

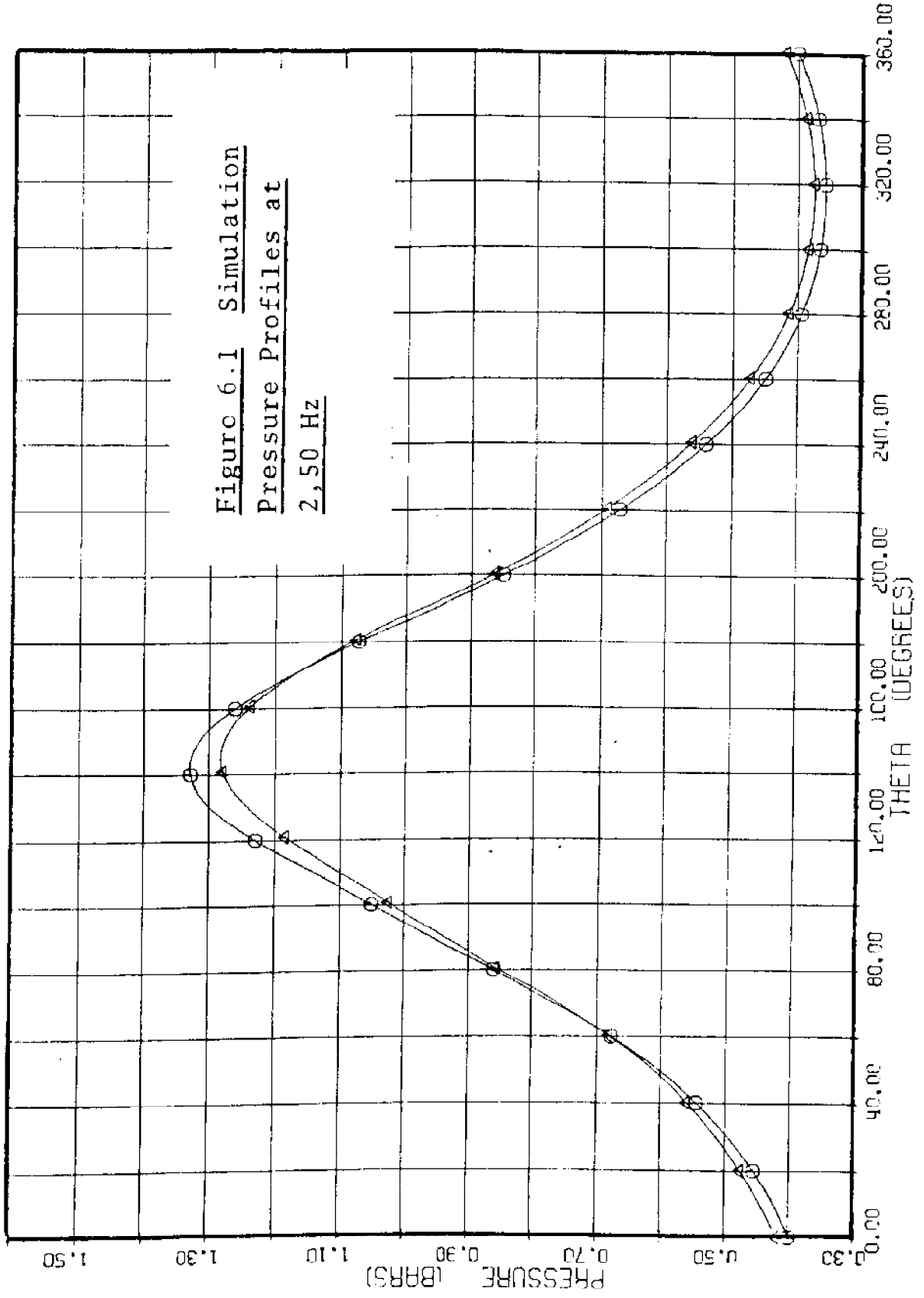
TEST 7

FLD: DYNOR ±0.028RH

FREQUENCY 2.500HZ

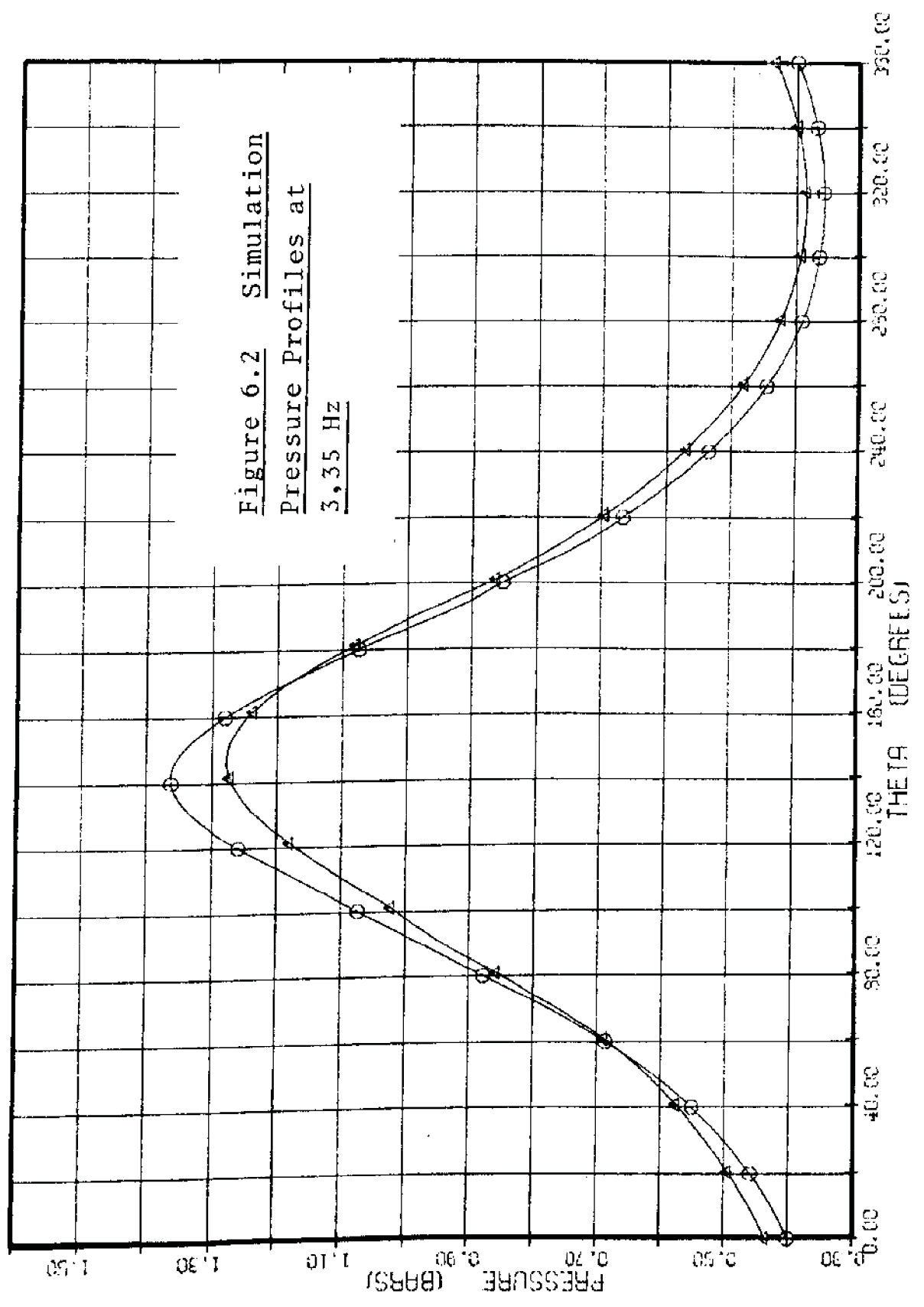
○ COMPRESSION SPACE
△ EXPANSION SPACE

CHARGE PRESSURE 0.715 BARS



FREQUENCY 3.350 HZ
CHARGE PRESSURE 0.723 BARS

COMPRESSION SPACE
EXPANSION SPACE

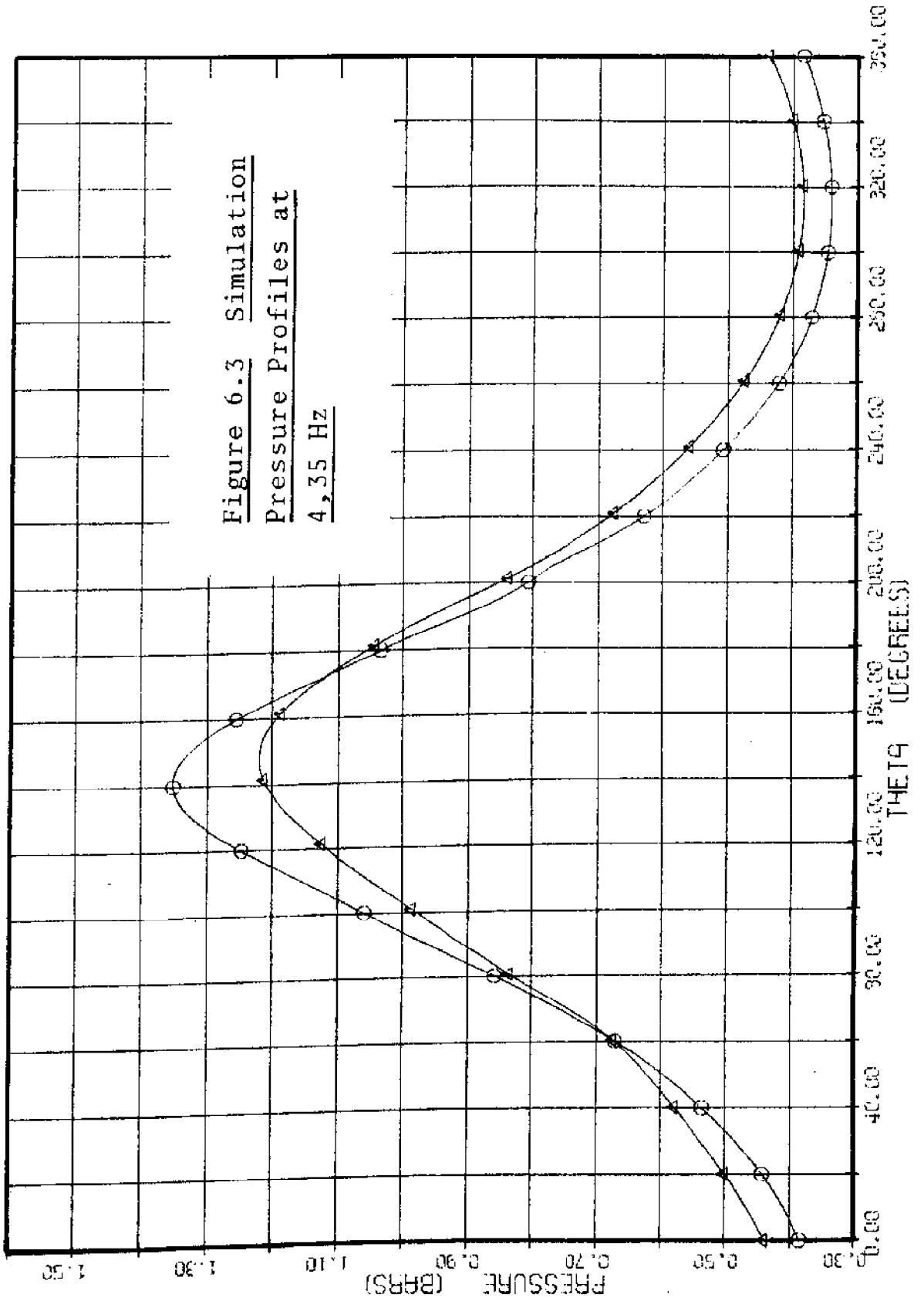




A EXTENSION

CHIFFRE PRESSE 0.705 2493

Figure 6.3 Simulation Pressure Profiles at 4,35 Hz



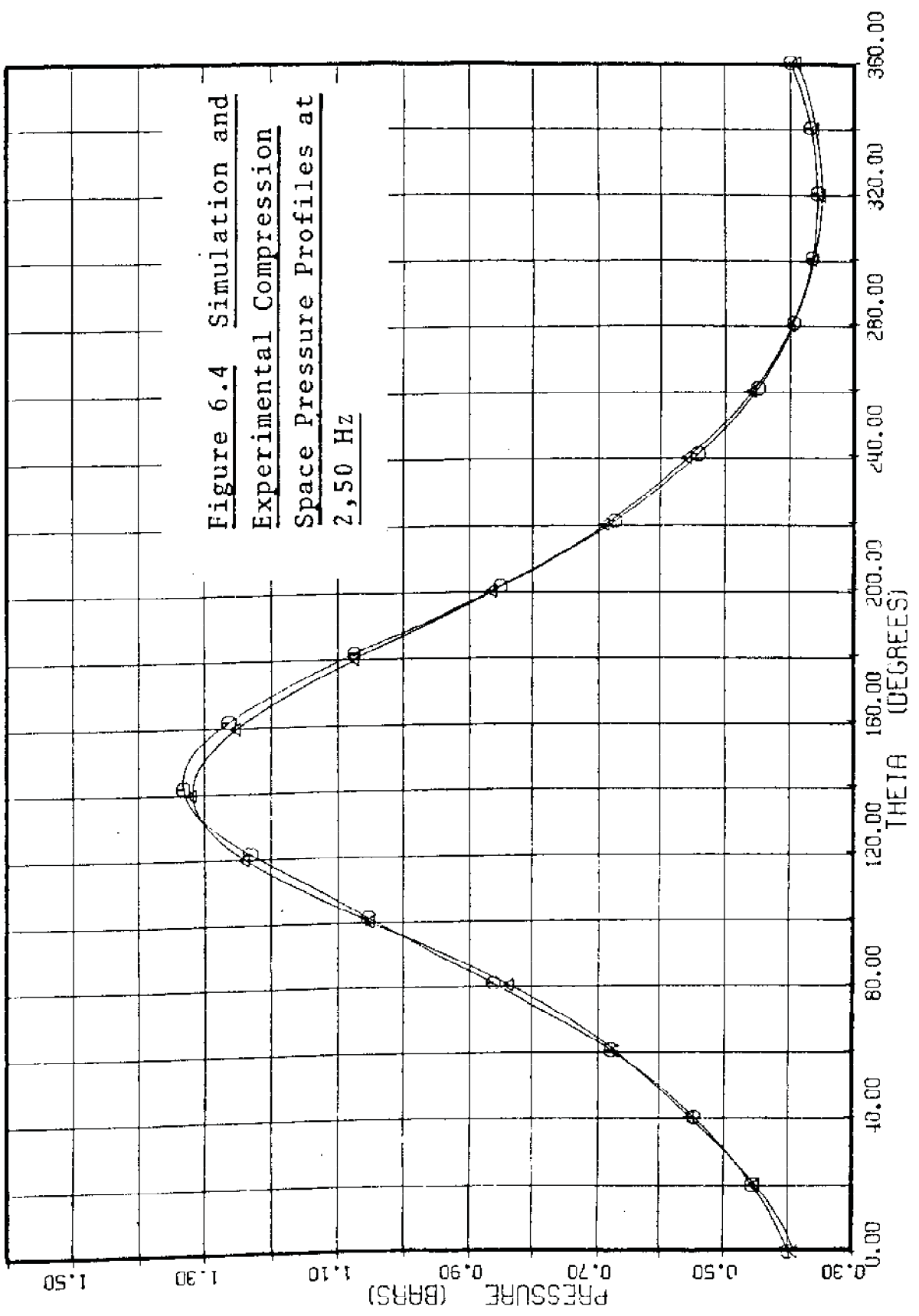
TEST 1

PLC1 ERROR 40.02BAR

FREQUENCY 2.500HZ

○ SIMULATION
+ EXPERIMENTAL

CHARGE PRESSURE 0.715 BARS



