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Small Passenger Car Transmission Test-Mercury Lynx ATX Transmission

M. P. Bujold
Eaton Corporation
Engineering & Research Center

September 1981

Prepared for
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
Lewis Research Center
Under Contract DEN 3-124

for
U.S. DEPARTMENT OF ENERGY
Conservation and Renewable Energy
Office of Vehicle and Engine R&D

NOTICE

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Washington, D.C. 20585
Under Interagency Agreement DE-AI01-77CS51044

PREFACE

The Electric and Hybrid Vehicle Research, Development, and Demonstration Act of 1976 (Public Law 94-413) authorized a Federal program of research and development designed to promote electric and hybrid vehicle technologies. The Energy Research and Development Administration, now the Department of Energy (DOE), which was given the responsibility for implementing the Act, established the Electric and Hybrid Vehicle Research, Development, and Demonstration Project to manage the activities required by Public Law 94-413.

The National Aeronautics and Space Administration under an Interagency Agreement was requested by ERDA (DOE) to undertake research and development of propulsion systems for electric and hybrid vehicles. The Lewis Research Center was made the responsible NASA Center for this project. The work presented in this report is a part of that program.

The work described in this report was conducted under Contract DEN3-124 with the National Aeronautics and Space Administration (NASA) and sponsored by the Department of Energy through an agreement with NASA.

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SUMMARY

The small passenger car transmission test was initiated to supply electric vehicle manufacturers with technical information regarding the performance of commercially available transmissions. This information would enable EV manufacturers to design a more energy efficient vehicle. With this information the manufacturers would be able to estimate vehicle driving range as well as speed and torque requirements for specific road load performance characteristics.

This report covers the 1981 Mercury Lynx ATX transaxle. This transmission was tested per a passenger car automatic transmission test code (SAE J651b) which required drive performance, coast performance, and no load test conditions. Under these test conditions the transmission attained maximum efficiencies in the 93% range for drive performance tests. The major results of this test are the torque, speed and efficiency curves which are located in the data section of this report. These graphs map performance characteristics for the Mercury Lynx ATX transmission.

INTRODUCTION

The Mercury Lynx ATX is a commercially available automatic transmission which is suited for a small passenger car installation. The transmission is equipped with three forward driving ranges: a neutral, reverse and park. Very little technical information in the area of torque, speed and efficiency data is currently available on this transmission. This lack of available information was the principal reason for the initiation of this test.

The principal object of this test was to map torque, speed, and efficiency curves of the test transmission in each gear range and in both drive performance and coast performance conditions. The test was performed per the specifications of the Passenger Car Automatic Transmission Test Code - SAE J651b. The torque and speed limits of this test were governed by the torque and speed limits of an engine which would typically be supplied with this transmission. The test code specified that three basic tests were to be conducted which involved holding the torque constant and varying the transmission speed. The three specific tests were drive performance, coast performance, and no load losses which were conducted in first, second and third gear.

The test code required that the transmission should be held in gear over the complete range of the test. In order to accomplish this, it was necessary to block the valves. This kept the transmission locked in gear. The test code also specified an oil temperature requirement to ensure that a set viscosity level be attained throughout the tests. This temperature requirement was accomplished through the use of an immersion heater and oil cooler.

There were two main factors which determined the amount of load which could be applied to the system. These factors were the temperature of the transmission oil and the torque-speed characteristics of the absorber and dynamometer. The torque-speed characteristics of the absorber and dynamometer are contained in the Appendix.

The data that were obtained from the torque and speed sensors were placed directly onto tape. The tape was then fed into a computer which reduced the data and generated the necessary graphs and technical information. The main advantage to this method of data reduction is that any fluctuation that may occur due to system resonance is averaged by the computer. This method minimizes the operator error and allows the data to be viewed soon after the tests are completed.

EQUIPMENT TESTED

This report involves the test conducted on a 1981 Mercury Lynx ATX (C1712PMA A2, 149228 E1EP AE). The automatic transaxle (ATX) combines an automatic transmission and differential into a single powertrain component designed for front wheel drive applications.

The ATX uses three friction clutches, one band and a single one way clutch. These components are applied as necessary to transmit engine torque through a compound planetary gear set. The planetary provides three forward gear ratios and one reverse. The ATX uses a standard torque converter with an internal splitter gear which provides mechanical connection between the engine and the transaxle. The splitter gear miniminizes the converter slippage in second and third gear range. In first and reverse the engine torque is 100% hydraulically transmitted. In second and third gears the engine torque is split between the converter turbine and the splitter gear. This reduces torque converter losses and improves the efficiency of the transmission.

The transmission hydraulic system is pressurized by a gear type pump which provides the working pressure to operate the friction elements and automatic controls.

TEST APPARATUS

The test apparatus used in testing the Mercury Lynx ATX transmission consisted of the following basic items which are described and listed below. The set-up was basically the same for drive and coast performance tests except that the transmission was indexed 180° for coast performance tests.

The driving dynamometer was used to power the transmission. A torque sensor was placed on the dynamometer shaft to accurately monitor the torque into the transmission. A speed pickup was placed on the dyno shaft to measure the speed into the transmission.

The output shaft of the transmission was coupled to a torque sensor which accurately measured its torque. The torque sensor shaft was then coupled to a HY-VO chain drive (4:1 ratio) which was coupled to the absorber shaft. The purpose of the chain drive was to increase the slower output shaft speed into a range which would be acceptable to the absorber power requirements. The absorbing dynamometer was used to apply the system load. A speed pickup was mounted to the absorber shaft to measure output speed.

The transmission oil temperature was controlled through the use of a heat exchanger and circulation heater. When the transmission was operating at light load, the oil cooler was shut down and the circulation heater was engaged so that the oil could be kept up to temperature specification. When the transmission was operating under heavy load, the oil cooler was operating and the circulation heater was disengaged so that the temperature specification was not exceeded.

The transmission was held in first gear by placing the gear selector lever in its appropriate setting. The transmission was held in second gear by blocking the 1 to 2 shift valve in the second position. The transmission was held in third gear by placing stops in the 1 to 2 shift valve and the 2 to 3 shift valve so the valves were kept in the 2 and 3 position, respectively.

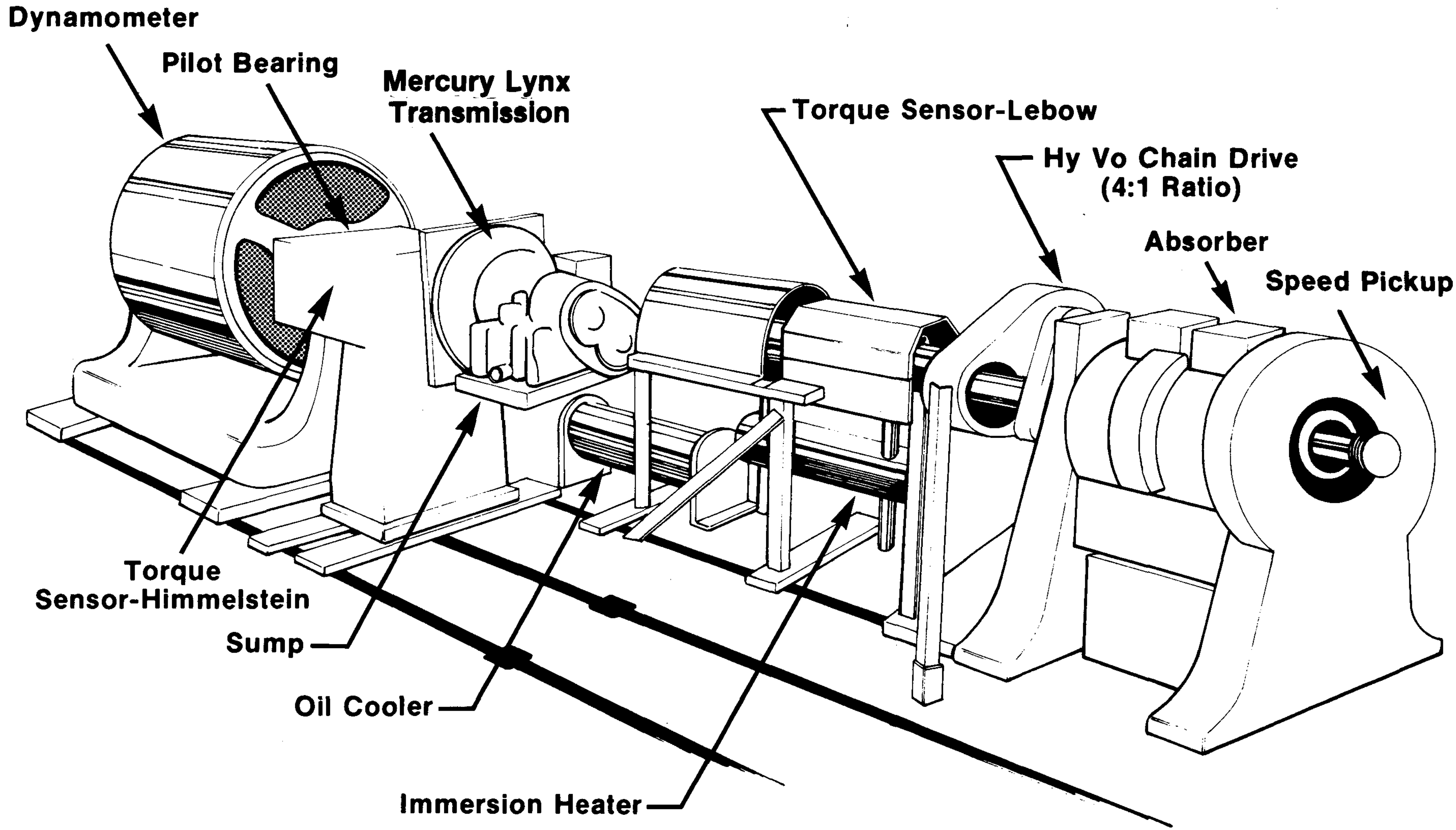
The transmission differential was locked for the entire test program. This was accomplished by welding the pinion gears to the differential carriers. This allowed the power to flow through one output shaft. This means that the output torques (drive performance) and input torques (coast performance) shown in the graphs are twice the values that each wheel would feel. However, the output speeds (drive performance) and input speeds (coast performance) are the actual speeds at each wheel.

The instrumentation for the setup consisted of the following basic items. The Lebow torque sensor was used in conjunction with a Daytronic signal conditioner (878). The Himmelstein torque sensor was matched with a Daytronic signal conditioner (878A). The magnetic speed pickup was used with an Airpax speed readout. These signals were then fed into a Sangamo 3500 tape recorder. The tape recorded data were then fed into a Hewlett Packard Analyzer which reduced the data.

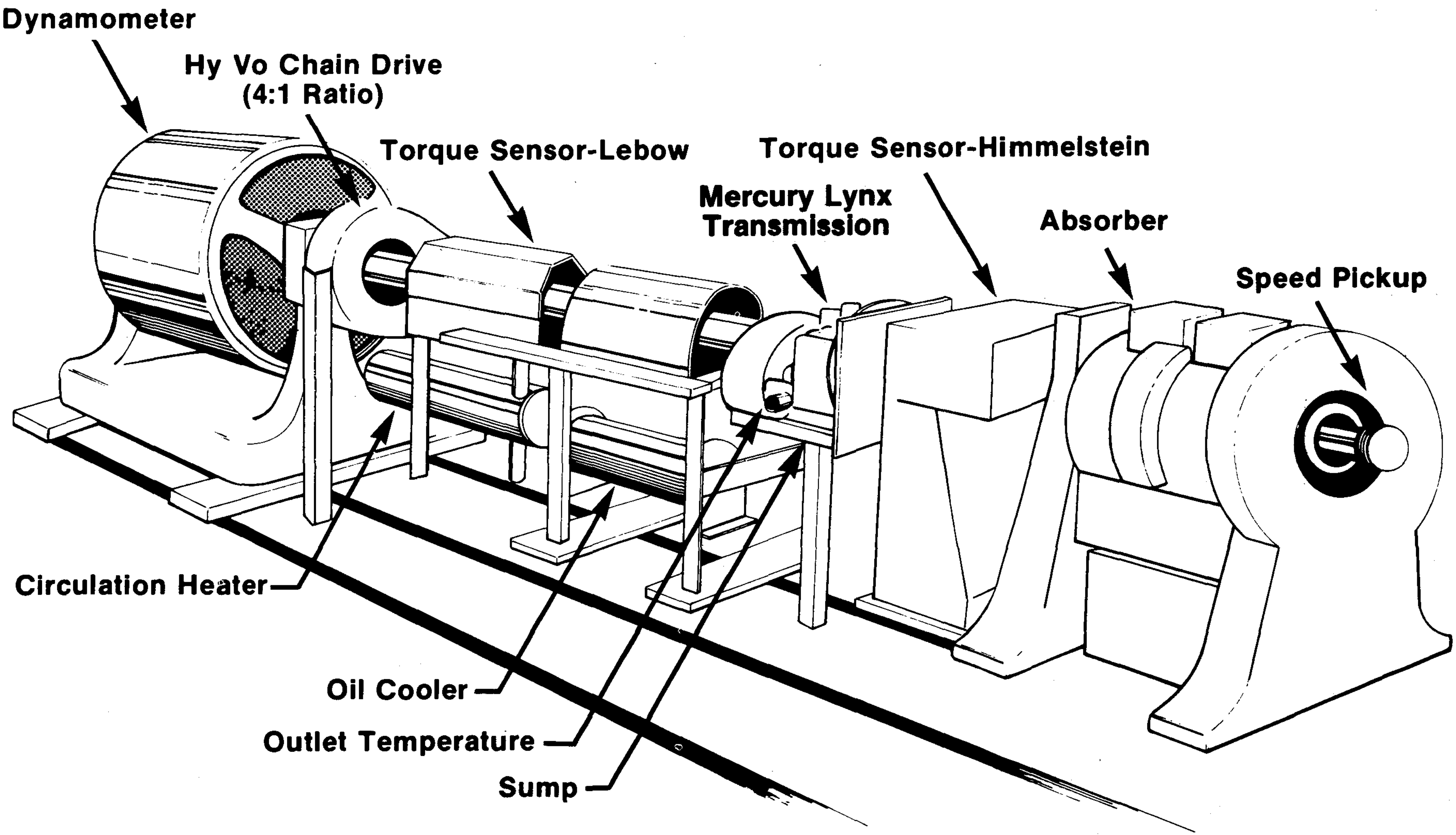
DESCRIPTION	PART NO.	MANUFACTURER
Driving Dynamometer	Model 26G308	General Electric
Flexible Coupling	226 SN	Thomas-Rexnord
Torque Sensor	MCRT6-02T(2-3)	Himmelstein
Pilot Bearing	SFT-15	Sealmaster
Transmission	Lynx ATX	Mercury
Rear Bearing	209-SFF	MRC
Flexible Coupling	226 SN	Thomas-Rexnord
Torque Sensor	1648-5K	Lebow
Torque Sensor	1248-20K	Lebow
Absorber	1014DG	Dynamatic
Heat Exchanger	F-301-ER-2P	Young
Circulation Heater	NWHO-2	Chromalox
Pressure Gage	D-0252	Marsh
HY VO Chain Drive (4:1)	1.25 WIDE	Morse

INSTRUMENTATION

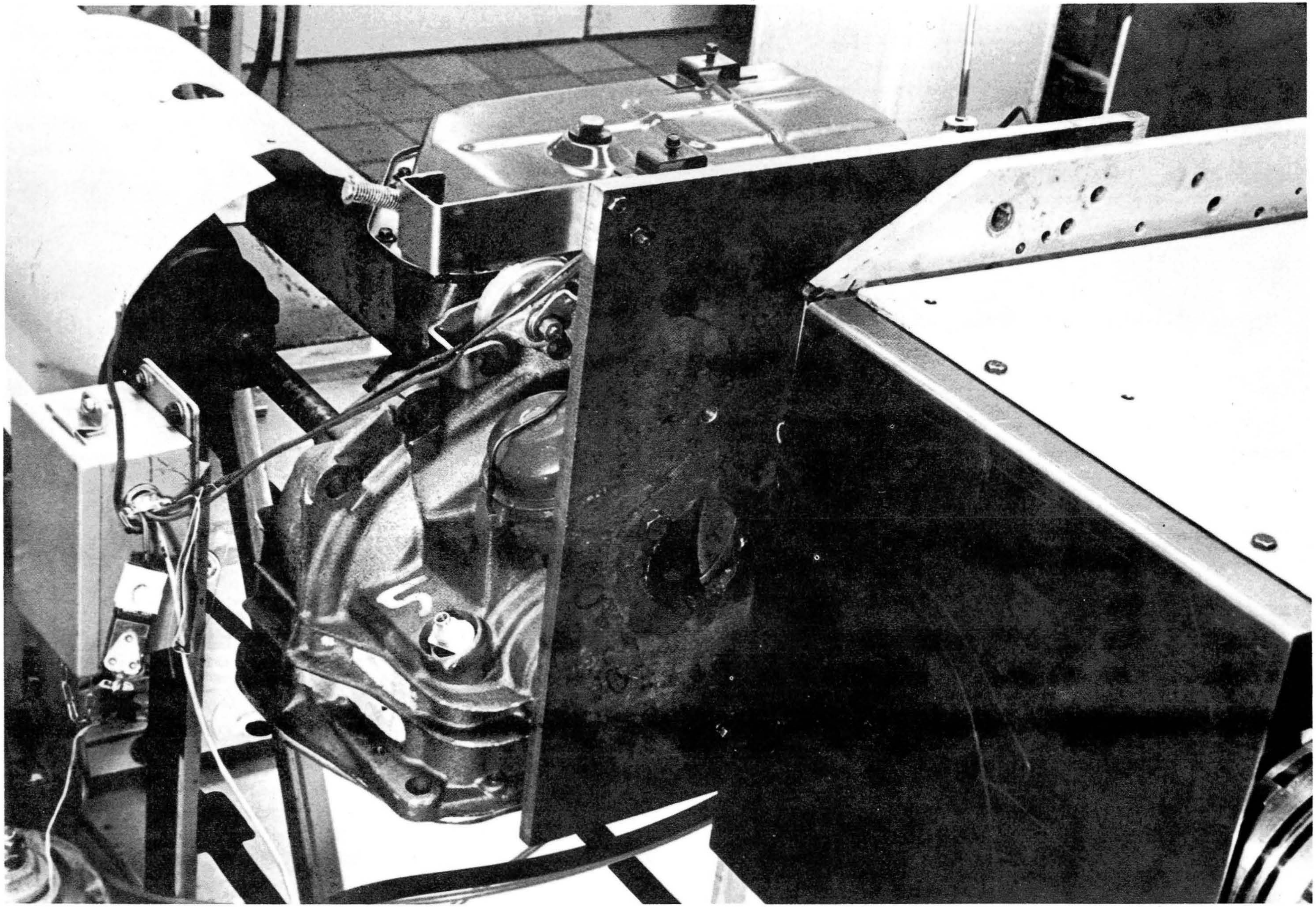
Torque Signal Conditioner	878A	Daytronic
Torque Signal Conditioner	878	Daytronic
Speed Readout	761400110	Airpax
Temperature Conditioner	810	Daytronic
Thermocouples	6610WBA2	Applied Instruments
FM Tape Recorder	3500	Sangamo
Speed Pickup	3030 AN	Electro
Speed Conditioner	840	Daytronic
Analyzer	5451B	Hewlett Packard



