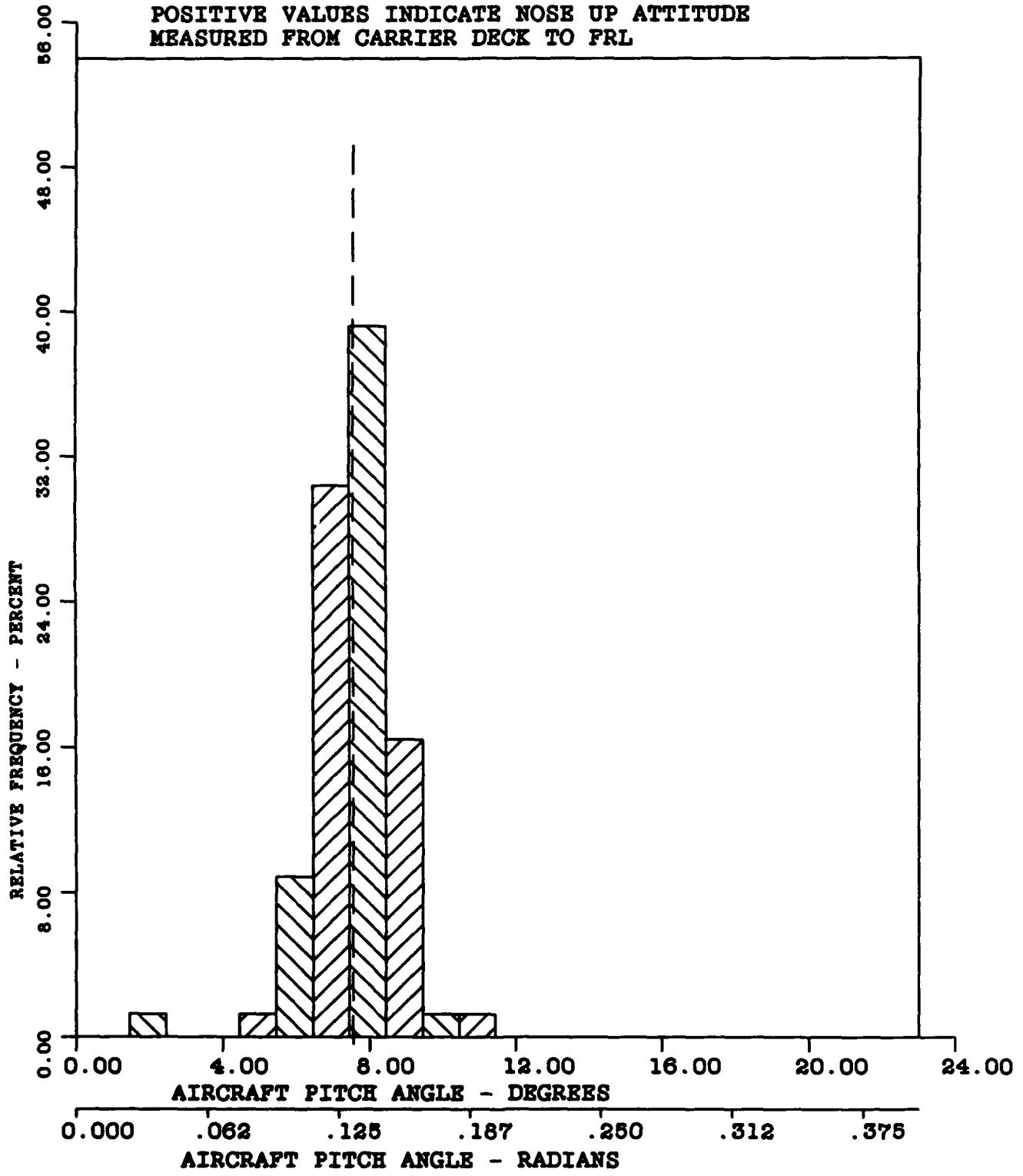


FIGURE L-23 FREQUENCY DISTRIBUTION OF AIRCRAFT PITCH ANGLE AT FIRST MAIN WHEEL TOUCHDOWN

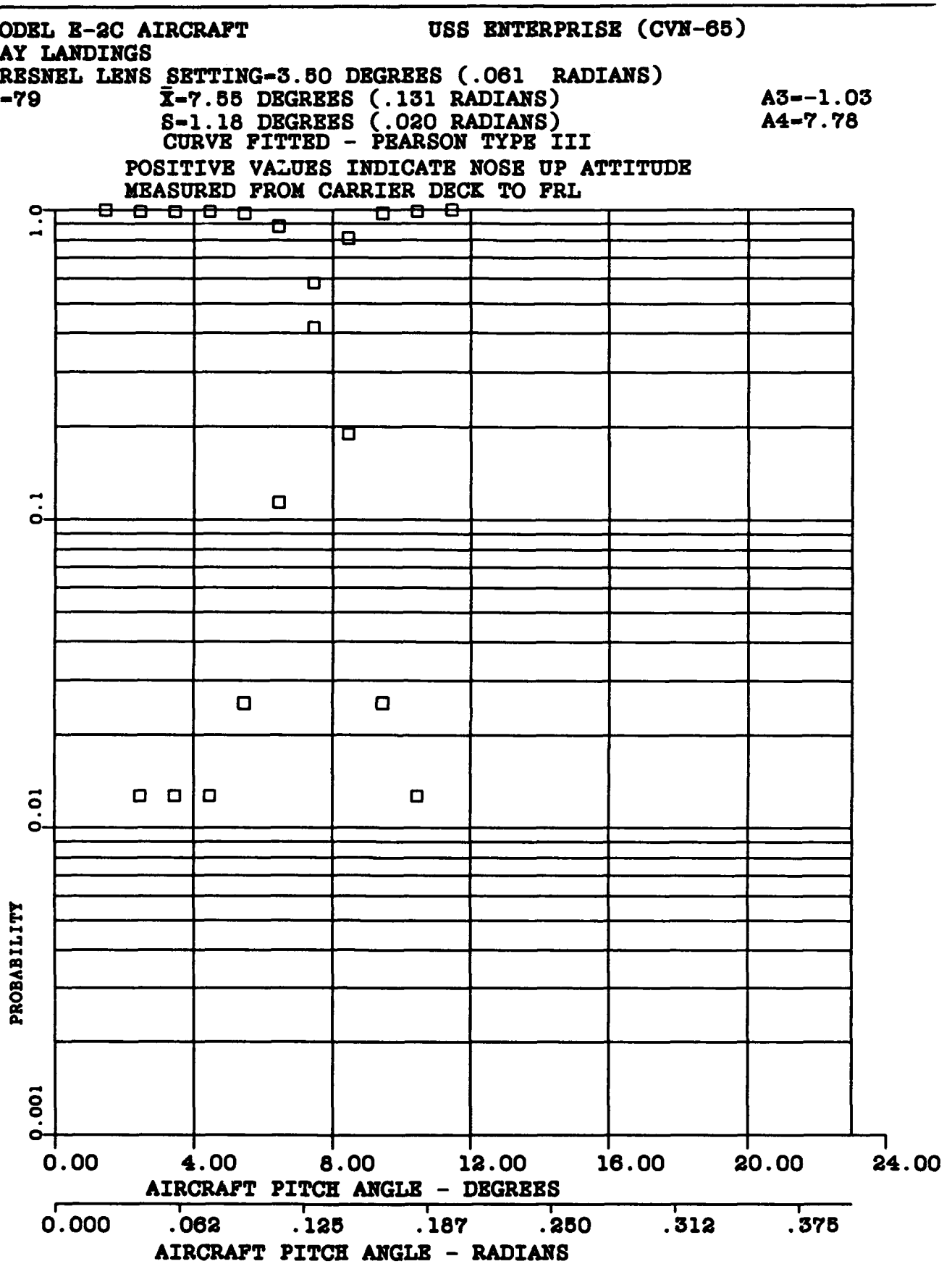


FIGURE L-24 PROBABILITY DISTRIBUTION OF AIRCRAFT PITCH ANGLE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-4 $\bar{X}$-8.90 DEGREES (.155 RADIANS) A3=.44
S-1.46 DEGREES (.025 RADIANS) A4-1.69

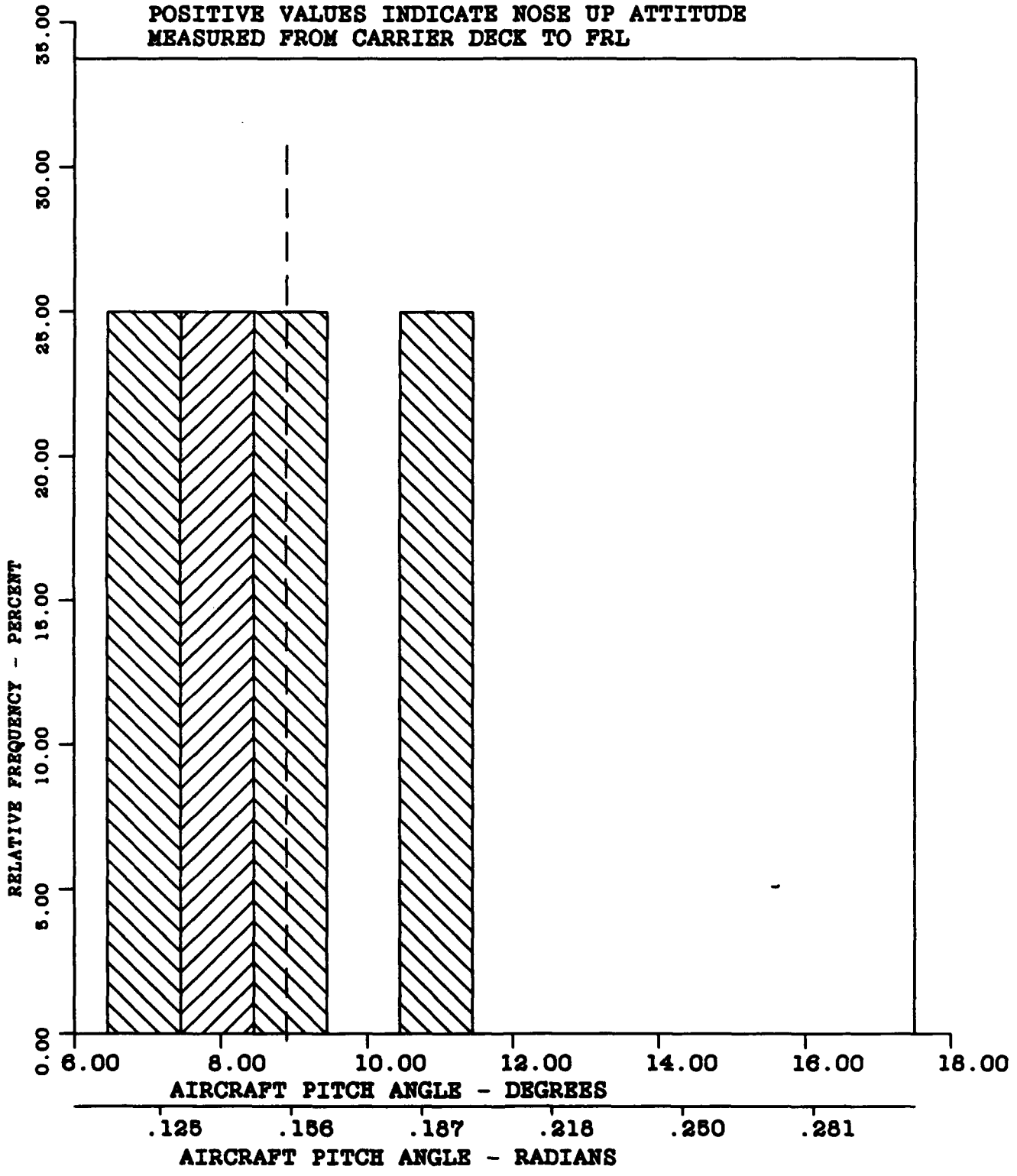


FIGURE L-25 FREQUENCY DISTRIBUTION OF AIRCRAFT PITCH ANGLE AT FREE FLIGHT

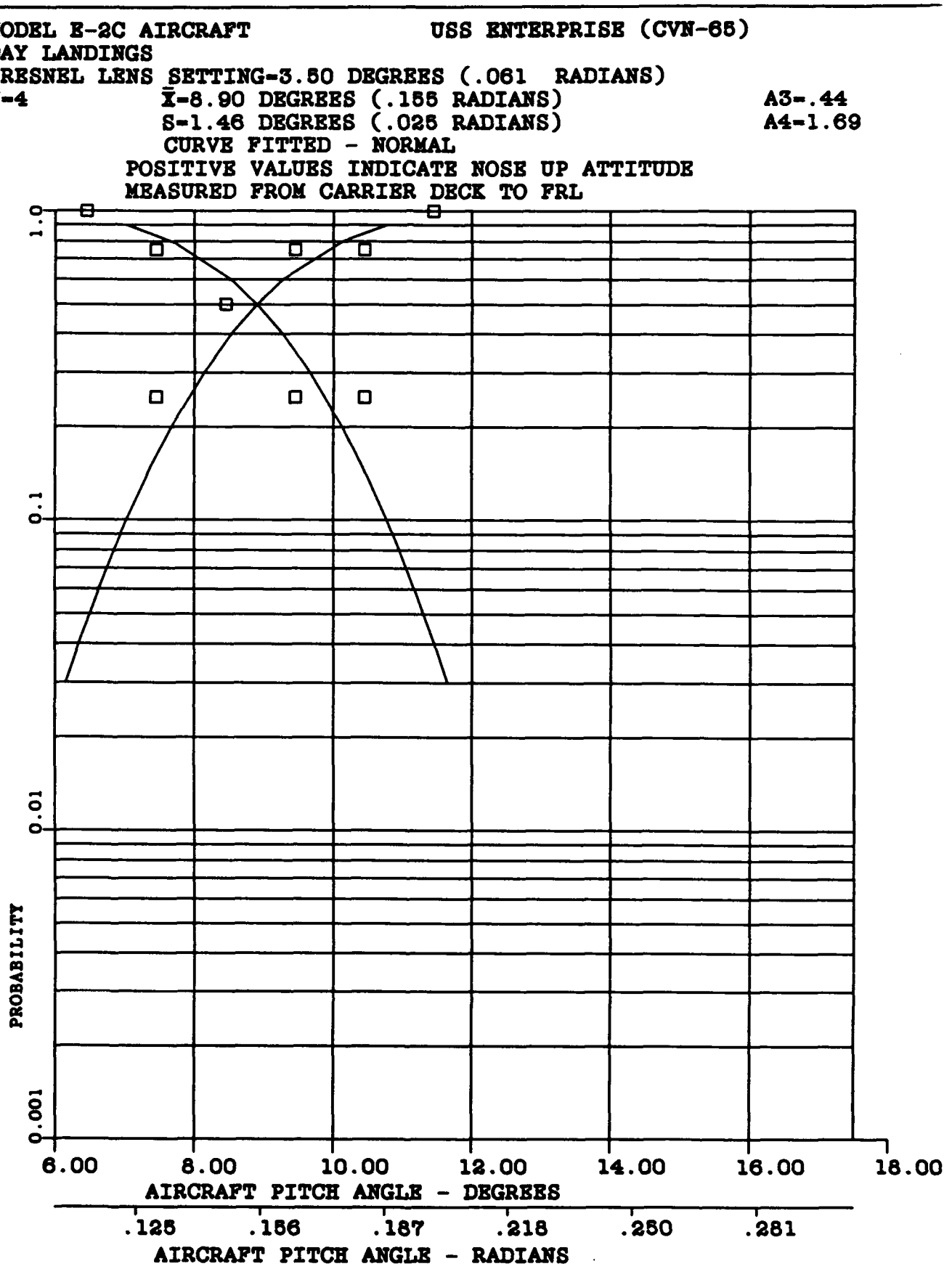


FIGURE L-26 PROBABILITY DISTRIBUTION OF AIRCRAFT PITCH ANGLE AT FREE FLIGHT

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-75 $\bar{X}$-1.01 DEGREES (.017 RADIANS) A3=.68
S-2.82 DEGREES (.049 RADIANS) A4-3.53

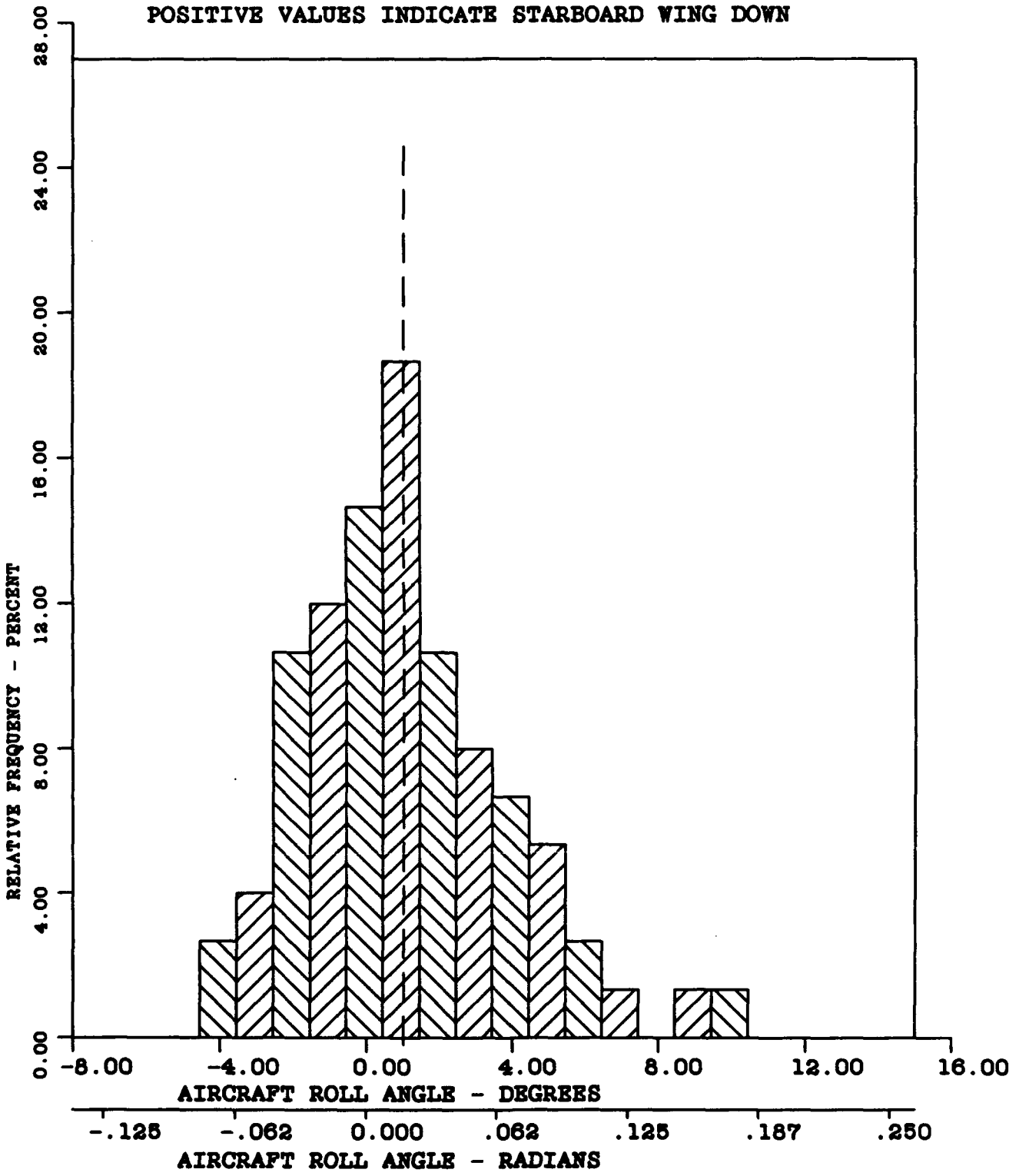


FIGURE L-27 FREQUENCY DISTRIBUTION OF AIRCRAFT ROLL ANGLE AT THE RAMP

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-75 $\bar{X}$-1.01 DEGREES (.017 RADIANS) A3=.68
S-2.82 DEGREES (.049 RADIANS) A4=3.53
CURVE FITTED - PEARSON TYPE III
POSITIVE VALUES INDICATE STARBOARD WING DOWN

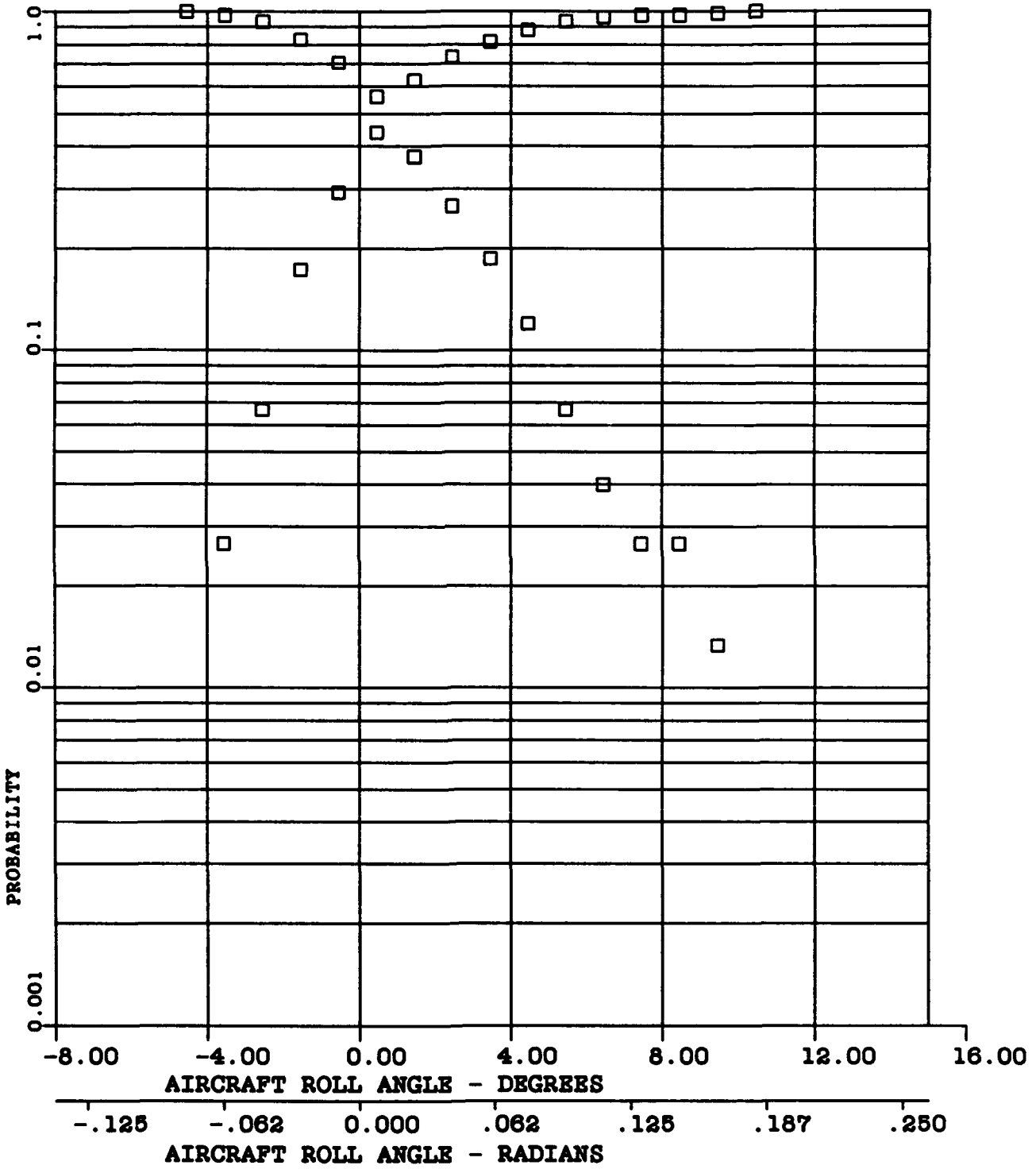


FIGURE L-28 PROBABILITY DISTRIBUTION OF AIRCRAFT ROLL ANGLE AT THE RAMP

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-79 $\bar{X}$-.35 DEGREES (.006 RADIANS) A3-.41
S-2.34 DEGREES (.040 RADIANS) A4-4.06

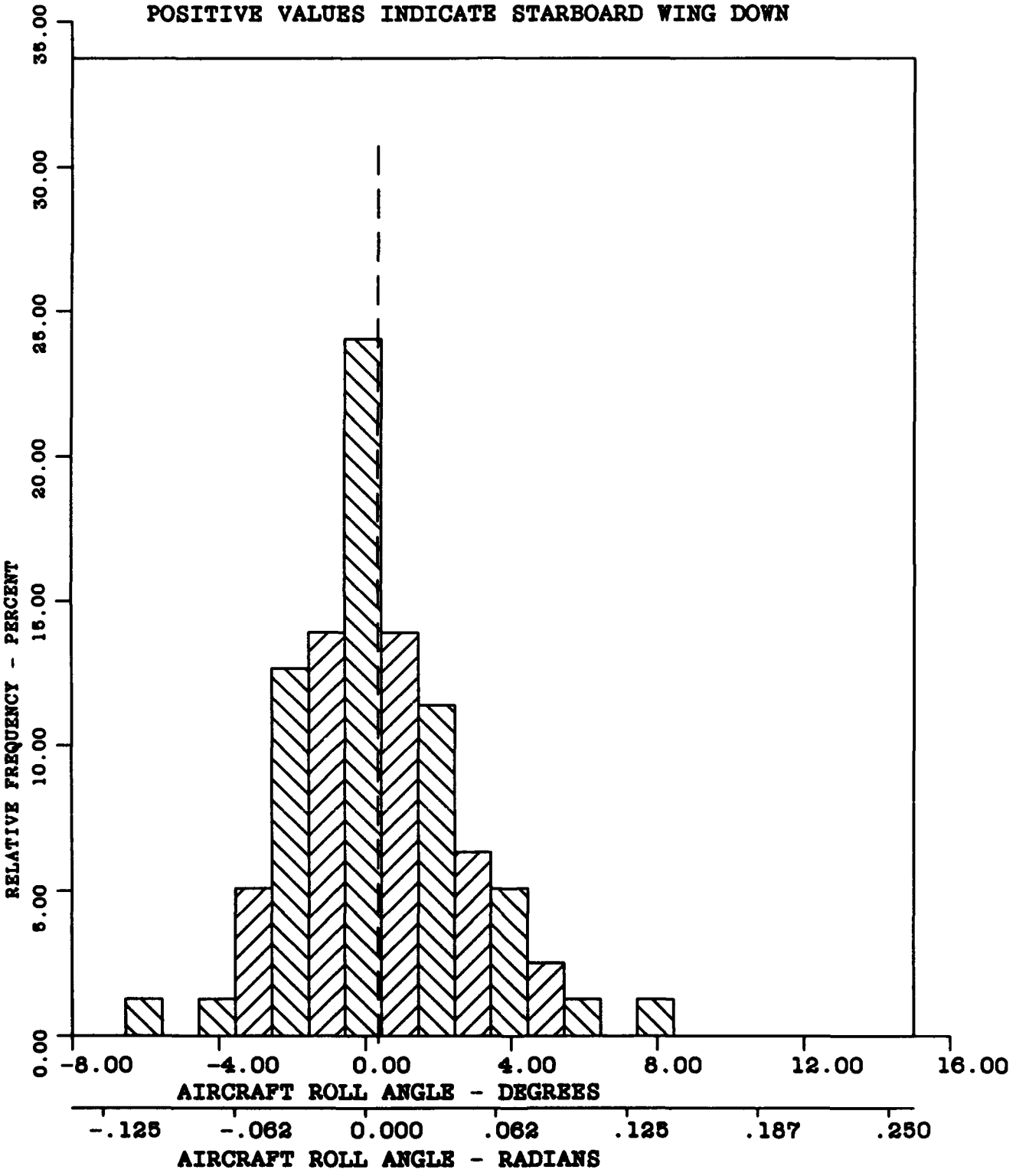


FIGURE L-29 FREQUENCY DISTRIBUTION OF AIRCRAFT ROLL ANGLE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N-79 $\bar{X}$=.35 DEGREES (.006 RADIANS) A3=.41
S=2.34 DEGREES (.040 RADIANS) A4=4.06
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE STARBOARD WING DOWN

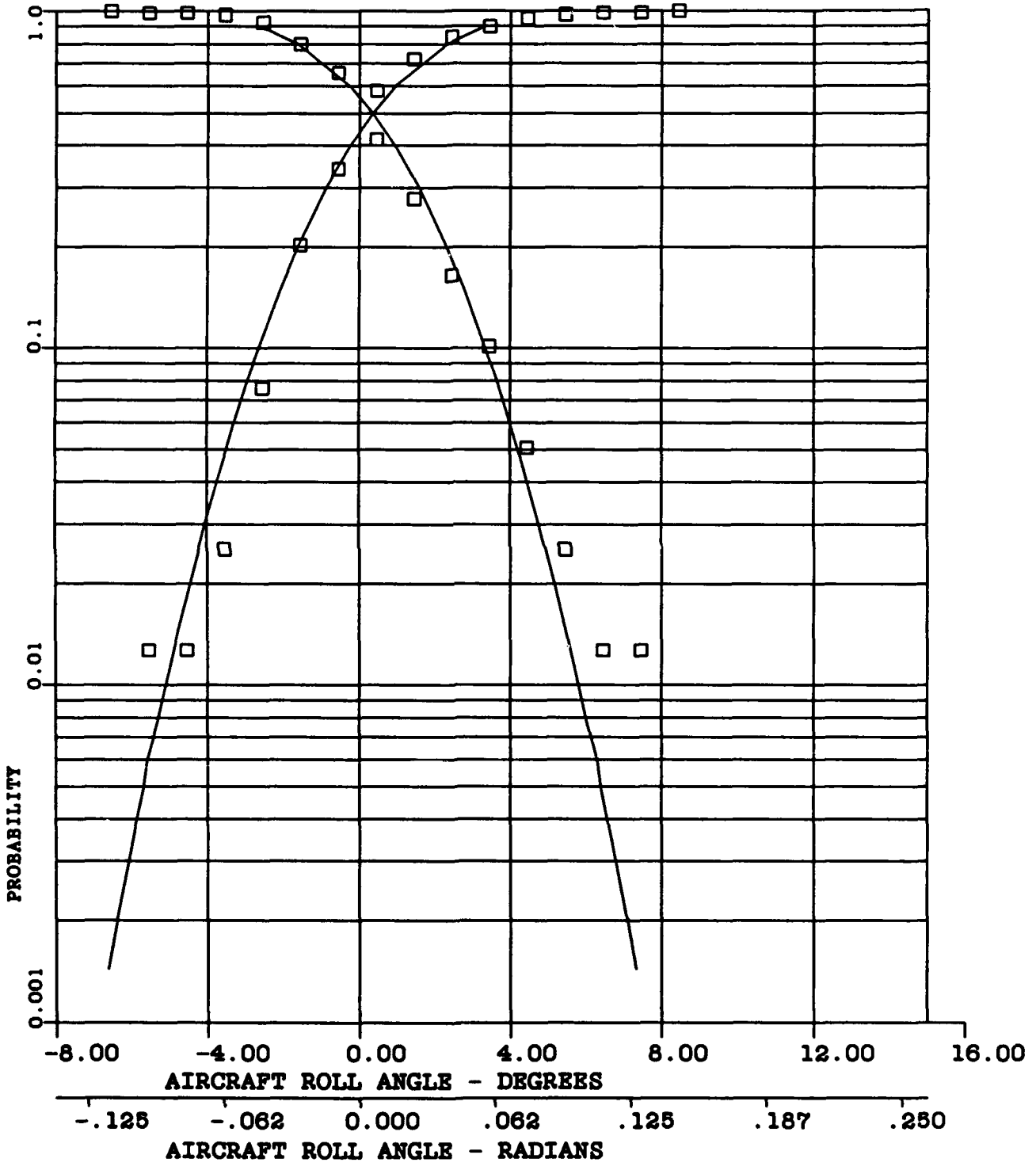


FIGURE L-30 PROBABILITY DISTRIBUTION OF AIRCRAFT ROLL ANGLE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N=4 $\bar{X}$-1.80 DEGREES (.031 RADIANS) A3=-.04
S-1.01 DEGREES (.017 RADIANS) A4=1.09

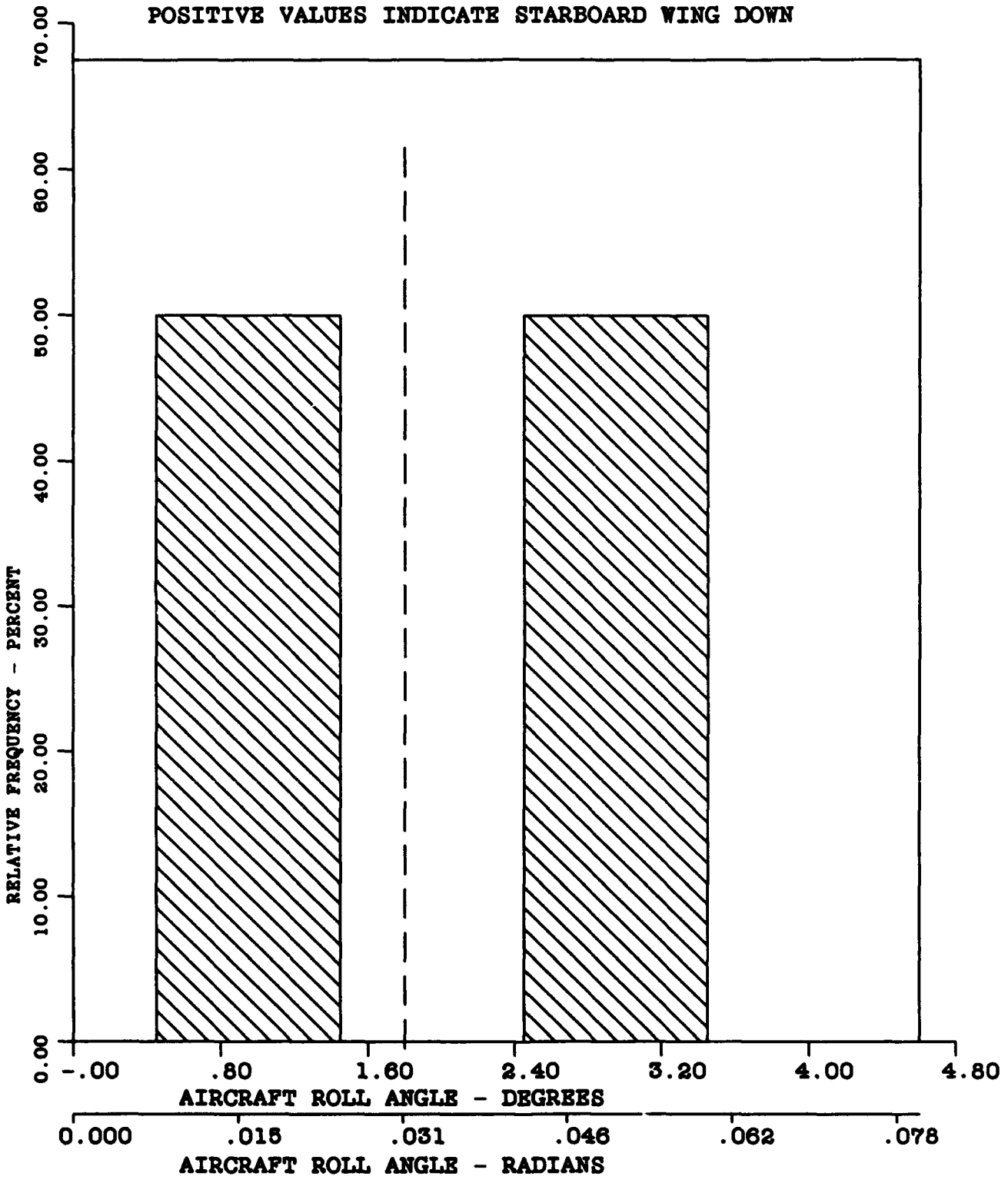


FIGURE L-31 FREQUENCY DISTRIBUTION OF AIRCRAFT ROLL ANGLE AT FREE FLIGHT

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=4 $\bar{X}$=1.80 DEGREES (.031 RADIANS) A3=-.04
S=1.01 DEGREES (.017 RADIANS) A4=1.09
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE STARBOARD WING DOWN

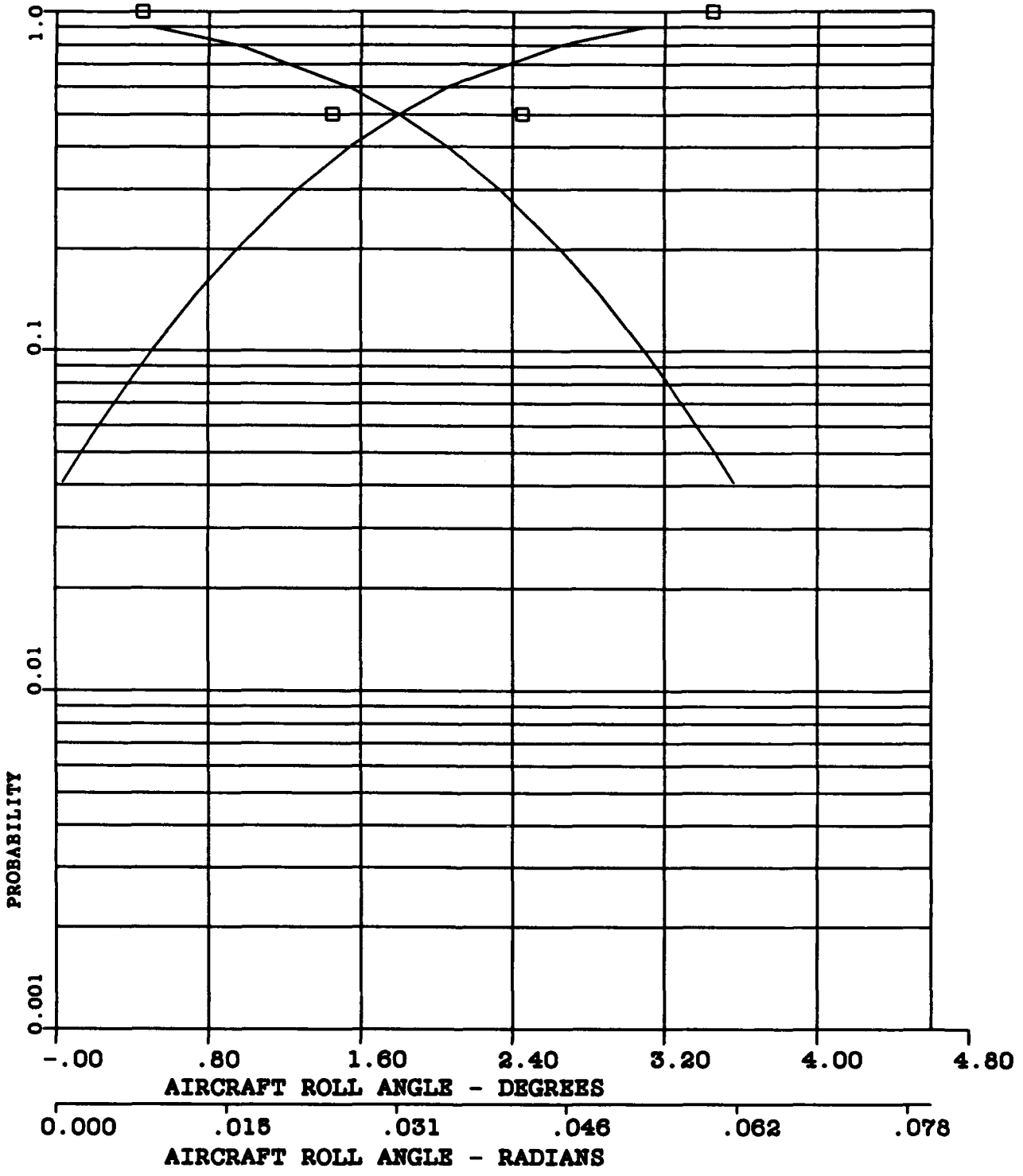


FIGURE L-32 PROBABILITY DISTRIBUTION OF AIRCRAFT ROLL ANGLE AT FREE FLIGHT

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-79 $\bar{X}$-251.96 FEET (76.79 METRES) A3=-.37
S-32.56 FEET (9.92 METRES) A4=3.23

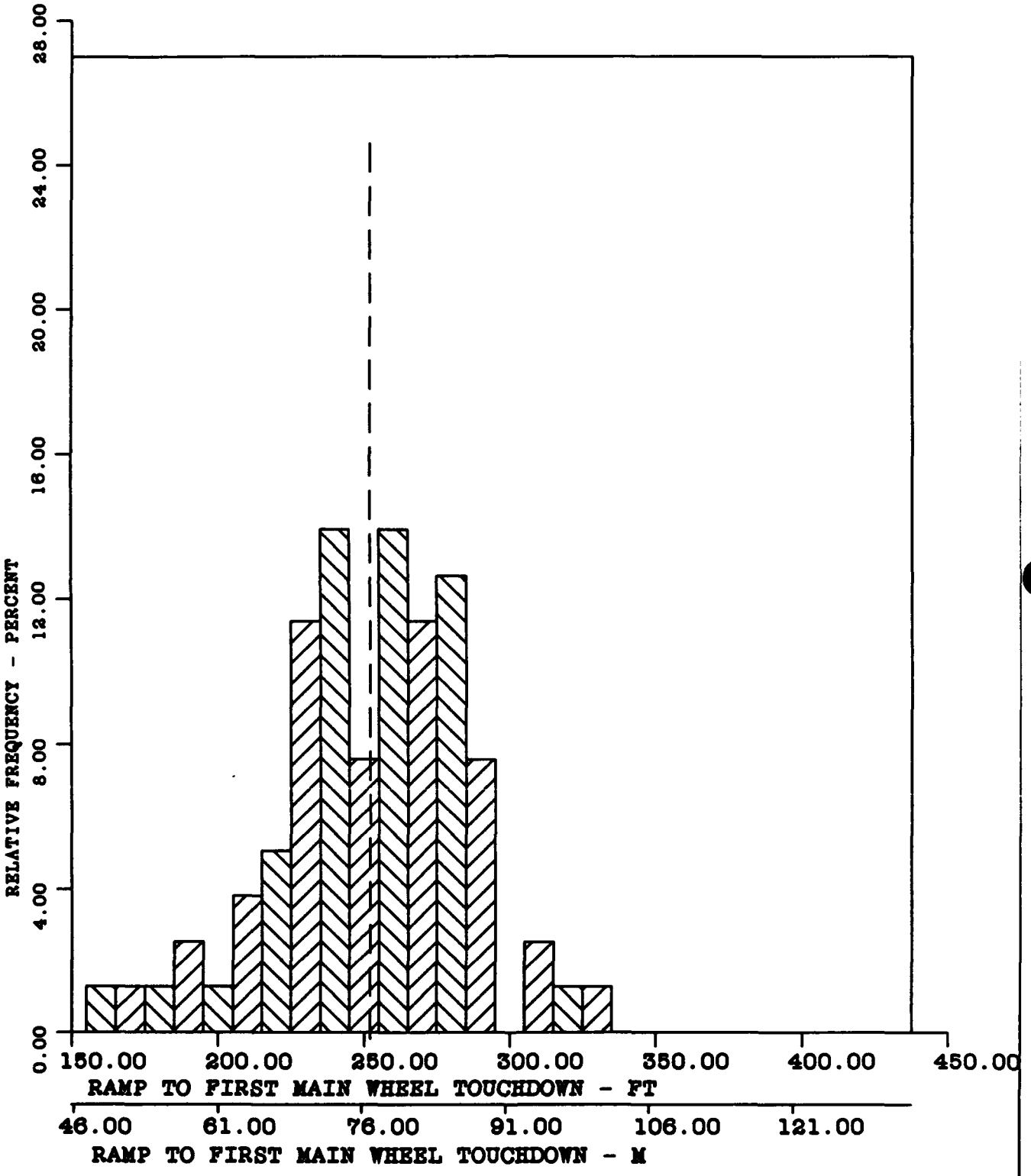


FIGURE L-33 FREQUENCY DISTRIBUTION OF DISTANCE FROM RAMP TO FIRST MAIN WHEEL TOUCHDOWN POINT

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-79 $\bar{X}$=-11.08 FEET (-3.37 METRES) A3=-.29
S-3.61 FEET (1.10 METRES) A4-2.62

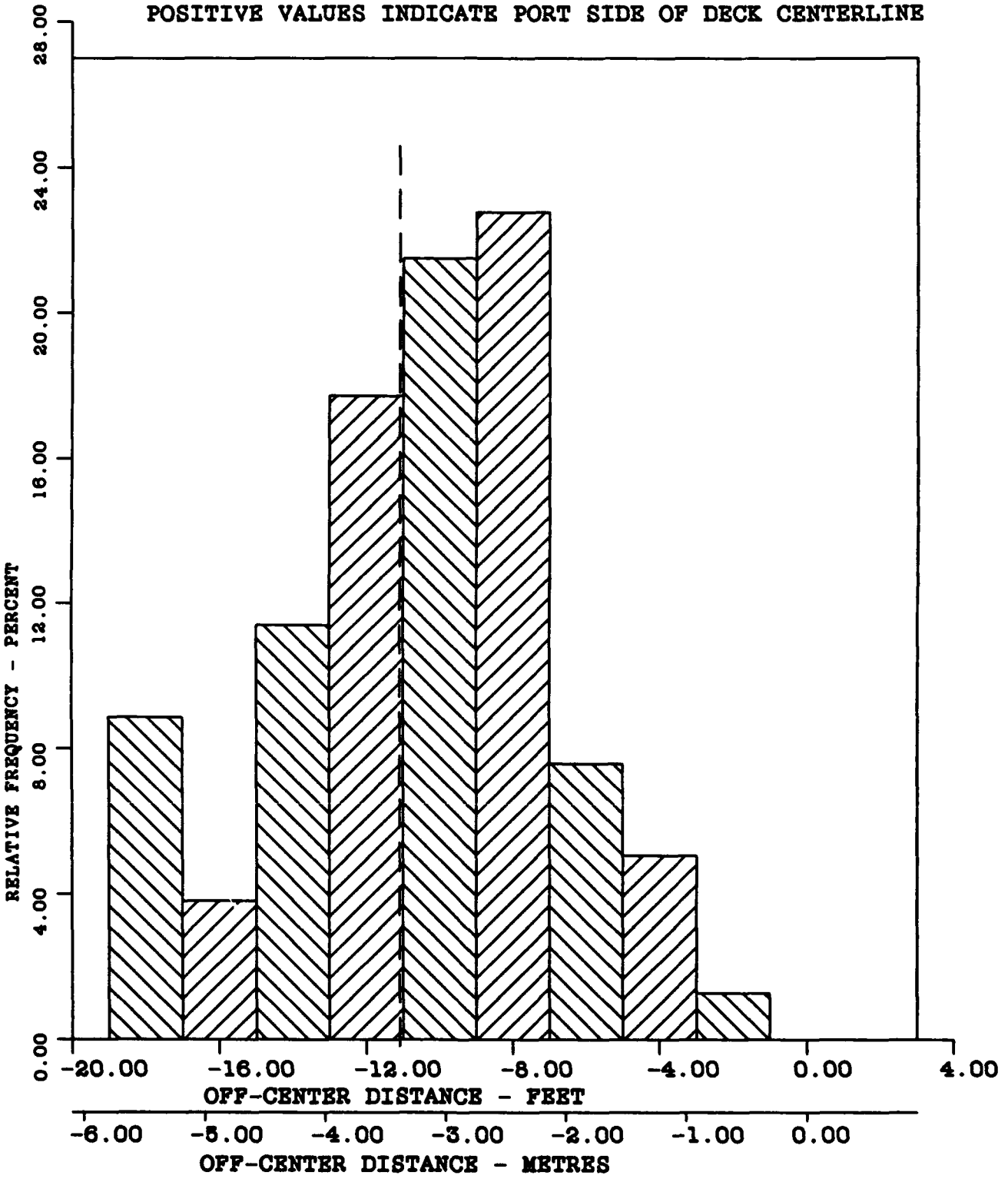


FIGURE L-34 FREQUENCY DISTRIBUTION OF AIRCRAFT CENTERLINE OFF-CNTR DISTANCE AT 1ST MAIN WHEEL TOUCHDOWN

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-79 $\bar{X}$-251.96 FEET (76.79 METRES) A3=-.37
S-32.56 FEET (9.92 METRES) A4-3.23
CURVE FITTED - NORMAL

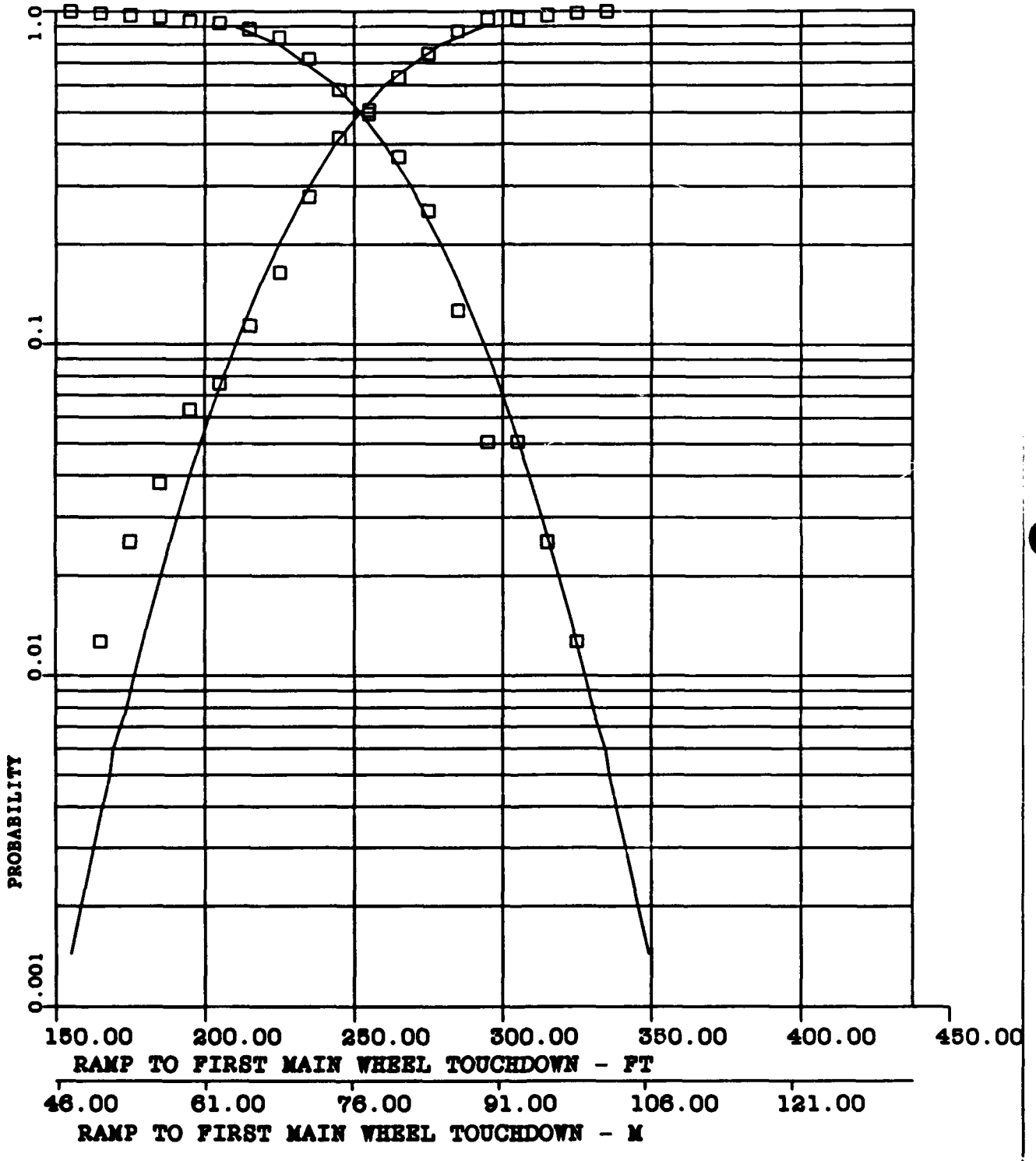


FIGURE L-35 PROBABILITY DISTRIBUTION OF DISTANCE FROM RAMP TO FIRST MAIN WHEEL TOUCHDOWN POINT

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-79 $\bar{X}$=-11.08 FEET (-3.37 METRES) A3=-.29
S-3.61 FEET (1.10 METRES) A4=2.62
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE PORT SIDE OF DECK CENTERLINE

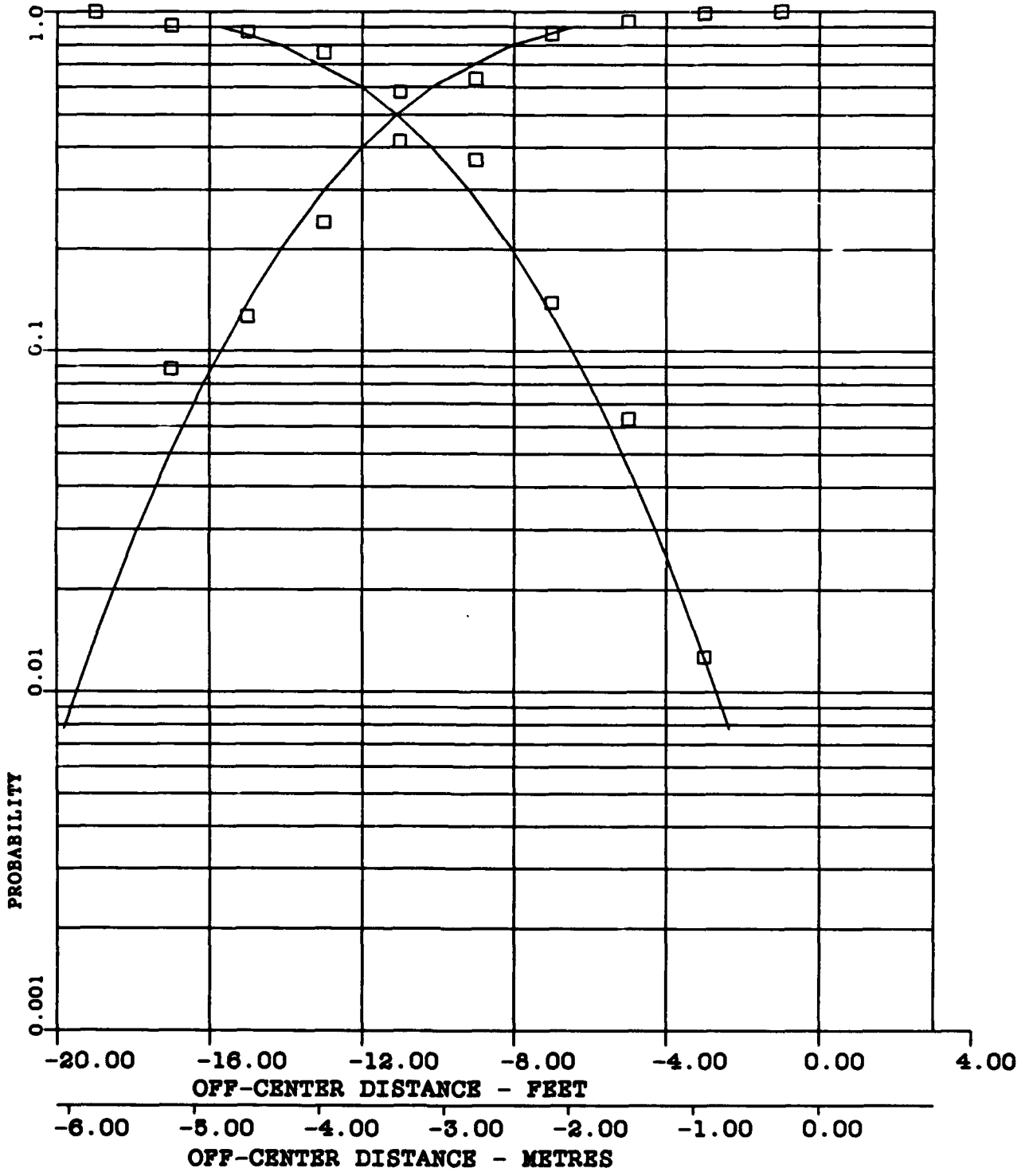


FIGURE L-36 PROBABILITY DISTRIBUTION OF AIRCRAFT OFF-CENTER DISTANCE AT 1ST MAIN WHEEL TOUCHDOWN

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-65 $\bar{X}$-2.55 A3=.53
S=.68 A4=2.60

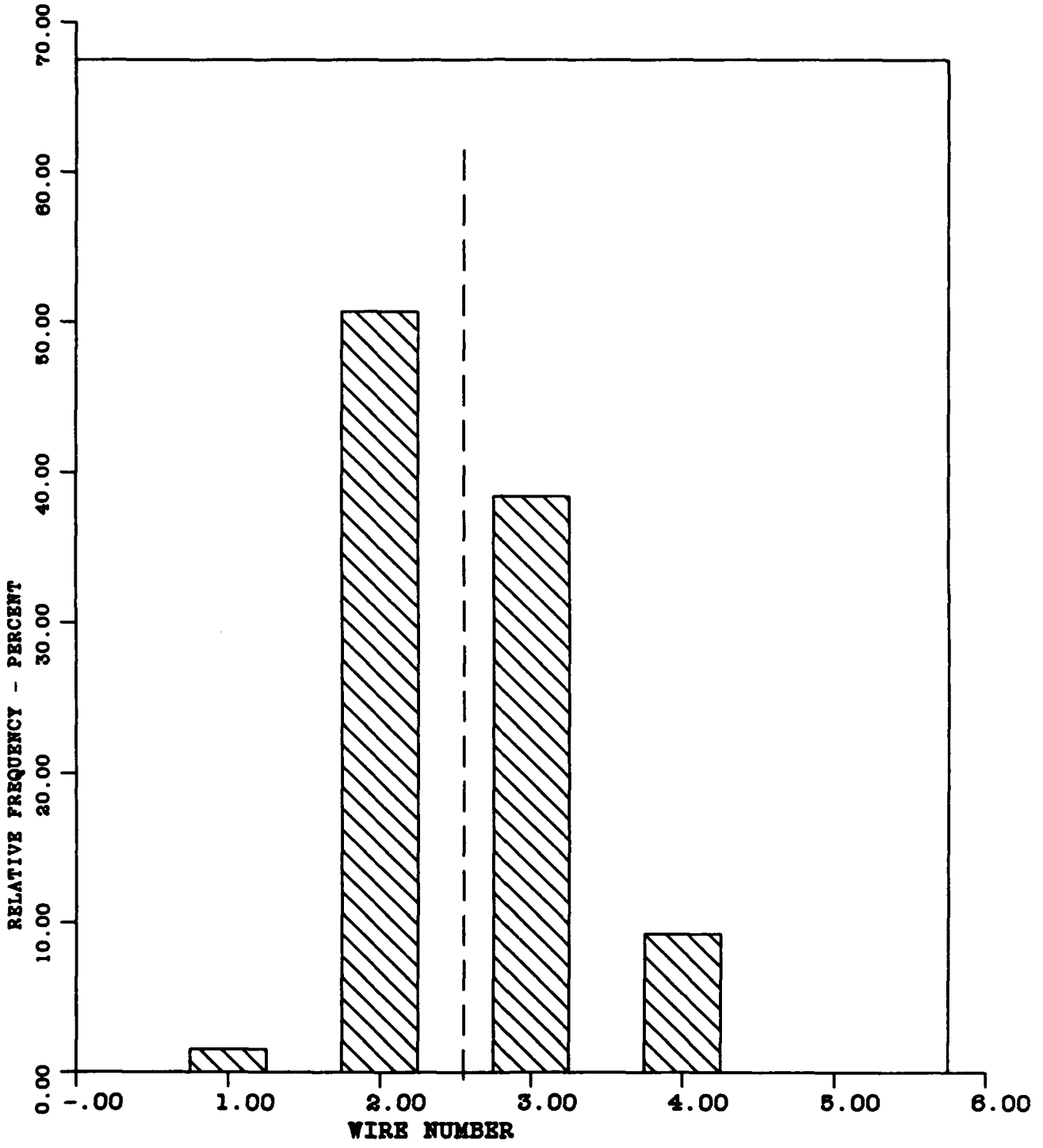


FIGURE L-37 FREQUENCY DISTRIBUTION OF ARRESTMENT WIRE NUMBER ENGAGED

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N=79 $\bar{X}$=2.93 DEGREES (.051 RADIANS) A3=-.04
S=.75 DEGREES (.013 RADIANS) A4=2.80

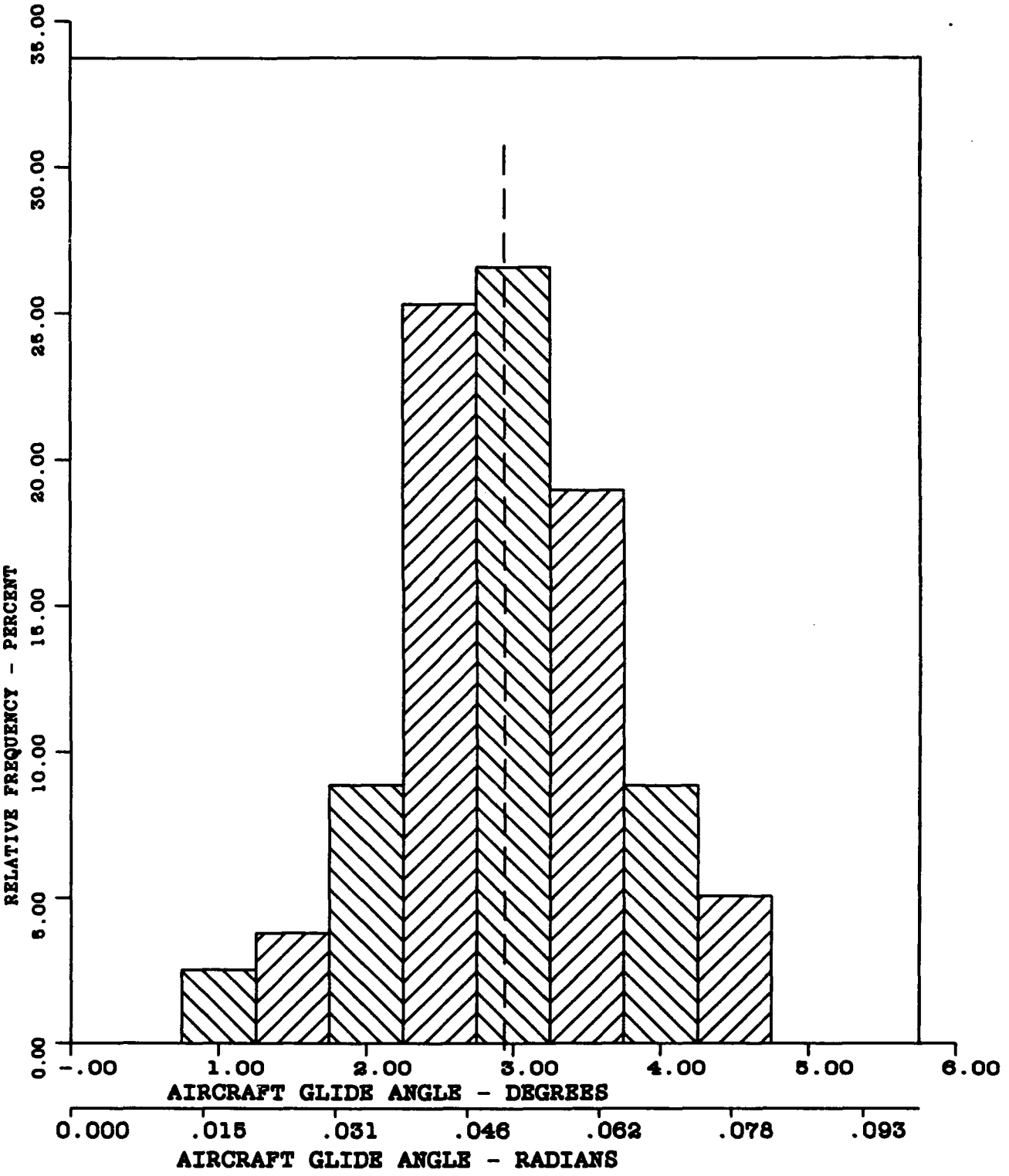


FIGURE L-38 FREQUENCY DISTRIBUTION OF AIRCRAFT GLIDE ANGLE - INSTANTANEOUS METHOD

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=75 $\bar{X}$=2.69 DEGREES (.047 RADIANS) A3=.53
S=.49 DEGREES (.008 RADIANS) A4=3.44

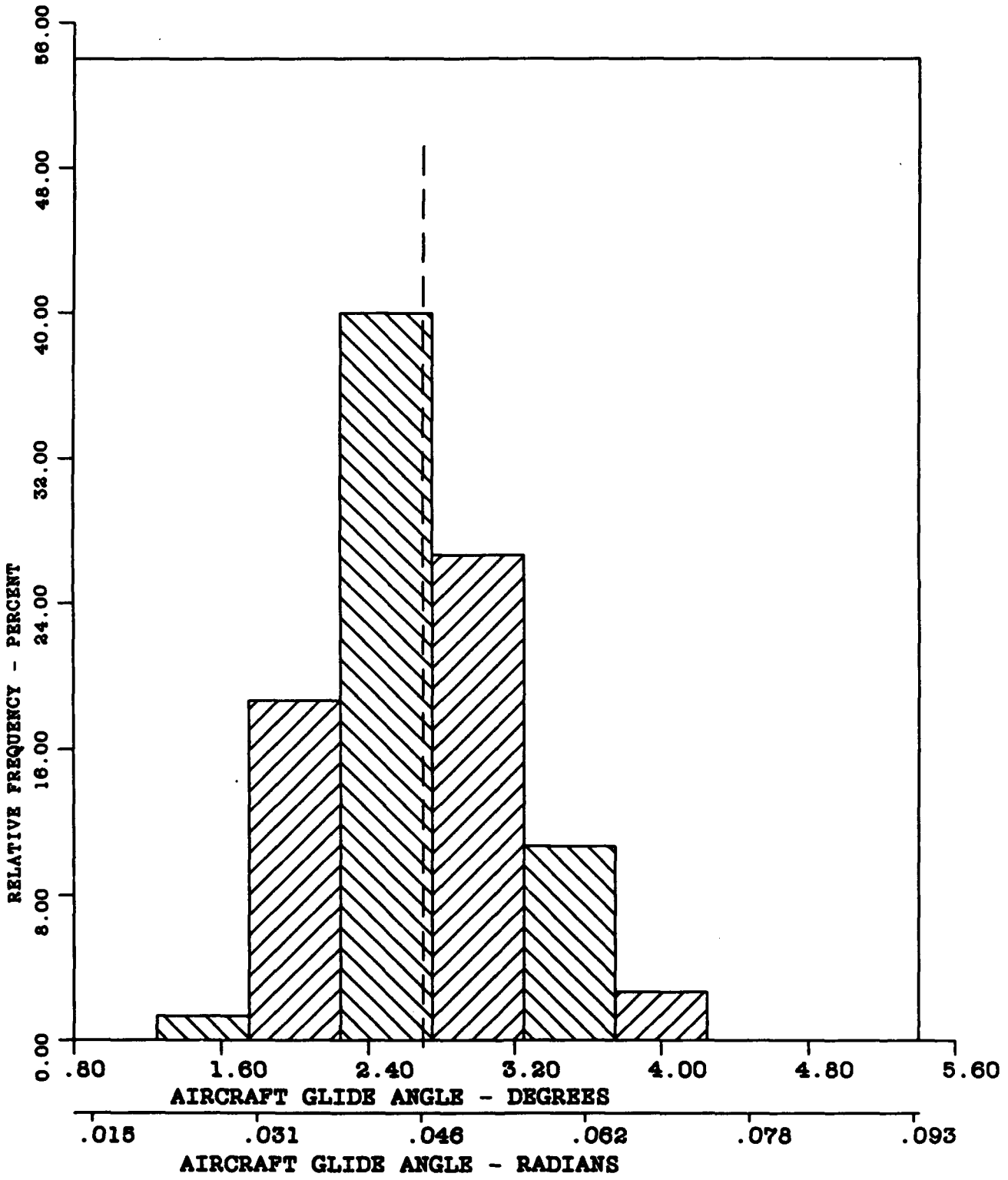


FIGURE L-39 FREQUENCY DISTRIBUTION OF AIRCRAFT GLIDE ANGLE - GEOMETRIC METHOD

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-75 $\bar{X}$-9.44 FEET (2.87 METRES) A3=.31
S-2.56 FEET (.78 METRES) A4=2.65

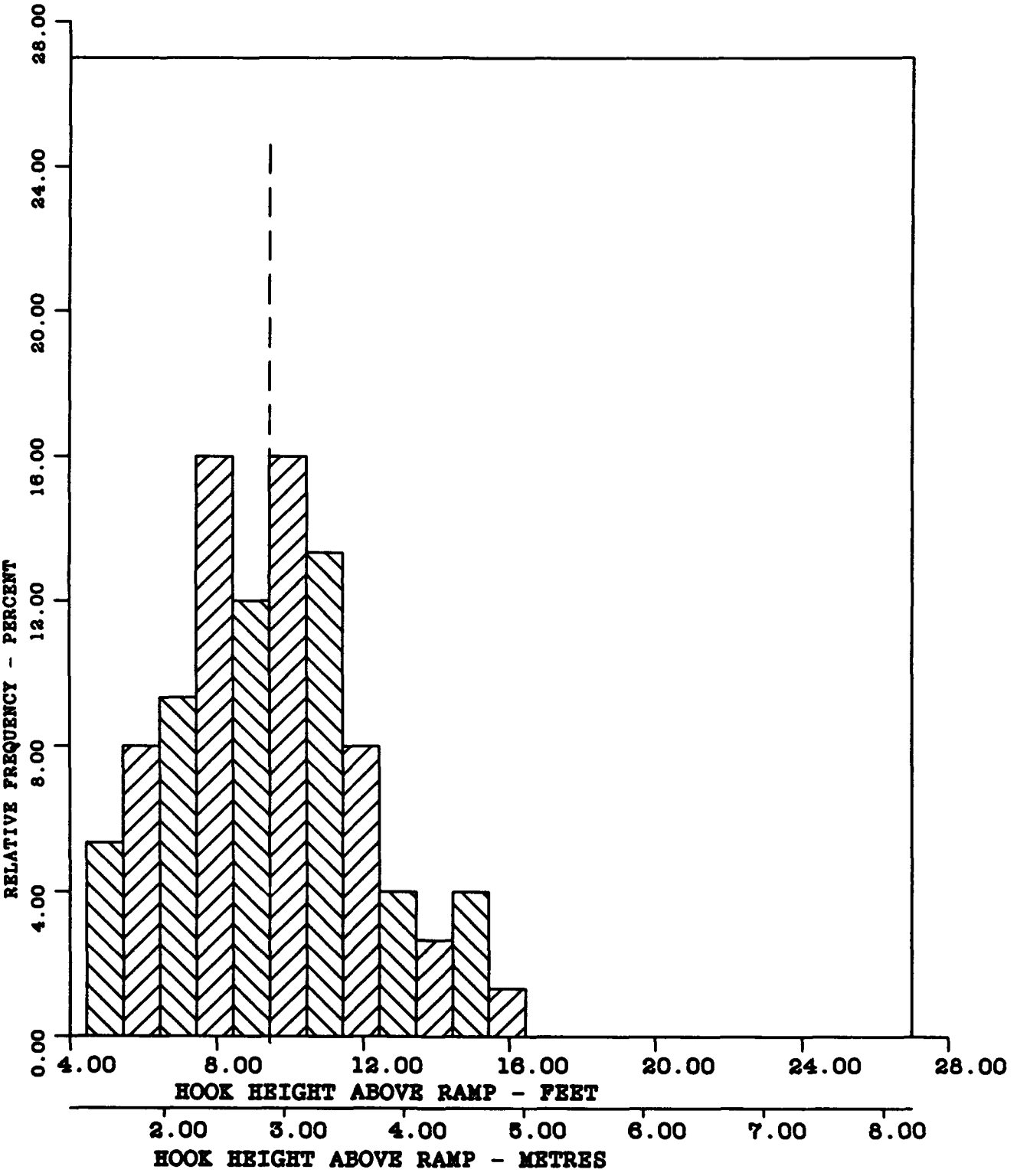


FIGURE L-40 FREQUENCY DISTRIBUTION OF AIRCRAFT ARRESTMENT HOOK HEIGHT ABOVE CARRIER RAMP

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-75 $\bar{X}$-9.44 FEET (2.87 METRES) A3-.31
S-2.56 FEET (.78 METRES) A4-2.65
CURVE FITTED - NORMAL

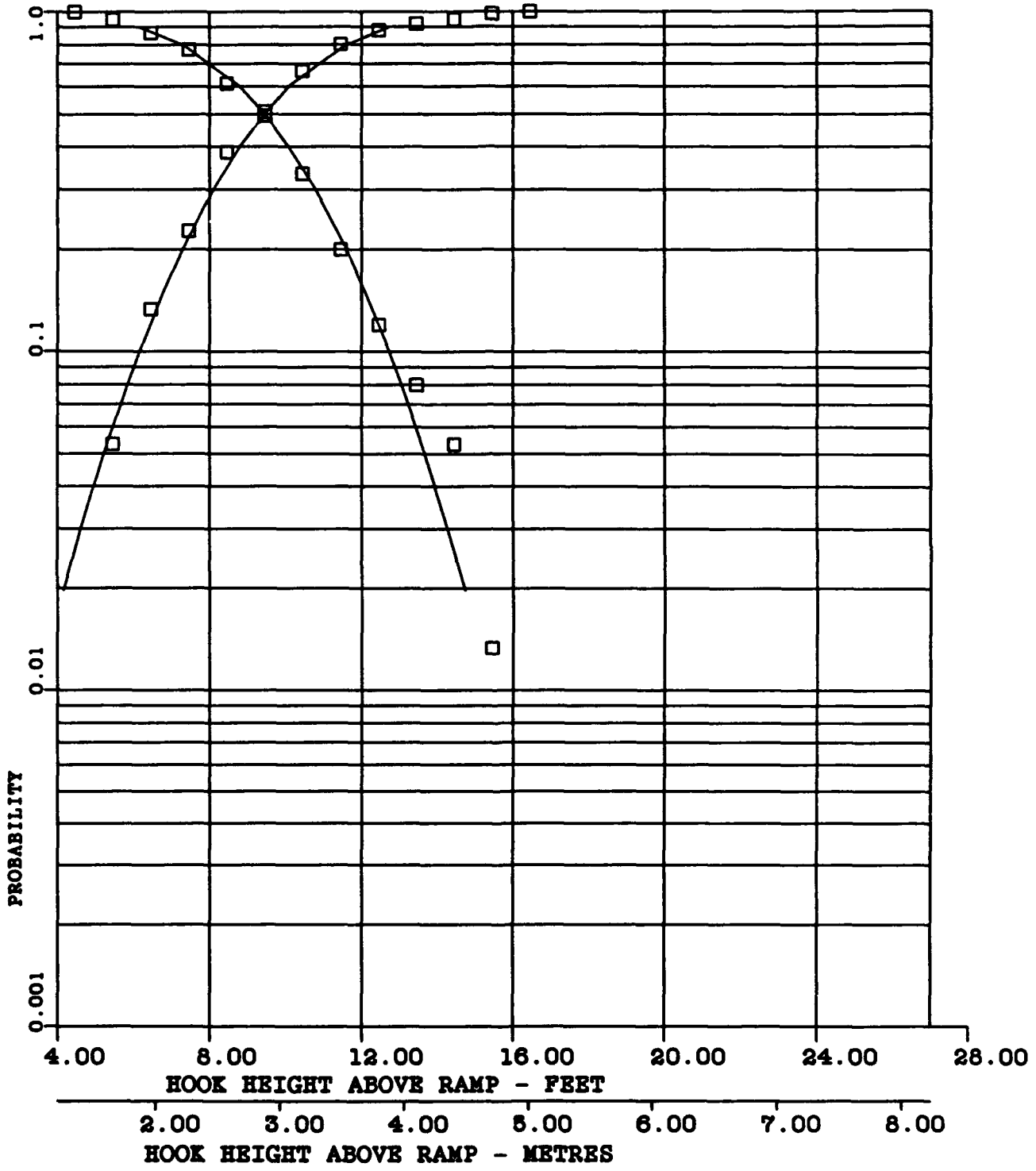


FIGURE L-41 PROBABILITY DISTRIBUTION OF ARRESTMENT HOOK HEIGHT ABOVE CARRIER RAMP

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-79 $\bar{X}$-83.45 KNOTS (42.92 METRES/SEC) A3=-.69
S-4.24 KNOTS (2.18 METRES/SEC) A4-7.45

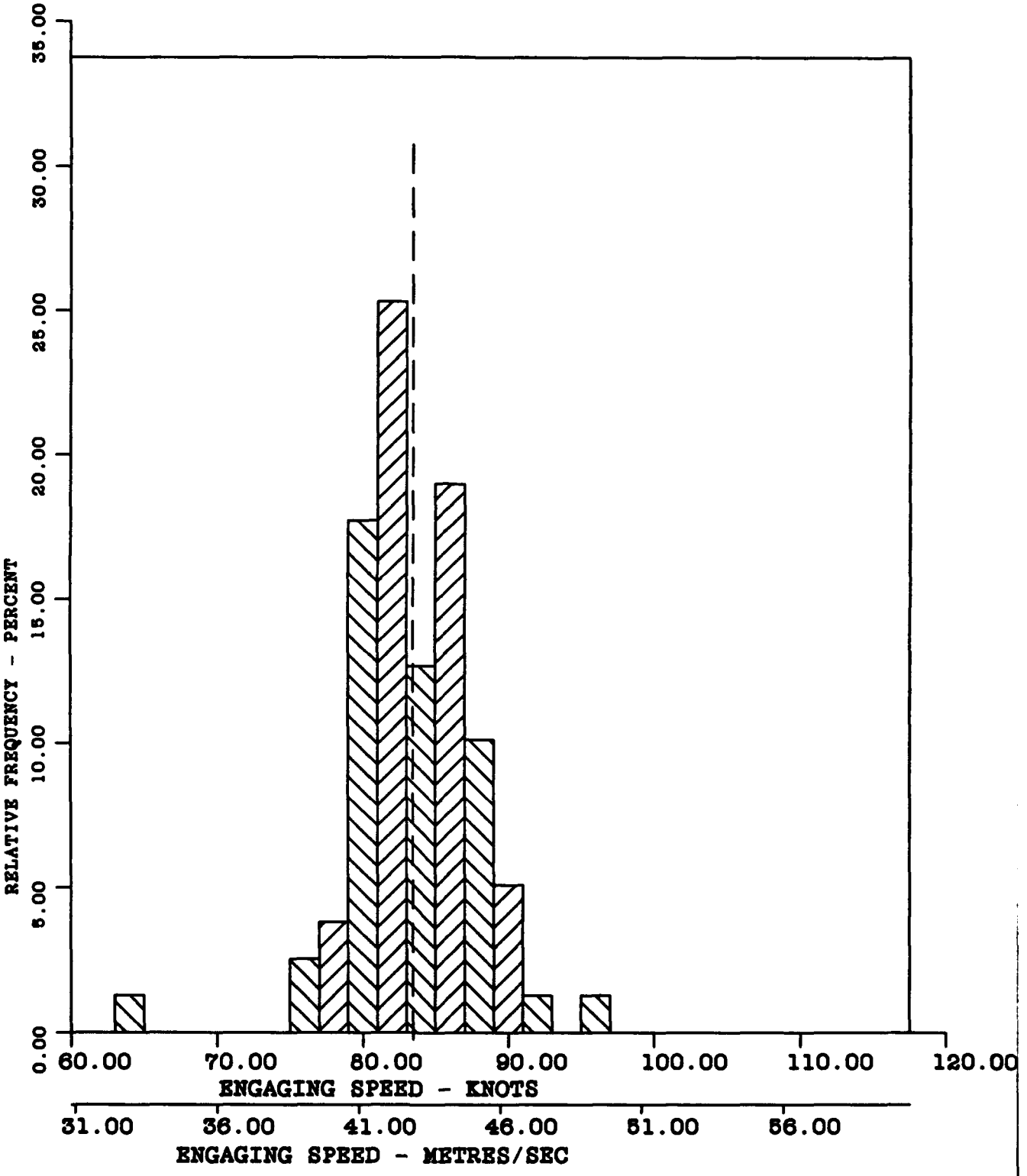


FIGURE L-42 FREQUENCY DISTRIBUTION OF AIRCRAFT ENGAGING SPEED AT FIRST MAIN WHEEL TOUCHDOWN

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=79 $\bar{X}$=83.45 KNOTS (42.92 METRES/SEC) A3=-.69
S=4.24 KNOTS (2.18 METRES/SEC) A4=7.45
CURVE FITTED - PEARSON TYPE III

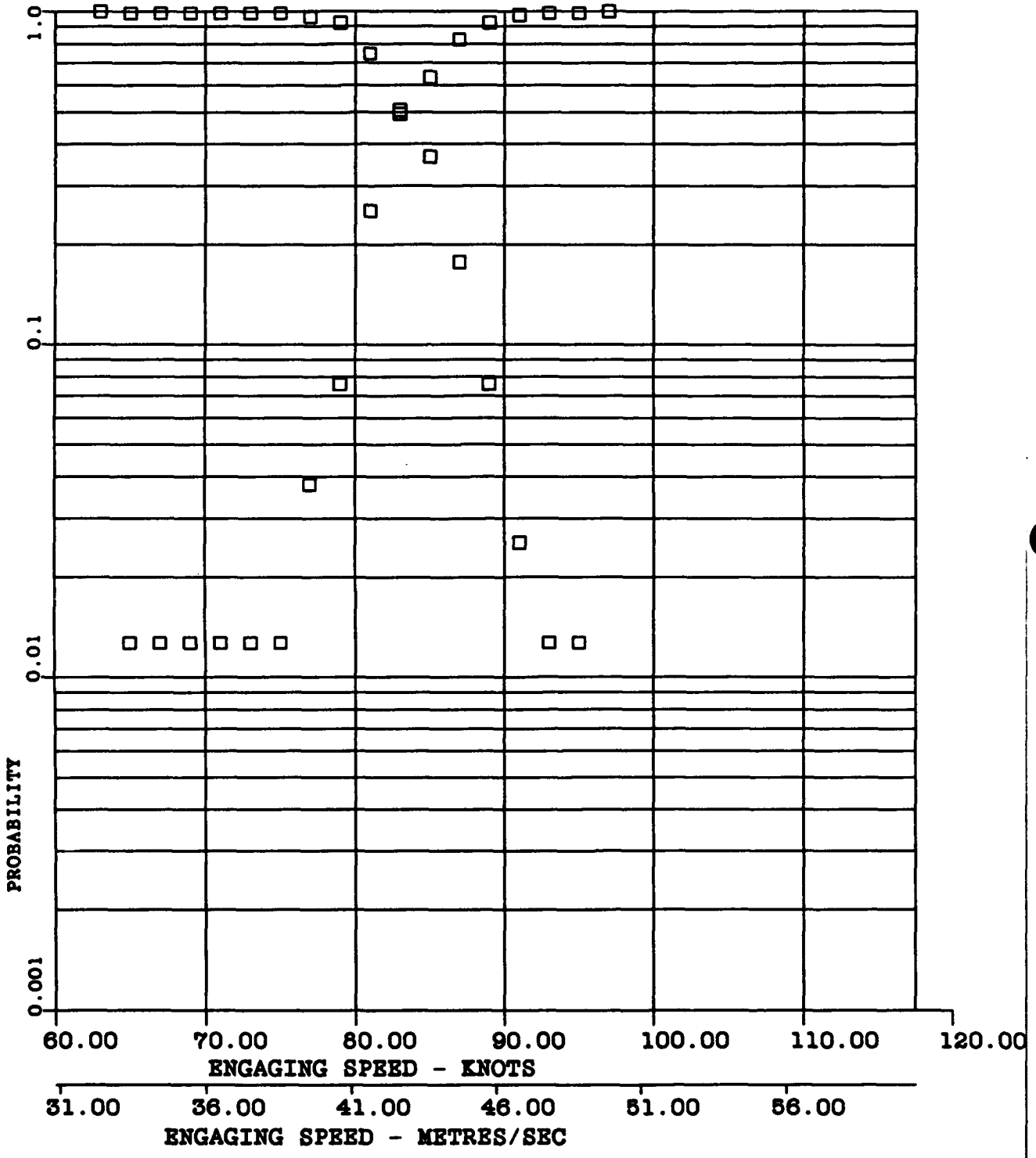


FIGURE L-43 PROBABILITY DISTRIBUTION OF ENGAGING SPEED AT FIRST MAIN WHEEL TOUCHDOWN

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-78 $\bar{X}$-85.93 KNOTS (44.20 METRES/SEC) A3=.29
S-1.10 KNOTS (.56 METRES/SEC) A4-2.76

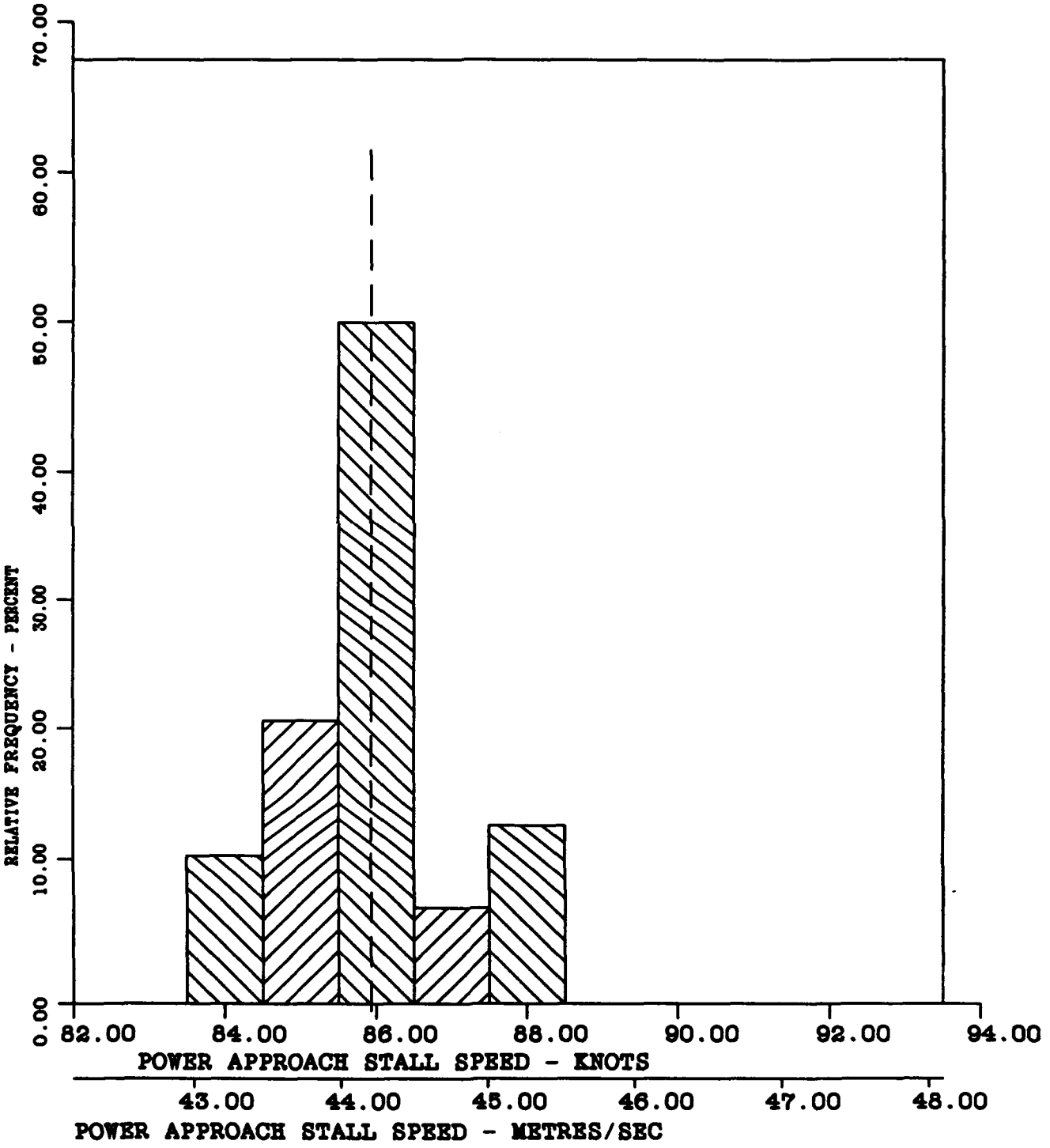


FIGURE L-44 FREQUENCY DISTRIBUTION OF POWER APPROACH STALL SPEED

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-78 $\bar{X}$-1.25 A3=.42
S=.03 A4=3.61

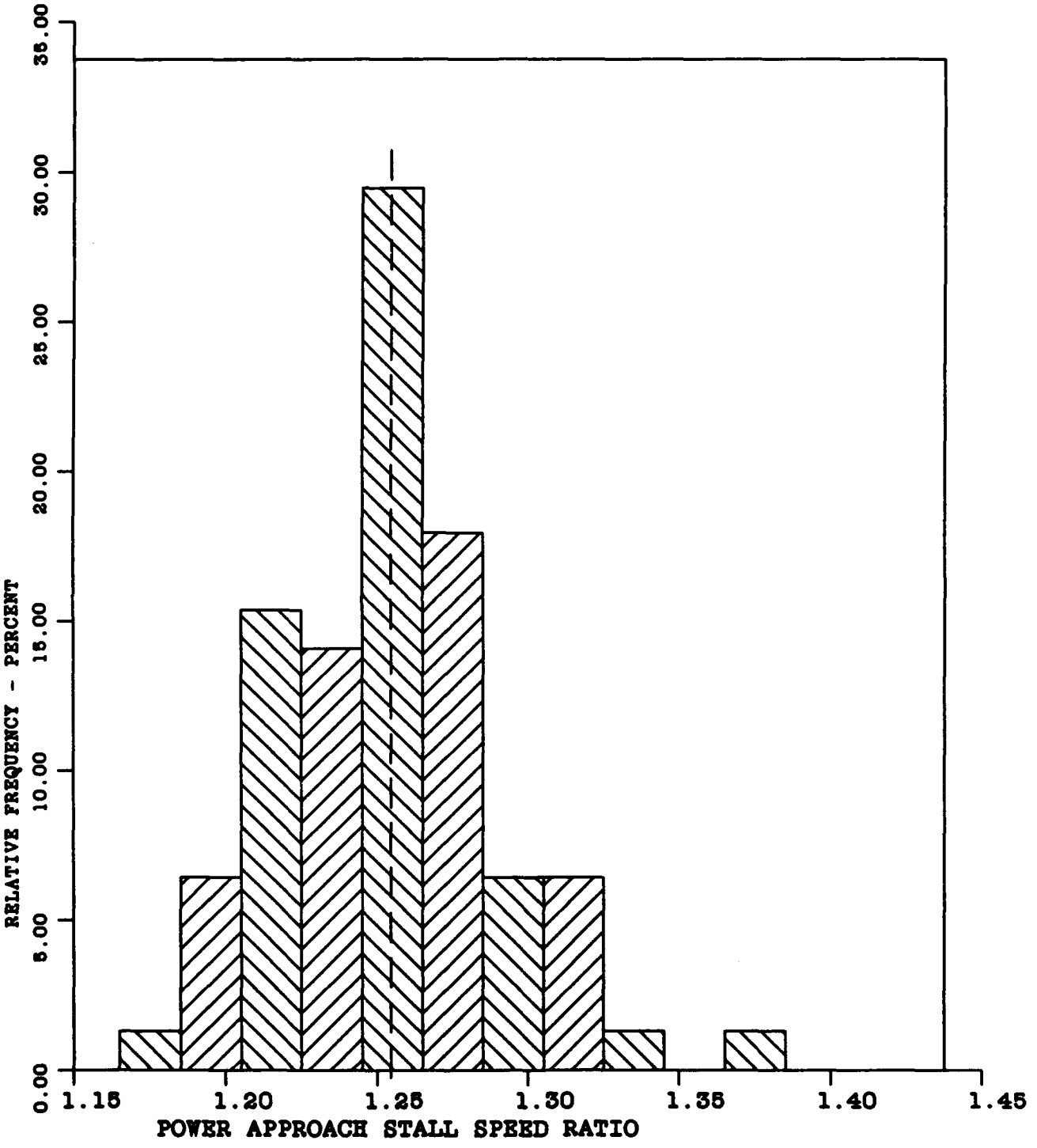


FIGURE L-45 FREQUENCY DISTRIBUTION OF POWER APPROACH STALL SPEED RATIO

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=79 $\bar{X}$=.15 DEGREES (.002 RADIANS) A3=.46
S=.76 DEGREES (.013 RADIANS) A4=3.87

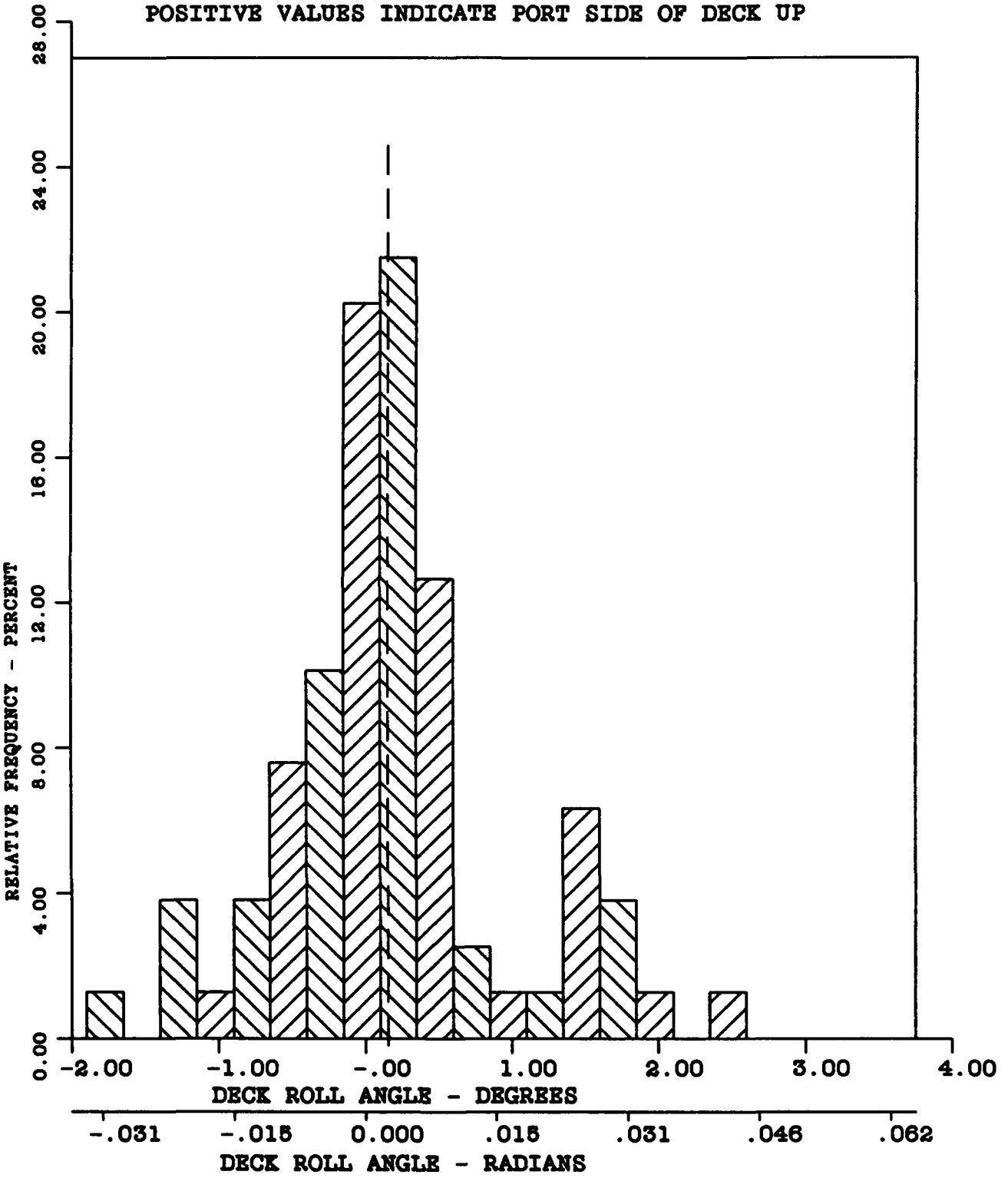


FIGURE L-46 FREQUENCY DISTRIBUTION OF CARRIER DECK ROLL MOTION

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-79 $\bar{X}$-.15 DEGREES (.002 RADIANS) A3=.46
S=.76 DEGREES (.013 RADIANS) A4=3.87
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE PORT SIDE OF DECK UP

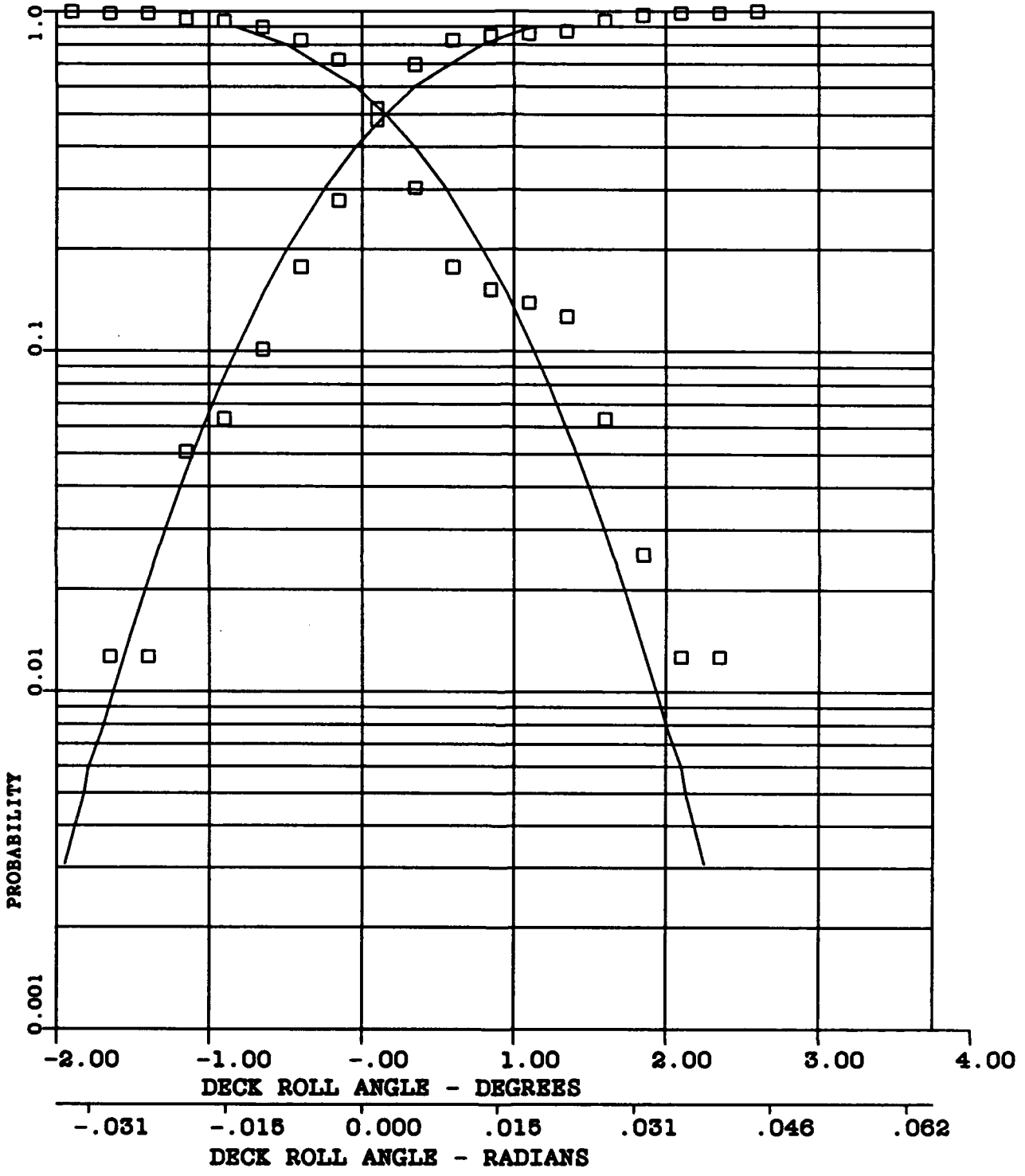


FIGURE L-47 PROBABILITY DISTRIBUTION OF CARRIER DECK ROLL MOTION

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=79 $\bar{X}$=-.12 DEGREES (-.002 RADIANS) A3=.28
S=.20 DEGREES (.003 RADIANS) A4=3.08

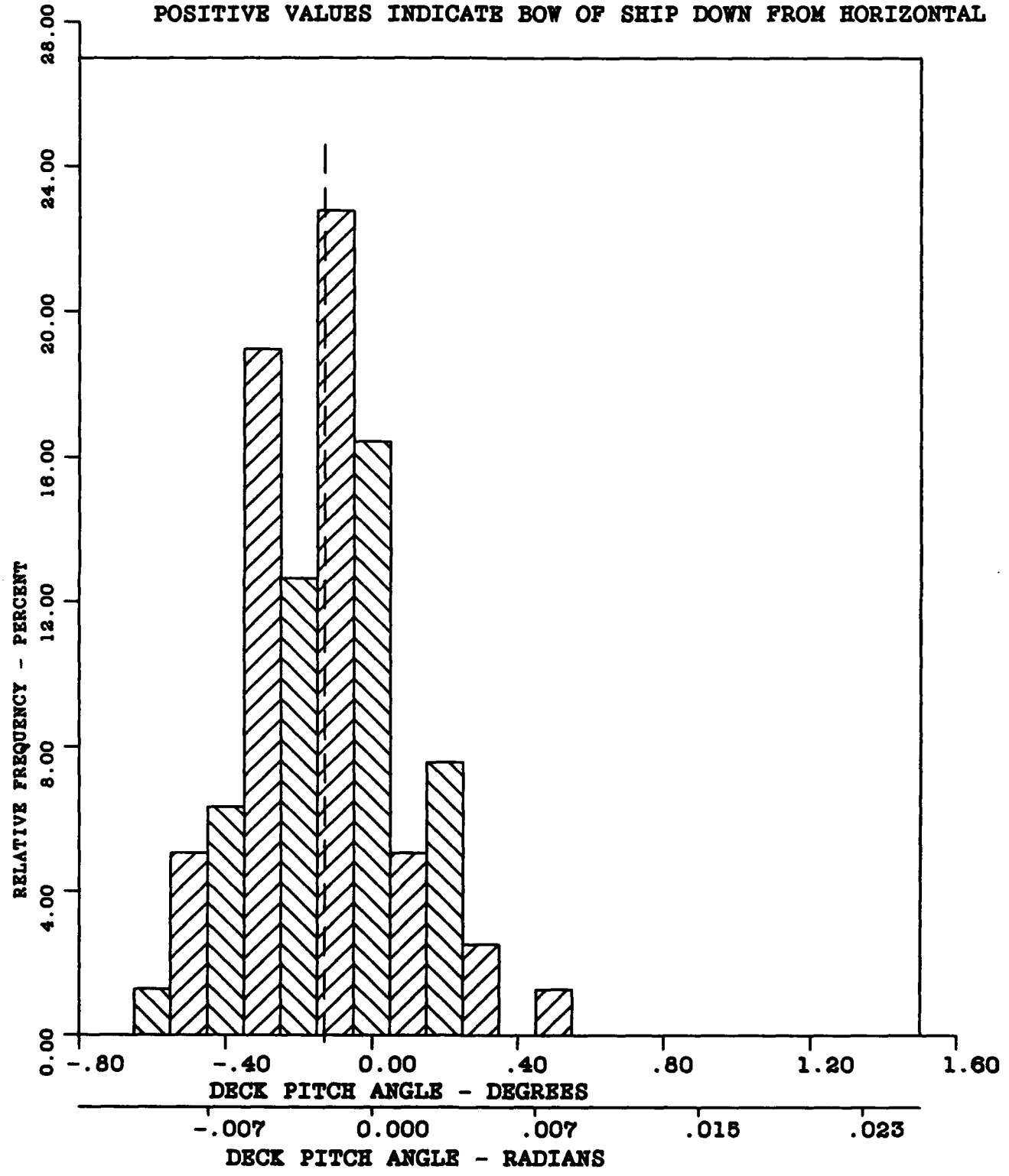


FIGURE L-48 FREQUENCY DISTRIBUTION OF CARRIER DECK PITCH MOTION

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=79 $\bar{X}$=-.12 DEGREES (-.002 RADIANS) A3=.28
S=.20 DEGREES (.003 RADIANS) A4=3.08
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE BOW OF SHIP DOWN FROM HORIZONTAL

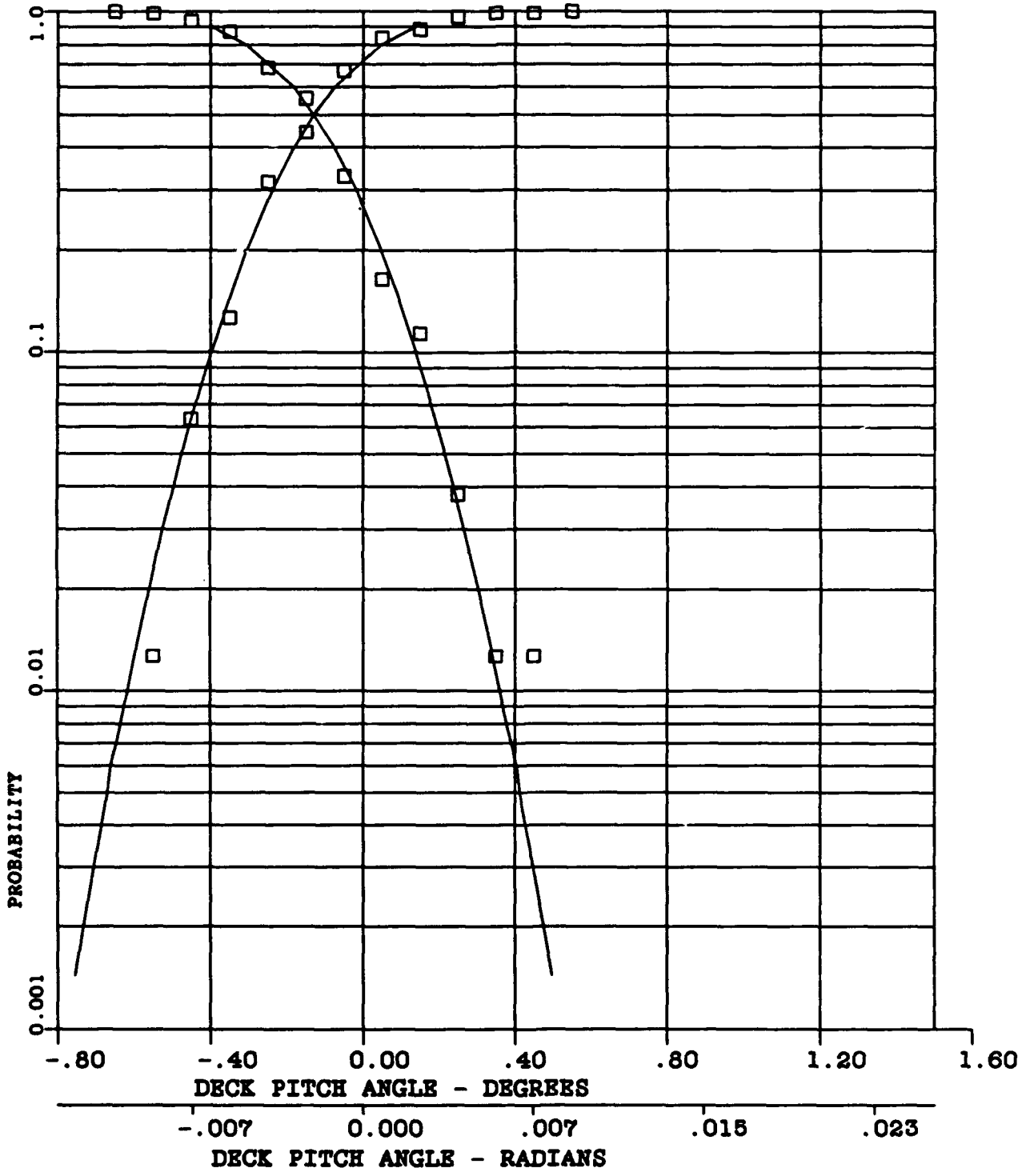


FIGURE L-49 PROBABILITY DISTRIBUTION OF CARRIER DECK PITCH MOTION

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-78 $\bar{X}$-43302.38 POUNDS (19641.96 KILOGRAMS) A3-.33
S-1115.57 POUNDS (506.02 KILOGRAMS) A4-2.77

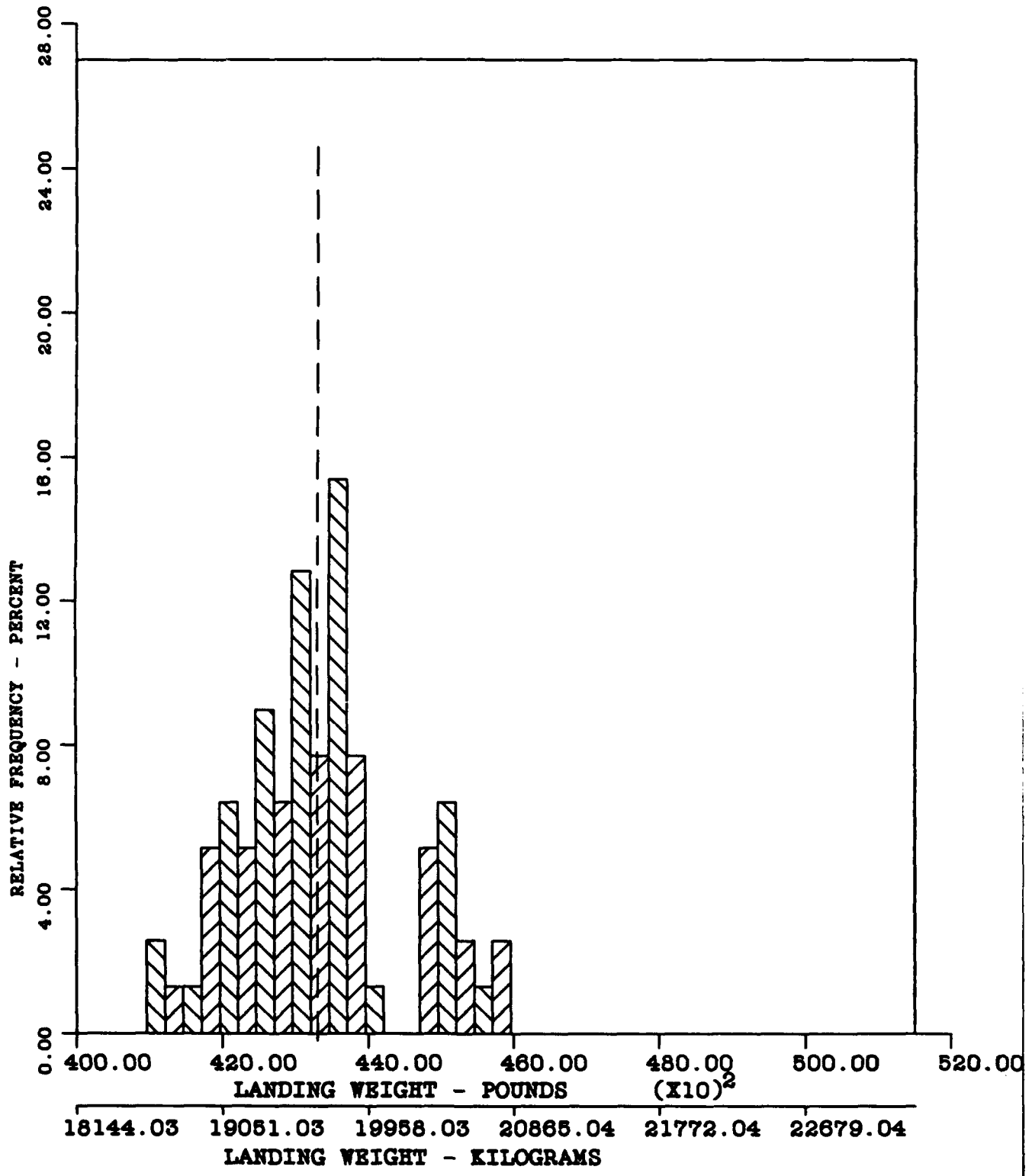


FIGURE L-50 FREQUENCY DISTRIBUTION OF AIRCRAFT LANDING WEIGHT

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-79 $\bar{X}$-.26 DEG/SEC (.004 RAD/SEC) A3=-.33
S-4.94 DEG/SEC (.086 RAD/SEC) A4=3.74

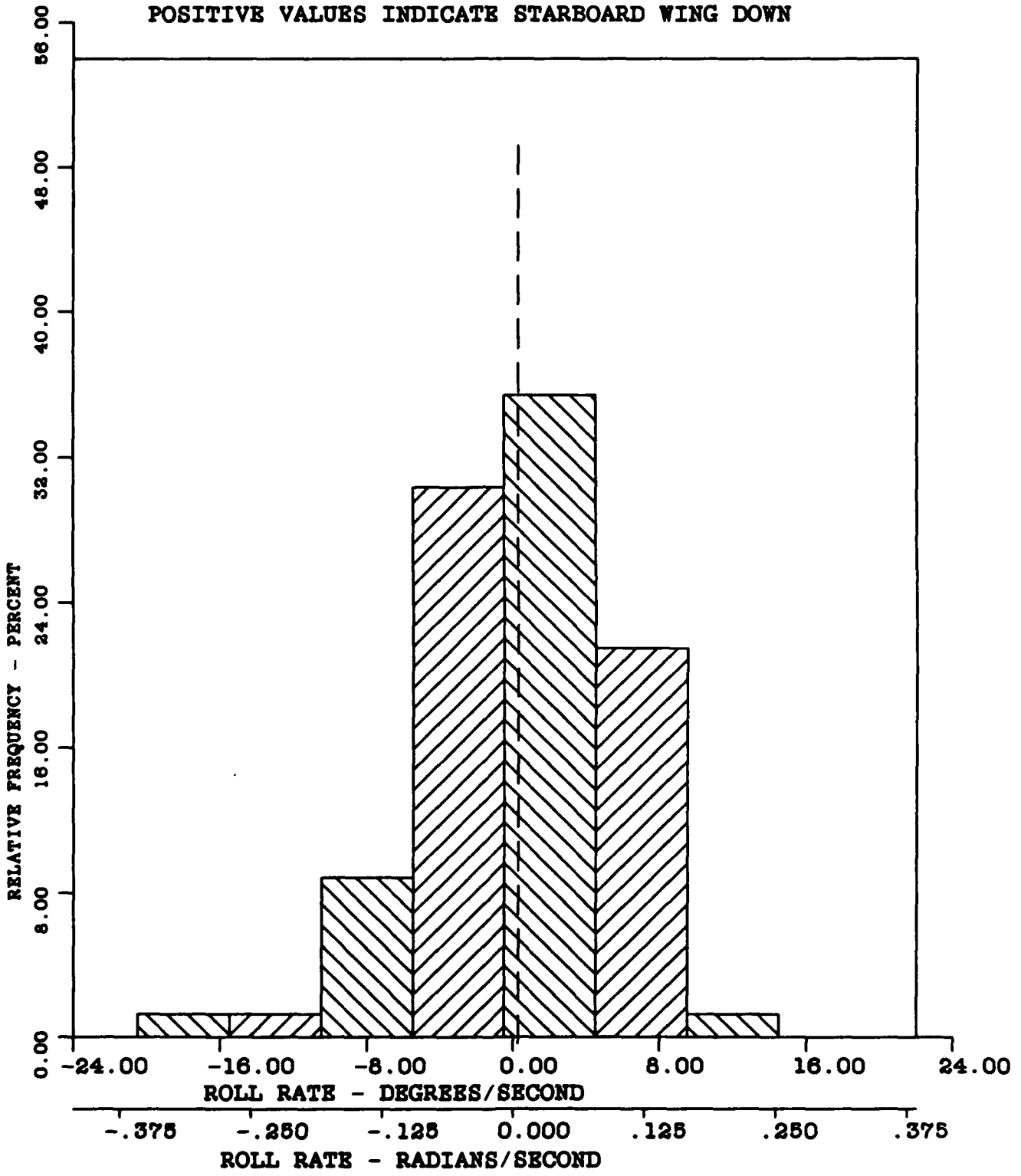


FIGURE L-51 FREQUENCY DISTRIBUTION OF ROLL RATE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-79 $\bar{X}$=-.26 DEG/SEC (.004 RAD/SEC) A3=-.33
S=4.94 DEG/SEC (.086 RAD/SEC) A4=3.74
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE STARBOARD WING DOWN

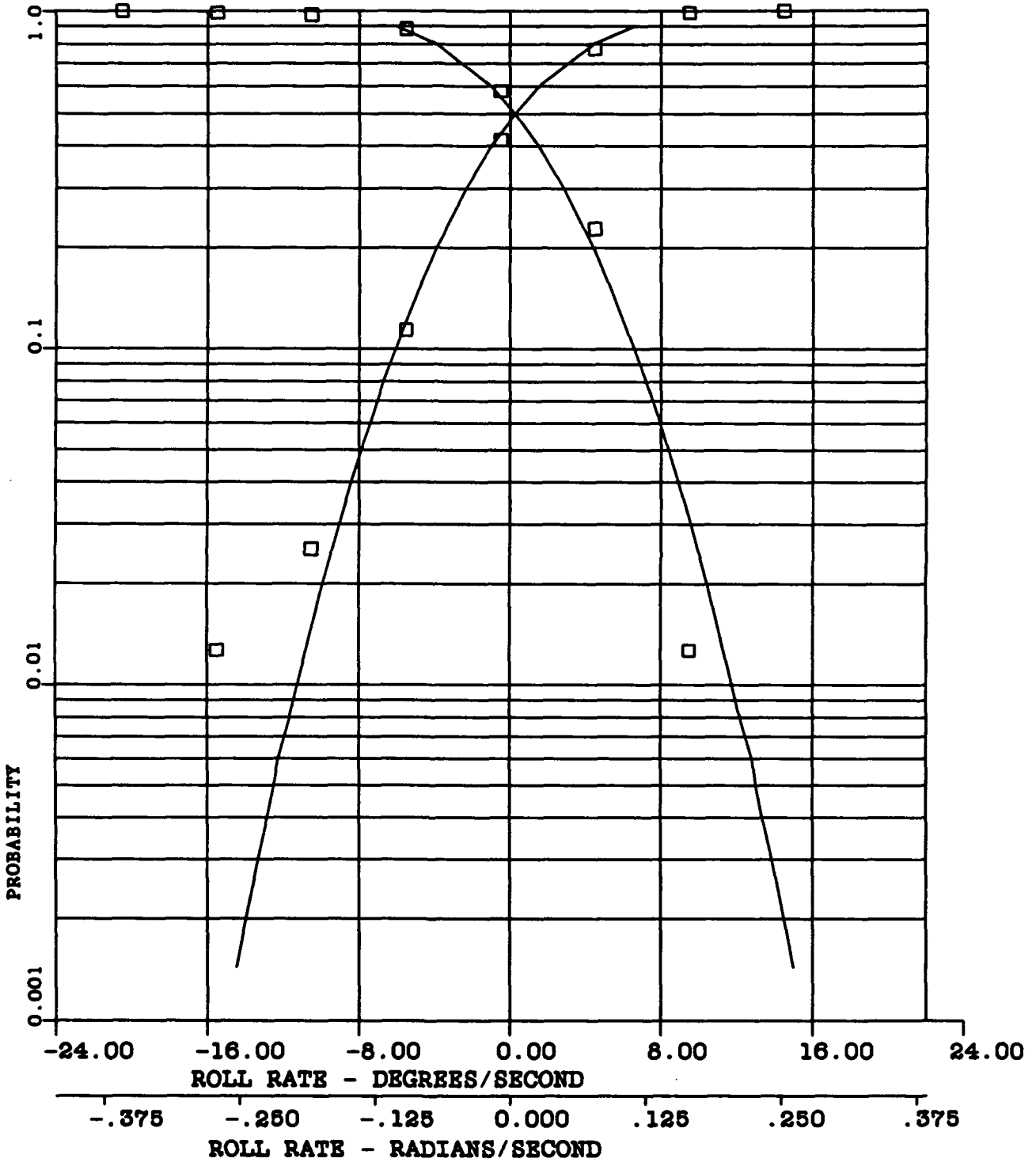


FIGURE L-52 PROBABILITY DISTRIBUTION OF ROLL RATE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-79 $\bar{X}$=-.13 DEG/SEC (-.002 RAD/SEC) A3=.37
S=2.22 DEG/SEC (.038 RAD/SEC) A4=4.79

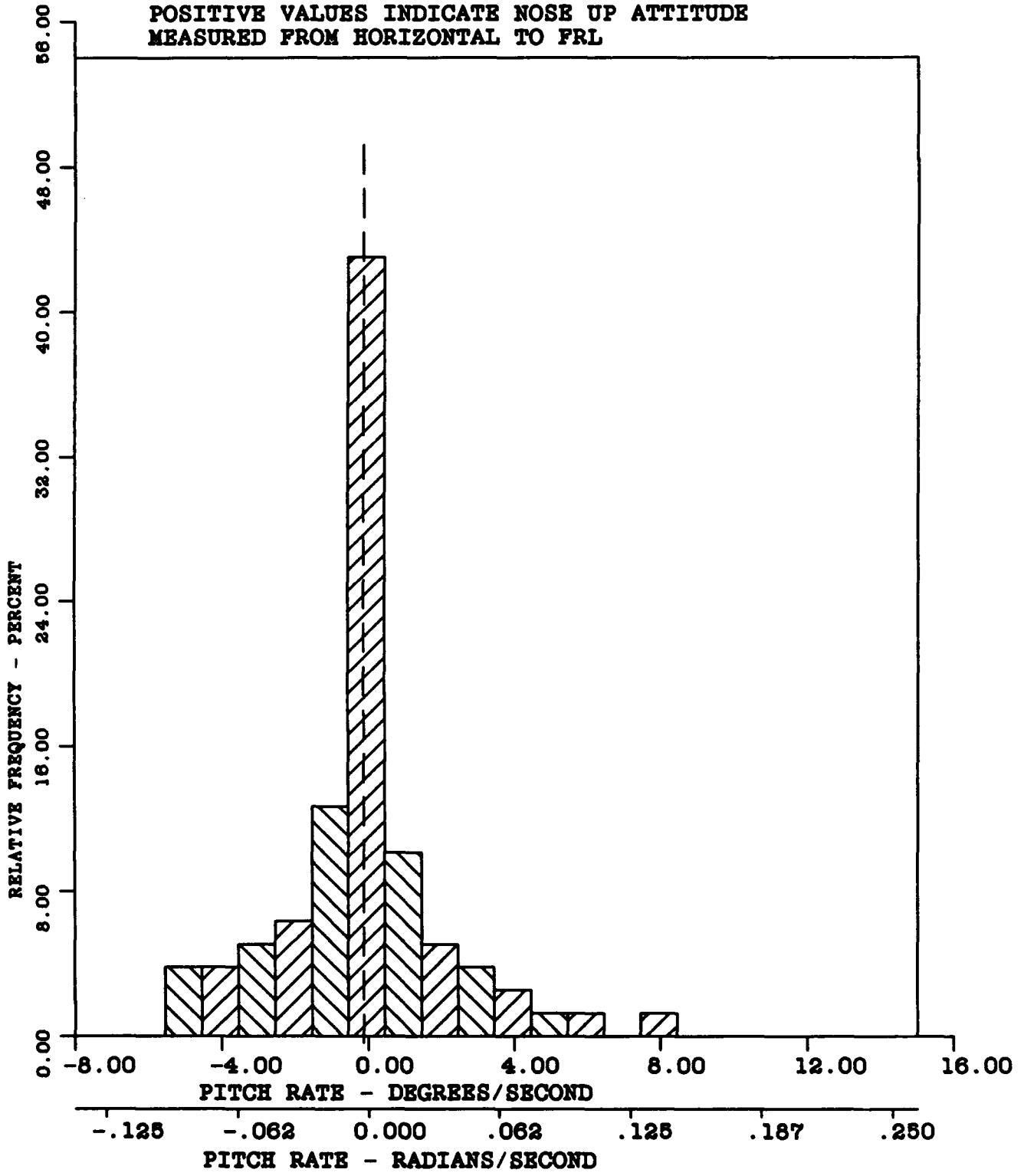


FIGURE L-53 FREQUENCY DISTRIBUTION OF PITCH RATE AT FIRST MAIN WHEEL TOUCHDOWN

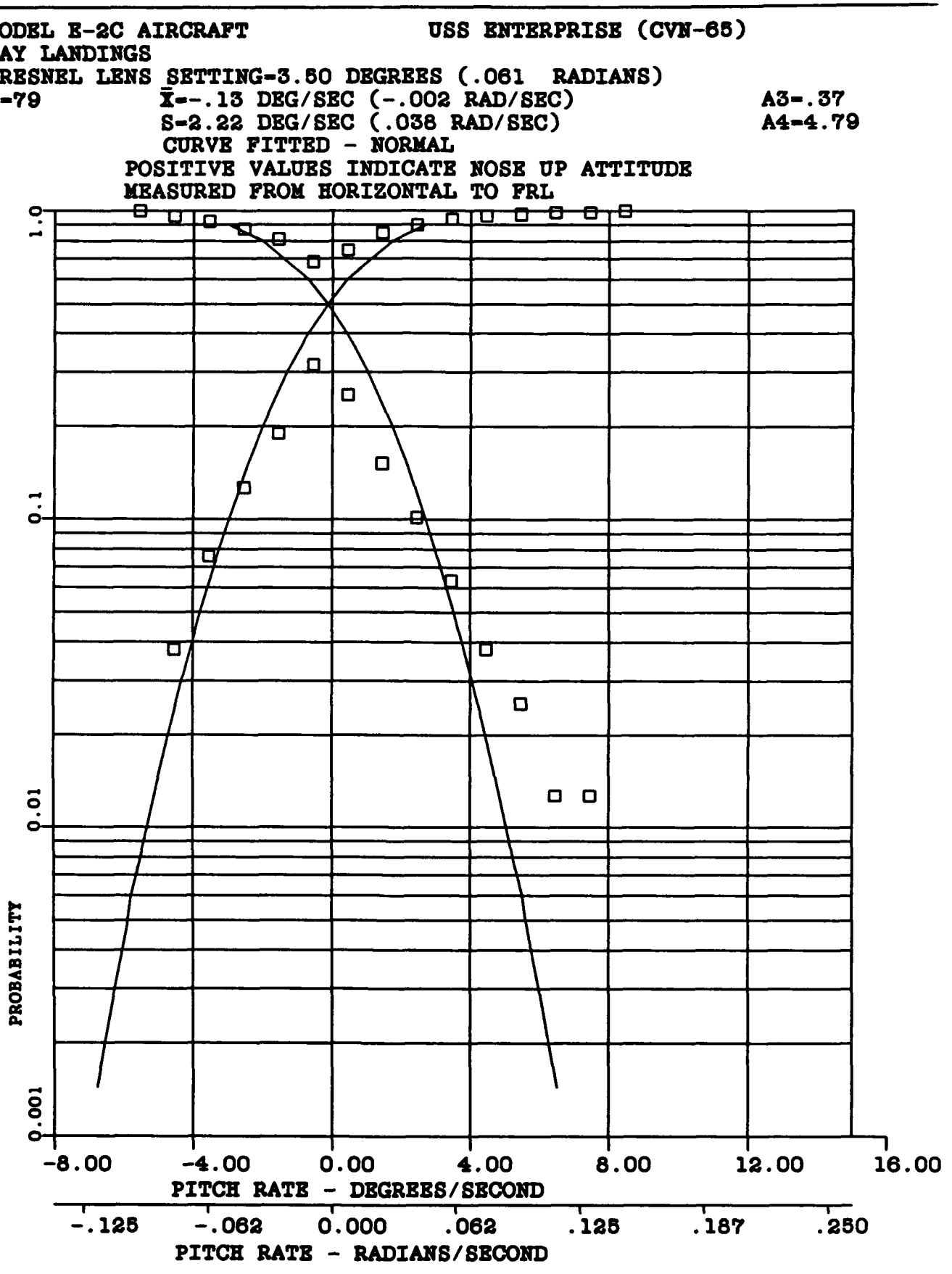


FIGURE L-54 PROBABILITY DISTRIBUTION OF PITCH RATE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-79 $\bar{X}$=-2.56 DEGREES (-.044 RADIANS) A3=.09
S=1.64 DEGREES (.028 RADIANS) A4=3.62

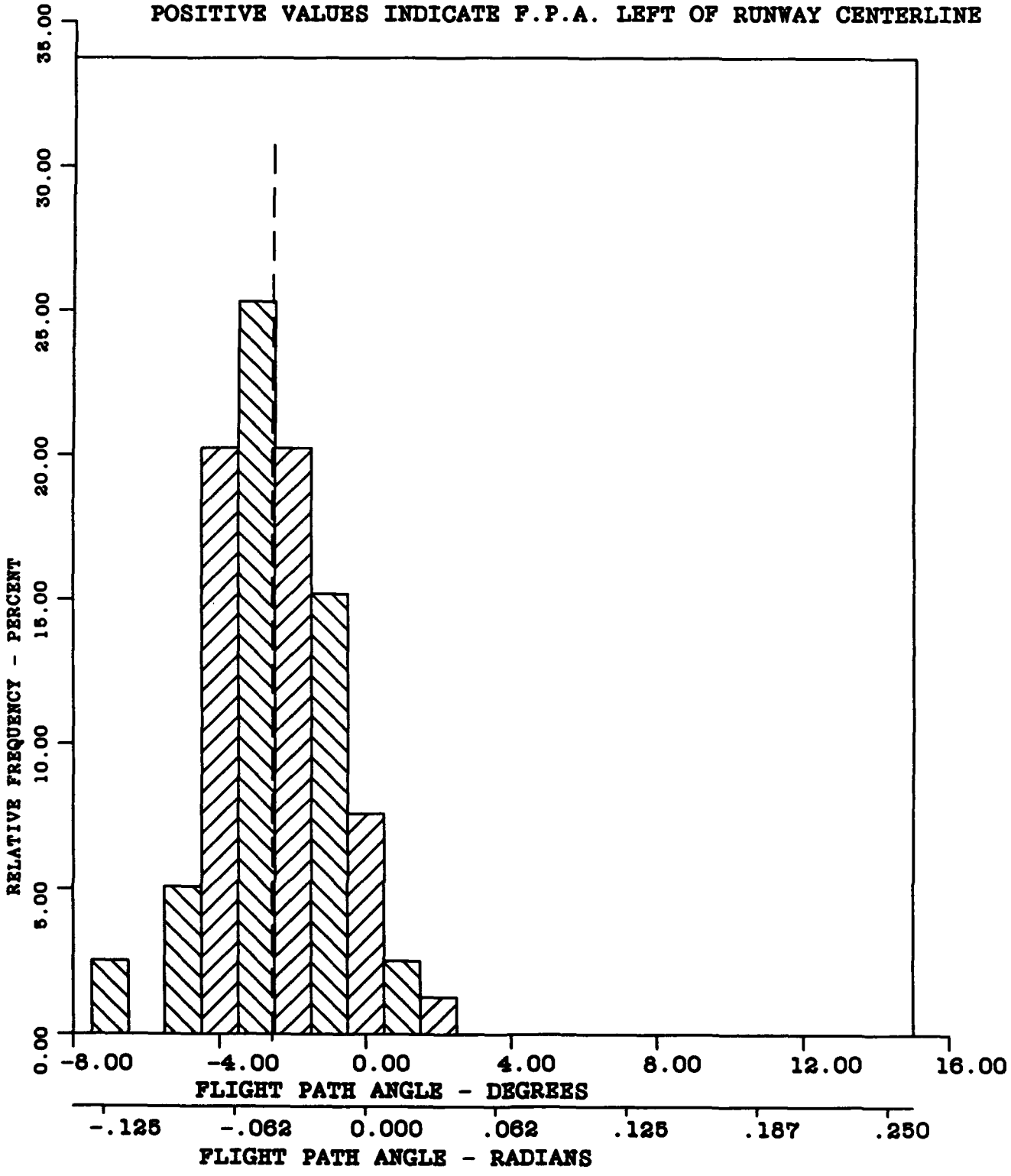


FIGURE L-55 FREQUENCY DISTRIBUTION OF AIRCRAFT FLIGHT PATH ANGLE AT TOUCHDOWN

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-79 $\bar{X}$=-2.56 DEGREES (-.044 RADIANS) A3=.09
S=1.64 DEGREES (.028 RADIANS) A4=3.62
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE F.P.A. LEFT OF RUNWAY CENTERLINE

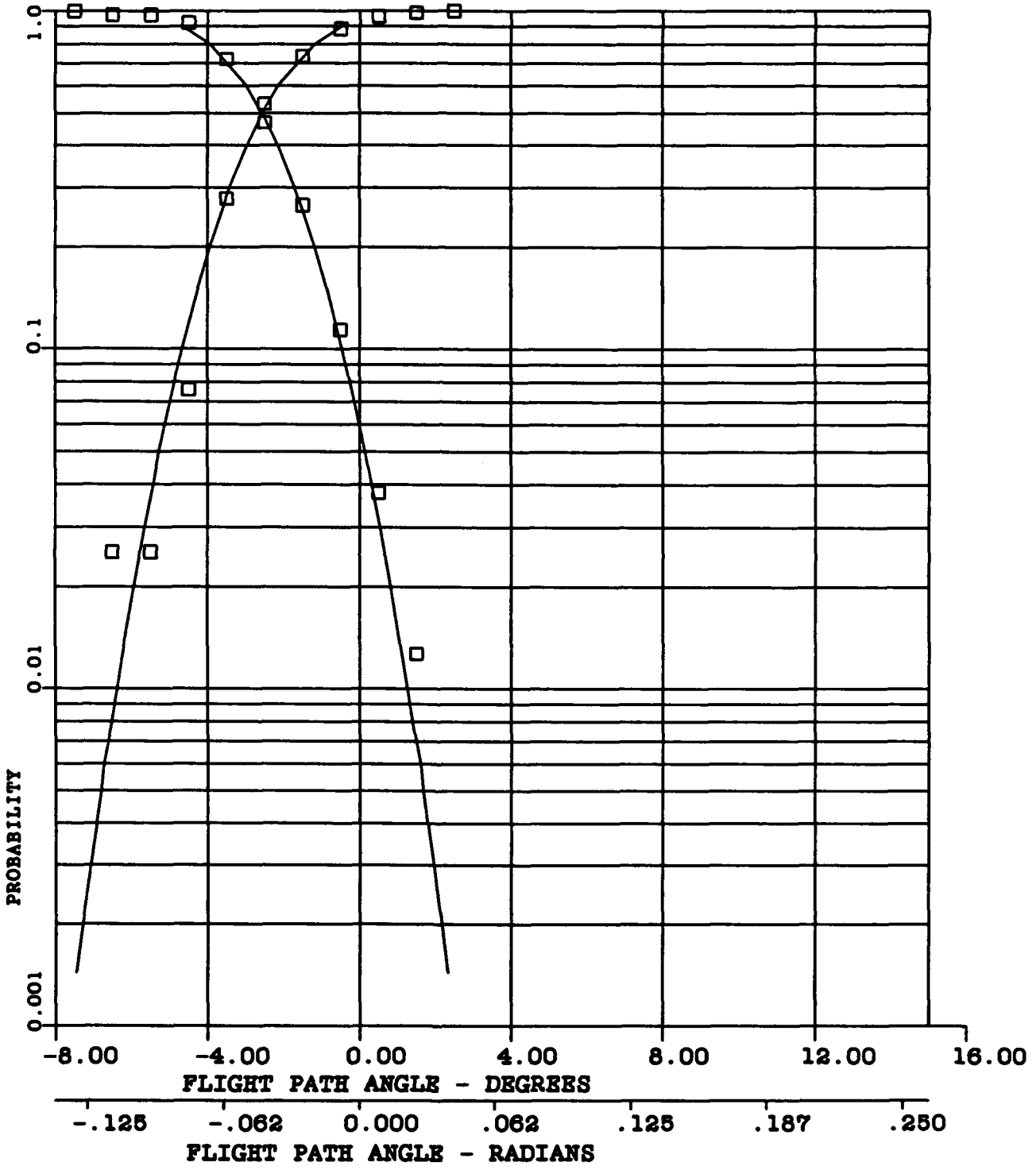


FIGURE L-56 PROBABILITY DISTRIBUTION OF AIRCRAFT FLIGHT PATH ANGLE AT TOUCHDOWN

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-7● $\bar{X}$-2.43 DEGREES (.042 RADIANS) A3=-.21
S-2.57 DEGREES (.044 RADIANS) A4-2.77

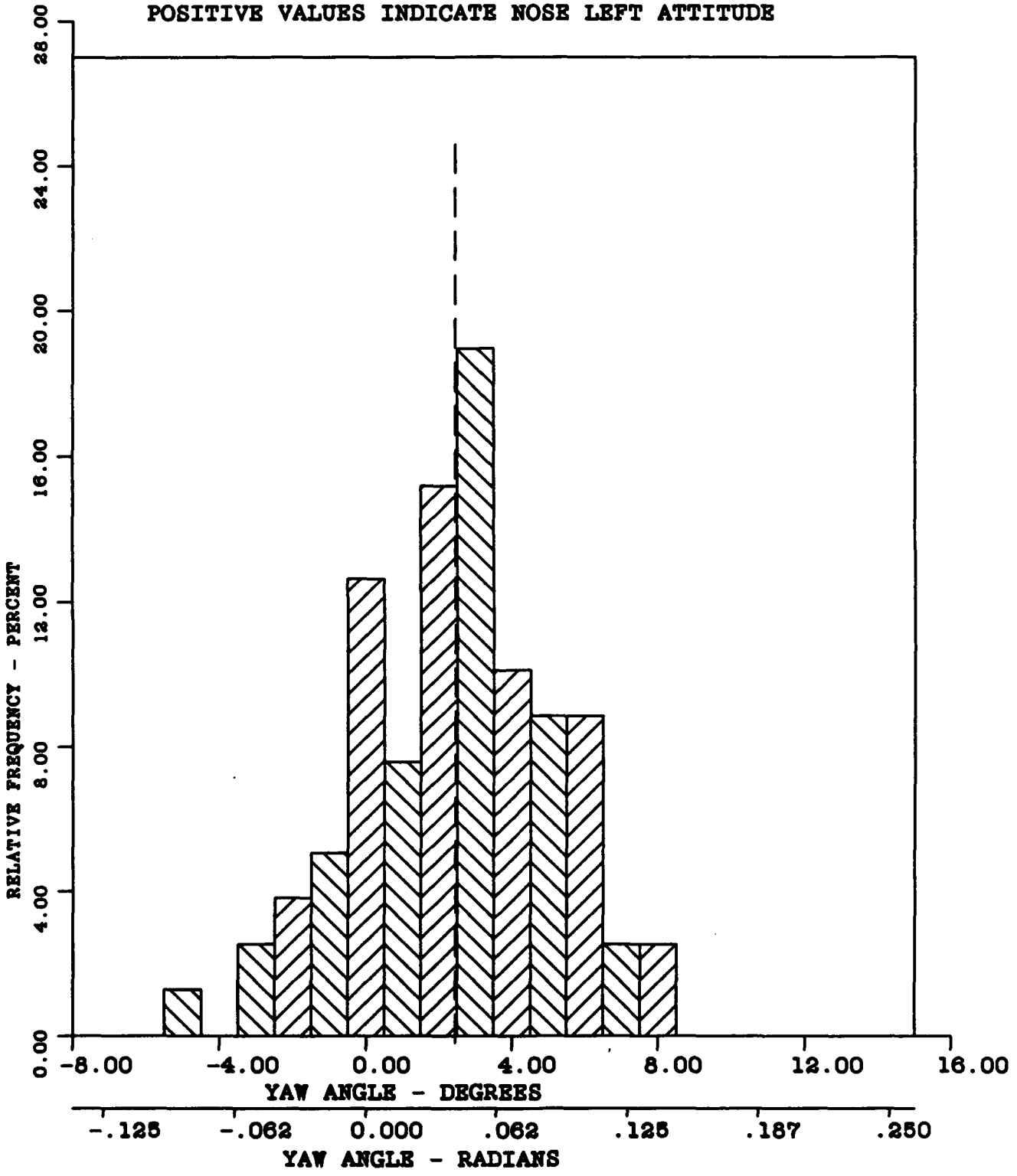


FIGURE L-57 FREQUENCY DISTRIBUTION OF AIRCRAFT YAW ANGLE

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-79 $\bar{X}$-2.43 DEGREES (.042 RADIANS) A3=-.21
S-2.57 DEGREES (.044 RADIANS) A4-2.77
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE NOSE LEFT ATTITUDE

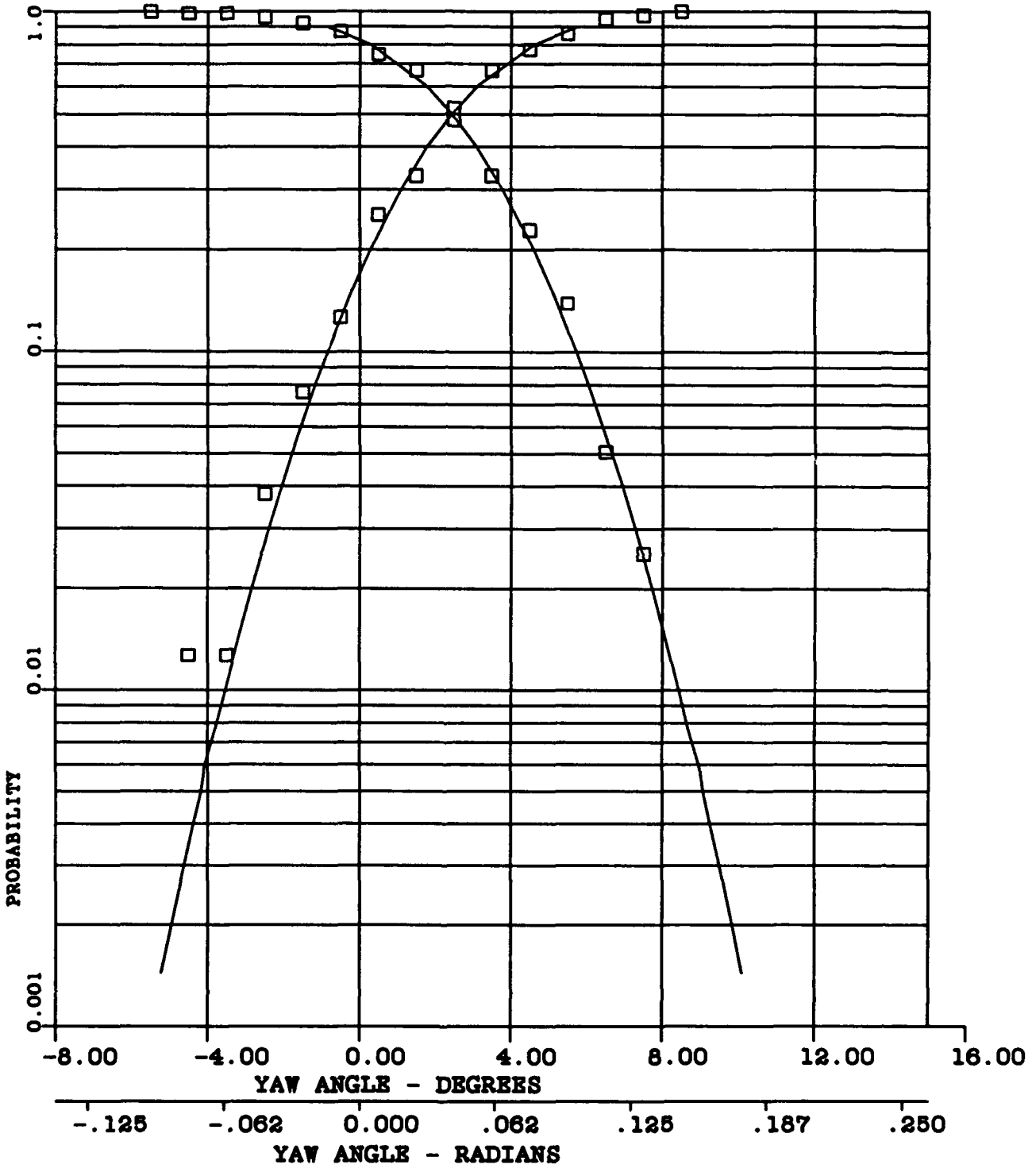


FIGURE L-58 PROBABILITY DISTRIBUTION OF AIRCRAFT YAW ANGLE

APPENDIX M

E-2C AIRCRAFT

NIGHT CARRIER LANDINGS

USS ENTERPRISE
CVN-65

Appendix M:

Frequency and Probability Distributions,
E-2C Aircraft, Night Landings

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MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N=80 $\bar{X}$=23.84 KNOTS (12.26 METRES/SEC) A3=0.57
S= 2.76 KNOTS (1.42 METRES/SEC) A4=2.26

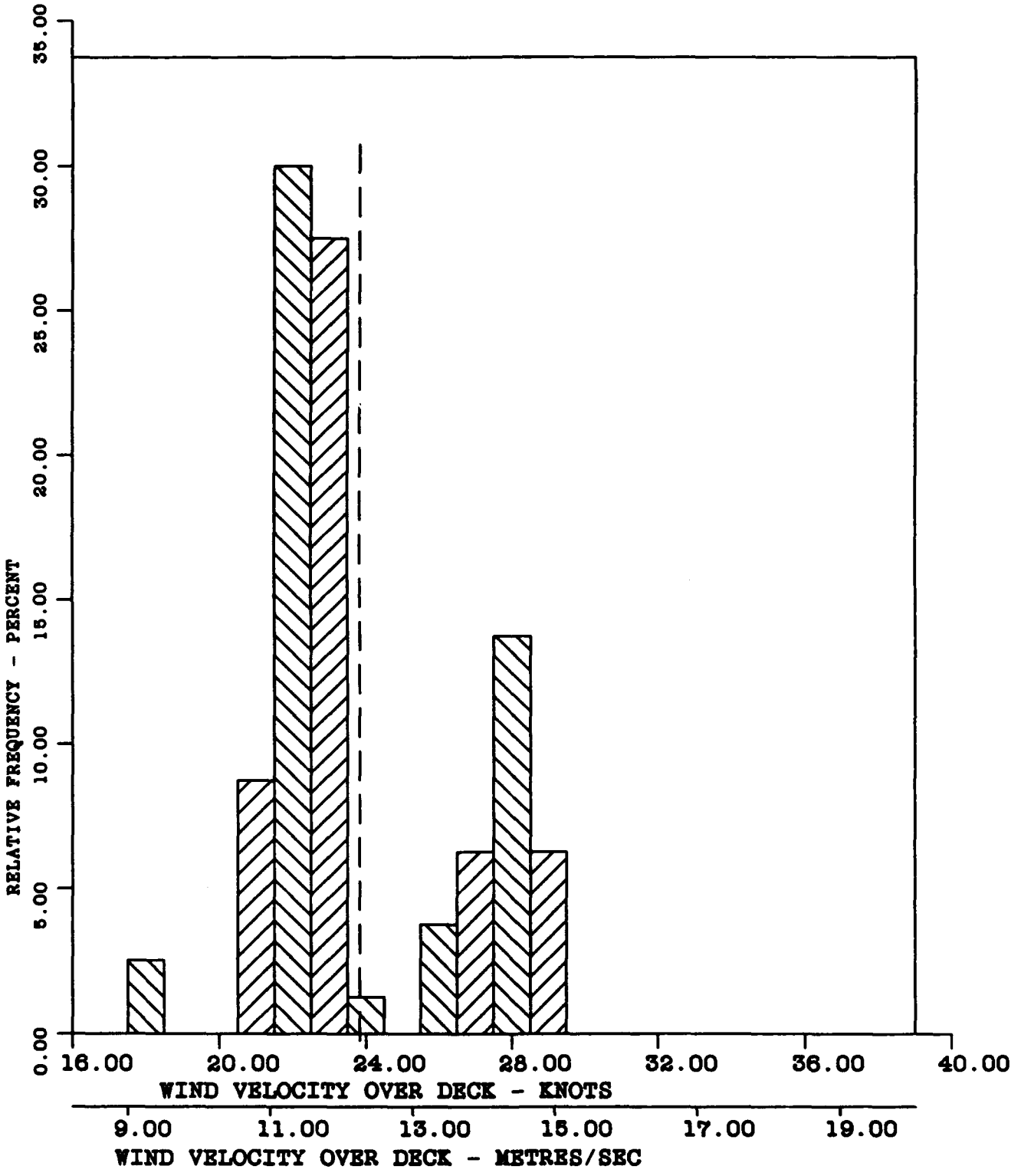


FIGURE M-1 FREQUENCY DISTRIBUTION OF WIND VELOCITY OVER THE DECK

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-80 $\bar{X}$-23.84 KNOTS (12.26 METRES/SEC) A3-0.57
S- 2.76 KNOTS (1.42 METRES/SEC) A4-2.26
CURVE FITTED - PEARSON TYPE III

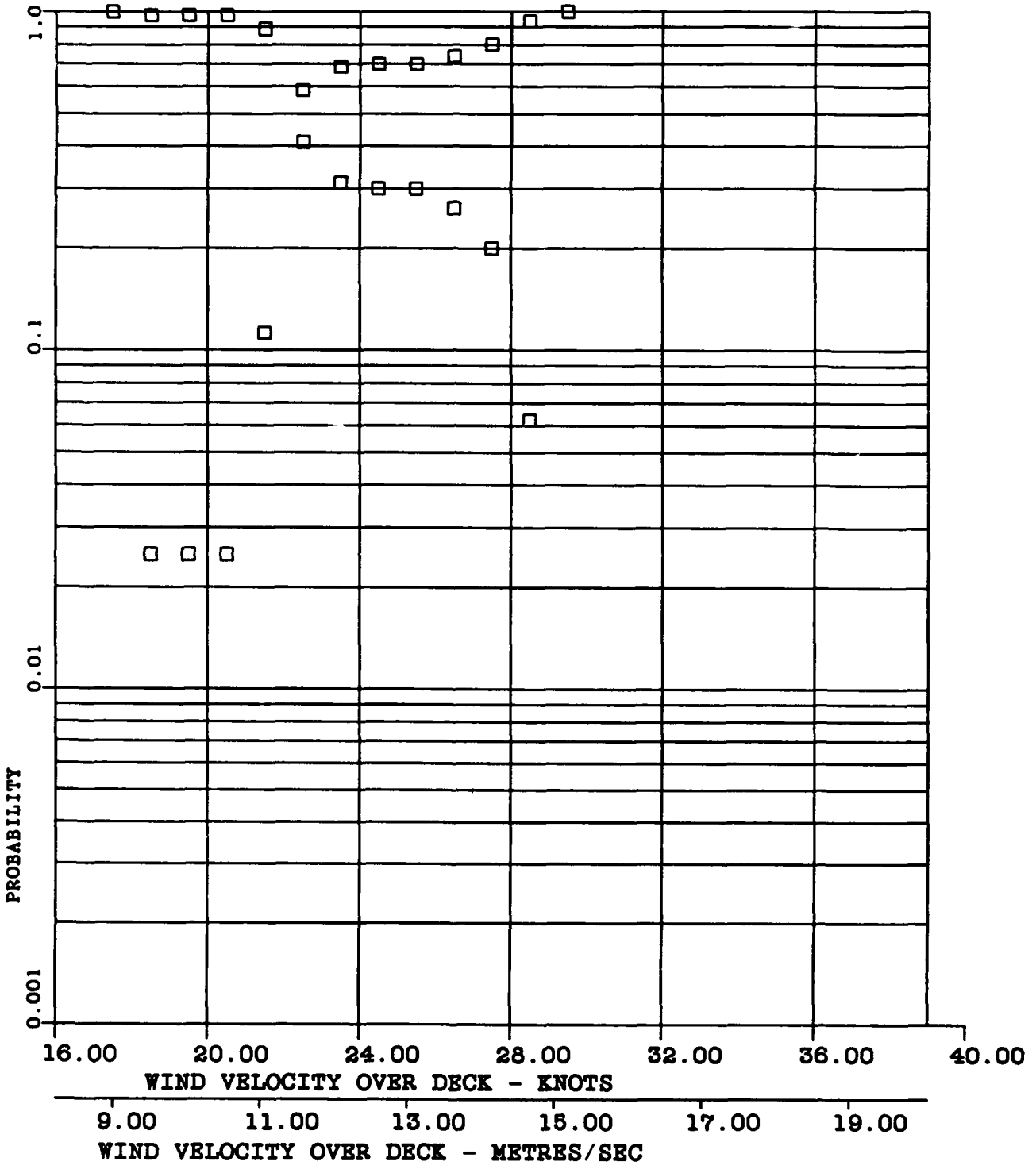


FIGURE M-2 PROBABILITY DISTRIBUTION OF WIND VELOCITY OVER THE DECK

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-80 $\bar{X}$-108.45 KNOTS (55.79 METRES/SEC) A3=0.26
S= 5.34 KNOTS (2.75 METRES/SEC) A4=2.68

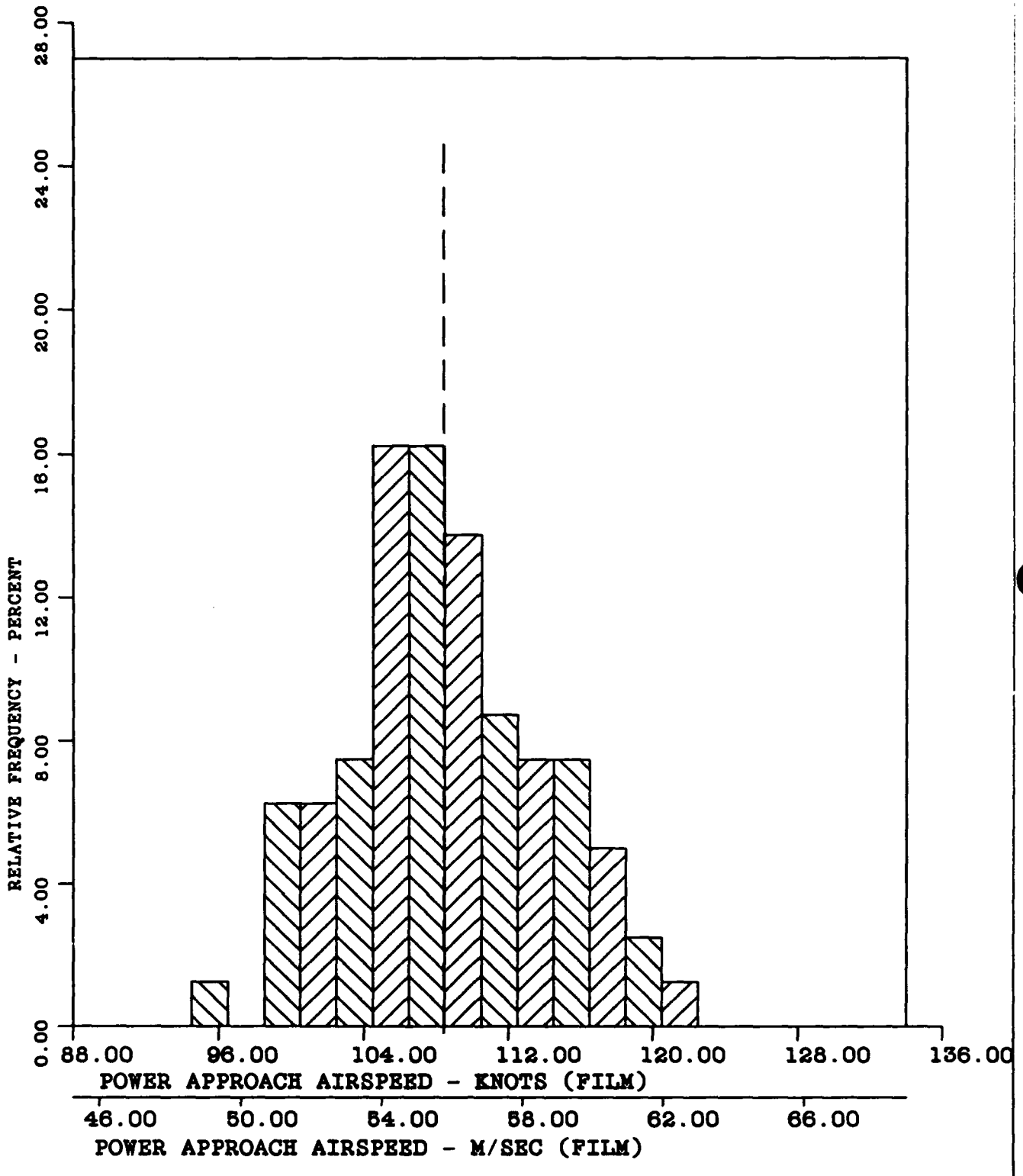


FIGURE M-3 FREQUENCY DISTRIBUTION OF FILM MEASURED POWER APPROACH AIRSPEED AT THE RAMP

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-80 $\bar{X}$-108.45 KNOTS (55.79 METRES/SEC) A3=0.26
S= 5.34 KNOTS (2.75 METRES/SEC) A4=2.68
CURVE FITTED - NORMAL

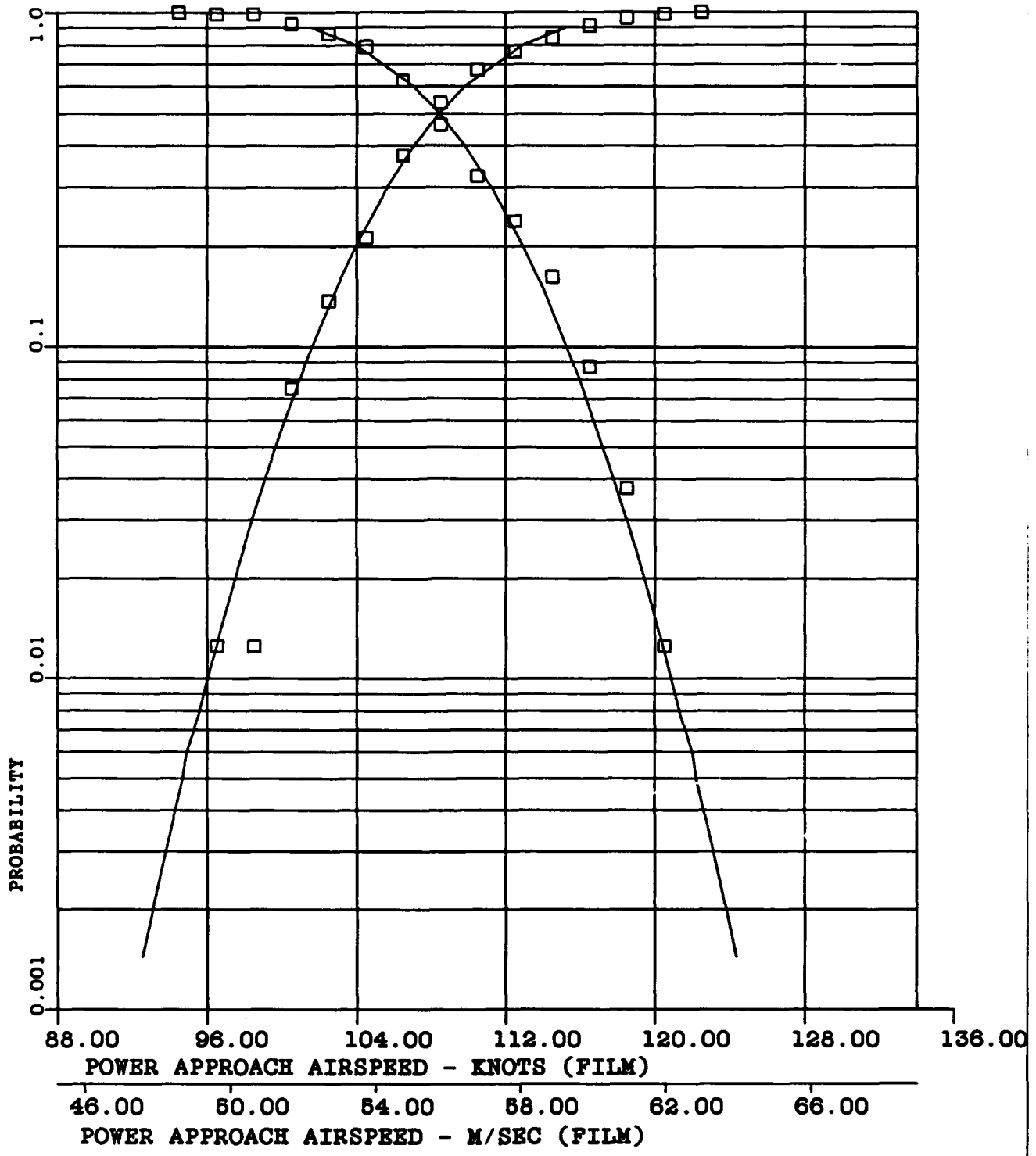


FIGURE M-4 PROBABILITY DISTRIBUTION OF POWER APPROACH AIRSPEED AT THE RAMP (FILM)

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N=80 $\bar{X}$=6.30 FEET/SEC (1.92 METRES/SEC) A3=-0.14
S= 2.57 FEET/SEC (0.78 METRES/SEC) A4=2.90

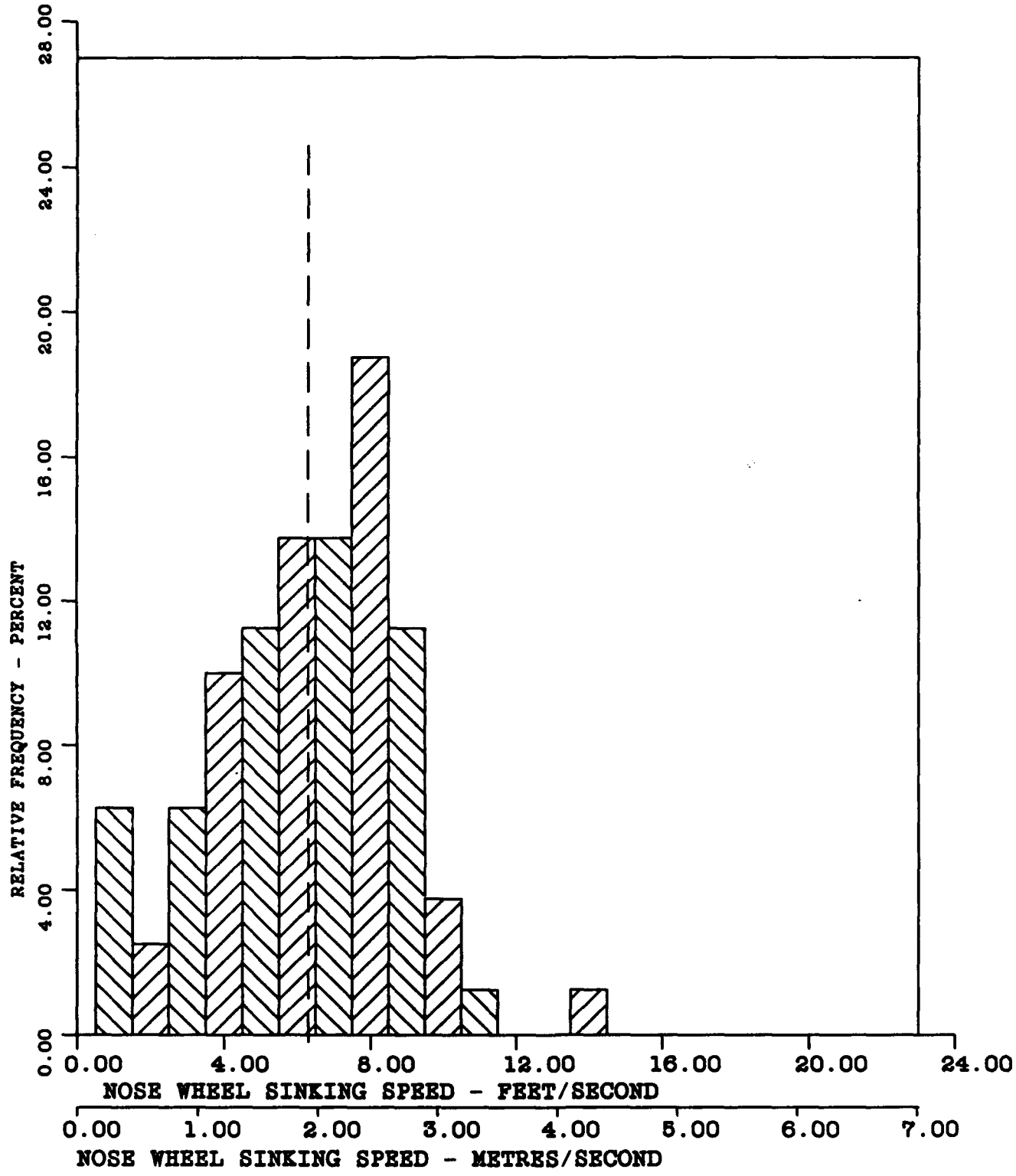


FIGURE M-5 FREQUENCY DISTRIBUTION OF NOSE WHEEL SINKING SPEED

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-80 $\bar{X}$-6.30 FEET/SEC (1.92 METRES/SEC) A3=-0.14
S= 2.57 FEET/SEC (0.78 METRES/SEC) A4-2.90
CURVE FITTED - NORMAL

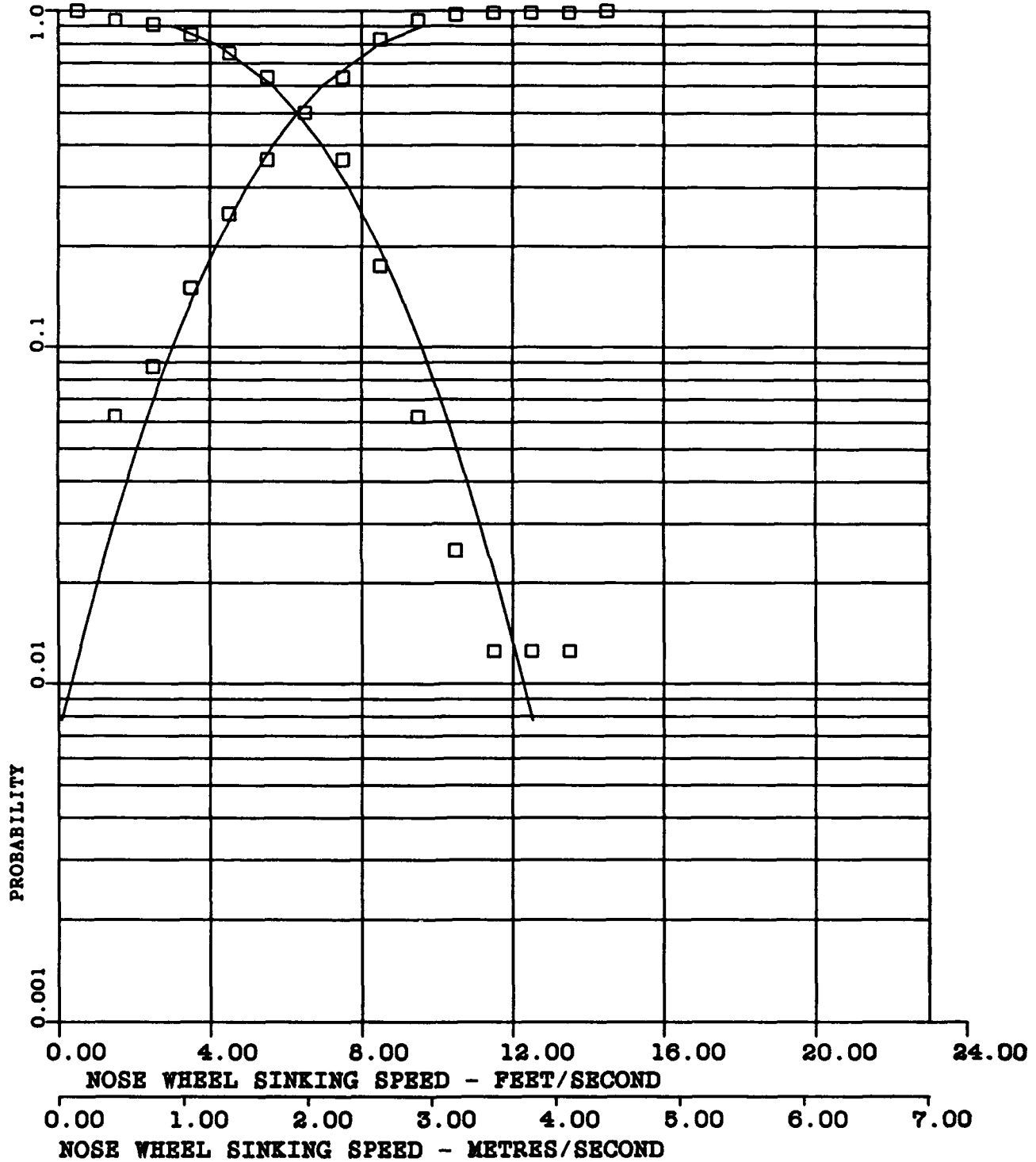


FIGURE M-6 PROBABILITY DISTRIBUTION OF NOSE WHEEL SINKING SPEED

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-80 $\bar{X}$-8.24 FEET/SEC (2.51 METRES/SEC) A3=-0.23
S= 2.31 FEET/SEC (0.70 METRES/SEC) A4=3.00

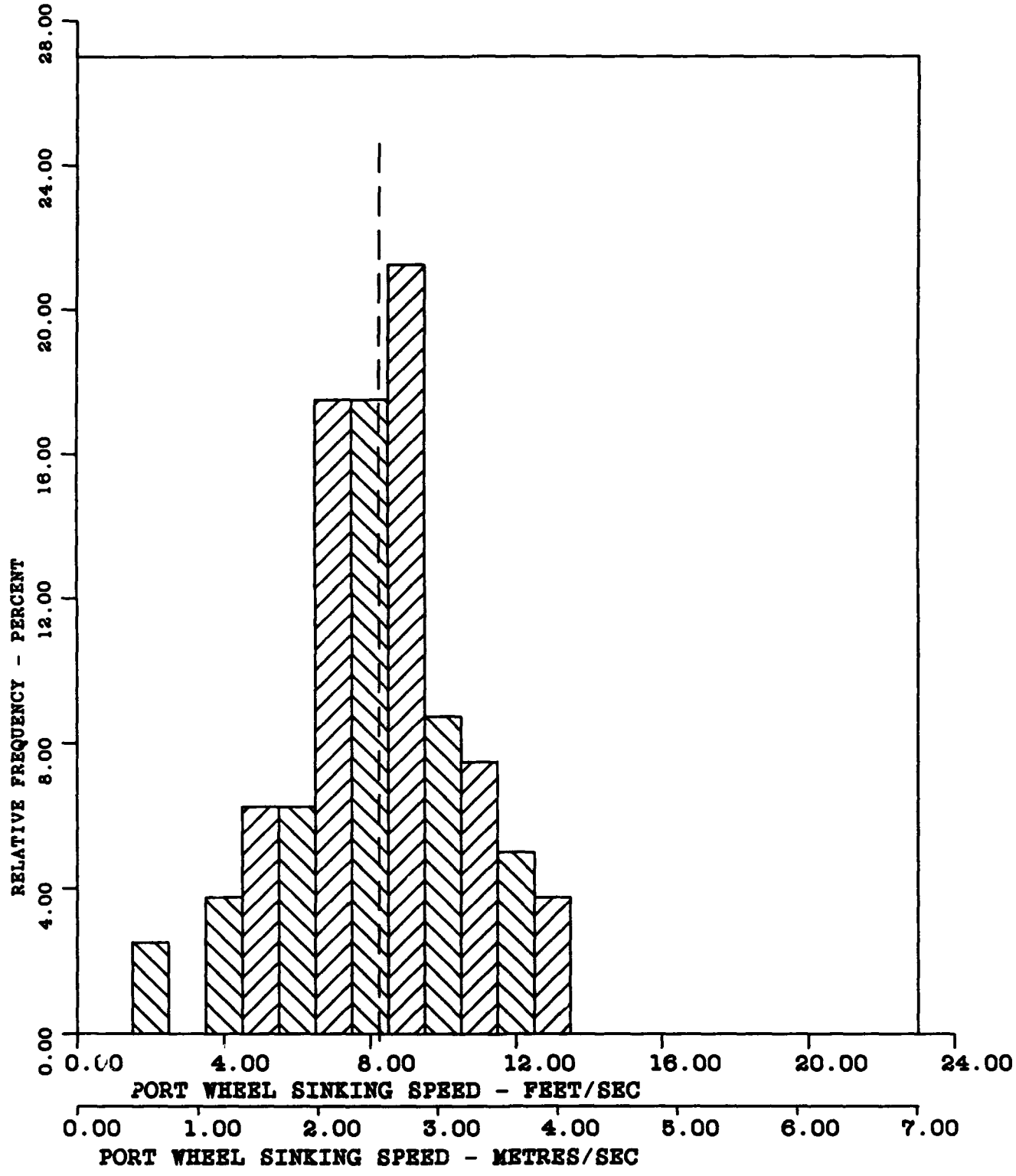


FIGURE M-7 FREQUENCY DISTRIBUTION OF PORT WHEEL SINKING SPEED AT PORT WHEEL TOUCHDOWN

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (0.061 RADIANS)
N=80 $\bar{X}$=8.24 FEET/SEC (2.51 METRES/SEC) A3=-0.23
S= 2.31 FEET/SEC (0.70 METRES/SEC) A4=3.00
CURVE FITTED - NORMAL

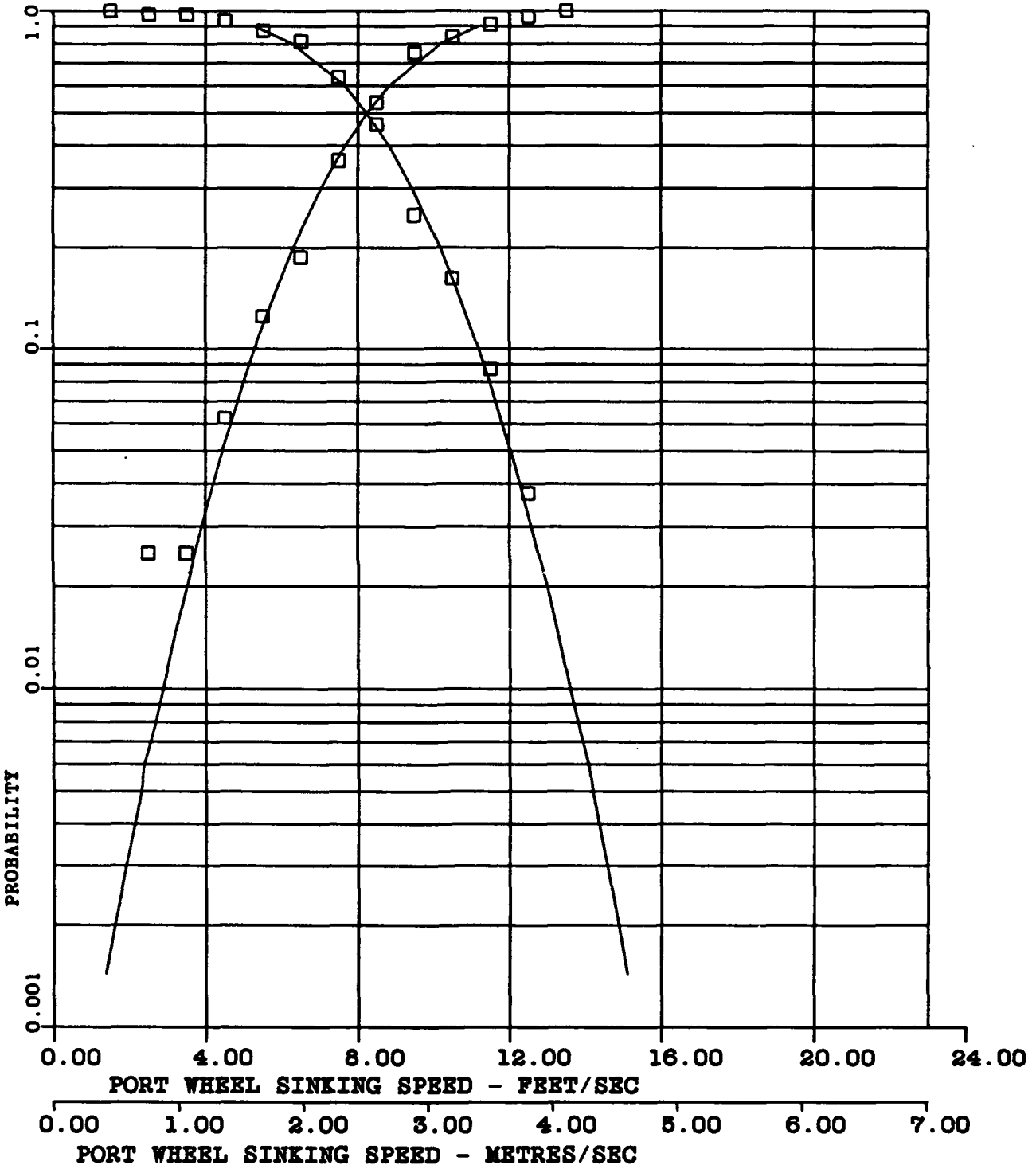


FIGURE M-8 PROBABILITY DISTRIBUTION OF PORT WHEEL SINKING SPEED

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N=80 $\bar{X}$=8.01 FEET/SEC (2.44 METRES/SEC) A3=-0.16
S= 2.45 FEET/SEC (0.75 METRES/SEC) A4=3.23

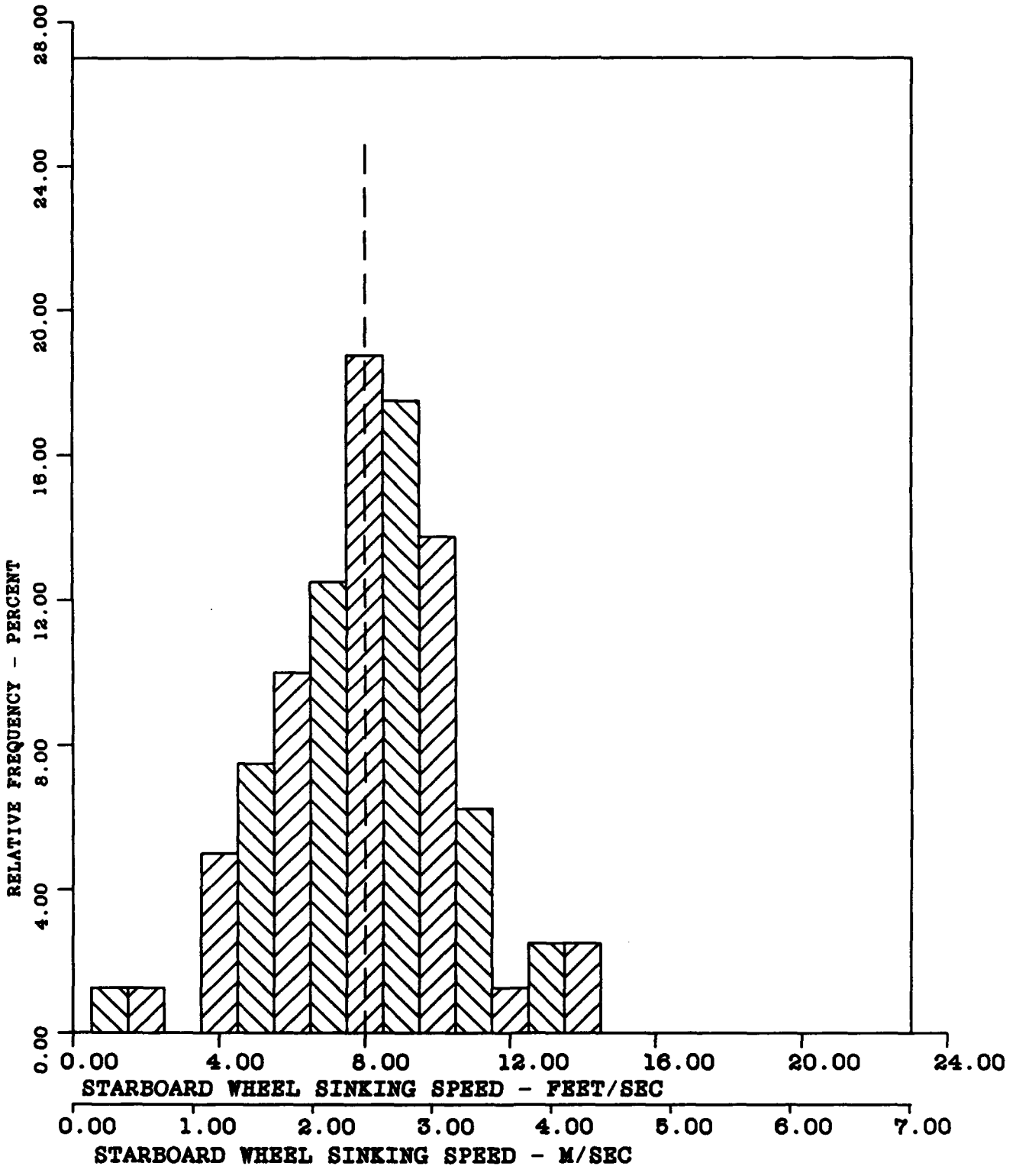


FIGURE M-9 FREQUENCY DISTRIBUTION OF STARBOARD WHEEL SINKING SPEED AT STARBOARD WHEEL TOUCHDOWN

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-80 $\bar{X}$-8.01 FEET/SEC (2.44 METRES/SEC) A3=-0.16
S= 2.45 FEET/SEC (0.75 METRES/SEC) A4-3.23
CURVE FITTED - NORMAL

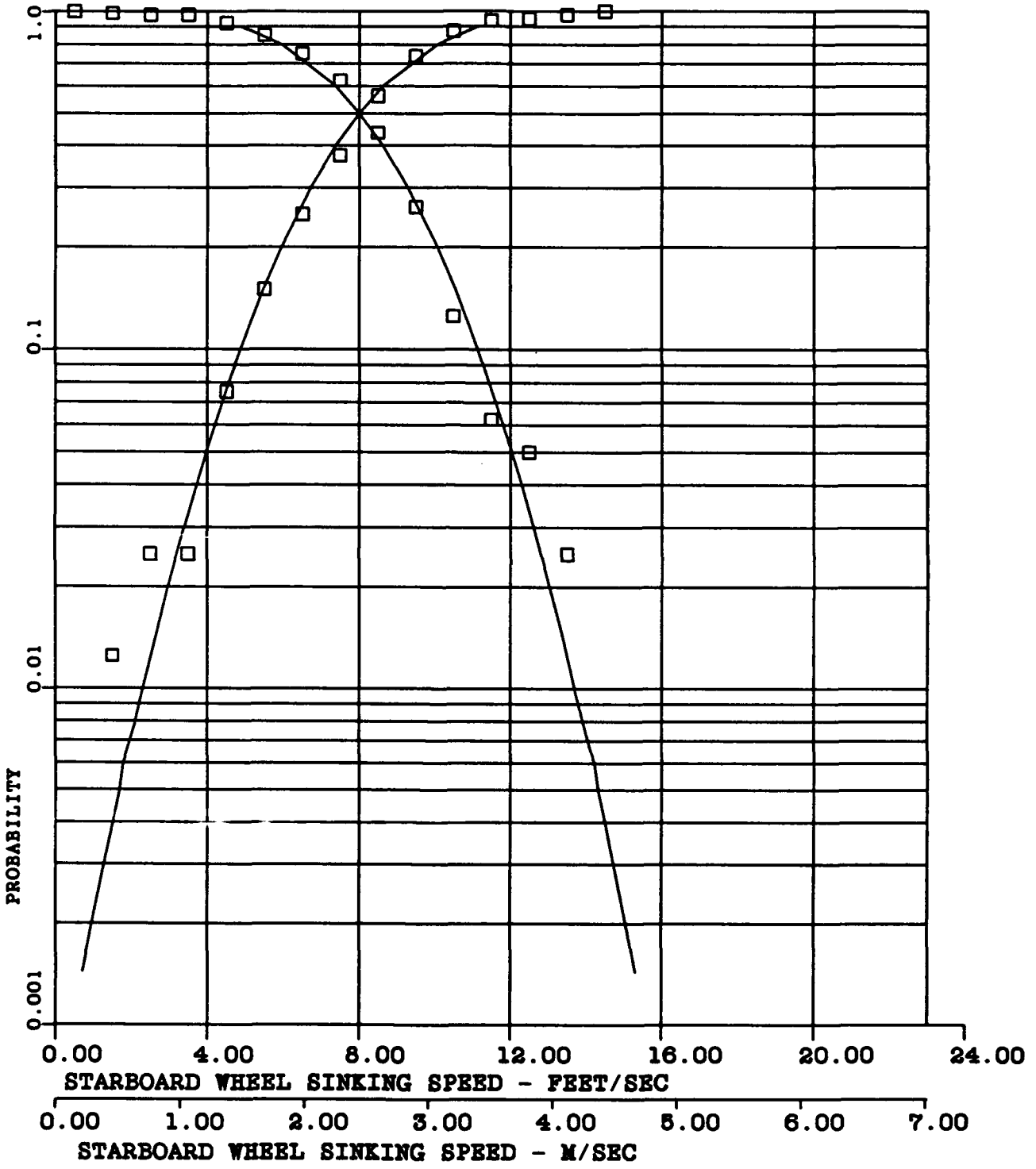


FIGURE M-10 PROBABILITY DISTRIBUTION OF STARBOARD WHEEL SINKING SPEED

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N=80 $\bar{X}$=8.30 FEET/SEC (2.53 METRES/SEC) A3=-0.20
S= 2.18 FEET/SEC (0.66 METRES/SEC) A4=3.20