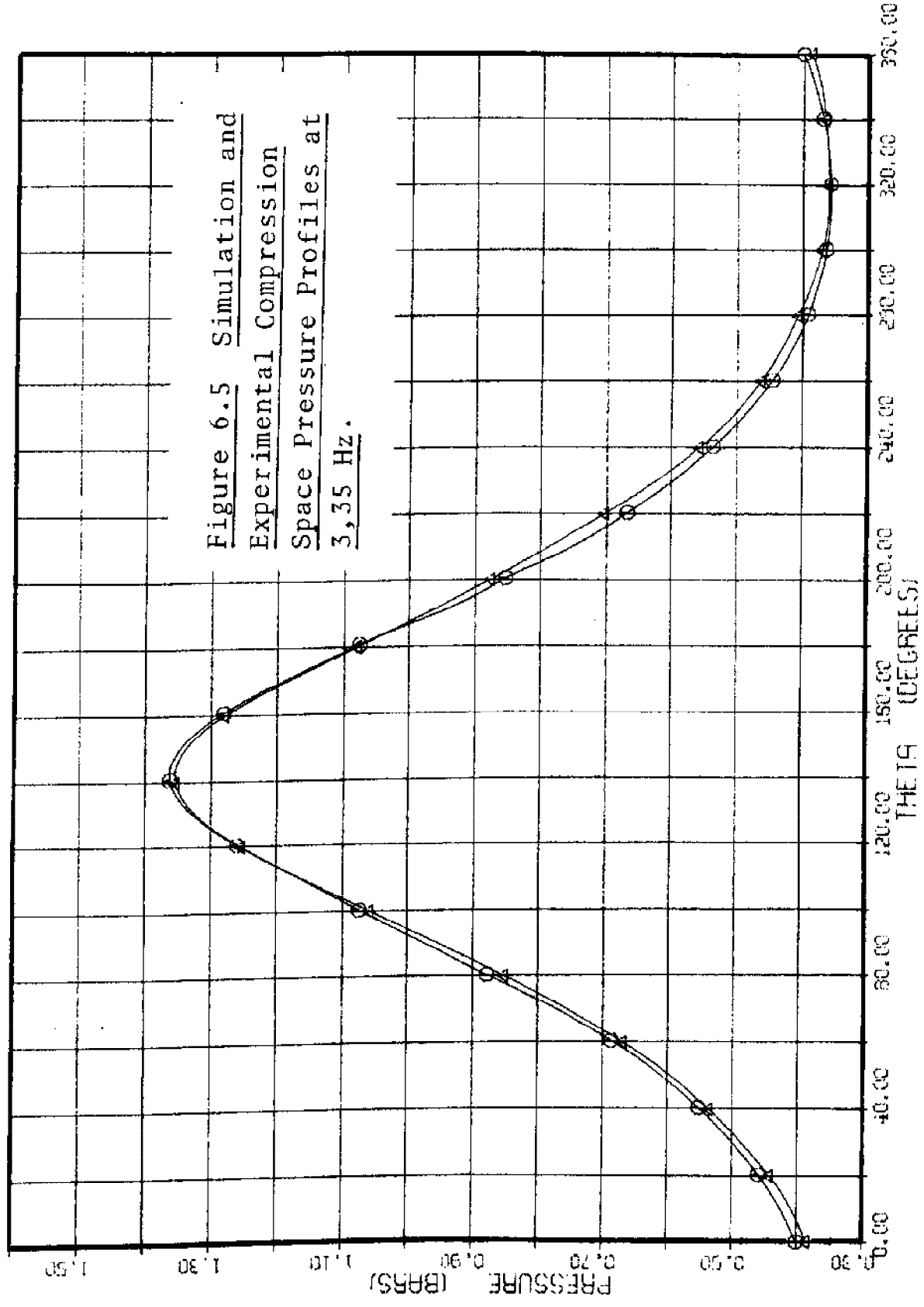
TEST 5

FREQUENCY 3,350 HZ

CHARGE PRESSURE 0.723 BARS

011118HJH 40,0234H

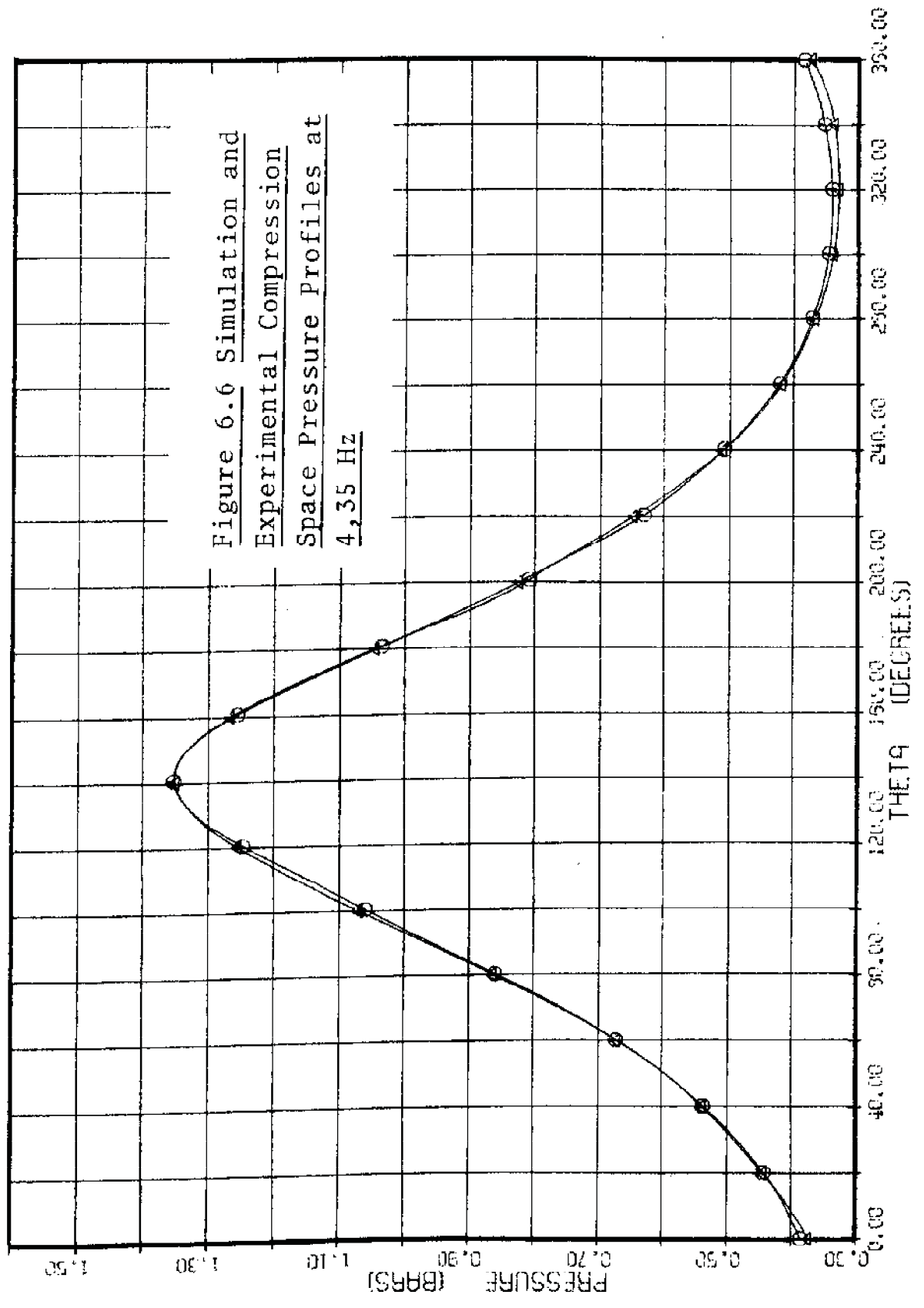
○ SIMULATION
△ EXPERIMENTAL



Q3 SIMULATION
△ EXPERIMENTAL

FREQUENCY 4.350 HZ

CHARGE PRESSURE 0.703 BARS



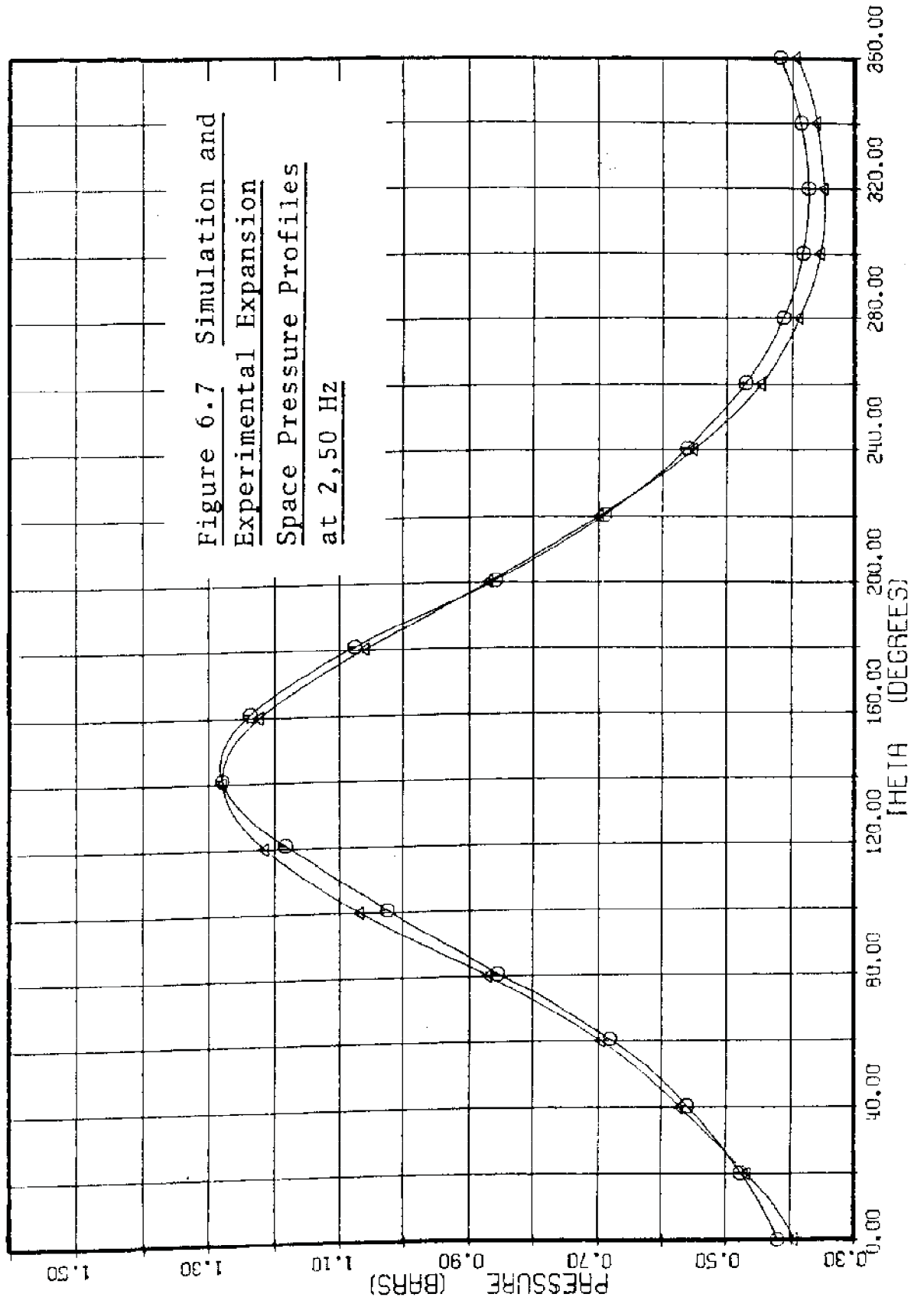
TEST 7

FREQUENCY 2.500HZ

CHARGE PRESSURE 0.715 BARS

○ SIMULATION
△ EXPERIMENTAL

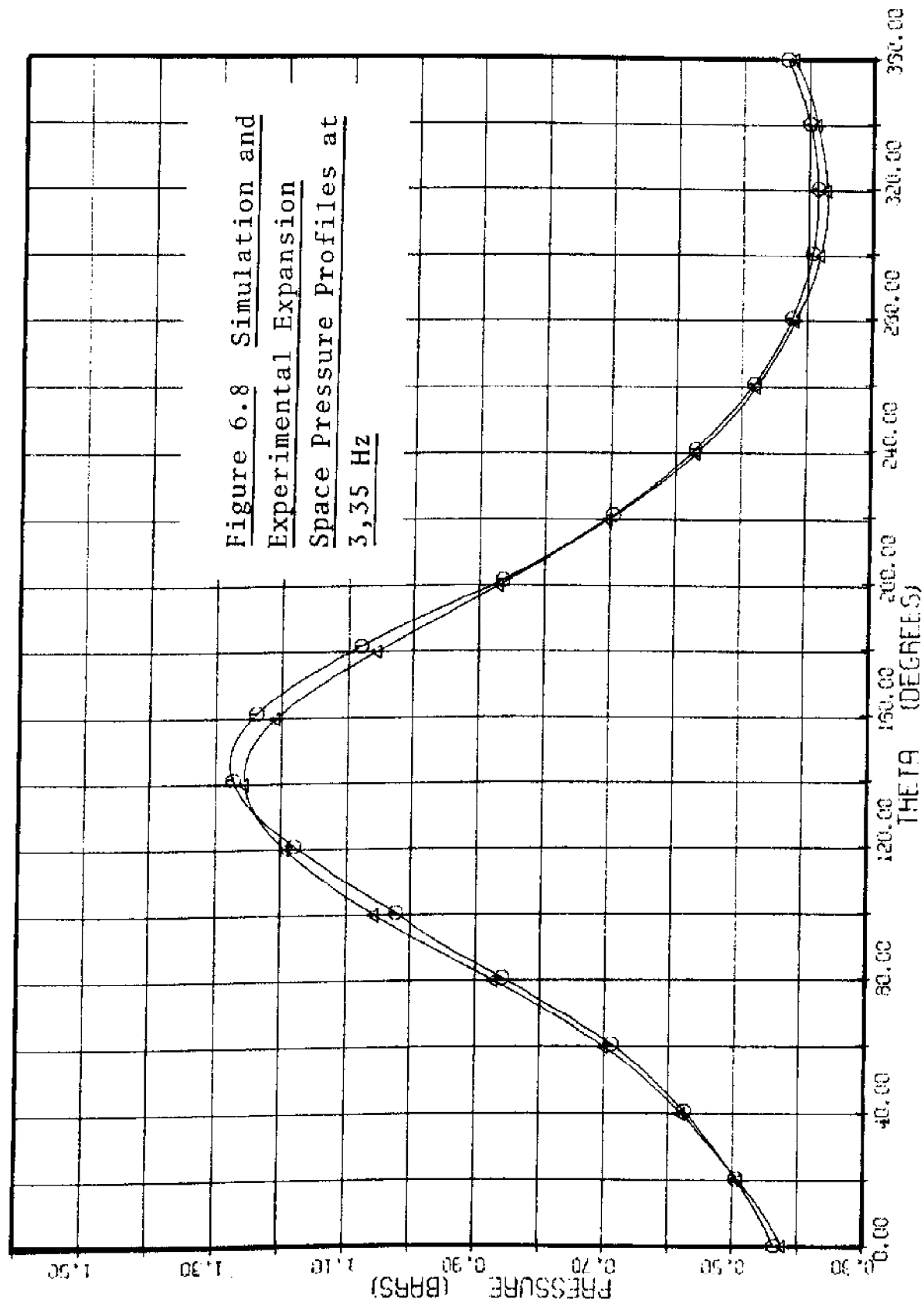
PL 01 LINDA PC.0280A



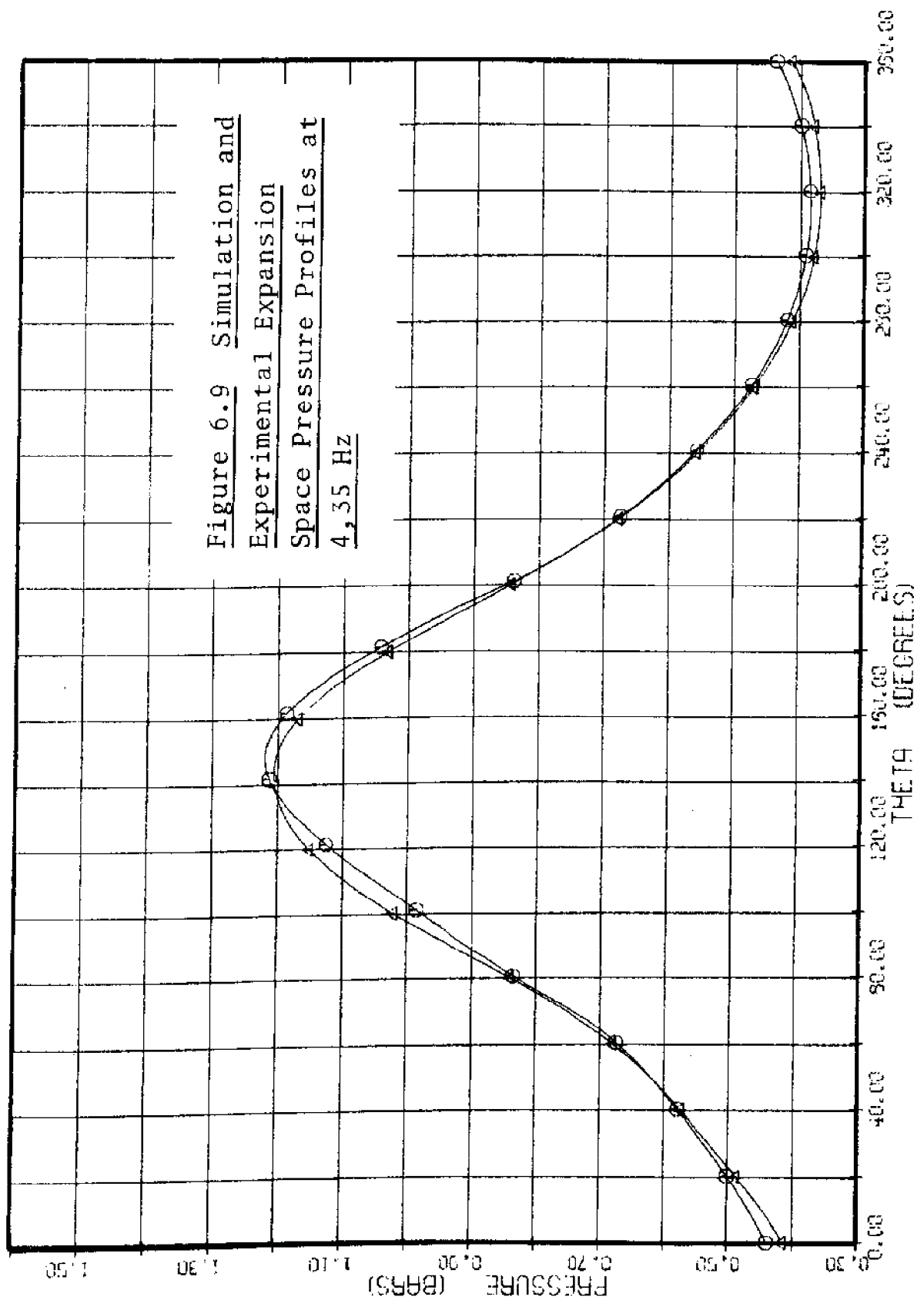
FREQUENCY 3.350 HZ

○ SIMULATION
△ EXPERIMENTAL

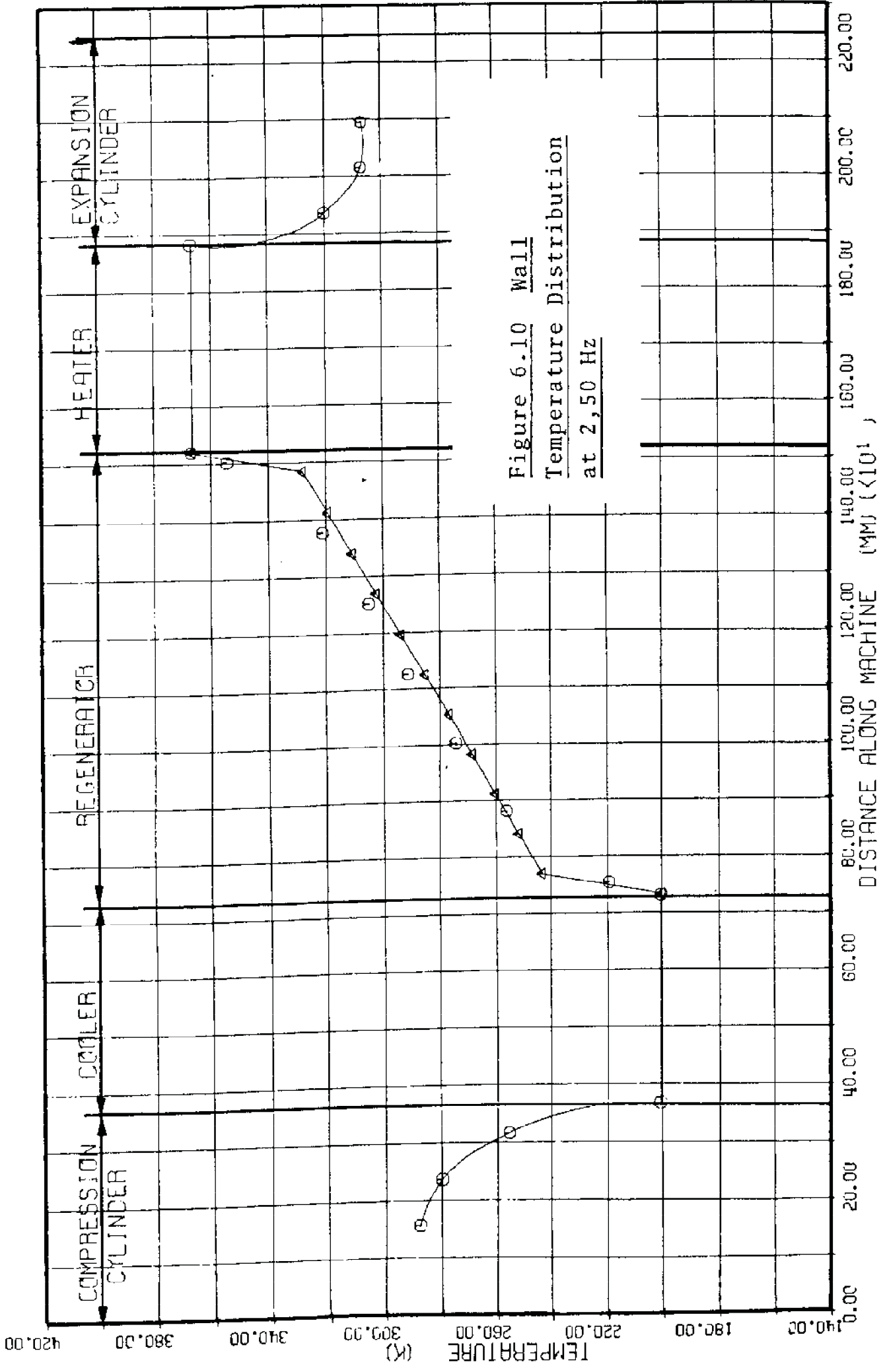