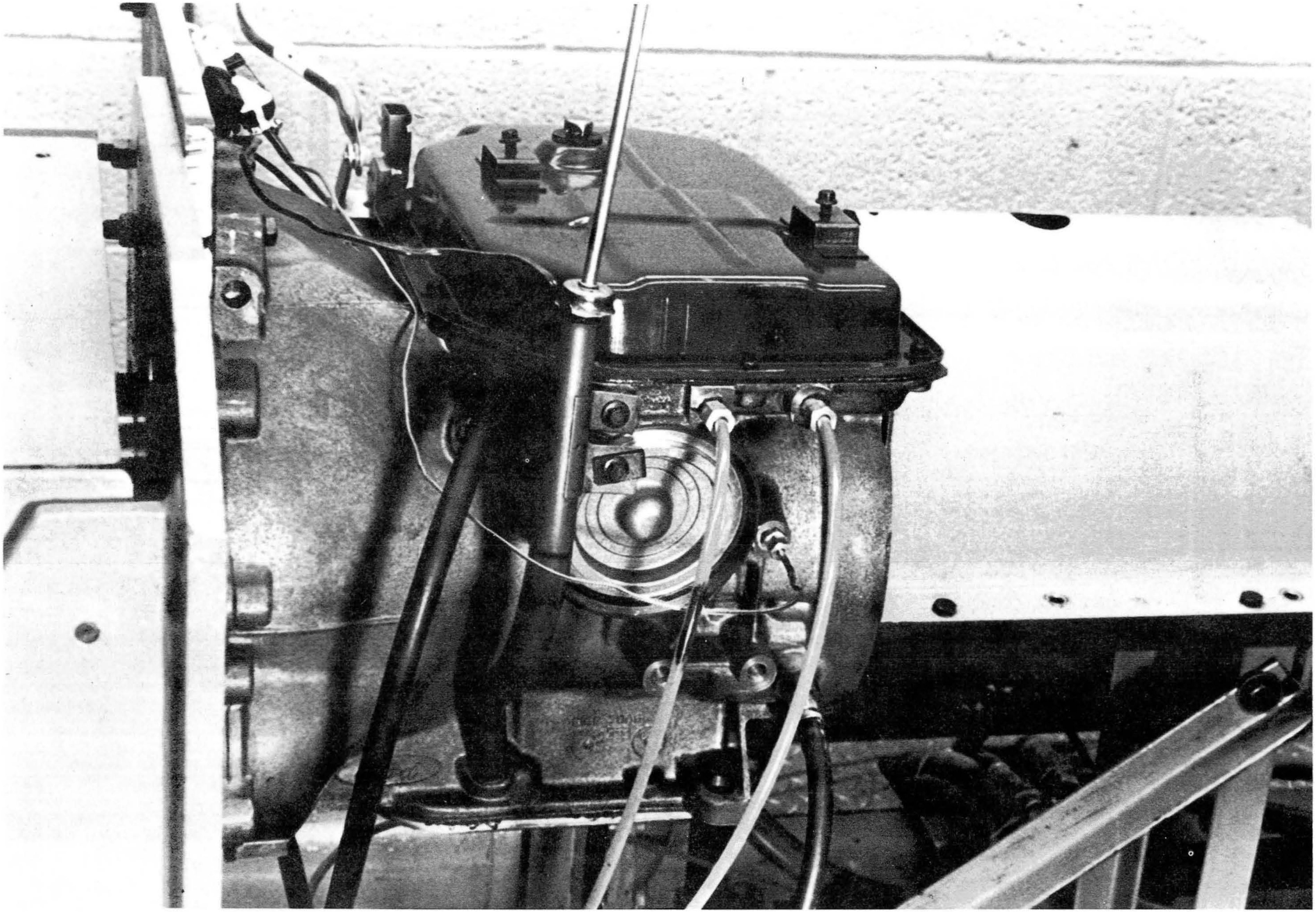
Drive Performance Test Setup



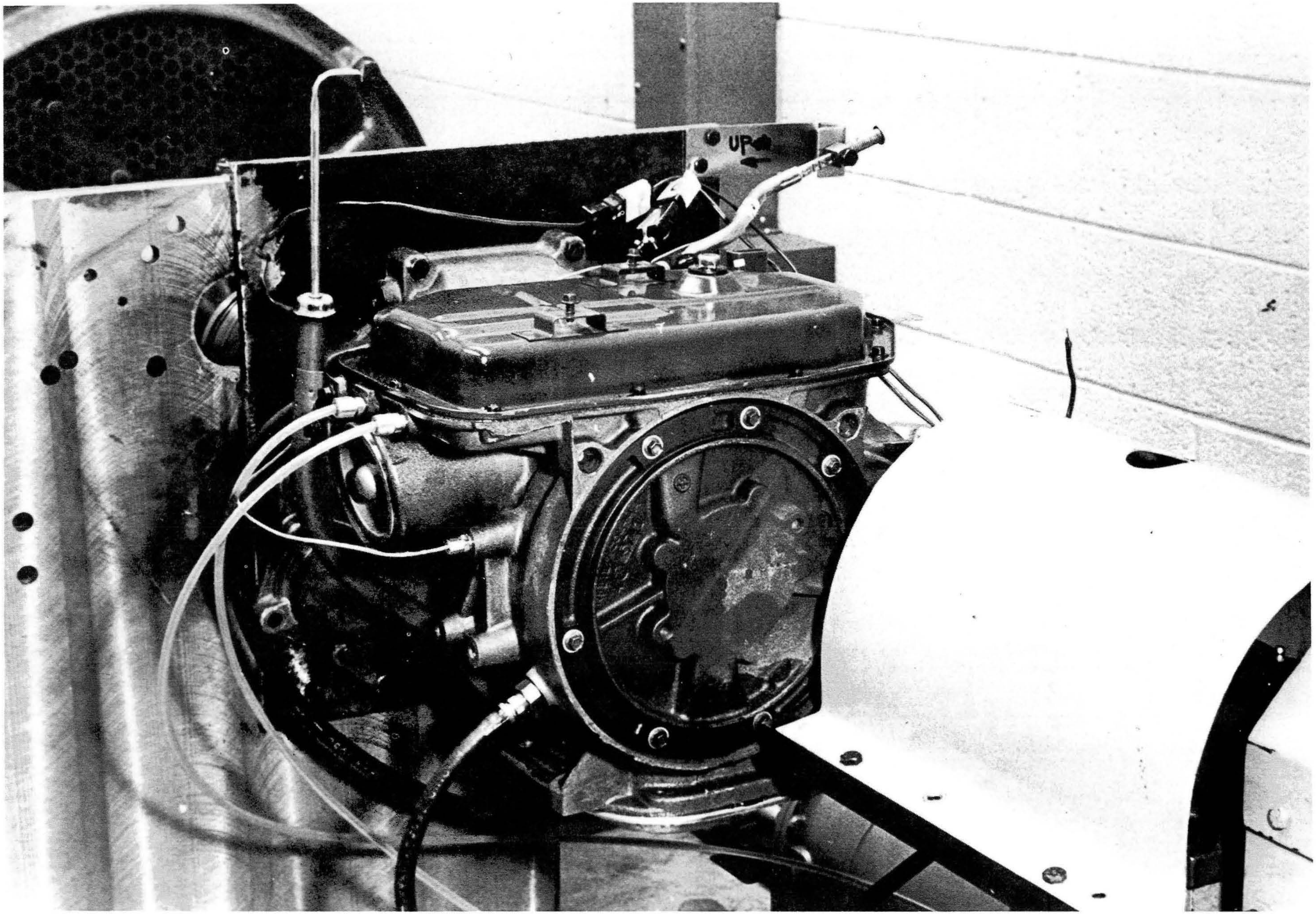
Coast Performance Test Setup



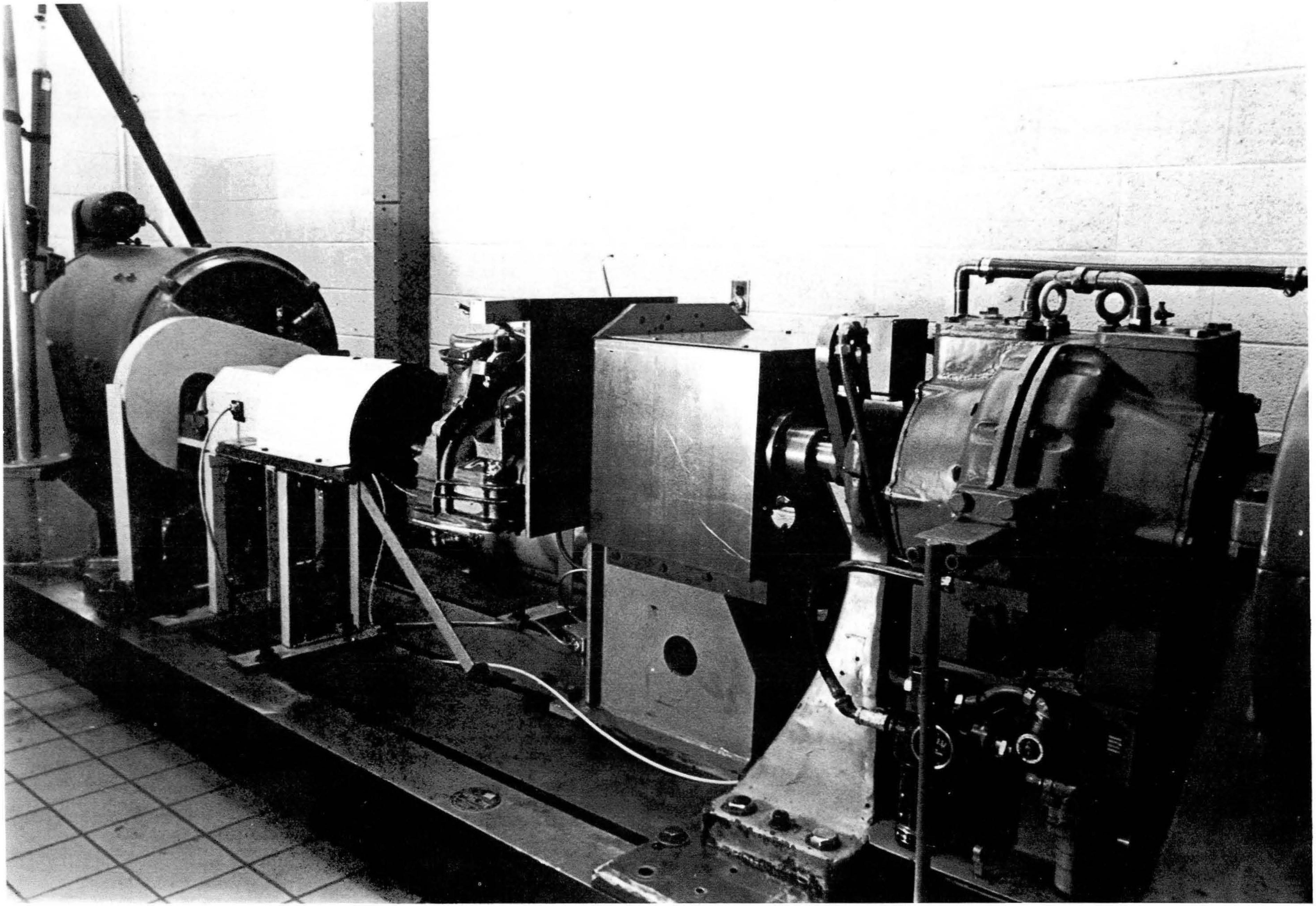
1981 Mercury Lynx Drive Performance Test Setup
Front View



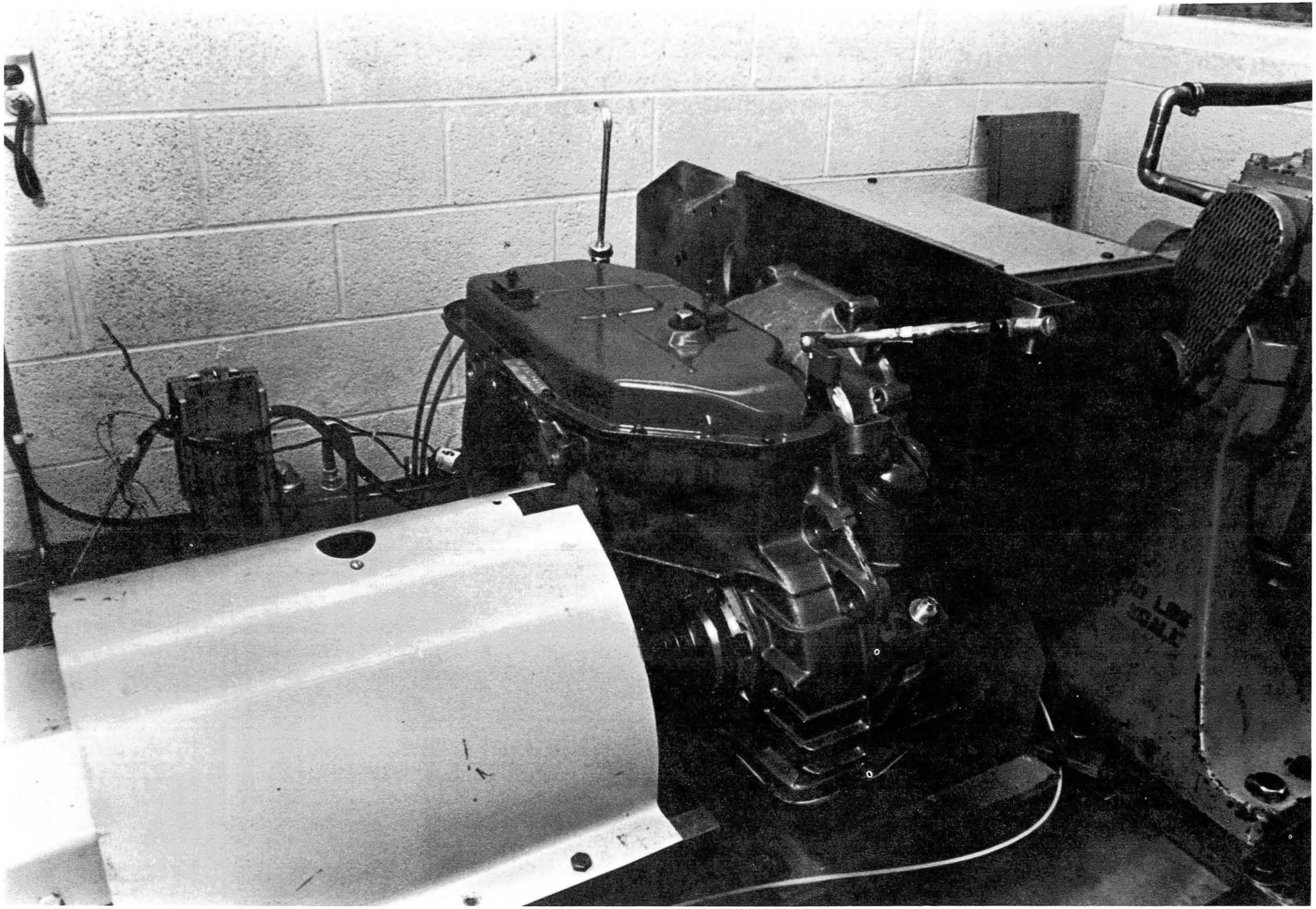
1981 Mercury Lynx Drive Performance Test Setup
Side View



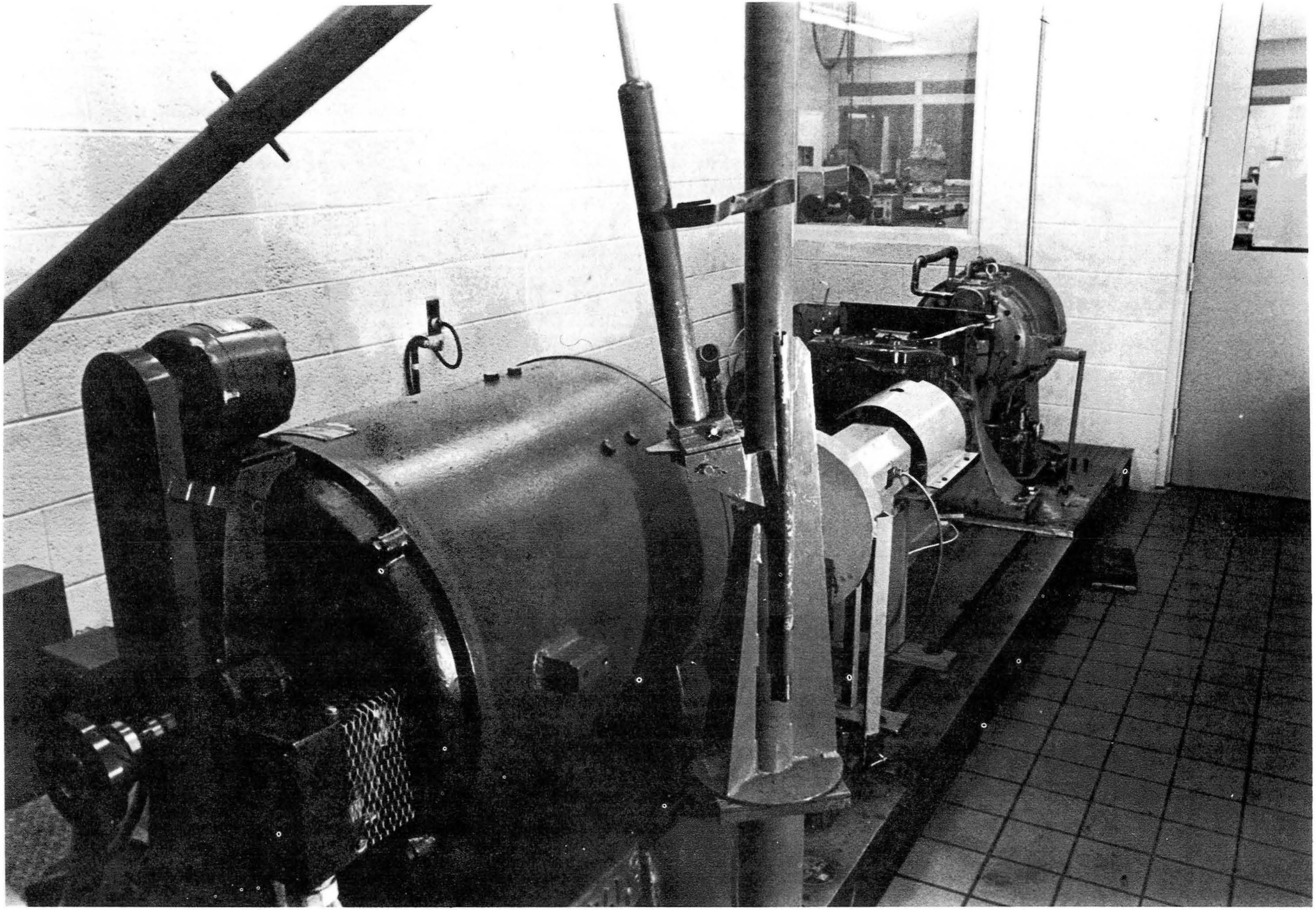
1981 Mercury Lynx Drive Performance Test Setup
Back View



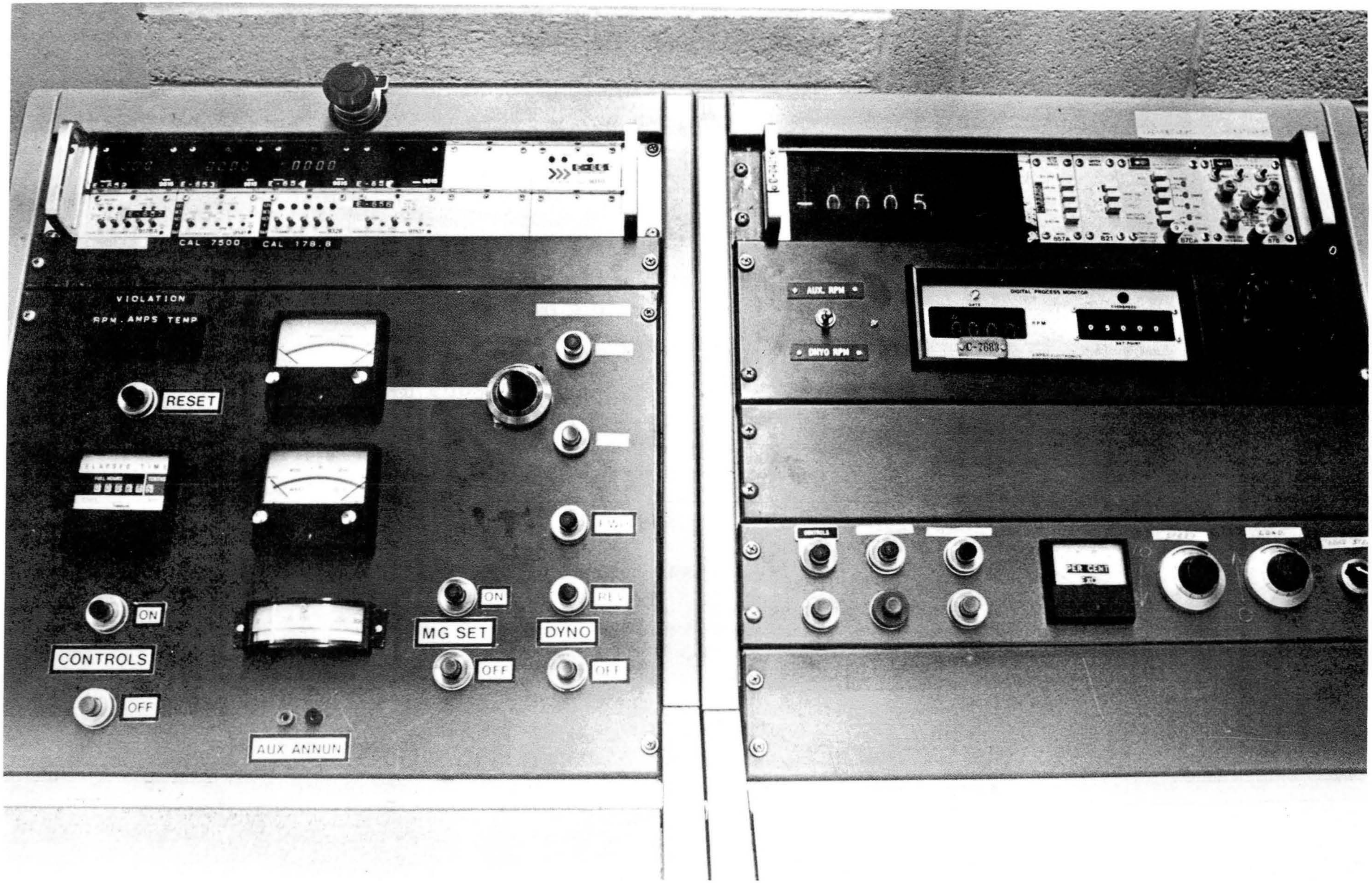
1981 Mercury Lynx Coast Performance Test Setup
Front View



1981 Mercury Lynx Coast Performance Test Setup
Side View



1981 Mercury Lynx Coast Performance Test Setup
Back View



Control Console

**Control Console
with Data Reduction Equipment**

TEST PROCEDURE

The test was conducted per the Passenger Car Automatic Transmission Test Code-SAE J651b. The code states that three basic tests should be performed on the transmission. These tests are Drive Performance, Coast Performance and No Load Losses. Each test was performed to the accuracies stated in the code. The throttle valve was modulated throughout the test to its normal operating positions. The table on page 18 indicates the engine torque and its related throttle valve setting.

The limits of the test were determined by the normal operating conditions of an engine typically supplied with this transmission. The transmission was tested at a torque which ranged from 10-80 lb-ft on the input shaft of the transmission. The torque was incremented by 10 lb-ft for each test. The speed limits of the test ranged from 700 to 3800 rpm on the input shaft of the transmission.

The first test conducted was the Drive Performance - Constant Input Torque test. The input torque was held at 10 lb-ft, and the speed was incremented from 750-3800 rpm. The torque was then set to 20 lb-ft, and the transmission was run through the same speed range. This procedure was followed for input torques of 10, 20, 30, 40, 50, 60, 70, and 80 lb-ft. The throttle valve was modulated to match the appropriate input torque for these test ranges. The starting speed was dependent on when the torque could be attained, which was characteristic of the torque converter. The data recorded in this test were input and output speed, input and output torque, line pressure, sump temperature, outlet temperature, case hotspot temperature and ambient temperature.

This procedure was performed on the transmission in first, second and third gear range. The transmission was held in each gear through the entire torque and speed range per the explanation given in the Test Apparatus section of this report.

The next portion of the Drive Performance test to be conducted was the Cross Sectional Road Load Performance test. This test was conducted in third gear and involved holding the transmission output shaft at a constant torque while varying the input speed. The output torques selected were 25, 47, 79, 110, 145, 177, 208, and 243 lb-ft. The speed range was from 750 to 3800 rpm on this input shaft. The starting speed was dependent on when the torque could be attained. The throttle valve was modulated throughout this test to match the appropriate engine torque. The data recorded in this test was input and output torques, input and output speeds, line pressure, sump temperatures, outlet temperatures, case hotspot temperature and ambient temperatures.

The No Load Losses portion of the test was performed next. This test was run with the output shaft turning freely. The input torque and speed were recorded for an entire speed range which ran from 700 rpm to 3700 rpm. This test was performed in each gear range by disconnecting the output shaft and allowing it to turn freely.

The parameters recorded in this test were input torque and speed, line pressure, sump temperature, outlet temperature, case hotspot temperature, and ambient temperature.

The final test performed was the Coast Performance test. For this test the transmission was oriented in the reverse direction so that the dynamometer drove through the output shaft of the transmission and the power was taken up in the absorber. The test was conducted by setting the converter impeller torque at a constant level and varying its speed in the range set by the previous tests. In order to run this test, it was necessary to spin the torque converter shaft at approximately 400 rpm so that the charge pump would generate the line pressure necessary to operate the transmission. The torque and speed ranges of this test were different from the previous tests due to torque converter characteristics. The speed was limited by two conditions. These conditions were the lowest speed necessary to maintain line pressure and the lowest speed at which the required torque could be attained. The amount of torque which could be applied to the system was limited by the current limits of the dynamometer controller. The first gear Coast Performance test reached the current limit at the 50 lb-ft run. This was due to the slow output speed in first gear which was beyond the dynamometer torque-speed characteristics. The data recorded during this portion of the test were input and output torque, input and output speed, line pressure, sump temperature, outlet temperature, case hotspot temperature, and ambient temperature. The throttle valve was set to the idle position during the entire test.

The transmission was filled with Dexron II automatic transmission fluid through the entire test schedule. The physical and chemical properties of the transmission fluid were monitored throughout the test. The fluid did not appreciably change colors or properties throughout the tests. However, it should be noted that when operating in the coast performance mode this pump is turning at a slower speed which means less flow for cooling purposes. This could become a factor in the amount of power which could be transmitted under coast performance.

Following is a table of engine torque vs. throttle cable position. The transmission throttle cable was modulated for each engine torque level throughout the tests.

ENGINE TORQUE (lb-ft)	THROTTLE CABLE POSITION (in.)
closed	0.00
10	0.125
20	0.25
30	0.38
40	0.50
50	0.62
60	0.75
70	0.88
80	1.0
open	

CALIBRATION

The test apparatus was calibrated before and after a major test was completed. The major components calibrated were the torque sensors and the speed readouts. The torque sensors were calibrated with their respective readouts and attaching cables so that a total system accuracy was obtained. The calibration was performed by placing a set of known weights at a known distance to produce the resultant torque. The weights were weighed on a Toledo Digital Scale Model No. 1070, which is calibrated to a set of weights traceable to the National Bureau of Standards. A second calibration method was used as a check against the dead weights. This involved a hydraulic calibration stand which compared a calibrated torque cell (traceable to the National Bureau of Standards) to the test torque transducers. The calibration sheets contained in this section show the calculated torque and the actual torque which appeared on the readout (measured torque). The torque sensors were calibrated to the limits of the range over which they were to operate.

The speed readout was an AIRPAX counter (Model No. 761400110) which was calibrated in an operating range from 0 to 4500 rpm. The counter was calibrated with a Hewlett Packard electric counter (Model No. 5245L) used in conjunction with a WWVB frequency comparator (True Time, Inc. Model No. 60-TR). The accuracy of the digital readout was ±1 count.

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CALIBRATION SHEET
HIMMELSTEIN TORQUE SENSOR #MCRT 6-02T (2-3)
CAL VALUE = 58.5 lb-ft
(Drive performance torque was positive. Direction of torque was clockwise.)

CALCULATED TORQUE (lb-ft)	MEASURED TORQUE (lb-ft)
0.0	0.0
16.6	16.5
33.3	33.0
50.0	50.0
66.6	66.5
83.3	83.5
100.0	100.0
116.6	116.5
133.3	133.5
150.0	150.0
166.6	166.5
150.0	150.0
133.0	133.5
116.6	116.5
100.0	100.0
83.3	83.5
66.5	66.5
50.0	50.0
33.3	33.0
16.6	16.5
0.0	0.0

4/23/81
DEN3-124

CALIBRATION SHEET
LEBOW TORQUE SENSOR #1648-5K
CAL VALUE = 271
(Coast performance torque was negative. Direction of torque is labeled above each column.)

CALCULATED TORQUE (lb-ft)	MEASURED TORQUE (lb-ft) Clockwise	Counter Clockwise
0.0	0.0	0.0
41.6	42.0	41.5
83.3	84.0	83.5
125.0	125.5	125.0
166.6	167.0	166.5
208.3	209.0	208.0
250.0	251.0	250.0
291.6	293.0	291.5
333.3	335.0	333.5
375.0	377.0	375.0
416.6	419.0	416.6
375.0	377.5	374.5
333.0	335.0	333.0
291.6	293.0	291.0
250.0	251.5	249.5
208.3	210.0	207.5
166.6	168.0	166.0
125.0	126.5	124.5
83.3	84.0	83.0
41.6	42.0	41.0
0.0	0.0	0.0

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CALIBRATION SHEET
LEBOW TORQUE SENSOR #1248-20K
CAL VALUE = 271
(Coast performance torque was negative. Direction of torque was counterclockwise.)

CALCULATED TORQUE (lb-ft)	MEASURED TORQUE (lb-ft) Clockwise	Counter Clockwise
0.0	0.0	0.0
166.6	163.7	164.1
333.3	334.0	332.6
500.0	498.0	498.5
666.6	663.8	667.0
833.3	829.3	836.3
1000.0	999.6	1000.4
1166.6	1163.7	1164.9
1333.3	1329.7	1335.0
1500.0	1497.7	1505.2
1666.6	1666.0	1668.9
1500.0	1498.5	1506.9
1333.3	1329.2	1351.0
1166.6	1165.7	1165.1
1000.0	996.4	1002.9
833.3	830.7	835.0
666.6	662.0	665.9
500.0	498.9	504.9
333.3	332.6	333.0
166.6	167.0	163.1
0.0	0.0	1.9

SYSTEM ACCURACY

The instruments used in the test setup have been calibrated to insure the accuracy of the test data. The individual components utilized in the tests have manufacturers' specifications which guarantee the accuracy of the instrumentation. These accuracies are listed and combined in the Appendix section to determine the total system accuracy. The three major factors involved in the system accuracy are the torque signals, speed signals, and data reduction equipment. Worst case system accuracies for the torque sensors, cabling and readout were determined from the calibration charts and are shown below.

TAPE RECORDER: Sangamo Model #3500
ACCURACY: ±0.05% of Full Scale

TORQUE SENSOR: Lebow (1648-5K) + Daytronic (878A)
ACCURACY: ((Calculated Torque-Measured)/Full Scale Torque) x (100) =
((210.0 - 208.3)/416.66) x (100) = ±0.408% of Full Scale

TORQUE SENSOR: Himmelstein (MCRT 6-62T(2-3)) + Daytronic (878)
ACCURACY: ((Calculated Torque-Measured)/Full Scale Torque) x (100) =
((33.3 - 33.0)/(166.66)) x (100) = ±0.18% of Full Scale

SPEED SENSOR: Speed Pickup + Airpax Counter
ACCURACY: Calibration was ±1 Count (1/4000) x (100) = ±0.025% of Full Scale

SPEED CONDITIONER (Frequency to Voltage Converter-Daytronic 840)
ACCURACY: 0.05% of Average DC Voltage = ±0.10% of Full Scale

HEWLETT PACKARD ANALYZER (HP 5451B Fourier Analyzer)
ACCURACY: 12 Bits = 2^{11} = 2048 Bits = 1 Volt
(1/2048) x (100) = ±0.048% of Full Scale

COMPUTER INTER NUMBER CALCULATION (Method of Program Calculation)
= 0.5% of Full Scale

The inter number calculation error resulted from the method that the computer used to average the acquired data. This method is explained in the Appendix.

From the instrument accuracy determined above, a system accuracy may be determined. There are two generally accepted methods for calculating a system error. These methods are the root mean square and the sum of the errors. Both methods are tabulated in the Appendix and charted below for torque, speed, power and efficiency readings.