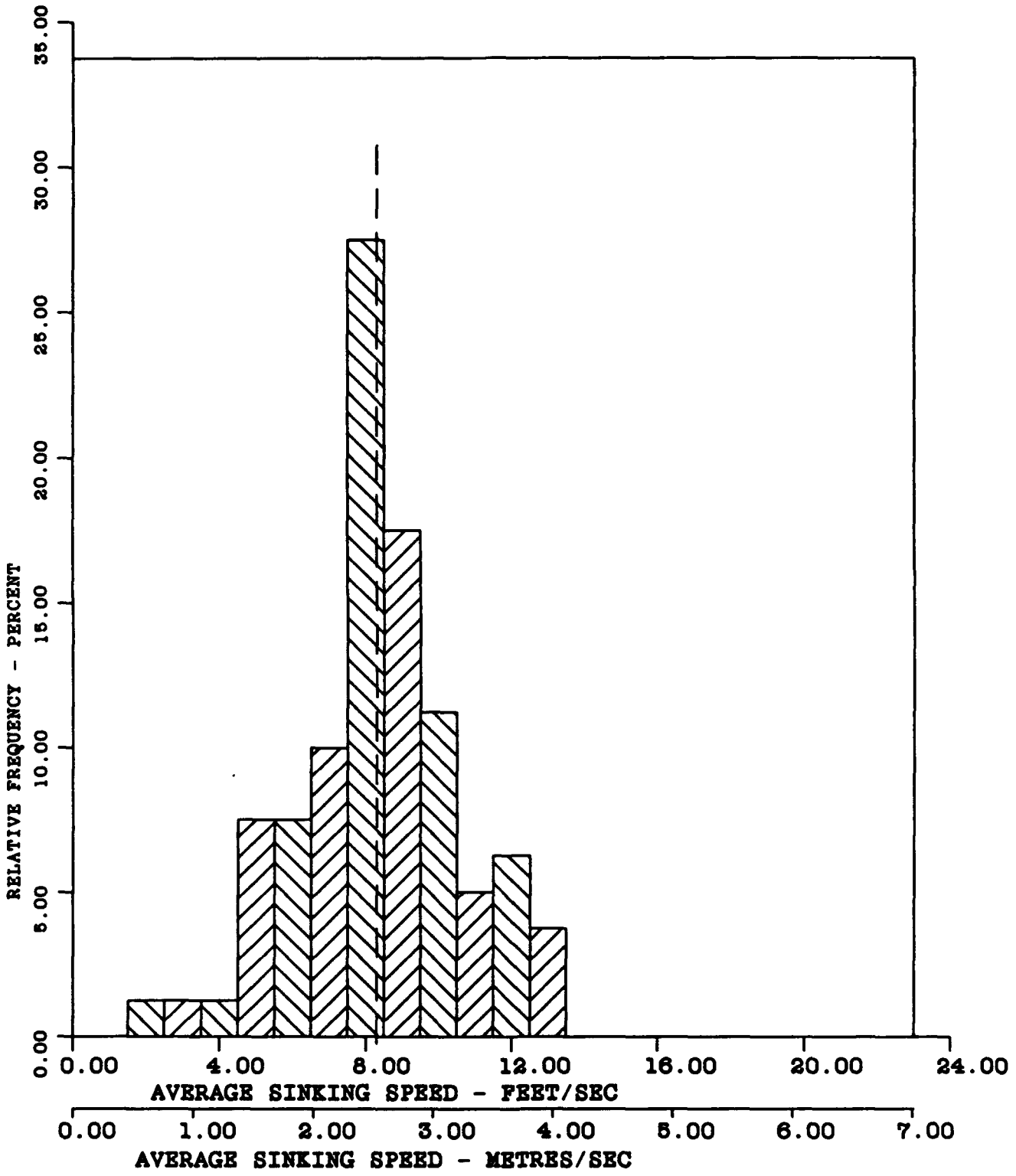


FIGURE M-11 FREQUENCY DISTRIBUTION OF AVG SINKING SPEED OF MAIN WHEEL AT FIRST MAIN WHEEL TOUCHDOWN

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-80 $\bar{X}$-8.30 FEET/SEC (2.53 METRES/SEC) A3=-0.20
S= 2.18 FEET/SEC (0.66 METRES/SEC) A4=3.20
CURVE FITTED - NORMAL

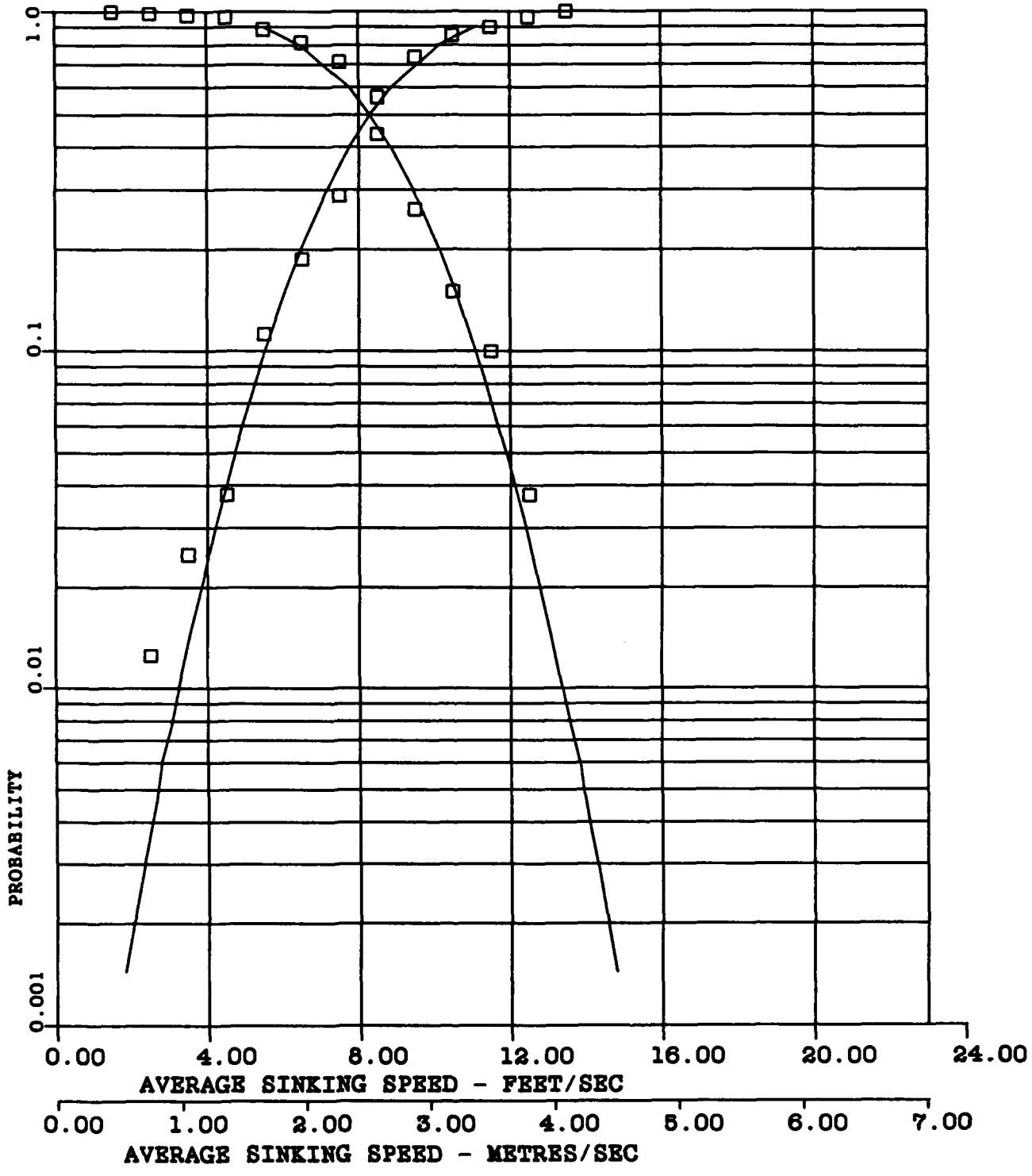


FIGURE M-12 PROBABILITY DISTRIBUTION OF AVERAGE SINKING SPEED AT FIRST MAIN WHEEL TOUCHDOWN

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-6 $\bar{X}$-9.46 FEET/SEC (2.88 METRES/SEC) A3-0.60
S- 1.24 FEET/SEC (0.38 METRES/SEC) A4-2.13

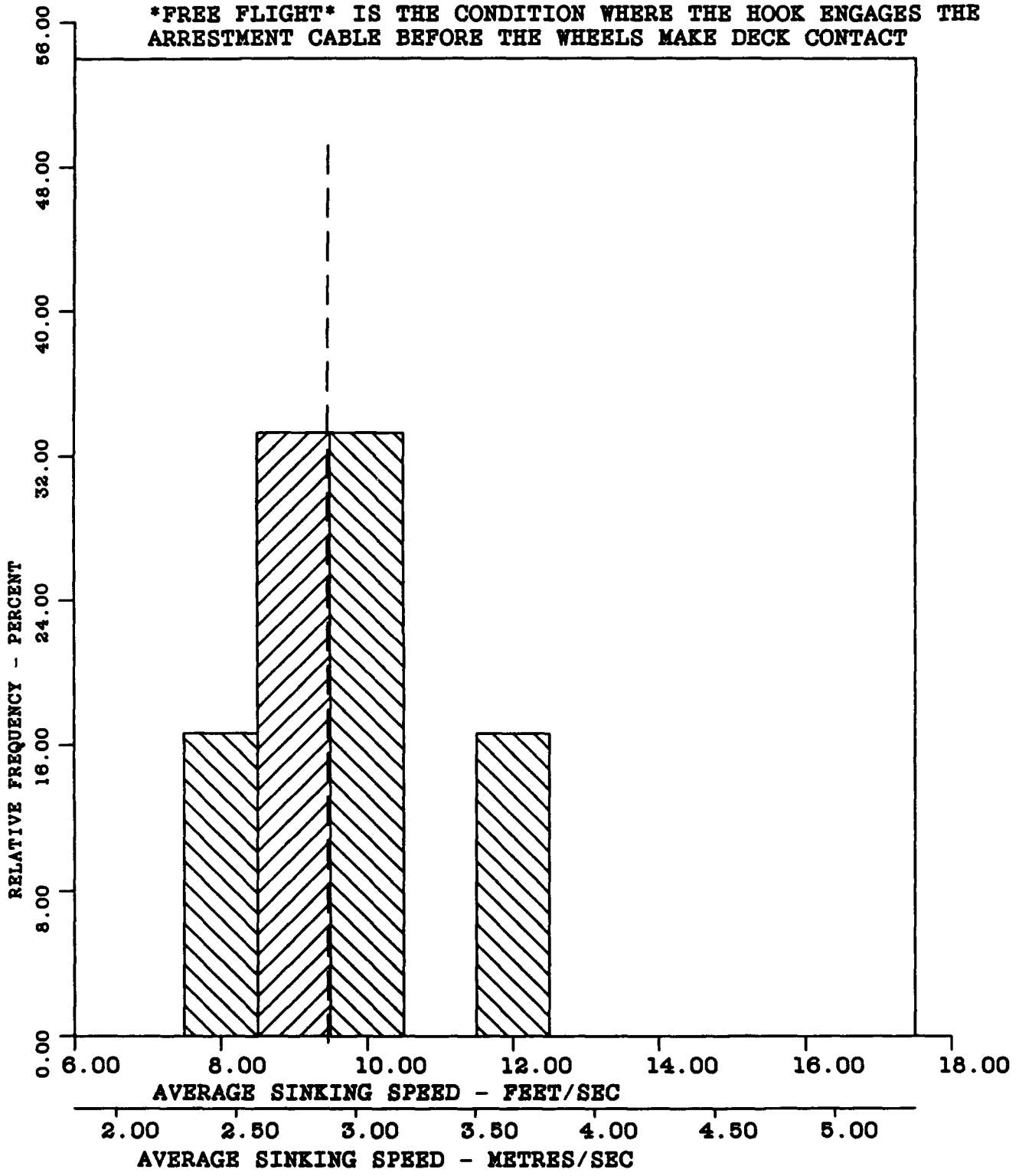


FIGURE M-13 FREQUENCY DISTRIBUTION OF AVERAGE SINKING SPEED OF MAIN WHEELS AT FREE FLIGHT

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-6 $\bar{X}$-9.46 FEET/SEC (2.88 METRES/SEC) A3-0.60
S- 1.24 FEET/SEC (0.38 METRES/SEC) A4-2.13
CURVE FITTED - NORMAL
FREE FLIGHT IS THE CONDITION WHERE THE HOOK ENGAGES THE ARRESTMENT CABLE BEFORE THE WHEELS MAKE DECK CONTACT

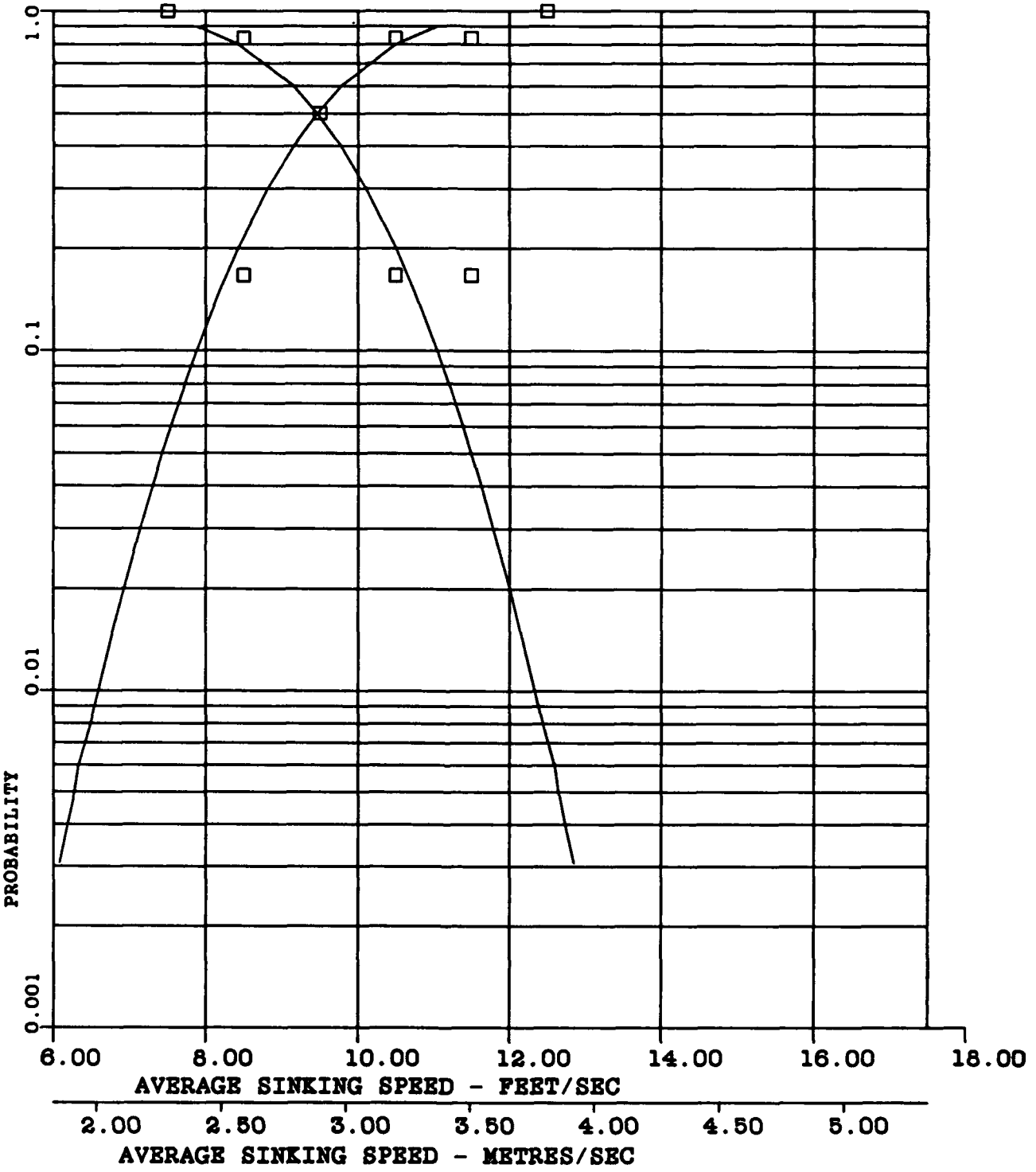


FIGURE M-14 PROBABILITY DISTRIBUTION OF AVERAGE SINKING SPEED AT FREE FLIGHT

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-80 $\bar{X}$-1.02 A3-0.63
S- 0.12 A4-2.83

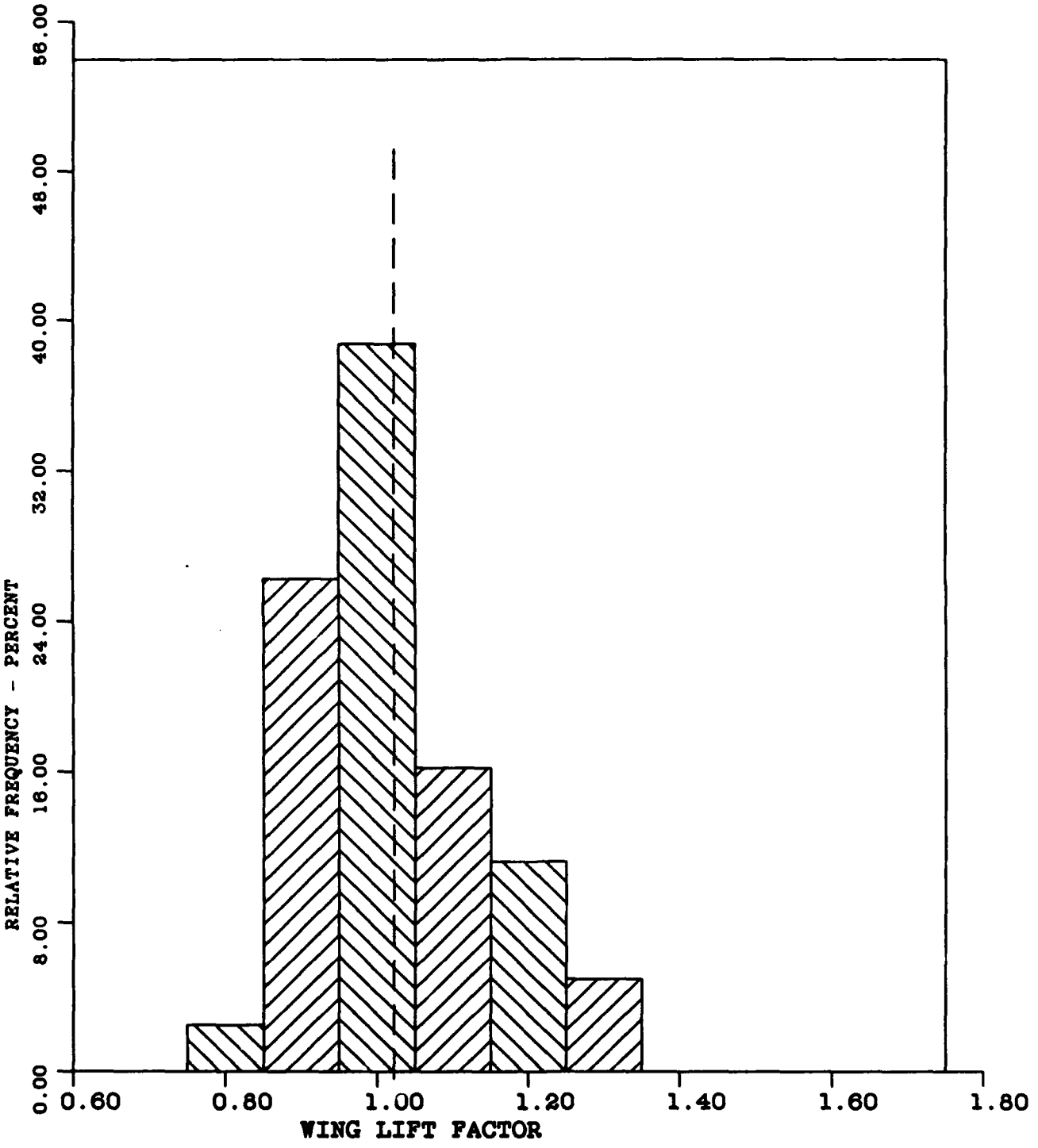


FIGURE M-15 FREQUENCY DISTRIBUTION OF WING LIFT FACTOR AT FIRST MAIN WHEEL TOUCHDOWN

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-80 $\bar{X}$-1.02 A3-0.63
S- 0.12 A4-2.83
CURVE FITTED - PEARSON TYPE III

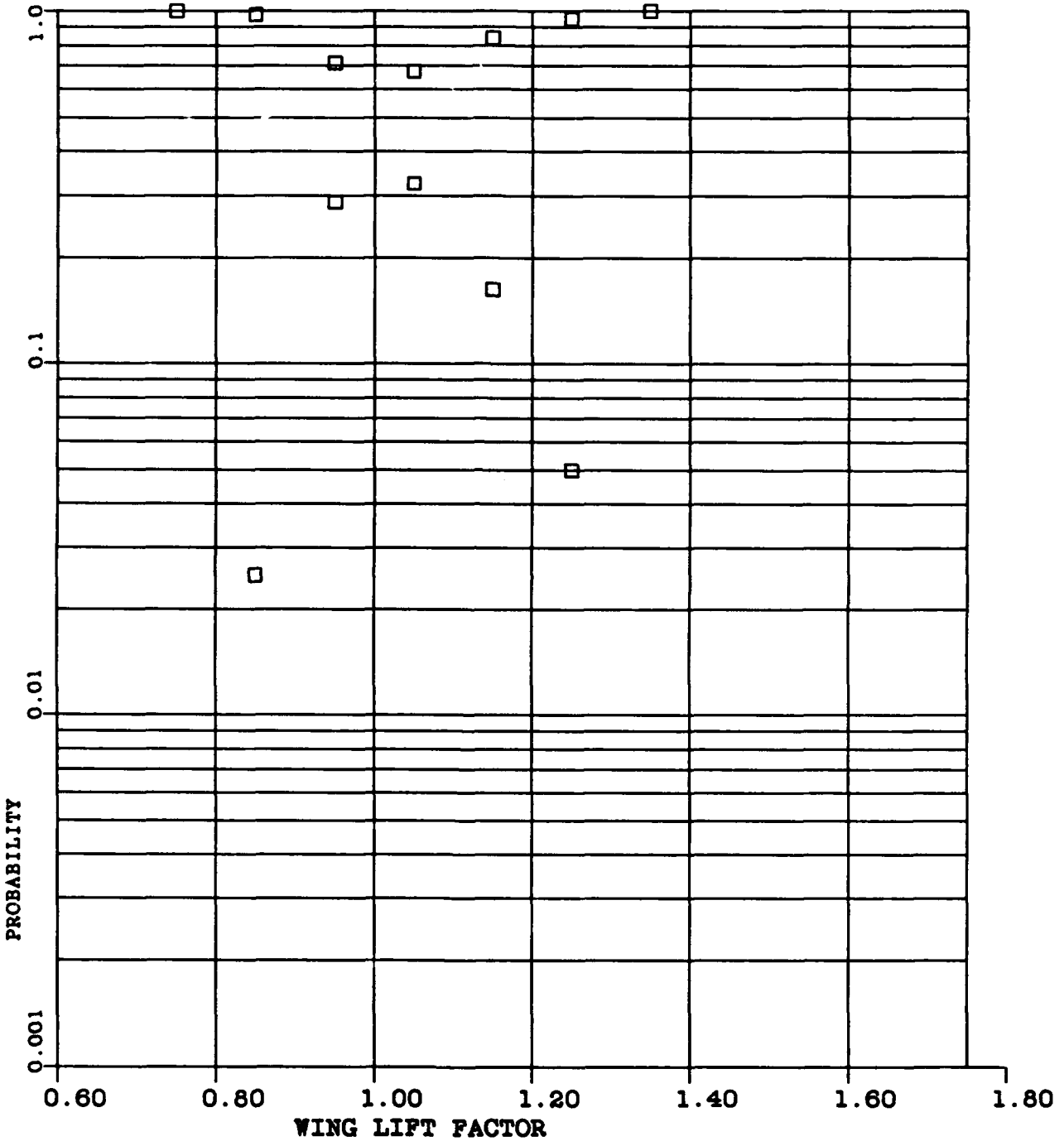


FIGURE M-16 PROBABILITY DISTRIBUTION OF WING LIFT FACTOR AT FIRST MAIN WHEEL TOUCHDOWN

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (0.061 RADIANS)
N=6 $\bar{X}$=1.08 A3=0.53
S= 0.16 A4=1.55

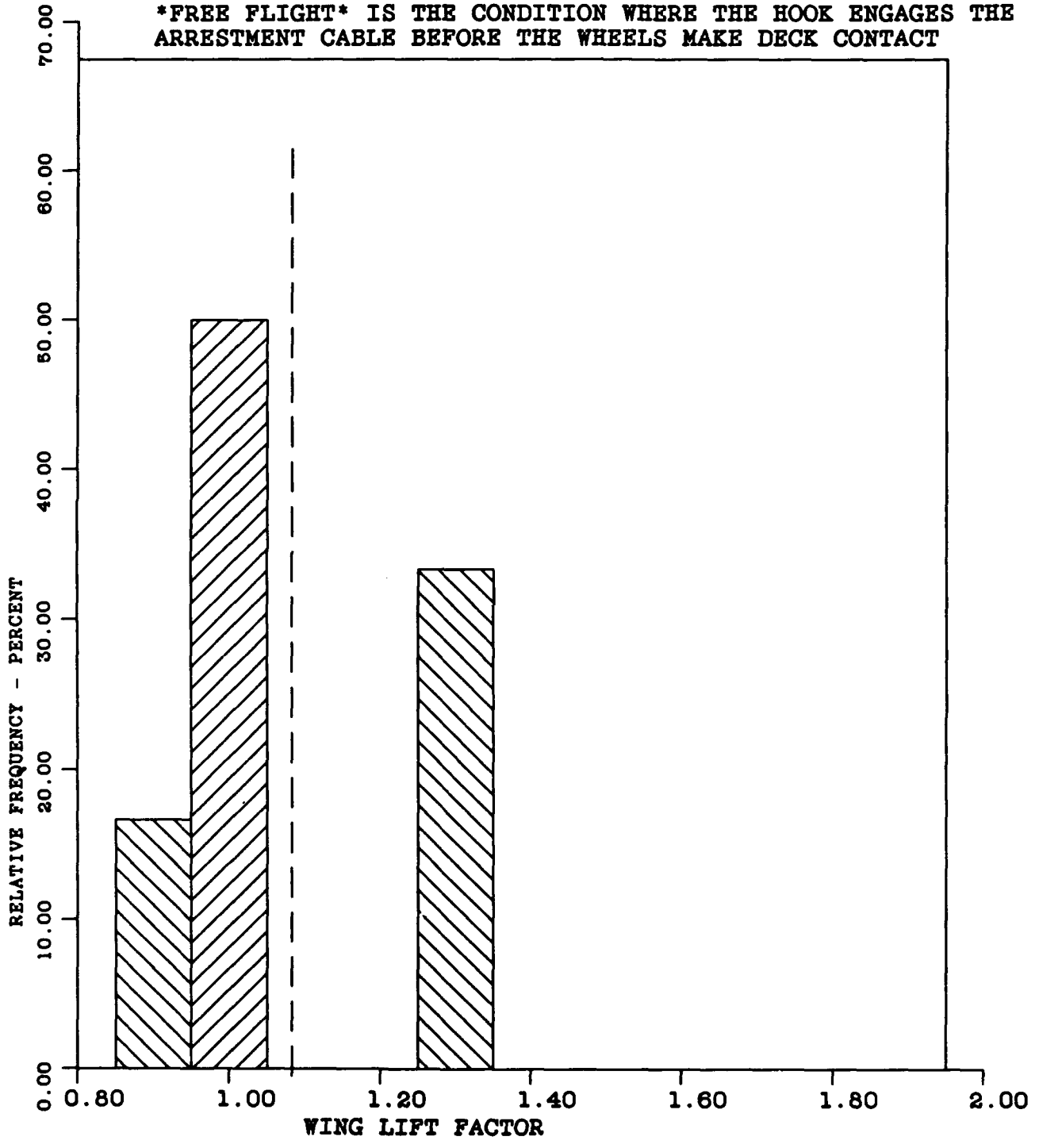


FIGURE M-17 FREQUENCY DISTRIBUTION OF WING LIFT FACTOR AT FREE FLIGHT

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-6 $\bar{X}$-1.08 A3-0.53
S= 0.16 A4-1.55
CURVE FITTED - NORMAL
FREE FLIGHT IS THE CONDITION WHERE THE HOOK ENGAGES THE ARRESTMENT CABLE BEFORE THE WHEELS MAKE DECK CONTACT

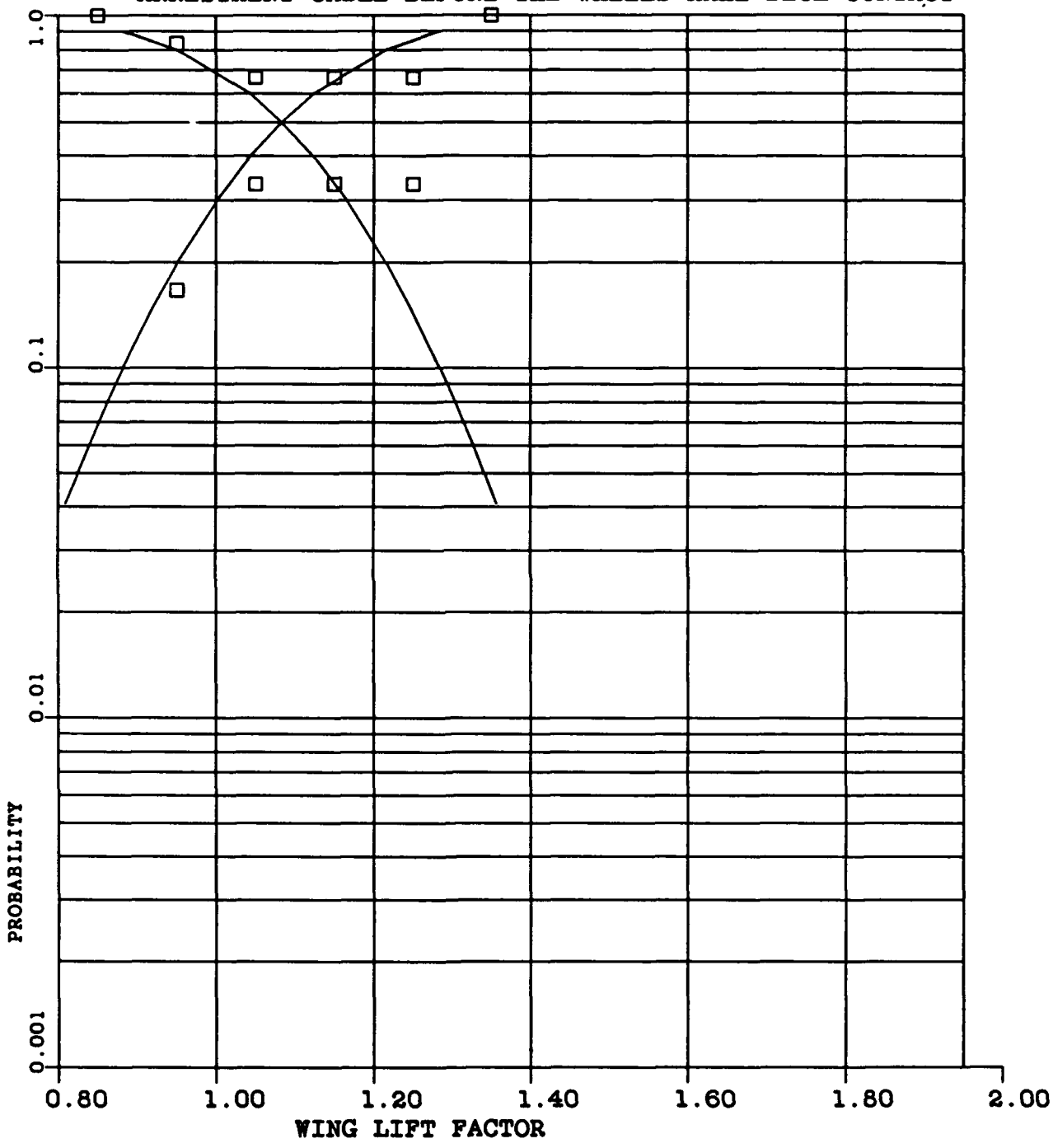


FIGURE M-18 PROBABILITY DISTRIBUTION OF WING LIFT FACTOR AT FREE FLIGHT

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (0.061 RADIANS)
N=80 $\bar{X}$=7.56 DEGREES (0.132 RADIANS) A3=0.14
S= 1.14 DEGREES (0.020 RADIANS) A4=2.45

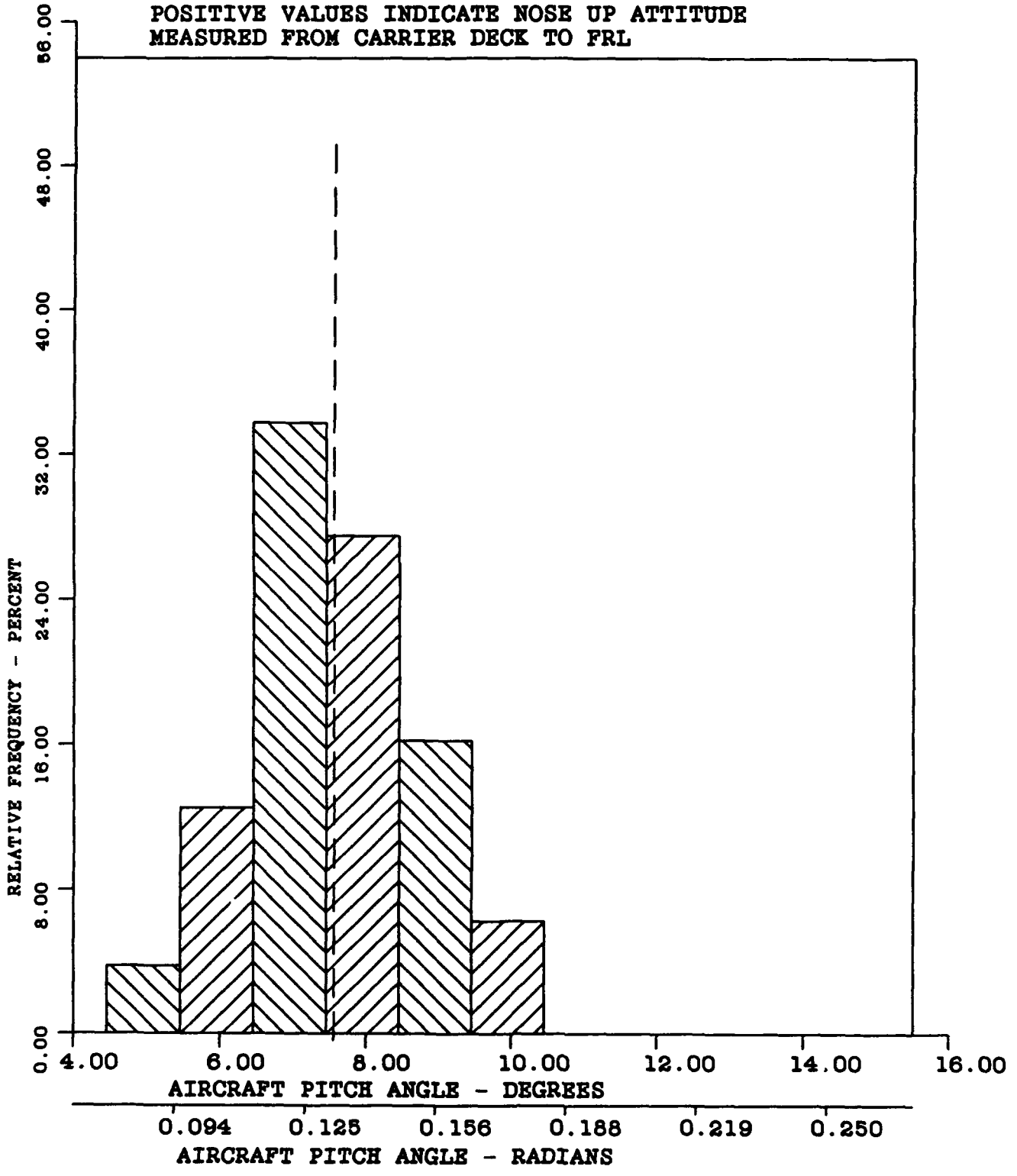


FIGURE M-19 FREQUENCY DISTRIBUTION OF AIRCRAFT PITCH ANGLE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-80 $\bar{X}$-7.56 DEGREES (0.132 RADIANS) A3-0.14
S- 1.14 DEGREES (0.020 RADIANS) A4-2.45
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE NOSE UP ATTITUDE
MEASURED FROM CARRIER DECK TO FRL

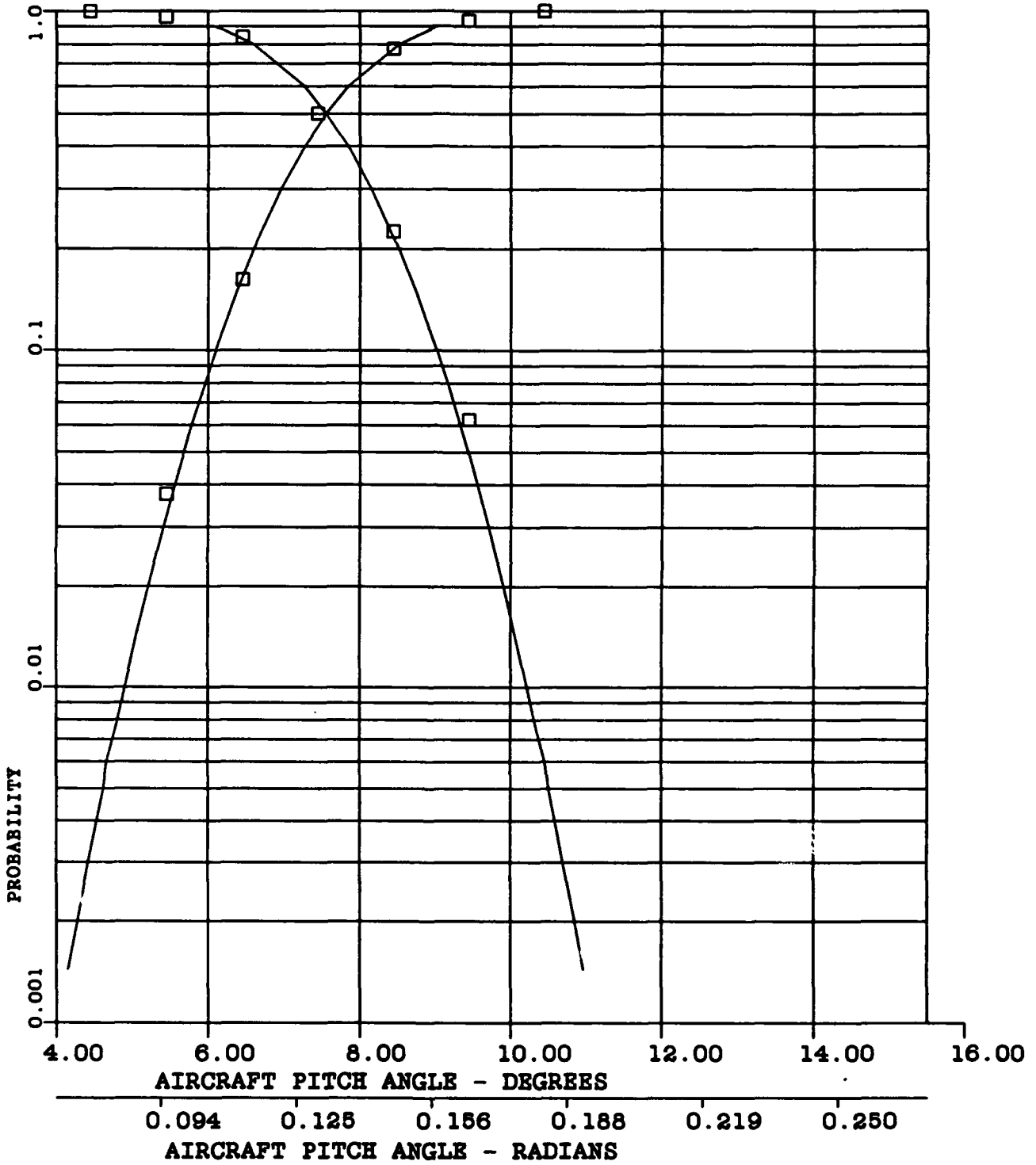


FIGURE M-20 PROBABILITY DISTRIBUTION OF AIRCRAFT PITCH ANGLE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-6 $\bar{X}$-8.57 DEGREES (0.149 RADIANS) A3=-0.06
S= 0.79 DEGREES (0.014 RADIANS) A4=1.93

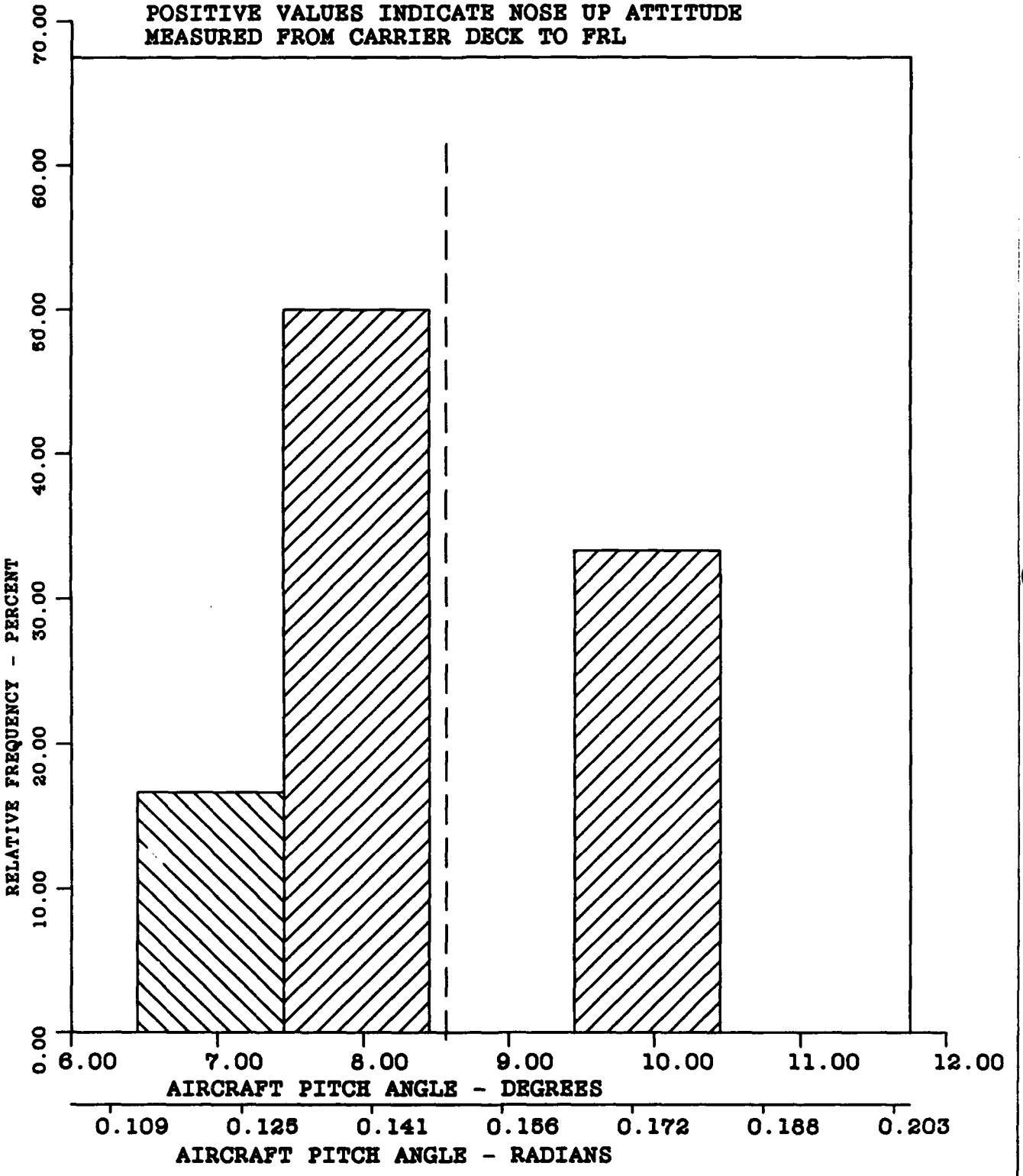


FIGURE M-21 FREQUENCY DISTRIBUTION OF AIRCRAFT PITCH ANGLE AT FREE FLIGHT

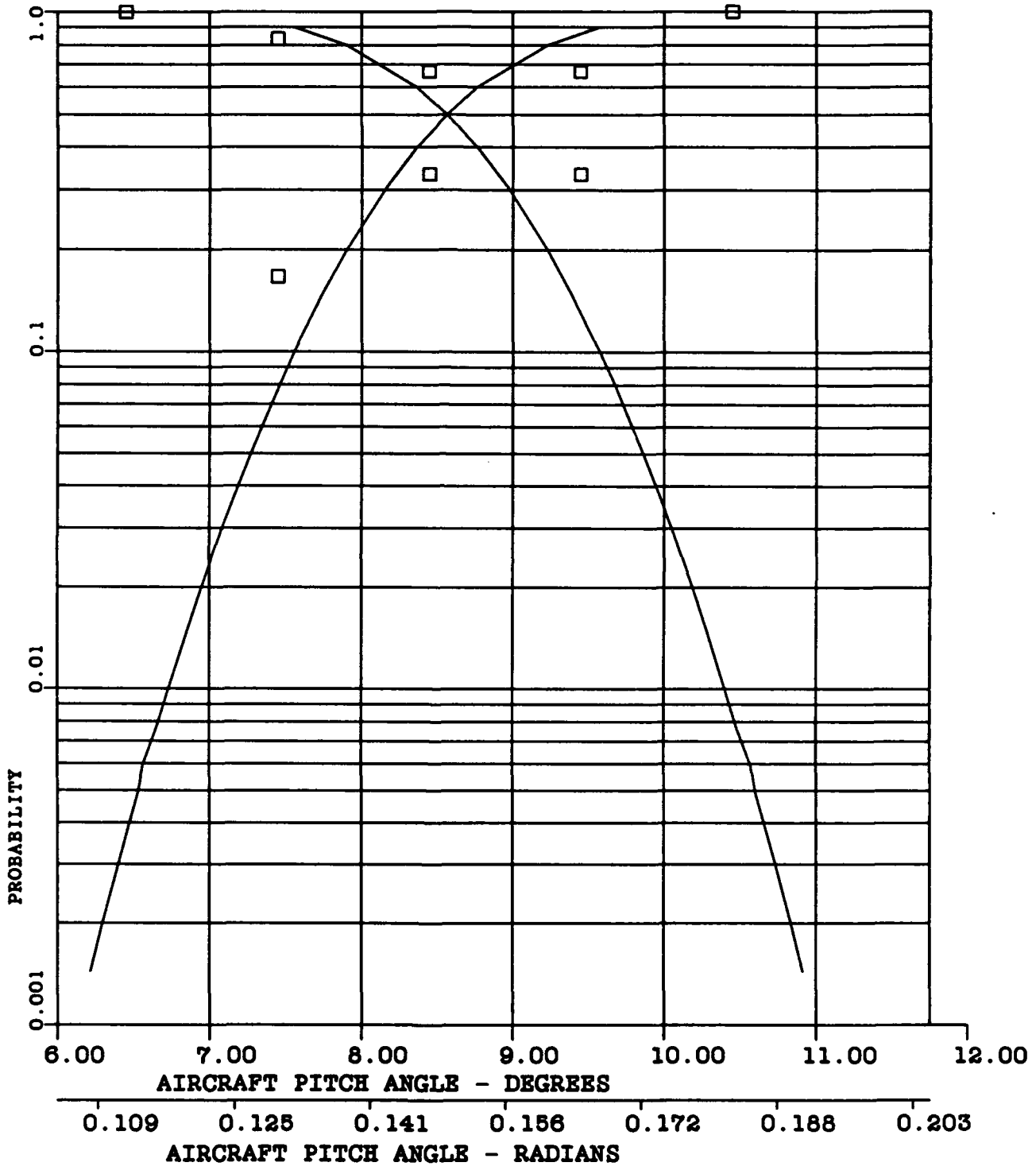


FIGURE M-22 PROBABILITY DISTRIBUTION OF AIRCRAFT PITCH ANGLE AT FREE FLIGHT

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (0.061 RADIANS)
N=80 $\bar{X}$=1.18 DEGREES (0.021 RADIANS) A3=1.03
S= 3.06 DEGREES (0.053 RADIANS) A4=5.05

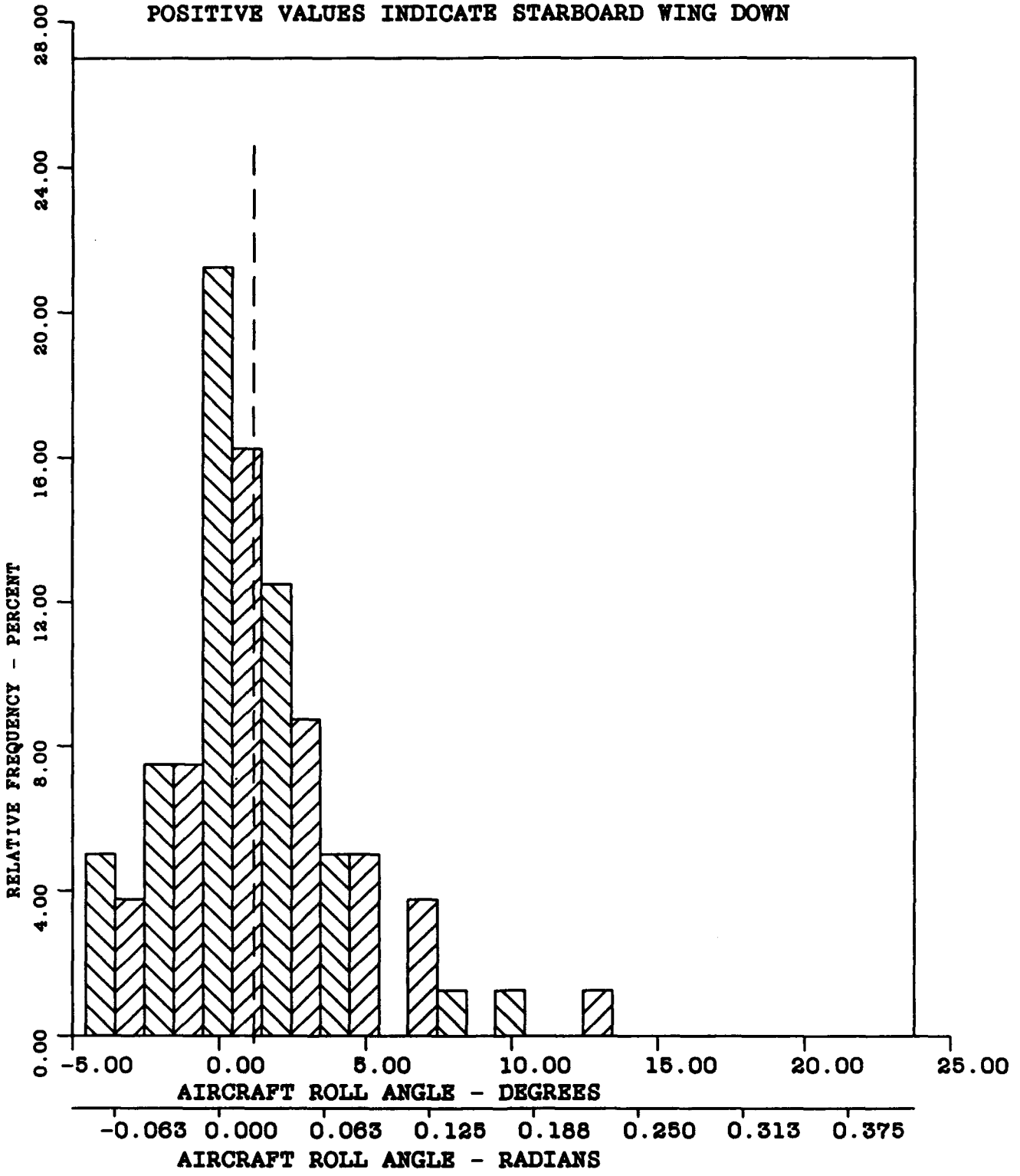


FIGURE M-23 FREQUENCY DISTRIBUTION OF AIRCRAFT ROLL ANGLE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (0.061 RADIANS)
N=80 $\bar{X}$=1.18 DEGREES (0.021 RADIANS) A3=1.03
S= 3.06 DEGREES (0.053 RADIANS) A4=5.05
CURVE FITTED - PEARSON TYPE III
POSITIVE VALUES INDICATE STARBOARD WING DOWN

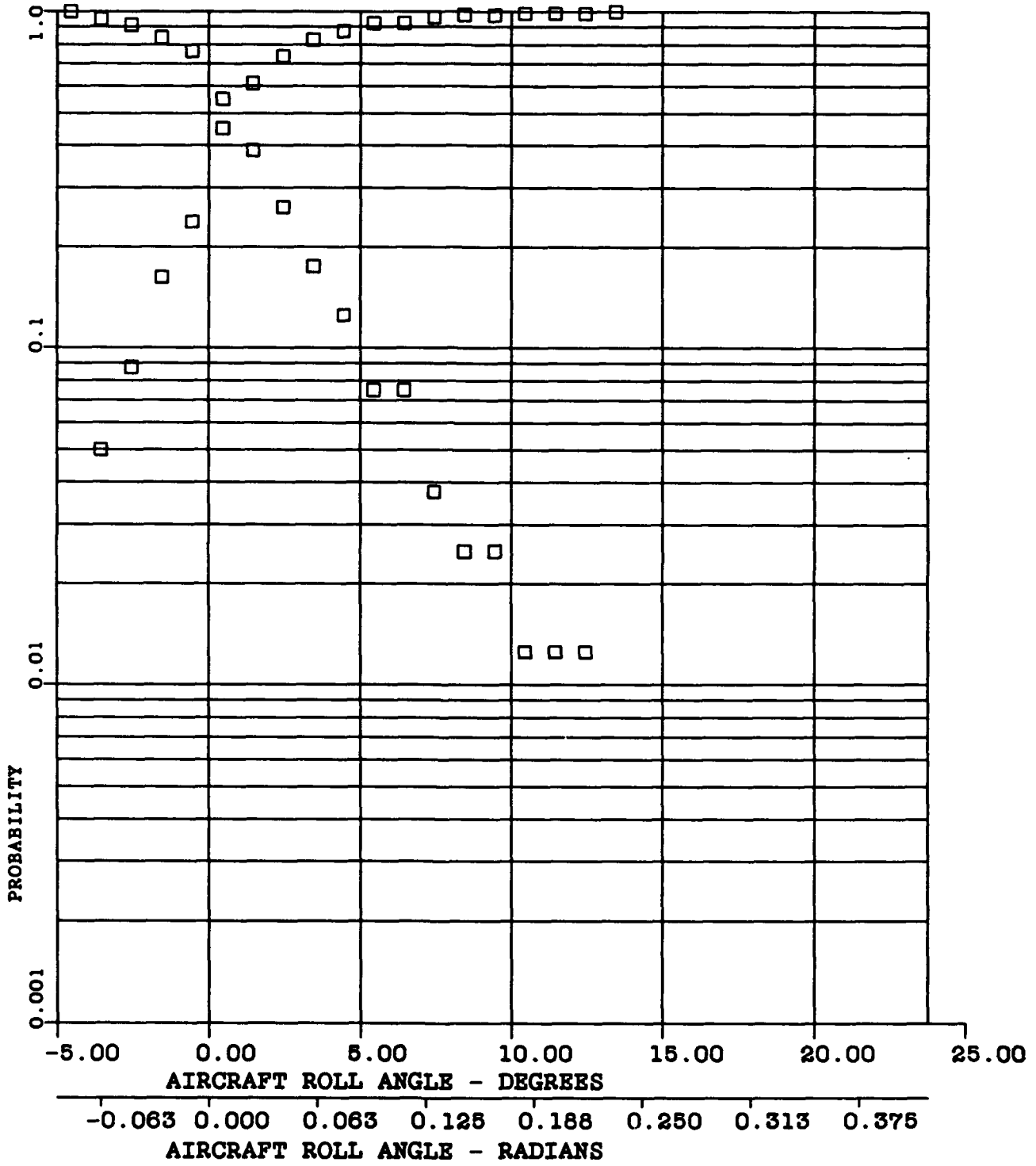


FIGURE M-24 PROBABILITY DISTRIBUTION OF AIRCRAFT ROLL ANGLE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (0.061 RADIANS)
N=6 $\bar{X}$=0.45 DEGREES (0.008 RADIANS) A3=0.94
S= 0.98 DEGREES (0.017 RADIANS) A4=3.08

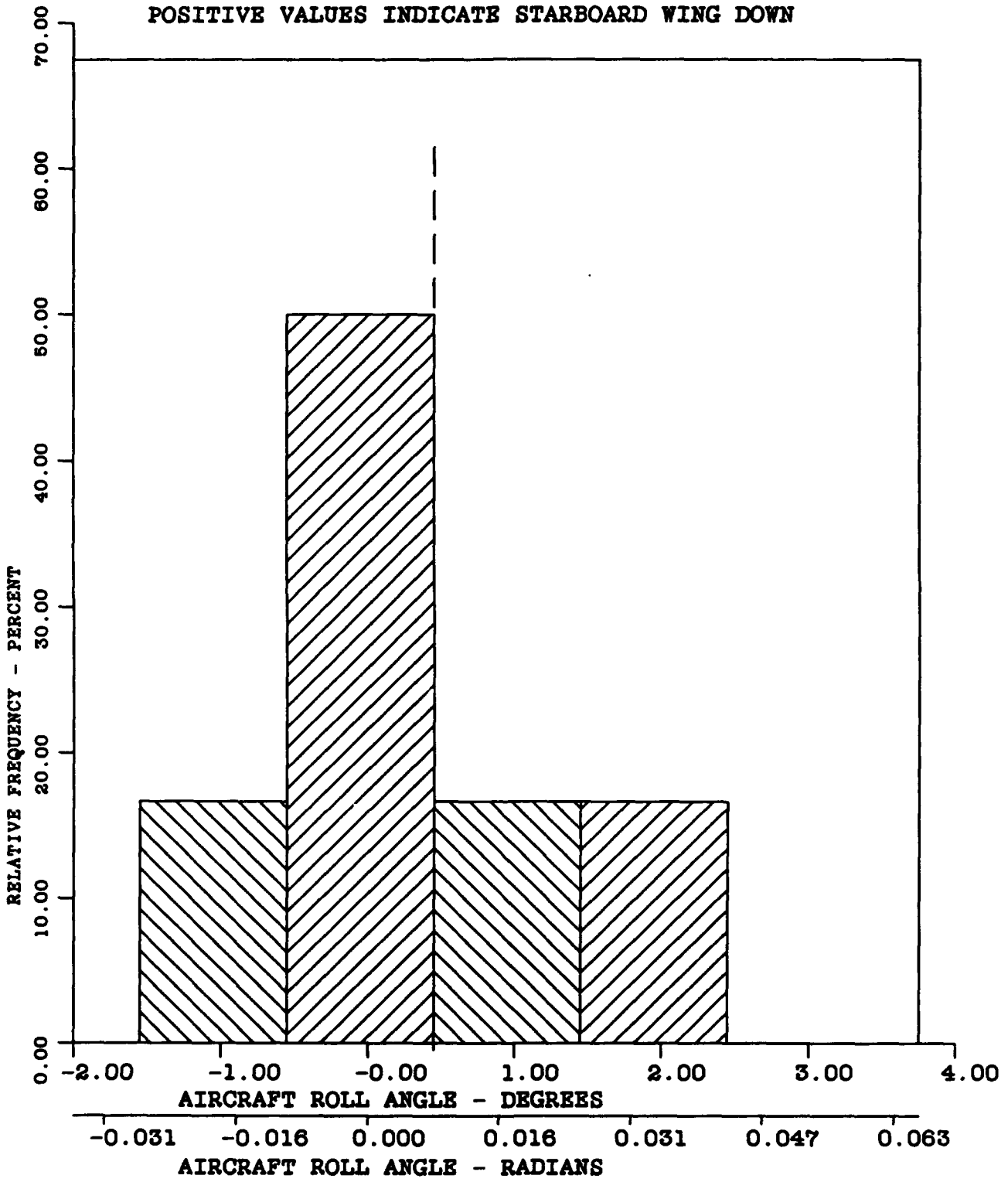


FIGURE M-25 FREQUENCY DISTRIBUTION OF AIRCRAFT ROLL ANGLE AT FREE FLIGHT

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N=6 $\bar{X}$=0.45 DEGREES (0.008 RADIANS) A3=0.94
S= 0.98 DEGREES (0.017 RADIANS) A4=3.08
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE STARBOARD WING DOWN

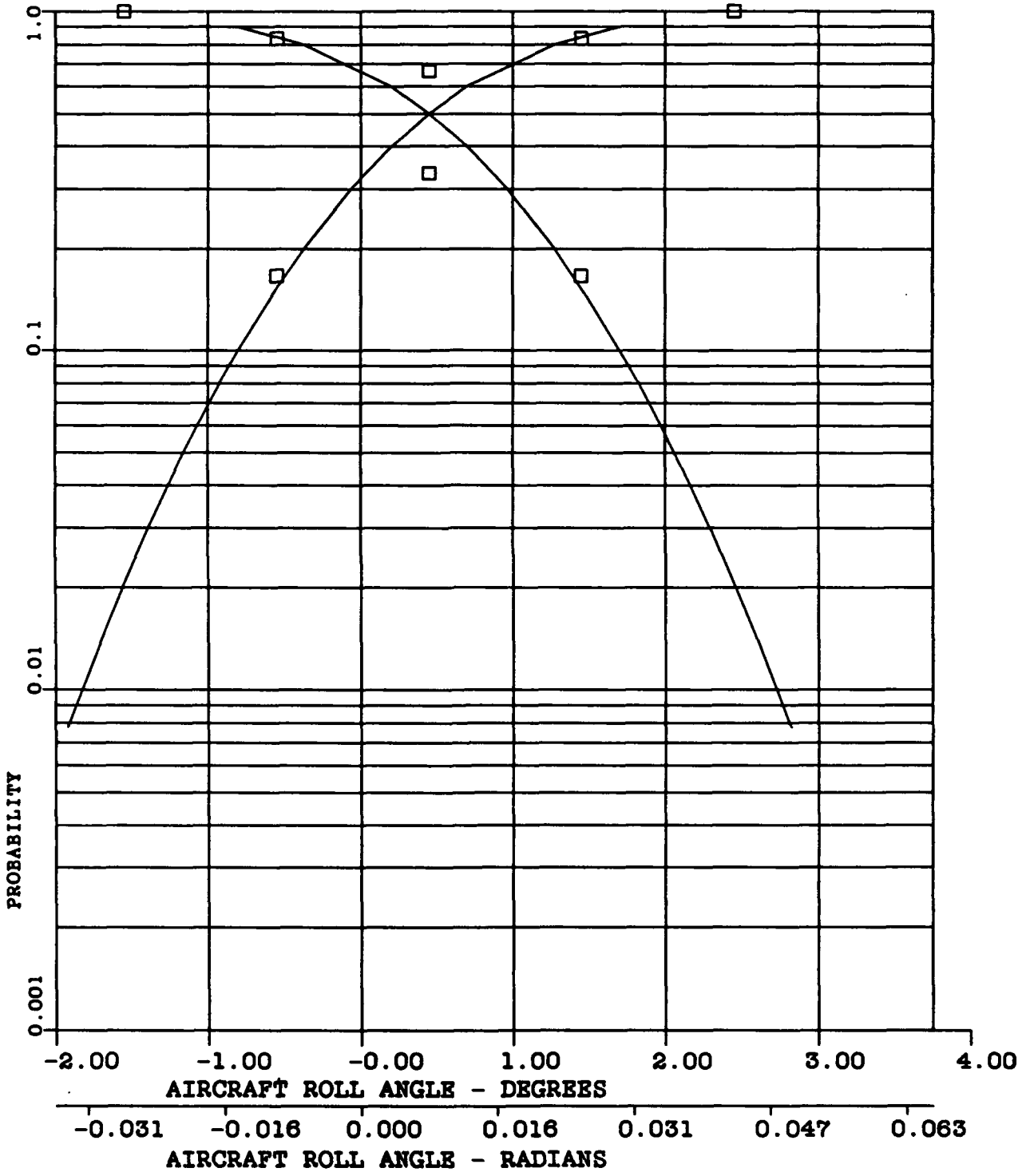


FIGURE M-26 PROBABILITY DISTRIBUTION OF AIRCRAFT ROLL ANGLE AT FREE FLIGHT

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-80 $\bar{X}$-269.56 FEET (82.16 METRES) A3=-0.63
S= 41.61 FEET (12.68 METRES) A4=3.07

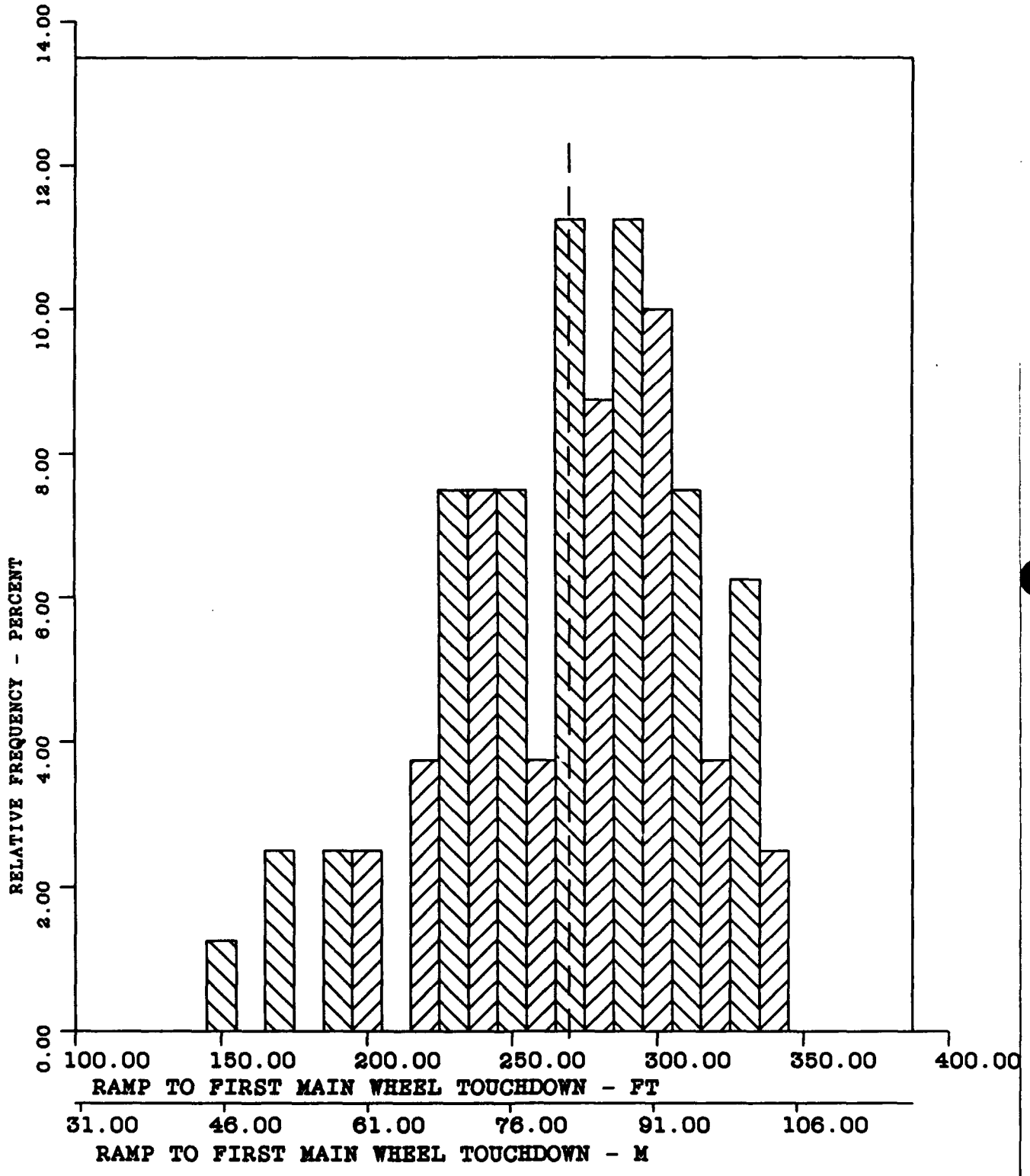


FIGURE M-27 FREQUENCY DISTRIBUTION OF DISTANCE FROM RAMP TO FIRST MAIN WHEEL TOUCHDOWN POINT

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-80 $\bar{X}$-269.56 FEET (82.16 METRES) A3=-0.63
S= 41.61 FEET (12.68 METRES) A4=3.07
CURVE FITTED - PEARSON TYPE III

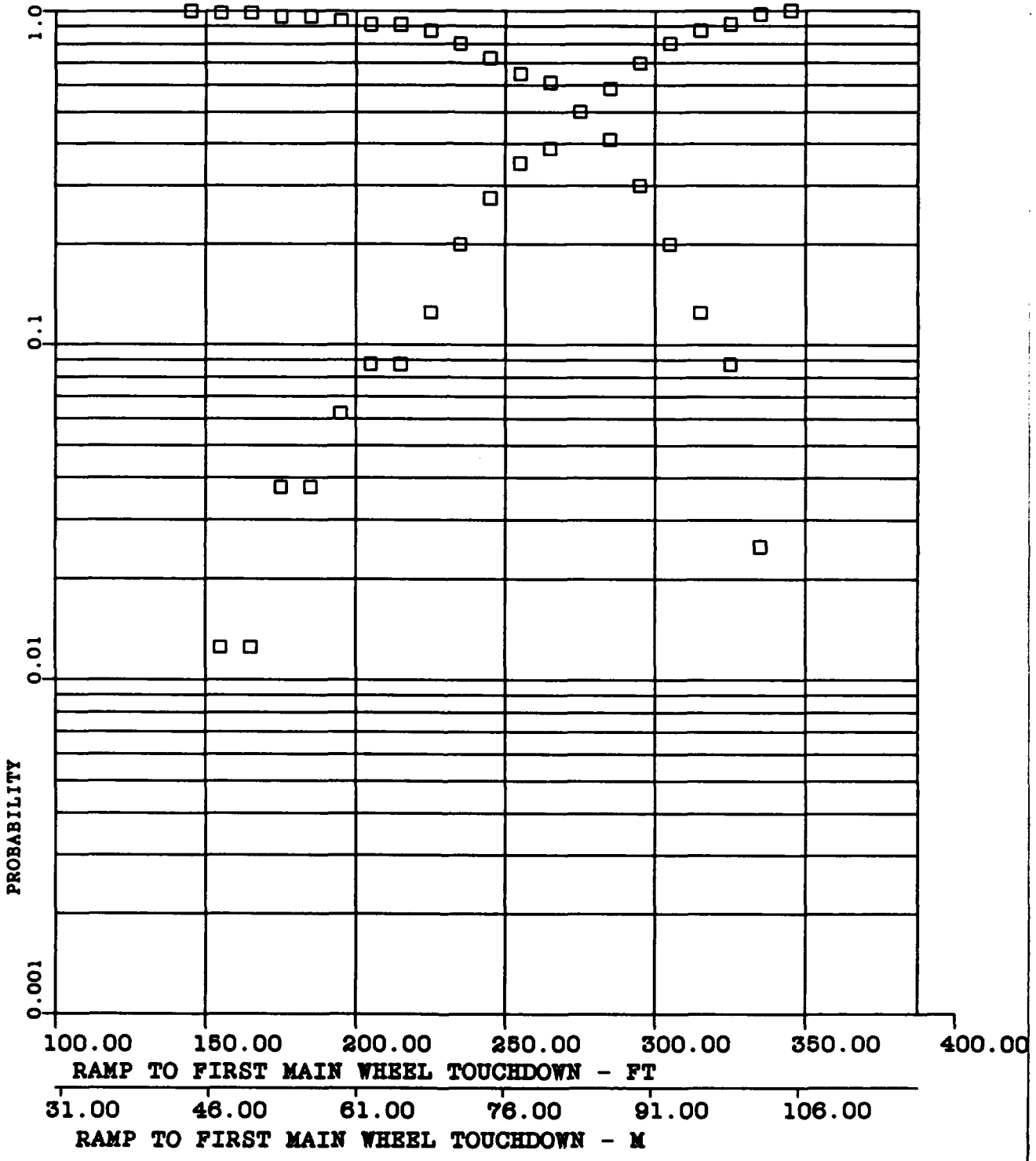


FIGURE M-28 PROBABILITY DISTRIBUTION OF DISTANCE FROM RAMP TO FIRST MAIN WHEEL TOUCHDOWN POINT

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (0.061 RADIANS)
N=80 $\bar{X}$=-11.93 FEET (-3.63 METRES) A3=0.73
S= 4.20 FEET (1.28 METRES) A4=4.20

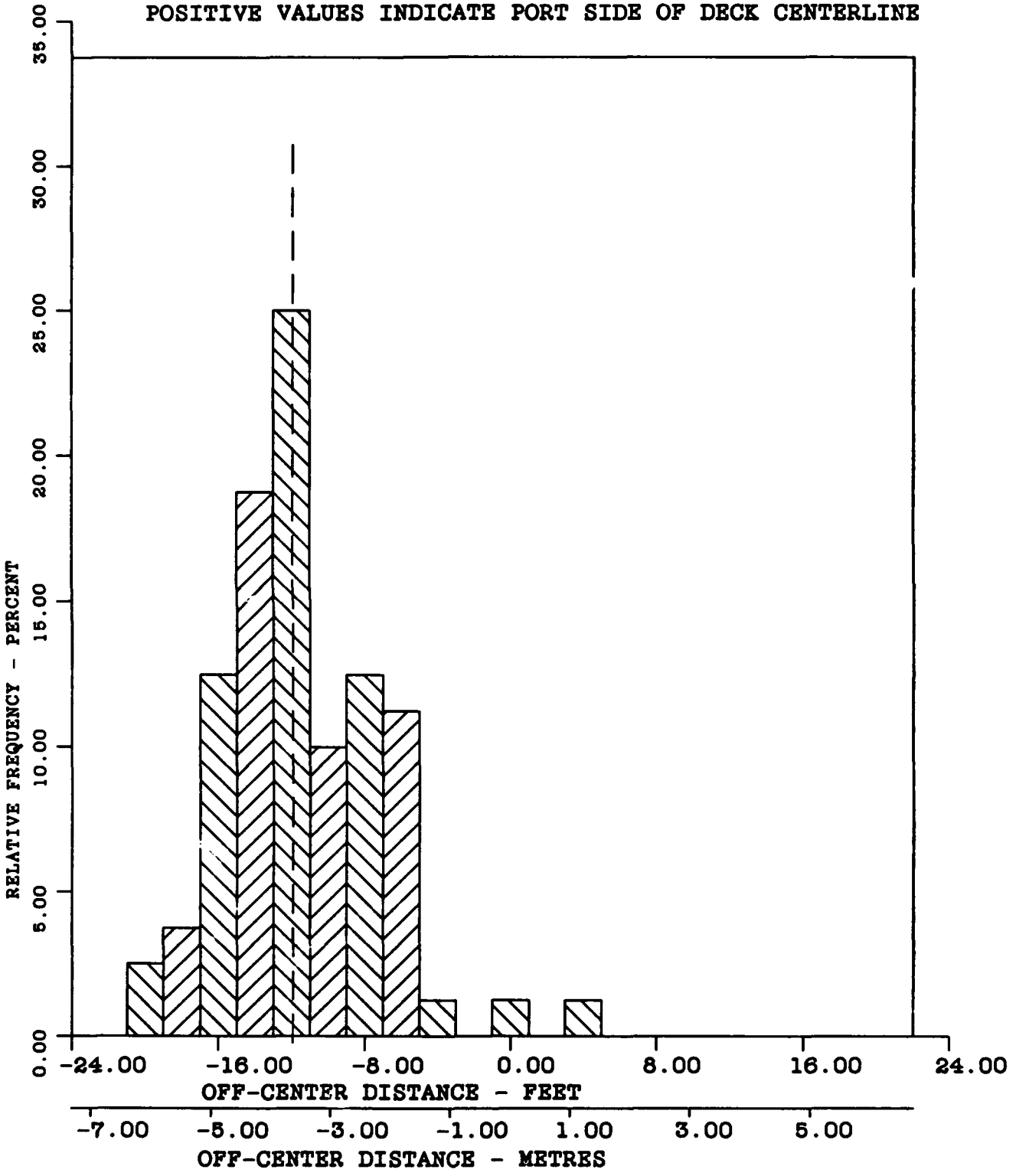


FIGURE M-28 FREQUENCY DISTRIBUTION OF AIRCRAFT CENTERLINE OFF-CNTR DISTANCE AT 1ST MAIN WHEEL TOUCHDOWN

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-80 $\bar{X}$=-11.93 FEET (-3.63 METRES) A3-0.73
S= 4.20 FEET (1.28 METRES) A4-4.20
CURVE FITTED - PEARSON TYPE III
POSITIVE VALUES INDICATE PORT SIDE OF DECK CENTERLINE

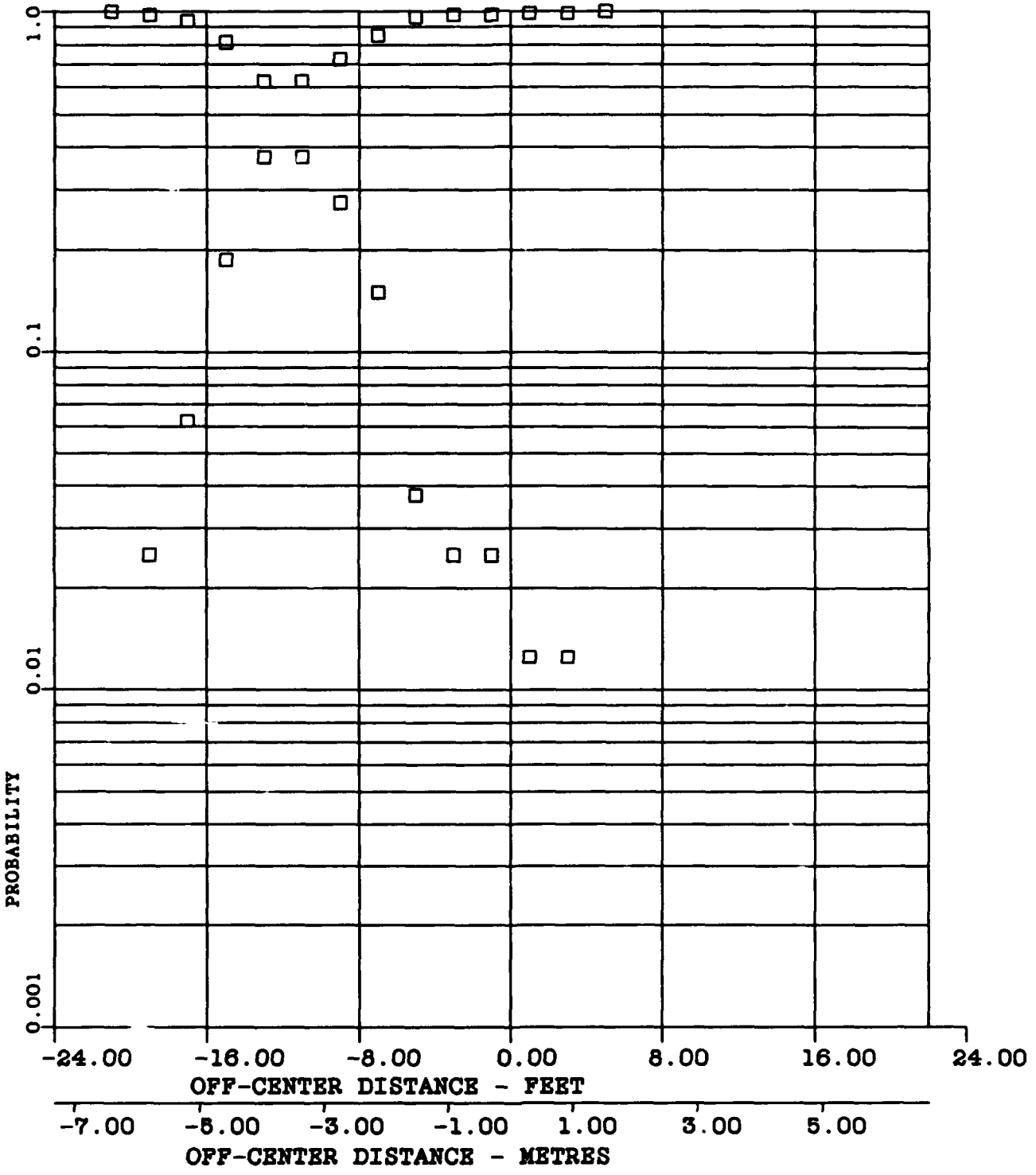


FIGURE M-29 PROBABILITY DISTRIBUTION OF AIRCRAFT OFF-CENTER DISTANCE AT 1ST MAIN WHEEL TOUCHDOWN

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N=71 $\bar{X}$=3.11 A3=-0.08
S= 0.62 A4=2.56

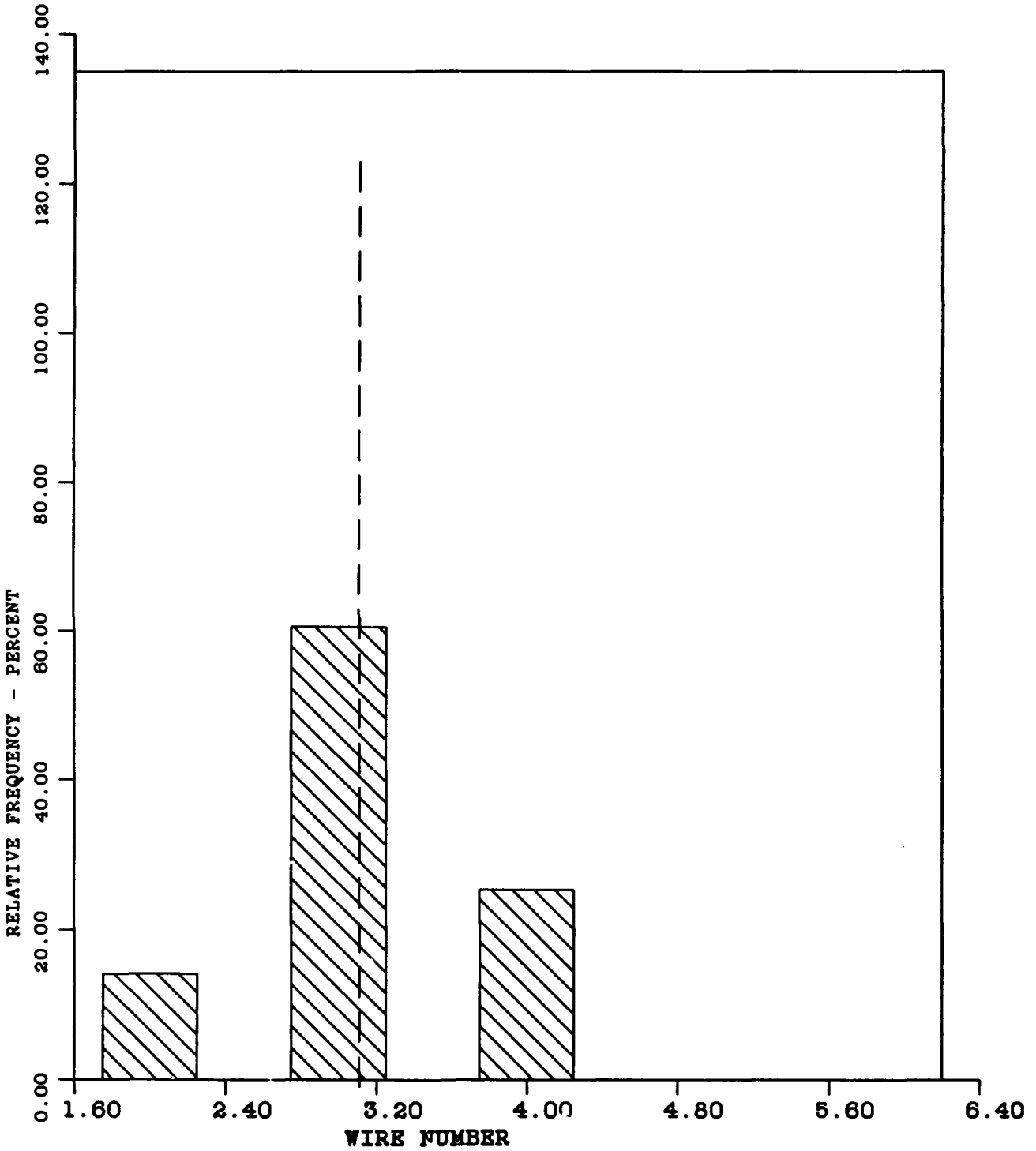


FIGURE M-30 FREQUENCY DISTRIBUTION OF ARRESTMENT WIRE NUMBER ENGAGED

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (0.061 RADIANS)
N=80 $\bar{X}$=3.19 DEGREES (0.056 RADIANS) A3=0.03
S= 0.89 DEGREES (0.016 RADIANS) A4=3.45

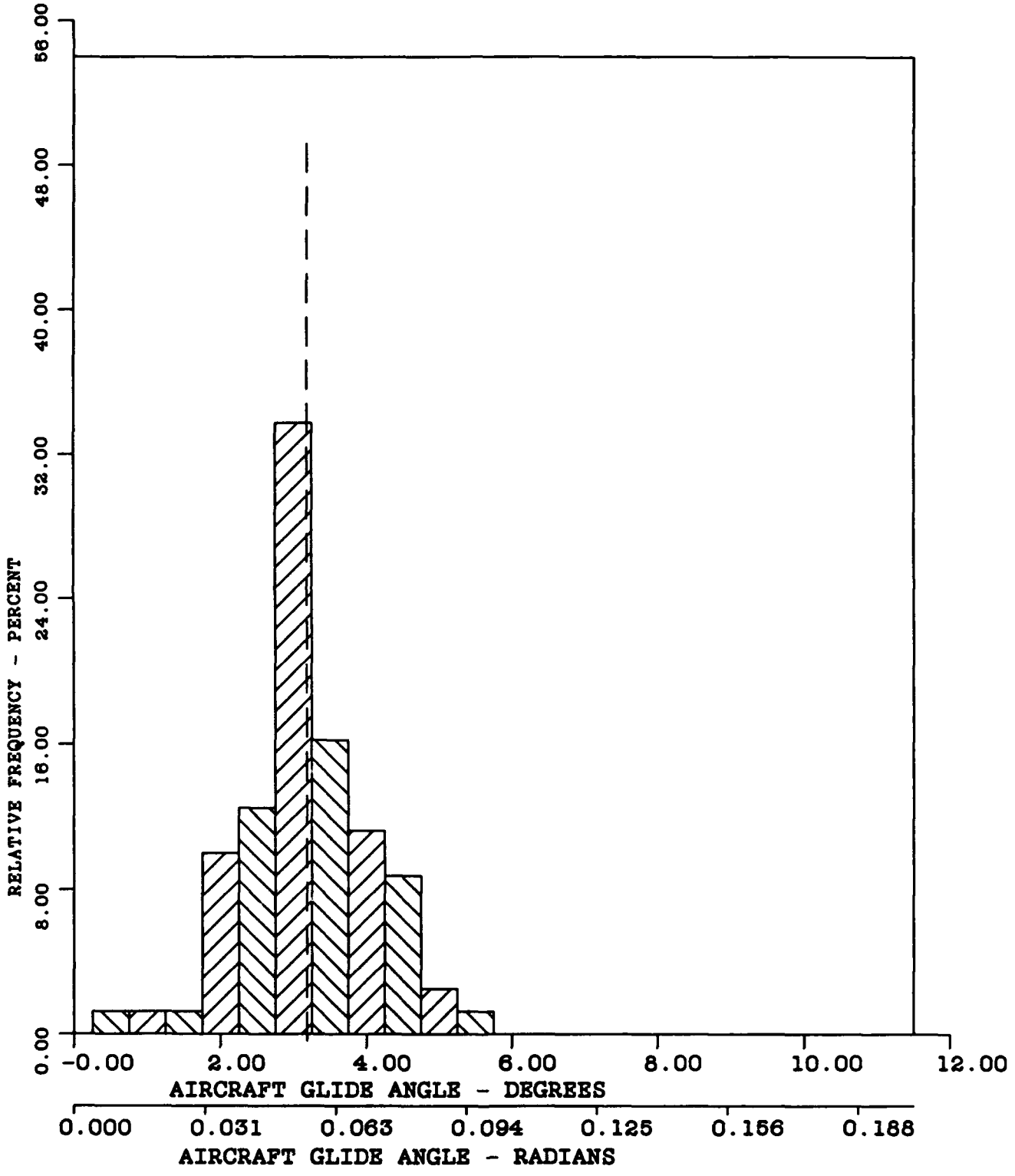


FIGURE M-31 FREQUENCY DISTRIBUTION OF AIRCRAFT GLIDE ANGLE - INSTANTANEOUS METHOD

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (0.061 RADIANS)
N=80 $\bar{X}$=84.61 KNOTS (43.52 METRES/SEC) A3=-0.06
S= 5.04 KNOTS (2.59 METRES/SEC) A4=3.72

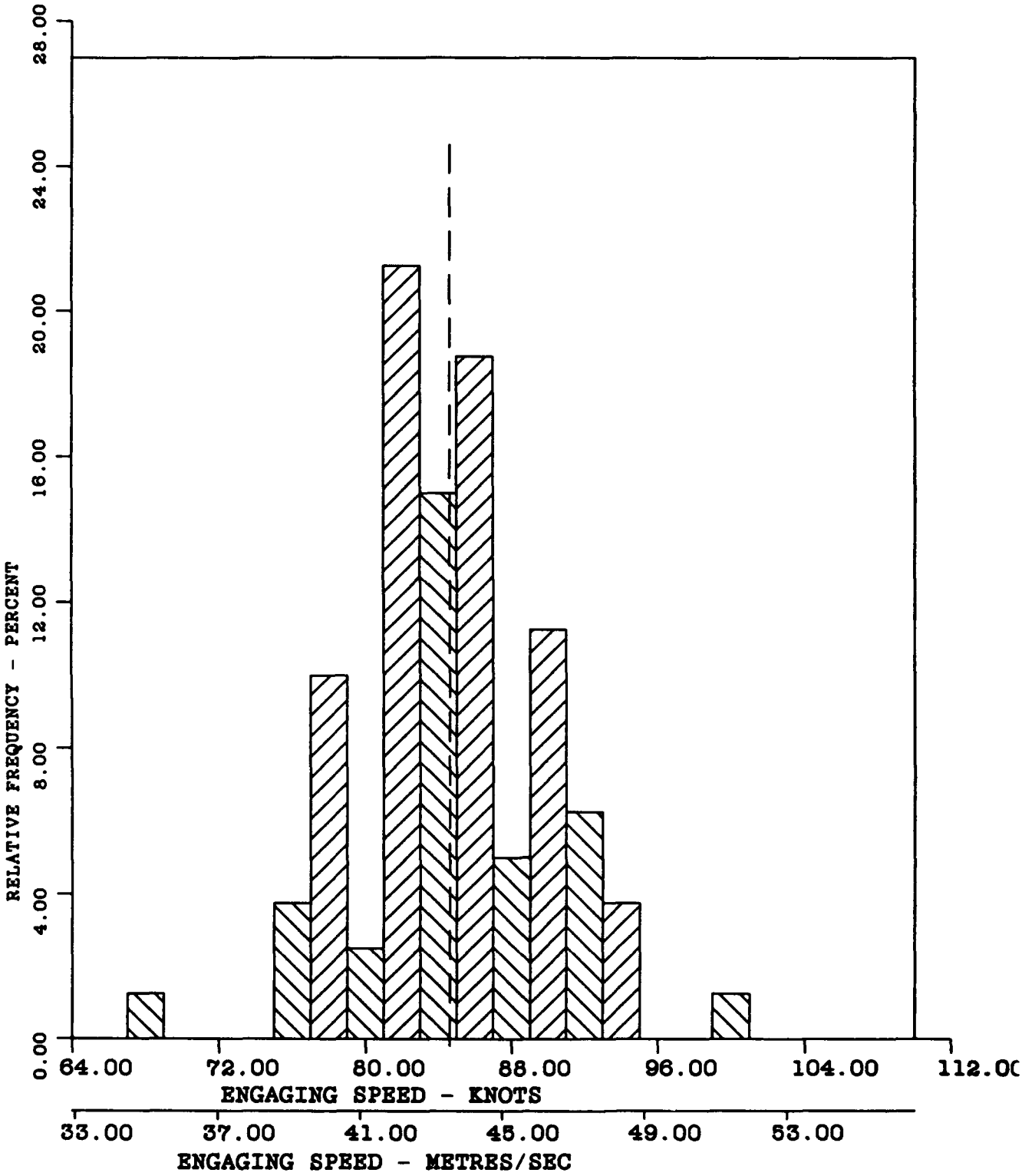


FIGURE M-32 FREQUENCY DISTRIBUTION OF AIRCRAFT ENGAGING SPEED AT FIRST MAIN WHEEL TOUCHDOWN

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-80 $\bar{X}$-84.61 KNOTS (43.52 METRES/SEC) A3=-0.06
S= 5.04 KNOTS (2.59 METRES/SEC) A4=3.72
CURVE FITTED - NORMAL

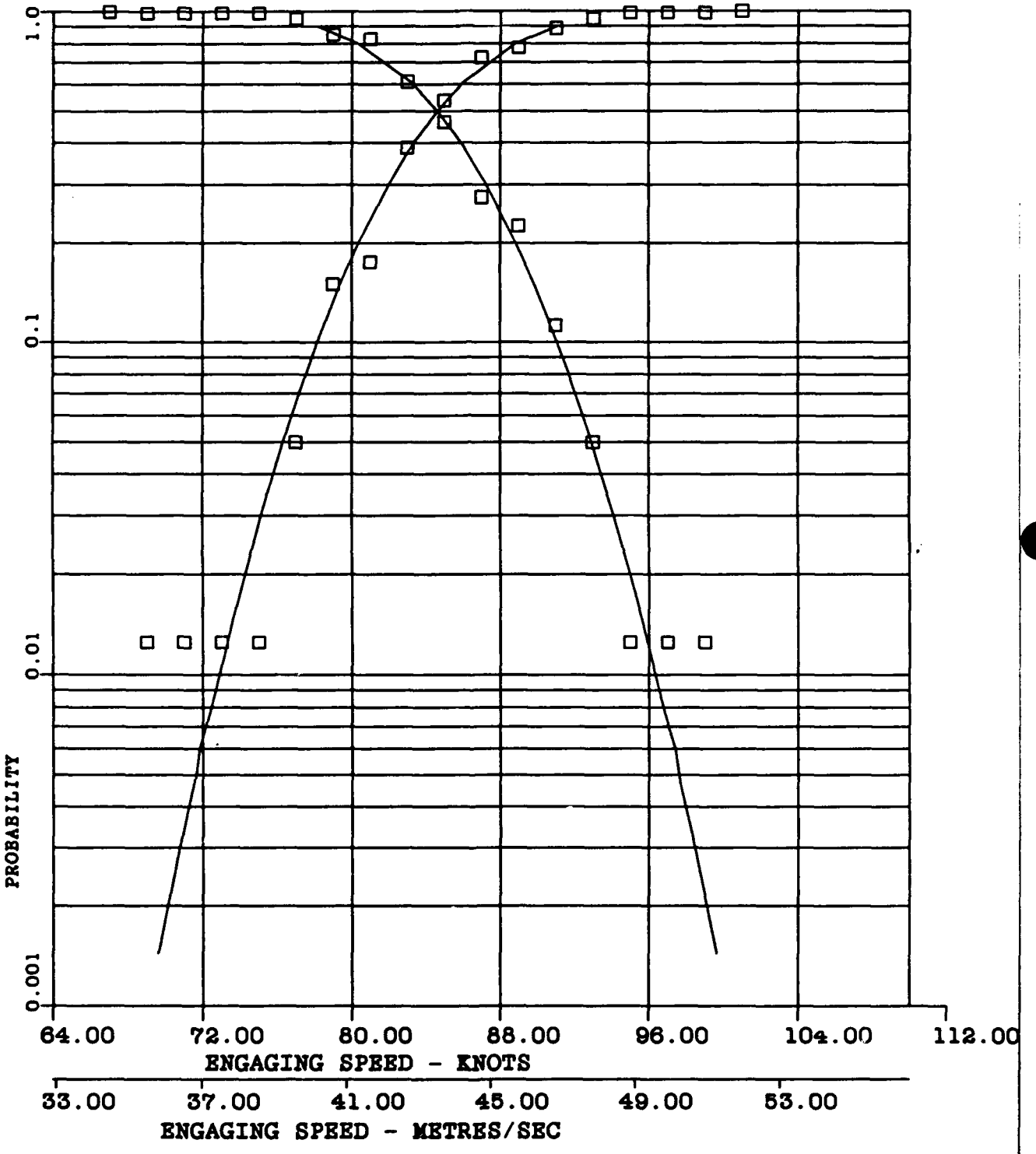


FIGURE M-33 PROBABILITY DISTRIBUTION OF ENGAGING SPEED AT FIRST MAIN WHEEL TOUCHDOWN

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N=80 $\bar{X}$=85.91 KNOTS (44.19 METRES/SEC) A3=0.80
S= 1.03 KNOTS (0.53 METRES/SEC) A4=4.28

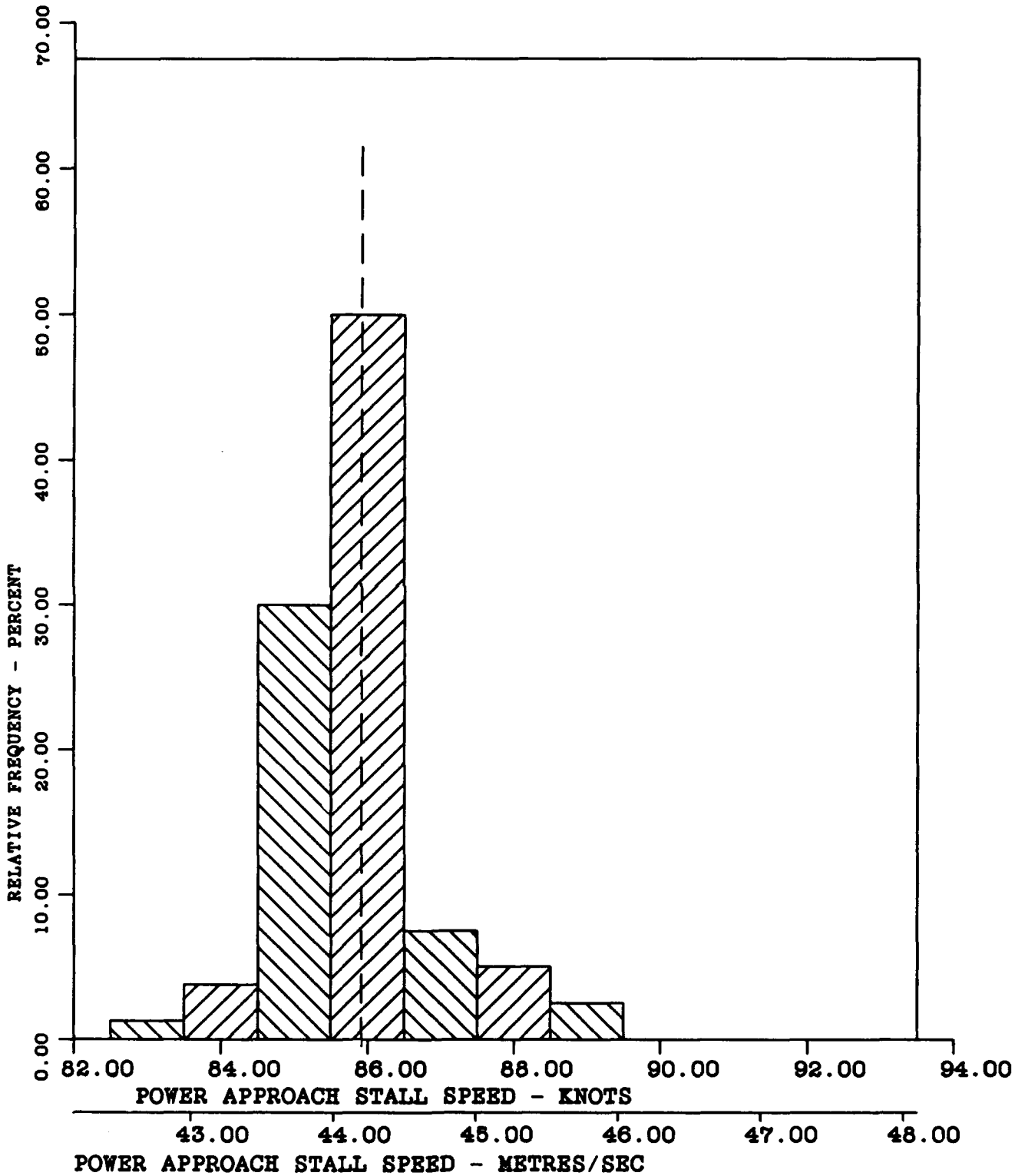


FIGURE M-34 FREQUENCY DISTRIBUTION OF POWER APPROACH STALL SPEED

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-80 $\bar{X}$-1.26 A3-0.23
S- 0.06 A4-2.83

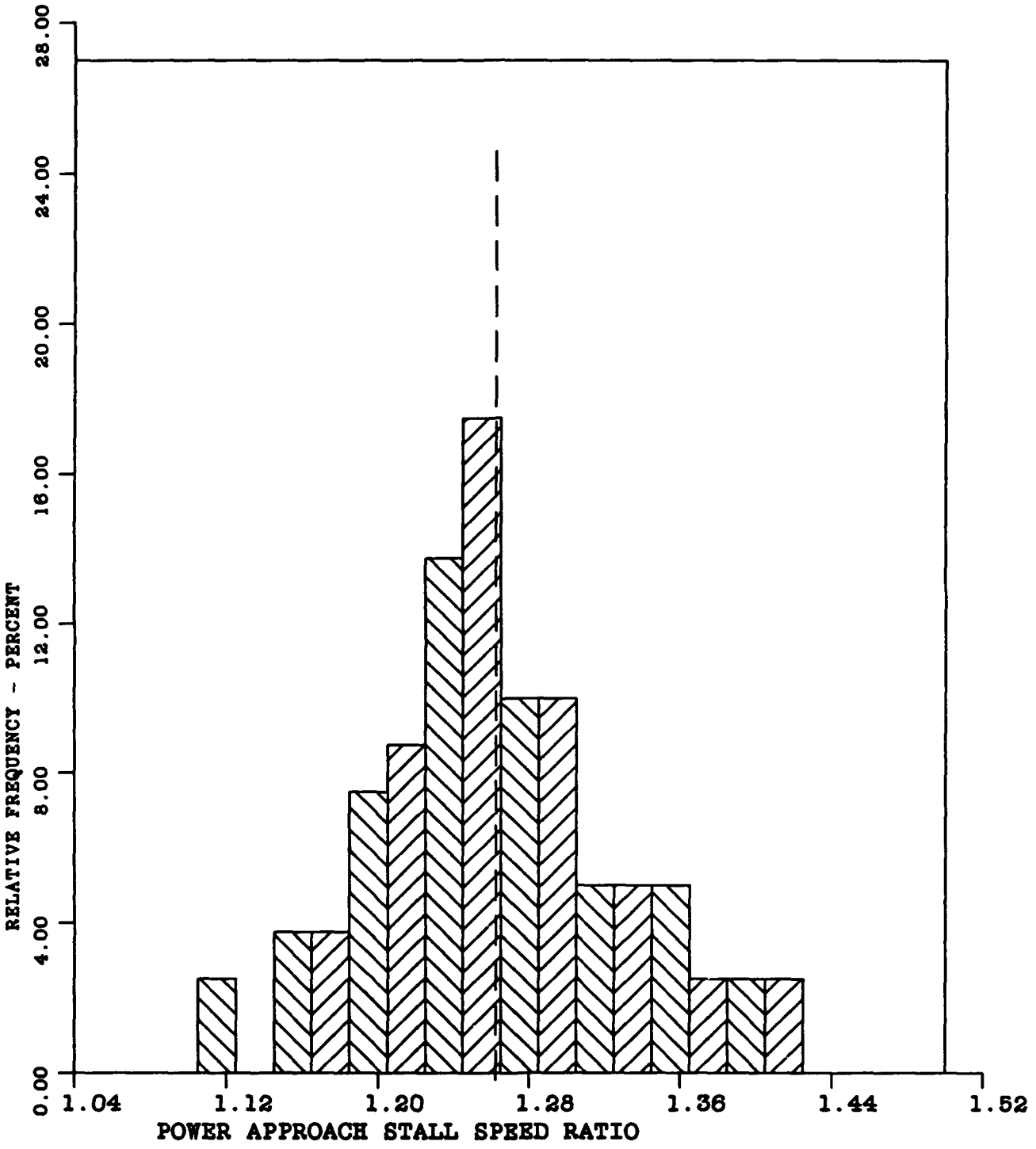


FIGURE M-35 FREQUENCY DISTRIBUTION OF POWER APPROACH STALL SPEED RATIO

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N=80 $\bar{X}$=0.04 DEGREES (0.001 RADIANS) A3=-0.64
S= 0.92 DEGREES (0.016 RADIANS) A4=3.41

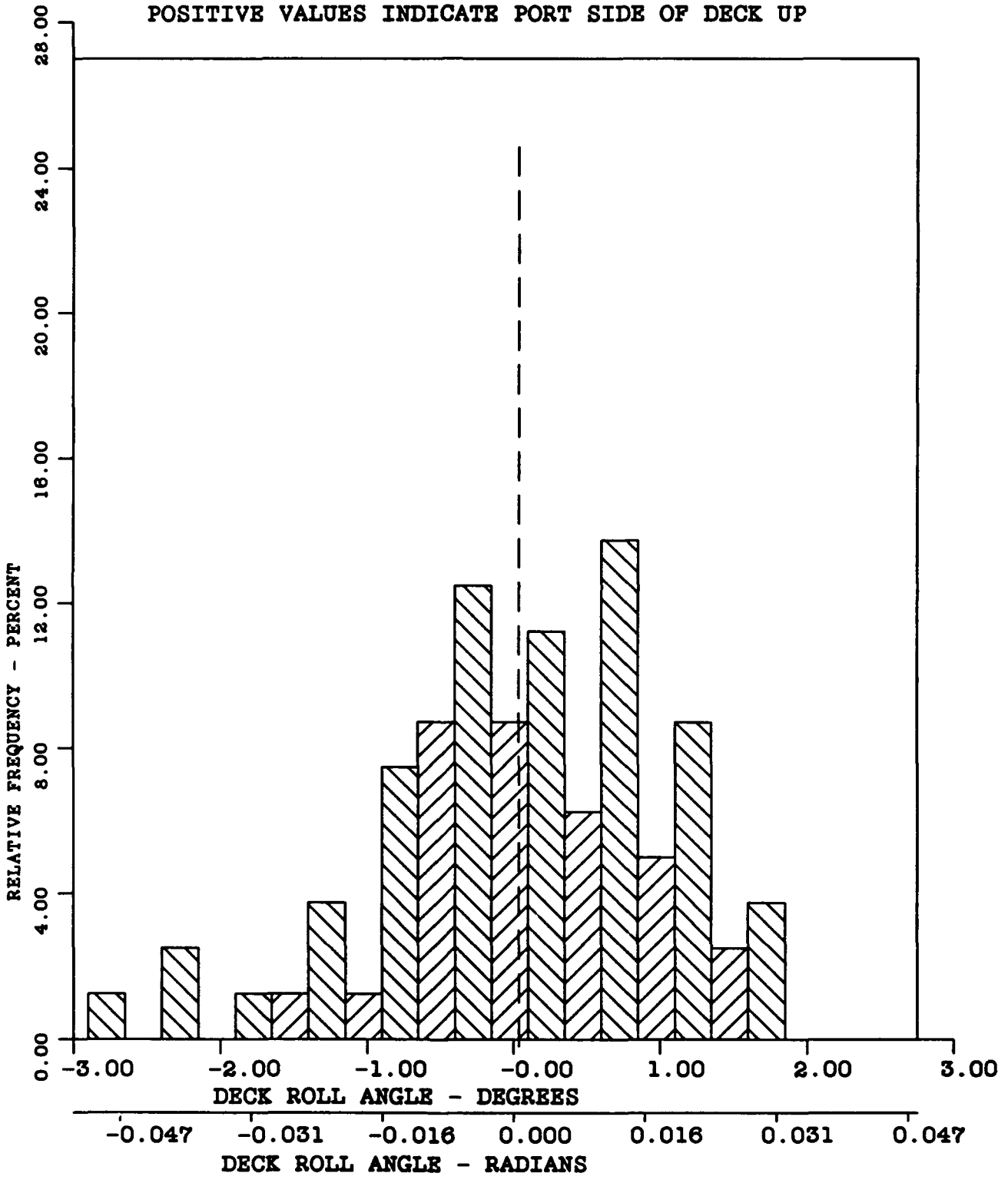


FIGURE M-36 FREQUENCY DISTRIBUTION OF CARRIER DECK ROLL MOTION

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-80 $\bar{X}$-0.04 DEGREES (0.001 RADIANS) A3=-0.64
S= 0.92 DEGREES (0.016 RADIANS) A4=3.41
CURVE FITTED - PEARSON TYPE III
POSITIVE VALUES INDICATE PORT SIDE OF DECK UP

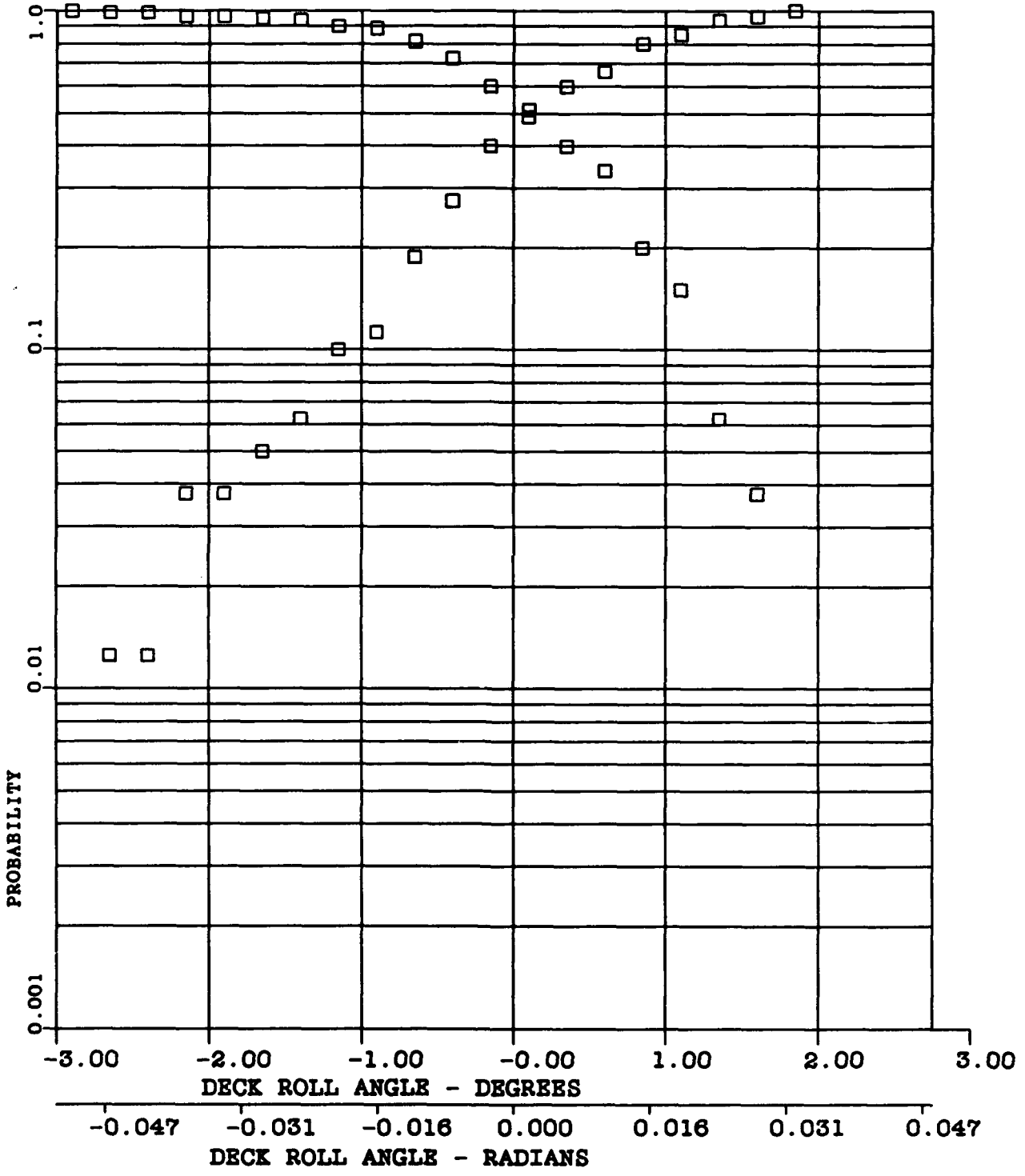


FIGURE M-37 PROBABILITY DISTRIBUTION OF CARRIER DECK ROLL MOTION

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N=80 $\bar{X}$=-0.15 DEGREES (-0.003 RADIANS) A3=0.50
S= 0.16 DEGREES (0.003 RADIANS) A4=3.67

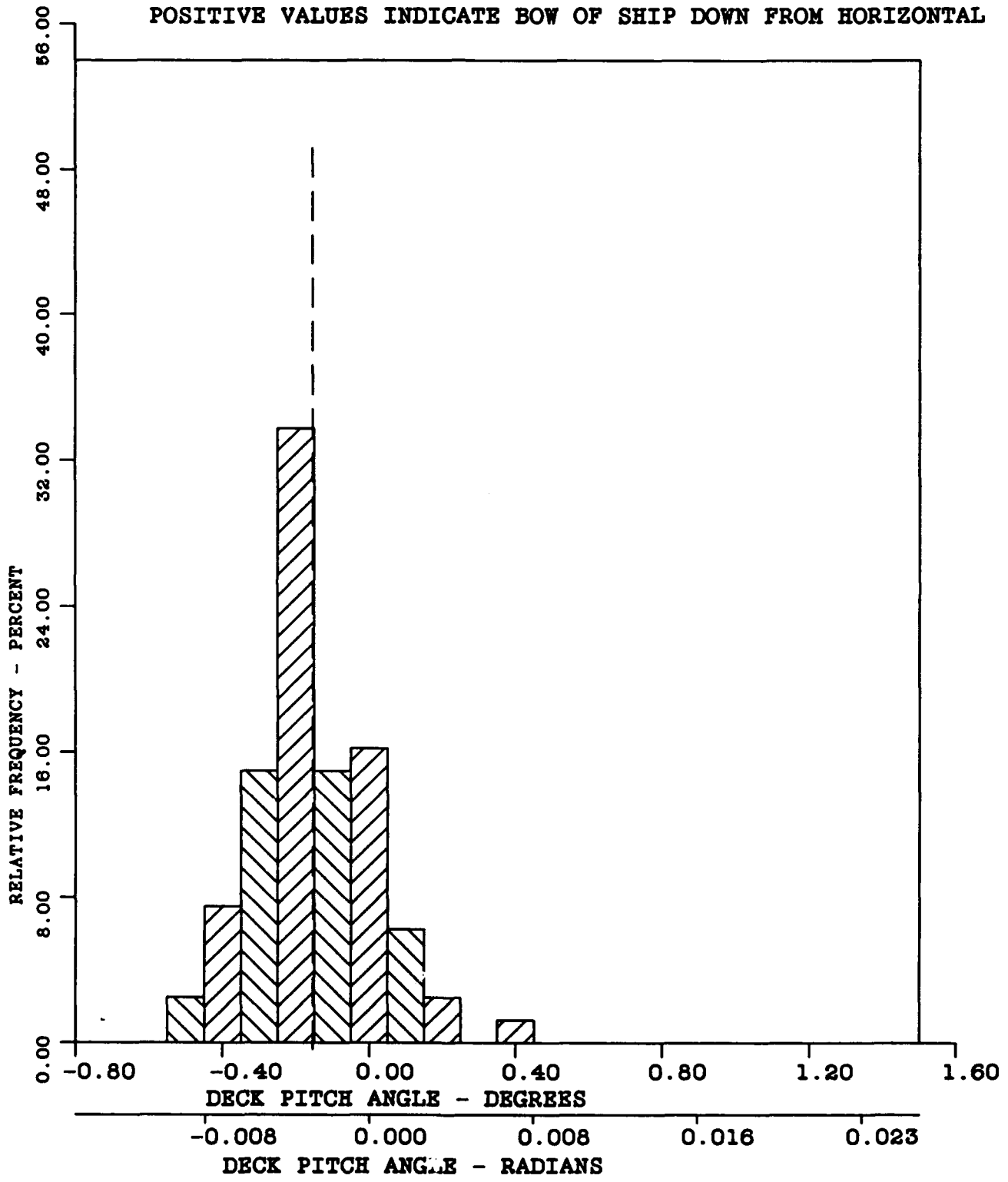


FIGURE M-38 FREQUENCY DISTRIBUTION OF CARRIER DECK PITCH MOTION

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N=80 $\bar{X}$=-0.15 DEGREES (-0.003 RADIANS) A3=0.50
S= 0.16 DEGREES (0.003 RADIANS) A4=3.67
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE BOW OF SHIP DOWN FROM HORIZONTAL

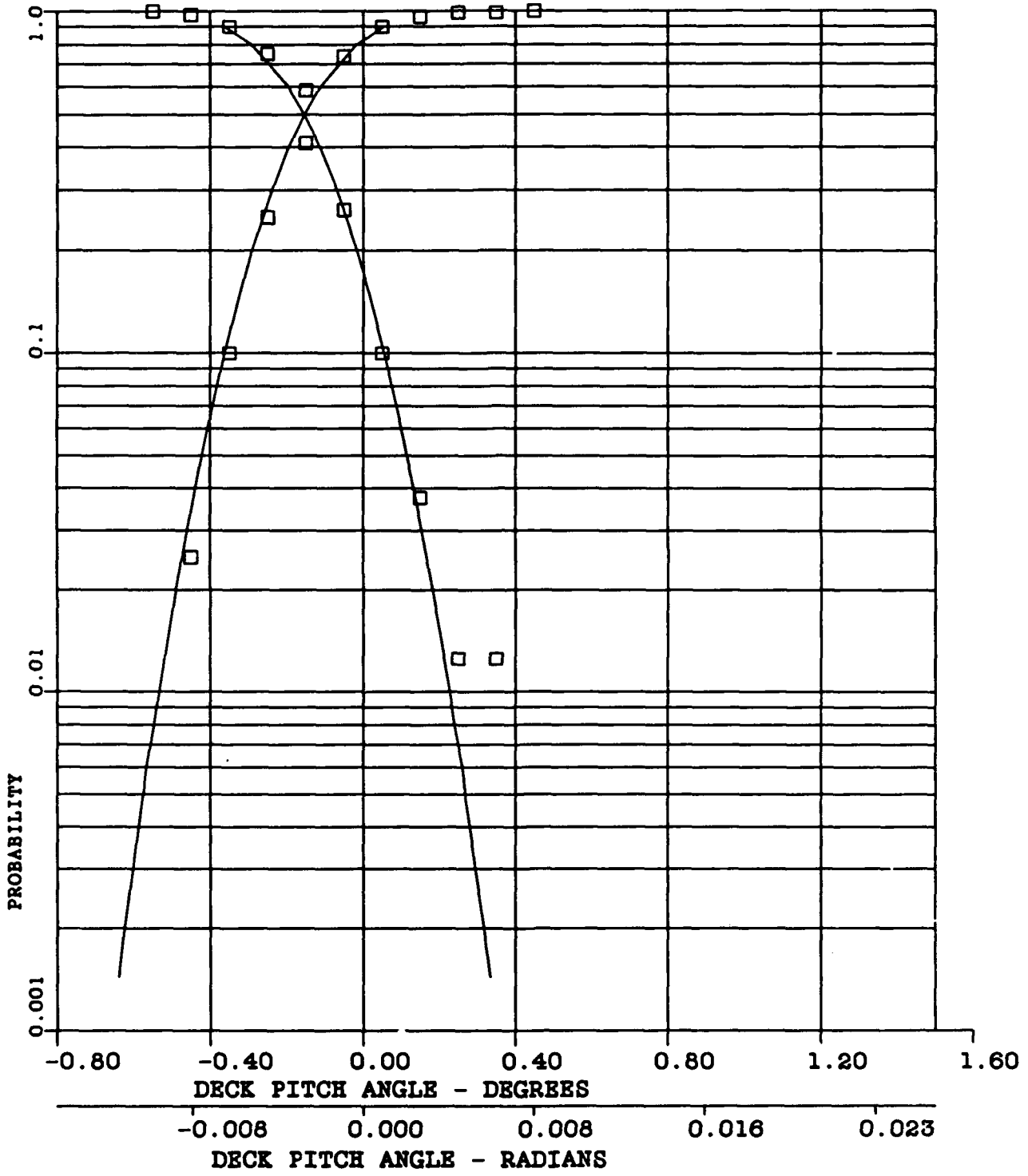


FIGURE M-39 PROBABILITY DISTRIBUTION OF CARRIER DECK PITCH MOTION

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (0.061 RADIANS)
N=80 $\bar{X}$=43281.10 POUNDS (19632.31 KILOGRAMS) A3=0.84
S= 1047.45 POUNDS (475.12 KILOGRAMS) A4=4.36

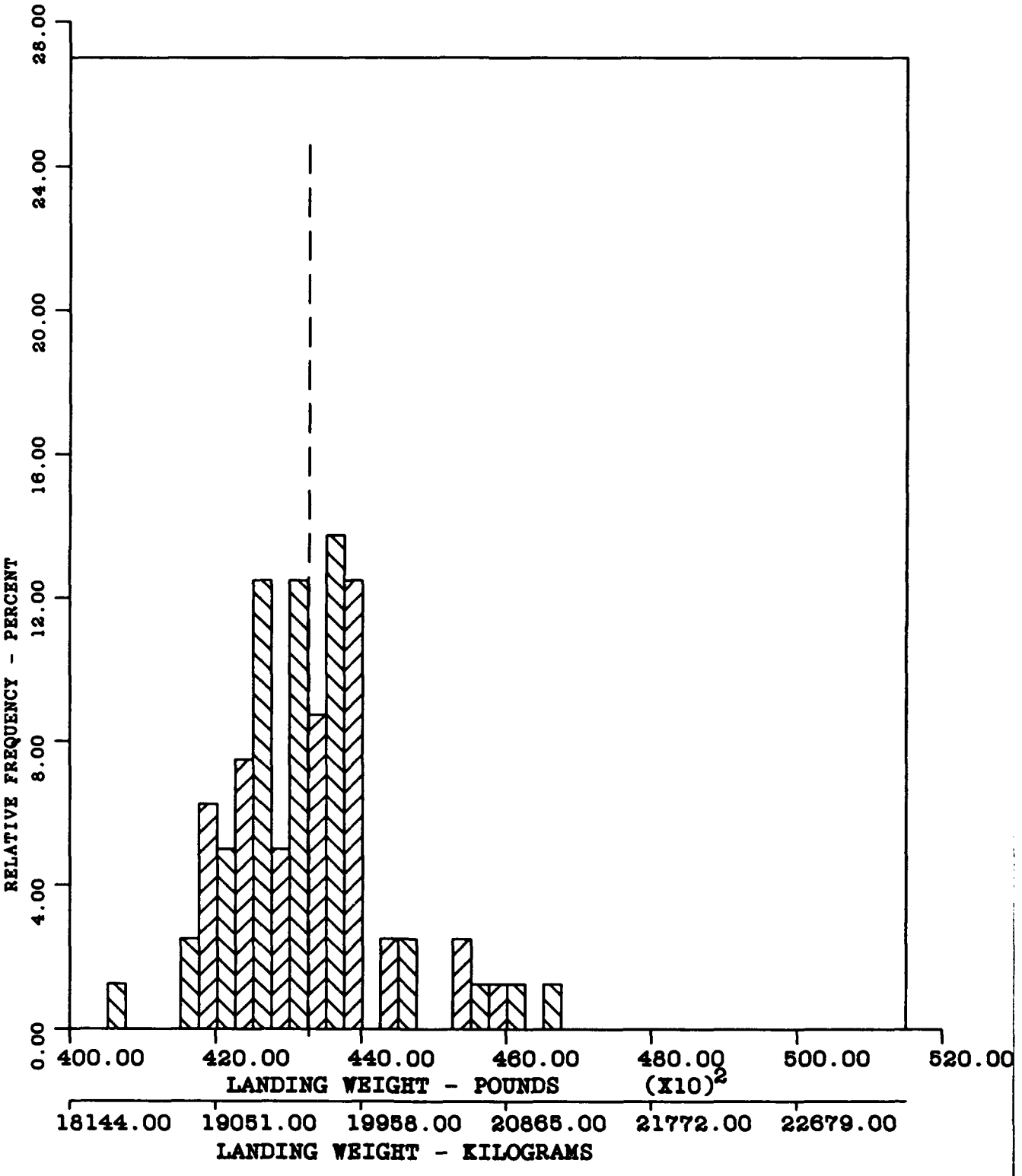


FIGURE M-40 FREQUENCY DISTRIBUTION OF AIRCRAFT LANDING WEIGHT

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-80 $\bar{X}$-1.12 DEG/SEC (0.020 RAD/SEC) A3=-0.68
S= 4.95 DEG/SEC (0.086 RAD/SEC) A4=4.17

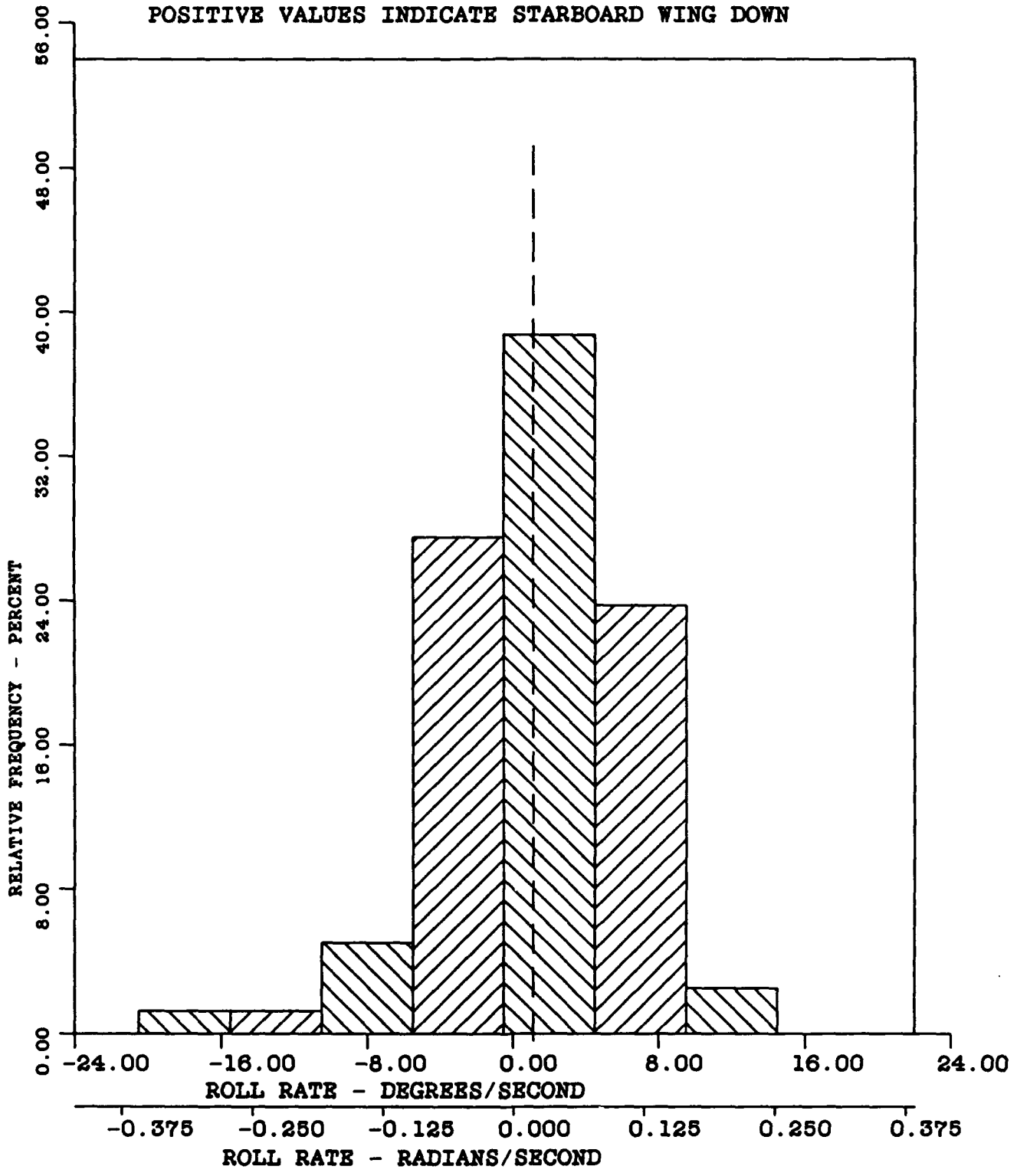


FIGURE M-41 FREQUENCY DISTRIBUTION OF ROLL RATE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N=80 $\bar{X}$=1.12 DEG/SEC (0.020 RAD/SEC) A3=-0.68
S= 4.95 DEG/SEC (0.086 RAD/SEC) A4=4.17
CURVE FITTED - PEARSON TYPE III
POSITIVE VALUES INDICATE STARBOARD WING DOWN

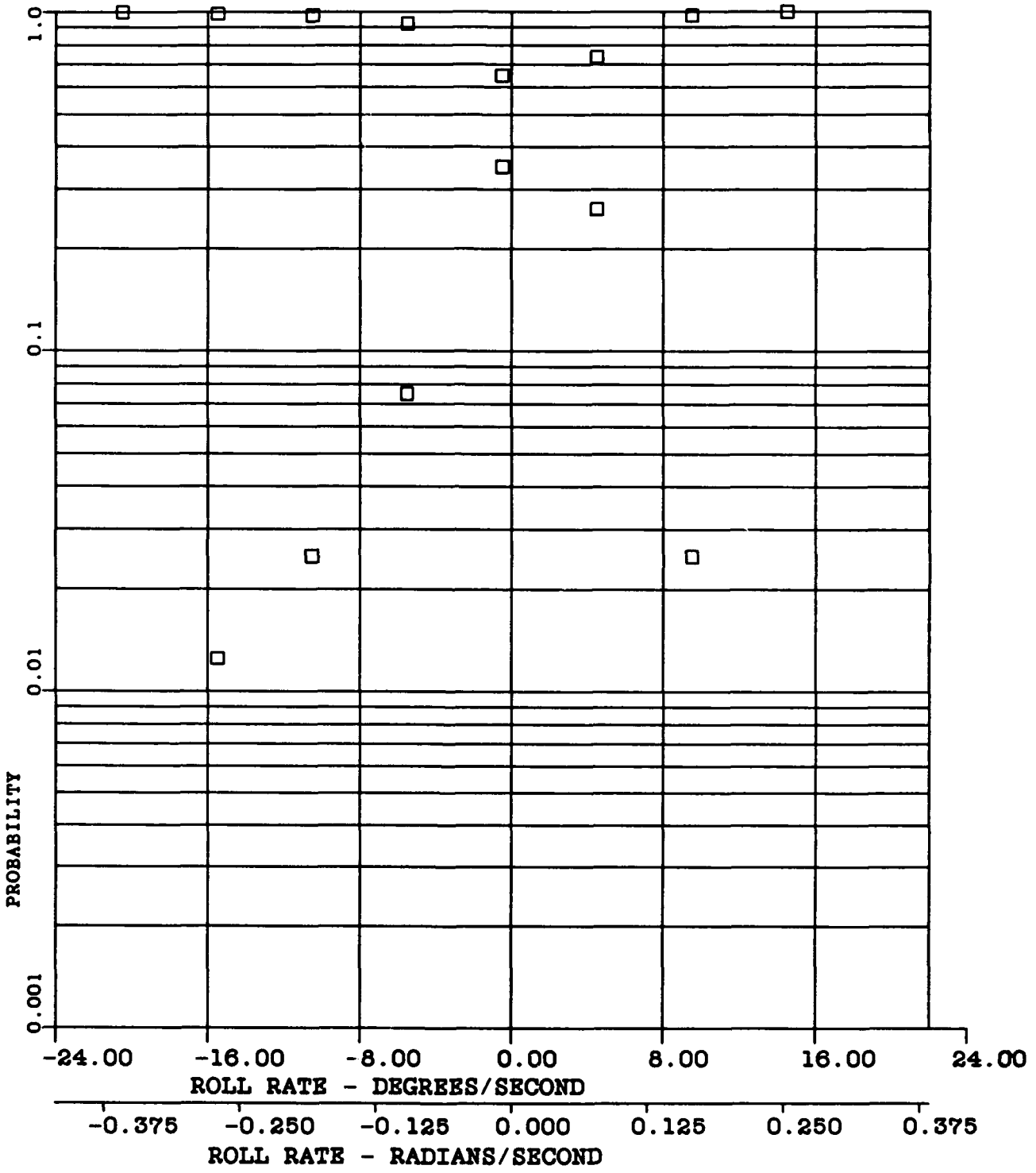


FIGURE M-42 PROBABILITY DISTRIBUTION OF ROLL RATE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-80 $\bar{X}$-0.16 DEG/SEC (0.003 RAD/SEC) A3-0.15
S- 1.98 DEG/SEC (0.035 RAD/SEC) A4-4.48

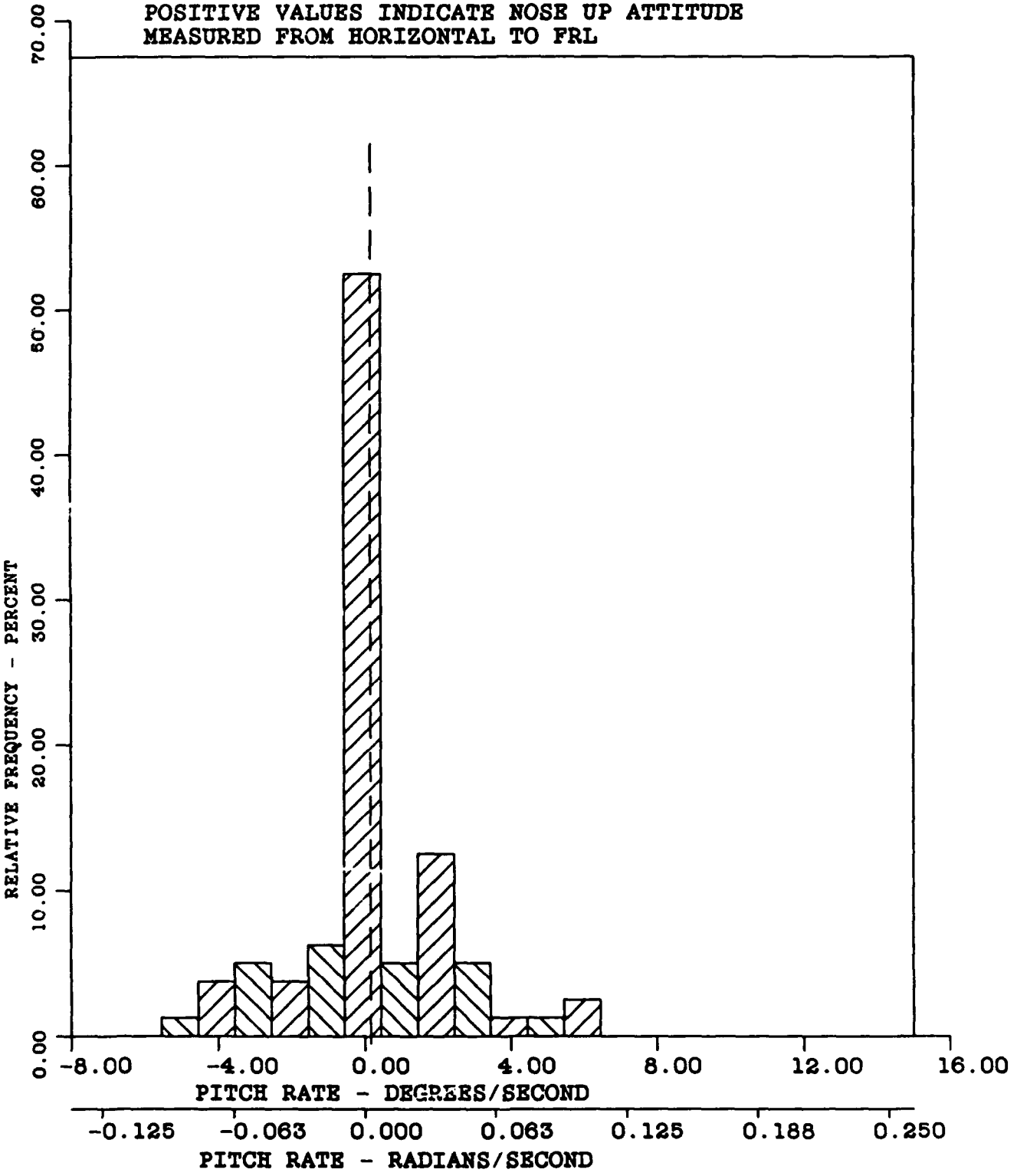


FIGURE M-43 FREQUENCY DISTRIBUTION OF PITCH RATE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N=80 $\bar{X}$=0.16 DEG/SEC (0.003 RAD/SEC) A3=0.15
S= 1.98 DEG/SEC (0.035 RAD/SEC) A4=4.48
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE NOSE UP ATTITUDE
MEASURED FROM HORIZONTAL TO FRL

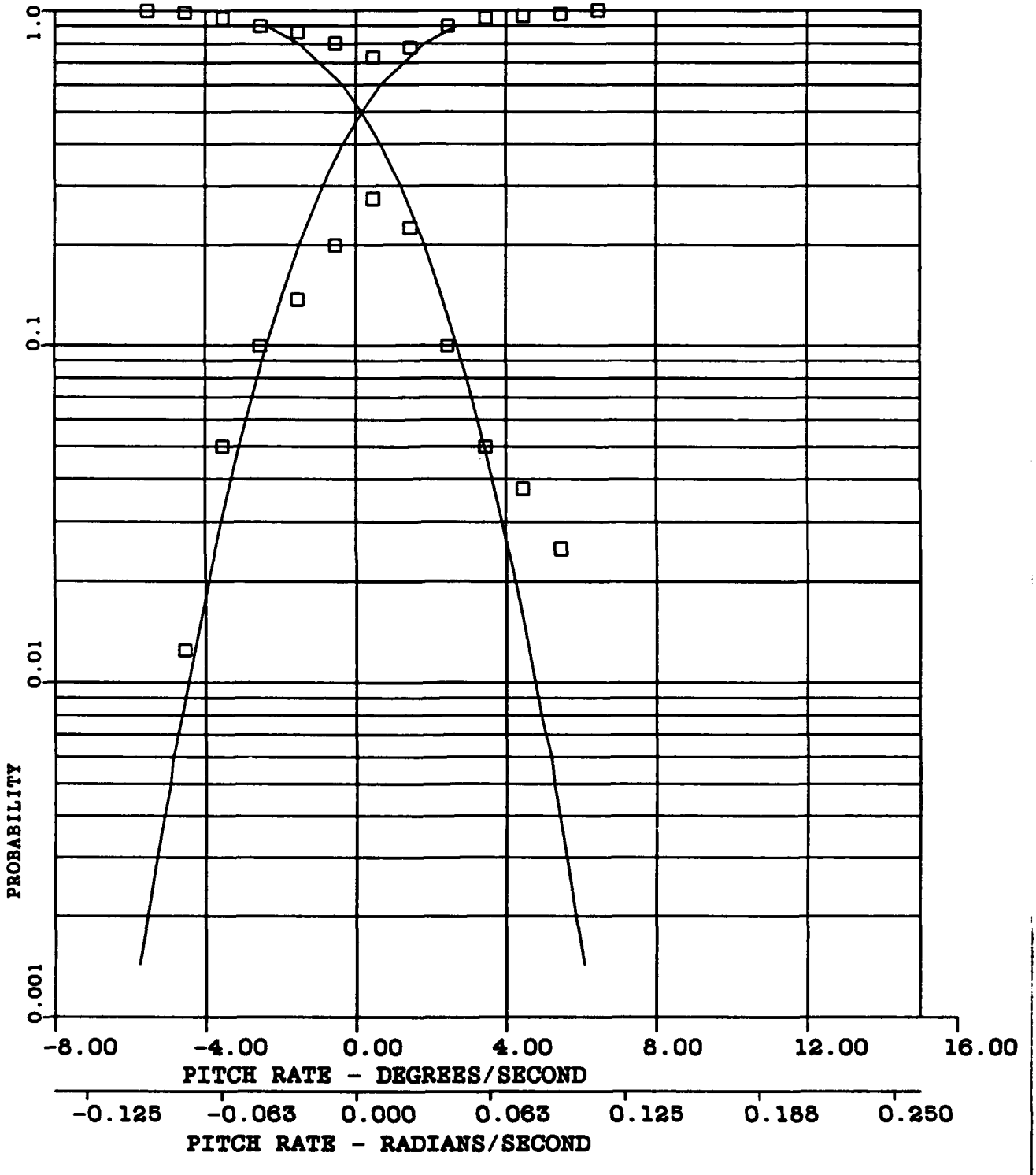


FIGURE M-44 PROBABILITY DISTRIBUTION OF PITCH RATE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (0.061 RADIANS)
N=80 $\bar{X}$=-3.46 DEGREES (-0.060 RADIANS) A3=1.13
S= 2.22 DEGREES (0.039 RADIANS) A4=4.39

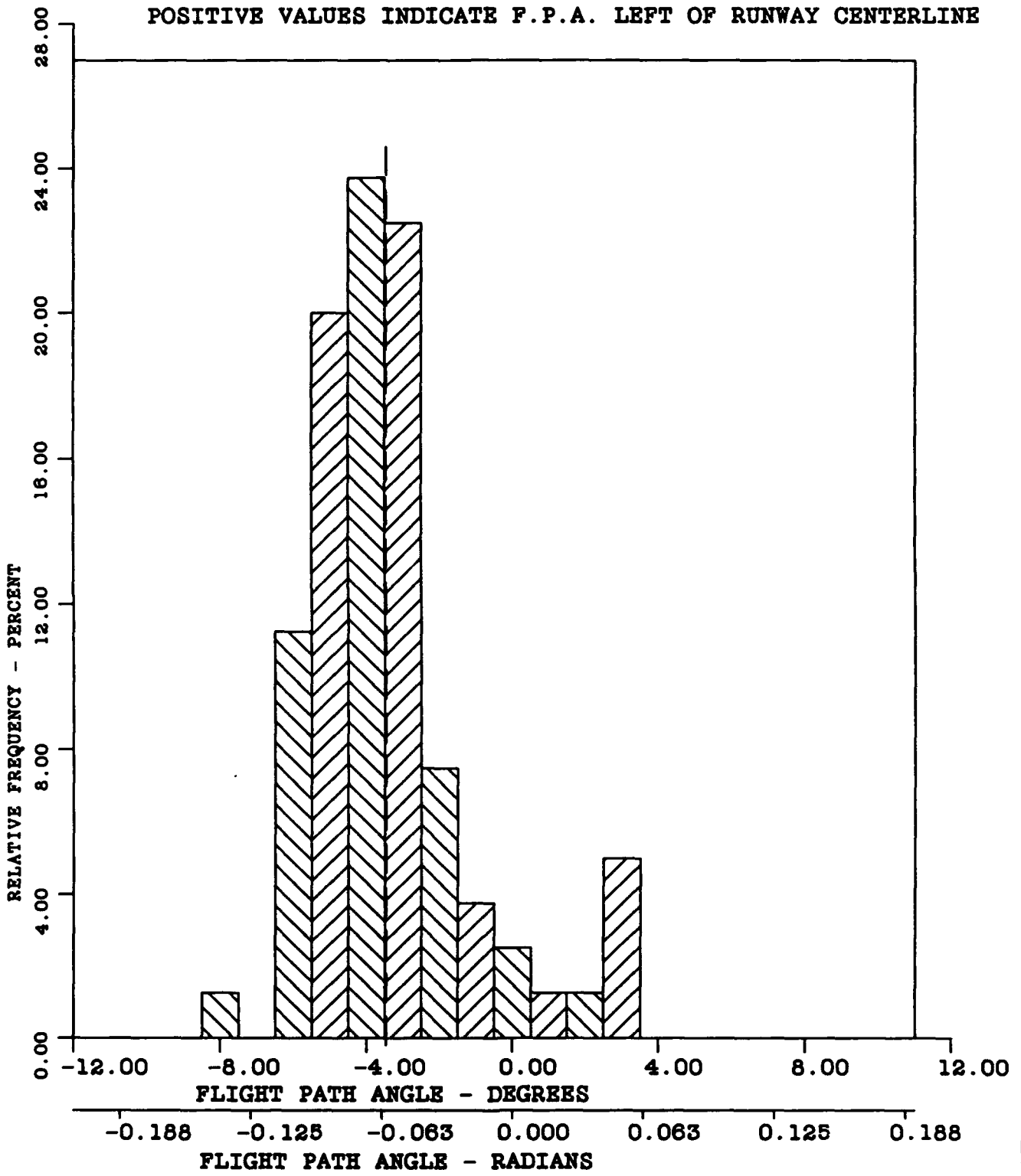


FIGURE M-45 FREQUENCY DISTRIBUTION OF AIRCRAFT FLIGHT PATH ANGLE AT TOUCHDOWN

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (0.061 RADIANS)
N=80 $\bar{X}$=-3.46 DEGREES (-0.060 RADIANS) A3=1.13
S= 2.22 DEGREES (0.039 RADIANS) A4=4.39
CURVE FITTED - PEARSON TYPE III
POSITIVE VALUES INDICATE F.P.A. LEFT OF RUNWAY CENTERLINE

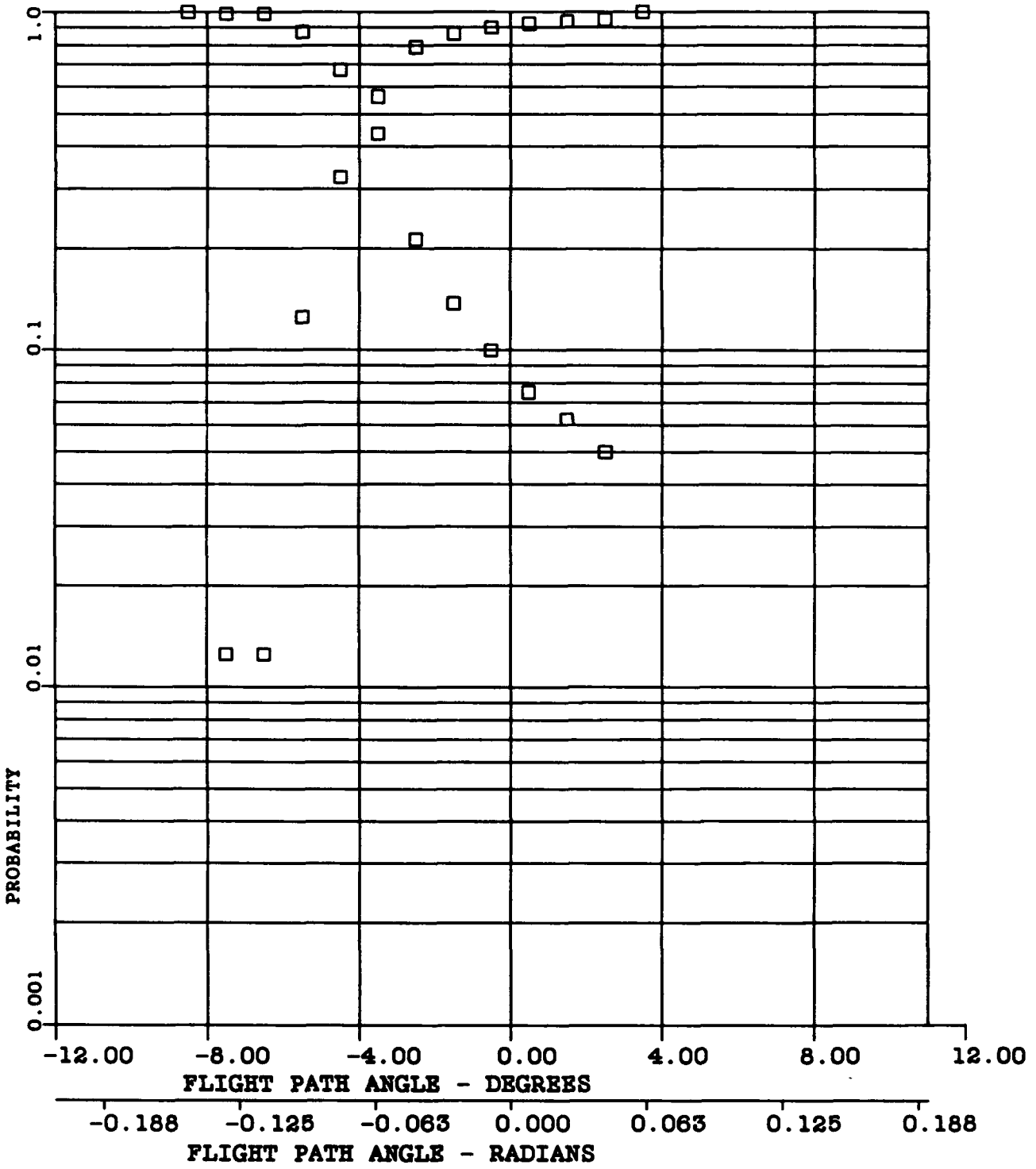


FIGURE M-46 PROBABILITY DISTRIBUTION OF AIRCRAFT FLIGHT PATH ANGLE AT TOUCHDOWN

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-80 $\bar{X}$-4.02 DEGREES (0.070 RADIANS) A3=-0.80
S= 3.26 DEGREES (0.057 RADIANS) A4=3.50

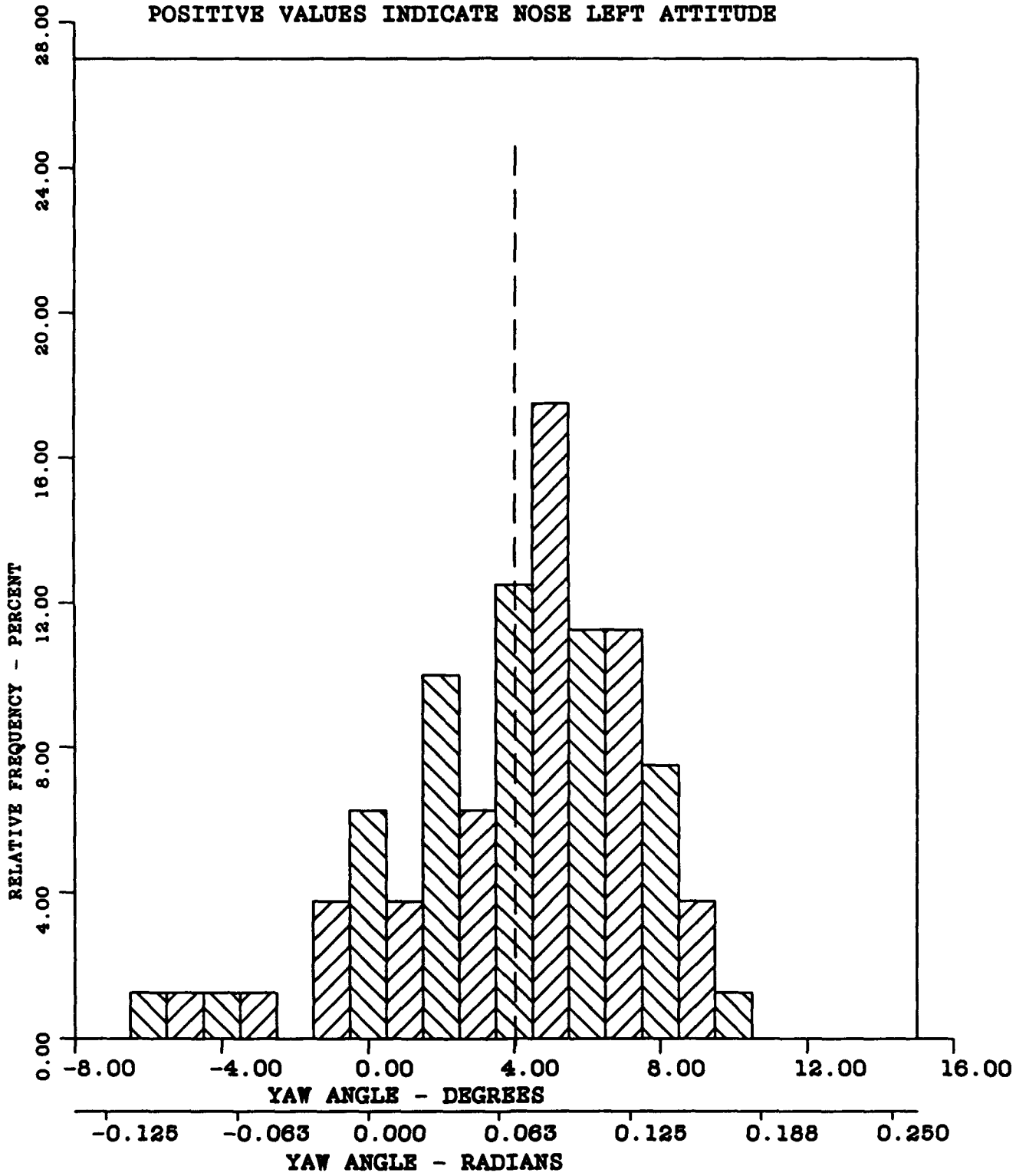


FIGURE M-47 FREQUENCY DISTRIBUTION OF AIRCRAFT YAW ANGLE

MODEL E-2C AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-80 $\bar{X}$-4.02 DEGREES (0.070 RADIANS) A3=-0.80
S= 3.26 DEGREES (0.057 RADIANS) A4-3.50
CURVE FITTED - PEARSON TYPE III
POSITIVE VALUES INDICATE NOSE LEFT ATTITUDE

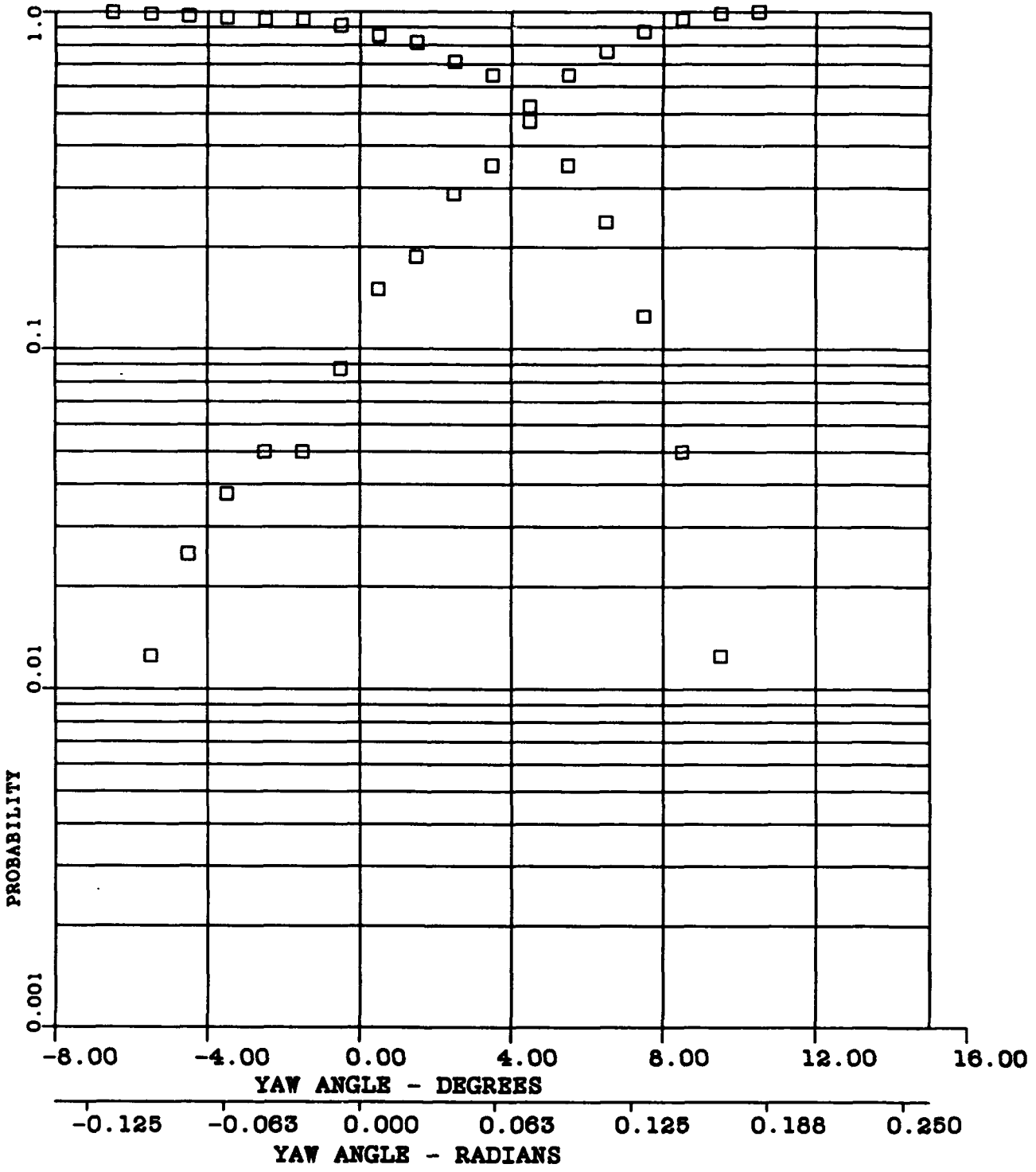


FIGURE M-48 PROBABILITY DISTRIBUTION OF AIRCRAFT YAW ANGLE

APPENDIX N

S-3A AIRCRAFT

DAY CARRIER LANDINGS

USS ENTERPRISE
CVN-65

Appendix N:

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S-3A Aircraft, Day Landings

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MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N=165 $\bar{X}$=27.88 KNOTS (14.34 METRES/SEC) A3=0.29
S= 4.58 KNOTS (2.35 METRES/SEC) A4=3.00

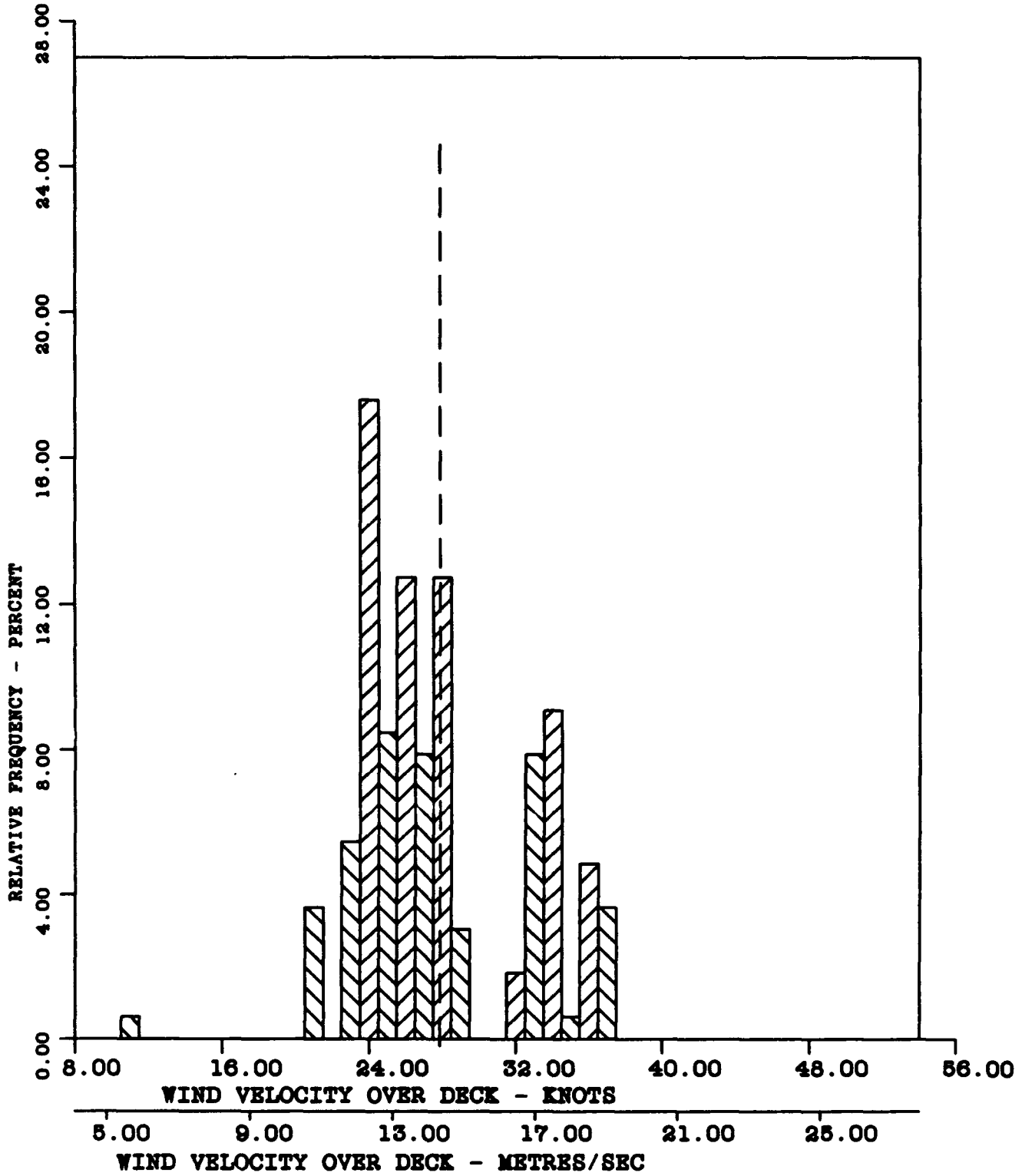


FIGURE N-1 FREQUENCY DISTRIBUTION OF WIND VELOCITY OVER THE DECK

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-165 $\bar{X}$-27.88 KNOTS (14.34 METRES/SEC) A3-0.29
S- 4.58 KNOTS (2.35 METRES/SEC) A4-3.00
CURVE FITTED - NORMAL

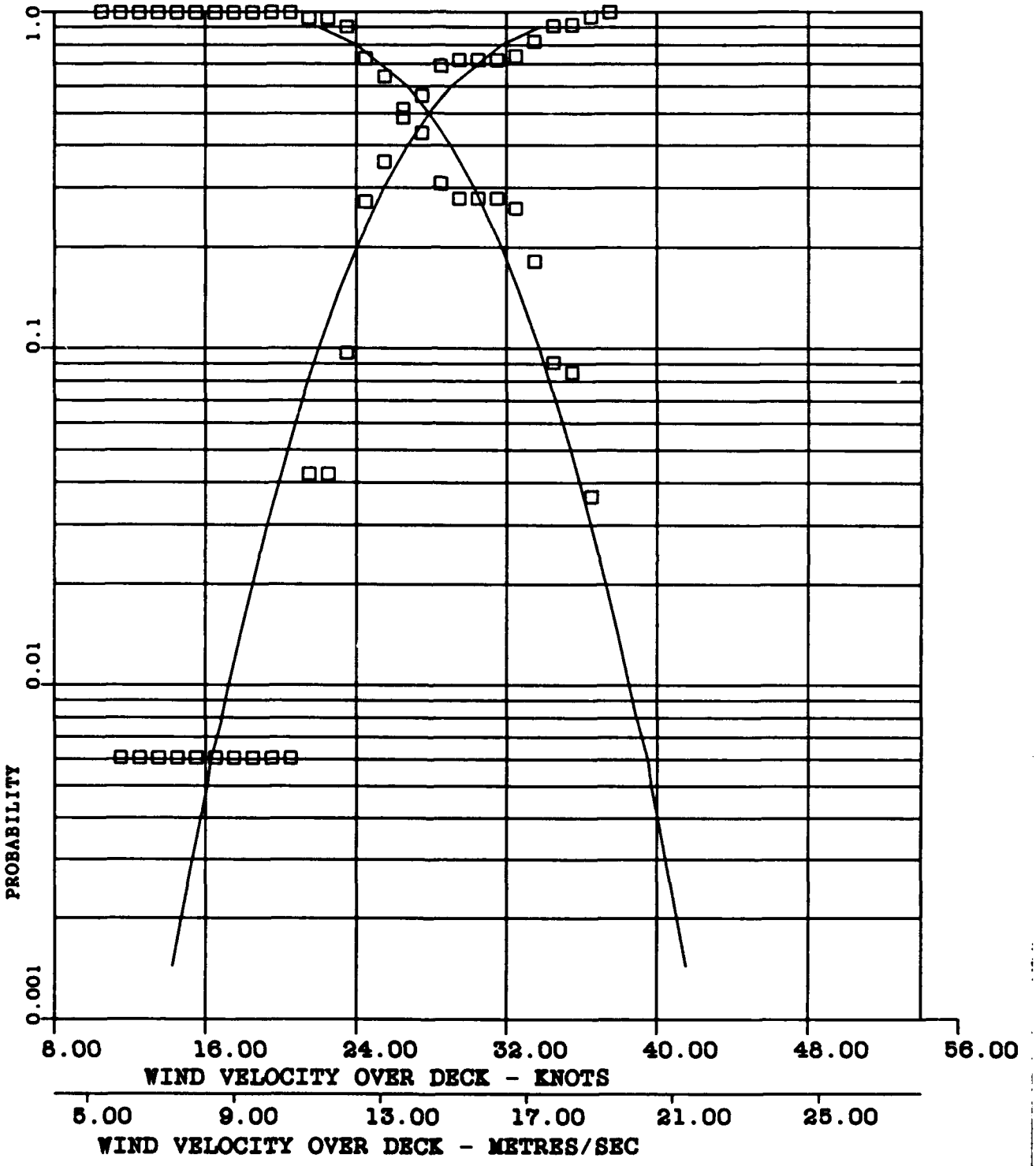


FIGURE N-2 PROBABILITY DISTRIBUTION OF WIND VELOCITY OVER THE DECK

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (0.061 RADIANS)
N=165 $\bar{X}$=121.69 KNOTS (62.60 METRES/SEC) A3=-0.21
S= 4.75 KNOTS (2.44 METRES/SEC) A4=2.54

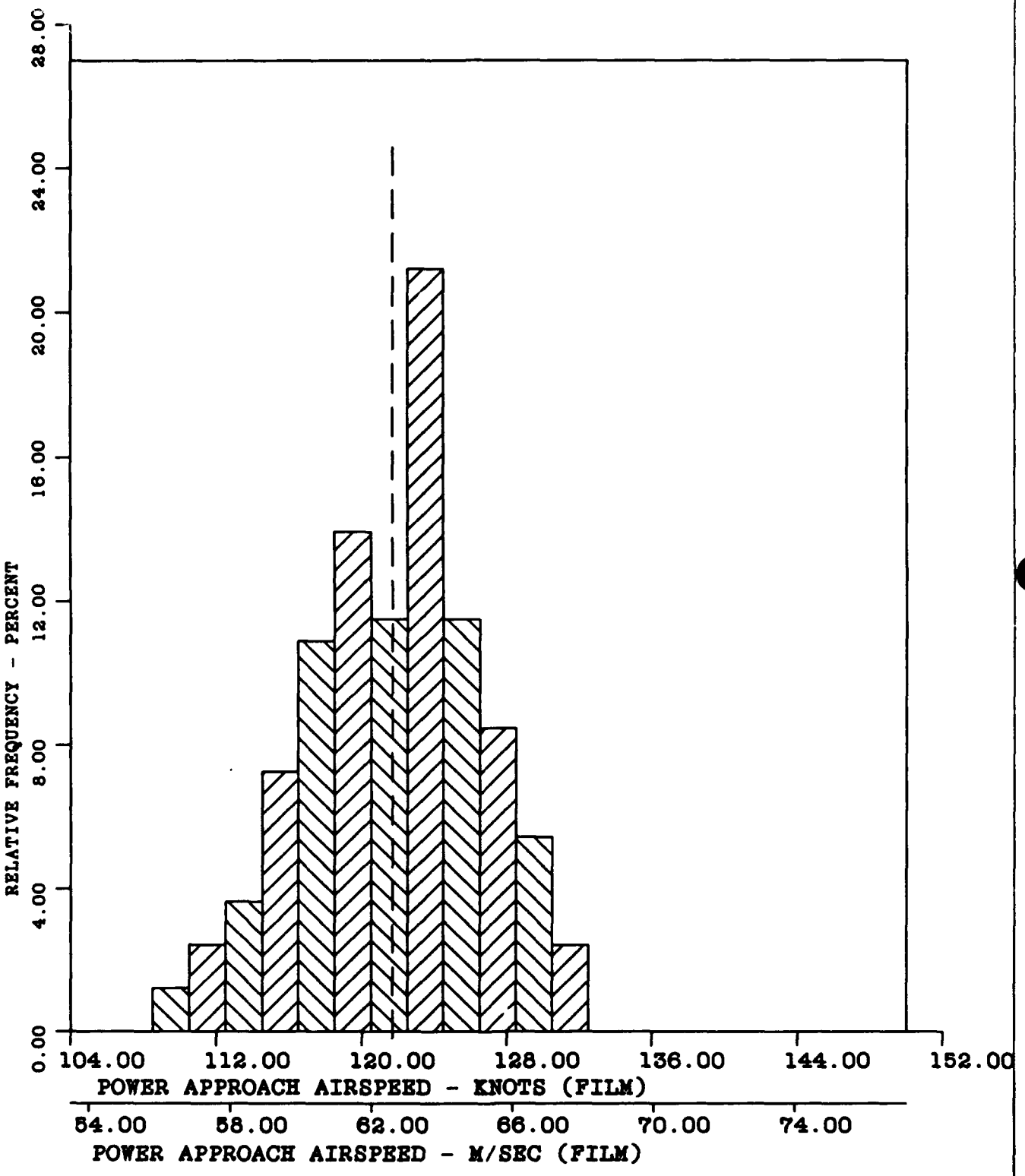


FIGURE N-3 FREQUENCY DISTRIBUTION OF FILM MEASURED POWER APPROACH AIRSPEED AT THE RAMP

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-165 $\bar{X}$-121.69 KNOTS (62.60 METRES/SEC) A3=-0.21
S- 4.75 KNOTS (2.44 METRES/SEC) A4-2.54
CURVE FITTED - NORMAL

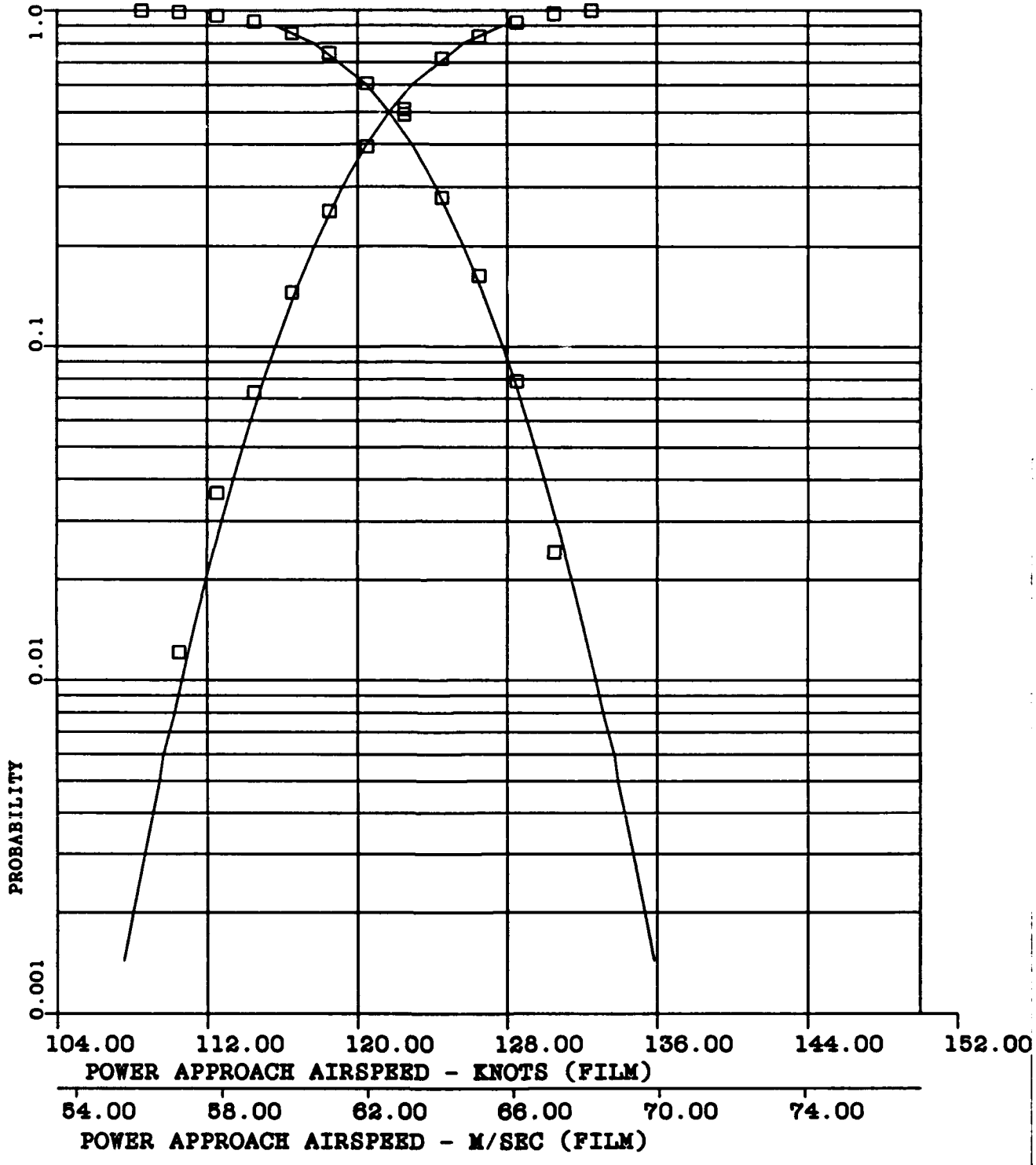


FIGURE N-4 PROBABILITY DISTRIBUTION OF POWER APPROACH AIRSPEED AT THE RAMP (FILM)

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-161 $\bar{X}$-15.52 FEET (4.73 METRES) A3-0.71
S- 2.56 FEET (0.78 METRES) A4-3.57

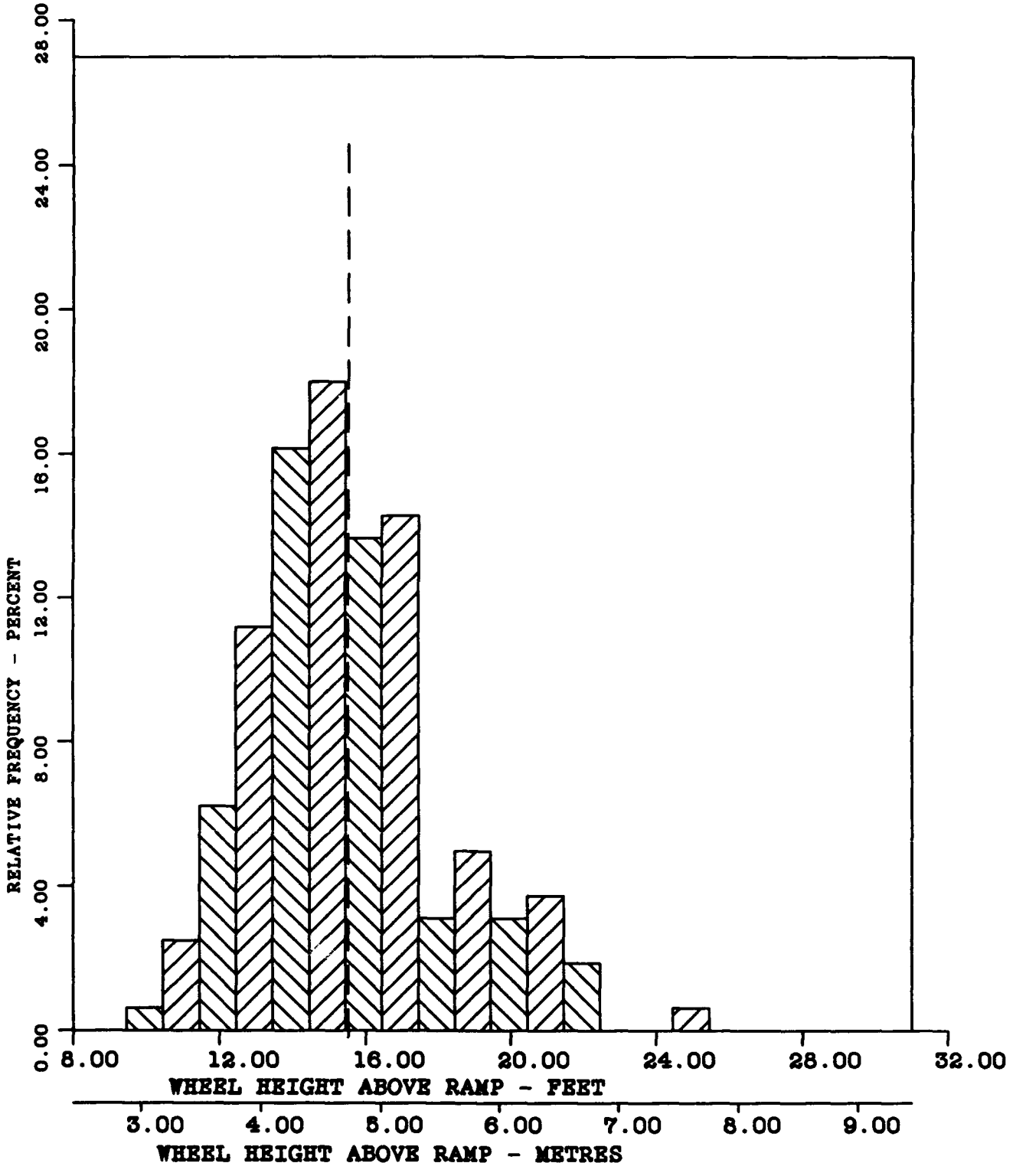


FIGURE N-5 FREQUENCY DISTRIBUTION OF AIRCRAFT WHEEL HEIGHT ABOVE CARRIER RAMP

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N=161 $\bar{X}$=15.52 FEET (4.73 METRES) A3=0.71
S= 2.56 FEET (0.78 METRES) A4=3.57
CURVE FITTED - PEARSON TYPE III

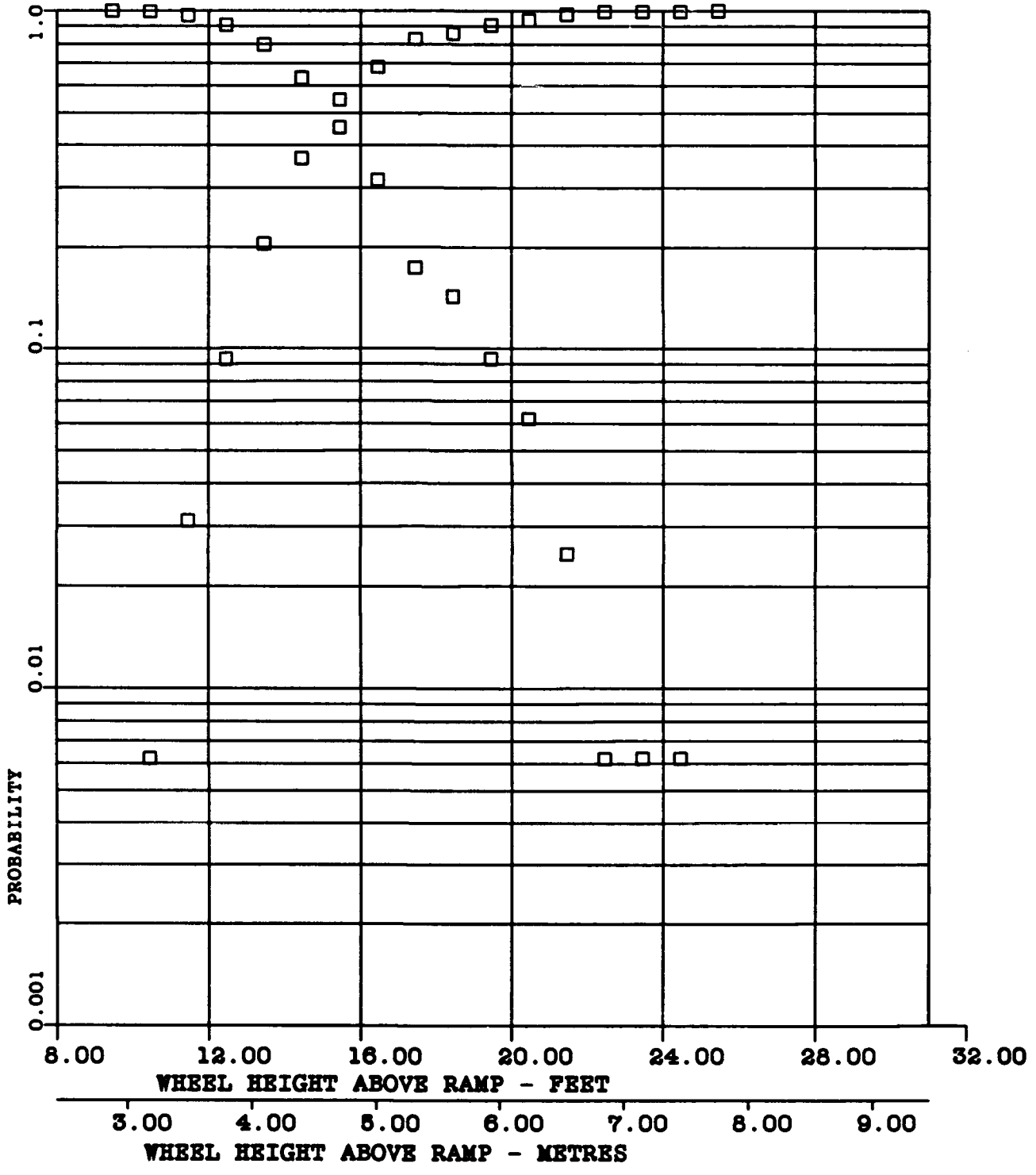


FIGURE PROBABILITY DISTRIBUTION OF AIRCRAFT WHEEL HEIGHT ABOVE CARRIER RAMP

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-165 $\bar{X}$-8.14 FEET/SEC (2.48 METRES/SEC) A3-0.47
S- 1.70 FEET/SEC (0.52 METRES/SEC) A4-3.73