CHARGE PRESSURE 0.723 BARS



CHARGE PRESSURE 0.700 BARS

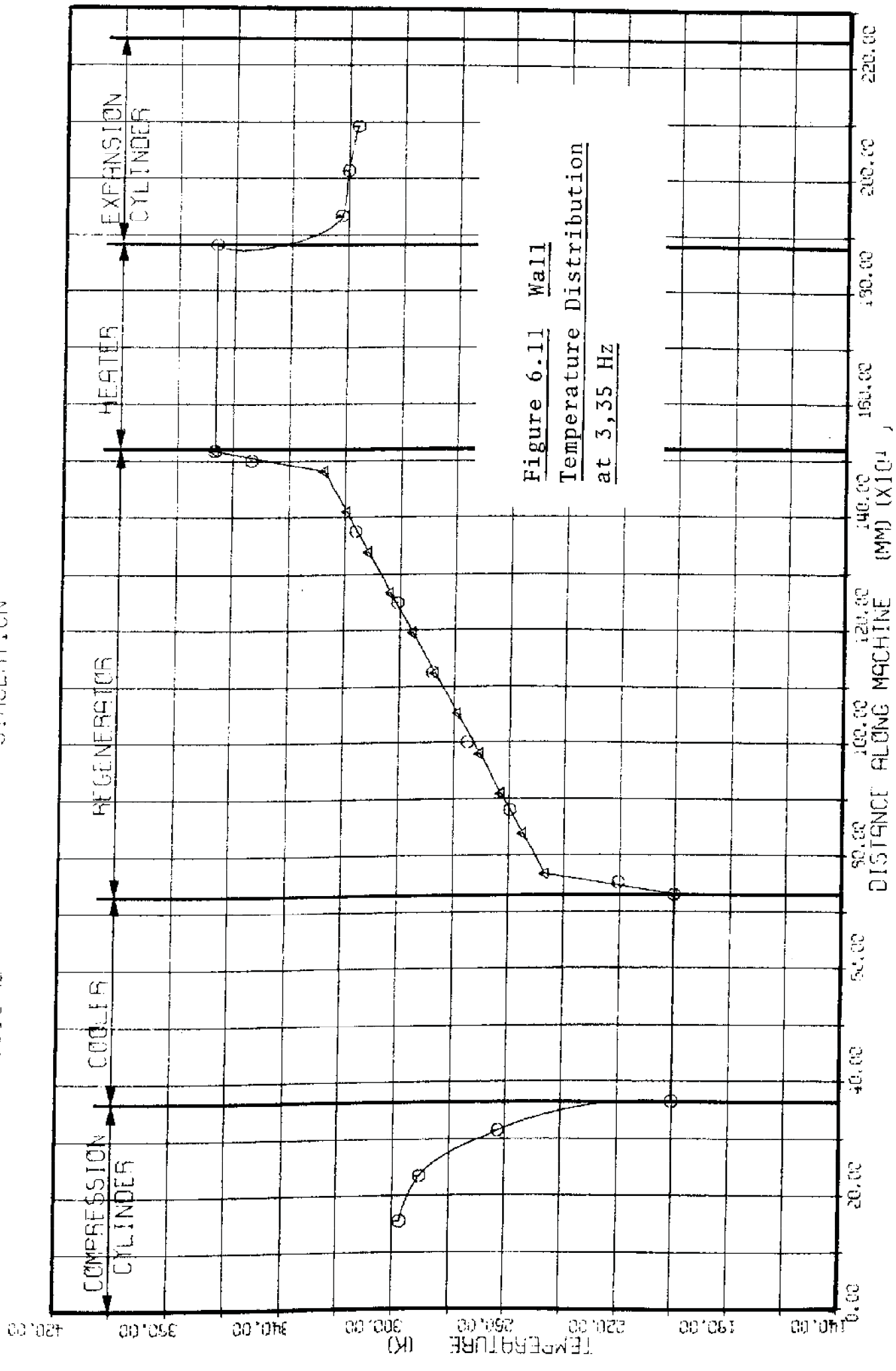


FREQUENCY 2.50 HZ
O EXPERIMENT
Δ SIMULATION



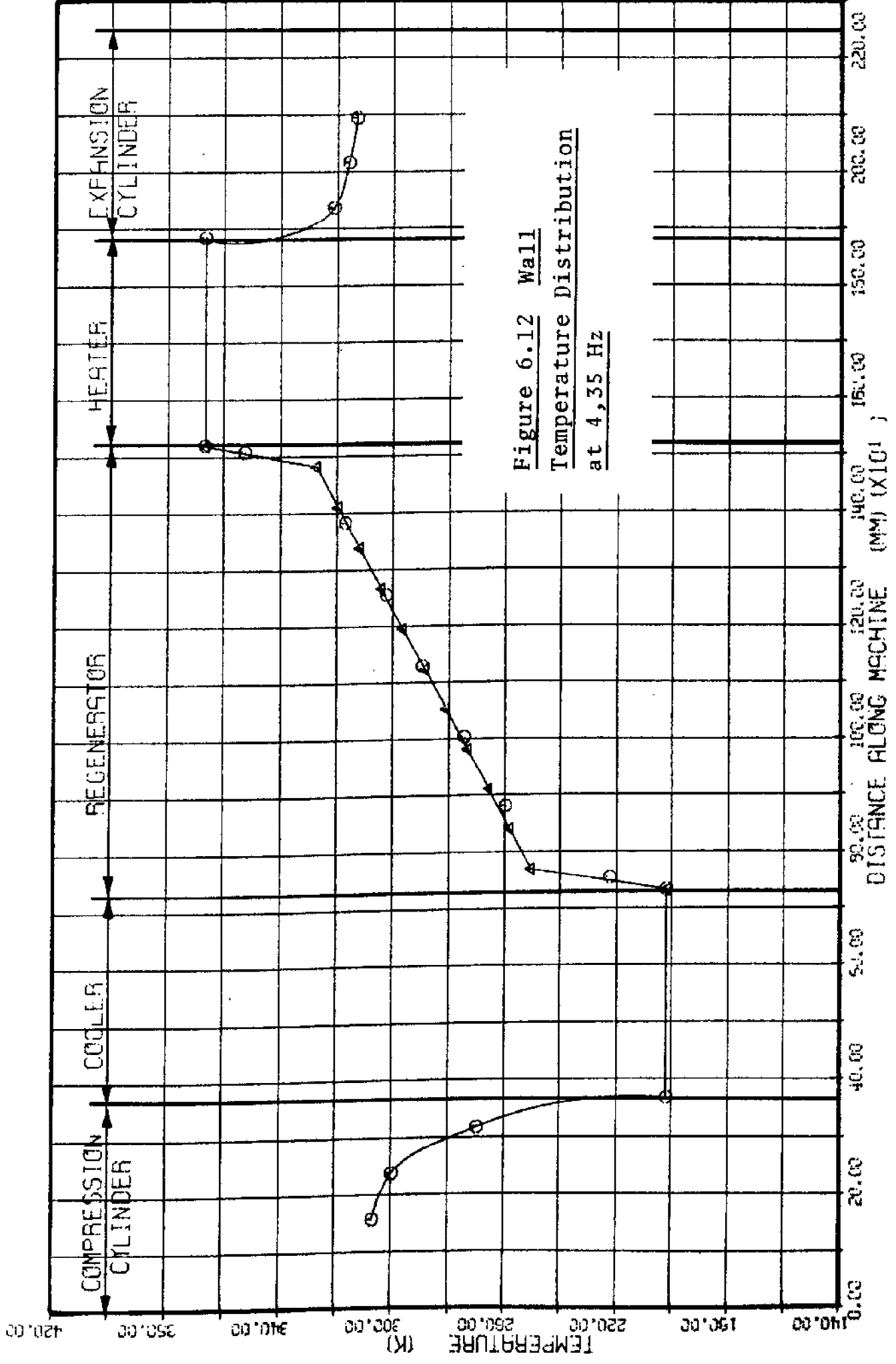
FREQUENCY 3.350 Hz

○ EXPERIMENT
△ SIMULATION



FREQUENCY 4.350HZ

○ EXPERIMENT
△ SIMULATION

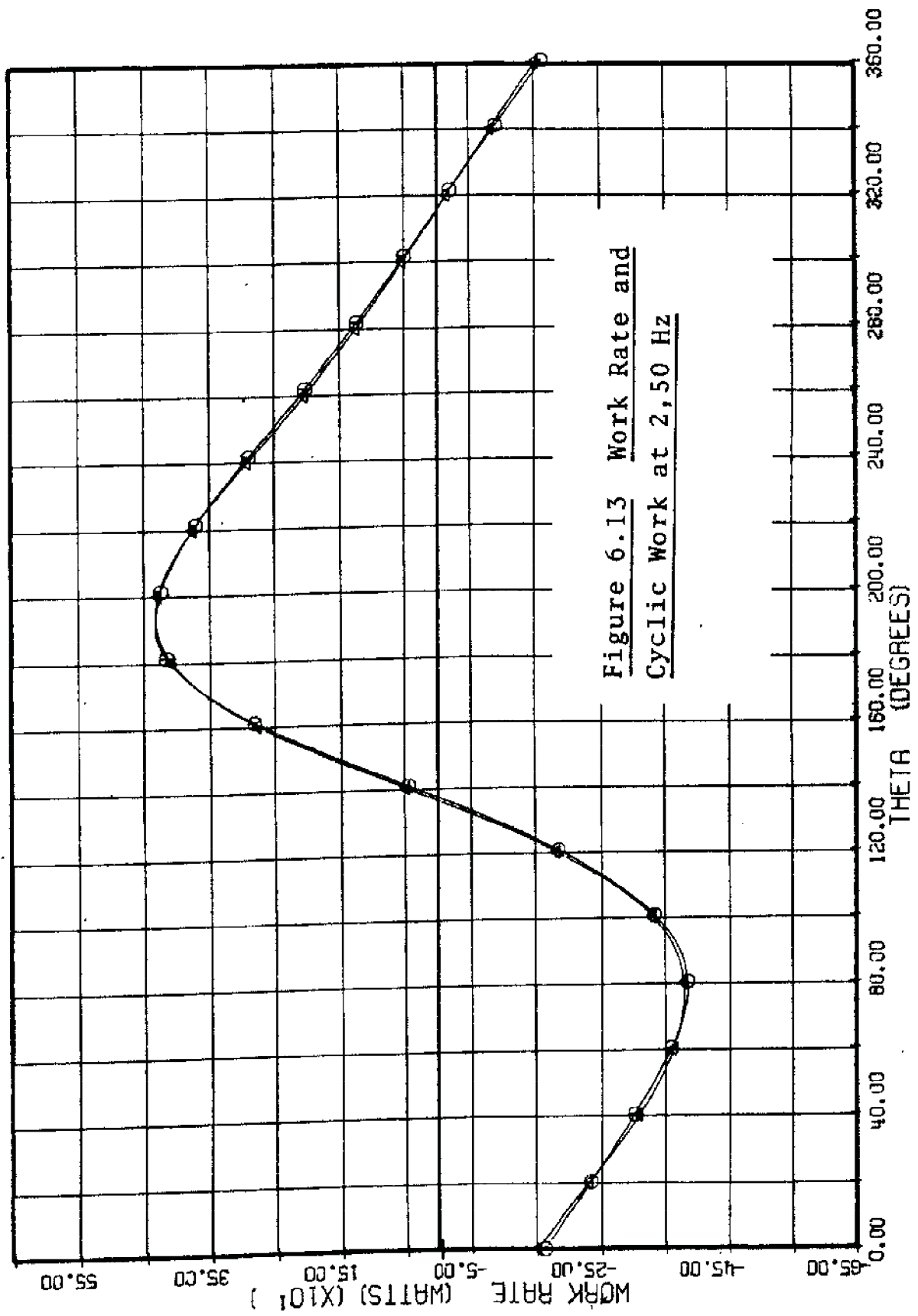


TEST 7.

FREQUENCY 2.500HZ

CHARGE PRESSURE 0.715 BARS

PL01 ERROR 55.0WATTS
SIMULATION CYCLIC WORK 0 2.886 J
EXPERIMENTAL CYCLIC WORK 4 4.127 J

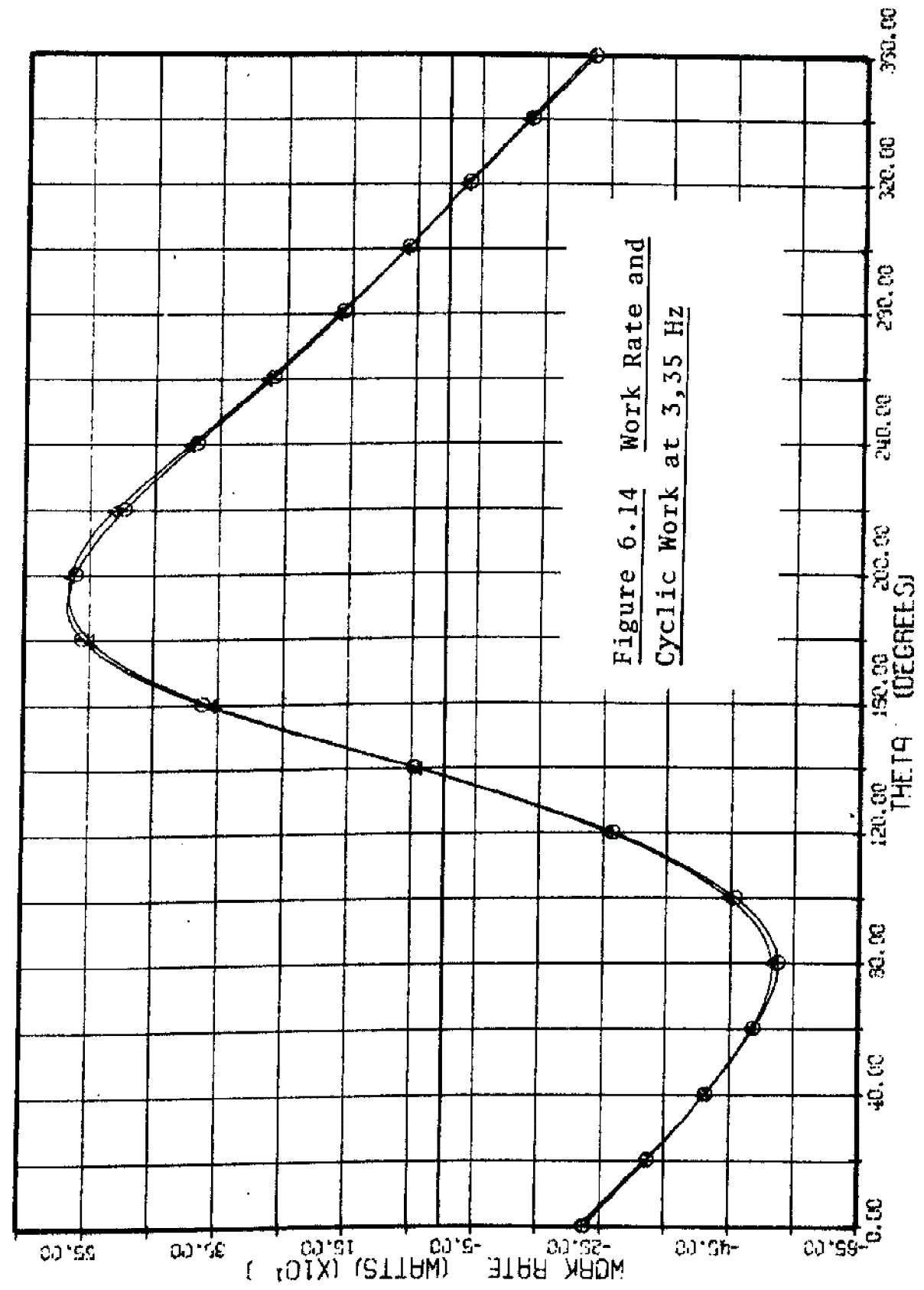


TEST 5.

FREQUENCY 3.350 HZ

CHARGE PRESSURE 0.723 BARS

PICTURE 45.04H15