	ROOT MEAN SQUARE METHOD % OF FULL SCALE	SUM OF ERRORS METHOD % OF FULL SCALE	FULL SCALE
Torque Error (Lebow)	0.416%	0.508%	416 lb-ft
Torque Error (Himm.)	0.193%	0.278%	166 lb-ft
Speed Error	0.124%	0.223%	4000 RPM
Power Out Error	0.662%	1.132%	137 HP
Efficiency Error	0.701%	1.732%	100%

DATA REDUCTION

The signals obtained from the torque and speed transducers of the test stand were placed directly into a Sangamo Tape Recorder Model No. 3500. The information on the tape was then fed into a computer which was used to compile the data. While in the computer, the data were reviewed to ensure their accuracy, and then a hard copy was printed out on a line printer.

The following procedure was used to record the input and output torque. The torque signals were placed in the tape recorder as voltage. A calibration value was determined in engineering units (lb-ft) for each torque sensor. The torques were recorded on channels one and two in the following manner:

CHANNEL 1: PRECALIBRATION ZERO CALIBRATION VOLTAGE PRERUN ZERO DATA

CHANNEL 2: PRECALIBRATION ZERO CALIBRATION VOLTAGE PRERUN ZERO DATA

This information was then fed into the computer which integrated and compiled a 2.5-second sample of data to obtain an average value in engineering units.

The frequency signals from the speed pickups were placed directly into the tape recorder. The data on the tape were then fed into a frequency-to-voltage unit which turned the frequency into a DC voltage which in turn was fed into the computer. The method for recording speeds in shown below.

CHANNEL 3: ZERO FREQUENCY CALIBRATION FREQUENCY PRERUN ZERO FREQUENCY DATA

CHANNEL 4: ZERO FREQUENCY CALIBRATION FREQUENCY PRERUN ZERO FREQUENCY DATA

The data on these channels were then fed into the computer which integrated and compiled a 2.5-second sample of data to obtain an averge speed value in engineering units.

The computer was programmed to take the values of torques and speeds and calculate efficiency and power from them. From the data it has generated, the computer would print out the required graphs and data per the contract specification. The main advantage of taking data in this manner was that the computer would calculate an integrated average which would minimize the error in a fluctuating signal. Any fluctuation due to system resonance or gear teeth meshing would be integrated and averaged.

TEST RESULTS

The data contained in this segment of the report have been divided into three major sections. These sections are Drive Performance, Coast Performance, and No Load Losses. There are five data sheets for each test condition in the Drive Performance and Coast Performance tests. The organization of this data is described and listed in the Table of Contents. Cover sheets for Drive Performance, Coast Performance and No Load Losses have been placed at the beginning of each section to describe the enclosed sheets.

DRIVE PERFORMANCE

1st Gear

Graphs Contained in This Section

Torque Ratio -vs- Output Speed

Output Torque -vs- Output Speed

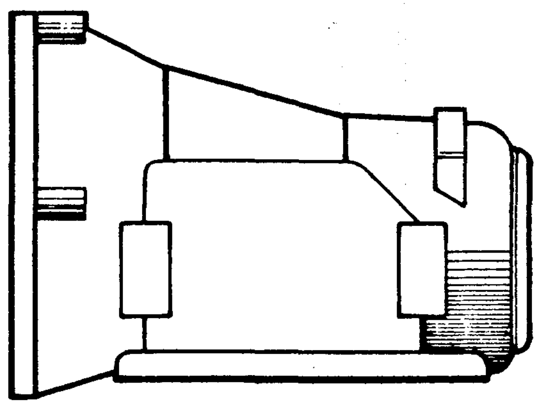
Input Speed -vs- Output Speed

Efficiency -vs- Output Speed

Efficiency -vs- Power Out

Torque In

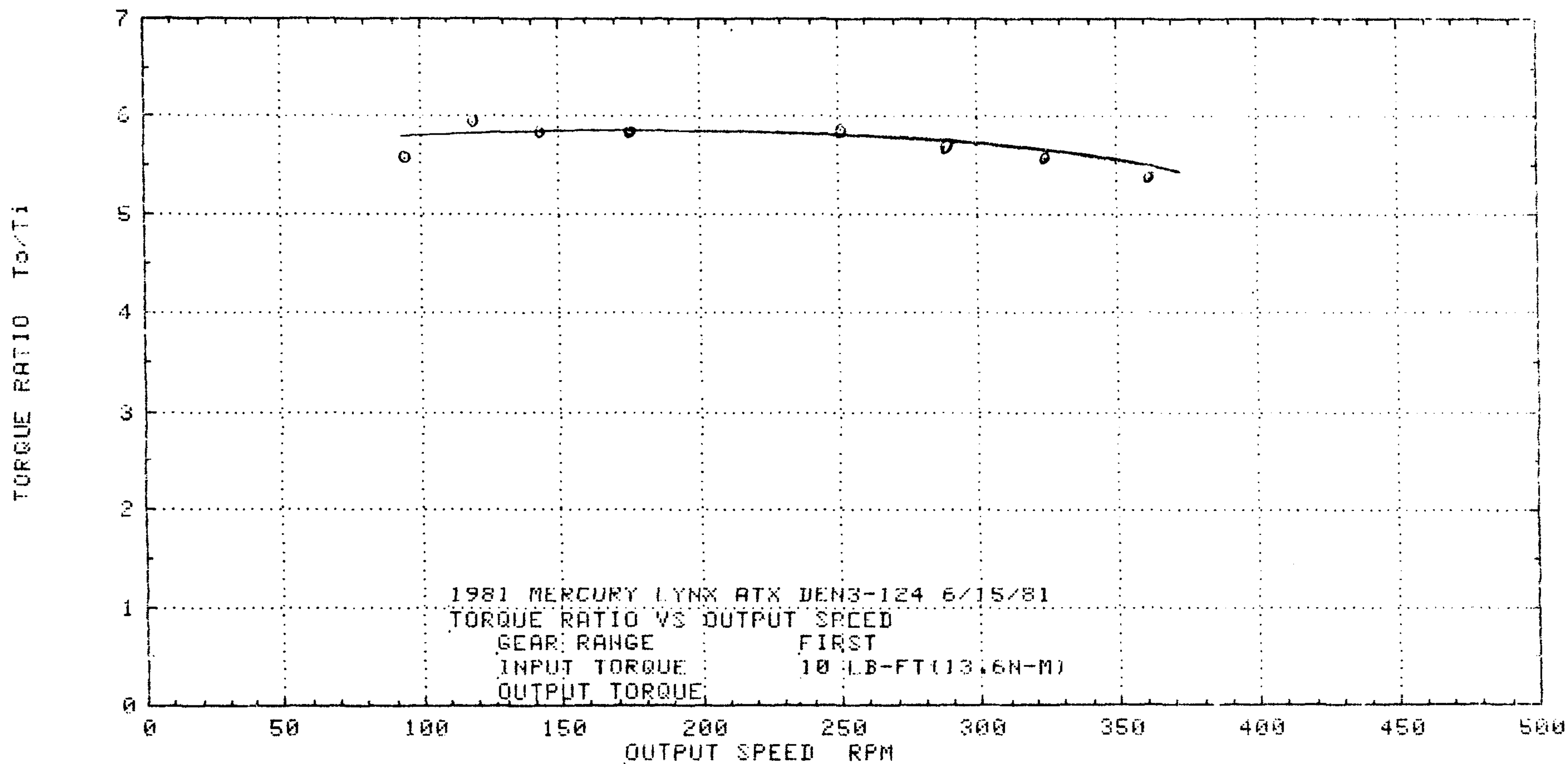
Speed In



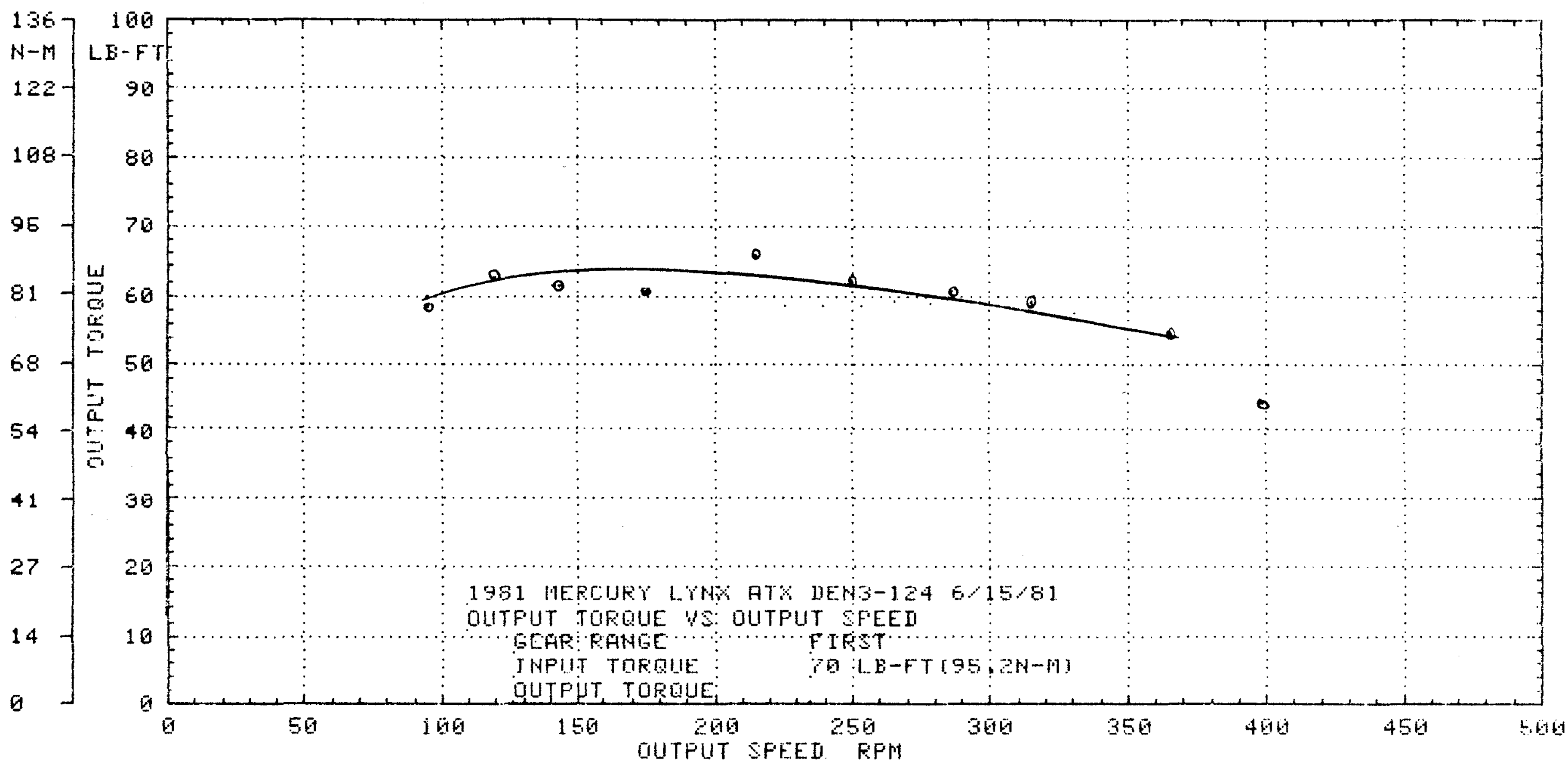
Torque Out

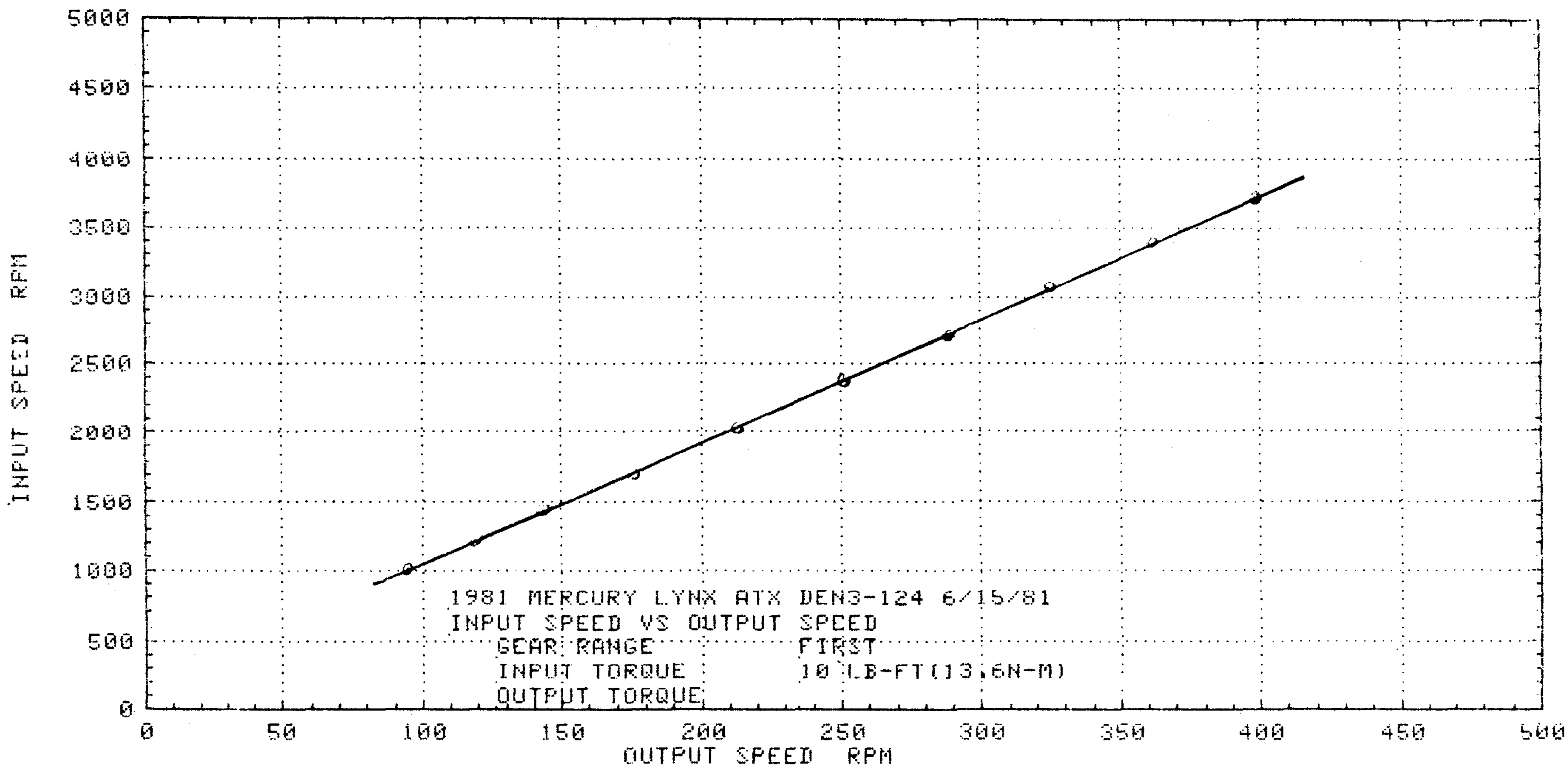
Speed Out

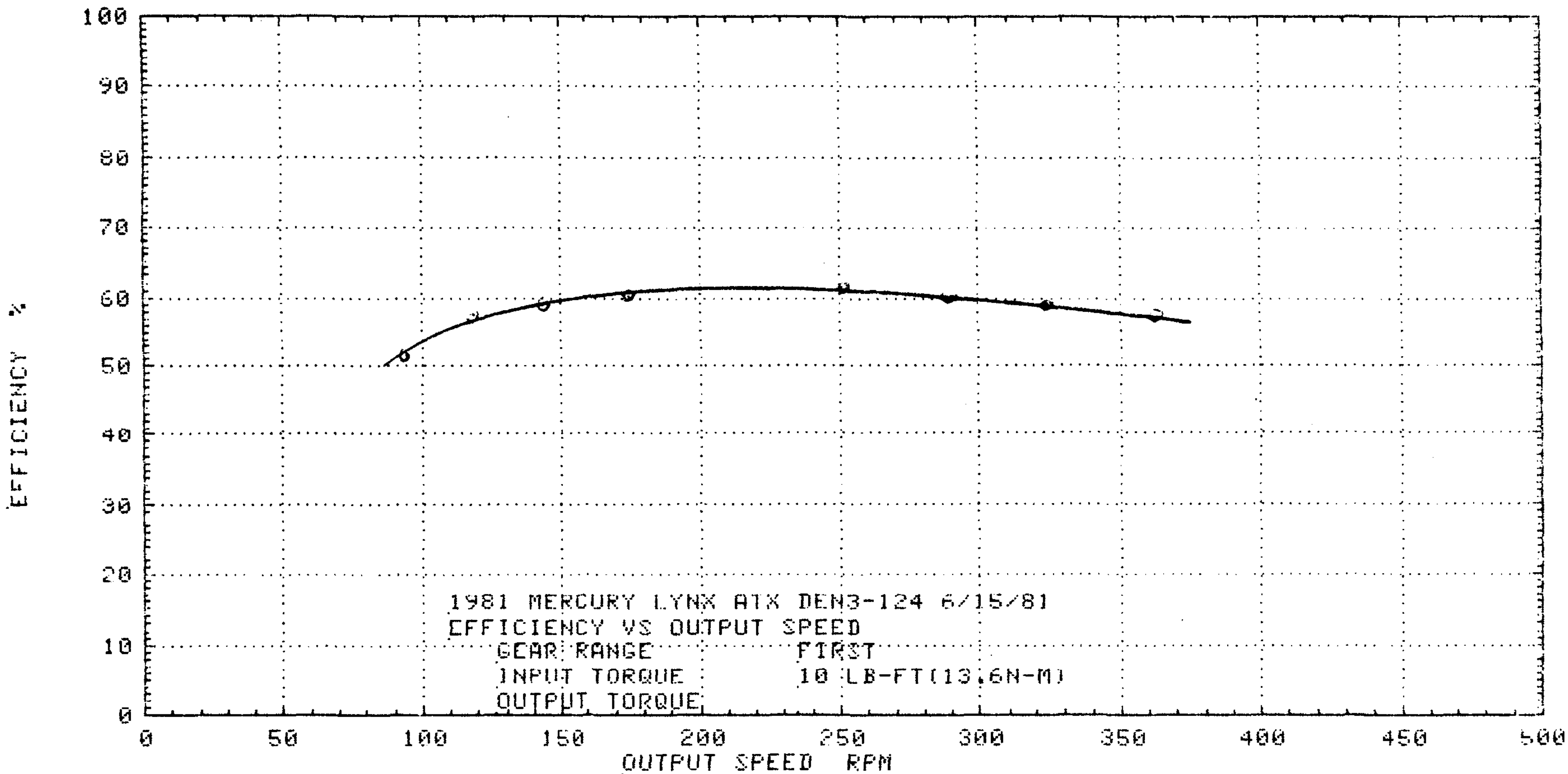
Drive Performance Tests

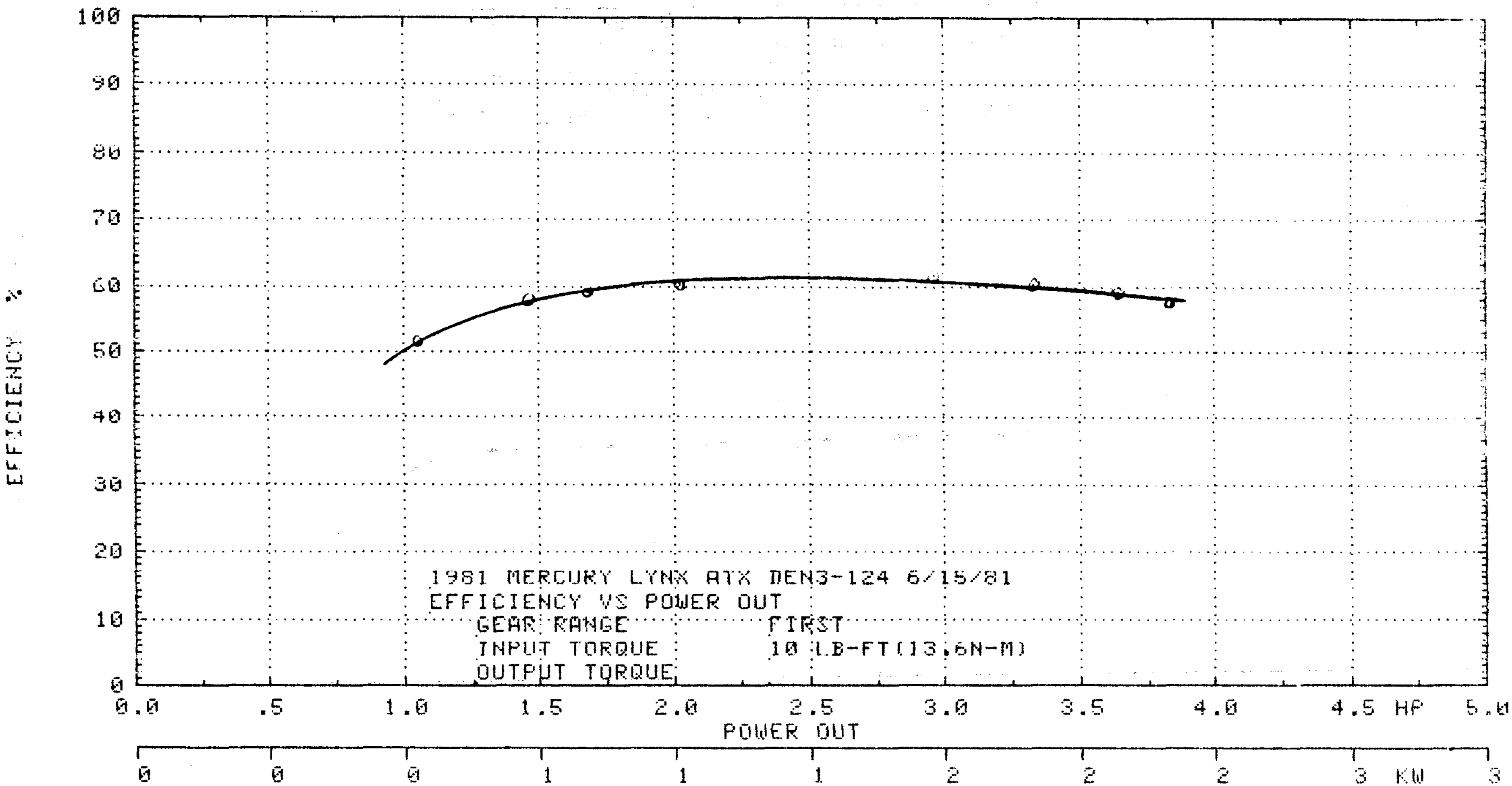


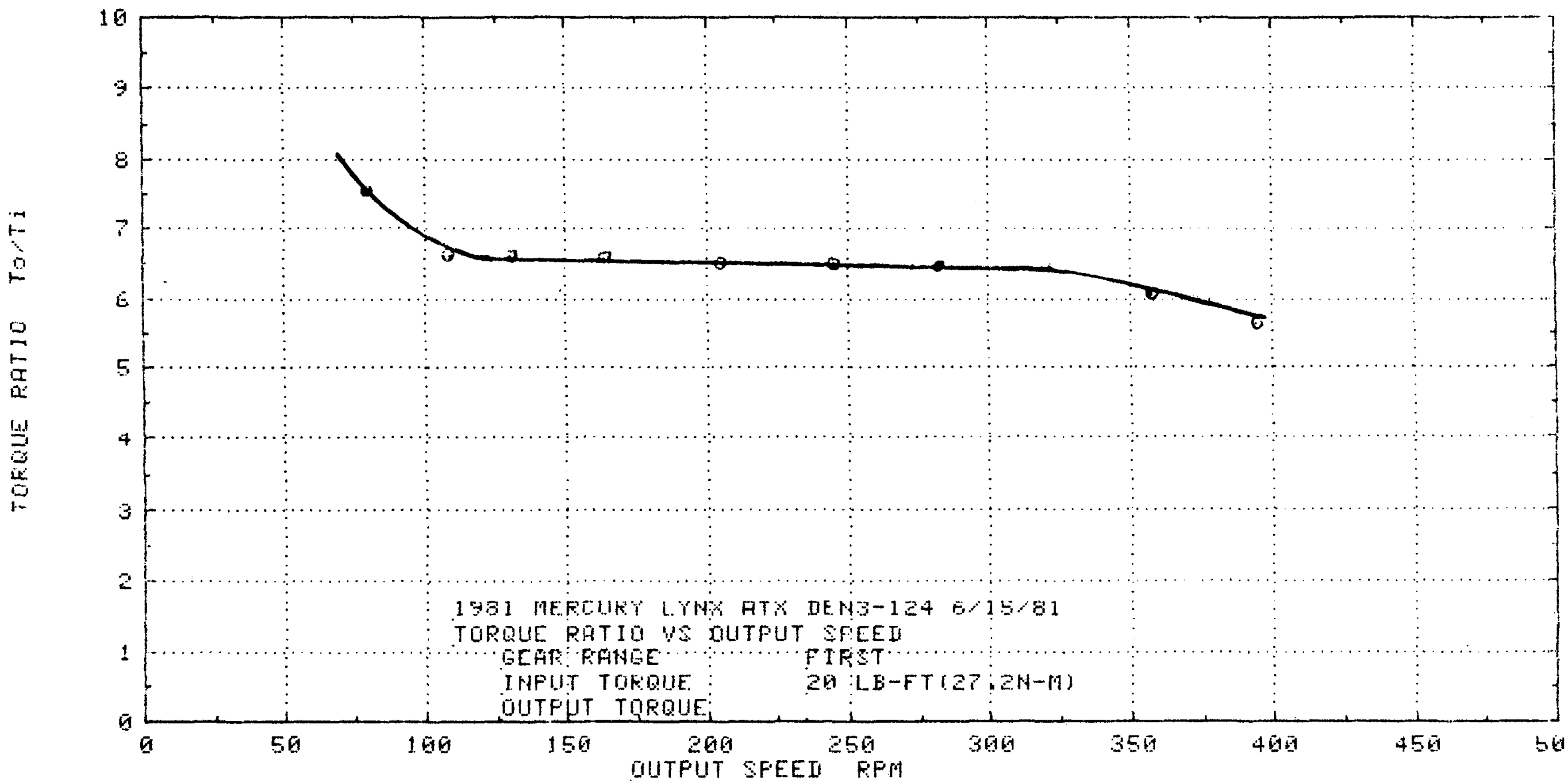
TORQUE RATIO To/Ti
OUTPUT SPEED RPM
1981 MERCURY LYNX ATX DEN3-124 6/15/81
TORQUE RATIO VS OUTPUT SPEED
GEAR RANGE FIRST
INPUT TORQUE 10 LB-FT(13.6N-M)
OUTPUT TORQUE
0
1
2
3
4
5
6
7
0
50
100
150
200
250
300
350
400
450
500