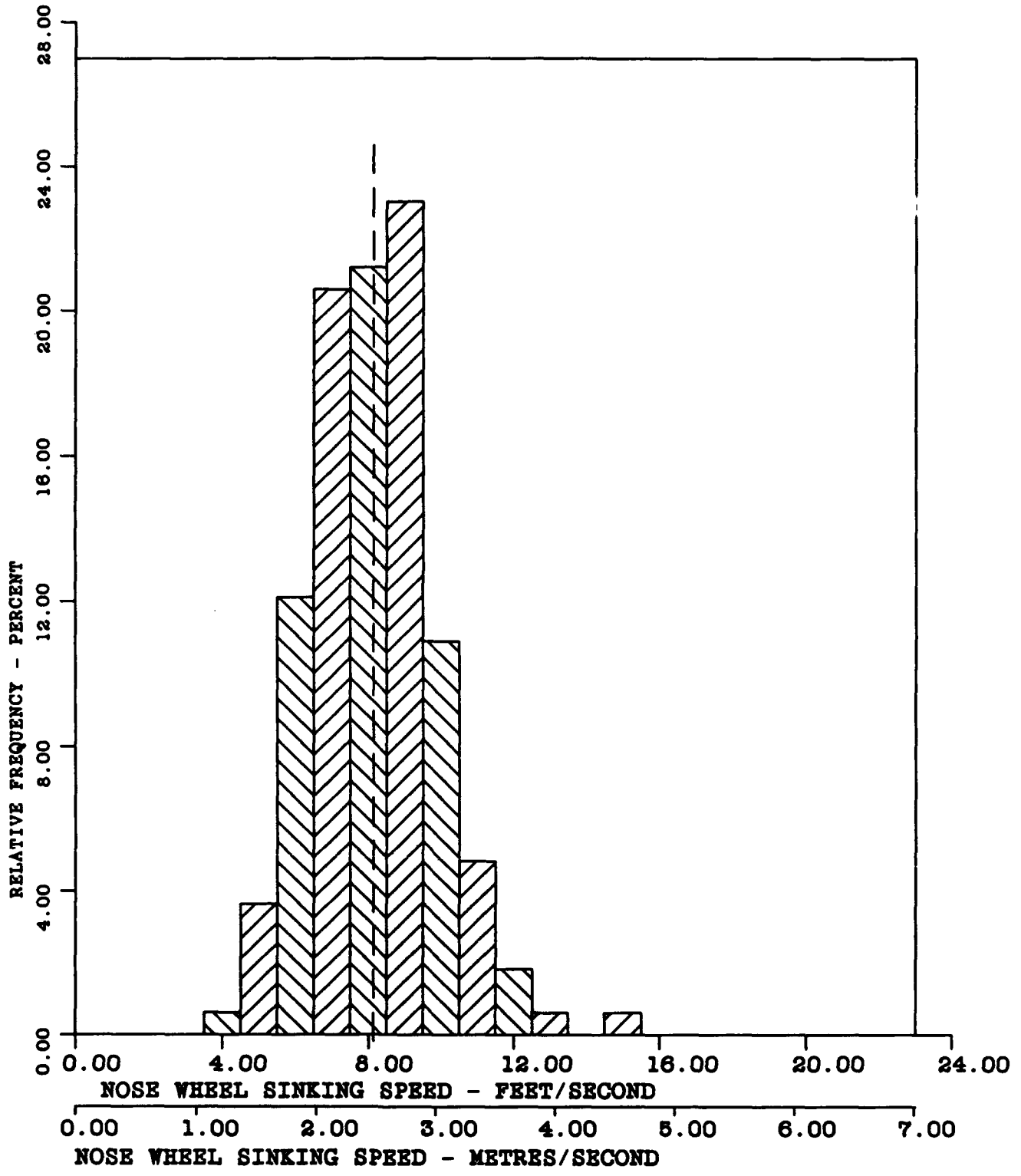


FIGURE N-7 FREQUENCY DISTRIBUTION OF NOSE WHEEL SINKING SPEED

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-165 $\bar{X}$-8.14 FEET/SEC (2.48 METRES/SEC) A3-0.47
S- 1.70 FEET/SEC (0.52 METRES/SEC) A4-3.73
CURVE FITTED - PEARSON TYPE III

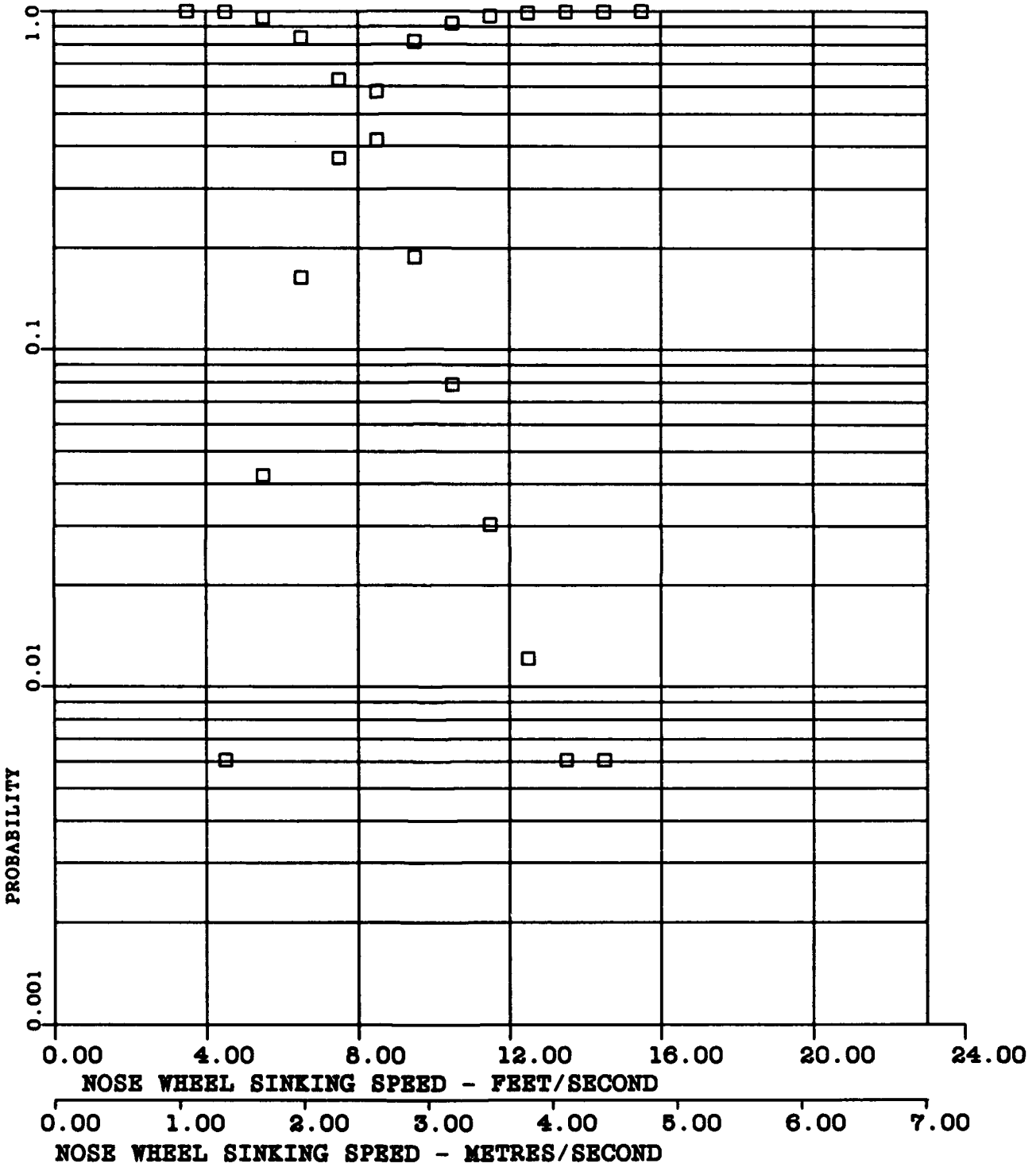


FIGURE N-8 PROBABILITY DISTRIBUTION OF NOSE WHEEL SINKING SPEED

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N=165 $\bar{X}$-8.49 FEET/SEC (2.59 METRES/SEC) A3=0.31
S= 2.07 FEET/SEC (0.63 METRES/SEC) A4=3.58

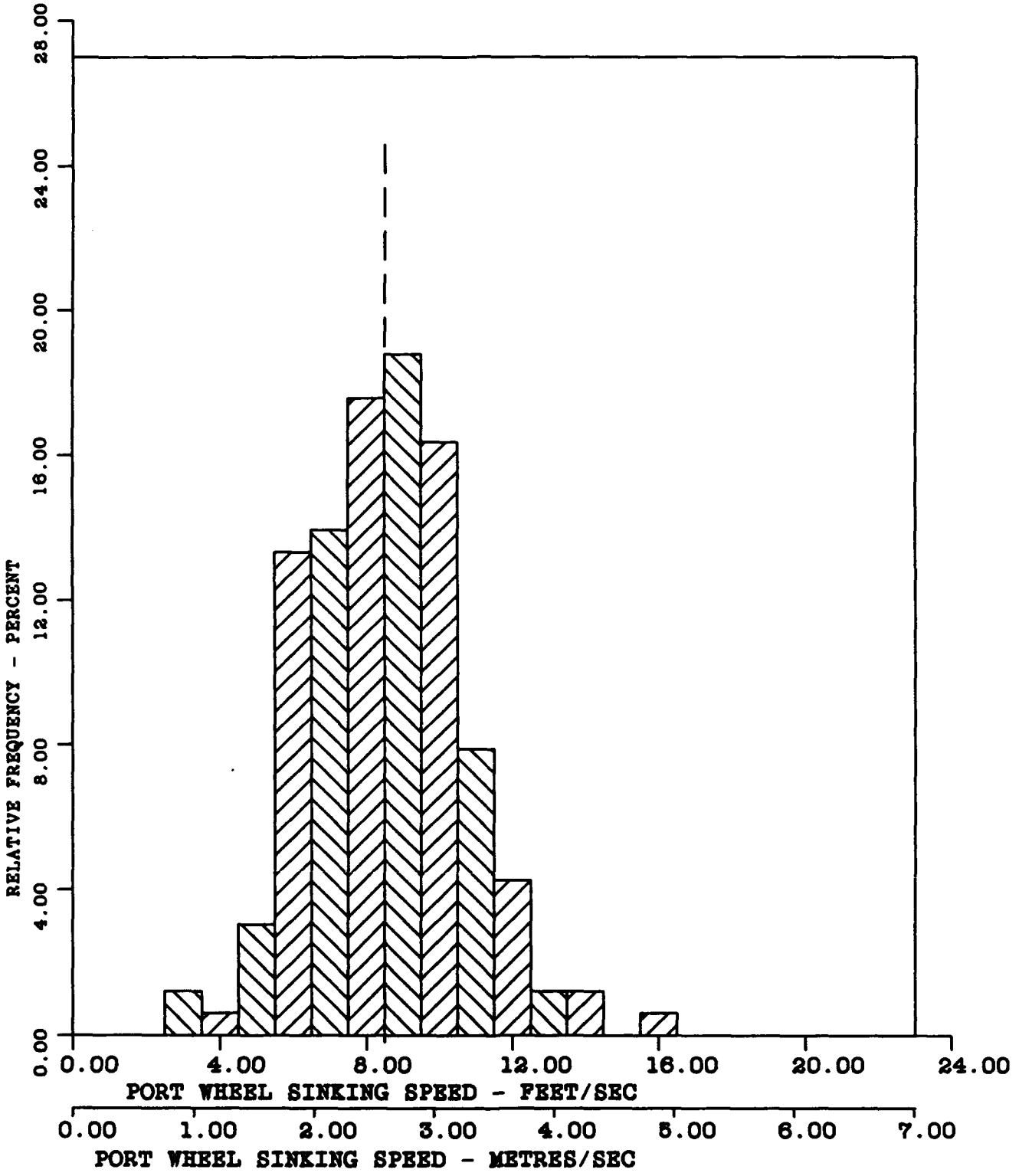


FIGURE N-9 FREQUENCY DISTRIBUTION OF PORT WHEEL SINKING SPEED AT PORT WHEEL TOUCHDOWN

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-165 $\bar{X}$-8.49 FEET/SEC (2.59 METRES/SEC) A3-0.31
S- 2.07 FEET/SEC (0.63 METRES/SEC) A4-3.58
CURVE FITTED - NORMAL

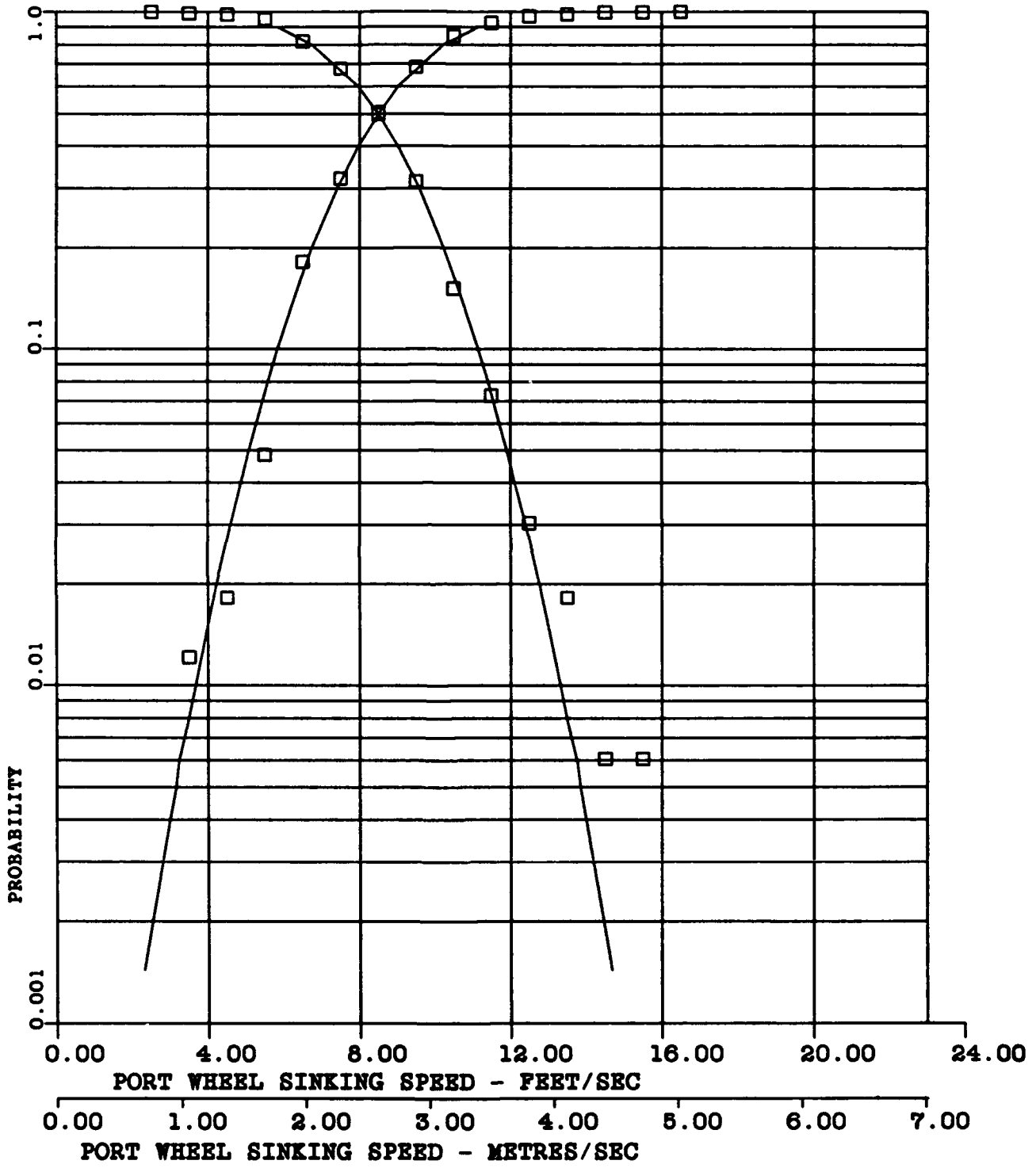


FIGURE N-10 PROBABILITY DISTRIBUTION OF PORT WHEEL SINKING SPEED

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-165 $\bar{X}$-8.19 FEET/SEC (2.50 METRES/SEC) A3-0.48
S- 2.00 FEET/SEC (0.61 METRES/SEC) A4-3.89

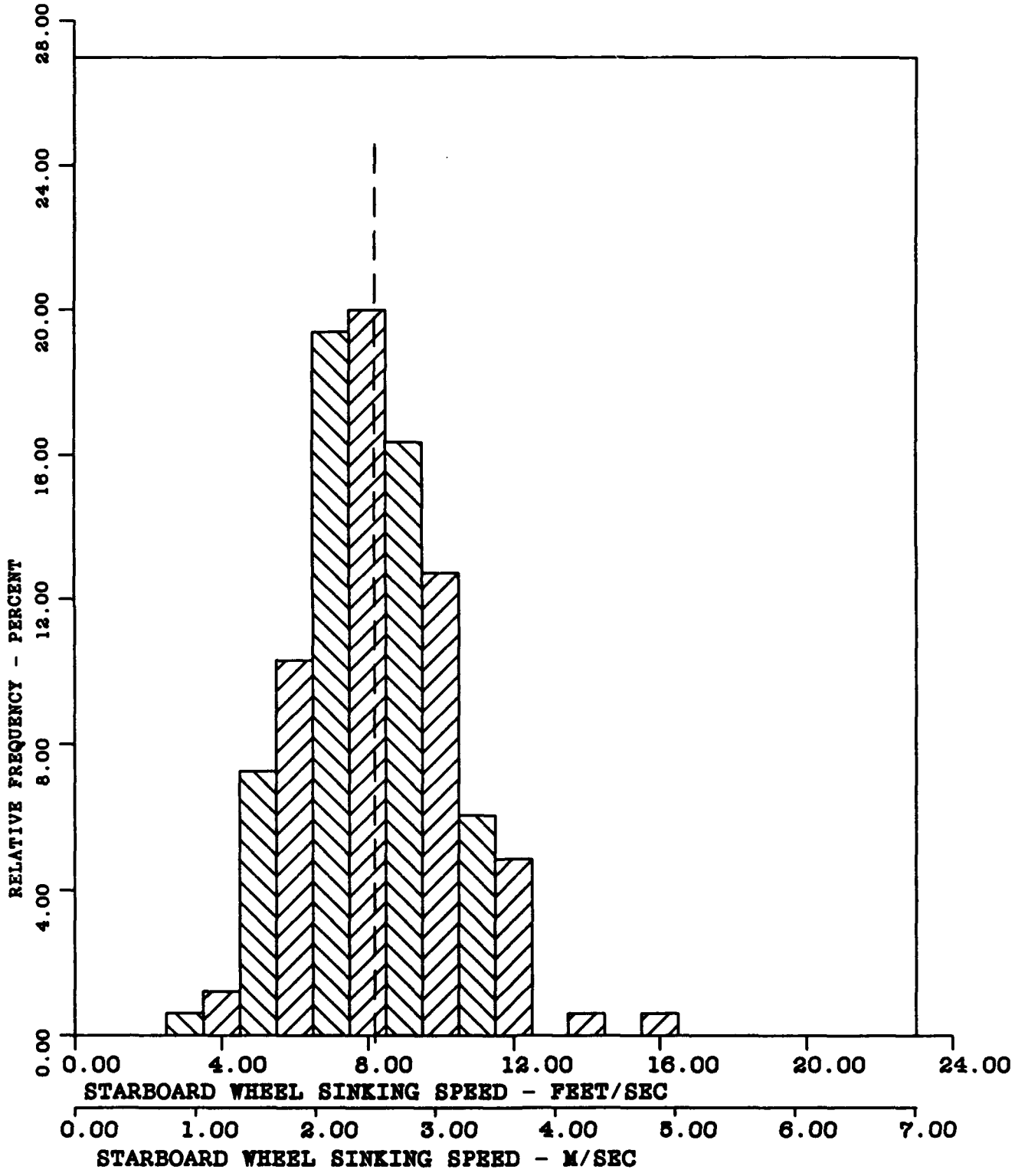


FIGURE N-11 FREQUENCY DISTRIBUTION OF STARBOARD WHEEL SINKING SPEED AT STARBOARD WHEEL TOUCHDOWN

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-165 $\bar{X}$-8.19 FEET/SEC (2.50 METRES/SEC) A3-0.48
S- 2.00 FEET/SEC (0.61 METRES/SEC) A4-3.89
CURVE FITTED - PEARSON TYPE III

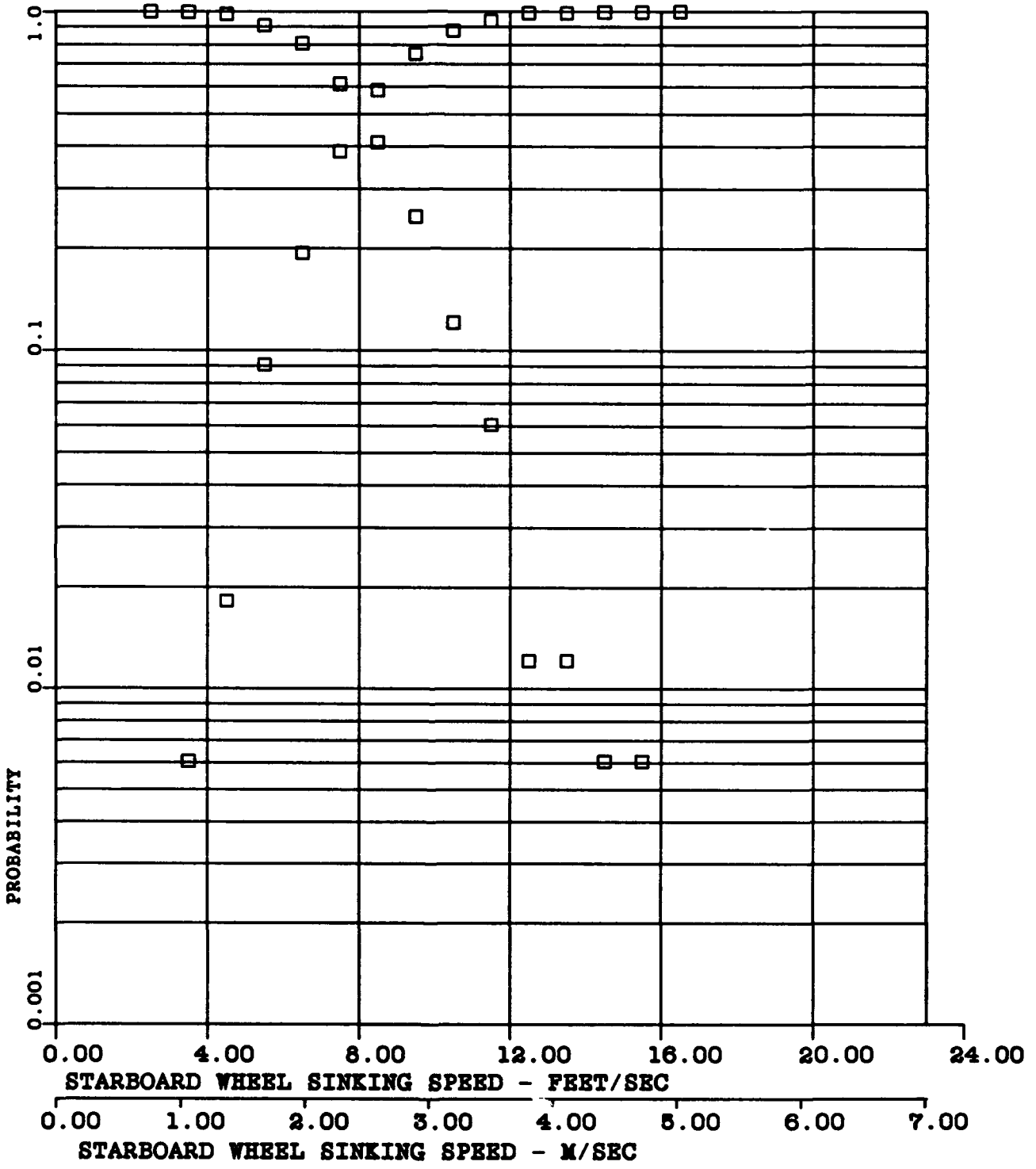


FIGURE N-12 PROBABILITY DISTRIBUTION OF STARBOARD WHEEL SINKING SPEED

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N=165 $\bar{X}$-8.39 FEET/SEC (2.56 METRES/SEC) A3-0.47
S= 1.96 FEET/SEC (0.60 METRES/SEC) A4=4.27

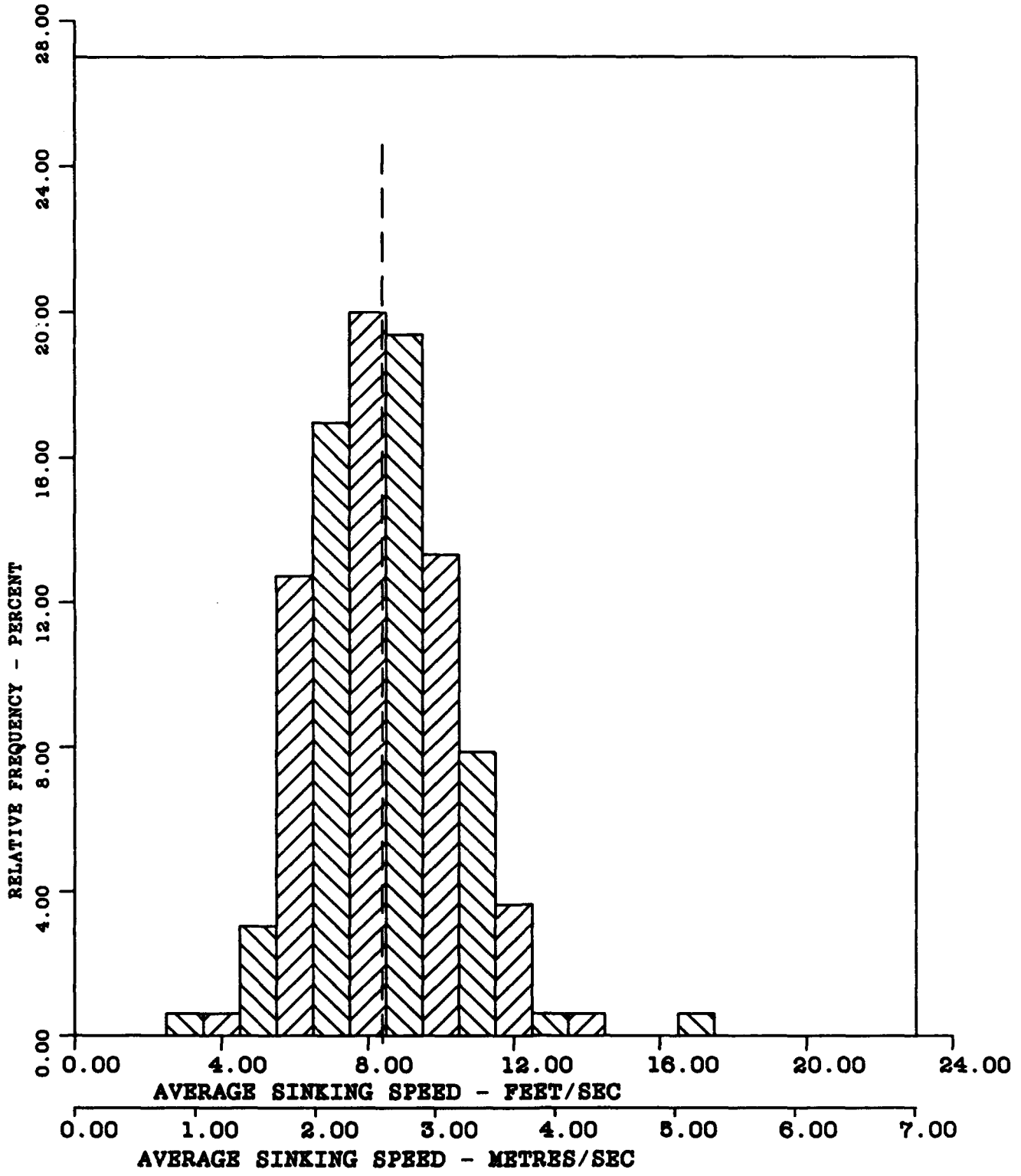


FIGURE N-13 FREQUENCY DISTRIBUTION OF AVG SINKING SPEED OF MAIN WHEEL AT FIRST MAIN WHEEL TOUCHDOWN

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N=165 $\bar{X}$-8.39 FEET/SEC (2.56 METRES/SEC) A3=0.47
S= 1.96 FEET/SEC (0.60 METRES/SEC) A4=4.27
CURVE FITTED - PEARSON TYPE III

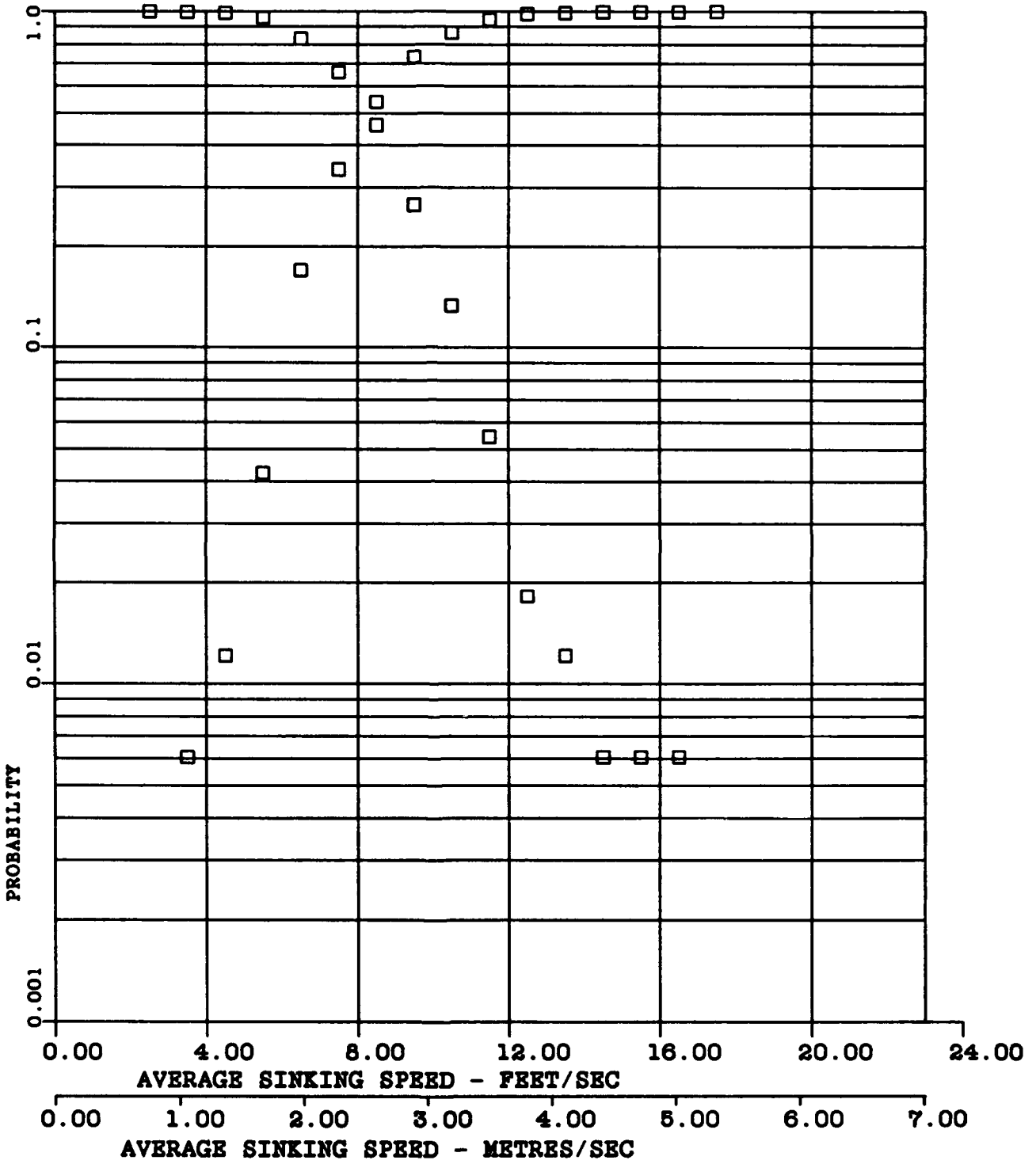


FIGURE N-14 PROBABILITY DISTRIBUTION OF AVERAGE SINKING SPEED AT FIRST MAIN WHEEL TOUCHDOWN

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (0.061 RADIANS)
N=13 $\bar{X}$=6.94 FEET/SEC (2.12 METRES/SEC) A3=0.30
S= 1.98 FEET/SEC (0.60 METRES/SEC) A4=2.96

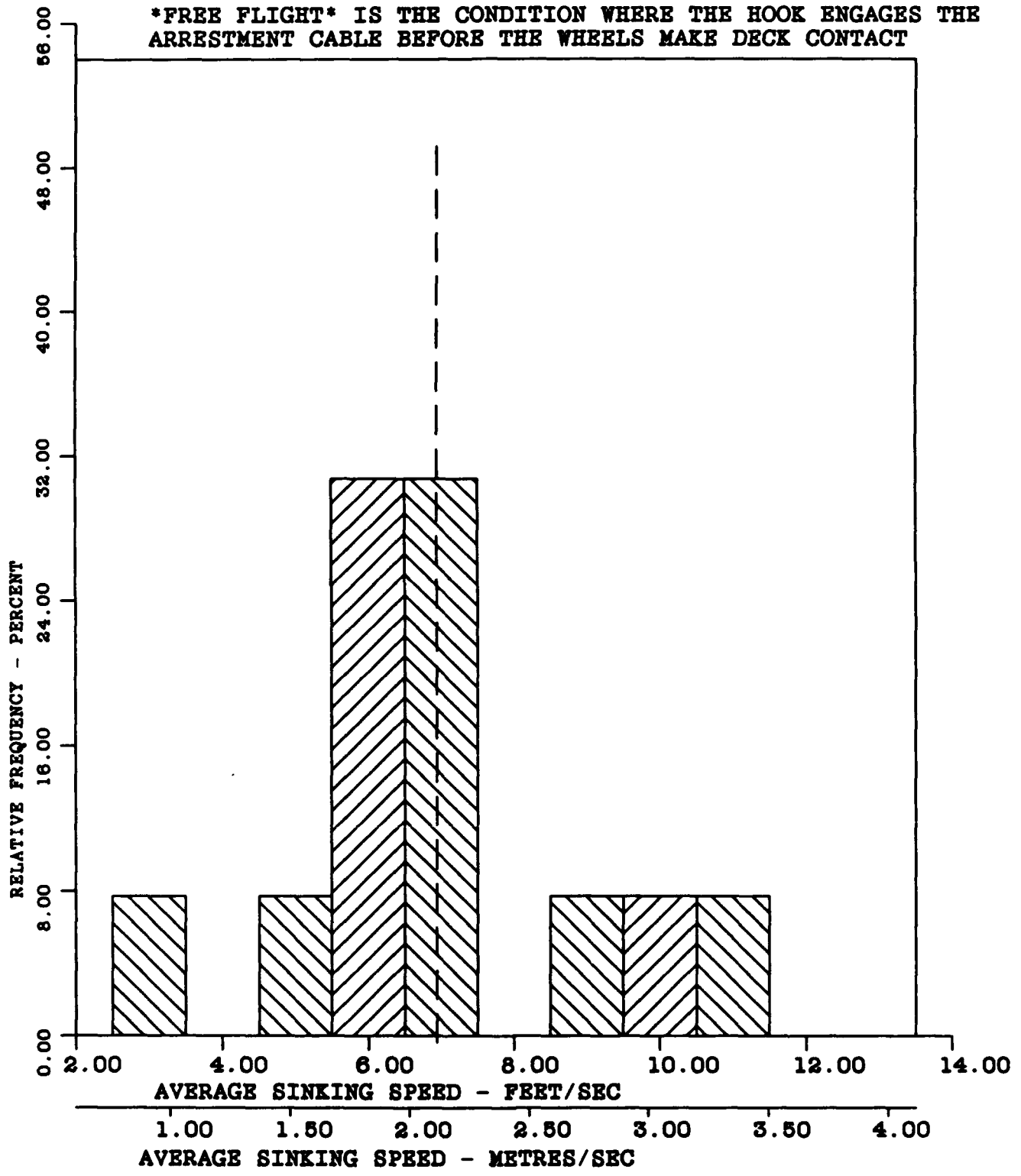


FIGURE N-15 FREQUENCY DISTRIBUTION OF AVERAGE SINKING SPEED OF MAIN WHEELS AT FREE FLIGHT

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N=13 $\bar{X}$-6.94 FEET/SEC (2.12 METRES/SEC) A3=0.30
S= 1.98 FEET/SEC (0.60 METRES/SEC) A4=2.96
CURVE FITTED - NORMAL
FREE FLIGHT IS THE CONDITION WHERE THE HOOK ENGAGES THE ARRESTMENT CABLE BEFORE THE WHEELS MAKE DECK CONTACT

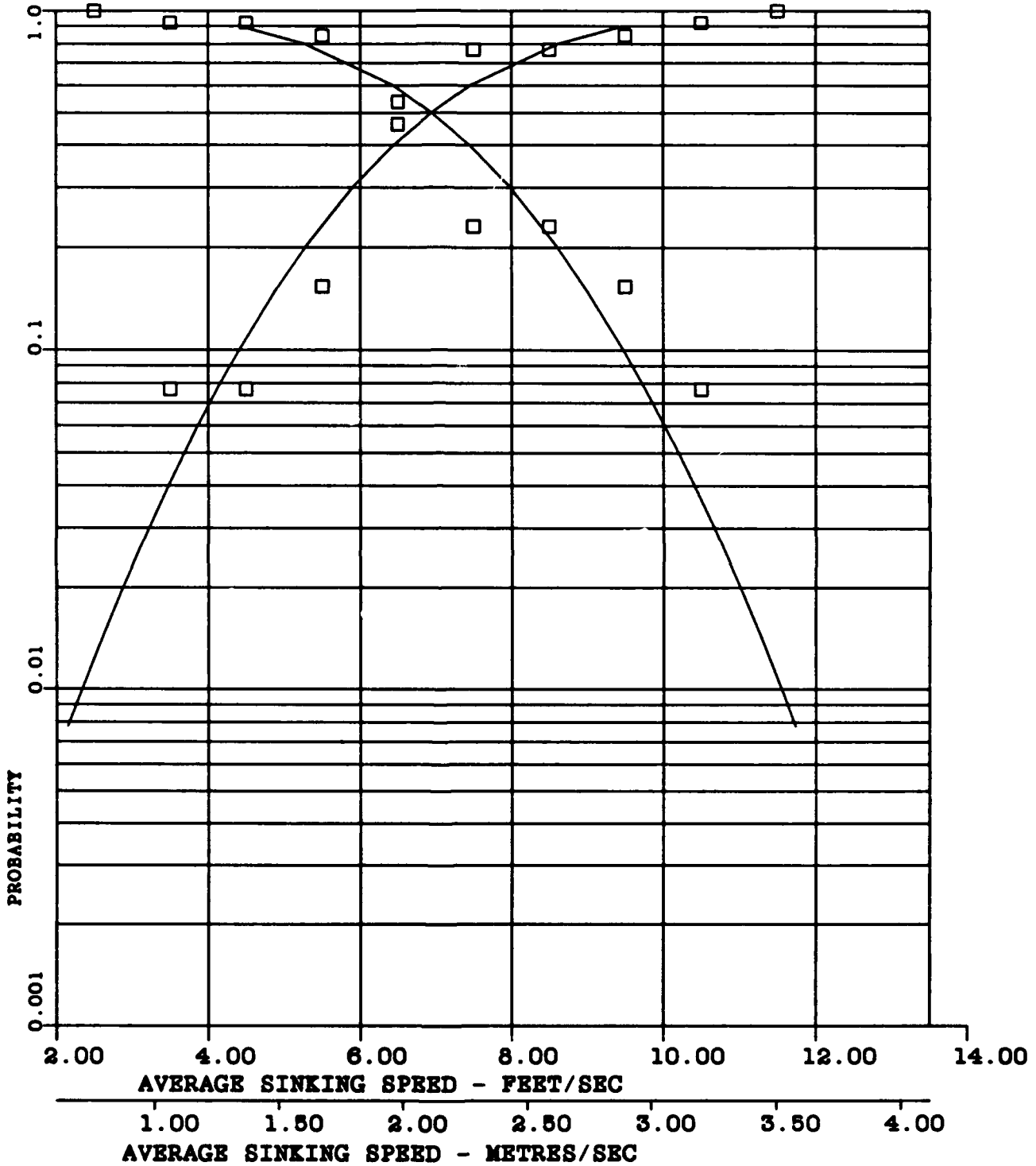


FIGURE N-16 PROBABILITY DISTRIBUTION OF AVERAGE SINKING SPEED AT FREE FLIGHT

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-165 $\bar{X}$-1.03 A3-0.32
S= 0.09 A4-3.52

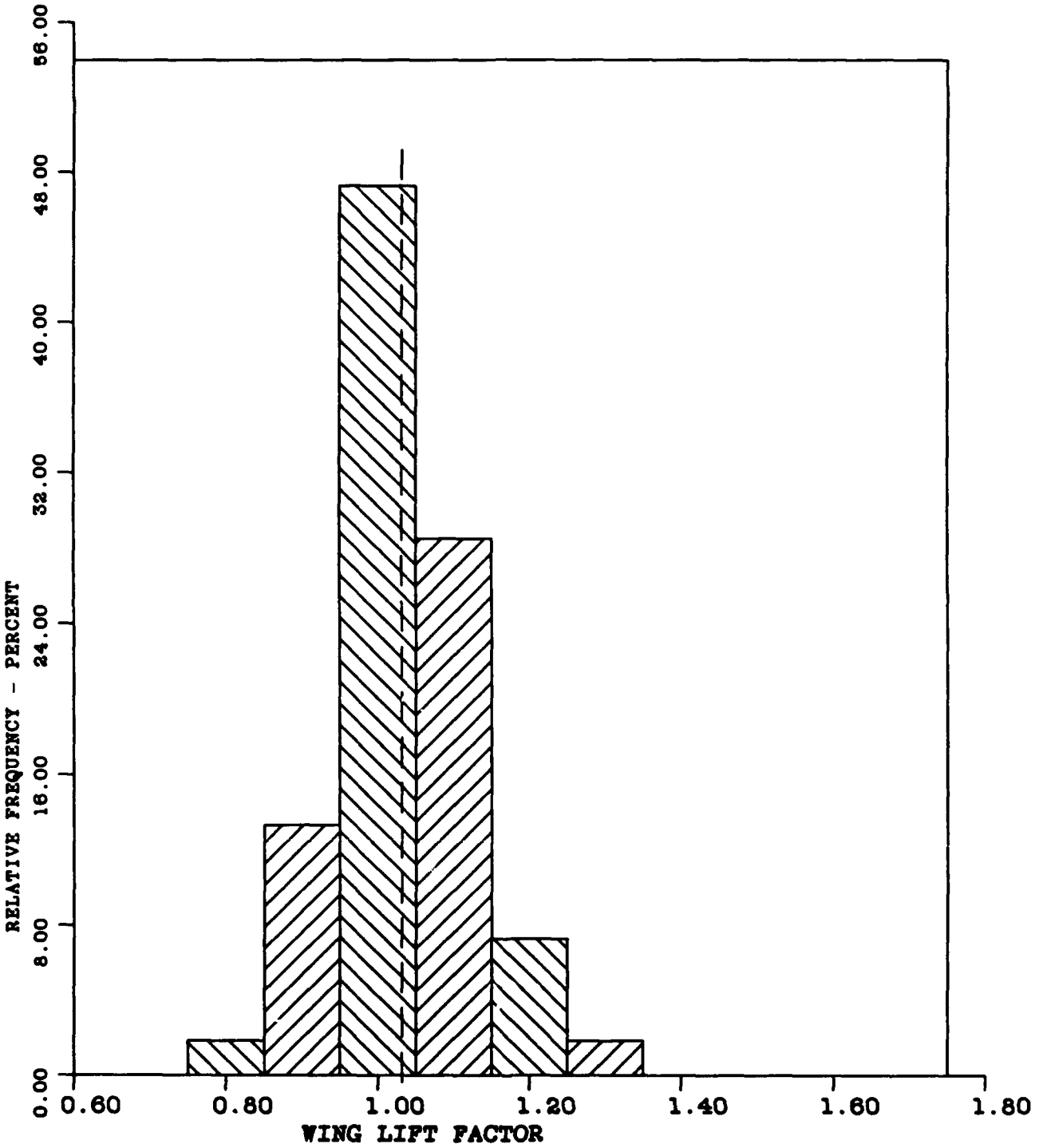


FIGURE N-17 FREQUENCY DISTRIBUTION OF WING LIFT FACTOR AT FIRST MAIN WHEEL TOUCHDOWN

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (0.061 RADIANS)
N=165 $\bar{X}$=1.03 A3=0.32
S= 0.09 A4=3.52
CURVE FITTED - NORMAL

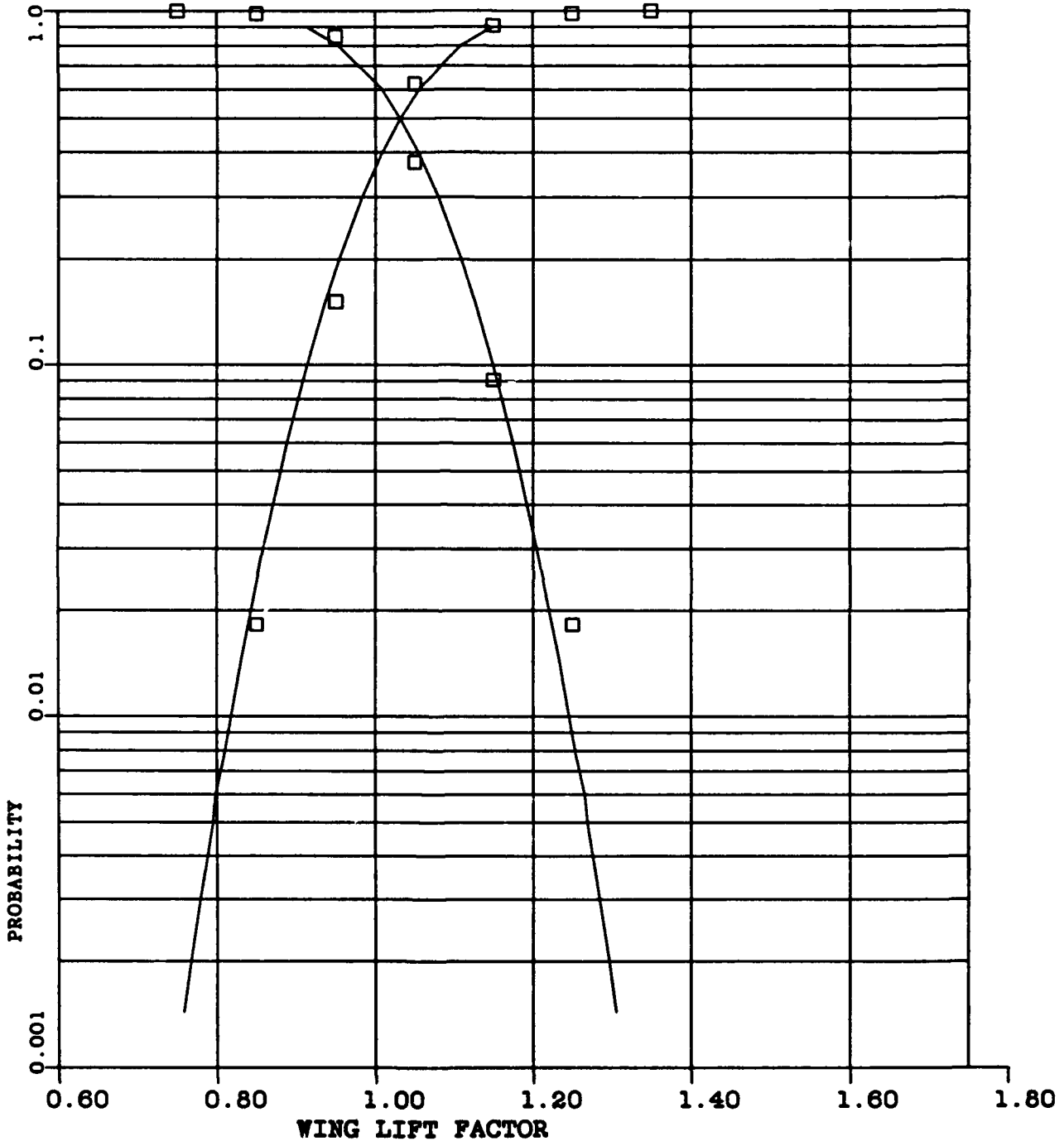


FIGURE N-18 PROBABILITY DISTRIBUTION OF WING LIFT FACTOR AT FIRST MAIN WHEEL TOUCHDOWN

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N=13 $\bar{X}$=1.05 A3=-0.13
S= 0.07 A4=2.70

FREE FLIGHT IS THE CONDITION WHERE THE HOOK ENGAGES THE ARRESTMENT CABLE BEFORE THE WHEELS MAKE DECK CONTACT

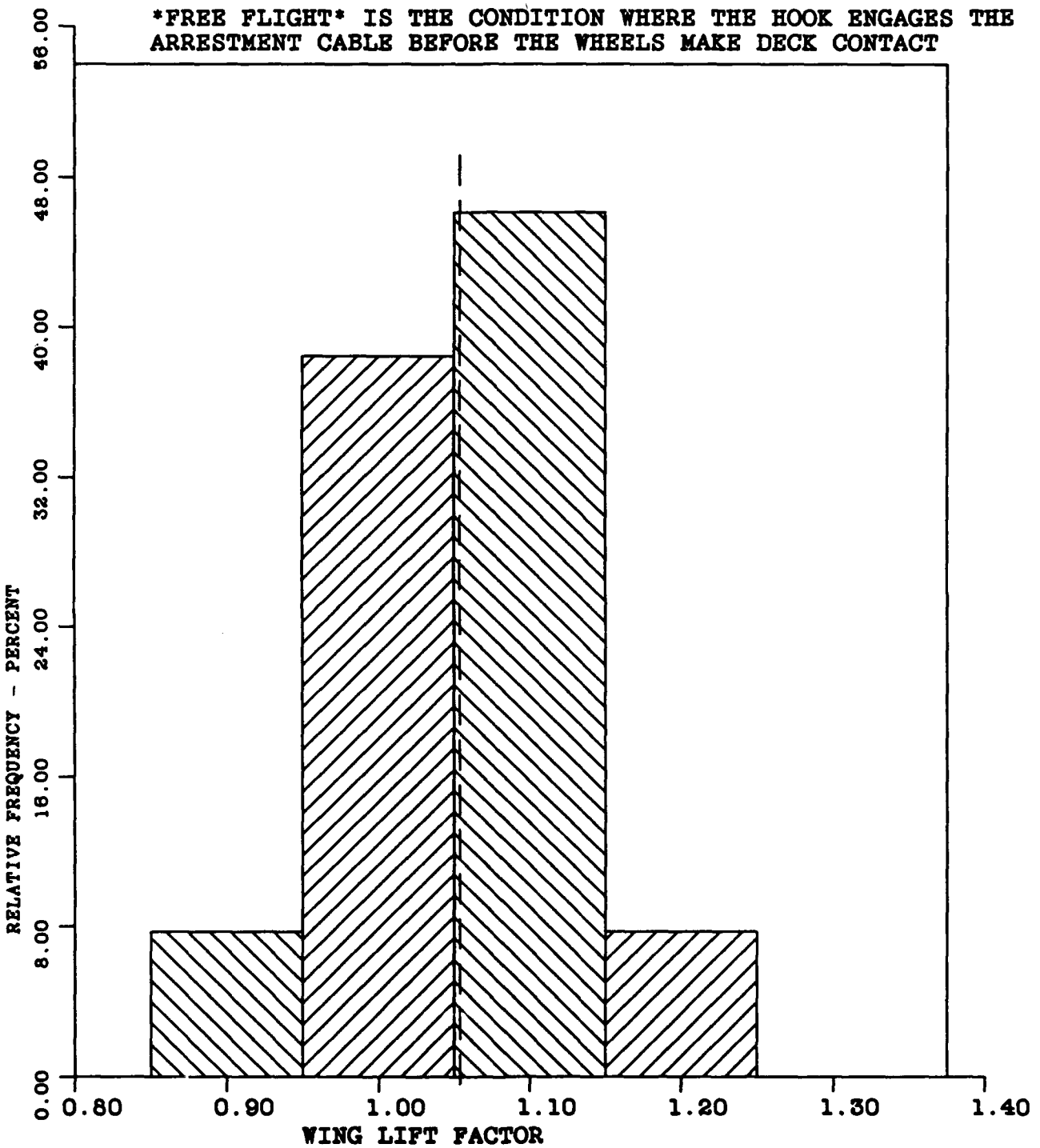


FIGURE N-19 FREQUENCY DISTRIBUTION OF WING LIFT FACTOR AT FREE FLIGHT

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N=13 $\bar{X}$=1.05 A3=-0.13
S= 0.07 A4=2.70
CURVE FITTED - NORMAL
FREE FLIGHT IS THE CONDITION WHERE THE HOOK ENGAGES THE ARRESTMENT CABLE BEFORE THE WHEELS MAKE DECK CONTACT

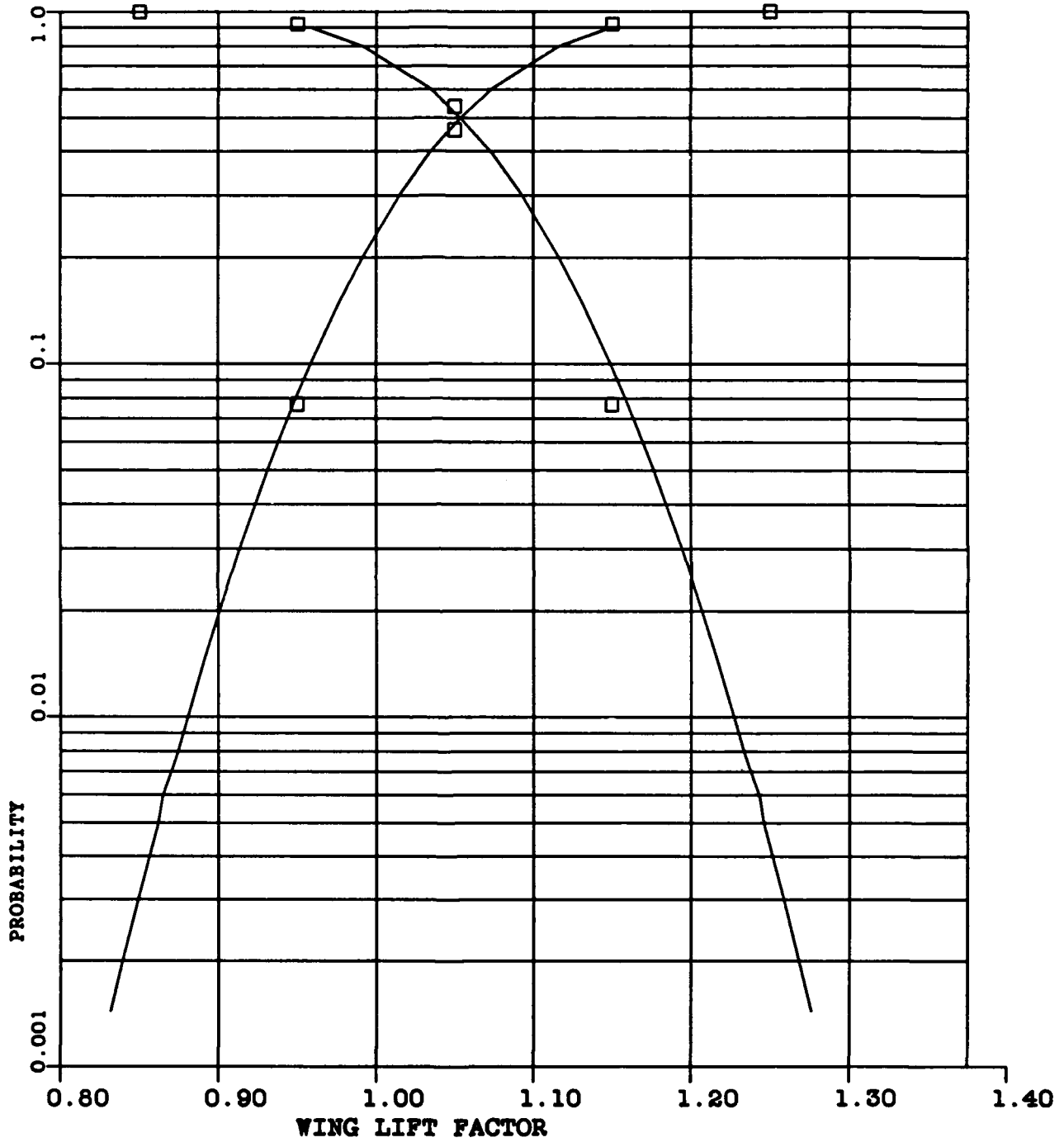


FIGURE N-20 PROBABILITY DISTRIBUTION OF WING LIFT FACTOR AT FREE FLIGHT

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-161 $\bar{X}$-5.46 DEGREES (0.095 RADIANS) A3-0.55
S- 1.19 DEGREES (0.021 RADIANS) A4-3.89

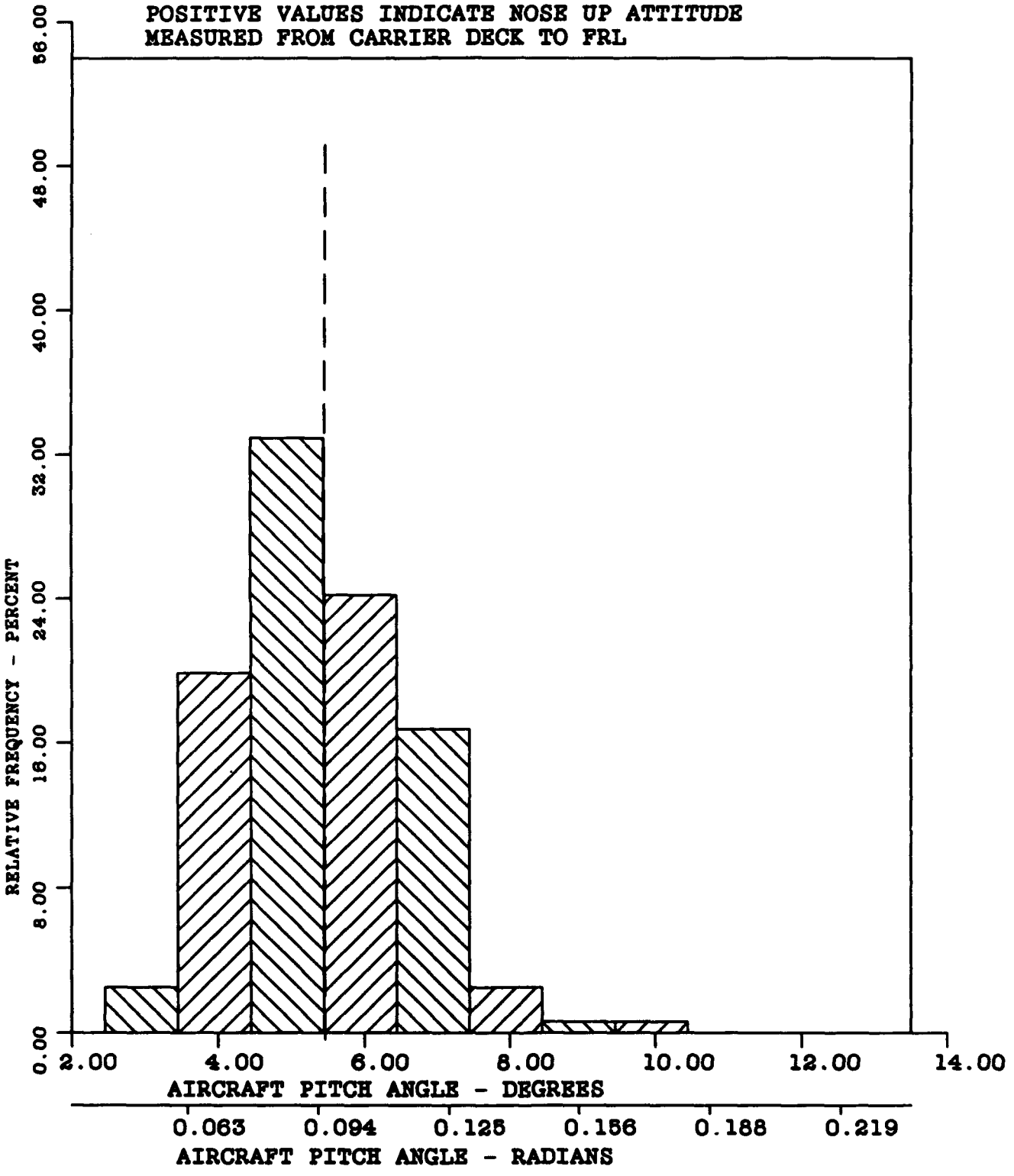


FIGURE N-21 FREQUENCY DISTRIBUTION OF AIRCRAFT PITCH ANGLE AT THE RAMP

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-161 $\bar{X}$-5.46 DEGREES (0.095 RADIANS) A3-0.55
S- 1.19 DEGREES (0.021 RADIANS) A4-3.89
CURVE FITTED - PEARSON TYPE III
POSITIVE VALUES INDICATE NOSE UP ATTITUDE
MEASURED FROM CARRIER DECK TO FRL

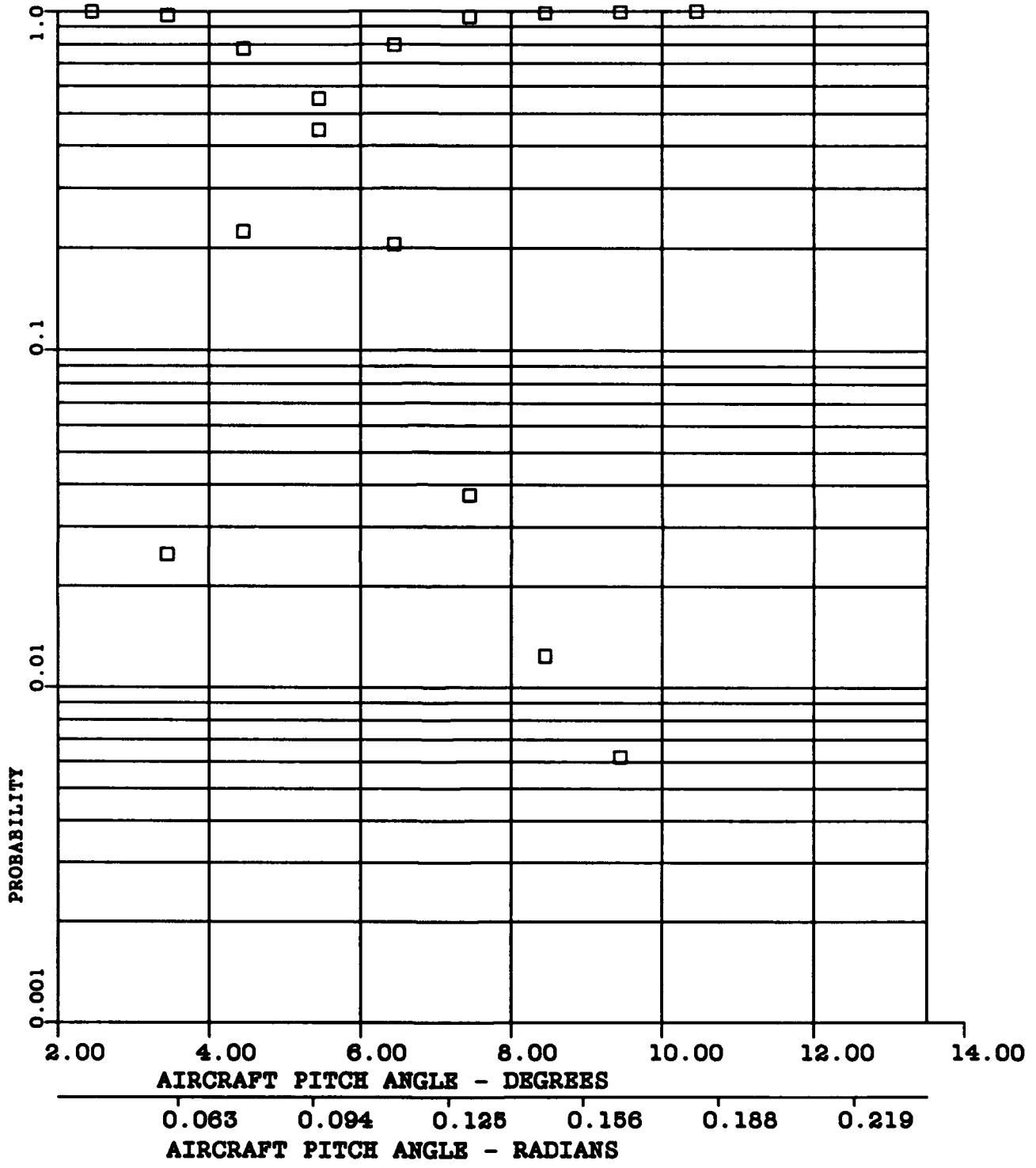


FIGURE N-22 PROBABILITY DISTRIBUTION OF AIRCRAFT PITCH ANGLE AT THE RAMP

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-165 $\bar{X}$-4.50 DEGREES (0.079 RADIANS) A3-0.18
S- 1.20 DEGREES (0.021 RADIANS) A4-3.57

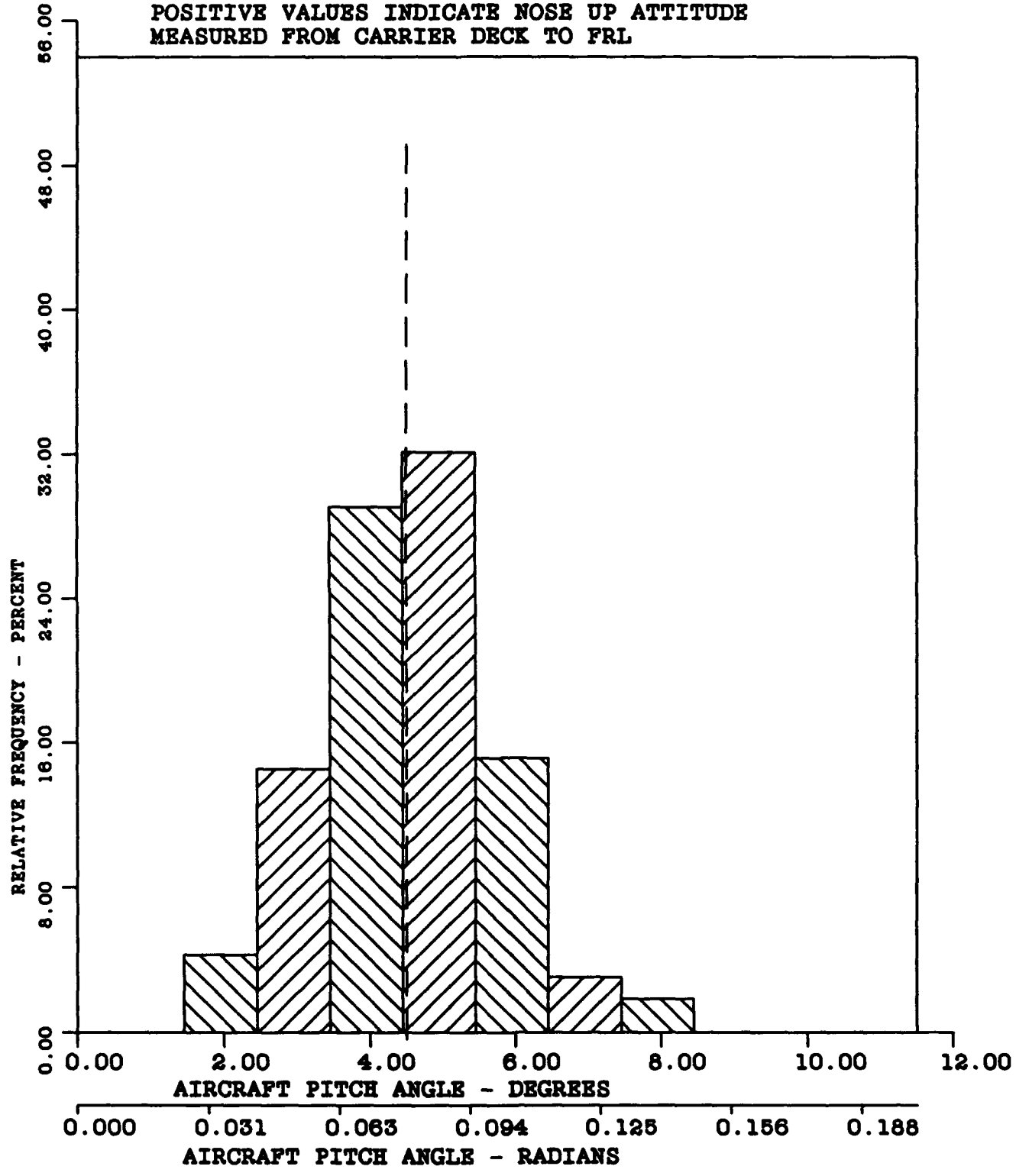


FIGURE N-23 FREQUENCY DISTRIBUTION OF AIRCRAFT PITCH ANGLE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-165 $\bar{X}$-4.50 DEGREES (0.079 RADIANS) A3-0.18
S- 1.20 DEGREES (0.021 RADIANS) A4-3.57
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE NOSE UP ATTITUDE
MEASURED FROM CARRIER DECK TO FRL

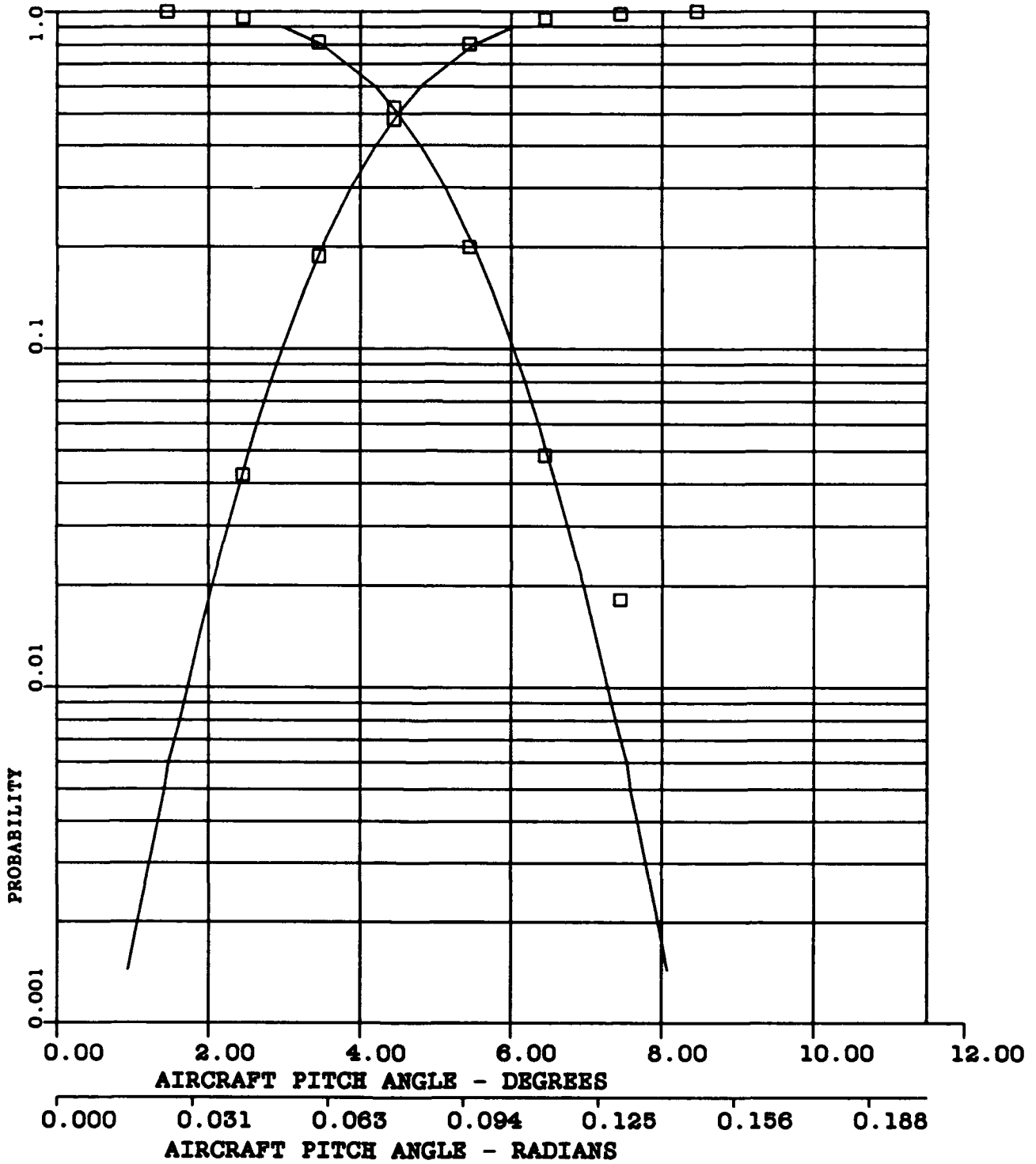


FIGURE N-24 PROBABILITY DISTRIBUTION OF AIRCRAFT PITCH ANGLE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N=13 $\bar{X}$=5.05 DEGREES (0.088 RADIANS) A3=-0.00
S= 0.89 DEGREES (0.016 RADIANS) A4=2.40

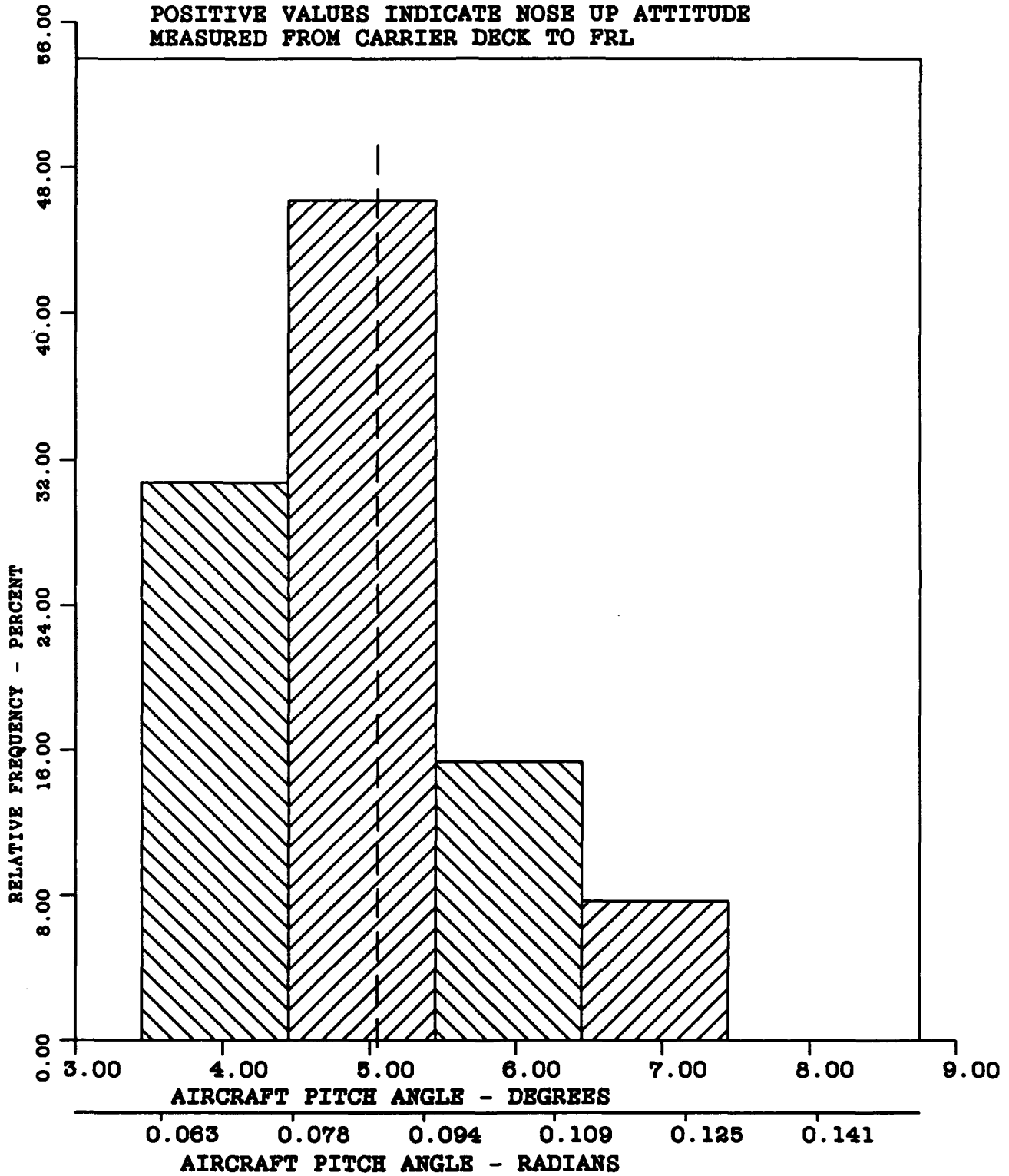


FIGURE N-25 FREQUENCY DISTRIBUTION OF AIRCRAFT PITCH ANGLE AT FREE FLIGHT

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-13 $\bar{X}$-5.05 DEGREES (0.088 RADIANS) A3=-0.00
S= 0.89 DEGREES (0.016 RADIANS) A4-2.40
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE NOSE UP ATTITUDE
MEASURED FROM CARRIER DECK TO FRL

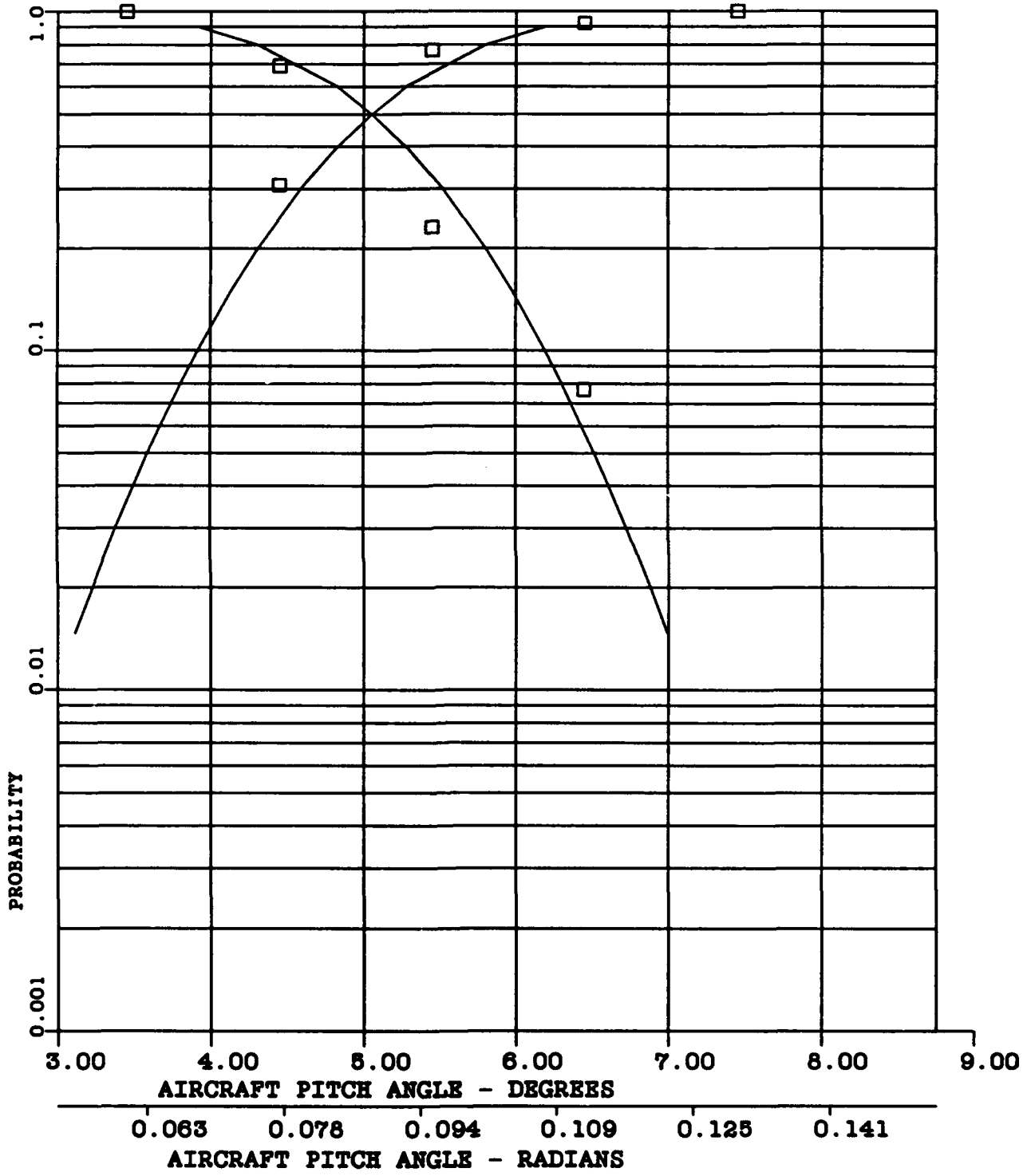


FIGURE N-26 PROBABILITY DISTRIBUTION OF AIRCRAFT PITCH ANGLE AT FREE FLIGHT

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N=161 $\bar{X}$=-0.11 DEGREES (-0.002 RADIANS) A3=0.48
S= 2.08 DEGREES (0.036 RADIANS) A4=3.65

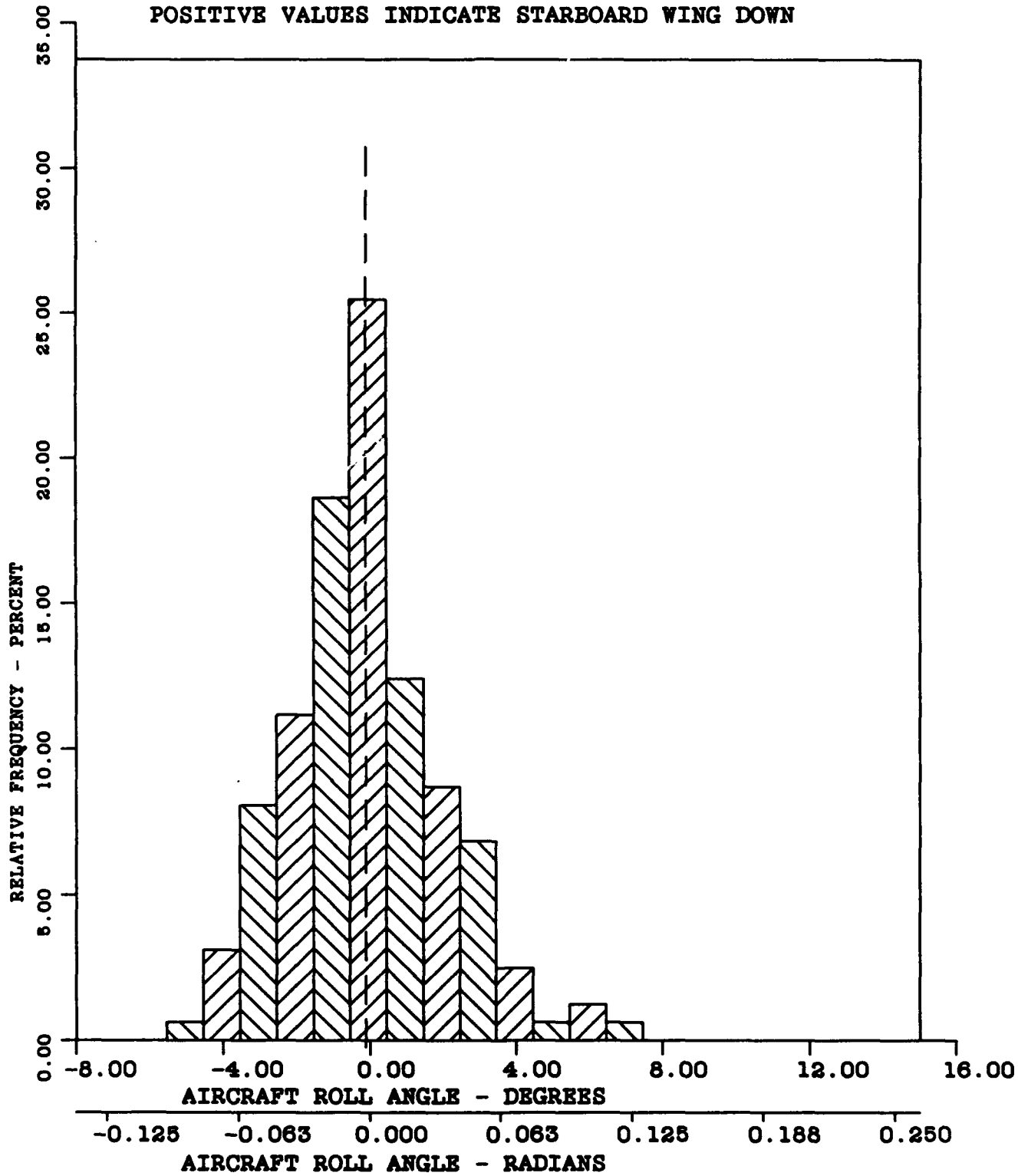


FIGURE N-27 FREQUENCY DISTRIBUTION OF AIRCRAFT ROLL ANGLE AT THE RAMP

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N=161 $\bar{X}$=-0.11 DEGREES (-0.002 RADIANS) A3=0.48
S= 2.08 DEGREES (0.036 RADIANS) A4=3.65
CURVE FITTED - PEARSON TYPE III
POSITIVE VALUES INDICATE STARBOARD WING DOWN

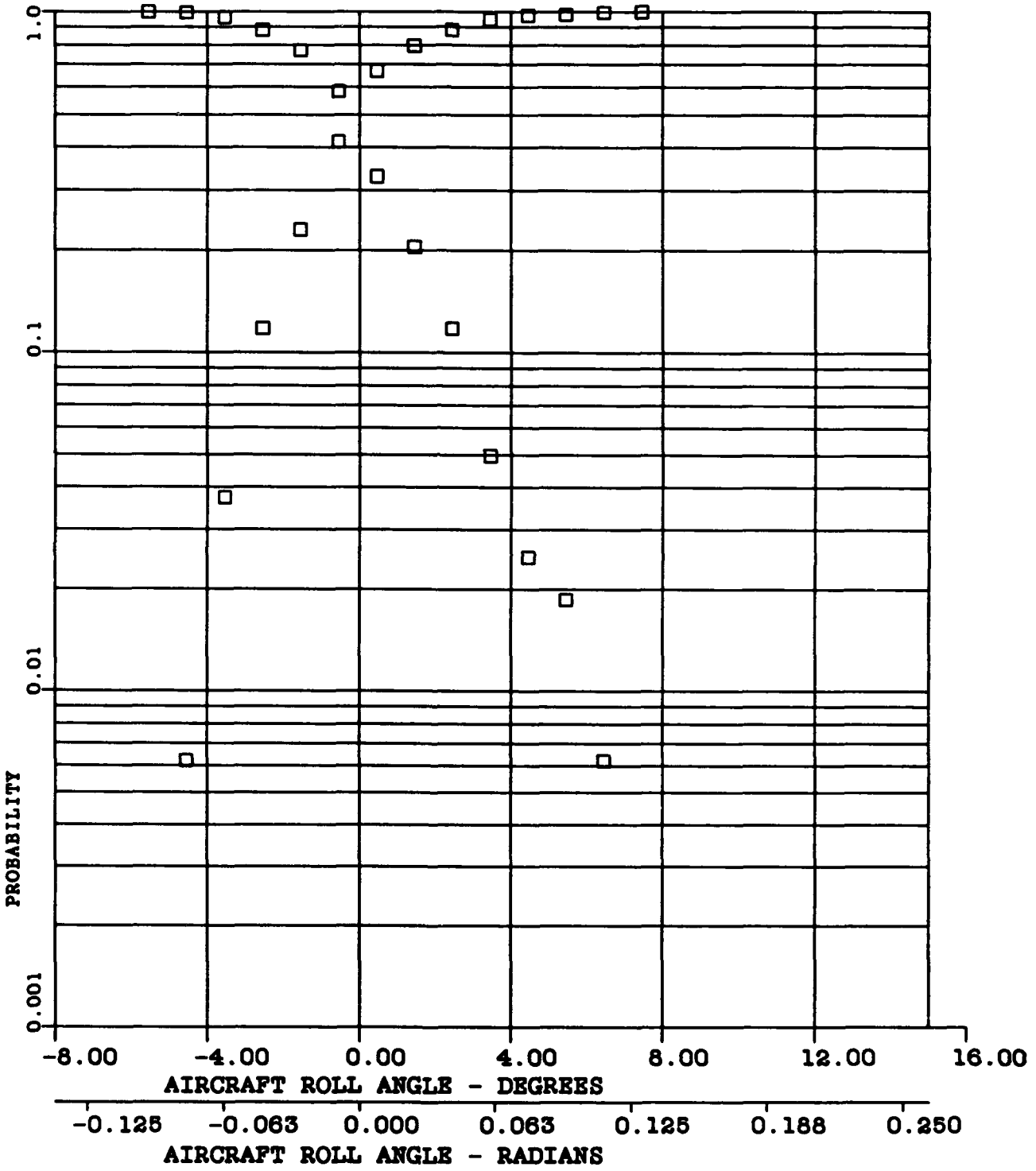


FIGURE N-28 PROBABILITY DISTRIBUTION OF AIRCRAFT ROLL ANGLE AT THE RAMP

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (0.061 RADIANS)
N=165 $\bar{X}$=-0.59 DEGREES (-0.010 RADIANS) A3=0.57
S= 1.89 DEGREES (0.033 RADIANS) A4=4.48

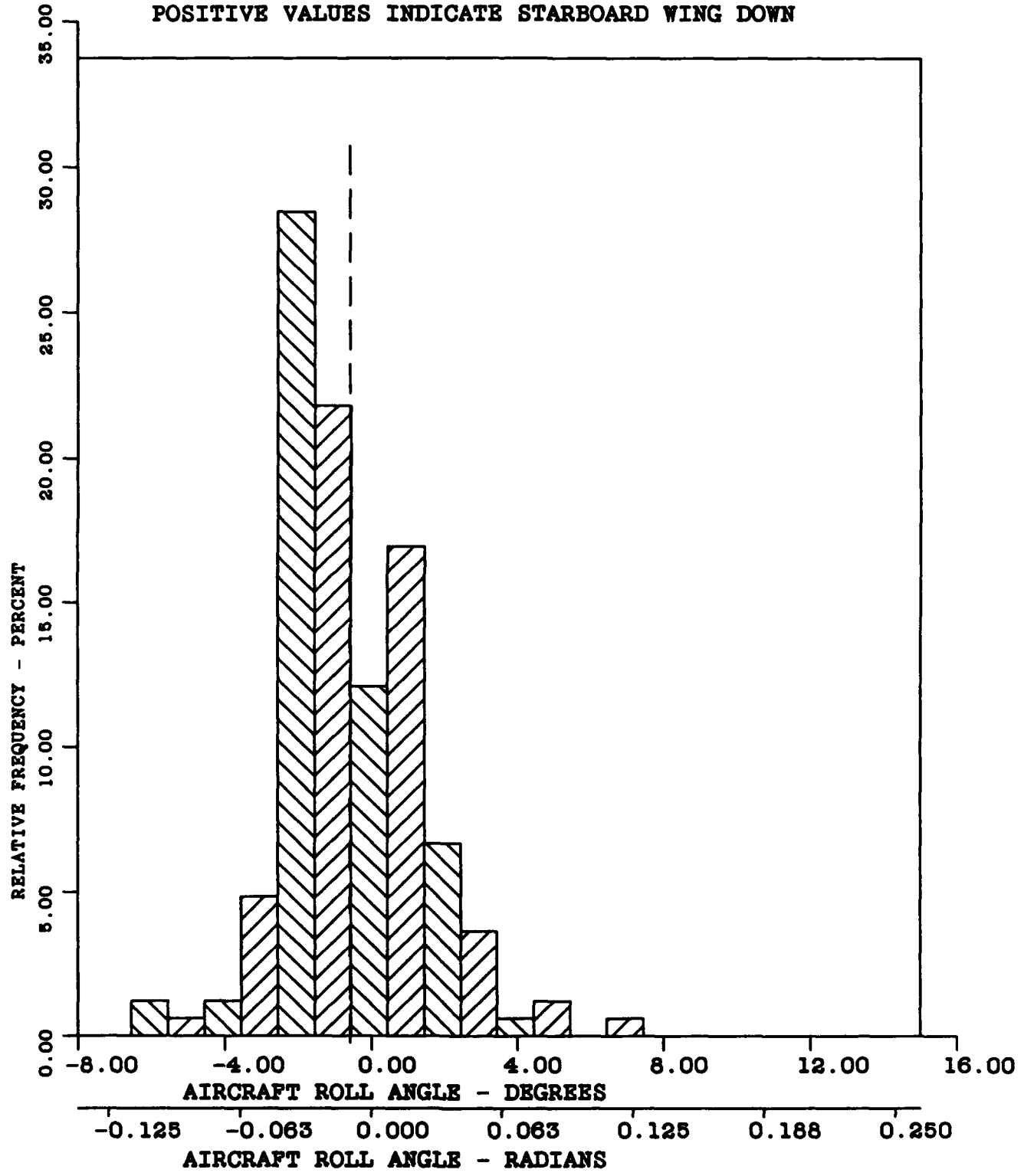


FIGURE FREQUENCY DISTRIBUTION OF AIRCRAFT ROLL ANGLE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (0.061 RADIANS)
N=165 $\bar{X}$=-0.59 DEGREES (-0.010 RADIANS) A3=0.57
S= 1.89 DEGREES (0.033 RADIANS) A4=4.48
CURVE FITTED - PEARSON TYPE III
POSITIVE VALUES INDICATE STARBOARD WING DOWN

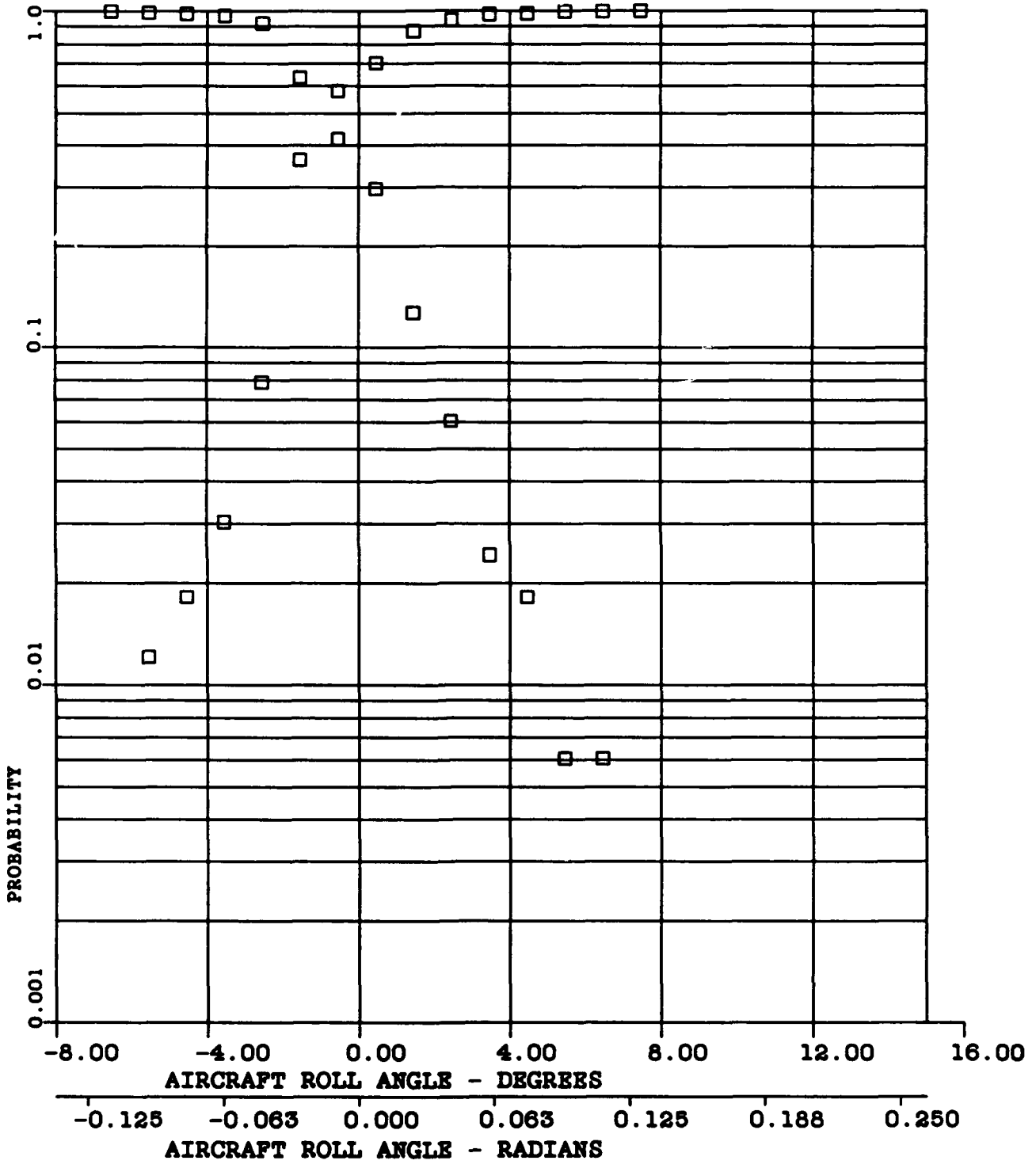


FIGURE N-30 PROBABILITY DISTRIBUTION OF AIRCRAFT ROLL ANGLE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-13 $\bar{X}$=-0.48 DEGREES (-0.008 RADIANS) A3=0.34
S= 1.17 DEGREES (0.020 RADIANS) A4=2.05

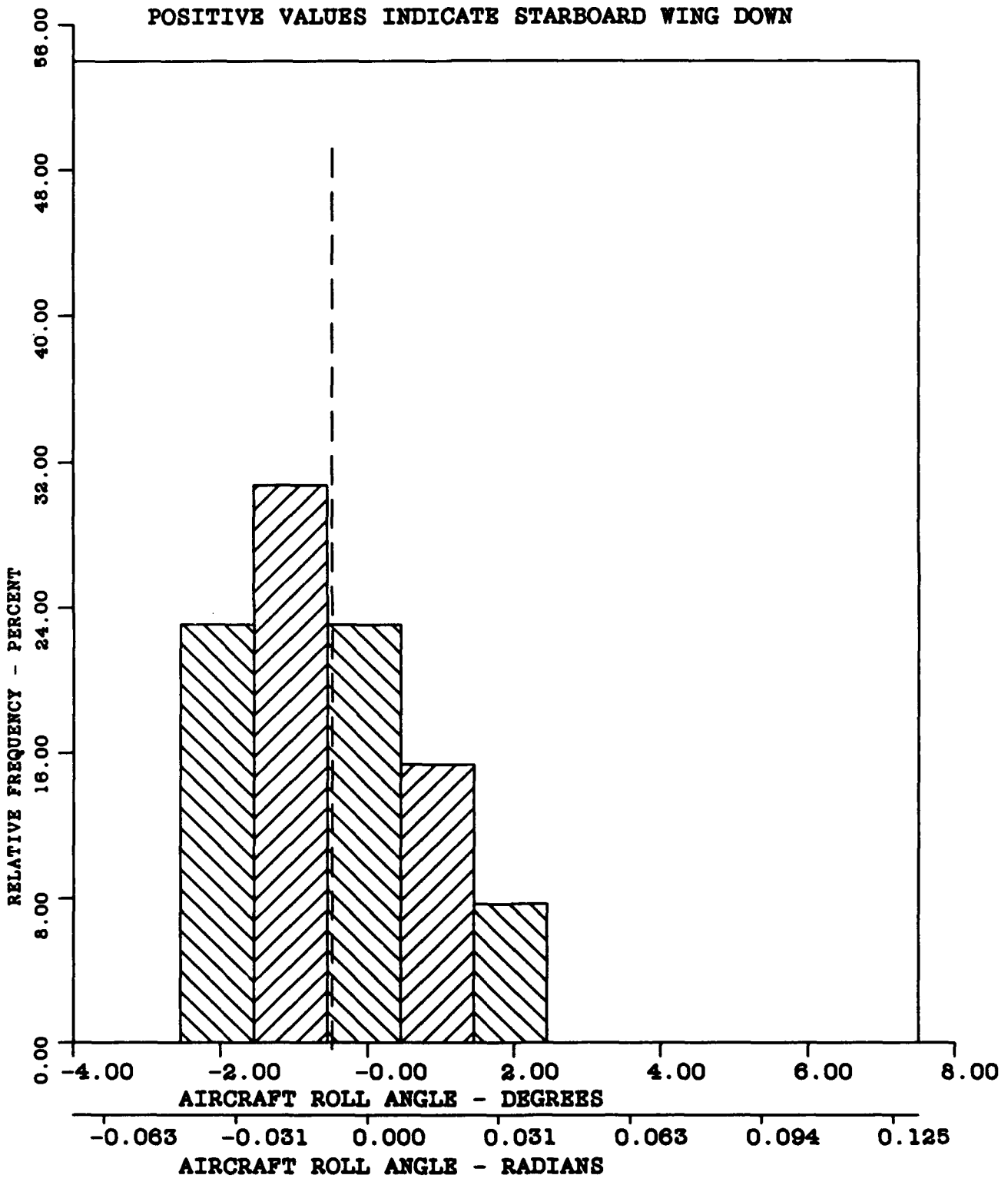


FIGURE N-31 FREQUENCY DISTRIBUTION OF AIRCRAFT ROLL ANGLE AT FREE FLIGHT

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N=13 $\bar{X}$=-0.48 DEGREES (-0.008 RADIANS) A3=0.34
S= 1.17 DEGREES (0.020 RADIANS) A4=2.05
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE STARBOARD WING DOWN

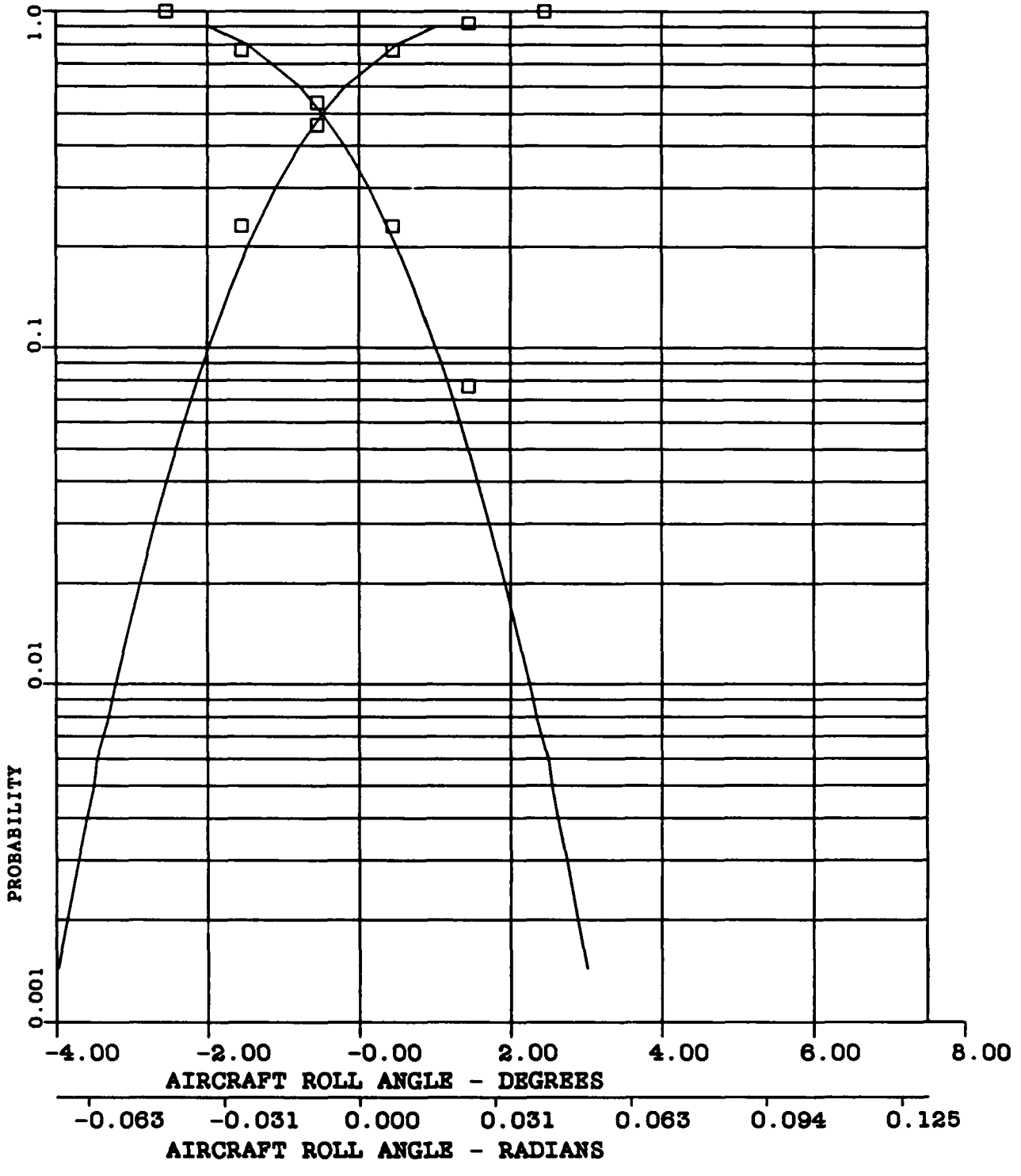


FIGURE N-32 PROBABILITY DISTRIBUTION OF AIRCRAFT ROLL ANGLE AT FREE FLIGHT

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-165 $\bar{X}$-248.47 FEET (75.73 METRES) A3=-0.39
S= 32.93 FEET (10.04 METRES) A4=2.85

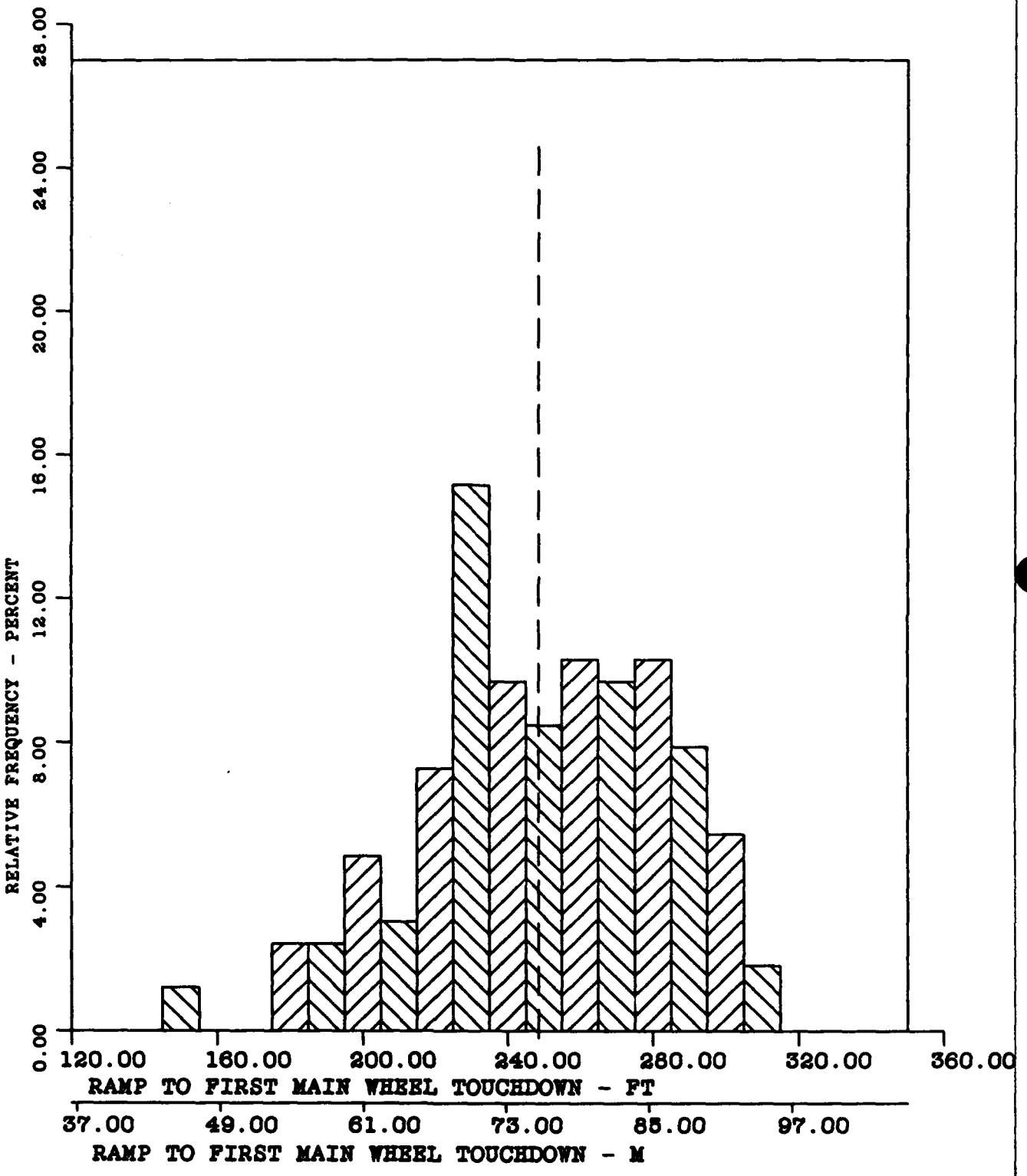


FIGURE N-33 FREQUENCY DISTRIBUTION OF DISTANCE FROM RAMP TO FIRST MAIN WHEEL TOUCHDOWN POINT

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (0.061 RADIANS)
N=165 $\bar{X}$=248.47 FEET (75.73 METRES) A3=-0.39
S= 32.93 FEET (10.04 METRES) A4=2.85
CURVE FITTED - PEARSON TYPE III

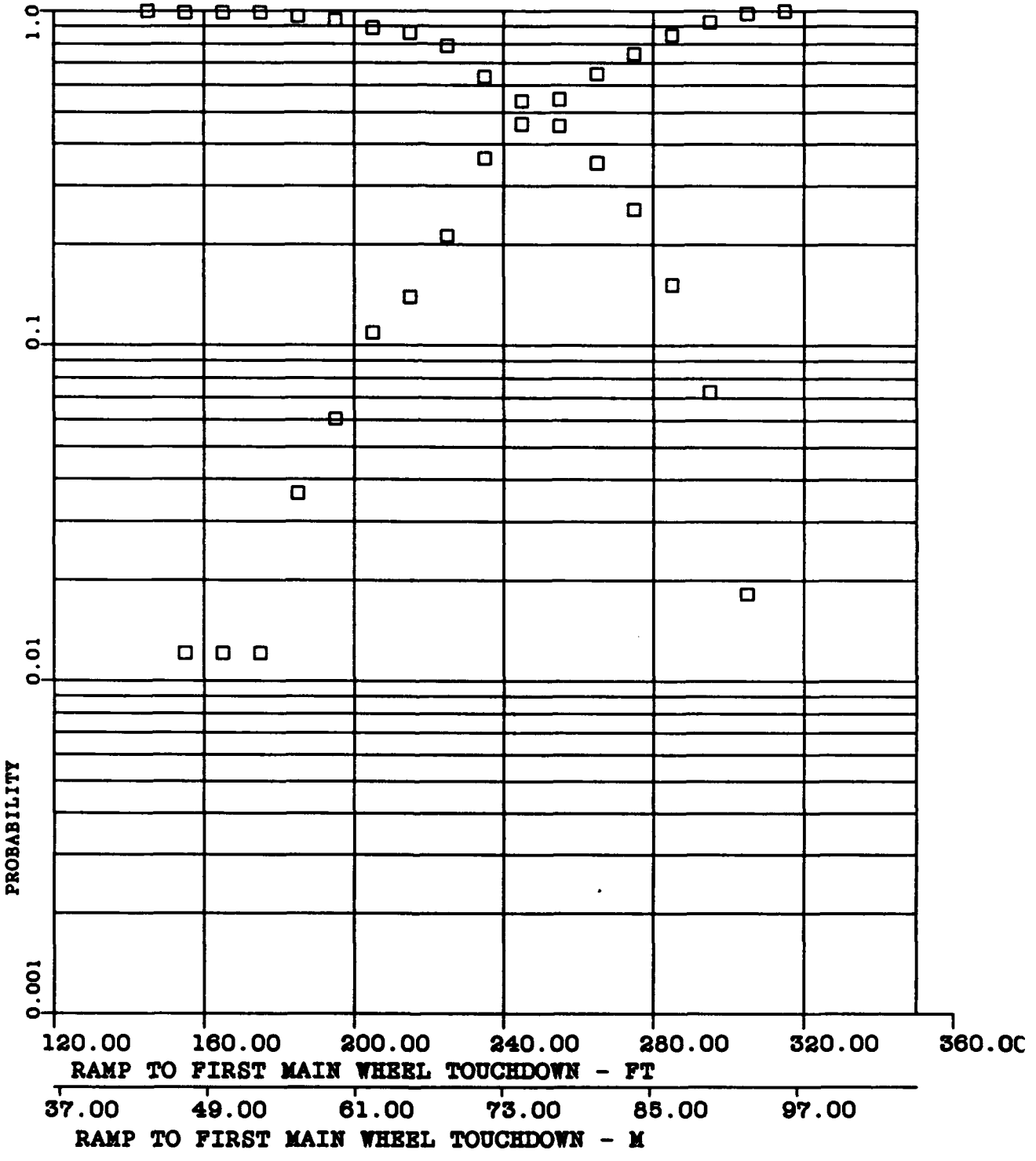


FIGURE N-34 PROBABILITY DISTRIBUTION OF DISTANCE FROM RAMP TO FIRST MAIN WHEEL TOUCHDOWN POINT

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (0.061 RADIANS)
N=165 $\bar{X}$=-10.57 FEET (-3.22 METRES) A3=0.22
S= 4.52 FEET (1.38 METRES) A4=2.97

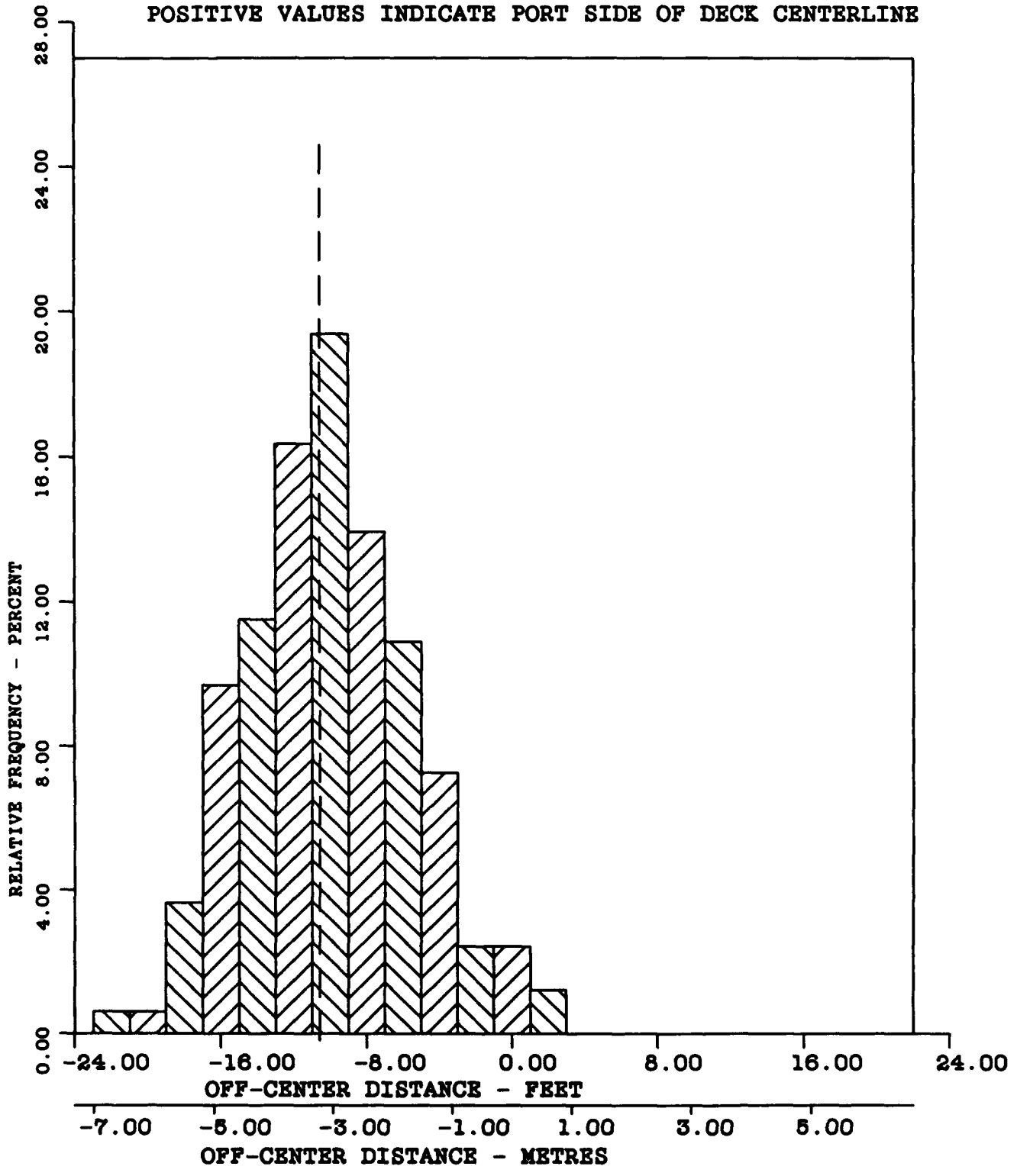


FIGURE N-35 FREQUENCY DISTRIBUTION OF AIRCRAFT CENTERLINE OFF-CNTR DISTANCE AT 1ST MAIN WHEEL TOUCHDOWN

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N=165 $\bar{X}$=-10.57 FEET (-3.22 METRES) A3=0.22
S= 4.52 FEET (1.38 METRES) A4=2.97
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE PORT SIDE OF DECK CENTERLINE

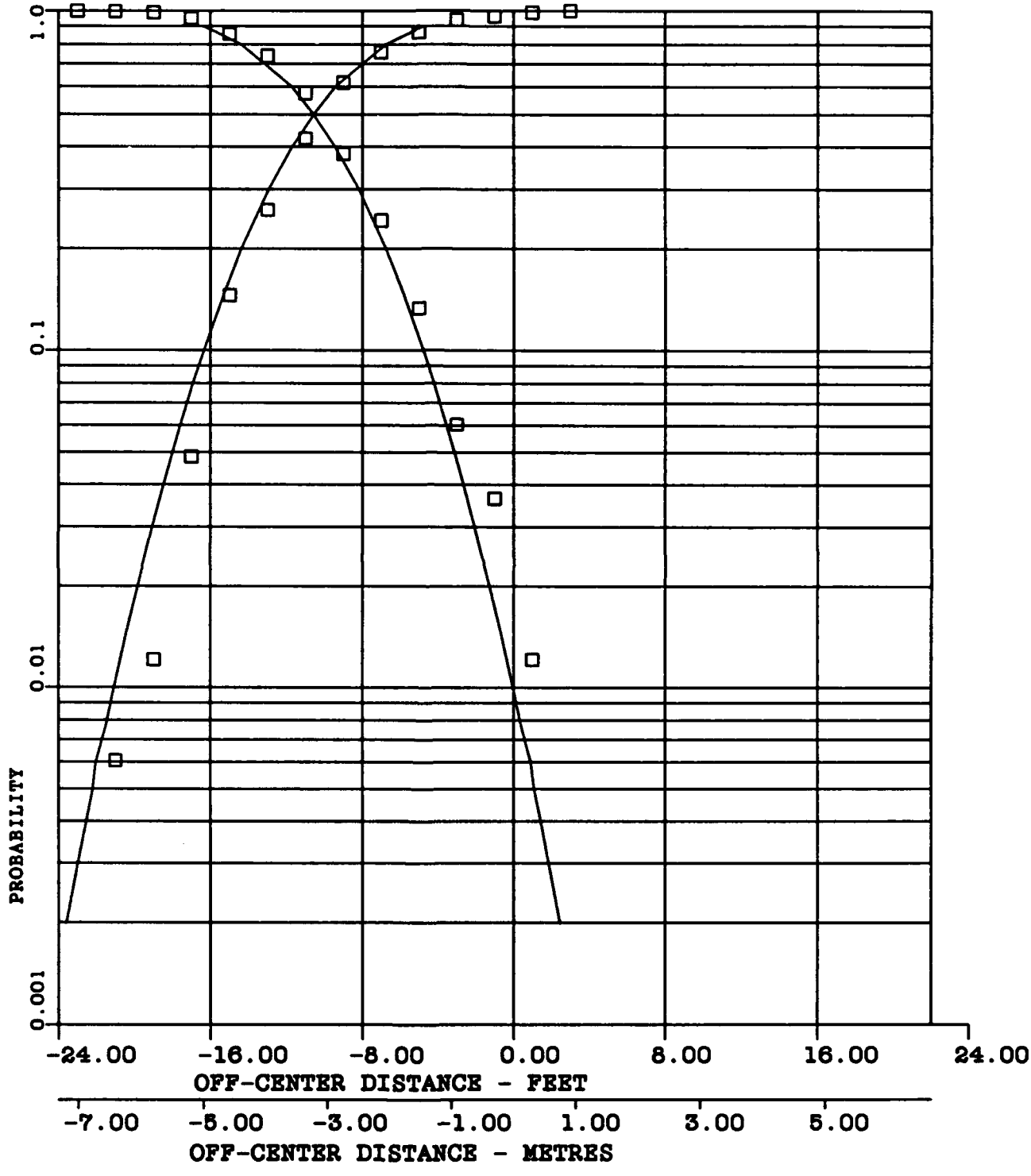


FIGURE N-36 PROBABILITY DISTRIBUTION OF AIRCRAFT OFF-CENTER DISTANCE AT 1ST MAIN WHEEL TOUCHDOWN

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N=131 $\bar{X}$=2.61 A3=0.47
S= 0.76 A4=2.34

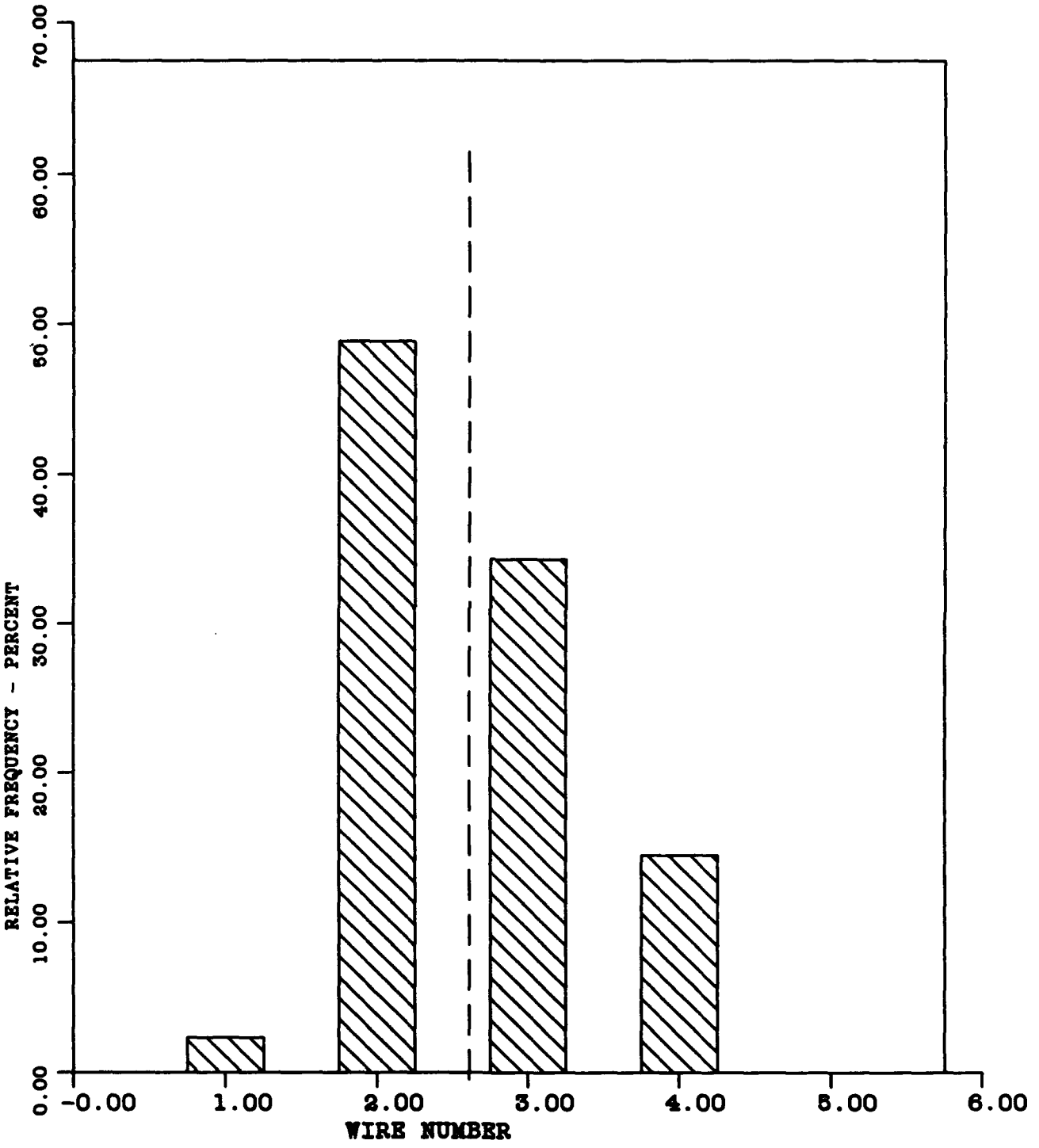


FIGURE N-37 FREQUENCY DISTRIBUTION OF ARRESTMENT WIRE NUMBER ENGAGED

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (0.061 RADIANS)
N=165 $\bar{X}$=2.80 DEGREES (0.049 RADIANS) A3=0.45
S= 0.70 DEGREES (0.012 RADIANS) A4=3.20

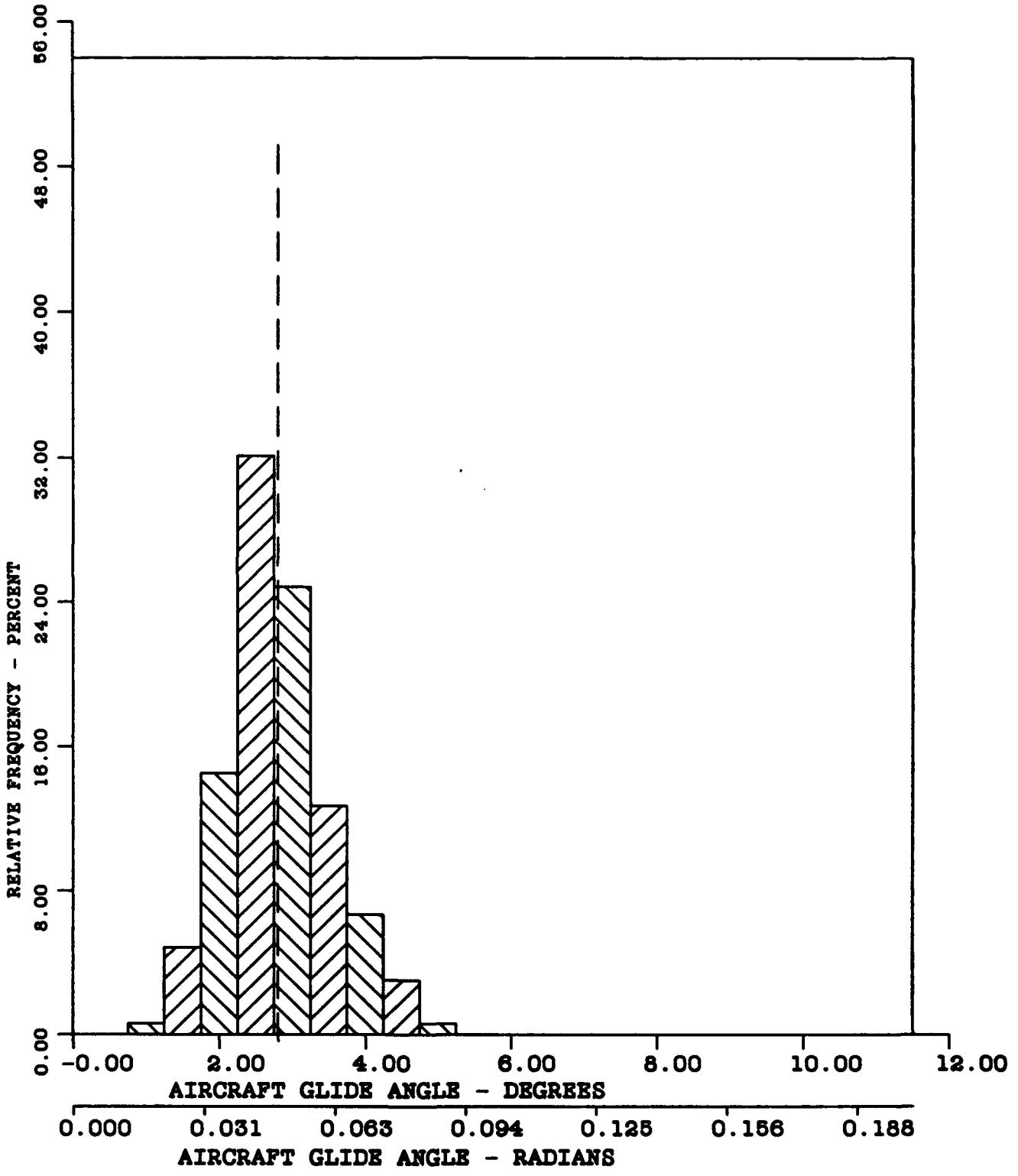


FIGURE N-38 FREQUENCY DISTRIBUTION OF AIRCRAFT GLIDE ANGLE - INSTANTANEOUS METHOD

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-161 $\bar{X}$-3.23 DEGREES (0.056 RADIANS) A3=0.74
S= 0.67 DEGREES (0.012 RADIANS) A4=4.01

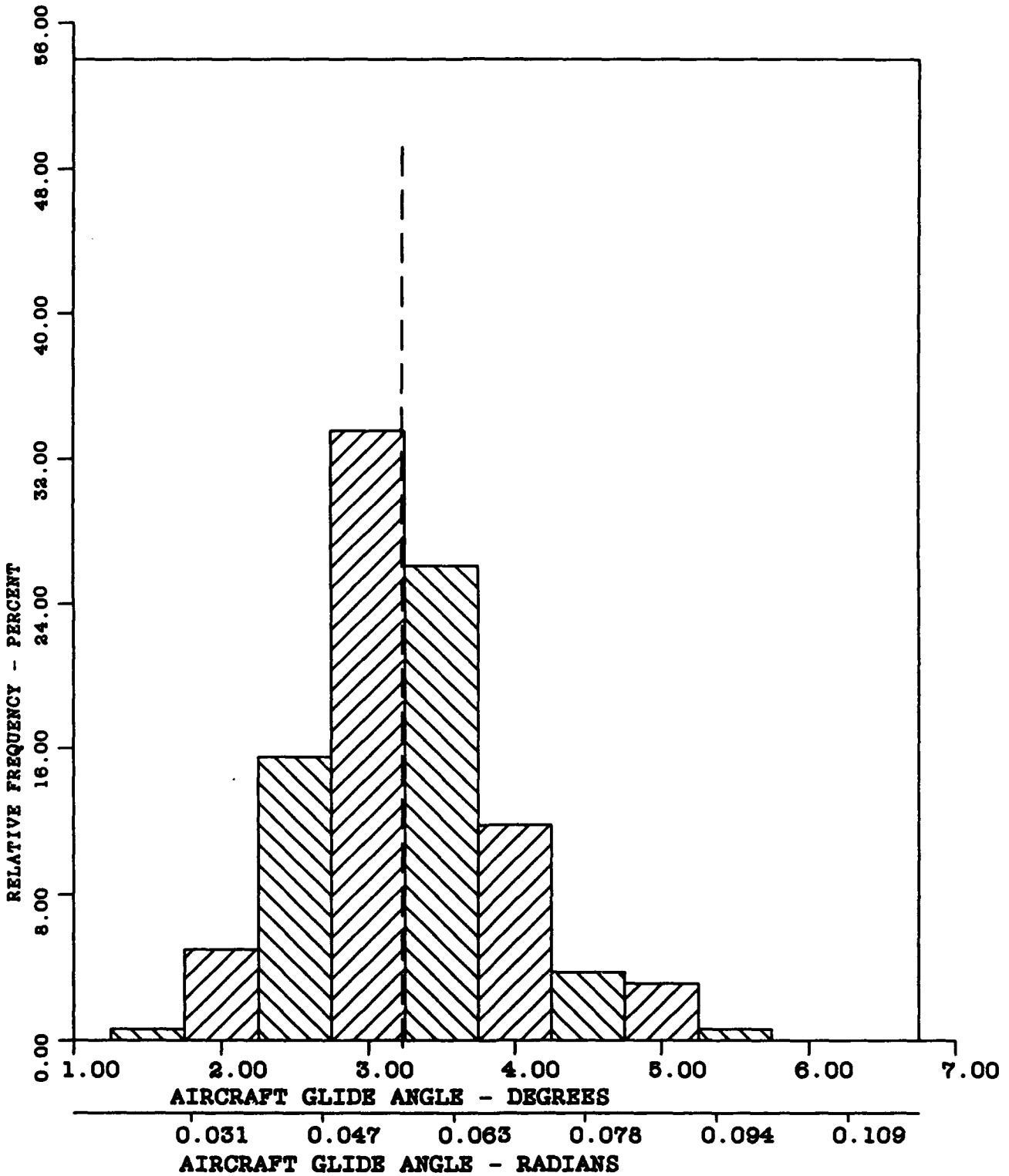


FIGURE N-39 FREQUENCY DISTRIBUTION OF AIRCRAFT GLIDE ANGLE - GEOMETRIC METHOD

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-161 $\bar{X}$-12.83 FEET (3.91 METRES) A3-0.65
S- 2.57 FEET (0.78 METRES) A4-3.50

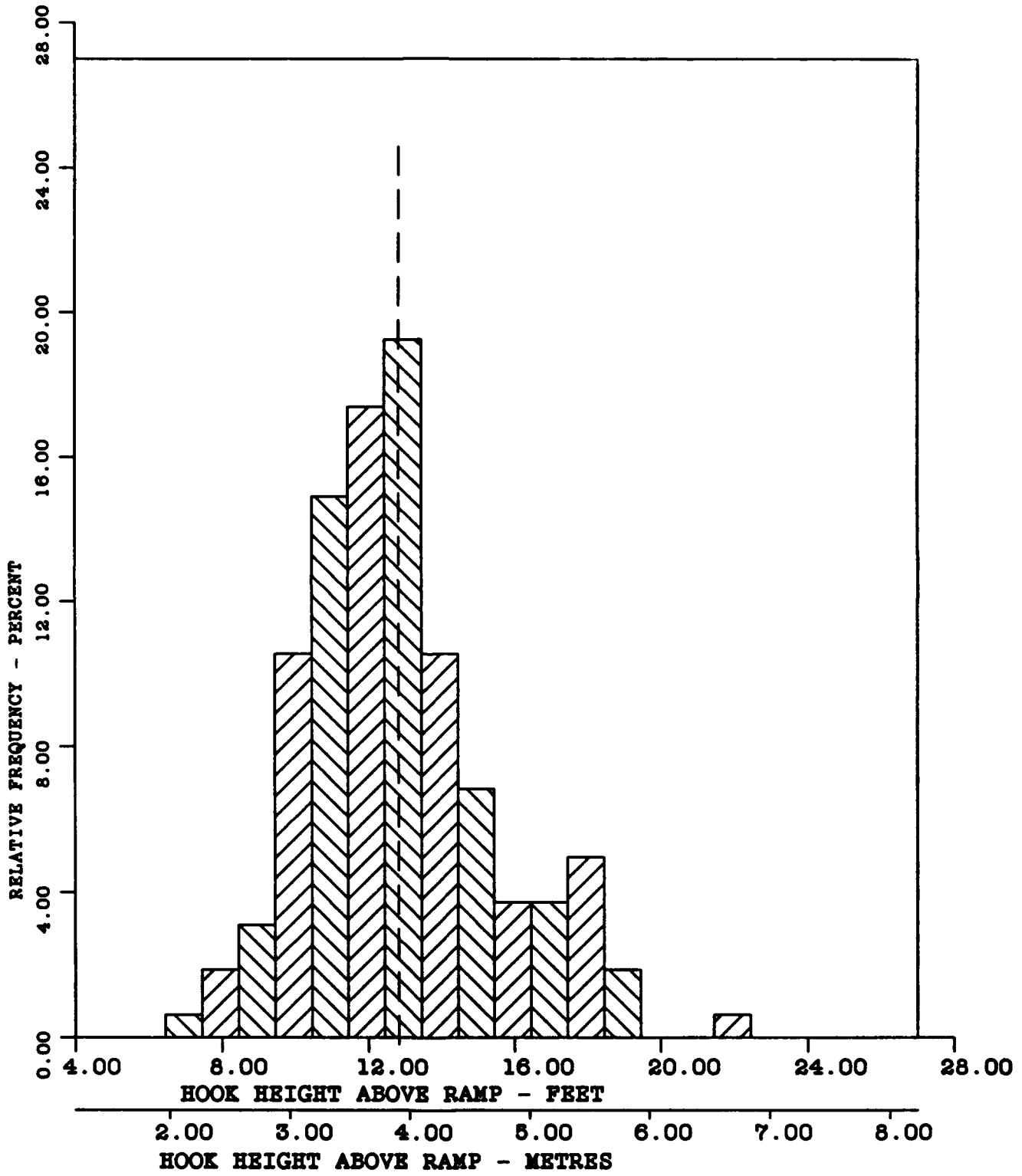


FIGURE N-40 FREQUENCY DISTRIBUTION OF AIRCRAFT ARRESTMENT HOOK HEIGHT ABOVE CARRIER RAMP

MODEL S-3 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 161 $\bar{X}$= 12.83 FEET A3= 0.64
S= 2.57 FEET A4= 3.50
CURVE FITTED - PEARSON TYPE III

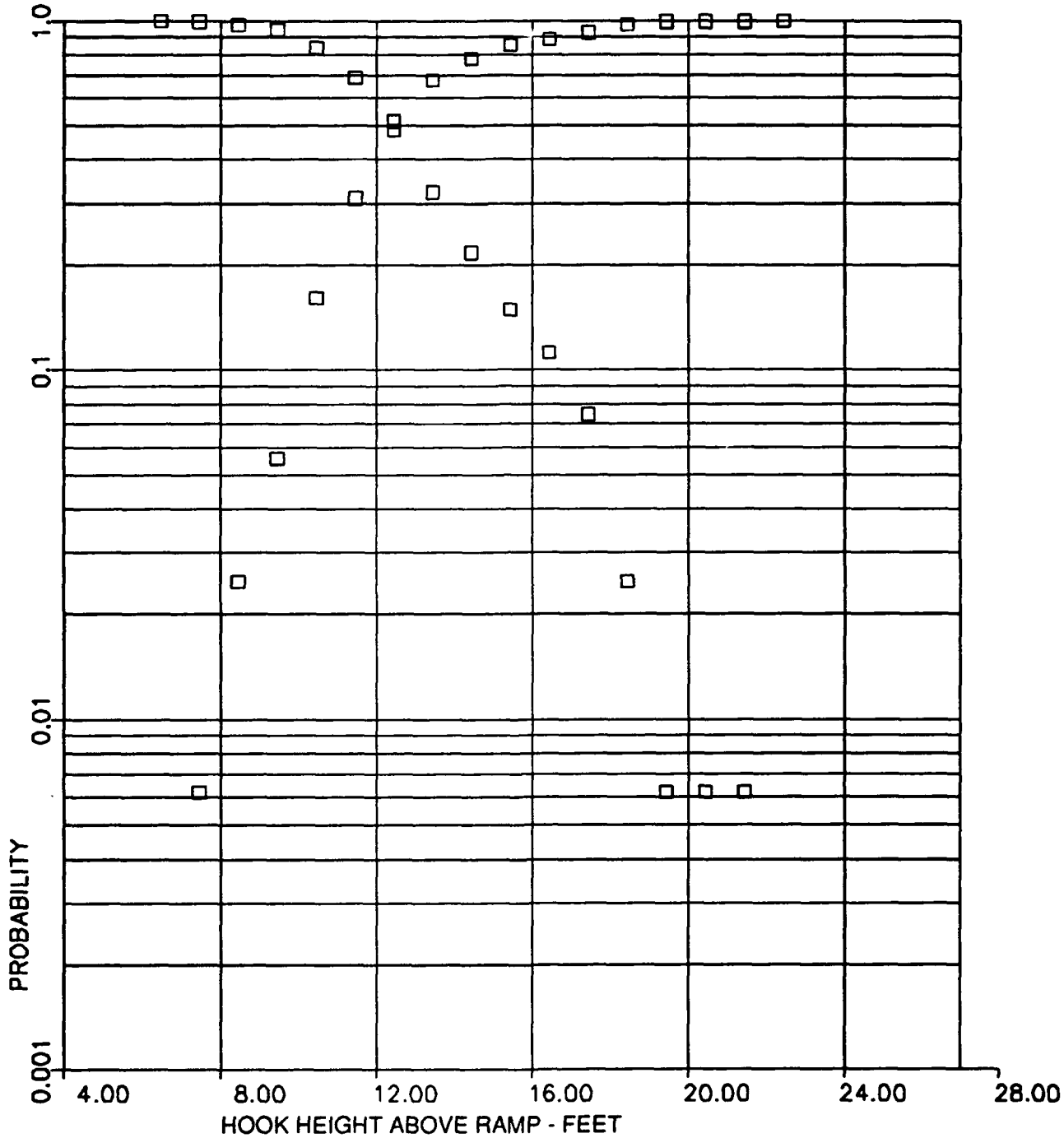


FIGURE N-41 PROBABILITY DISTRIBUTION OF ARRESTMENT HOOK HEIGHT ABOVE CARRIER RAMP

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N=165 $\bar{X}$-93.81 KNOTS (48.25 METRES/SEC) A3=0.09
S= 5.38 KNOTS (2.77 METRES/SEC) A4=2.61

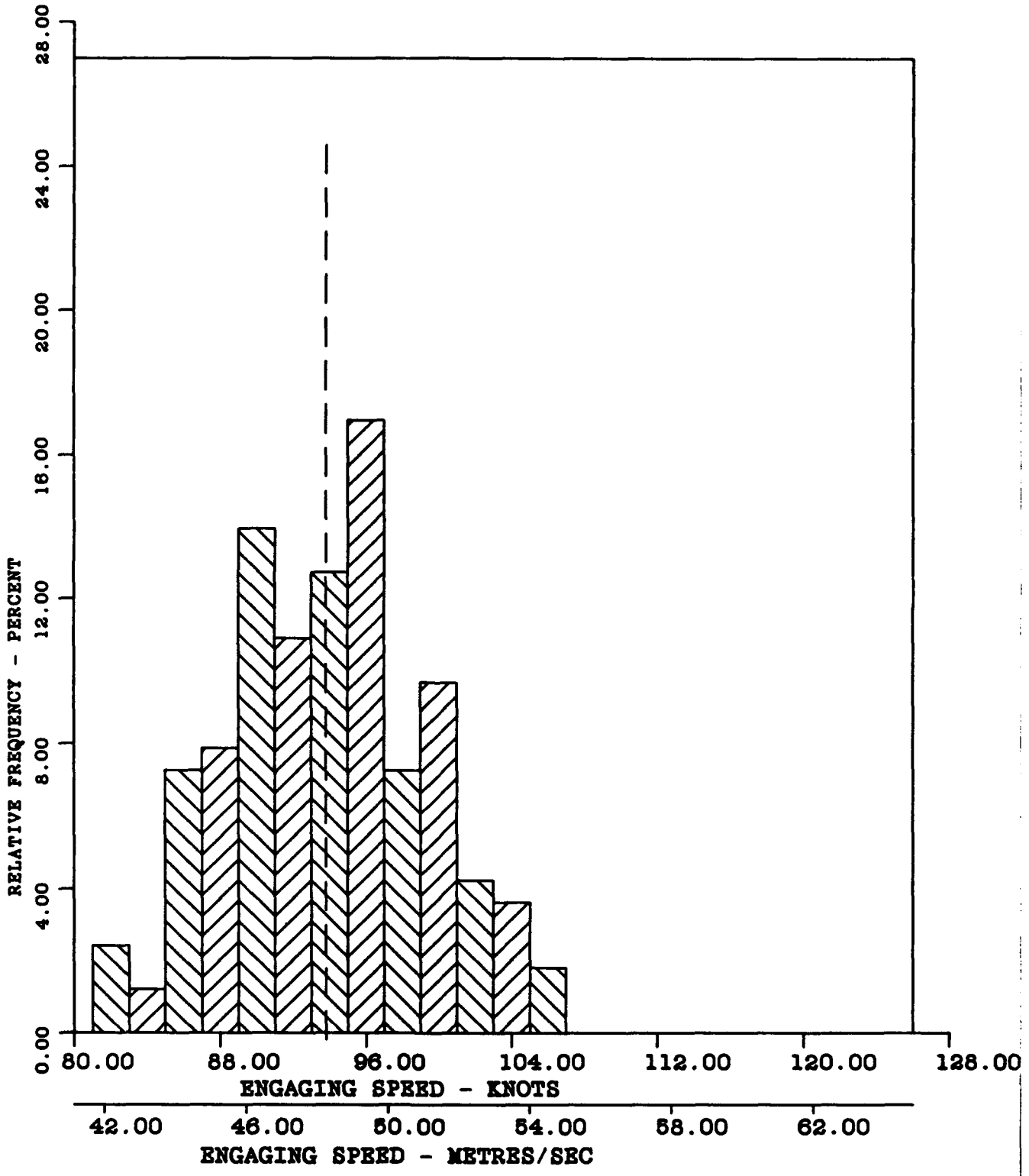


FIGURE N-42 FREQUENCY DISTRIBUTION OF AIRCRAFT ENGAGING SPEED AT FIRST MAIN WHEEL TOUCHDOWN

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-165 $\bar{X}$-93.81 KNOTS (48.25 METRES/SEC) A3-0.09
S- 5.38 KNOTS (2.77 METRES/SEC) A4-2.61
CURVE FITTED - NORMAL

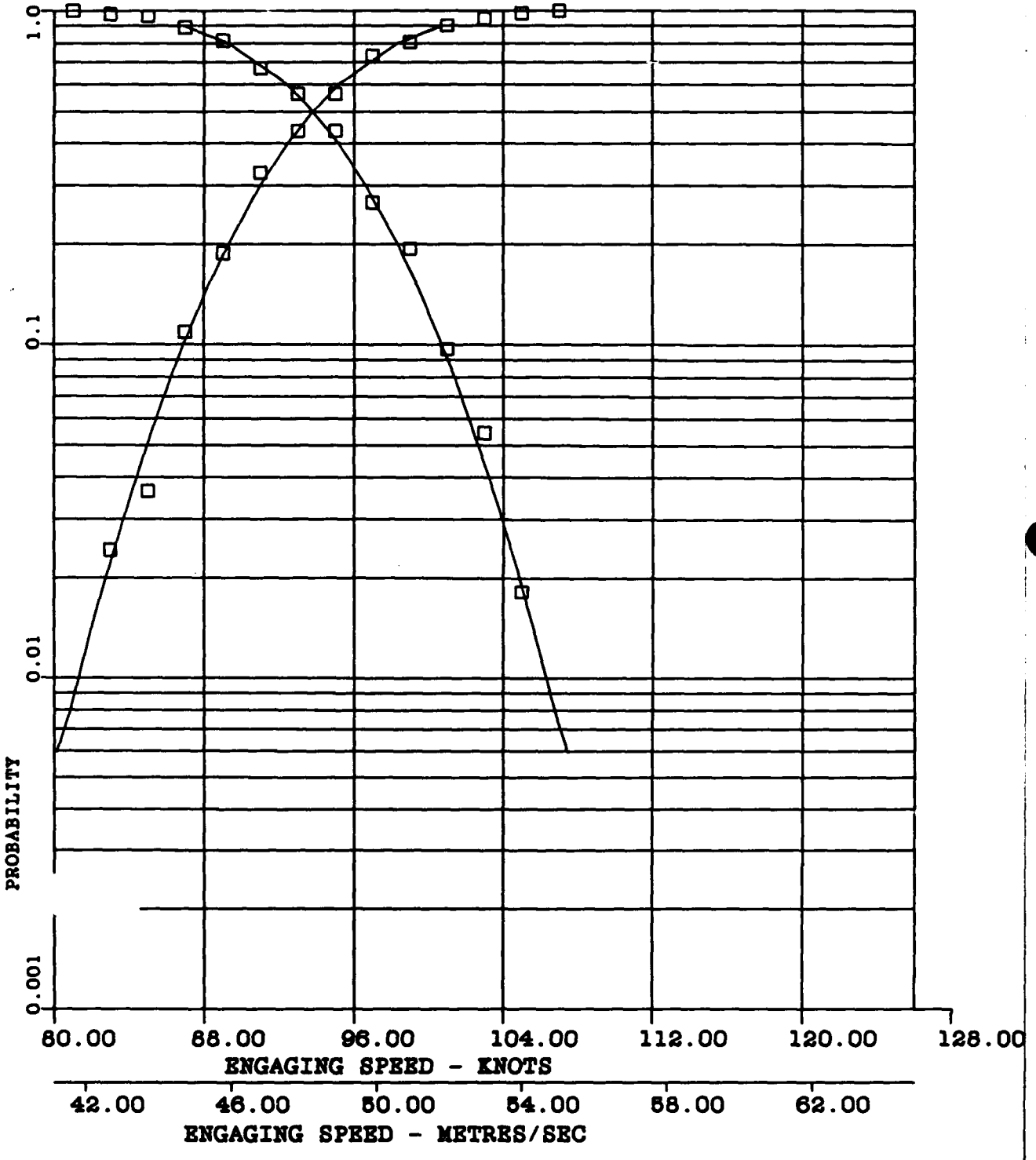


FIGURE N-43 PROBABILITY DISTRIBUTION OF ENGAGING SPEED AT FIRST MAIN WHEEL TOUCHDOWN

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-164 $\bar{X}$-105.05 KNOTS (54.04 METRES/SEC) A3-0.29
S- 2.14 KNOTS (1.10 METRES/SEC) A4-2.37

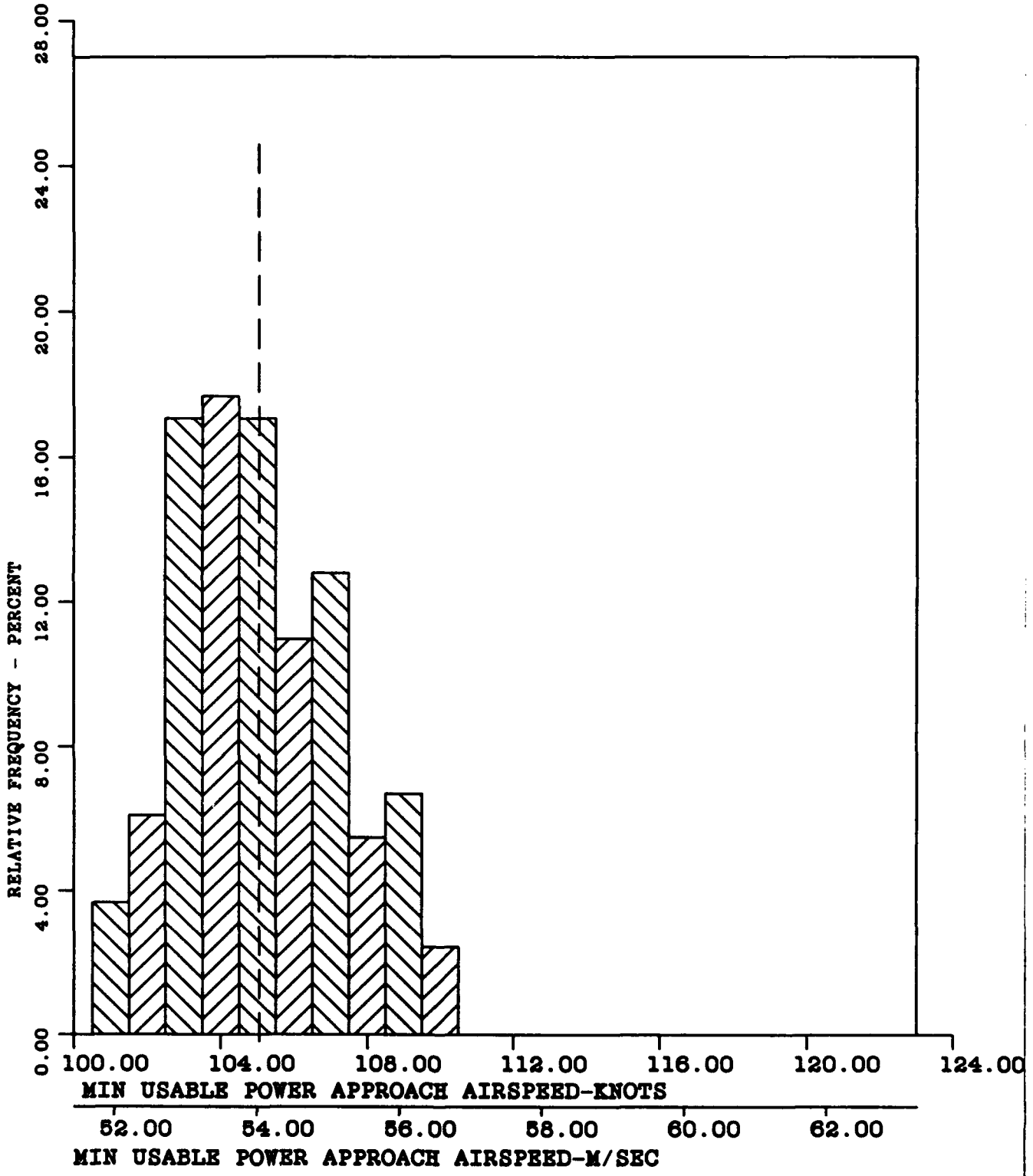


FIGURE N-44 FREQUENCY DISTRIBUTION OF MINIMUM USABLE POWER APPROACH AIRSPEED

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-164 $\bar{X}$-1.16 A3-0.18
S- 0.05 A4-2.74

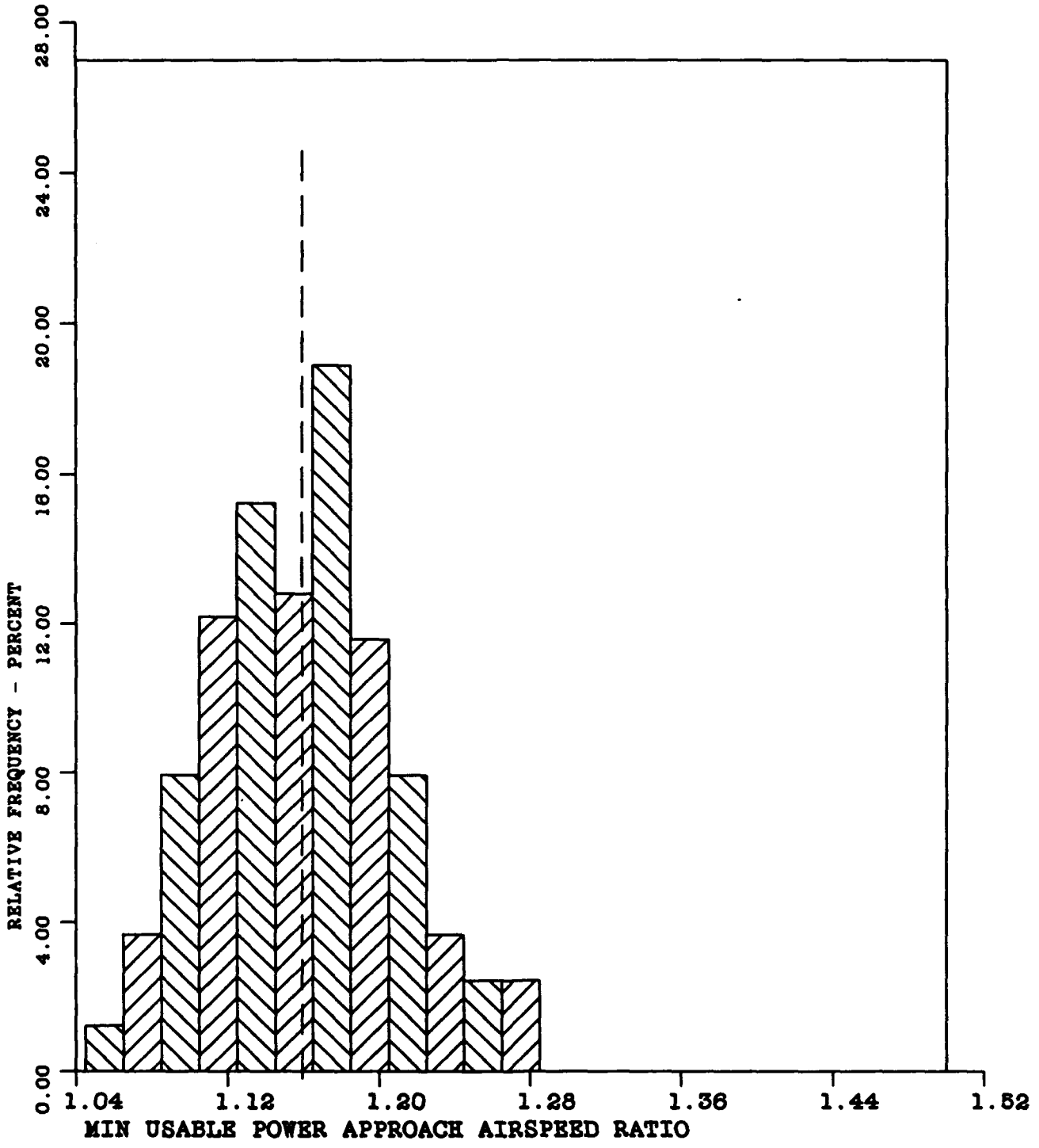


FIGURE N-45 FREQUENCY DISTRIBUTION OF MINIMUM USABLE POWER APPROACH AIRSPEED RATIO - FILM

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-149 $\bar{X}$=-0.42 DEGREES (-0.007 RADIANS) A3-0.12
S= 1.09 DEGREES (0.019 RADIANS) A4-3.59

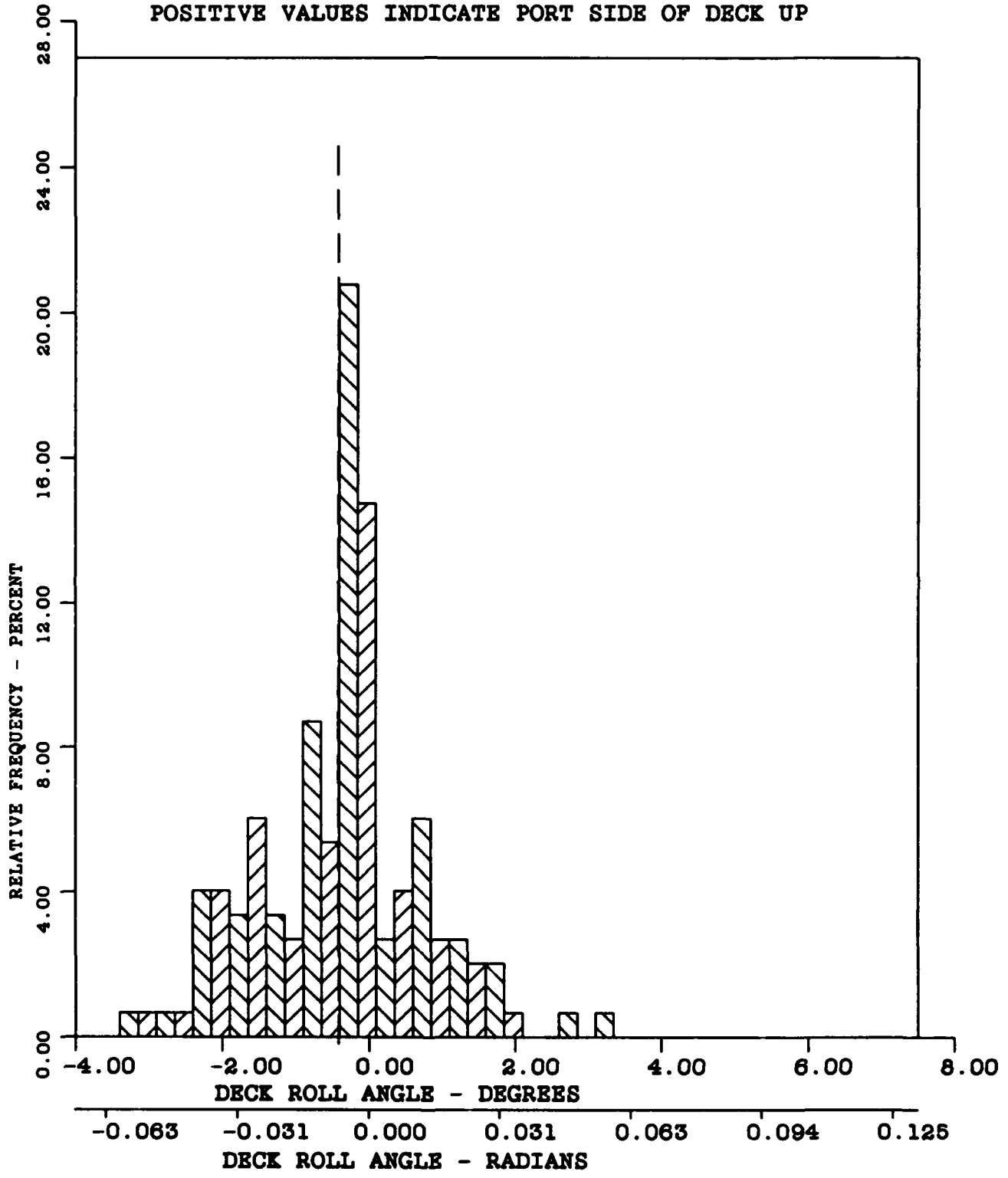


FIGURE N-46 FREQUENCY DISTRIBUTION OF CARRIER DECK ROLL MOTION

MODEL S-3 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 149 $\bar{X}$=-0.42 DEGREES A3= 0.12
S= 1.09 DEGREES A4= 3.59
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE PORT SIDE OF DECK UP

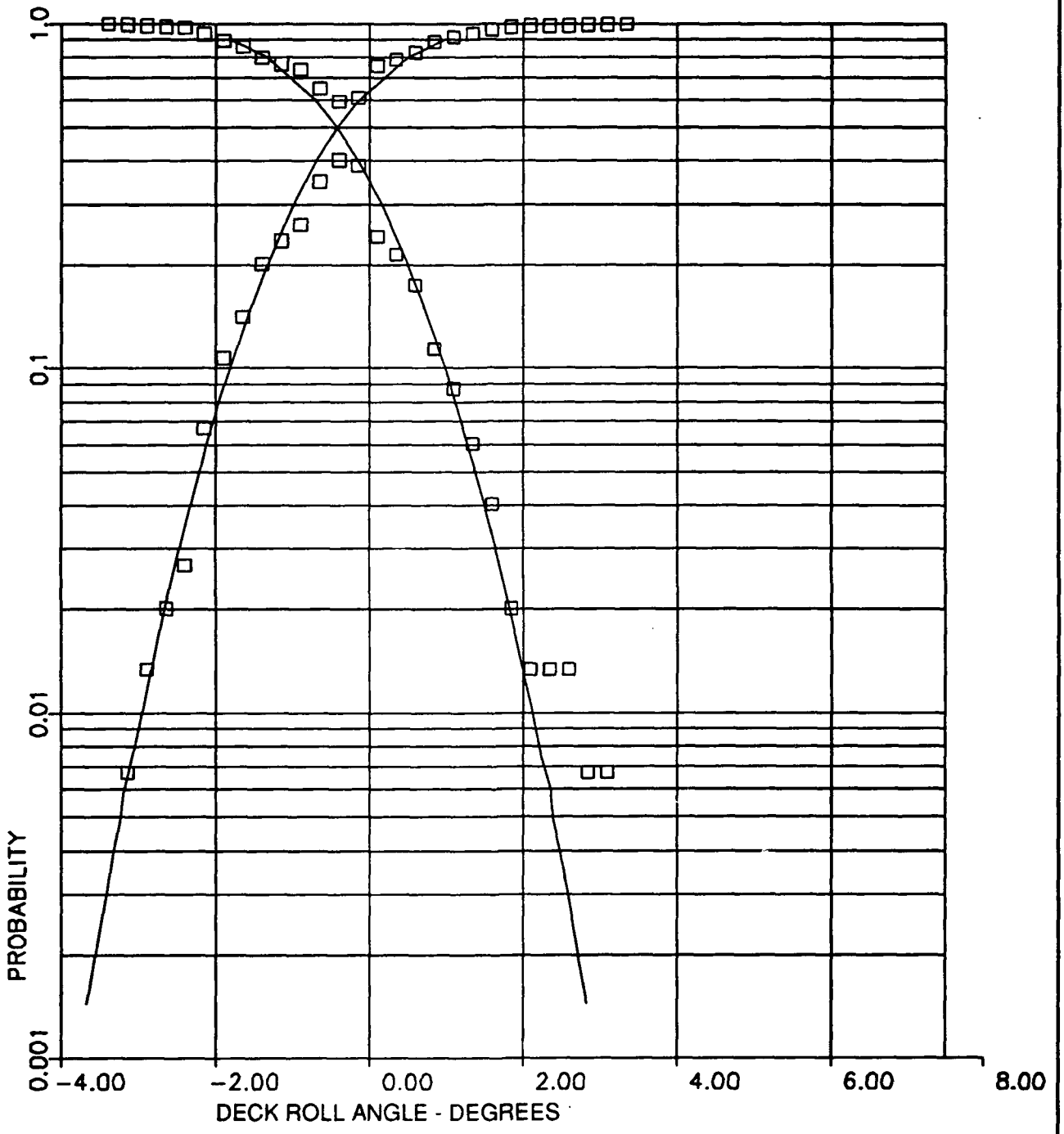


FIGURE N-47 PROBABILITY DISTRIBUTION OF CARRIER DECK ROLL MOTION

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (0.061 RADIANS)
N=149 $\bar{X}$=-0.26 DEGREES (-0.004 RADIANS) A3=-0.04
S= 0.21 DEGREES (0.004 RADIANS) A4=2.37

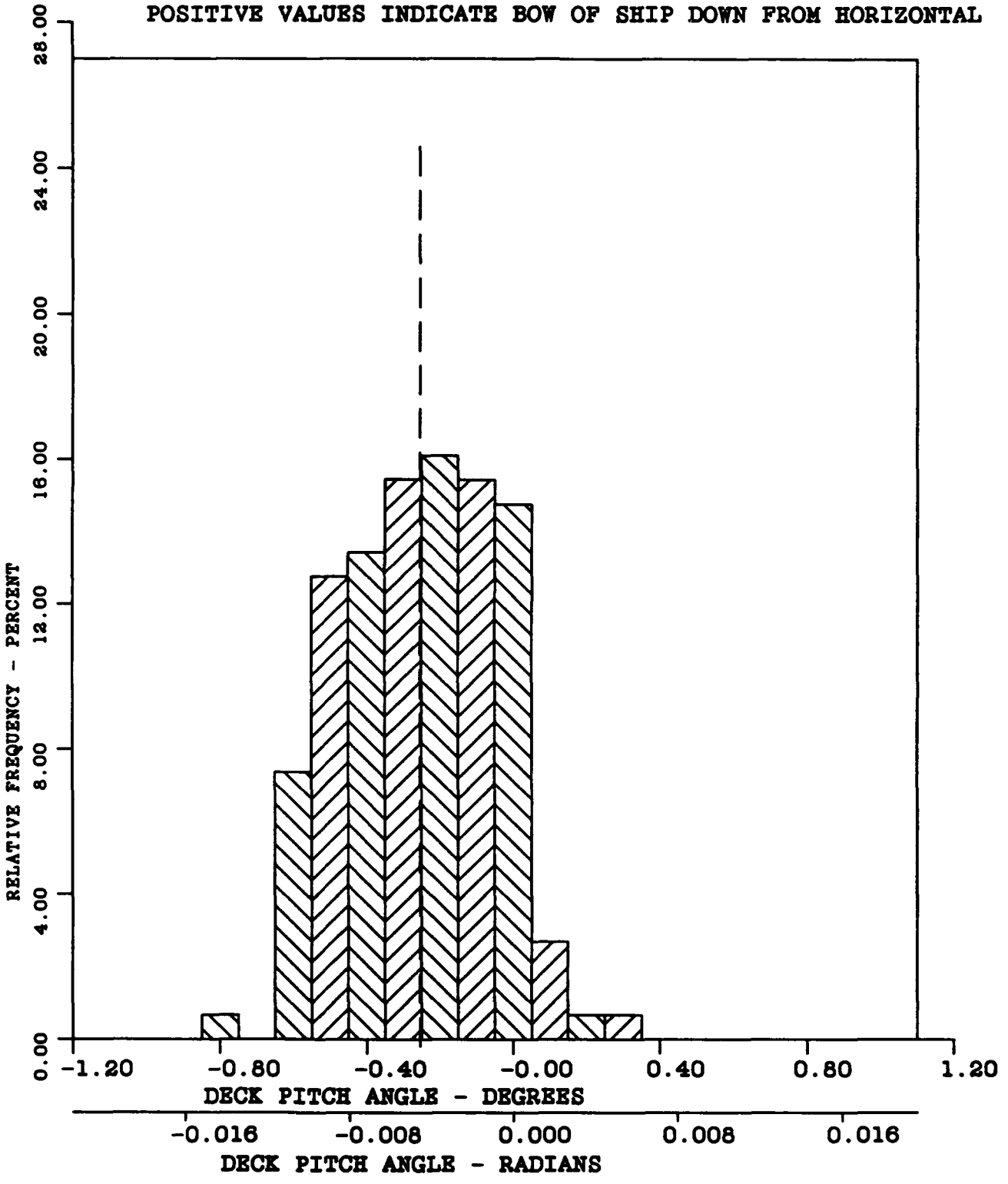


FIGURE N-48 FREQUENCY DISTRIBUTION OF CARRIER DECK PITCH MOTION

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N=149 $\bar{X}$=-0.26 DEGREES (-0.004 RADIANS) A3=-0.04
S= 0.21 DEGREES (0.004 RADIANS) A4=2.37
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE BOW OF SHIP DOWN FROM HORIZONTAL

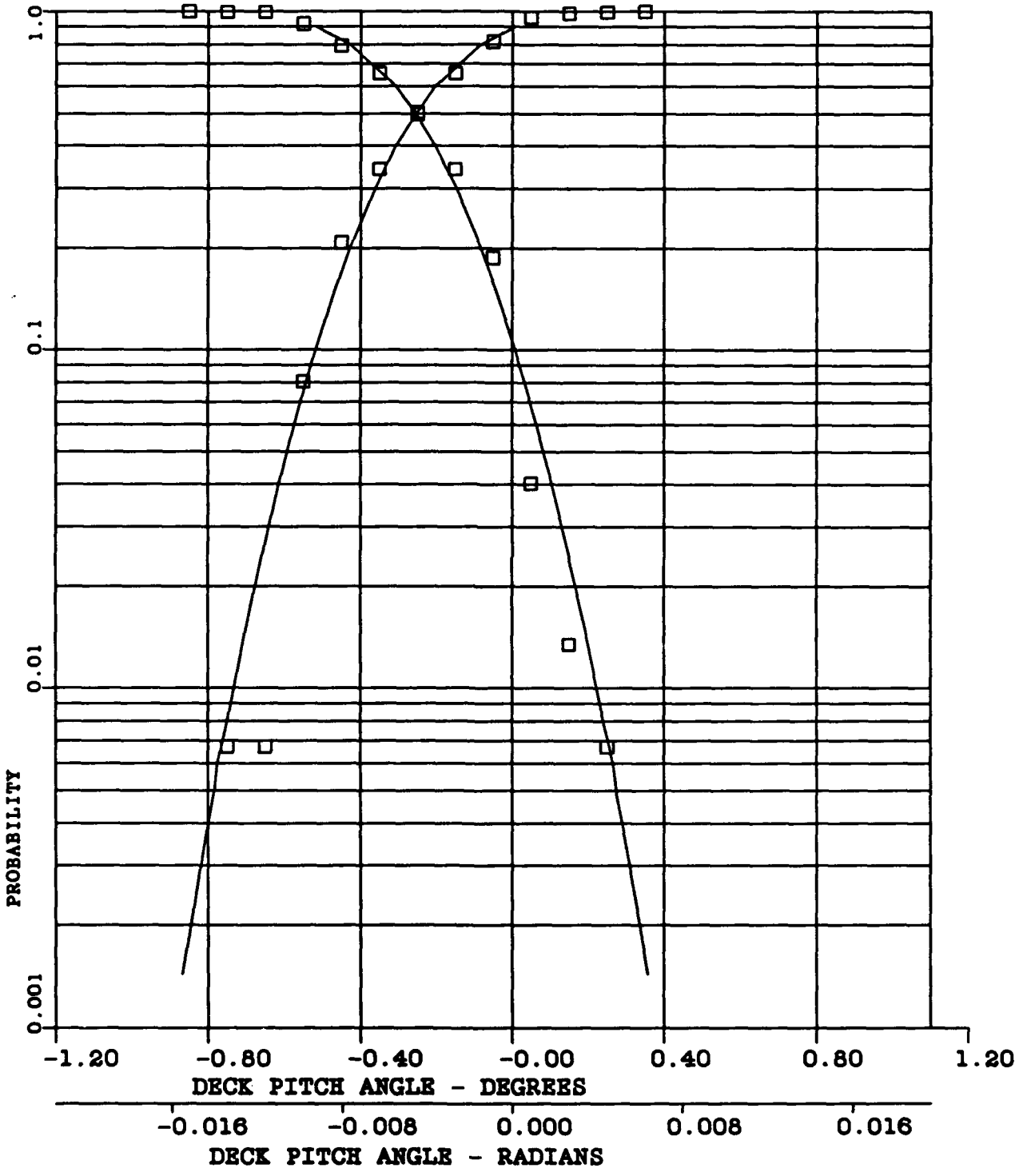


FIGURE N-49 PROBABILITY DISTRIBUTION OF CARRIER DECK PITCH MOTION

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-164 $\bar{X}$-36764.00 POUNDS (16676.15 KILOGRAMS) A3-0.33
S- 1500.69 POUNDS (680.71 KILOGRAMS) A4-2.39

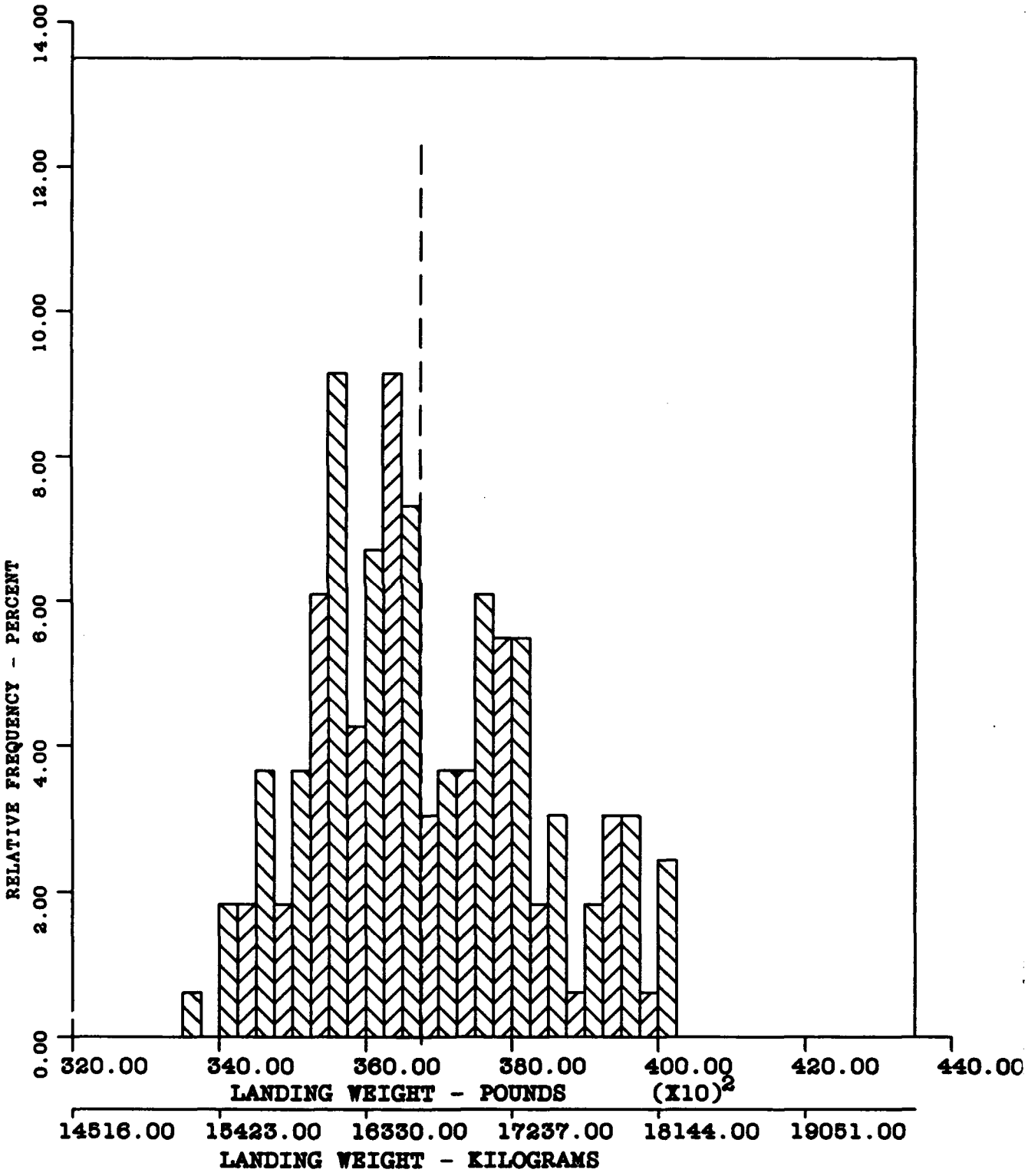


FIGURE N-50 FREQUENCY DISTRIBUTION OF AIRCRAFT LANDING WEIGHT

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N=165 $\bar{X}$=1.02 DEG/SEC (0.018 RAD/SEC) A3=0.07
S= 4.10 DEG/SEC (0.072 RAD/SEC) A4=3.81

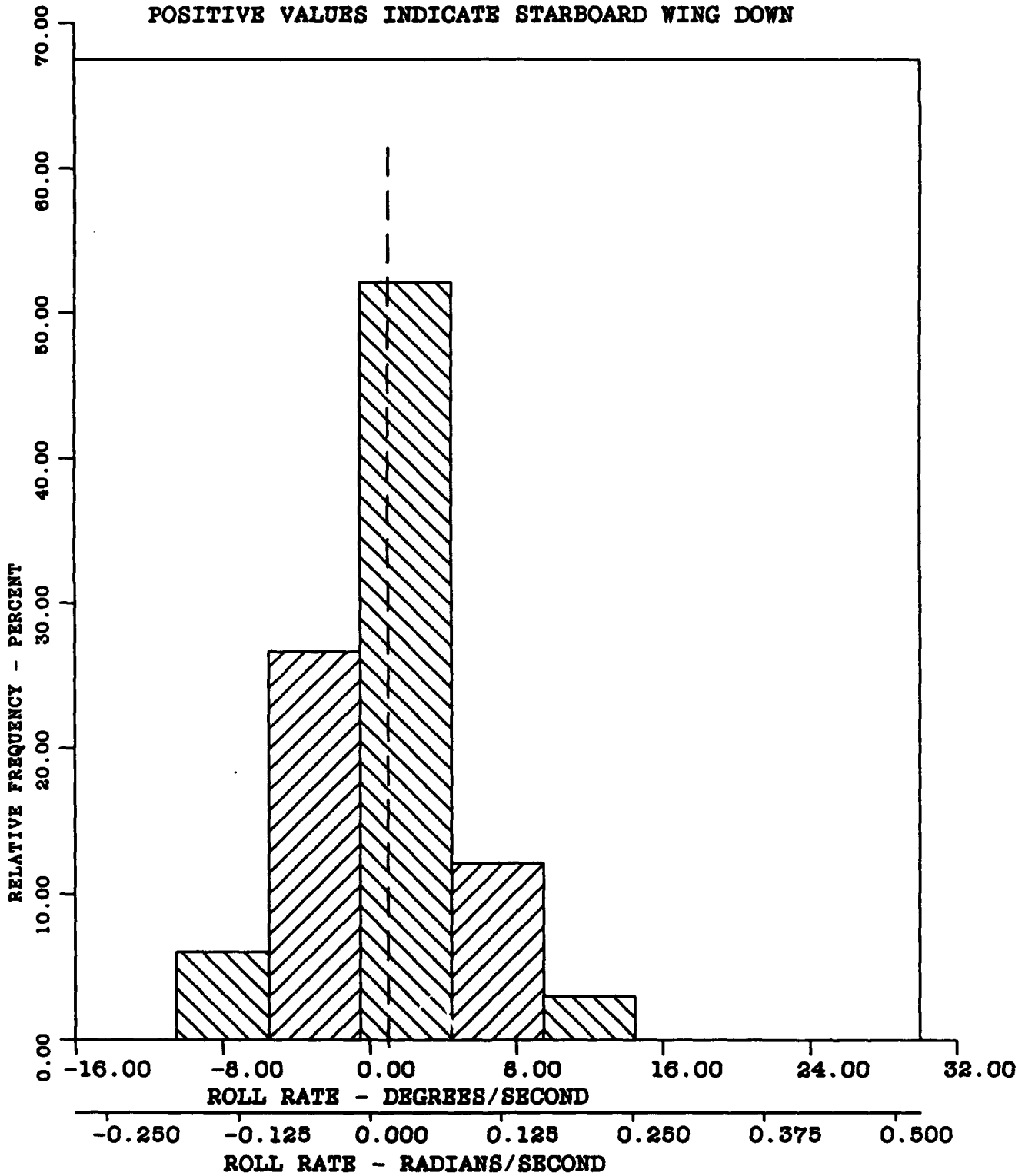


FIGURE N-51 FREQUENCY DISTRIBUTION OF ROLL RATE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL S-3 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 165 $\bar{X}$= 1.02 DEG/SEC A3= 0.07
S= 4.10 DEG/SEC A4= 3.81
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE STARBOARD WING DOWN

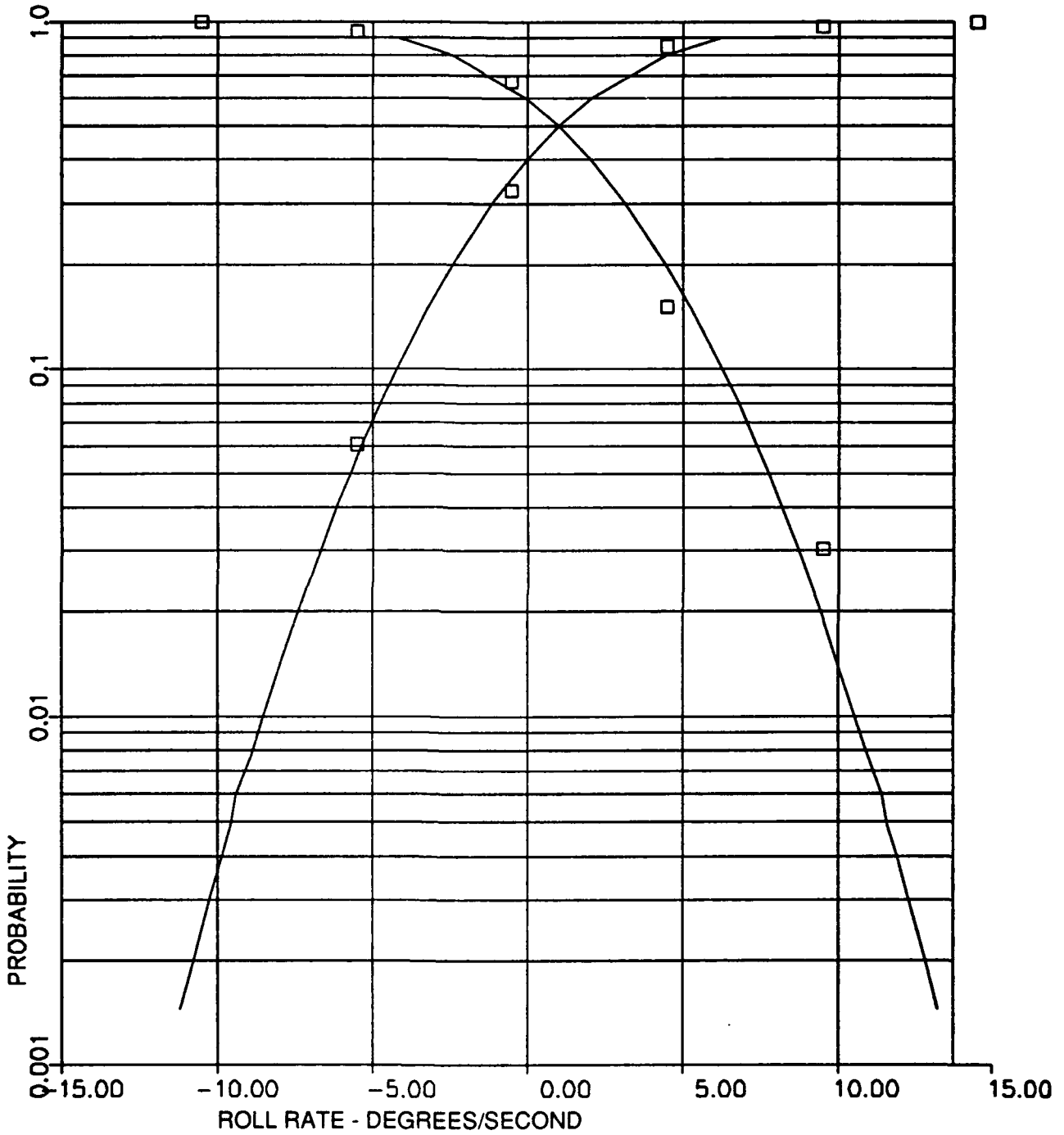


FIGURE N-52 PROBABILITY DISTRIBUTION OF ROLL RATE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N=165 $\bar{X}$=-0.05 DEG/SEC (-0.001 RAD/SEC) A3=-0.11
S= 2.57 DEG/SEC (0.045 RAD/SEC) A4=4.87