SIMULATION CYCLIC WORK $\circ$ 1.261 J
EXPERIMENTAL CYCLIC WORK Δ 2.592 J



TEST 6.
 FREQUENCY 4.350HZ
 CHARGE PRESSURE 0.703 BARS
 PLOT ERROR 45.0WATTS
 SIMULATION CYCLIC WORK 0 -1.172J
 EXPERIMENTAL CYCLIC WORK Δ -0.860J

CHARGE PRESSURE 0.703 BARS

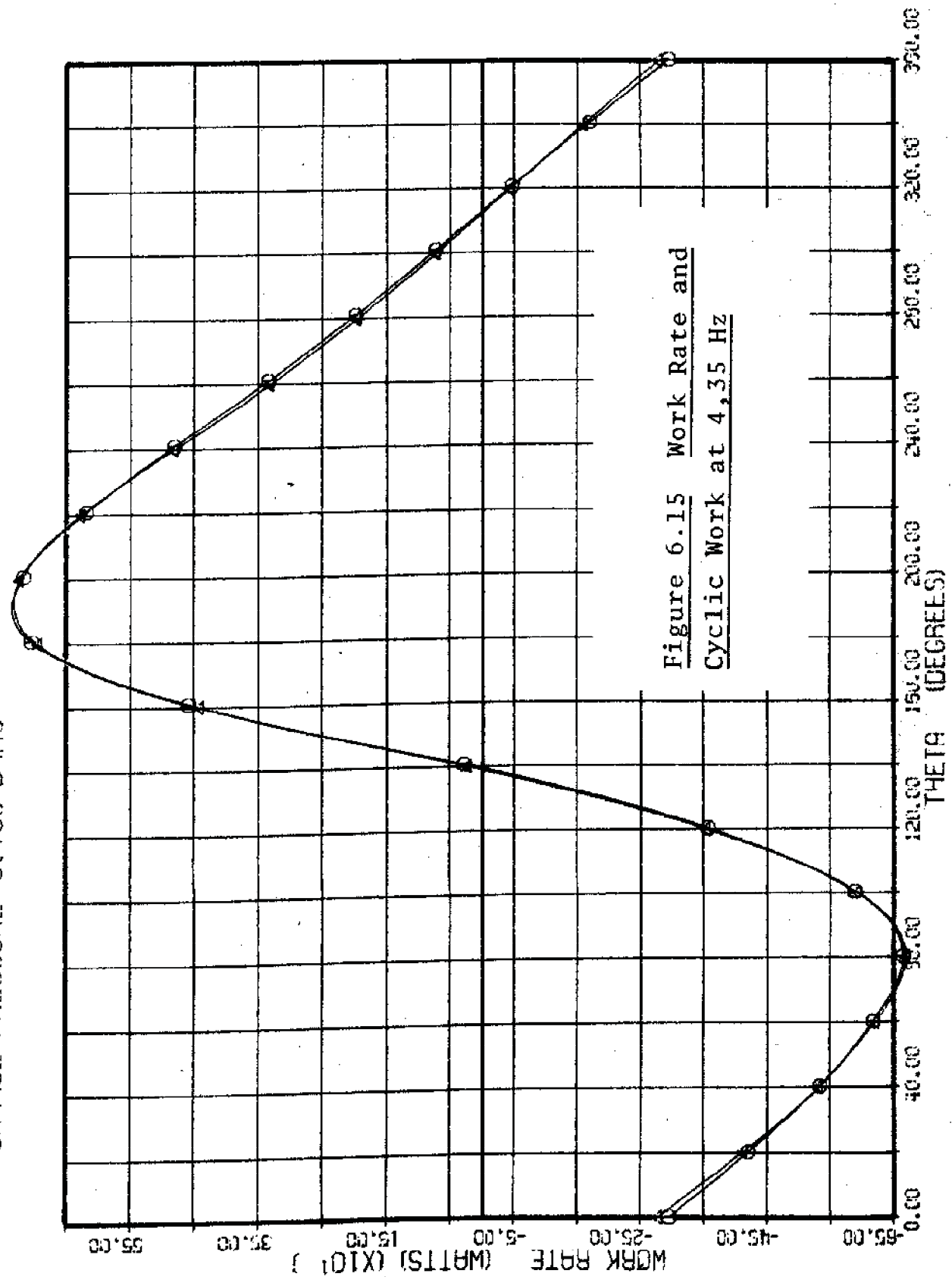


Figure 6.15 Work Rate and
 Cyclic Work at 4.35 Hz

TEST 7. PLOT ERROR ±5.0WATTS
 FREQUENCY 2.500HZ SIMULATION CYCLIC COOLING ○
-46.628 J
EXPERIMENTAL CYCLIC COOLING
-53.655 J
SIMULATION CYCLIC HEATING ▲
49.047 J
EXPERIMENTAL CYCLIC HEATING
56.516 J
 CHARGE PRESSURE 0.715 BARS