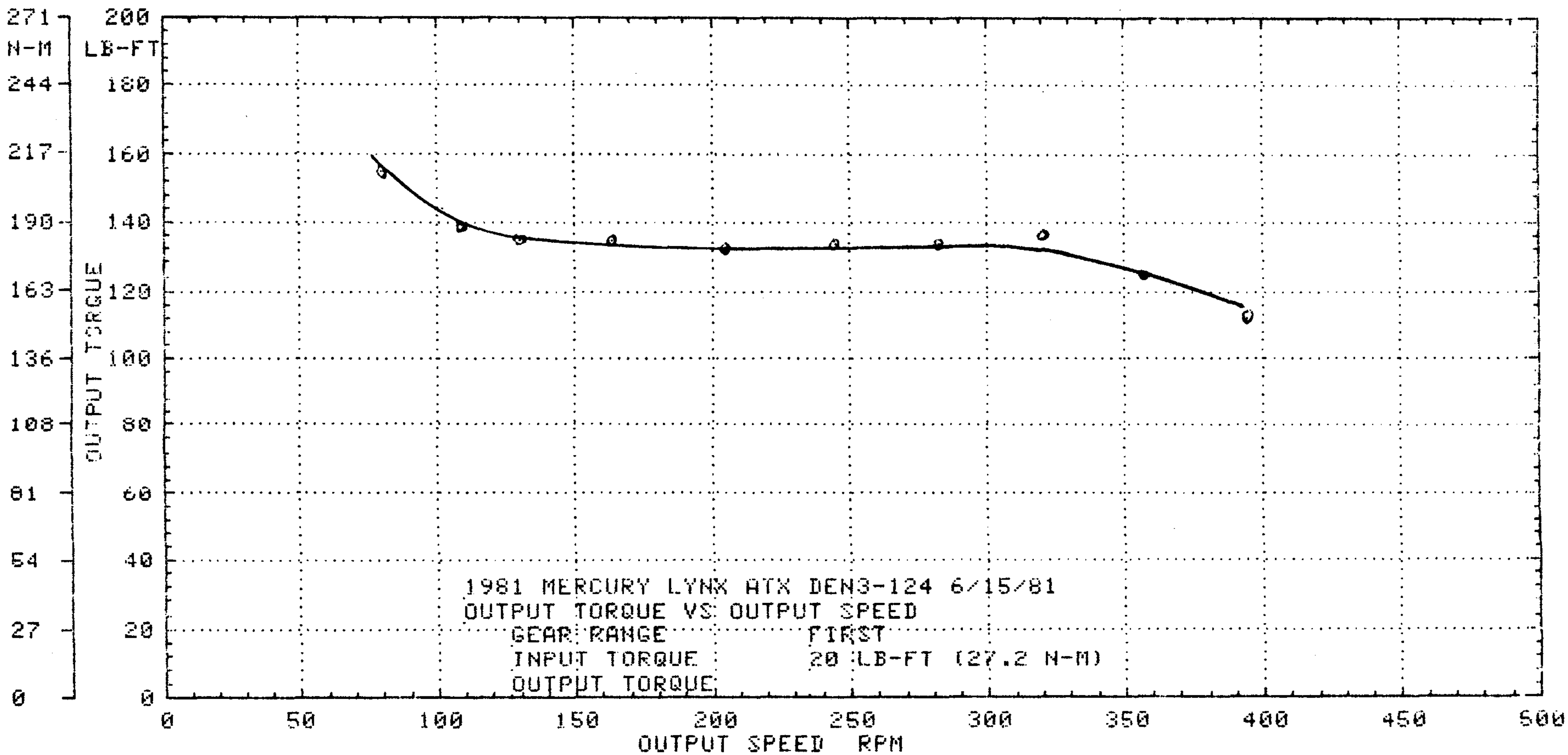

136 N-M
100 LB-FT
OUTPUT TORQUE
122 90
108 80
95 70
81 60
68 50
54 40
41 30
27 20
14 10
0 0
0 50 100 150 200 250 300 350 400 450 500
OUTPUT SPEED RPM
1981 MERCURY LYNX ATX DEN3-124 6/15/81
OUTPUT TORQUE VS OUTPUT SPEED
GEAR RANGE FIRST
INPUT TORQUE 70 LB-FT(95.2N-M)
OUTPUT TORQUE


1981 MERCURY LYNX ATX DEN3-124 6/15/81
INPUT SPEED VS OUTPUT SPEED
GEAR RANGE FIRST
INPUT TORQUE 10 LB-FT(13.6N-M)
OUTPUT TORQUE
INPUT SPEED RPM
OUTPUT SPEED RPM
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
0
50
100
150
200
250
300
350
400
450
500

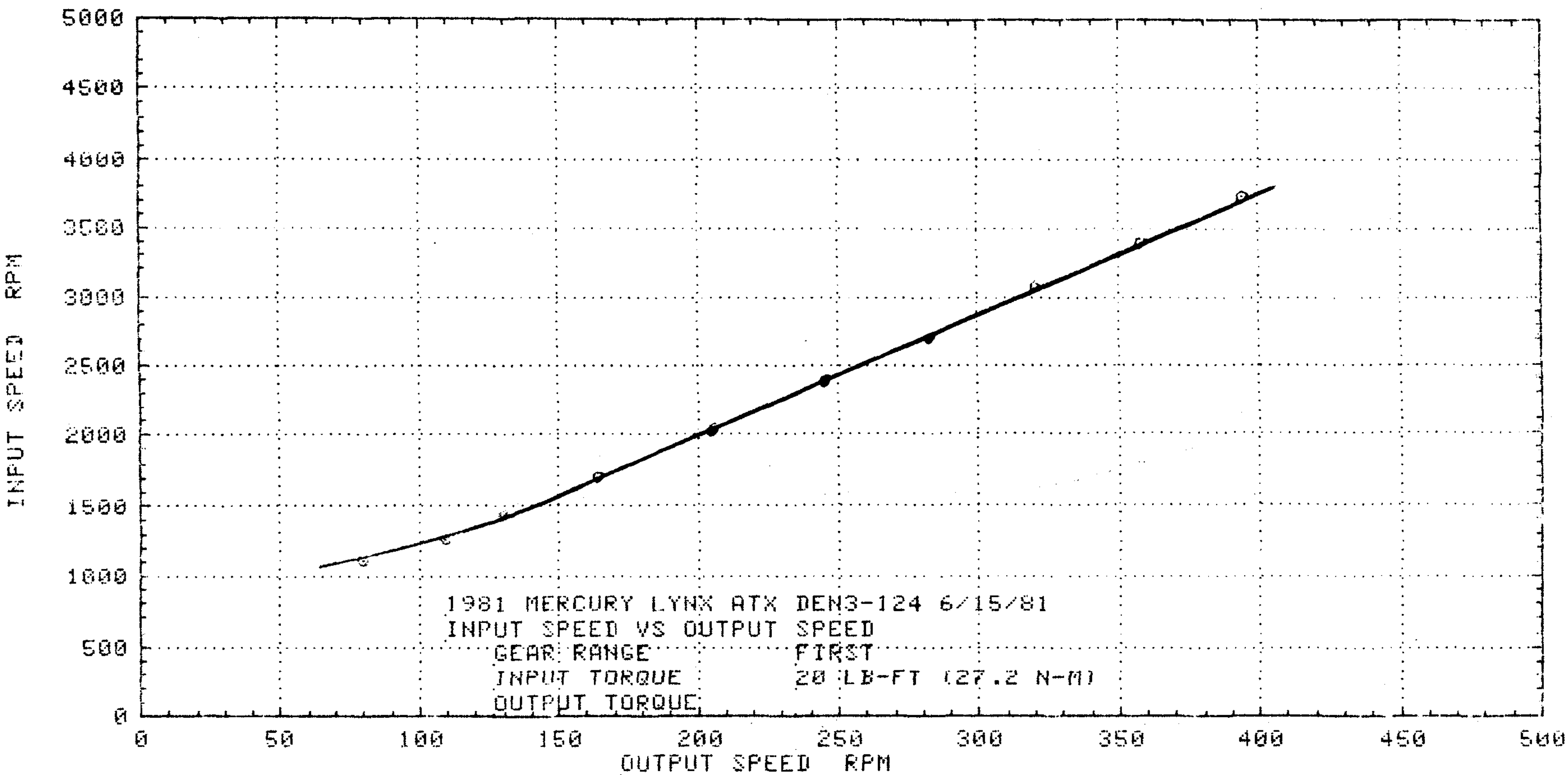

1981 MERCURY LYNX ATX DEN3-124 6/15/81
EFFICIENCY VS OUTPUT SPEED
GEAR RANGE FIRST
INPUT TORQUE 10 LB-FT(13.6N-M)
OUTPUT TORQUE
EFFICIENCY %
OUTPUT SPEED RPM
0
10
20
30
40
50
60
70
80
90
100
0
50
100
150
200
250
300
350
400
450
500

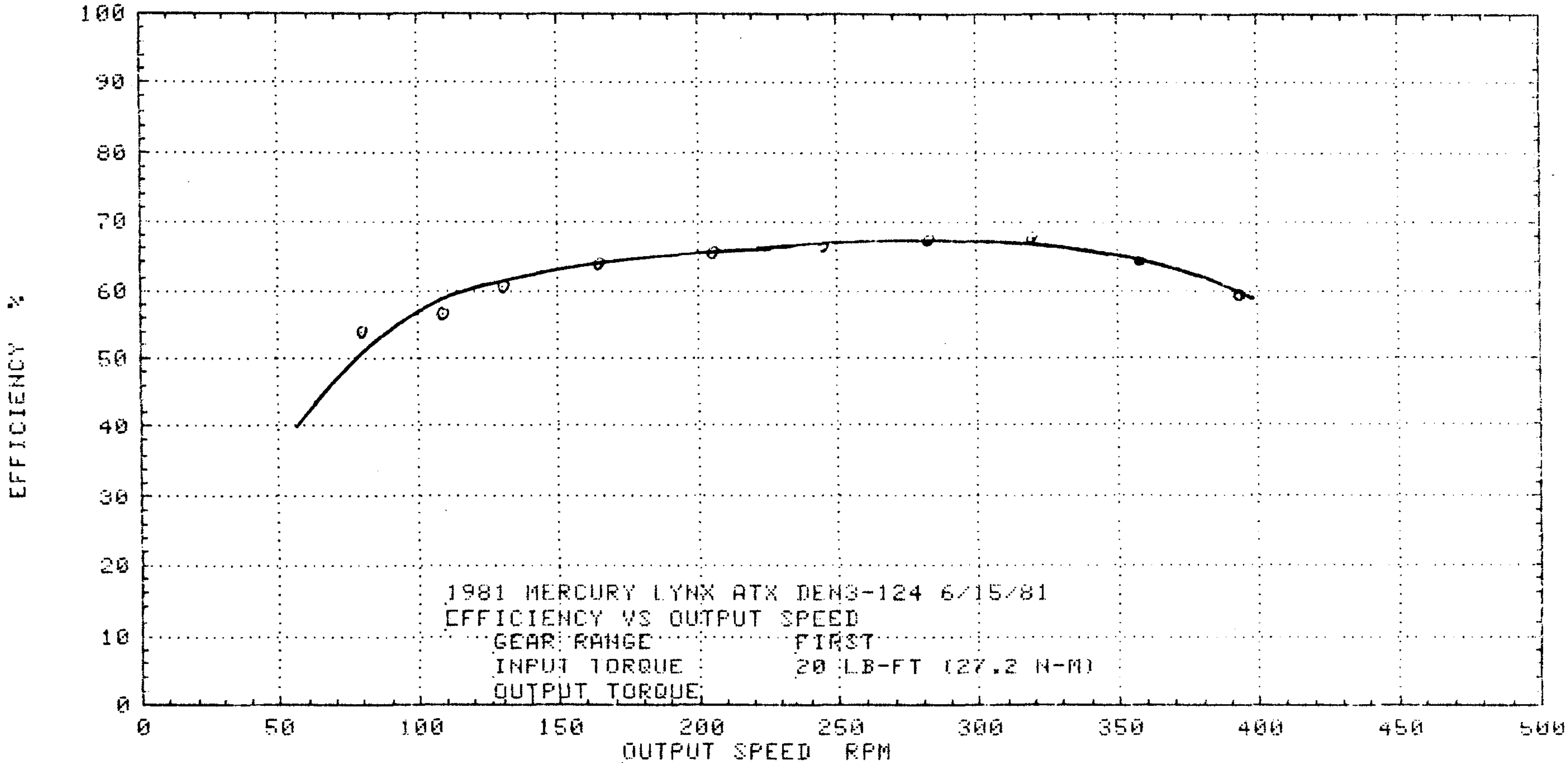

1981 MERCURY LYNX ATX DEN3-124 6/15/81
EFFICIENCY VS POWER OUT
GEAR RANGE FIRST
INPUT TORQUE 10 LB-FT(13.6N-M)
OUTPUT TORQUE
EFFICIENCY %
100
90
80
70
60
50
40
30
20
10
0
0.0
.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
4.5 HP
5.0
POWER OUT
0
0
0
1
1
1
2
2
2
3 KW
3


TORQUE RATIO To/Ti
OUTPUT SPEED RPM
1981 MERCURY LYNX ATX DEN3-124 6/15/81
TORQUE RATIO VS OUTPUT SPEED
GEAR RANGE FIRST
INPUT TORQUE 20 LB-FT(27.2N-M)
OUTPUT TORQUE
0 50 100 150 200 250 300 350 400 450 500
0 1 2 3 4 5 6 7 8 9 10

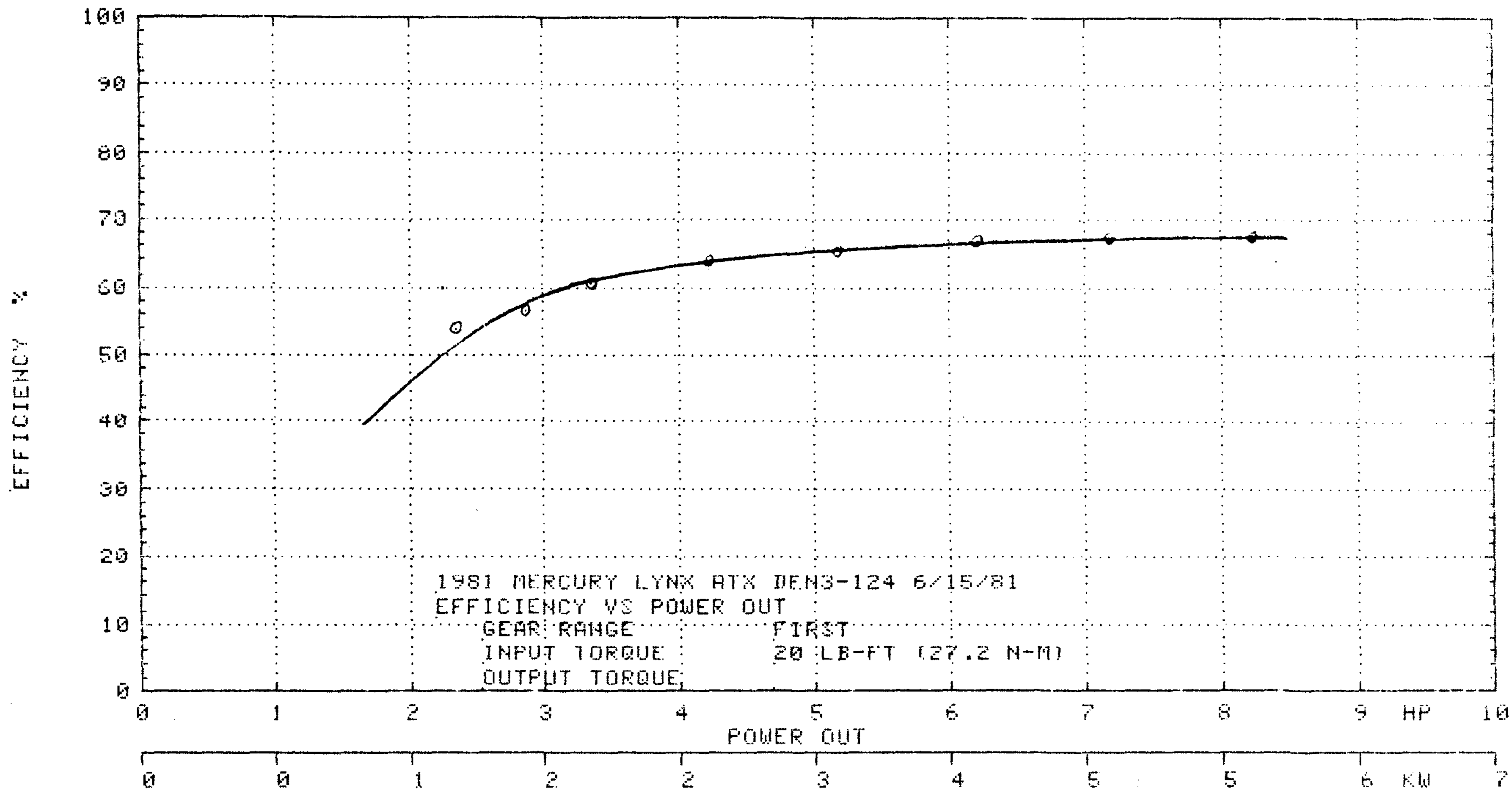


271
N-M
244
217
190
163
136
108
81
54
27
0
200
LB-FT
180
160
140
120
100
80
60
40
20
0
OUTPUT TORQUE
0
50
100
150
200
250
300
350
400
450
500
OUTPUT SPEED RPM
1981 MERCURY LYNX ATX DEN3-124 6/15/81
OUTPUT TORQUE VS OUTPUT SPEED
GEAR RANGE FIRST
INPUT TORQUE 20 LB-FT (27.2 N-M)
OUTPUT TORQUE

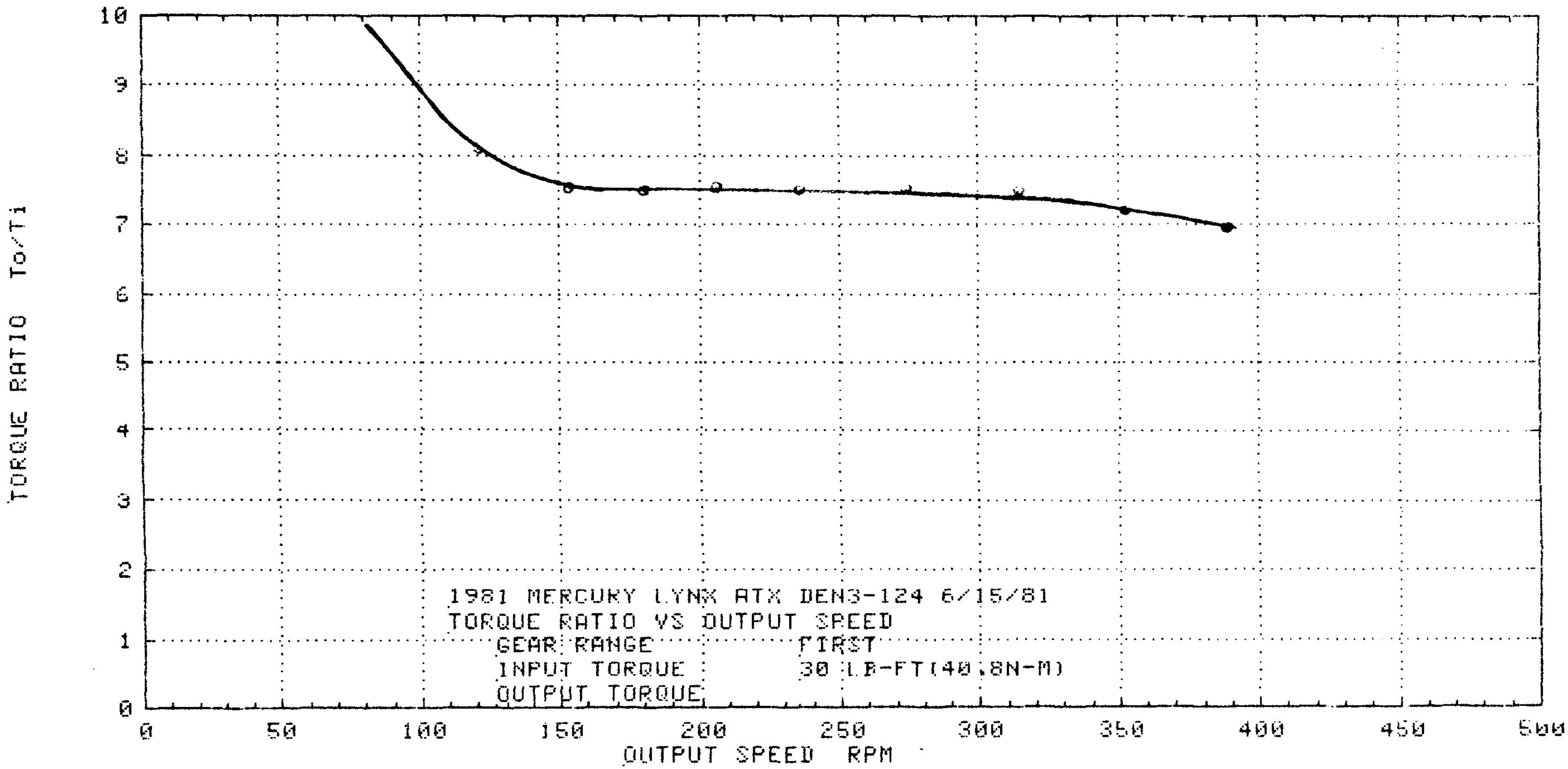

1981 MERCURY LYNX ATX DEN3-124 6/15/81
INPUT SPEED VS OUTPUT SPEED
GEAR RANGE FIRST
INPUT TORQUE 20 LB-FT (27.2 N-M)
OUTPUT TORQUE
INPUT SPEED RPM
OUTPUT SPEED RPM
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
0
50
100
150
200
250
300
350
400
450
500