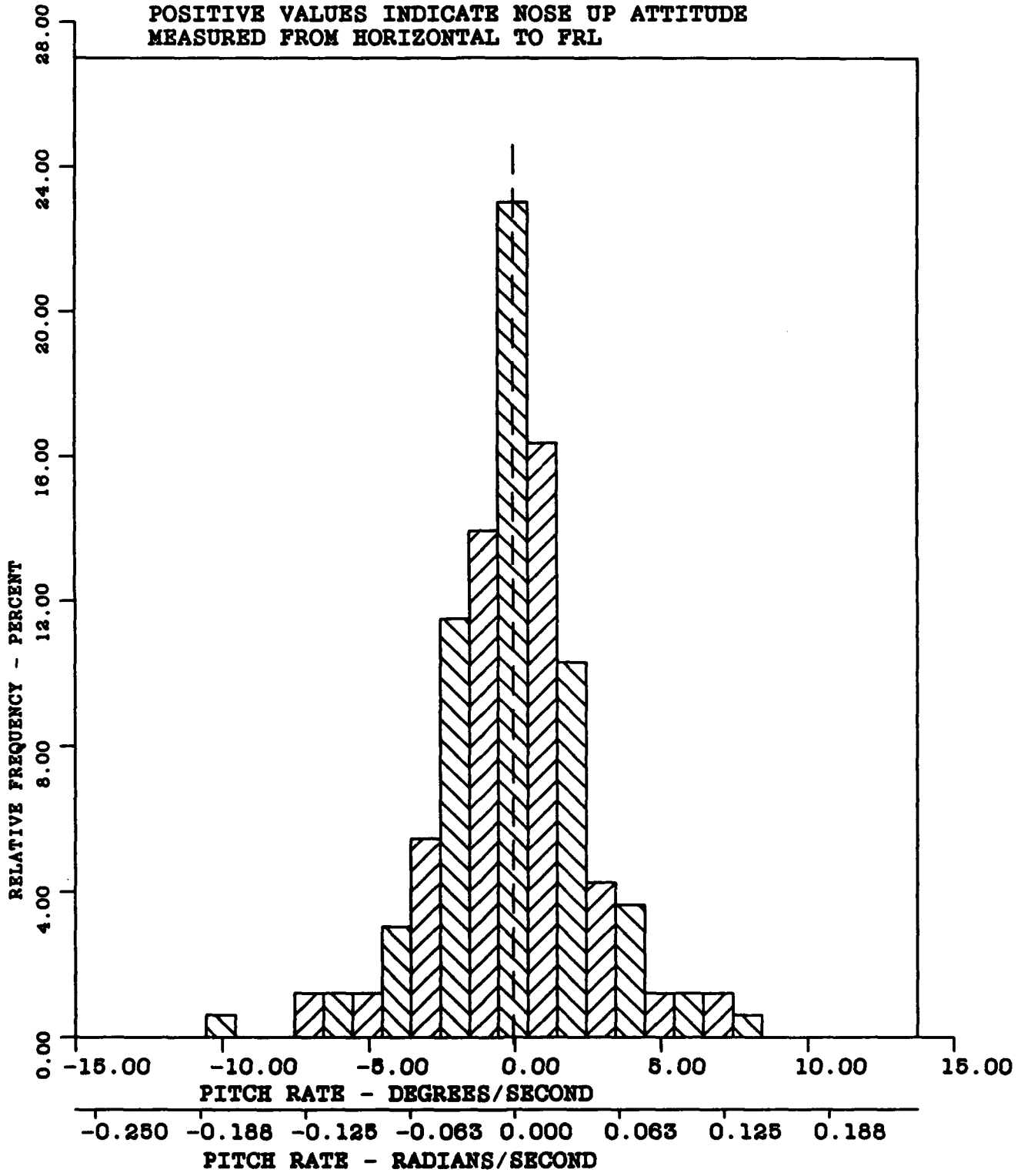


FIGURE N-53 FREQUENCY DISTRIBUTION OF PITCH RATE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N=165 $\bar{X}$=-0.05 DEG/SEC (-0.001 RAD/SEC) A3=-0.11
S= 2.57 DEG/SEC (0.045 RAD/SEC) A4=4.87
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE NOSE UP ATTITUDE
MEASURED FROM HORIZONTAL TO FRL

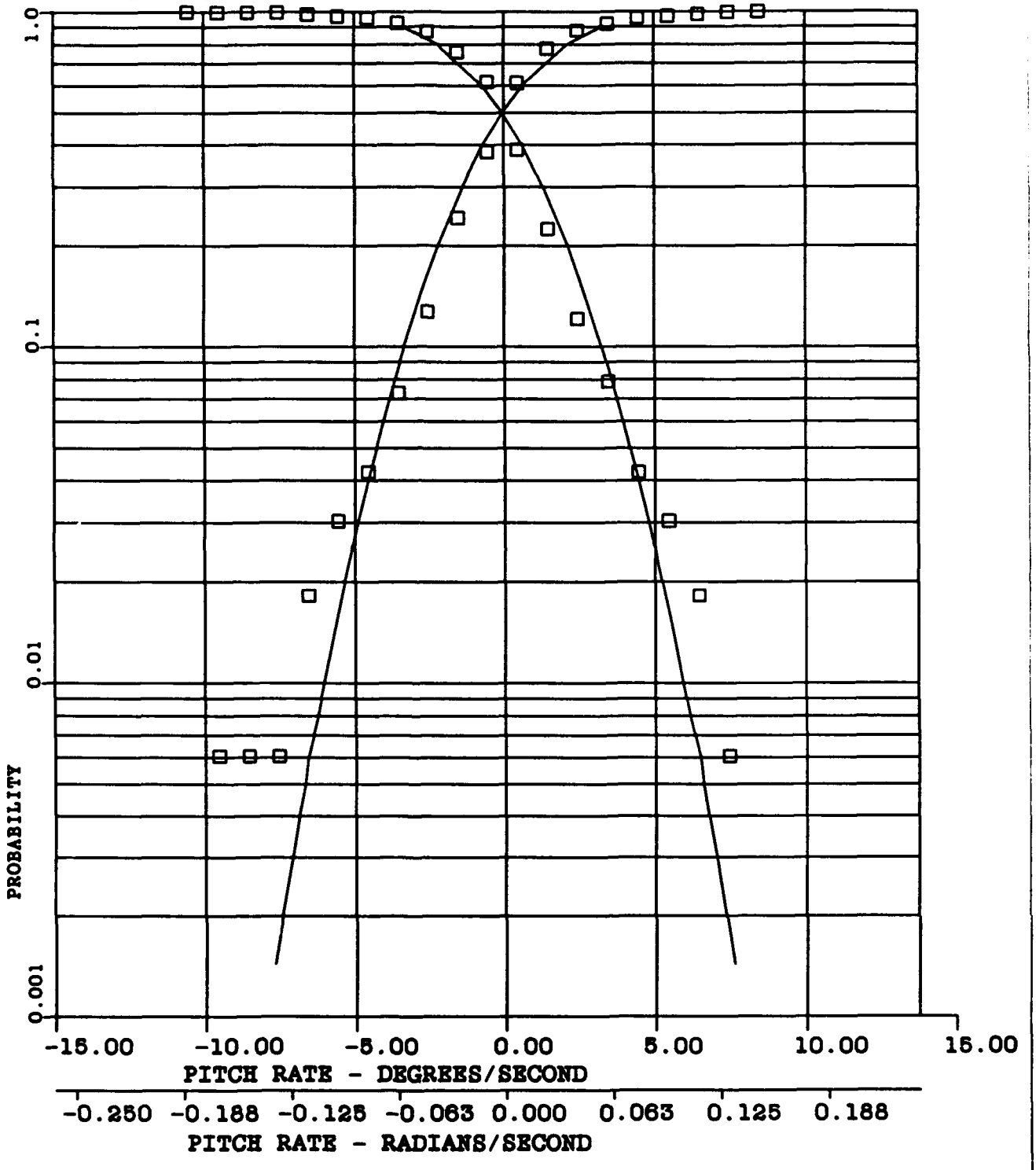


FIGURE N-54 PROBABILITY DISTRIBUTION OF PITCH RATE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-165 $\bar{X}$=-3.08 DEGREES (-0.054 RADIANS) A3=0.60
S= 1.13 DEGREES (0.020 RADIANS) A4=4.30

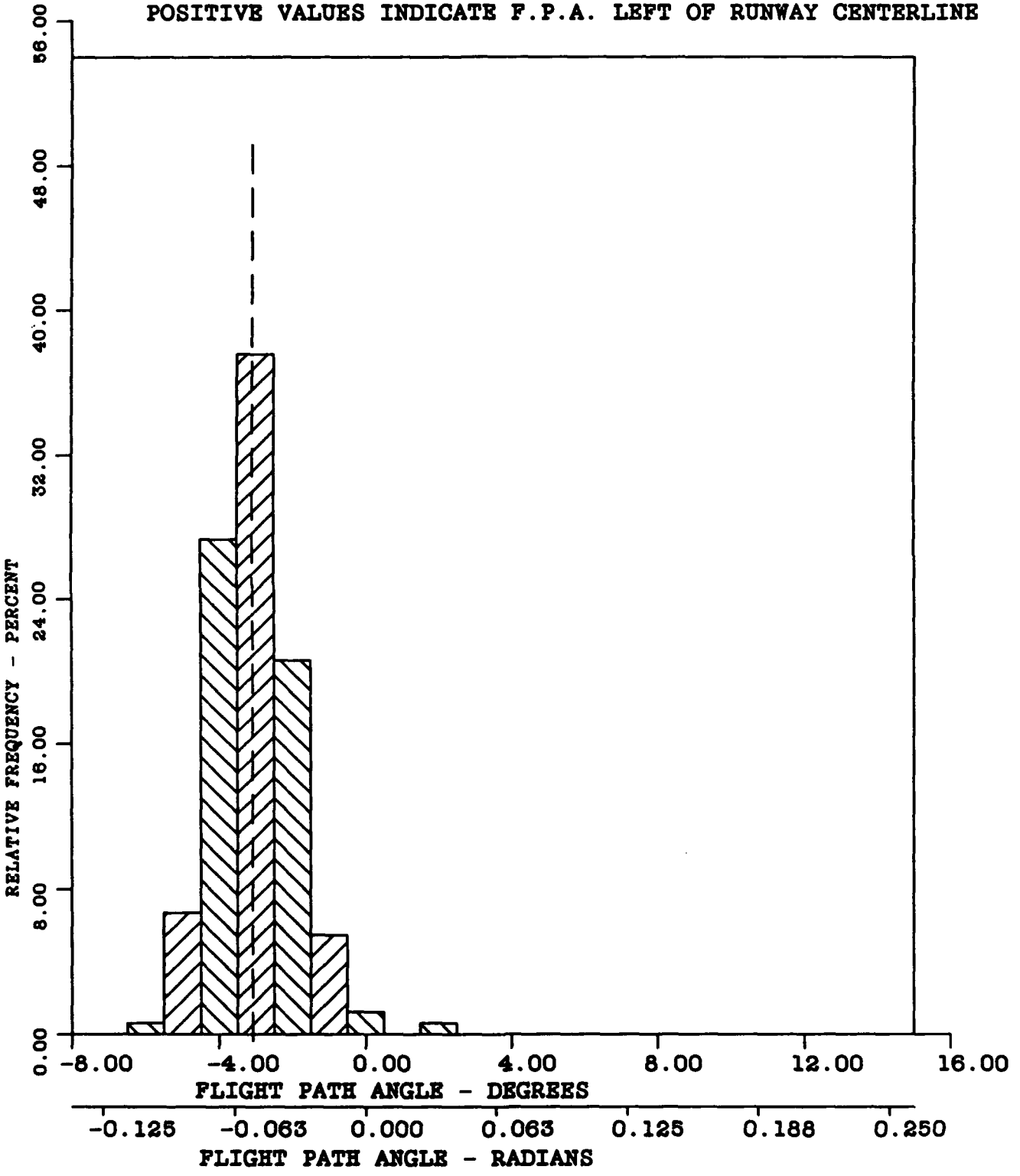


FIGURE N-55 FREQUENCY DISTRIBUTION OF AIRCRAFT FLIGHT PATH ANGLE AT TOUCHDOWN

MODEL S-3 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 165 $\bar{X}$=−3.08 DEGREES A3= 0.60
S= 1.13 DEGREES A4= 4.30
CURVE FITTED - PEARSON TYPE III
POSITIVE VALUES INDICATE F.P.A. LEFT OF RUNWAY CENTERLINE

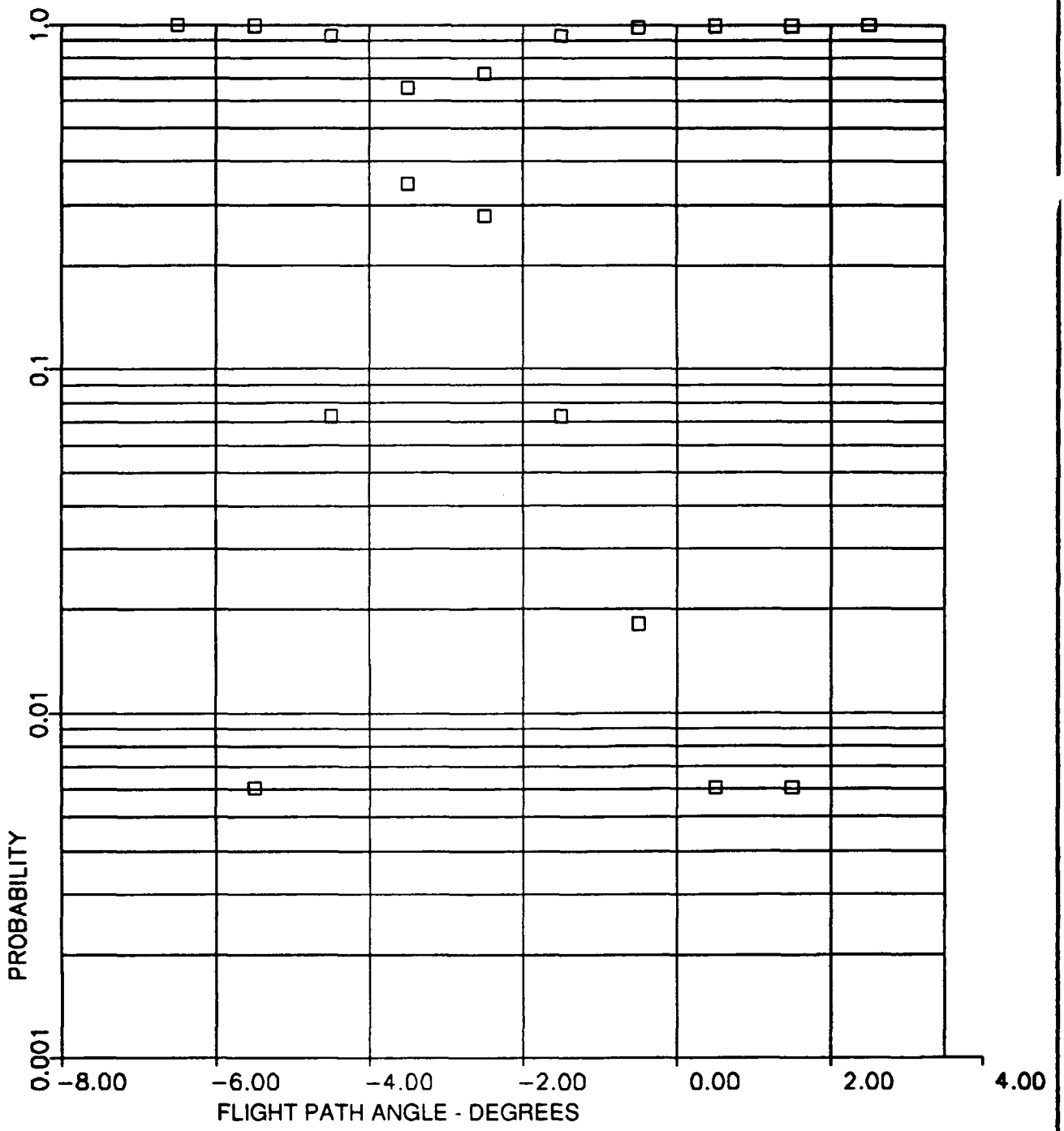


FIGURE N-56 PROBABILITY DISTRIBUTION OF AIRCRAFT FLIGHT PATH ANGLE AT TOUCHDOWN

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N=165 $\bar{X}$-1.76 DEGREES (0.031 RADIANS) A3=0.05
S= 2.92 DEGREES (0.051 RADIANS) A4=2.72

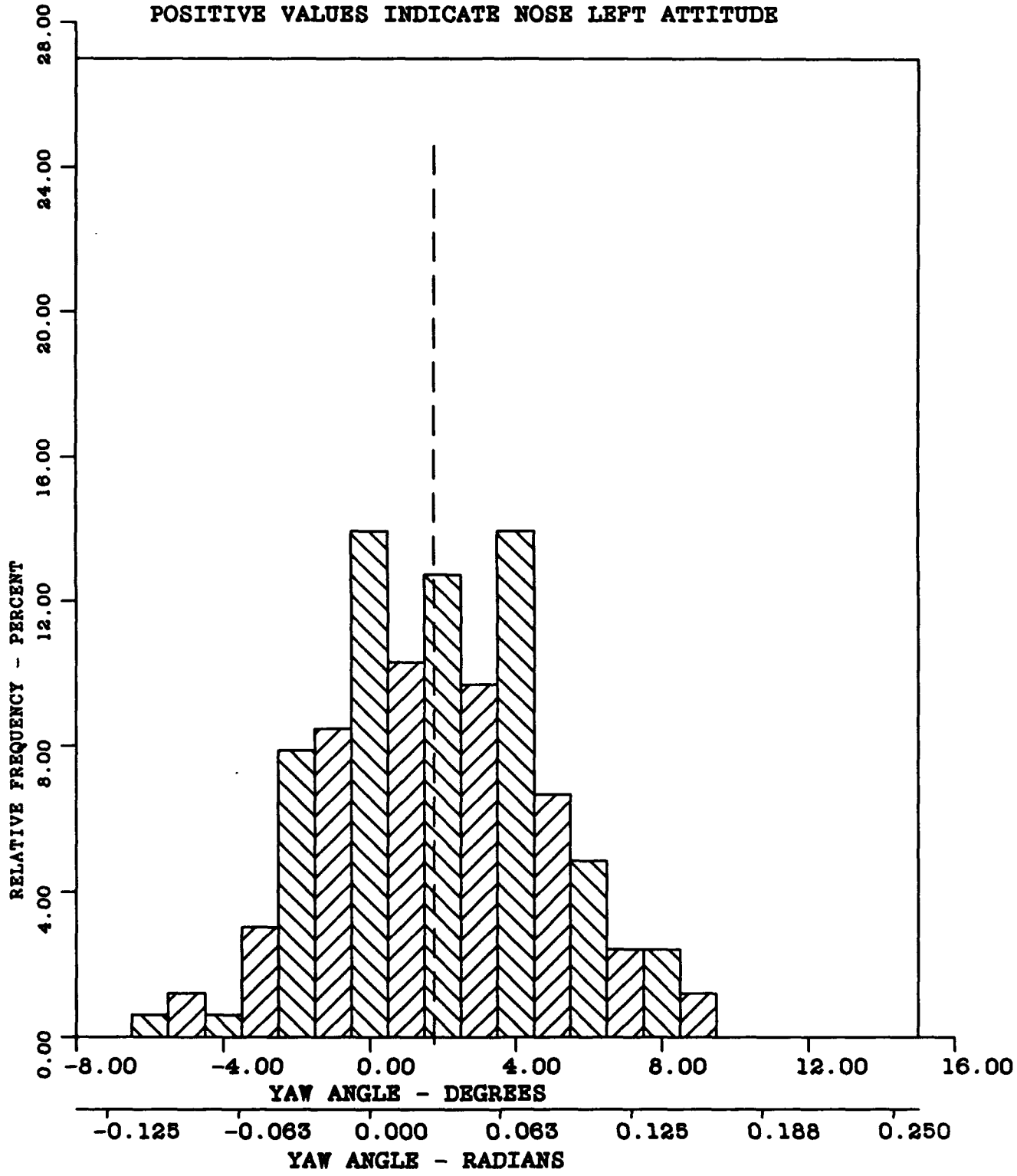


FIGURE N-57 FREQUENCY DISTRIBUTION OF AIRCRAFT YAW ANGLE

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N=165 $\bar{X}$-1.76 DEGREES (0.031 RADIANS) A3=0.05
S= 2.92 DEGREES (0.051 RADIANS) A4=2.72
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE NOSE LEFT ATTITUDE

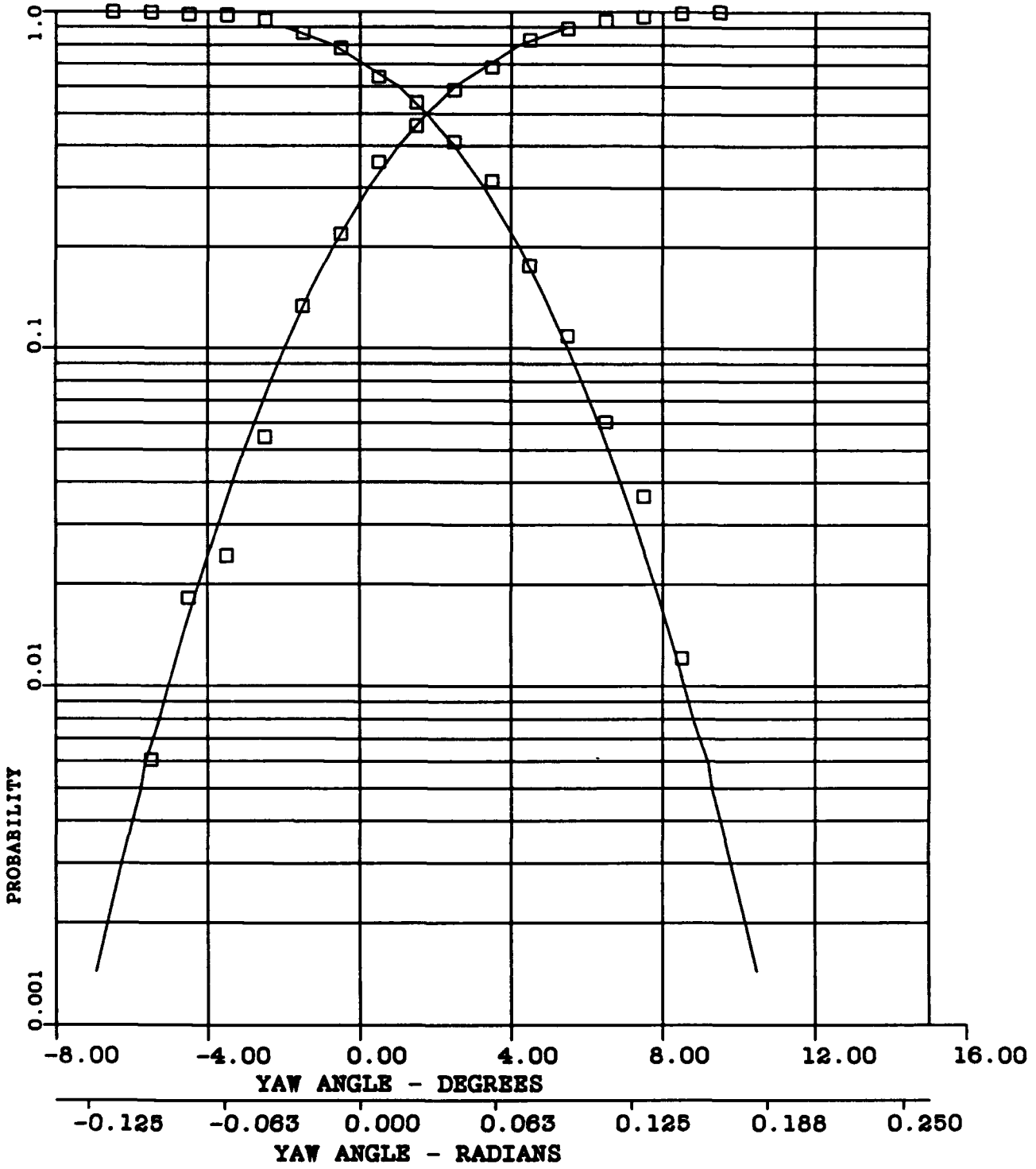


FIGURE N-58 PROBABILITY DISTRIBUTION OF AIRCRAFT YAW ANGLE

APPENDIX O

S-3A AIRCRAFT

NIGHT CARRIER LANDINGS

USS ENTERPRISE
CVN-65

Appendix O:

Frequency and Probability Distributions,
S-3A Aircraft, Night Landings

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MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-133 $\bar{X}$-31.79 KNOTS (16.35 METRES/SEC) A3=0.01
S= 2.04 KNOTS (1.05 METRES/SEC) A4=1.98

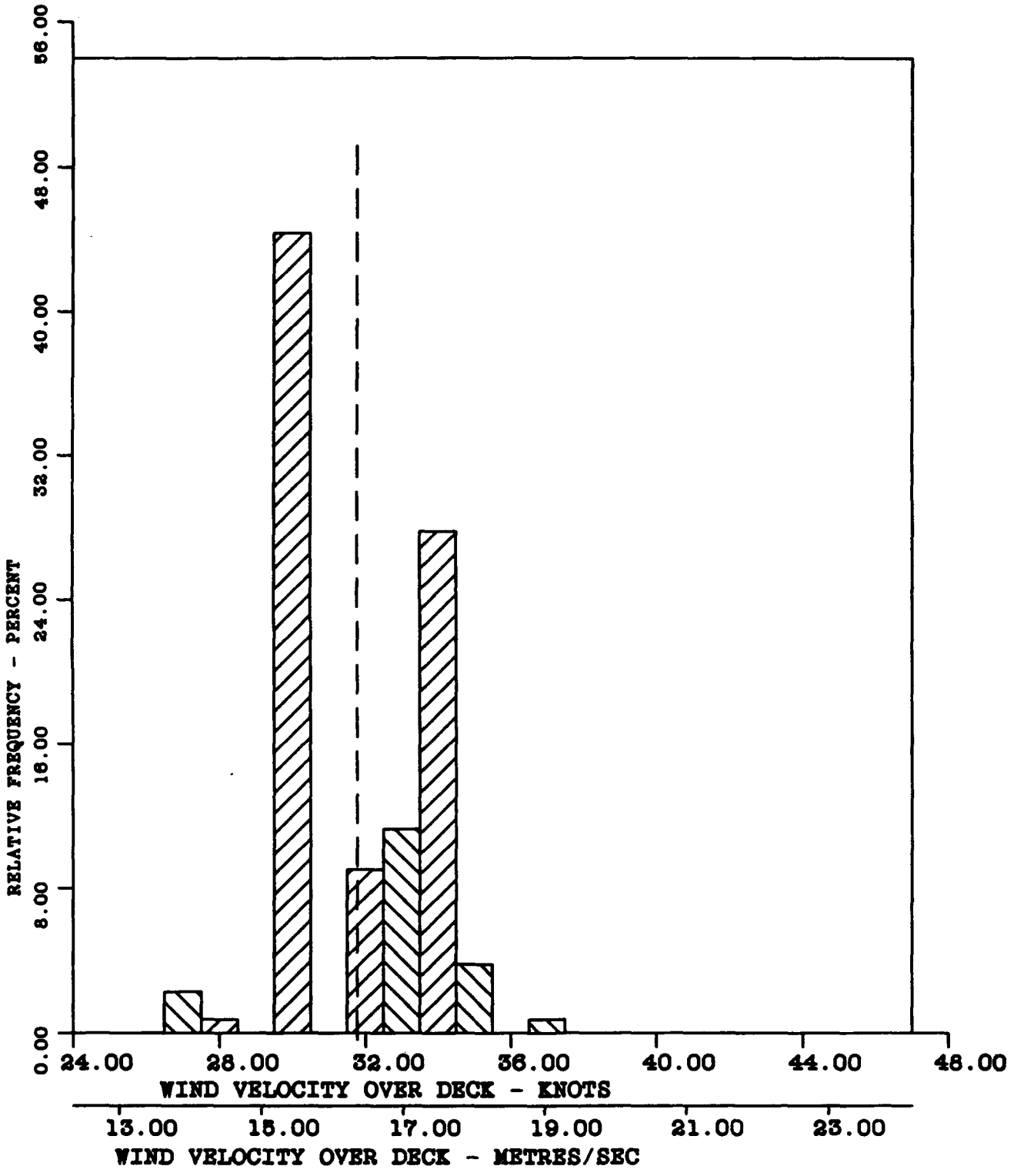


FIGURE O-1 FREQUENCY DISTRIBUTION OF WIND VELOCITY OVER THE DECK

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N=133 $\bar{X}$=31.79 KNOTS (16.35 METRES/SEC) A3=0.01
S= 2.04 KNOTS (1.05 METRES/SEC) A4=1.98
CURVE FITTED - NORMAL

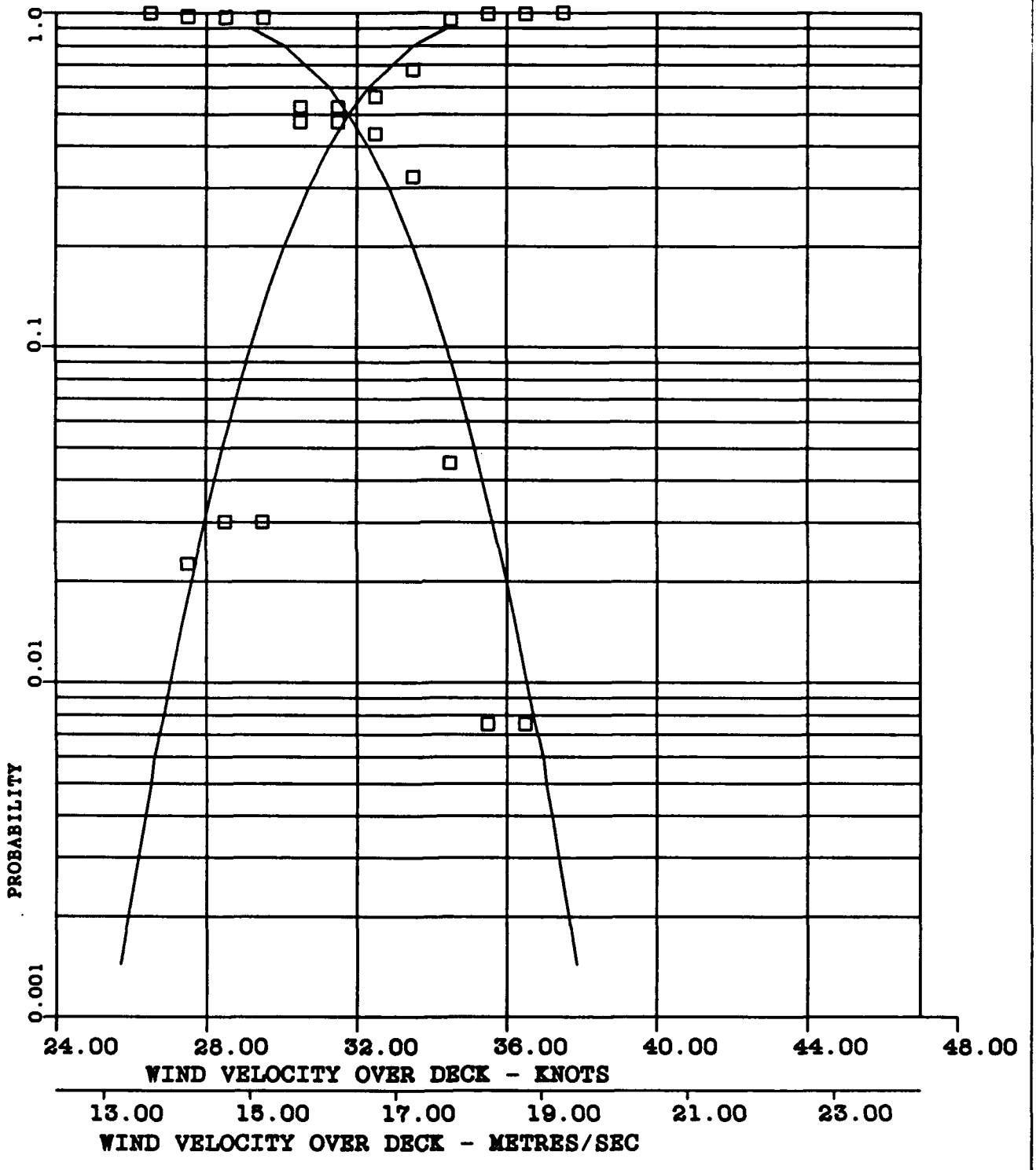


FIGURE O-2 PROBABILITY DISTRIBUTION OF WIND VELOCITY OVER THE DECK

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-133 $\bar{X}$-122.38 KNOTS (62.95 METRES/SEC) A3=-0.38
S= 5.64 KNOTS (2.90 METRES/SEC) A4-4.99

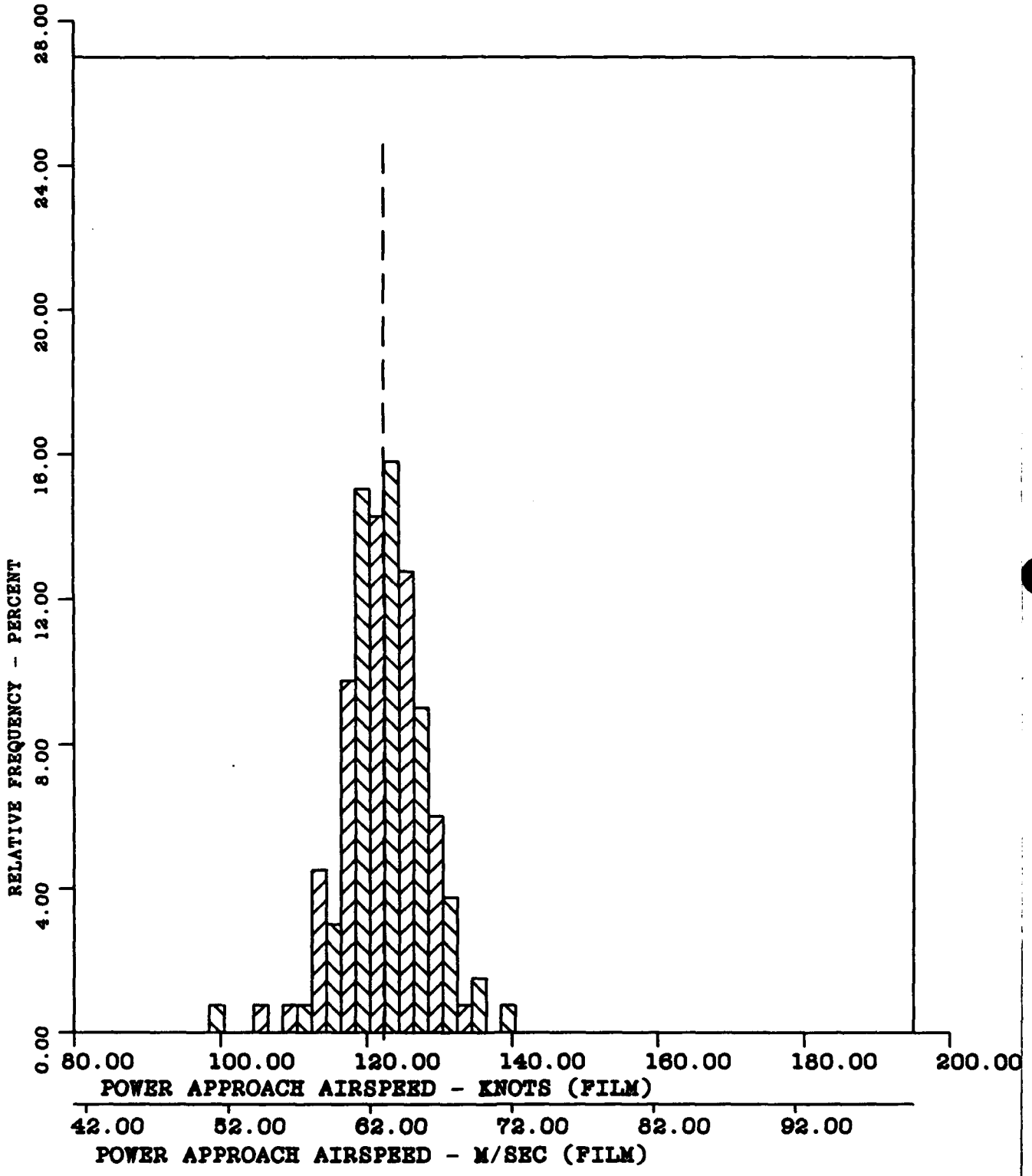


FIGURE O-3 FREQUENCY DISTRIBUTION OF FILM MEASURED POWER APPROACH AIRSPEED AT THE RAMP

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-133 $\bar{X}$-122.38 KNOTS (62.95 METRES/SEC) A3=-0.38
S= 5.64 KNOTS (2.90 METRES/SEC) A4=4.99
CURVE FITTED - NORMAL

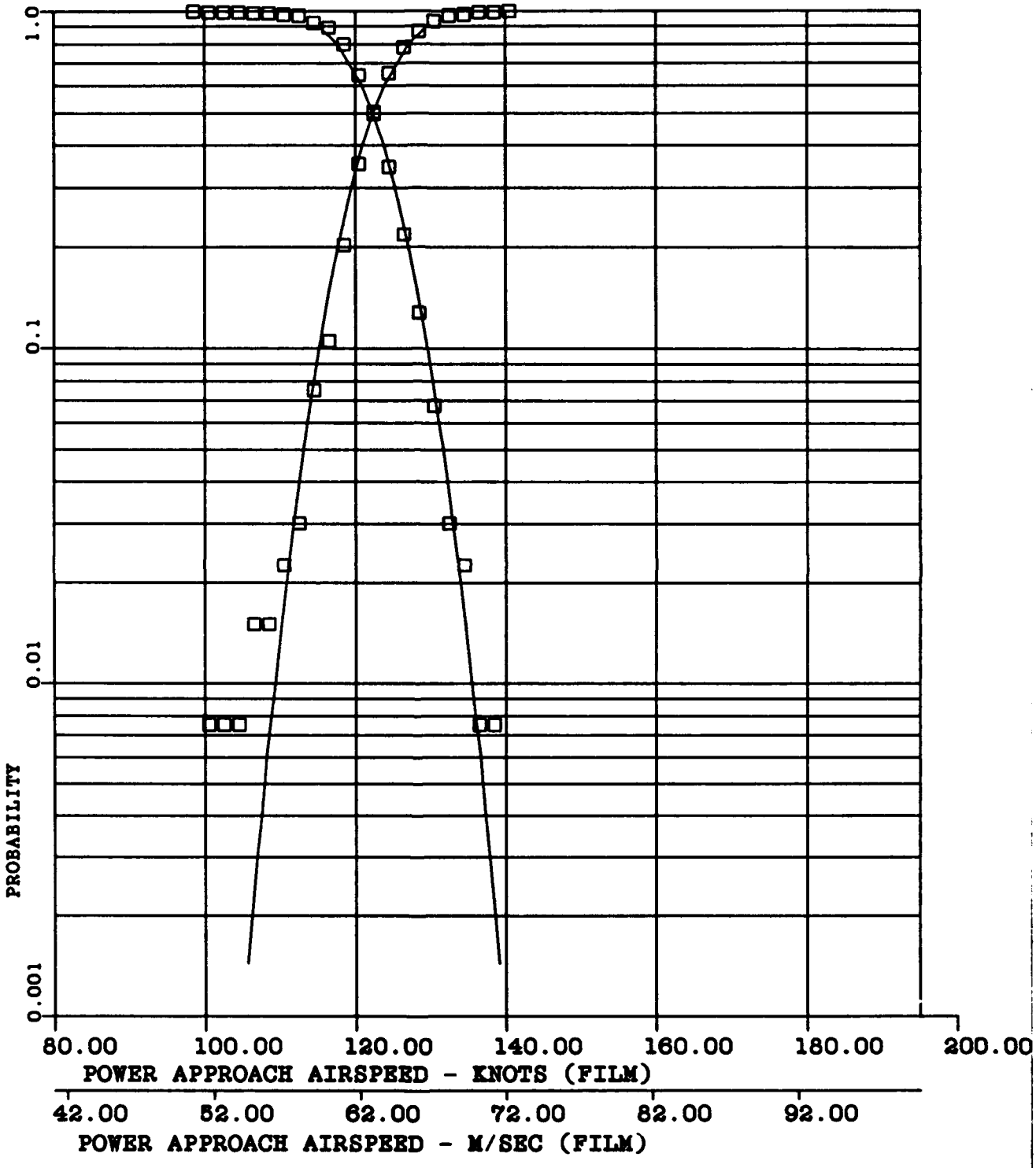


FIGURE O-4 PROBABILITY DISTRIBUTION OF POWER APPROACH AIRSPEED AT THE RAMP (FILM)

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-133 $\bar{X}$-8.18 FEET/SEC (2.49 METRES/SEC) A3=-0.08
S= 1.80 FEET/SEC (0.55 METRES/SEC) A4-2.63

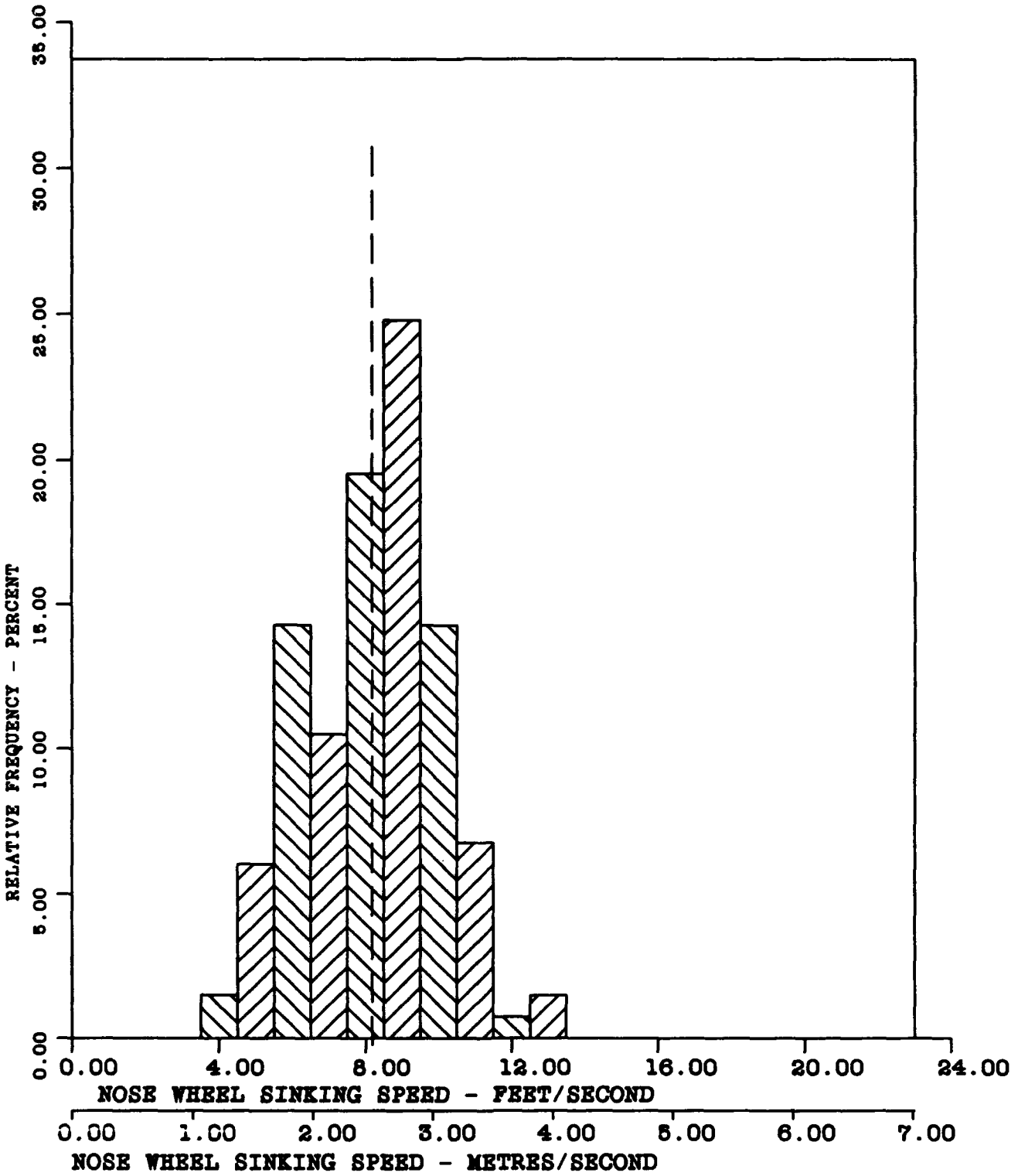


FIGURE O-5 FREQUENCY DISTRIBUTION OF NOSE WHEEL SINKING SPEED

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-133 $\bar{X}$-8.18 FEET/SEC (2.49 METRES/SEC) A3=-0.08
S= 1.80 FEET/SEC (0.55 METRES/SEC) A4=2.63
CURVE FITTED - NORMAL

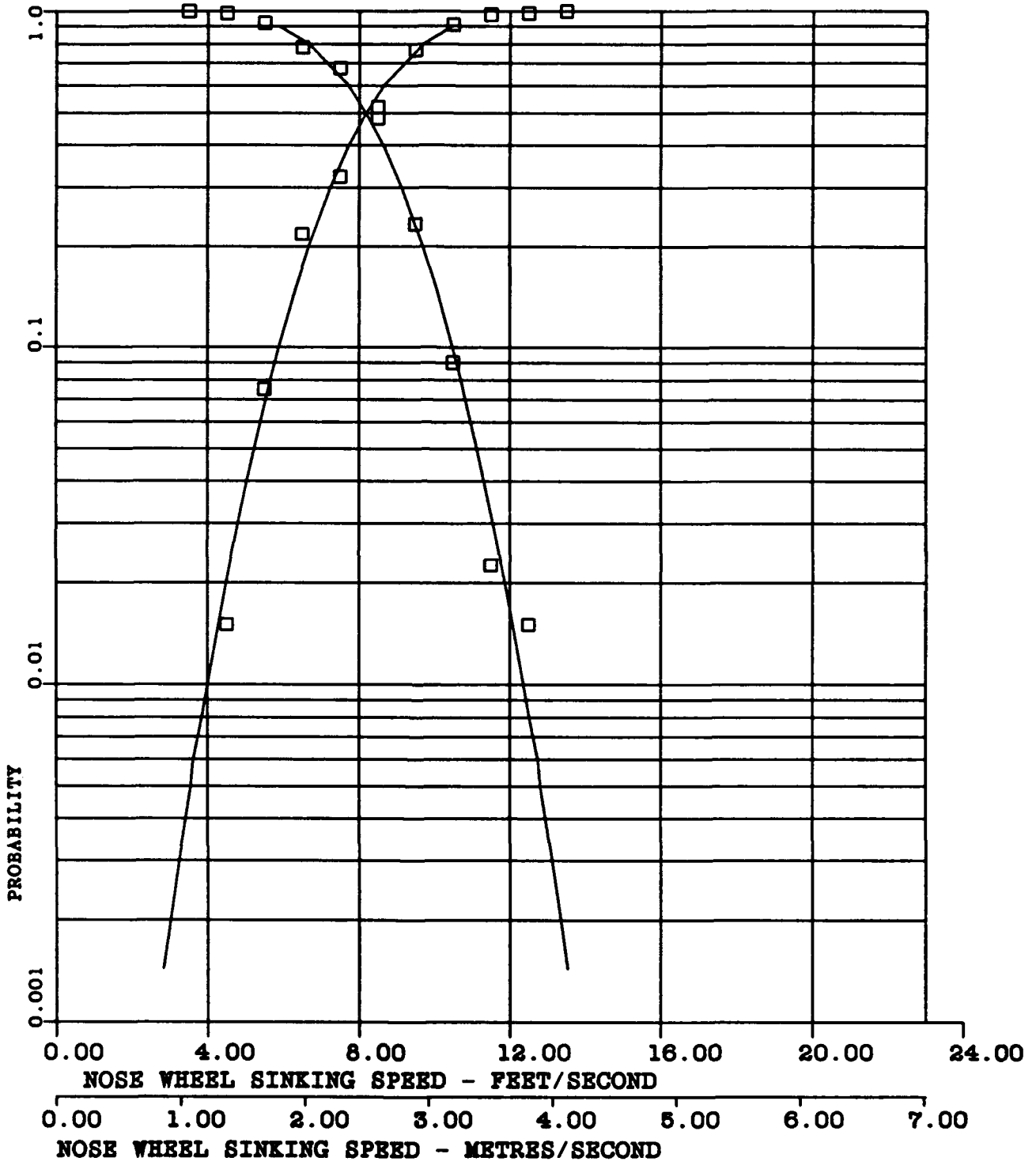


FIGURE O-6 PROBABILITY DISTRIBUTION OF NOSE WHEEL SINKING SPEED

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-133 $\bar{X}$-8.61 FEET/SEC (2.63 METRES/SEC) A3=-0.06
S= 1.97 FEET/SEC (0.60 METRES/SEC) A4-3.16

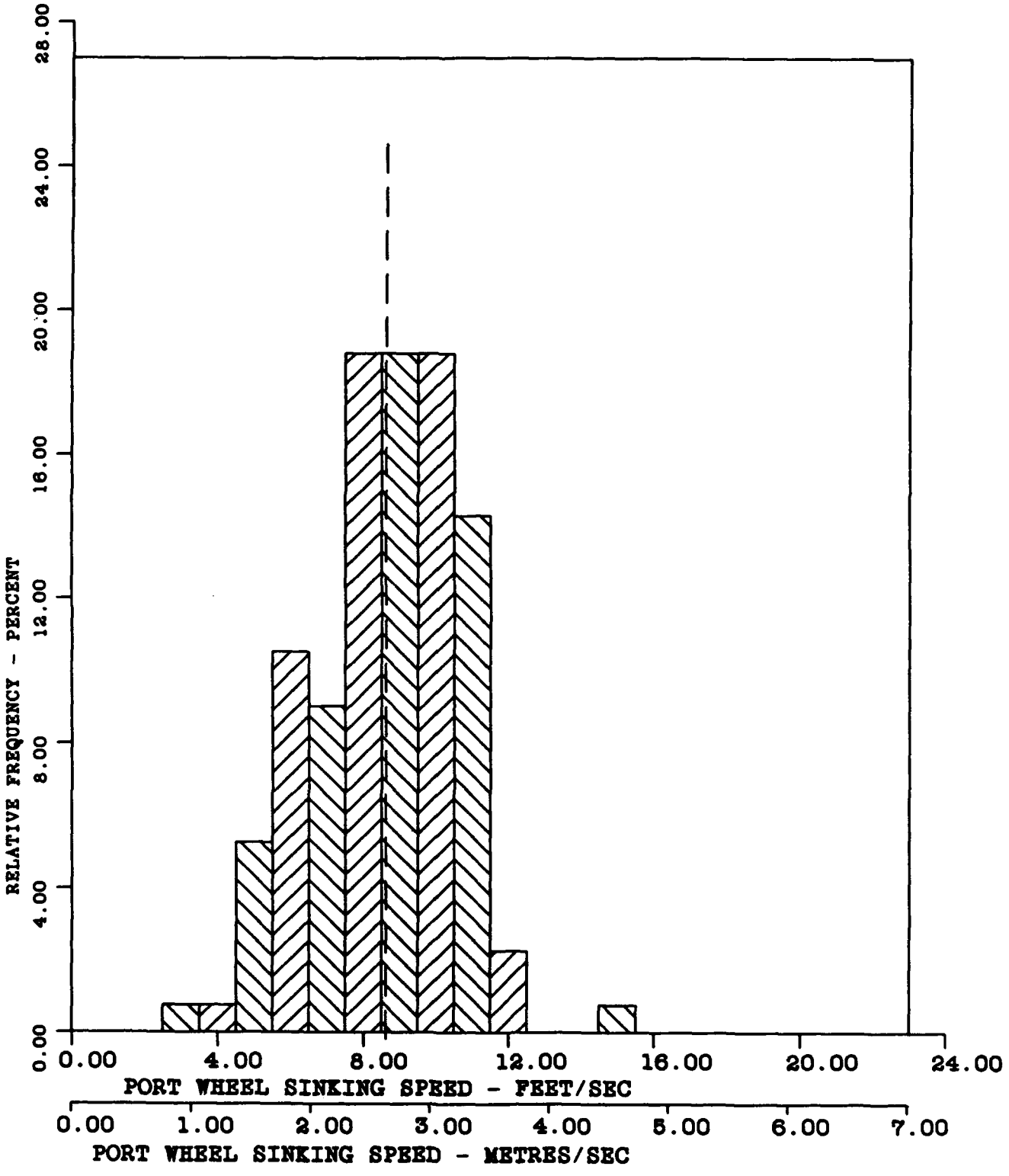


FIGURE O-7 FREQUENCY DISTRIBUTION OF PORT WHEEL SINKING SPEED AT PORT WHEEL TOUCHDOWN

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-133 $\bar{X}$-8.61 FEET/SEC (2.63 METRES/SEC) A3=-0.06
S= 1.97 FEET/SEC (0.60 METRES/SEC) A4-3.16
CURVE FITTED - NORMAL

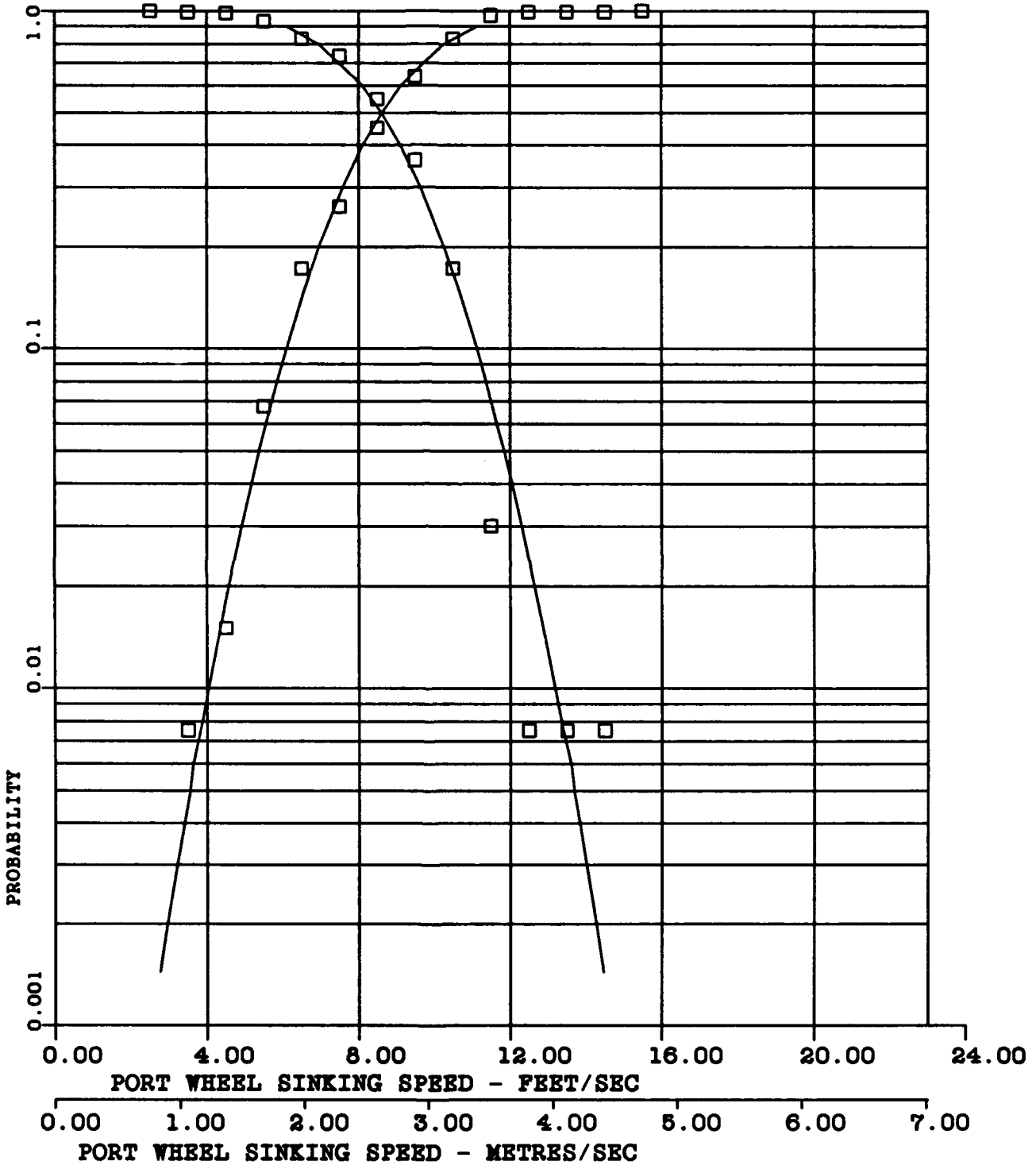


FIGURE O-8 PROBABILITY DISTRIBUTION OF PORT WHEEL SINKING SPEED

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N=133 $\bar{X}$=8.41 FEET/SEC (2.56 METRES/SEC) A3=0.02
S= 2.20 FEET/SEC (0.67 METRES/SEC) A4=2.54

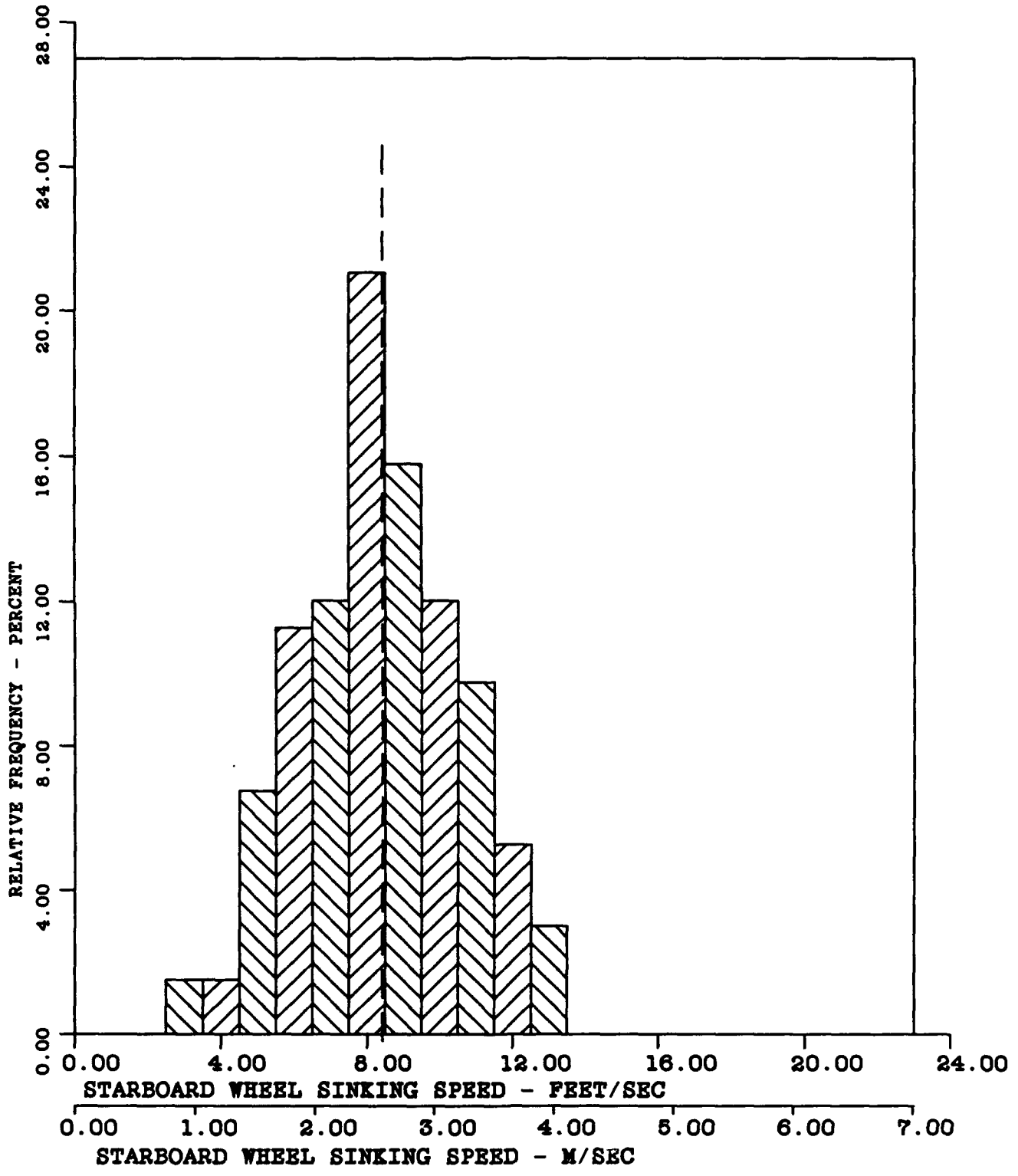


FIGURE O-9 FREQUENCY DISTRIBUTION OF STARBOARD WHEEL SINKING SPEED AT STARBOARD WHEEL TOUCHDOWN

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N=133 $\bar{X}$=8.41 FEET/SEC (2.56 METRES/SEC) A3=0.02
S= 2.20 FEET/SEC (0.67 METRES/SEC) A4=2.54
CURVE FITTED - NORMAL

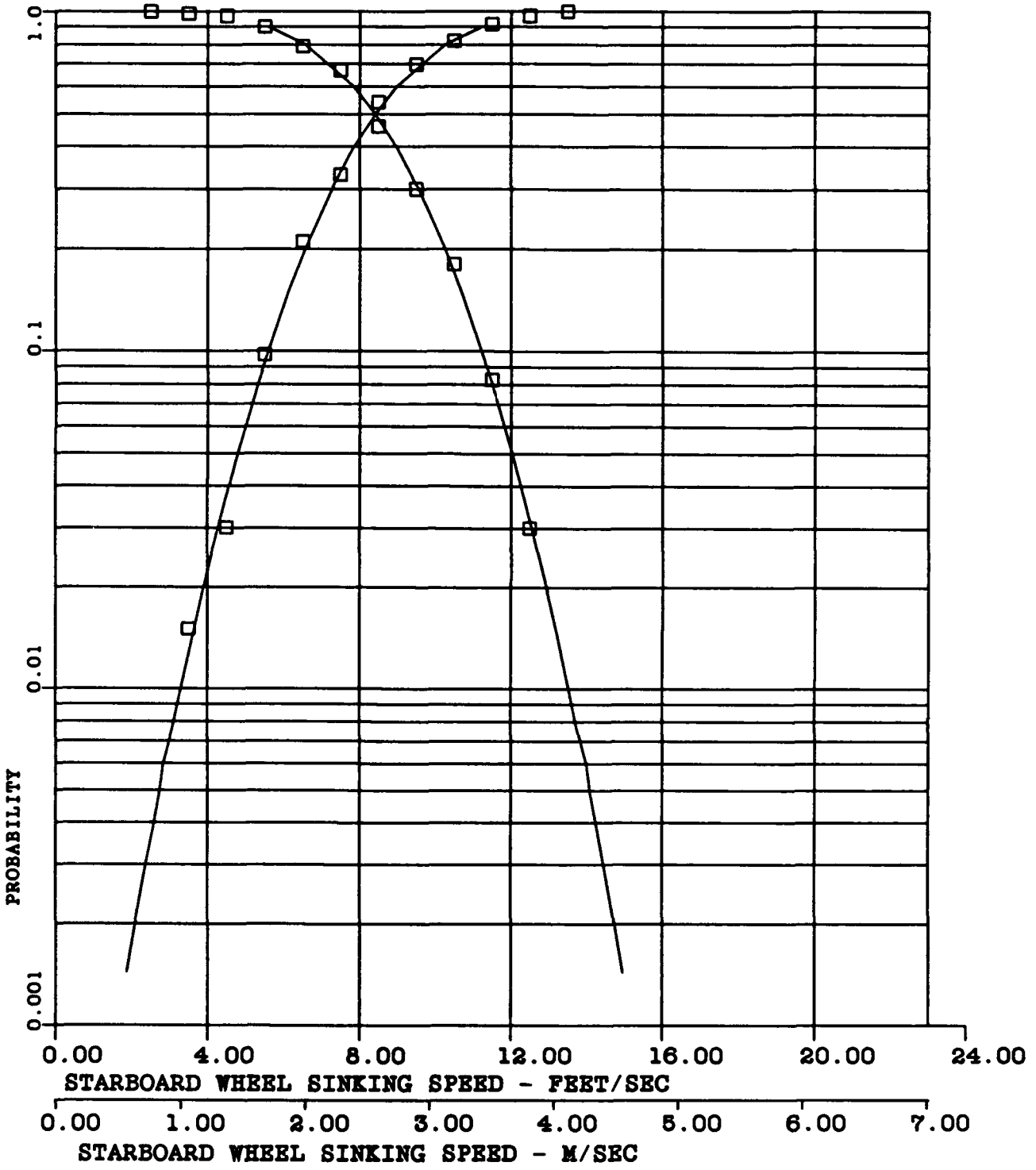


FIGURE O-10 PROBABILITY DISTRIBUTION OF STARBOARD WHEEL SINKING SPEED

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-133 $\bar{X}$-8.57 FEET/SEC (2.61 METRES/SEC) A3=-0.13
S= 1.92 FEET/SEC (0.59 METRES/SEC) A4-2.66

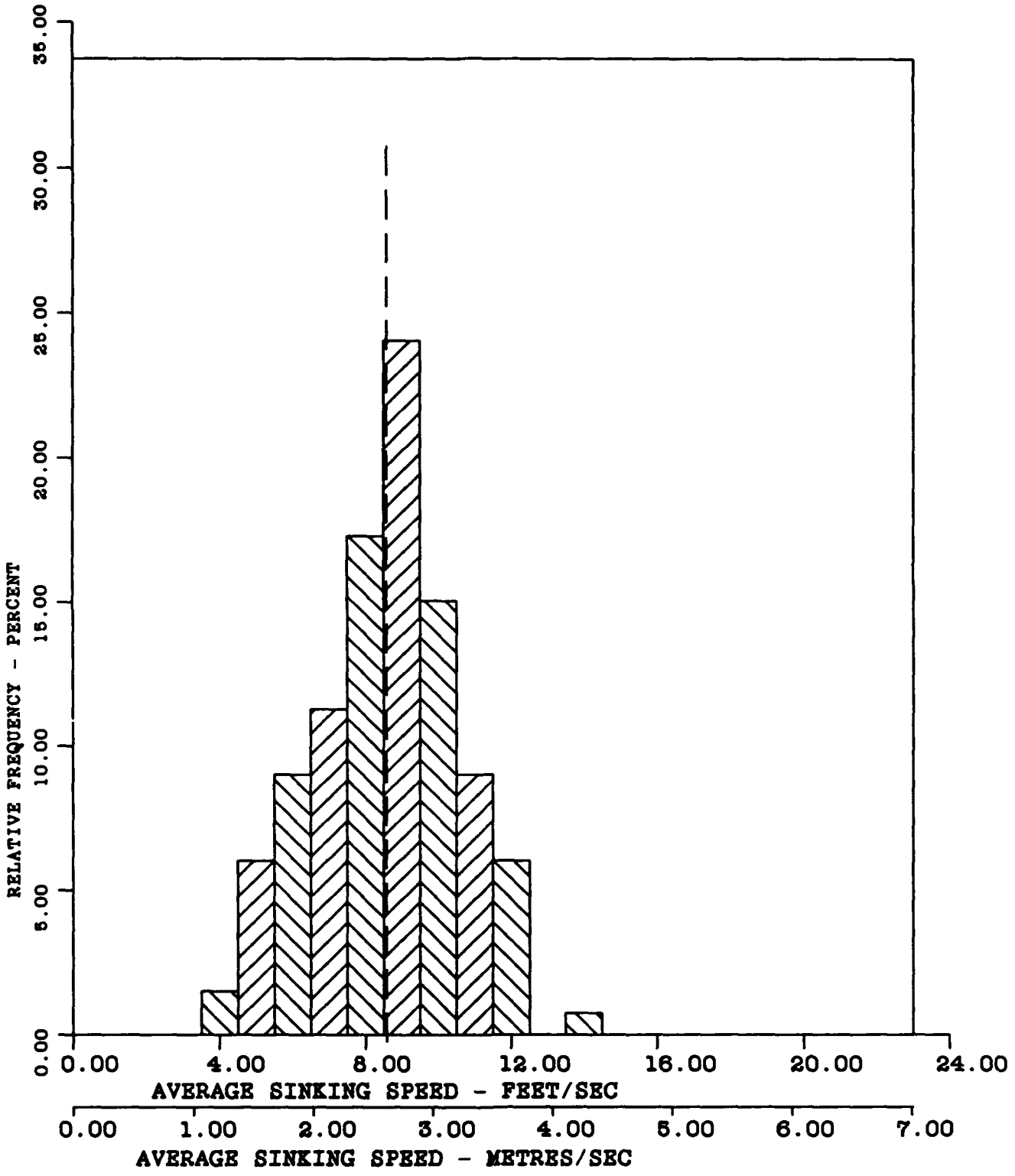


FIGURE O-11 FREQUENCY DISTRIBUTION OF AVG SINKING SPEED OF MAIN WHEEL AT FIRST MAIN WHEEL TOUCHDOWN

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N=133 $\bar{X}$=8.57 FEET/SEC (2.61 METRES/SEC) A3=-0.13
S= 1.92 FEET/SEC (0.59 METRES/SEC) A4=2.66
CURVE FITTED - NORMAL

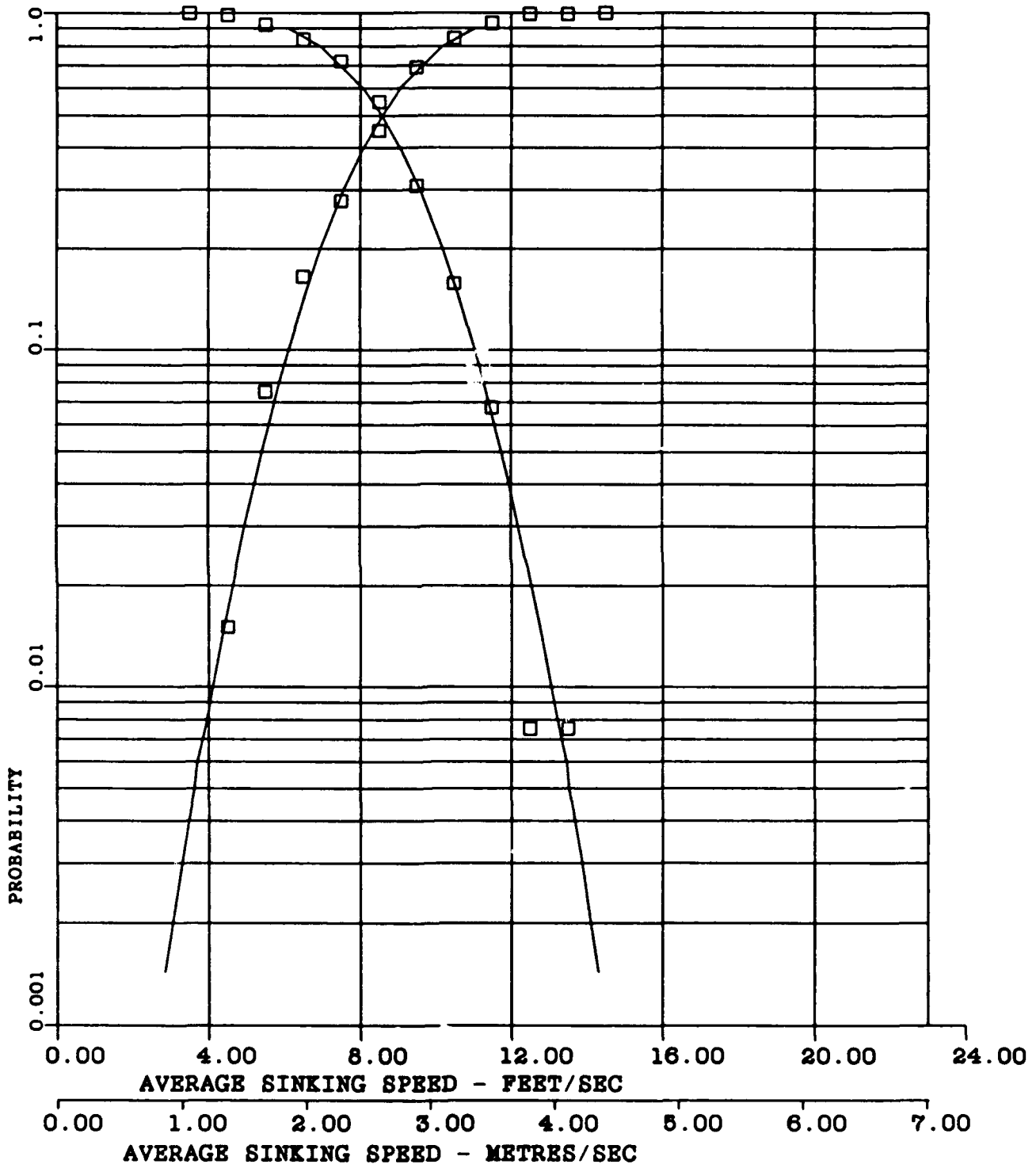


FIGURE O-12 PROBABILITY DISTRIBUTION OF AVERAGE SINKING SPEED AT FIRST MAIN WHEEL TOUCHDOWN

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N=7 $\bar{X}$=7.66 FEET/SEC (2.34 METRES/SEC) A3=-0.59
S= 2.23 FEET/SEC (0.68 METRES/SEC) A4=2.06

FREE FLIGHT IS THE CONDITION WHERE THE HOOK ENGAGES THE ARRESTMENT CABLE BEFORE THE WHEELS MAKE DECK CONTACT

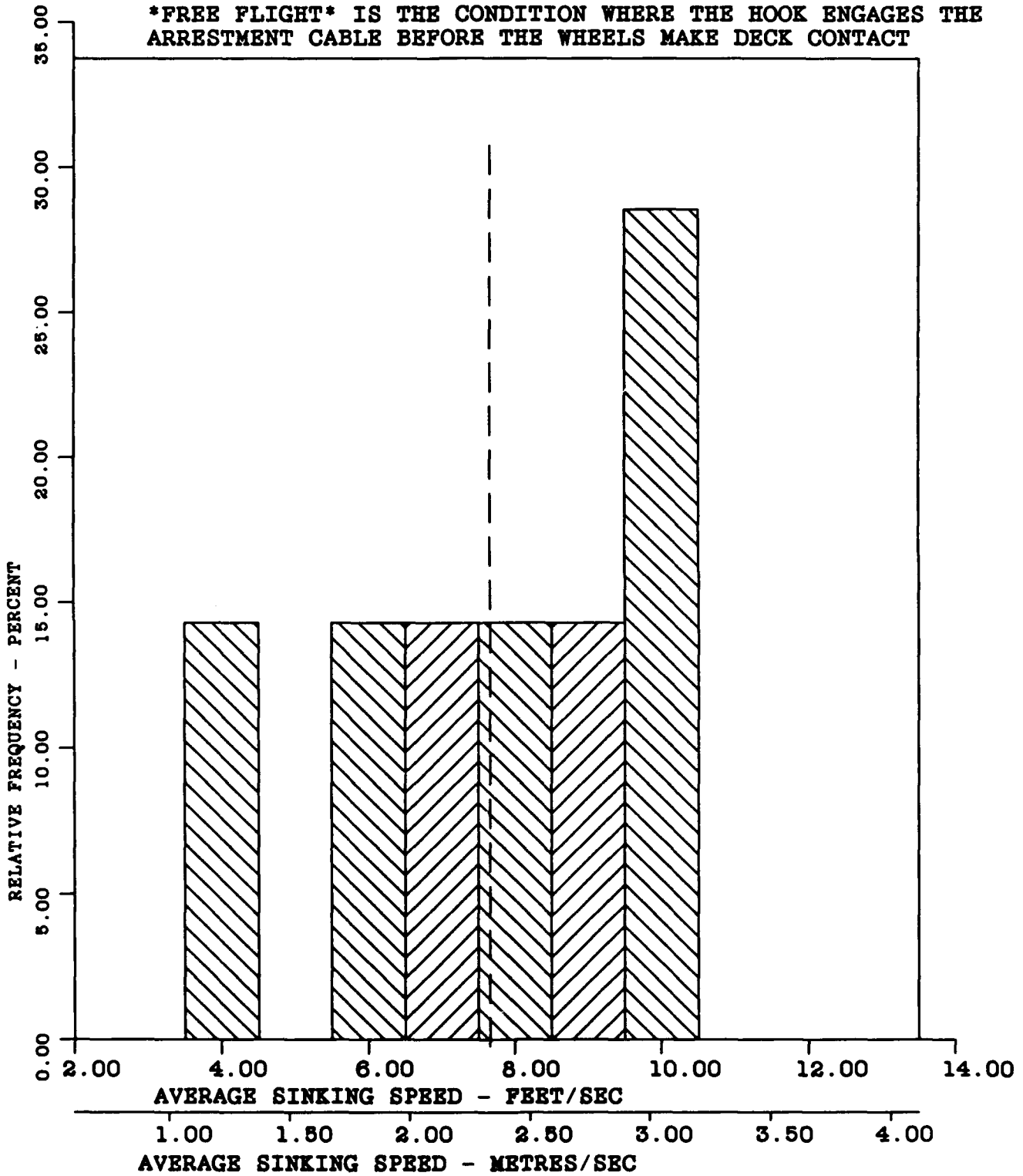


FIGURE O-13 FREQUENCY DISTRIBUTION OF AVERAGE SINKING SPEED OF MAIN WHEELS AT FREE FLIGHT

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-7 $\bar{X}$-7.66 FEET/SEC (2.34 METRES/SEC) A3=-0.59
S= 2.23 FEET/SEC (0.68 METRES/SEC) A4=2.06
CURVE FITTED - NORMAL
FREE FLIGHT IS THE CONDITION WHERE THE HOOK ENGAGES THE ARRESTMENT CABLE BEFORE THE WHEELS MAKE DECK CONTACT

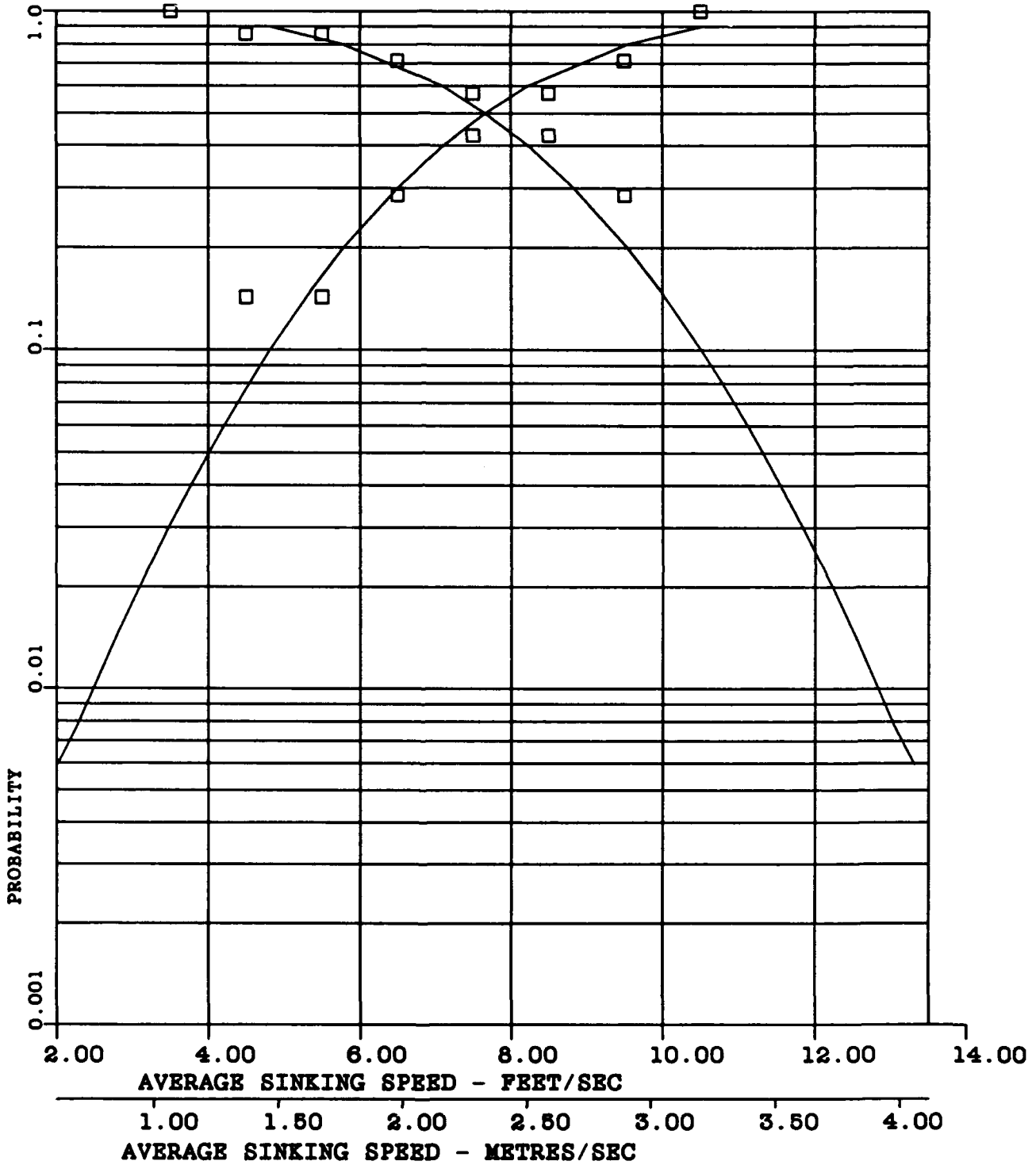


FIGURE O-14 PROBABILITY DISTRIBUTION OF AVERAGE SINKING SPEED AT FREE FLIGHT

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-133 $\bar{X}$-1.03 A3=-0.06
S= 0.09 A4=3.97

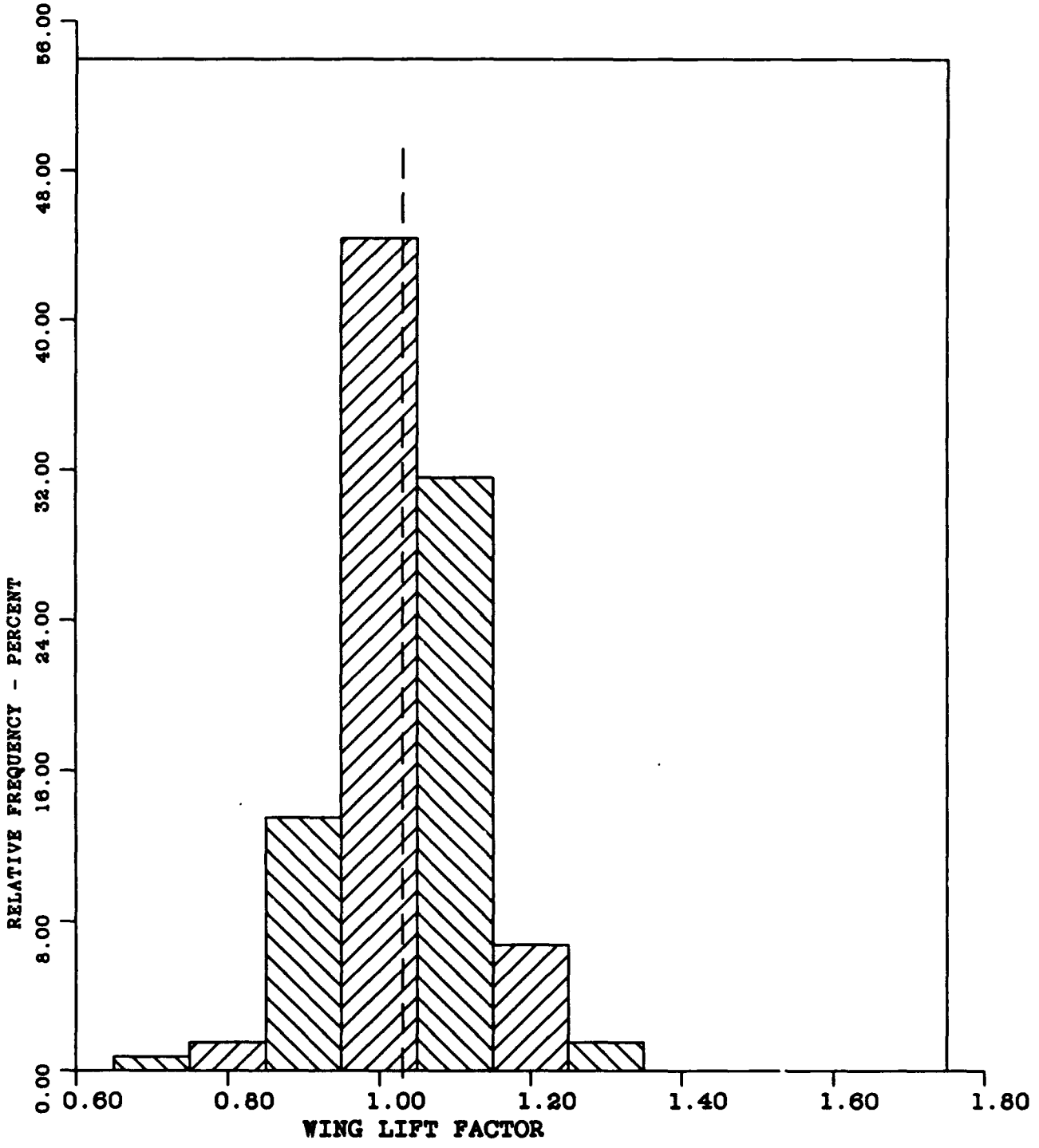


FIGURE O-15 FREQUENCY DISTRIBUTION OF WING LIFT FACTOR AT FIRST MAIN WHEEL TOUCHDOWN

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-133 $\bar{X}$-1.03 A3=-0.06
S= 0.09 A4=3.97
CURVE FITTED - NORMAL

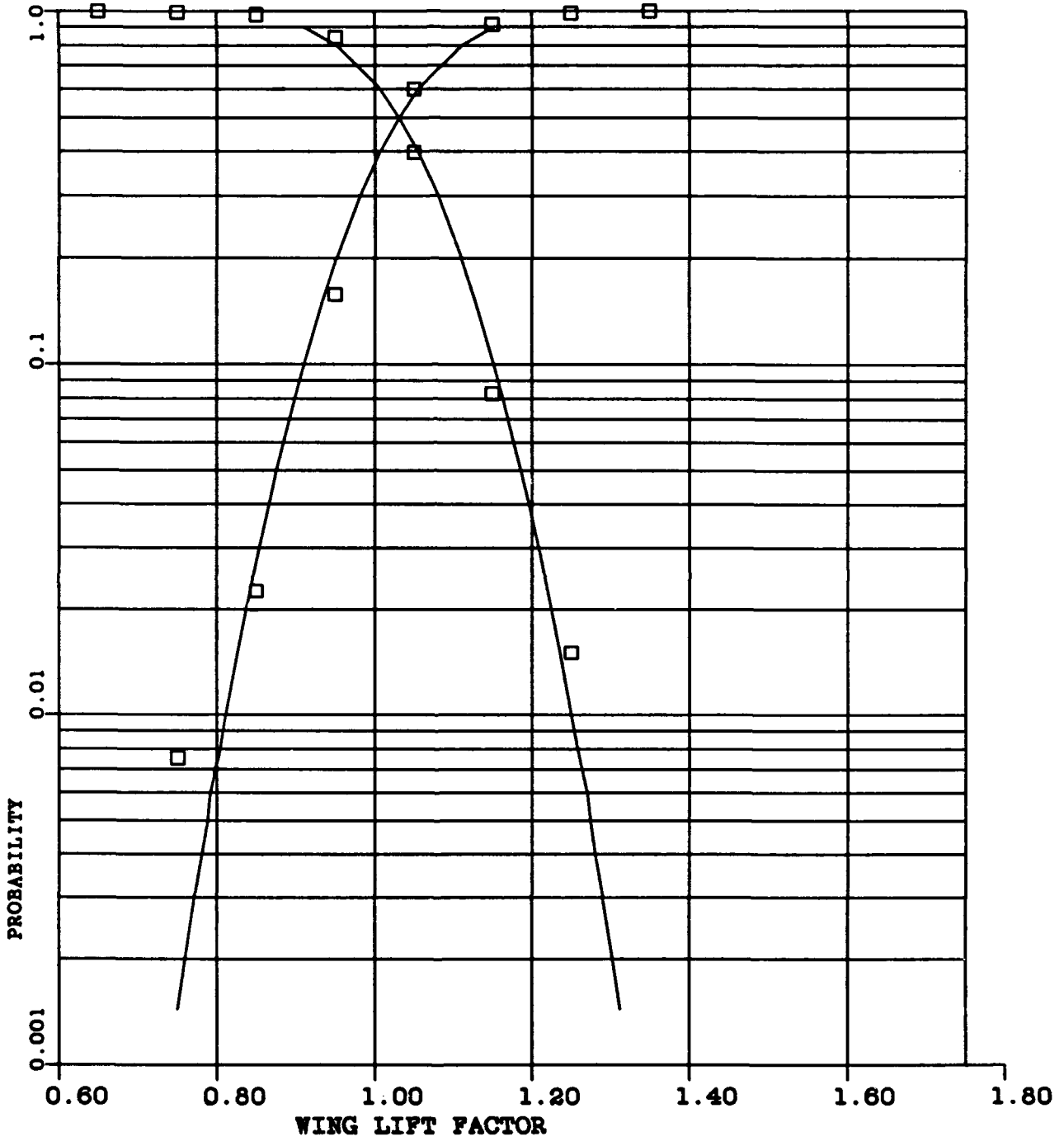


FIGURE O-16 PROBABILITY DISTRIBUTION OF WING LIFT FACTOR AT FIRST MAIN WHEEL TOUCHDOWN

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-7 $\bar{X}$-1.03 A3-0.95
S- 0.05 A4-1.90

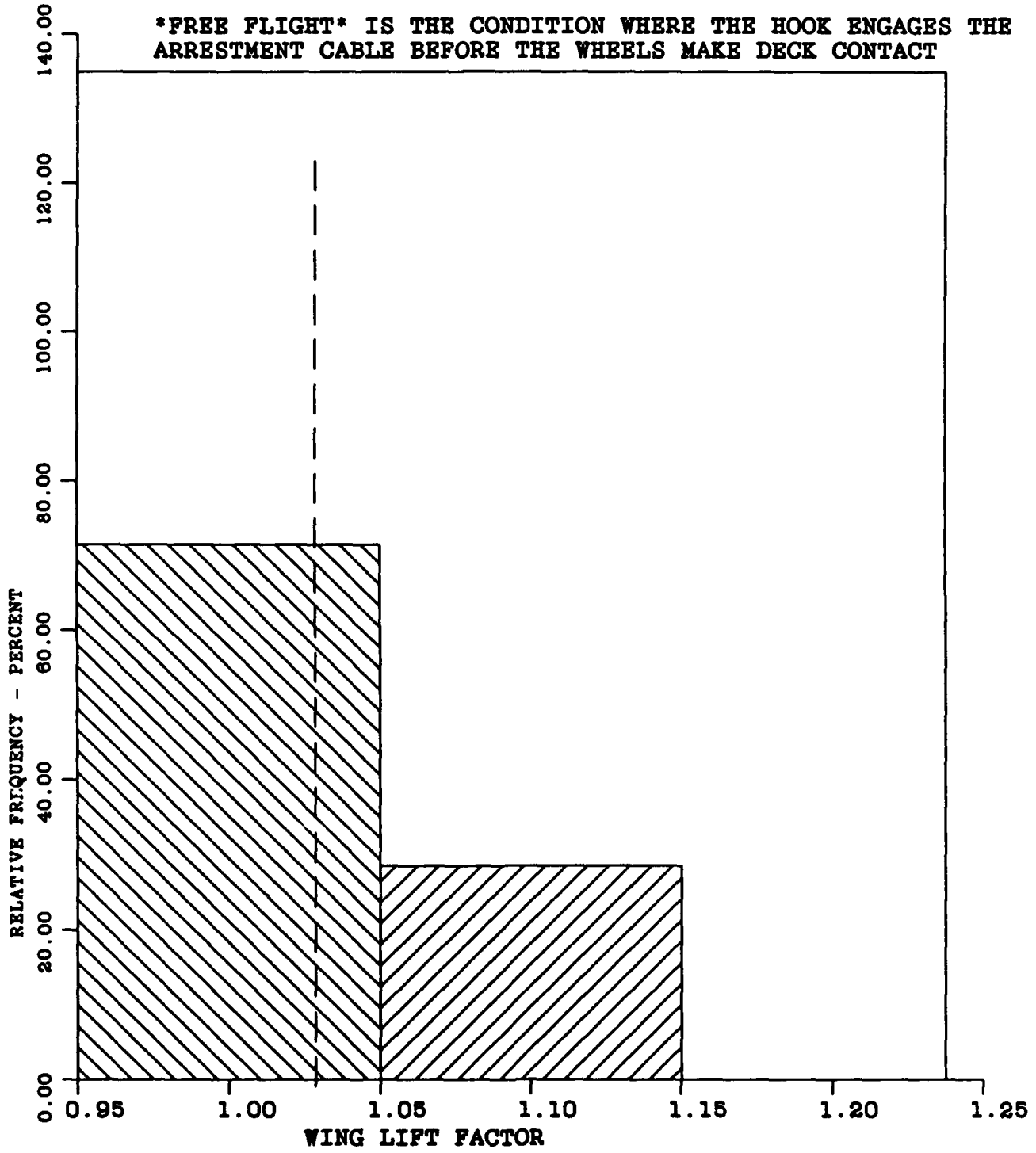


FIGURE O-17 FREQUENCY DISTRIBUTION OF WING LIFT FACTOR AT FREE FLIGHT

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (0.061 RADIANS)
N=7 $\bar{X}$=1.03 A3=0.95
S= 0.05 A4=1.90
CURVE FITTED - NORMAL
FREE FLIGHT IS THE CONDITION WHERE THE HOOK ENGAGES THE ARRESTMENT CABLE BEFORE THE WHEELS MAKE DECK CONTACT

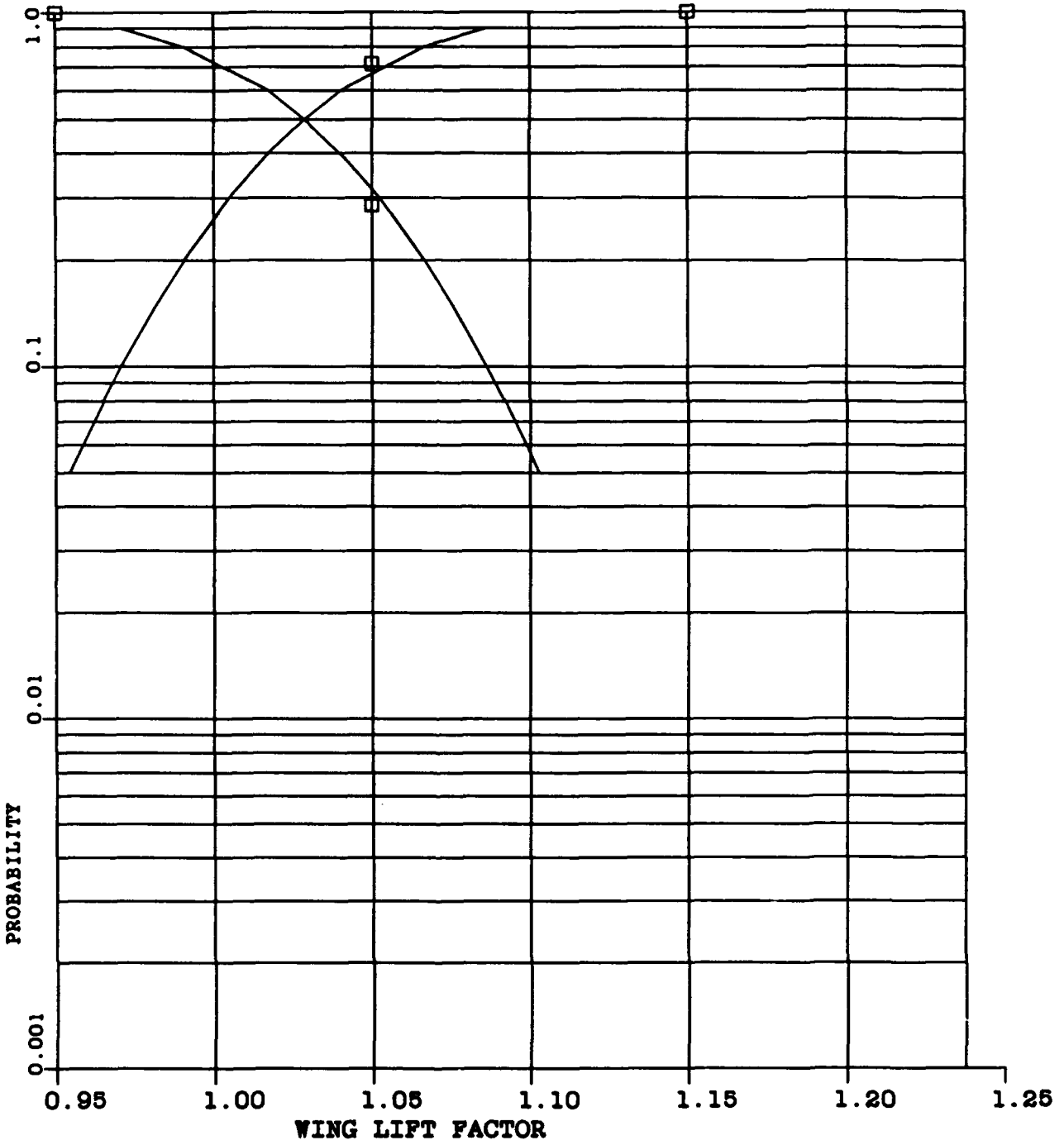


FIGURE O-18 PROBABILITY DISTRIBUTION OF WING LIFT FACTOR AT FREE FLIGHT

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-133 $\bar{X}$-4.72 DEGREES (0.082 RADIANS) A3=-0.57
S= 1.23 DEGREES (0.022 RADIANS) A4=5.40

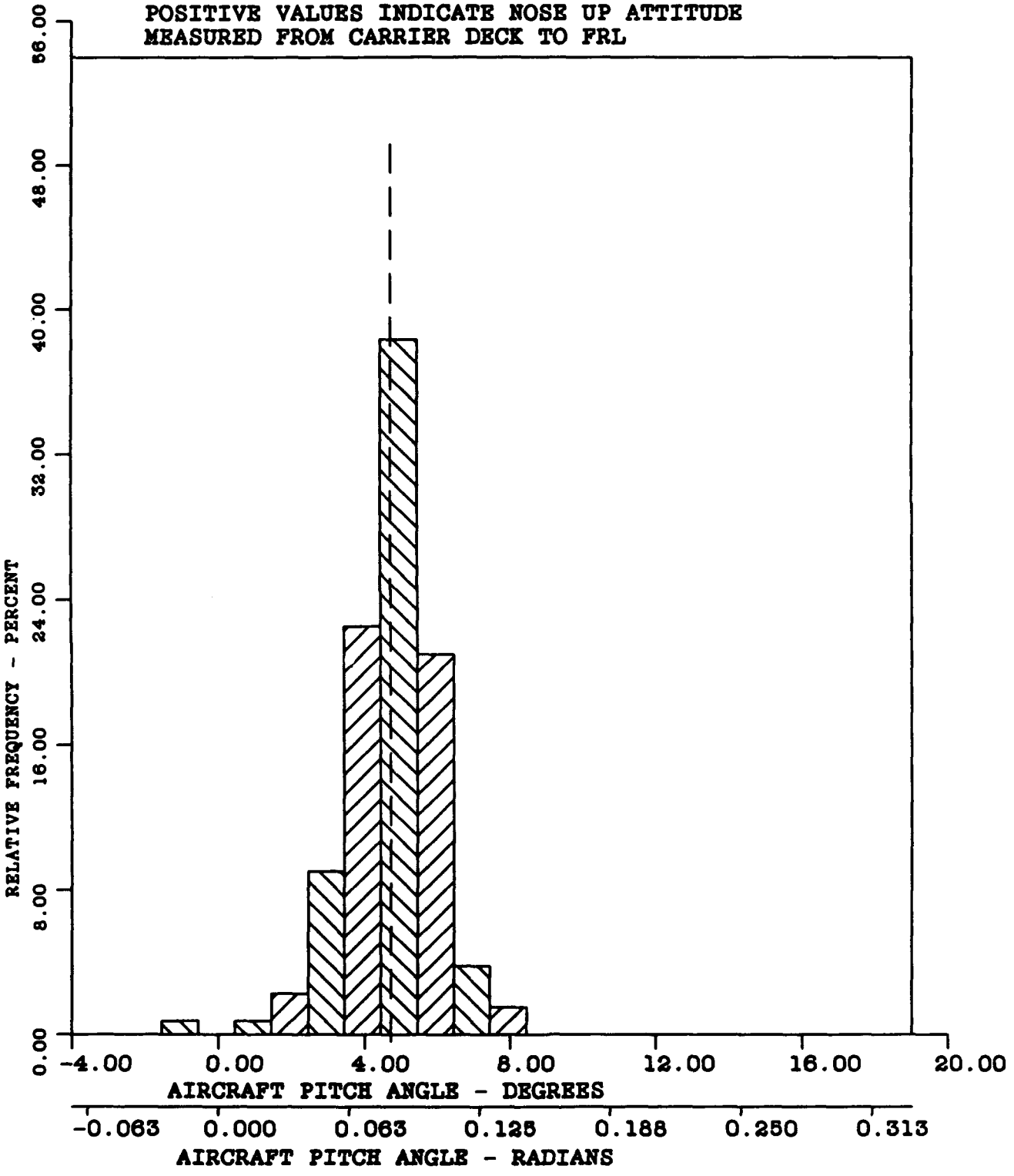


FIGURE O-19 FREQUENCY DISTRIBUTION OF AIRCRAFT PITCH ANGLE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N=133 $\bar{X}$=4.72 DEGREES (0.082 RADIANS) A3=-0.57
S= 1.23 DEGREES (0.022 RADIANS) A4=5.40
CURVE FITTED - PEARSON TYPE III
POSITIVE VALUES INDICATE NOSE UP ATTITUDE
MEASURED FROM CARRIER DECK TO FRL

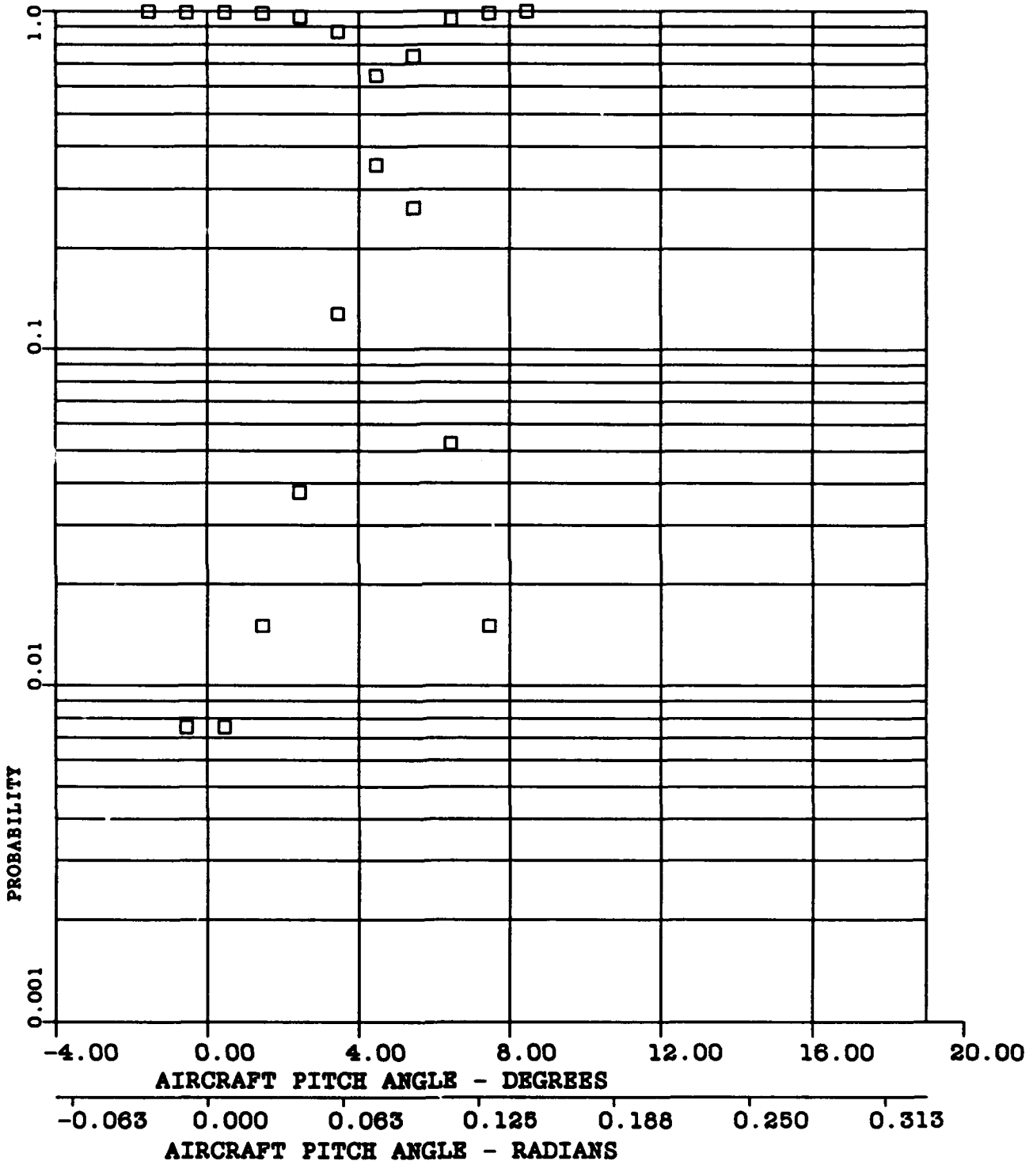


FIGURE O-20 PROBABILITY DISTRIBUTION OF AIRCRAFT PITCH ANGLE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-7 $\bar{X}$-5.09 DEGREES (0.089 RADIANS) A3-1.27
S- 0.78 DEGREES (0.014 RADIANS) A4-3.63

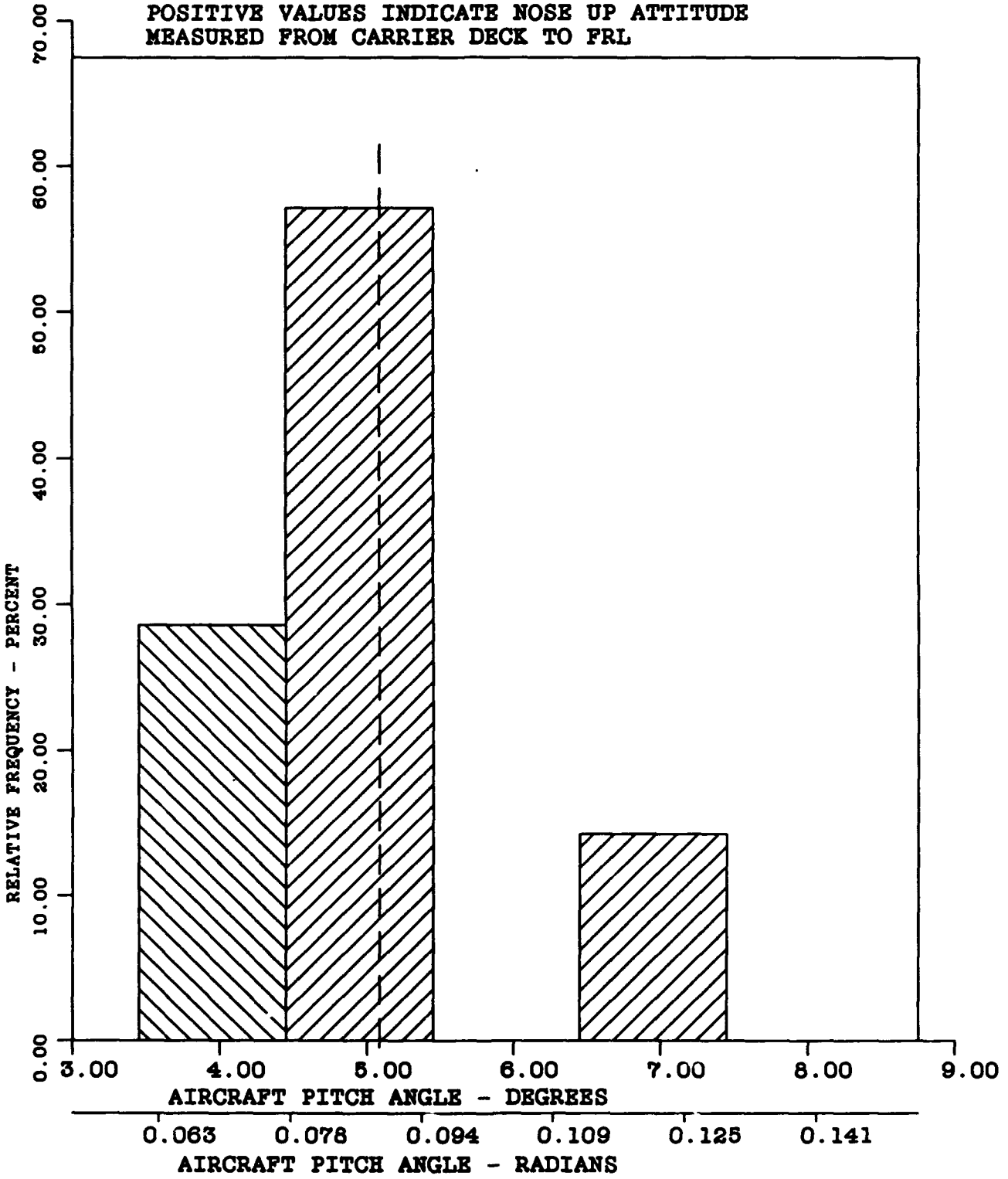


FIGURE O-21 FREQUENCY DISTRIBUTION OF AIRCRAFT PITCH ANGLE AT FREE FLIGHT

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-7 $\bar{X}$-5.09 DEGREES (0.089 RADIANS) A3-1.27
S= 0.78 DEGREES (0.014 RADIANS) A4-3.63
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE NOSE UP ATTITUDE
MEASURED FROM CARRIER DECK TO FRL

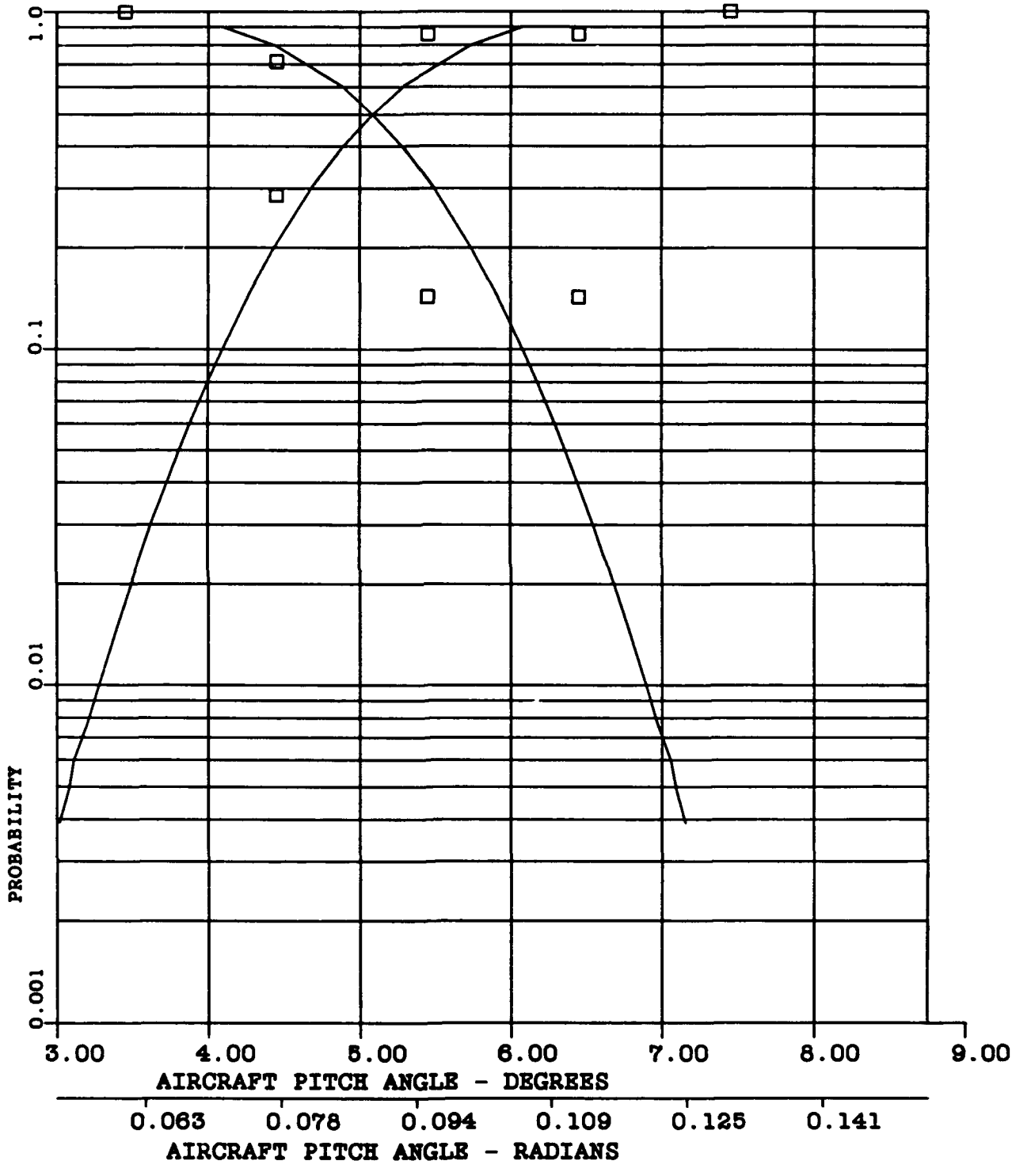


FIGURE O-22 PROBABILITY DISTRIBUTION OF AIRCRAFT PITCH ANGLE AT FREE FLIGHT

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N=133 $\bar{X}$=-1.01 DEGREES (-0.018 RADIANS) A3=0.22
S= 2.23 DEGREES (0.039 RADIANS) A4=3.43

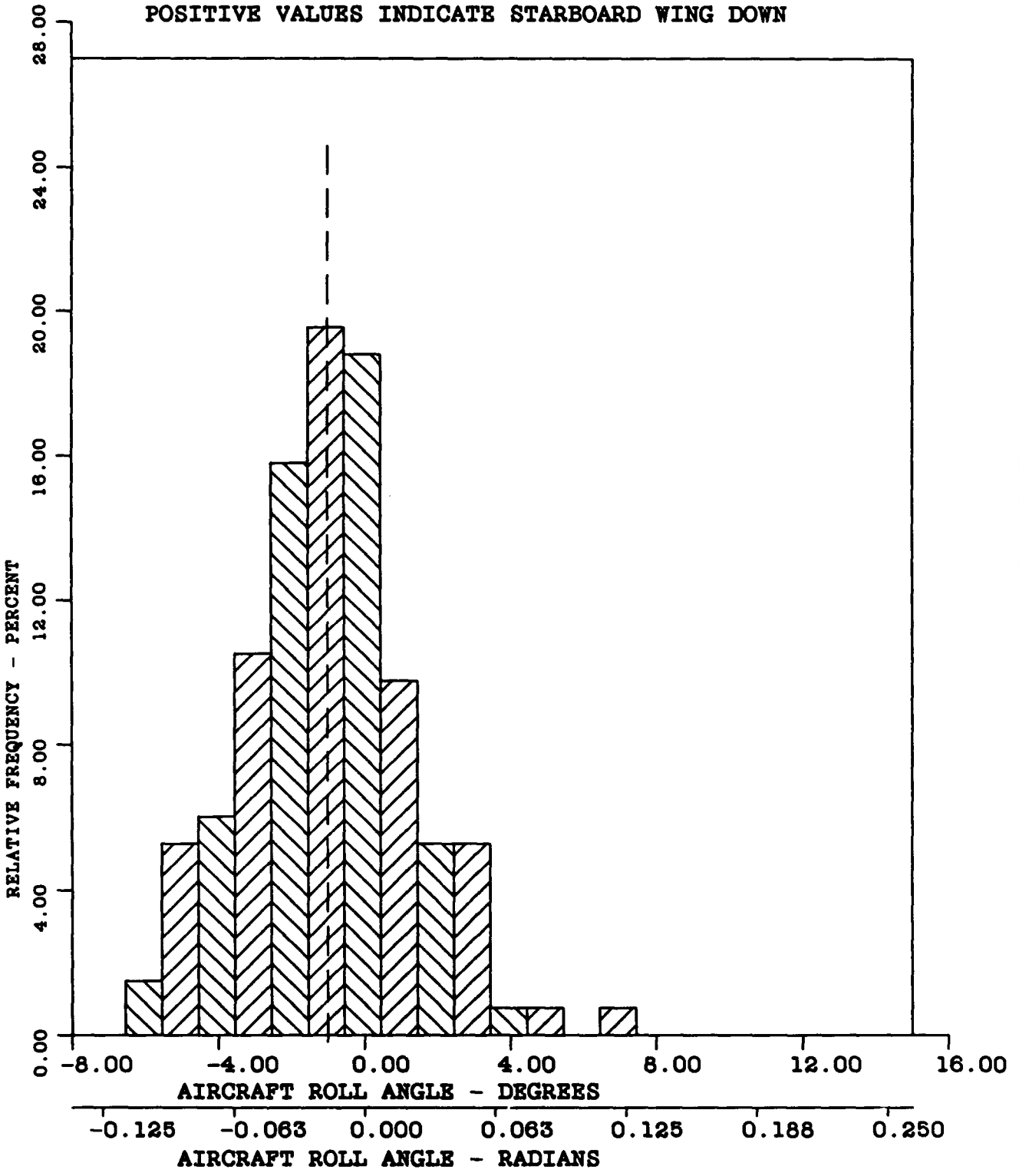


FIGURE O-23 FREQUENCY DISTRIBUTION OF AIRCRAFT ROLL ANGLE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-133 $\bar{X}$--1.01 DEGREES (-0.018 RADIANS) A3-0.22
S- 2.23 DEGREES (0.039 RADIANS) A4-3.43
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE STARBOARD WING DOWN

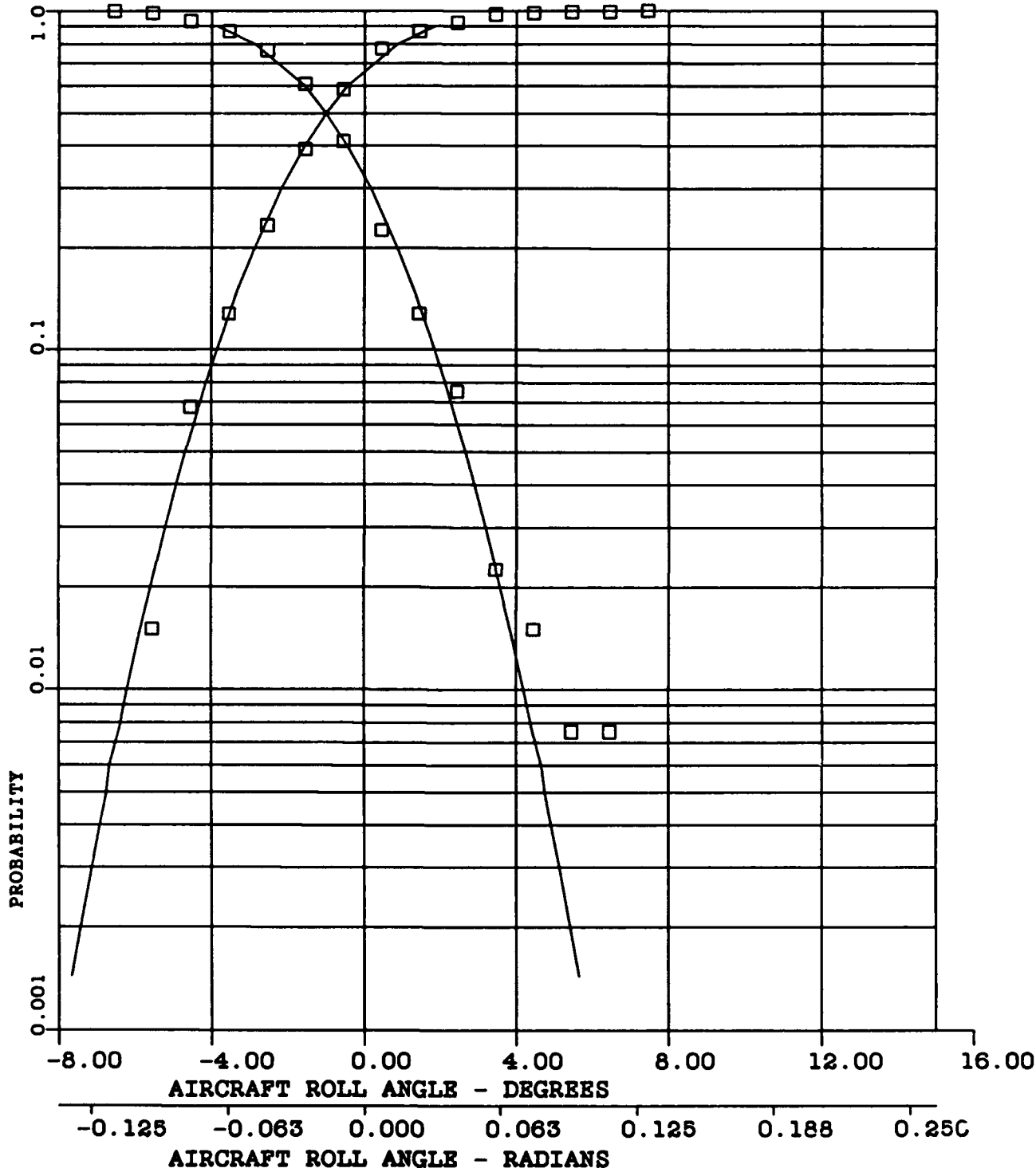


FIGURE O-24 PROBABILITY DISTRIBUTION OF AIRCRAFT ROLL ANGLE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (0.061 RADIANS)
N=7 $\bar{X}$=-0.97 DEGREES (-0.017 RADIANS) A3=0.73
S= 1.63 DEGREES (0.028 RADIANS) A4=1.96

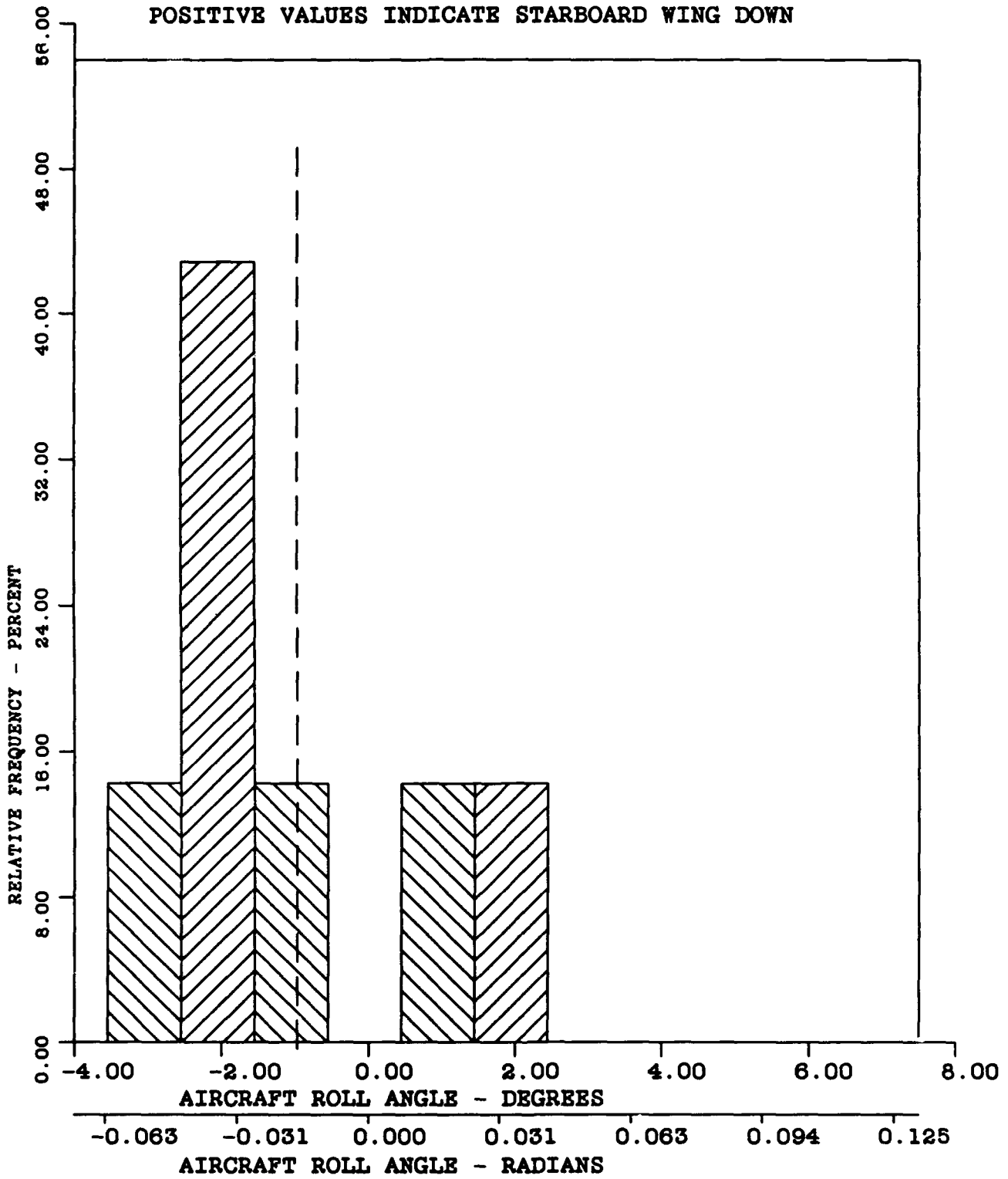


FIGURE O-25 FREQUENCY DISTRIBUTION OF AIRCRAFT ROLL ANGLE AT FREE FLIGHT

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (0.061 RADIANS)
N=7 $\bar{X}$=-0.97 DEGREES (-0.017 RADIANS) A3=0.73
S= 1.63 DEGREES (0.028 RADIANS) A4=1.96
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE STARBOARD WING DOWN

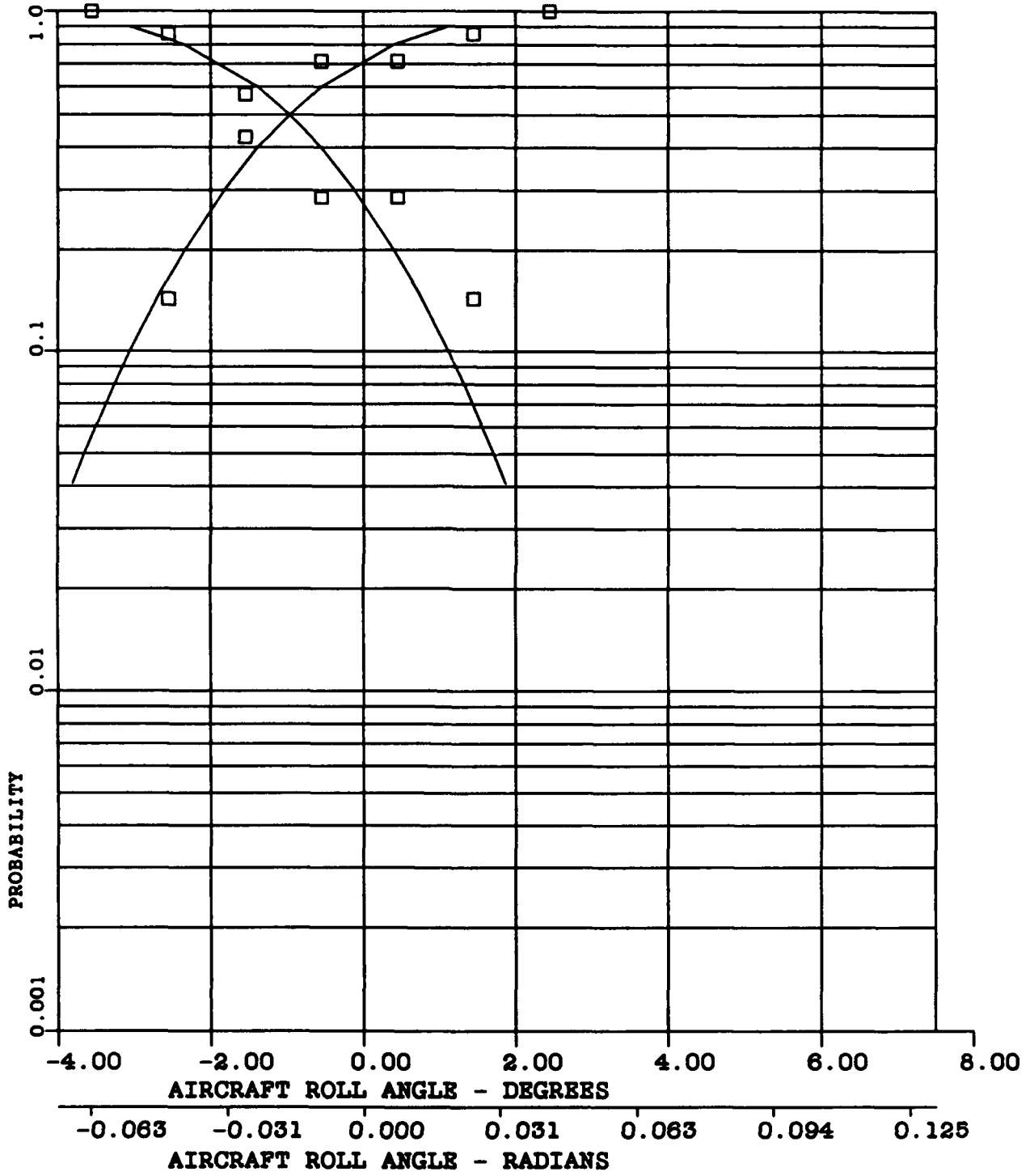


FIGURE O-26 PROBABILITY DISTRIBUTION OF AIRCRAFT ROLL ANGLE AT FREE FLIGHT

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-133 $\bar{X}$-276.20 FEET (84.19 METRES) A3=-0.28
S= 38.32 FEET (11.68 METRES) A4-2.65

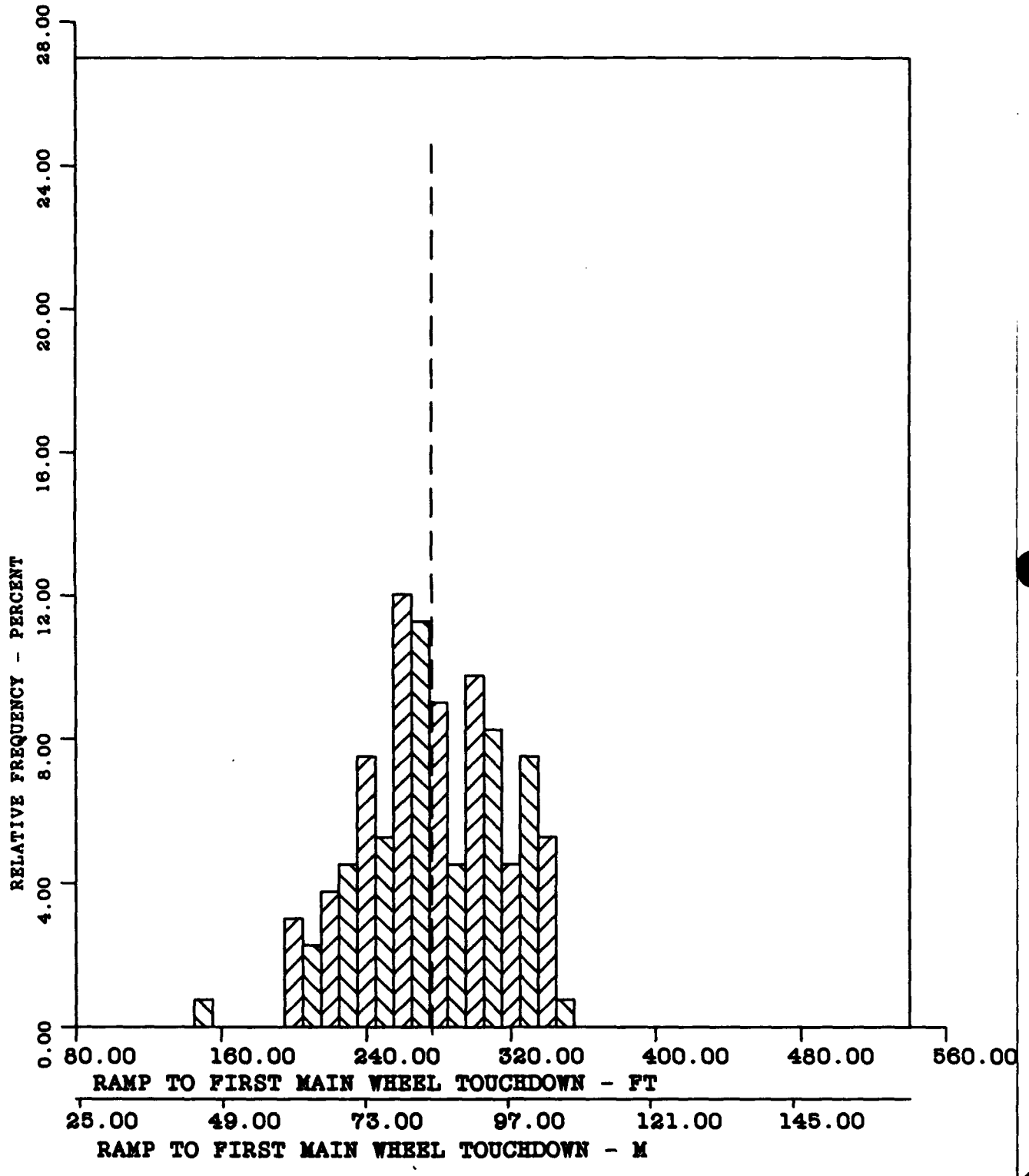


FIGURE O-27 FREQUENCY DISTRIBUTION OF DISTANCE FROM RAMP TO FIRST MAIN WHEEL TOUCHDOWN POINT

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N=133 $\bar{X}$-276.20 FEET (84.19 METRES) A3=-0.28
S= 38.32 FEET (11.68 METRES) A4=2.65
CURVE FITTED - NORMAL

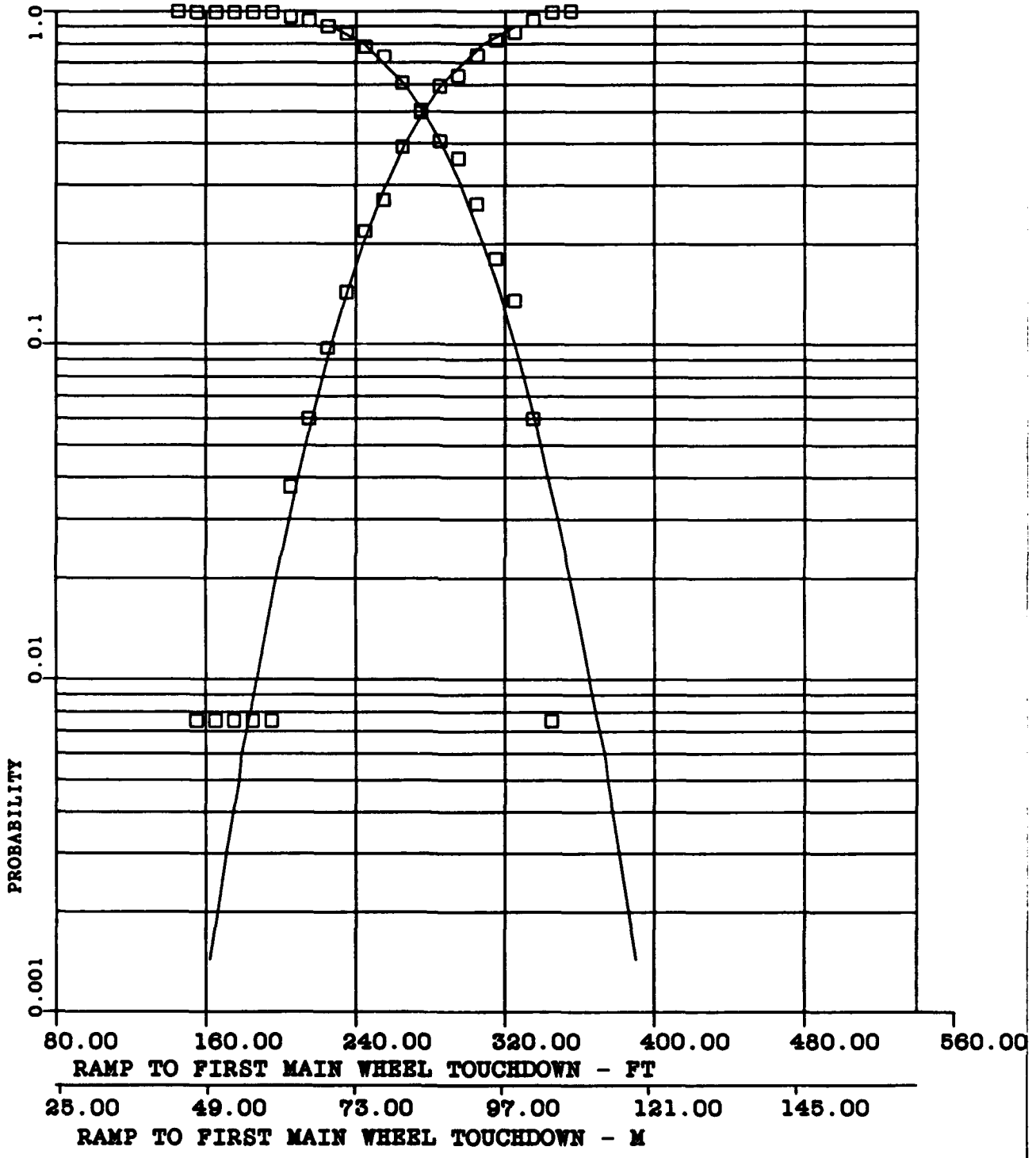


FIGURE O-28 PROBABILITY DISTRIBUTION OF DISTANCE FROM RAMP TO FIRST MAIN WHEEL TOUCHDOWN POINT

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-133 $\bar{X}$=-10.68 FEET (-3.26 METRES) A3=0.36
S= 5.34 FEET (1.63 METRES) A4=3.81

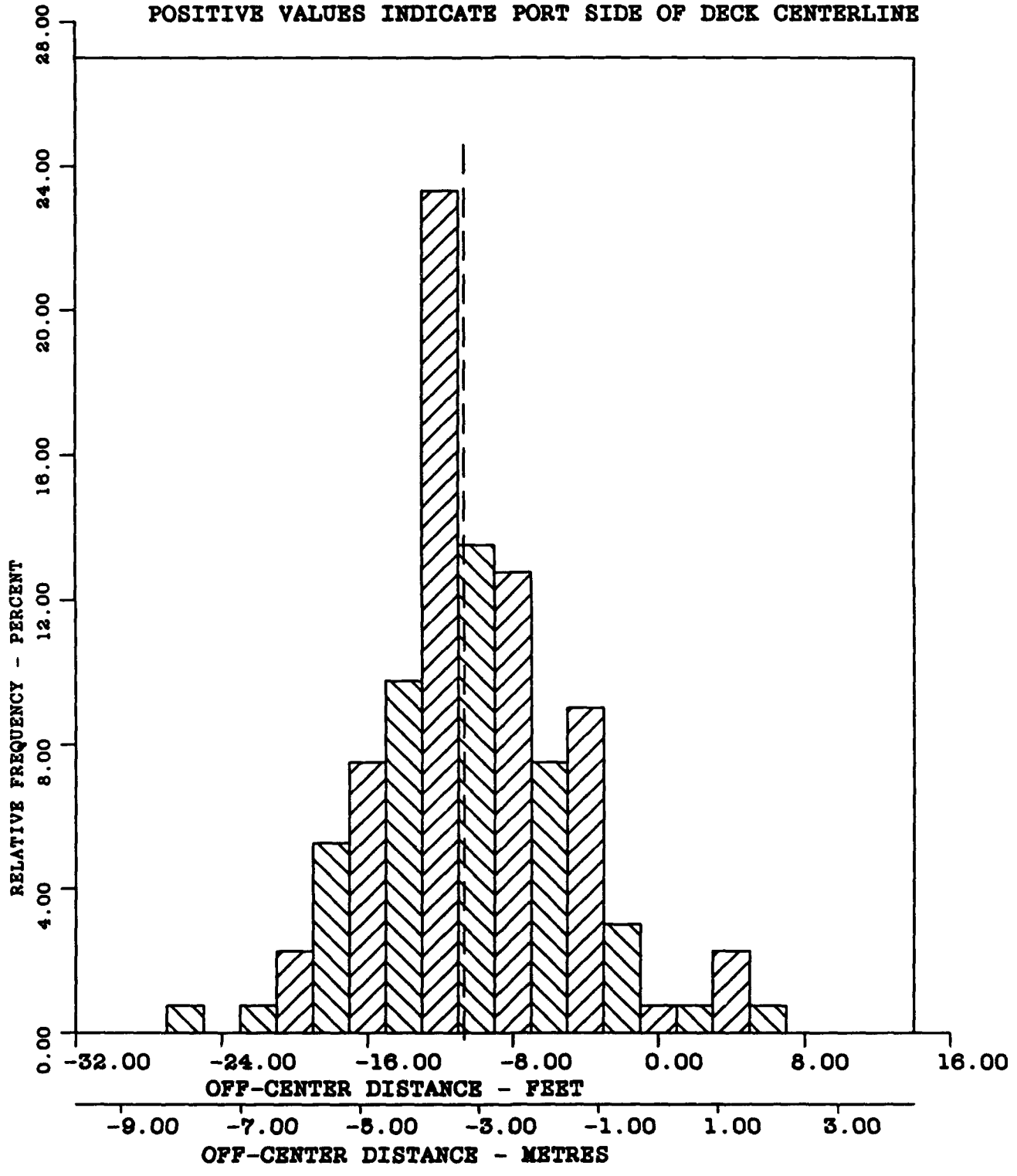


FIGURE O-29 FREQUENCY DISTRIBUTION OF AIRCRAFT CENTERLINE OFF-CNTR DISTANCE AT 1ST MAIN WHEEL TOUCHDOWN

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-133 $\bar{X}$=-10.68 FEET (-3.26 METRES) A3=0.36
S= 5.34 FEET (1.63 METRES) A4=3.81
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE PORT SIDE OF DECK CENTERLINE

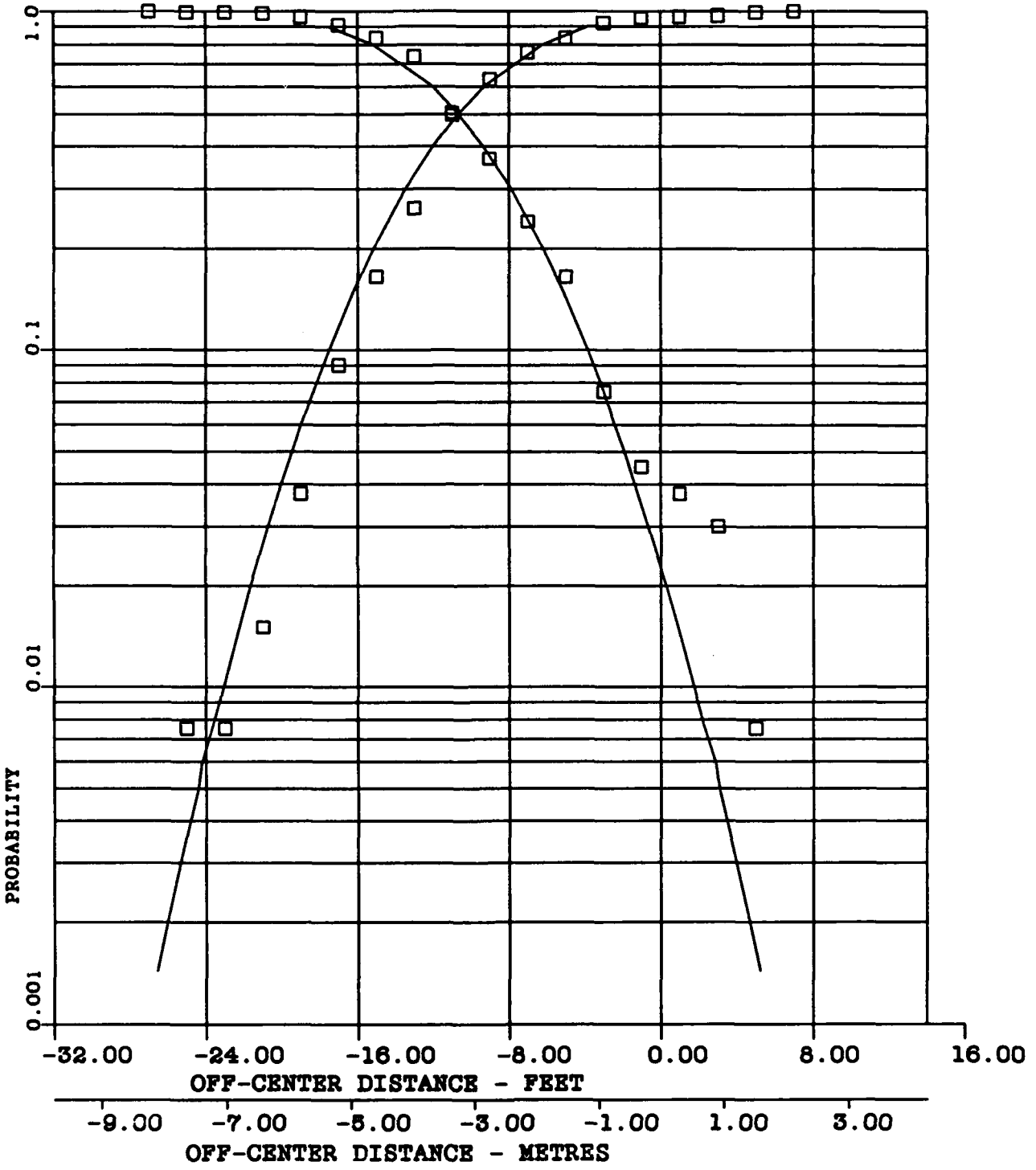


FIGURE O-30 PROBABILITY DISTRIBUTION OF AIRCRAFT OFF-CENTER DISTANCE AT 1ST MAIN WHEEL TOUCHDOWN

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (0.061 RADIANS)
N=98 $\bar{X}$=2.96 A3=-0.20
S= 0.77 A4=2.34

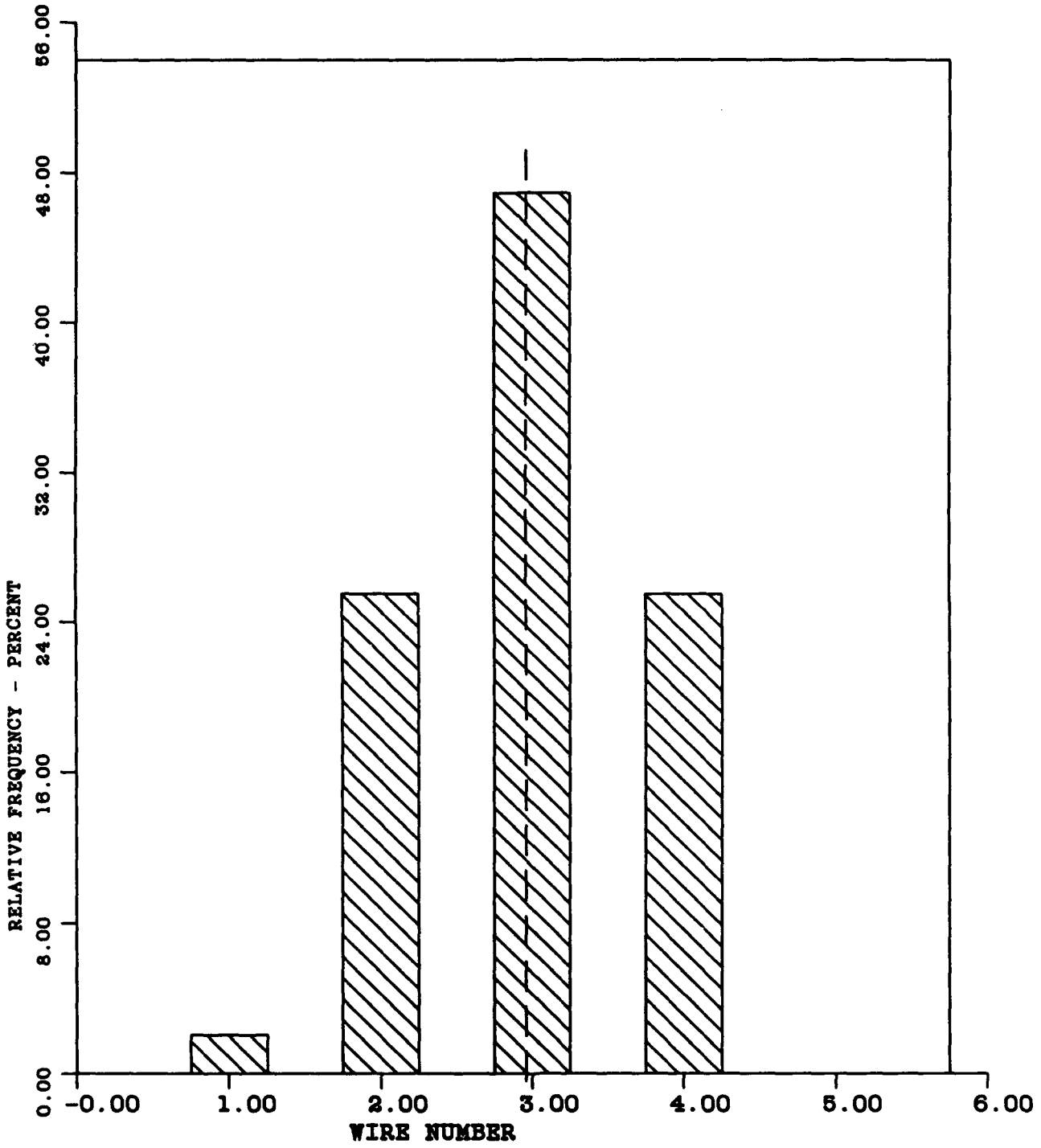


FIGURE O-31 FREQUENCY DISTRIBUTION OF ARRESTMENT WIRE NUMBER ENGAGED

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (0.061 RADIANS)
N=133 $\bar{X}$=2.84 DEGREES (0.050 RADIANS) A3=-0.37
S= 0.71 DEGREES (0.012 RADIANS) A4=2.78

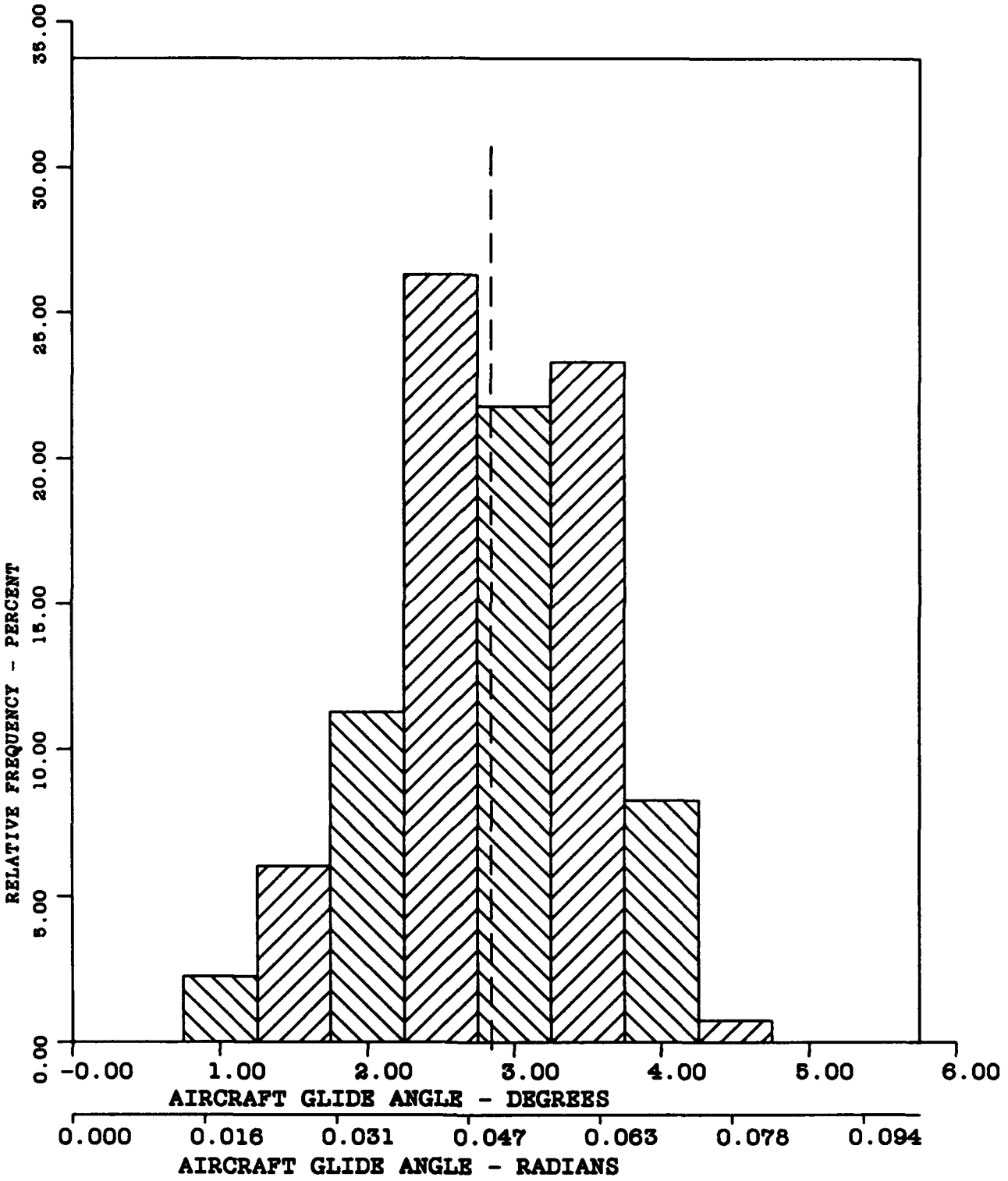


FIGURE O-32 FREQUENCY DISTRIBUTION OF AIRCRAFT GLIDE ANGLE - INSTANTANEOUS METHOD

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-133 $\bar{X}$-90.59 KNOTS (46.60 METRES/SEC) A3=-0.17
S= 5.87 KNOTS (3.02 METRES/SEC) A4=3.39

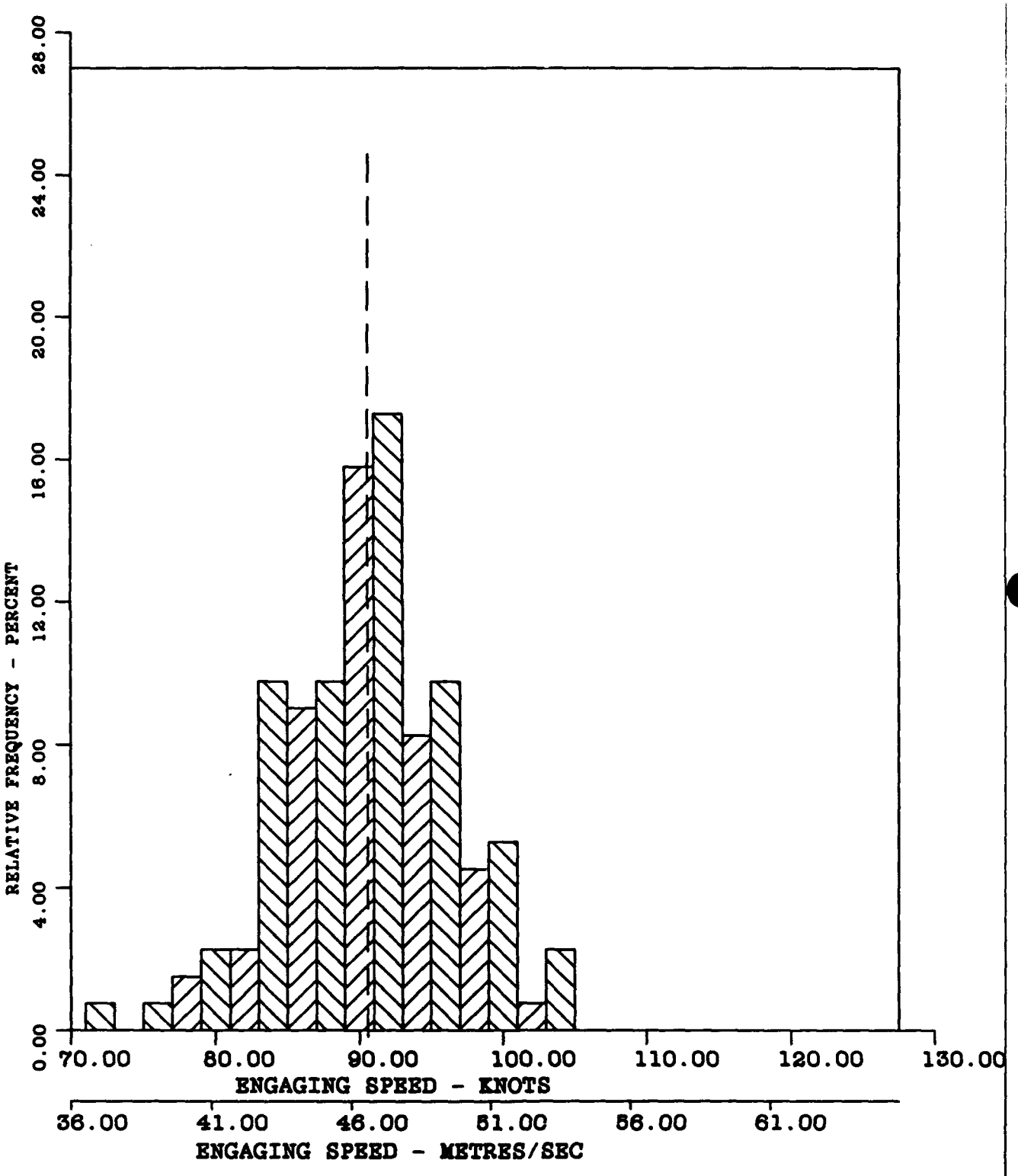


FIGURE O-33 FREQUENCY DISTRIBUTION OF AIRCRAFT ENGAGING SPEED AT FIRST MAIN WHEEL TOUCHDOWN

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-133 $\bar{X}$-90.59 KNOTS (46.60 METRES/SEC) A3=-0.17
S= 5.87 KNOTS (3.02 METRES/SEC) A4=3.39
CURVE FITTED - NORMAL

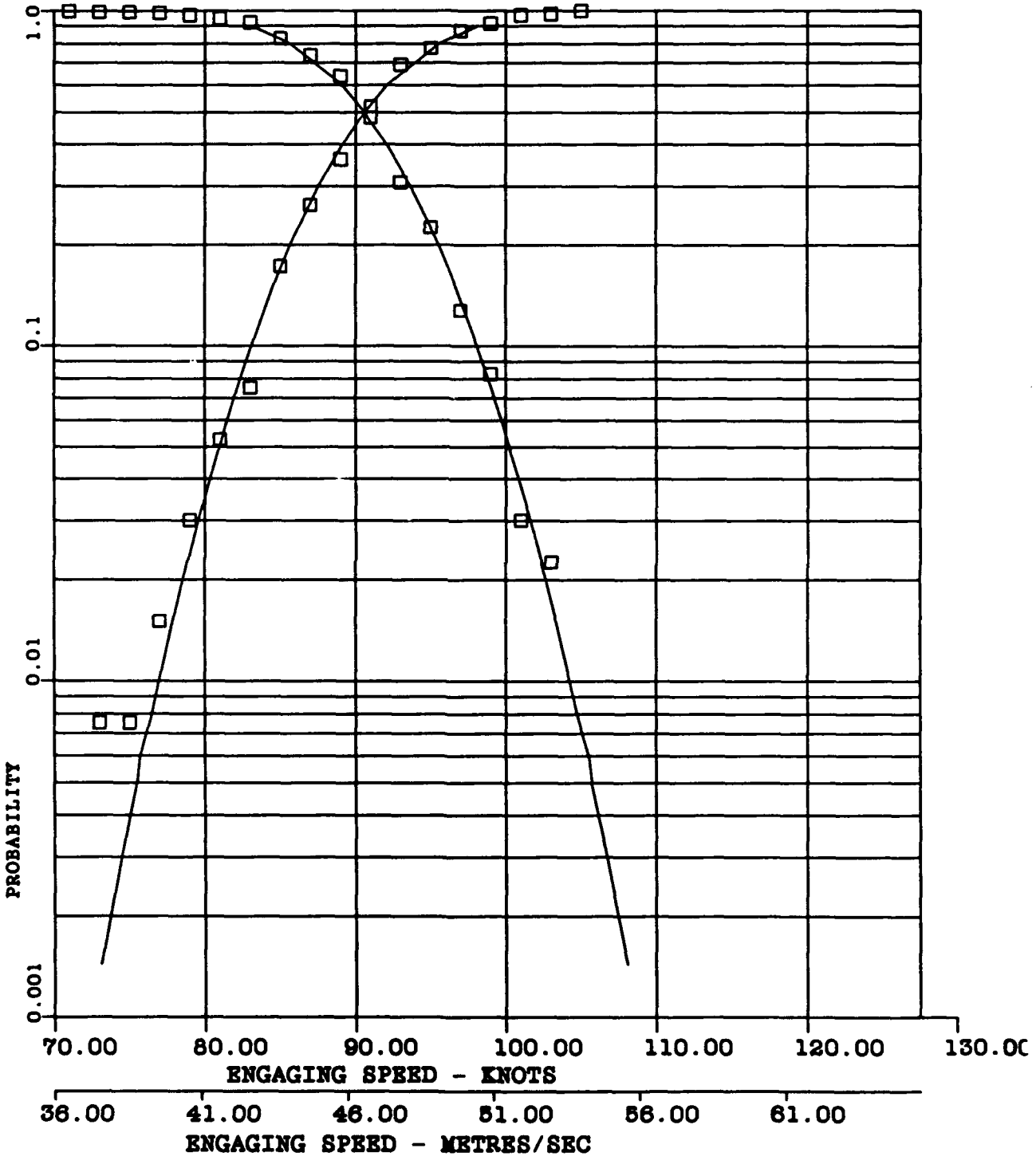


FIGURE O-34 PROBABILITY DISTRIBUTION OF ENGAGING SPEED AT FIRST MAIN WHEEL TOUCHDOWN

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-133 $\bar{X}$-105.01 KNOTS (54.02 METRES/SEC) A3=-0.05
S= 2.55 KNOTS (1.31 METRES/SEC) A4-2.19

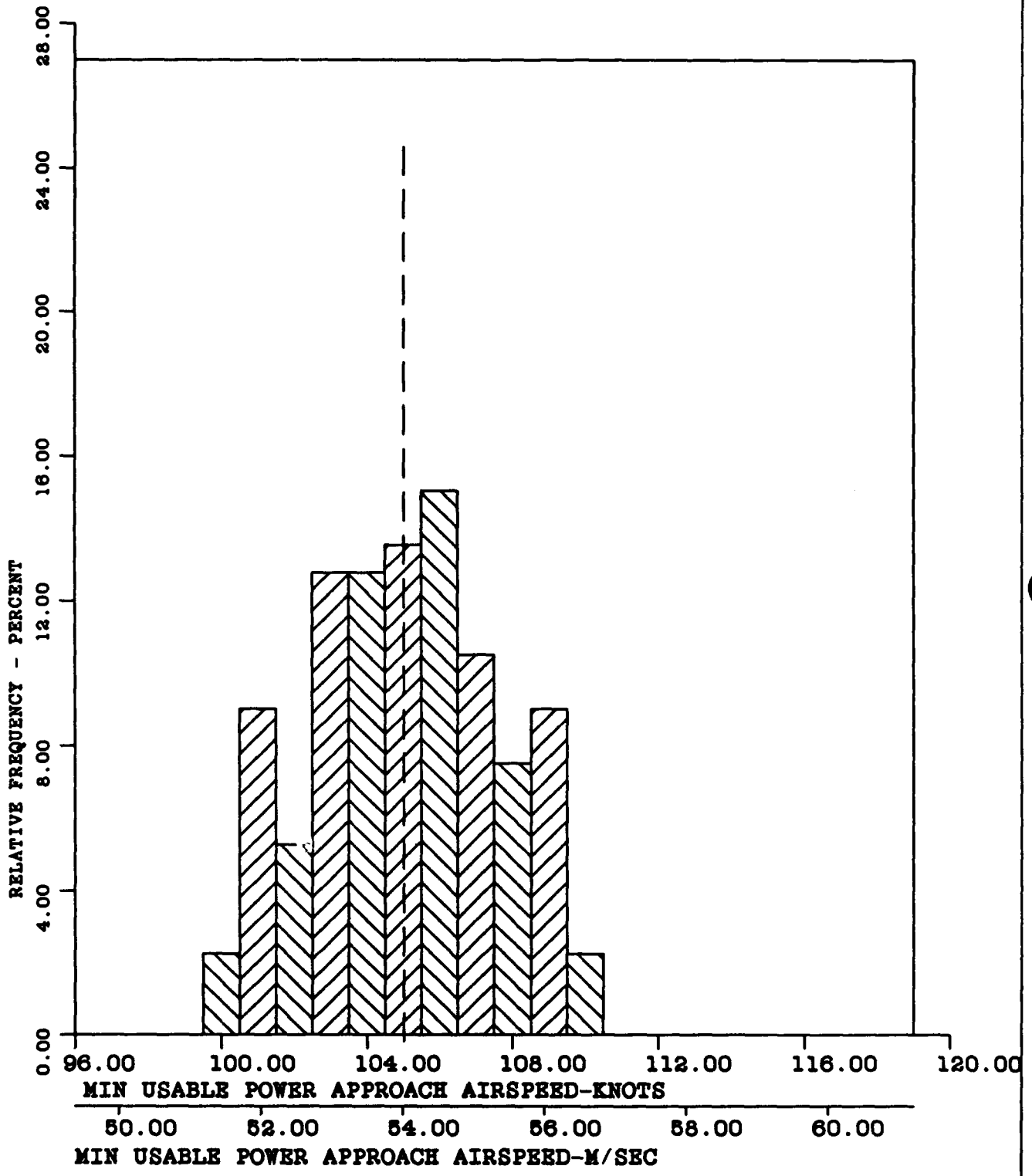


FIGURE O-35 FREQUENCY DISTRIBUTION OF MINIMUM USABLE POWER APPROACH AIRSPEED

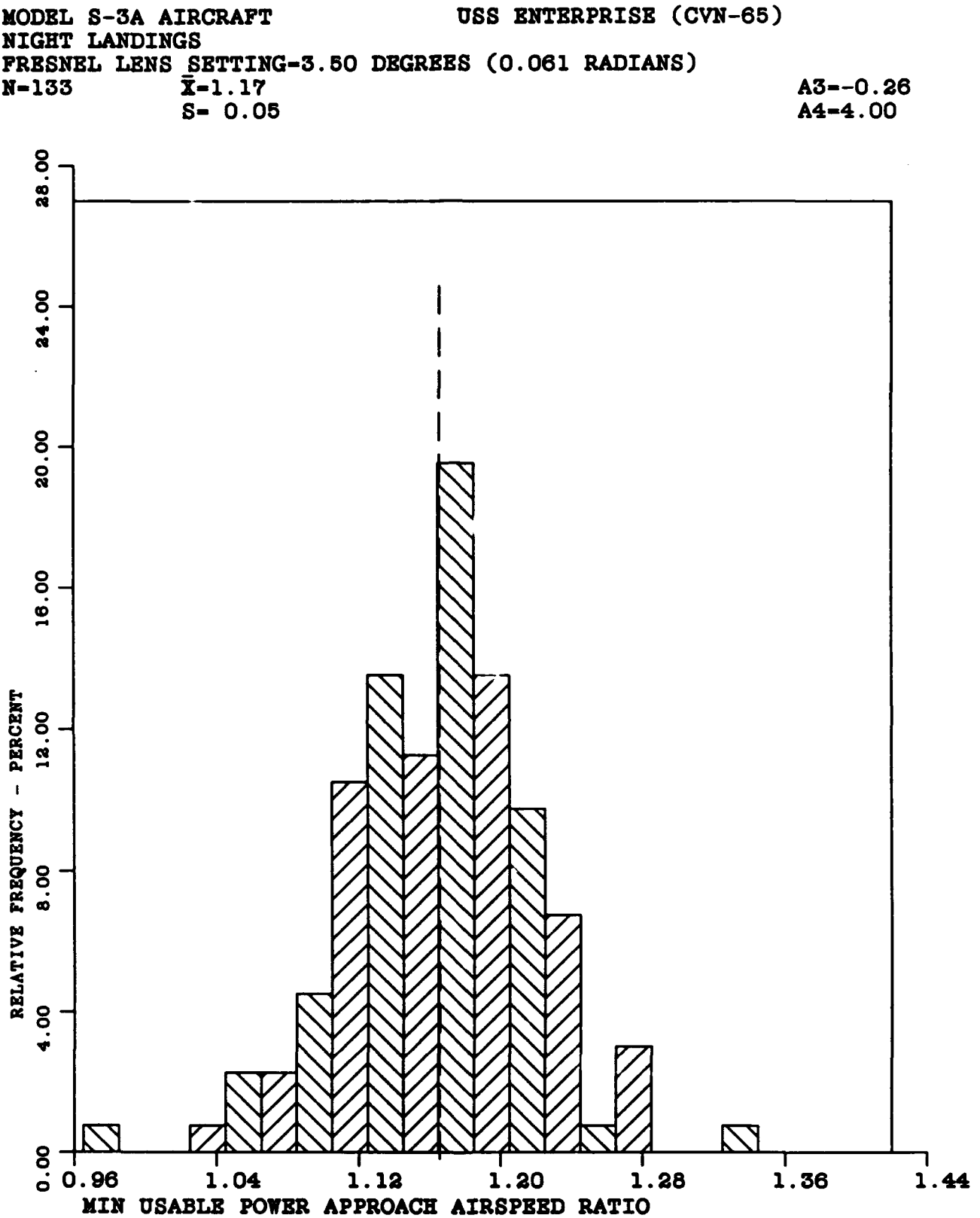


FIGURE O-36 FREQUENCY DISTRIBUTION OF MINIMUM USABLE POWER APPROACH AIRSPEED RATIO - FILM

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N=133 $\bar{X}$=-0.28 DEGREES (-0.005 RADIANS) A3=-0.28
S= 1.04 DEGREES (0.018 RADIANS) A4=3.55

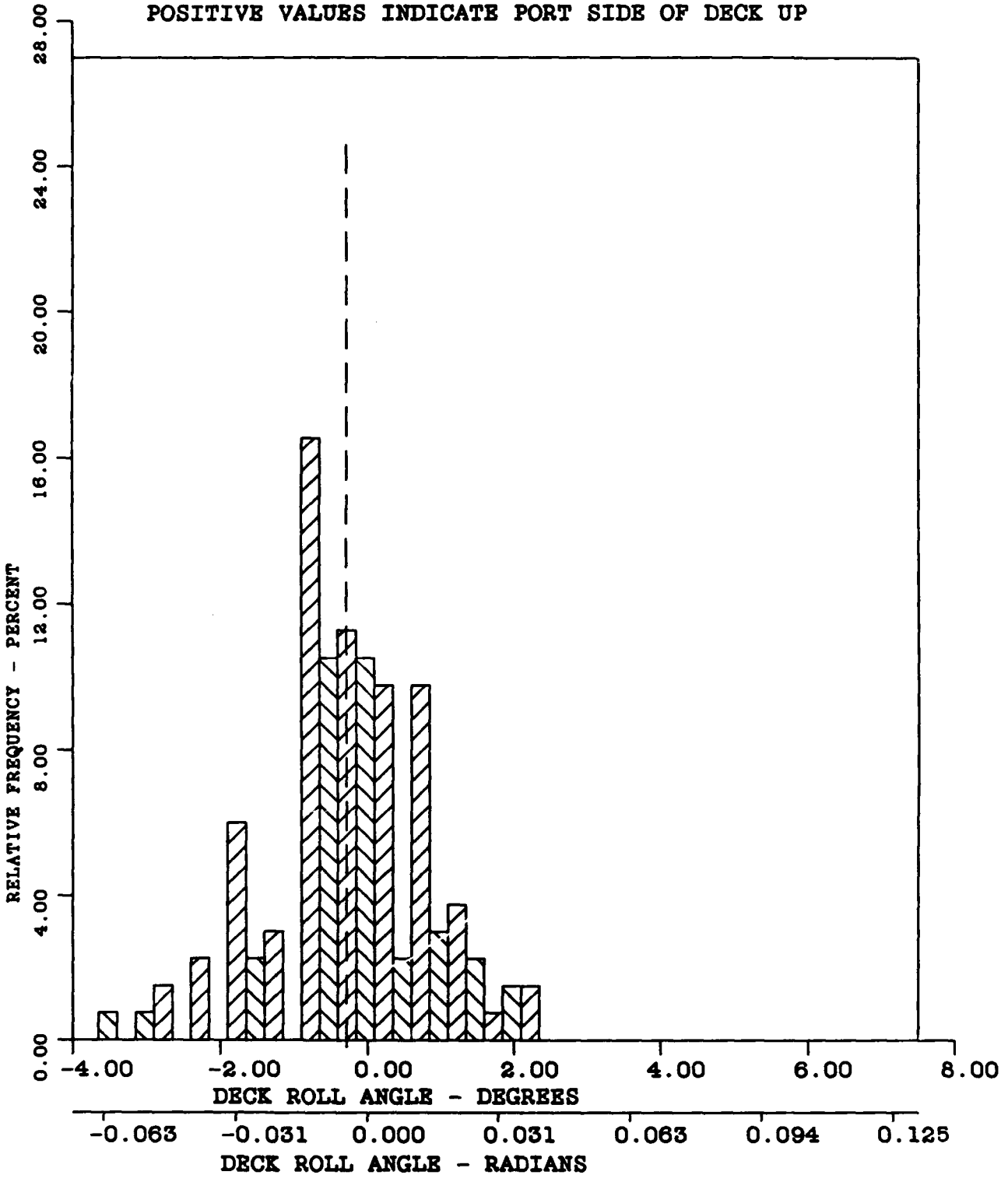


FIGURE O-37 FREQUENCY DISTRIBUTION OF CARRIER DECK ROLL MOTION

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (0.061 RADIANS)
N=133 $\bar{X}$=-0.28 DEGREES (-0.005 RADIANS) A3=-0.28
S= 1.04 DEGREES (0.018 RADIANS) A4=3.55
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE PORT SIDE OF DECK UP

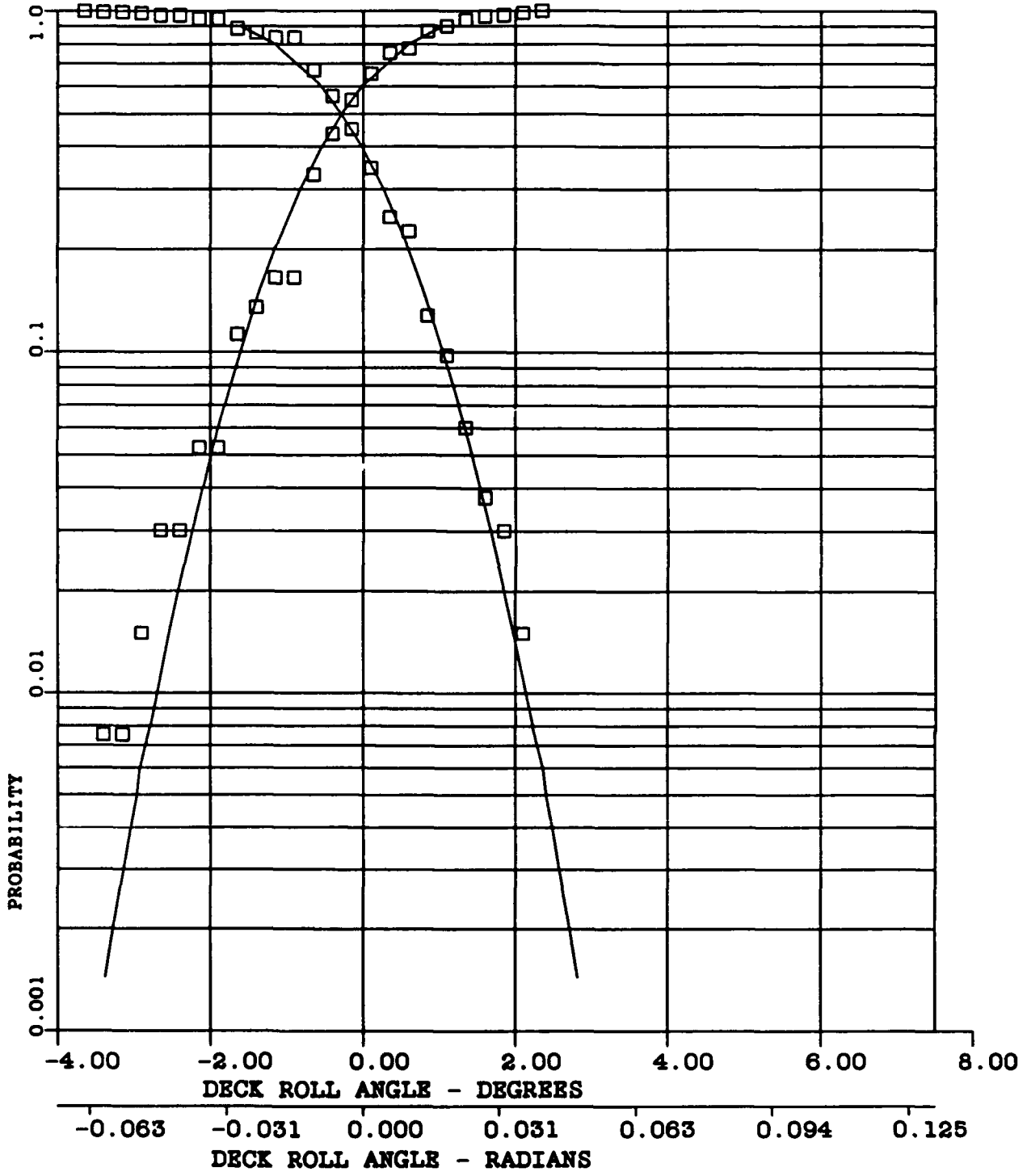


FIGURE O-38 PROBABILITY DISTRIBUTION OF CARRIER DECK ROLL MOTION

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N=133 $\bar{X}$=-0.37 DEGREES (-0.007 RADIANS) A3=0.15
S= 0.21 DEGREES (0.004 RADIANS) A4=2.17

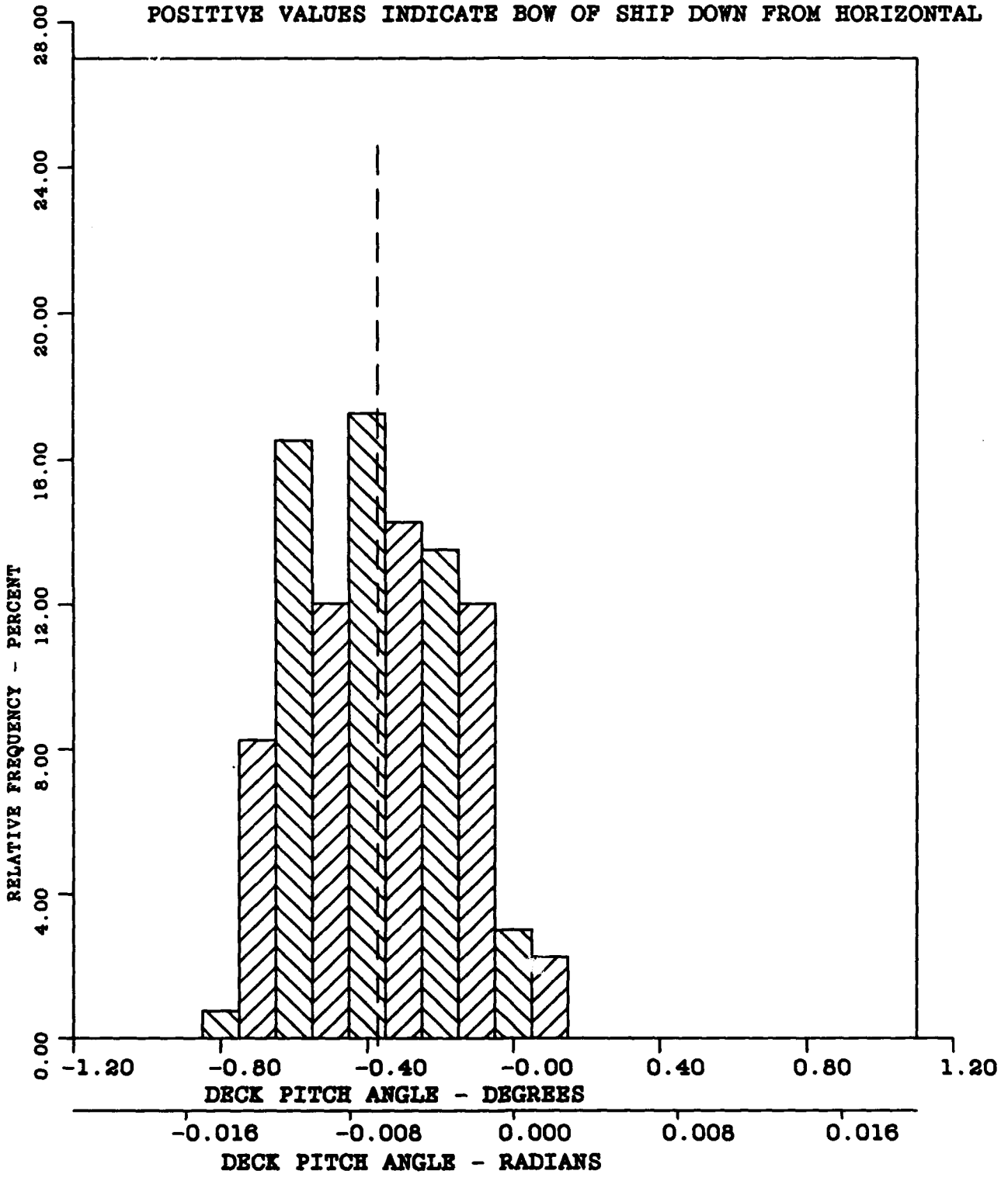


FIGURE O-39 FREQUENCY DISTRIBUTION OF CARRIER DECK PITCH MOTION

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N=133 $\bar{X}$=-0.37 DEGREES (-0.007 RADIANS) A3=0.15
S= 0.21 DEGREES (0.004 RADIANS) A4=2.17
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE BOW OF SHIP DOWN FROM HORIZONTAL