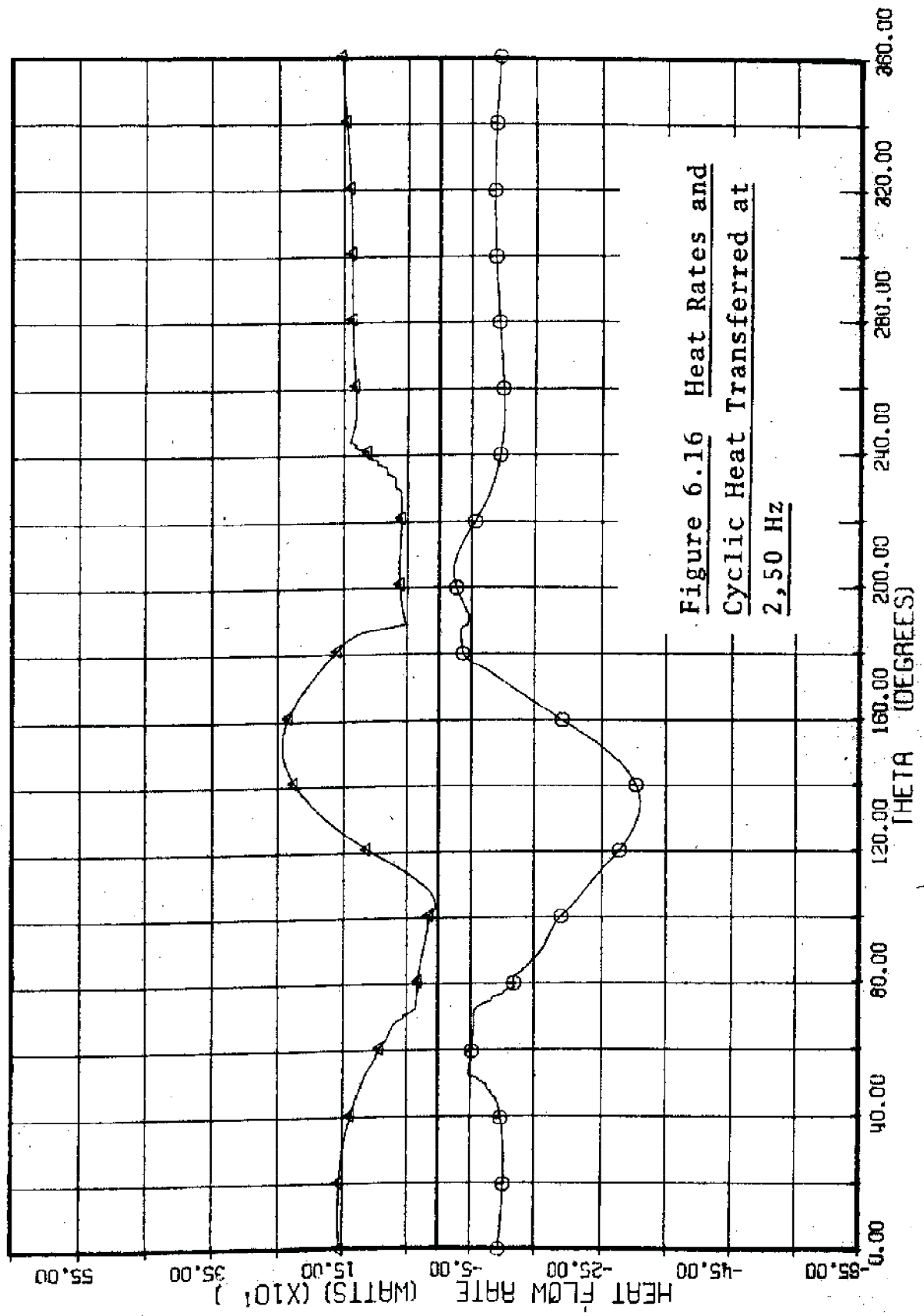
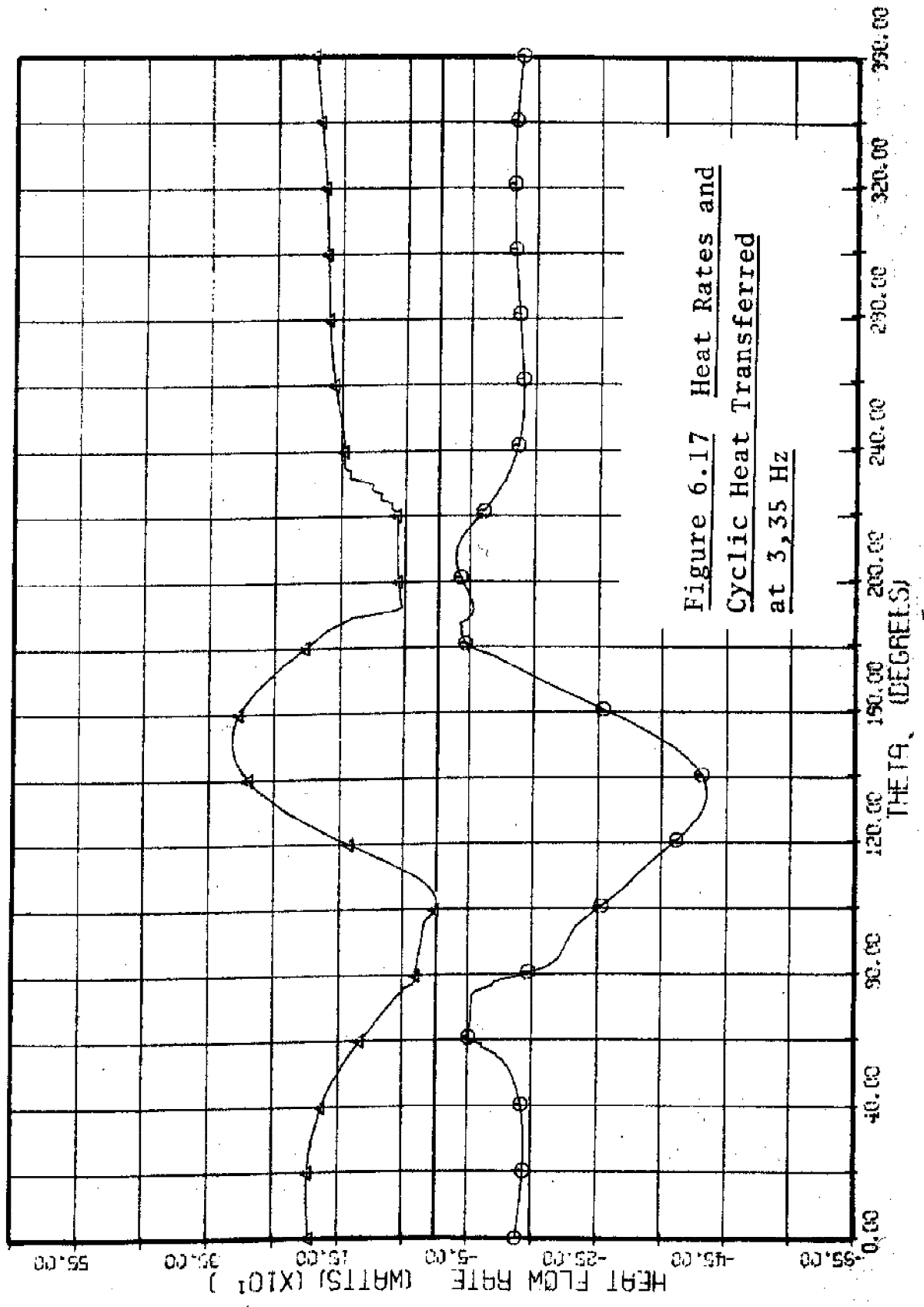


Figure 6.16 Heat Rates and
 Cyclic Heat Transferred at
 2.50 Hz

TEST 5
 FREQUENCY 3.35CHZ
 CHARGE PRESSURE 0.723 BARS
 SIMULATION CYCLIC COOLING $\odot$
 EXPERIMENTAL CYCLIC COOLING Δ
 SIMULATION CYCLIC HEATING Δ
 EXPERIMENTAL CYCLIC HEATING $\odot$
 PLANT 1-4000 46.6WATT5
 -46.384 J
 -53.895 J
 46.219 J
 51.387 J



TEST 6.
 FREQUENCY 4.350HZ
 CHARGE PRESSURE 0.703 BARS
 SIMULATION CYCLIC COOLING $\circ$
 EXPERIMENTAL CYCLIC COOLING
 SIMULATION CYCLIC HEATING Δ
 EXPERIMENTAL CYCLIC HEATING
 PLIST ERROR 45.0WATTS
 -44.690 J
 -51.227 J
 42.238 J
 41.156 J

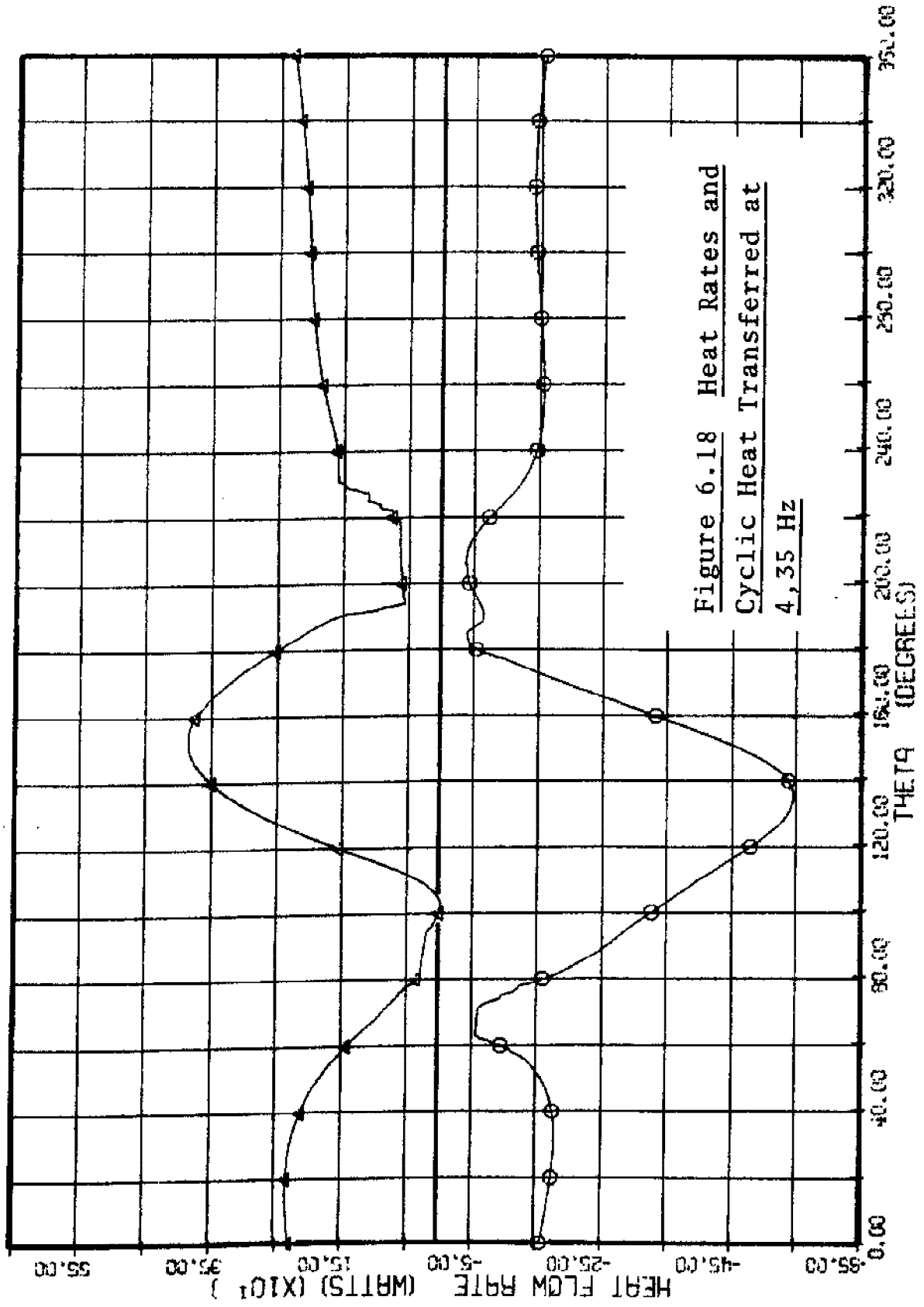


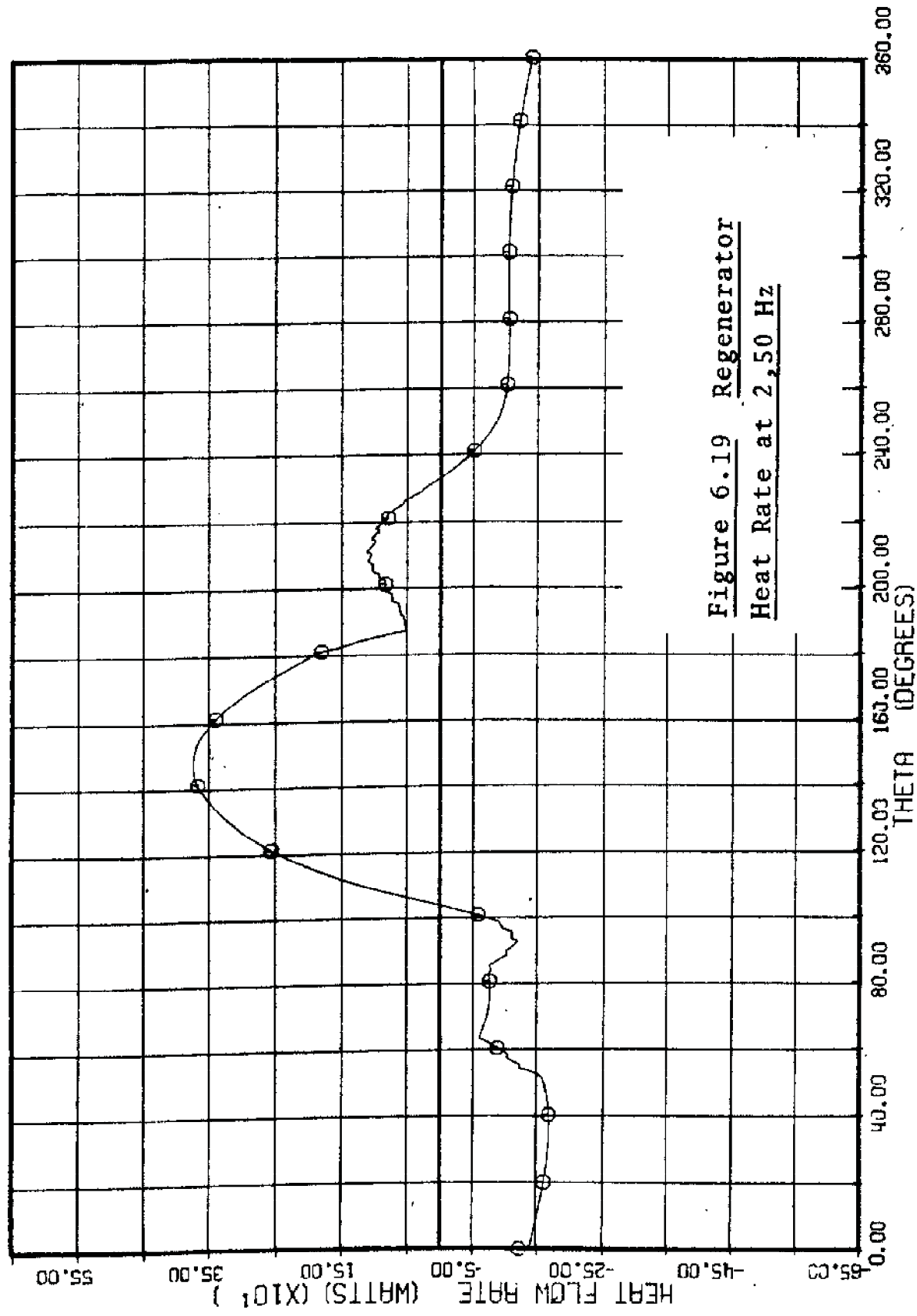
Figure 6.18 Heat Rates and
 Cyclic Heat Transferred at
 4, 35 Hz

TEST 7.