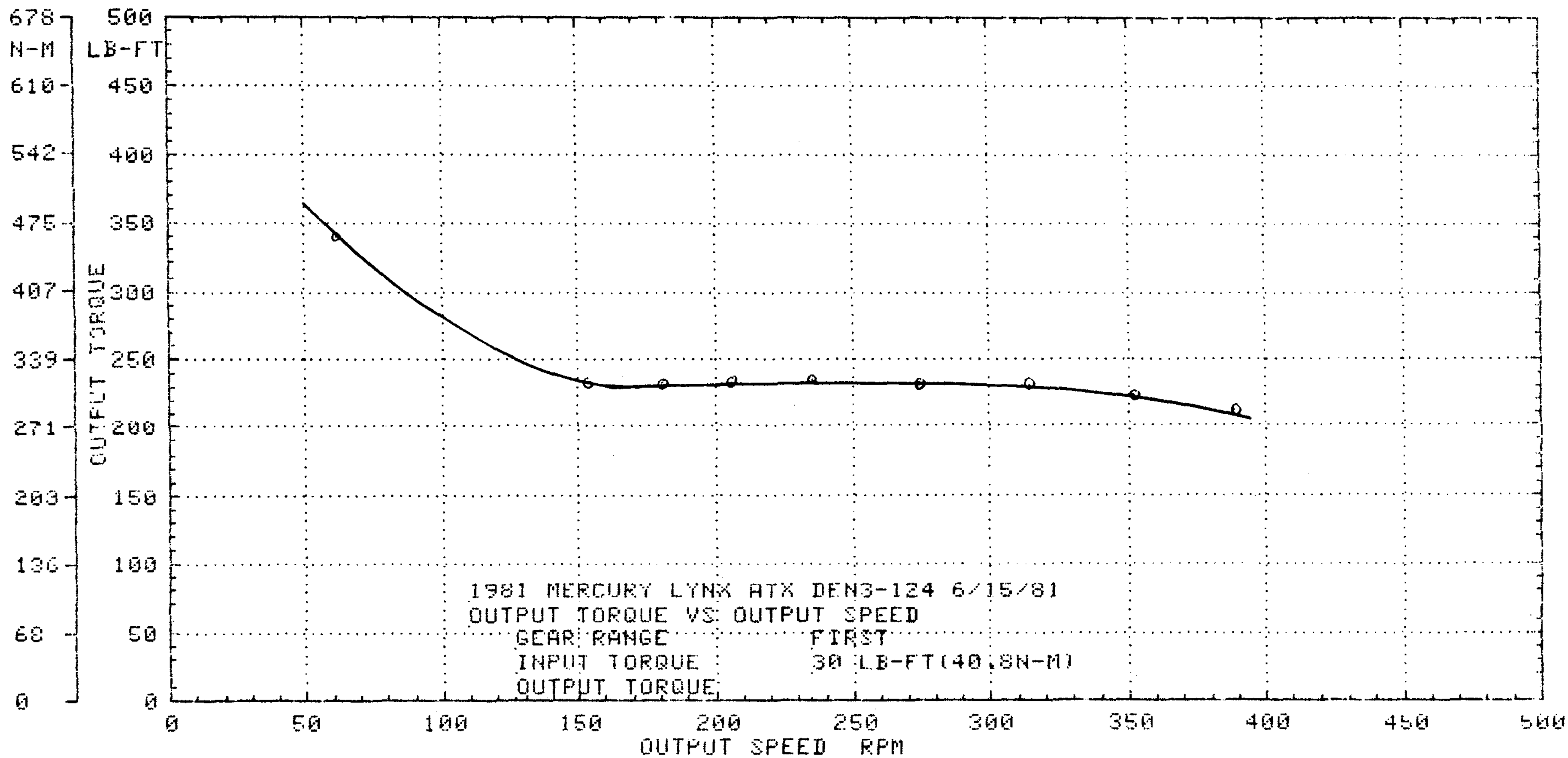


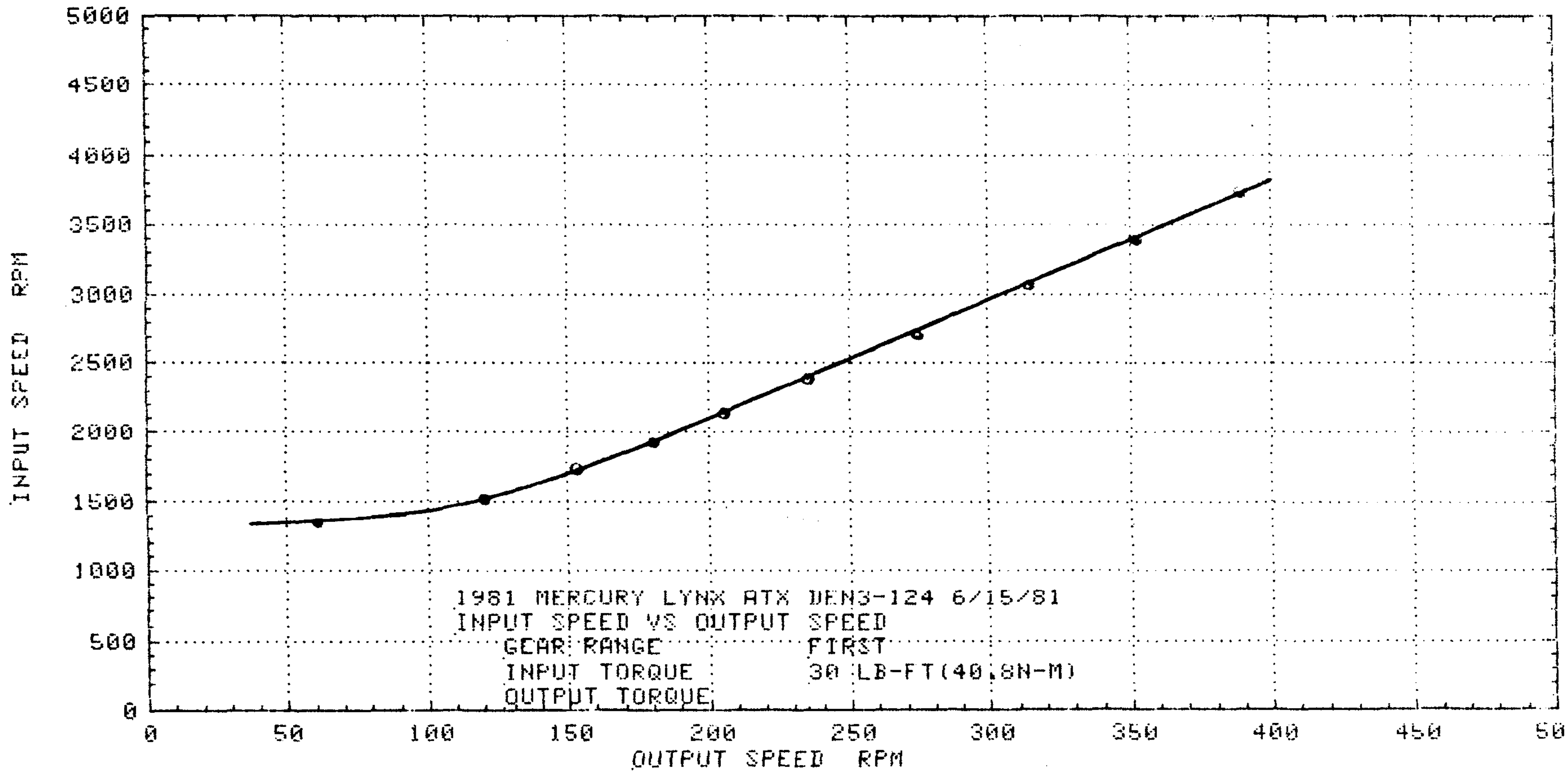
100
90
80
70
60
50
40
30
20
10
0
EFFICIENCY %
0
50
100
150
200
250
300
350
400
450
500
OUTPUT SPEED RPM
1981 MERCURY LYNX ATX DEN3-124 6/15/81
EFFICIENCY VS OUTPUT SPEED
GEAR RANGE FIRST
INPUT TORQUE 20 LB-FT (27.2 N-M)
OUTPUT TORQUE

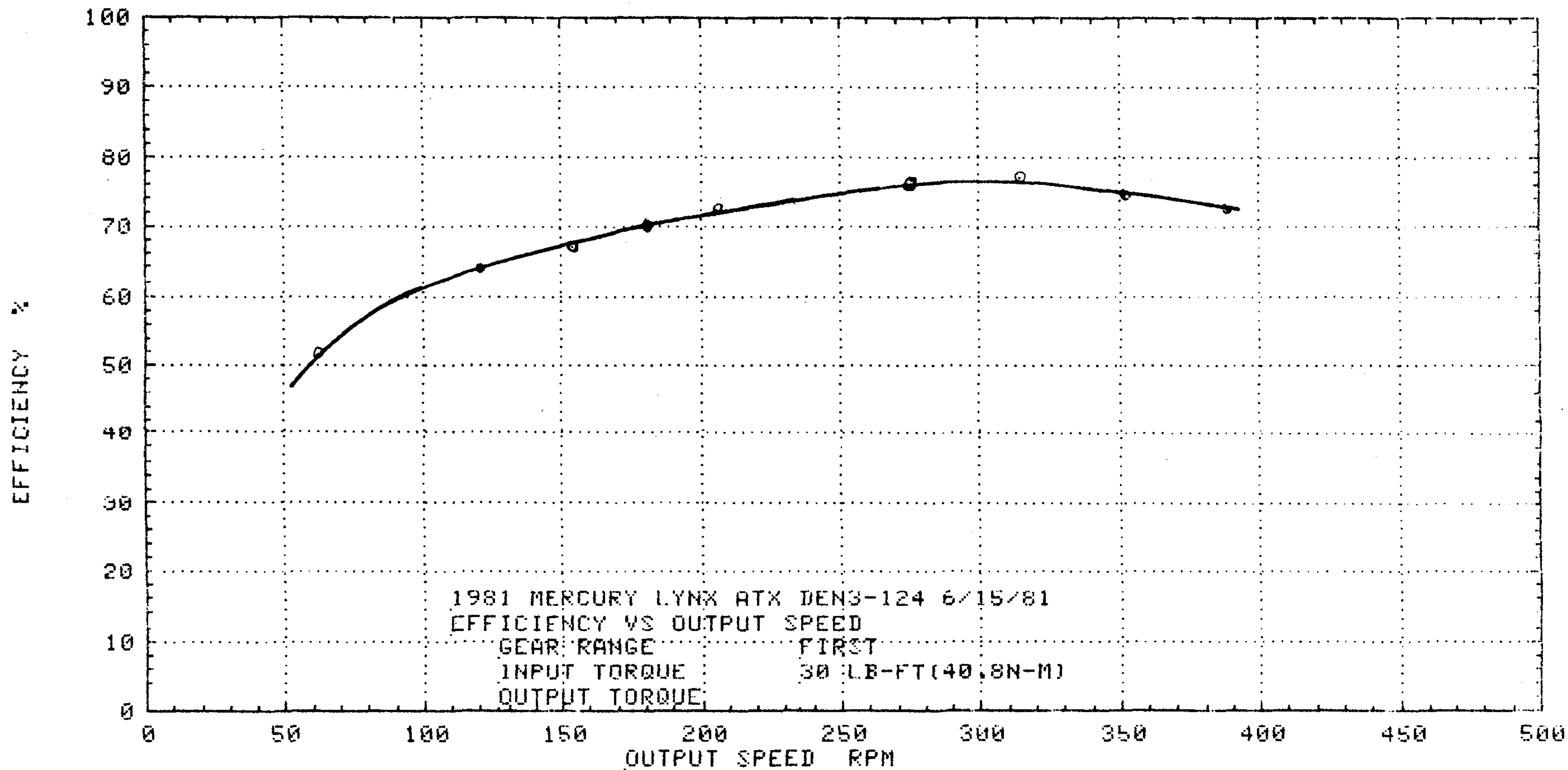


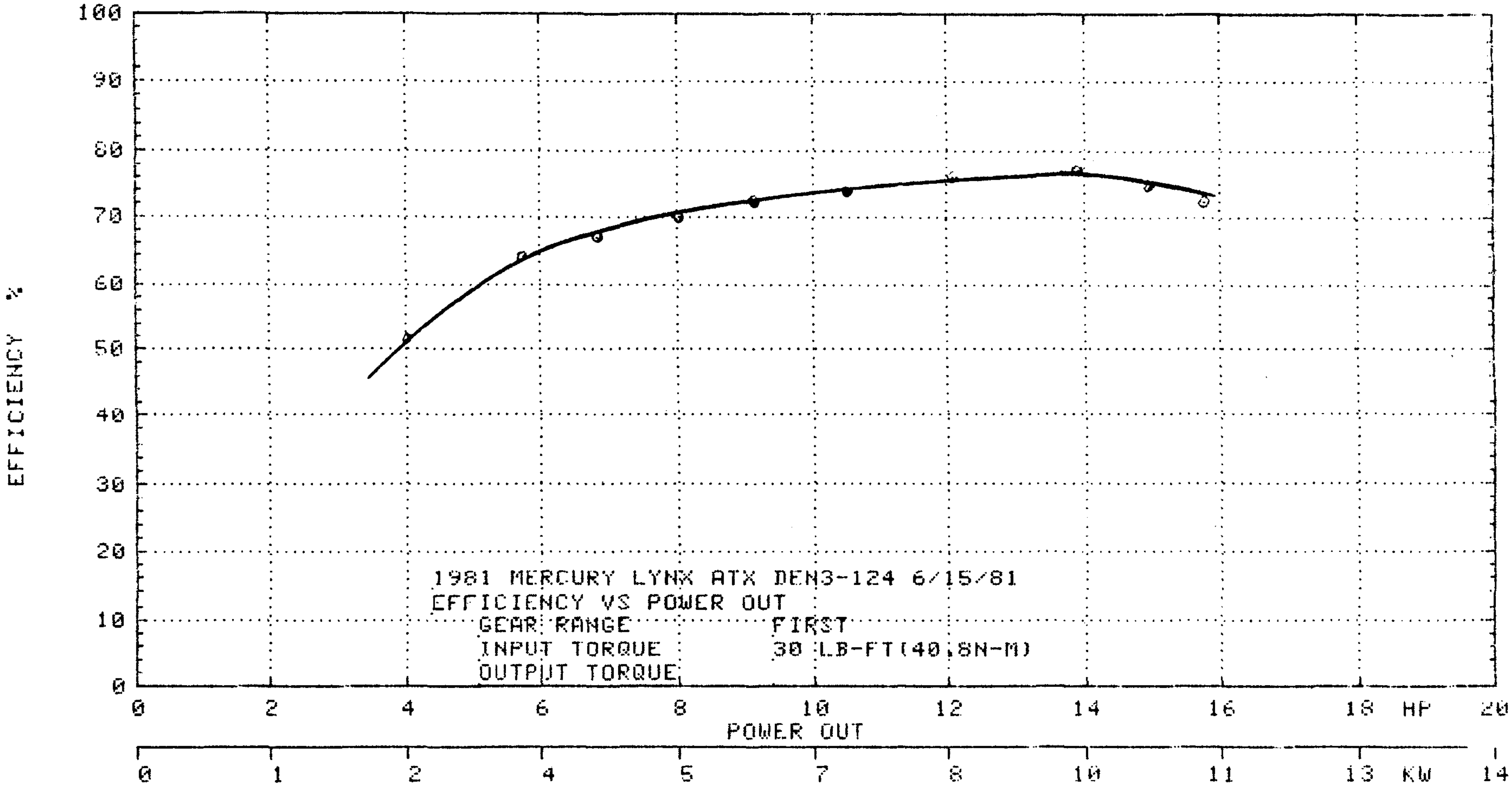
EFFICIENCY %
100
90
80
70
60
50
40
30
20
10
0
1981 MERCURY LYNX ATX DEN3-124 6/15/81
EFFICIENCY VS POWER OUT
GEAR RANGE FIRST
INPUT TORQUE 20 LB-FT (27.2 N-M)
OUTPUT TORQUE
0 1 2 3 4 5 6 7 8 9 HP 10
POWER OUT
0 0 1 2 2 3 4 5 5 6 KW 7

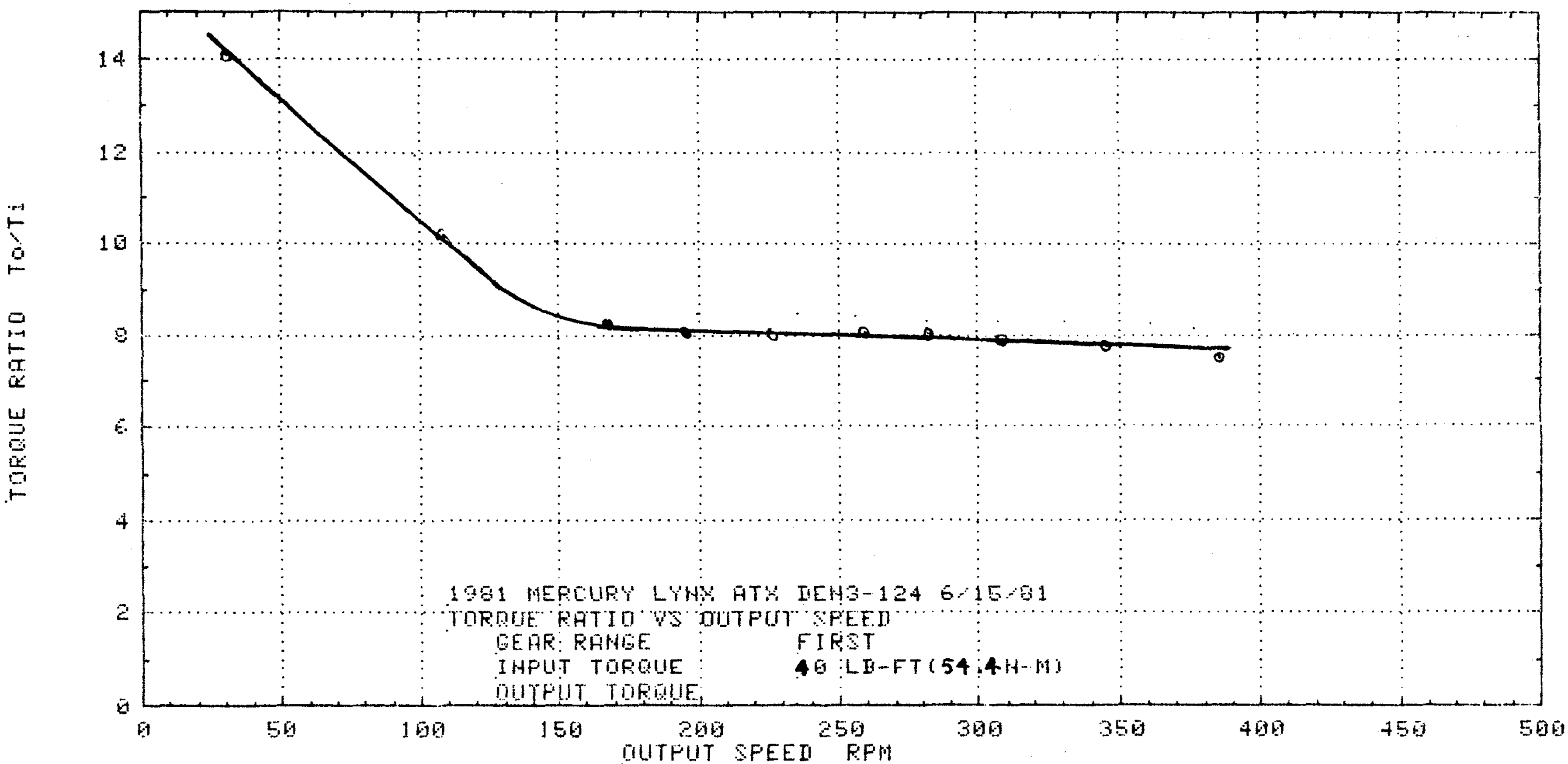

TORQUE RATIO To/Ti
0
1
2
3
4
5
6
7
8
9
10
1981 MERCURY LYNX ATX DEN3-124 6/15/81
TORQUE RATIO VS OUTPUT SPEED
GEAR RANGE FIRST
INPUT TORQUE 30 LB-FT(40.8N-M)
OUTPUT TORQUE
0
50
100
150
200
250
300
350
400
450
500
OUTPUT SPEED RPM


678
N-M
610
542
475
407
339
271
203
136
68
0
500
LB-FT
450
400
350
300
250
200
150
100
50
0
OUTPUT TORQUE
0
50
100
150
200
250
300
350
400
450
500
OUTPUT SPEED RPM
1981 MERCURY LYNX ATX DEN3-124 6/15/81
OUTPUT TORQUE VS OUTPUT SPEED
GEAR RANGE FIRST
INPUT TORQUE 30 LB-FT(40.8N-M)
OUTPUT TORQUE

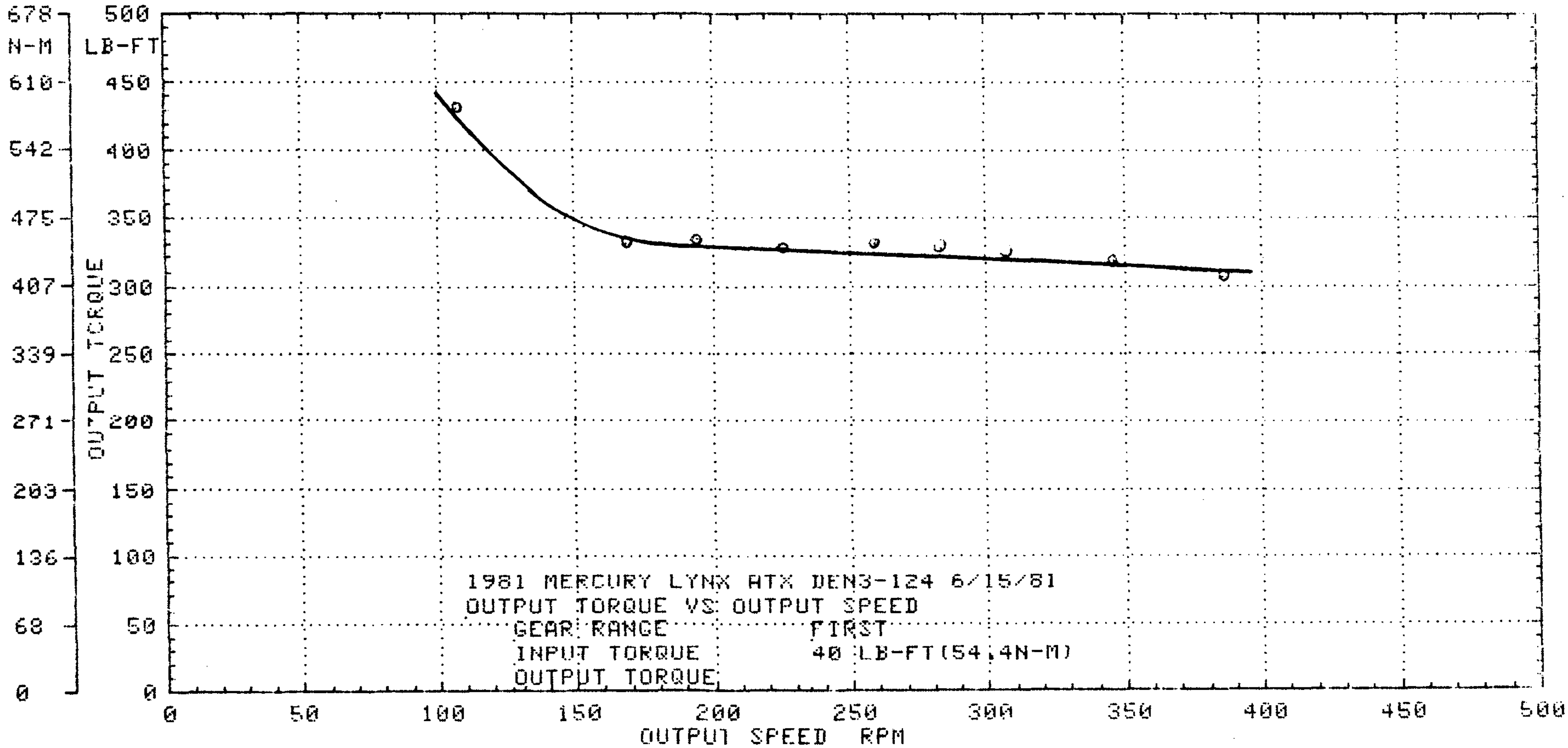

1981 MERCURY LYNX ATX DEN3-124 6/15/81
INPUT SPEED VS OUTPUT SPEED
GEAR RANGE FIRST
INPUT TORQUE 30 LB-FT(40.8N-M)
OUTPUT TORQUE
INPUT SPEED RPM
OUTPUT SPEED RPM
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
0
50
100
150
200
250
300
350
400
450
500

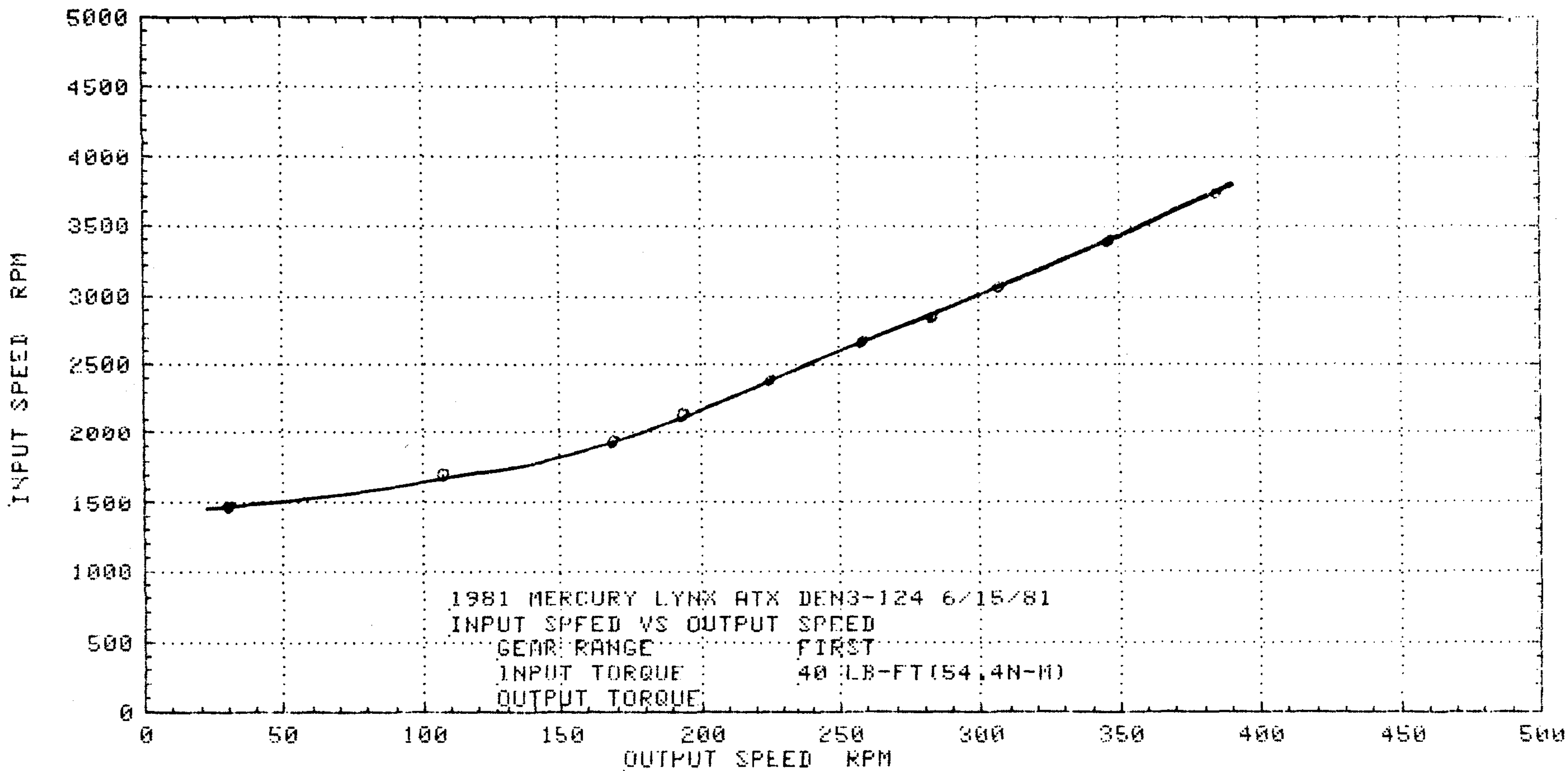

100
90
80
70
60
50
40
30
20
10
0
EFFICIENCY %
0
50
100
150
200
250
300
350
400
450
500
OUTPUT SPEED RPM
1981 MERCURY LYNX ATX DEN3-124 6/15/81
EFFICIENCY VS OUTPUT SPEED
GEAR RANGE FIRST
INPUT TORQUE 30 LB-FT(40.8N-M)
OUTPUT TORQUE