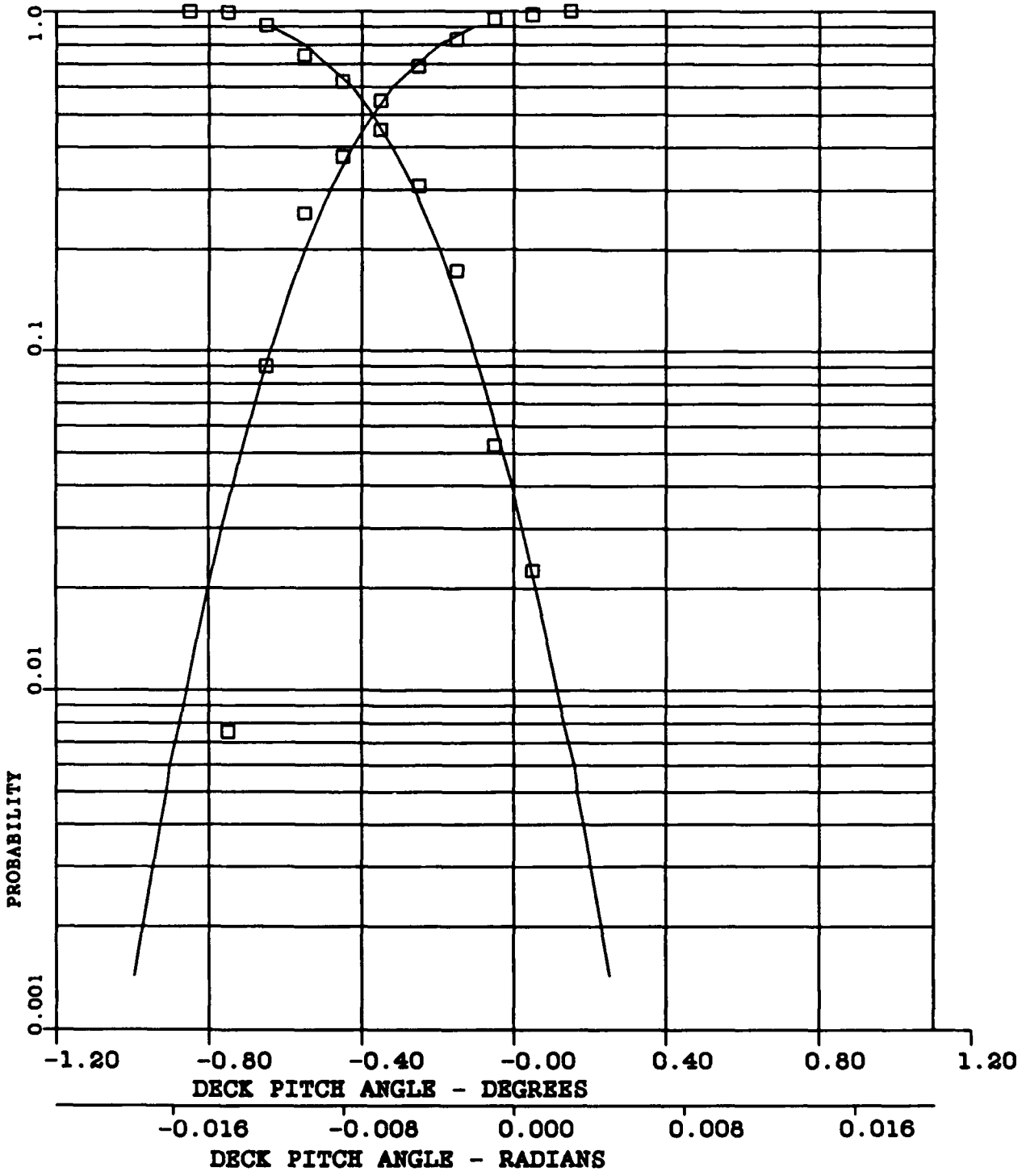


FIGURE O-40 PROBABILITY DISTRIBUTION OF CARRIER DECK PITCH MOTION

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-133 $\bar{X}$-36740.60 POUNDS (16665.54 KILOGRAMS) A3=-0.00
S- 1781.57 POUNDS (808.12 KILOGRAMS) A4-2.19

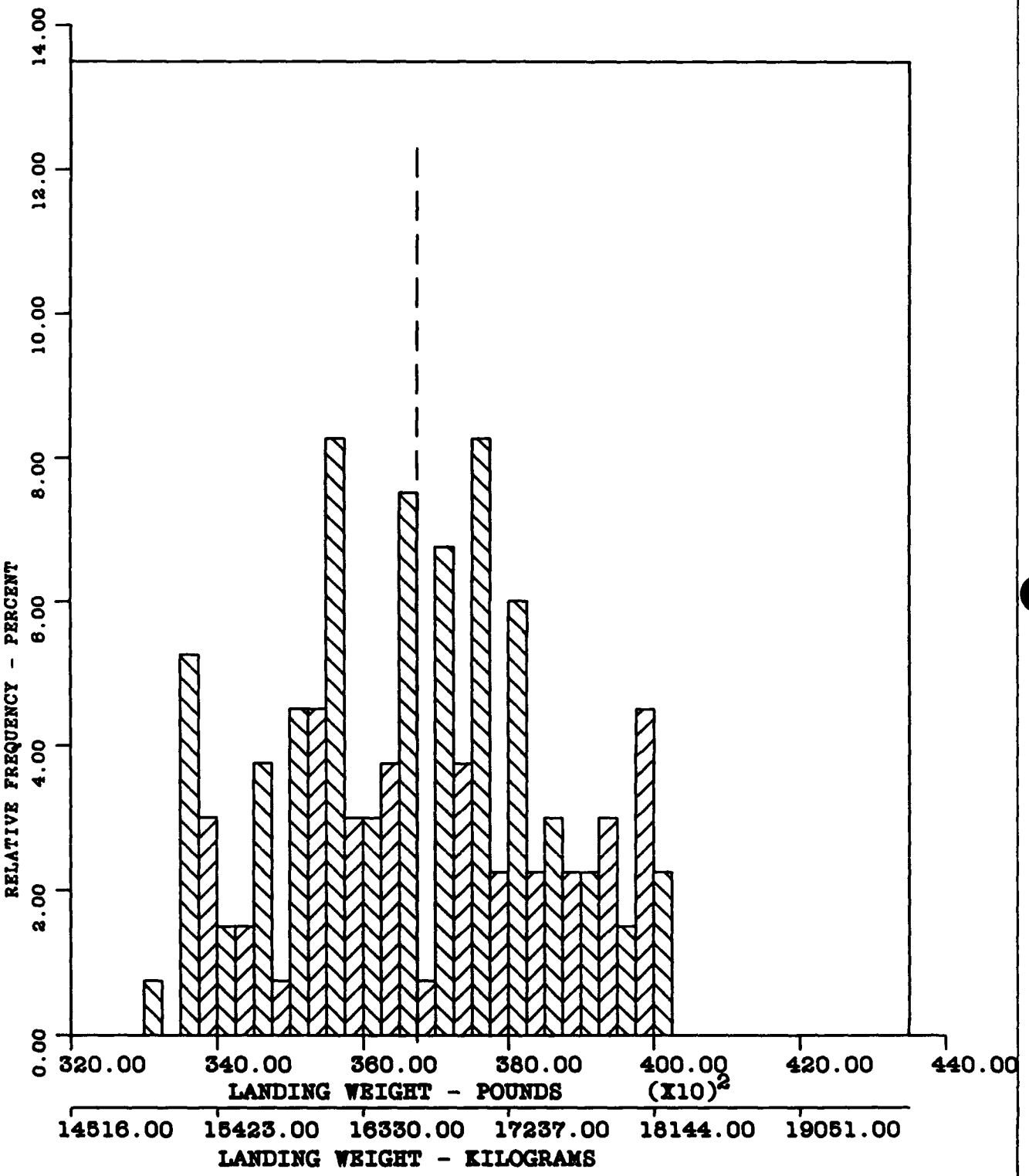


FIGURE O-41 FREQUENCY DISTRIBUTION OF AIRCRAFT LANDING WEIGHT

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-133 $\bar{X}$=0.55 DEG/SEC (0.010 RAD/SEC) A3=0.55
S= 5.91 DEG/SEC (0.103 RAD/SEC) A4=4.06

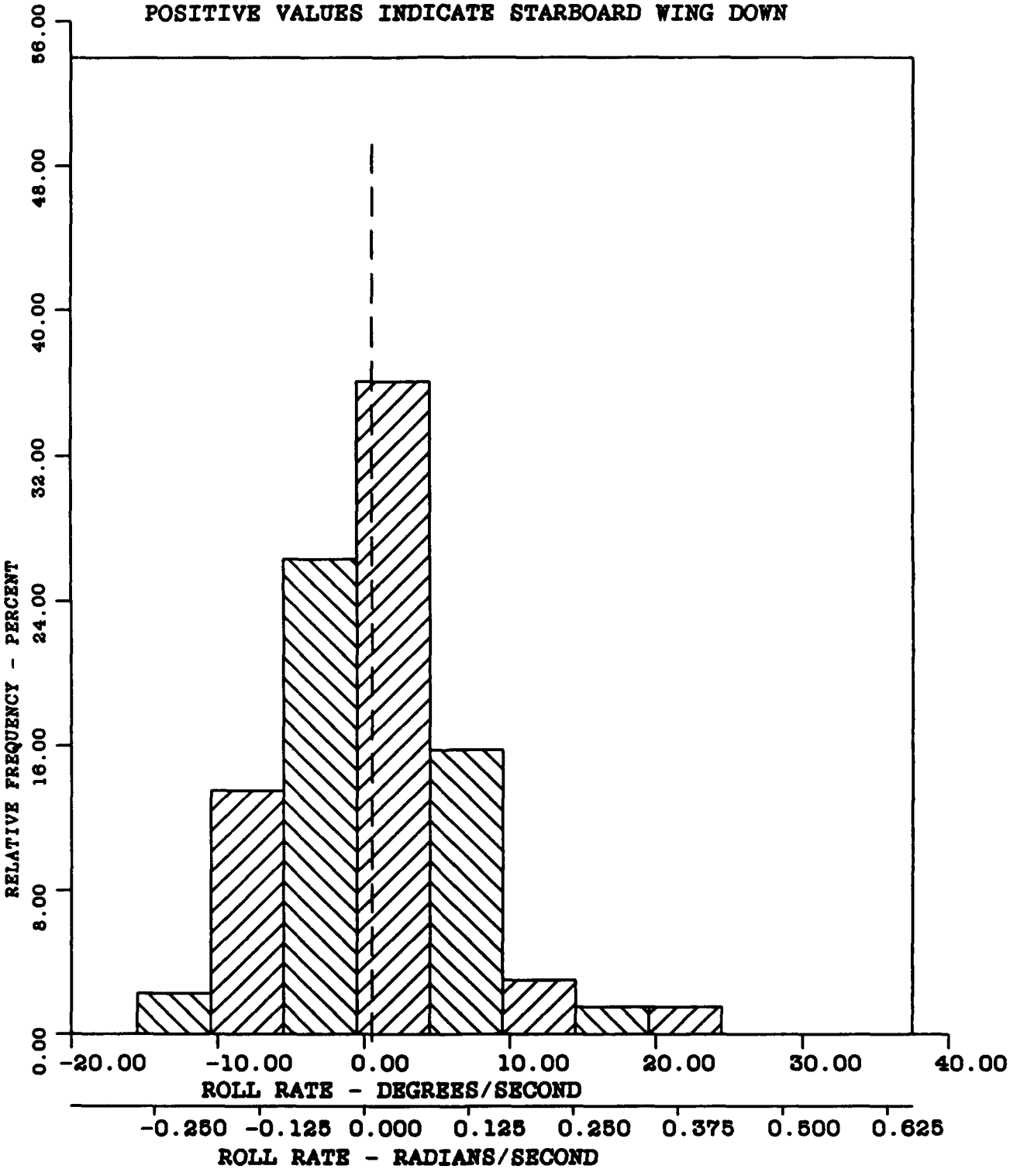


FIGURE O-42 FREQUENCY DISTRIBUTION OF ROLL RATE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-133 $\bar{X}$-0.55 DEG/SEC (0.010 RAD/SEC) A3-0.55
S- 5.91 DEG/SEC (0.103 RAD/SEC) A4-4.06
CURVE FITTED - PEARSON TYPE III
POSITIVE VALUES INDICATE STARBOARD WING DOWN

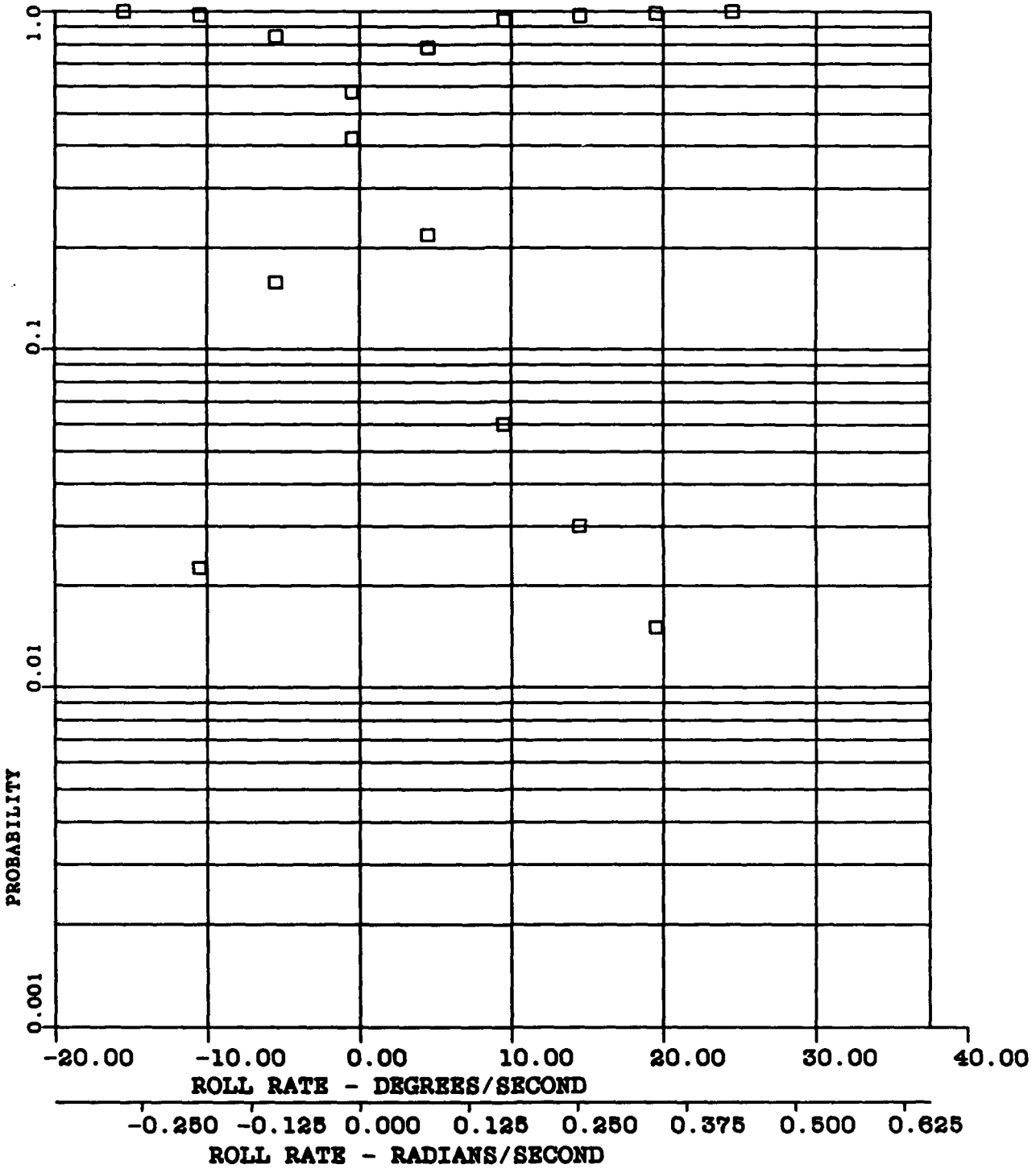


FIGURE O-43 PROBABILITY DISTRIBUTION OF ROLL RATE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (0.061 RADIANS)
N=133 $\bar{X}$=-0.44 DEG/SEC (-0.008 RAD/SEC) A3=-0.42
S= 2.33 DEG/SEC (0.041 RAD/SEC) A4=3.45

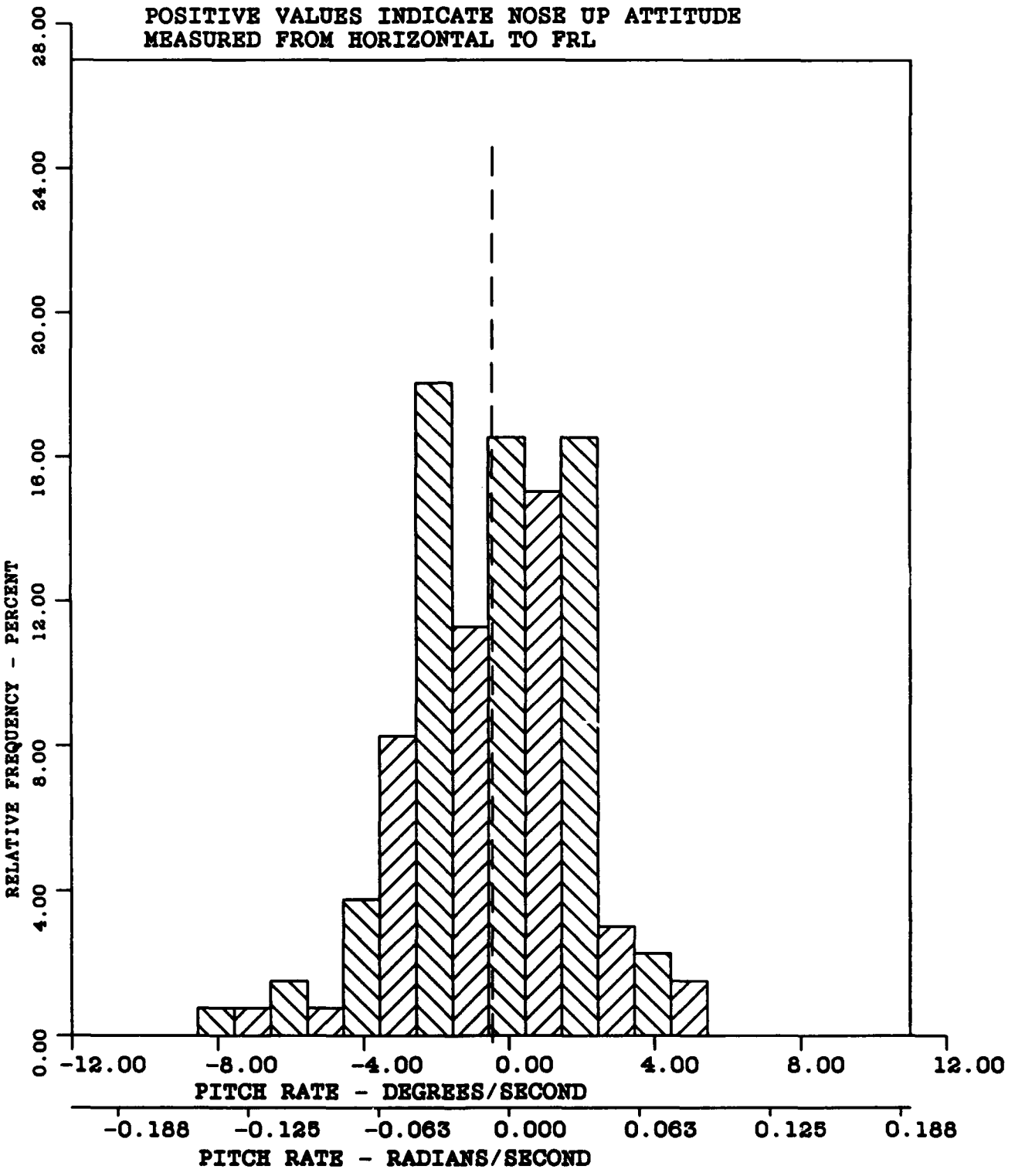


FIGURE O-44 FREQUENCY DISTRIBUTION OF PITCH RATE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-133 $\bar{X}$=-0.44 DEG/SEC (-0.008 RAD/SEC) A3=-0.42
S= 2.33 DEG/SEC (0.041 RAD/SEC) A4-3.45
CURVE FITTED - PEARSON TYPE III
POSITIVE VALUES INDICATE NOSE UP ATTITUDE
MEASURED FROM HORIZONTAL TO FRL

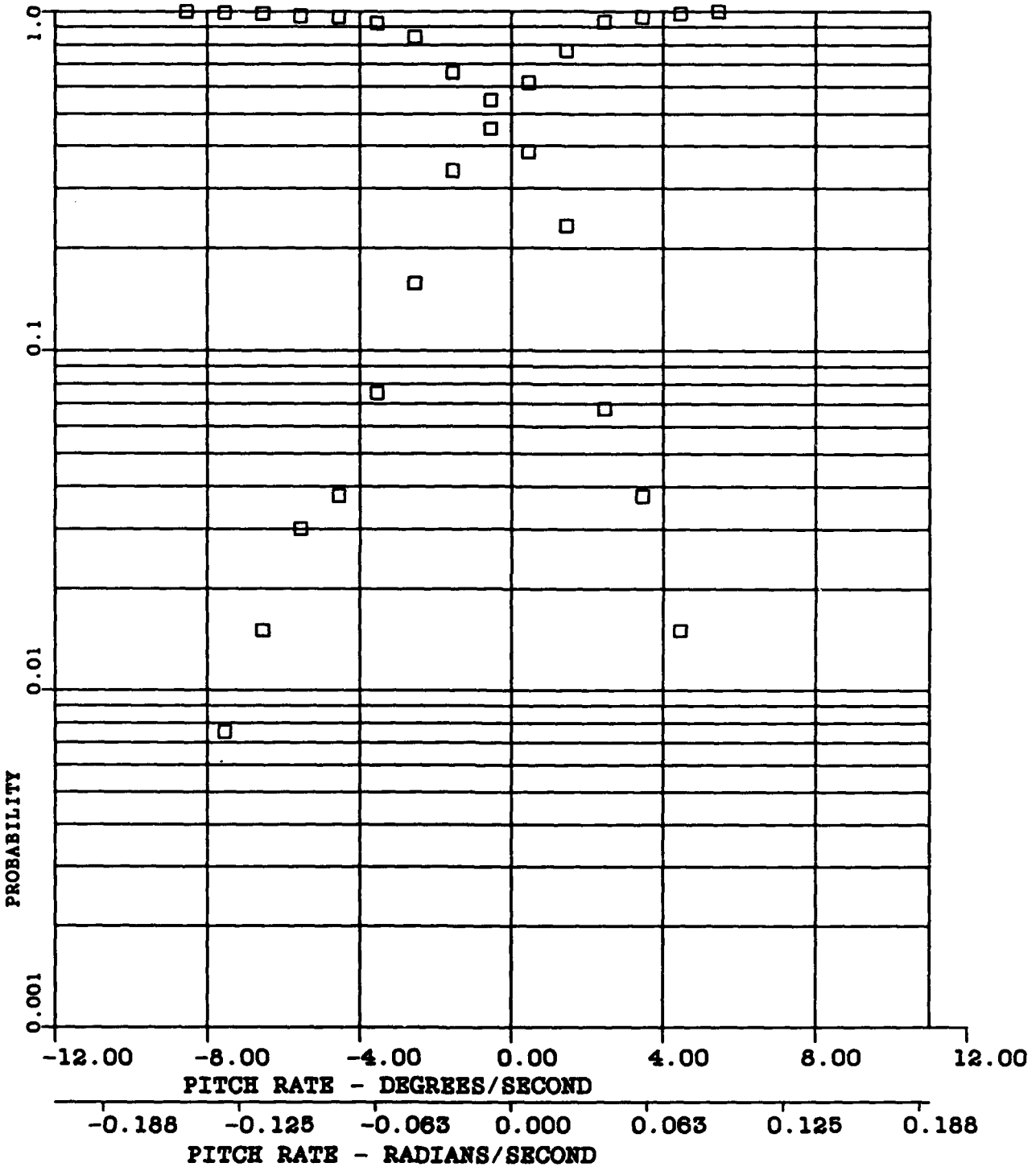


FIGURE O-45 PROBABILITY DISTRIBUTION OF PITCH RATE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (0.061 RADIANS)
N=133 $\bar{X}$=-3.51 DEGREES (-0.061 RADIANS) A3=1.50
S= 1.58 DEGREES (0.028 RADIANS) A4=10.27

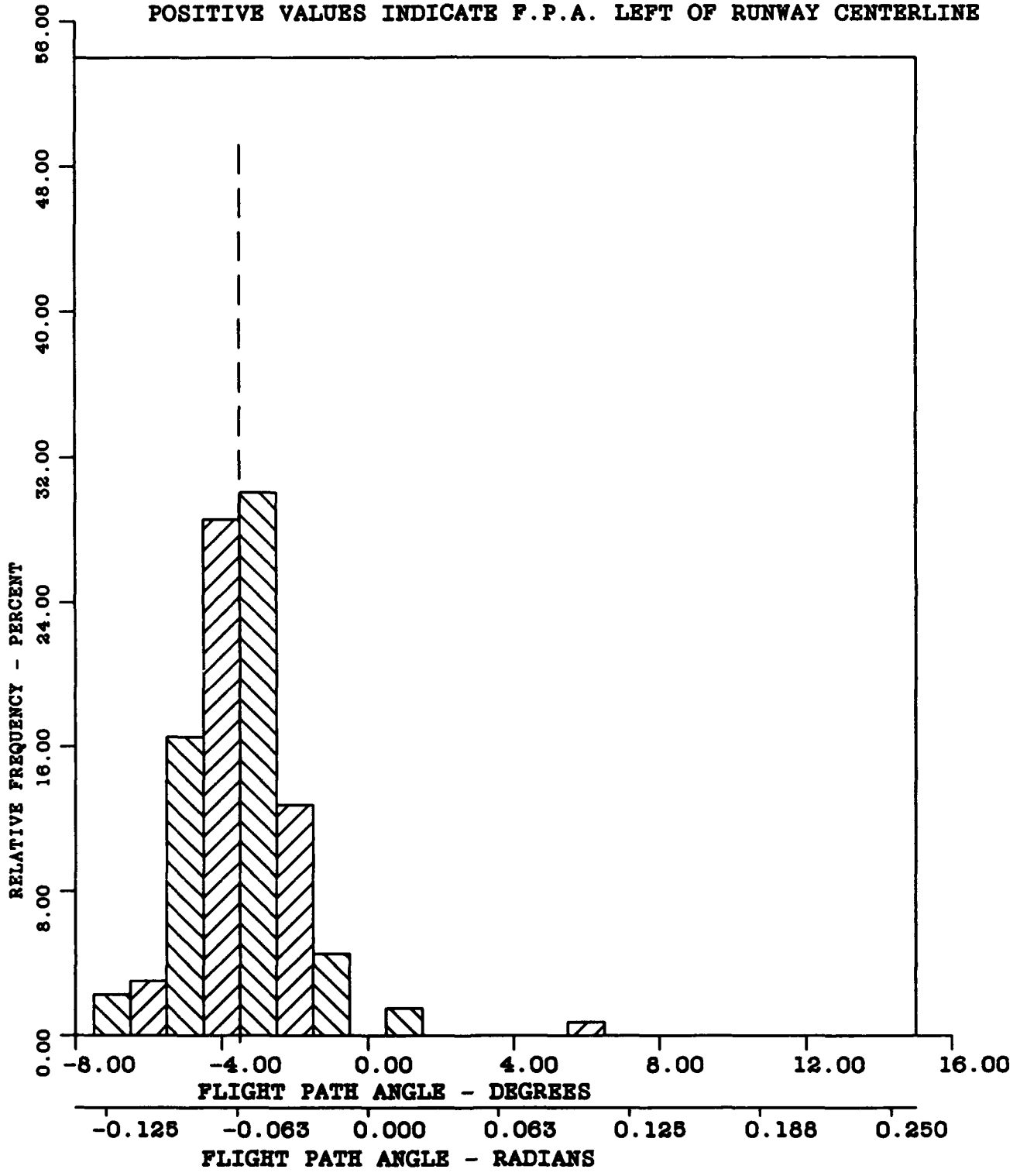


FIGURE O-46 FREQUENCY DISTRIBUTION OF AIRCRAFT FLIGHT PATH ANGLE AT TOUCHDOWN

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-133 $\bar{X}$=-3.51 DEGREES (-0.061 RADIANS) A3=1.50
S= 1.58 DEGREES (0.028 RADIANS) A4=10.27
CURVE FITTED - PEARSON TYPE III
POSITIVE VALUES INDICATE F.P.A. LEFT OF RUNWAY CENTERLINE

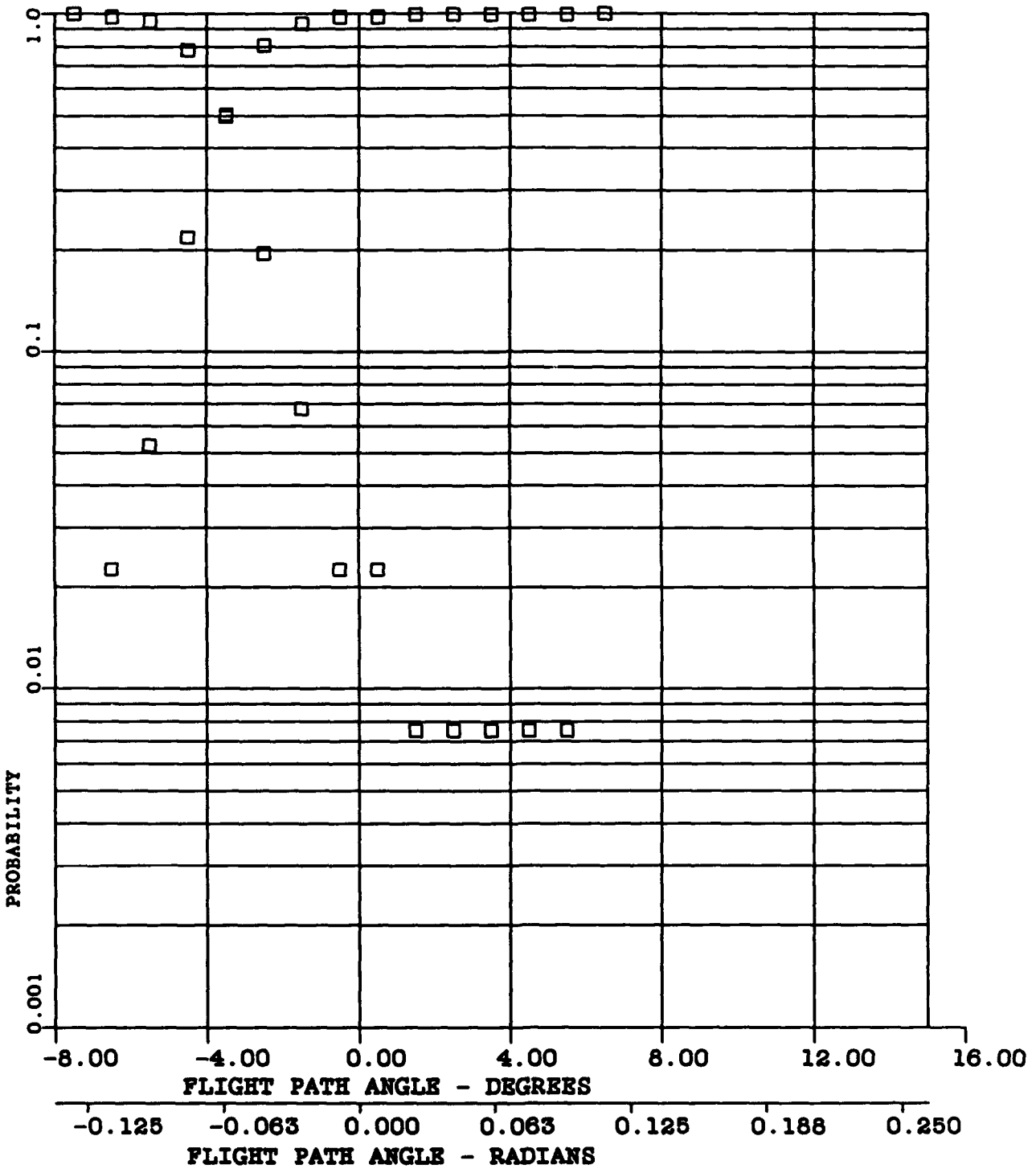


FIGURE O-47 PROBABILITY DISTRIBUTION OF AIRCRAFT FLIGHT PATH ANGLE AT TOUCHDOWN

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-133 $\bar{X}$-3.06 DEGREES (0.053 RADIANS) A3-0.27
S- 3.68 DEGREES (0.064 RADIANS) A4-2.45

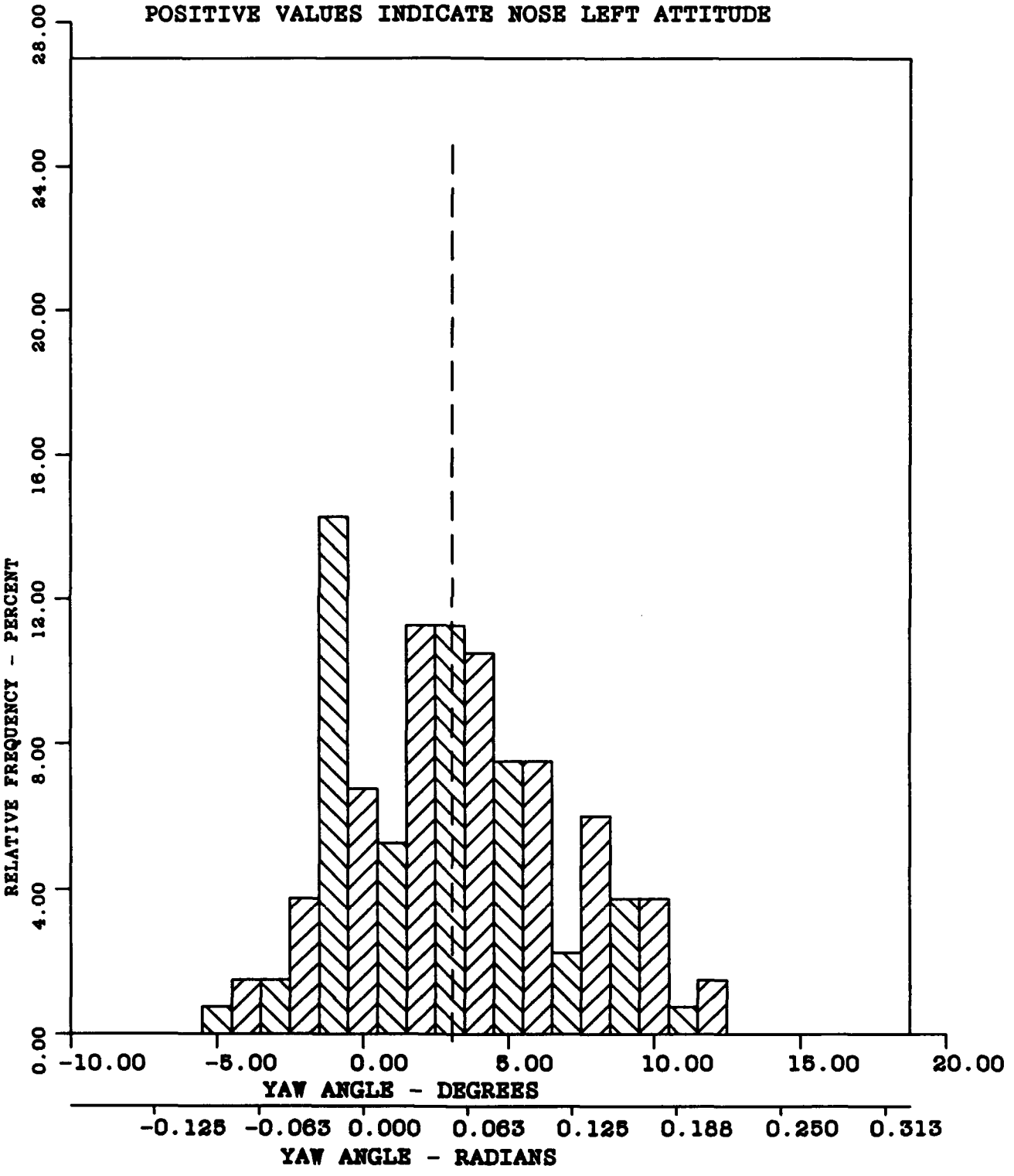


FIGURE O-48 FREQUENCY DISTRIBUTION OF AIRCRAFT YAW ANGLE

MODEL S-3A AIRCRAFT USS ENTERPRISE (CVN-65)
NIGHT LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (0.061 RADIANS)
N-133 $\bar{X}$-3.06 DEGREES (0.053 RADIANS) A3-0.27
S- 3.68 DEGREES (0.064 RADIANS) A4-2.45
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE NOSE LEFT ATTITUDE

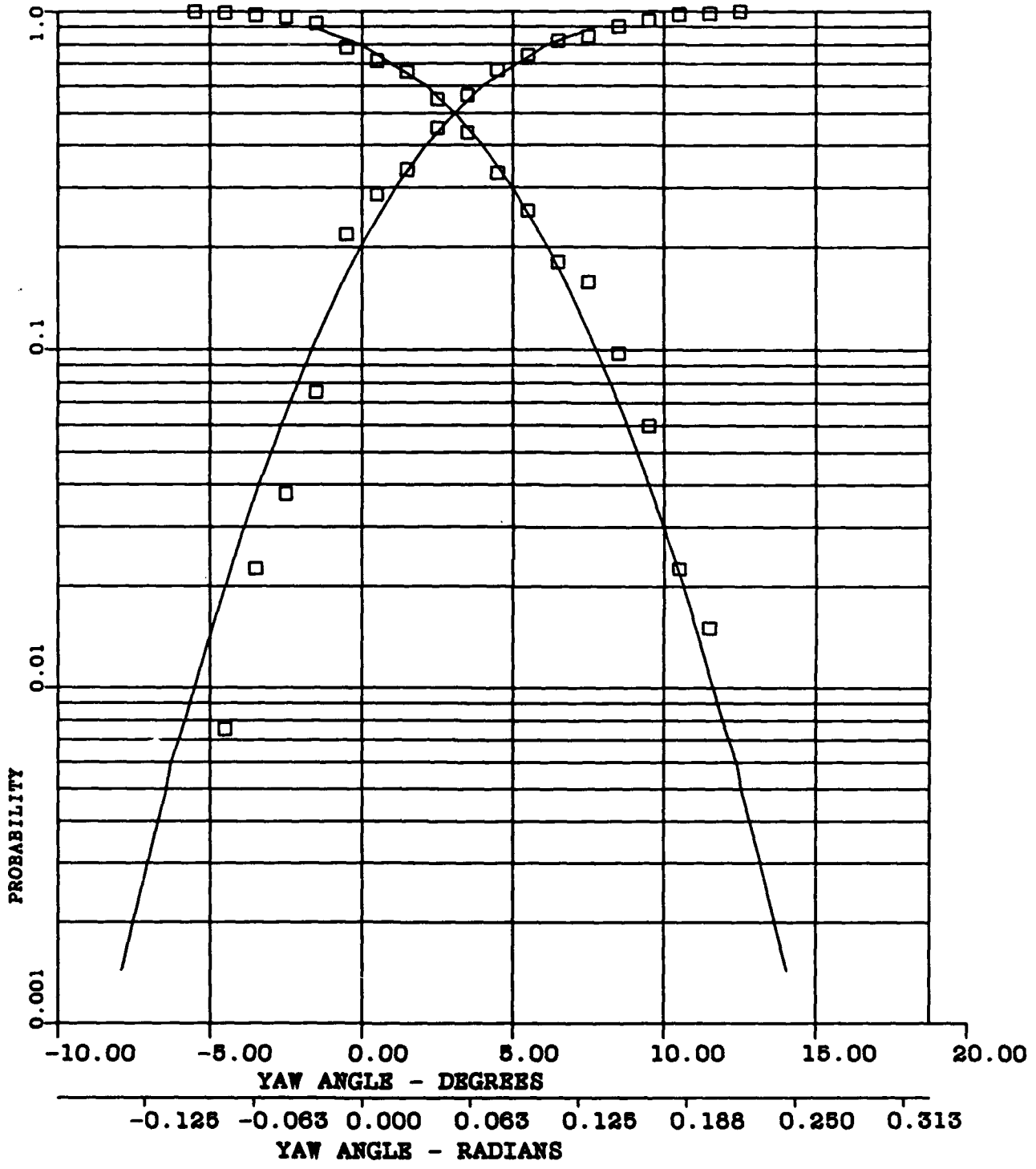


FIGURE O-49 PROBABILITY DISTRIBUTION OF AIRCRAFT YAW ANGLE

APPENDIX P

TA-3B AIRCRAFT

DAY CARRIER LANDINGS

USS ENTERPRISE
CVN-65

Appendix P:

Frequency and Probability Distributions,
TA-3B Aircraft, Day Landings

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MODEL A-3 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-23 $\bar{X}$-24.34 KNOTS (12.52 METRES/SEC) A3-.31
S-1.87 KNOTS (.96 METRES/SEC) A4-2.90

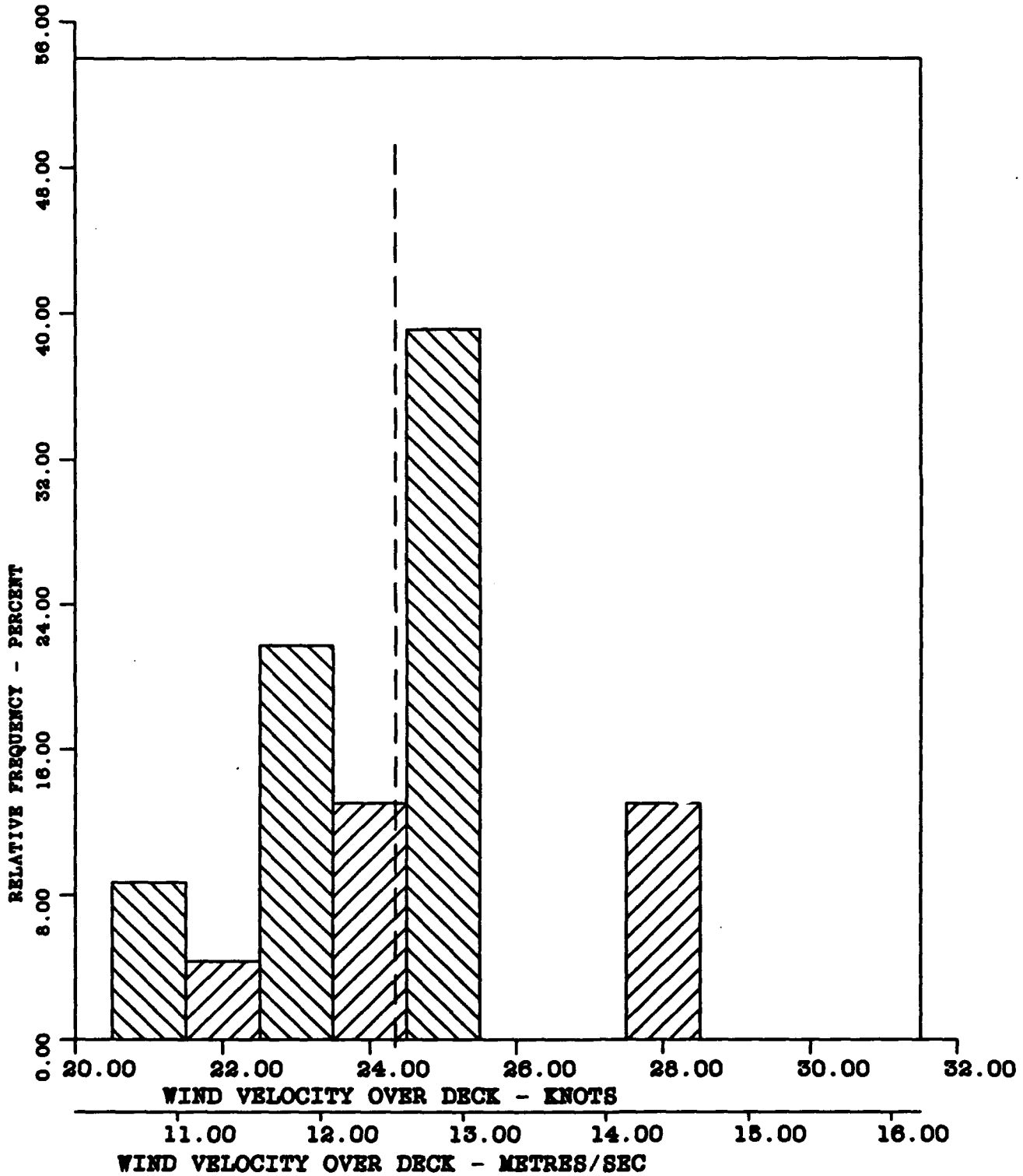


FIGURE P-1 FREQUENCY DISTRIBUTION OF WIND VELOCITY OVER THE DECK

MODEL A-3 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-23 $\bar{X}$-24.34 KNOTS (12.52 METRES/SEC) A3=.31
S-1.87 KNOTS (.96 METRES/SEC) A4=2.90
CURVE FITTED - NORMAL

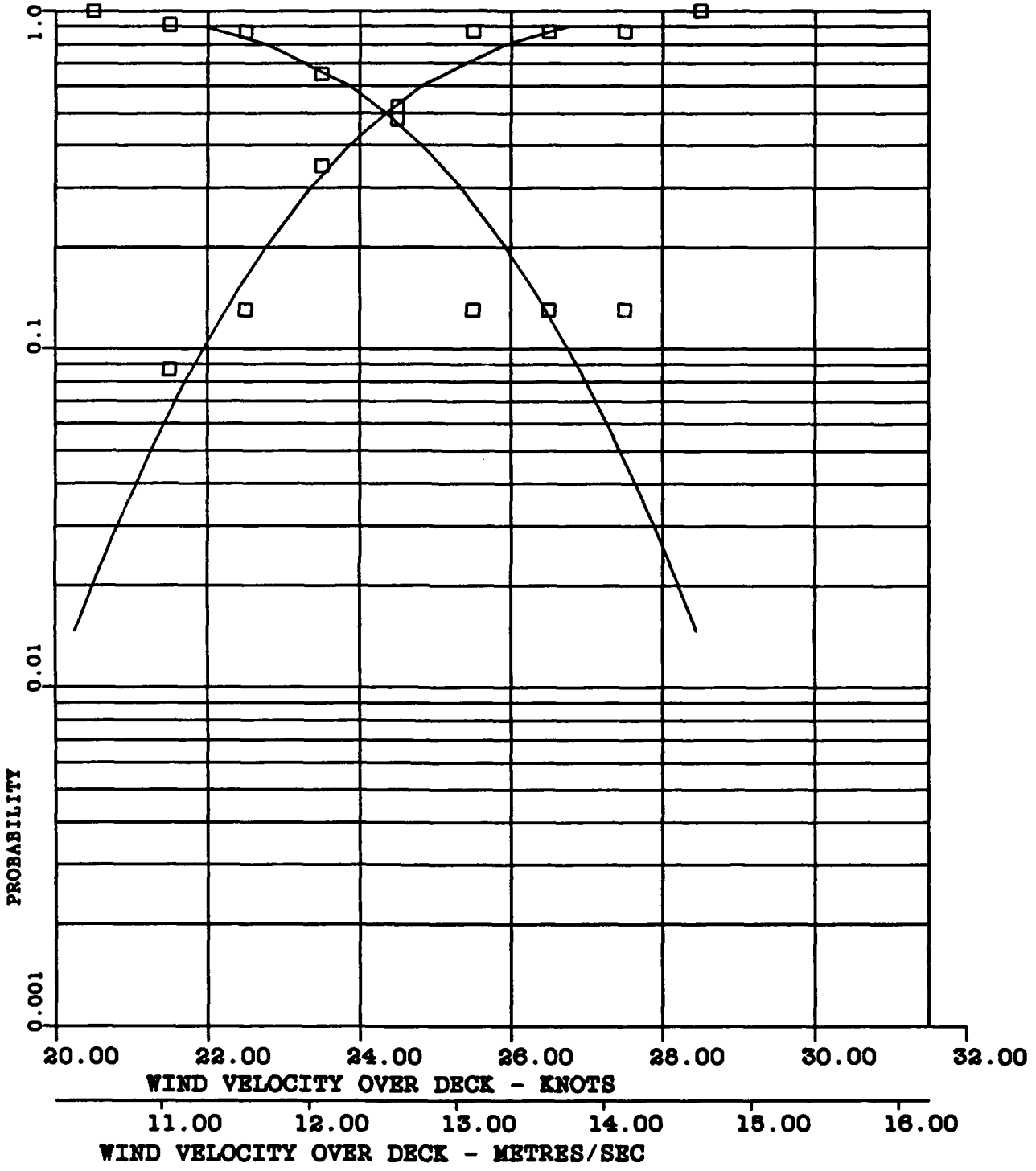


FIGURE P-2 PROBABILITY DISTRIBUTION OF WIND VELOCITY OVER THE DECK

MODEL A-3 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-23 $\bar{X}$-124.83 KNOTS (64.21 METRES/SEC) A3=.39
S-4.47 KNOTS (2.30 METRES/SEC) A4=2.27

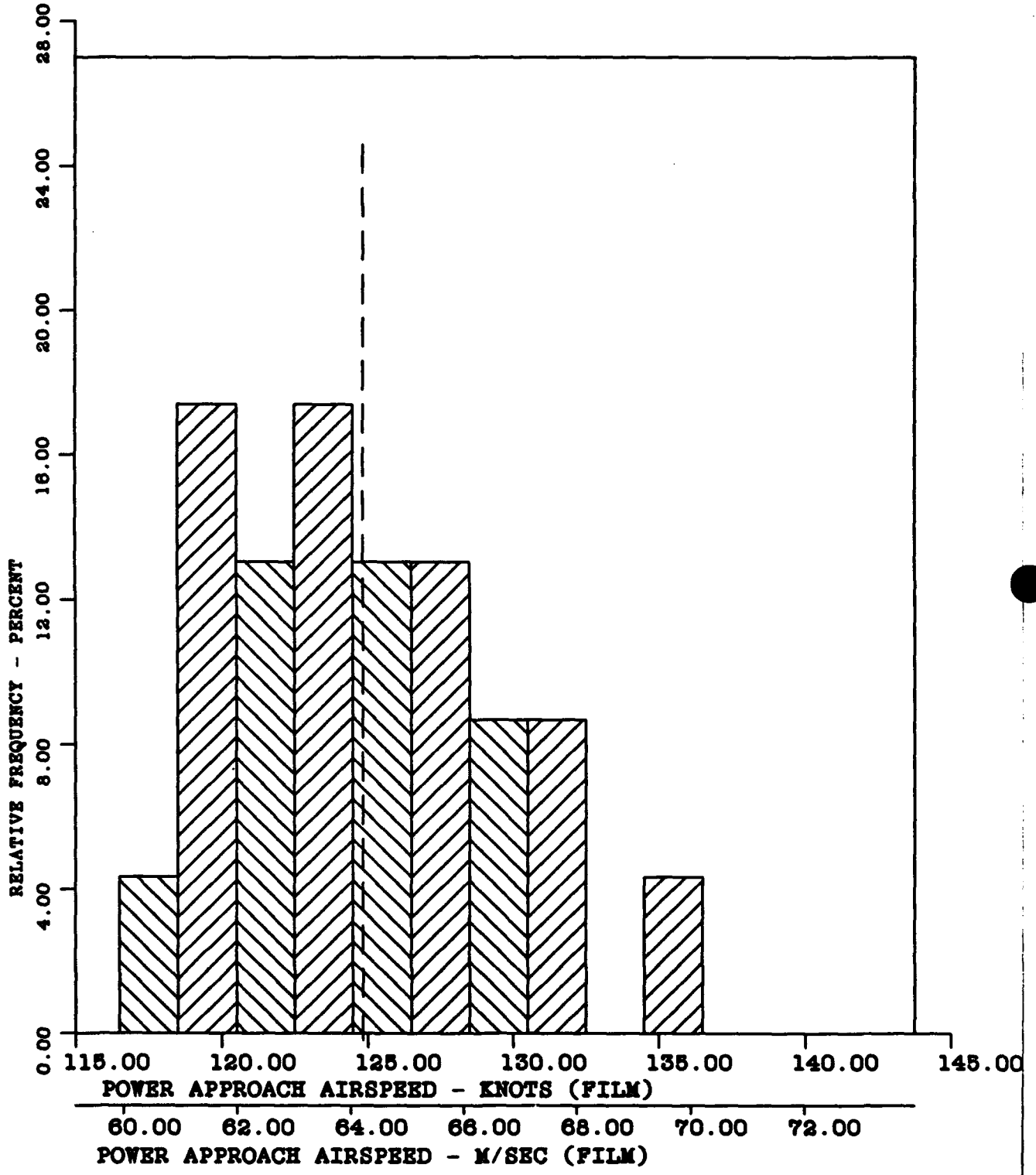


FIGURE P-3 FREQUENCY DISTRIBUTION OF FILM MEASURED POWER APPROACH AIRSPEED AT THE RAMP

MODEL A-3 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-23 $\bar{X}$-124.83 KNOTS (64.21 METRES/SEC) A3=.39
S-4.47 KNOTS (2.30 METRES/SEC) A4=2.27
CURVE FITTED - NORMAL

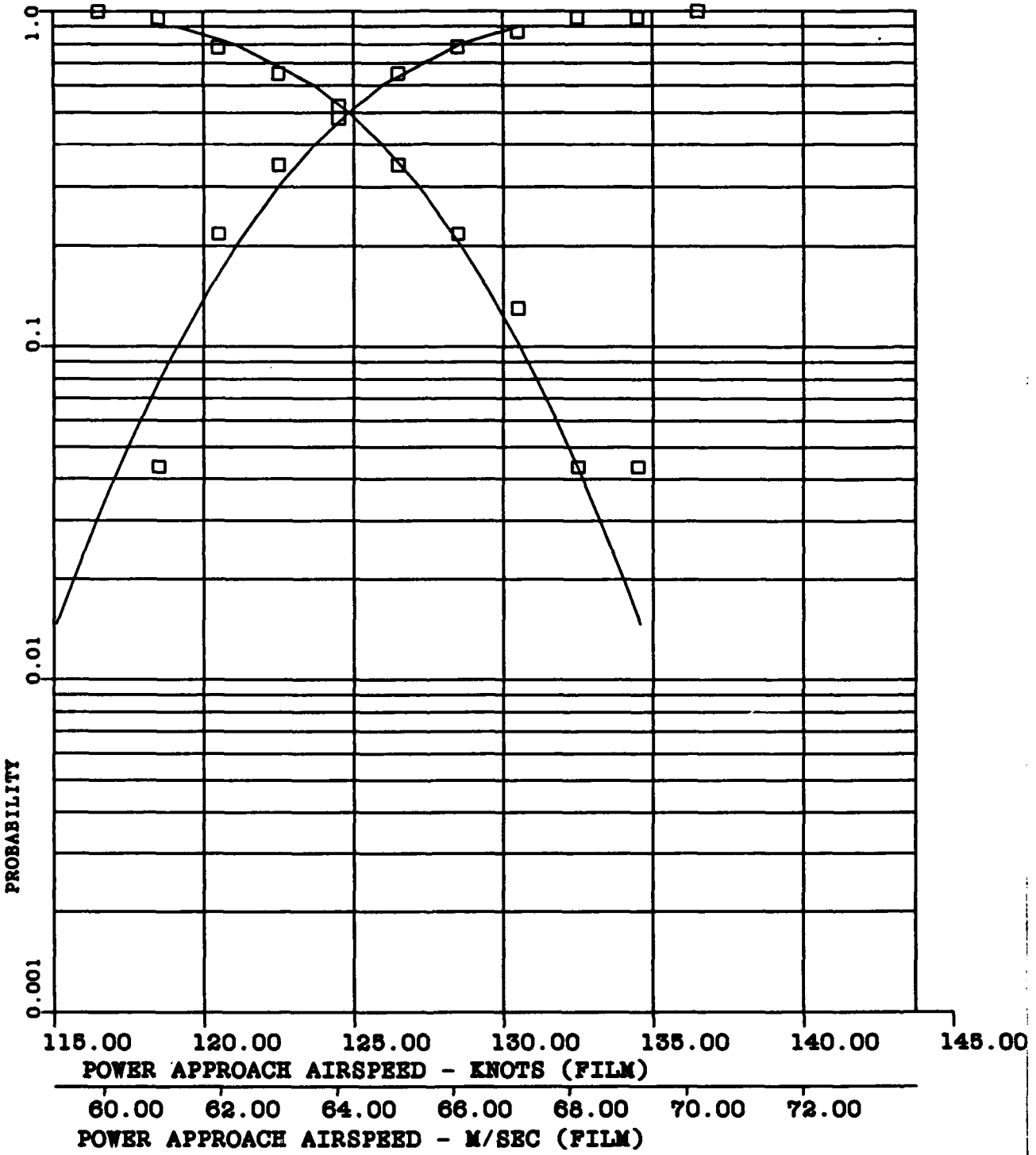


FIGURE P-4 PROBABILITY DISTRIBUTION OF POWER APPROACH AIRSPEED AT THE RAMP (FILM)

MODEL A-3 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-23 $\bar{X}$-17.16 FEET (5.23 METRES) A3=-.09
S-2.65 FEET (.81 METRES) A4-2.09

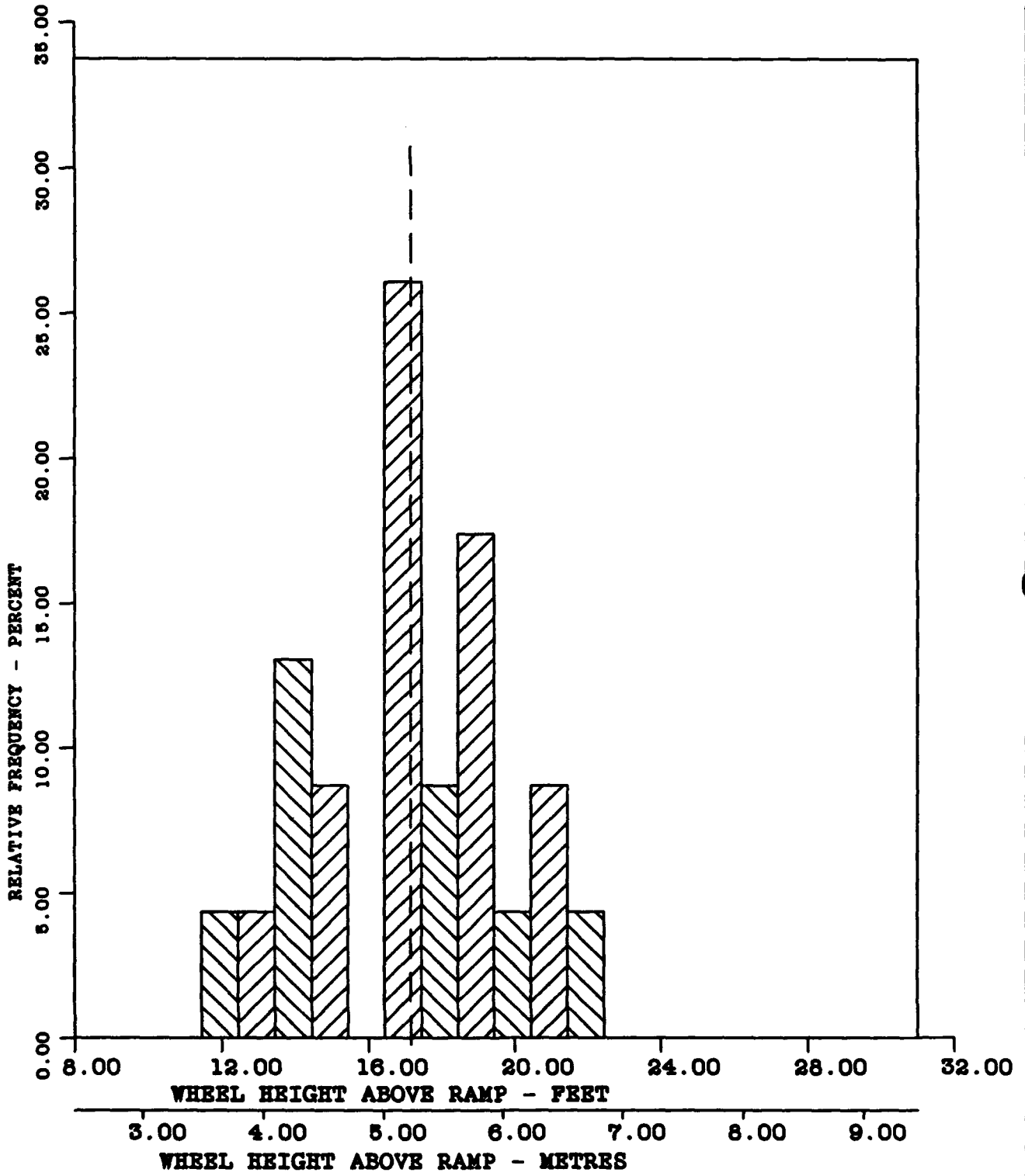


FIGURE P-5 FREQUENCY DISTRIBUTION OF AIRCRAFT WHEEL HEIGHT ABOVE CARRIER RAMP

MODEL A-3 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-23 $\bar{X}$-17.16 FEET (5.23 METRES) A3=-.09
S-2.65 FEET (.81 METRES) A4=2.09
CURVE FITTED - NORMAL

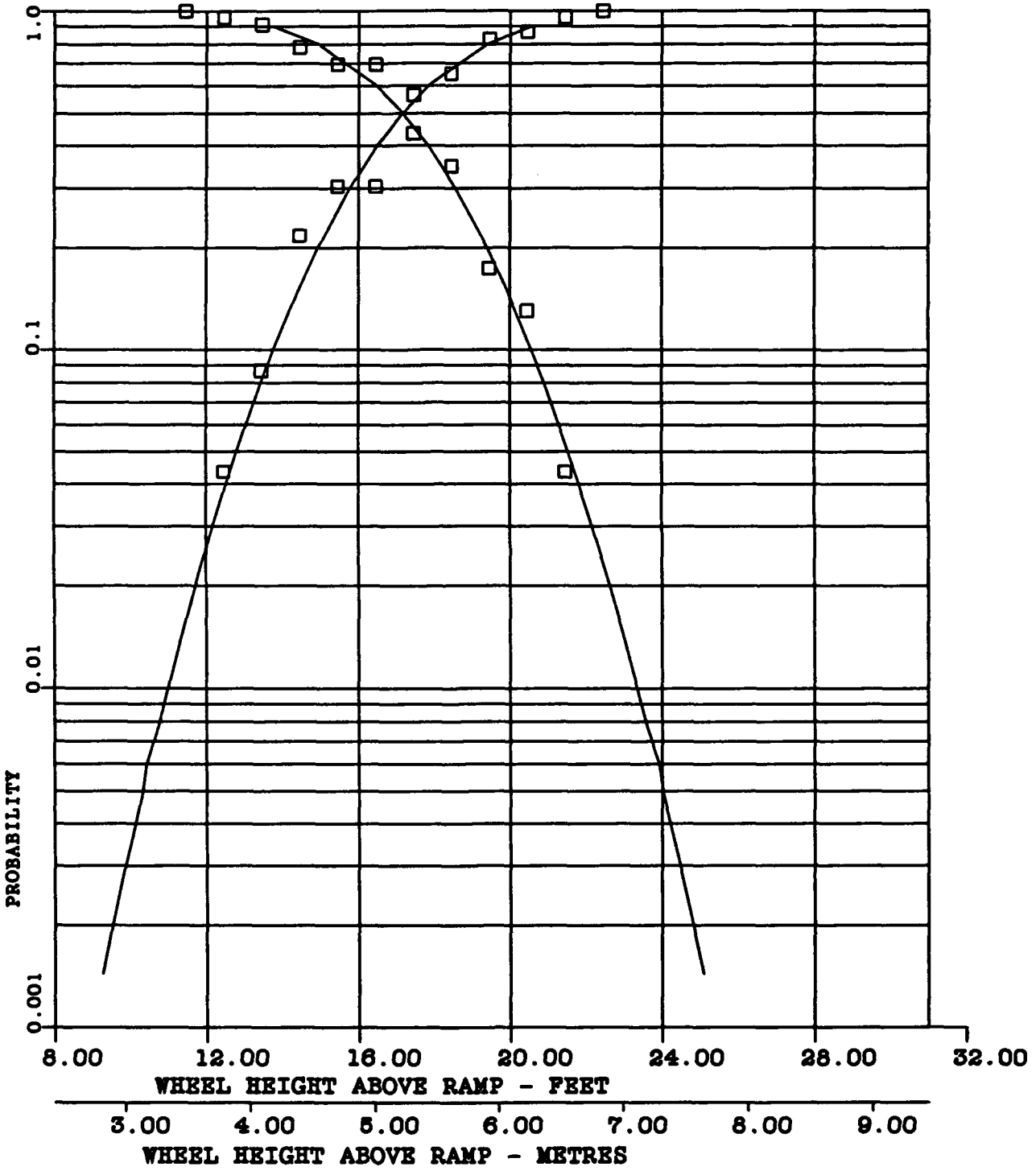


FIGURE P-6 PROBABILITY DISTRIBUTION OF AIRCRAFT WHEEL HEIGHT ABOVE CARRIER RAMP

MODEL A-3 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-23 $\bar{X}$-10.26 FEET/SEC (3.12 METRES/SEC) A3=-.07
S-1.63 FEET/SEC (.49 METRES/SEC) A4-2.14

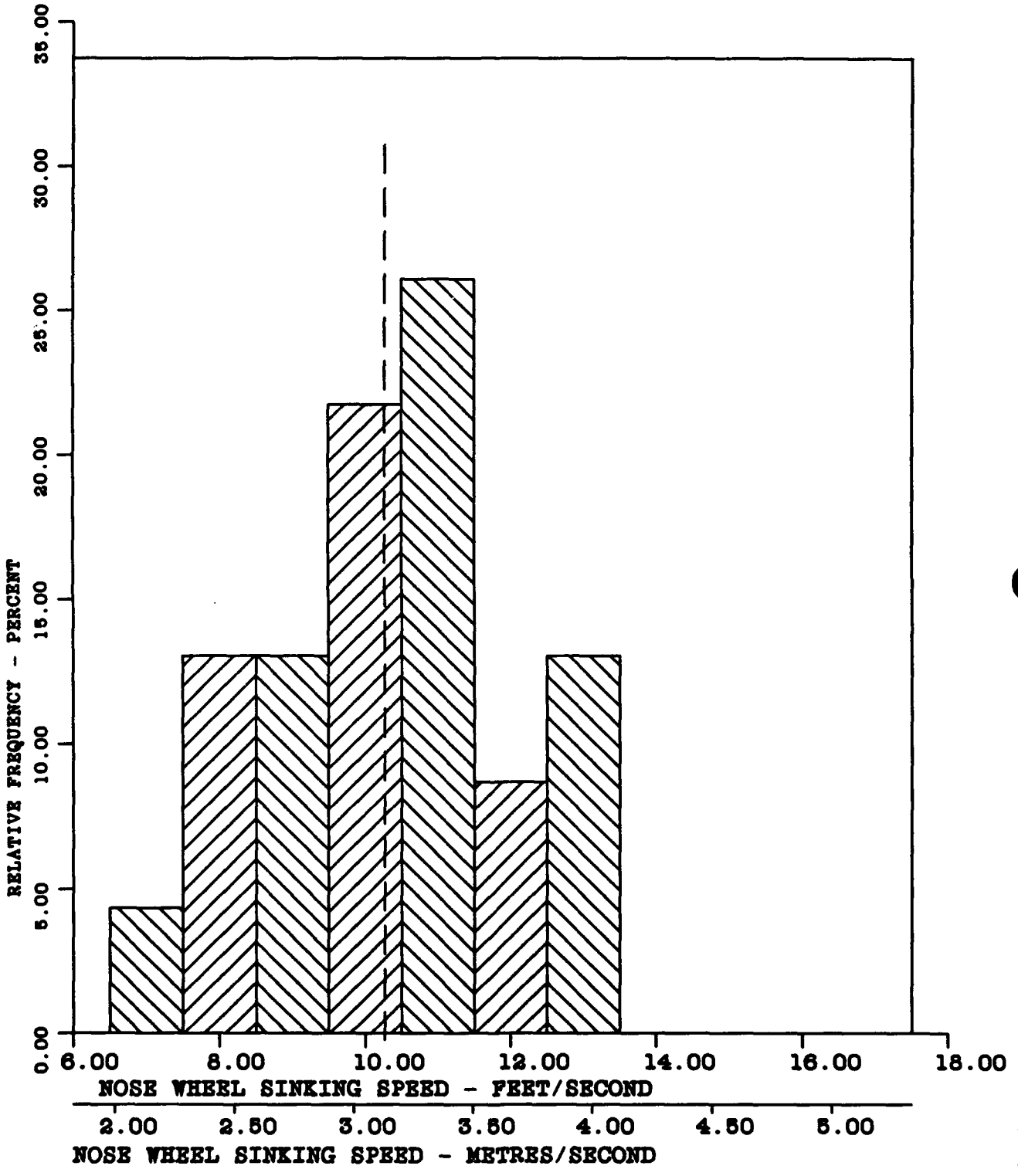


FIGURE P-7 FREQUENCY DISTRIBUTION OF NOSE WHEEL SINKING SPEED

MODEL A-3 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-23 $\bar{X}$-10.26 FEET/SEC (3.12 METRES/SEC) A3=-.07
S-1.63 FEET/SEC (.49 METRES/SEC) A4-2.14
CURVE FITTED - NORMAL

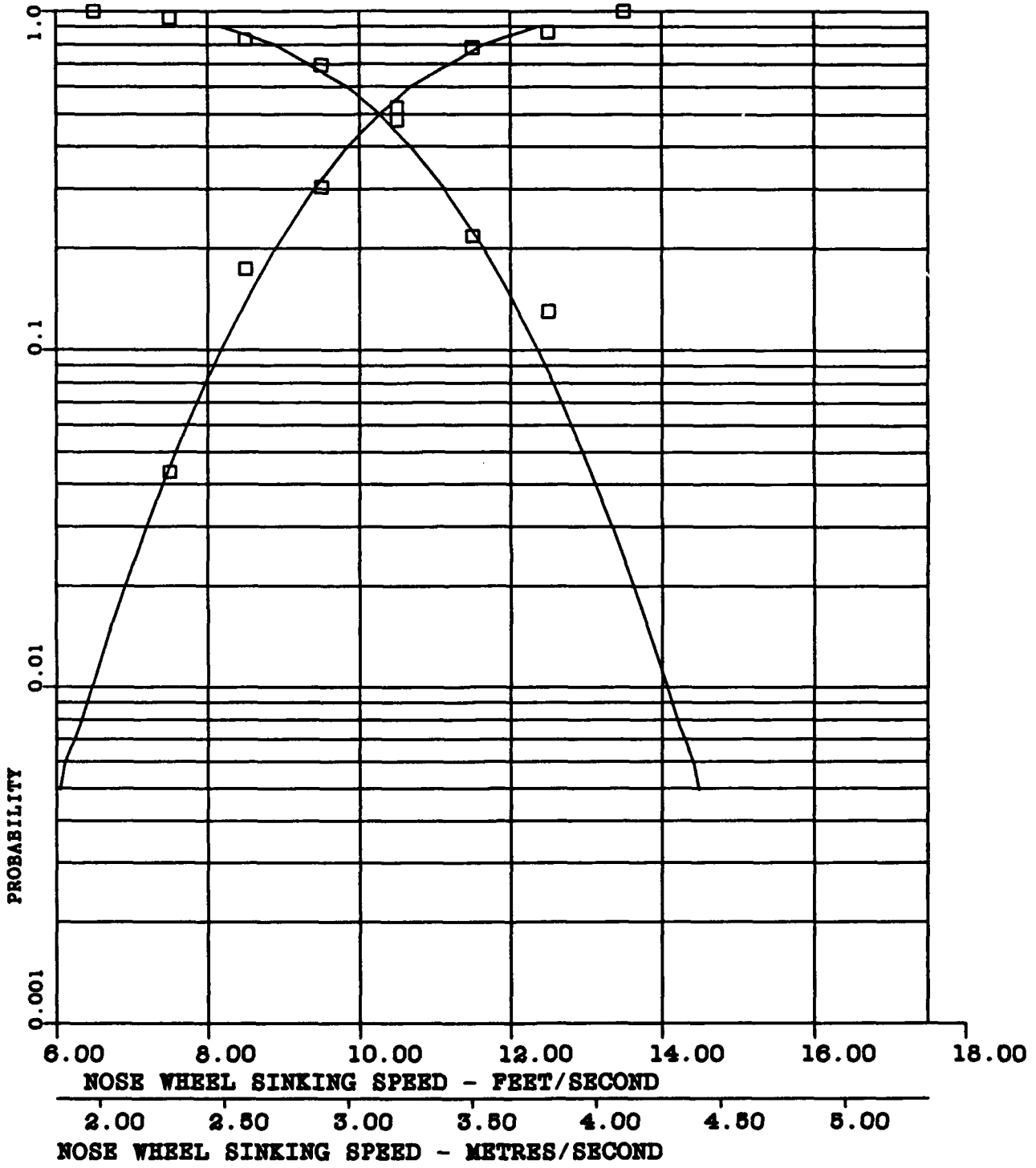


FIGURE P-8 PROBABILITY DISTRIBUTION OF NOSE WHEEL SINKING SPEED

MODEL A-3 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-23 $\bar{X}$-9.85 FEET/SEC (3.00 METRES/SEC) A3=-.22
S-2.10 FEET/SEC (.64 METRES/SEC) A4-2.35

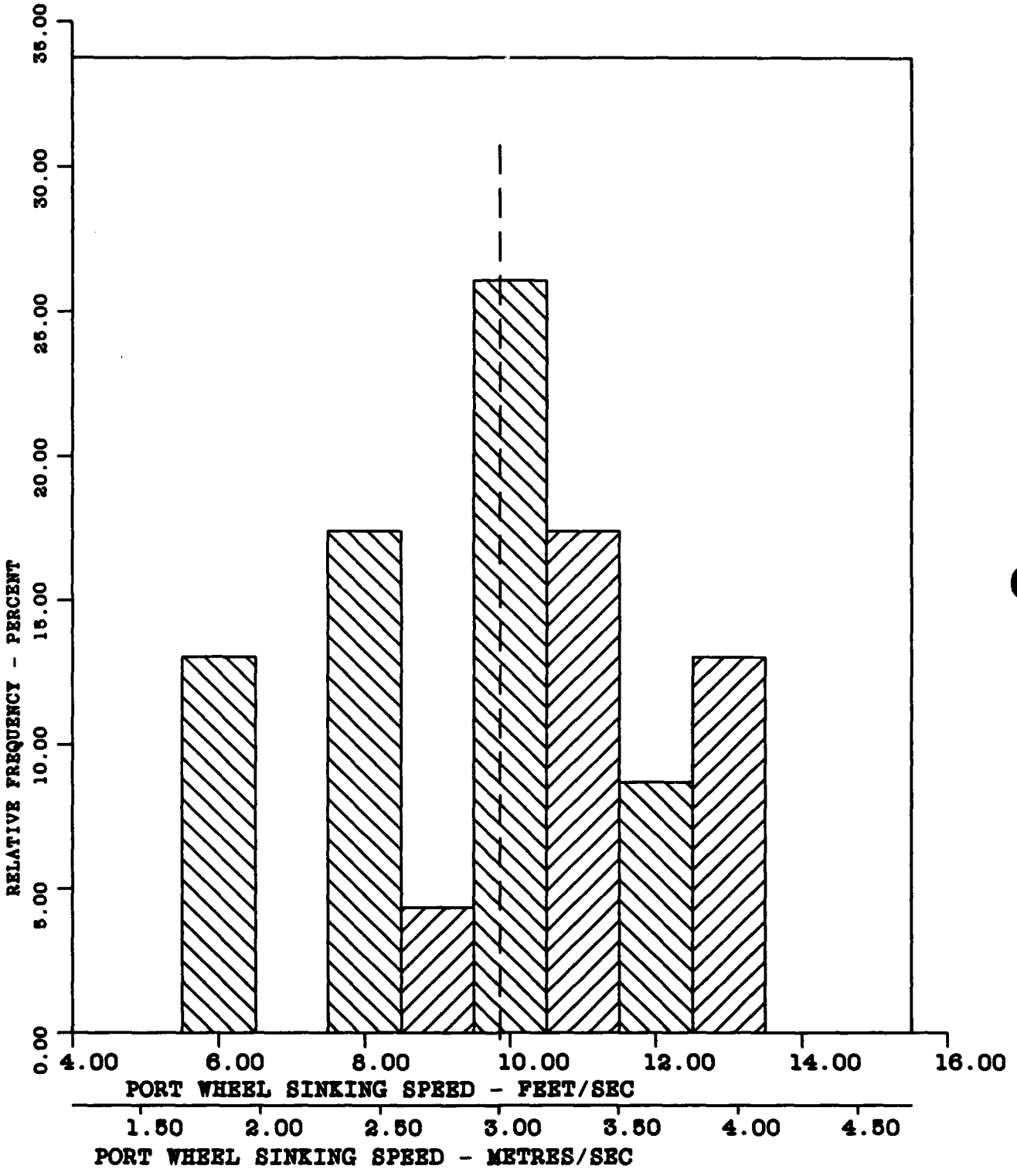


FIGURE P-9 FREQUENCY DISTRIBUTION OF PORT WHEEL SINKING SPEED AT PORT WHEEL TOUCHDOWN

MODEL A-3 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-23 $\bar{X}$-9.85 FEET/SEC (3.00 METRES/SEC) A3=-.22
S-2.10 FEET/SEC (.64 METRES/SEC) A4-2.35
CURVE FITTED - NORMAL

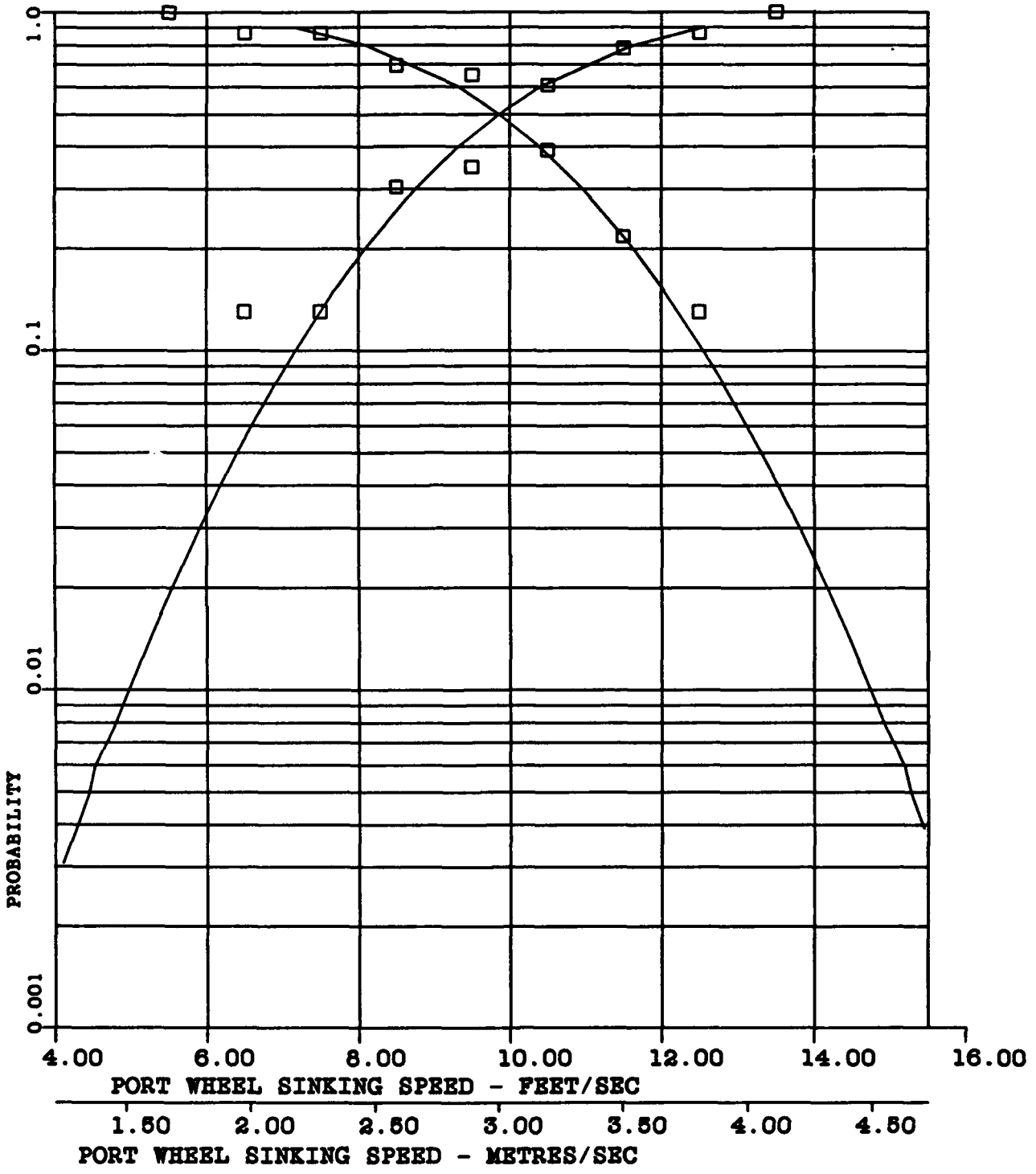


FIGURE P-10 PROBABILITY DISTRIBUTION OF PORT WHEEL SINKING SPEED

MODEL A-3 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-23 $\bar{X}$-9.98 FEET/SEC (3.04 METRES/SEC) A3=-.10
S-2.23 FEET/SEC (.68 METRES/SEC) A4-2.71

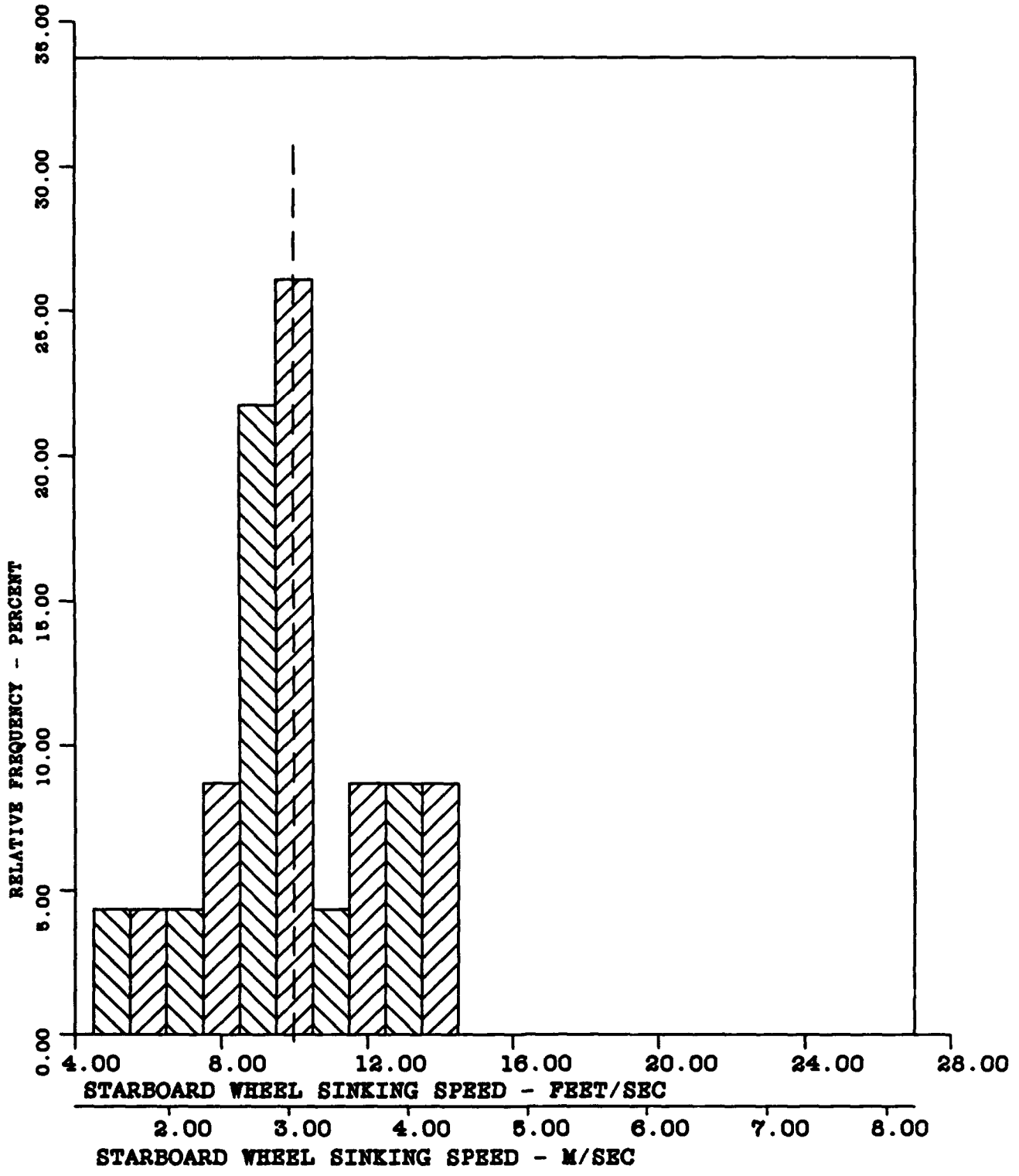


FIGURE P-11 FREQUENCY DISTRIBUTION OF STARBOARD WHEEL SINKING SPEED AT STARBOARD WHEEL TOUCHDOWN

MODEL A-3 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-23 $\bar{X}$-9.98 FEET/SEC (3.04 METRES/SEC) A3=-.10
S-2.23 FEET/SEC (.68 METRES/SEC) A4-2.71
CURVE FITTED - NORMAL

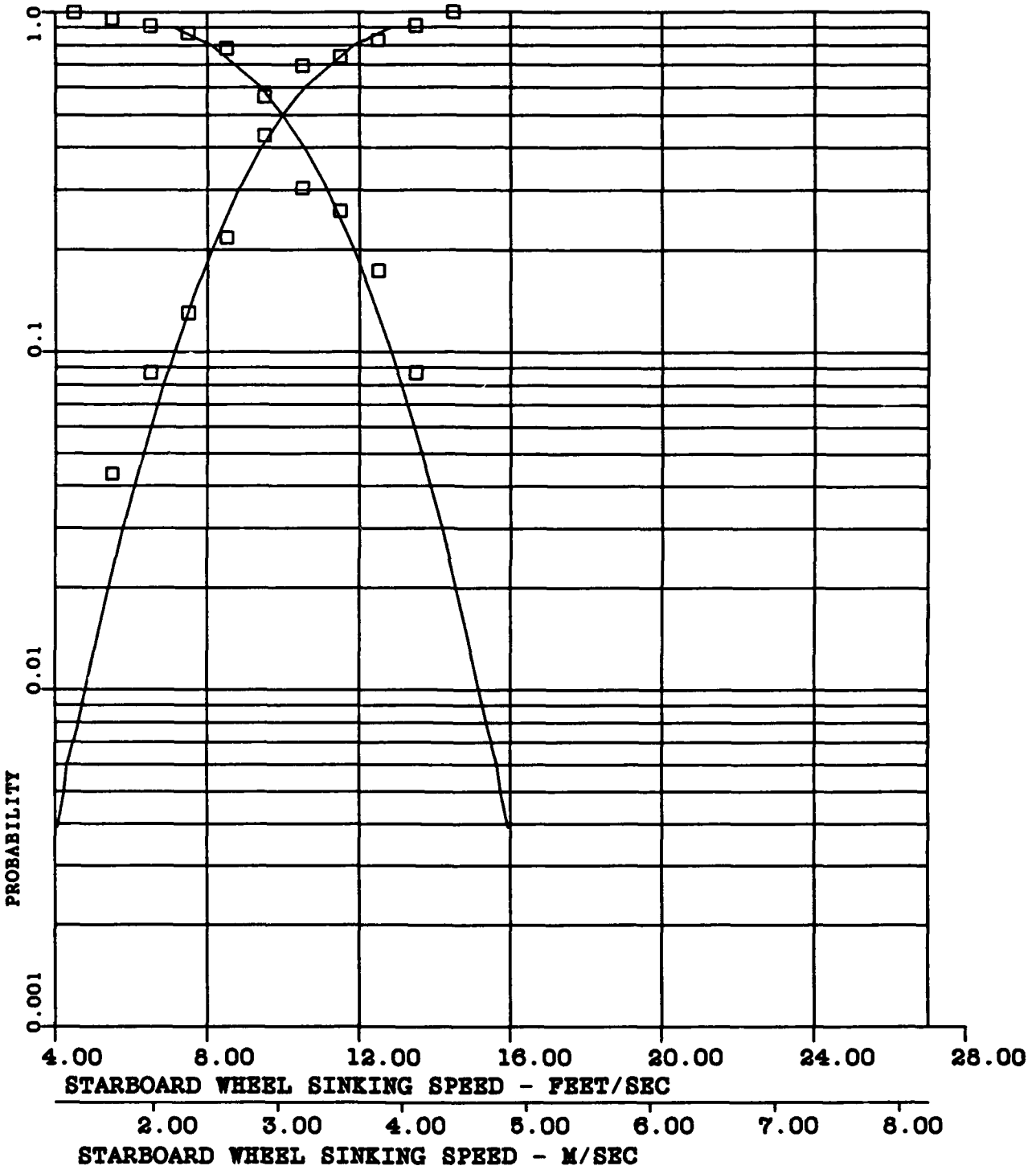


FIGURE P-12 PROBABILITY DISTRIBUTION OF STARBOARD WHEEL SINKING SPEED

MODEL A-3 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=23 $\bar{X}$=9.98 FEET/SEC (3.04 METRES/SEC) A3=-.14
S=2.13 FEET/SEC (.64 METRES/SEC) A4=2.57

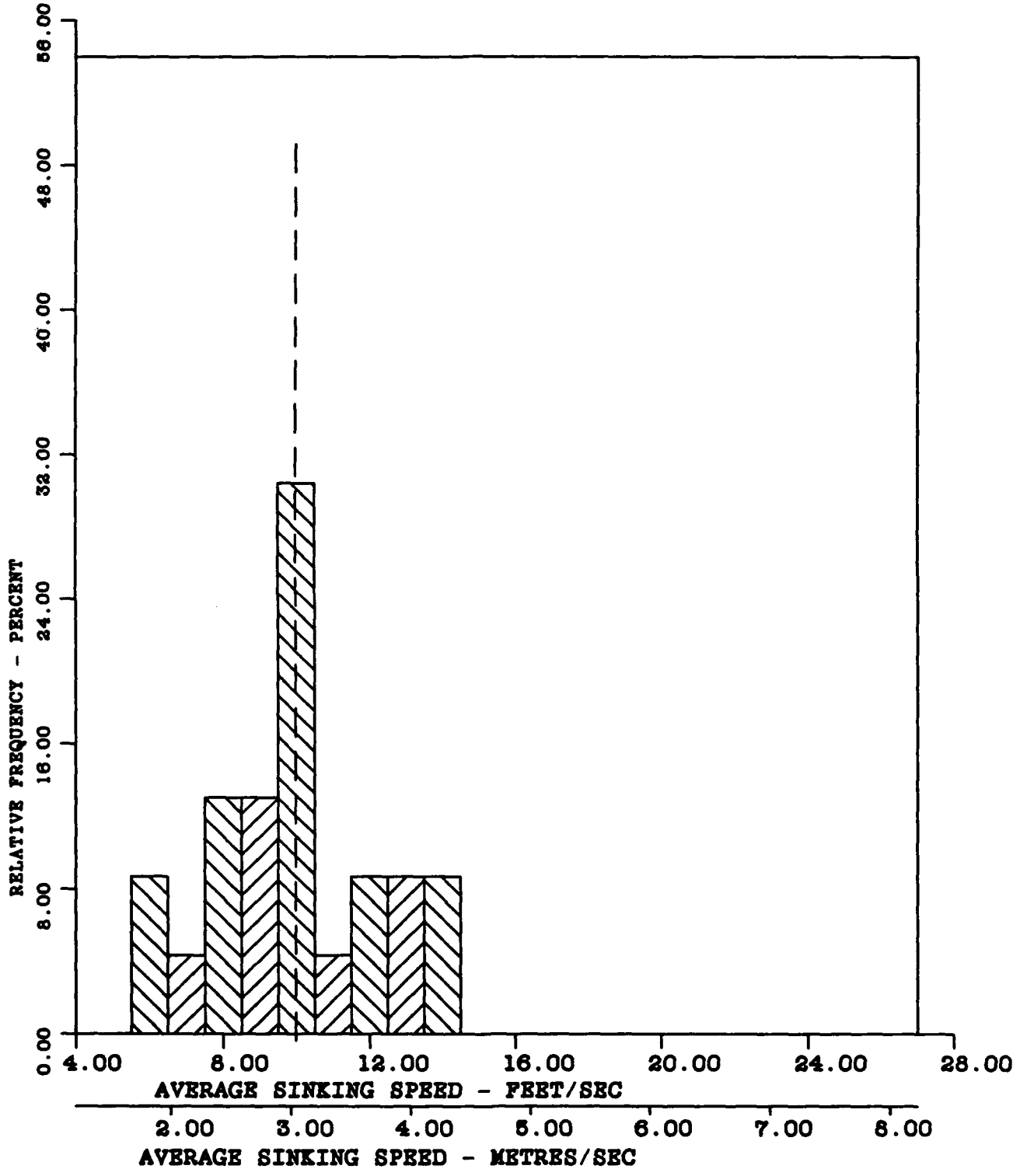


FIGURE P-13 FREQUENCY DISTRIBUTION OF AVG SINKING SPEED OF MAIN WHEEL AT FIRST MAIN WHEEL TOUCHDOWN

MODEL A-3 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-23 $\bar{X}$-9.98 FEET/SEC (3.04 METRES/SEC) A3=-.14
S-2.13 FEET/SEC (.64 METRES/SEC) A4-2.57
CURVE FITTED - NORMAL

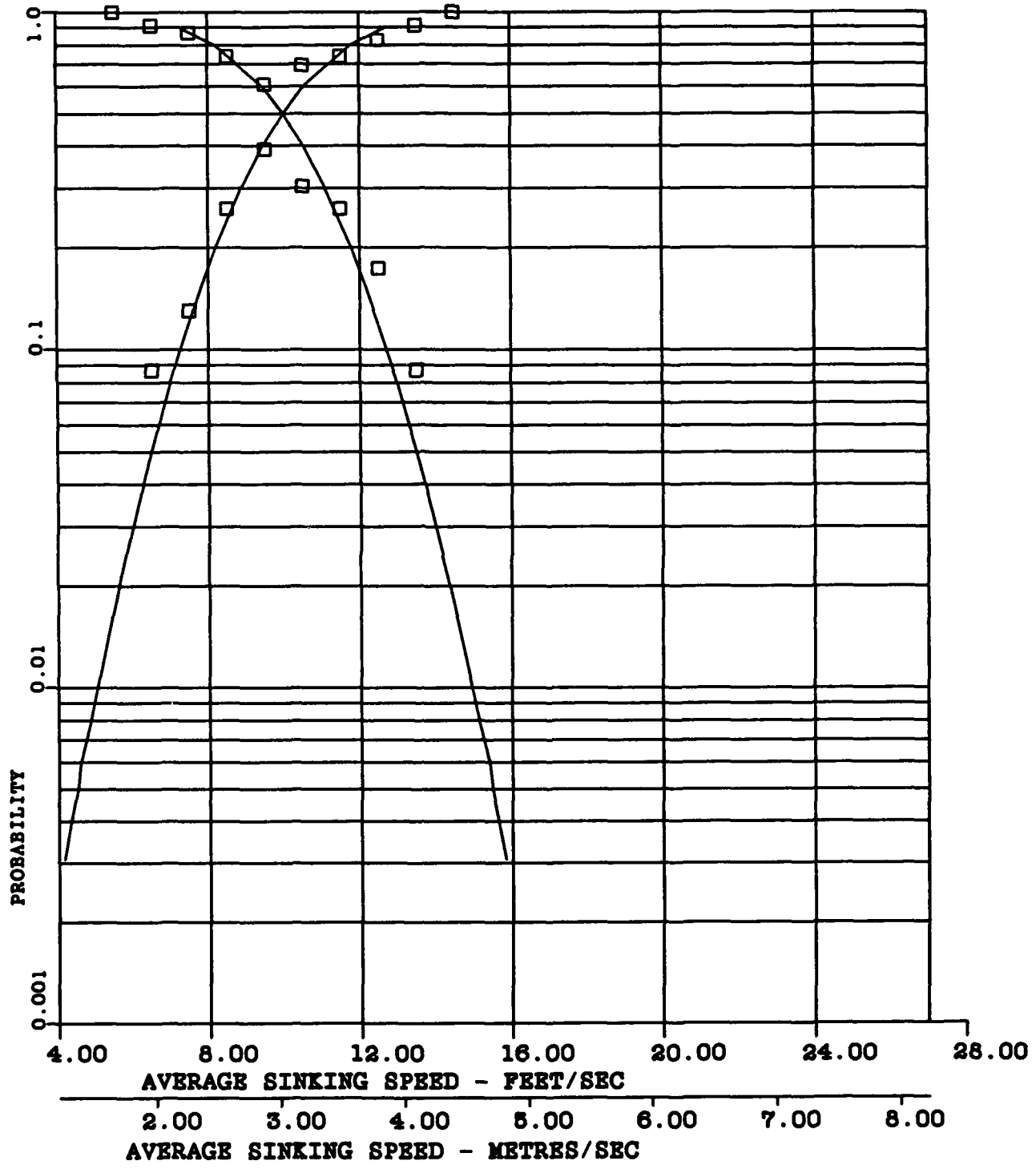


FIGURE P-14 PROBABILITY DISTRIBUTION OF AVERAGE SINKING SPEED AT FIRST MAIN WHEEL TOUCHDOWN

MODEL A-3 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-2 $\bar{X}$-7.61 FEET/SEC (2.31 METRES/SEC) A3=.00
S-2.50 FEET/SEC (.76 METRES/SEC) A4=1.00

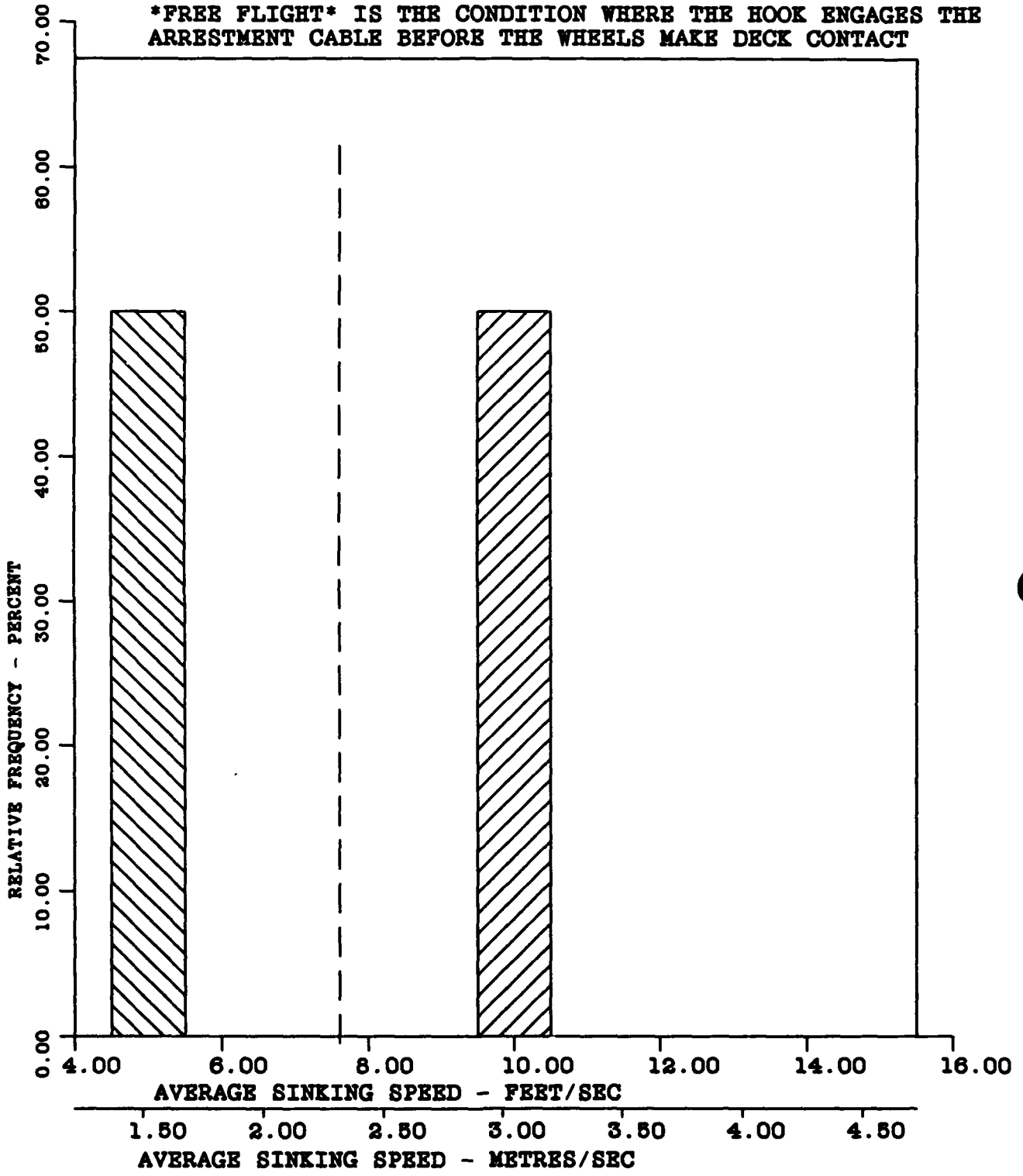


FIGURE P-15 FREQUENCY DISTRIBUTION OF AVERAGE SINKING SPEED OF MAIN WHEELS AT FREE FLIGHT

MODEL A-3 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-2 $\bar{X}$-7.61 FEET/SEC (2.31 METRES/SEC) A3=.00
S-2.50 FEET/SEC (.76 METRES/SEC) A4=1.00
CURVE FITTED - NORMAL
FREE FLIGHT IS THE CONDITION WHERE THE HOOK ENGAGES THE ARRESTMENT CABLE BEFORE THE WHEELS MAKE DECK CONTACT

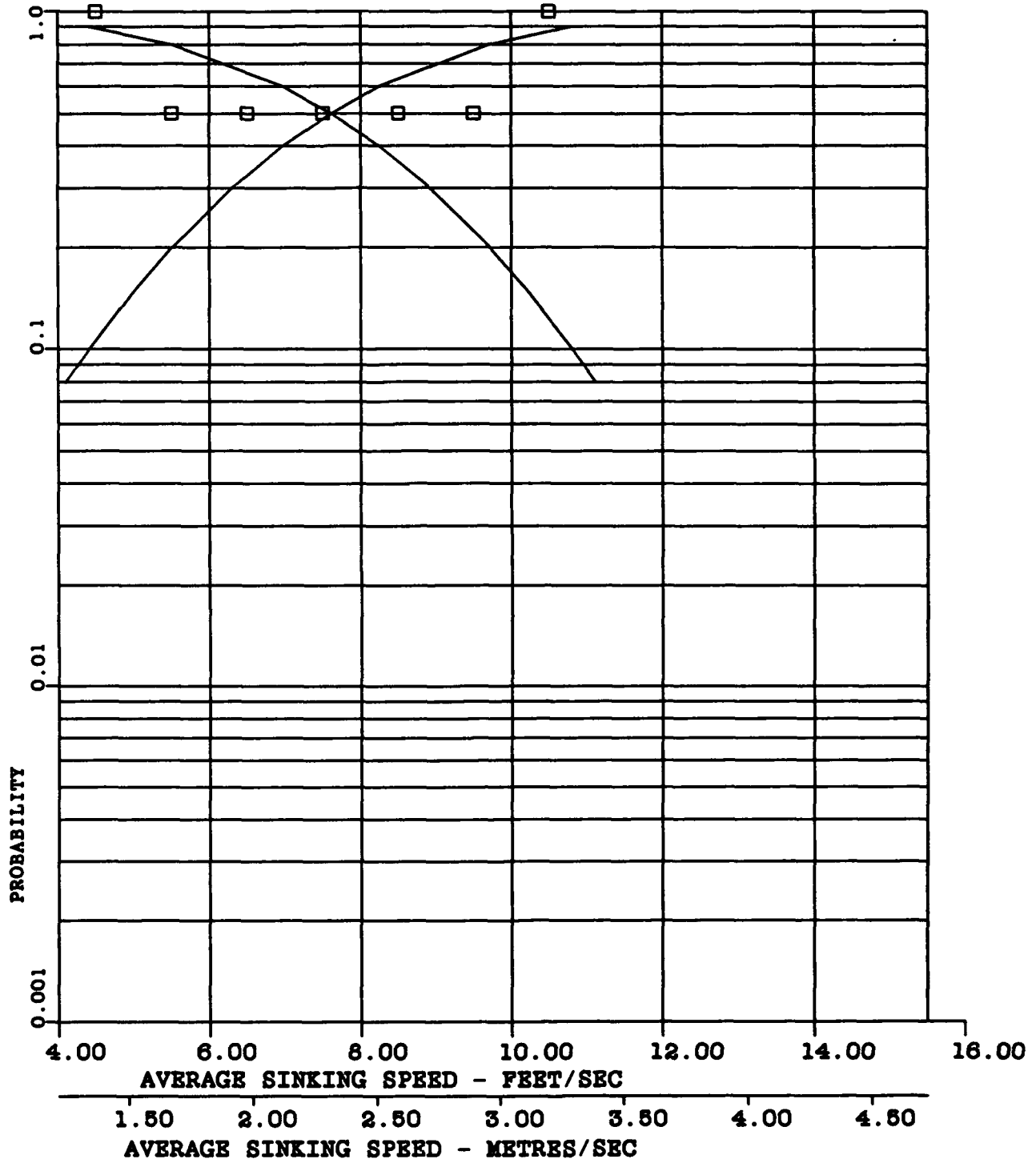


FIGURE P-16 PROBABILITY DISTRIBUTION OF AVERAGE SINKING SPEED AT FREE FLIGHT

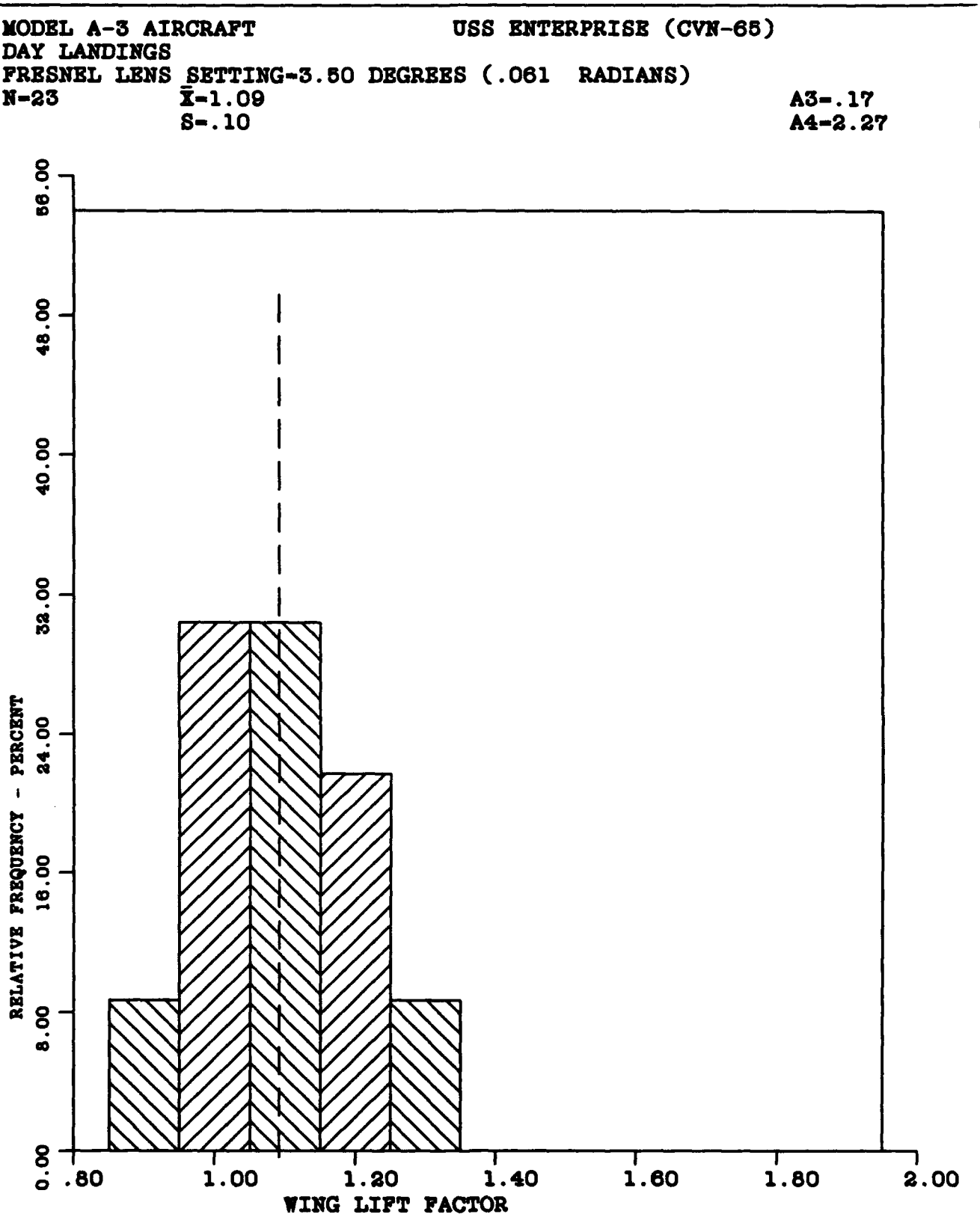


FIGURE P-17 FREQUENCY DISTRIBUTION OF WING LIFT FACTOR AT FIRST MAIN WHEEL TOUCHDOWN

MODEL A-3 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-23 $\bar{X}$-1.09 A3-.17
S-.10 A4-2.27
CURVE FITTED - NORMAL

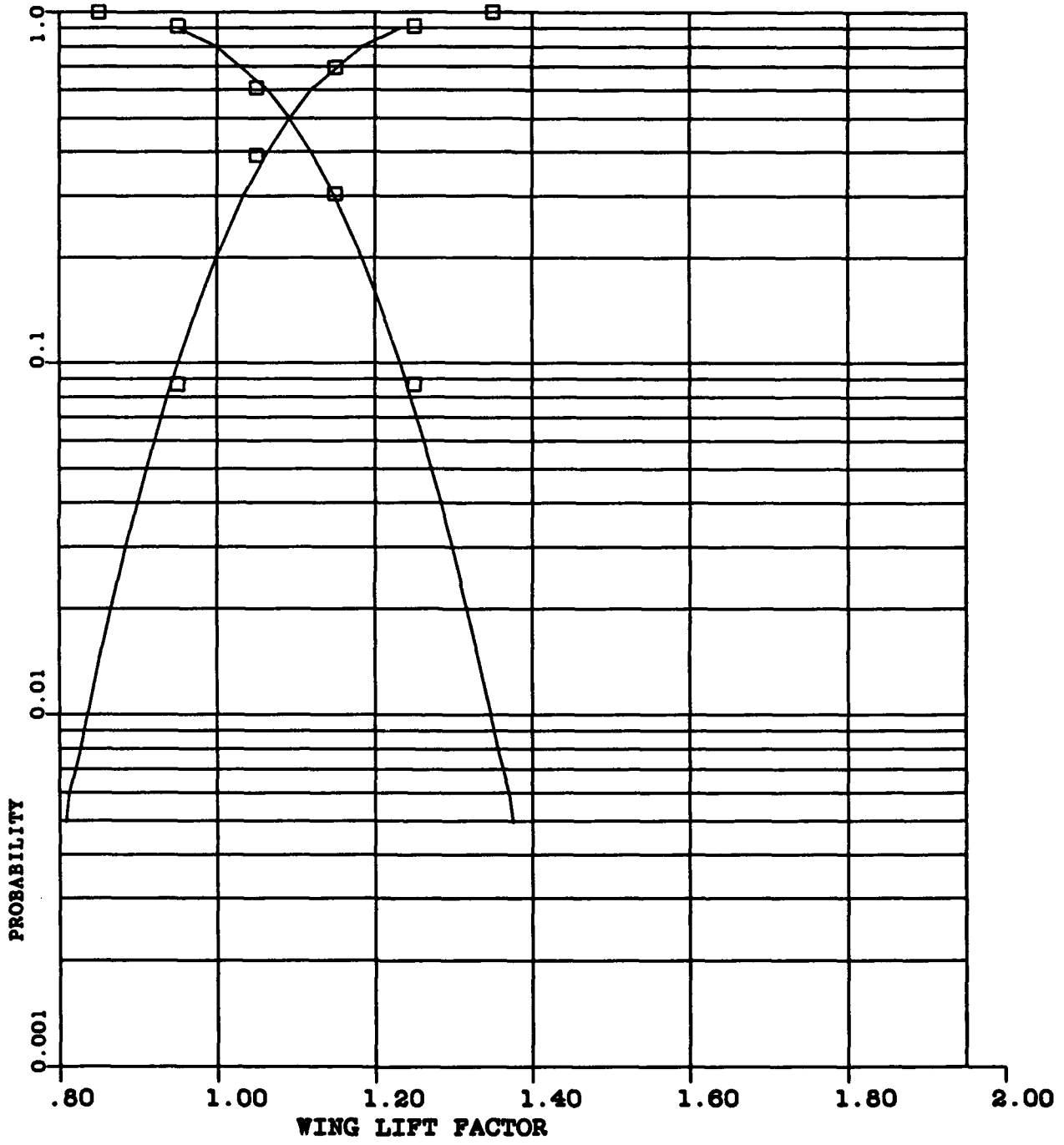


FIGURE P-18 PROBABILITY DISTRIBUTION OF WING LIFT FACTOR AT FIRST MAIN WHEEL TOUCHDOWN

MODEL A-3 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-23 $\bar{X}$-3.10 DEGREES (.054 RADIANS) A3=.17
S-1.21 DEGREES (.021 RADIANS) A4=2.70

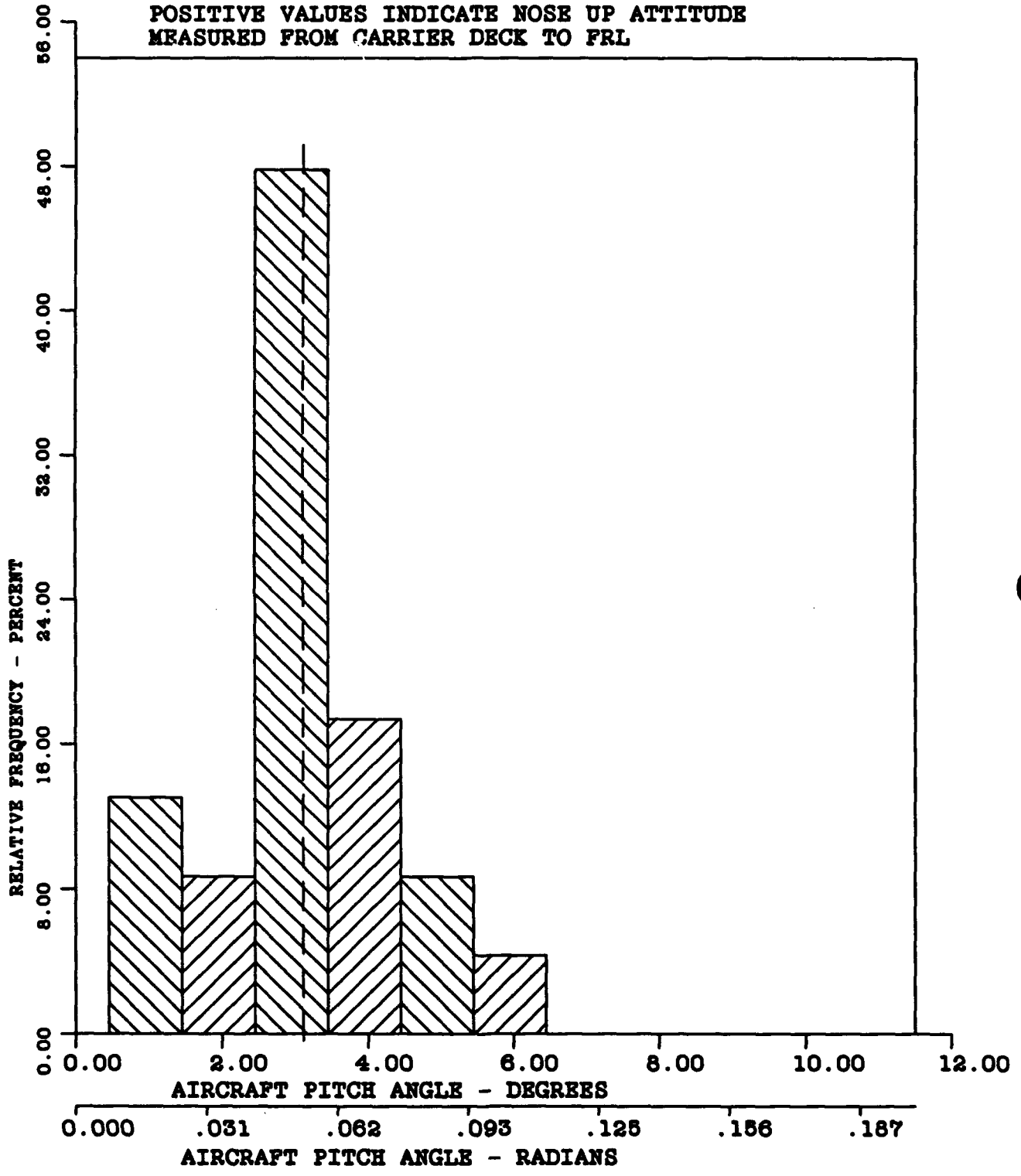


FIGURE P-19 FREQUENCY DISTRIBUTION OF AIRCRAFT PITCH ANGLE AT THE RAMP

MODEL A-3 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-23 $\bar{X}$-3.10 DEGREES (.054 RADIANS) A3=.17
S-1.21 DEGREES (.021 RADIANS) A4=2.70
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE NOSE UP ATTITUDE
MEASURED FROM CARRIER DECK TO FRL

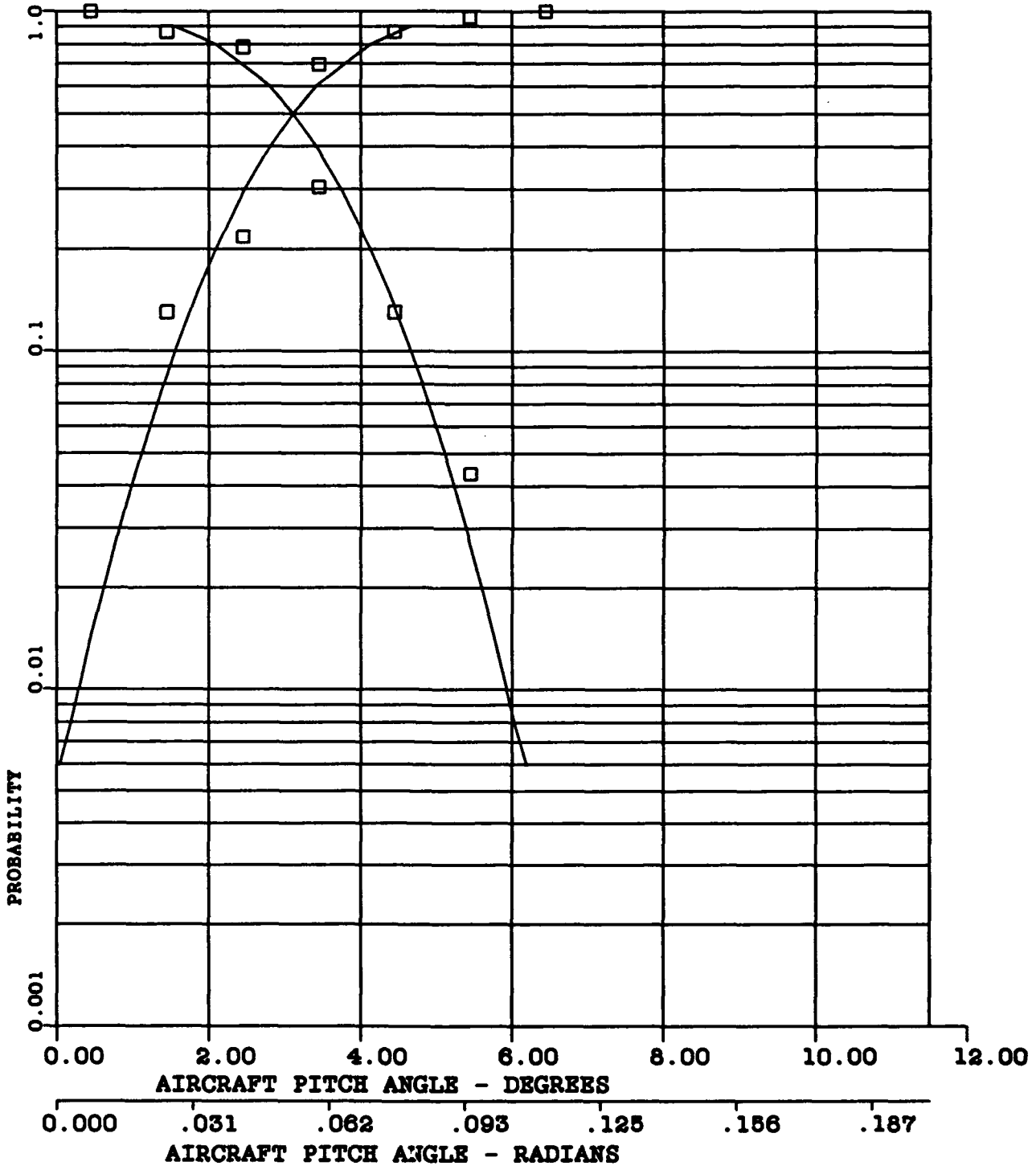


FIGURE P-20 PROBABILITY DISTRIBUTION OF AIRCRAFT PITCH ANGLE AT THE RAMP

MODEL A-3 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-23 $\bar{X}$-2.93 DEGREES (.051 RADIANS) A3-.51
S-1.06 DEGREES (.018 RADIANS) A4-2.74

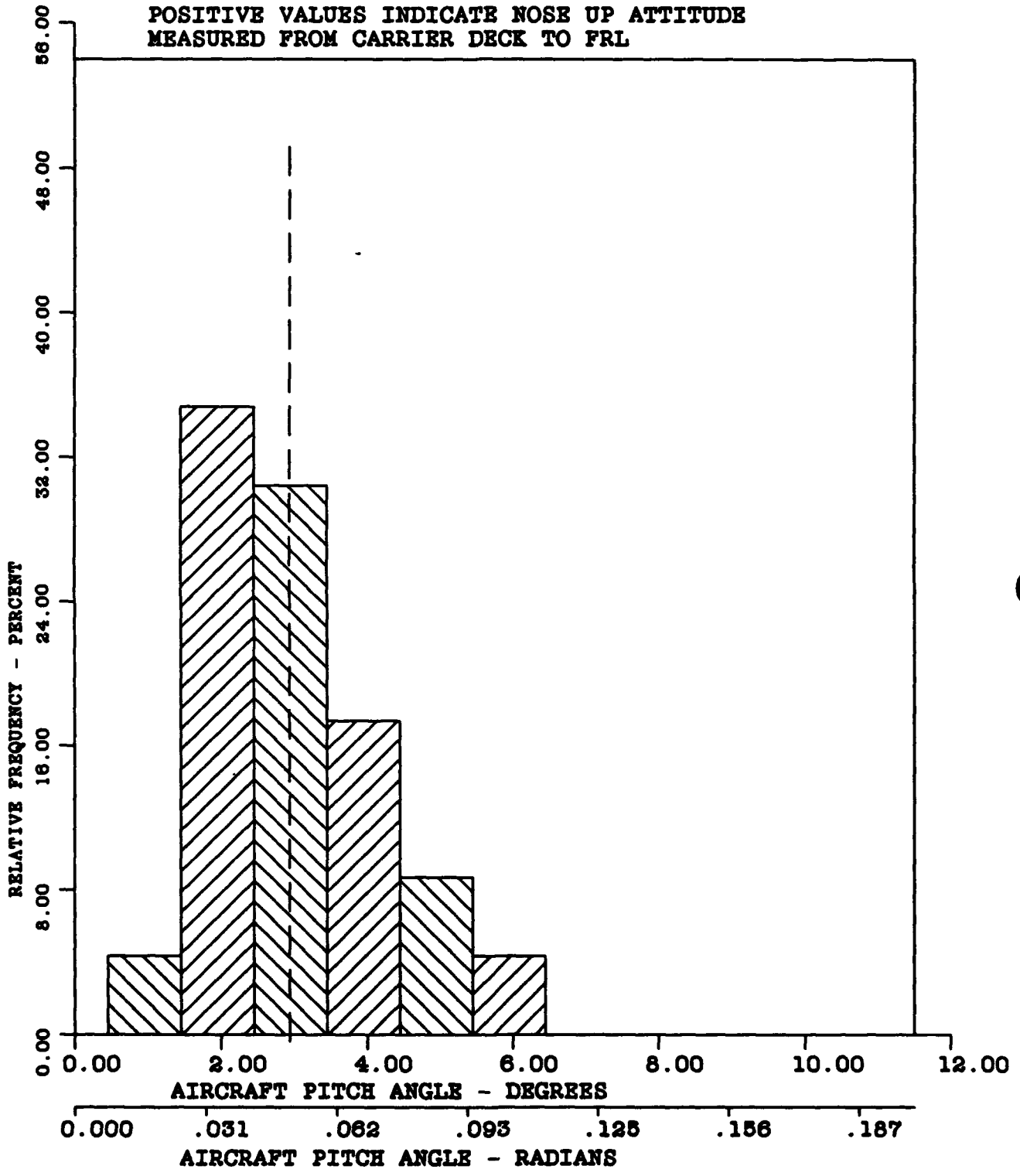


FIGURE P-21 FREQUENCY DISTRIBUTION OF AIRCRAFT PITCH ANGLE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL A-3 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-23 $\bar{X}$-2.93 DEGREES (.051 RADIANS) A3=.51
S-1.06 DEGREES (.018 RADIANS) A4-2.74
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE NOSE UP ATTITUDE
MEASURED FROM CARRIER DECK TO FRL

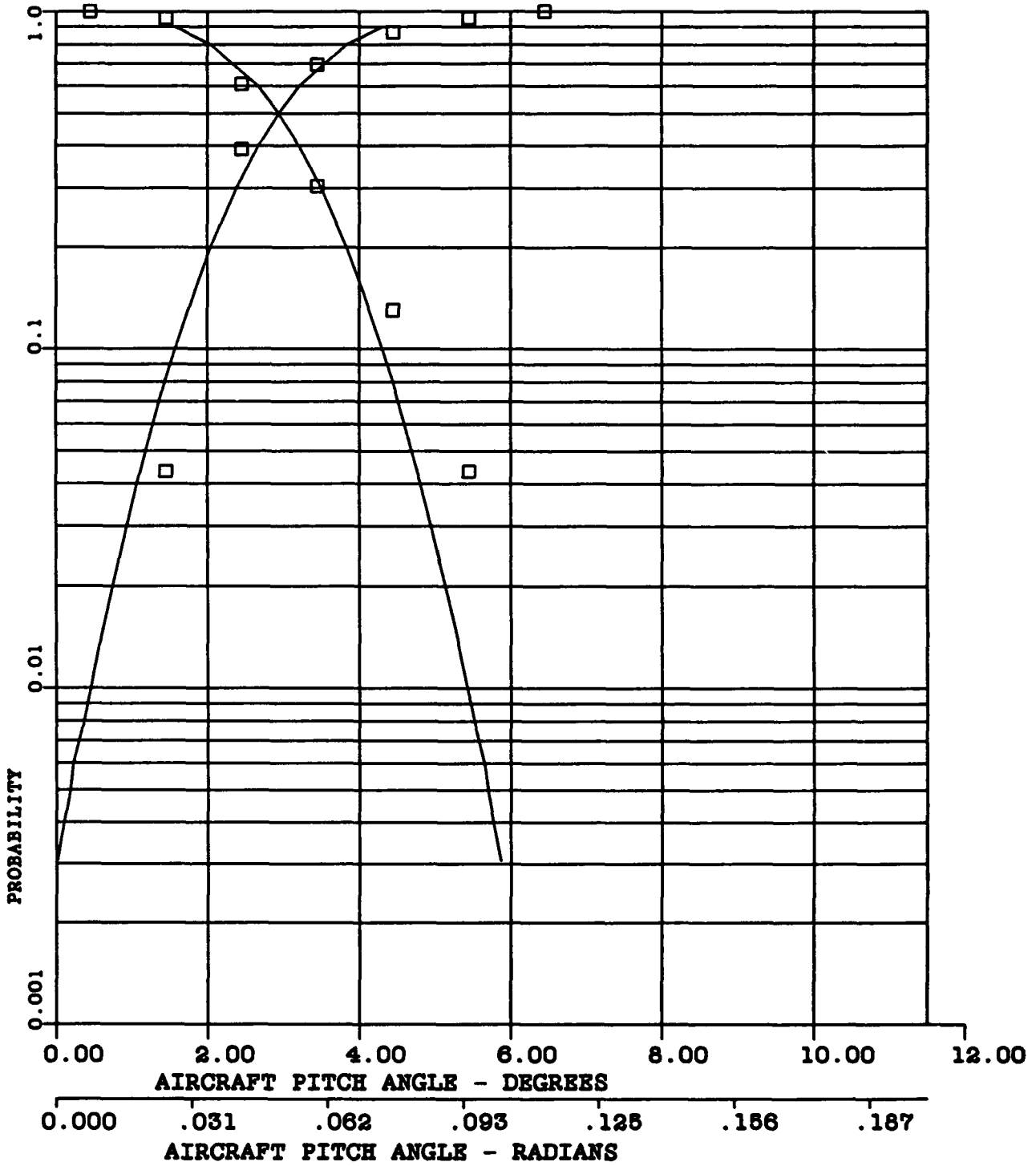


FIGURE P-22 PROBABILITY DISTRIBUTION OF AIRCRAFT PITCH ANGLE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL A-3 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-2 $\bar{X}$-4.45 DEGREES (.077 RADIANS) A3-0.00
S-.05 DEGREES (.000 RADIANS) A4-1.00

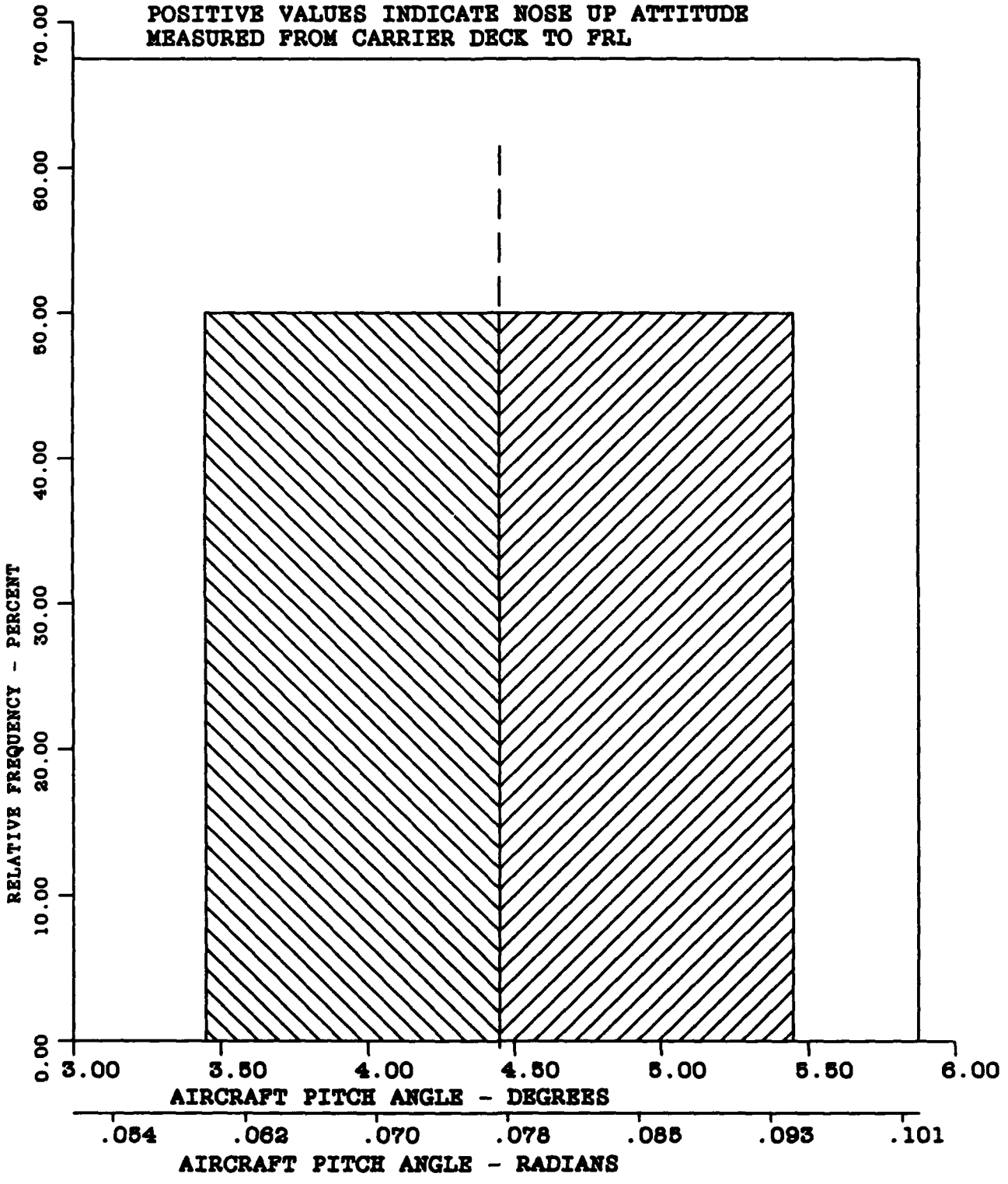


FIGURE P-23 FREQUENCY DISTRIBUTION OF AIRCRAFT PITCH ANGLE AT FREE FLIGHT

MODEL A-3 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-2 $\bar{X}$-4.45 DEGREES (.077 RADIANS) A3-0.00
S-.05 DEGREES (.000 RADIANS) A4-1.00
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE NOSE UP ATTITUDE
MEASURED FROM CARRIER DECK TO FRL

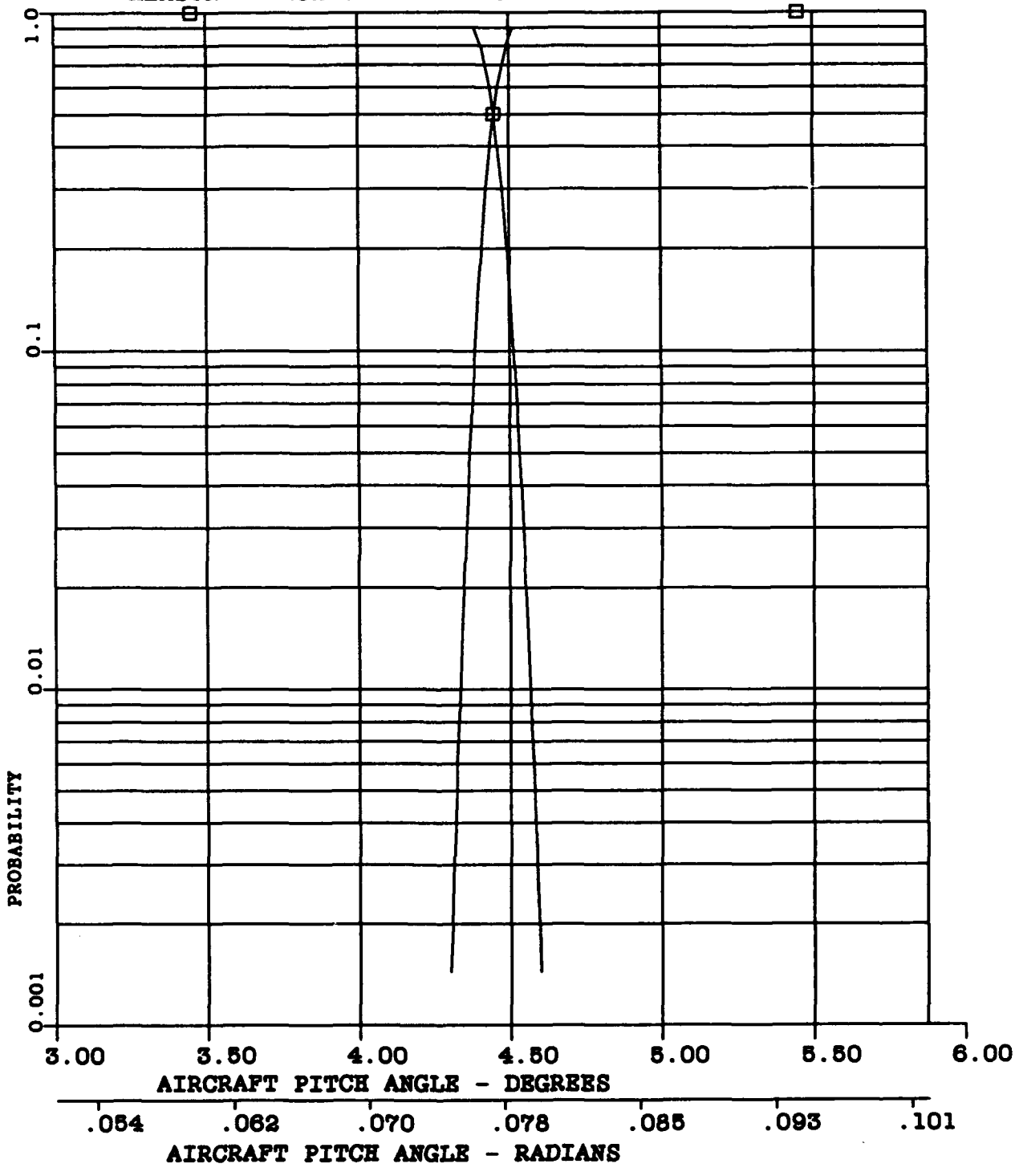


FIGURE P-24 PROBABILITY DISTRIBUTION OF AIRCRAFT PITCH ANGLE AT FREE FLIGHT

MODEL A-3 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-23 $\bar{X}$=-1.00 DEGREES (-.017 RADIANS) A3=.03
S=1.44 DEGREES (.025 RADIANS) A4=2.74

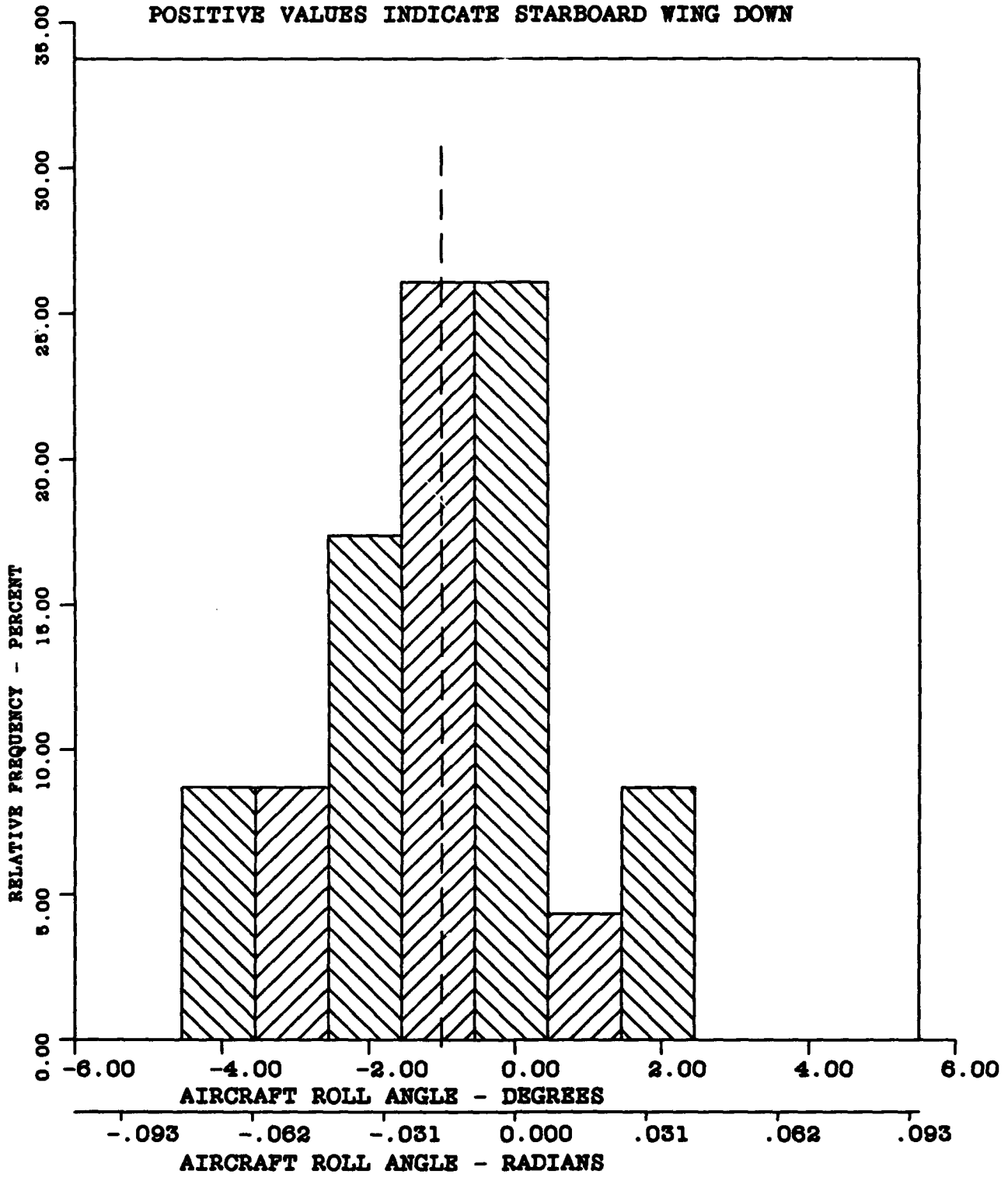


FIGURE P-25 FREQUENCY DISTRIBUTION OF AIRCRAFT ROLL ANGLE AT THE RAMP

MODEL A-3 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=23 $\bar{X}$=-1.00 DEGREES (-.017 RADIANS) A3=.03
S=1.44 DEGREES (.025 RADIANS) A4=2.74
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE STARBOARD WING DOWN

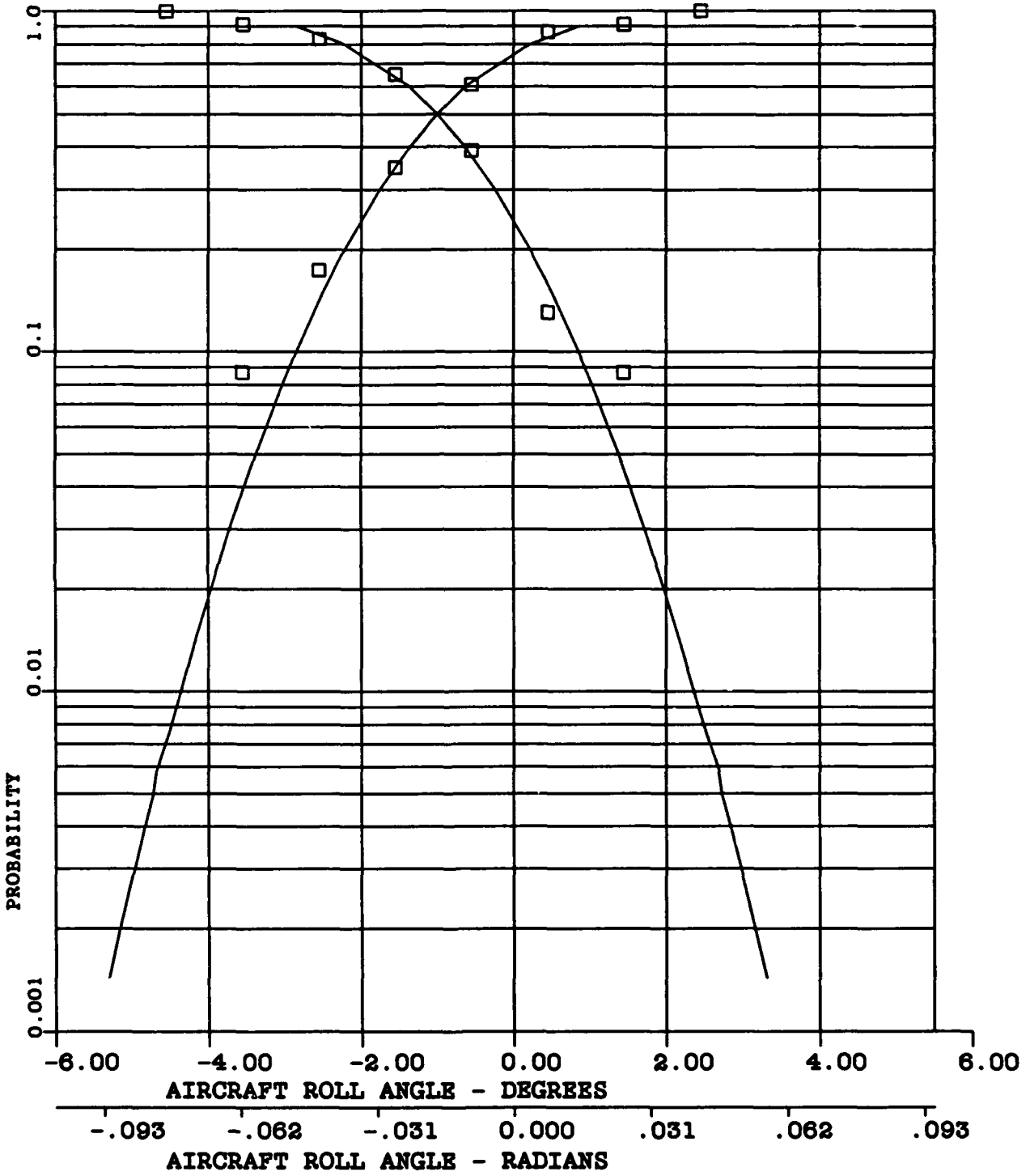


FIGURE P-26 PROBABILITY DISTRIBUTION OF AIRCRAFT ROLL ANGLE AT THE RAMP

MODEL A-3 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-23 $\bar{X}$=-.70 DEGREES (-.012 RADIANS) A3=-.43
S=1.65 DEGREES (.028 RADIANS) A4=3.17

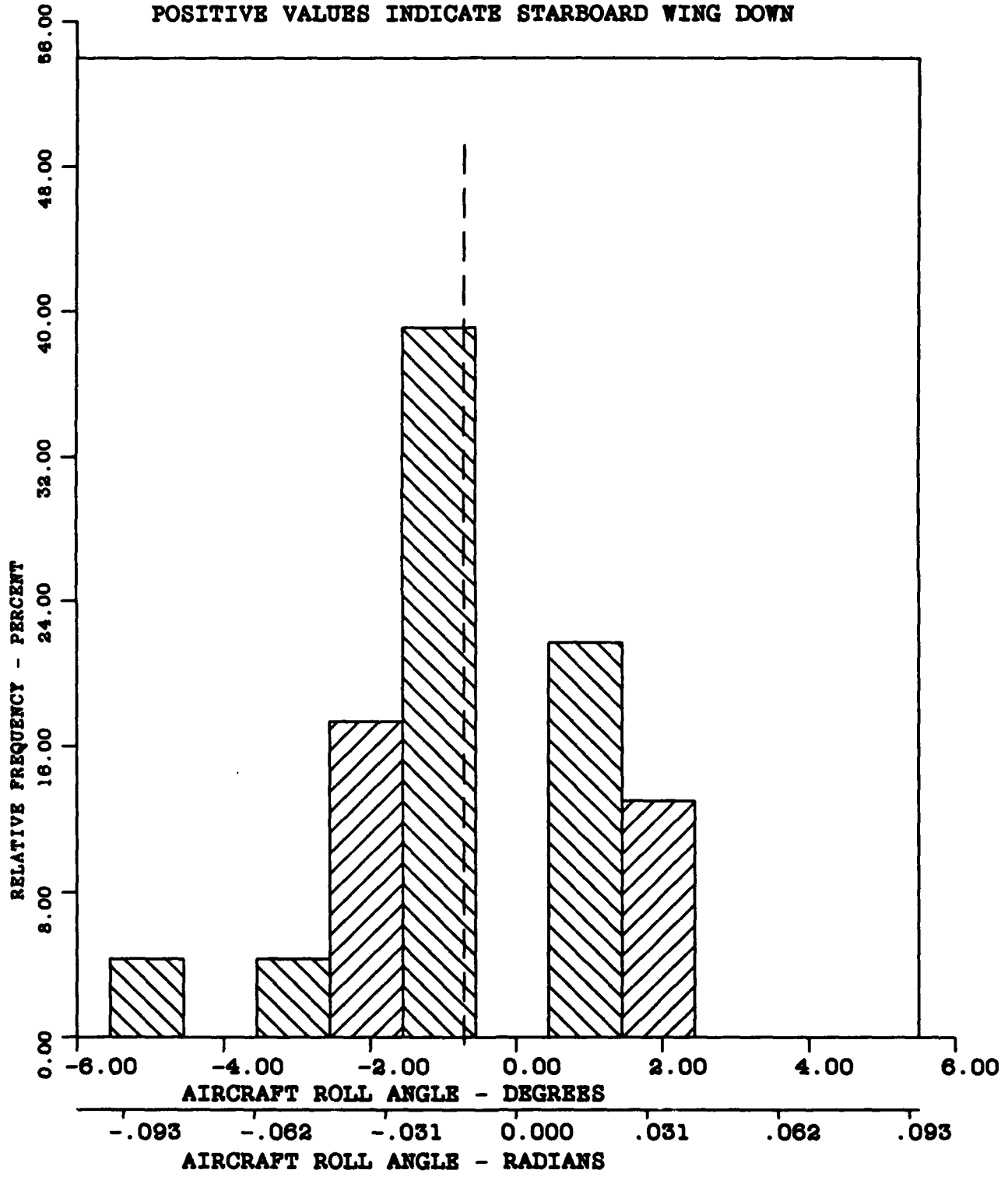


FIGURE P-27 FREQUENCY DISTRIBUTION OF AIRCRAFT ROLL ANGLE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL A-3 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-23 $\bar{X}$=-.70 DEGREES (-.012 RADIANS) A3=-.43
S=1.65 DEGREES (.028 RADIANS) A4=3.17
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE STARBOARD WING DOWN

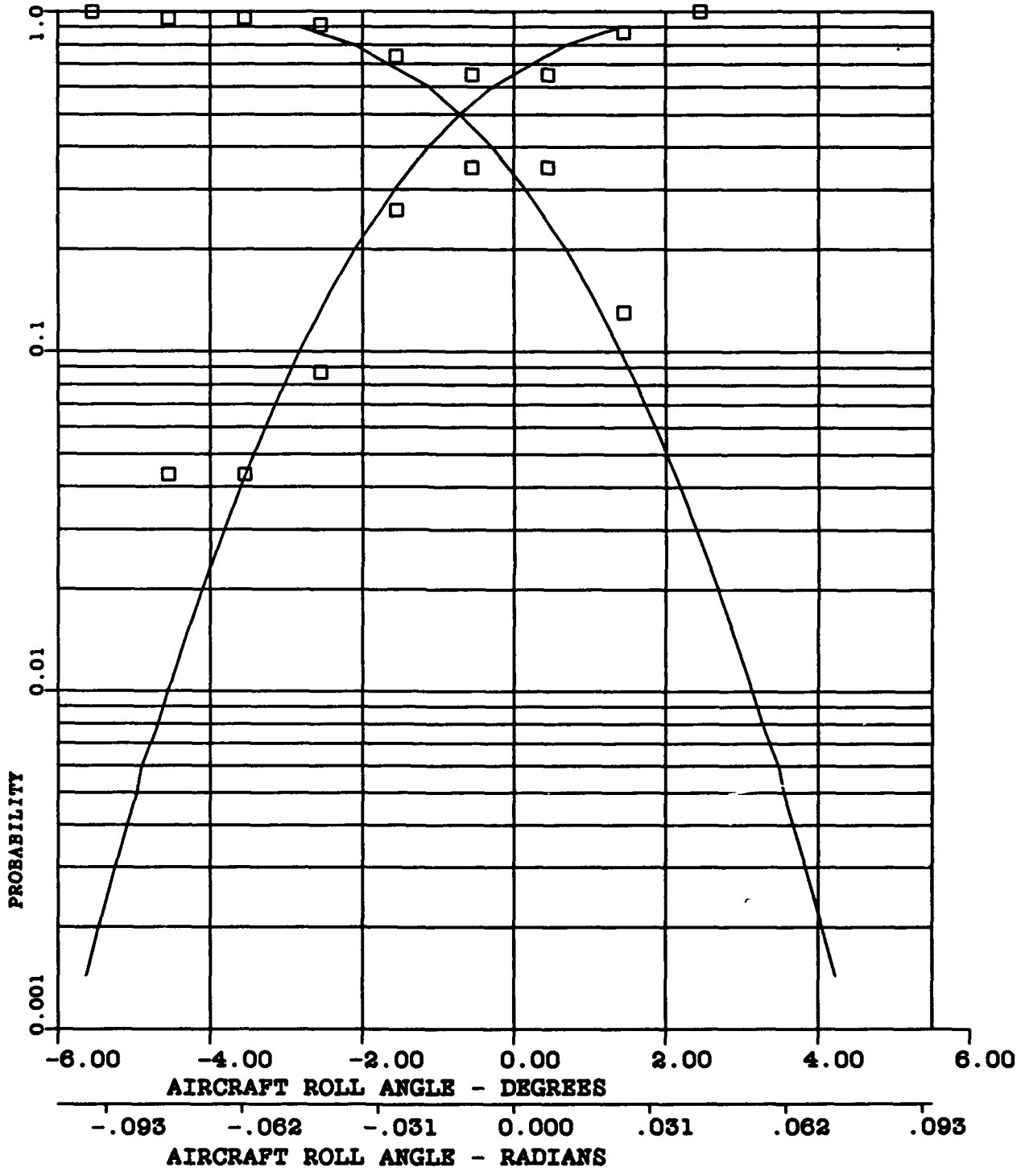


FIGURE P-28 PROBABILITY DISTRIBUTION OF AIRCRAFT ROLL ANGLE AT FIRST MAIN WHEEL TOUCHDOWN

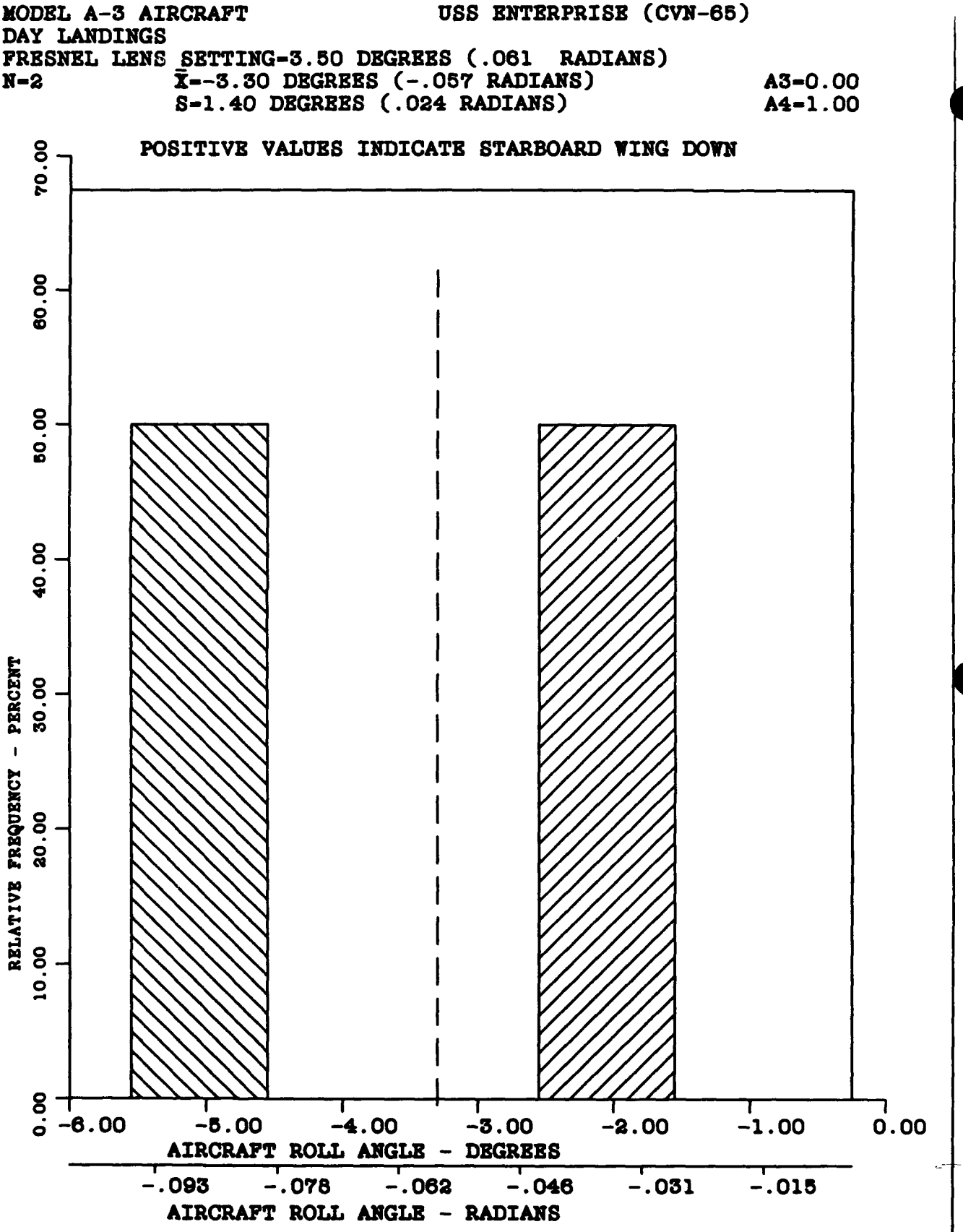


FIGURE P-29 FREQUENCY DISTRIBUTION OF AIRCRAFT ROLL ANGLE AT FREE FLIGHT

MODEL A-3 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-2 $\bar{X}$=-3.30 DEGREES (-.057 RADIANS) A3=0.00
S=1.40 DEGREES (.024 RADIANS) A4=1.00
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE STARBOARD WING DOWN

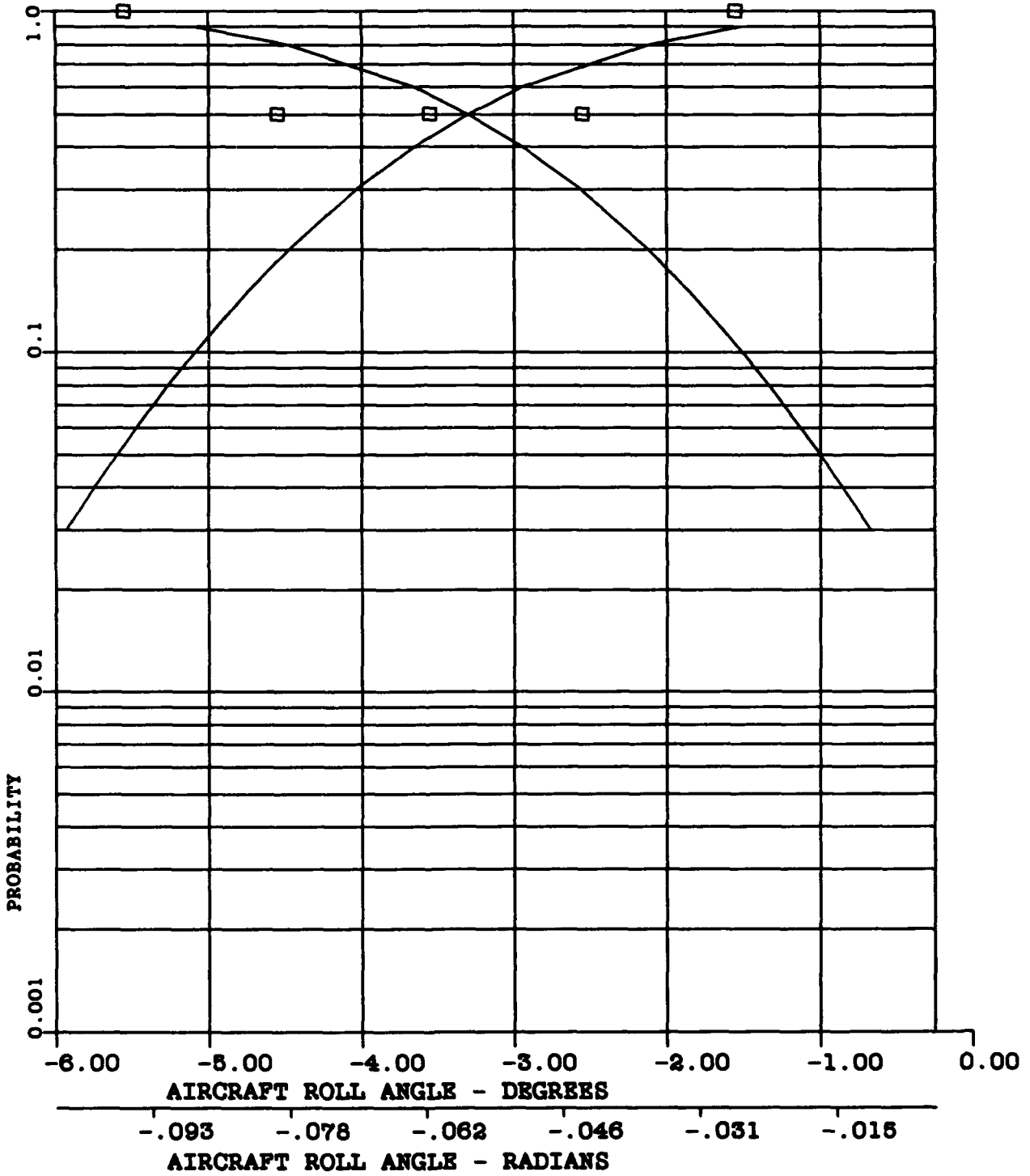


FIGURE P-30 PROBABILITY DISTRIBUTION OF AIRCRAFT ROLL ANGLE AT FREE FLIGHT

MODEL A-3 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-23 $\bar{X}$-242.78 FEET (74.00 METRES) A3=-.27
S-34.92 FEET (10.64 METRES) A4-3.75

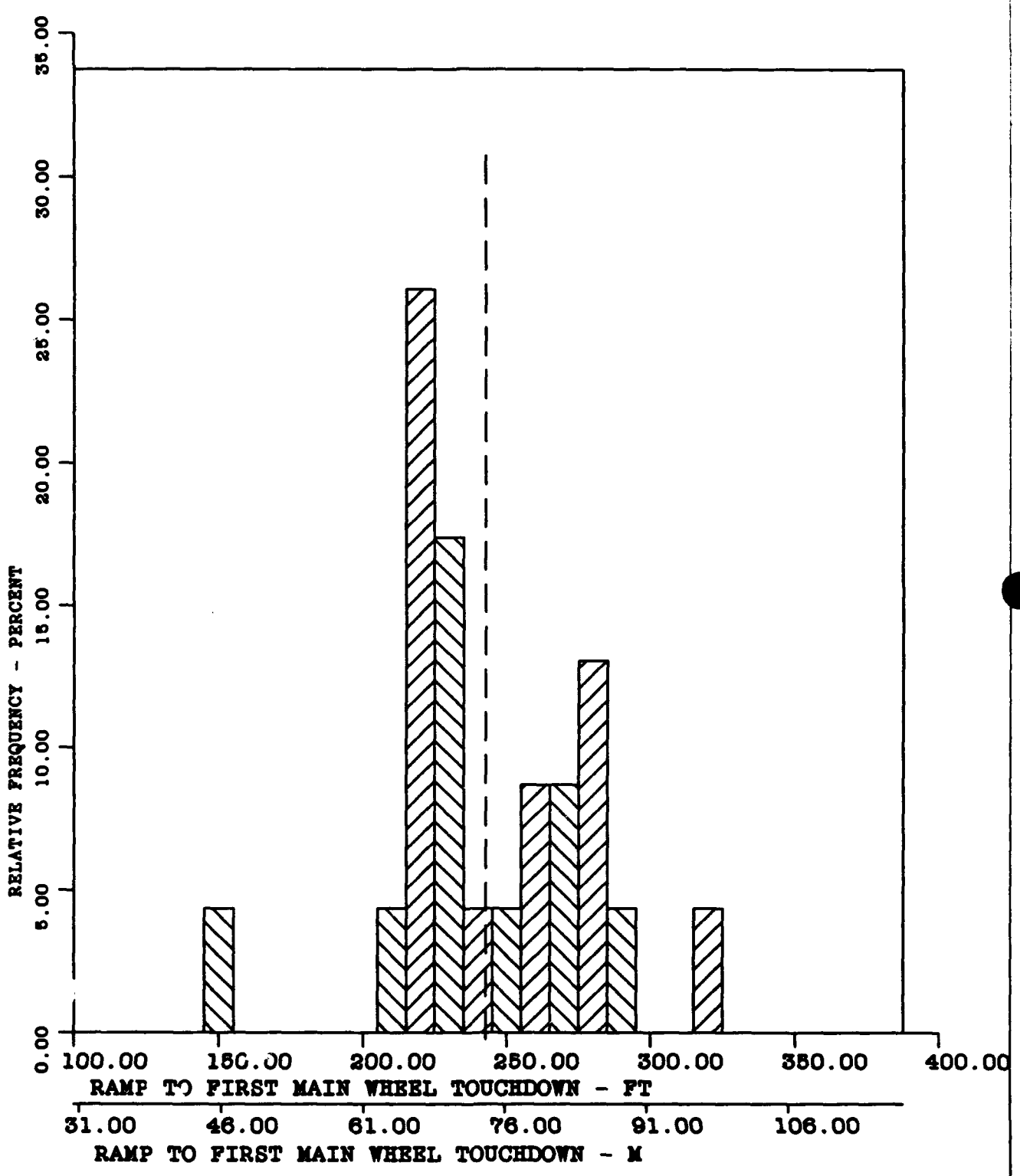


FIGURE P-31 FREQUENCY DISTRIBUTION OF DISTANCE FROM RAMP TO FIRST MAIN WHEEL TOUCHDOWN POINT

MODEL A-3 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-23 $\bar{X}$-242.78 FEET (74.00 METRES) A3=-.27
S-34.92 FEET (10.64 METRES) A4-3.75
CURVE FITTED - NORMAL

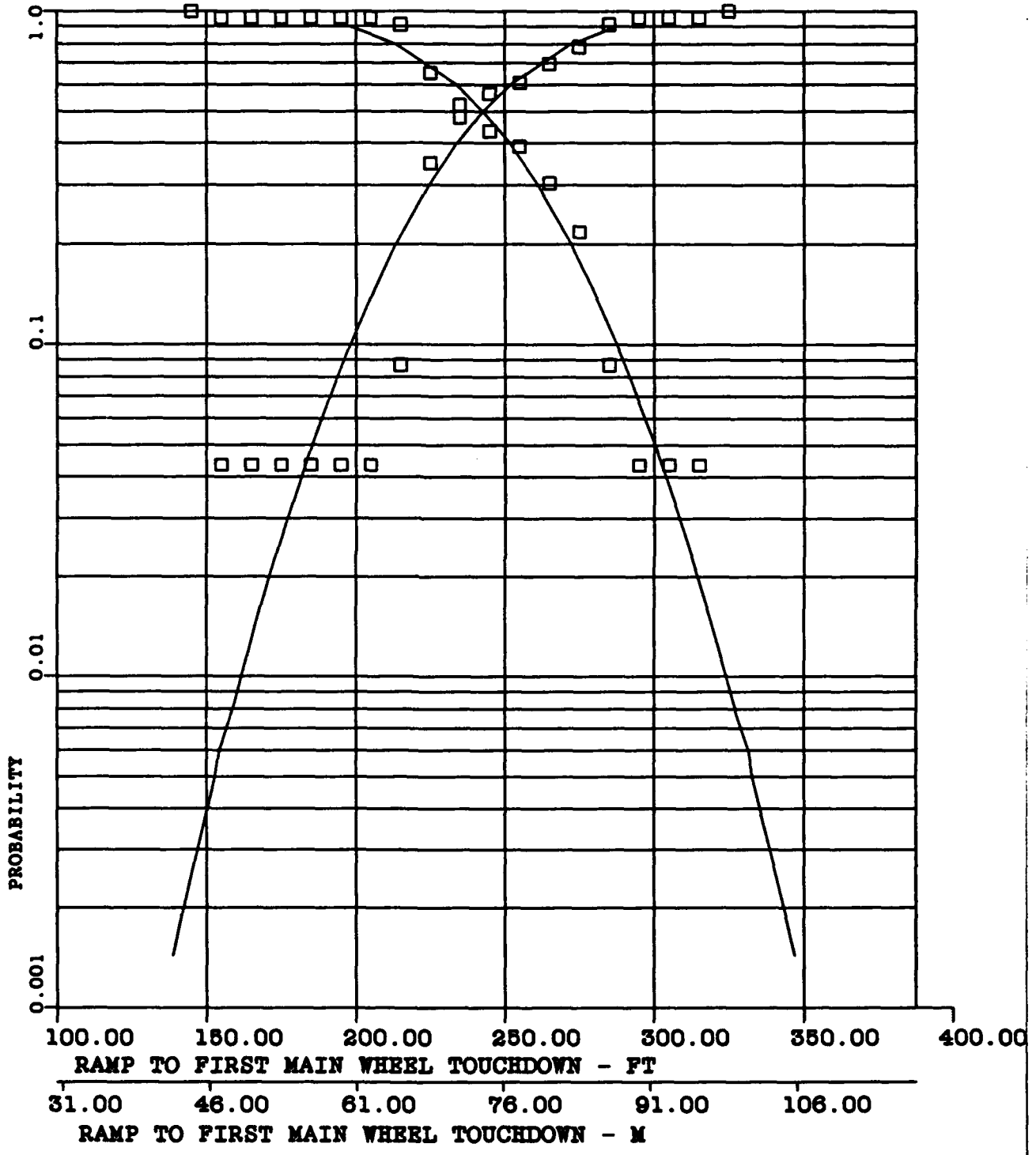


FIGURE P-32 PROBABILITY DISTRIBUTION OF DISTANCE FROM RAMP TO FIRST MAIN WHEEL TOUCHDOWN POINT

MODEL A-3 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N=23 $\bar{X}$=-8.86 FEET (-2.70 METRES) A3=-.24
S=4.07 FEET (1.24 METRES) A4=1.98

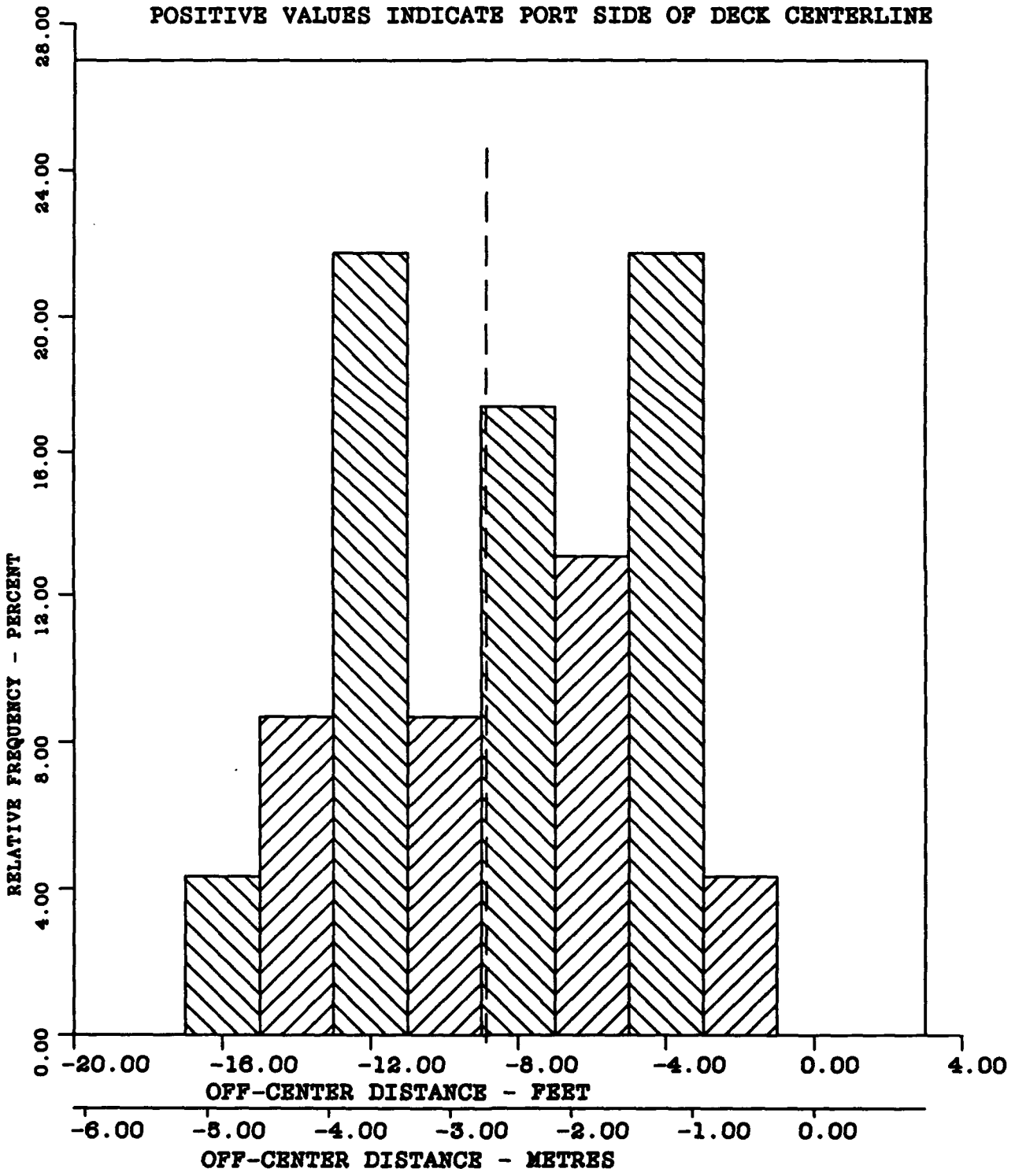


FIGURE P-33 FREQUENCY DISTRIBUTION OF AIRCRAFT CENTERLINE OFF-CNTR DISTANCE AT 1ST MAIN WHEEL TOUCHDOWN

MODEL A-3 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-23 $\bar{X}$=-8.86 FEET (-2.70 METRES) A3=-.24
S=4.07 FEET (1.24 METRES) A4=1.98
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE PORT SIDE OF DECK CENTERLINE

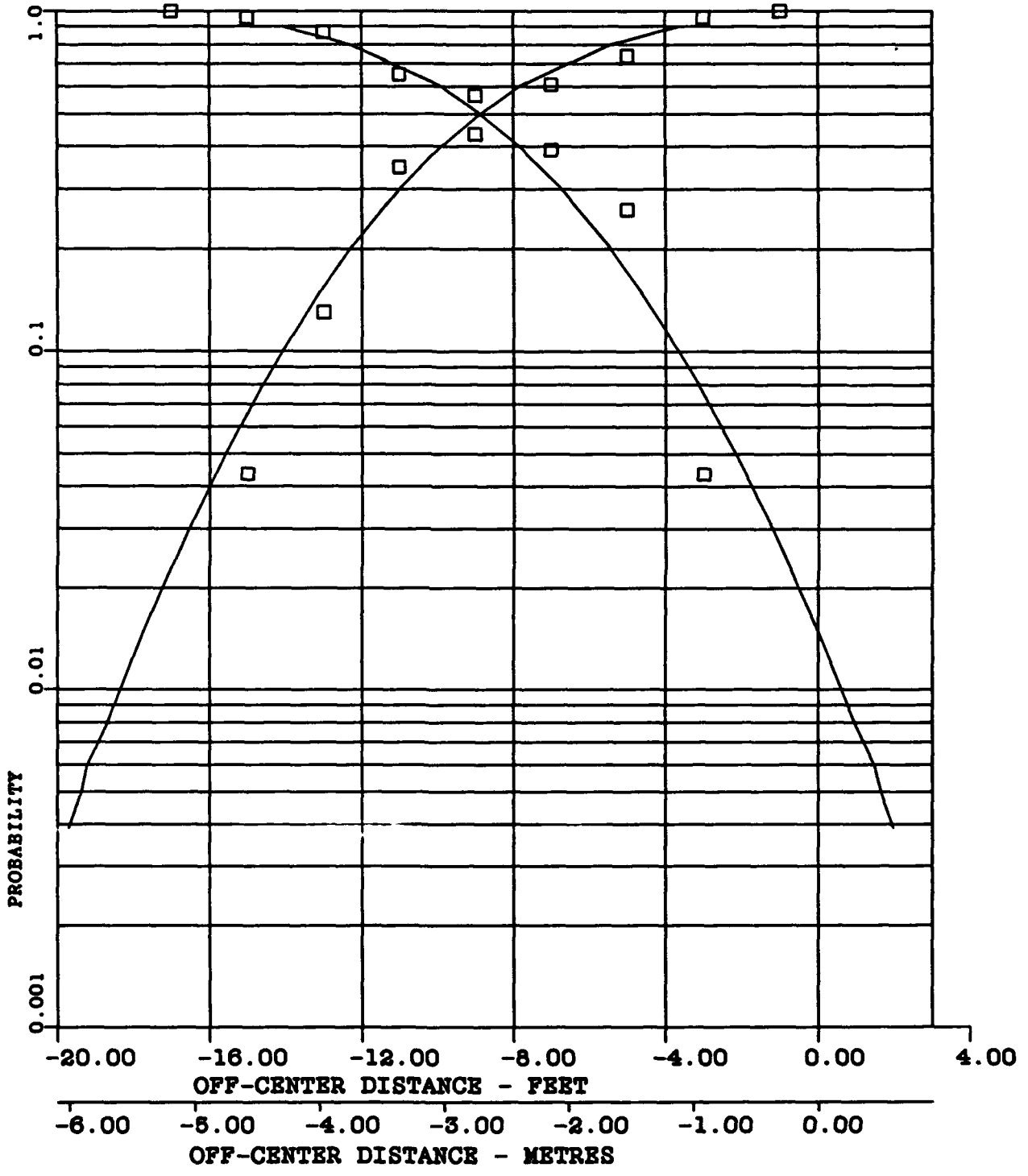


FIGURE P-34 PROBABILITY DISTRIBUTION OF AIRCRAFT OFF-CENTER DISTANCE AT 1ST MAIN WHEEL TOUCHDOWN

MODEL A-3 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-16 $\bar{X}$-2.56 A3-.38
S-.86 A4-2.21

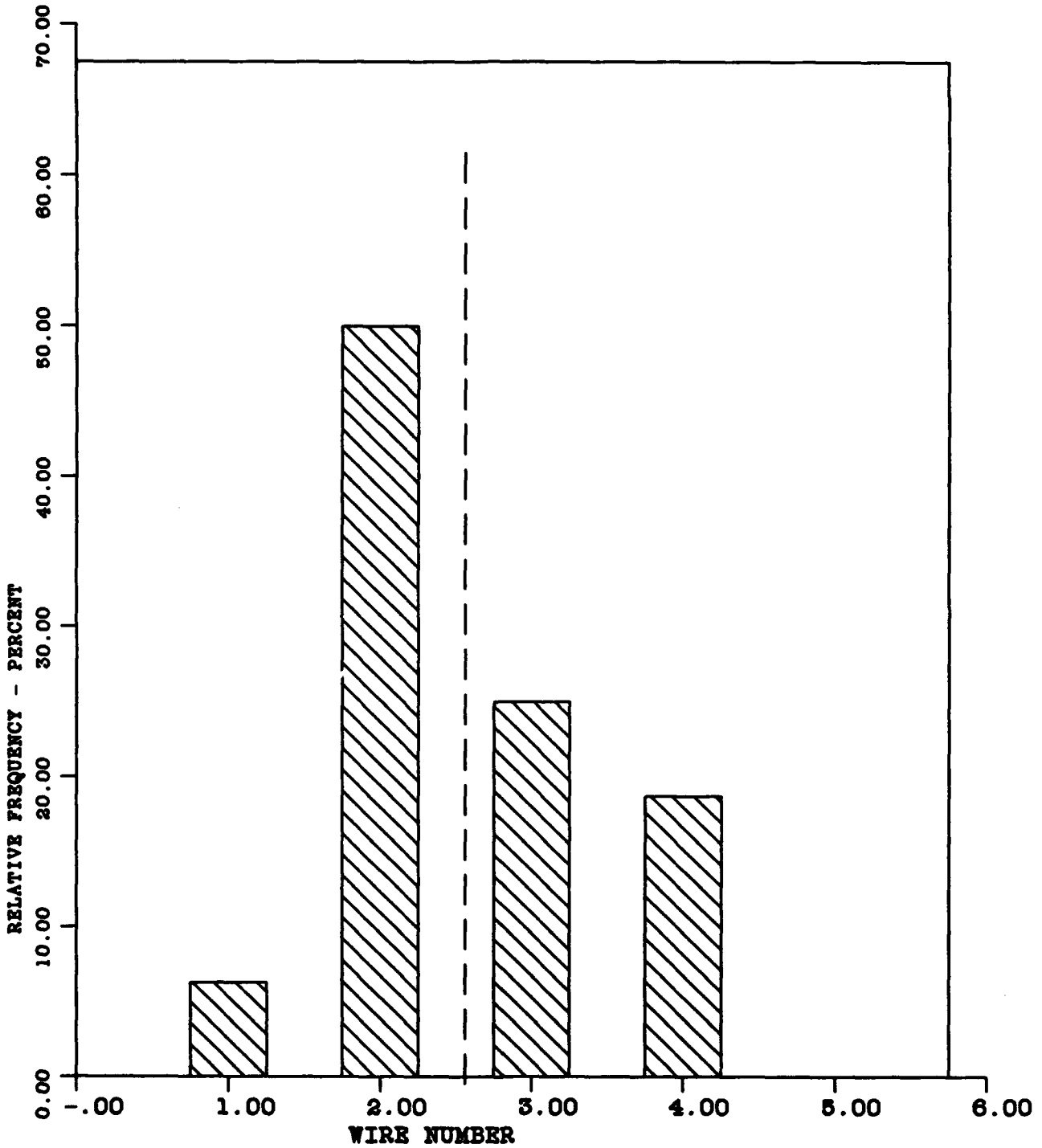


FIGURE P-35 FREQUENCY DISTRIBUTION OF ARRESTMENT WIRE NUMBER ENGAGED

MODEL A-3 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-23 $\bar{X}$-3.15 DEGREES (.054 RADIANS) A3=-.20
S=.75 DEGREES (.013 RADIANS) A4-2.32