FLOW ERROR ± 5.0 WATTS

FREQUENCY 2.500HZ

CHARGE PRESSURE 0.715 BARS

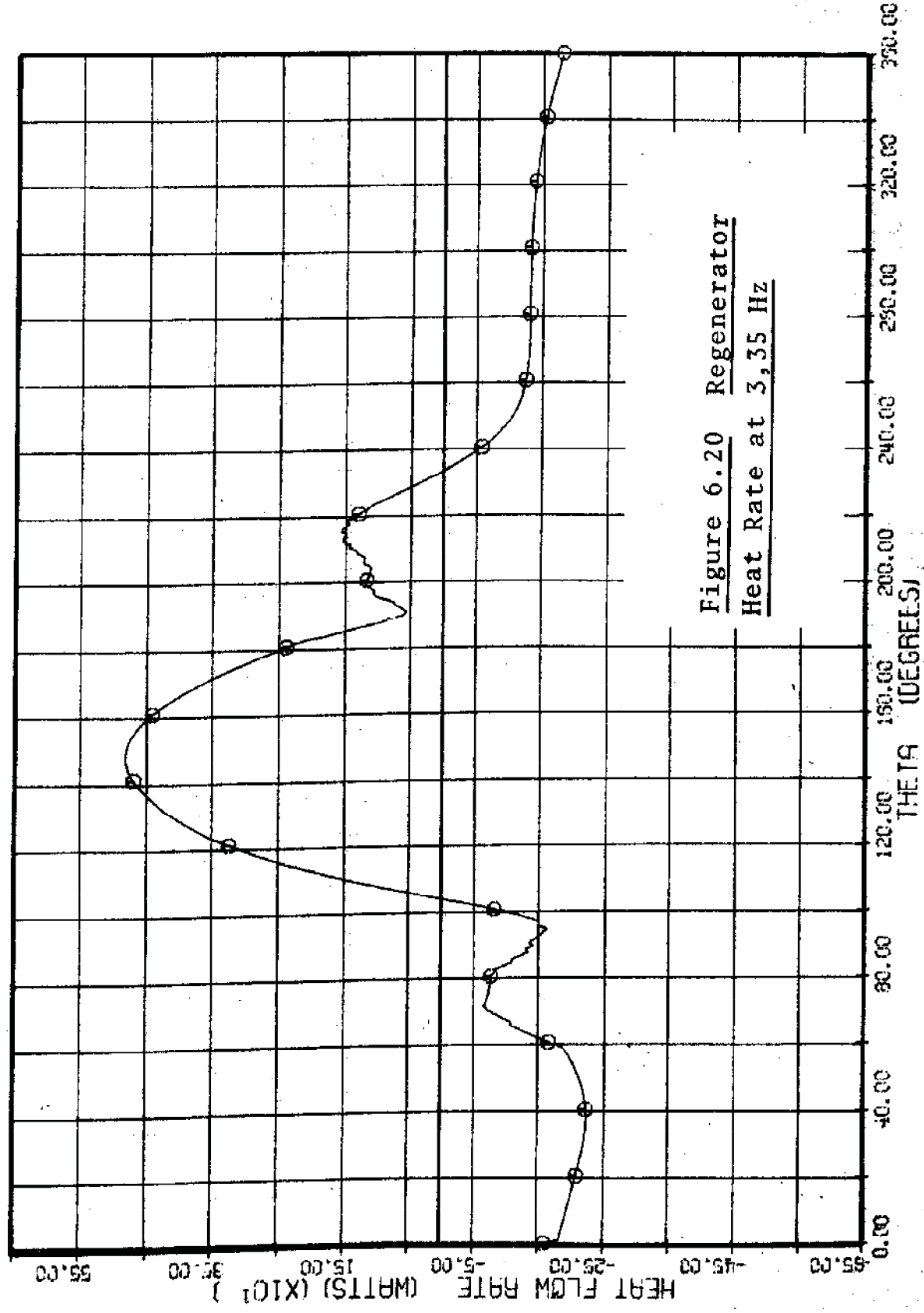


TEST 5.

PLOT ERROR ±5.0WATTS

FREQUENCY 3.350HZ

CHARGE PRESSURE 0.723 BARS

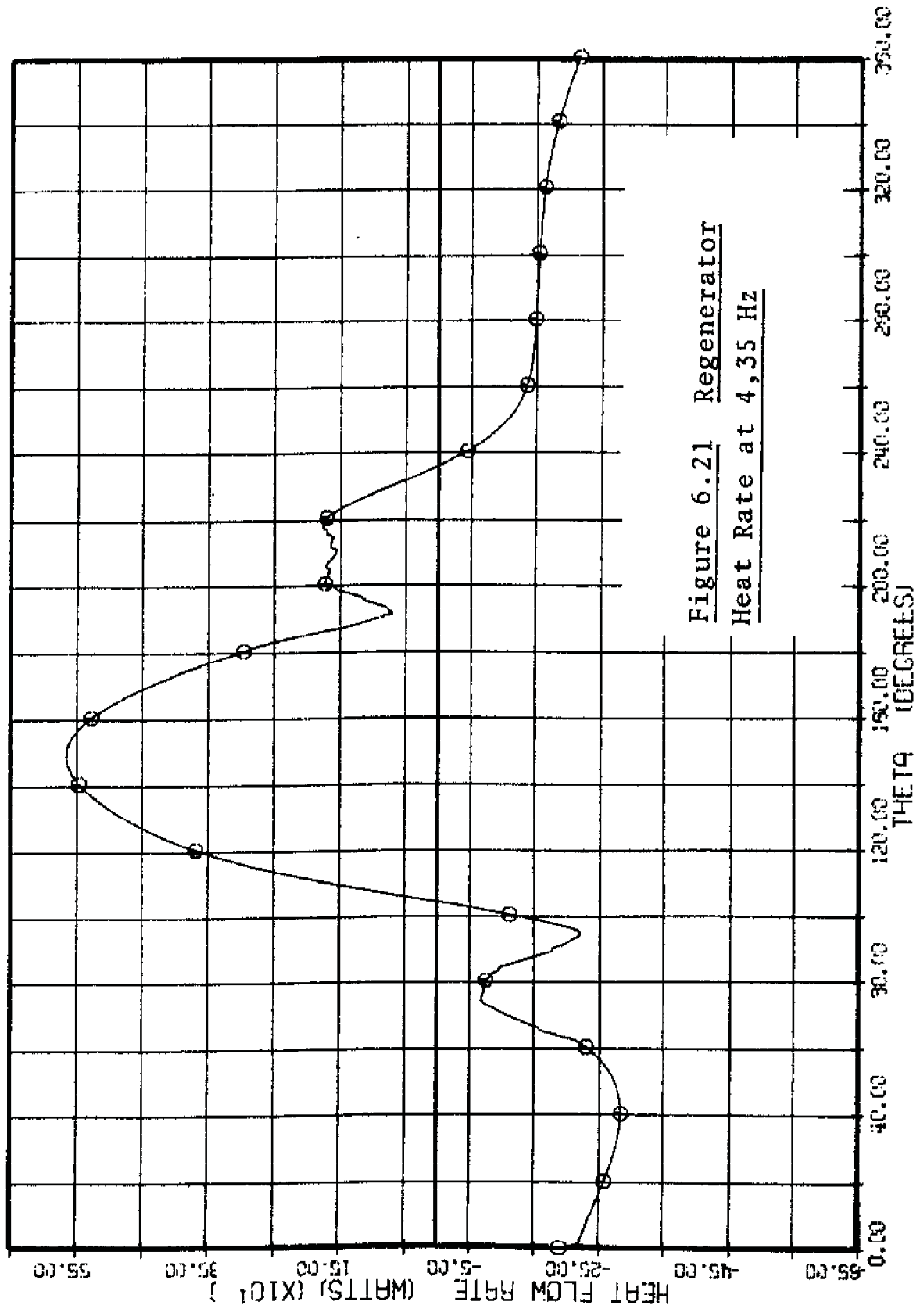


TEST 6.

PLOT ERROR 45.0WATTS

FREQUENCY 4.350HZ

CHARGE PRESSURE 0.705 BARS

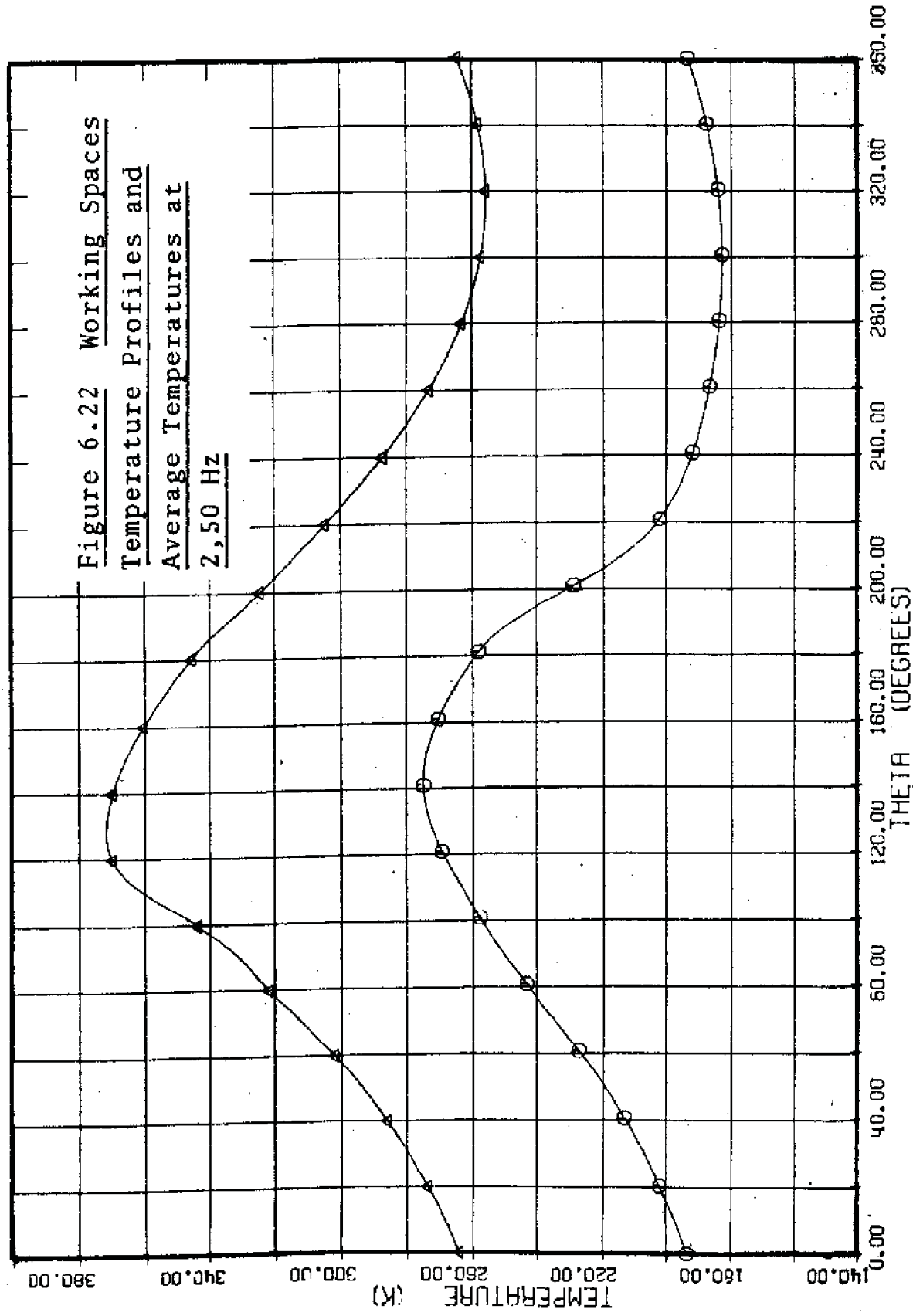


TEST 7.

FREQUENCY 2.500HZ

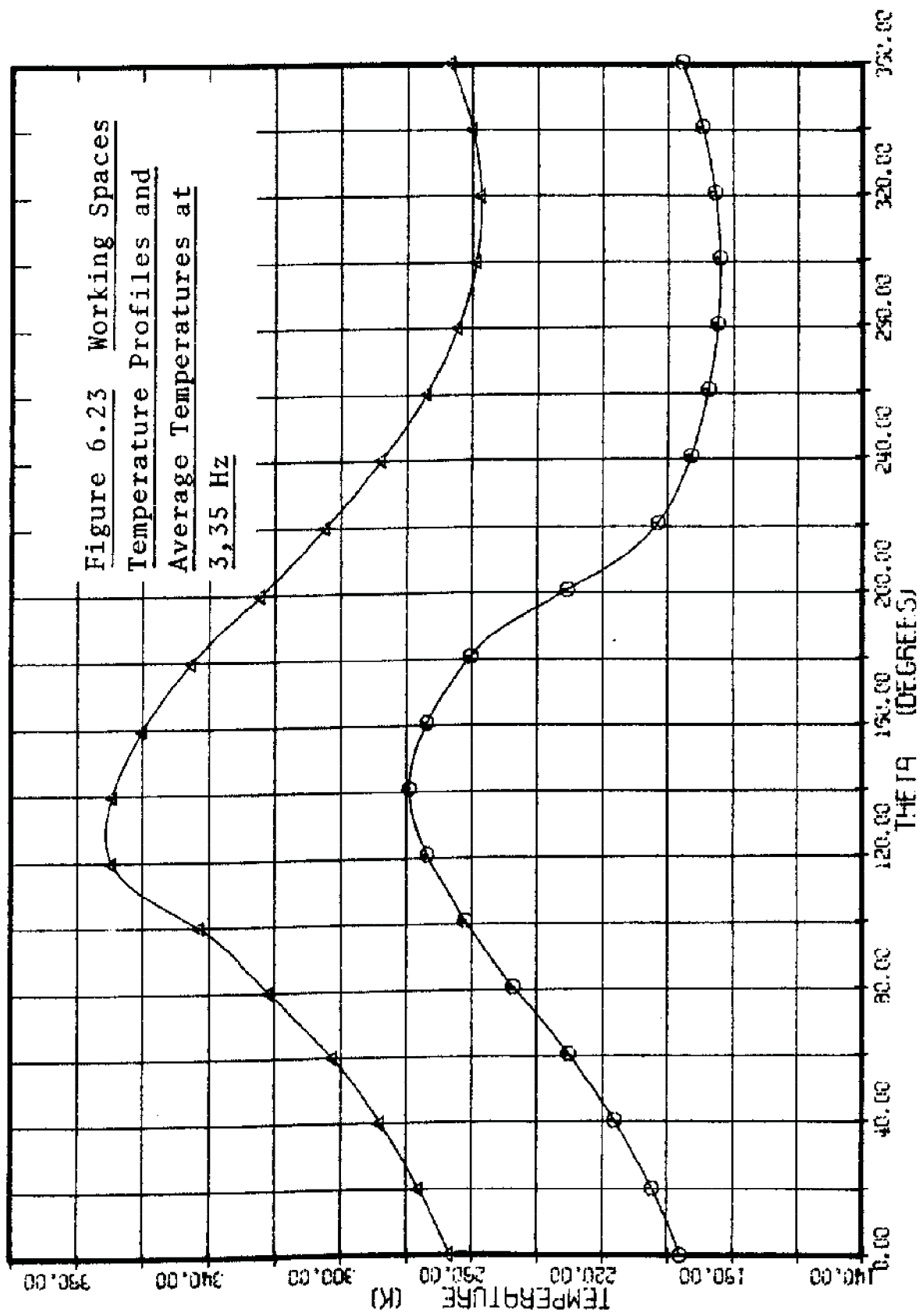
CHARGE PRESSURE 0.715 BARS

PLOT ERROR $\pm 0.5K$
SIMULATION AVG COMPR TEMP $\circ$ 219.244K
EXPERIMENTAL AVG COMPR TEMP 235.600K
SIMULATION AVG EXPAN TEMP Δ 302.610K
EXPERIMENTAL AVG EXPAN TEMP 340.900K