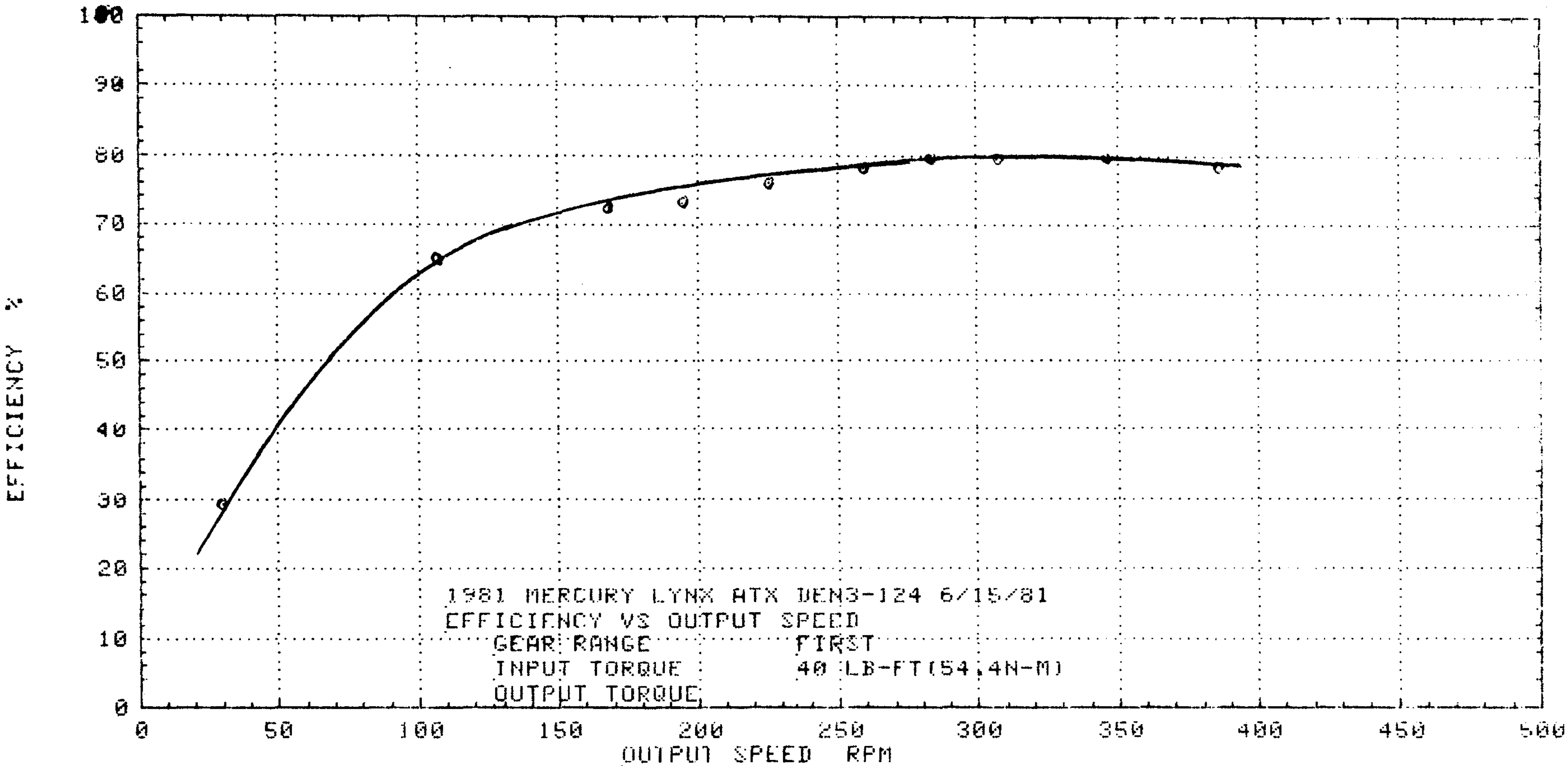

1981 MERCURY LYNX ATX DEN3-124 6/15/81
EFFICIENCY VS POWER OUT
GEAR RANGE FIRST
INPUT TORQUE 30 LB-FT(40.8N-M)
OUTPUT TORQUE
EFFICIENCY %
100
90
80
70
60
50
40
30
20
10
0
POWER OUT
0 2 4 6 8 10 12 14 16 18 HP 20
0 1 2 4 5 7 8 10 11 13 KW 14

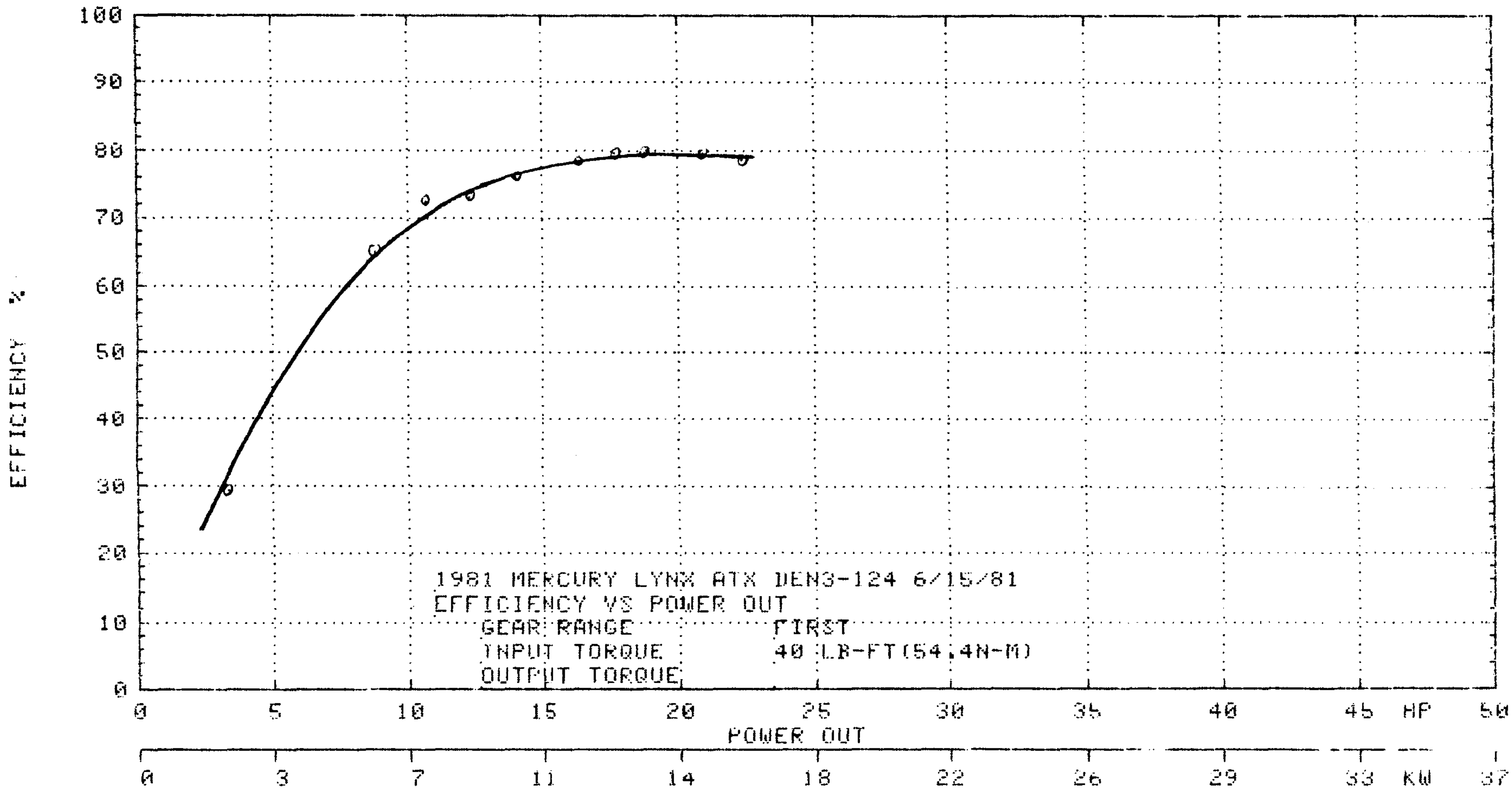


TORQUE RATIO To/Ti
14
12
10
8
6
4
2
0
0
50
100
150
200
250
300
350
400
450
500
OUTPUT SPEED RPM
1981 MERCURY LYNX ATX DEN3-124 6/15/81
TORQUE RATIO VS OUTPUT SPEED
GEAR RANGE FIRST
INPUT TORQUE 40 LB-FT(54.4N-M)
OUTPUT TORQUE

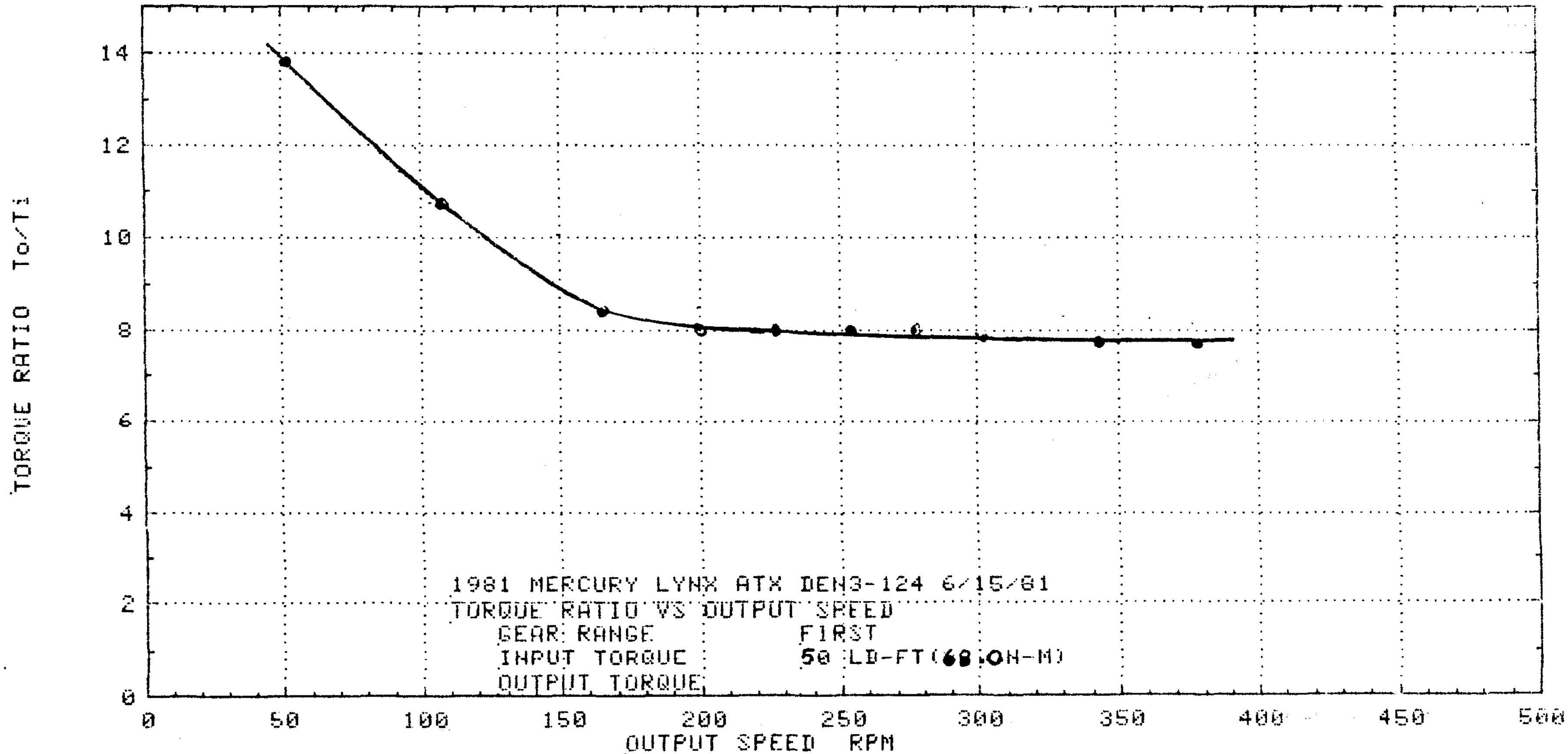

678
N-M
610
542
475
407
339
271
203
136
68
0
500
LB-FT
450
400
350
300
250
200
150
100
50
0
OUTPUT TORQUE
0
50
100
150
200
250
300
350
400
450
500
OUTPUT SPEED RPM
1981 MERCURY LYNX ATX DEN3-124 6/15/81
OUTPUT TORQUE VS OUTPUT SPEED
GEAR RANGE FIRST
INPUT TORQUE 40 LB-FT(54.4N-M)
OUTPUT TORQUE

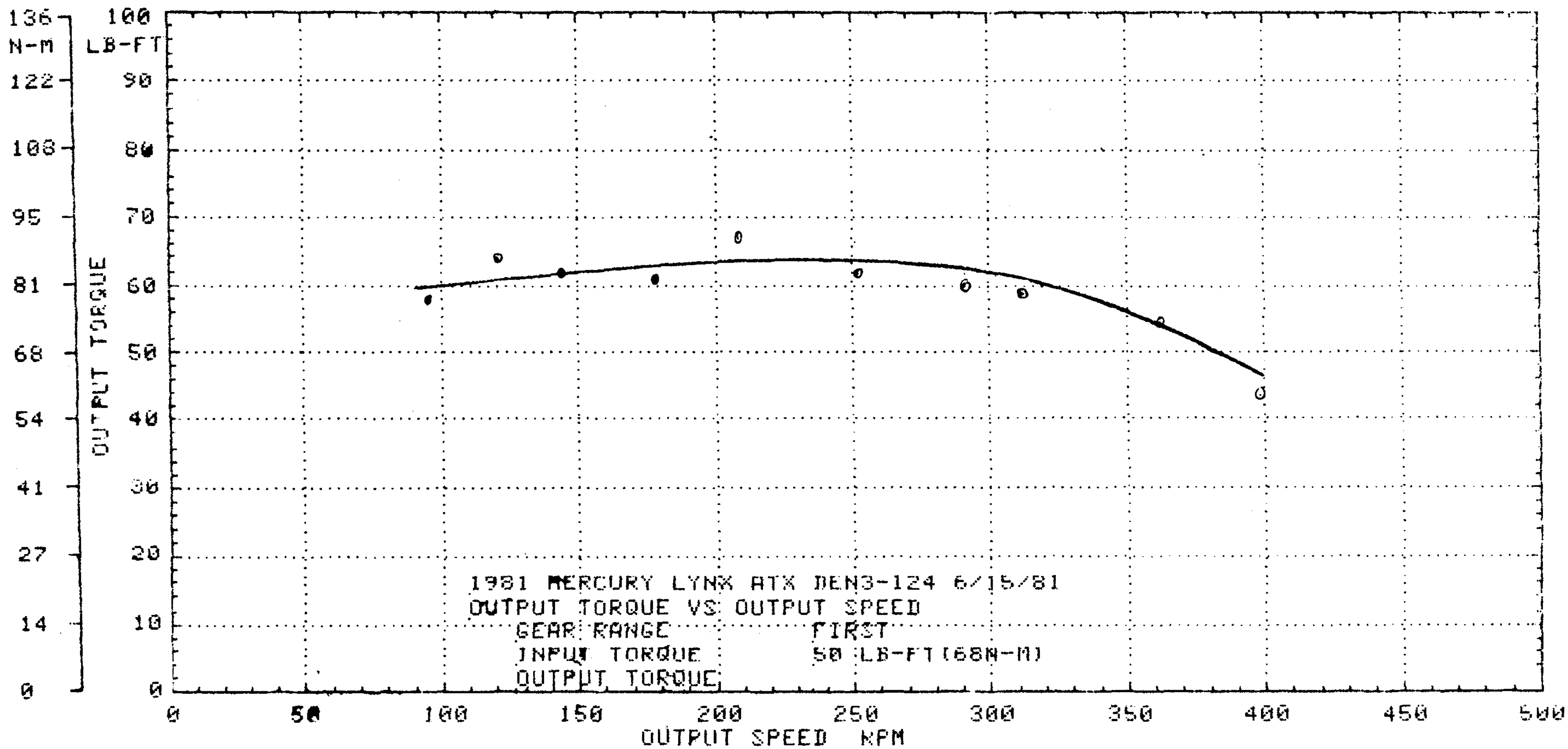

1981 MERCURY LYNX ATX DEN3-124 6/15/81
INPUT SPEED VS OUTPUT SPEED
GEAR RANGE FIRST
INPUT TORQUE 40 LB-FT(54.4N-M)
OUTPUT TORQUE
INPUT SPEED RPM
OUTPUT SPEED RPM
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
0
50
100
150
200
250
300
350
400
450
500

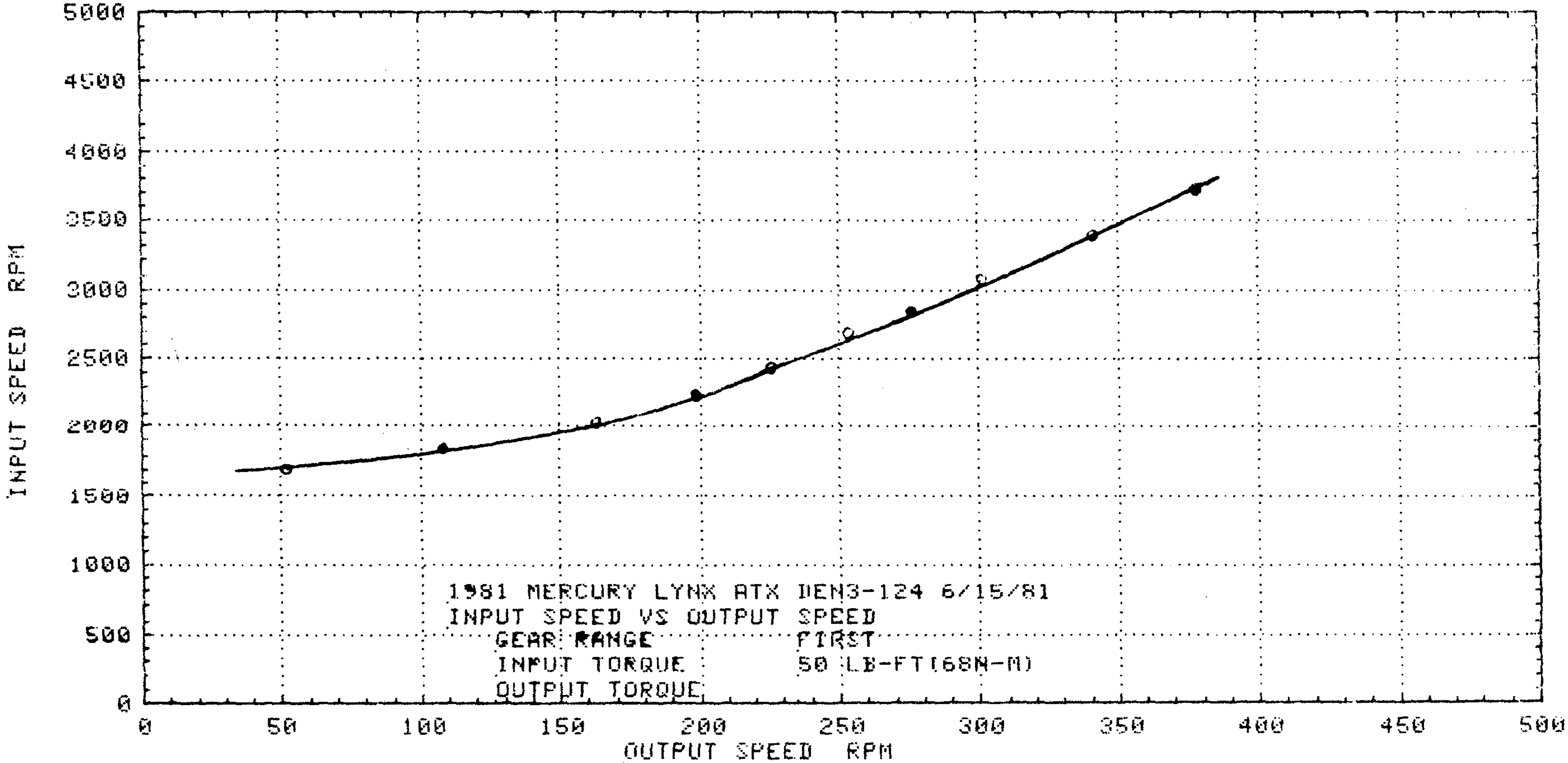

1981 MERCURY LYNX ATX DEN3-124 6/15/81
EFFICIENCY VS OUTPUT SPEED
GEAR RANGE FIRST
INPUT TORQUE 40 LB-FT(54.4N-M)
OUTPUT TORQUE
EFFICIENCY %
OUTPUT SPEED RPM
0
10
20
30
40
50
60
70
80
90
100
0
50
100
150
200
250
300
350
400
450
500

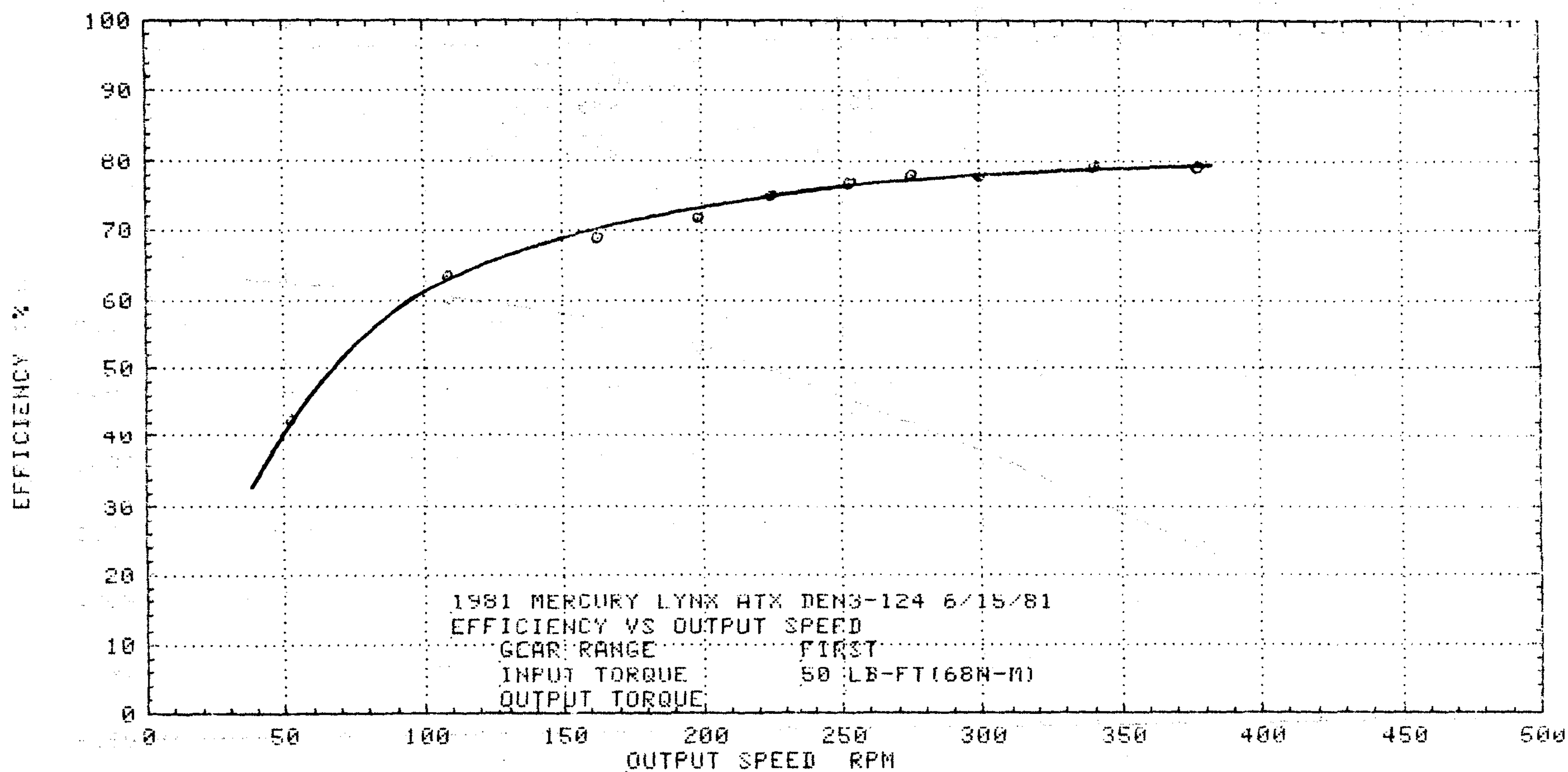


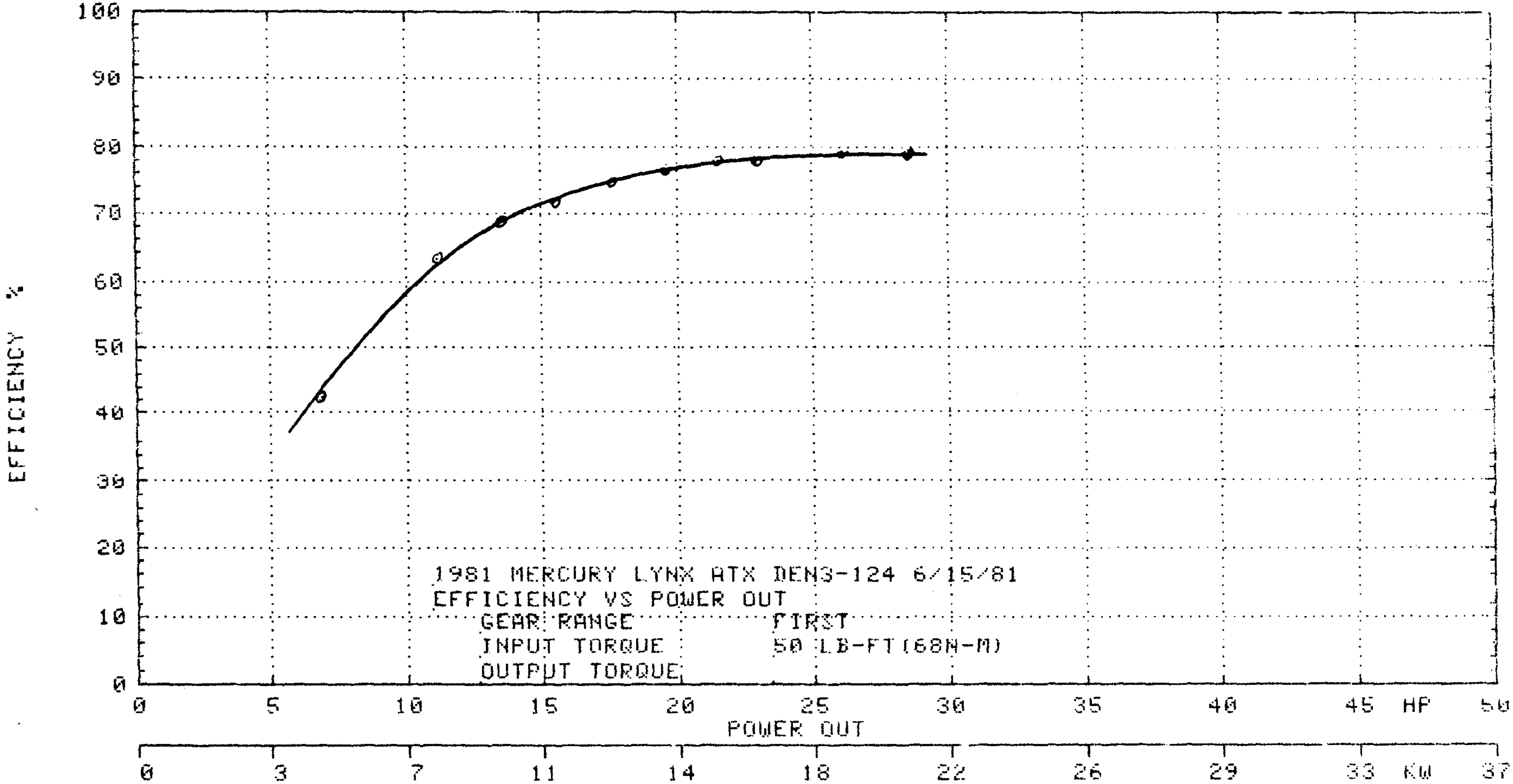
1981 MERCURY LYNX ATX DEN3-124 6/15/81
EFFICIENCY VS POWER OUT
GEAR RANGE FIRST
INPUT TORQUE 40 LB-FT(54.4N-M)
OUTPUT TORQUE
EFFICIENCY %
POWER OUT
HP
KW
0 10 20 30 40 50 60 70 80 90 100
0 5 10 15 20 25 30 35 40 45 50
0 3 7 11 14 18 22 26 29 33 37