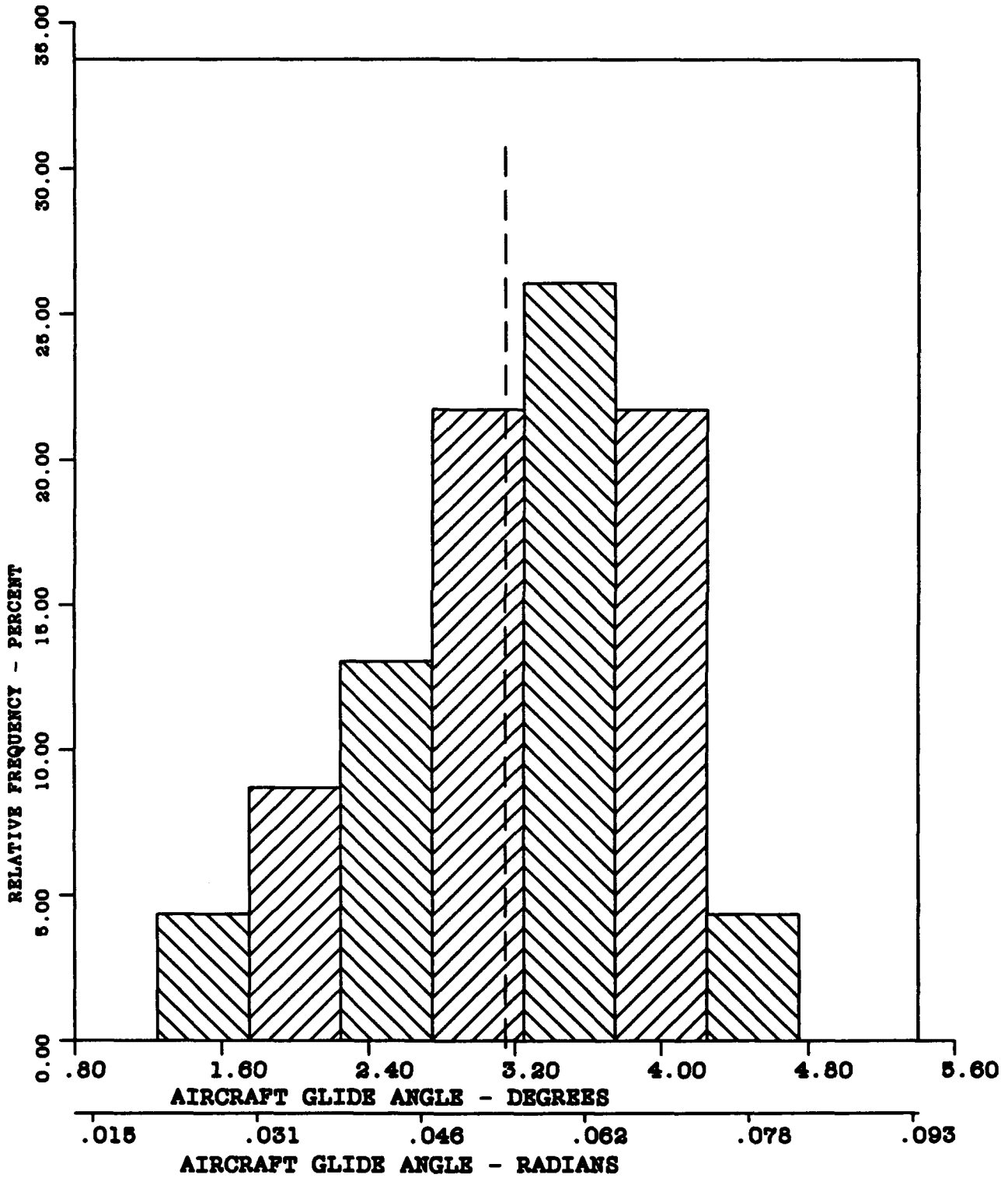


FIGURE P-36 FREQUENCY DISTRIBUTION OF AIRCRAFT GLIDE ANGLE - INSTANTANEOUS METHOD

MODEL A-3 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-23 $\bar{X}$-3.70 DEGREES (.064 RADIANS) A3=.17
S=.72 DEGREES (.012 RADIANS) A4=2.56

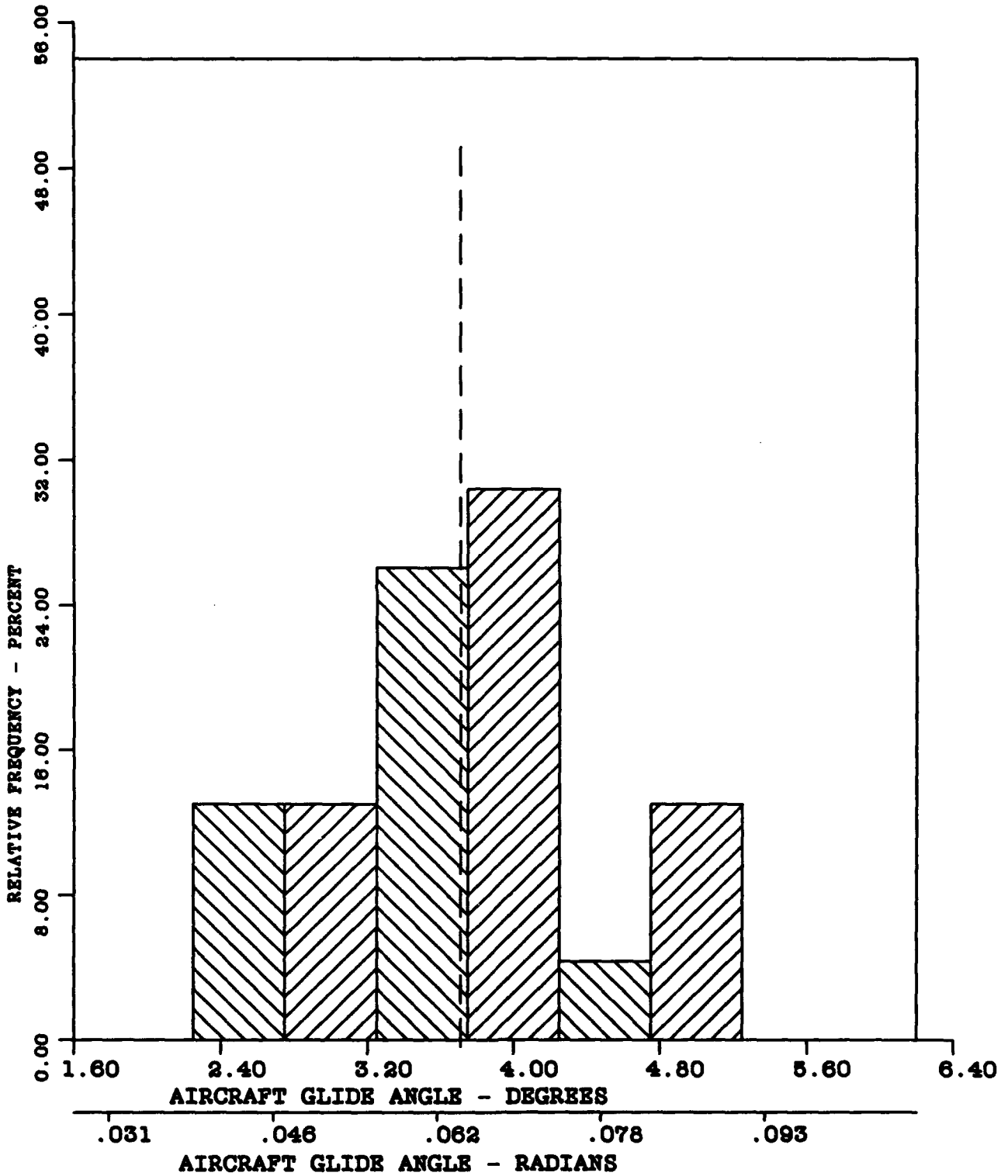


FIGURE P-37 FREQUENCY DISTRIBUTION OF AIRCRAFT GLIDE ANGLE - GEOMETRIC METHOD

MODEL A-3 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-23 $\bar{X}$-13.81 FEET (4.21 METRES) A3=-.11
S-2.80 FEET (.85 METRES) A4-2.11

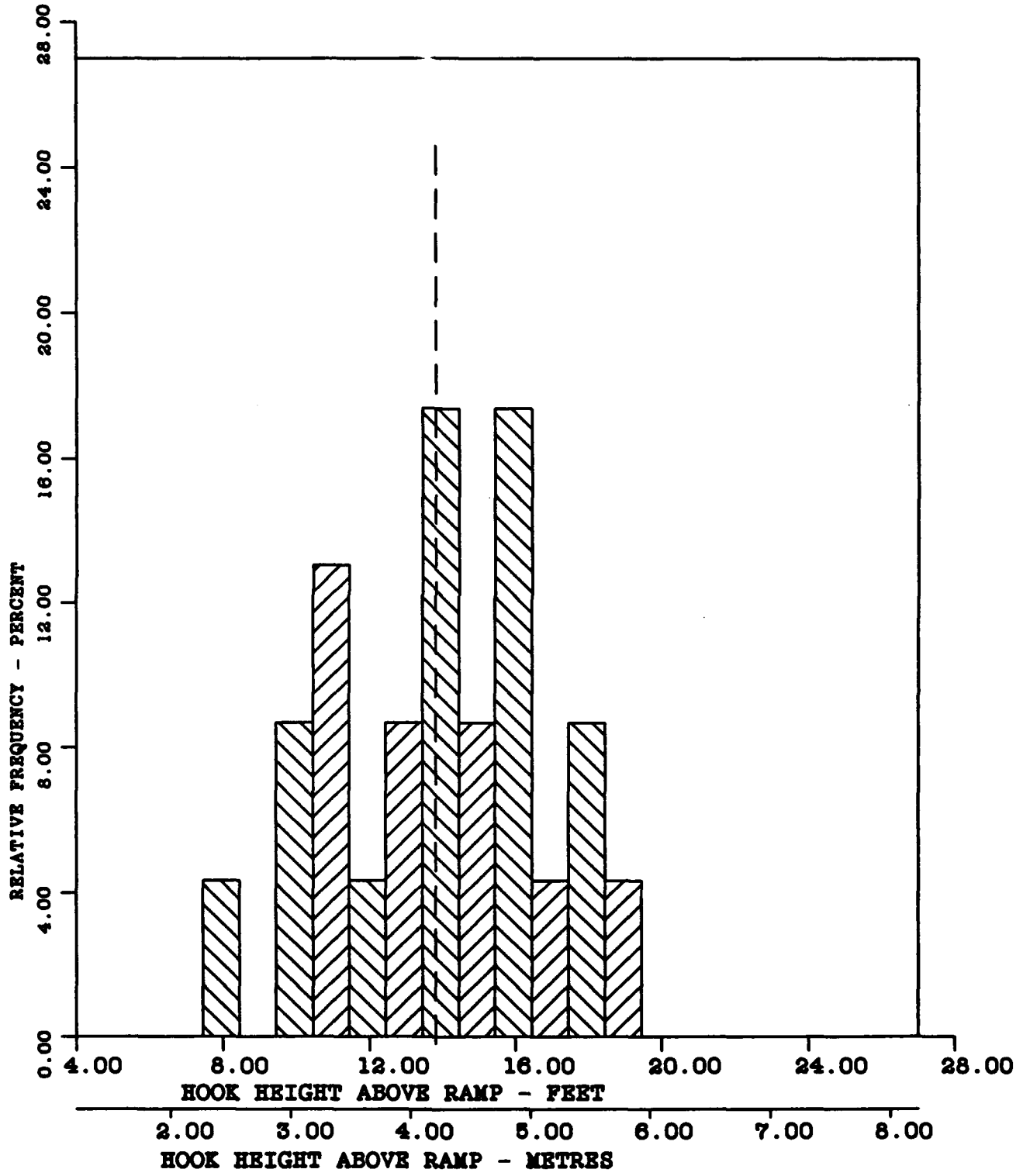


FIGURE P-38 FREQUENCY DISTRIBUTION OF AIRCRAFT ARRESTMENT HOOK HEIGHT ABOVE CARRIER RAMP

MODEL A-3 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-23 $\bar{X}$-13.81 FEET (4.21 METRES) A3=-.11
S-2.80 FEET (.85 METRES) A4-2.11
CURVE FITTED - NORMAL

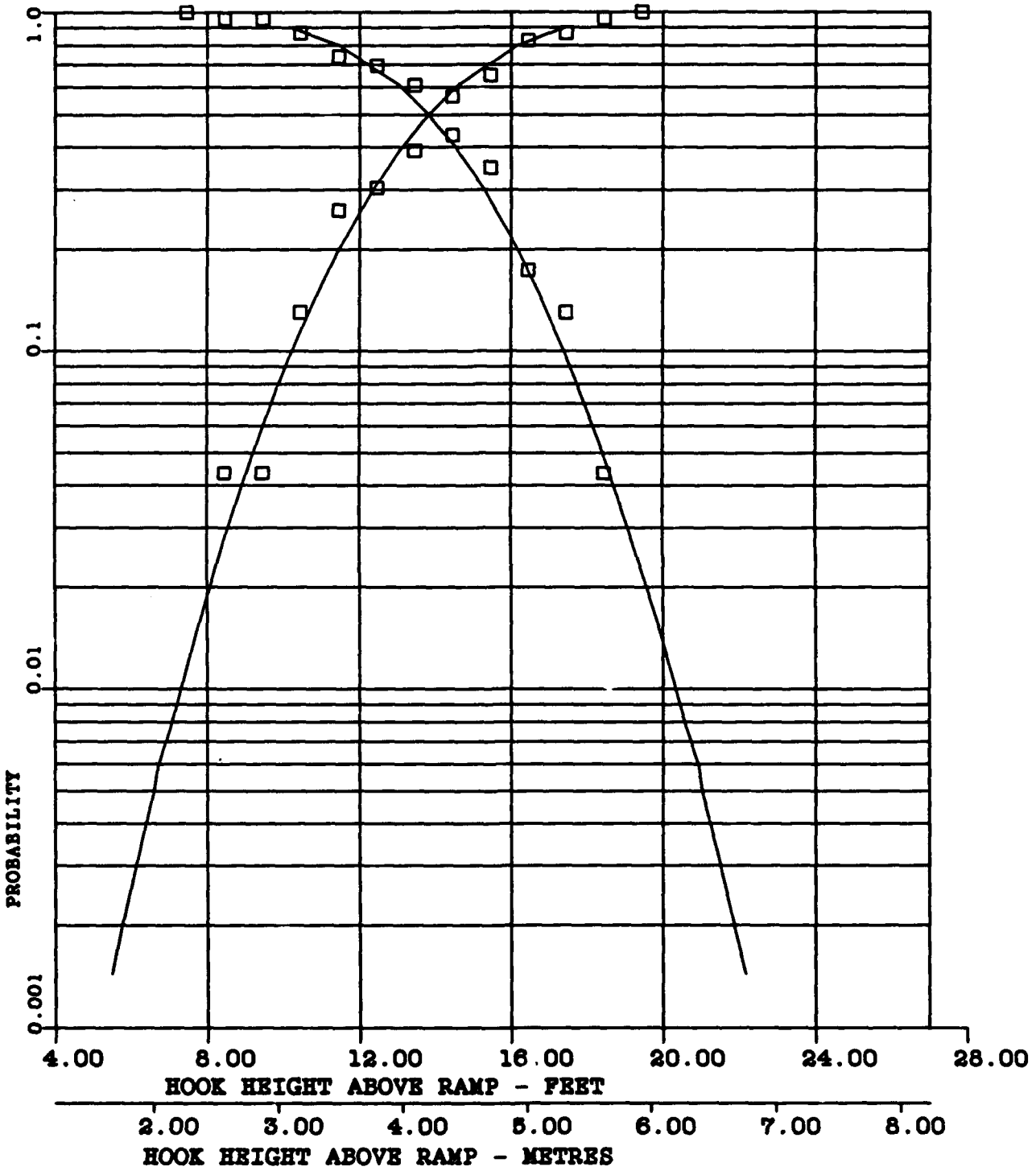


FIGURE P-39 PROBABILITY DISTRIBUTION OF ARRESTMENT HOOK HEIGHT ABOVE CARRIER RAMP

MODEL A-3 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-23 $\bar{X}$-100.48 KNOTS (51.69 METRES/SEC) A3=.50
S-4.51 KNOTS (2.32 METRES/SEC) A4=1.93

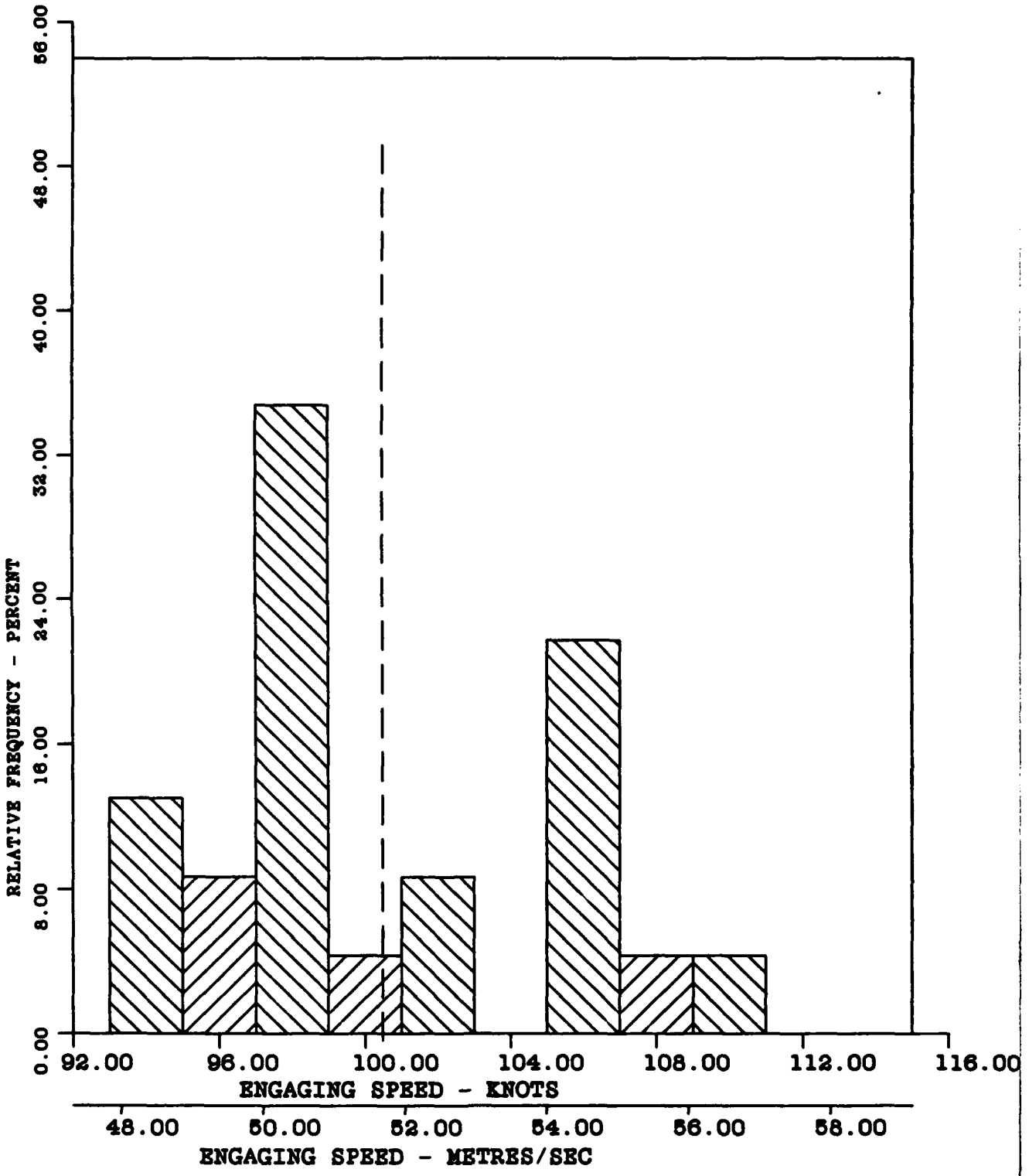


FIGURE P-40 FREQUENCY DISTRIBUTION OF AIRCRAFT ENGAGING SPEED AT FIRST MAIN WHEEL TOUCHDOWN

MODEL A-3 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-23 $\bar{X}$-100.48 KNOTS (51.69 METRES/SEC) A3-.50
S-4.51 KNOTS (2.32 METRES/SEC) A4-1.93
CURVE FITTED - NORMAL

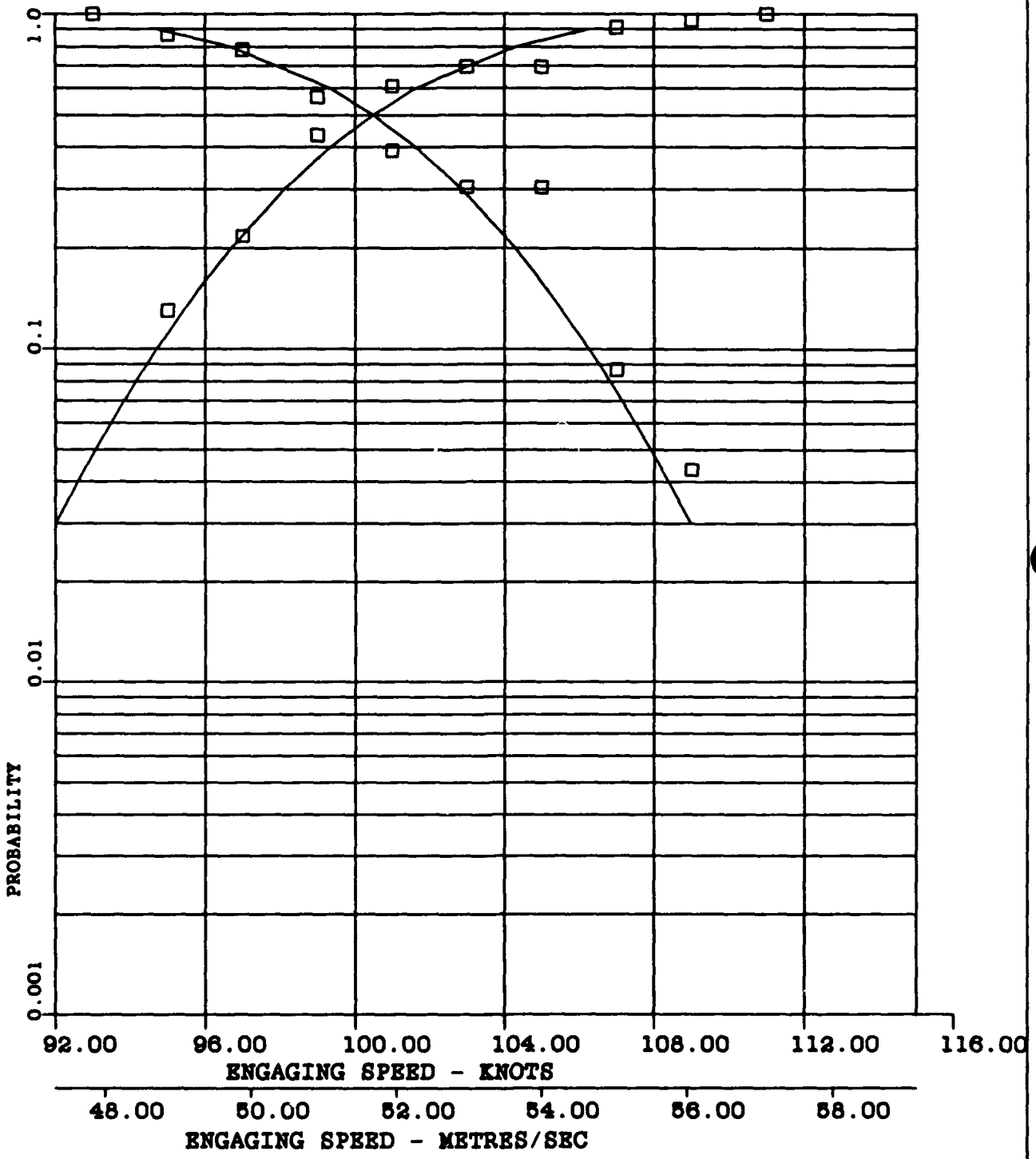


FIGURE P-41 PROBABILITY DISTRIBUTION OF ENGAGING SPEED AT FIRST MAIN WHEEL TOUCHDOWN

MODEL A-3 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-22 $\bar{X}$-113.15 KNOTS (58.20 METRES/SEC) A3=-.80
S-2.14 KNOTS (1.10 METRES/SEC) A4-2.92

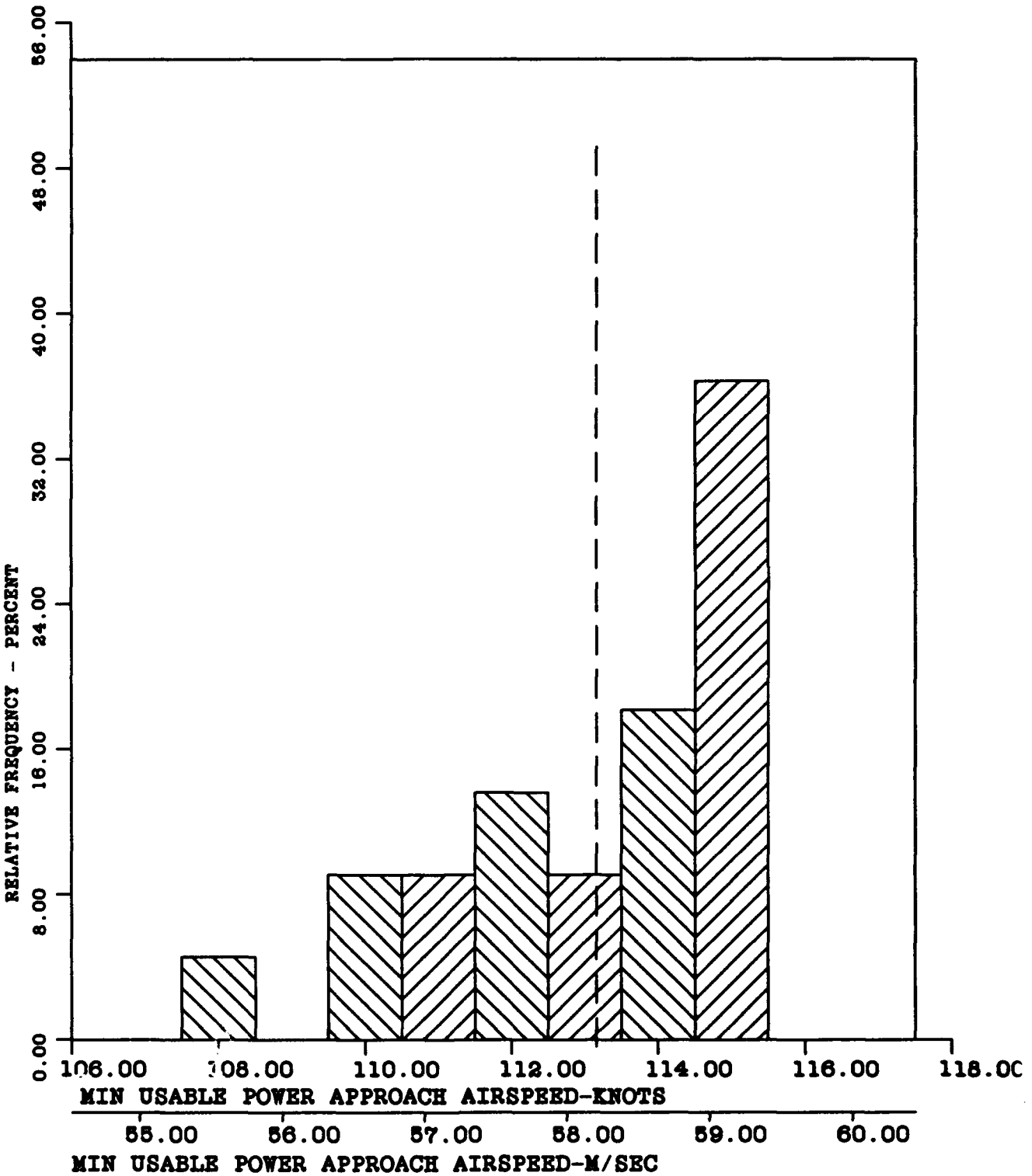


FIGURE P-42 FREQUENCY DISTRIBUTION OF MINIMUM USABLE POWER APPROACH AIRSPEED

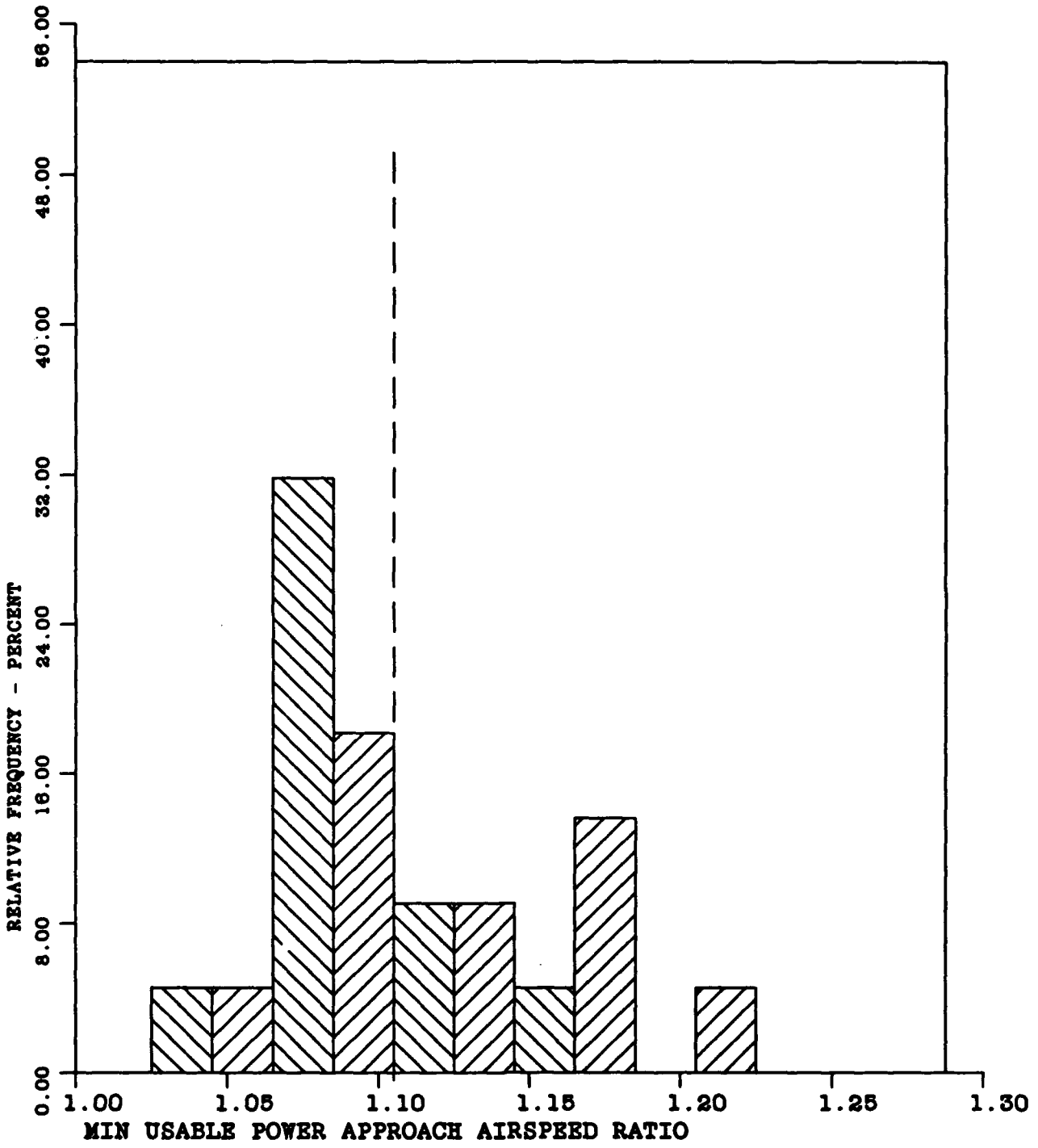


FIGURE P-43 FREQUENCY DISTRIBUTION OF MINIMUM USABLE POWER APPROACH AIRSPEED RATIO - FILM

MODEL A-3 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-19 $\bar{X}$=-.58 DEGREES (-.010 RADIANS) A3=-.73
S=.40 DEGREES (.007 RADIANS) A4=2.68

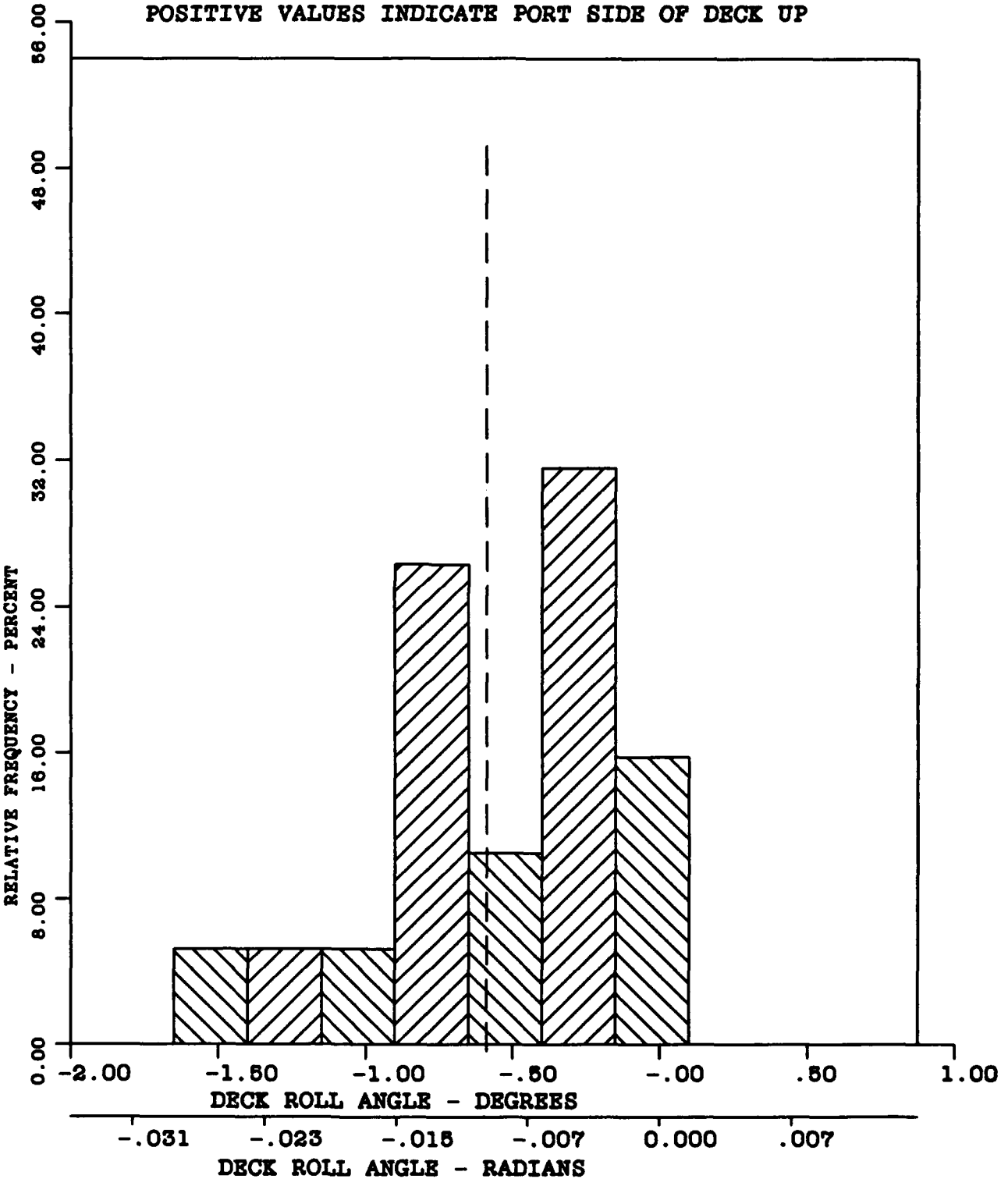


FIGURE P-44 FREQUENCY DISTRIBUTION OF CARRIER DECK ROLL MOTION

MODEL A-3 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-19 $\bar{X}$=-.58 DEGREES (-.010 RADIANS) A3=-.73
S=.40 DEGREES (.007 RADIANS) A4-2.68
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE PORT SIDE OF DECK UP

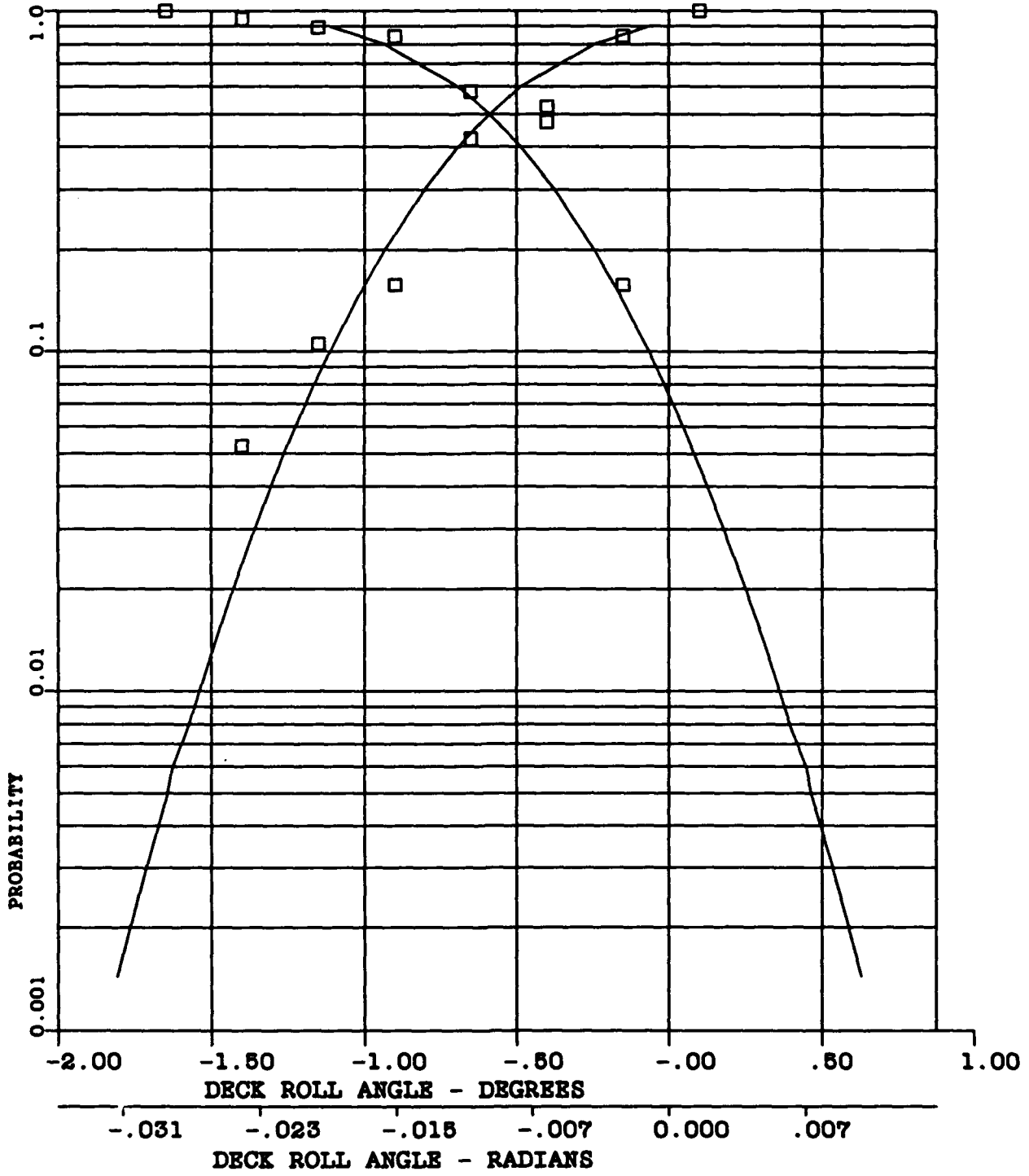


FIGURE P-45 PROBABILITY DISTRIBUTION OF CARRIER DECK ROLL MOTION

MODEL A-3 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-19 $\bar{X}$=-.27 DEGREES (-.004 RADIANS) A3=-.60
S=.13 DEGREES (.002 RADIANS) A4=2.04

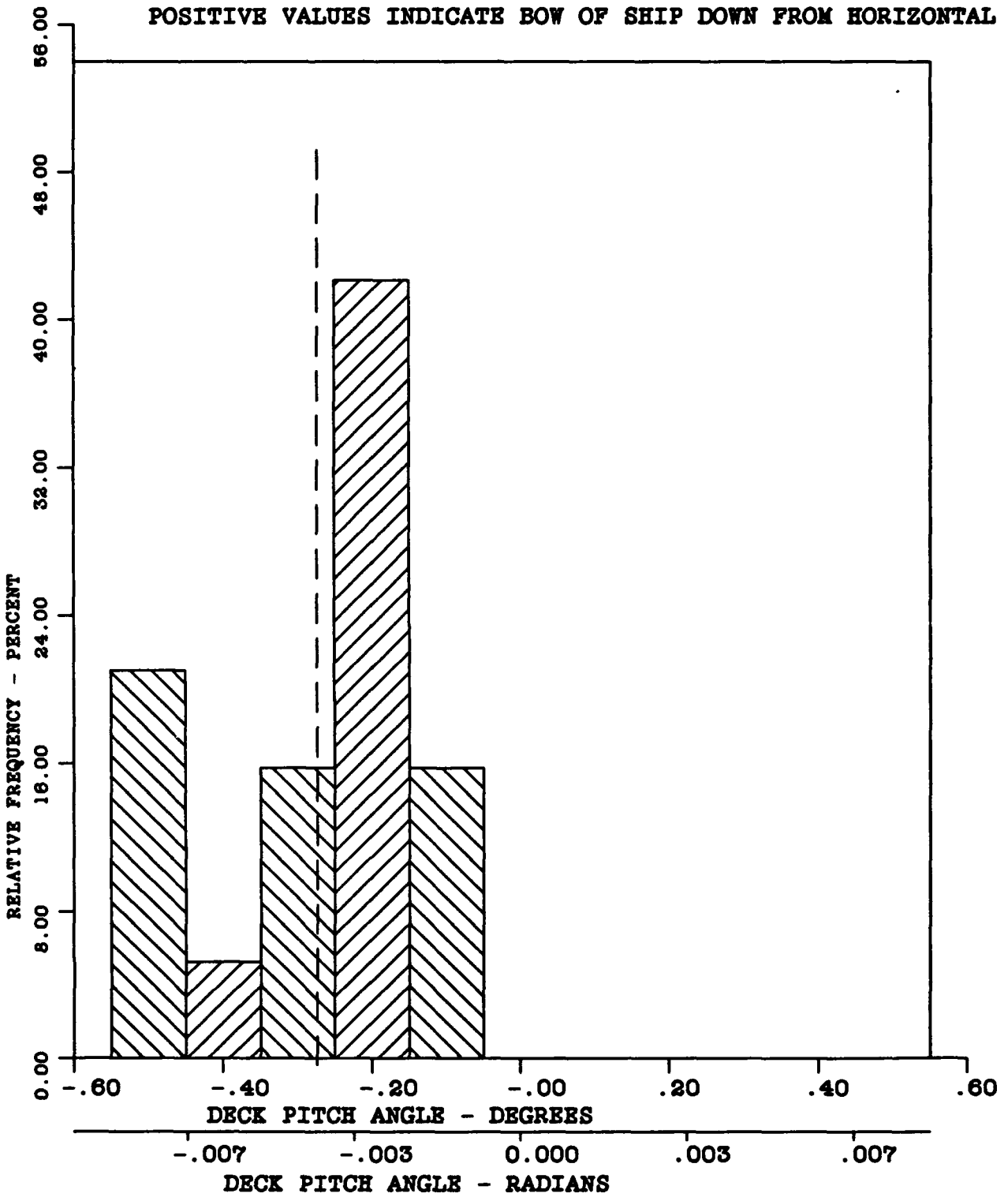


FIGURE P-46 FREQUENCY DISTRIBUTION OF CARRIER DECK PITCH MOTION

MODEL A-3 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=19 $\bar{X}$=-.27 DEGREES (-.004 RADIANS) A3=-.60
S=.13 DEGREES (.002 RADIANS) A4=2.04
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE BOW OF SHIP DOWN FROM HORIZONTAL

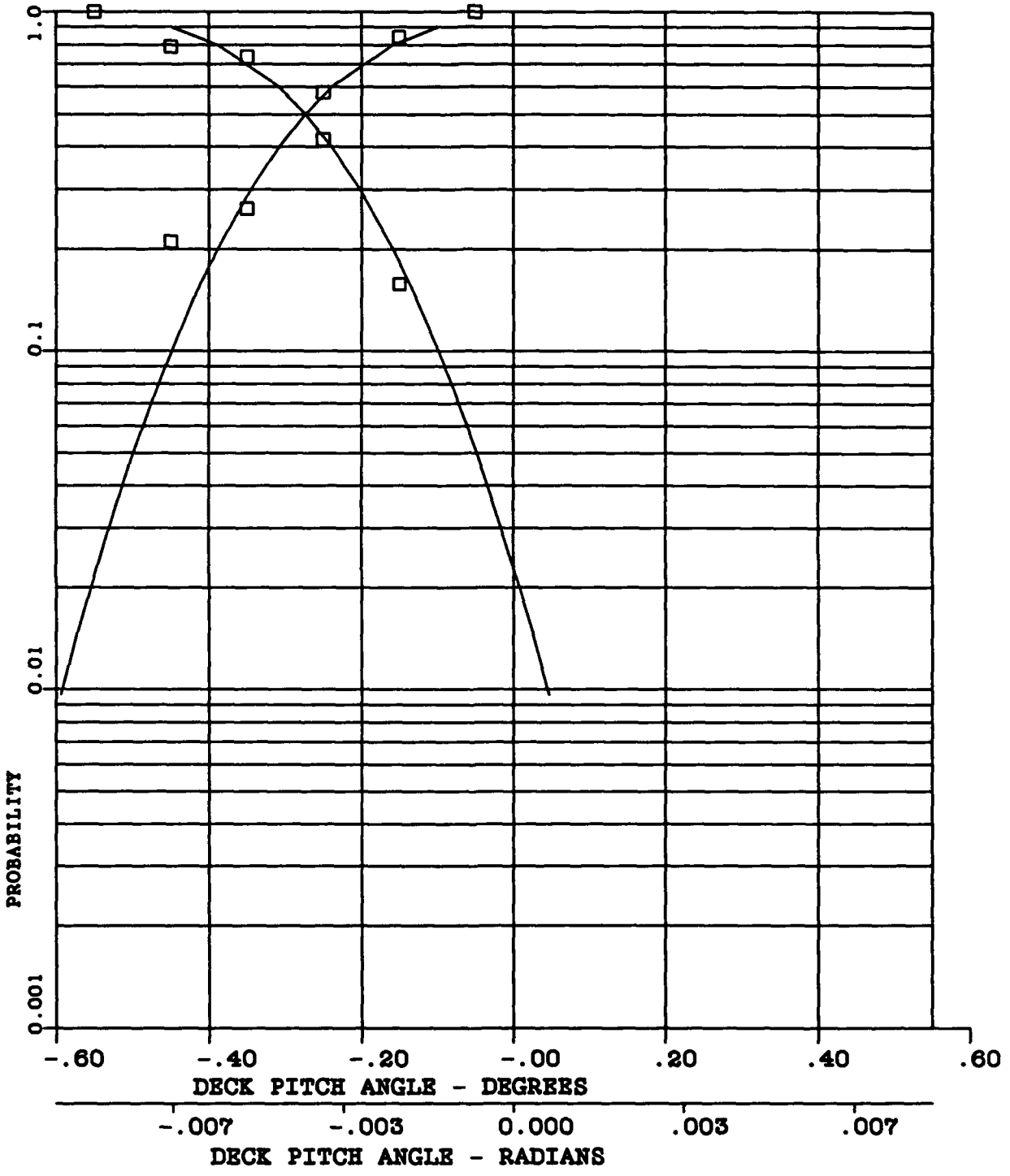


FIGURE P-47 PROBABILITY DISTRIBUTION OF CARRIER DECK PITCH MOTION

MODEL A-3 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-22 $\bar{X}$-48109.19 POUNDS (21822.33 KILOGRAMS) A3=-.76
S-1808.04 POUNDS (820.12 KILOGRAMS) A4-2.83

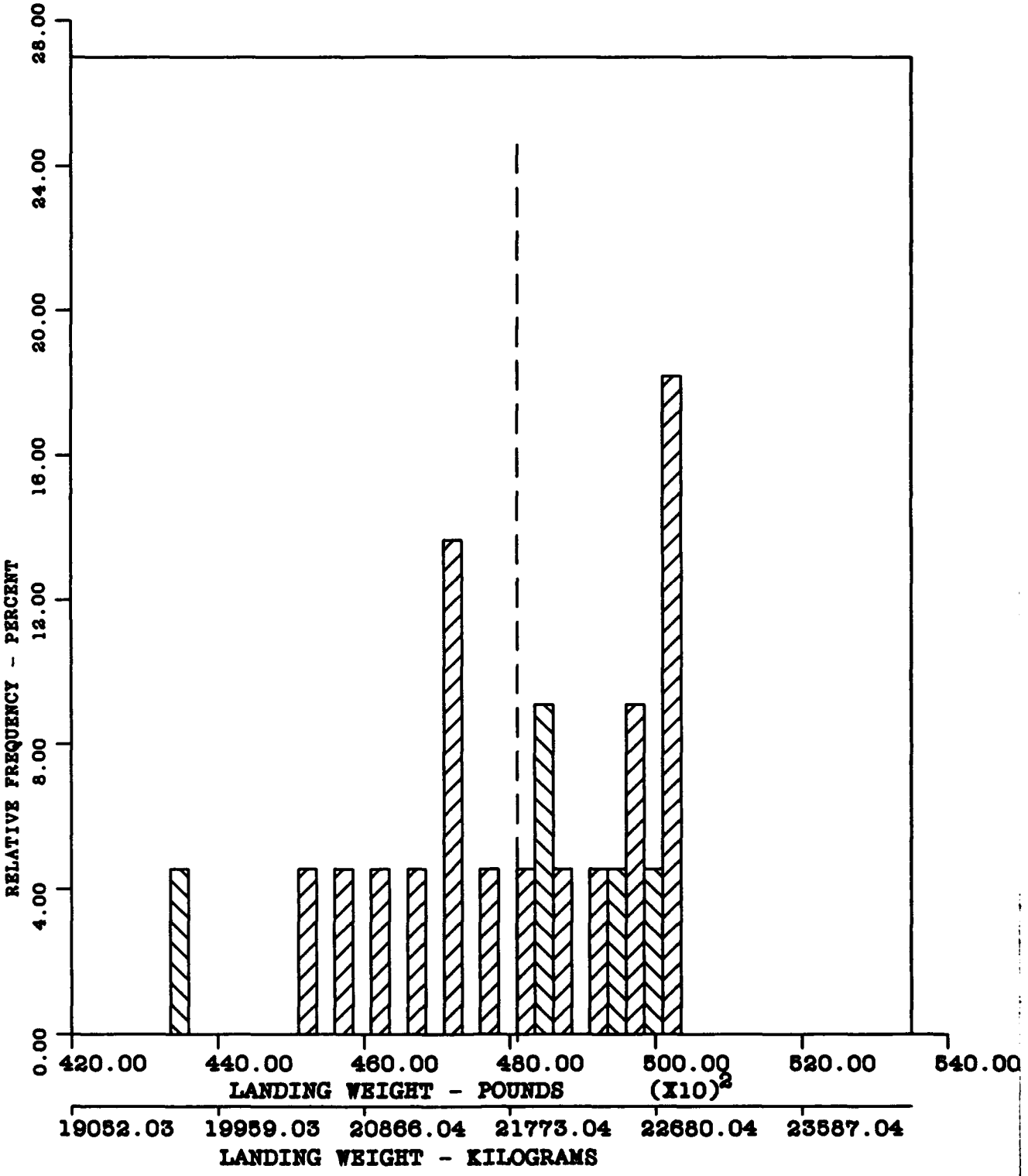


FIGURE P-48 FREQUENCY DISTRIBUTION OF AIRCRAFT LANDING WEIGHT

MODEL A-3 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=23 $\bar{X}$=-.18 DEG/SEC (-.003 RAD/SEC) A3=-.08
S=2.79 DEG/SEC (.048 RAD/SEC) A4=2.50

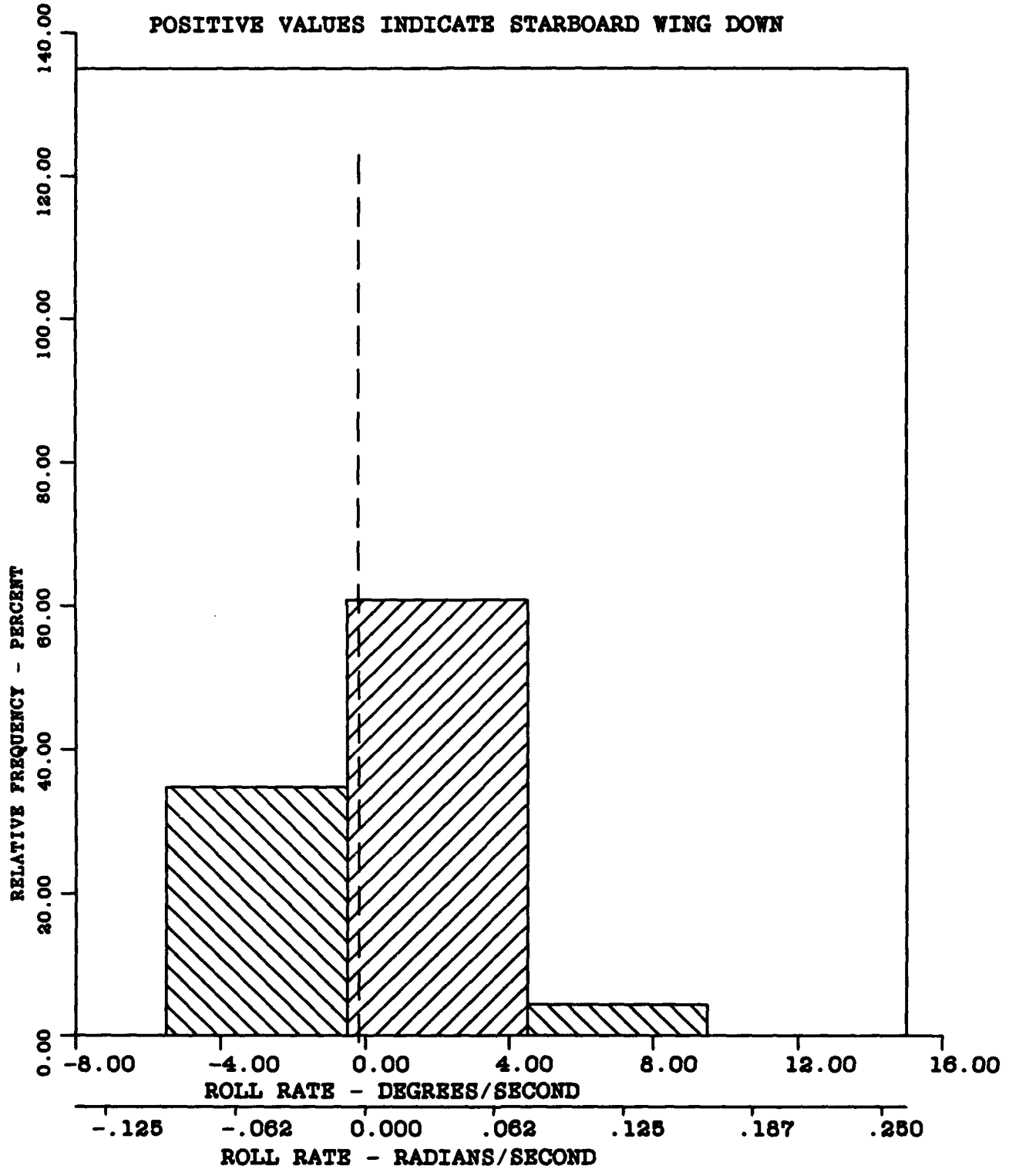


FIGURE P-49 FREQUENCY DISTRIBUTION OF ROLL RATE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL A-3 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-23 $\bar{X}$=-.18 DEG/SEC (-.003 RAD/SEC) A3=-.08
S-2.79 DEG/SEC (.048 RAD/SEC) A4-2.50
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE STARBOARD WING DOWN

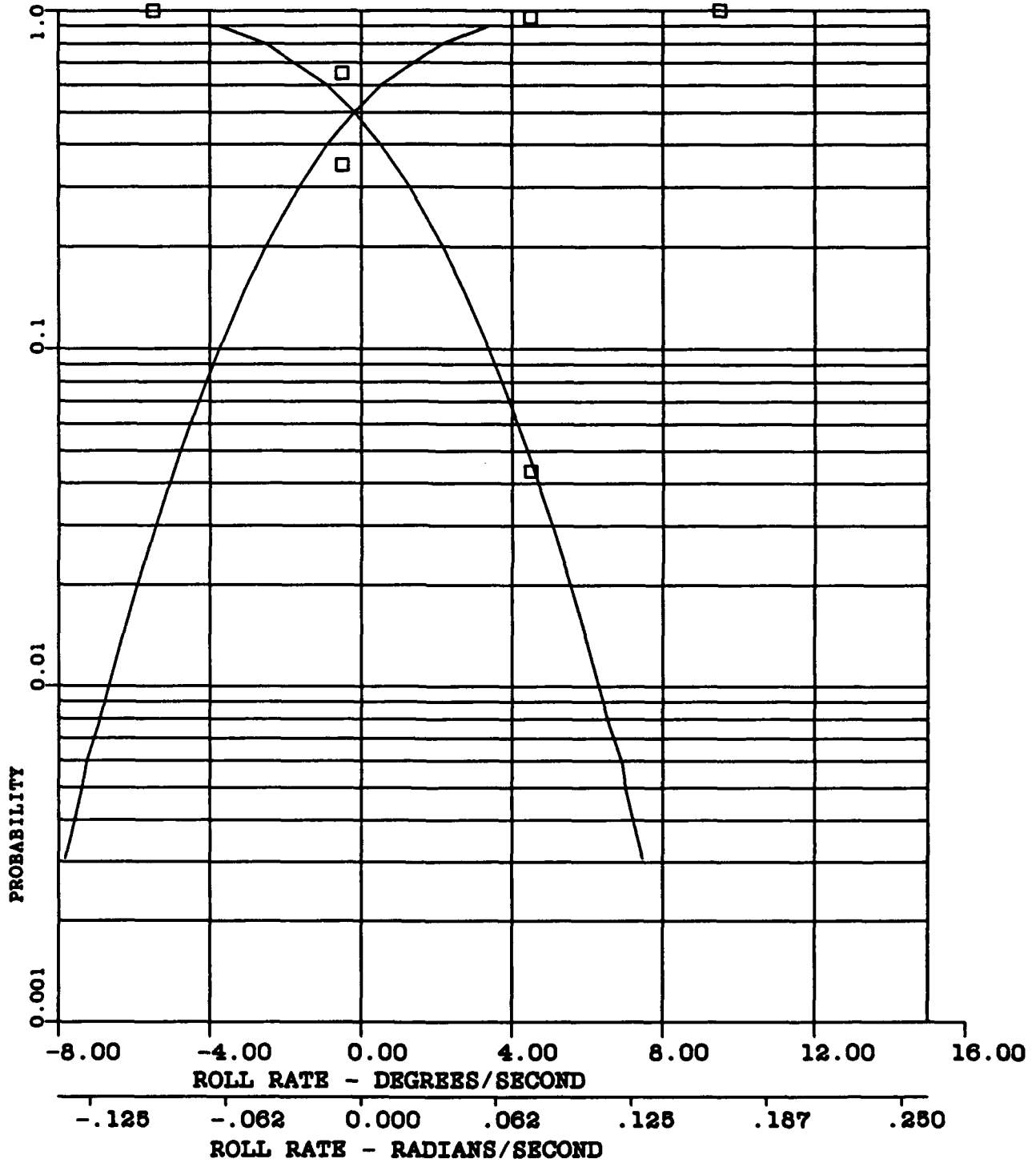


FIGURE P-50 PROBABILITY DISTRIBUTION OF ROLL RATE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL A-3 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-23 $\bar{X}$-1.71 DEG/SEC (.029 RAD/SEC) A3=-.26
S-2.61 DEG/SEC (.045 RAD/SEC) A4-2.66

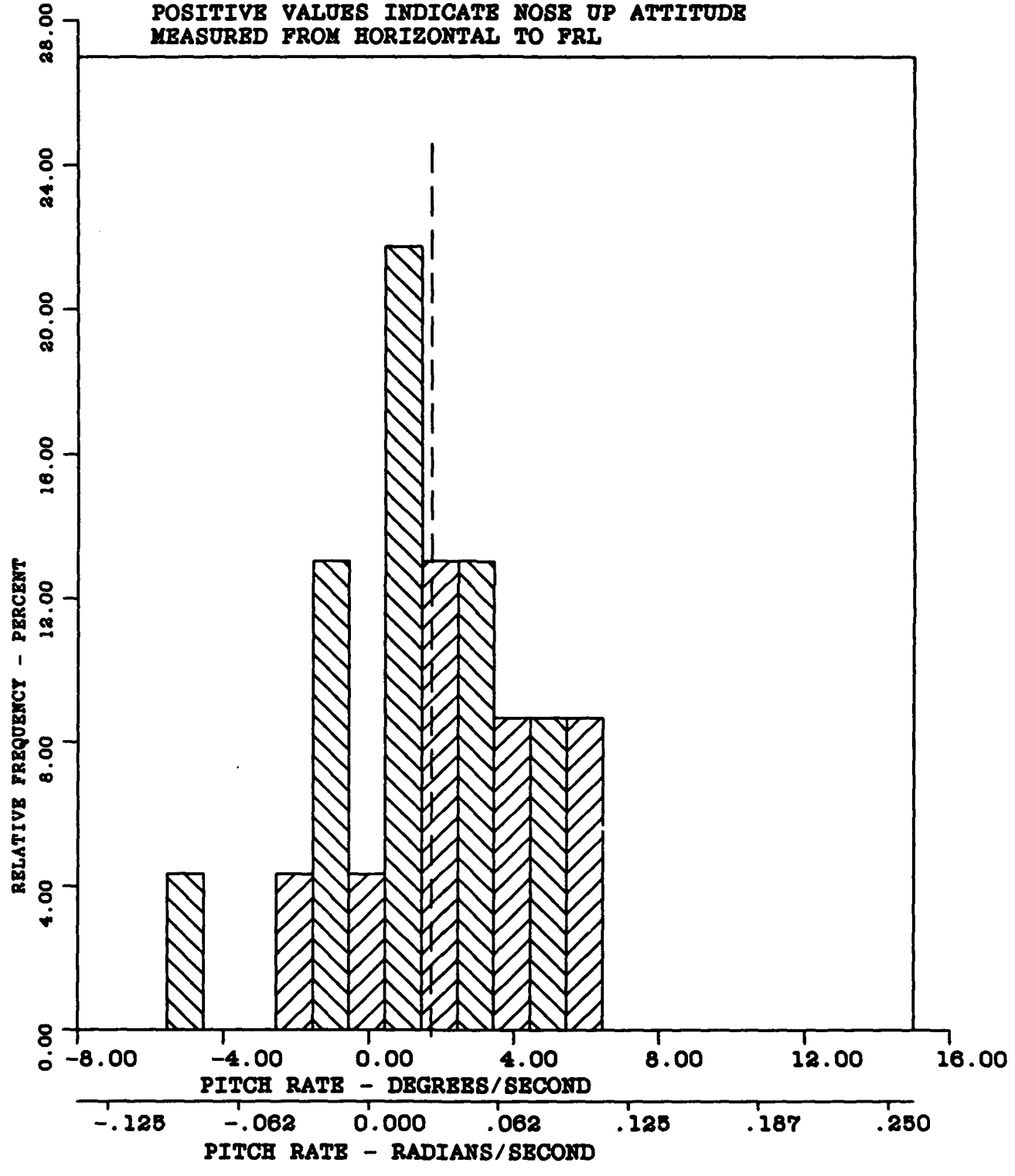


FIGURE P-51 FREQUENCY DISTRIBUTION OF PITCH RATE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL A-3 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-23 $\bar{X}$-1.71 DEG/SEC (.029 RAD/SEC) A3=-.26
S-2.61 DEG/SEC (.045 RAD/SEC) A4-2.66
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE NOSE UP ATTITUDE
MEASURED FROM HORIZONTAL TO FRL

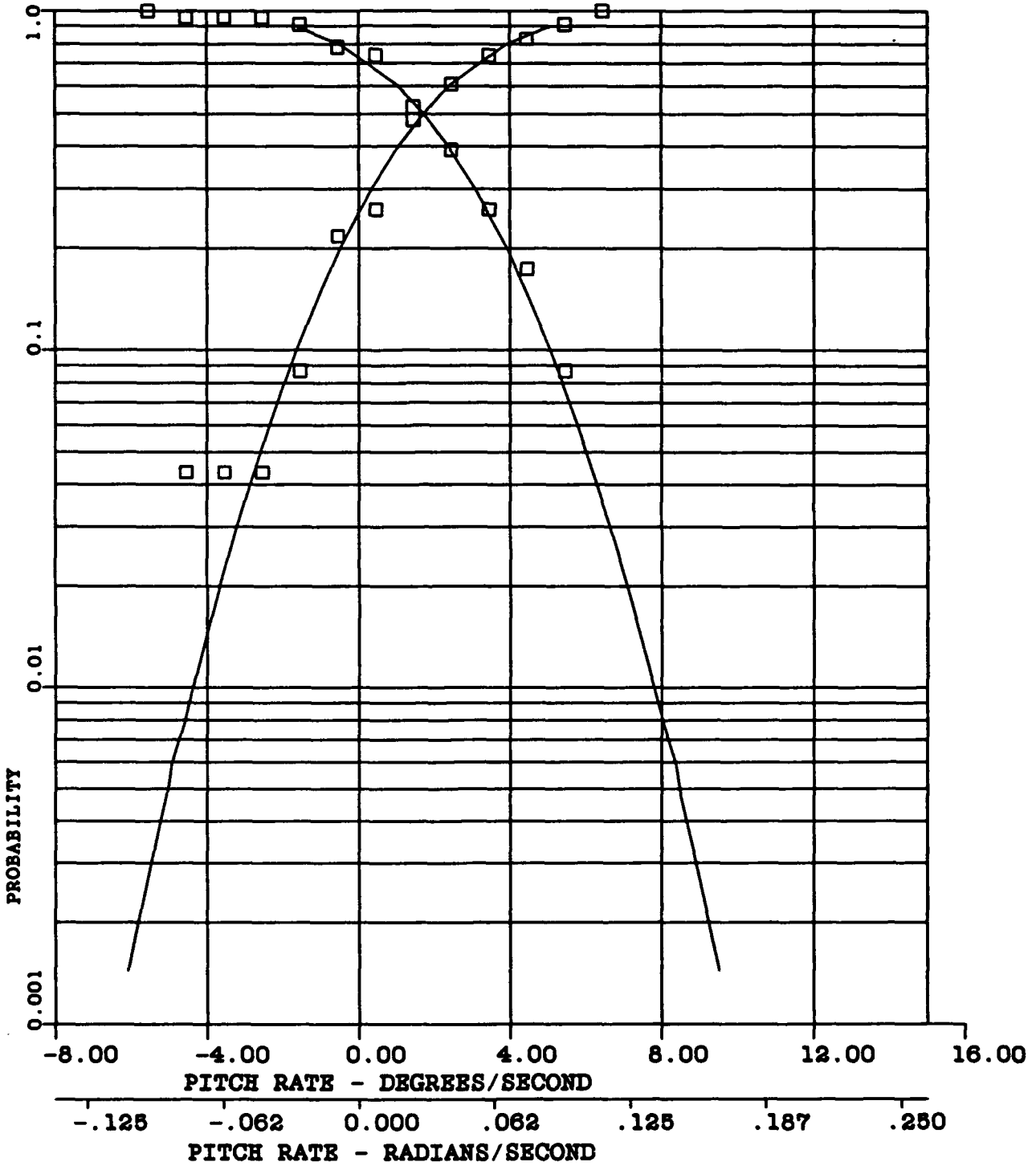


FIGURE P-52 PROBABILITY DISTRIBUTION OF PITCH RATE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL A-3 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING=3.50 DEGREES (.061 RADIANS)
N=23 $\bar{X}$=-3.36 DEGREES (-.058 RADIANS) A3=.48
S=1.24 DEGREES (.021 RADIANS) A4=4.22

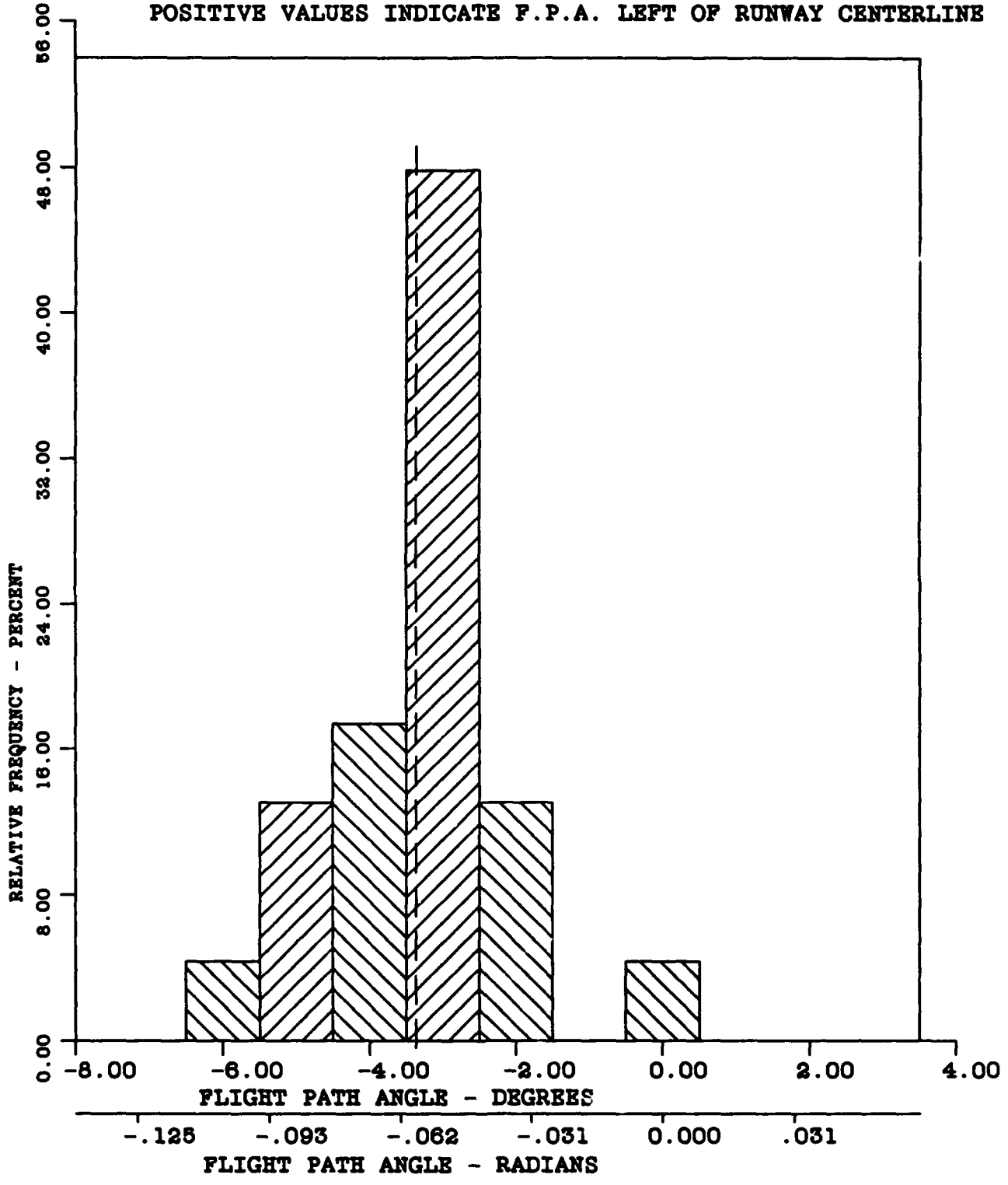


FIGURE P-53 FREQUENCY DISTRIBUTION OF AIRCRAFT FLIGHT PATH ANGLE AT TOUCHDOWN

MODEL A-3 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-23 $\bar{X}$=-3.36 DEGREES (-.058 RADIANS) A3=.48
S=1.24 DEGREES (.021 RADIANS) A4=4.22
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE F.P.A. LEFT OF RUNWAY CENTERLINE

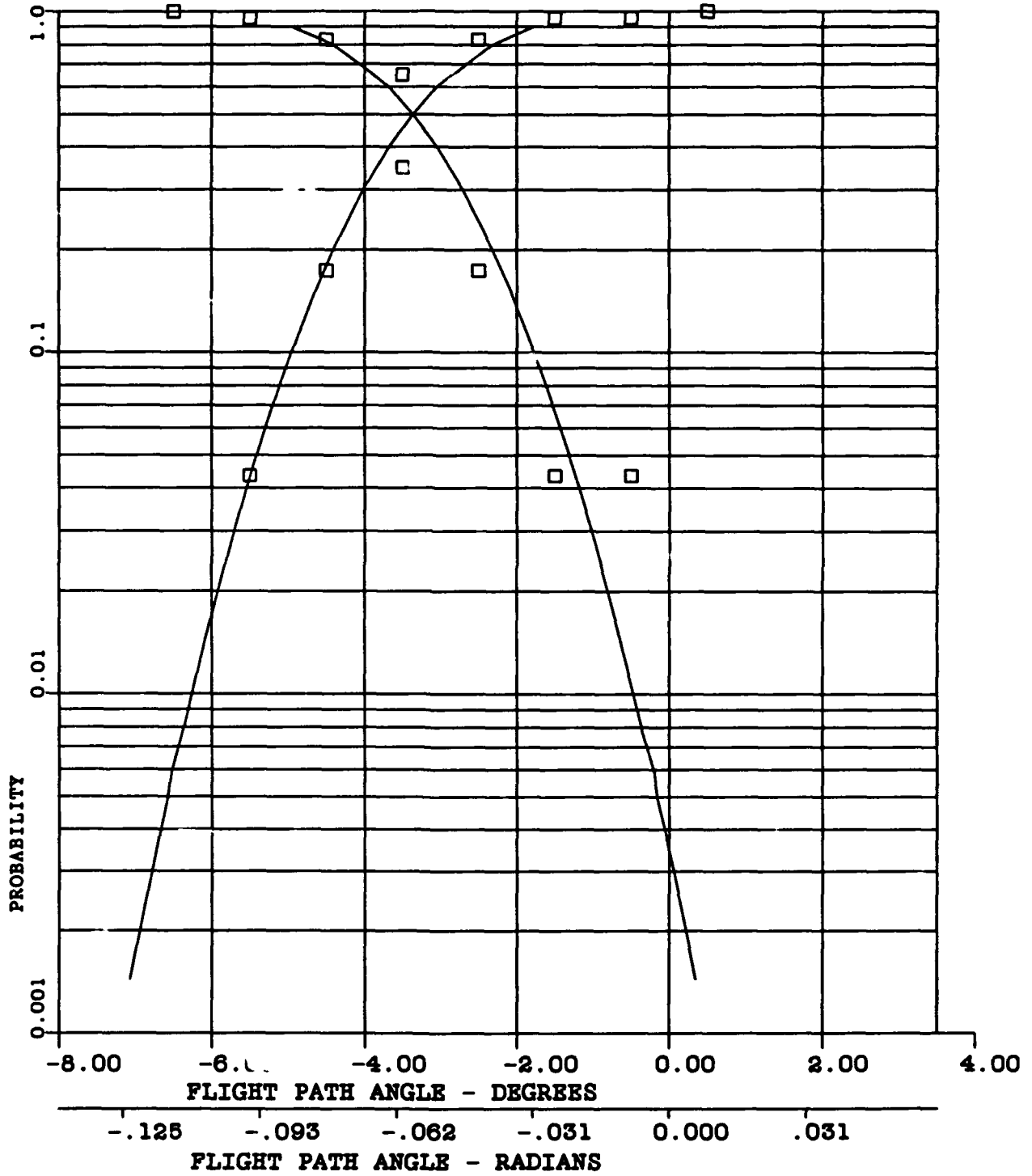


FIGURE P-54 PROBABILITY DISTRIBUTION OF AIRCRAFT FLIGHT PATH ANGLE AT TOUCHDOWN

MODEL A-3 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-23 $\bar{X}$-6.55 DEGREES (.114 RADIANS) A3=-.57
S-2.92 DEGREES (.051 RADIANS) A4-2.53

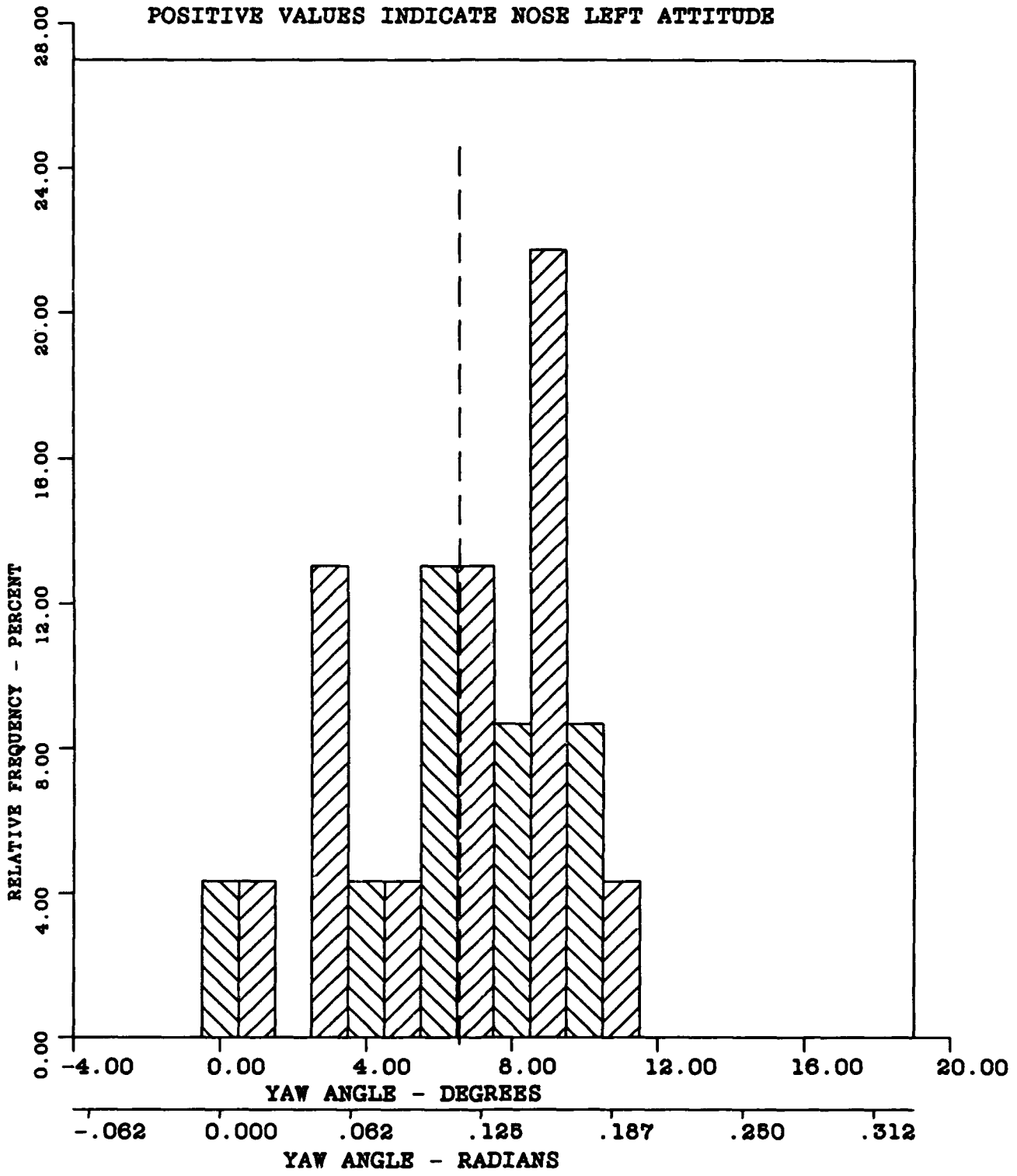


FIGURE P-55 FREQUENCY DISTRIBUTION OF AIRCRAFT YAW ANGLE

MODEL A-3 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING-3.50 DEGREES (.061 RADIANS)
N-23 $\bar{X}$-6.55 DEGREES (.114 RADIANS) A3=-.57
S-2.92 DEGREES (.051 RADIANS) A4-2.53
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE NOSE LEFT ATTITUDE

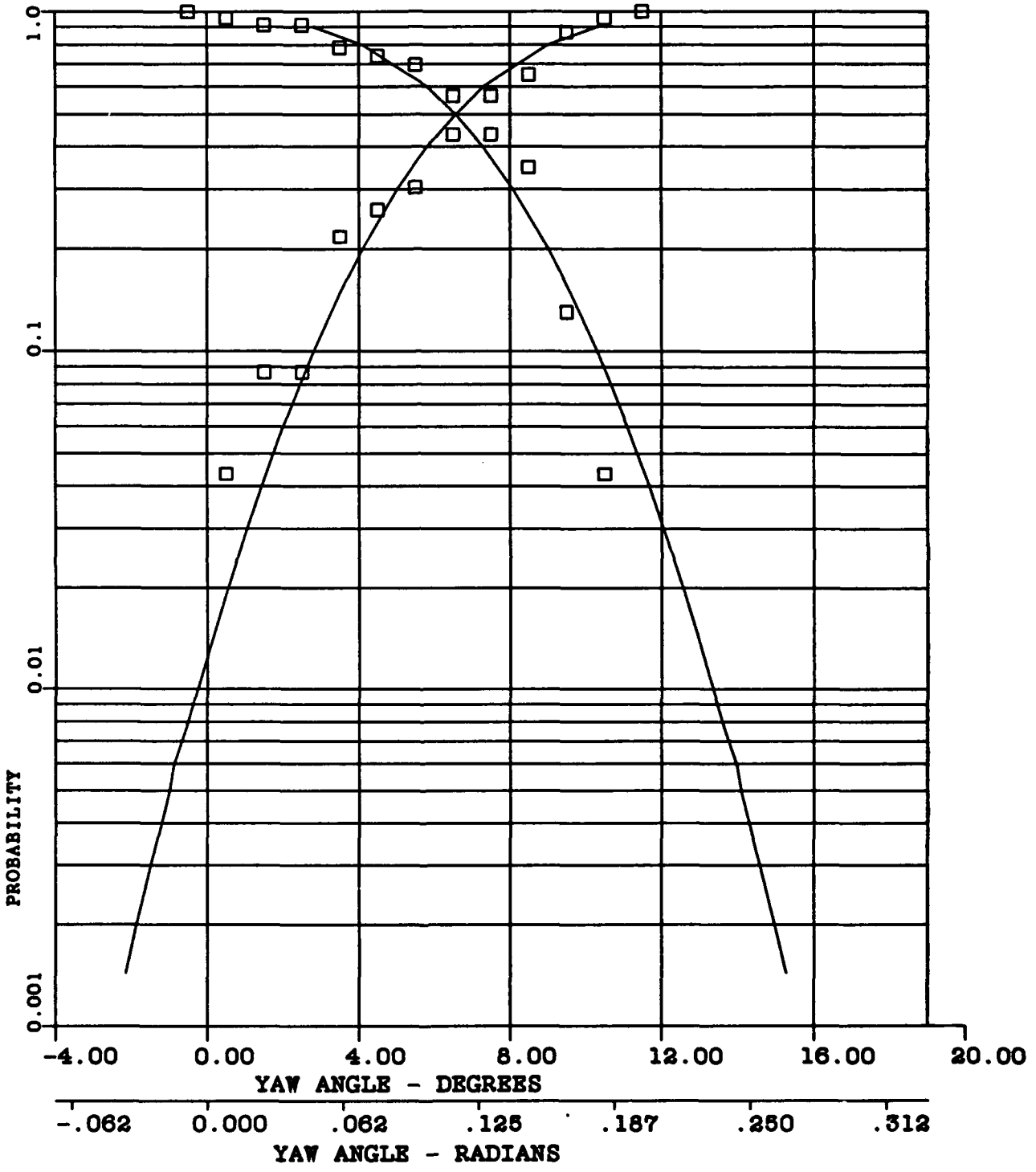


FIGURE P-56 PROBABILITY DISTRIBUTION OF AIRCRAFT YAW ANGLE

APPENDIX Q

T-2C AIRCRAFT

DAY CARRIER LANDINGS

USS ENTERPRISE
CVN-65

Appendix Q:

Frequency and Probability Distributions,
T-2C Aircraft, Day Landings

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MODEL T-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 498 $\bar{X}$= 23.72 KNOTS A3= 0.12
S= 1.91 KNOTS A4= 3.44

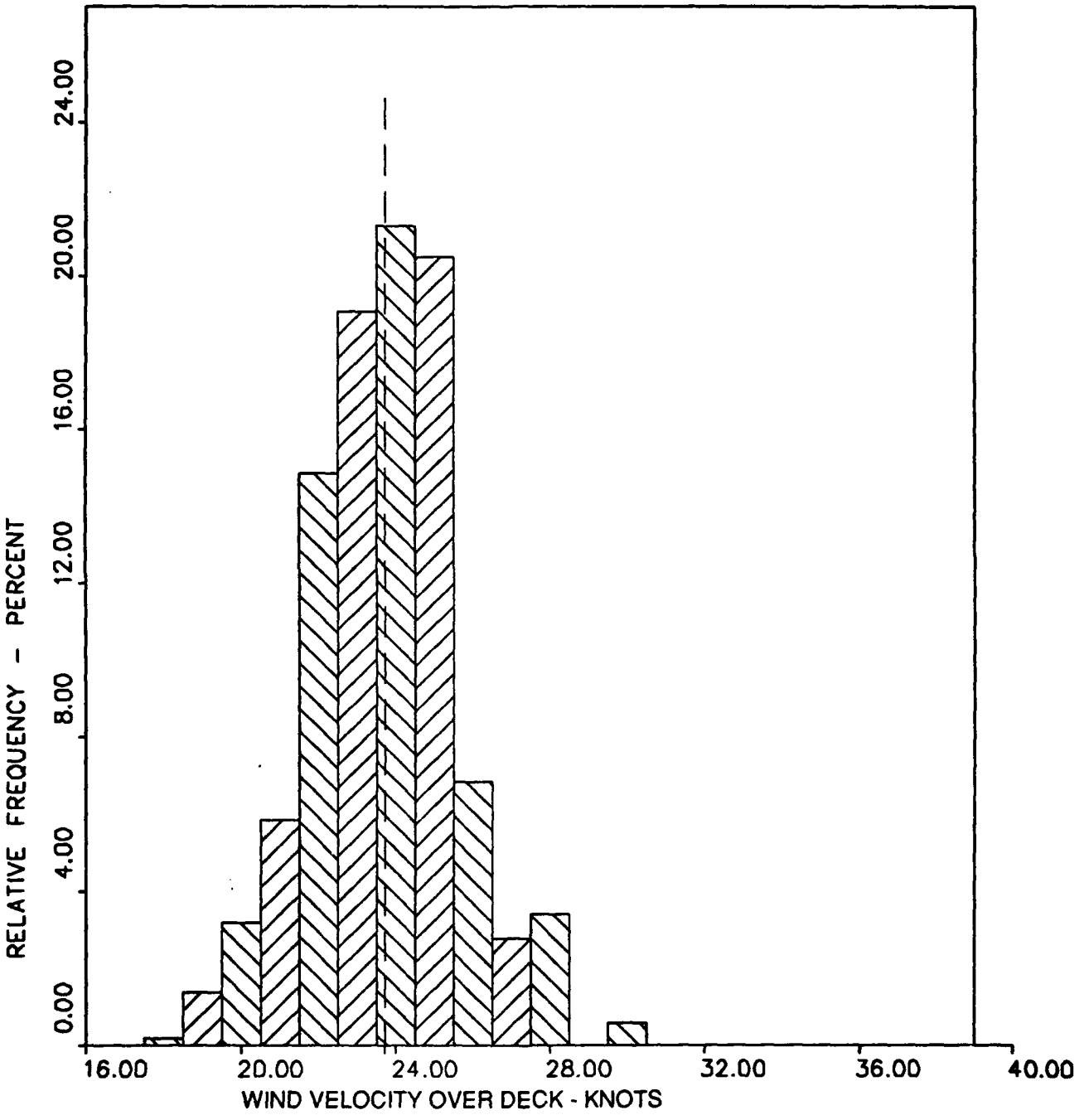


FIGURE Q-1 FREQUENCY DISTRIBUTION OF WIND VELOCITY OVER THE DECK

MODEL T-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 498 $\bar{X}$= 23.72 KNOTS A3= 0.12
S= 1.91 KNOTS A4= 3.44
CURVE FITTED - NORMAL

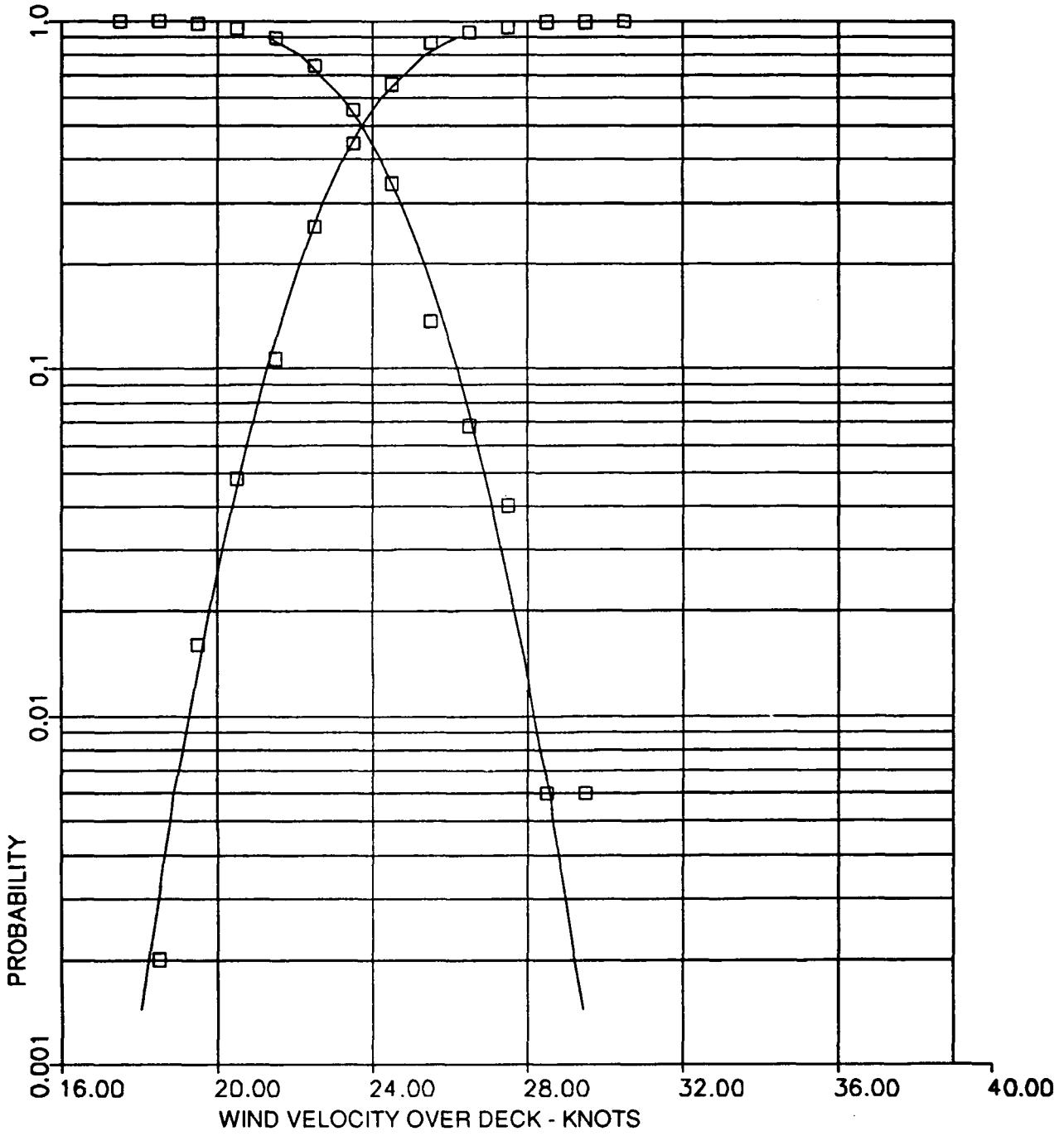


FIGURE Q-2 PROBABILITY DISTRIBUTION OF WIND VELOCITY OVER THE DECK

MODEL T-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 498 $\bar{X}$= 106.08 KNOTS A3= 0.31
S= 5.41 KNOTS A4= 3.83

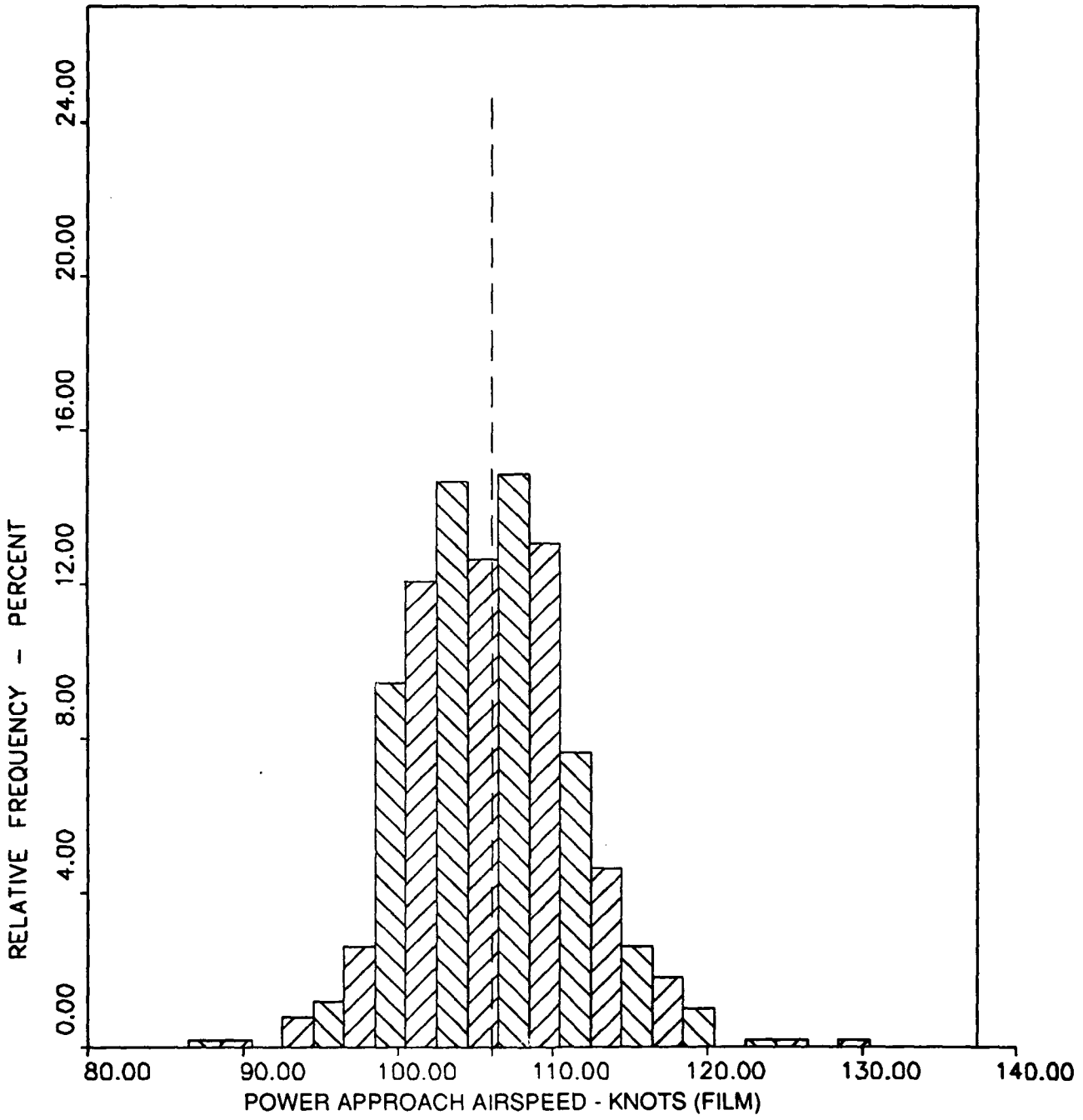


FIGURE Q-3 FREQUENCY DISTRIBUTION OF FILM MEASURED POWER APPROACH AIRSPEED AT THE RAMP

MODEL T-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 498 $\bar{X}$= 106.08 KNOTS A3= 0.31
S= 5.41 KNOTS A4= 3.83
CURVE FITTED - PEARSON TYPE III

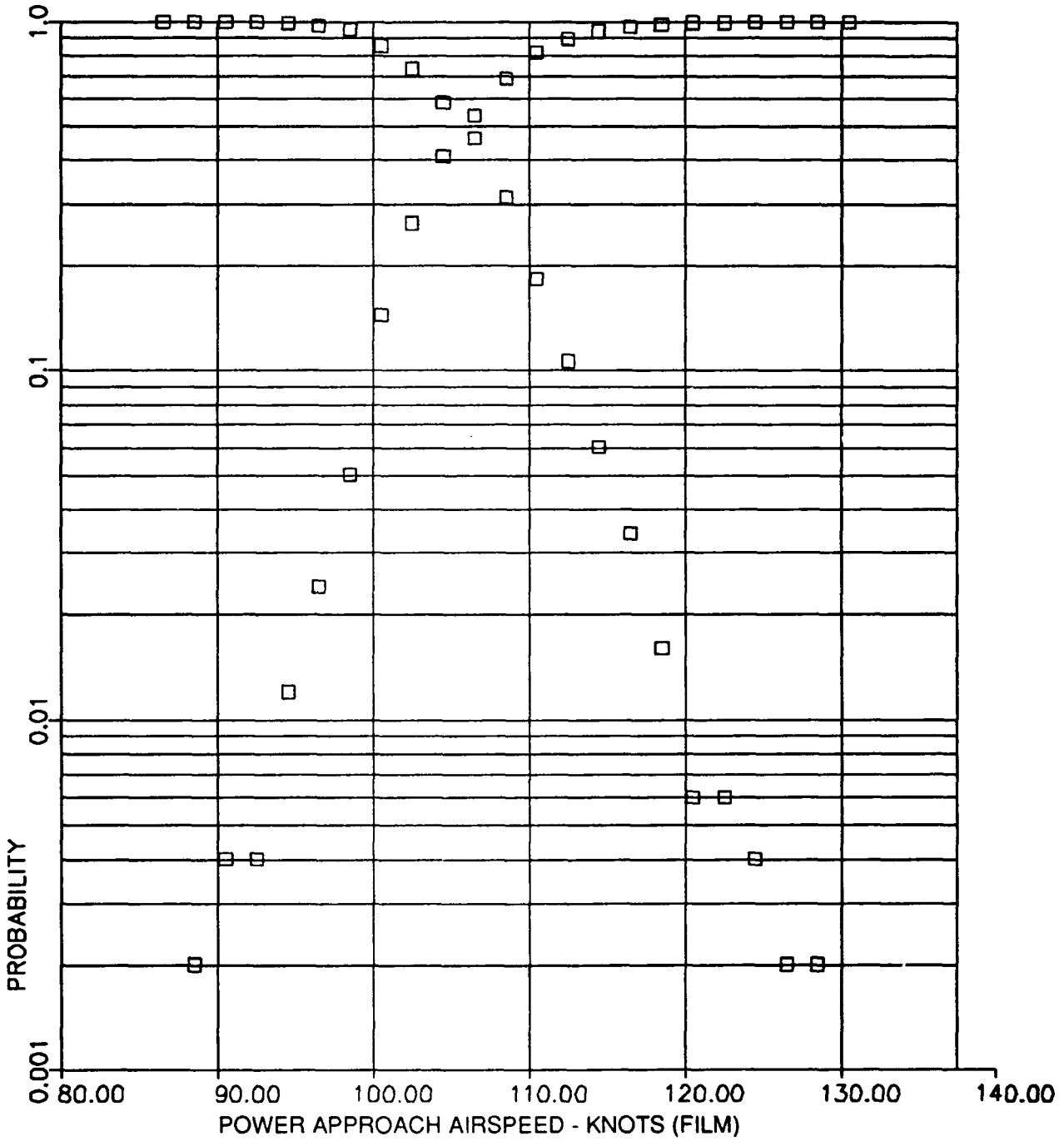


FIGURE Q-4 PROBABILITY DISTRIBUTION OF POWER APPROACH AIRSPEED AT THE RAMP (FILM)

MODEL T-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 490 $\bar{X}$= 15.74 FEET A3= 0.20
S= 3.04 FEET A4= 2.93

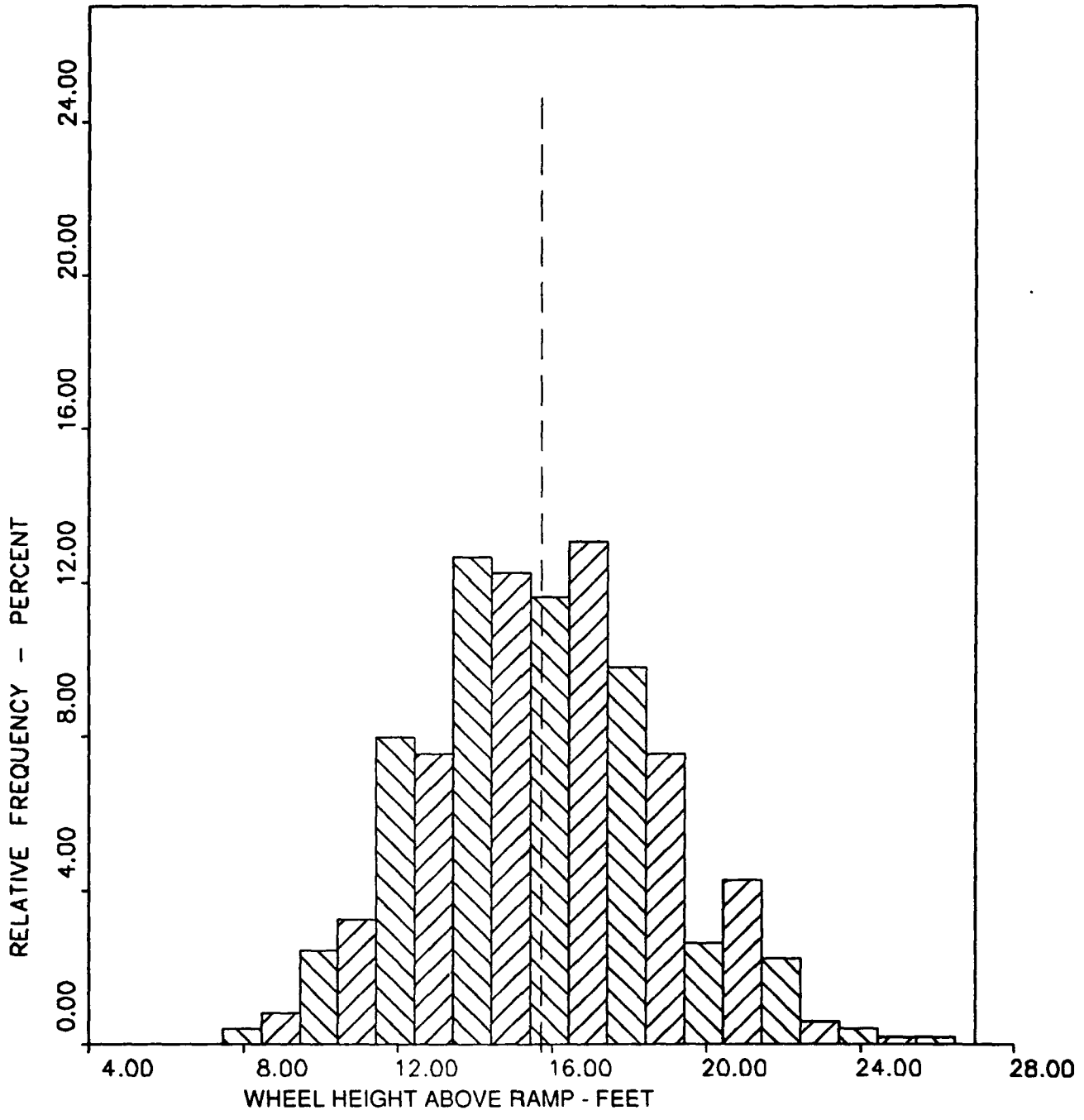


FIGURE Q-5 FREQUENCY DISTRIBUTION OF AIRCRAFT WHEEL HEIGHT ABOVE CARRIER RAMP

MODEL T-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 490 $\bar{X}$= 15.74 FEET
S= 3.04 FEET
CURVE FITTED - NORMAL

A3= 0.20
A4= 2.93

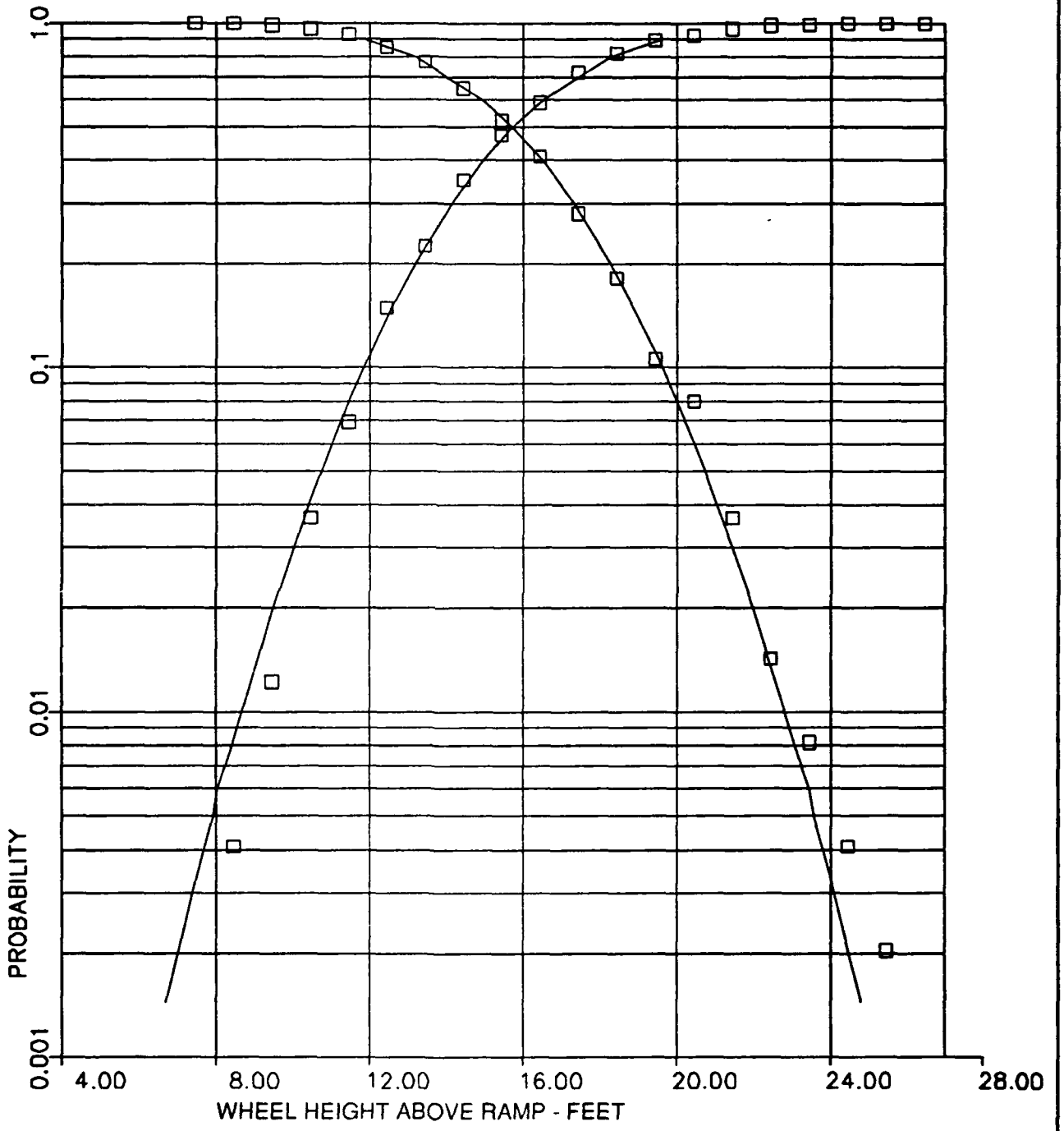


FIGURE Q-6 PROBABILITY DISTRIBUTION OF AIRCRAFT WHEEL HEIGHT ABOVE CARRIER RAMP

MODEL T-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 498 $\bar{X}$= 7.45 FEET/SEC A3= 0.37
S= 1.94 FEET/SEC A4= 4.02

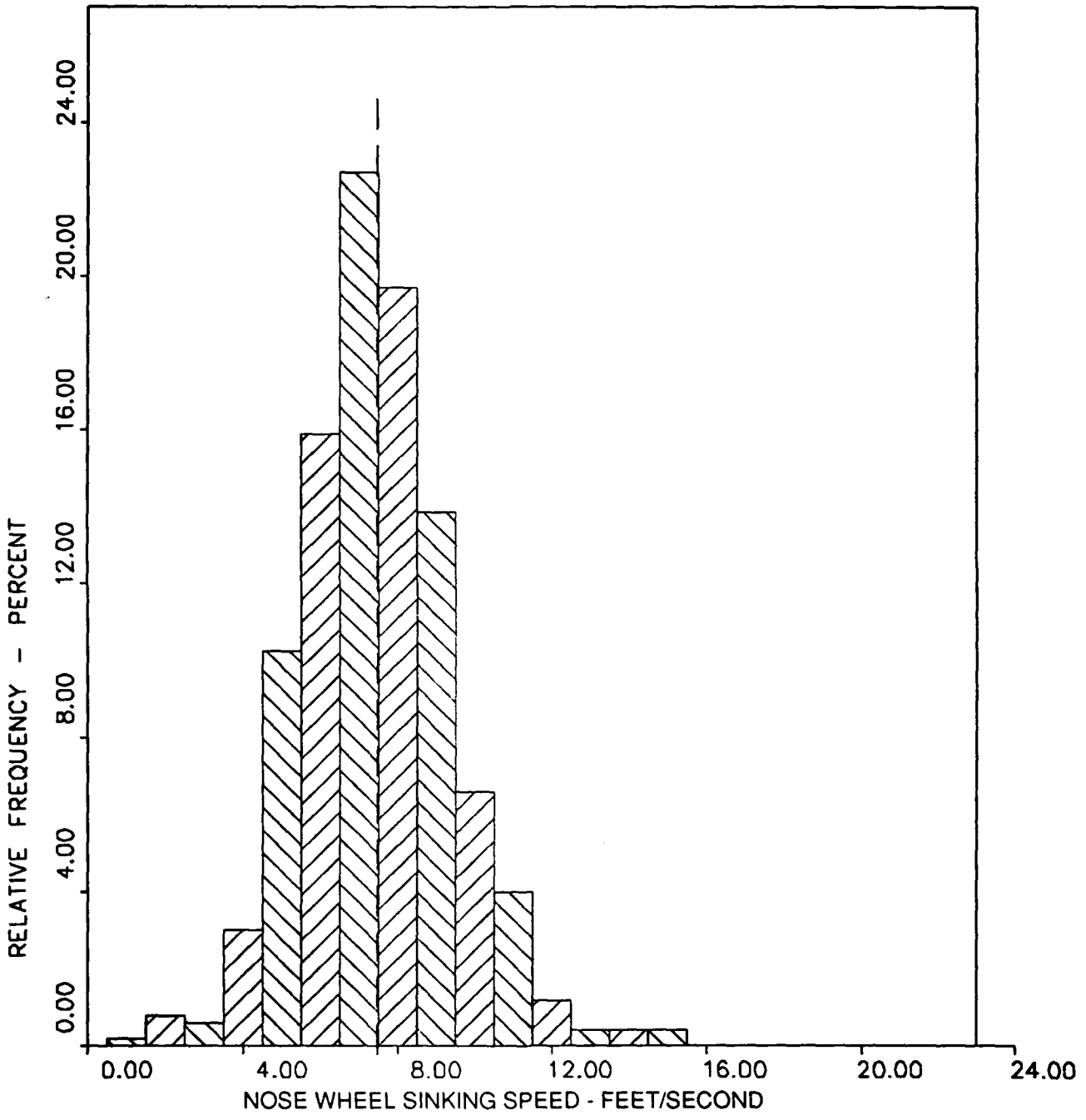


FIGURE Q-7 FREQUENCY DISTRIBUTION OF NOSE WHEEL SINKING SPEED

MODEL T-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 498 $\bar{X}$= 7.45 FEET/SEC A3= 0.37
S= 1.94 FEET/SEC A4= 4.02
CURVE FITTED - PEARSON TYPE III

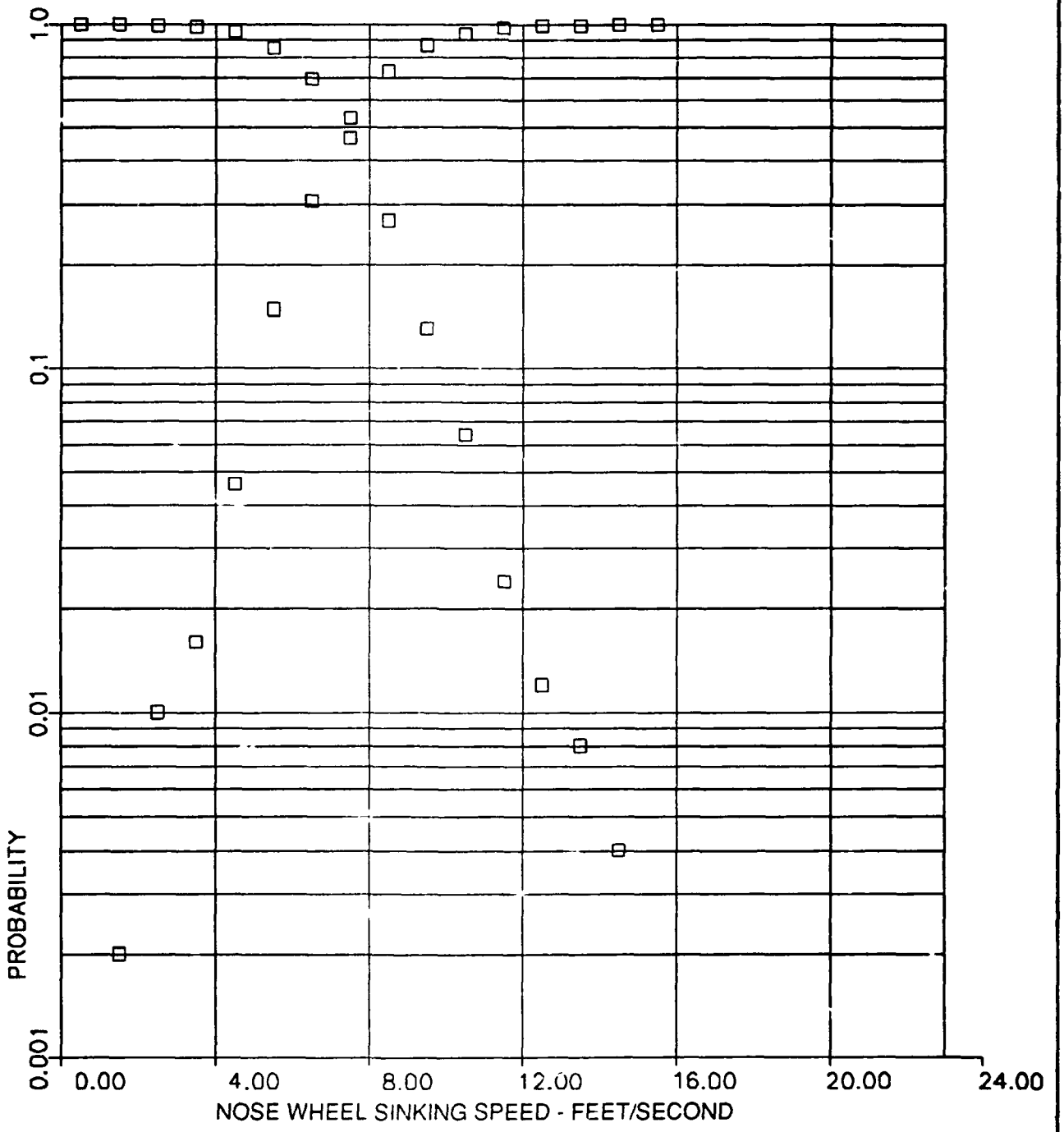


FIGURE Q-8 PROBABILITY DISTRIBUTION OF NOSE WHEEL SINKING SPEED

MODEL T-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 498 $\bar{X}$= 7.87 FEET/SEC A3= 0.42
S= 2.28 FEET/SEC A4= 4.44

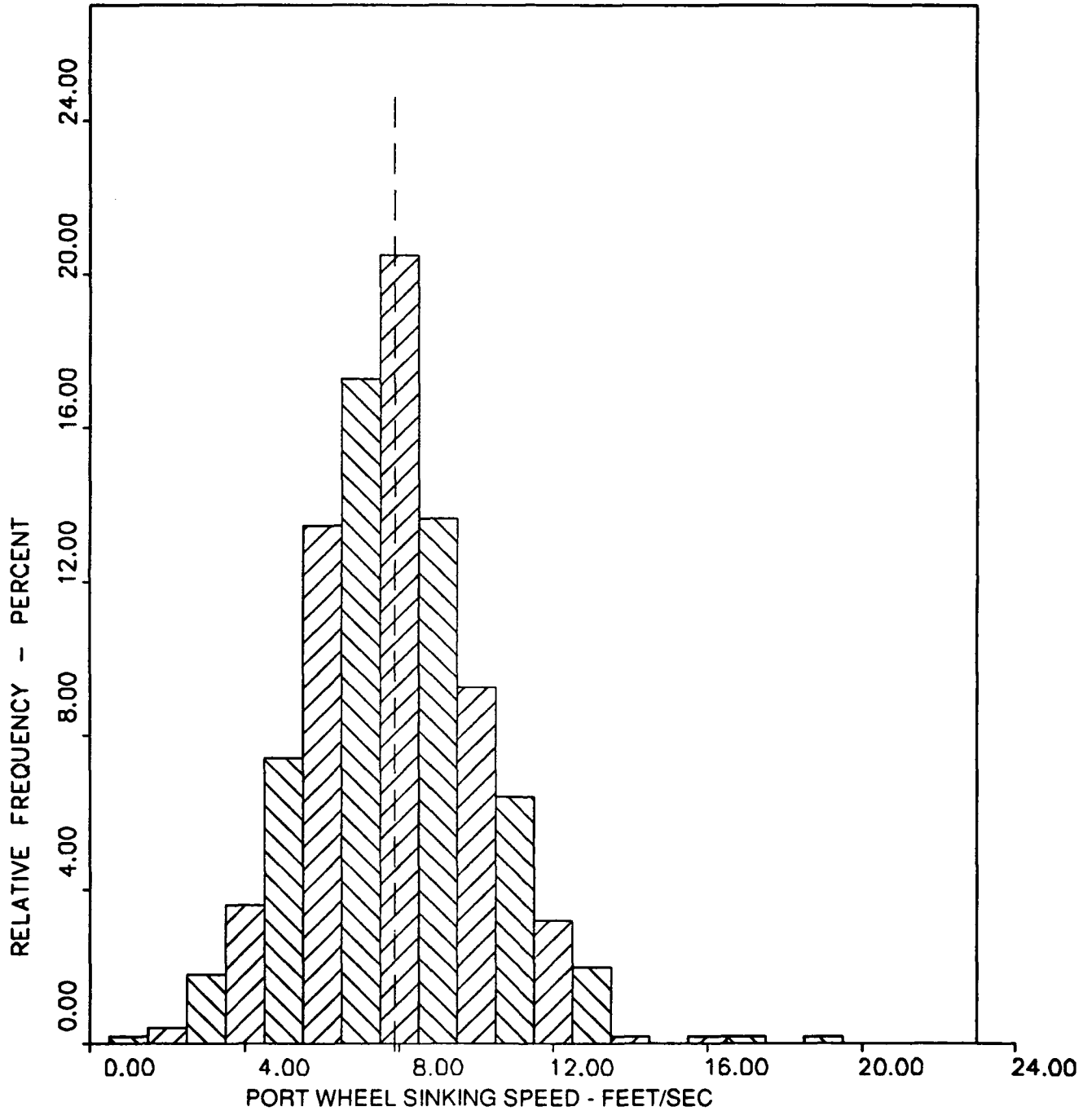


FIGURE Q-9 FREQUENCY DISTRIBUTION OF PORT WHEEL SINKING SPEED AT PORT WHEEL TOUCHDOWN

MODEL T-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 498 $\bar{X}$= 7.87 FEET/SEC A3= 0.42
S= 2.28 FEET/SEC A4= 4.44
CURVE FITTED - PEARSON TYPE III

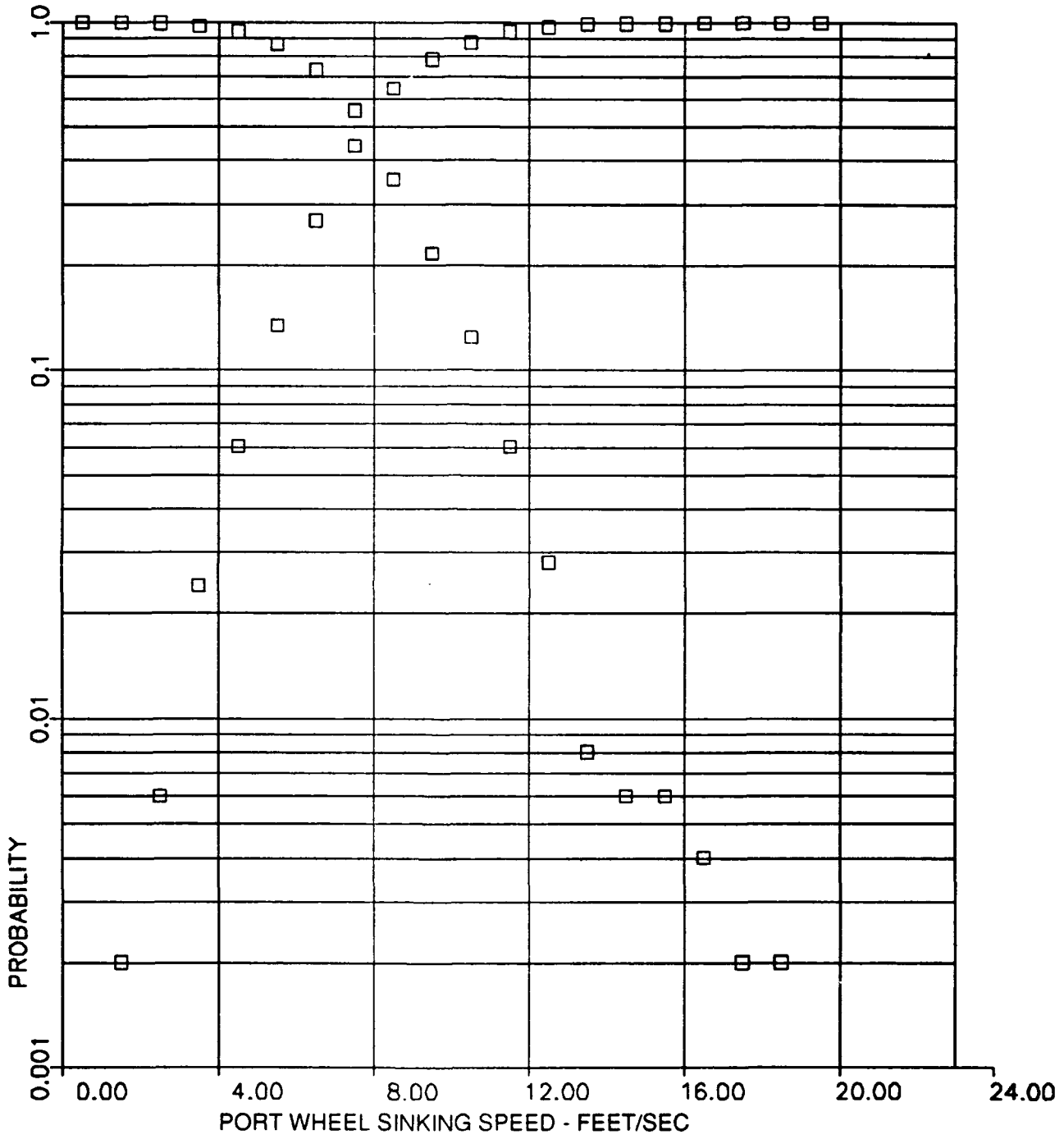


FIGURE Q-10 PROBABILITY DISTRIBUTION OF PORT WHEEL SINKING SPEED

MODEL T-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 498 $\bar{X}$= 7.23 FEET/SEC A3= 0.59
S= 2.15 FEET/SEC A4= 4.17

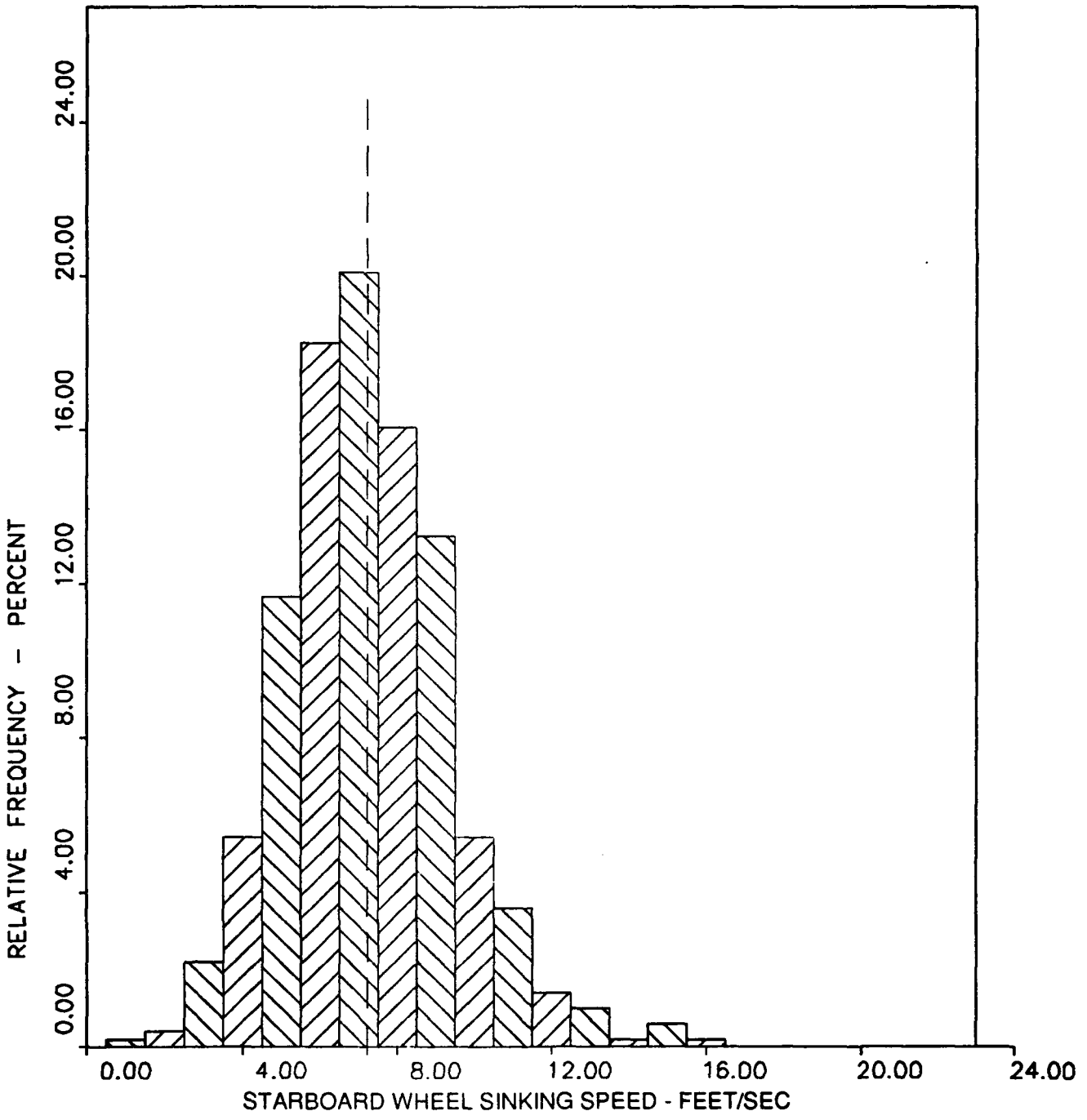


FIGURE Q-11 FREQUENCY DISTRIBUTION OF STARBOARD WHEEL SINKING SPEED AT STARBOARD WHEEL TOUCHDOWN

MODEL T-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 498 $\bar{X}$= 7.23 FEET/SEC A3= 0.59
S= 2.15 FEET/SEC A4= 4.17
CURVE FITTED - PEARSON TYPE III

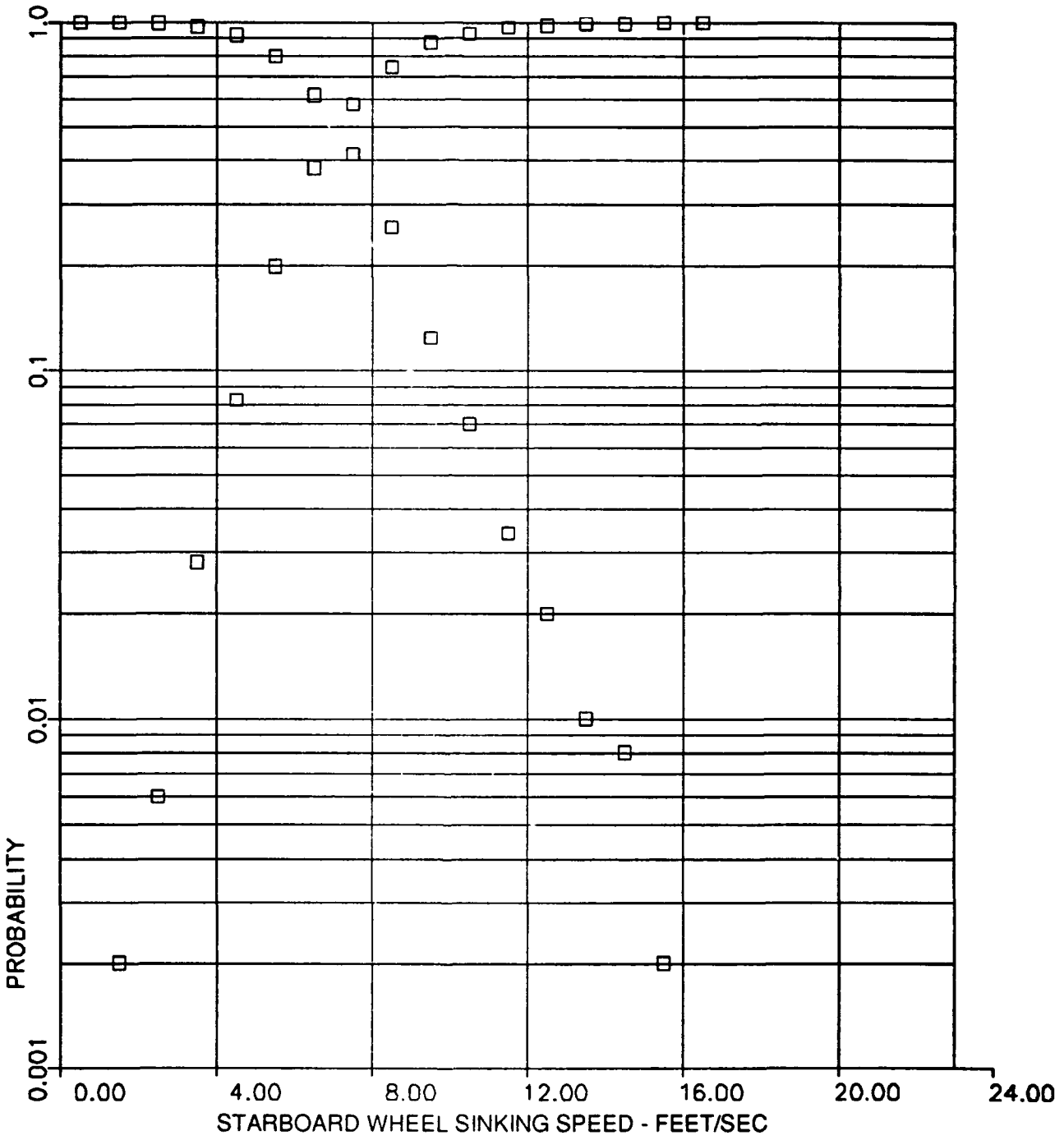


FIGURE Q-12 PROBABILITY DISTRIBUTION OF STARBOARD WHEEL SINKING SPEED

MODEL T-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 498 $\bar{X}$= 7.46 FEET/SEC A3= 0.62
S= 1.94 FEET/SEC A4= 4.48

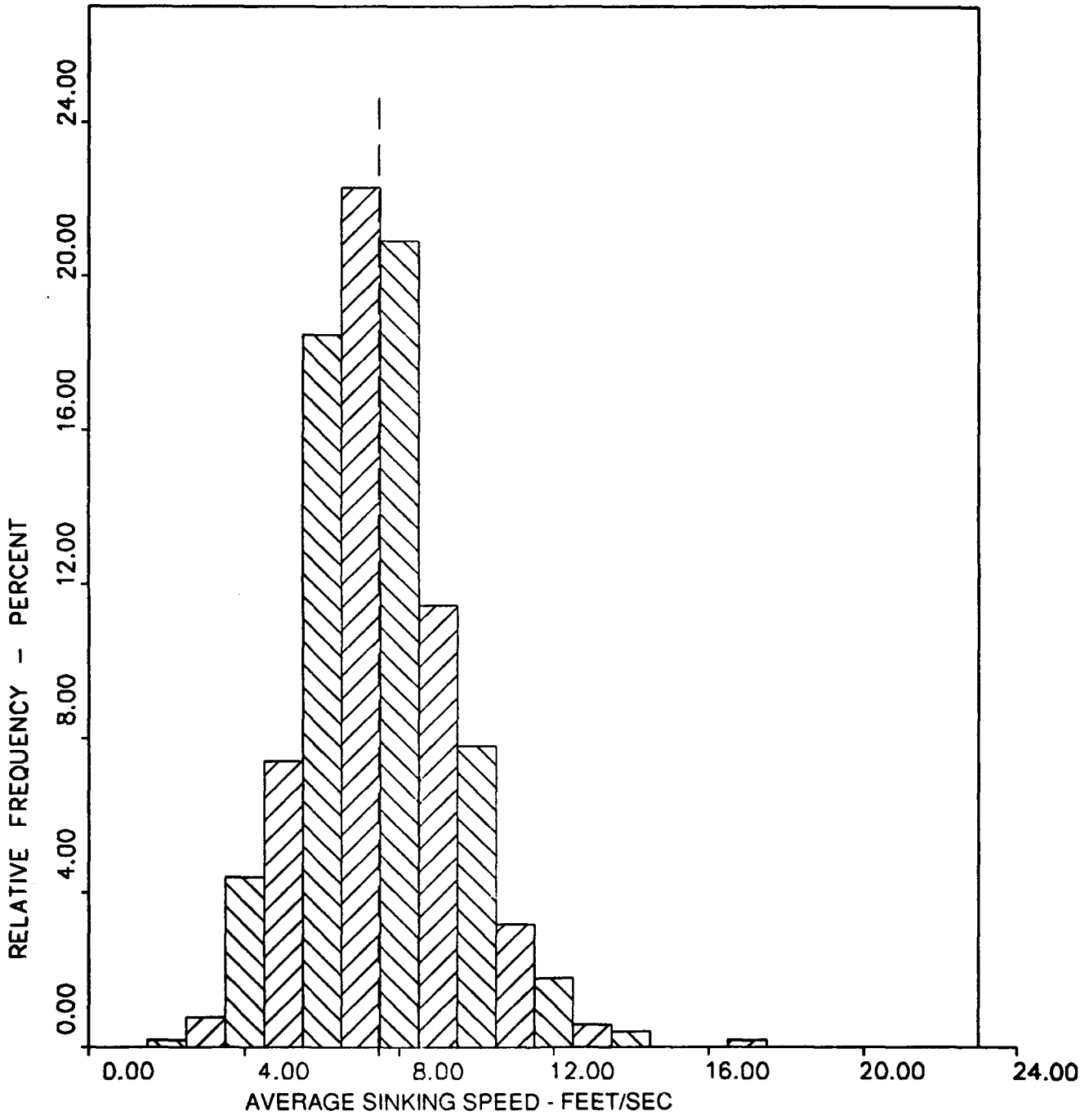


FIGURE Q-13 FREQUENCY DISTRIBUTION OF AVG SINKING SPEED OF MAIN WHEEL AT FIRST MAIN WHEEL TOUCHDOWN

MODEL T-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 498 $\bar{X}$= 7.46 FEET/SEC A3= 0.62
S= 1.94 FEET/SEC A4= 4.48
CURVE FITTED - PEARSON TYPE III

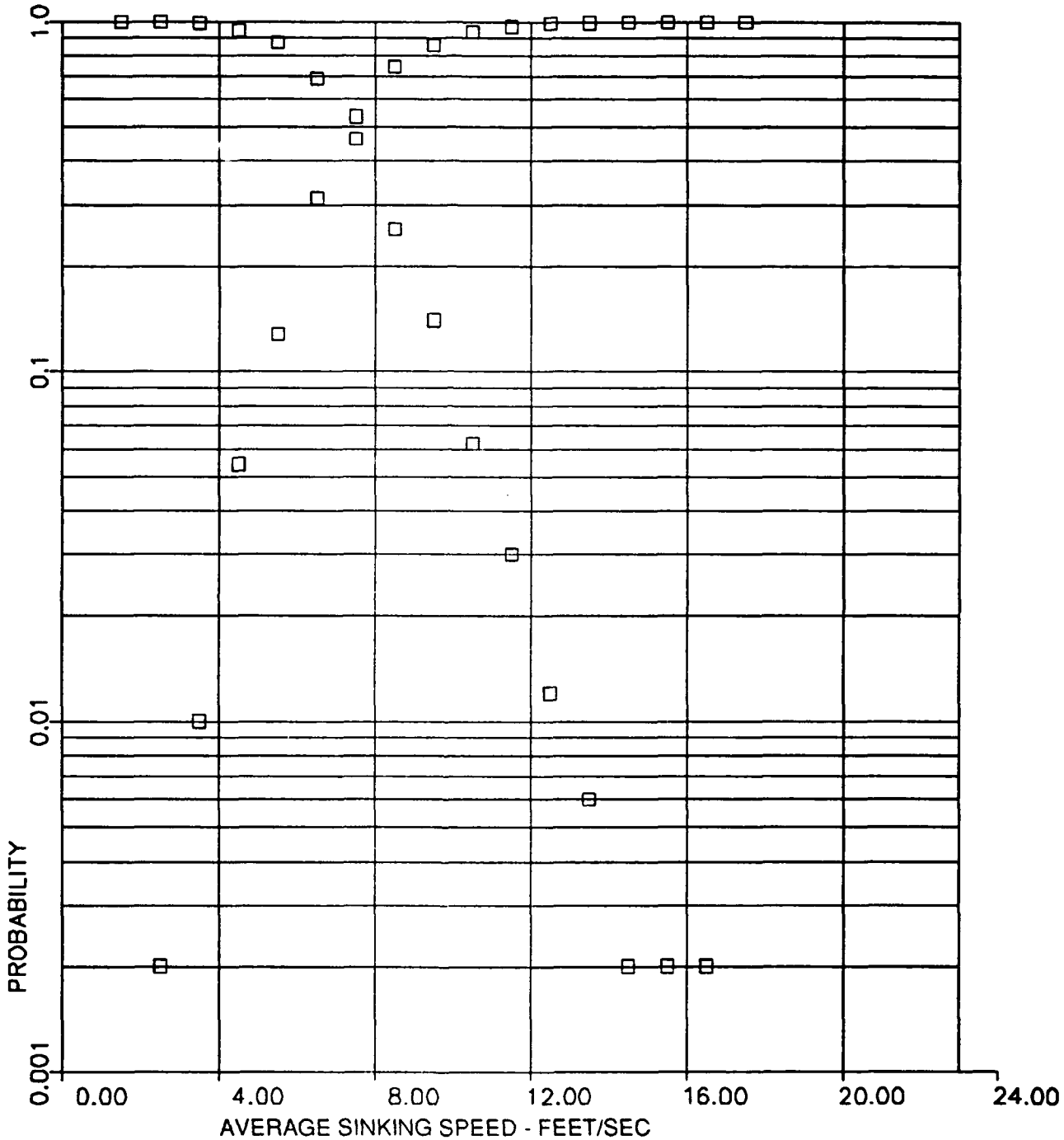


FIGURE Q-14 PROBABILITY DISTRIBUTION OF AVERAGE SINKING SPEED AT FIRST MAIN WHEEL TOUCHDOWN

MODEL T-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 28 $\bar{X}$= 6.95 FEET/SEC A3= 1.46
S= 1.86 FEET/SEC A4= 5.85

FREE FLIGHT IS THE CONDITION WHERE THE HOOK ENGAGES THE ARRESTMENT CABLE BEFORE THE WHEELS MAKE DECK CONTACT

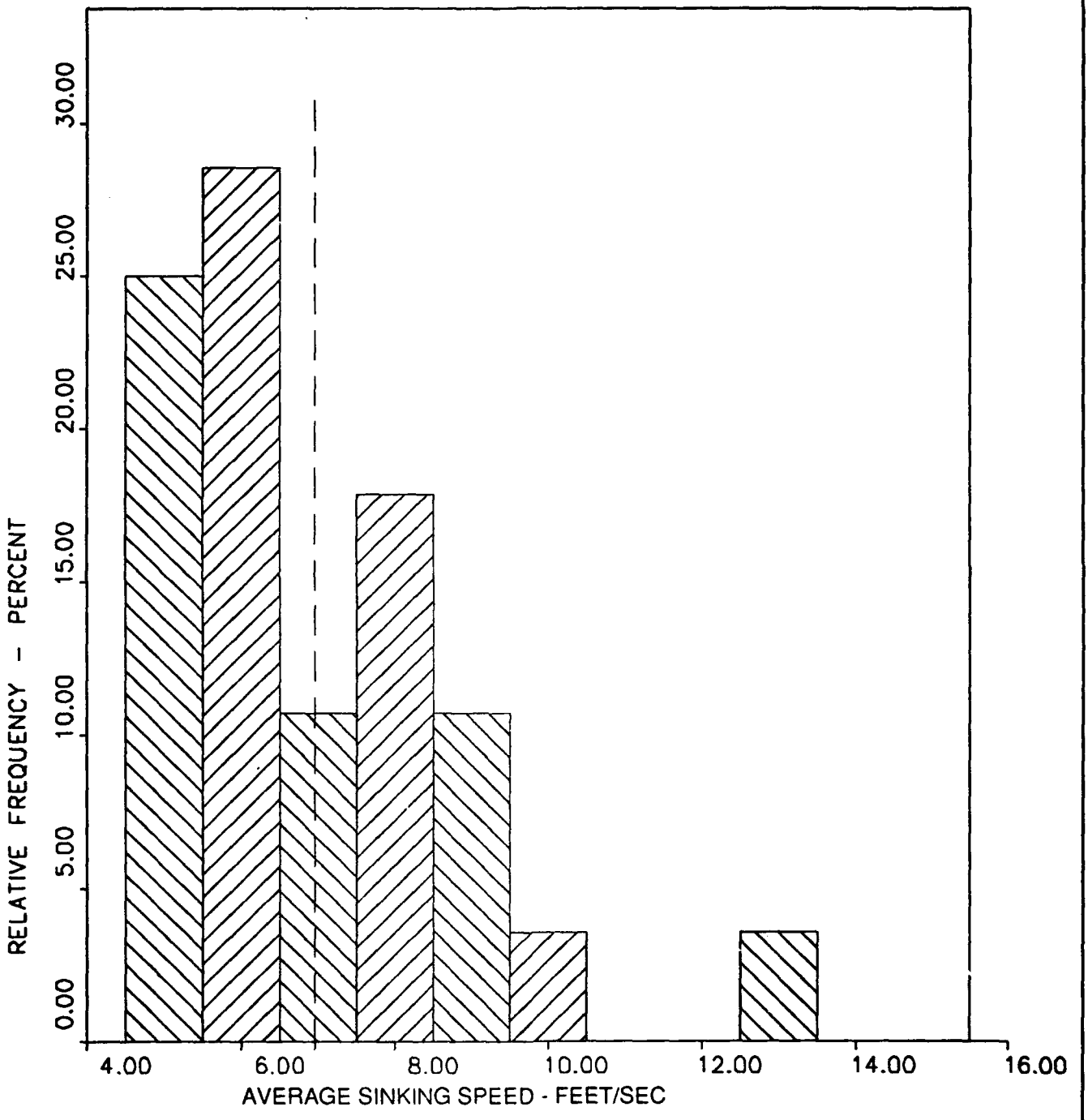


FIGURE Q-15 FREQUENCY DISTRIBUTION OF AVERAGE SINKING SPEED OF MAIN WHEELS AT FREE FLIGHT

MODEL T-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 28 $\bar{X}$= 6.95 FEET/SEC A3= 1.46
S= 1.86 FEET/SEC A4= 5.85
CURVE FITTED - PEARSON TYPE III
FREE FLIGHT IS THE CONDITION WHERE THE HOOK ENGAGES THE ARRESTMENT CABLE BEFORE THE WHEELS MAKE DECK CONTACT

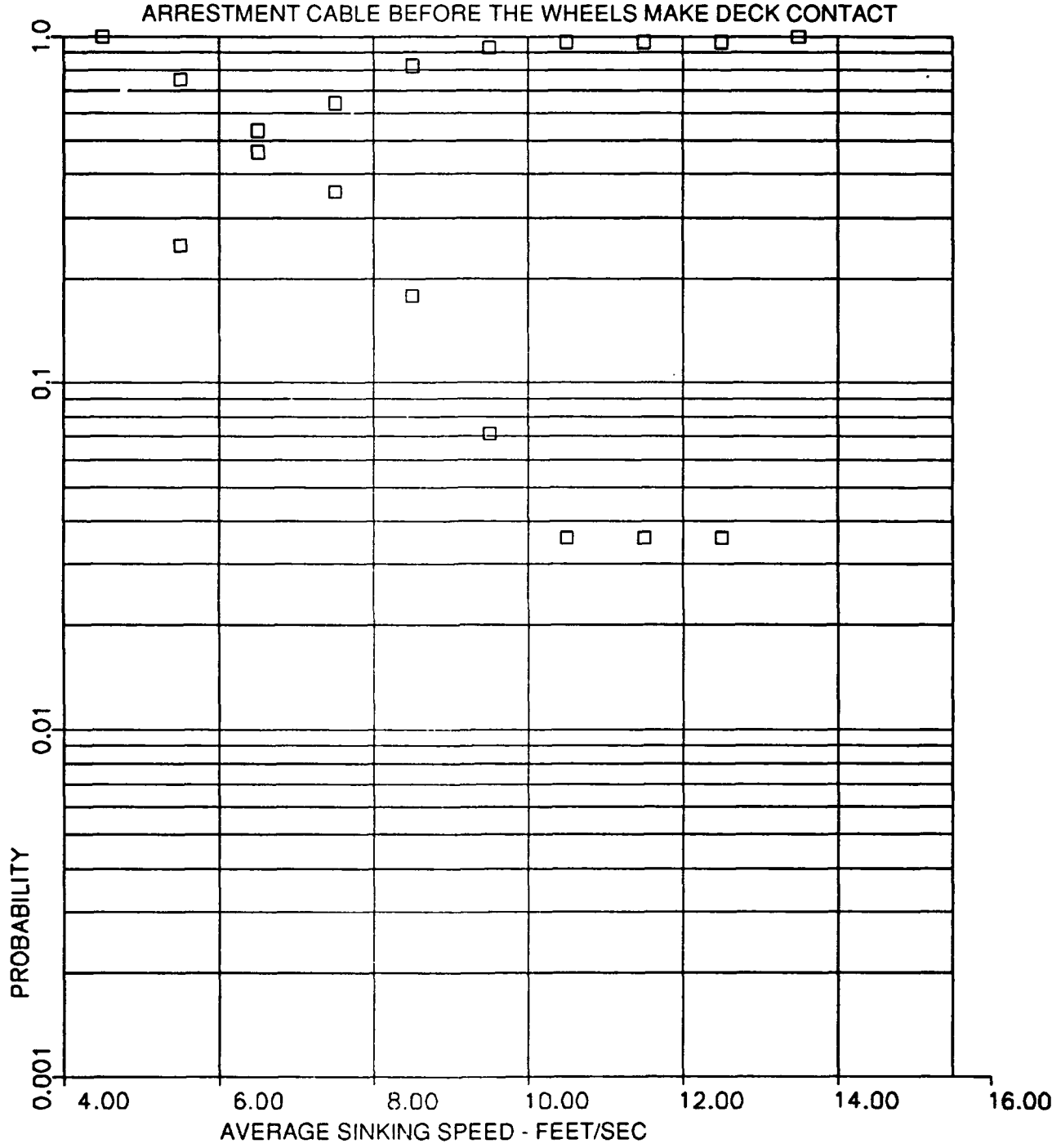


FIGURE Q-16 PROBABILITY DISTRIBUTION OF AVERAGE SINKING SPEED AT FREE FLIGHT

MODEL T-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 498 $\bar{X}$= 1.04 A3= 0.85
S= 0.10 A4= 6.53

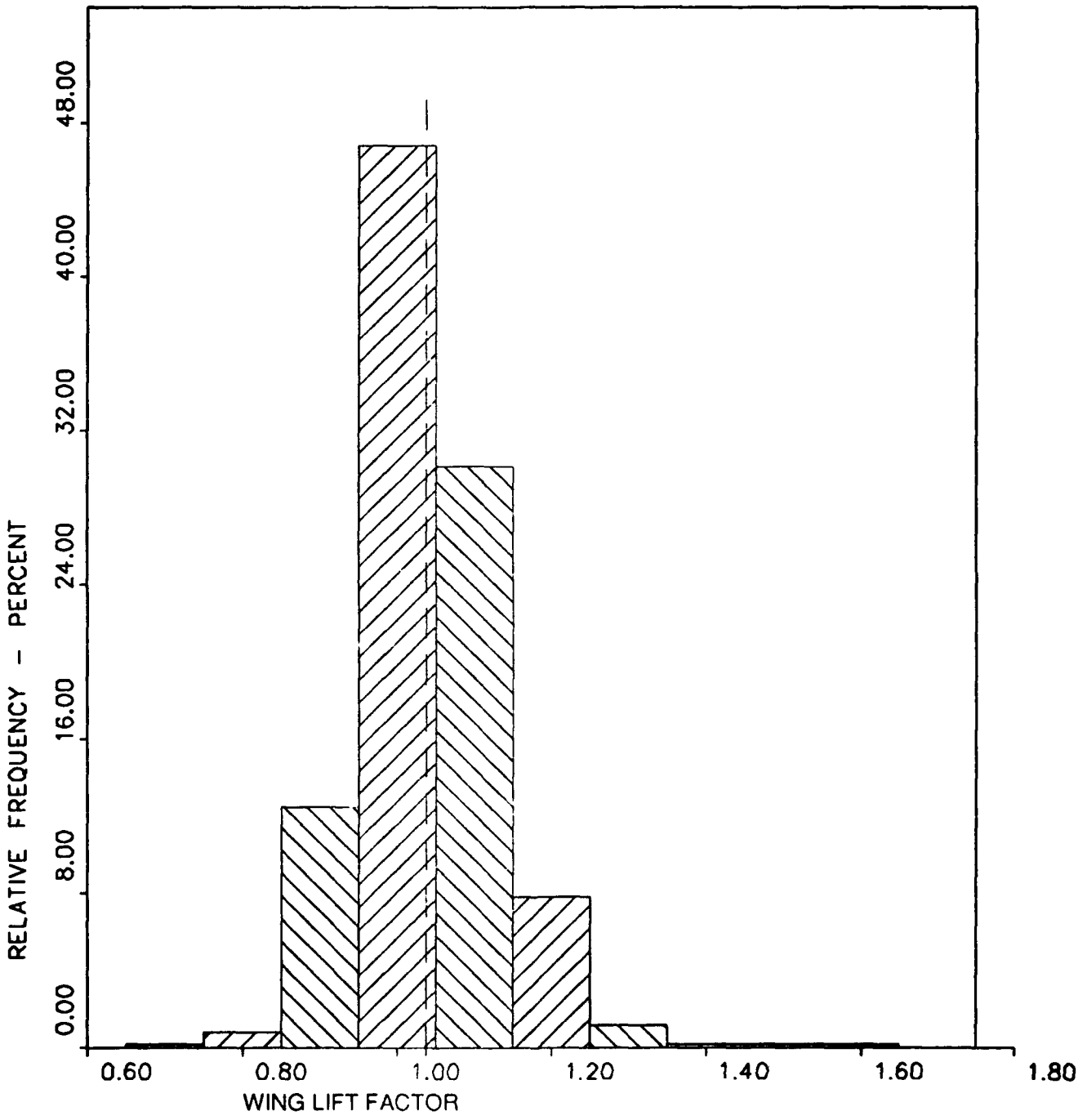


FIGURE Q-17 FREQUENCY DISTRIBUTION OF WING LIFT FACTOR AT FIRST MAIN WHEEL TOUCHDOWN

MODEL T-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 498 $\bar{X}$= 1.04 A3= 0.85
S= 0.10 A4= 6.53
CURVE FITTED - PEARSON TYPE III

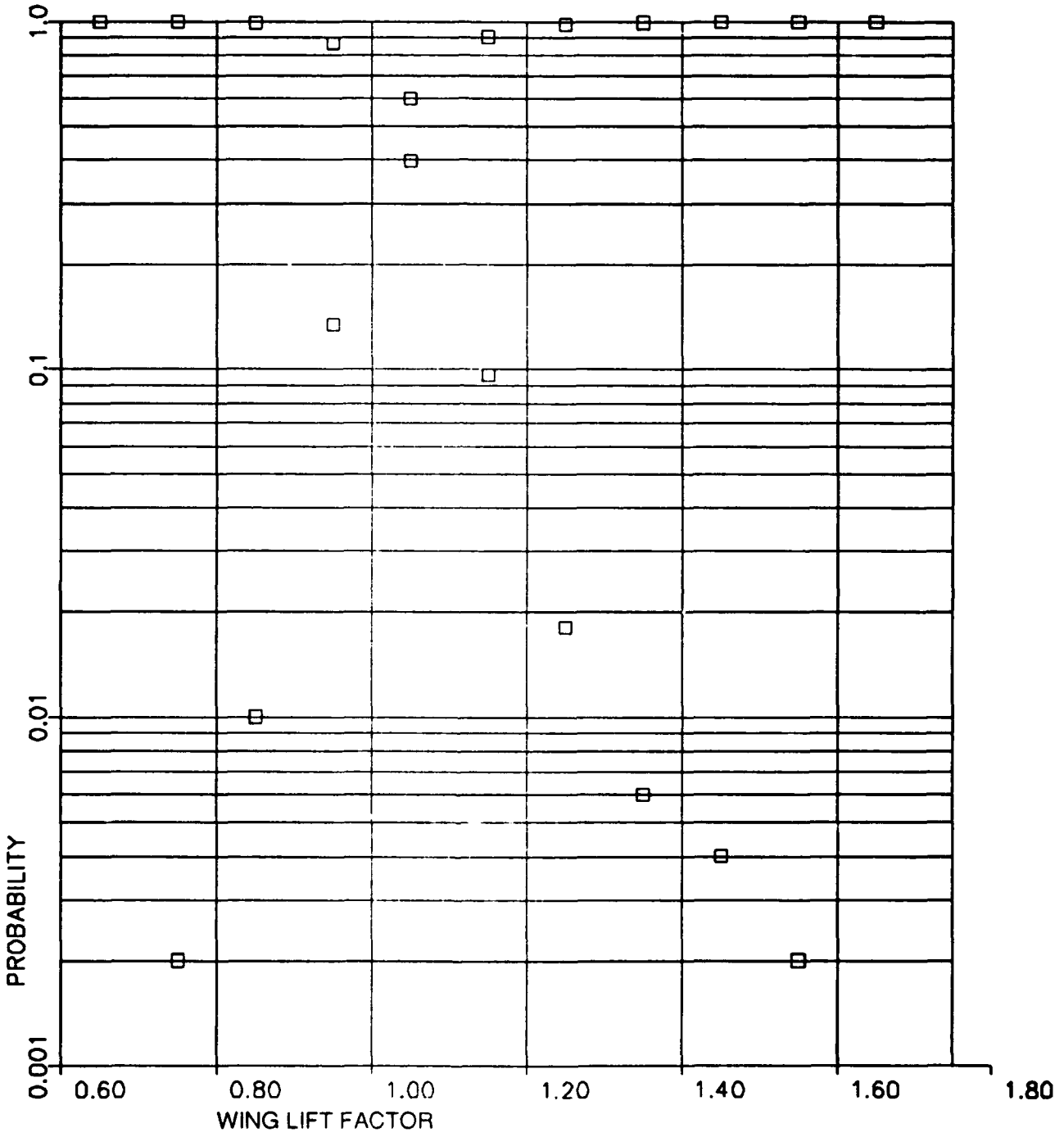


FIGURE Q-19 PROBABILITY DISTRIBUTION OF WING LIFT FACTOR AT FIRST MAIN WHEEL TOUCHDOWN

MODEL T-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 28 $\bar{X}$= 1.08 A3=-0.49
S= 0.08 A4= 2.94

FREE FLIGHT IS THE CONDITION WHERE THE HOOK ENGAGES THE ARRESTMENT CABLE BEFORE THE WHEELS MAKE DECK CONTACT

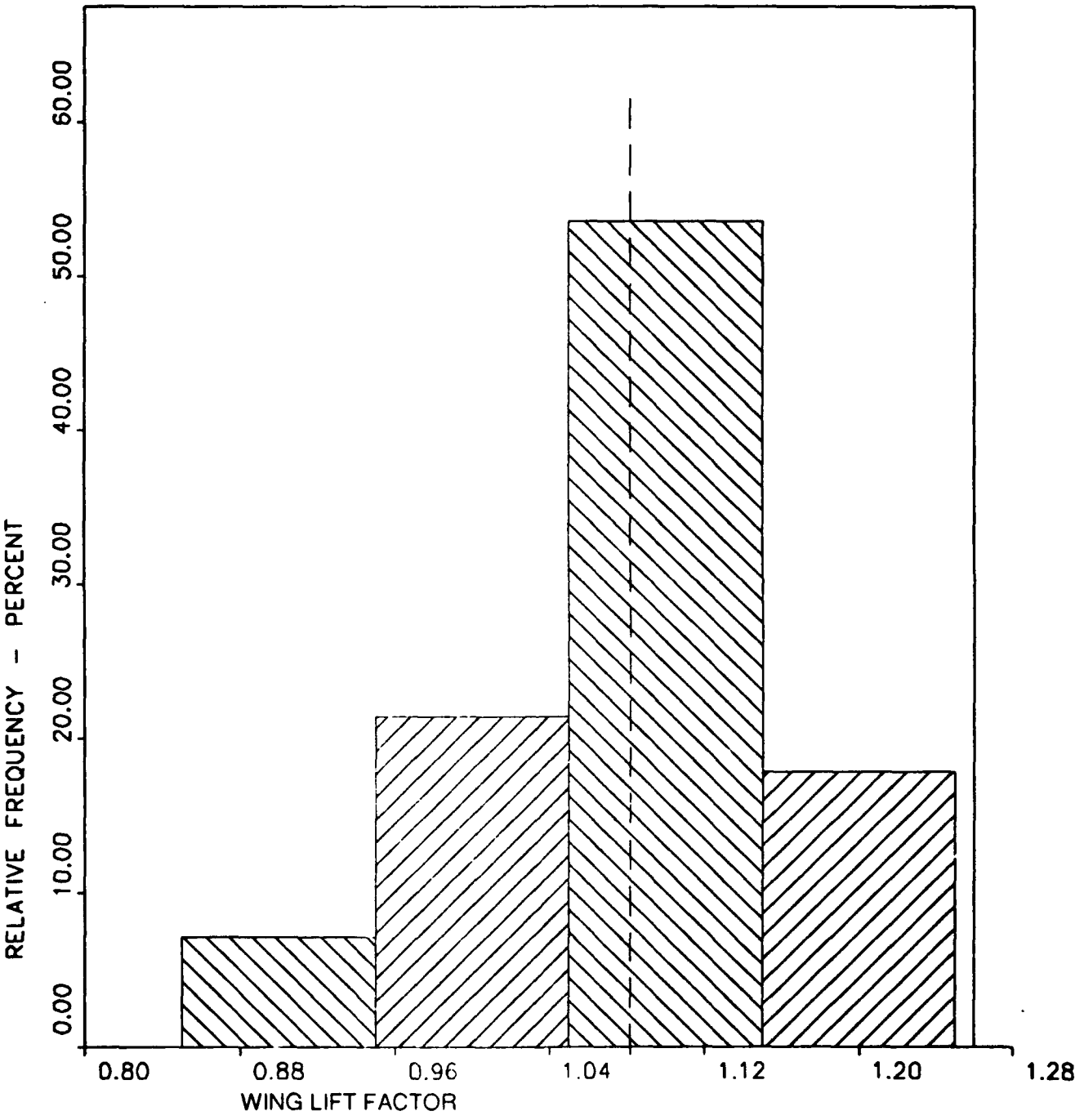


FIGURE Q-18 FREQUENCY DISTRIBUTION OF WING LIFT FACTOR AT FREE FLIGHT

MODEL T-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 28 $\bar{X}$= 1.08 A3=-0.49
S= 0.08 A4= 2.94
CURVE FITTED - NORMAL
FREE FLIGHT IS THE CONDITION WHERE THE HOOK ENGAGES THE ARRESTMENT CABLE BEFORE THE WHEELS MAKE DECK CONTACT

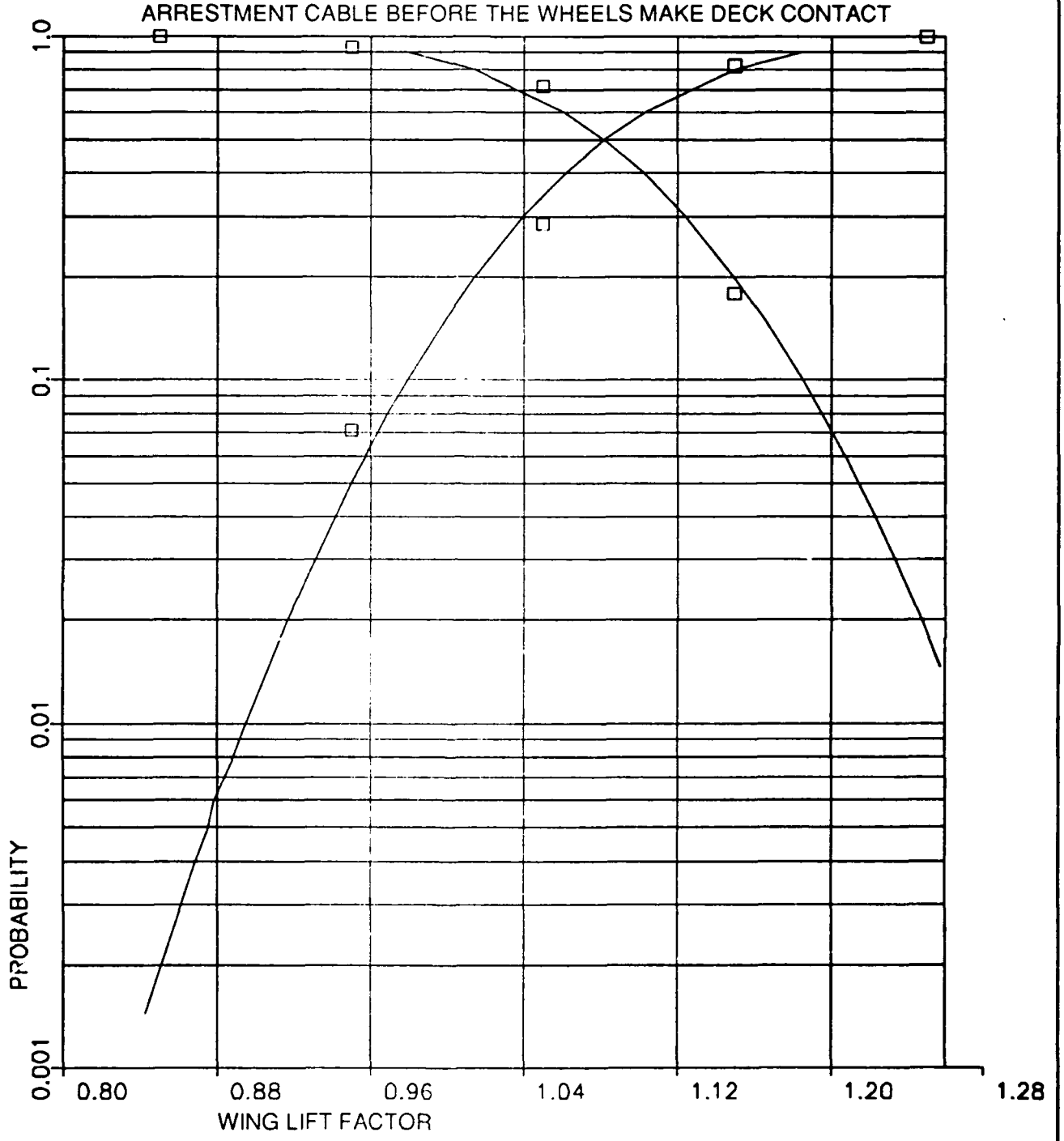


FIGURE Q-20 PROBABILITY DISTRIBUTION OF WING LIFT FACTOR AT FREE FLIGHT

MODEL T-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 490 $\bar{X}$= 5.99 DEGREES A3= 0.36
S= 1.29 DEGREES A4= 4.15

POSITIVE VALUES INDICATE NOSE UP ATTITUDE
MEASURED FROM CARRIER DECK TO FRL

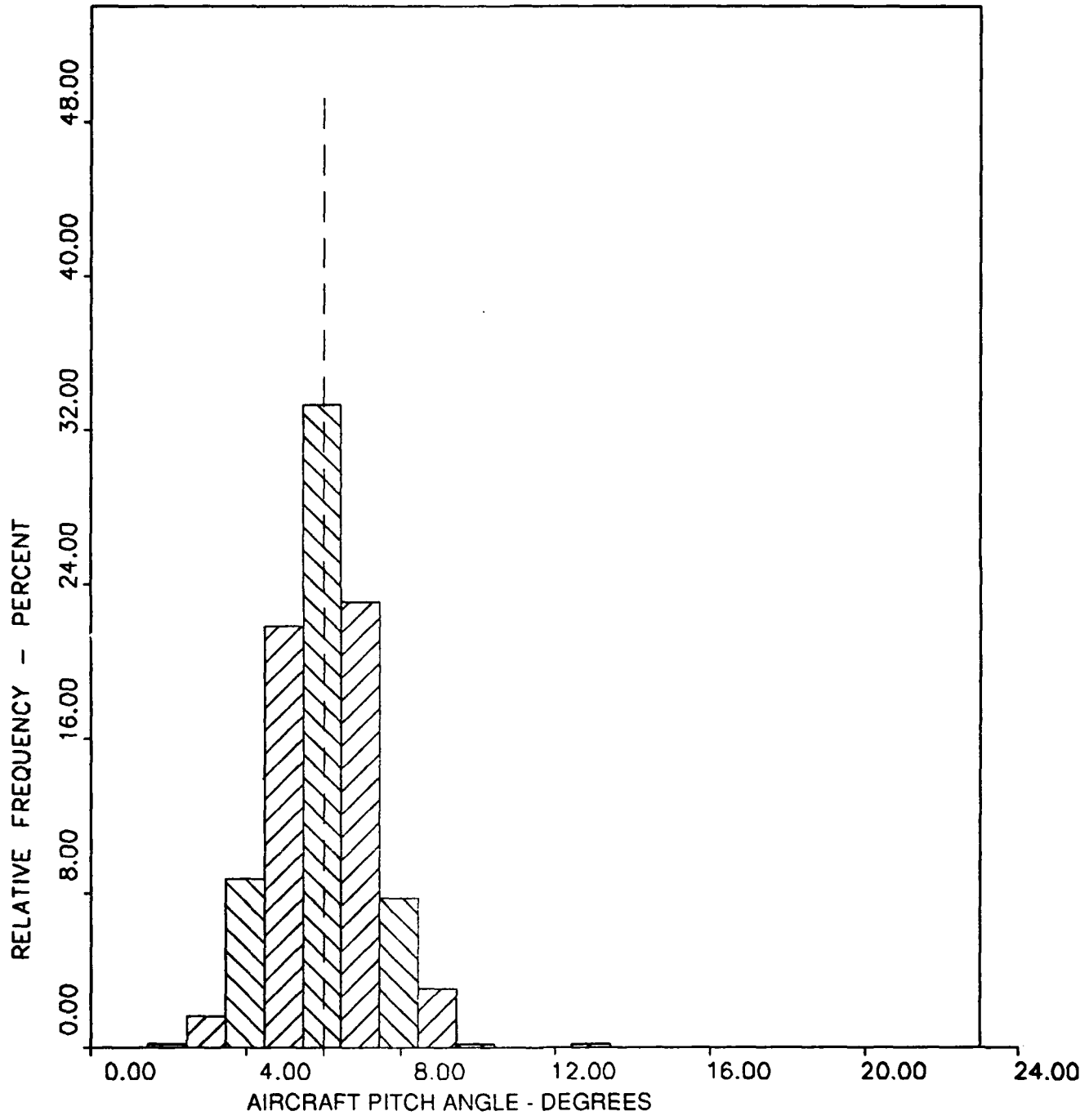


FIGURE Q-21 FREQUENCY DISTRIBUTION OF AIRCRAFT PITCH ANGLE AT THE RAMP

MODEL T-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 490 $\bar{X}$= 5.99 DEGREES A3= 0.36
S= 1.29 DEGREES A4= 4.15
CURVE FITTED - PEARSON TYPE III
POSITIVE VALUES INDICATE NOSE UP ATTITUDE
MEASURED FROM CARRIER DECK TO FRL

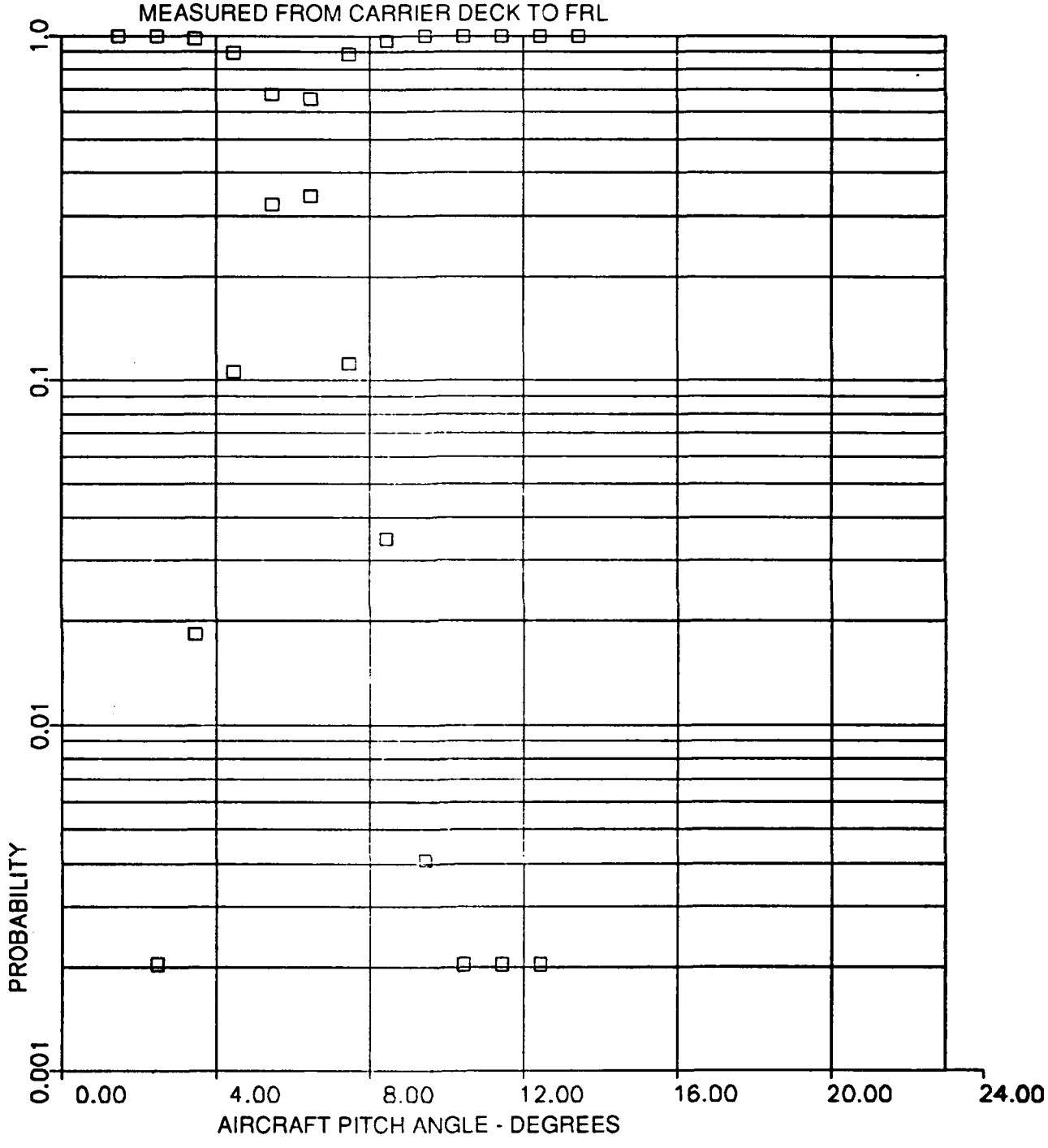


FIGURE Q-22 PROBABILITY DISTRIBUTION OF AIRCRAFT PITCH ANGLE AT THE RAMP

MODEL T-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 498 $\bar{X}$= 4.82 DEGREES A3= 0.37
S= 1.57 DEGREES A4= 3.22

POSITIVE VALUES INDICATE NOSE UP ATTITUDE
MEASURED FROM CARRIER DECK TO FRL

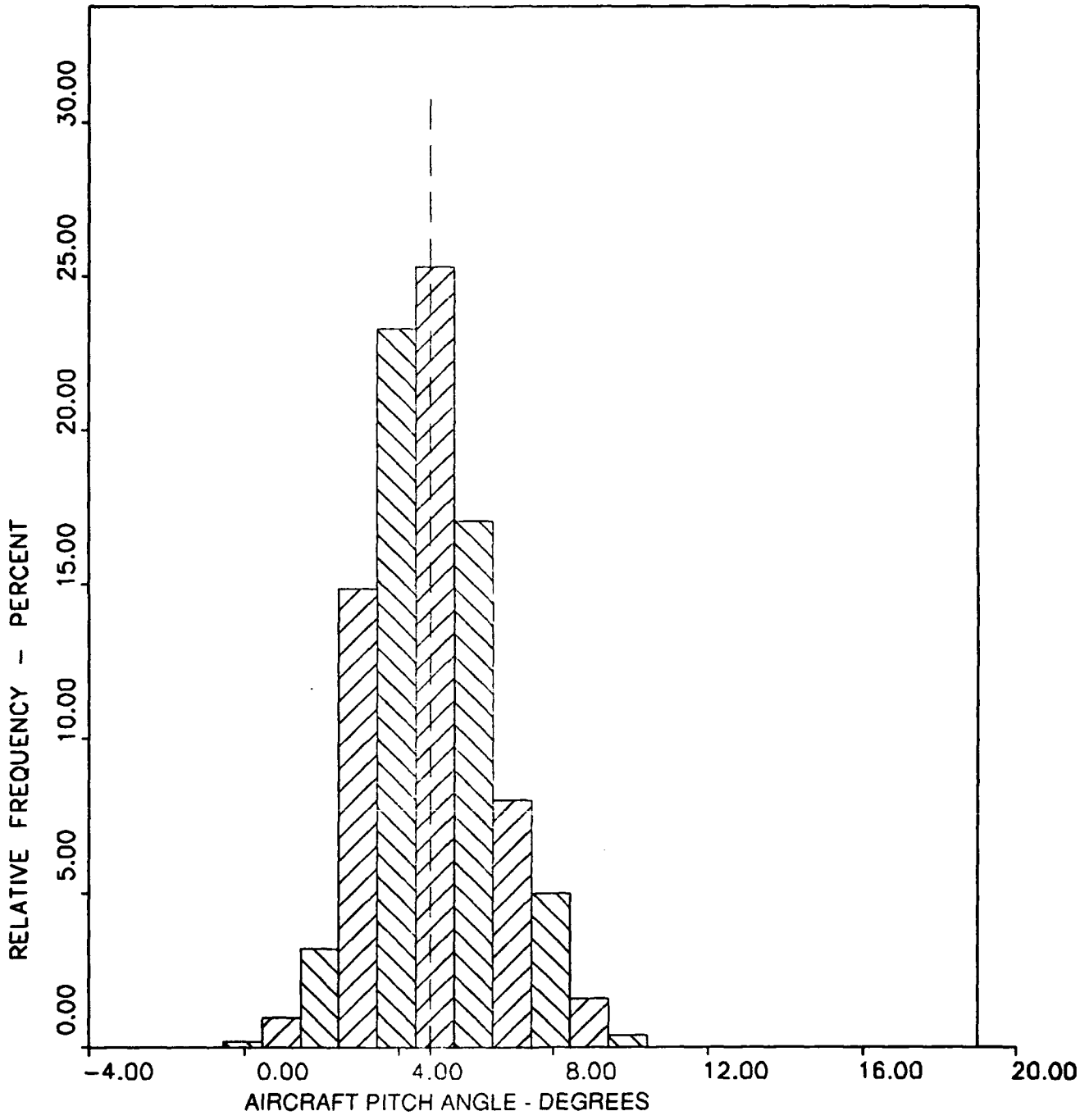


FIGURE Q-23 FREQUENCY DISTRIBUTION OF AIRCRAFT PITCH ANGLE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL T-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 498 $\bar{X}$= 4.82 DEGREES A3= 0.37
S= 1.57 DEGREES A4= 3.22
CURVE FITTED - PEARSON TYPE III
POSITIVE VALUES INDICATE NOSE UP ATTITUDE
MEASURED FROM CARRIER DECK TO FRL

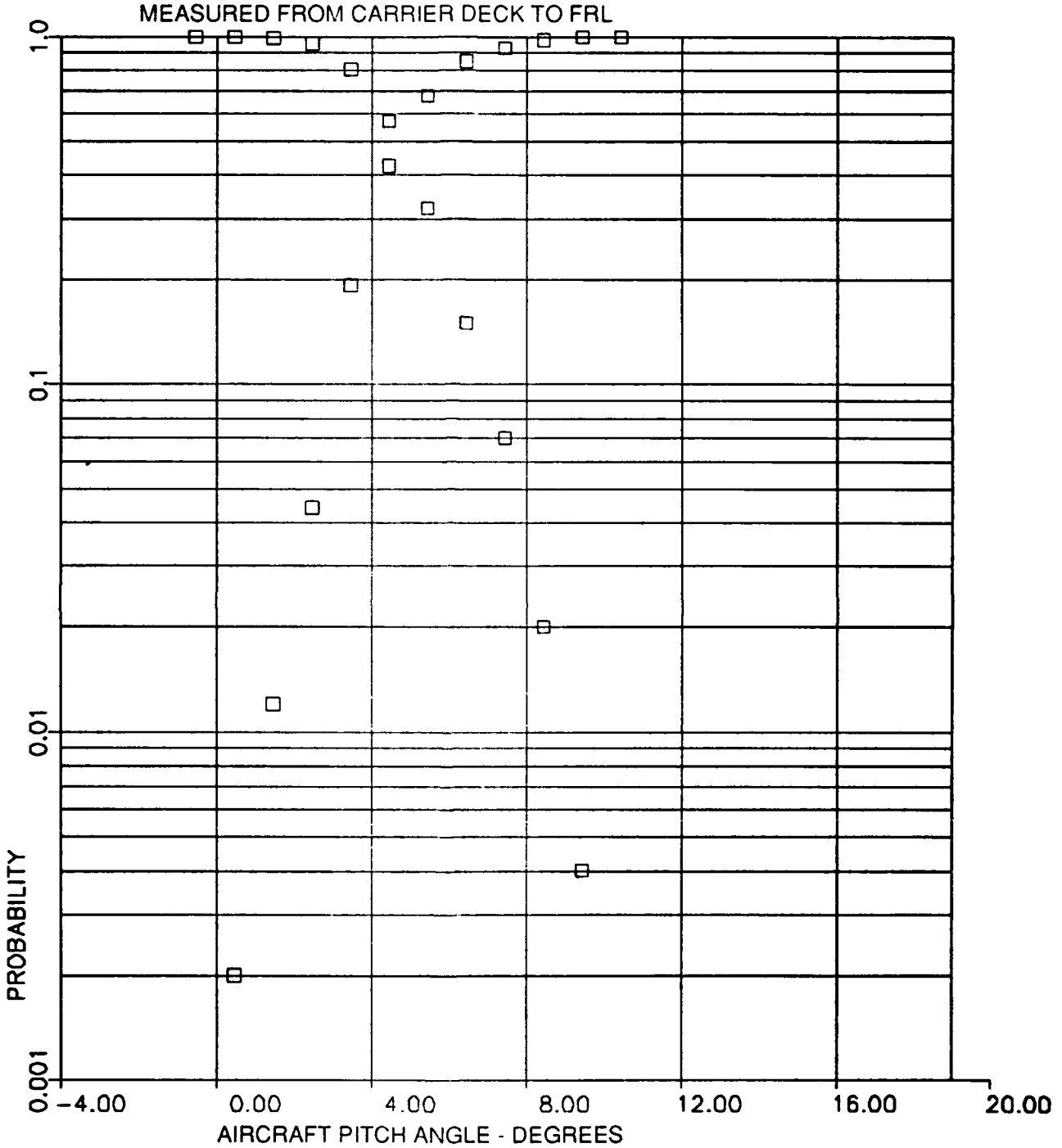


FIGURE Q-24 PROBABILITY DISTRIBUTION OF AIRCRAFT PITCH ANGLE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL T-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 28 $\bar{X}$= 5.82 DEGREES A3= 0.84
S= 1.22 DEGREES A4= 3.76

POSITIVE VALUES INDICATE NOSE UP ATTITUDE
MEASURED FROM CARRIER DECK TO FRL

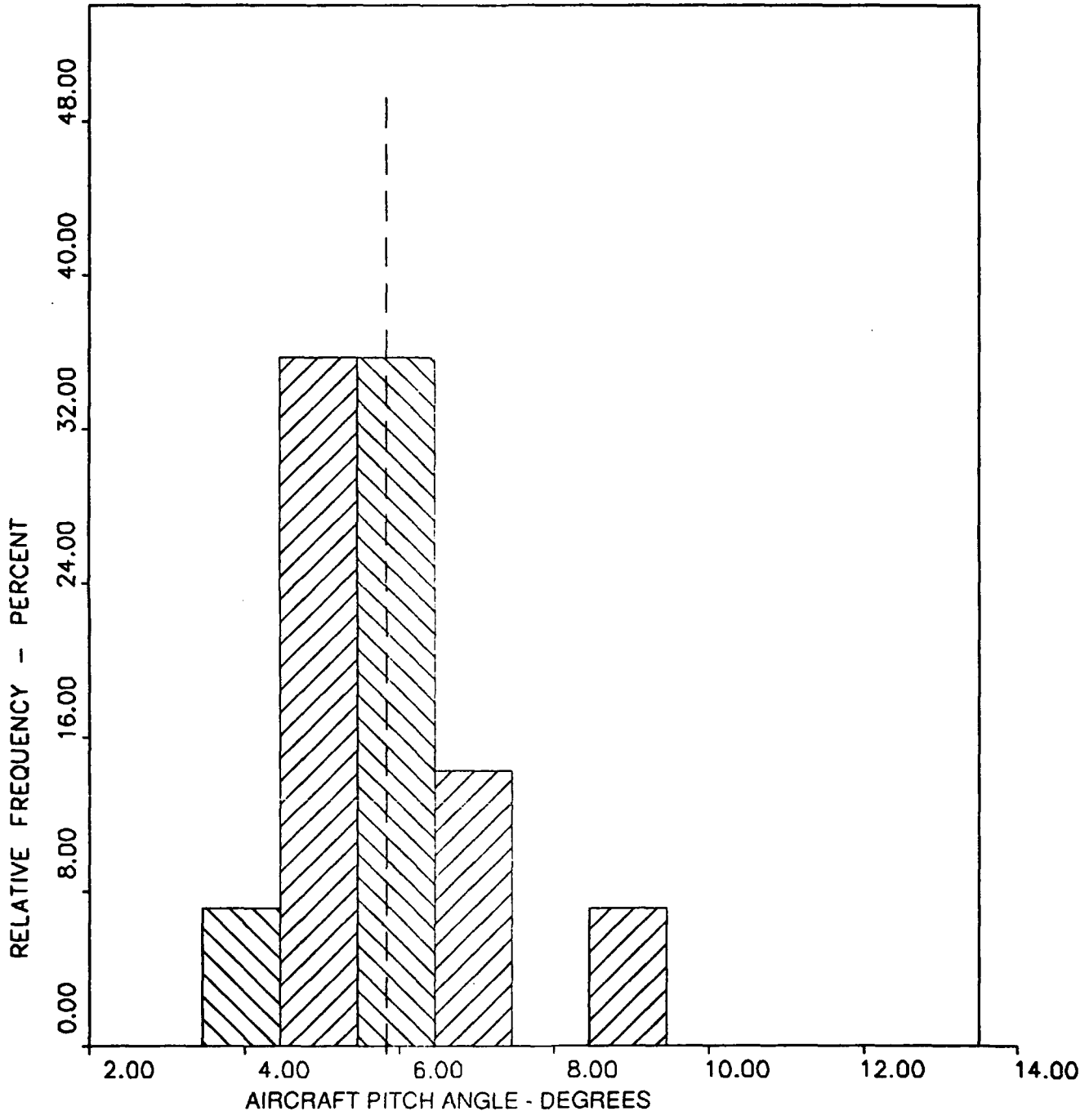


FIGURE Q-25 FREQUENCY DISTRIBUTION OF AIRCRAFT PITCH ANGLE AT FREE FLIGHT

MODEL T-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 28 $\bar{X}$= 5.82 DEGREES A3= 0.84
S= 1.22 DEGREES A4= 3.76
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE NOSE UP ATTITUDE
MEASURED FROM CARRIER DECK TO FRL