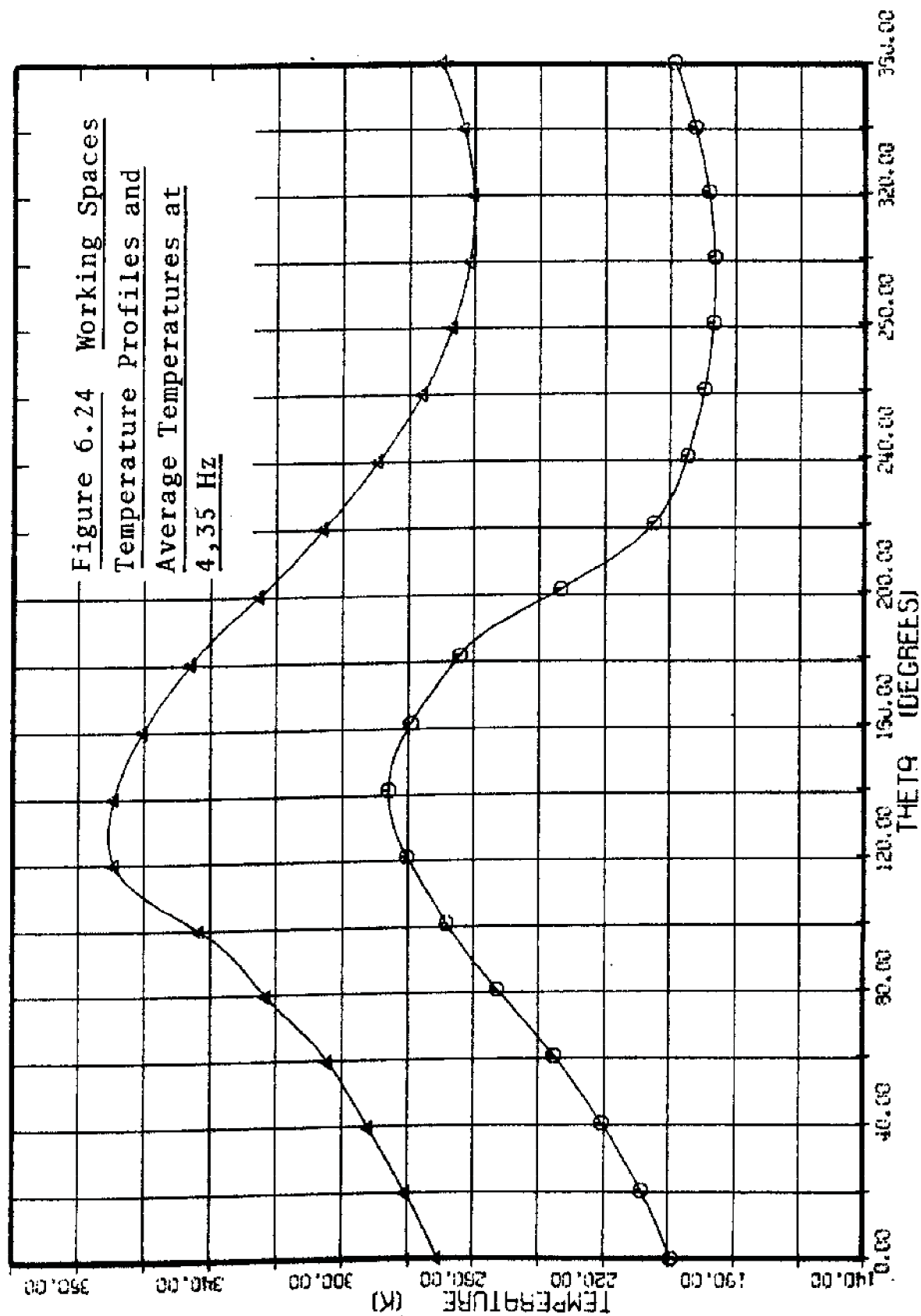


TEST 5.

FREQUENCY 3.350HZ
CHARGE PRESSURE 0.723 BARS
SIMULATION AVG COMPRESS TEMP $\square$ 221.553K
EXPERIMENTAL AVG COMPRESS TEMP 243.200K
SIMULATION AVG EXPAN TEMP $\triangle$ 303.306K
EXPERIMENTAL AVG EXPAN TEMP 341.900K
PLOT ERROR $\pm 0.5K$



TEST C. FLUT FREQ 40.5K
 FREQUENCY 4.350 HZ SIMULATION AVG COMP TEMP ◯ 225.426K
 EXPERIMENTAL AVG COMP TEMP 241.400K
 CHARGE PRESSURE 0.703 BARS SIMULATION AVG EXPAN TEMP ▲ 305.115K
 EXPERIMENTAL AVG EXPAN TEMP 341.700K