1981 MERCURY LYNX ATX DEN3-124 6/15/81
TORQUE RATIO VS OUTPUT SPEED
GEAR RANGE FIRST
INPUT TORQUE 50 LB-FT(68.0N-M)
OUTPUT TORQUE
TORQUE RATIO To/Ti
OUTPUT SPEED RPM
0
2
4
6
8
10
12
14
0
50
100
150
200
250
300
350
400
450
500

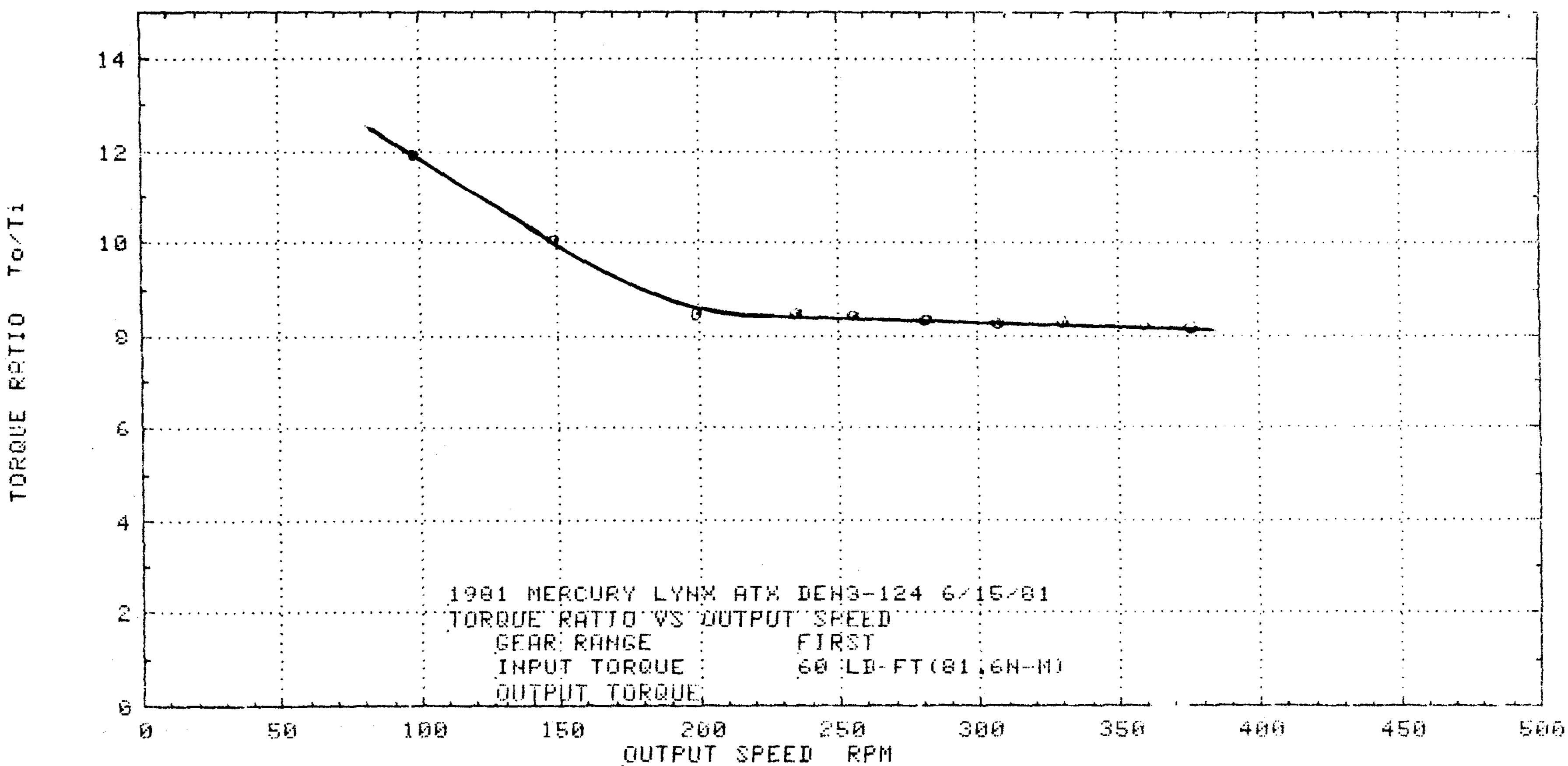

1981 MERCURY LYNX ATX DEN3-124 6/15/81
OUTPUT TORQUE VS OUTPUT SPEED
GEAR RANGE FIRST
INPUT TORQUE 50 LB-FT(68N-M)
OUTPUT TORQUE
OUTPUT TORQUE
N-M
LB-FT
OUTPUT SPEED RPM

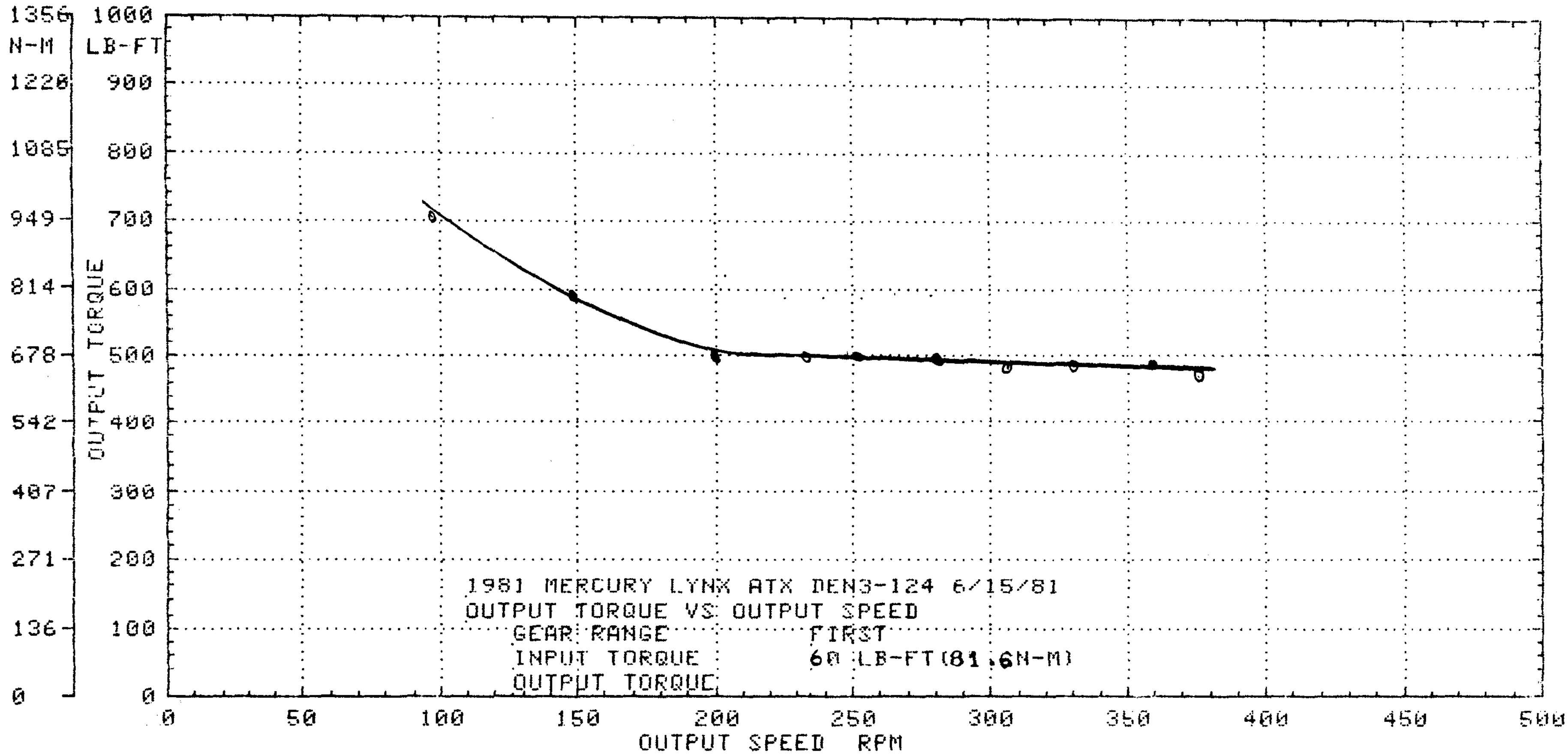

1981 MERCURY LYNX ATX DEN3-124 6/15/81
INPUT SPEED VS OUTPUT SPEED
GEAR RANGE FIRST
INPUT TORQUE 50 LB-FT(68N-M)
OUTPUT TORQUE
INPUT SPEED RPM
OUTPUT SPEED RPM
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
0
50
100
150
200
250
300
350
400
450
500

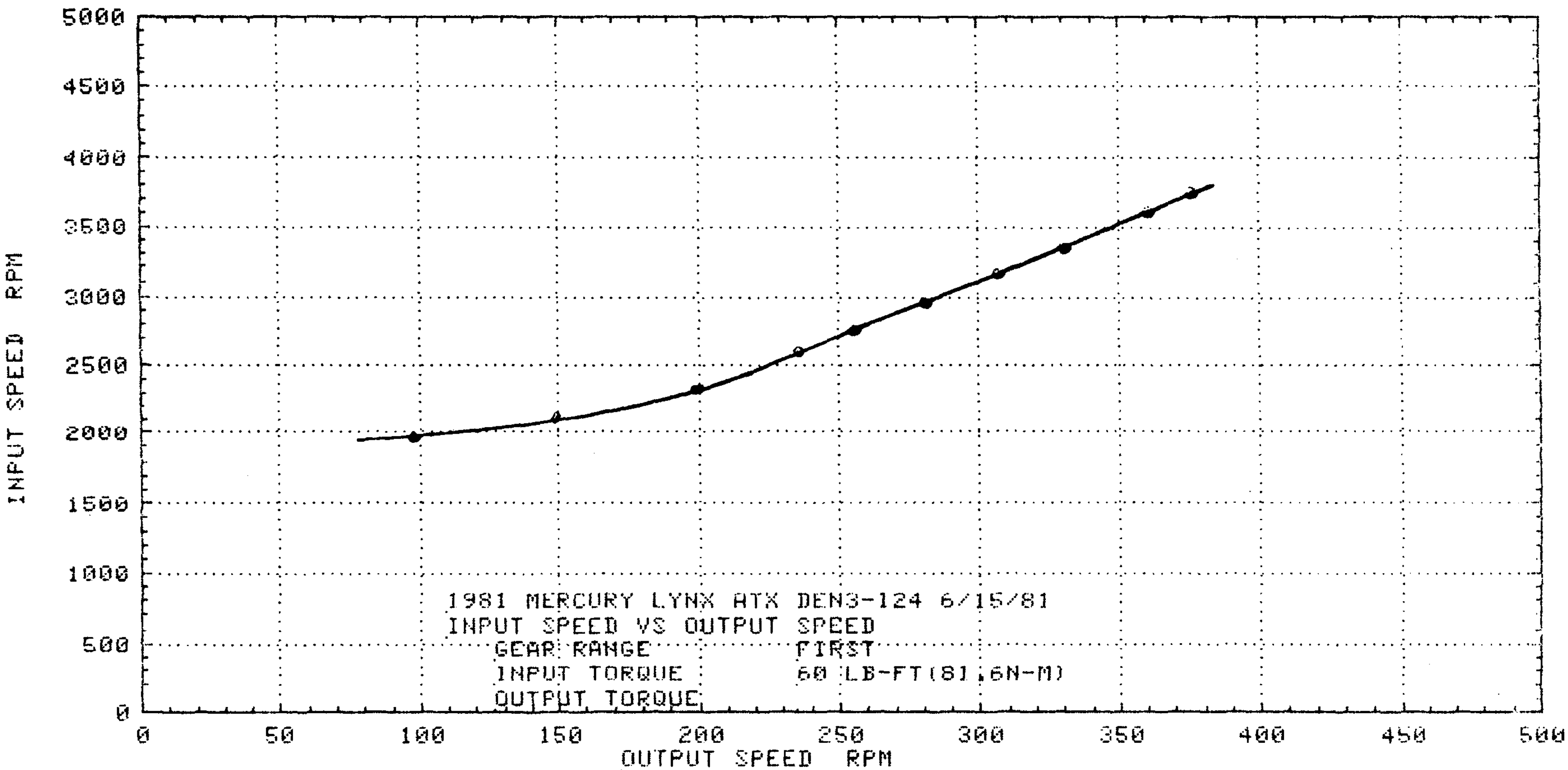

1981 MERCURY LYNX ATX DEN3-124 6/15/81
EFFICIENCY VS OUTPUT SPEED
GEAR RANGE FIRST
INPUT TORQUE 50 LB-FT(68N-M)
OUTPUT TORQUE
EFFICIENCY %
OUTPUT SPEED RPM
0 10 20 30 40 50 60 70 80 90 100
0 50 100 150 200 250 300 350 400 450 500



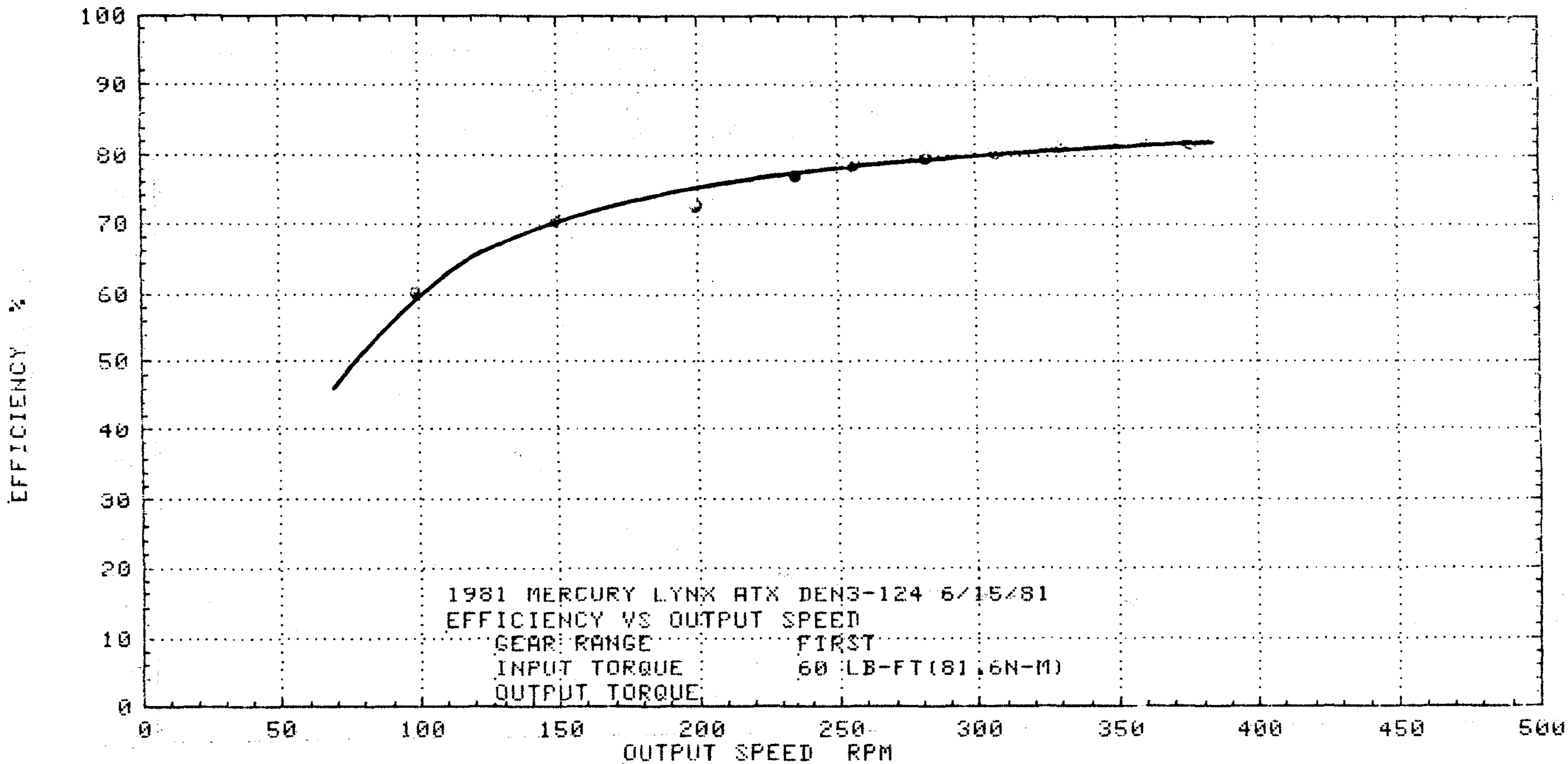
1981 MERCURY LYNX ATX DEN3-124 6/15/81
EFFICIENCY VS POWER OUT
GEAR RANGE FIRST
INPUT TORQUE 50 LB-FT(68N-M)
OUTPUT TORQUE
EFFICIENCY %
100
90
80
70
60
50
40
30
20
10
0
0 5 10 15 20 25 30 35 40 45 HP 50
POWER OUT
0 3 7 11 14 18 22 26 29 33 KW 37

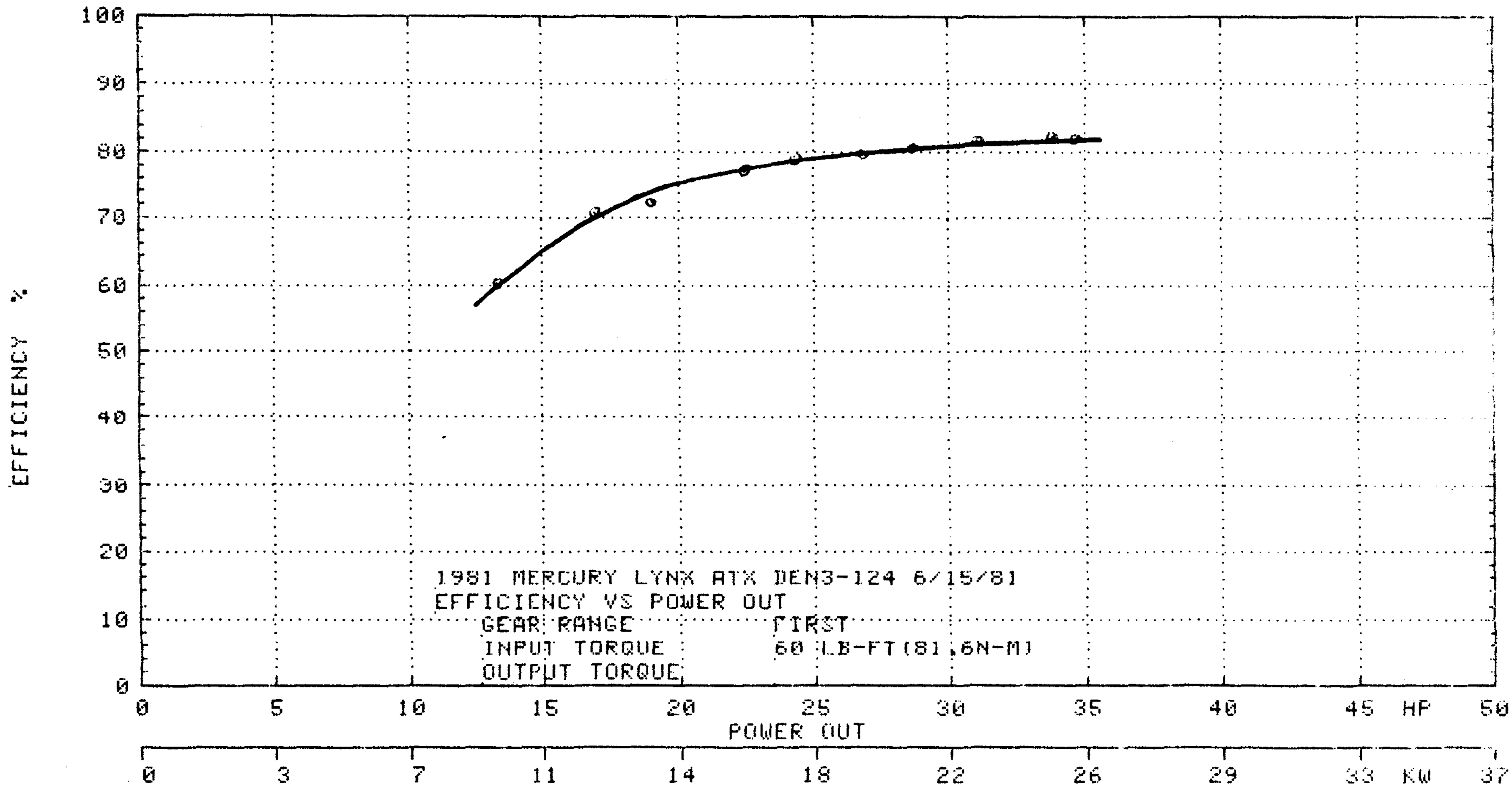

1981 MERCURY LYNX ATX DEH3-124 6/15/81
TORQUE RATIO VS OUTPUT SPEED
GEAR RANGE FIRST
INPUT TORQUE 60 LB-FT(81.6N-M)
OUTPUT TORQUE
TORQUE RATIO To/Ti
OUTPUT SPEED RPM
0
2
4
6
8
10
12
14
0
50
100
150
200
250
300
350
400
450
500

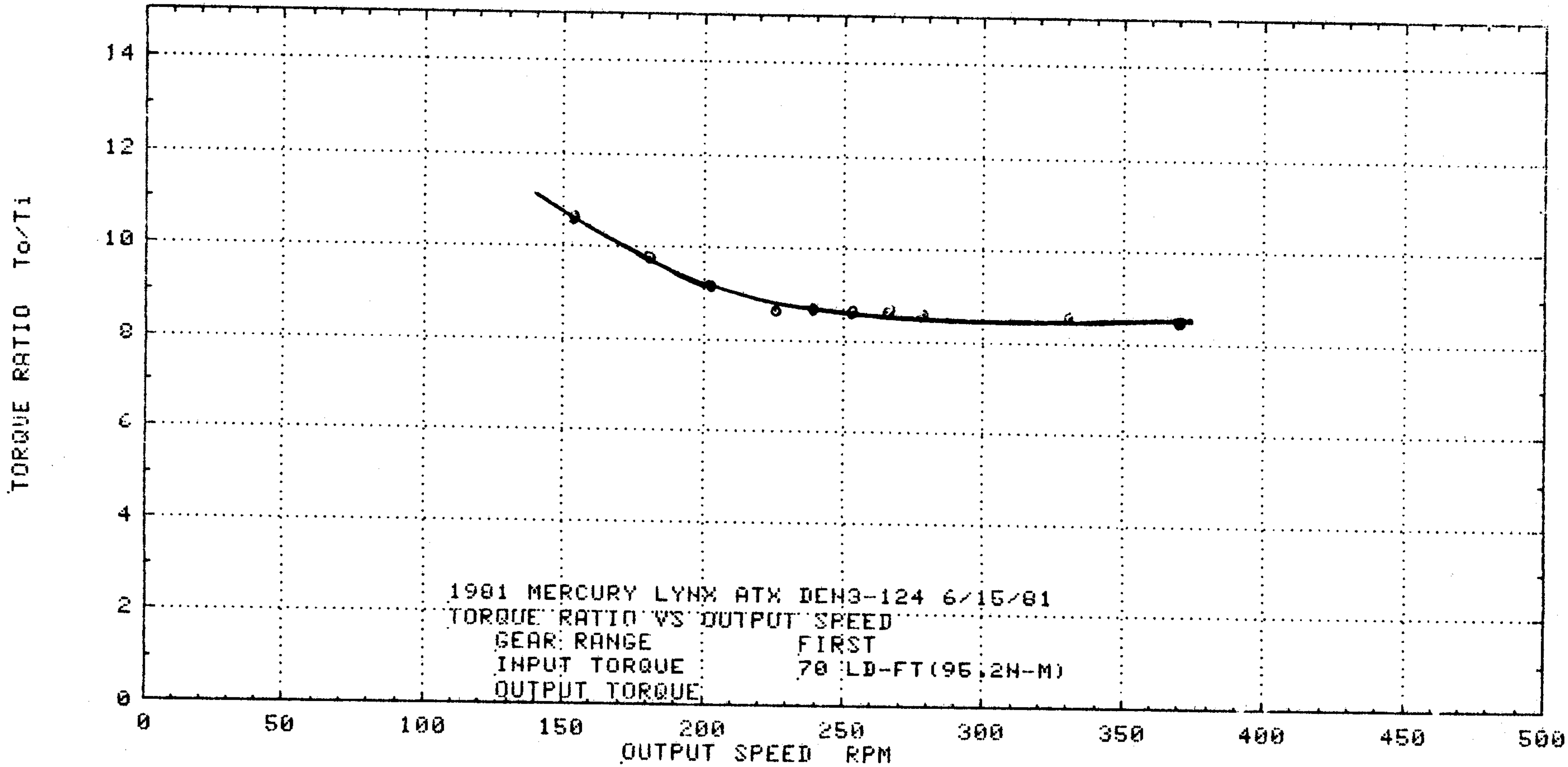

1356
N-M
1220
1085
949
814
678
542
407
271
136
0
1000
LB-FT
900
800
700
600
500
400
300
200
100
0
OUTPUT TORQUE
0
50
100
150
200
250
300
350
400
450
500
OUTPUT SPEED RPM
1981 MERCURY LYNX ATX DEN3-124 6/15/81
OUTPUT TORQUE VS OUTPUT SPEED
GEAR RANGE FIRST
INPUT TORQUE 60 LB-FT(81.6N-M)
OUTPUT TORQUE