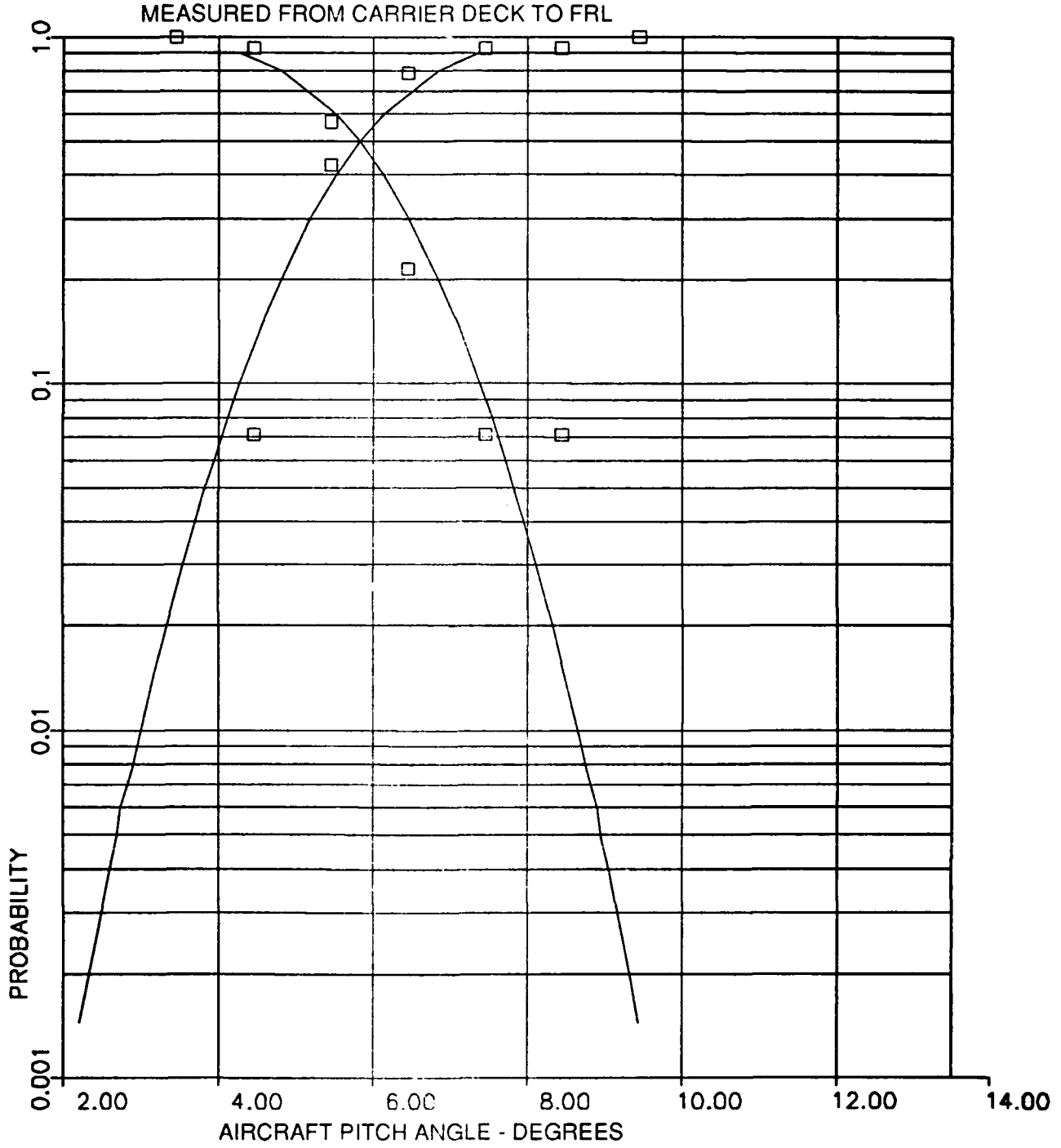


FIGURE Q-26 PROBABILITY DISTRIBUTION OF AIRCRAFT PITCH ANGLE AT FREE FLIGHT

MODEL T-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 490 $\bar{X}$=-0.24 DEGREES A3= 0.09
S= 2.81 DEGREES A4= 3.57

POSITIVE VALUES INDICATE STARBOARD WING DOWN

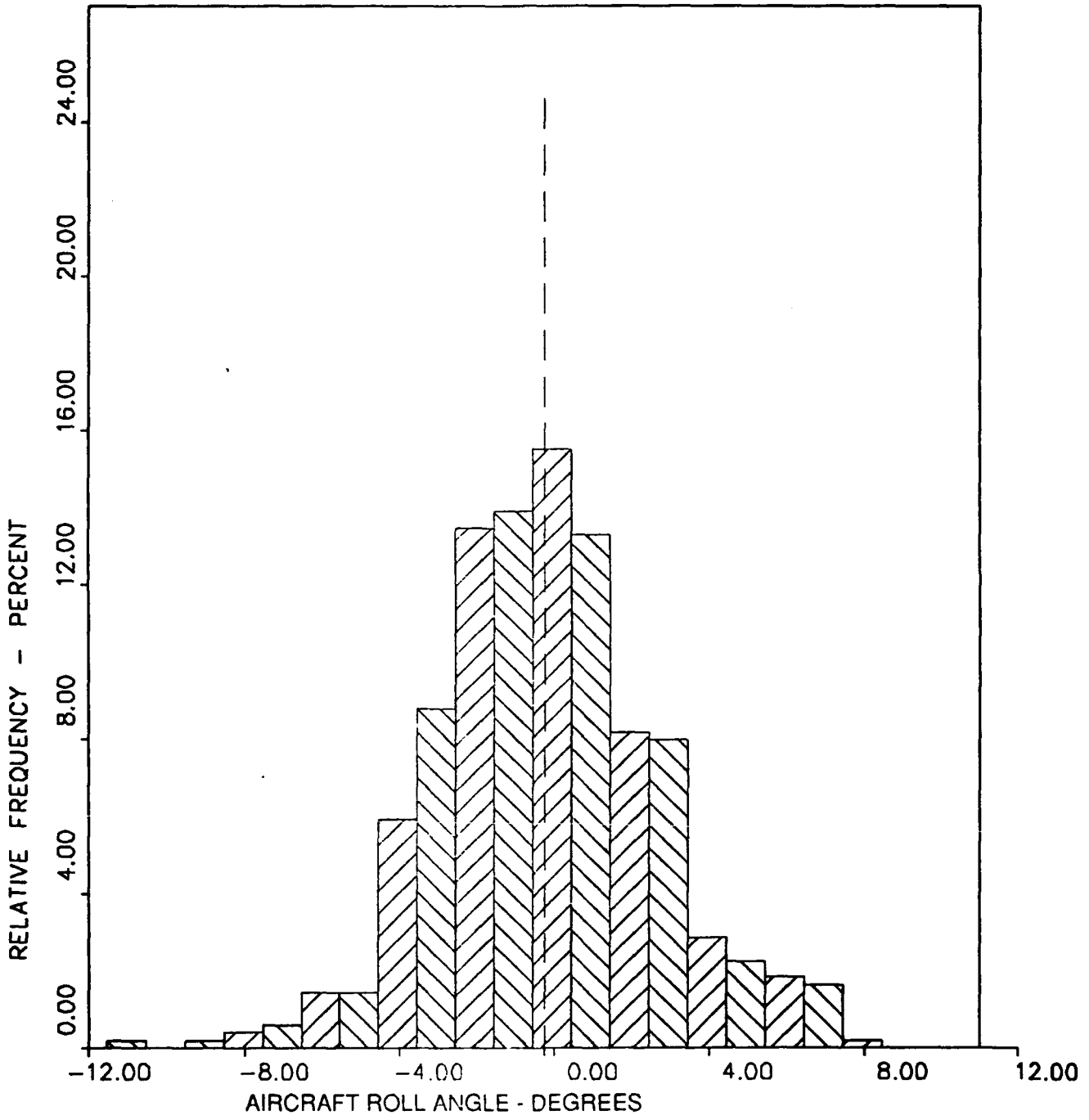


FIGURE Q-27 FREQUENCY DISTRIBUTION OF AIRCRAFT ROLL ANGLE AT THE RAMP

MODEL T-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 490 $\bar{X}$=−0.24 DEGREES A3= 0.09
S= 2.81 DEGREES A4= 3.57
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE STARBOARD WING DOWN

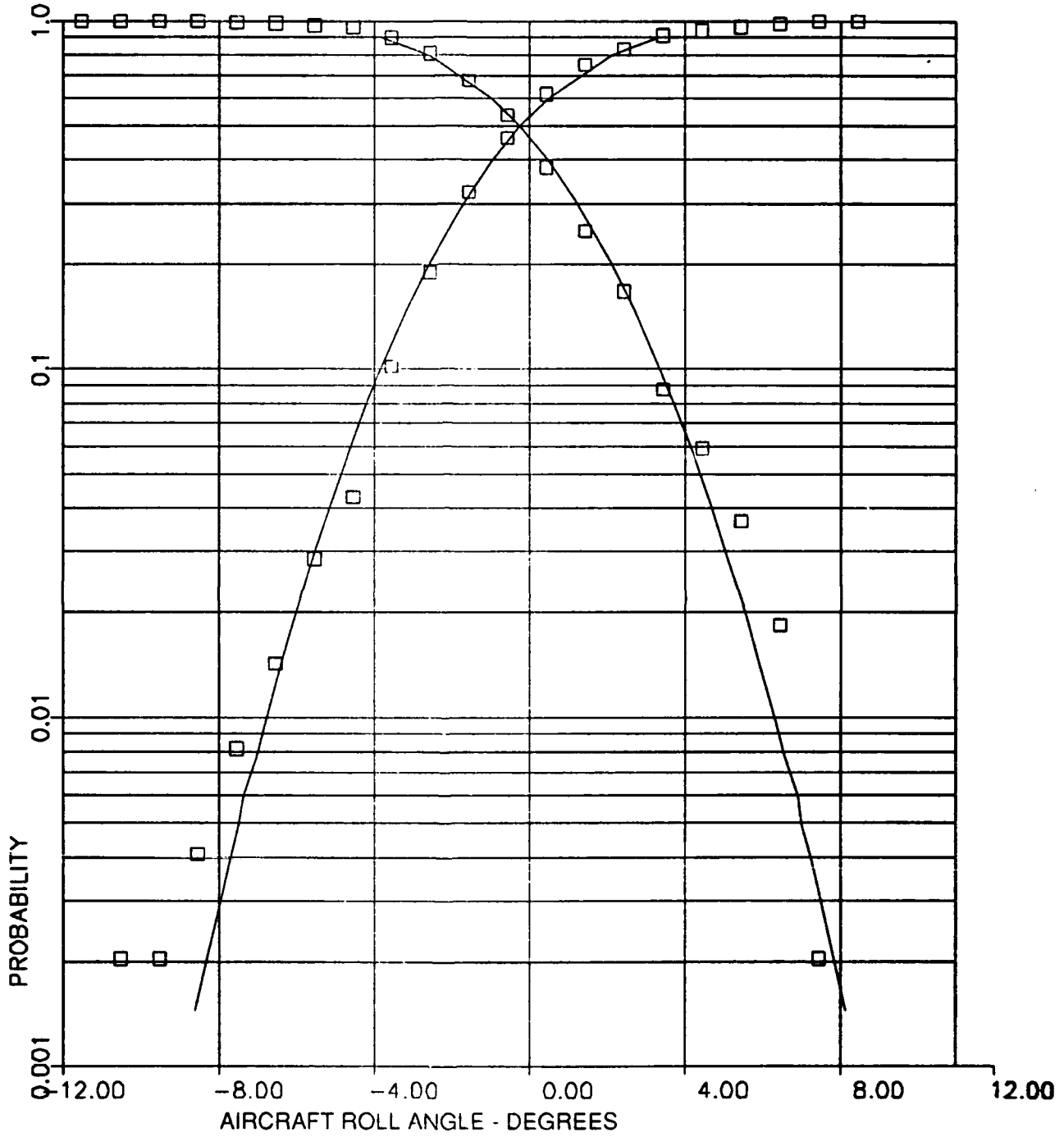


FIGURE Q-28 PROBABILITY DISTRIBUTION OF AIRCRAFT ROLL ANGLE AT THE RAMP

MODEL T-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 498 $\bar{X}$= 0.05 DEGREES A3= 0.57
S= 2.93 DEGREES A4= 3.62

POSITIVE VALUES INDICATE STARBOARD WING DOWN

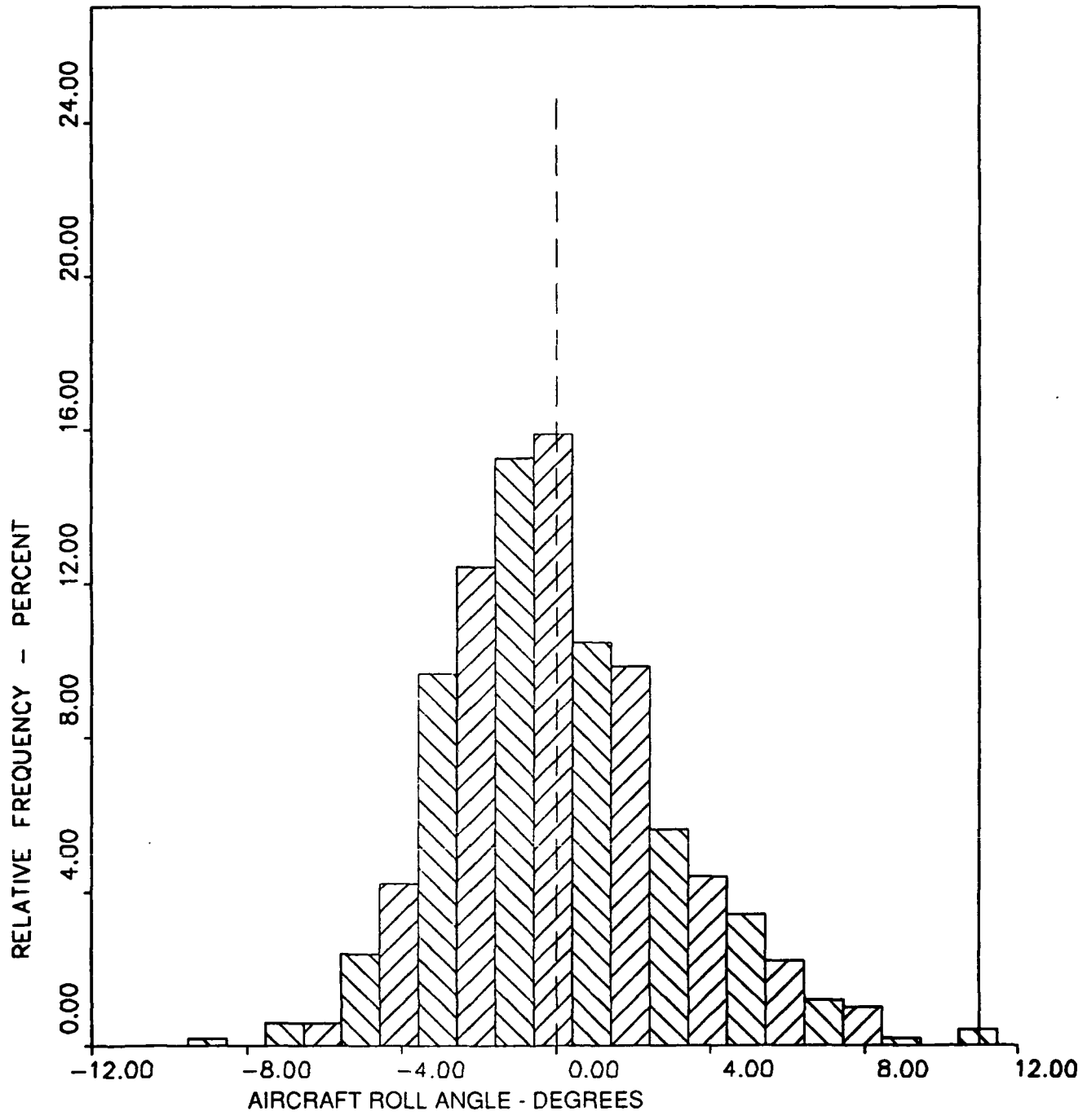


FIGURE Q-29 FREQUENCY DISTRIBUTION OF AIRCRAFT ROLL ANGLE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL T-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 498 $\bar{X}$= 0.05 DEGREES A3= 0.57
S= 2.93 DEGREES A4= 3.62
CURVE FITTED - PEARSON TYPE III
POSITIVE VALUES INDICATE STARBOARD WING DOWN

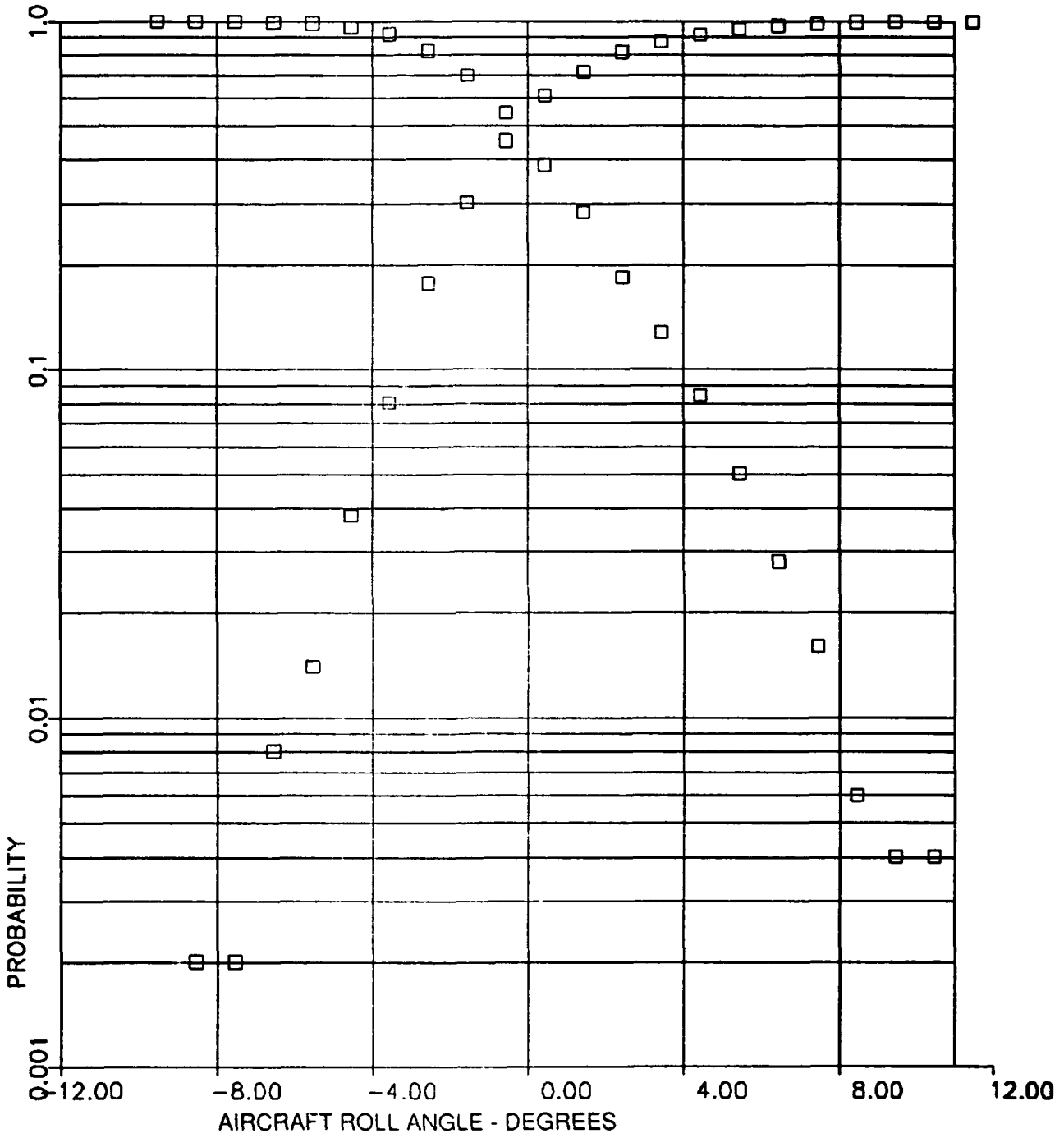


FIGURE Q-30 PROBABILITY DISTRIBUTION OF AIRCRAFT ROLL ANGLE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL T-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 28 $\bar{X}$=−0.90 DEGREES A3=−0.07
S= 1.36 DEGREES A4= 2.54

POSITIVE VALUES INDICATE STARBOARD WING DOWN

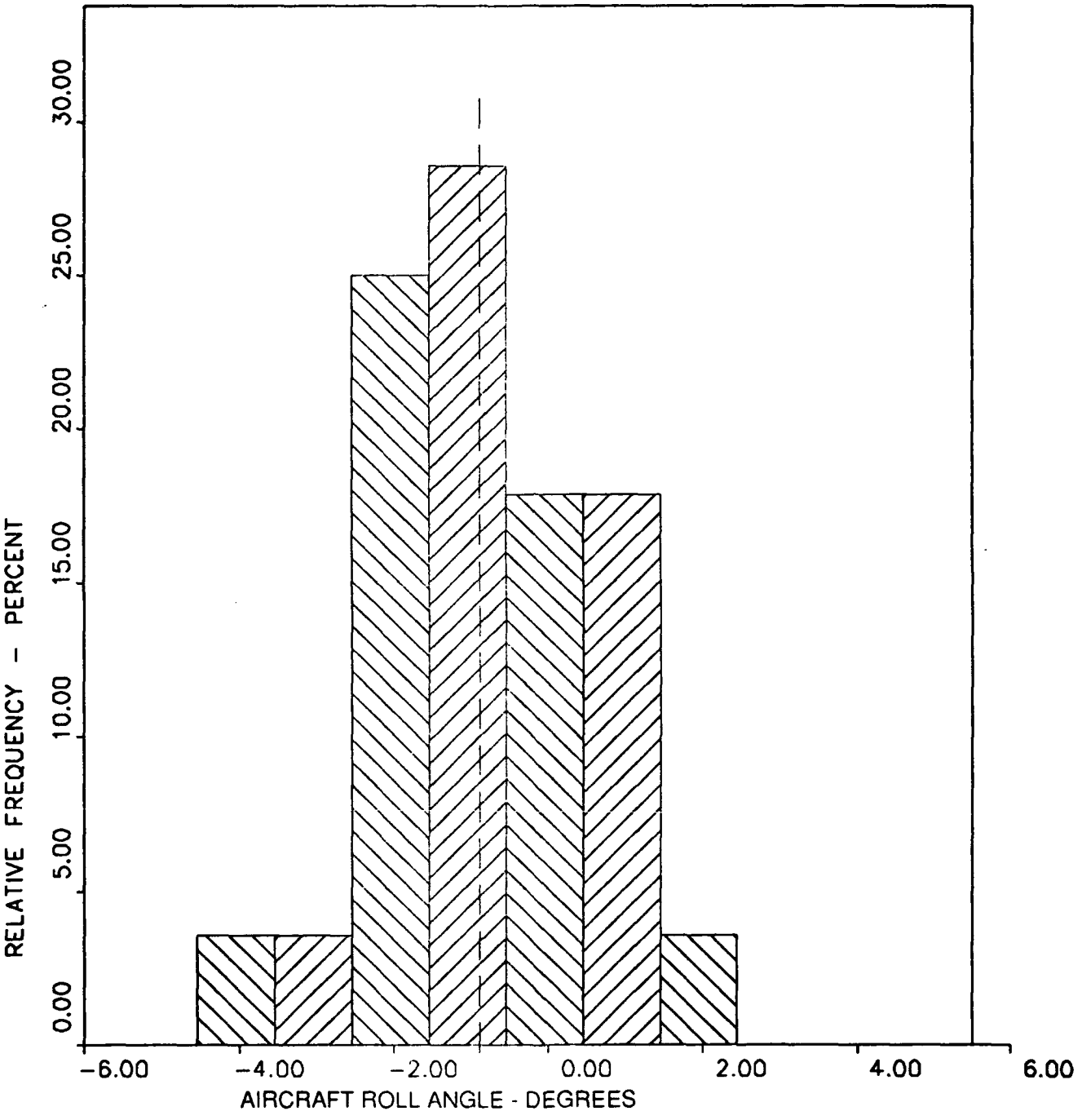


FIGURE Q-31 FREQUENCY DISTRIBUTION OF AIRCRAFT ROLL ANGLE AT FREE FLIGHT

MODEL T-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 28 $\bar{X}$=−0.90 DEGREES A3=−0.07
S= 1.36 DEGREES A4= 2.54
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE STARBOARD WING DOWN

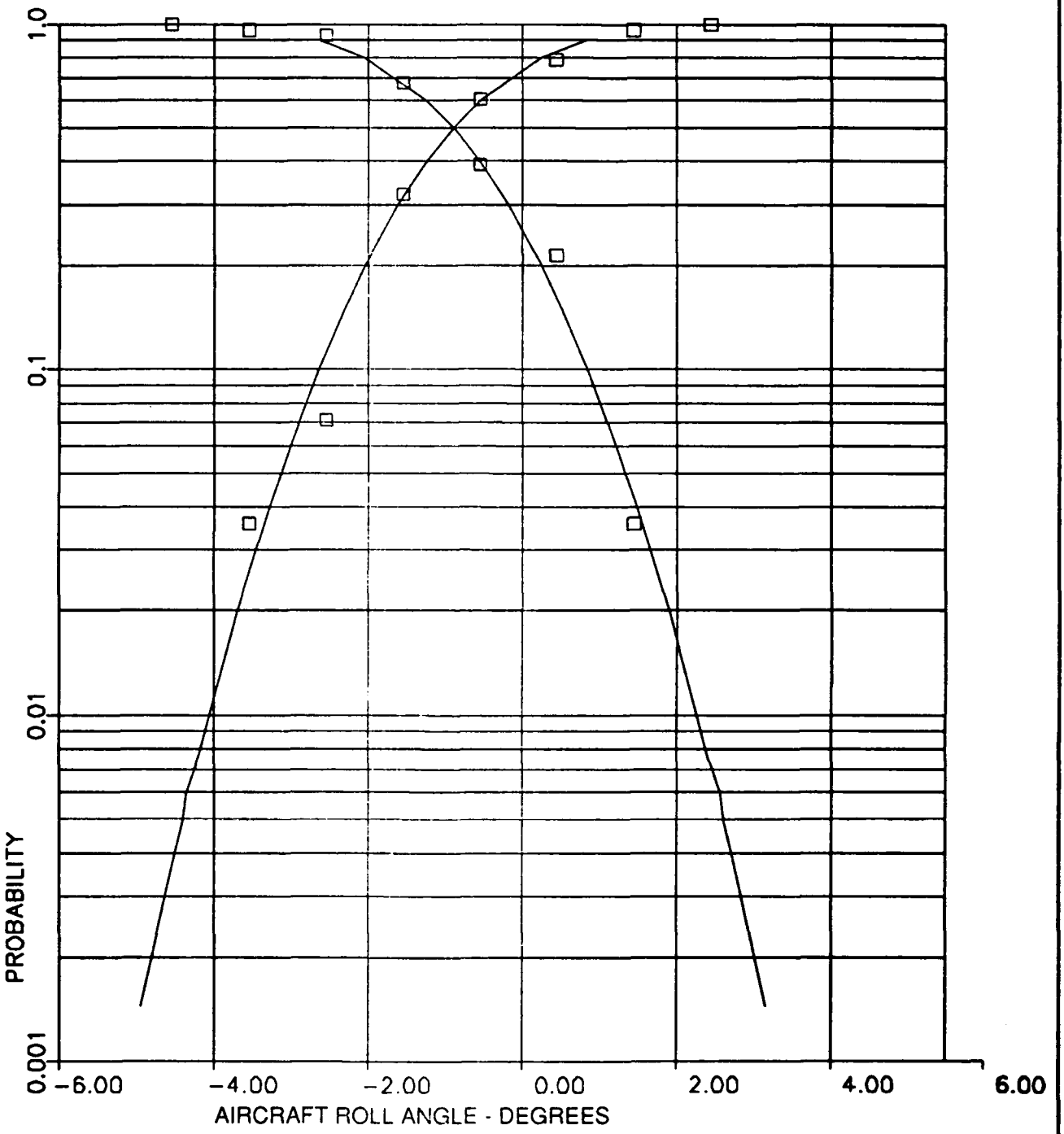


FIGURE Q-32 PROBABILITY DISTRIBUTION OF AIRCRAFT ROLL ANGLE AT FREE FLIGHT

MODEL T-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 498 $\bar{X}$= 248.42 FEET A3=-0.33
S= 44.53FEET A4= 2.66

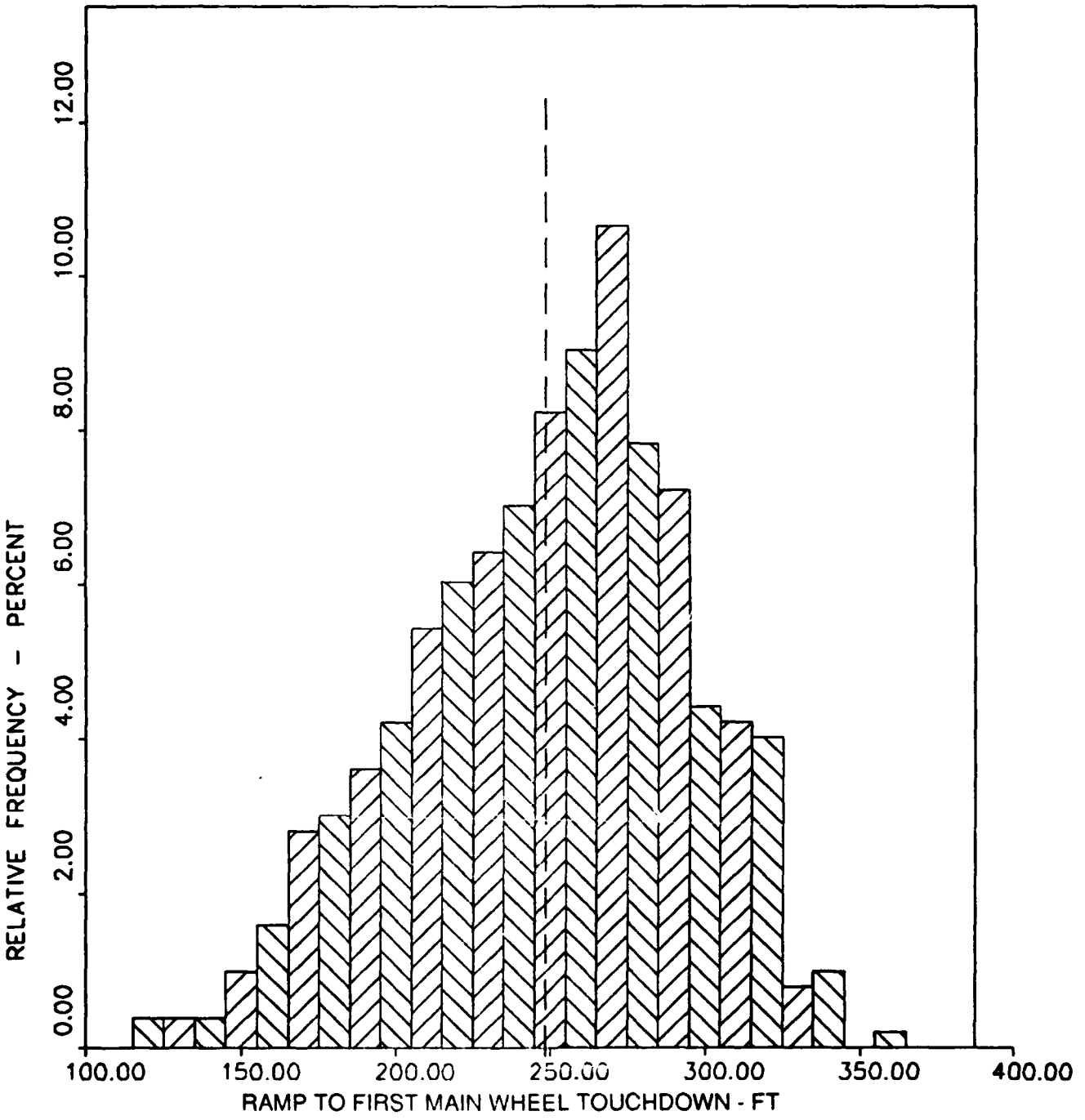


FIGURE Q-33 FREQUENCY DISTRIBUTION OF DISTANCE FROM RAMP TO FIRST MAIN WHEEL TOUCHDOWN POINT

MODEL T-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 498 $\bar{X}$= 248.42 FEET A3=-0.33
S= 44.53FEET A4= 2.66
CURVE FITTED - PEARSON TYPE III

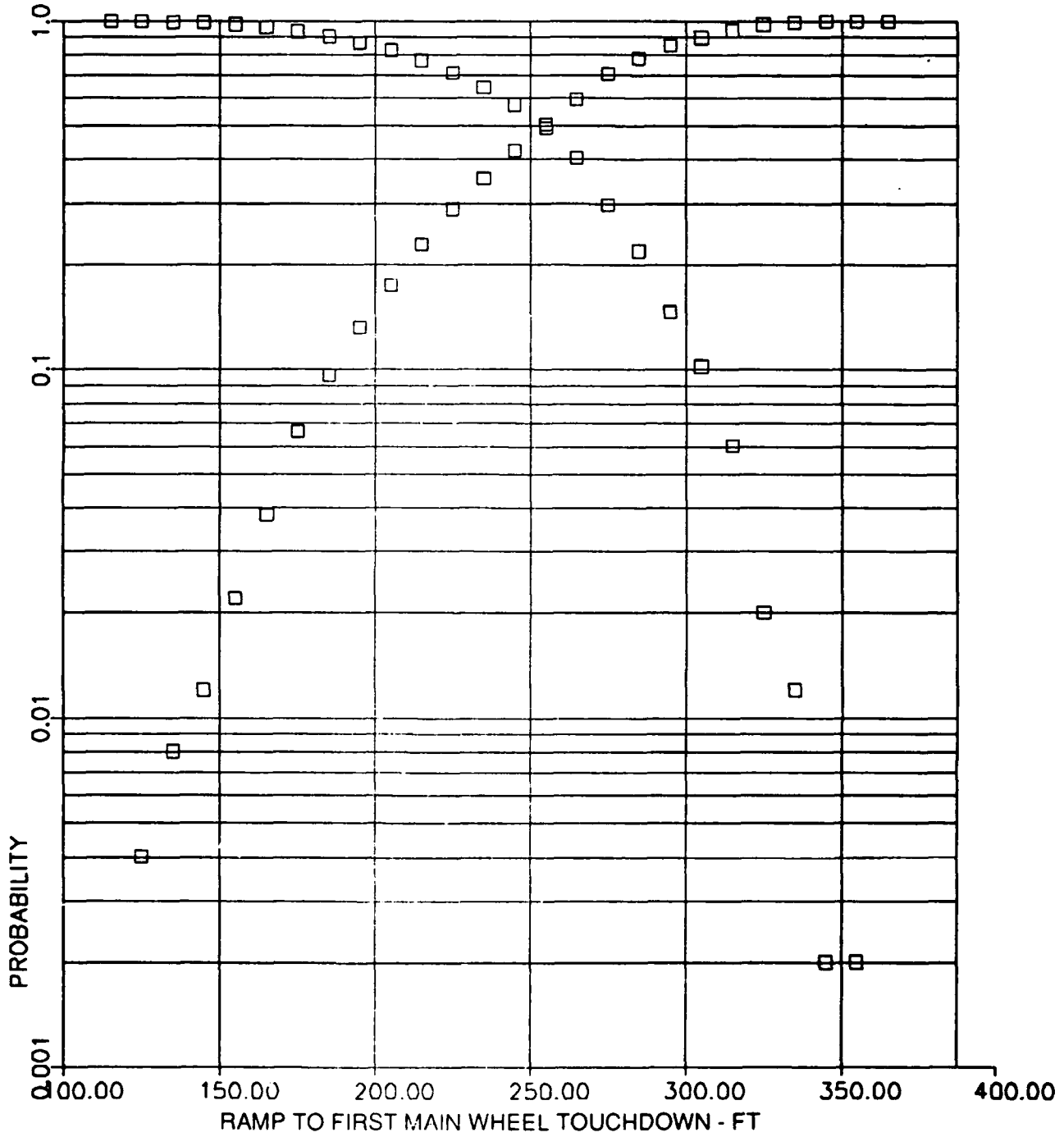


FIGURE Q-34 PROBABILITY DISTRIBUTION OF DISTANCE FROM RAMP TO FIRST MAIN WHEEL TOUCHDOWN POINT

MODEL T-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 498 $\bar{X}$= −11.09 FEET A3=−0.01
S= 5.23 FEET A4= 4.12

POSITIVE VALUES INDICATE PORT SIDE OF DECK CENTERLINE

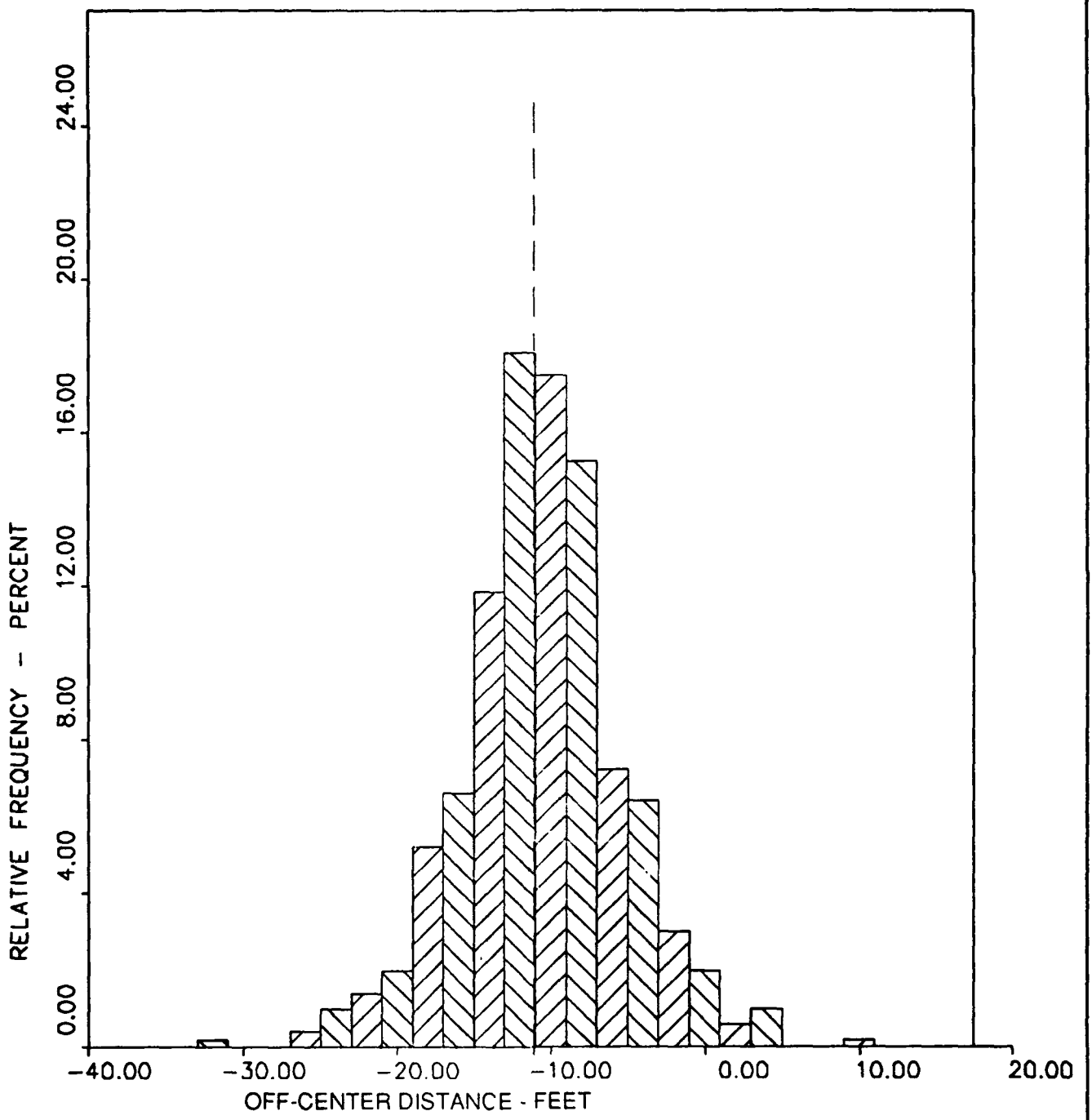


FIGURE Q-35 FREQUENCY DISTRIBUTION OF AIRCRAFT CENTERLINE OFF-CNTR DISTANCE AT 1ST MAIN WHEEL TOUCHDOWN

MODEL T-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 498 $\bar{X}$= −11.09 FEET A3=−0.01
S= 5.23 FEET A4= 4.12
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE PORT SIDE OF DECK CENTERLINE

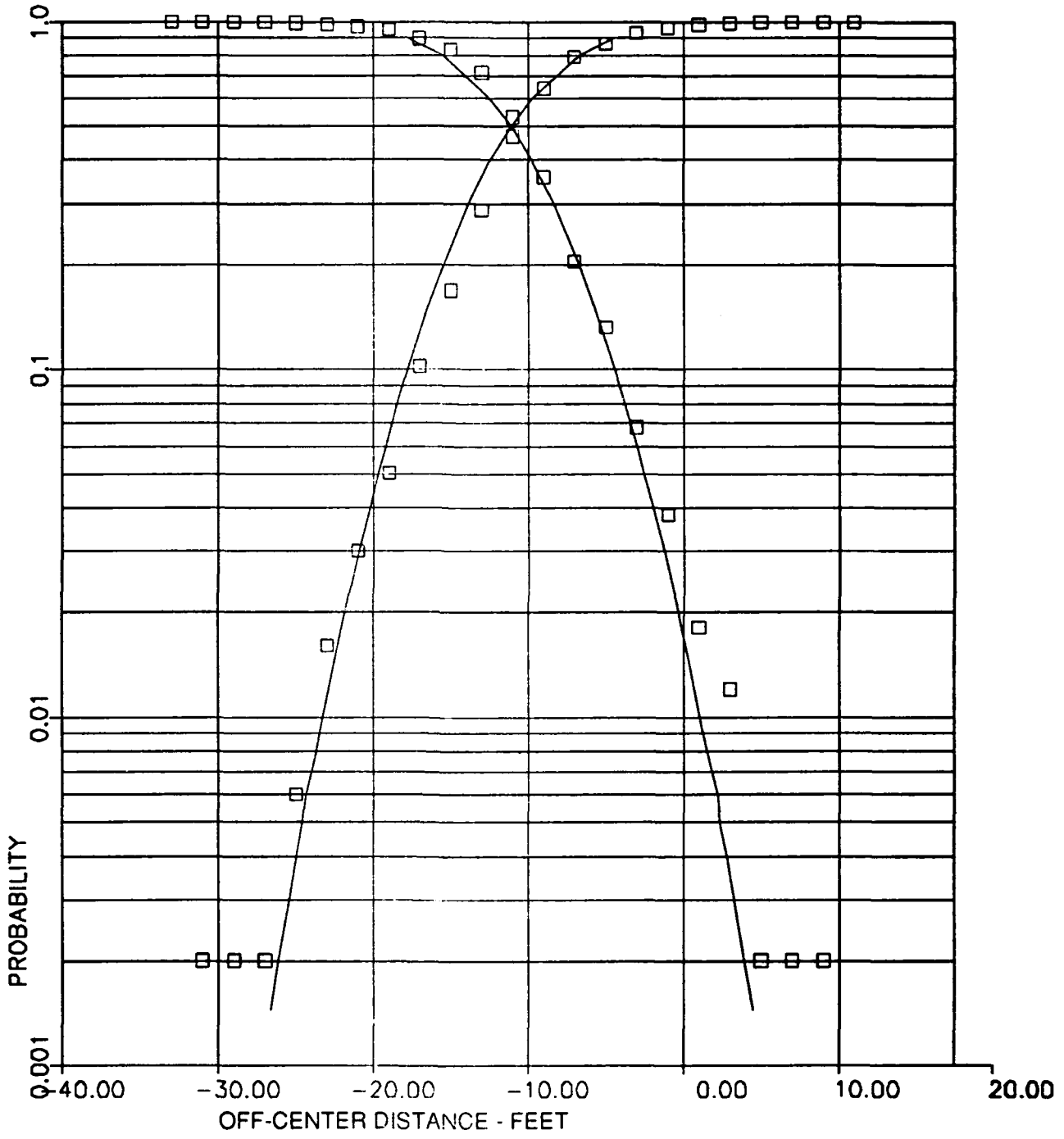


FIGURE Q-36 PROBABILITY DISTRIBUTION OF AIRCRAFT OFF-CENTER DISTANCE AT 1ST MAIN WHEEL TOUCHDOWN

MODEL T-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 310 $\bar{X}$= 2.88
S= 0.80
A3= 0.22
A4= 1.61

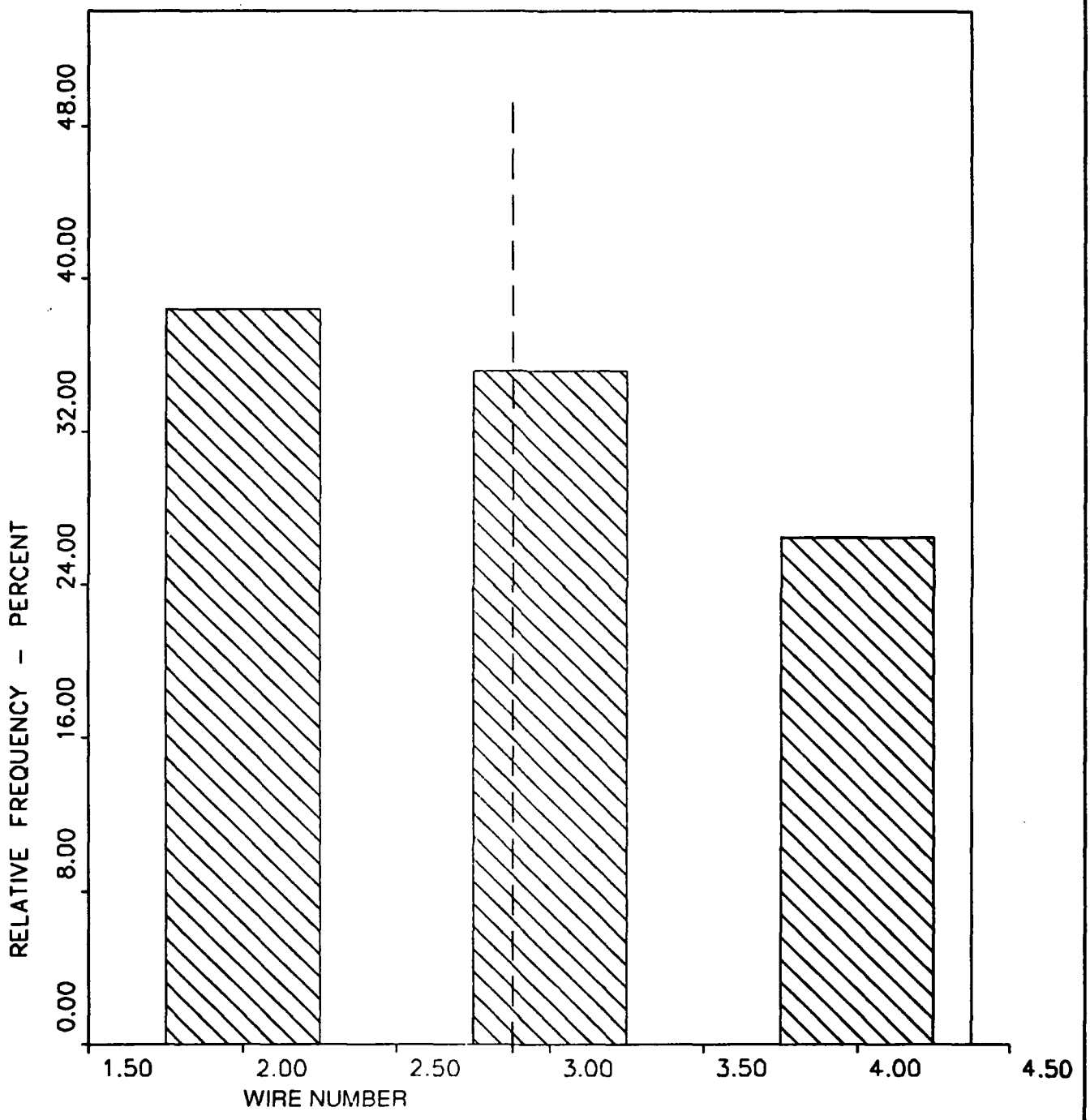


FIGURE Q-37 FREQUENCY DISTRIBUTION OF ARRESTMENT WIRE NUMBER ENGAGED

MODEL T-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 490 $\bar{X}$= 2.83 DEGREES A3= 0.97
S= 0.66 DEGREES A4= 5.59

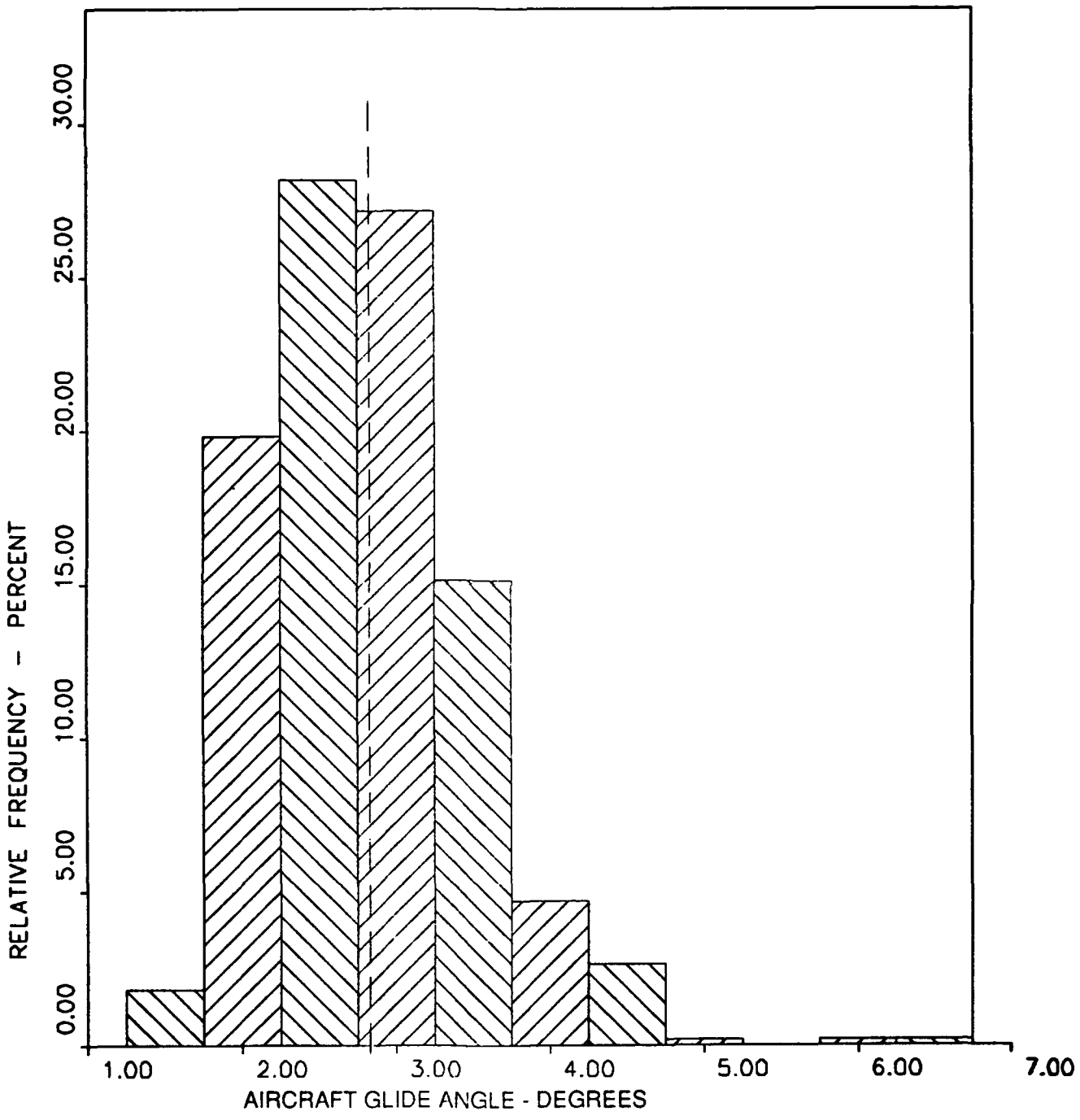


FIGURE Q-38 FREQUENCY DISTRIBUTION OF AIRCRAFT GLIDE ANGLE - GEOMETRIC METHOD

MODEL T-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 490 $\bar{X}$= 13.21 FEET
S= 3.08 FEET
A3= 0.14
A4= 2.92

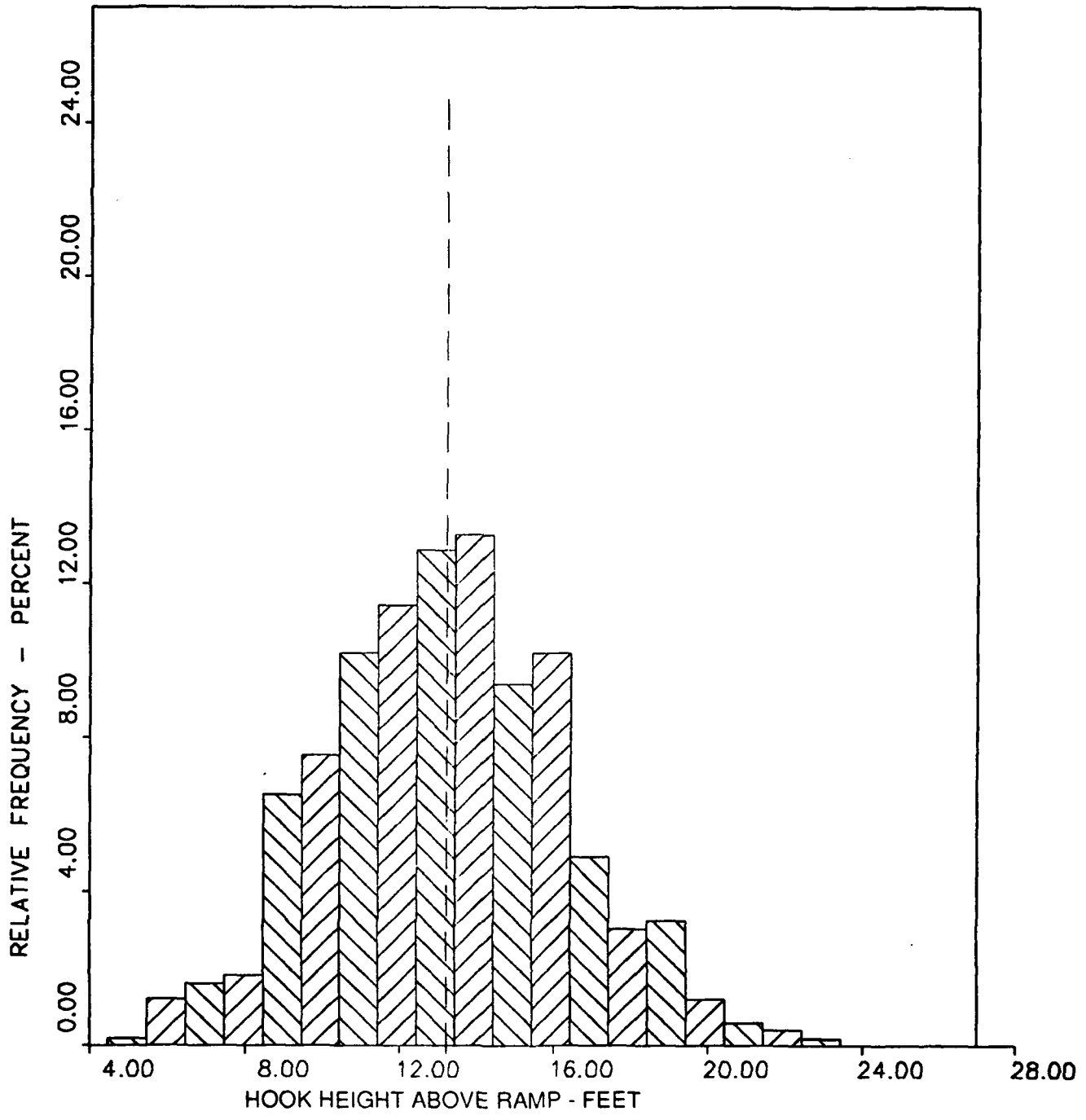


FIGURE Q-39 FREQUENCY DISTRIBUTION OF AIRCRAFT ARRESTMENT HOOK HEIGHT ABOVE CARRIER RAMP

MODEL T-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 490 $\bar{X}$= 13.21 FEET
S= 3.08 FEET
CURVE FITTED - NORMAL

A3= 0.14
A4= 2.92

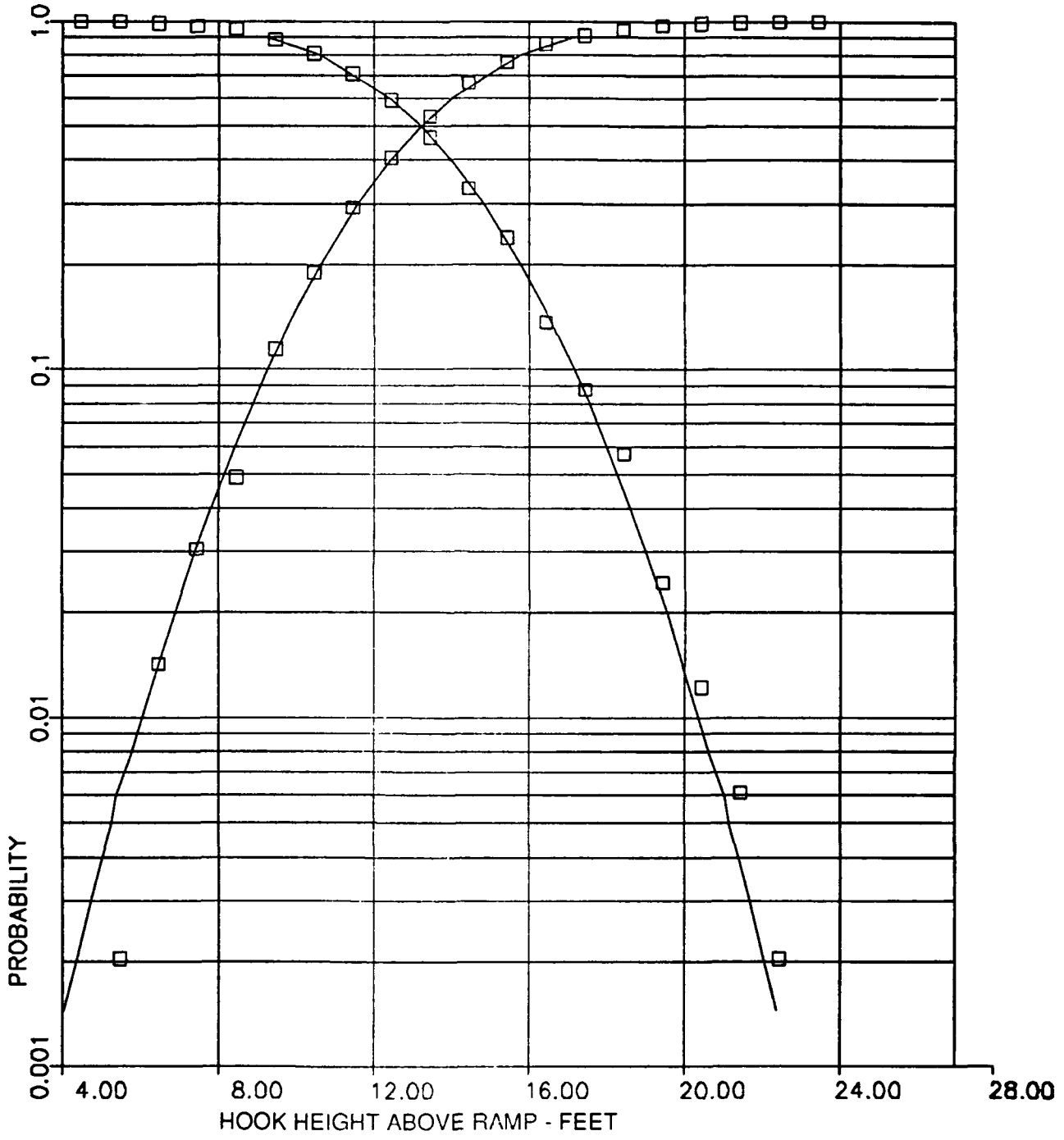


FIGURE Q-40 PROBABILITY DISTRIBUTION OF ARRESTMENT
HOOK HEIGHT ABOVE CARRIER RAMP

MODEL T-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 498 $\bar{X}$= 82.35 KNOTS A3= 0.32
S= 5.42 KNOTS A4= 4.33

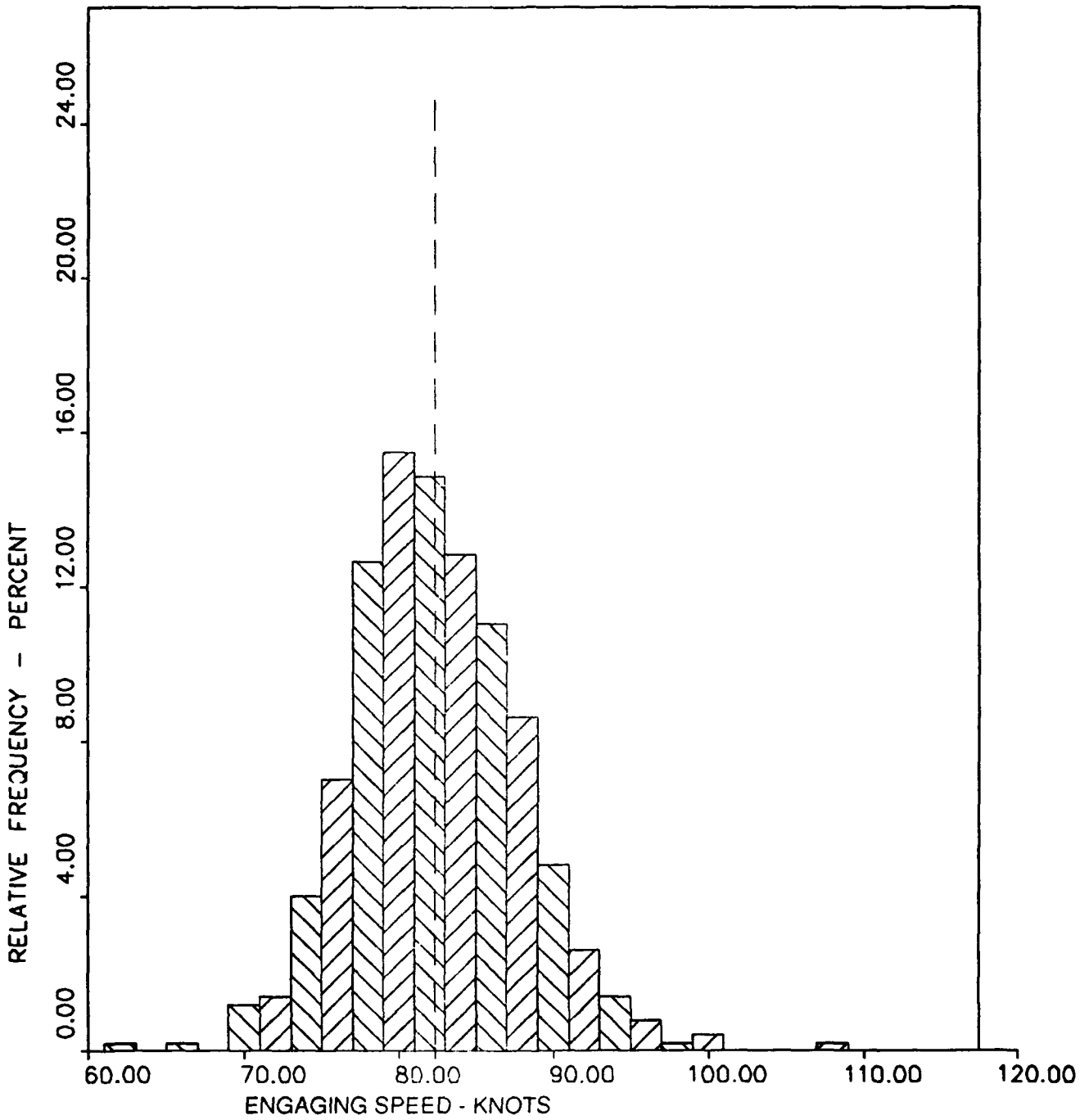


FIGURE Q-41 FREQUENCY DISTRIBUTION OF AIRCRAFT ENGAGING SPEED AT FIRST MAIN WHEEL TOUCHDOWN

MODEL T-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 498 $\bar{X}$= 82.35 KNOTS A3= 0.32
S= 5.42 KNOTS A4= 4.33
CURVE FITTED - PEARSON TYPE III

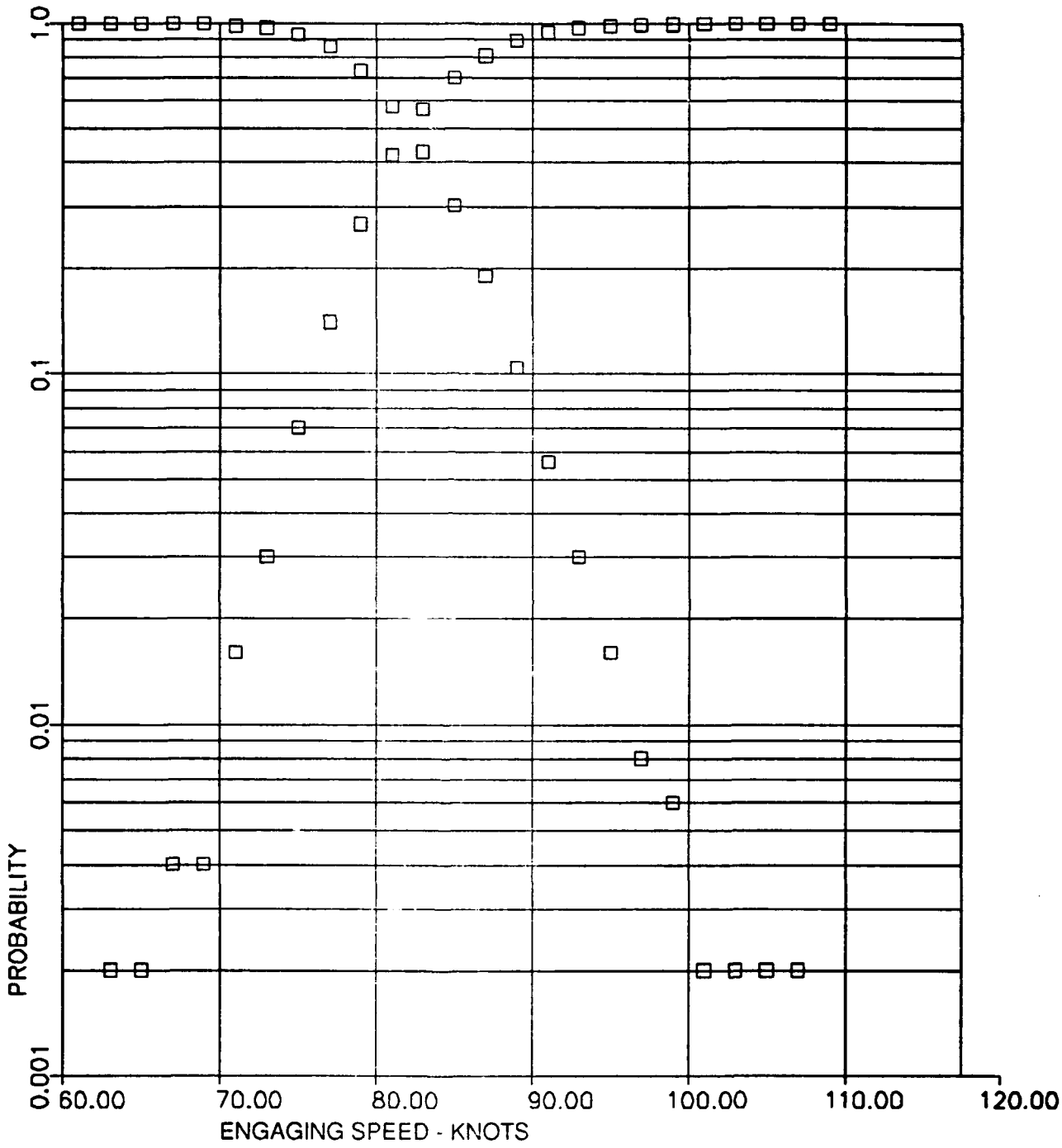


FIGURE Q-42 PROBABILITY DISTRIBUTION OF ENGAGING SPEED AT FIRST MAIN WHEEL TOUCHDOWN

MODEL T-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 496 $\bar{X}$= 95.07 KNOTS A3= 0.73
S= 1.84 KNOTS A4= 6.29

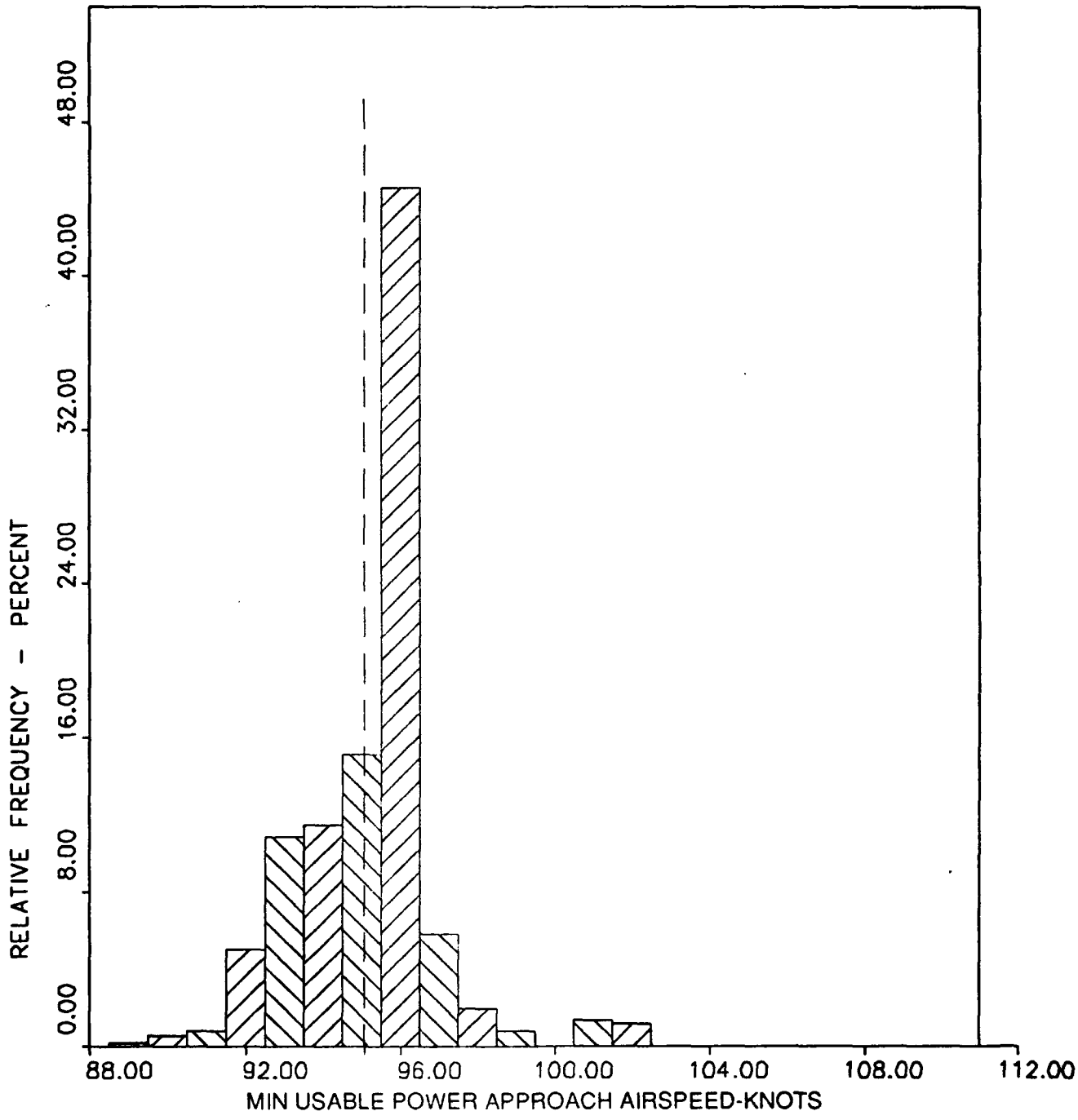


FIGURE Q-43 FREQUENCY DISTRIBUTION OF MINIMUM USABLE POWER APPROACH AIRSPEED

MODEL T-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 496 $\bar{X}$= 1.12 A3= 0.59
S= 0.06 A4= 4.97

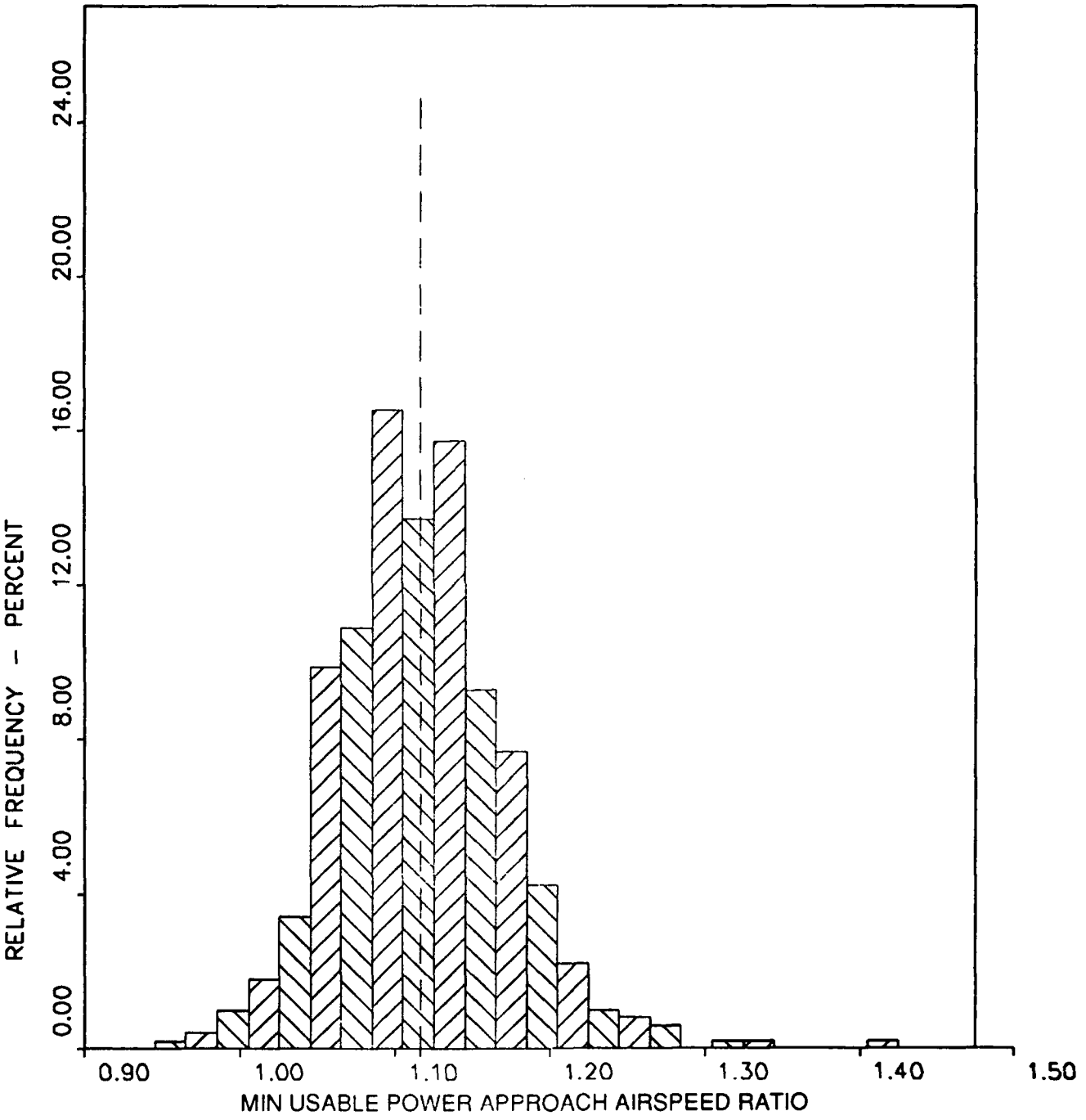


FIGURE Q-44 FREQUENCY DISTRIBUTION OF MINIMUM USABLE POWER APPROACH AIRSPEED RATIO - FILM

MODEL T-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 493 $\bar{X}$=−0.05 DEGREES A3= 0.13
S= 0.95 DEGREES A4= 4.35

POSITIVE VALUES INDICATE PORT SIDE OF DECK UP

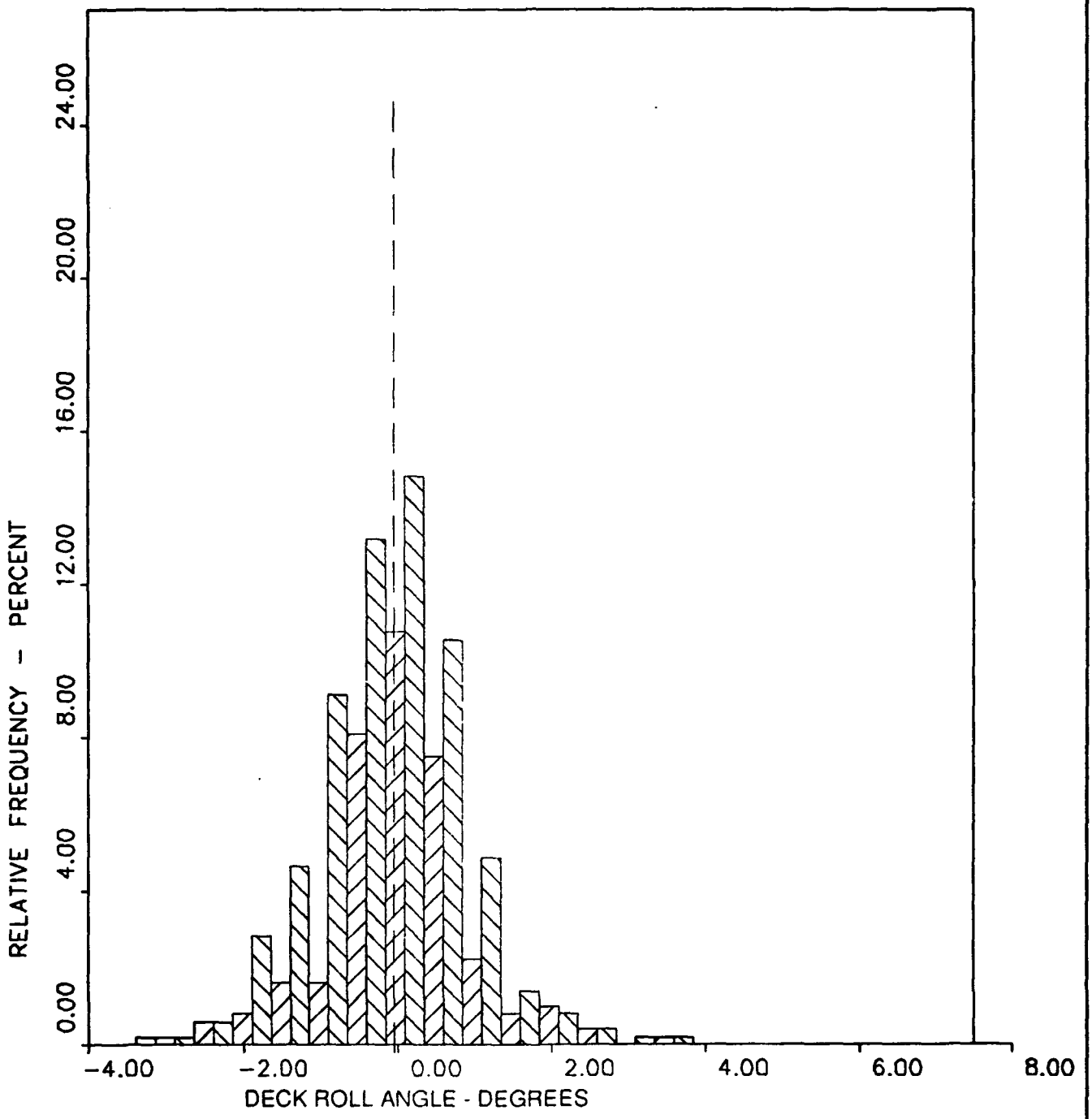


FIGURE Q-45 FREQUENCY DISTRIBUTION OF CARRIER DECK ROLL MOTION

MODEL T-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 493 $\bar{X}$=−0.05 DEGREES A3= 0.13
S= 0.95 DEGREES A4= 4.35
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE PORT SIDE OF DECK UP

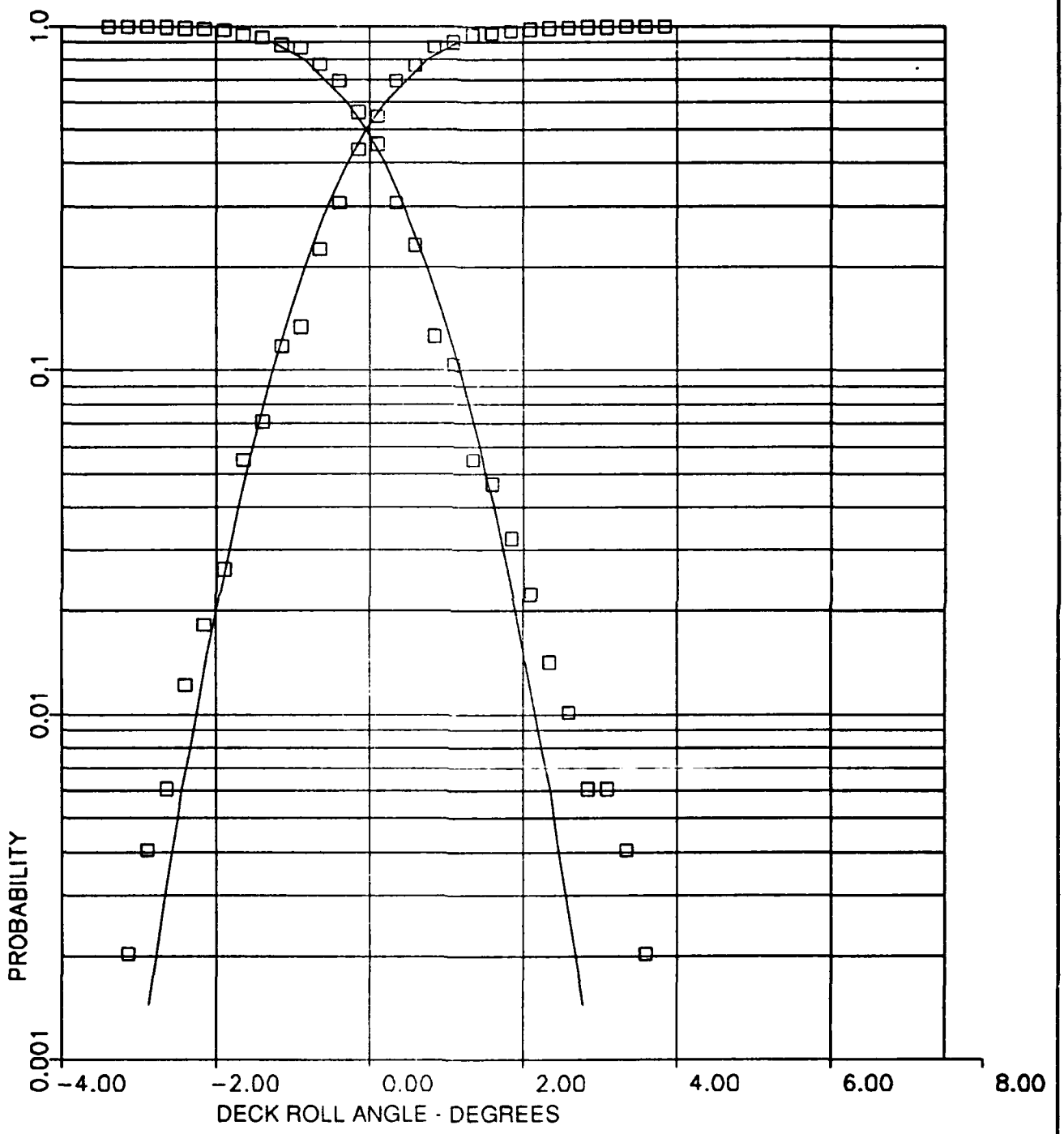


FIGURE Q-46 PROBABILITY DISTRIBUTION OF CARRIER DECK ROLL MOTION

MODEL T-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 493 $\bar{X}$=-0.10 DEGREES A3=-0.39
S= 0.21 DEGREES A4= 3.03

POSITIVE VALUES INDICATE BOW OF SHIP DOWN FROM HORIZONTAL

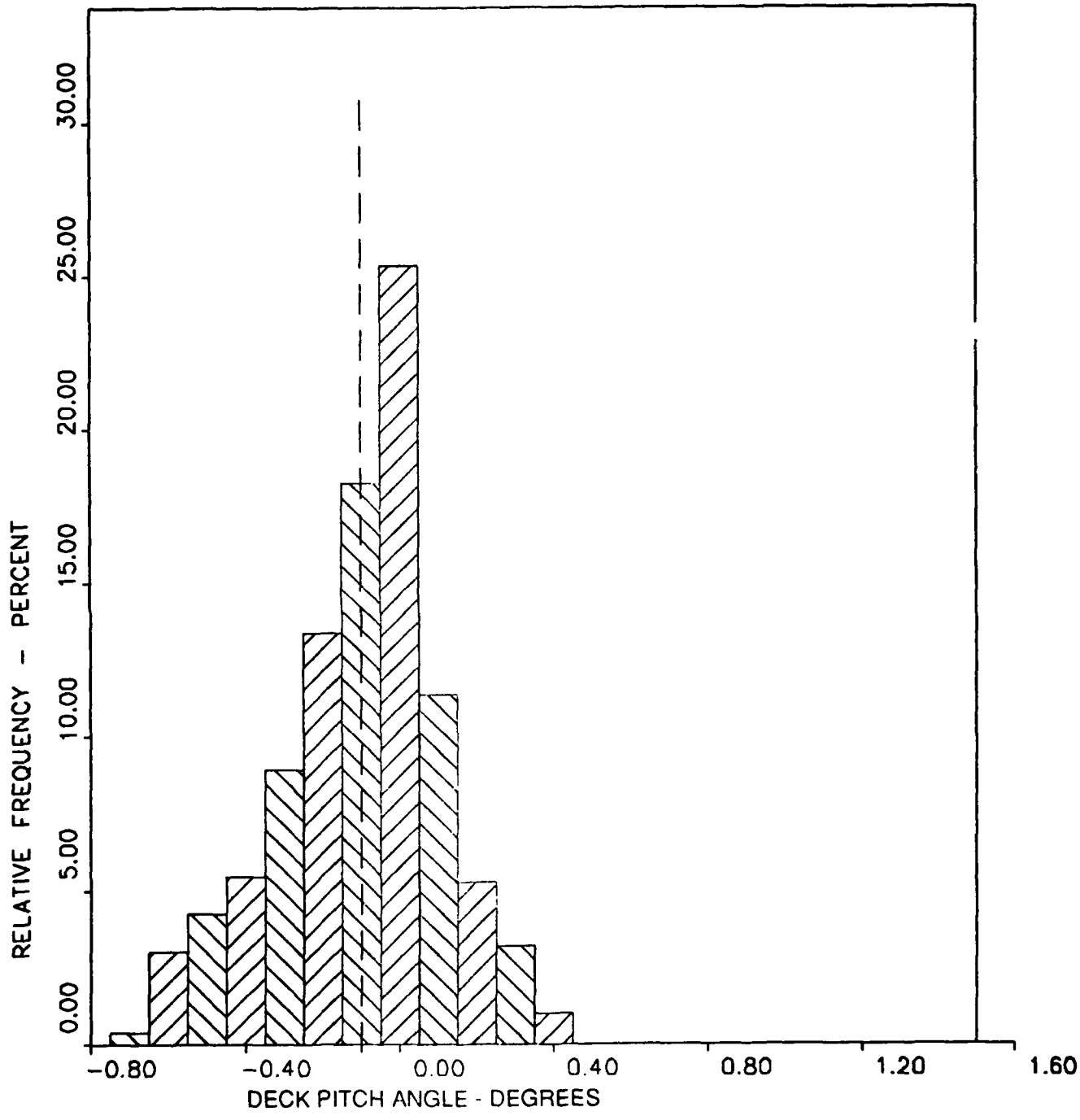


FIGURE Q-47 FREQUENCY DISTRIBUTION OF CARRIER DECK PITCH MOTION

MODEL T-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 493 $\bar{X}$=−0.10 DEGREES A3=−0.39
S= 0.21 DEGREES A4= 3.03
CURVE FITTED - PEARSON TYPE III
POSITIVE VALUES INDICATE BOW OF SHIP DOWN FROM HORIZONTAL

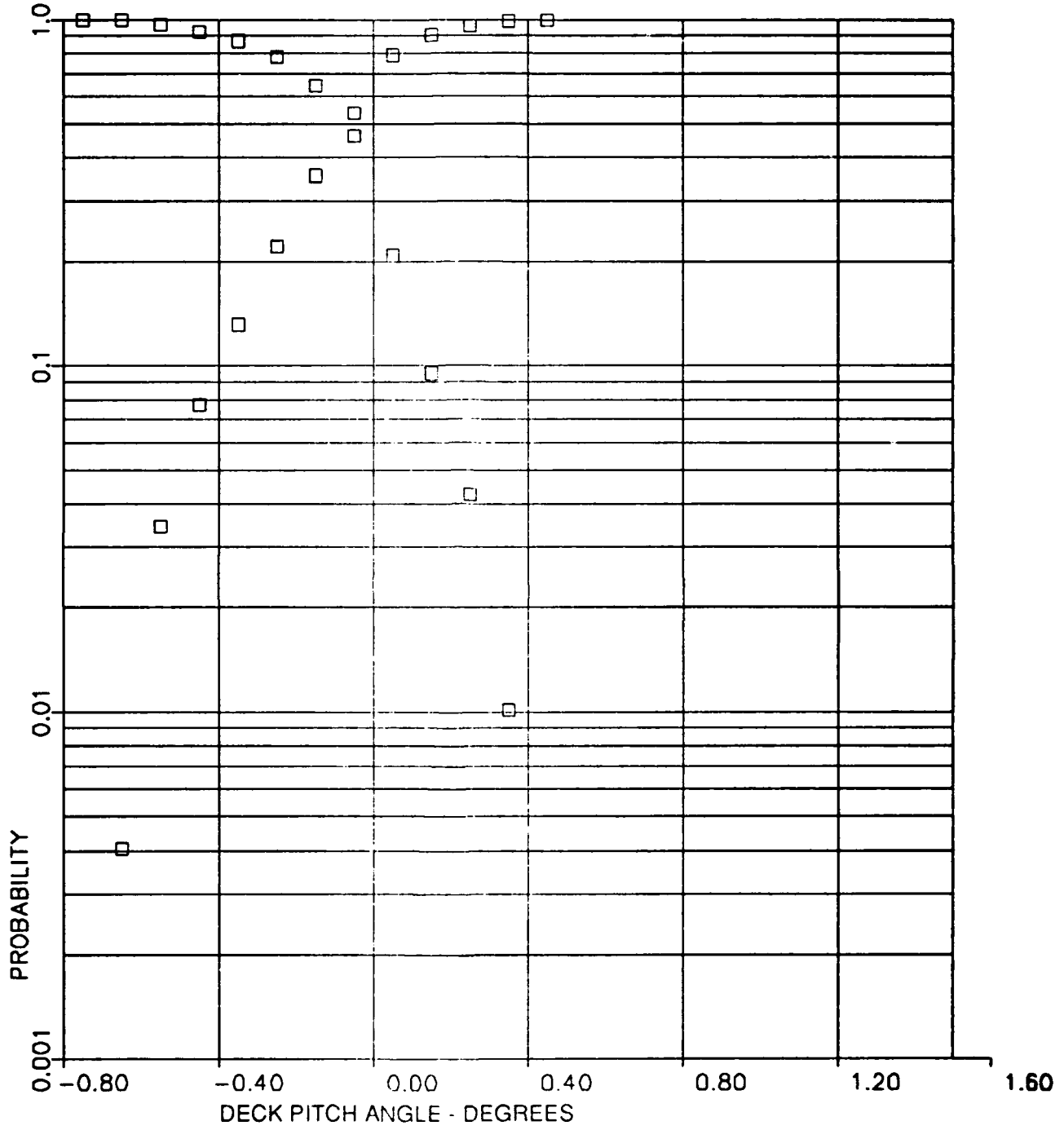


FIGURE Q-48 PROBABILITY DISTRIBUTION OF CARRIER DECK PITCH MOTION

MODEL T-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 496 $\bar{X}$= 9433.52 POUNDS A3= 0.87
S= 367.16 POUNDS A4= 6.67

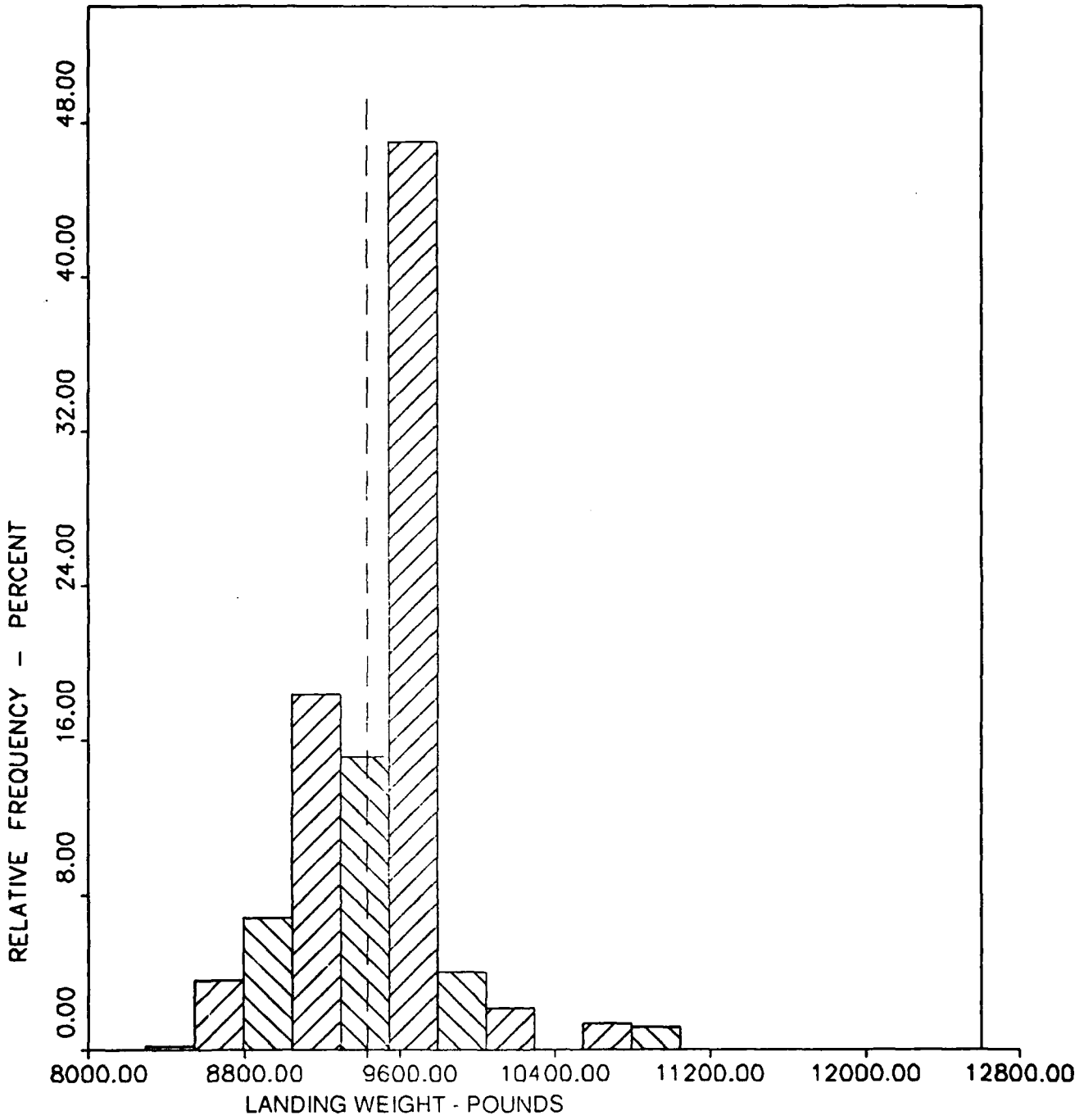


FIGURE Q-49 FREQUENCY DISTRIBUTION OF AIRCRAFT LANDING WEIGHT

MODEL T-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 498 $\bar{X}$= 1.75 DEG/SEC A3= 0.10
S= 6.59 DEG/SEC A4= 3.68

POSITIVE VALUES INDICATE STARBOARD WING DOWN

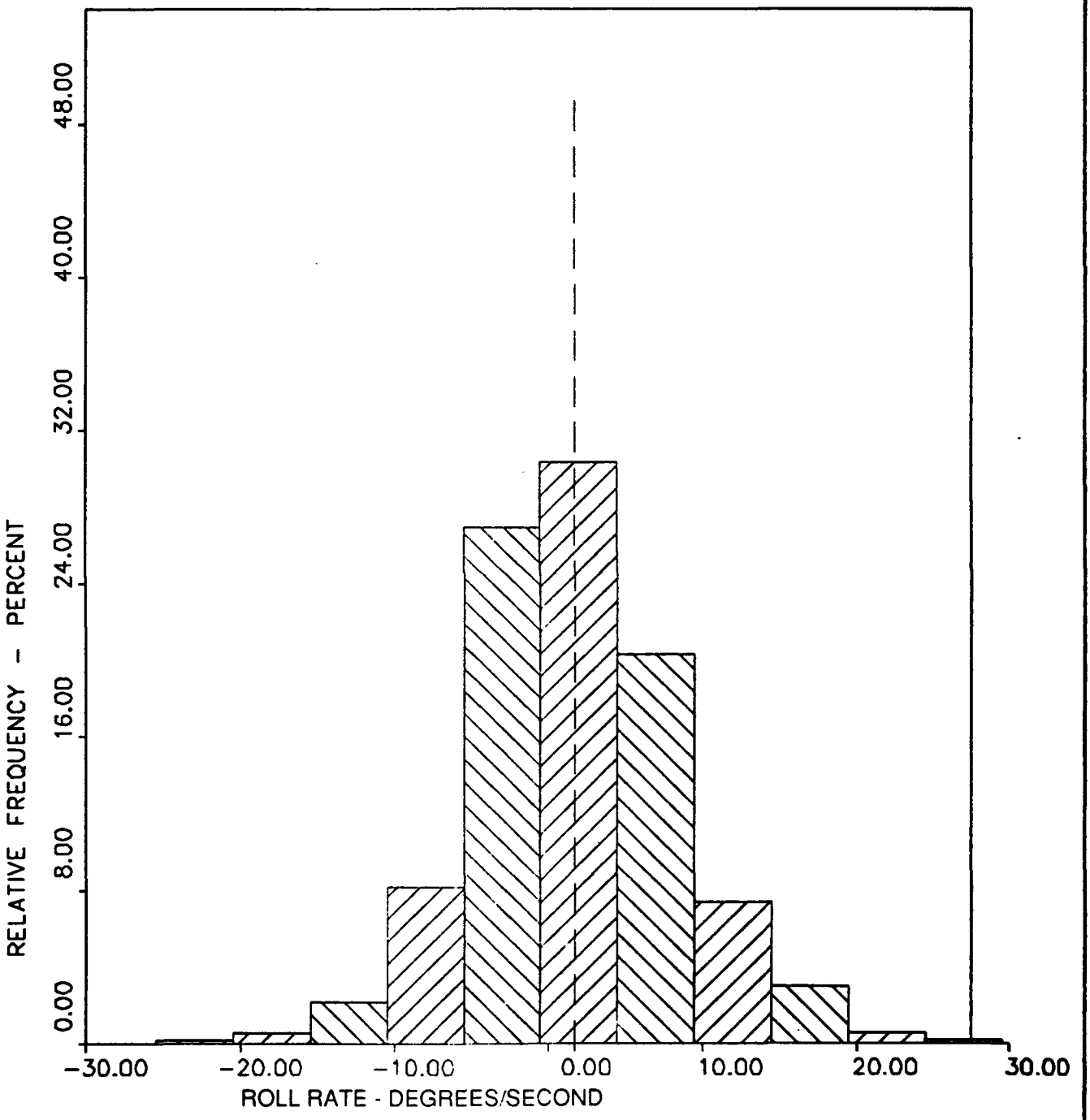


FIGURE Q-50 FREQUENCY DISTRIBUTION OF ROLL RATE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL T-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 498 $\bar{X}$= 1.75 DEG/SEC A3= 0.10
S= 6.59 DEG/SEC A4= 3.68
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE STARBOARD WING DOWN

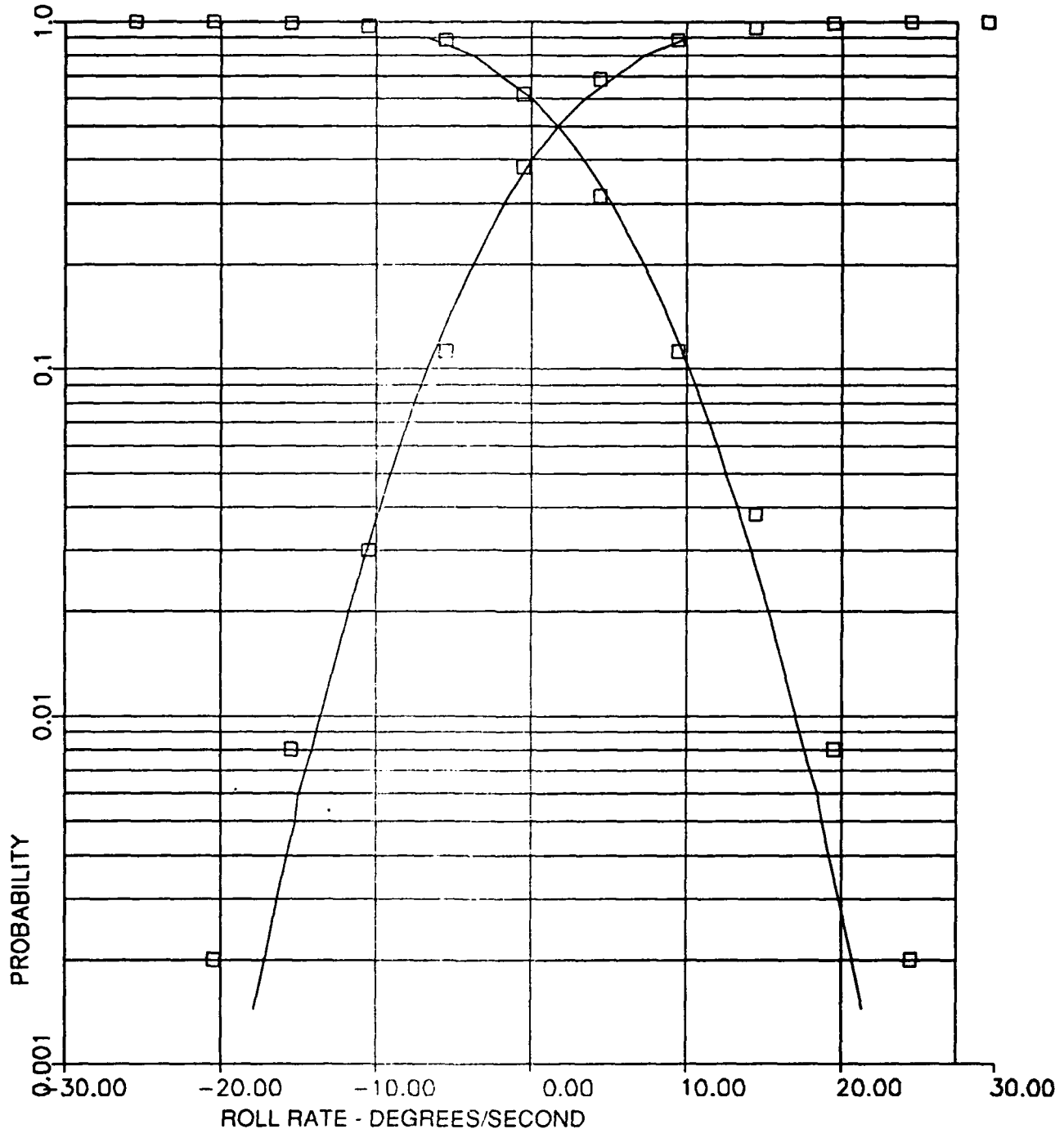


FIGURE Q-51 PROBABILITY DISTRIBUTION OF ROLL RATE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL T-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 498 $\bar{X}$= 0.90 DEG/SEC A3=-0.02
S= 3.56 DEG/SEC A4= 4.80

POSITIVE VALUES INDICATE NOSE UP ATTITUDE
MEASURED FROM HORIZONTAL TO FRL

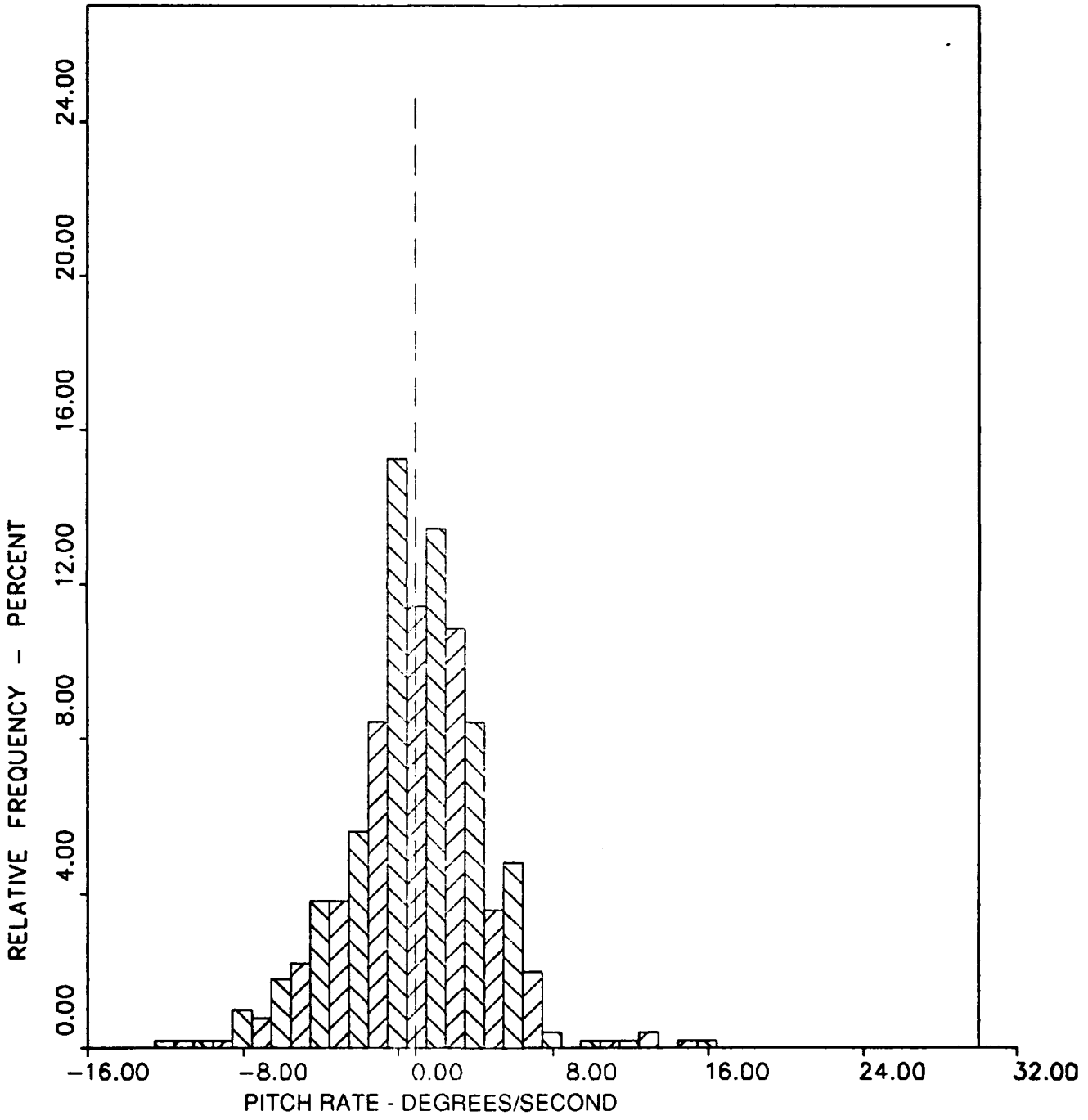


FIGURE Q-52 FREQUENCY DISTRIBUTION OF PITCH RATE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL T-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 498 $\bar{X}$= 0.90 DEG/SEC A3=-0.02
S= 3.56 DEG/SEC A4= 4.80
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE NOSE UP ATTITUDE
MEASURED FROM HORIZONTAL TO FRL

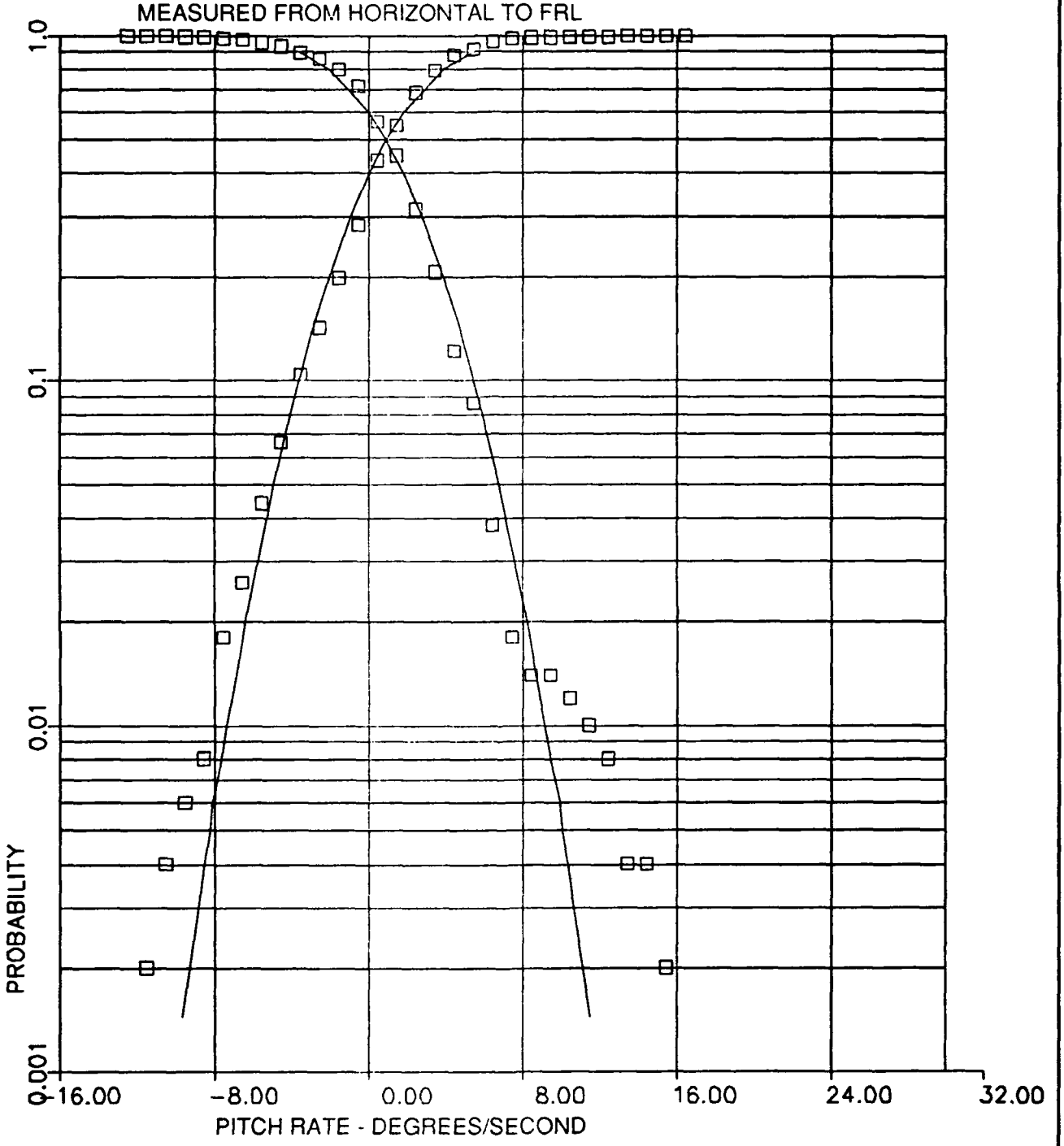


FIGURE Q-53 PROBABILITY DISTRIBUTION OF PITCH RATE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL T-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 498 $\bar{X}$= 3.60 DEGREES A3=-0.19
S= 3.41 DEGREES A4= 4.86
CURVE FITTED - PEARSON TYPE III
POSITIVE VALUES INDICATE F.P.A. LEFT OF RUNWAY CENTERLINE

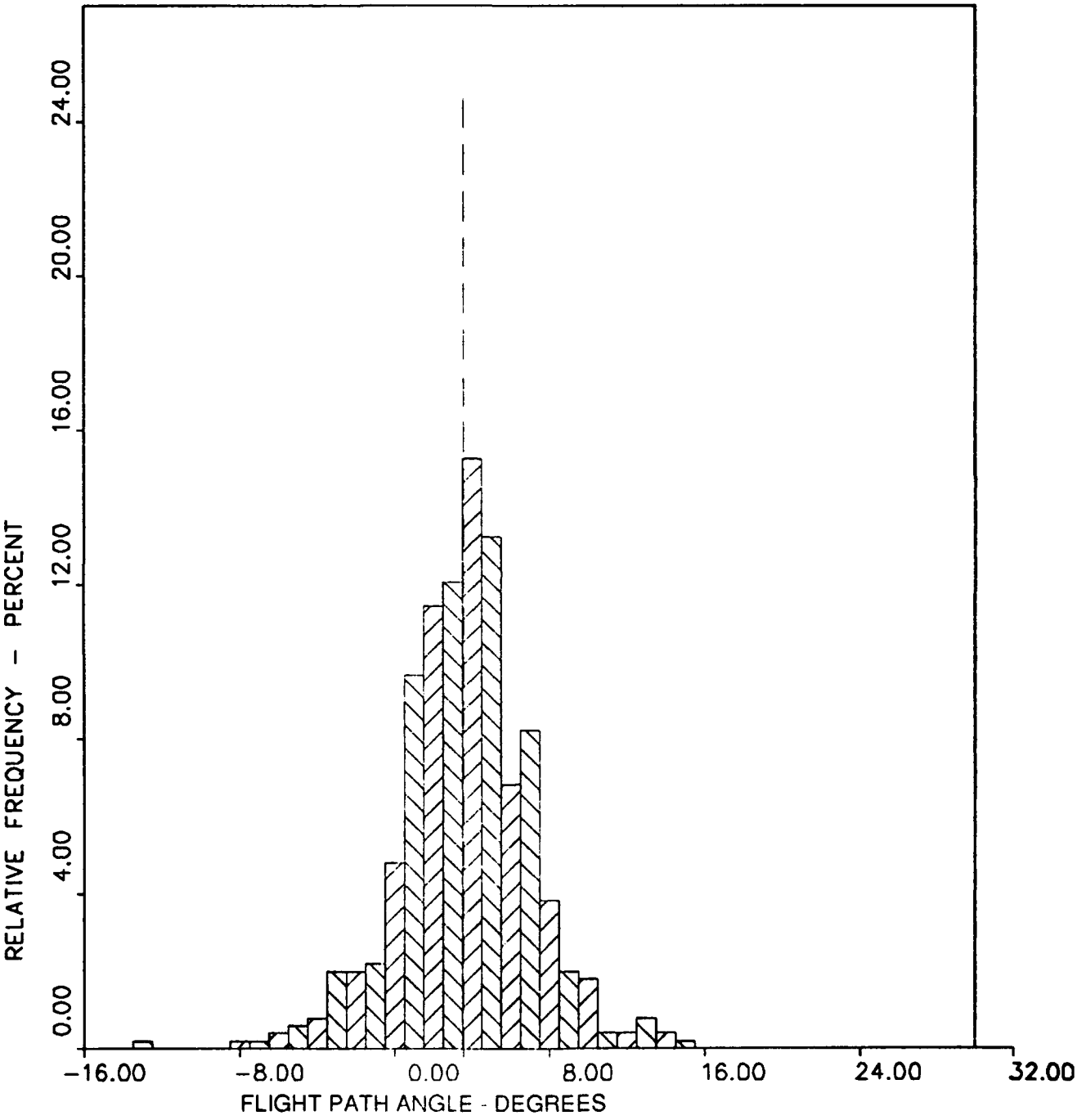


FIGURE Q-54 PROBABILITY DISTRIBUTION OF AIRCRAFT FLIGHT PATH ANGLE AT TOUCHDOWN

MODEL T-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 498 $\bar{X}$=-2.77 DEGREES A3= 0.38
S= 2.26 DEGREES A4= 10.10

POSITIVE VALUES INDICATE F.P.A. LEFT OF RUNWAY CENTERLINE

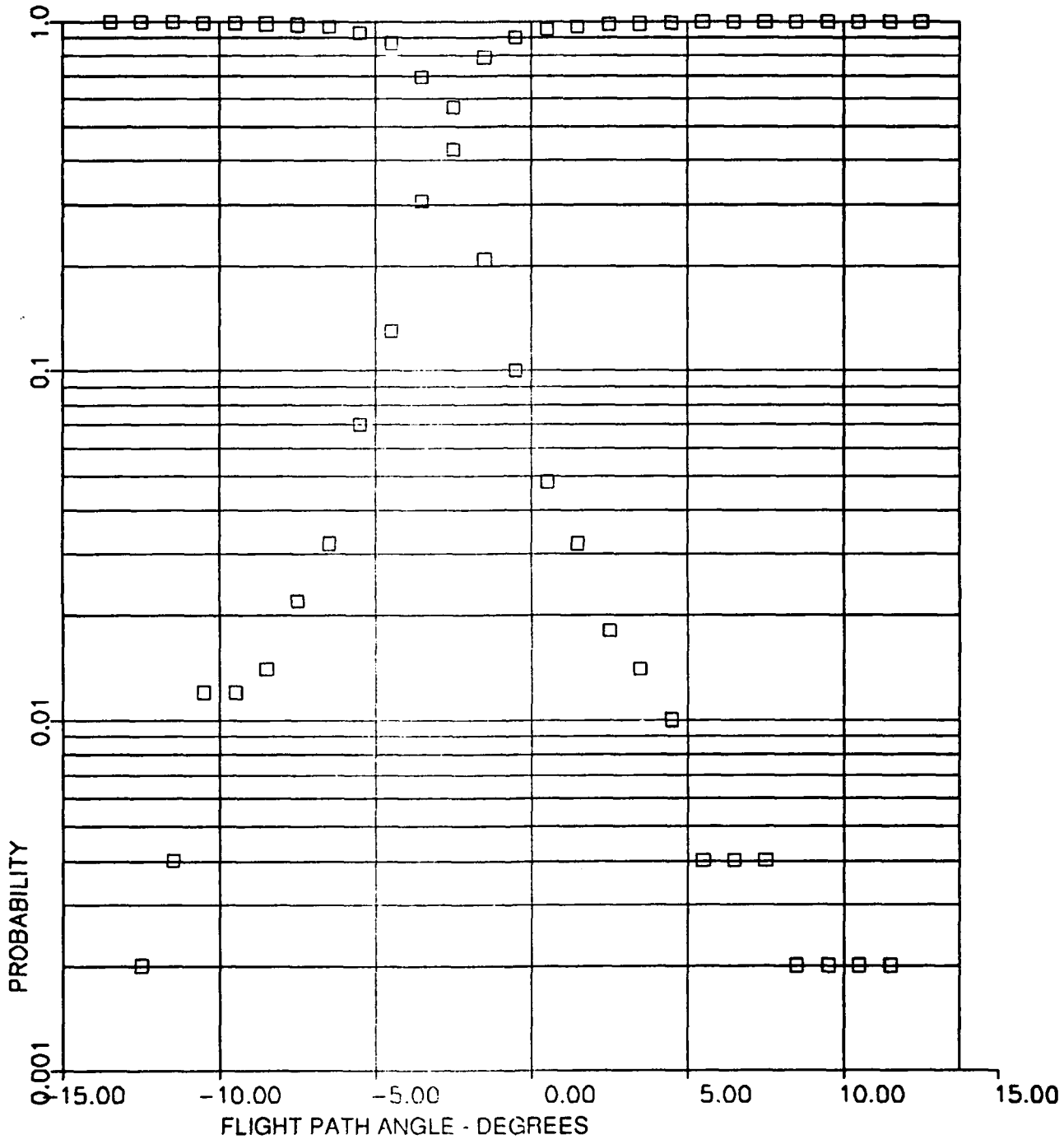


FIGURE Q-55 FREQUENCY DISTRIBUTION OF AIRCRAFT FLIGHT PATH ANGLE AT TOUCHDOWN

MODEL T-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 498 $\bar{X}$= 3.60 DEGREES A3=-0.19
S= 3.41 DEGREES A4= 4.86

POSITIVE VALUES INDICATE NOSE LEFT ATTITUDE

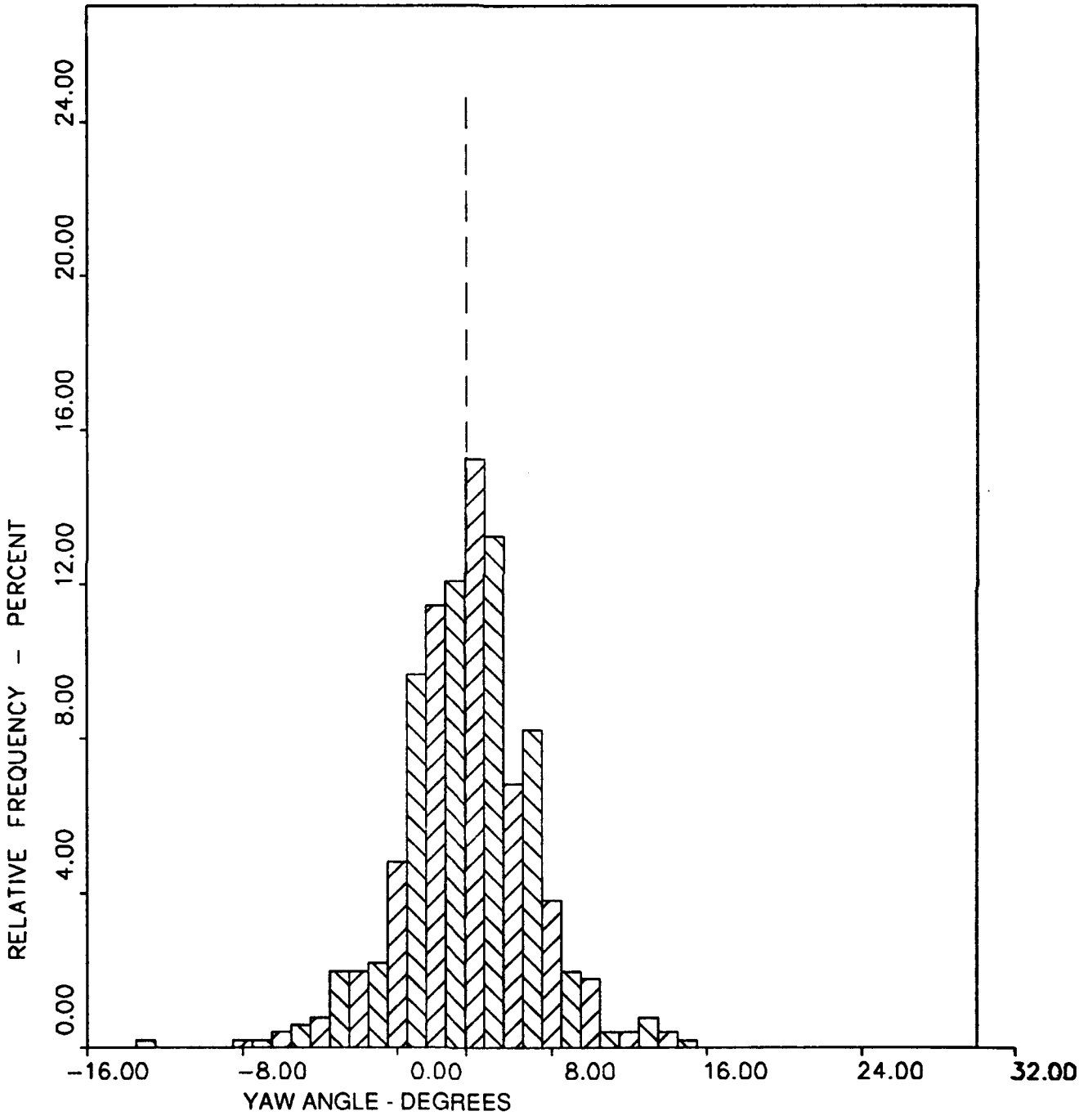


FIGURE Q-56 FREQUENCY DISTRIBUTION OF AIRCRAFT YAW ANGLE

MODEL T-2C AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 498 $\bar{X}$= 3.60 DEGREES A3=-0.19
S= 3.41 DEGREES A4= 4.86

POSITIVE VALUES INDICATE NOSE LEFT ATTITUDE

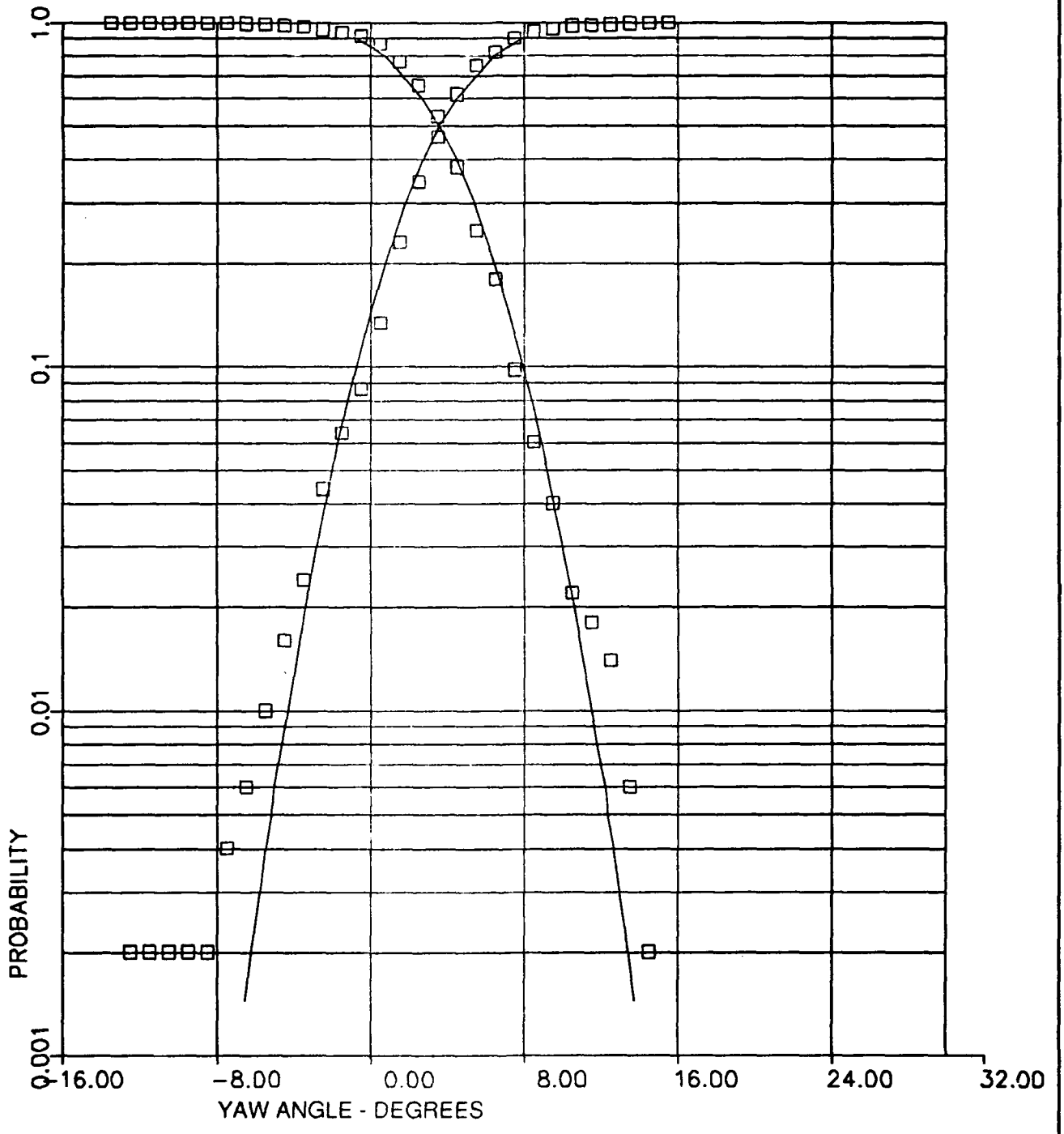


FIGURE Q-57 FREQUENCY DISTRIBUTION OF AIRCRAFT YAW ANGLE

APPENDIX R

TA-4J AIRCRAFT

DAY CARRIER LANDINGS

USS ENTERPRISE
CVN-65

Appendix R:

Frequency and Probability Distributions,
TA-4J Aircraft, Day Landings

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47. Model TA-4J Aircraft, Day Landings, Probability Distribution of Carrier Deck Roll Motion

48. Model TA-4J Aircraft, Day Landings, Frequency Distribution of Carrier Deck Pitch Motion

49. Model TA-4J Aircraft, Day Landings, Probability Distribution of Carrier Deck Pitch Motion

50. Model TA-4J Aircraft, Day Landings, Frequency Distribution of Aircraft Landing Weight

51. Model TA-4J Aircraft, Day Landings, Frequency Distribution of Aircraft Roll Rate

52. Model TA-4J Aircraft, Day Landings, Probability Distribution of Aircraft Roll Rate

53. Model TA-4J Aircraft, Day Landings, Frequency Distribution of Aircraft Pitch Rate

54. Model TA-4J Aircraft, Day Landings, Probability Distribution of Aircraft Pitch Rate

55. Model TA-4J Aircraft, Day Landings, Frequency Distribution of Aircraft Flight Path Angle at Touchdown

56. Model TA-4J Aircraft, Day Landings, Probability Distribution of Aircraft Flight Path Angle at Touchdown

57. Model TA-4J Aircraft, Day Landings, Frequency Distribution of Aircraft Yaw Angle at Touchdown

58. Model TA-4J Aircraft, Day Landings, Probability Distribution of Aircraft Yaw Angle at Touchdown

MODEL TA-4 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 635 $\bar{X}$= 26.37 KNOTS A3= 0.31
S= 3.30 KNOTS A4= 3.44

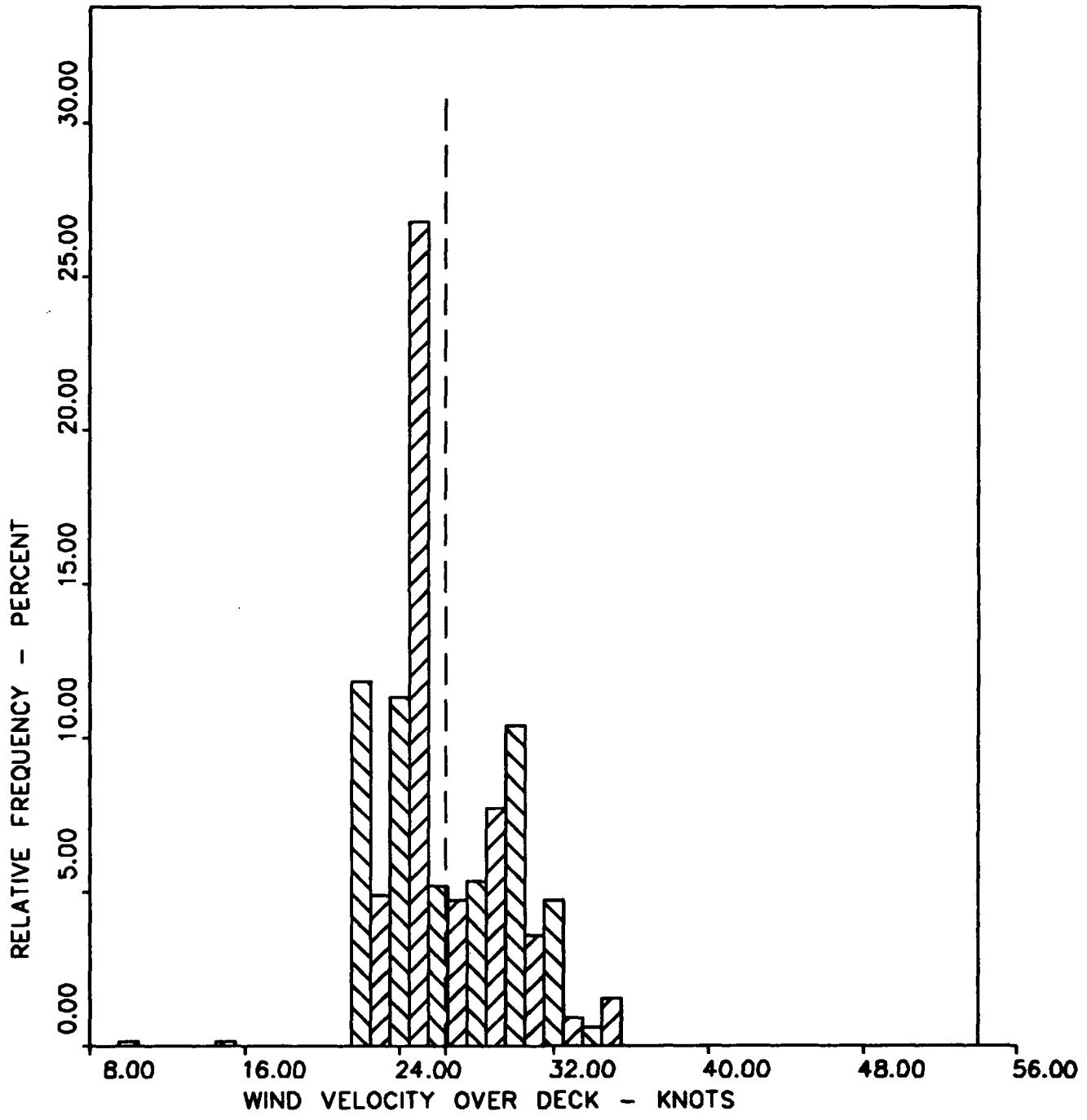


FIGURE R-1 FREQUENCY DISTRIBUTION OF WIND VELOCITY OVER THE DECK

MODEL TA-4 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 635 $\bar{X}$= 26.37 KNOTS A3= 0.31
S= 3.30 KNOTS A4= 3.44
CURVE FITTED - PEARSON TYPE III

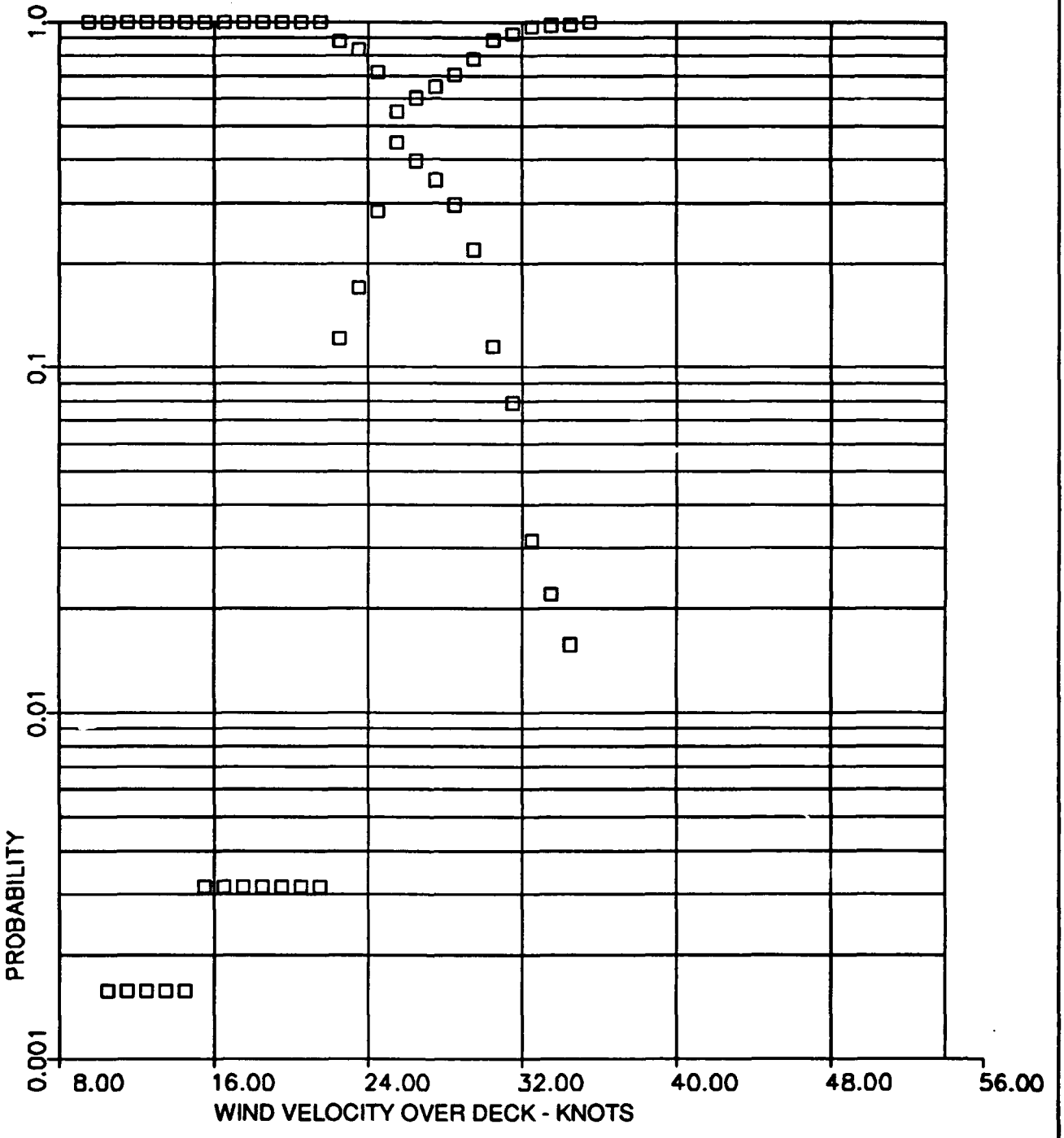


FIGURE R-2 PROBABILITY DISTRIBUTION OF WIND VELOCITY OVER THE DECK

MODEL TA-4 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 635 $\bar{X}$= 139.79 KNOTS A3= 0.46
S= 6.73 KNOTS A4= 6.09

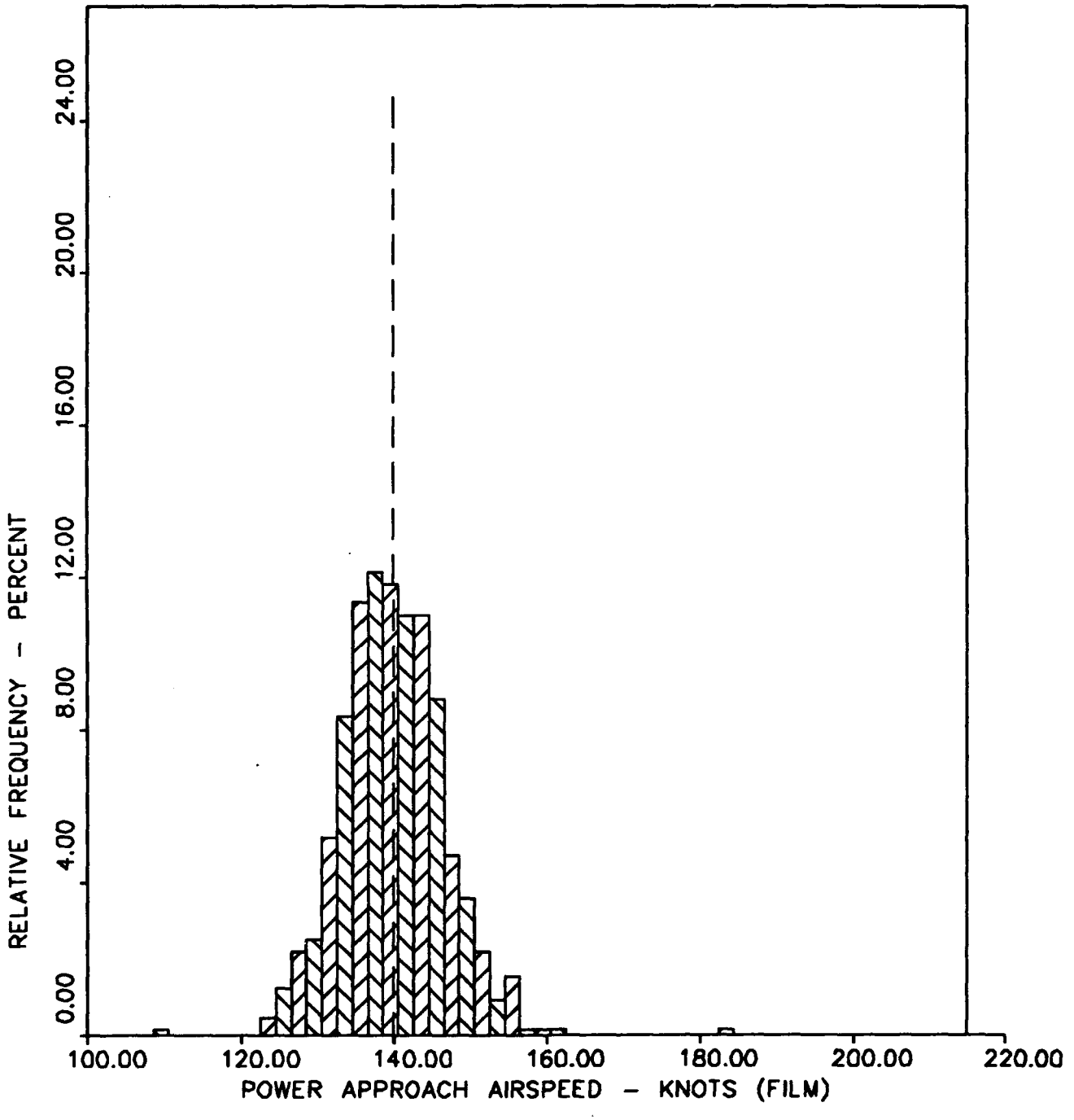


FIGURE R-3 FREQUENCY DISTRIBUTION OF FILM MEASURED POWER APPROACH AIRSPEED AT THE RAMP

MODEL TA-4 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 635 $\bar{X}$= 139.79 KNOTS A3= 0.46
S= 6.73 KNOTS A4= 6.09
CURVE FITTED - PEARSON TYPE III

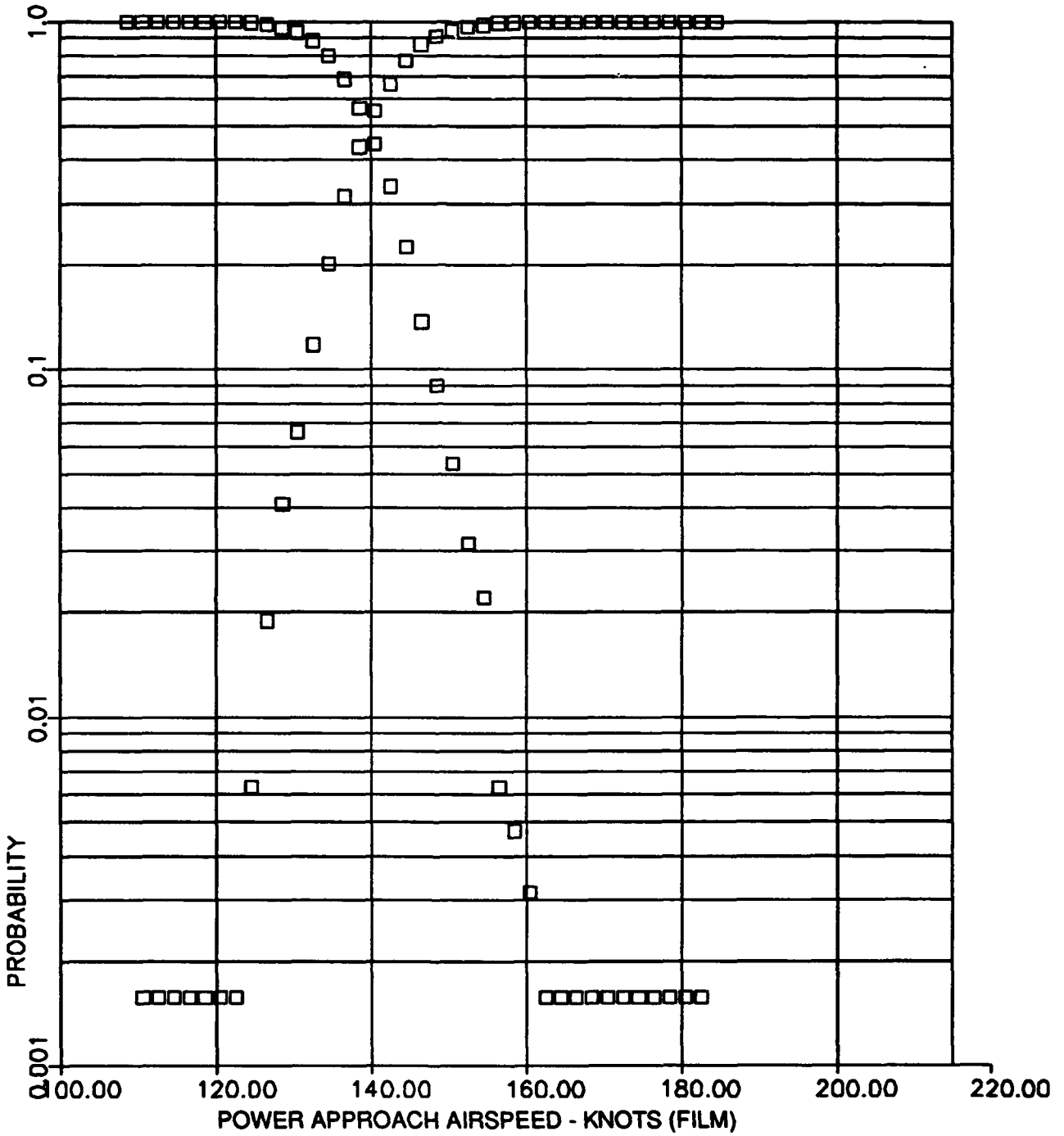


FIGURE R-4 PROBABILITY DISTRIBUTION OF POWER APPROACH AIRSPEED AT THE RAMP (FILM)

MODEL TA-4 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 617 $\bar{X}$= 15.81 FEET A3= 0.66
S= 3.20 FEET A4= 3.57

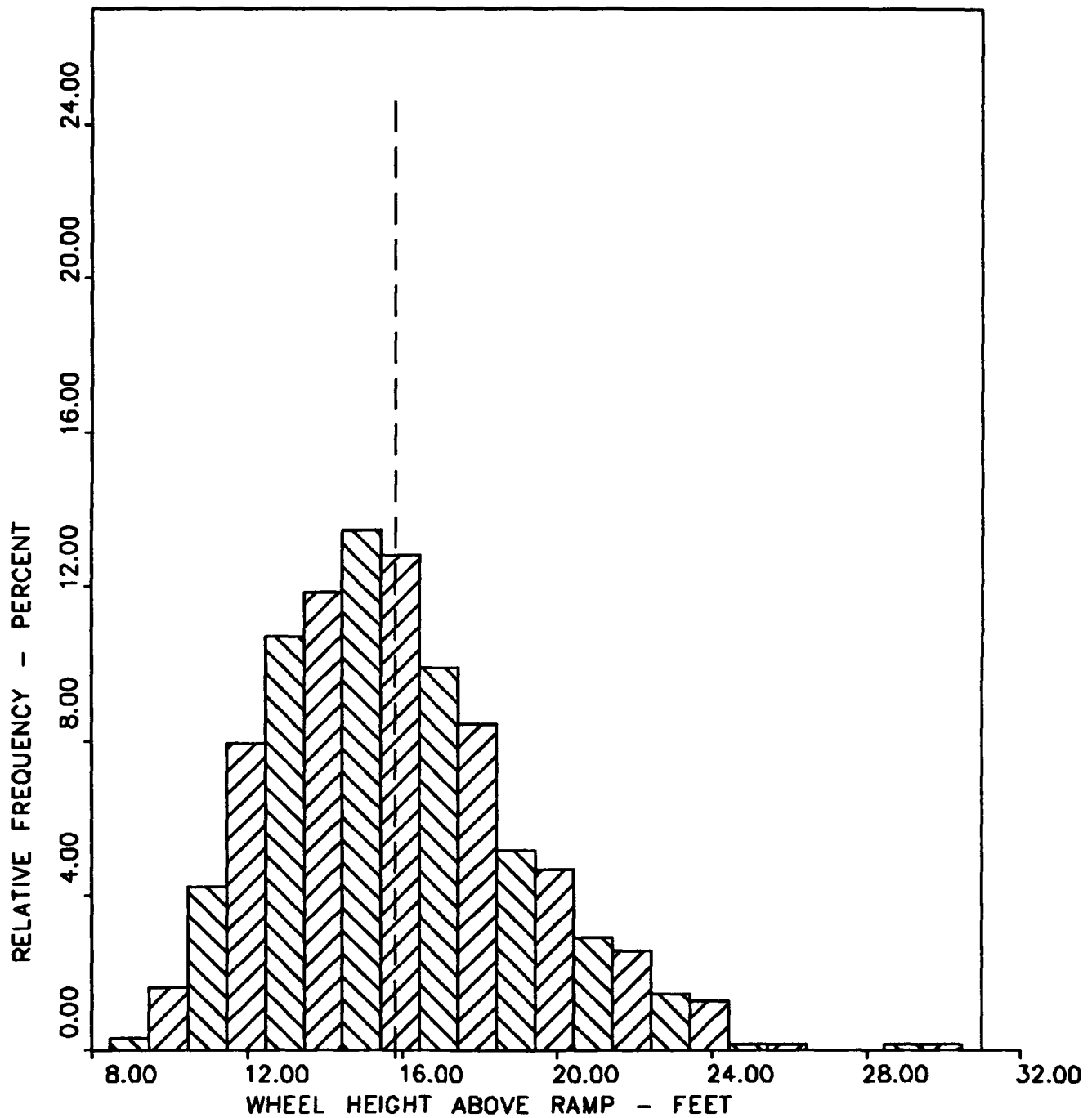


FIGURE R-5 FREQUENCY DISTRIBUTION OF AIRCRAFT WHEEL HEIGHT ABOVE CARRIER RAMP

MODEL TA-4 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 617 $\bar{X}$= 15.81 FEET A3= 0.66
S= 3.20 FEET A4= 3.57
CURVE FITTED - PEARSON TYPE III

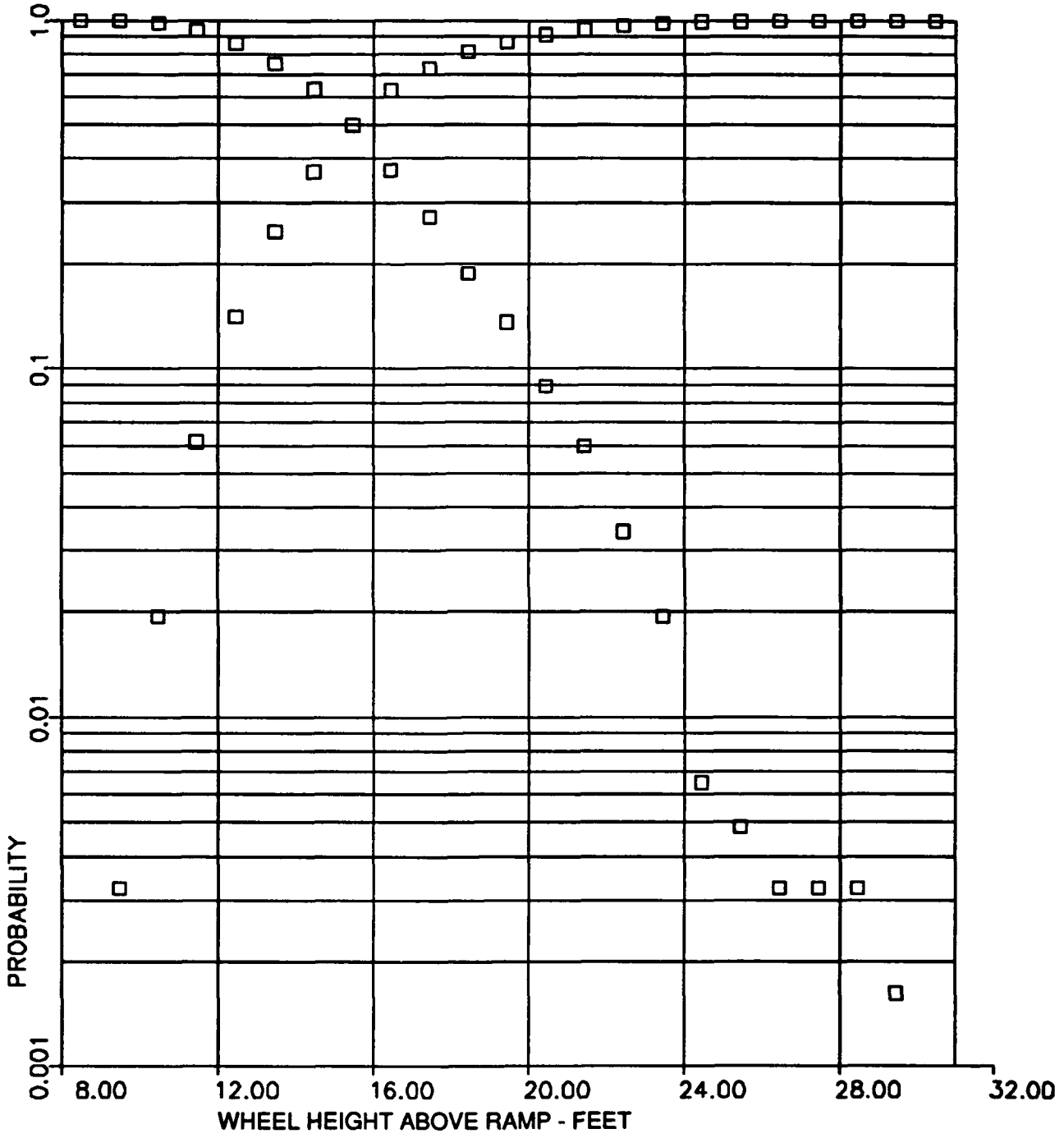


FIGURE R-6 PROBABILITY DISTRIBUTION OF AIRCRAFT WHEEL HEIGHT ABOVE CARRIER RAMP

MODEL TA-4 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 635 $\bar{X}$= 10.21 FEET/SEC A3=-0.32
S= 2.33 FEET/SEC A4= 3.70

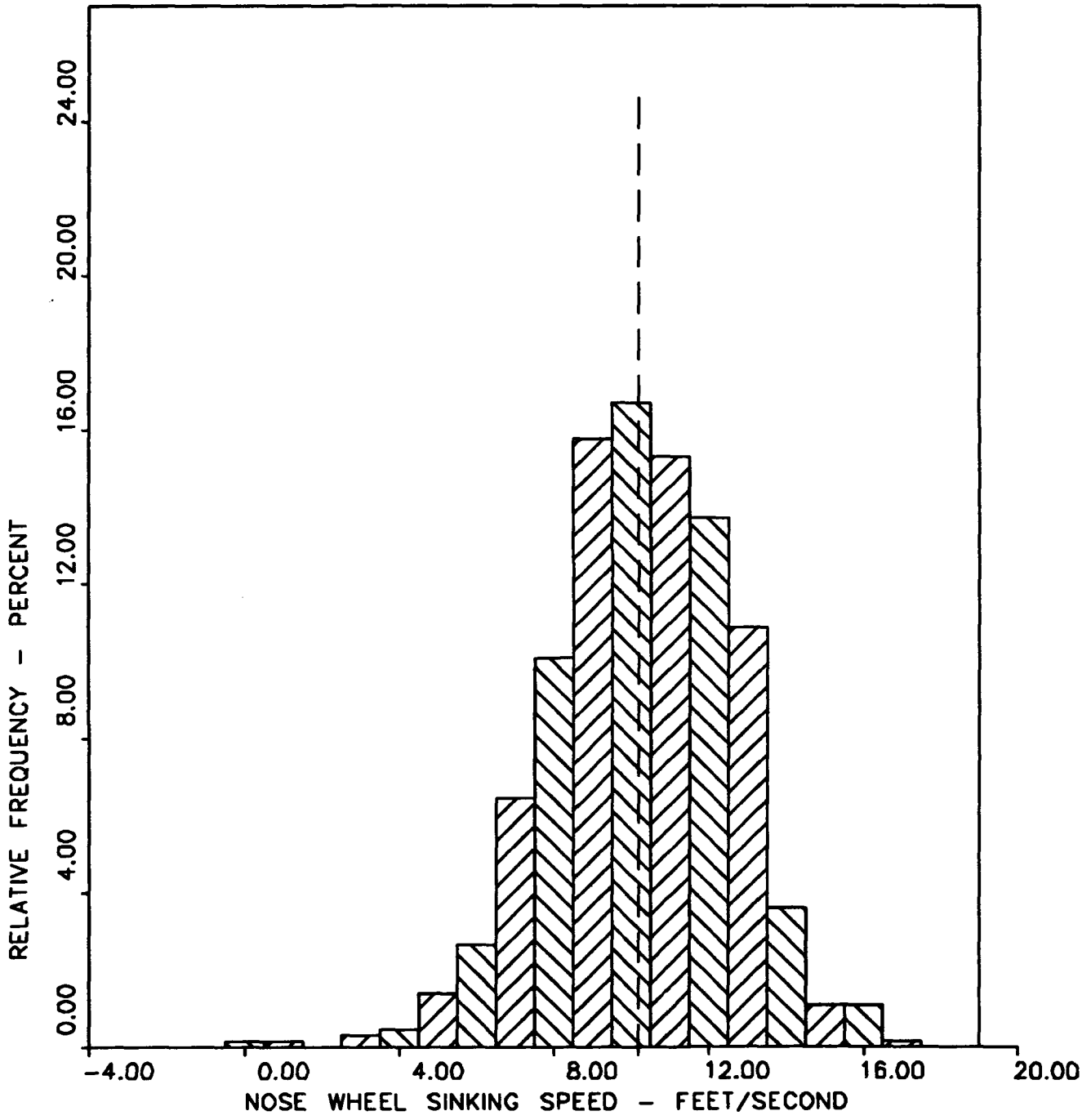


FIGURE R-7 FREQUENCY DISTRIBUTION OF NOSE WHEEL SINKING SPEED

MODEL TA-4 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 635 $\bar{X}$= 10.21 FEET/SEC A3=-0.32
S= 2.33 FEET/SEC A4= 3.70
CURVE FITTED - PEARSON TYPE III

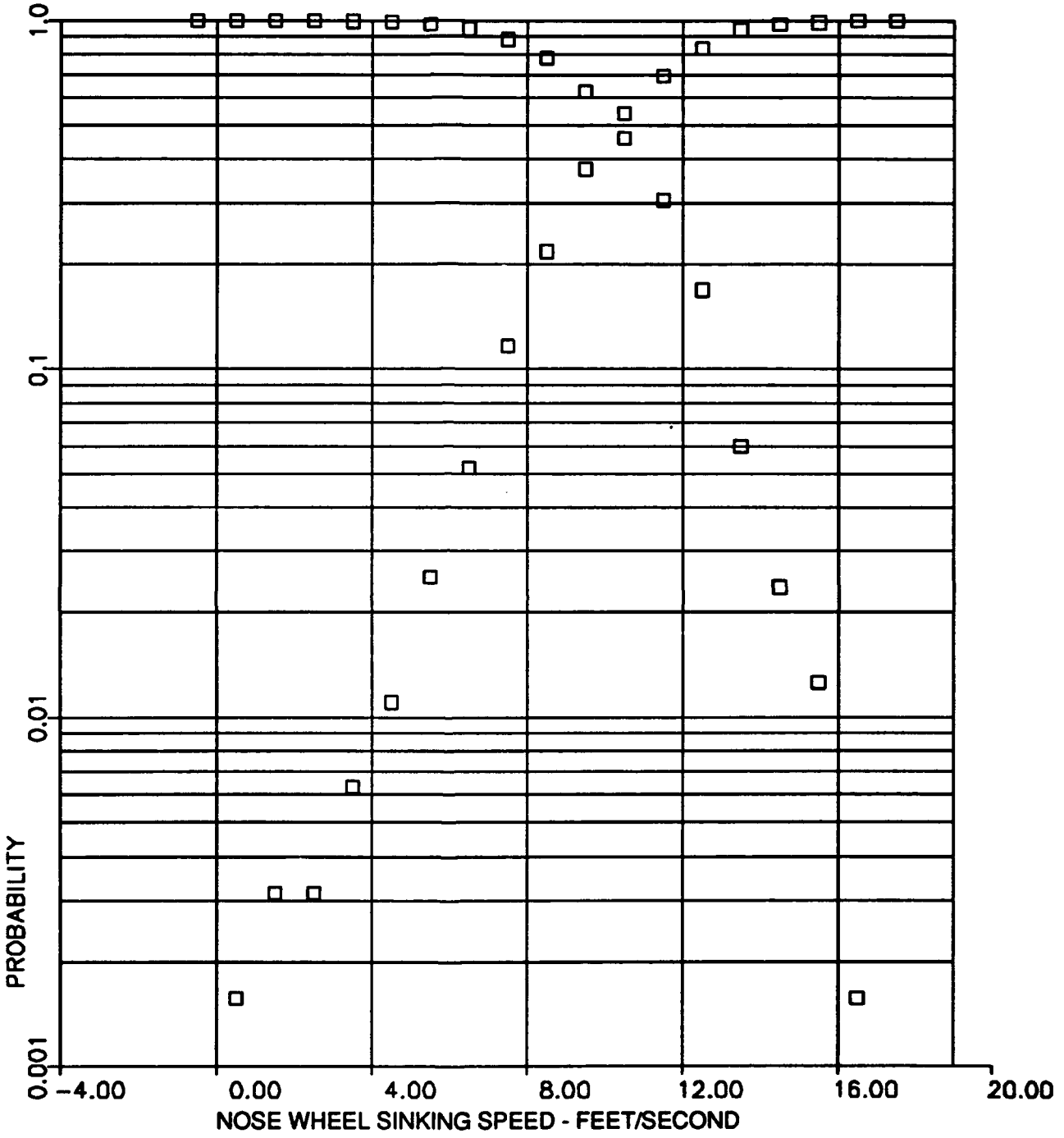


FIGURE R-8 PROBABILITY DISTRIBUTION OF NOSE WHEEL SINKING SPEED

MODEL TA-4 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 635 $\bar{X}$= 10.37 FEET/SEC A3= 0.18
S= 2.33 FEET/SEC A4= 3.13

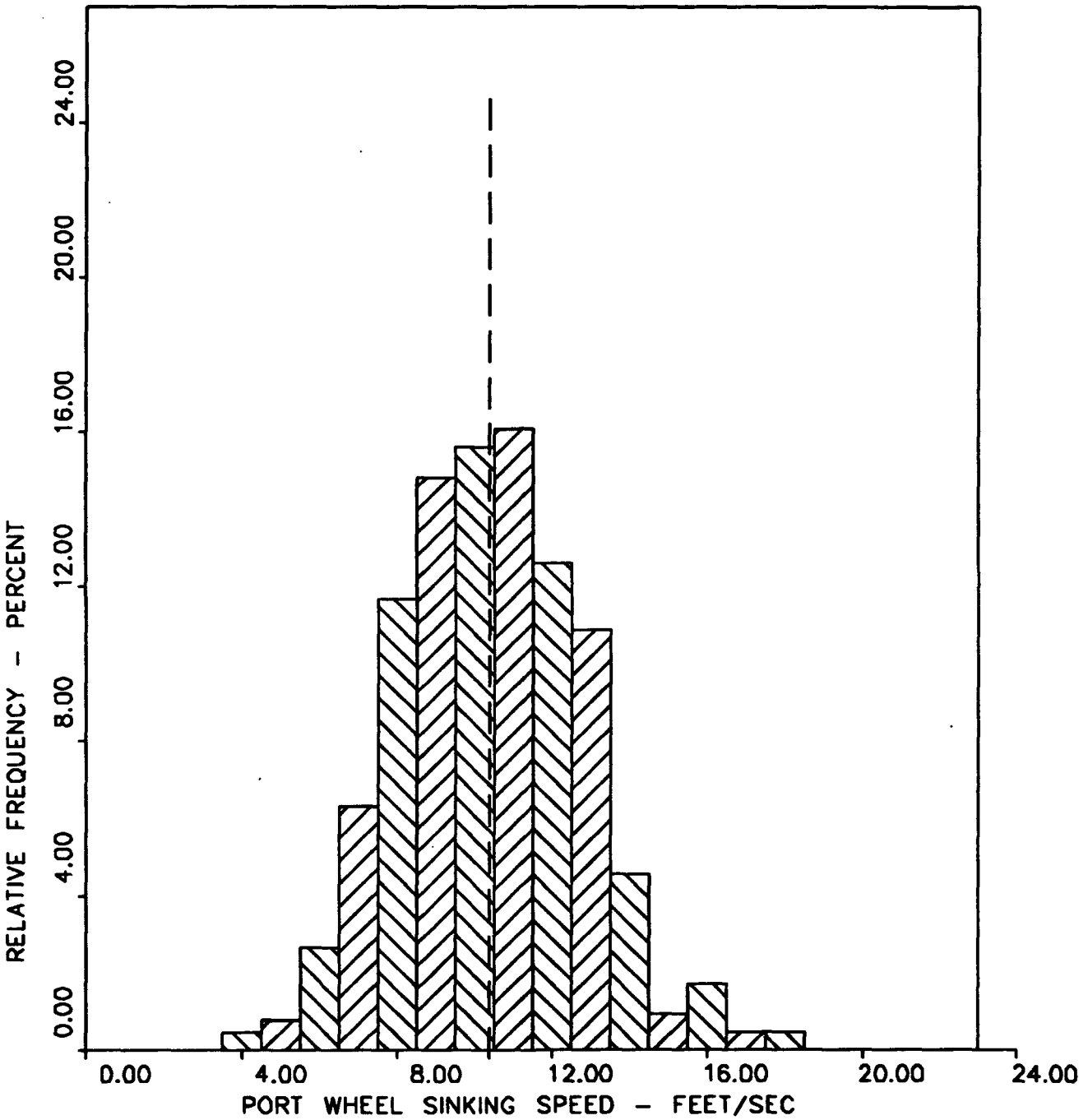


FIGURE R-9 FREQUENCY DISTRIBUTION OF PORT WHEEL SINKING SPEED AT PORT WHEEL TOUCHDOWN

MODEL TA-4 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 635 $\bar{X}$= 10.37 FEET/SEC
S= 2.33 FEET/SEC
CURVE FITTED - NORMAL

A3= 0.18
A4= 3.13

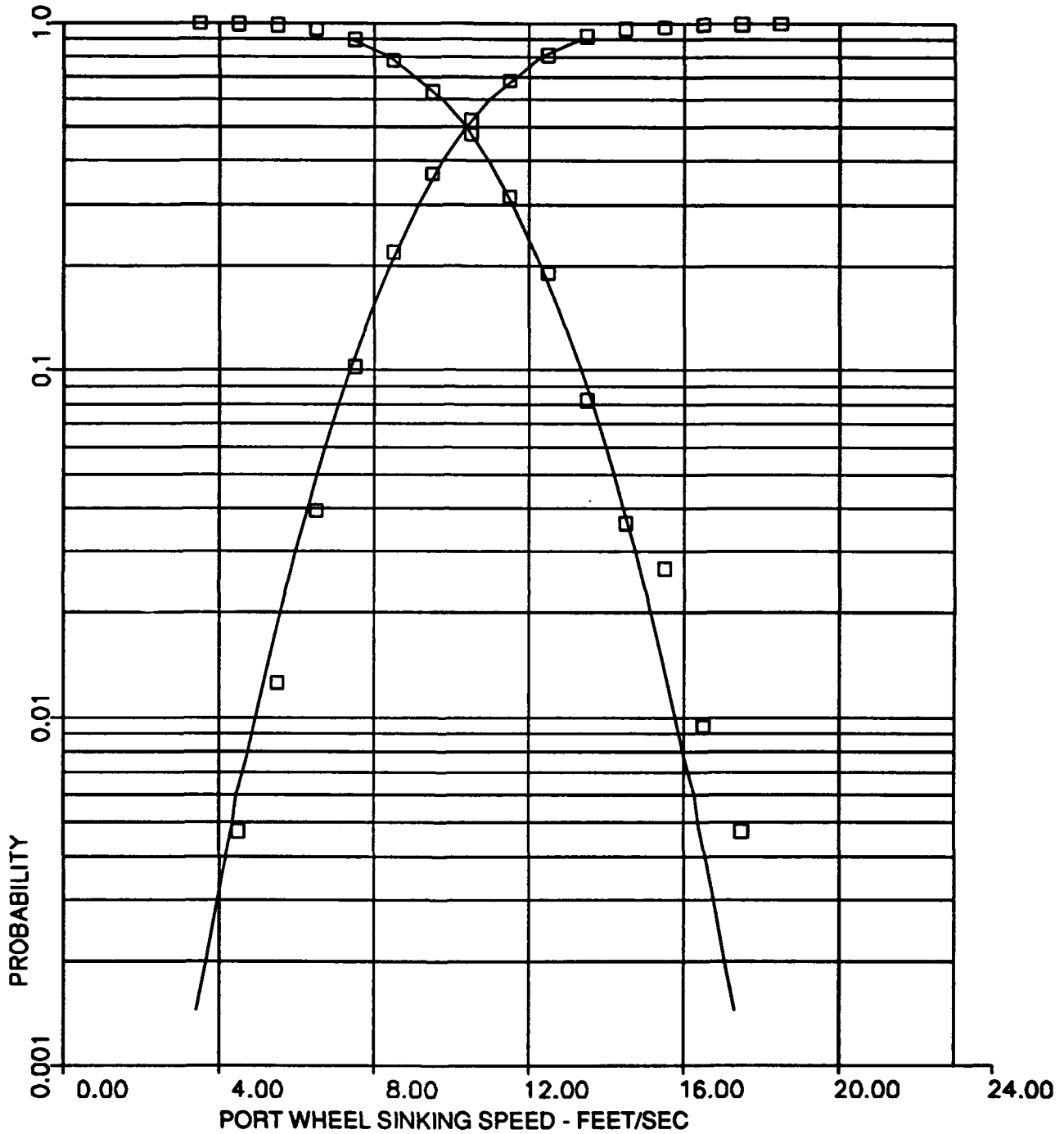


FIGURE R-10 PROBABILITY DISTRIBUTION OF PORT WHEEL SINKING SPEED

MODEL TA-4 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 635 $\bar{X}$= 10.03 FEET/SEC A3= 0.07
S= 2.28 FEET/SEC A4= 3.15

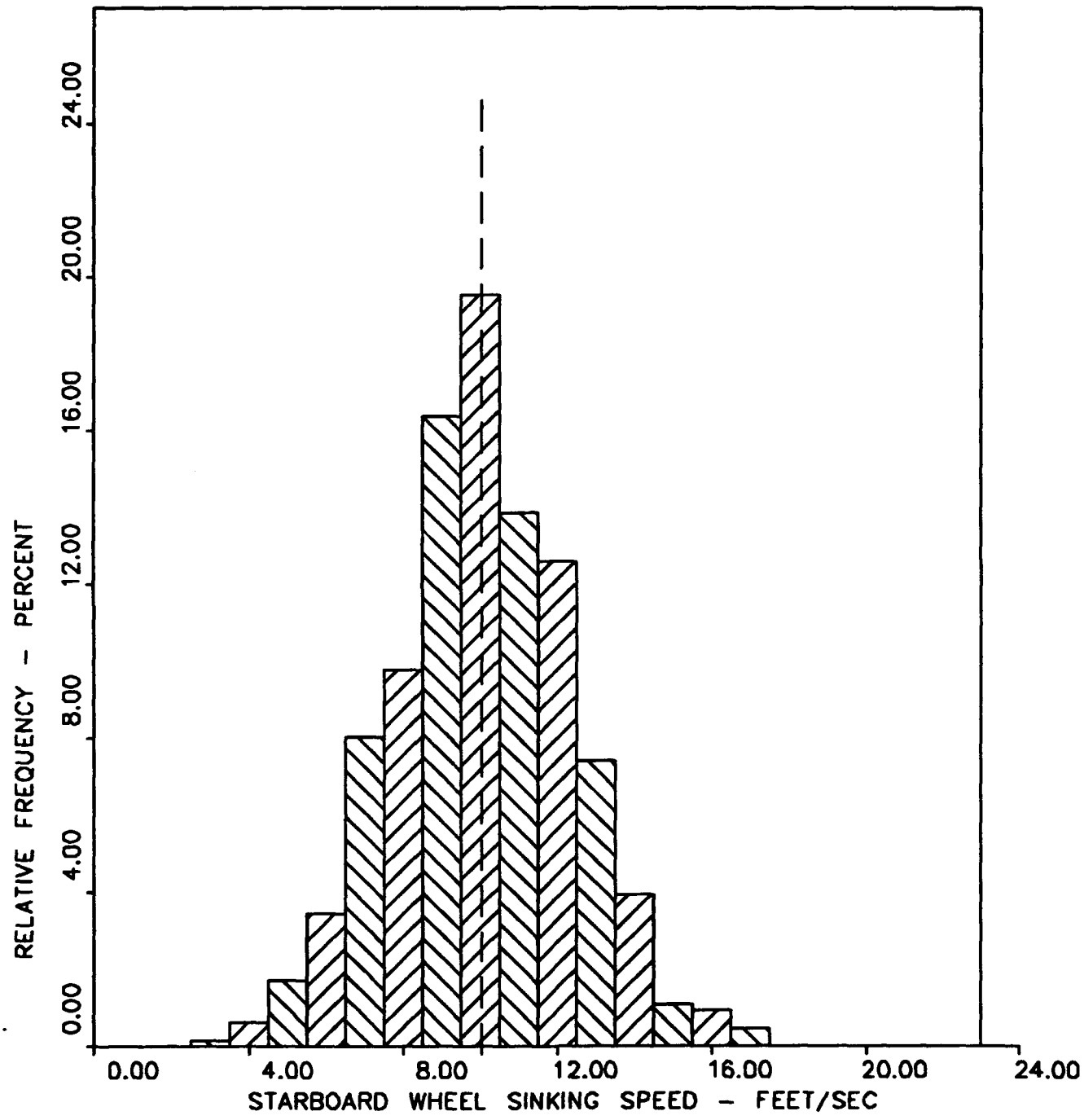


FIGURE R-11 FREQUENCY DISTRIBUTION OF STARBOARD WHEEL SINKING SPEED AT STARBOARD WHEEL TOUCHDOWN

MODEL TA-4 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 635 $\bar{X}$= 10.03 FEET/SEC A3= 0.07
S= 2.28 FEET/SEC A4= 3.15
CURVE FITTED - NORMAL

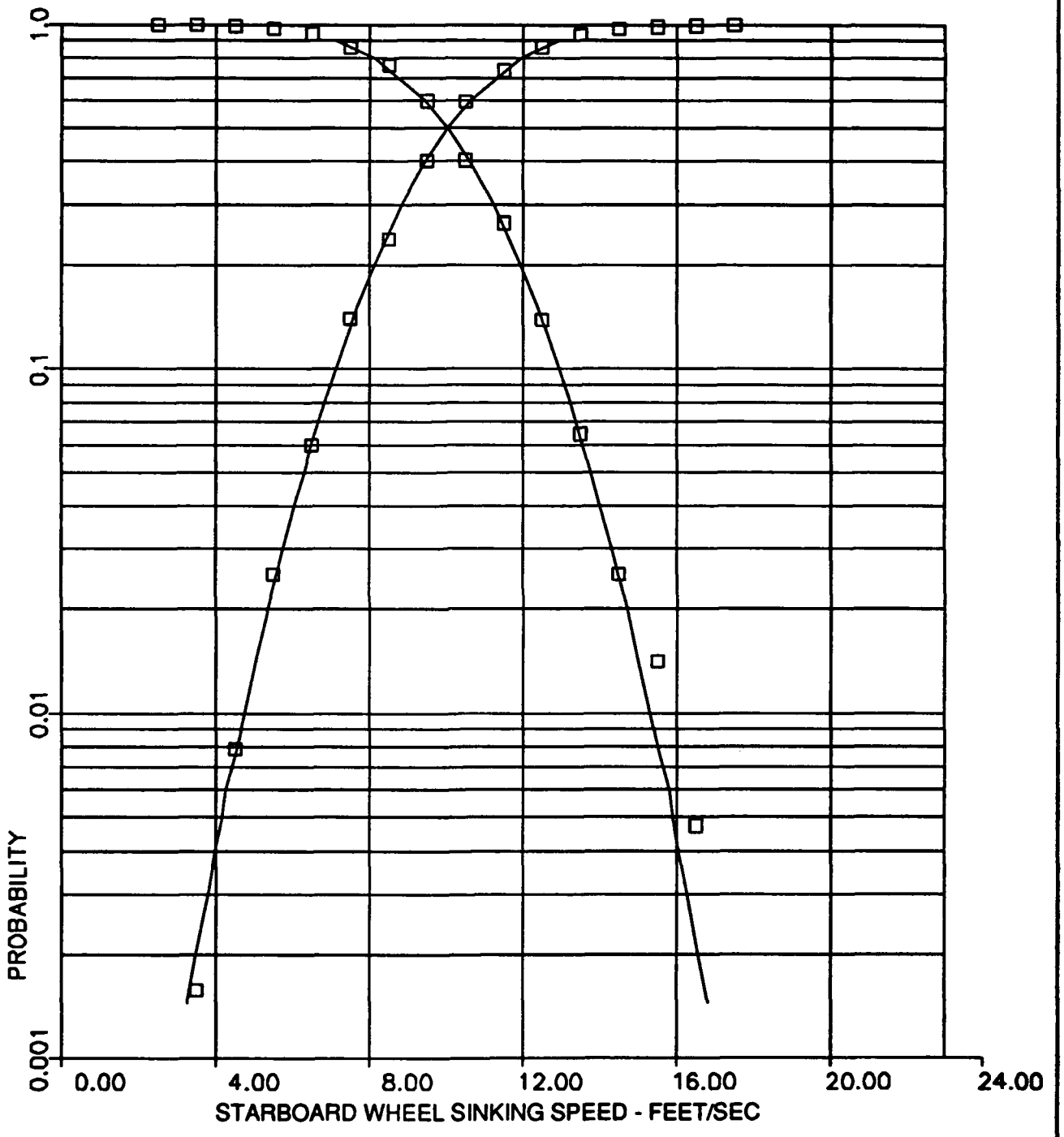


FIGURE R-12 PROBABILITY DISTRIBUTION OF STARBOARD WHEEL SINKING SPEED

MODEL TA-4 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 635 $\bar{X}$= 10.27 FEET/SEC A3= 0.16
S= 2.25 FEET/SEC A4= 3.23

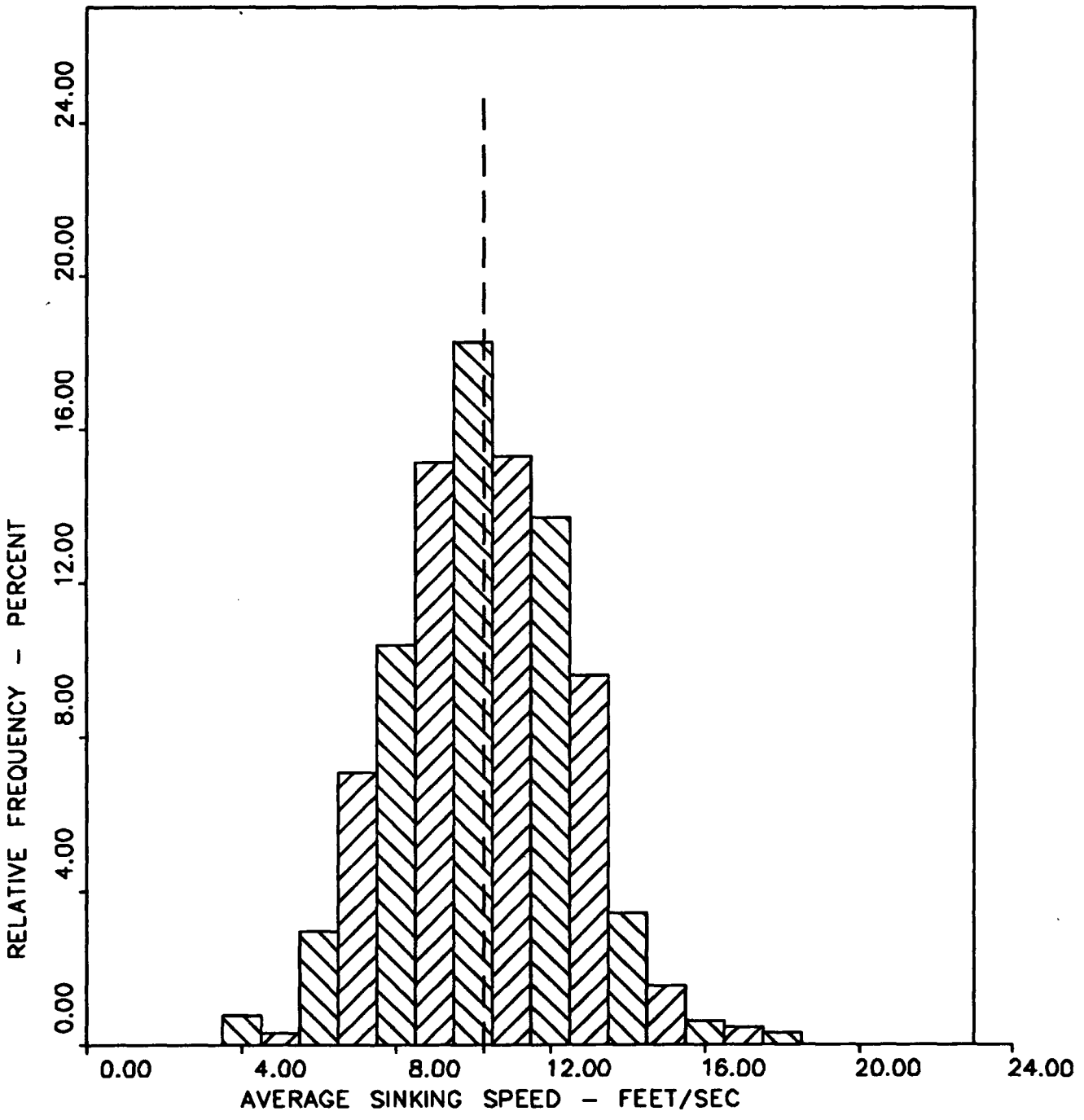


FIGURE R-13 FREQUENCY DISTRIBUTION OF AVG SINKING SPEED OF MAIN WHEEL AT FIRST MAIN WHEEL TOUCHDOWN

MODEL TA-4 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 635 $\bar{X}$= 10.27 FEET/SEC A3= 0.16
S= 2.25 FEET/SEC A4= 3.23
CURVE FITTED - NORMAL