TEST 8

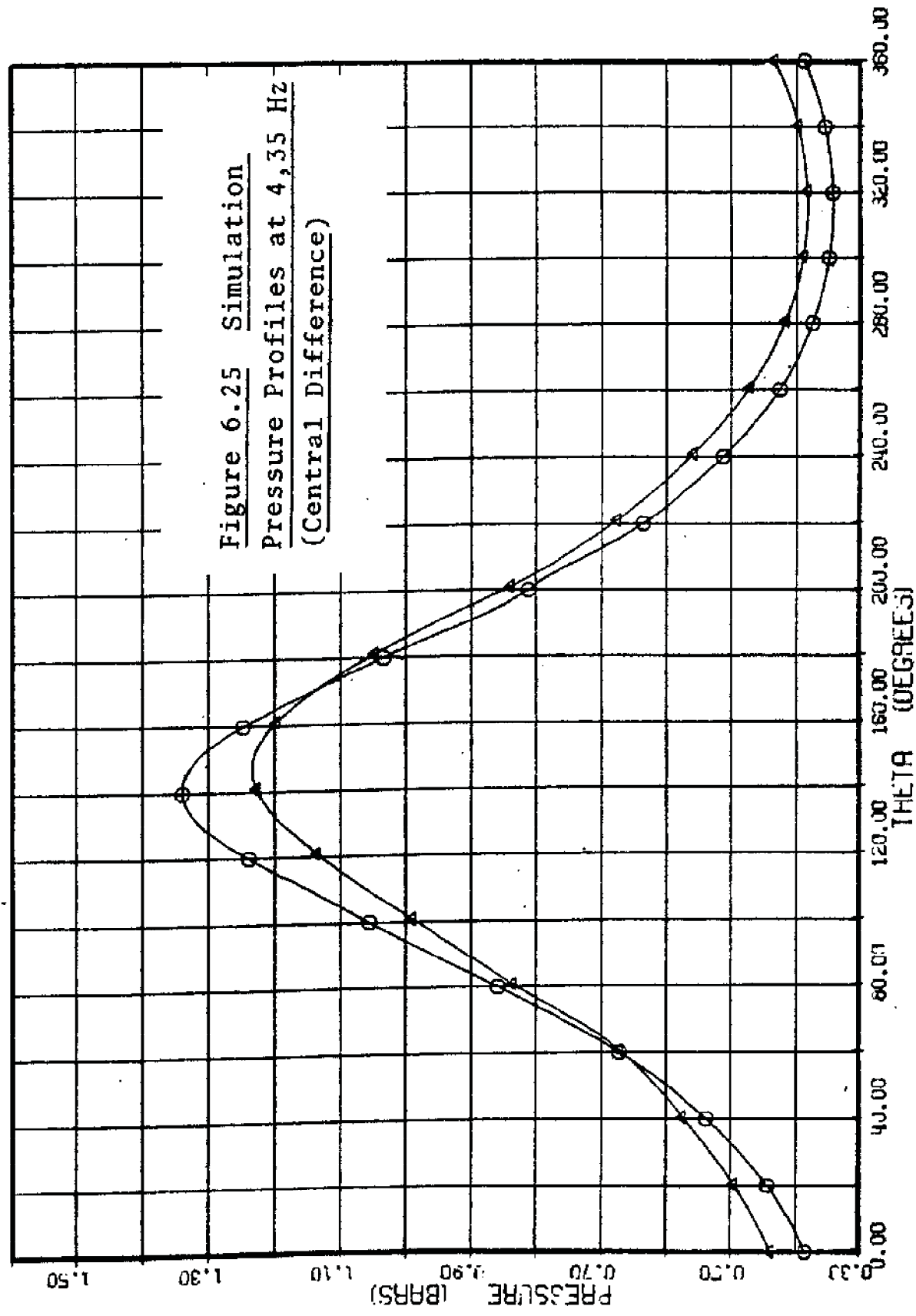
FREQUENCY 4.35 HZ

CHARGE PRESSURE 0.703 BARS

PLOT ERROR ±0.02 BAR

○ COMPRESSION SPACE

△ EXPANSION SPACE



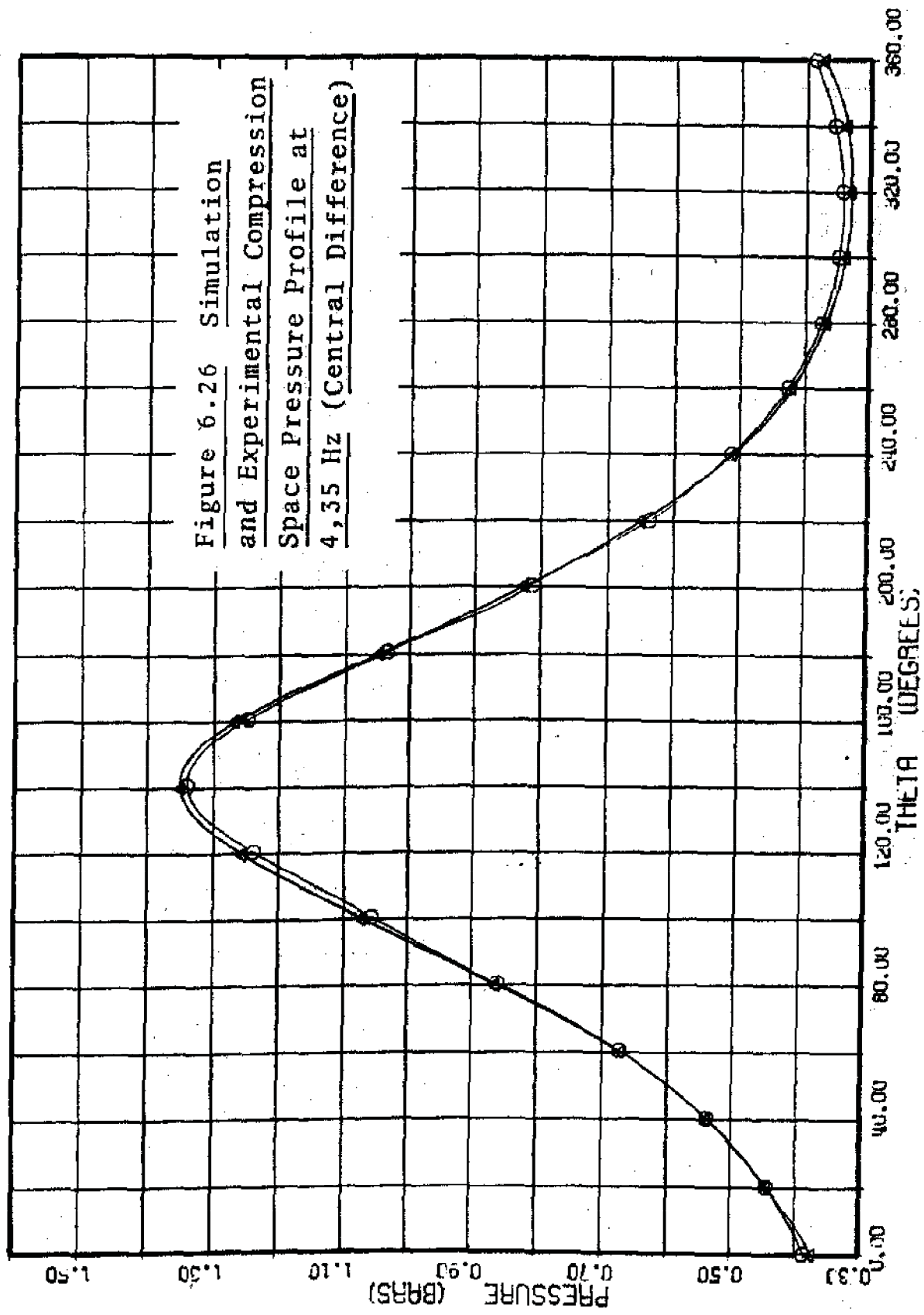
TEST 8

FREQUENCY 4.350 HZ

CHARGE PRESSURE 0.703 BARS

PLOT ERROR ±0.02BAR

○ SIMULATION
△ EXPERIMENTAL



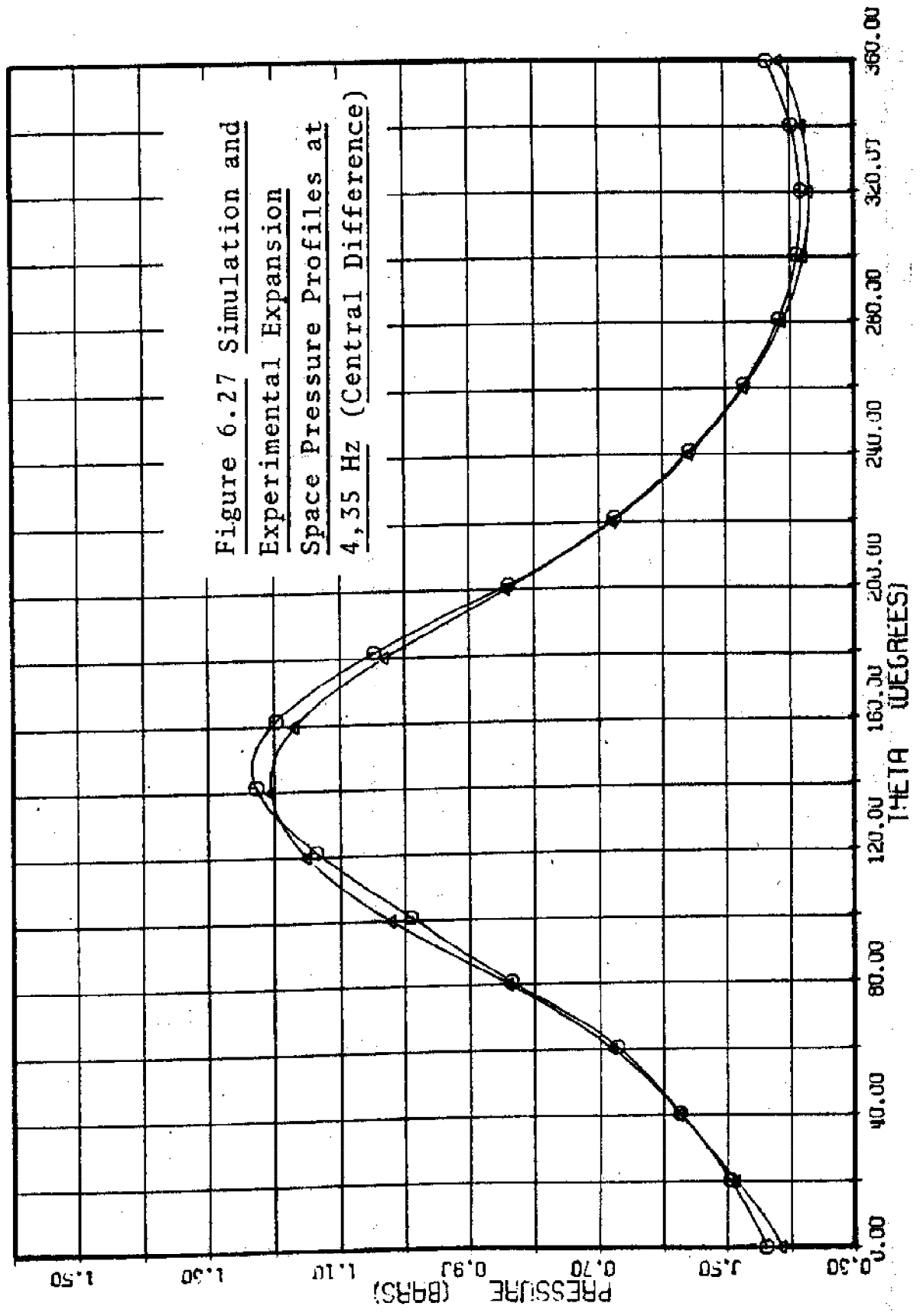
TEST 8

PLOT ERROR = 0.02BAR

○ SIMULATION
△ EXPERIMENTAL

FREQUENCY 4.350HZ

CHARGE PRESSURE 0.703 BARS



TEMPERATURE DISTRIBUTION OF HEAT EXCHANGER WALLS

TEST 8

PLOT ERROR $\pm 0.5K$

FREQUENCY 4.350 HZ

○ EXPERIMENT
△ SIMULATION

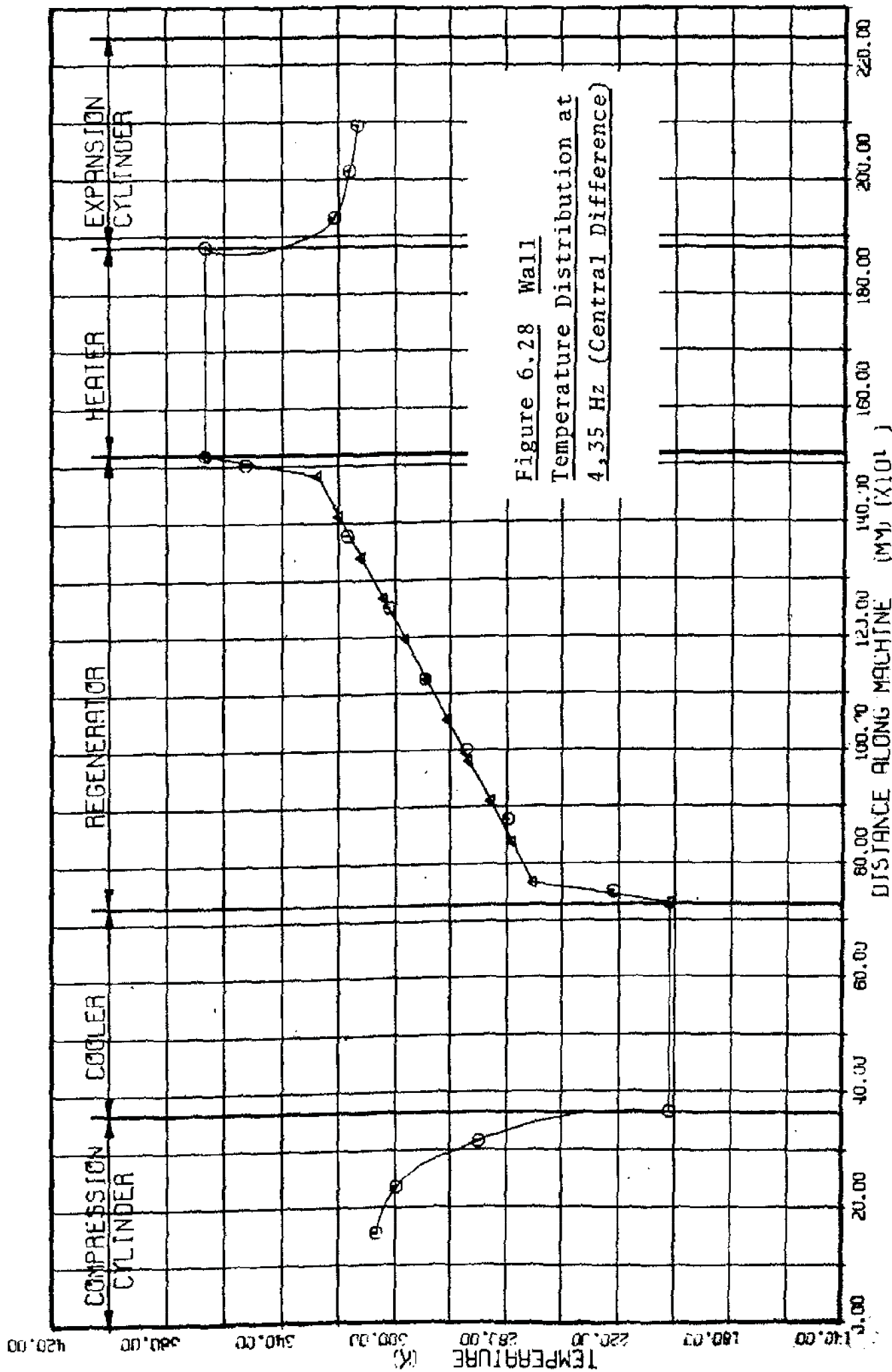


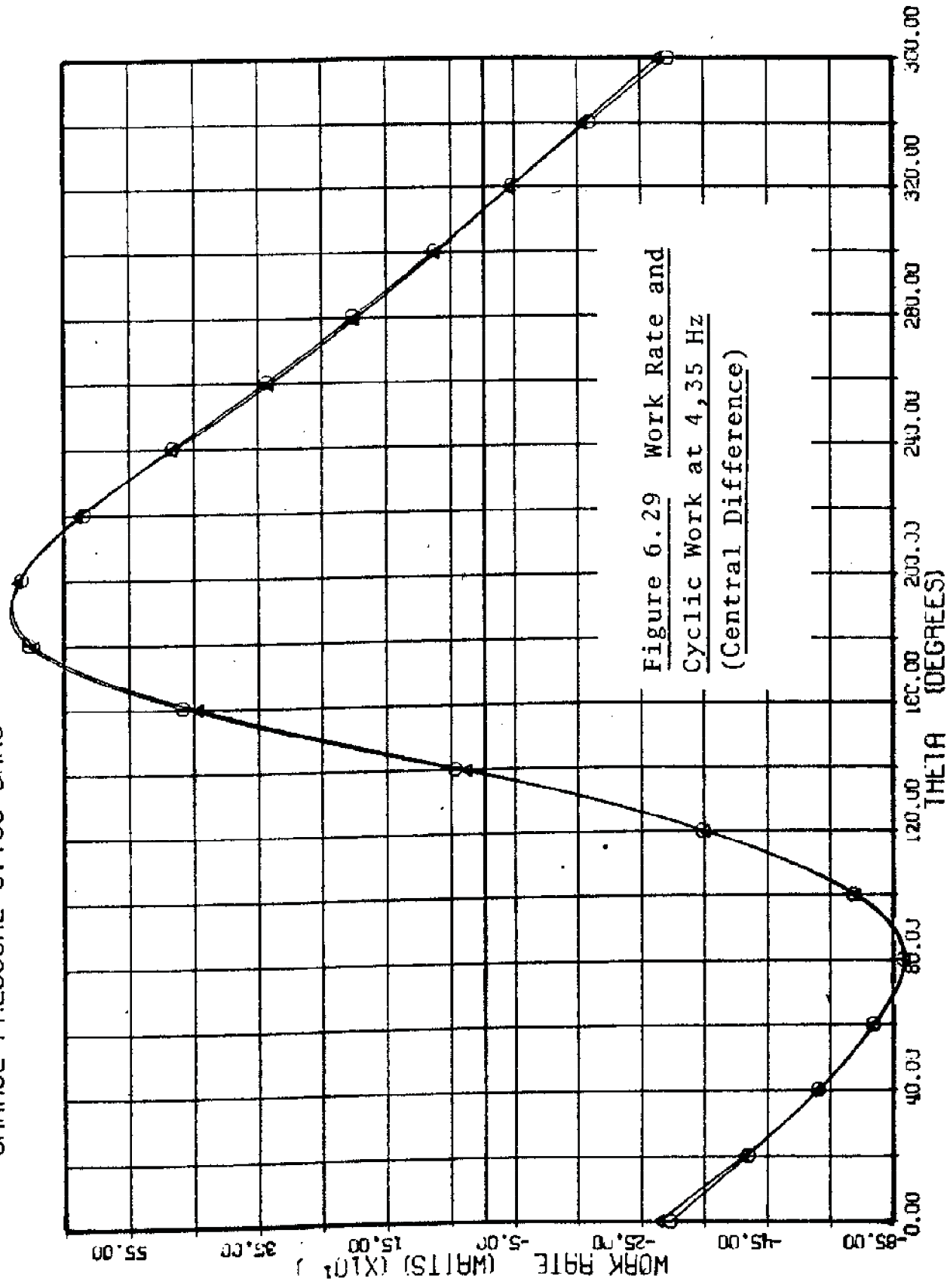
Figure 6.28 Wall
Temperature Distribution at
4.35 Hz (Central Difference)

TEST 8.

FREQUENCY 4.350 HZ

CHARGE PRESSURE 0.703 BARS

PLT ERROR ±5.0WATS
SIMULATION CYCLIC WORK ○ -0.287J
EXPERIMENTAL CYCLIC WORK △ -0.860 J



TEST 8.

FREQUENCY 4.350HZ

CHARGE PRESSURE 0.703 BARS

PLOT ERROR 95.0WATTS

SIMULATION CYCLIC COOLING $\square$

EXPERIMENTAL CYCLIC COOLING

SIMULATION CYCLIC HEATING Δ

EXPERIMENTAL CYCLIC HEATING

-44.655 J

-51.227 J

42.605 J

41.156 J

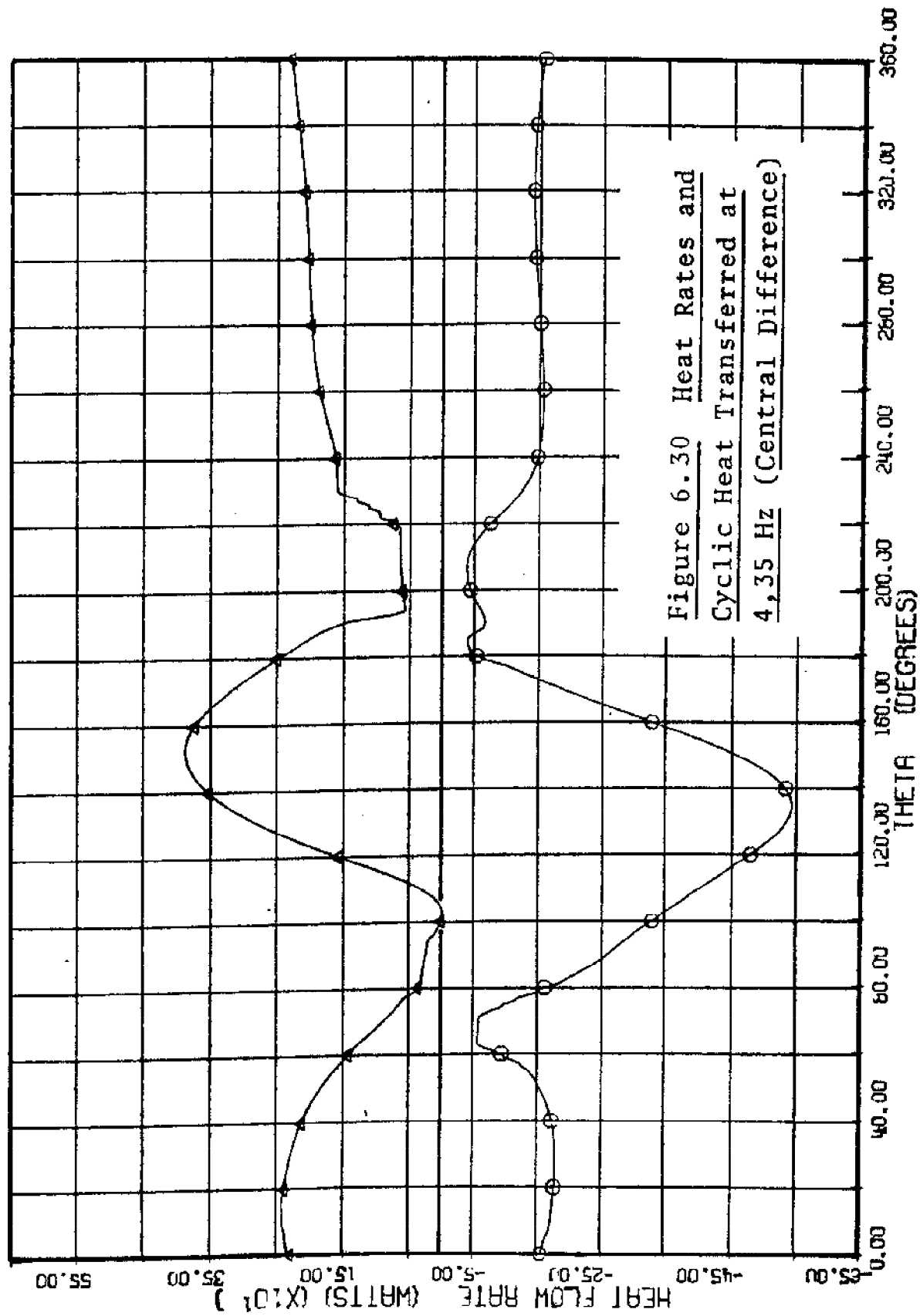


Figure 6.30 Heat Rates and
Cyclic Heat Transferred at
4.35 Hz (Central Difference)