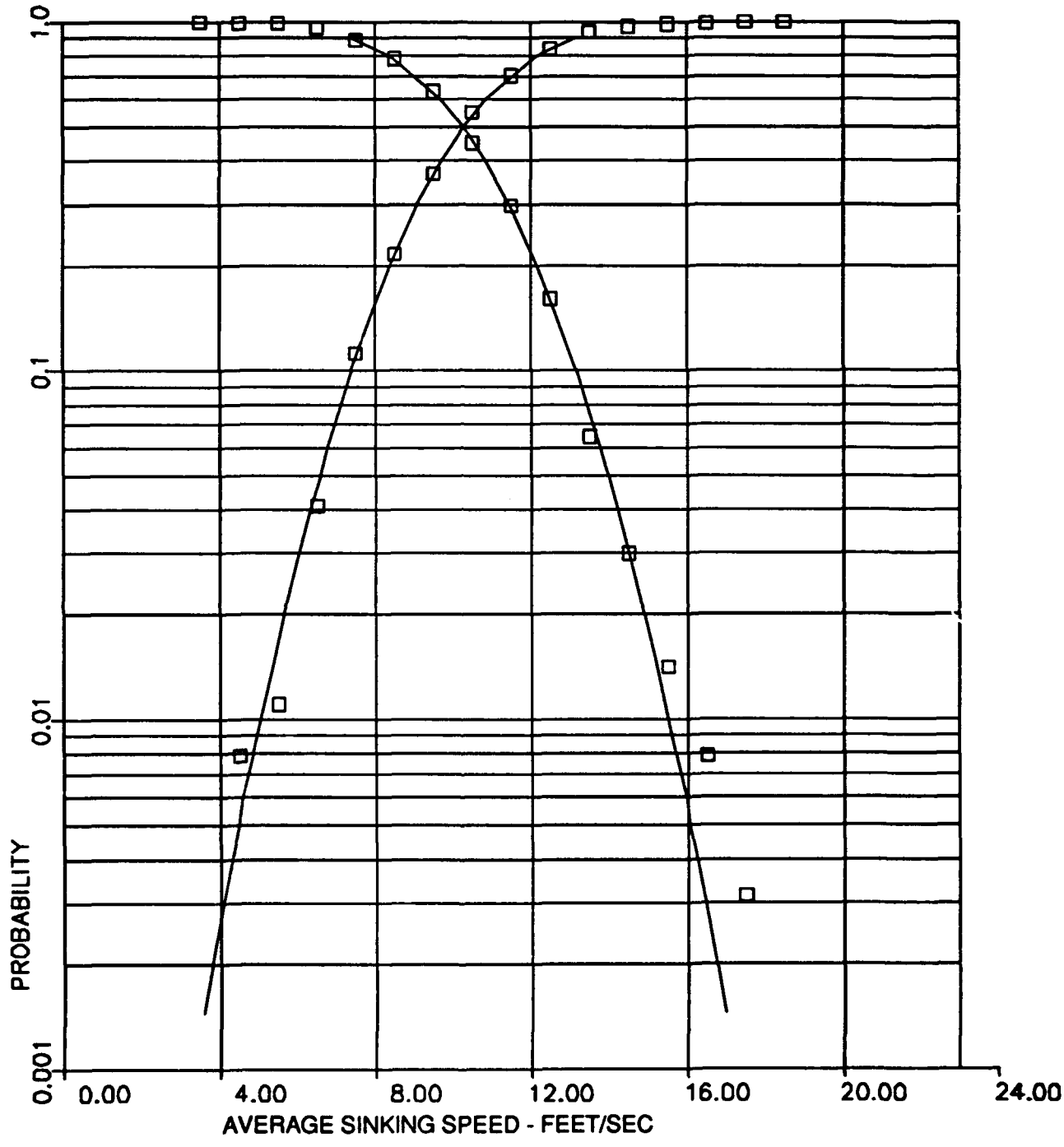


FIGURE R-14 PROBABILITY DISTRIBUTION OF AVERAGE SINKING SPEED AT FIRST MAIN WHEEL TOUCHDOWN

MODEL TA-4 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 120 $\bar{X}$= 9.33 FEET/SEC A3= 0.05
S= 2.52 FEET/SEC A4= 3.39

FREE FLIGHT IS THE CONDITION WHERE THE HOOK ENGAGES THE ARRESTMENT CABLE BEFORE THE WHEELS MAKE DECK CONTACT

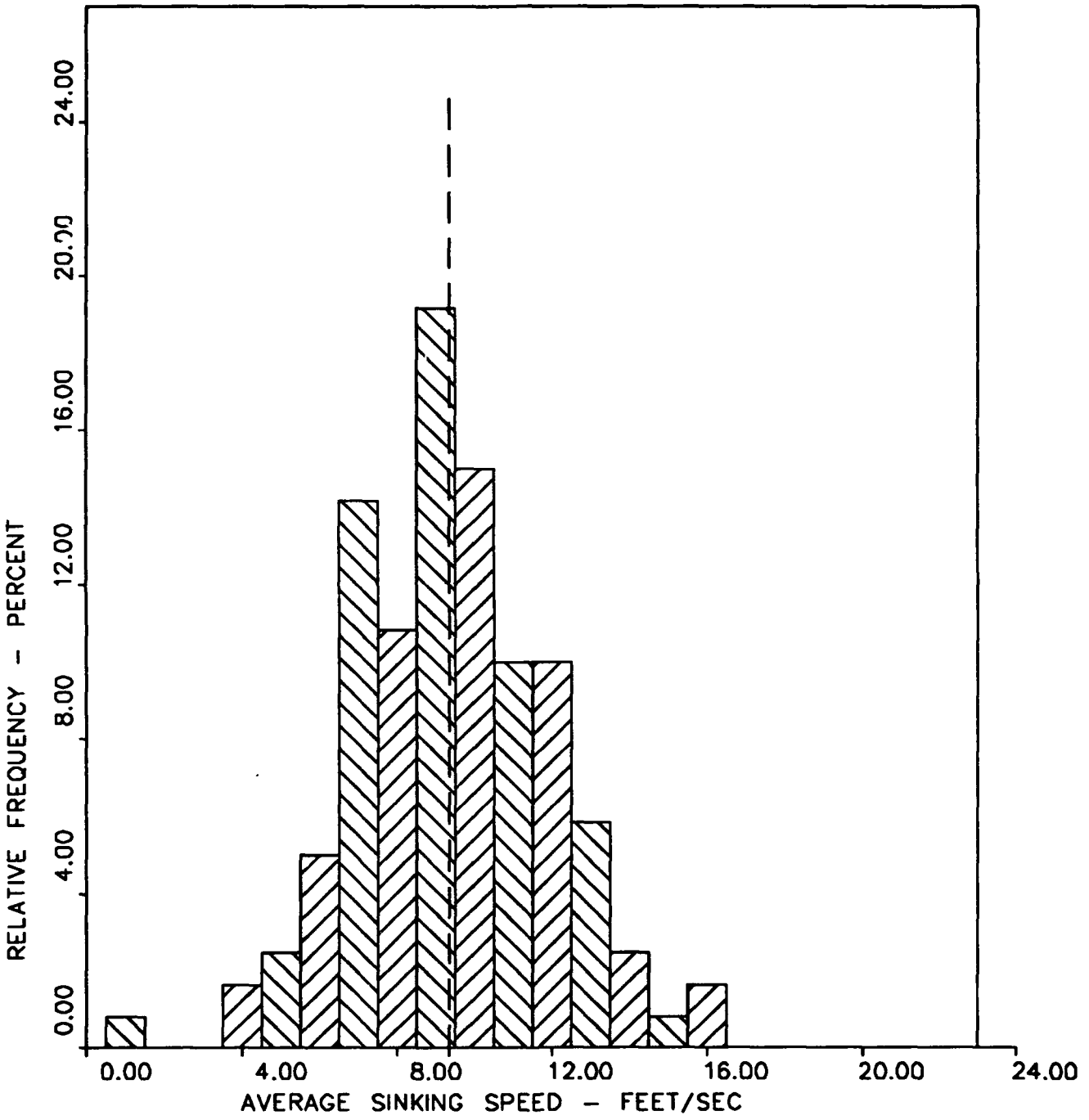


FIGURE R-15 FREQUENCY DISTRIBUTION OF AVERAGE SINKING SPEED OF MAIN WHEELS AT FREE FLIGHT

MODEL TA-4 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 120 $\bar{X}$= 9.33 FEET/SEC A3= 0.05
S= 2.52 FEET/SEC A4= 3.39
CURVE FITTED - NORMAL
FREE FLIGHT IS THE CONDITION WHERE THE HOOK ENGAGES THE ARRESTMENT CABLE BEFORE THE WHEELS MAKE DECK CONTACT

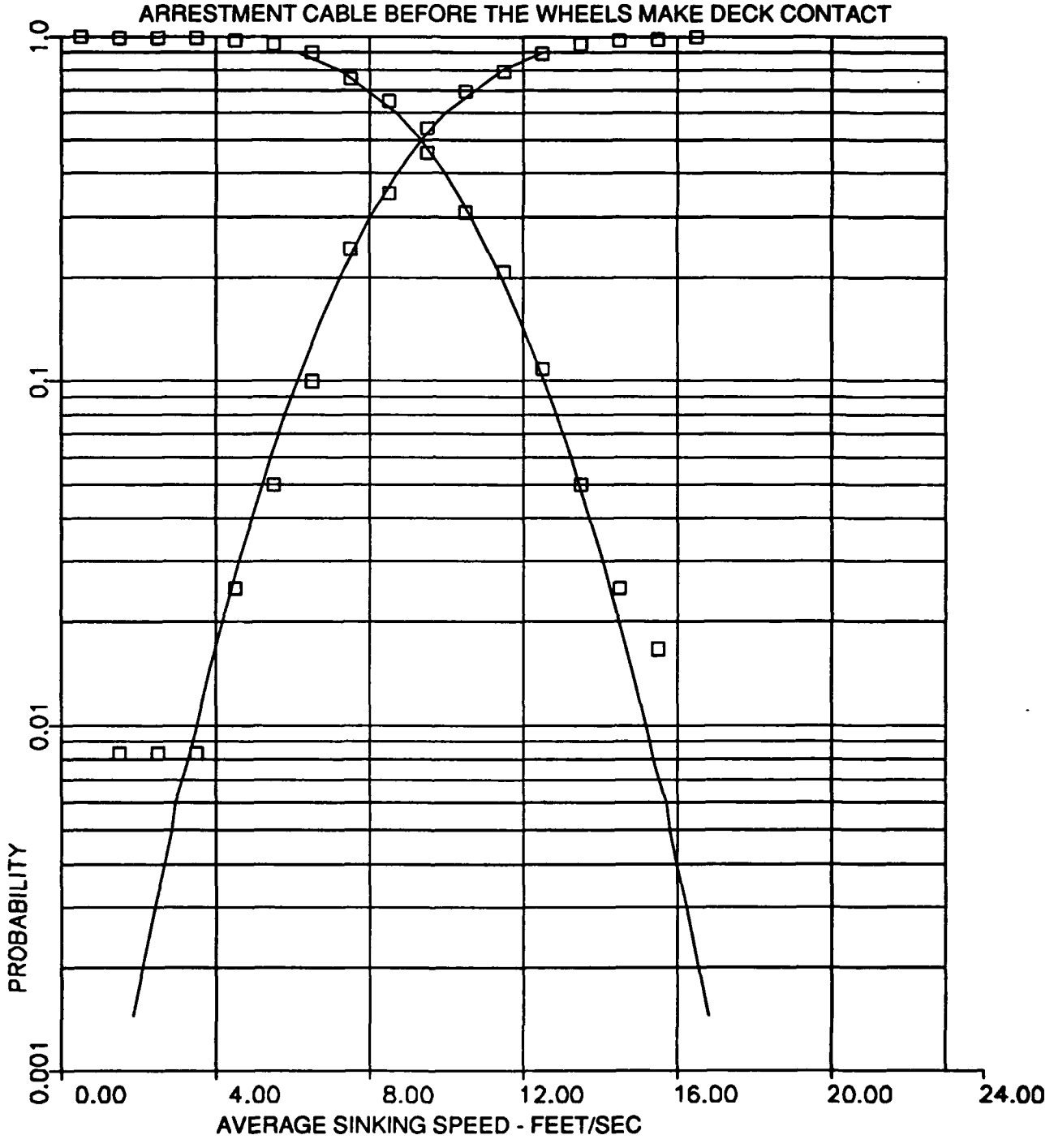


FIGURE R-16 PROBABILITY DISTRIBUTION OF AVERAGE SINKING SPEED AT FREE FLIGHT

MODEL TA-4 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 635 $\bar{X}$= 1.09 A3= 2.75
S= 0.10 A4= 35.05

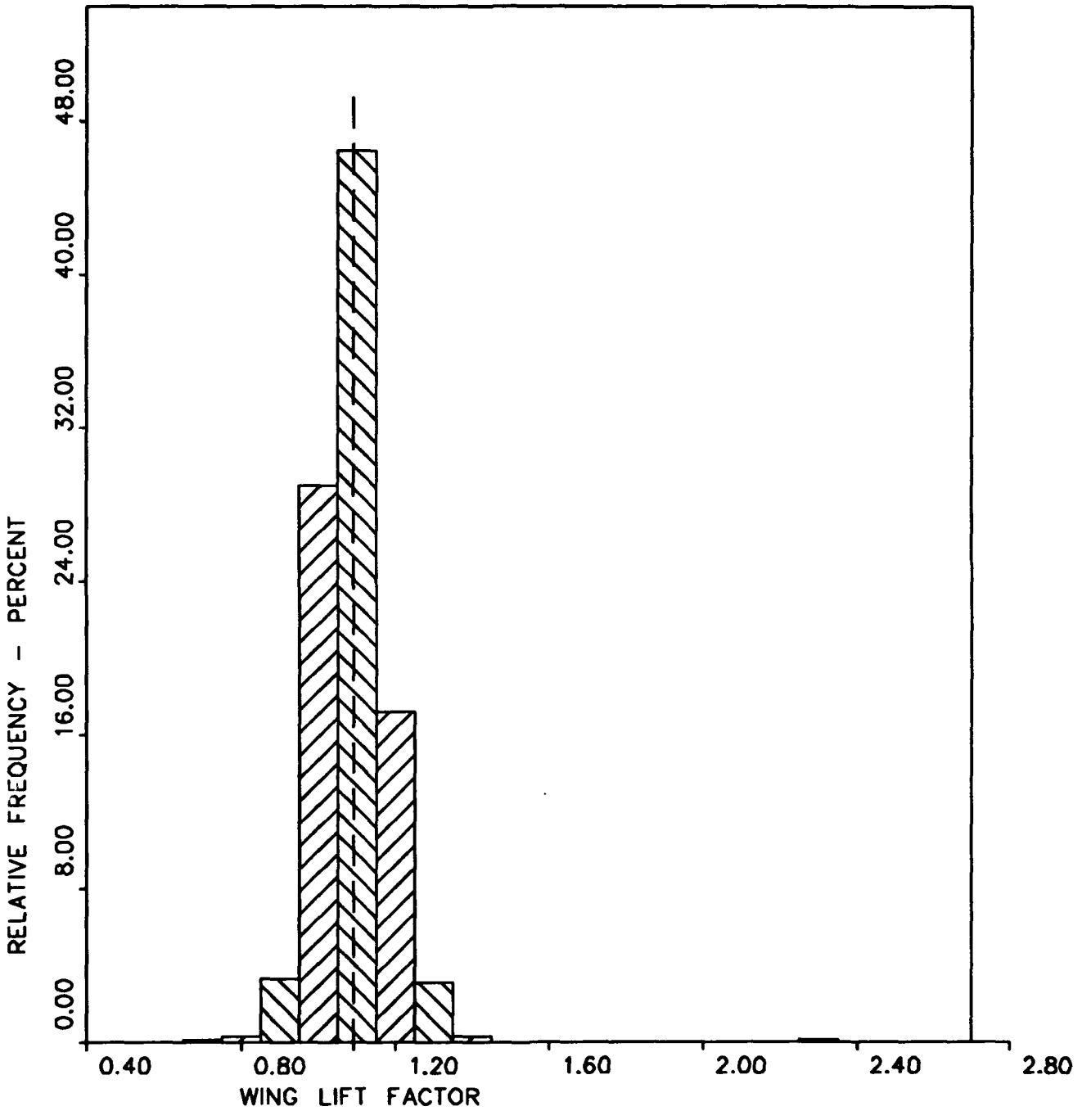


FIGURE R-17 FREQUENCY DISTRIBUTION OF WING LIFT FACTOR AT FIRST MAIN WHEEL TOUCHDOWN

MODEL TA-4 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 635 $\bar{X}$= 1.09 A3= 2.75
S= 0.10 A4= 35.05
CURVE FITTED - PEARSON TYPE III

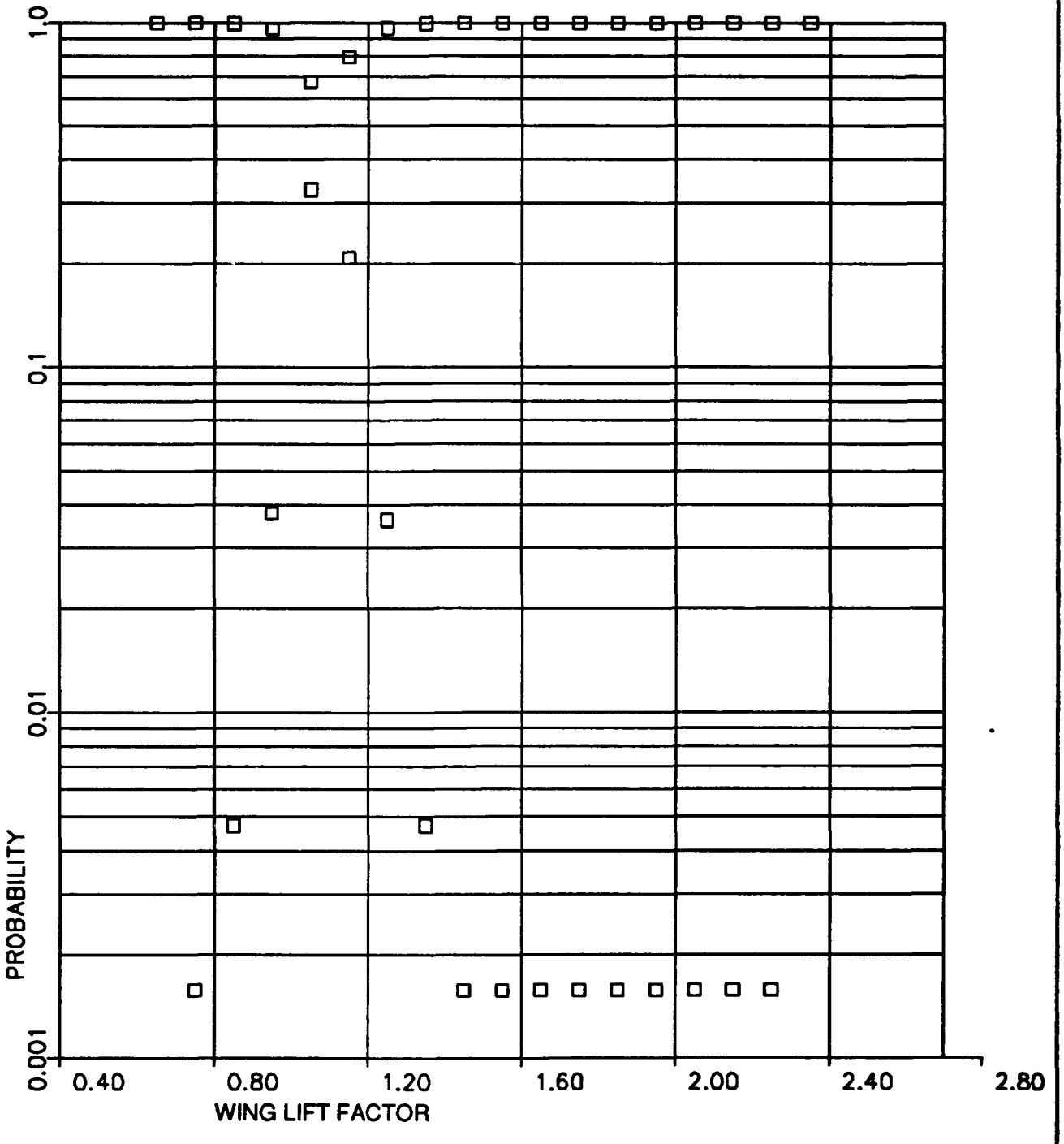


FIGURE R-18 PROBABILITY DISTRIBUTION OF WING LIFT FACTOR AT FIRST MAIN WHEEL TOUCHDOWN

MODEL TA-4 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 120 $\bar{X}$= 1.09 A3= 2.66
S= 0.12 A4= 19.74

FREE FLIGHT IS THE CONDITION WHERE THE HOOK ENGAGES THE ARRESTMENT CABLE BEFORE THE WHEELS MAKE DECK CONTACT

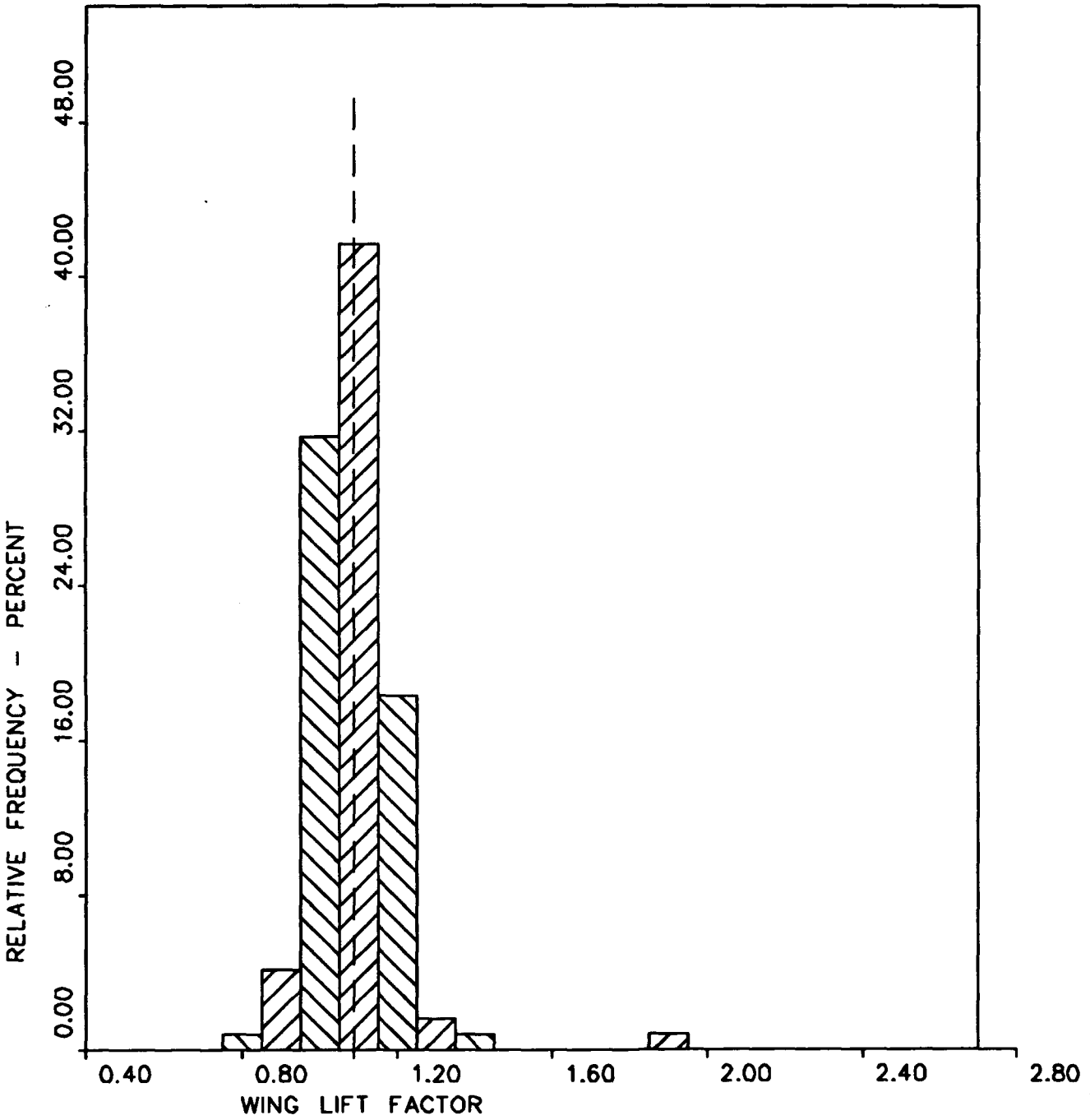


FIGURE R-19 FREQUENCY DISTRIBUTION OF WING LIFT FACTOR AT FREE FLIGHT

MODEL TA-4 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 120 $\bar{X}$= 1.09 A3= 2.66
S= 0.12 A4= 19.74
CURVE FITTED - PEARSON TYPE III
FREE FLIGHT IS THE CONDITION WHERE THE HOOK ENGAGES THE ARRESTMENT CABLE BEFORE THE WHEELS MAKE DECK CONTACT

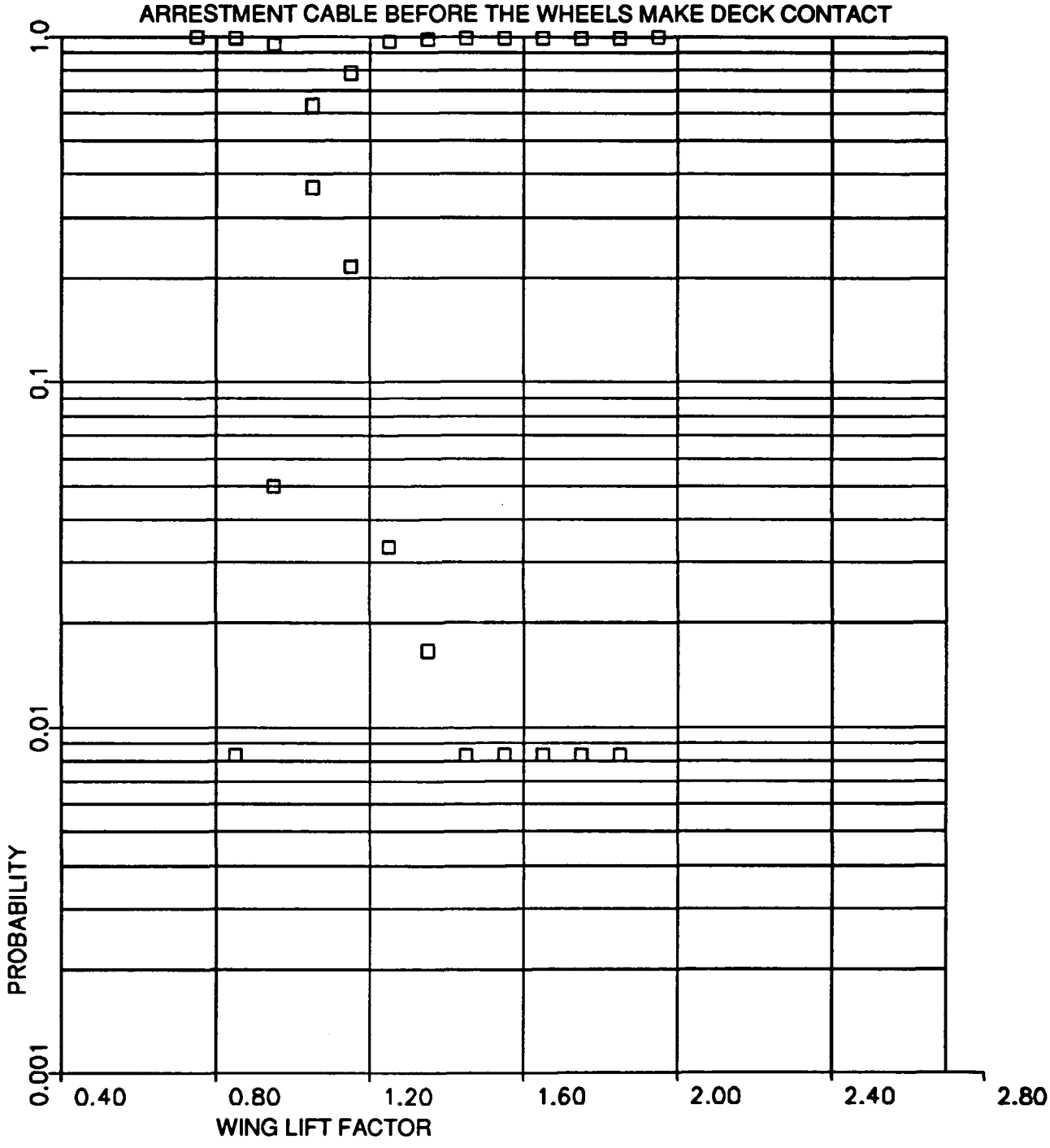


FIGURE R-20 PROBABILITY DISTRIBUTION OF WING LIFT FACTOR AT FREE FLIGHT

MODEL TA-4 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 617 $\bar{X}$= 14.16 DEGREES A3=-0.01
S= 1.48 DEGREES A4= 3.23

POSITIVE VALUES INDICATE NOSE UP ATTITUDE
MEASURED FROM CARRIER DECK TO FRL

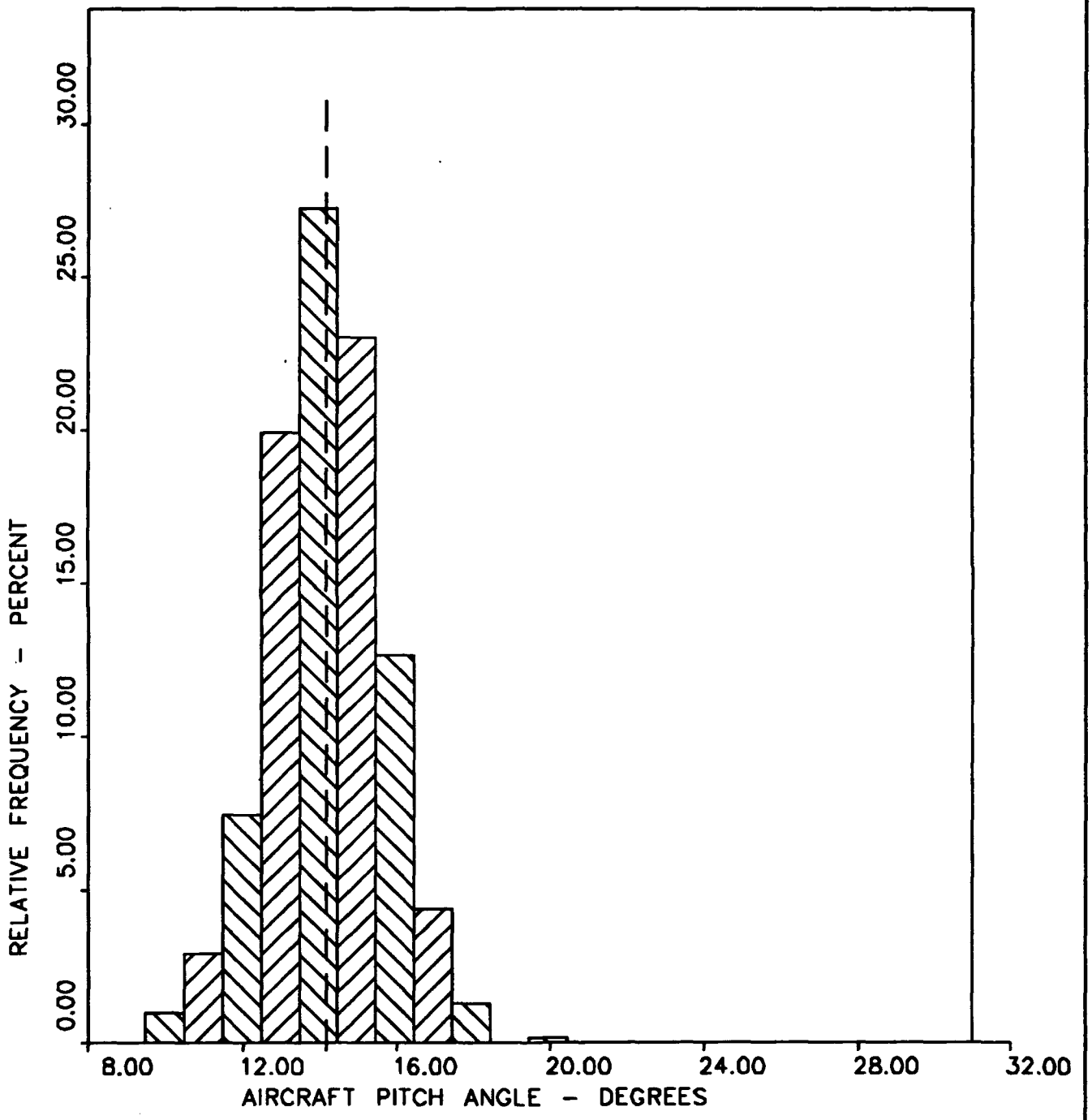


FIGURE R-21 FREQUENCY DISTRIBUTION OF AIRCRAFT PITCH ANGLE AT THE RAMP

MODEL TA-4 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 617 $\bar{X}$= 14.16 DEGREES A3=-0.01
S= 1.48 DEGREES A4= 3.23
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE NOSE UP ATTITUDE
MEASURED FROM CARRIER DECK TO FRL

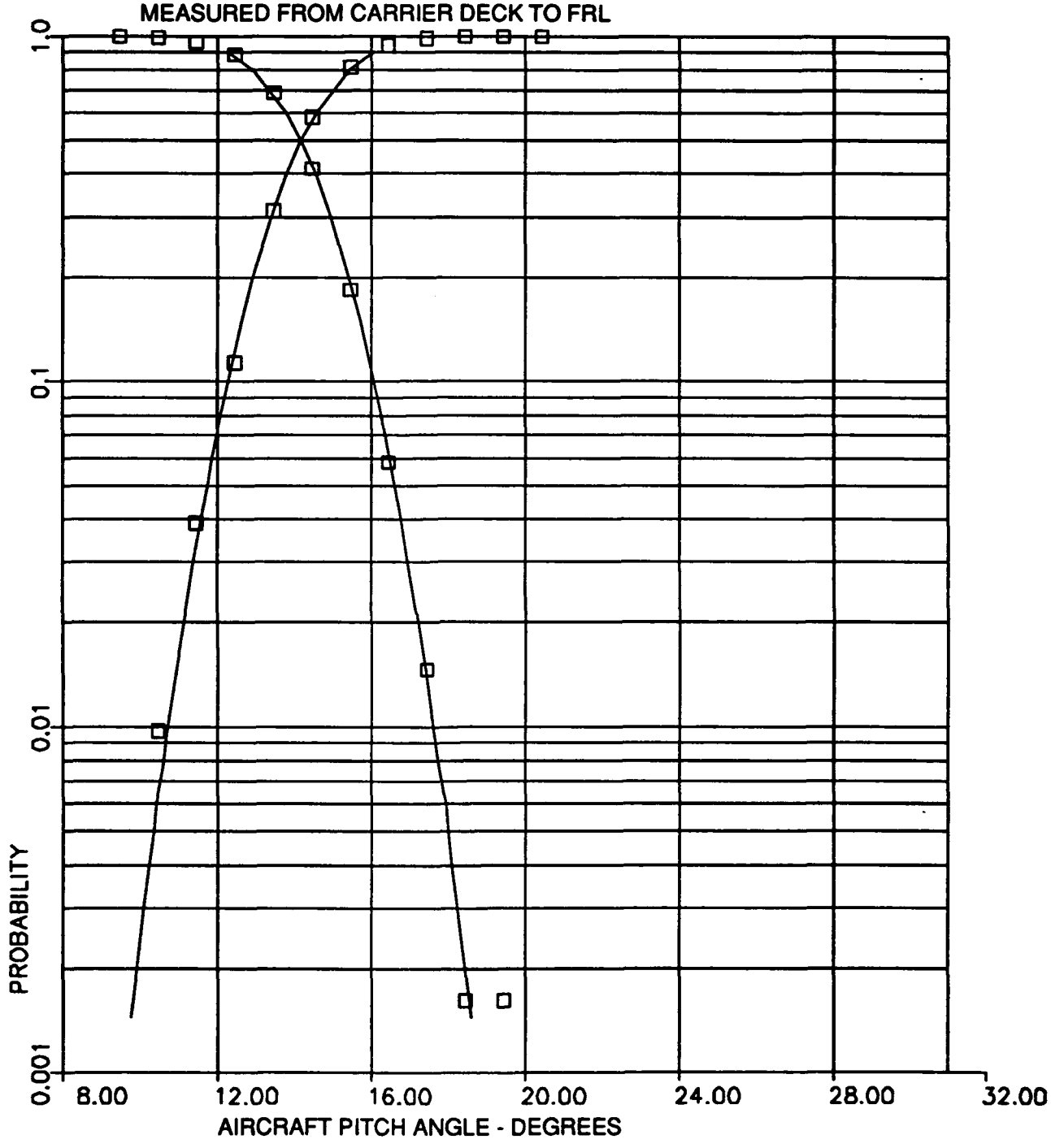


FIGURE R-22 PROBABILITY DISTRIBUTION OF AIRCRAFT PITCH ANGLE AT THE RAMP

MODEL TA-4 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 635 $\bar{X}$= 11.86 DEGREES A3=-0.14
S= 1.50 DEGREES A4= 3.61

POSITIVE VALUES INDICATE NOSE UP ATTITUDE
MEASURED FROM CARRIER DECK TO FRL

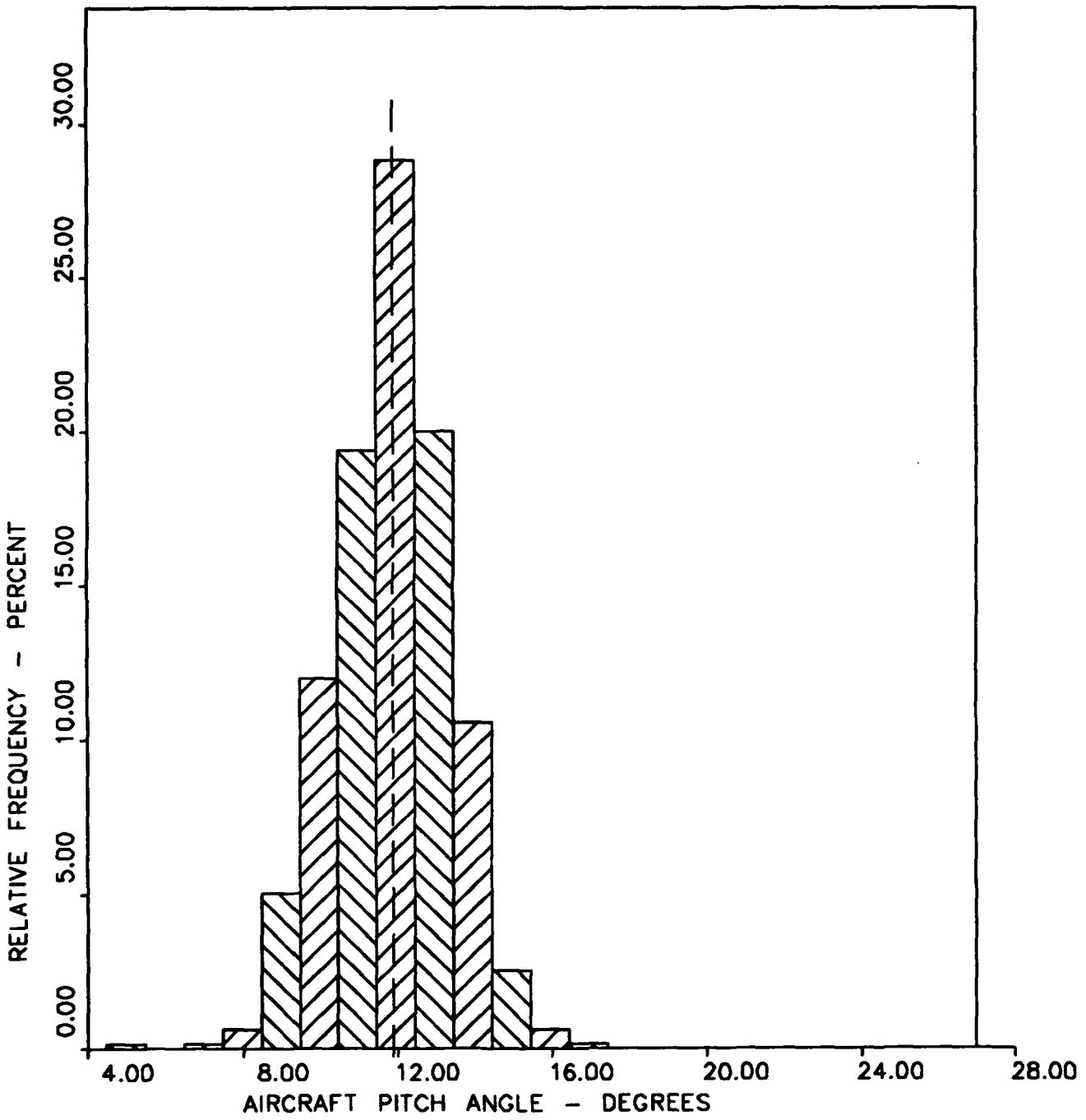


FIGURE R-23 FREQUENCY DISTRIBUTION OF AIRCRAFT PITCH ANGLE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL TA-4 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 635 $\bar{X}$= 11.86 DEGREES A3=-0.14
S= 1.50 DEGREES A4= 3.61
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE NOSE UP ATTITUDE
MEASURED FROM CARRIER DECK TO FRL

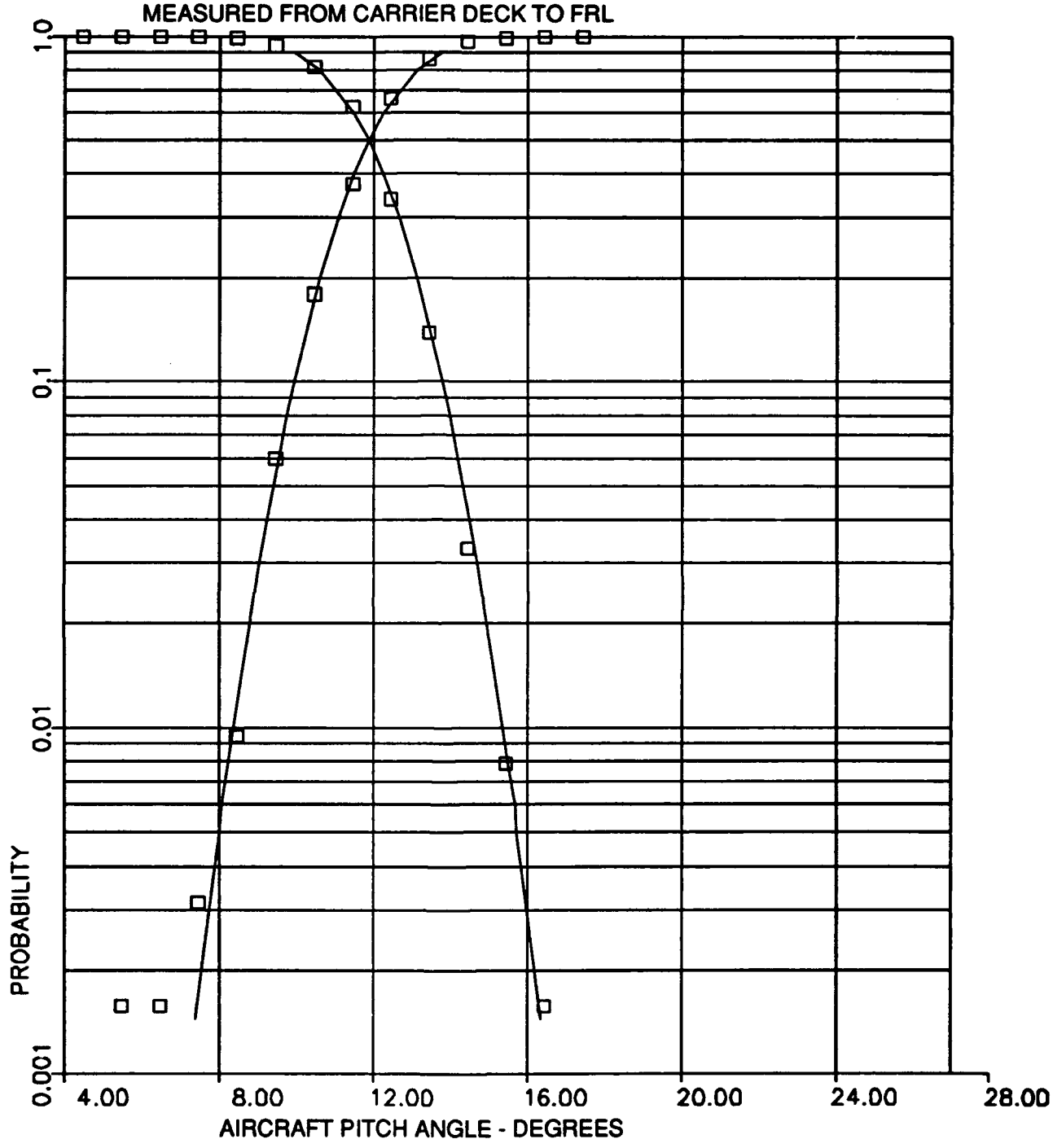


FIGURE R-24 PROBABILITY DISTRIBUTION OF AIRCRAFT PITCH ANGLE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL TA-4 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 120 $\bar{X}$= 12.29 DEGREES A3= 0.35
S= 1.49 DEGREES A4= 3.53

POSITIVE VALUES INDICATE NOSE UP ATTITUDE
MEASURED FROM CARRIER DECK TO FRL

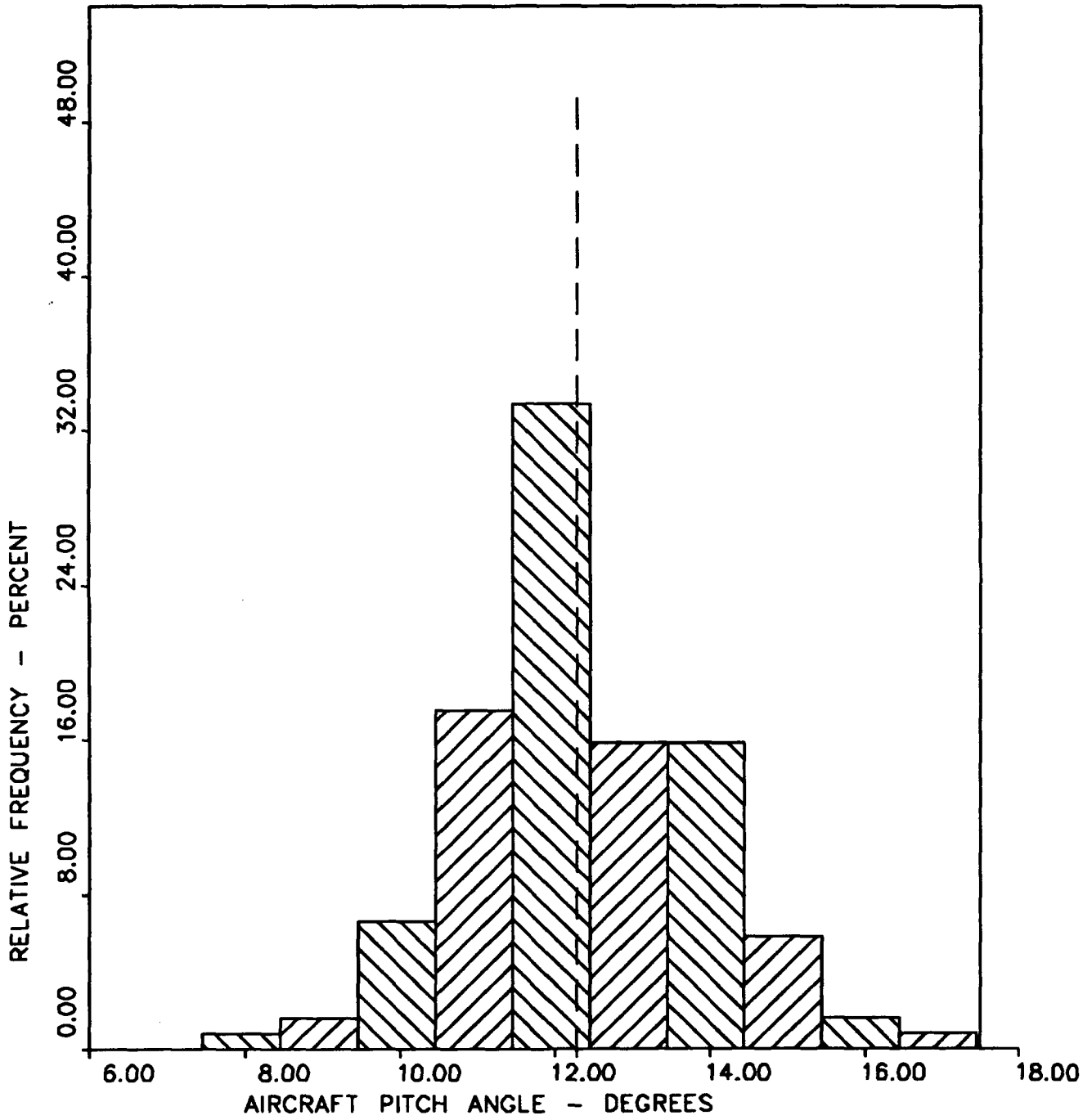


FIGURE R-25 FREQUENCY DISTRIBUTION OF AIRCRAFT PITCH ANGLE AT FREE FLIGHT

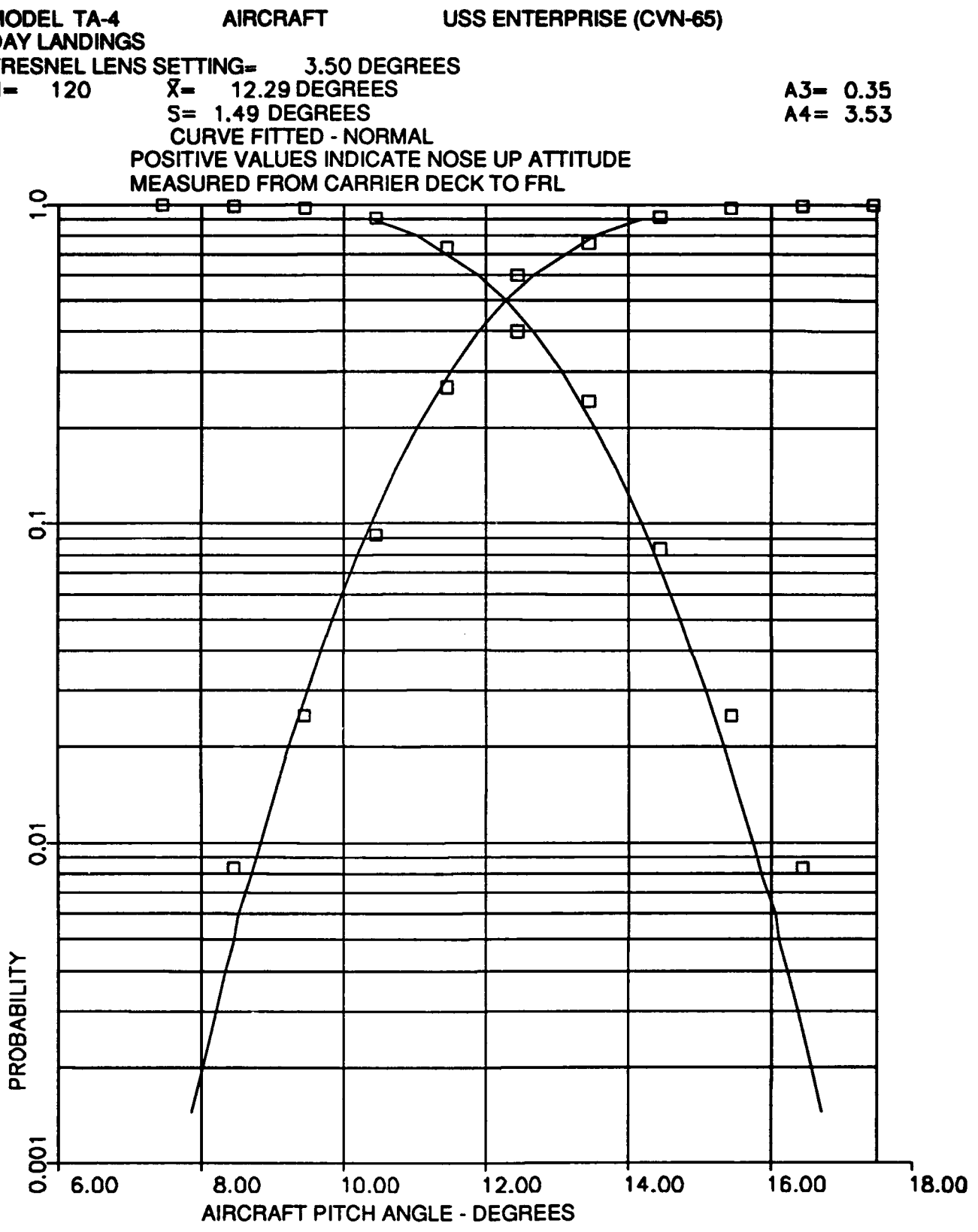


FIGURE R-26 PROBABILITY DISTRIBUTION OF AIRCRAFT PITCH ANGLE AT FREE FLIGHT

MODEL TA-4 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 617 $\bar{X}$= 0.56 DEGREES A3= 0.46
S= 3.40 DEGREES A4= 3.87

POSITIVE VALUES INDICATE STARBOARD WING DOWN

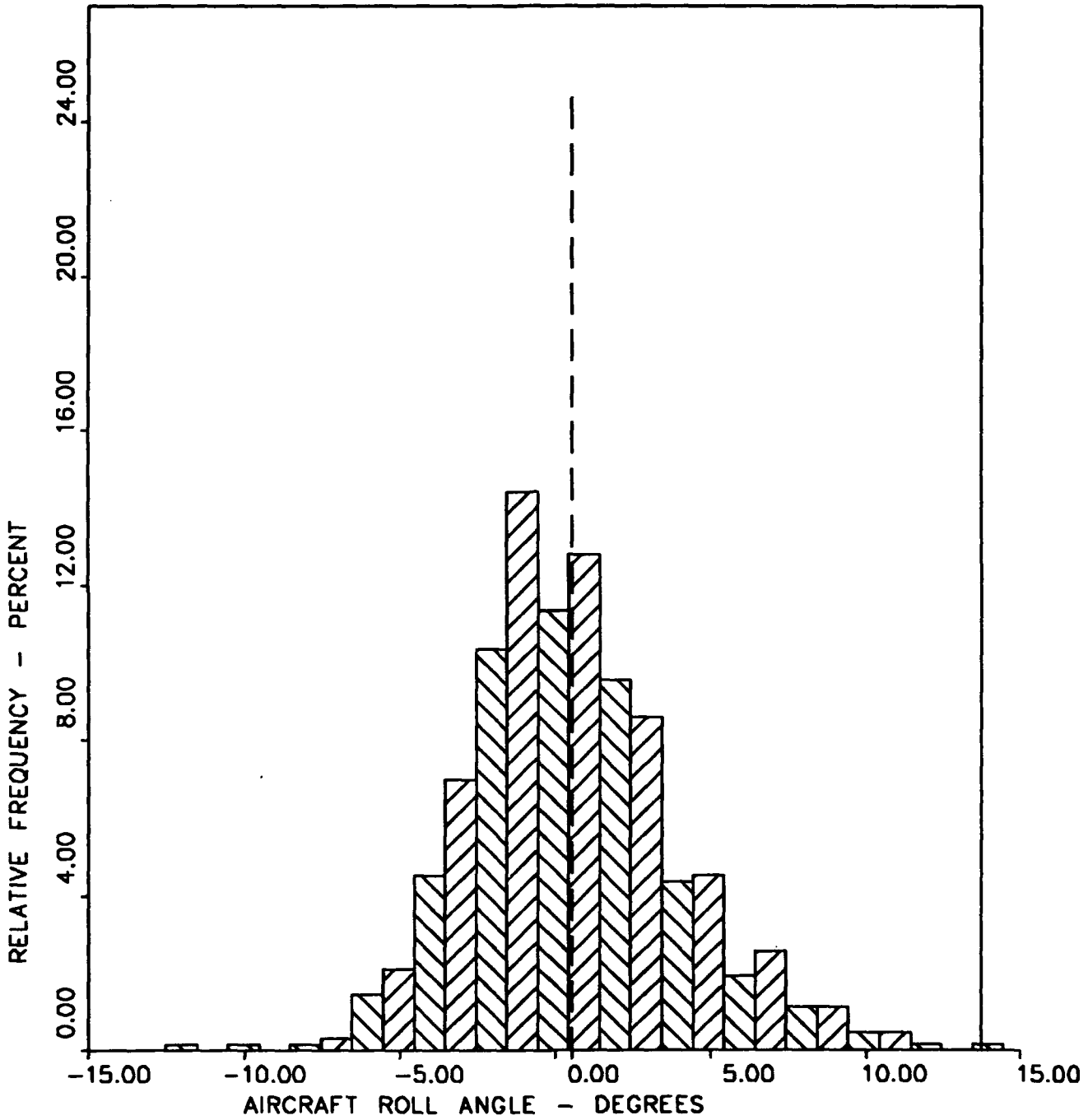


FIGURE R-27 FREQUENCY DISTRIBUTION OF AIRCRAFT ROLL ANGLE AT THE RAMP

MODEL TA-4 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 617 $\bar{X}$= 0.56 DEGREES A3= 0.46
S= 3.40 DEGREES A4= 3.87
CURVE FITTED - PEARSON TYPE III
POSITIVE VALUES INDICATE STARBOARD WING DOWN

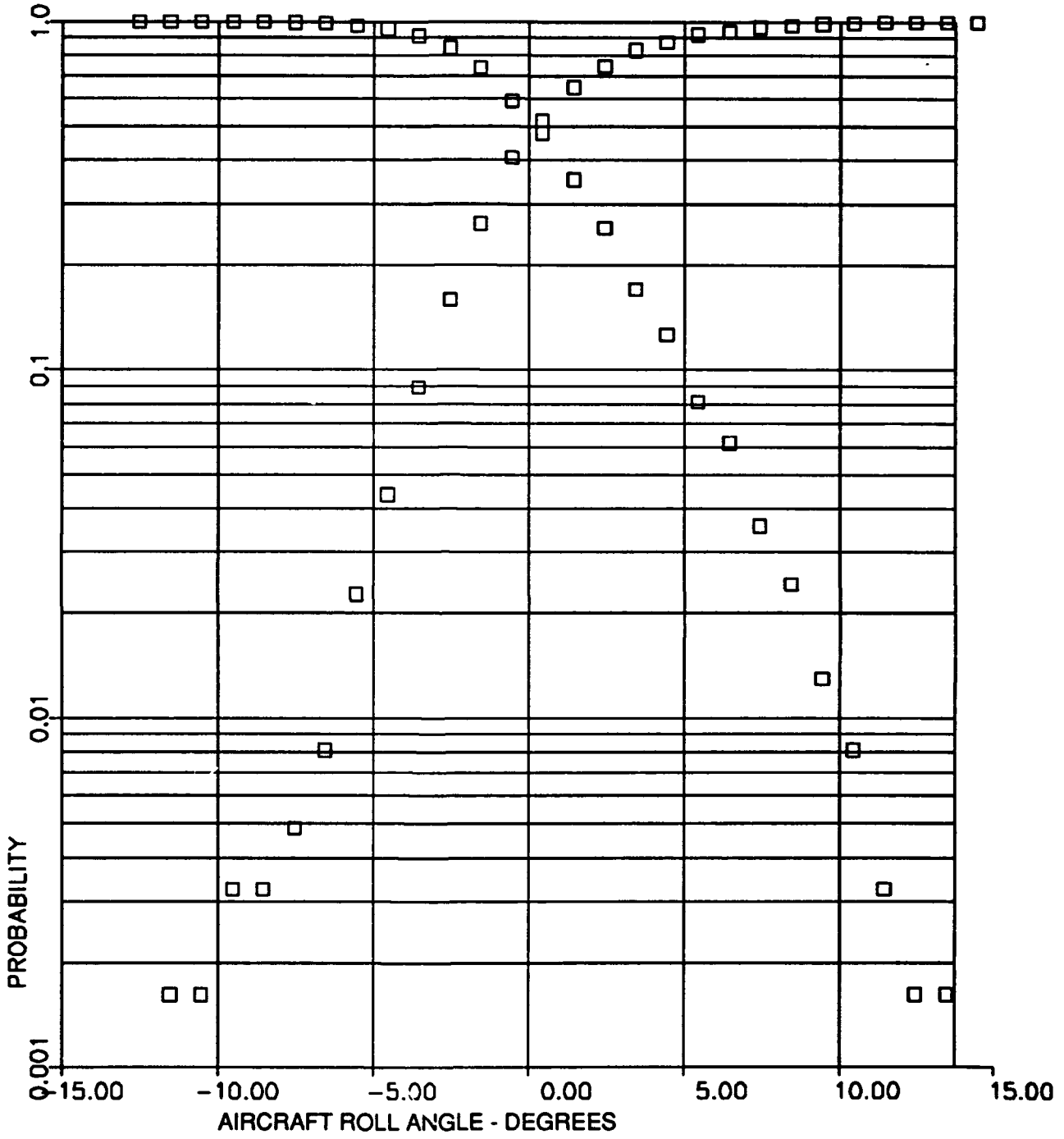


FIGURE R-28 PROBABILITY DISTRIBUTION OF AIRCRAFT ROLL ANGLE AT THE RAMP

MODEL TA-4 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 635 $\bar{X}$=-0.89 DEGREES A3= 0.29
S= 2.83 DEGREES A4= 3.94

POSITIVE VALUES INDICATE STARBOARD WING DOWN

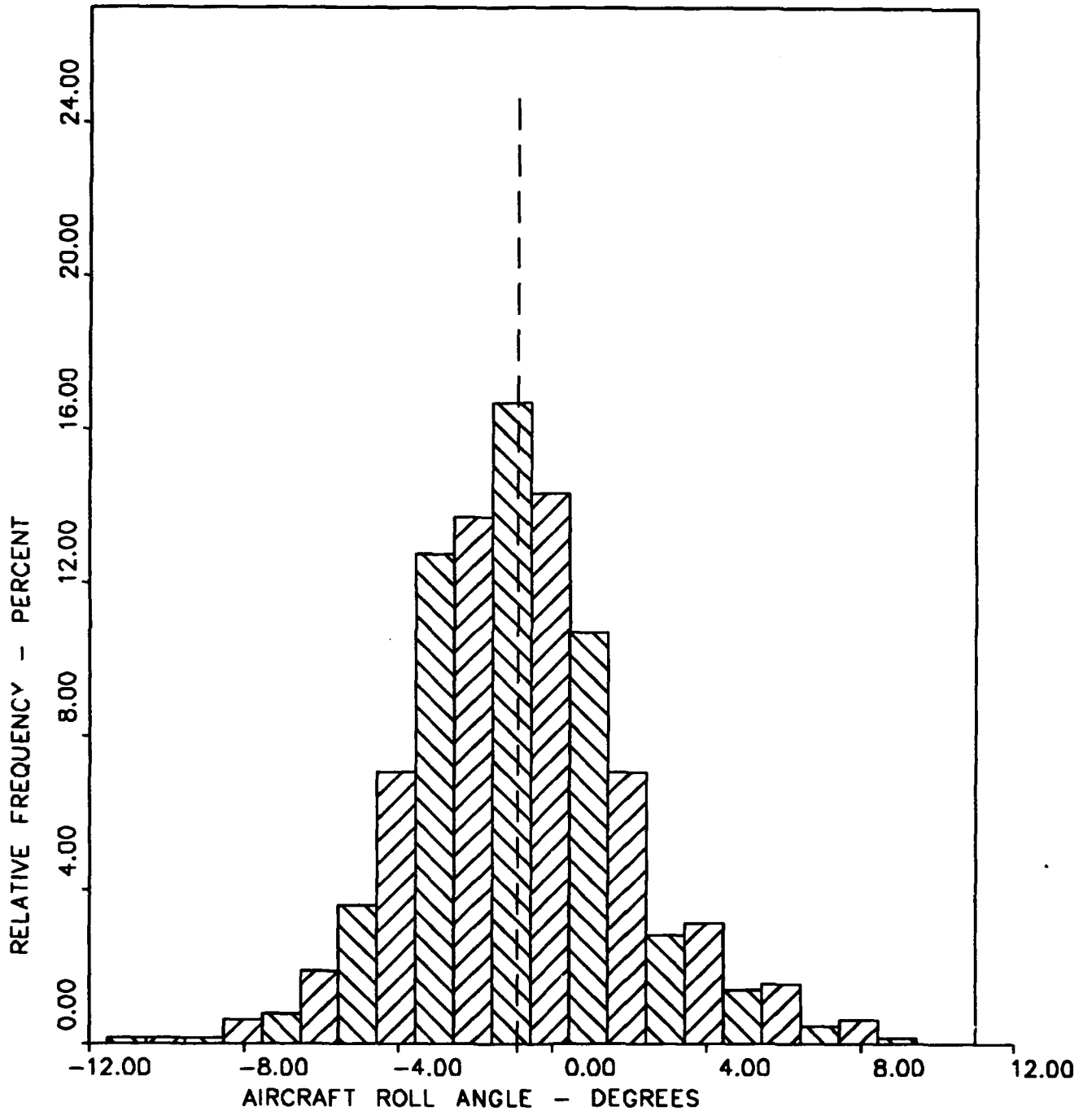


FIGURE R-29 FREQUENCY DISTRIBUTION OF AIRCRAFT ROLL ANGLE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL TA-4 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 635 $\bar{X}$=-0.89 DEGREES A3= 0.29
S= 2.83 DEGREES A4= 3.94
CURVE FITTED - PEARSON TYPE III
POSITIVE VALUES INDICATE STARBOARD WING DOWN

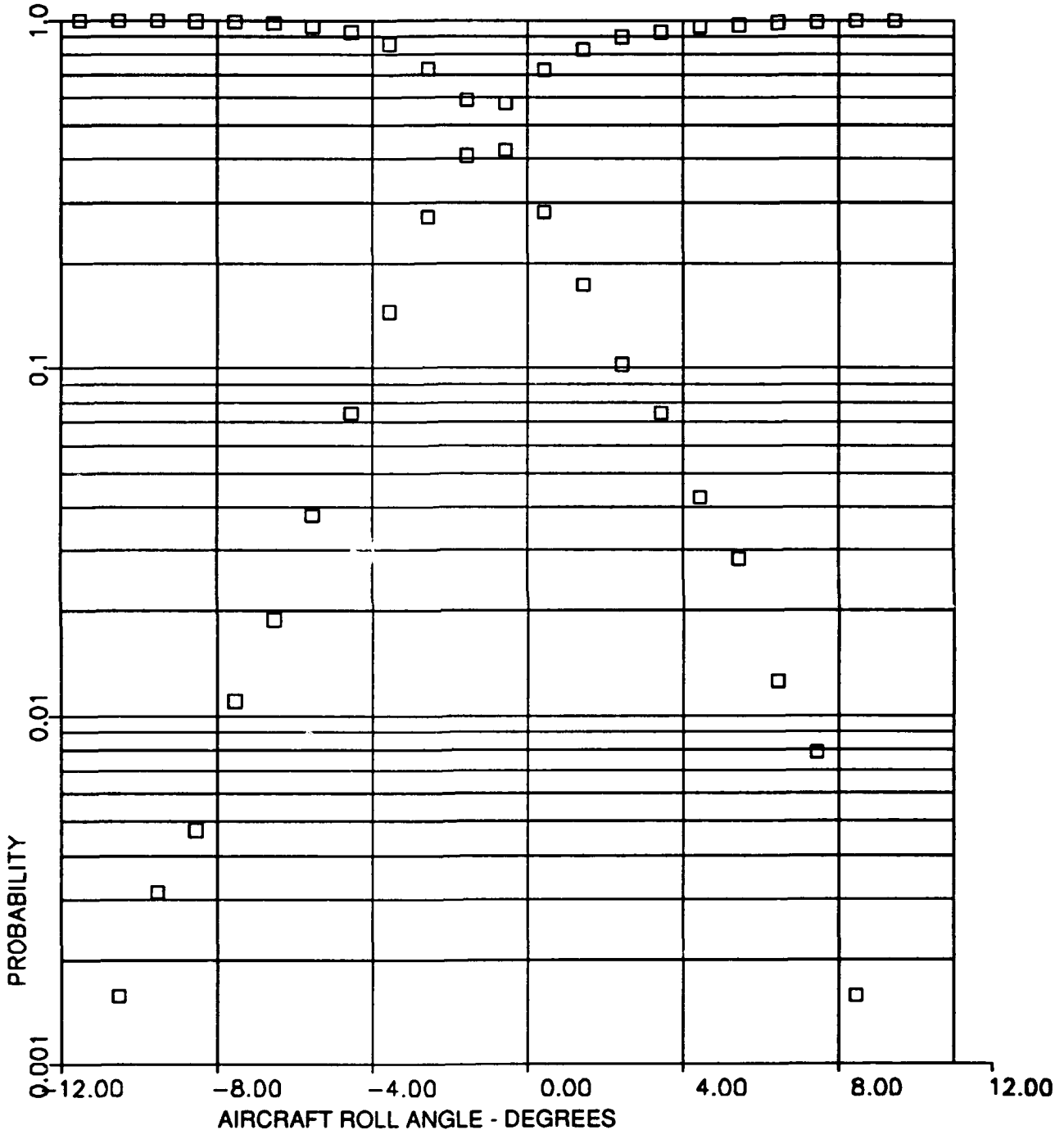


FIGURE R-30 PROBABILITY DISTRIBUTION OF AIRCRAFT ROLL ANGLE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL TA-4 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 120 $\bar{X}$=-0.59 DEGREES A3= 0.27
S= 2.30 DEGREES A4= 3.65

POSITIVE VALUES INDICATE STARBOARD WING DOWN

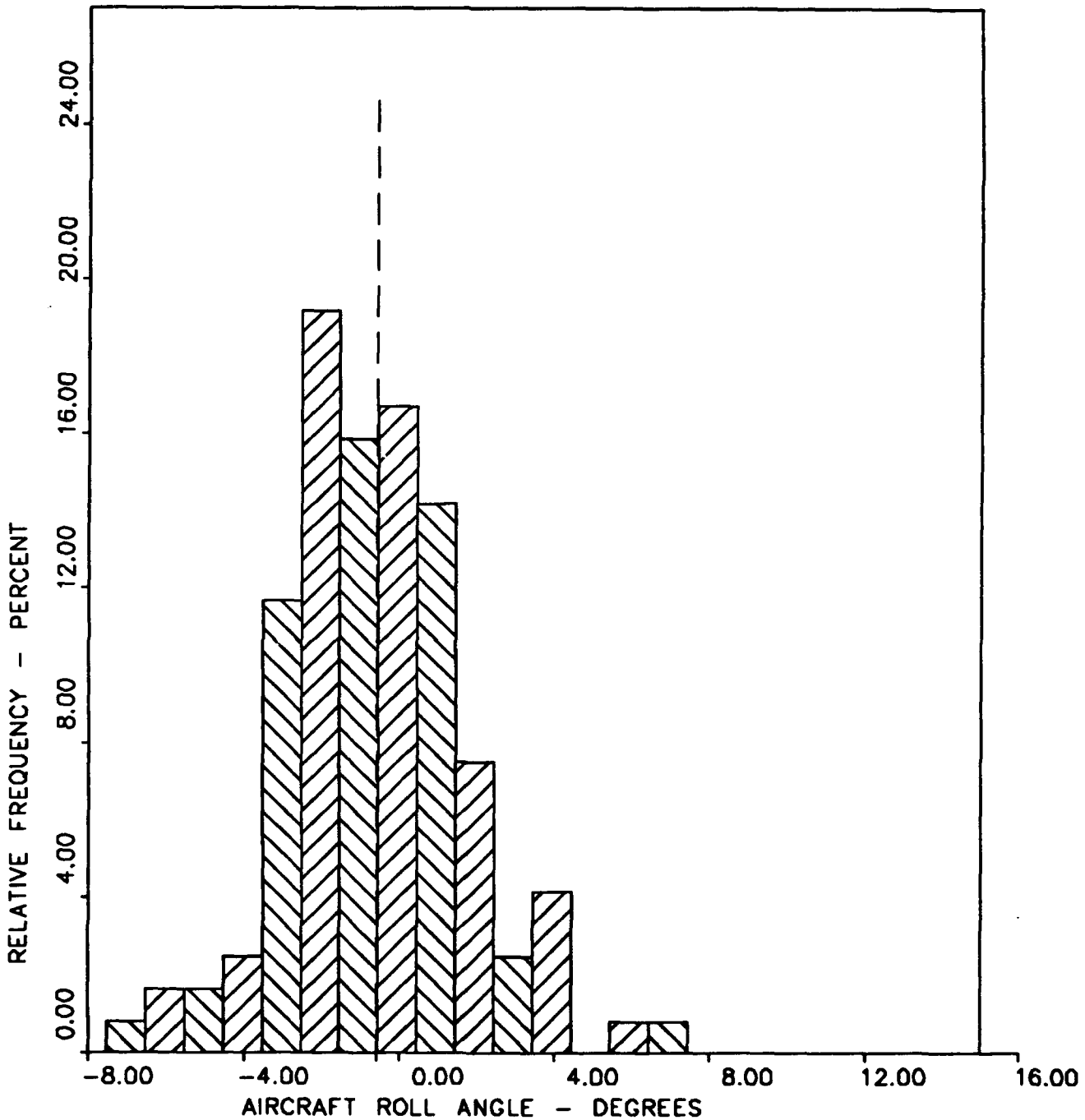


FIGURE R-31 FREQUENCY DISTRIBUTION OF AIRCRAFT ROLL ANGLE AT FREE FLIGHT

MODEL TA-4 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 120 $\bar{X}$=-0.59 DEGREES A3= 0.27
S= 2.30 DEGREES A4= 3.65
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE STARBOARD WING DOWN

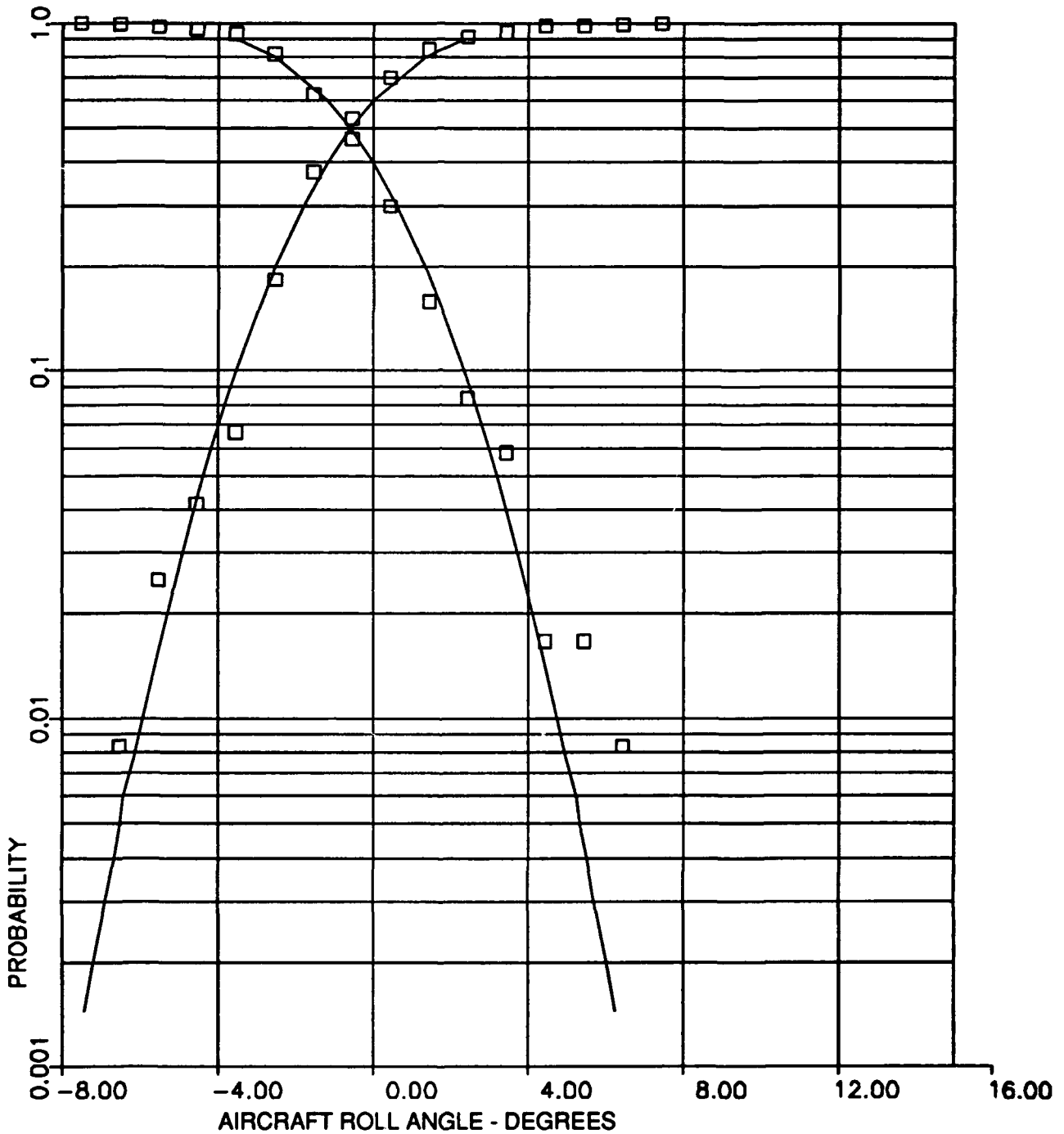


FIGURE R-32 PROBABILITY DISTRIBUTION OF AIRCRAFT ROLL ANGLE AT FREE FLIGHT

MODEL TA-4 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 635 $\bar{X}$= 253.63 FEET A3= 0.01
S= 42.11 FEET A4= 2.68

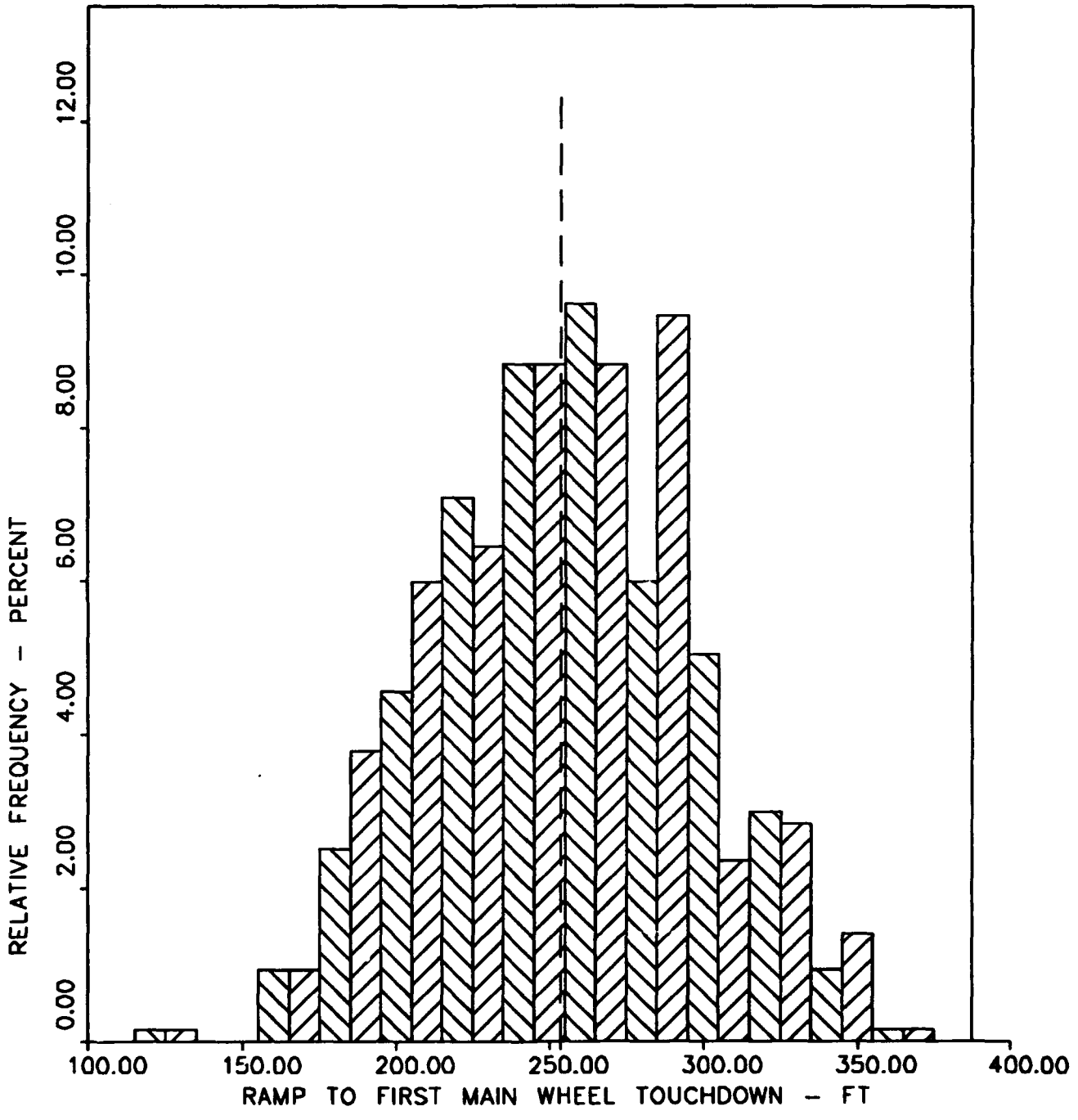


FIGURE R-33 FREQUENCY DISTRIBUTION OF DISTANCE FROM RAMP TO FIRST MAIN WHEEL TOUCHDOWN POINT

MODEL TA-4 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 635 $\bar{X}$= 253.63 FEET
S= 42.11 FEET
CURVE FITTED - NORMAL

A3= 0.01
A4= 2.68

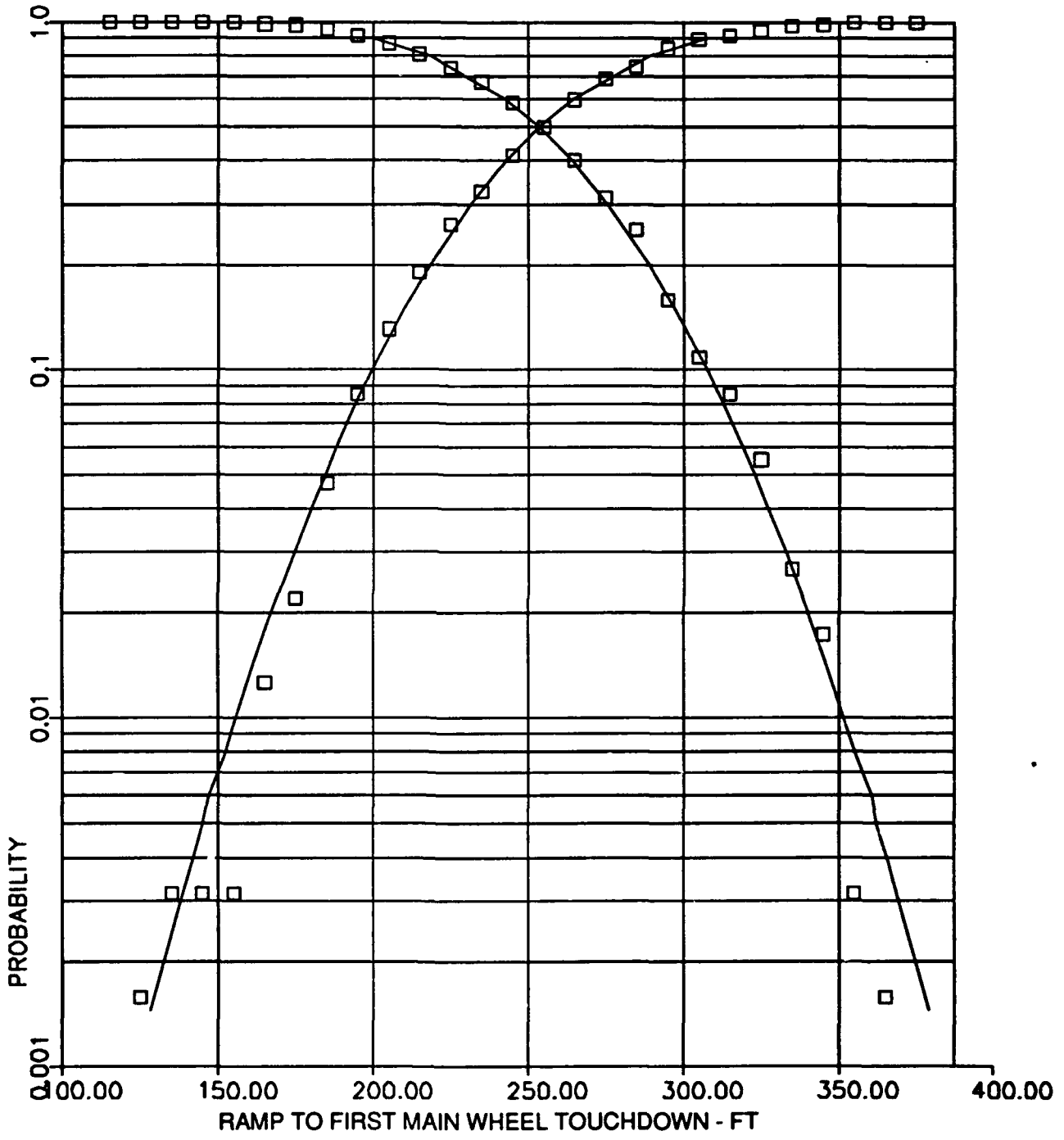


FIGURE R-34 PROBABILITY DISTRIBUTION OF DISTANCE FROM RAMP TO FIRST MAIN WHEEL TOUCHDOWN POINT

MODEL TA-4 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 635 $\bar{X}$=-9.16 FEET A3=-0.33
S= 6.13 FEET A4= 4.58

POSITIVE VALUES INDICATE PORT SIDE OF DECK CENTERLINE

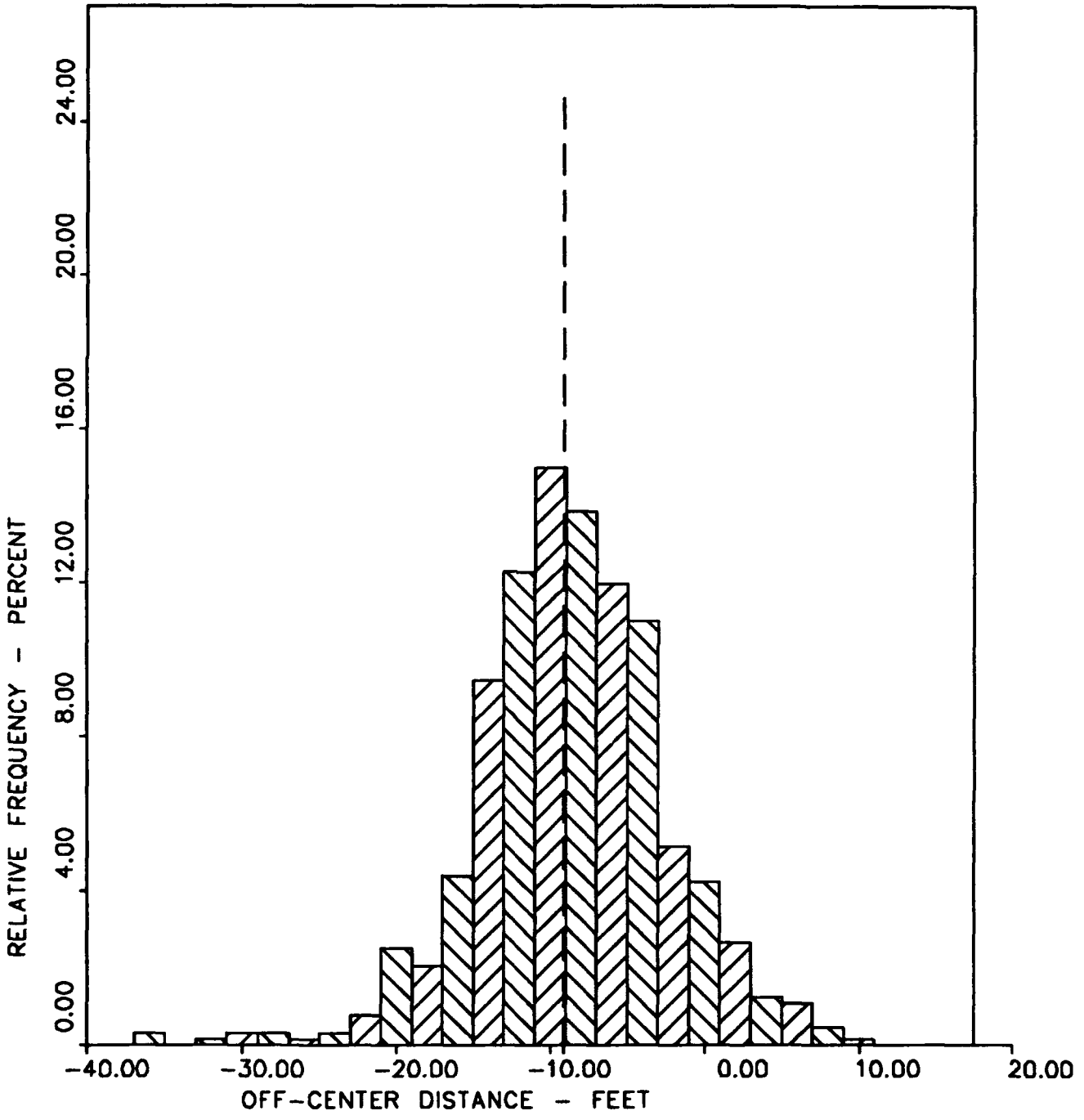


FIGURE R-35 FREQUENCY DISTRIBUTION OF AIRCRAFT CENTERLINE OFF-CNTR DISTANCE AT 1ST MAIN WHEEL TOUCHDOWN

MODEL TA-4 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 635 $\bar{X}$=-9.16 FEET A3=-0.33
S= 6.13 FEET A4= 4.58
CURVE FITTED - PEARSON TYPE III
POSITIVE VALUES INDICATE PORT SIDE OF DECK CENTERLINE

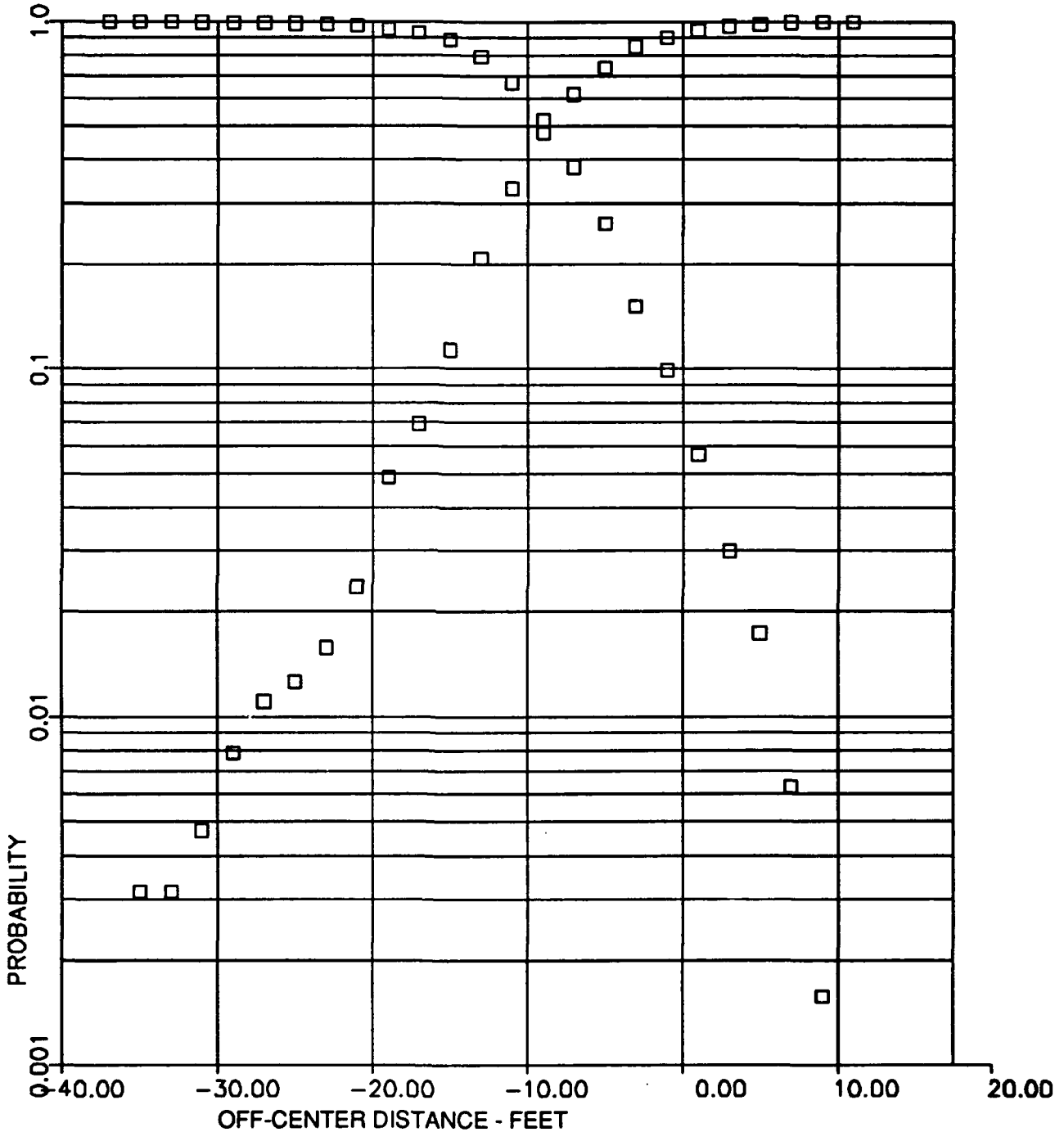


FIGURE R-36 PROBABILITY DISTRIBUTION OF AIRCRAFT OFF-CENTER DISTANCE AT 1ST MAIN WHEEL TOUCHDOWN

MODEL TA-4 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 452 $\bar{X}$= 2.80 A3=-0.40
S= 0.88 A4= 2.50

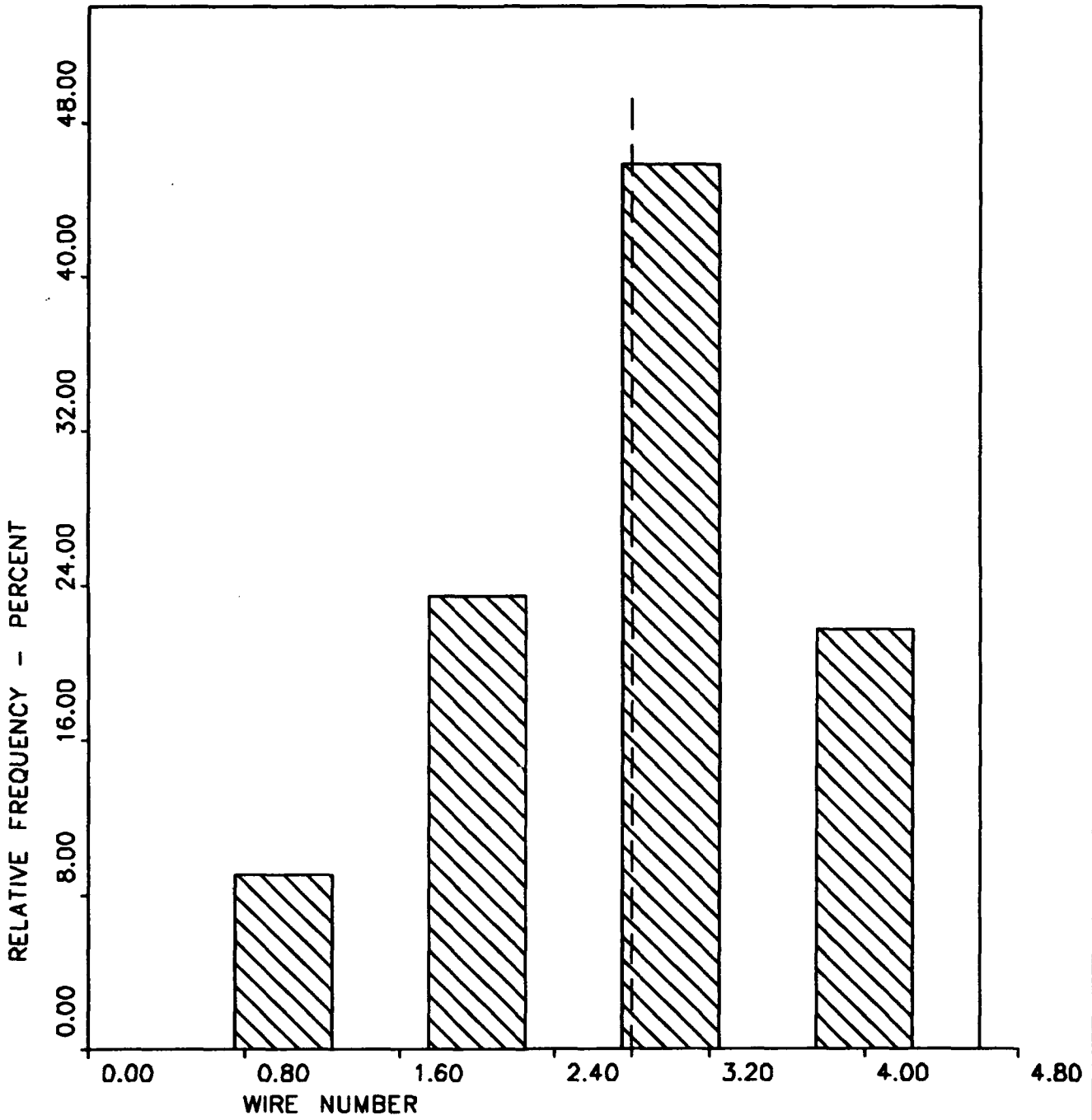


FIGURE R-37 FREQUENCY DISTRIBUTION OF ARRESTMENT WIRE NUMBER ENGAGED

MODEL TA-4 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 635 $\bar{X}$= 2.84 DEGREES A3= 0.11
S= 0.72 DEGREES A4= 3.41

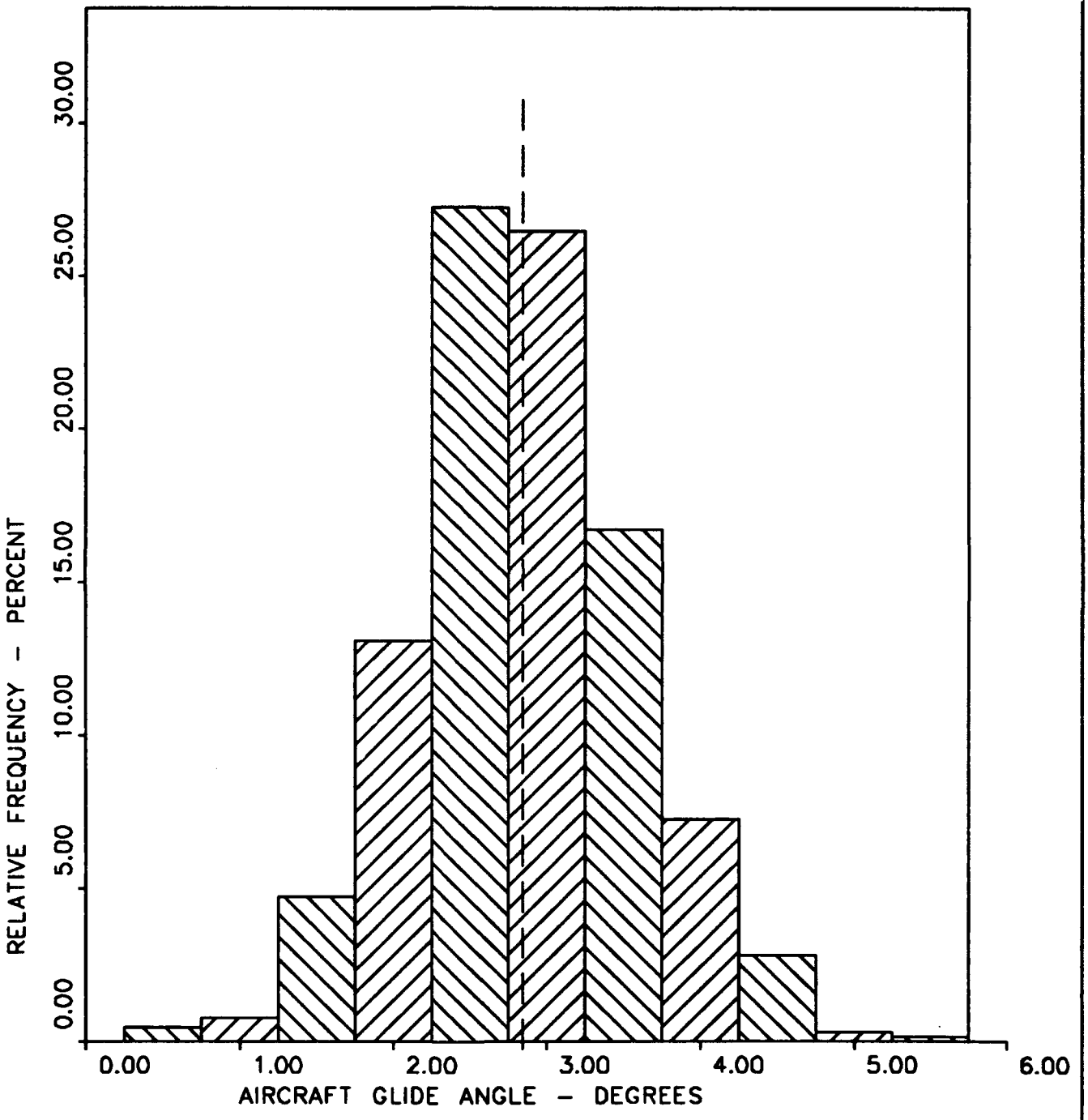


FIGURE R-38 FREQUENCY DISTRIBUTION OF AIRCRAFT GLIDE ANGLE - INSTANTANEOUS METHOD

MODEL TA-4 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 617 $\bar{X}$= 3.16 DEGREES A3= 0.16
S= 0.59 DEGREES A4= 3.31

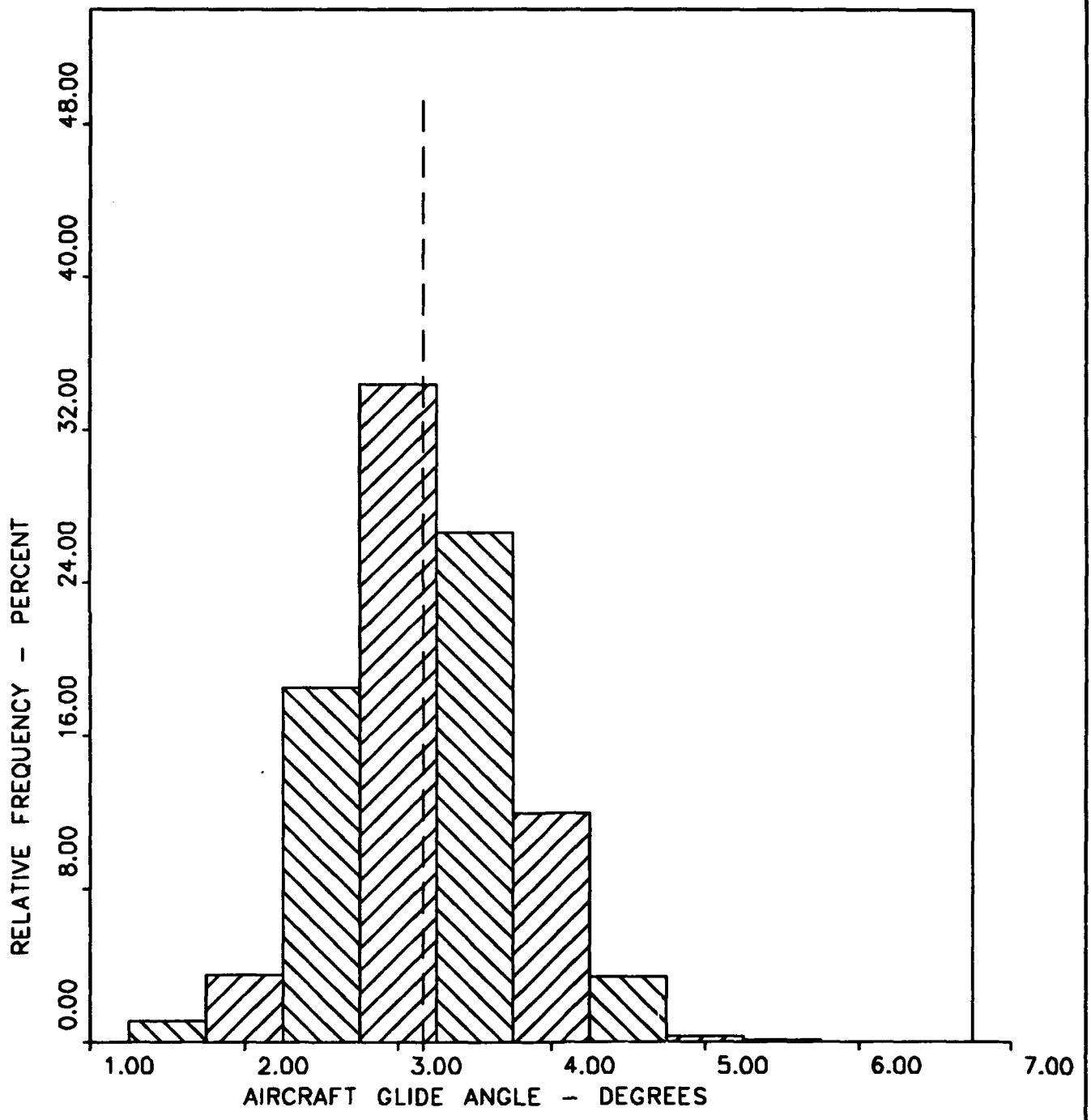


FIGURE R-39 FREQUENCY DISTRIBUTION OF AIRCRAFT GLIDE ANGLE - GEOMETRIC METHOD

MODEL TA-4 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 617 $\bar{X}$= 12.24 FEET A3= 0.61
S= 3.21 FEET A4= 3.42

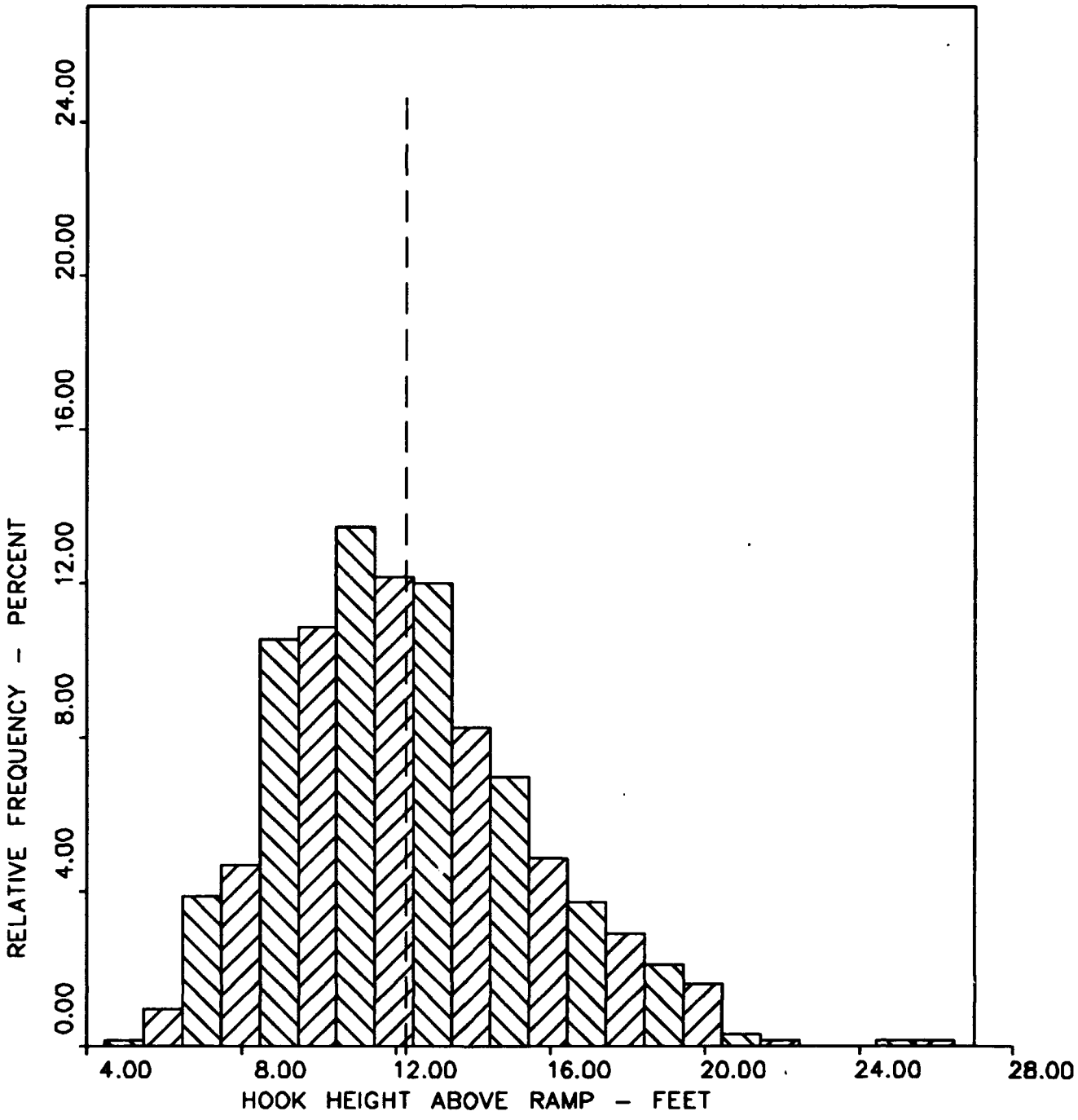


FIGURE R-40 FREQUENCY DISTRIBUTION OF AIRCRAFT ARRESTMENT HOOK HEIGHT ABOVE CARRIER RAMP

MODEL TA-4 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 617 $\bar{X}$= 12.24 FEET A3= 0.61
S= 3.21 FEET A4= 3.42
CURVE FITTED - PEARSON TYPE III

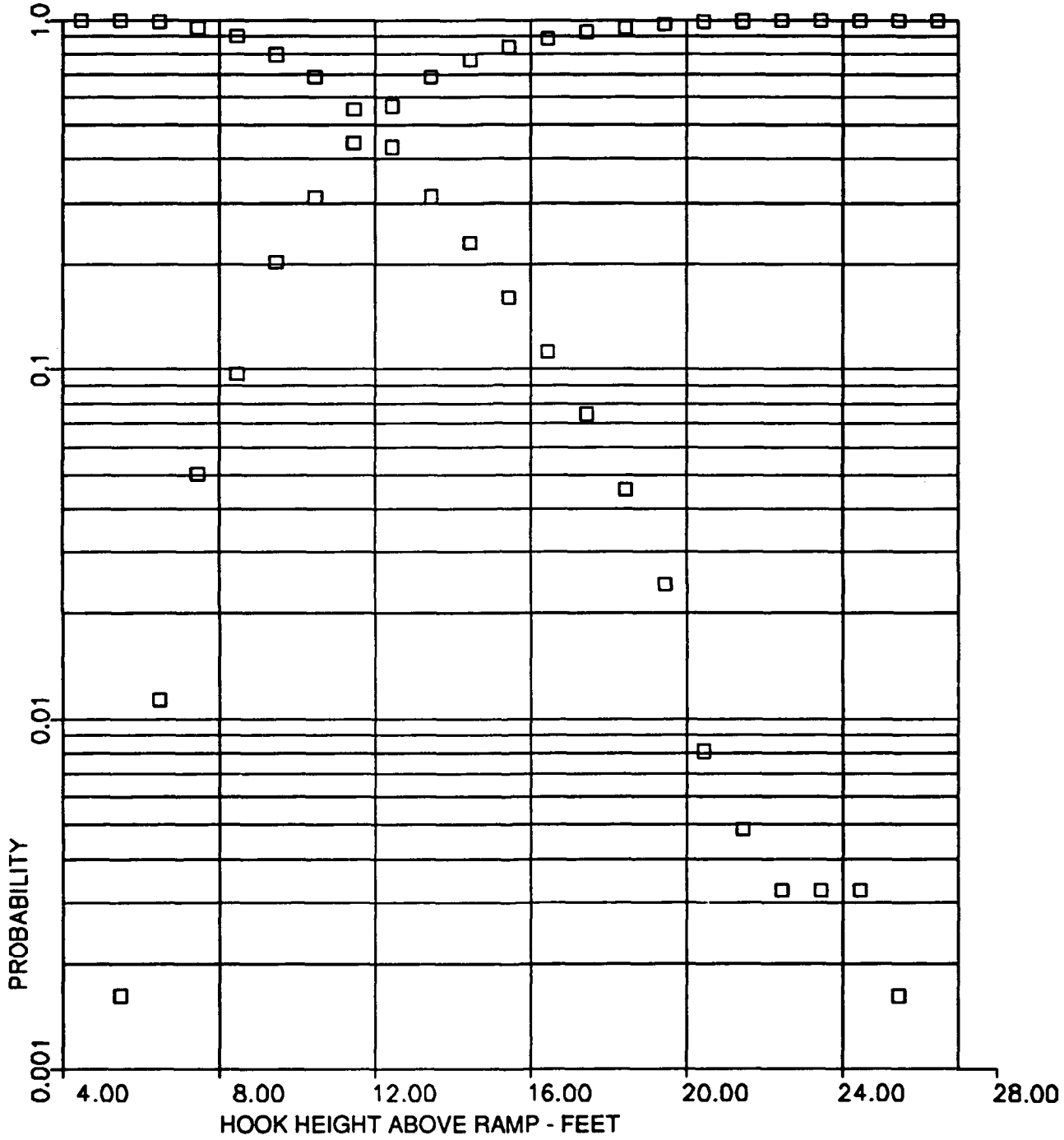


FIGURE R-41 PROBABILITY DISTRIBUTION OF ARRESTMENT
HOOK HEIGHT ABOVE CARRIER RAMP

MODEL TA-4 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 635 $\bar{X}$= 113.42 KNOTS A3= 0.49
S= 6.68 KNOTS A4= 8.05

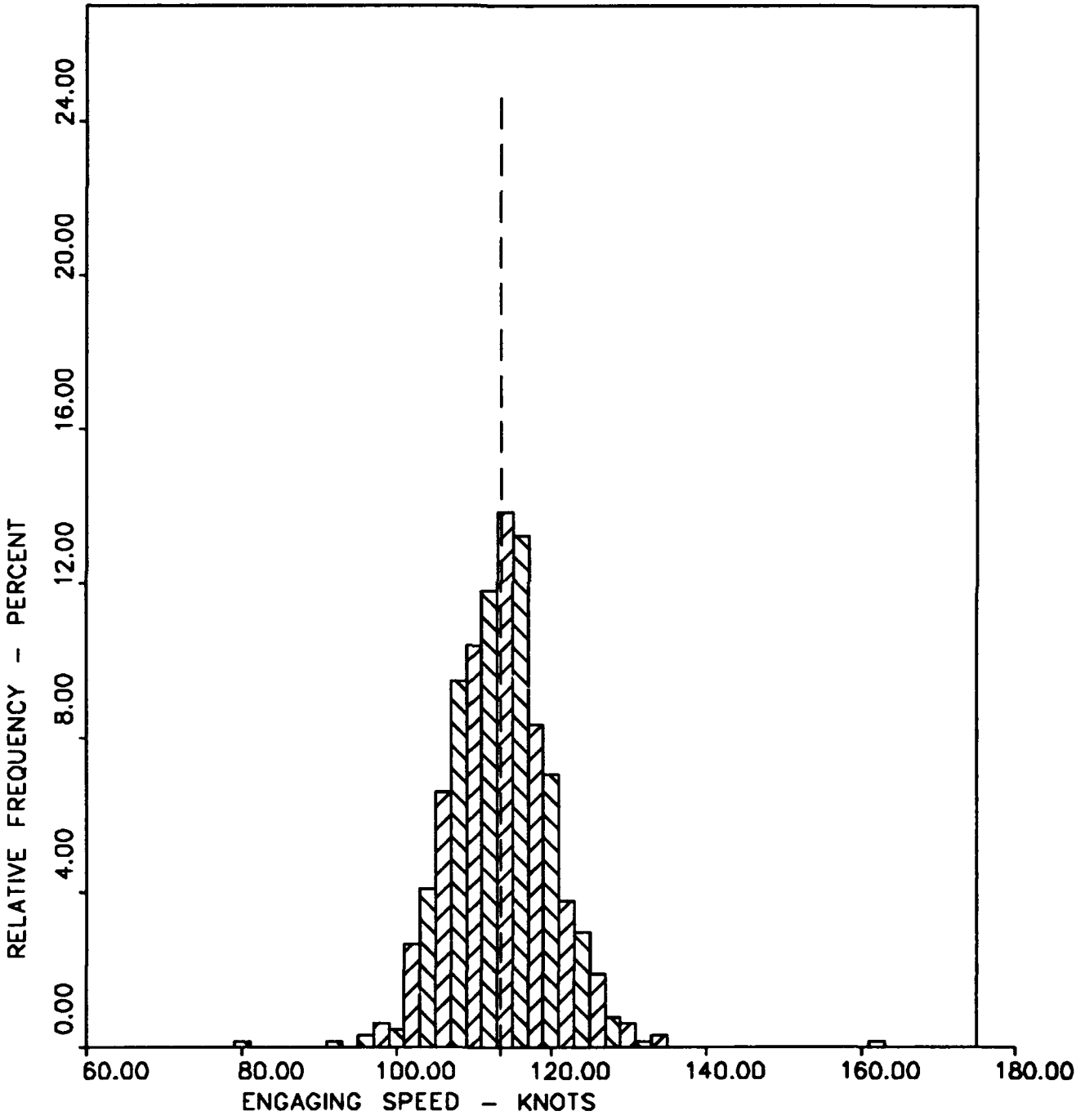


FIGURE R-42 FREQUENCY DISTRIBUTION OF AIRCRAFT ENGAGING SPEED AT FIRST MAIN WHEEL TOUCHDOWN

MODEL TA-4 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 635 $\bar{X}$= 113.42 KNOTS A3= 0.49
S= 6.68 KNOTS A4= 8.05
CURVE FITTED - PEARSON TYPE III

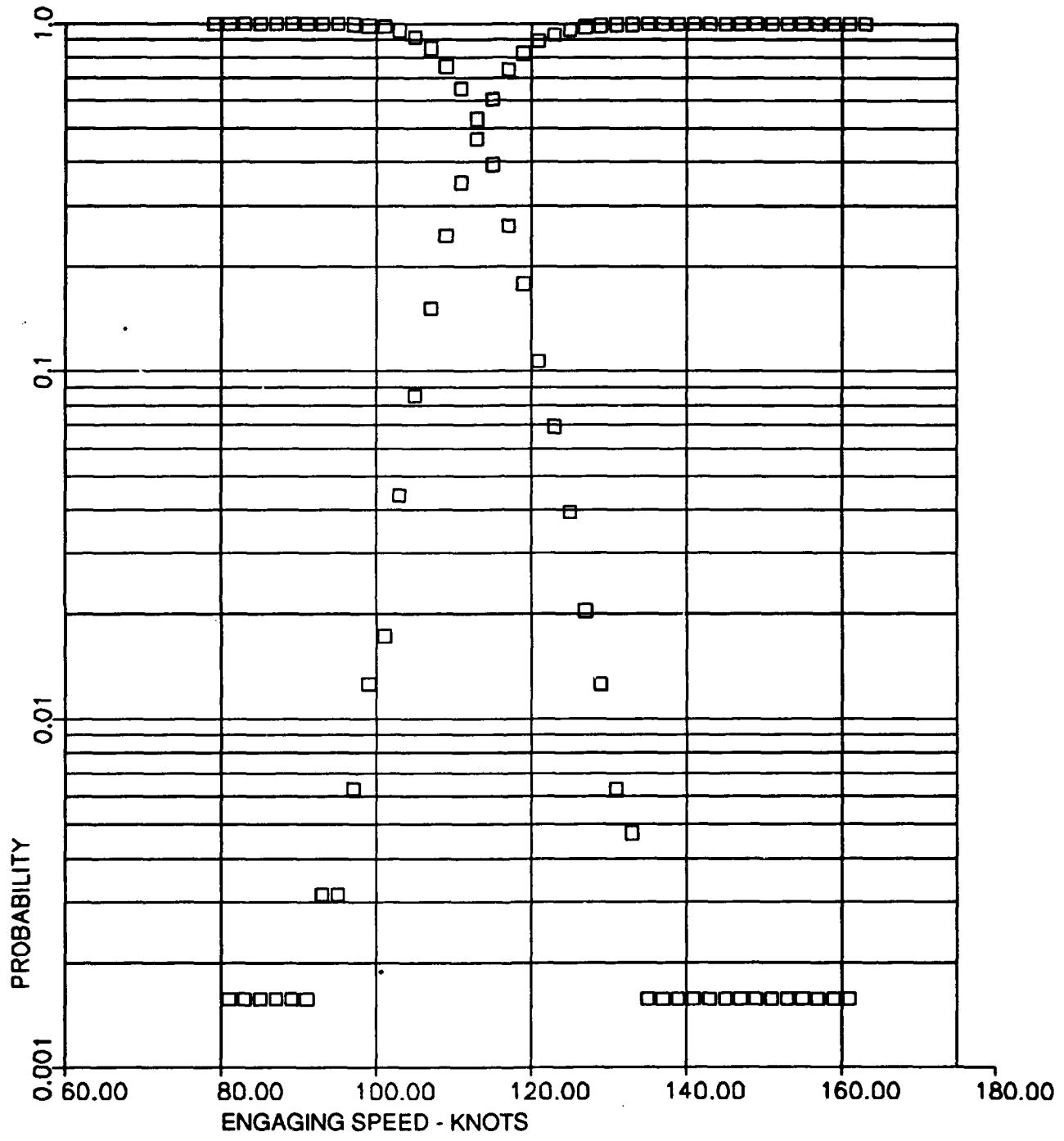


FIGURE R-43 PROBABILITY DISTRIBUTION OF ENGAGING SPEED AT FIRST MAIN WHEEL TOUCHDOWN

MODEL TA-4 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 624 $\bar{X}$= 128.77 KNOTS A3=-1.10
S= 1.47 KNOTS A4= 3.30

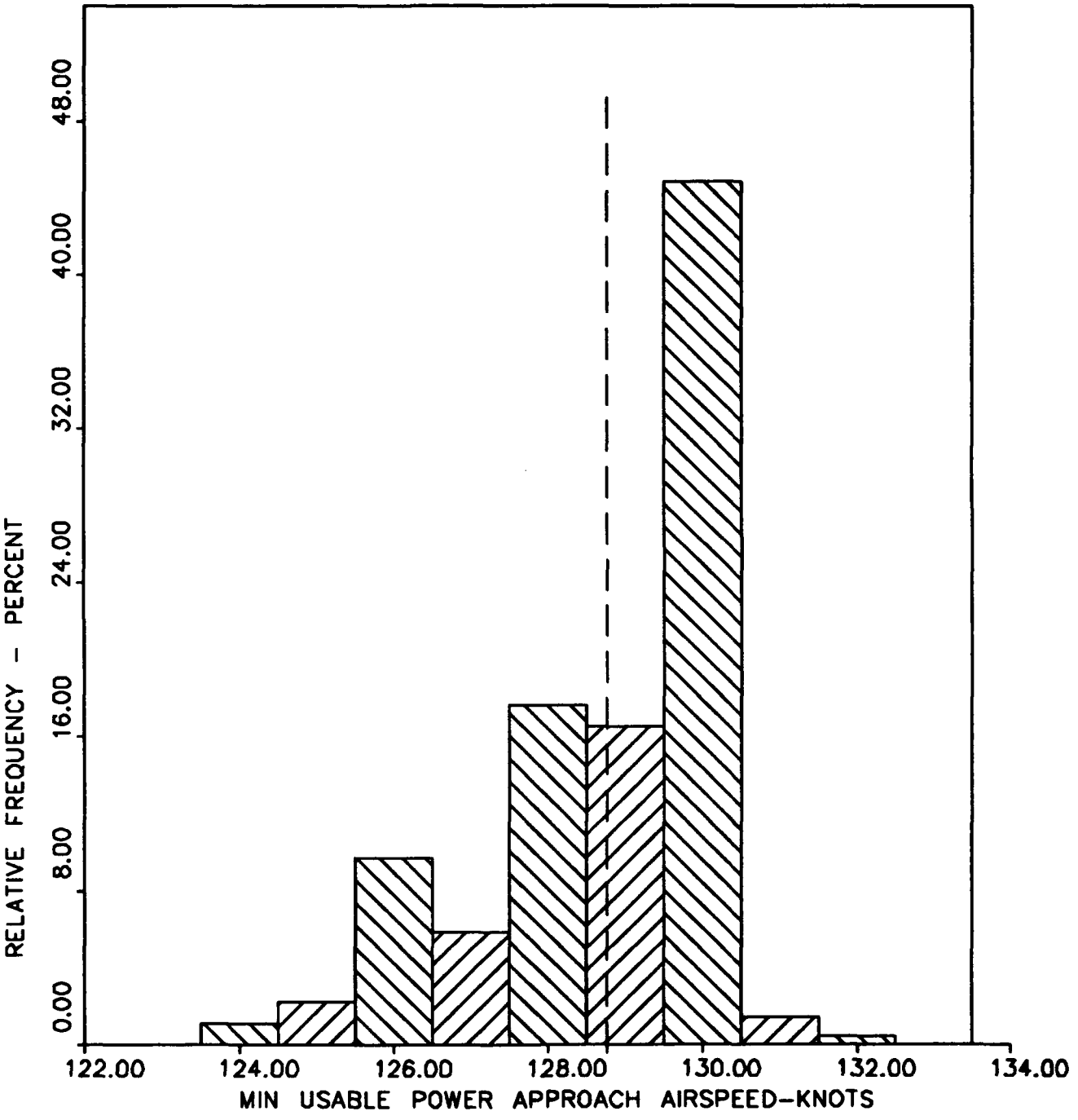


FIGURE R-44 FREQUENCY DISTRIBUTION OF MINIMUM USABLE POWER APPROACH AIRSPEED

MODEL TA-4 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 624 $\bar{X}$= 1.09 A3= 0.46
S= 0.05 A4= 6.01

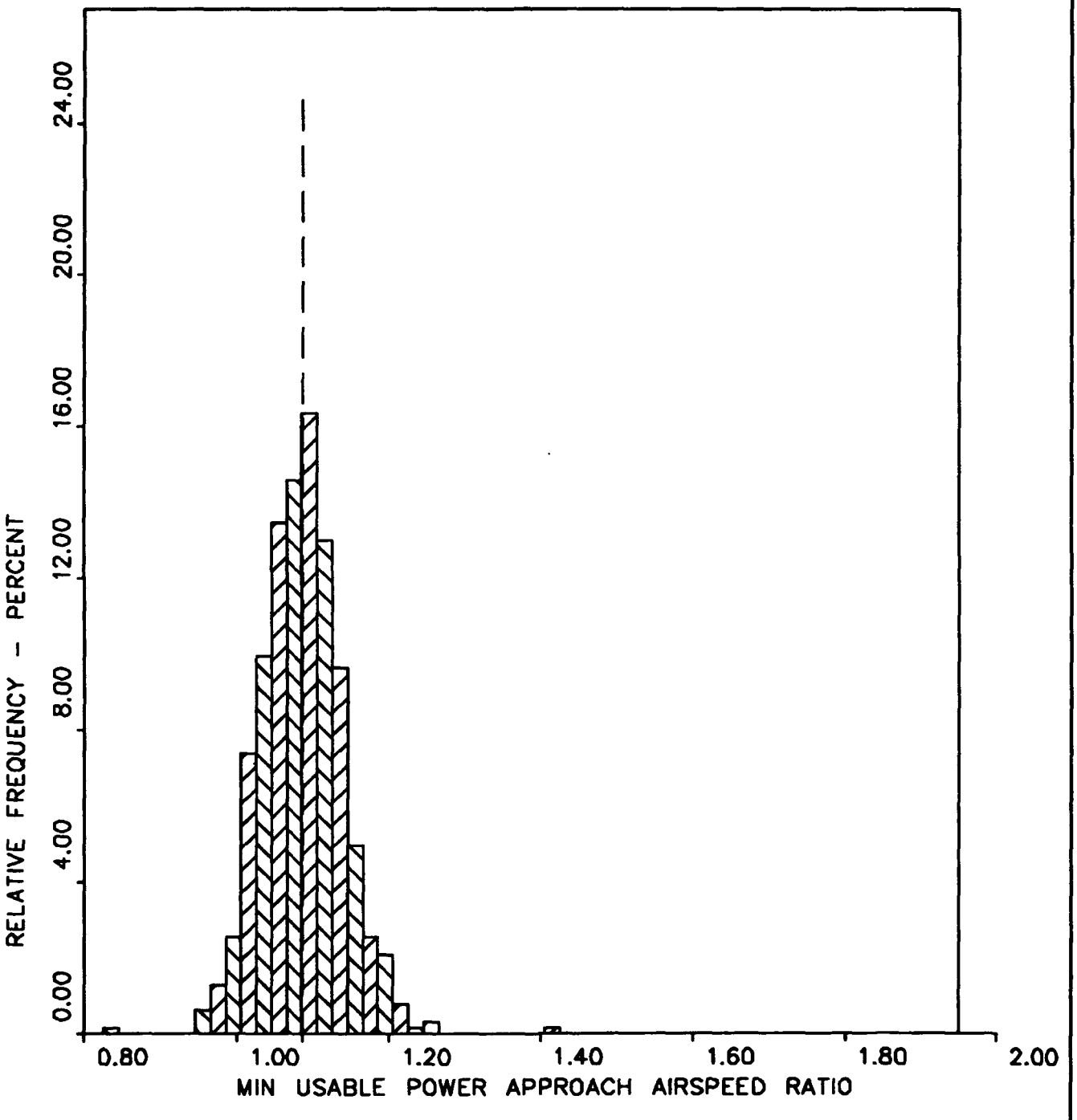


FIGURE R-45 FREQUENCY DISTRIBUTION OF MINIMUM USABLE POWER APPROACH AIRSPEED RATIO - FILM

MODEL TA-4 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 553 $\bar{X}$= 0.15 DEGREES A3= 0.27
S= 1.17 DEGREES A4= 3.28

POSITIVE VALUES INDICATE PORT SIDE OF DECK UP

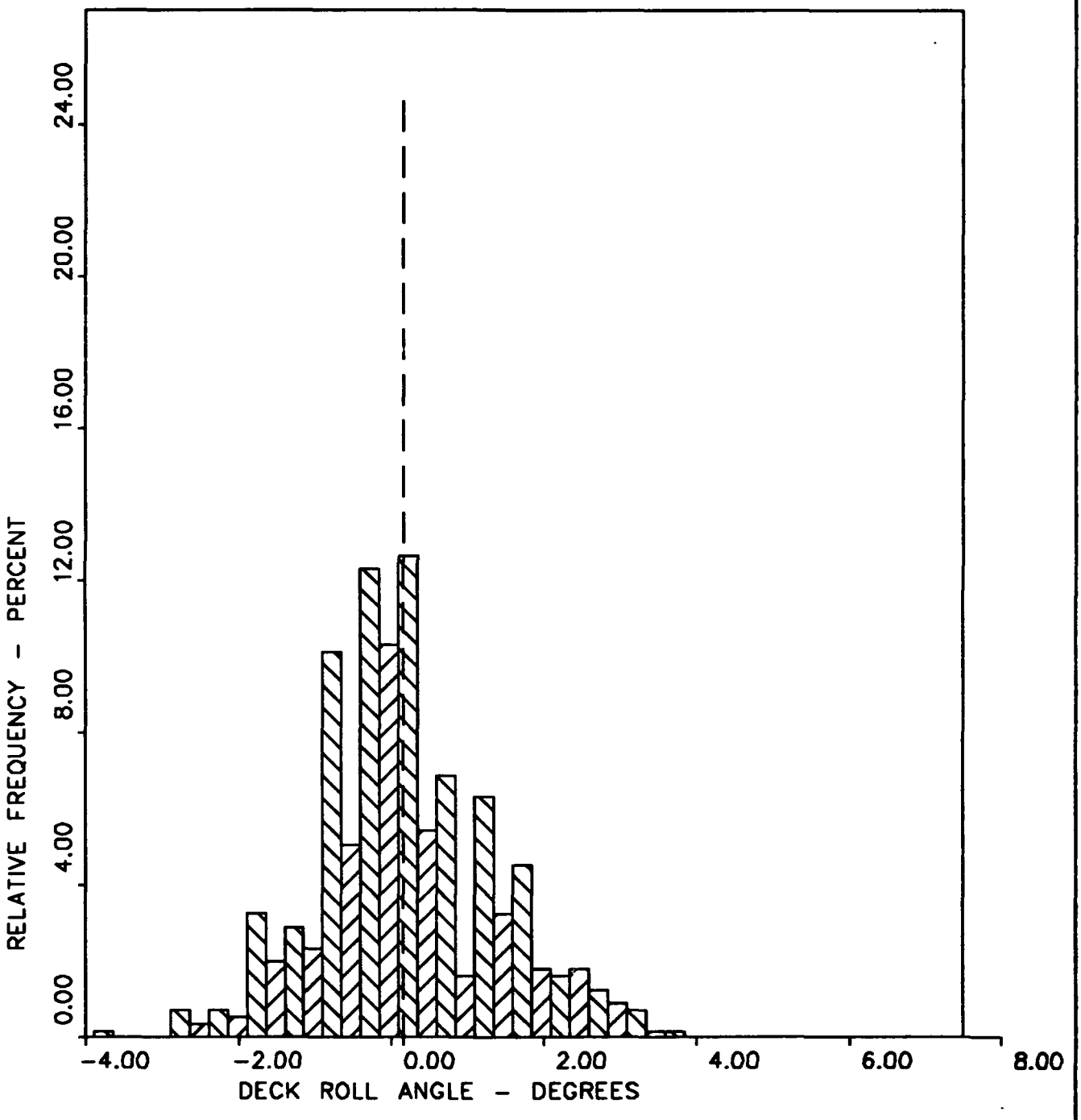


FIGURE R-46 FREQUENCY DISTRIBUTION OF CARRIER DECK ROLL MOTION

MODEL TA-4 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 553 $\bar{X}$= 0.15 DEGREES A3= 0.27
S= 1.17 DEGREES A4= 3.28
CURVE FITTED - PEARSON TYPE III
POSITIVE VALUES INDICATE PORT SIDE OF DECK UP

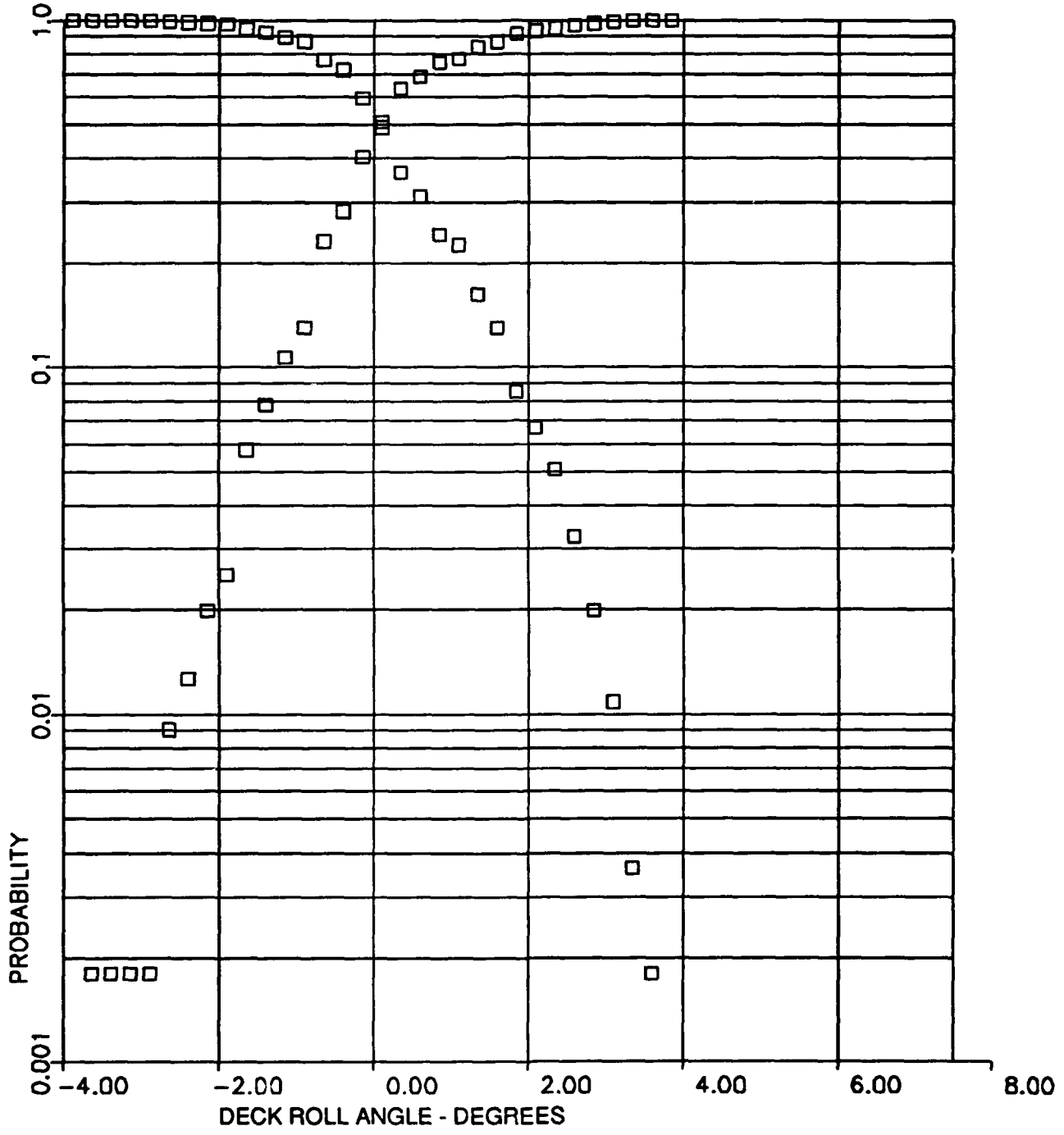


FIGURE R-47 PROBABILITY DISTRIBUTION OF CARRIER DECK ROLL MOTION

MODEL TA-4 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 553 $\bar{X}$=-0.28 DEGREES A3= 0.40
S= 0.20 DEGREES A4= 3.54

POSITIVE VALUES INDICATE BOW OF SHIP DOWN FROM HORIZONTAL

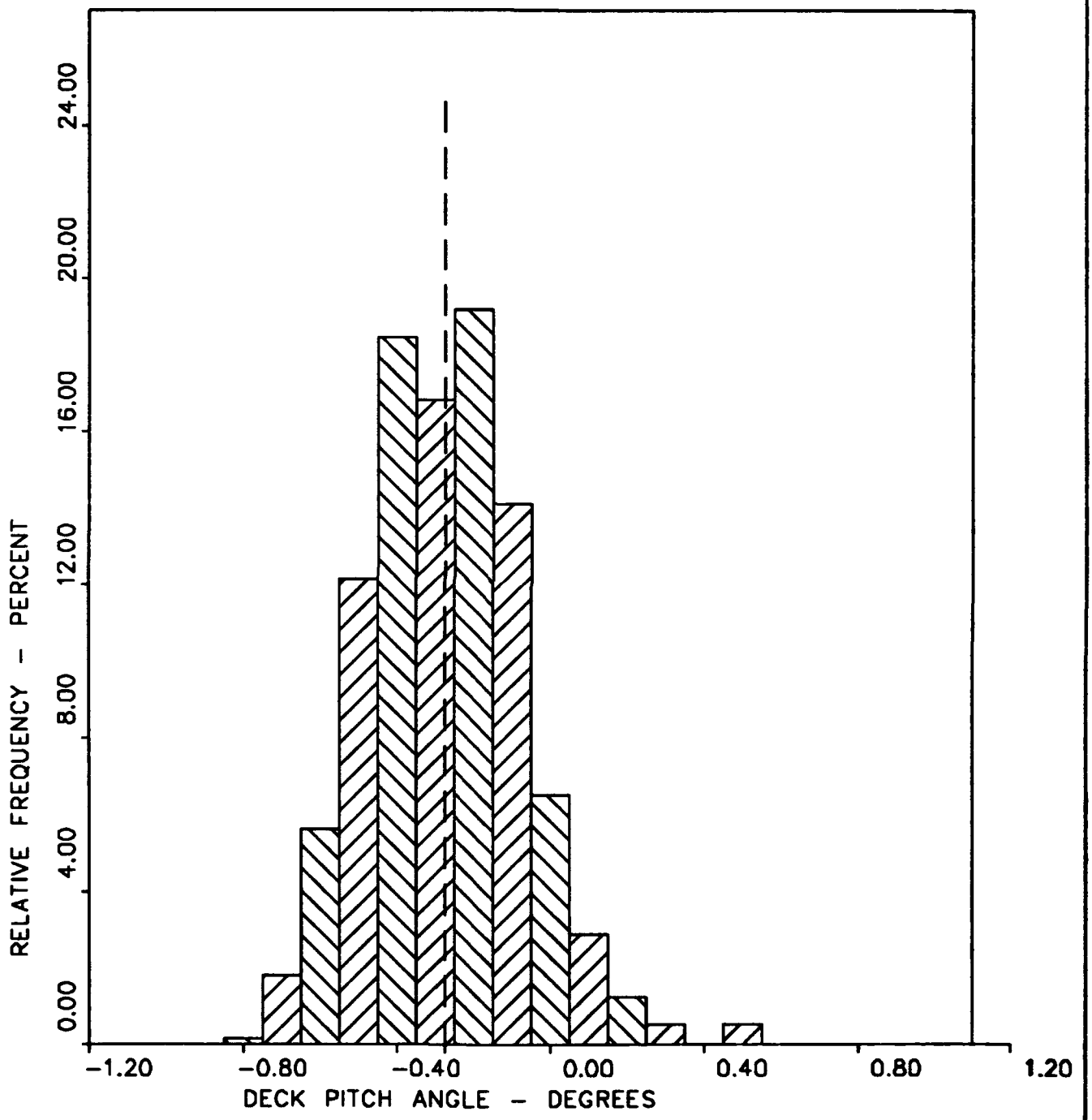


FIGURE R-48 FREQUENCY DISTRIBUTION OF CARRIER DECK PITCH MOTION

MODEL TA-4 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 553 $\bar{X}$=−0.28 DEGREES A3= 0.40
S= 0.20 DEGREES A4= 3.54
CURVE FITTED - PEARSON TYPE III
POSITIVE VALUES INDICATE BOW OF SHIP DOWN FROM HORIZONTAL

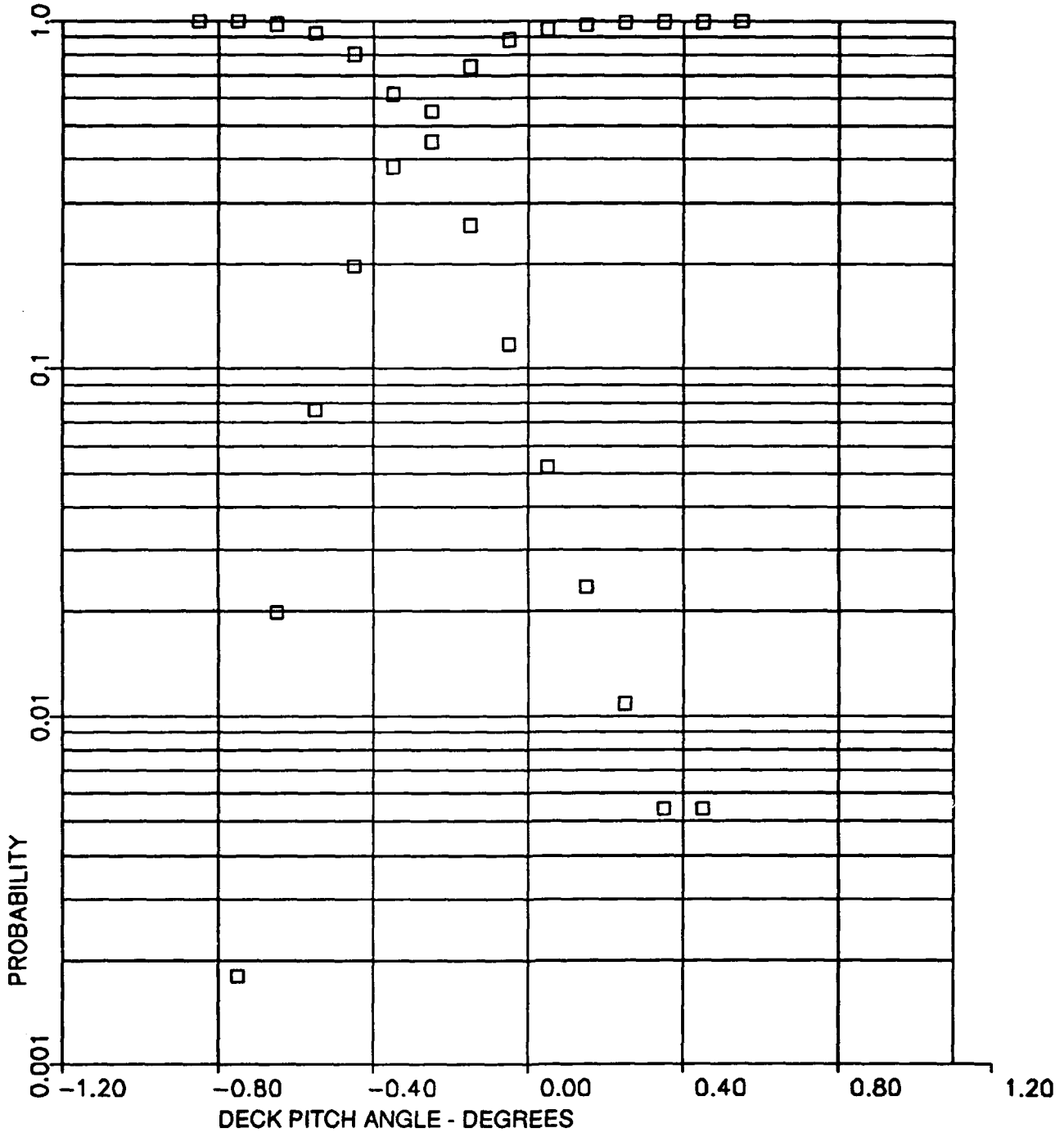


FIGURE R-49 PROBABILITY DISTRIBUTION OF CARRIER DECK PITCH MOTION

MODEL TA-4 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 624 $\bar{X}$= 14061.70 POUNDS A3=-1.08
S= 319.69 POUNDS A4= 3.25

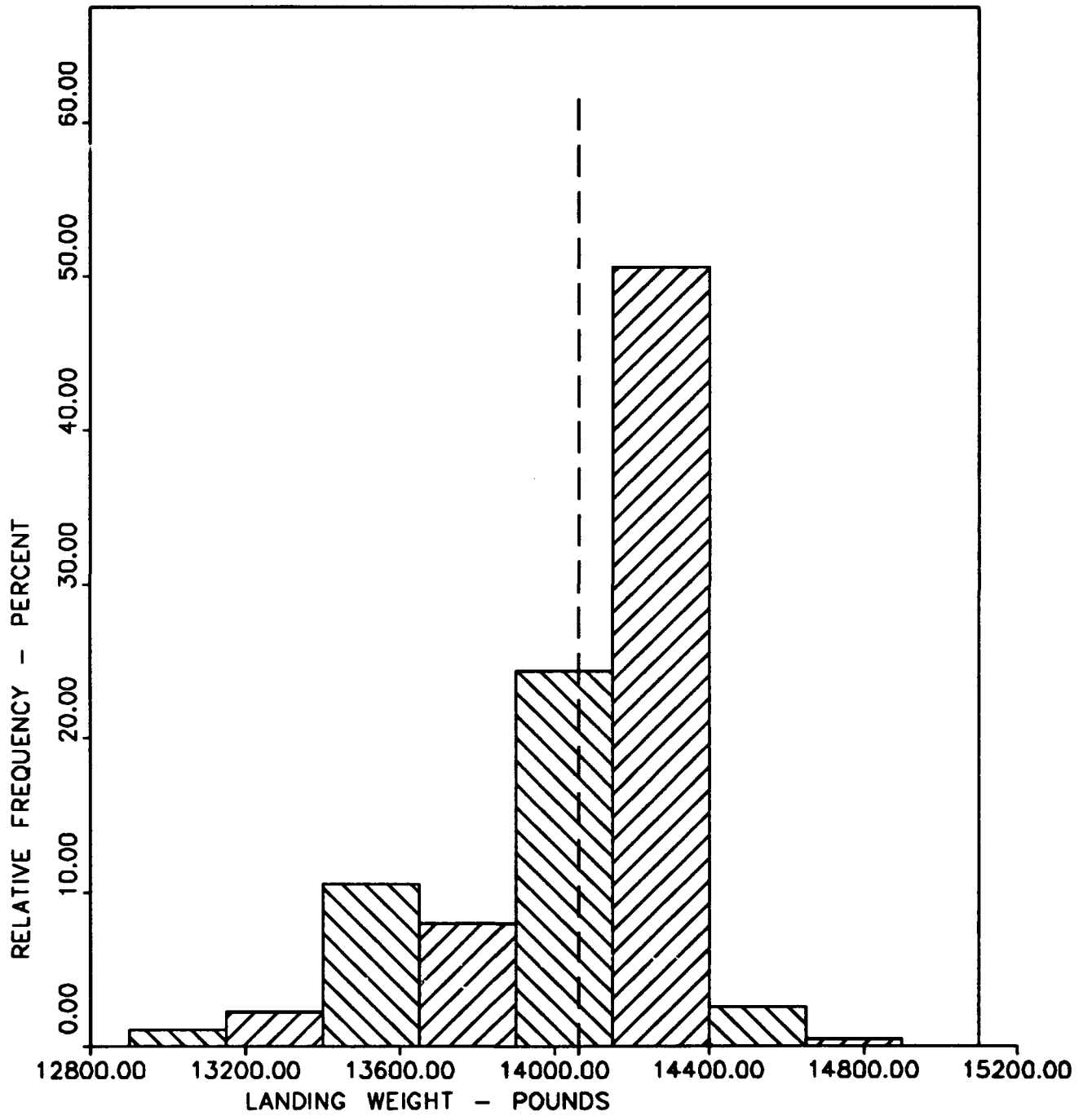


FIGURE R-50 FREQUENCY DISTRIBUTION OF AIRCRAFT LANDING WEIGHT

MODEL TA-4 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 635 $\bar{X}$= 1.69 DEG/SEC A3= 0.05
S= 7.80 DEG/SEC A4= 4.01

POSITIVE VALUES INDICATE STARBOARD WING DOWN

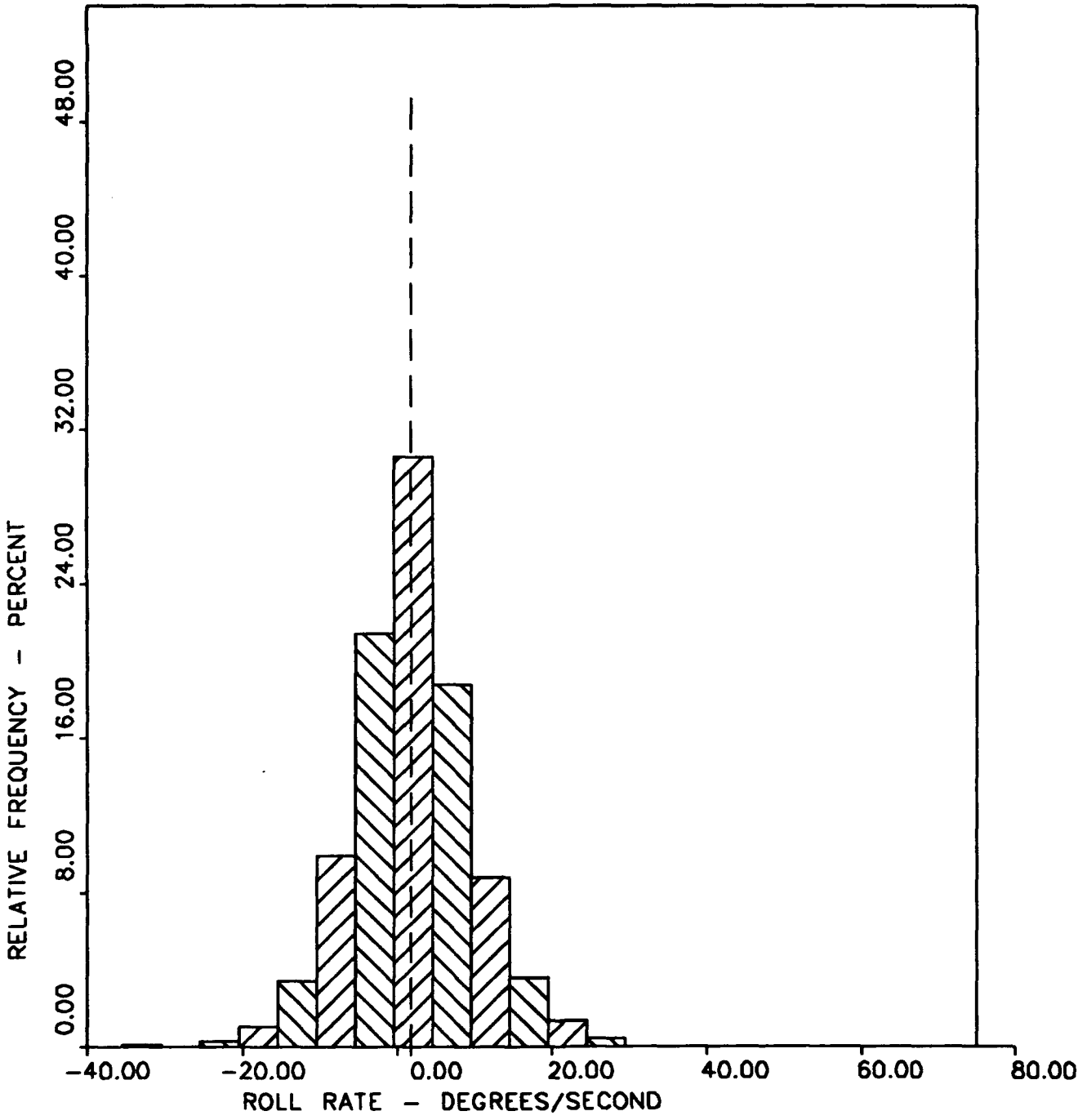


FIGURE R-51 FREQUENCY DISTRIBUTION OF ROLL RATE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL TA-4 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 635 $\bar{X}$= 1.69 DEG/SEC A3= 0.05
S= 7.80 DEG/SEC A4= 4.01
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE STARBOARD WING DOWN

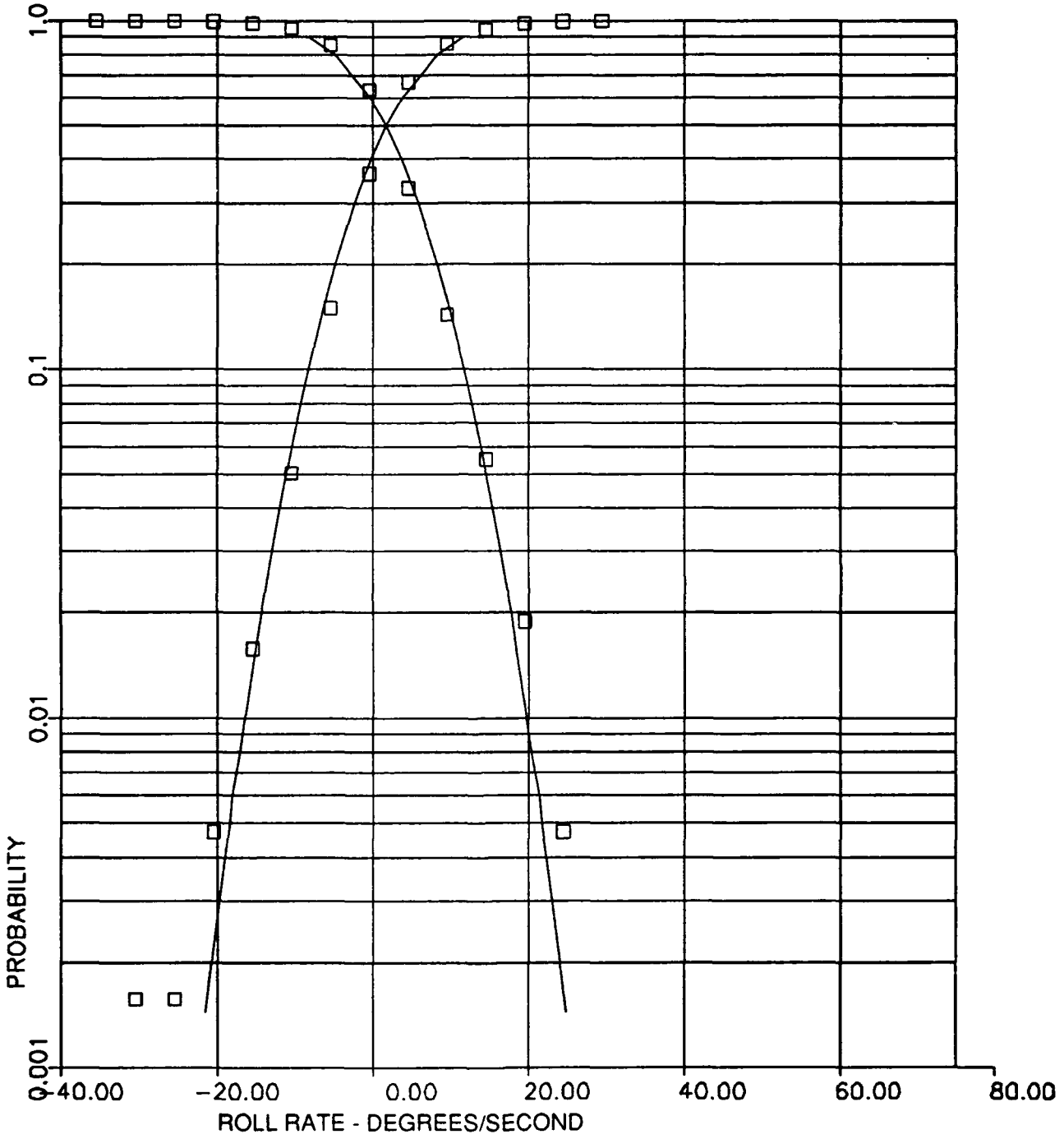


FIGURE R-52 PROBABILITY DISTRIBUTION OF ROLL RATE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL TA-4 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 635 $\bar{X}$= 3.75 DEG/SEC A3= 0.43
S= 3.27 DEG/SEC A4= 4.61

POSITIVE VALUES INDICATE NOSE UP ATTITUDE
MEASURED FROM HORIZONTAL TO FRL

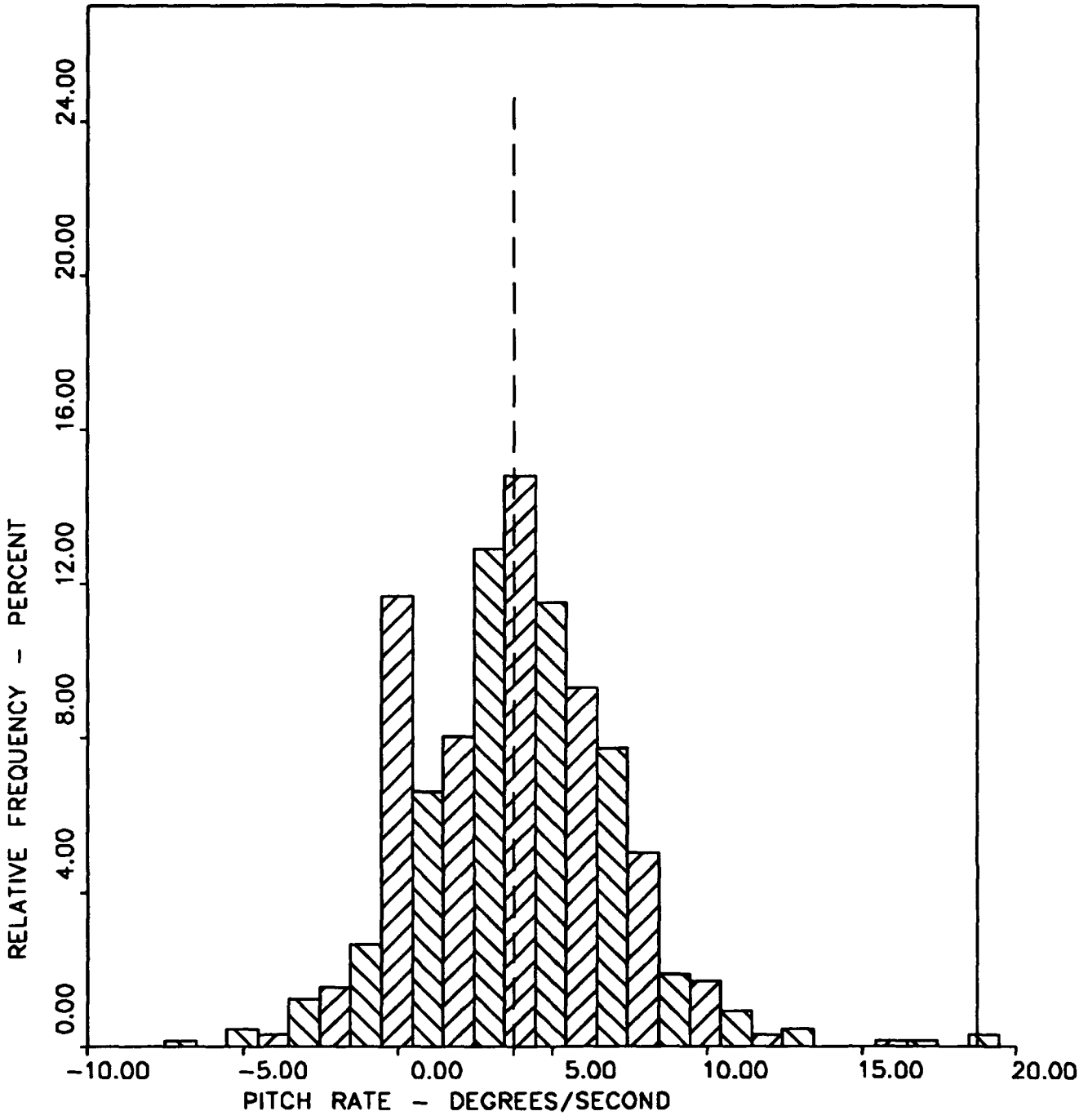


FIGURE R-53 FREQUENCY DISTRIBUTION OF PITCH RATE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL TA-4 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 635 $\bar{X}$= 3.75 DEG/SEC A3= 0.43
S= 3.27 DEG/SEC A4= 4.61
CURVE FITTED - PEARSON TYPE III
POSITIVE VALUES INDICATE NOSE UP ATTITUDE
MEASURED FROM HORIZONTAL TO FRL

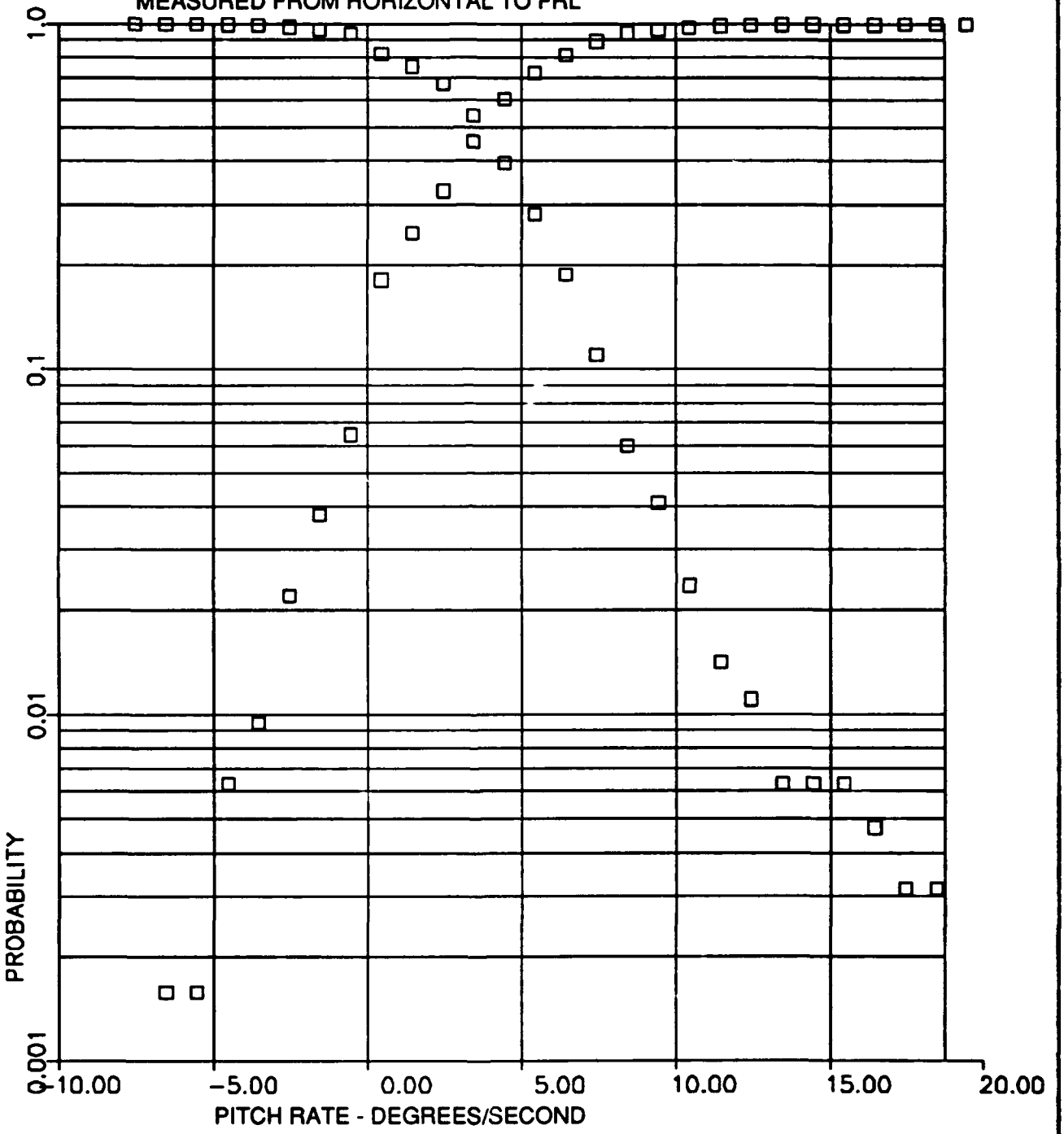


FIGURE R-54 PROBABILITY DISTRIBUTION OF PITCH RATE AT FIRST MAIN WHEEL TOUCHDOWN

MODEL TA-4 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 635 $\bar{X}$=-3.83 DEGREES A3= 0.07
S= 1.89 DEGREES A4= 6.23

POSITIVE VALUES INDICATE F.P.A. LEFT OF RUNWAY CENTERLINE

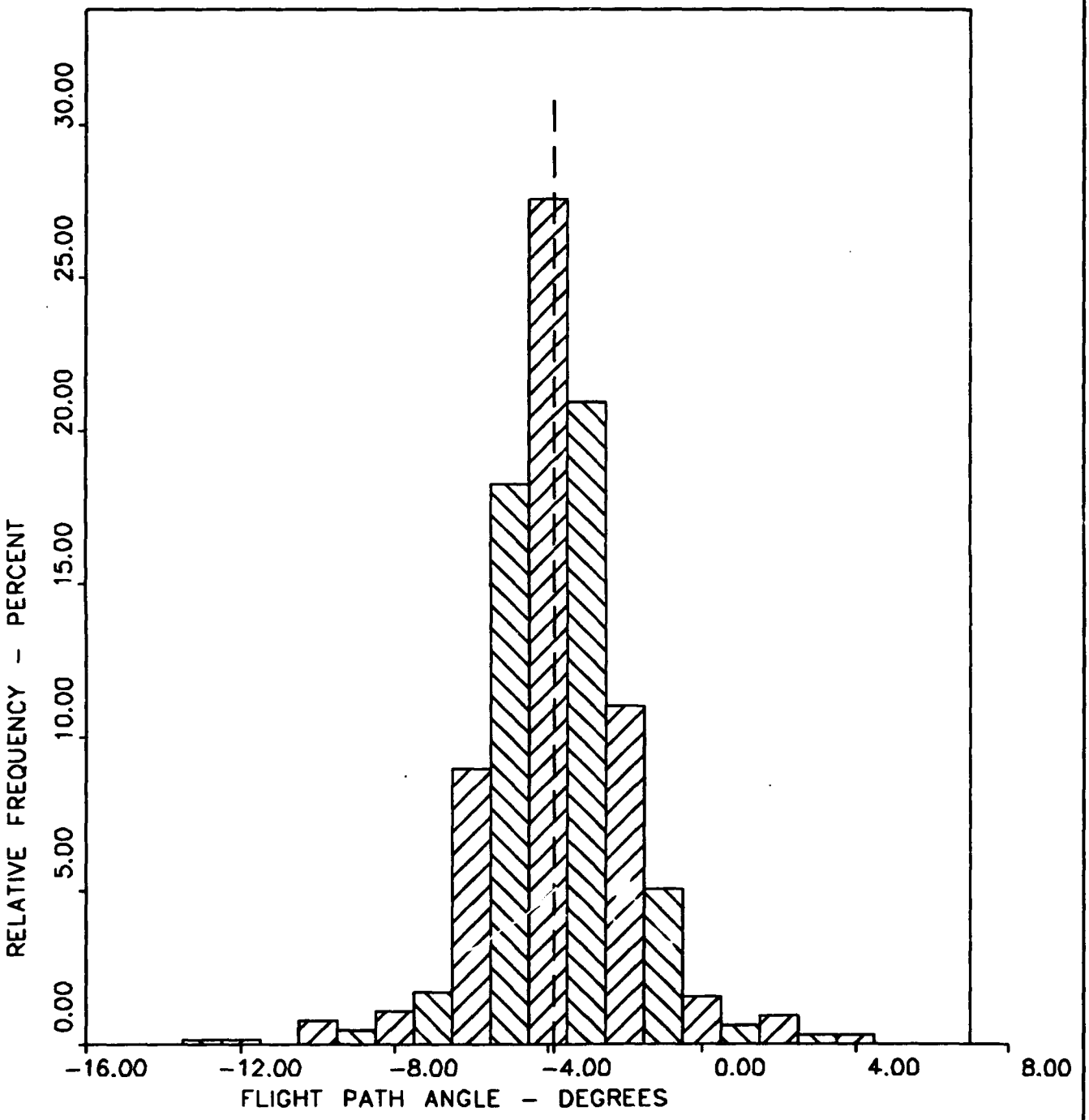


FIGURE R-55 FREQUENCY DISTRIBUTION OF AIRCRAFT FLIGHT PATH ANGLE AT TOUCHDOWN

MODEL TA-4 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 635 $\bar{X}$=-3.83 DEGREES A3= 0.07
S= 1.89 DEGREES A1= 6.23
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE F.P.A. LEFT OF RUNWAY CENTERLINE

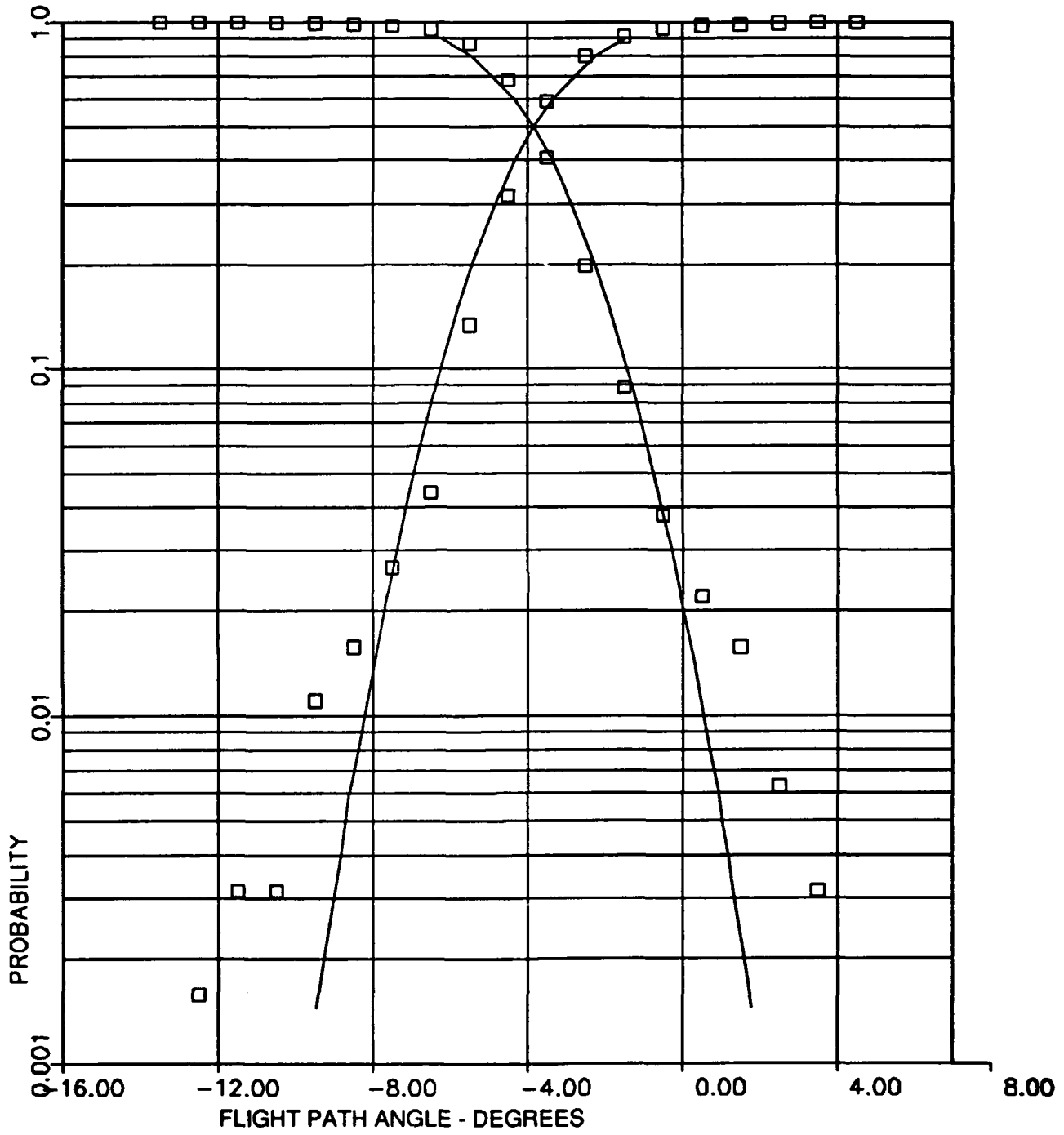


FIGURE R-56 PROBABILITY DISTRIBUTION OF AIRCRAFT FLIGHT PATH ANGLE AT TOUCHDOWN

MODEL TA-4 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 635 $\bar{X}$= 0.58 DEGREES A3=-0.13
S= 3.64 DEGREES A4= 3.21

POSITIVE VALUES INDICATE NOSE LEFT ATTITUDE

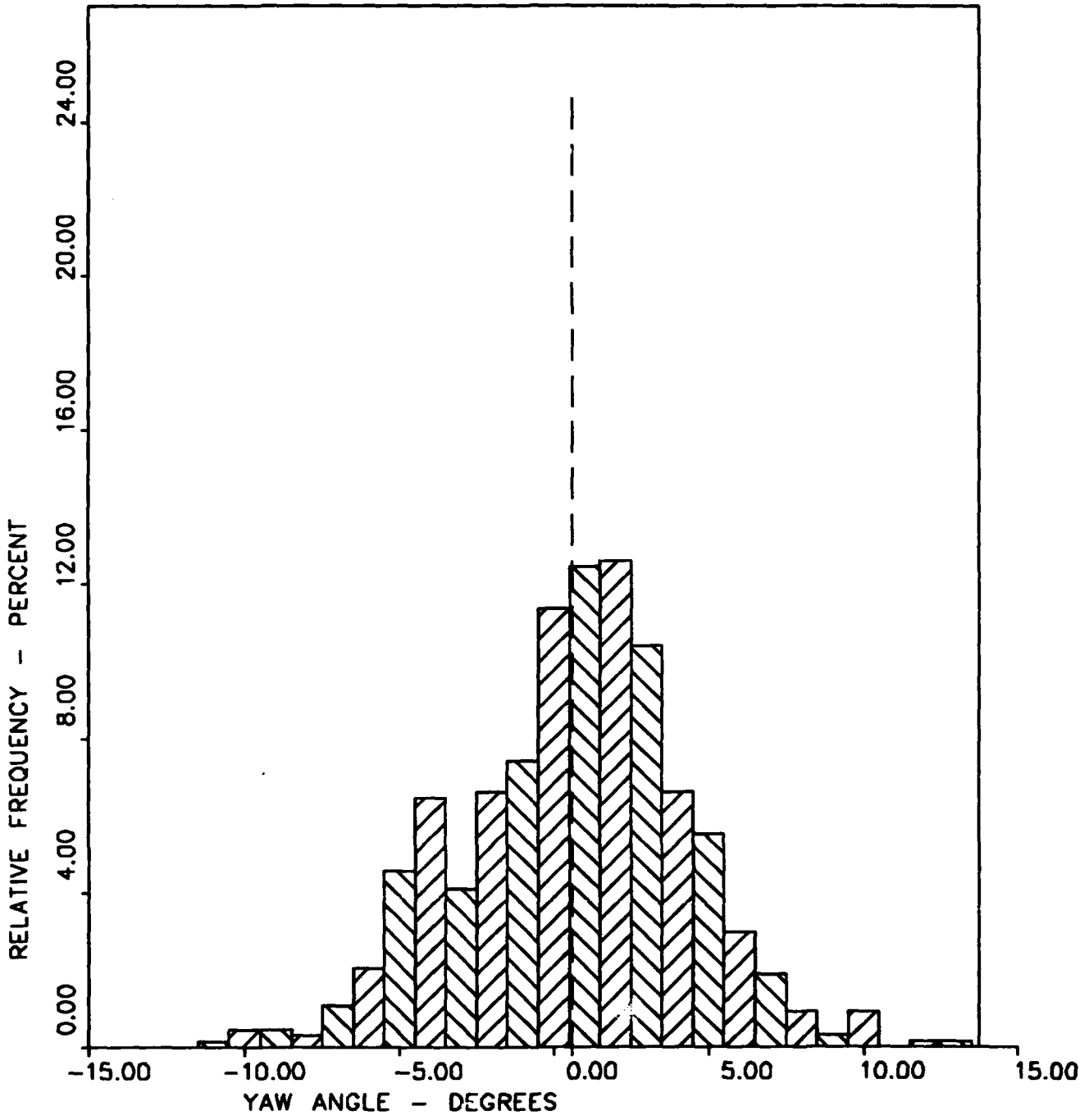


FIGURE R-57 FREQUENCY DISTRIBUTION OF AIRCRAFT YAW ANGLE

MODEL TA-4 AIRCRAFT USS ENTERPRISE (CVN-65)
DAY LANDINGS
FRESNEL LENS SETTING= 3.50 DEGREES
N= 635 $\bar{X}$= 0.58 DEGREES A3=−0.13
S= 3.64 DEGREES A4= 3.21
CURVE FITTED - NORMAL
POSITIVE VALUES INDICATE NOSE LEFT ATTITUDE

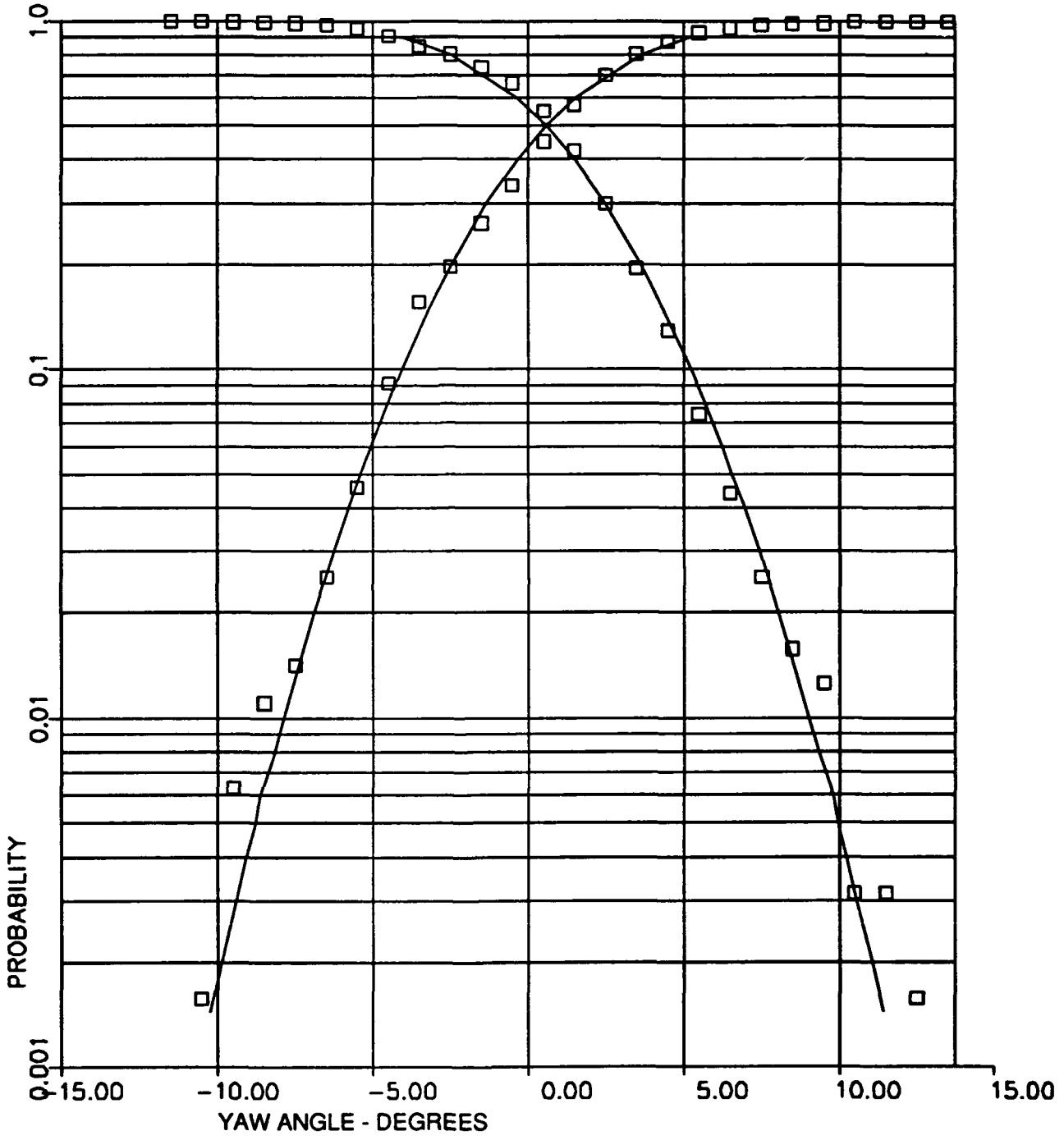


FIGURE R-58 PROBABILITY DISTRIBUTION OF AIRCRAFT YAW ANGLE

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