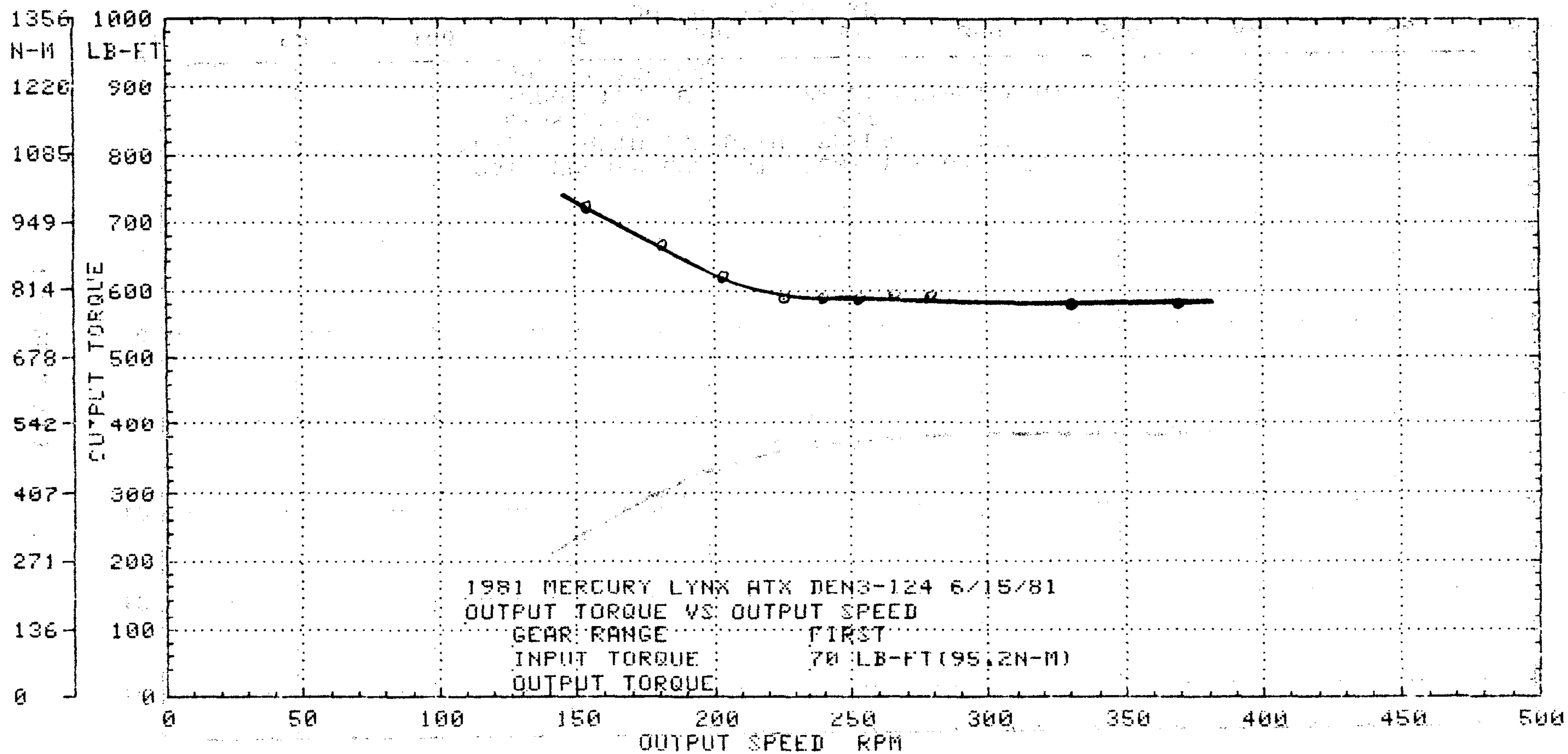


1981 MERCURY LYNX ATX DEN3-124 6/15/81
INPUT SPEED VS OUTPUT SPEED
GEAR RANGE FIRST
INPUT TORQUE 60 LB-FT(81.6N-M)
OUTPUT TORQUE
INPUT SPEED RPM
OUTPUT SPEED RPM
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
0
50
100
150
200
250
300
350
400
450
500

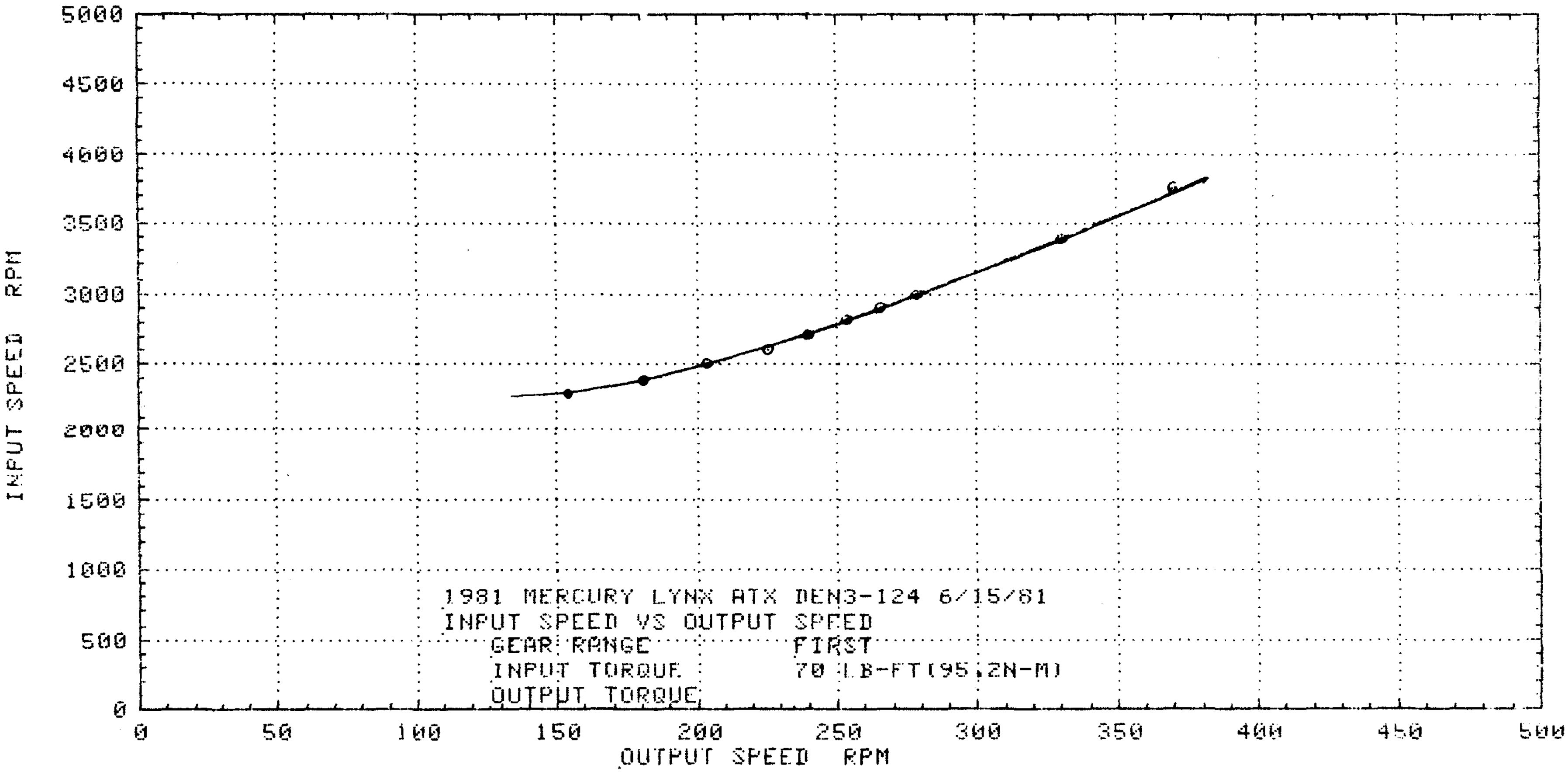

1981 MERCURY LYNX ATX DEN3-124 6/15/81
EFFICIENCY VS OUTPUT SPEED
GEAR RANGE FIRST
INPUT TORQUE 60 LB-FT(81.6N-M)
OUTPUT TORQUE
EFFICIENCY %
OUTPUT SPEED RPM
0
10
20
30
40
50
60
70
80
90
100
0
50
100
150
200
250
300
350
400
450
500

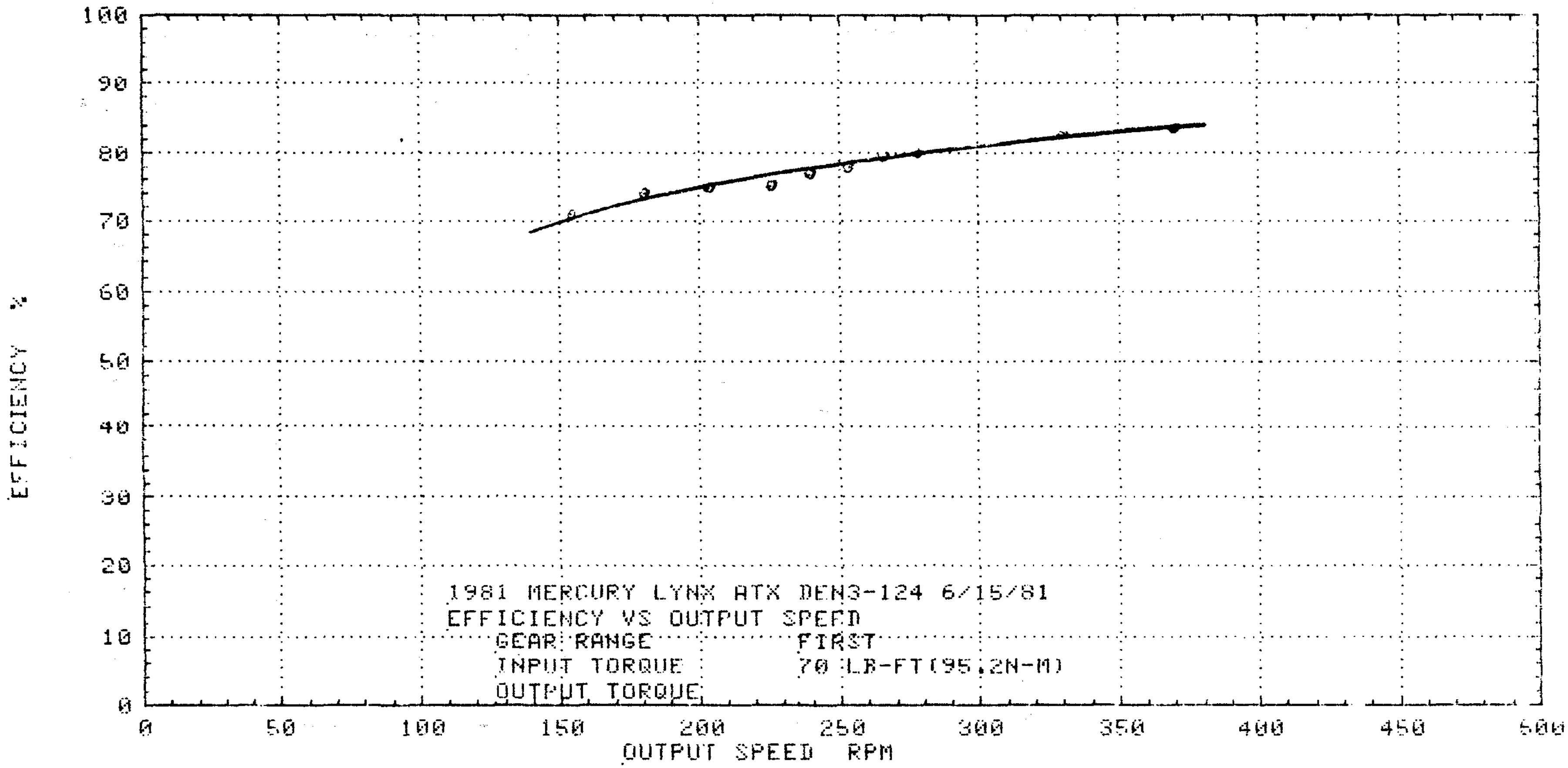

1981 MERCURY LYNX ATX DEN3-124 6/15/81
EFFICIENCY VS POWER OUT
GEAR RANGE FIRST
INPUT TORQUE 60 LB-FT(81.6N-M)
OUTPUT TORQUE
EFFICIENCY %
100
90
80
70
60
50
40
30
20
10
0
0 5 10 15 20 25 30 35 40 45 HP 50
POWER OUT
0 3 7 11 14 18 22 26 29 33 KW 37

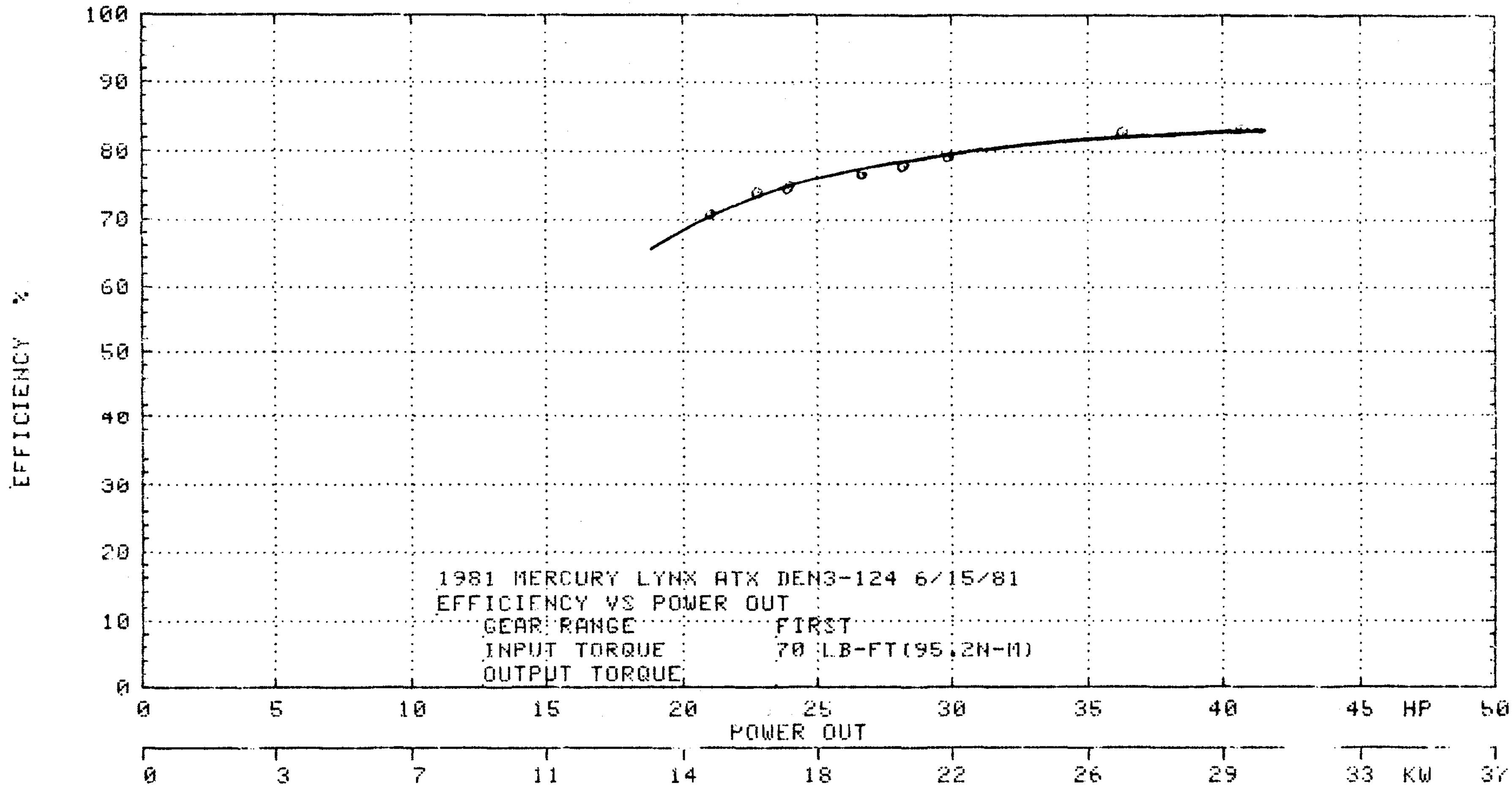

1981 MERCURY LYNX ATX DEH3-124 6/15/81
TORQUE RATIO VS OUTPUT SPEED
GEAR RANGE FIRST
INPUT TORQUE 70 LB-FT(95.2N-M)
OUTPUT TORQUE
TORQUE RATIO To/Ti
OUTPUT SPEED RPM
0
2
4
6
8
10
12
14
0
50
100
150
200
250
300
350
400
450
500

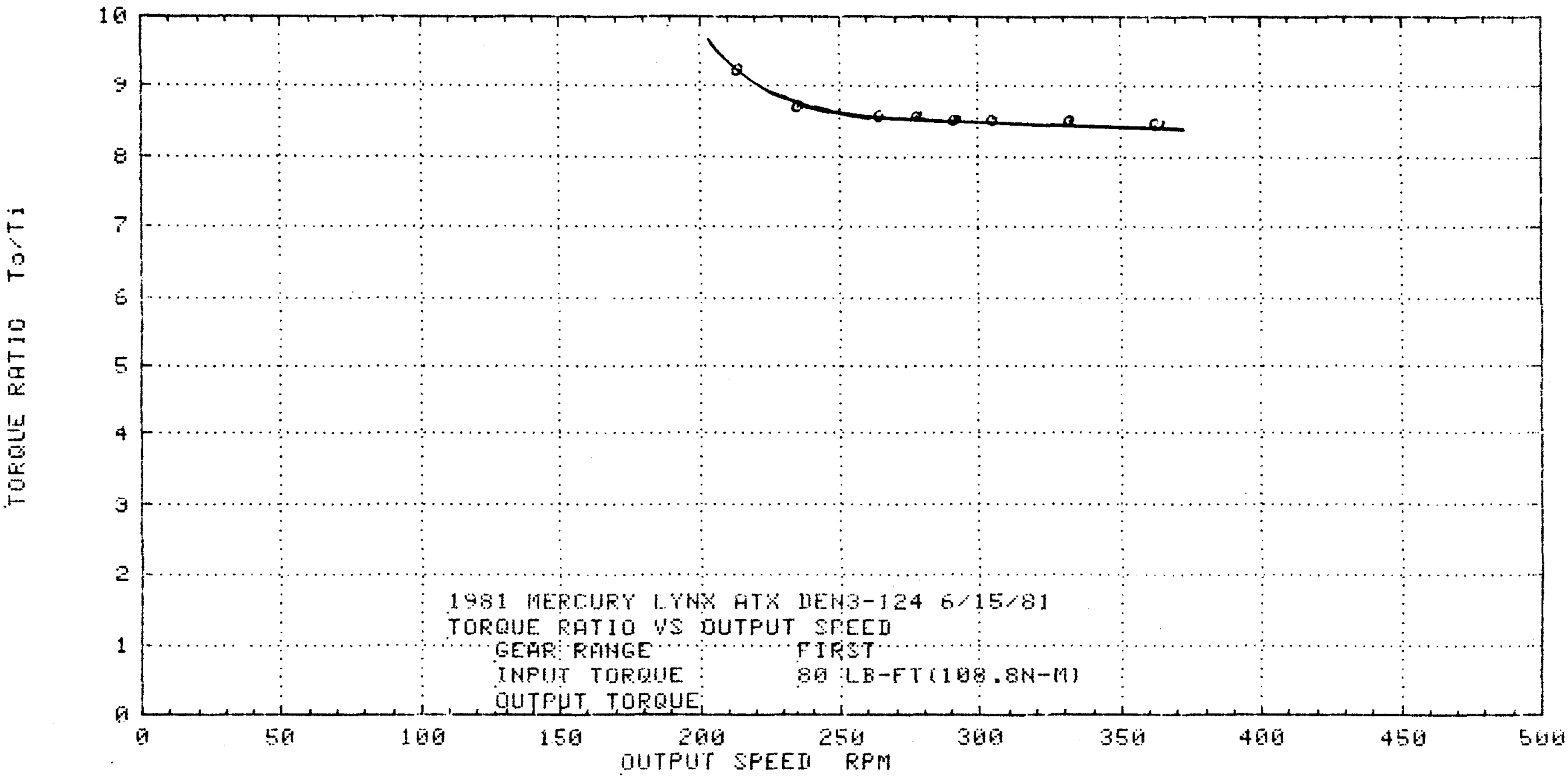


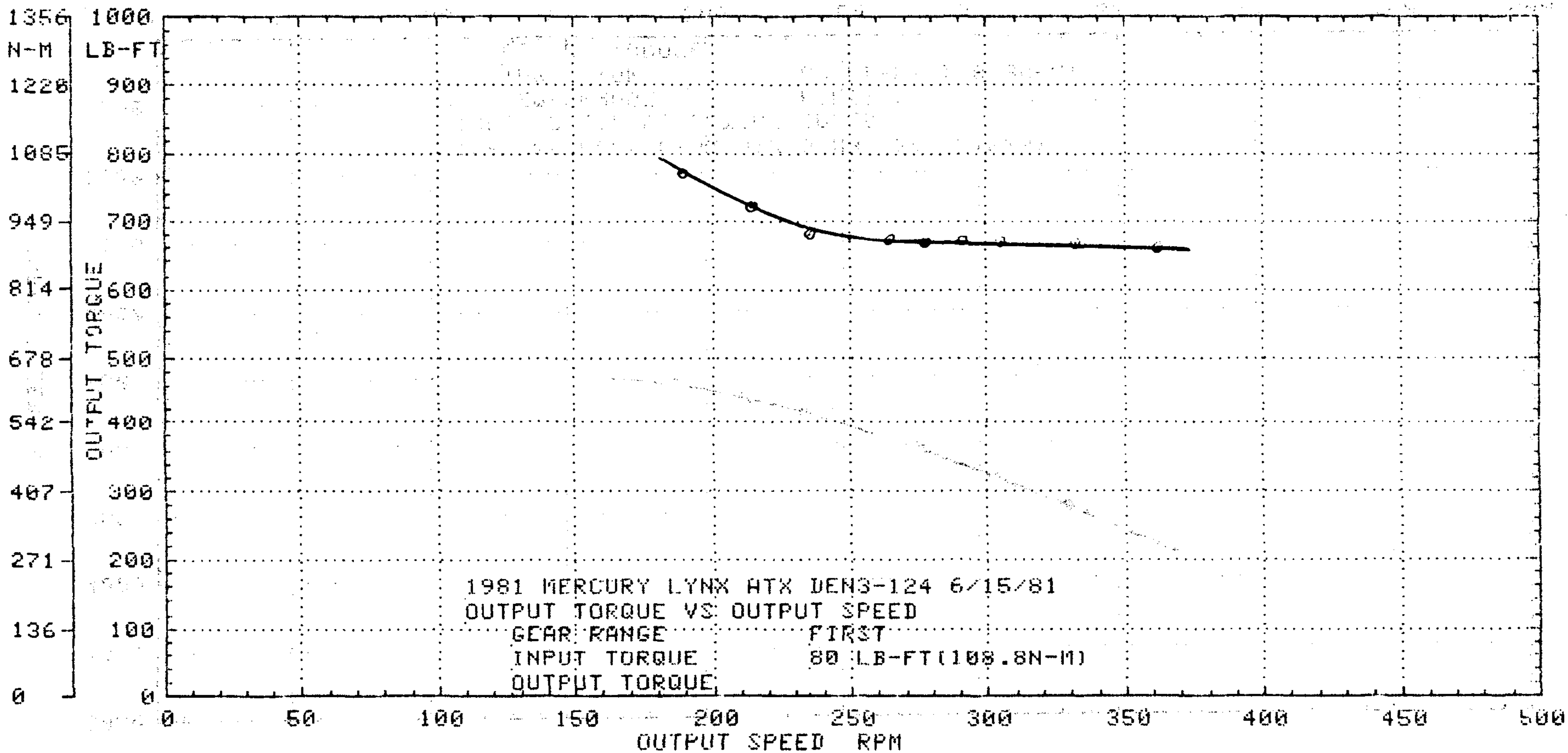
1356
N-M
1220
1085
949
814
678
542
407
271
136
0
1000
LB-FT
900
800
700
600
500
400
300
200
100
0
OUTPUT TORQUE
0
50
100
150
200
250
300
350
400
450
500
OUTPUT SPEED RPM
1981 MERCURY LYNX ATX DEN3-124 6/15/81
OUTPUT TORQUE VS OUTPUT SPEED
GEAR RANGE FIRST
INPUT TORQUE 70 LB-FT(95.2N-M)
OUTPUT TORQUE

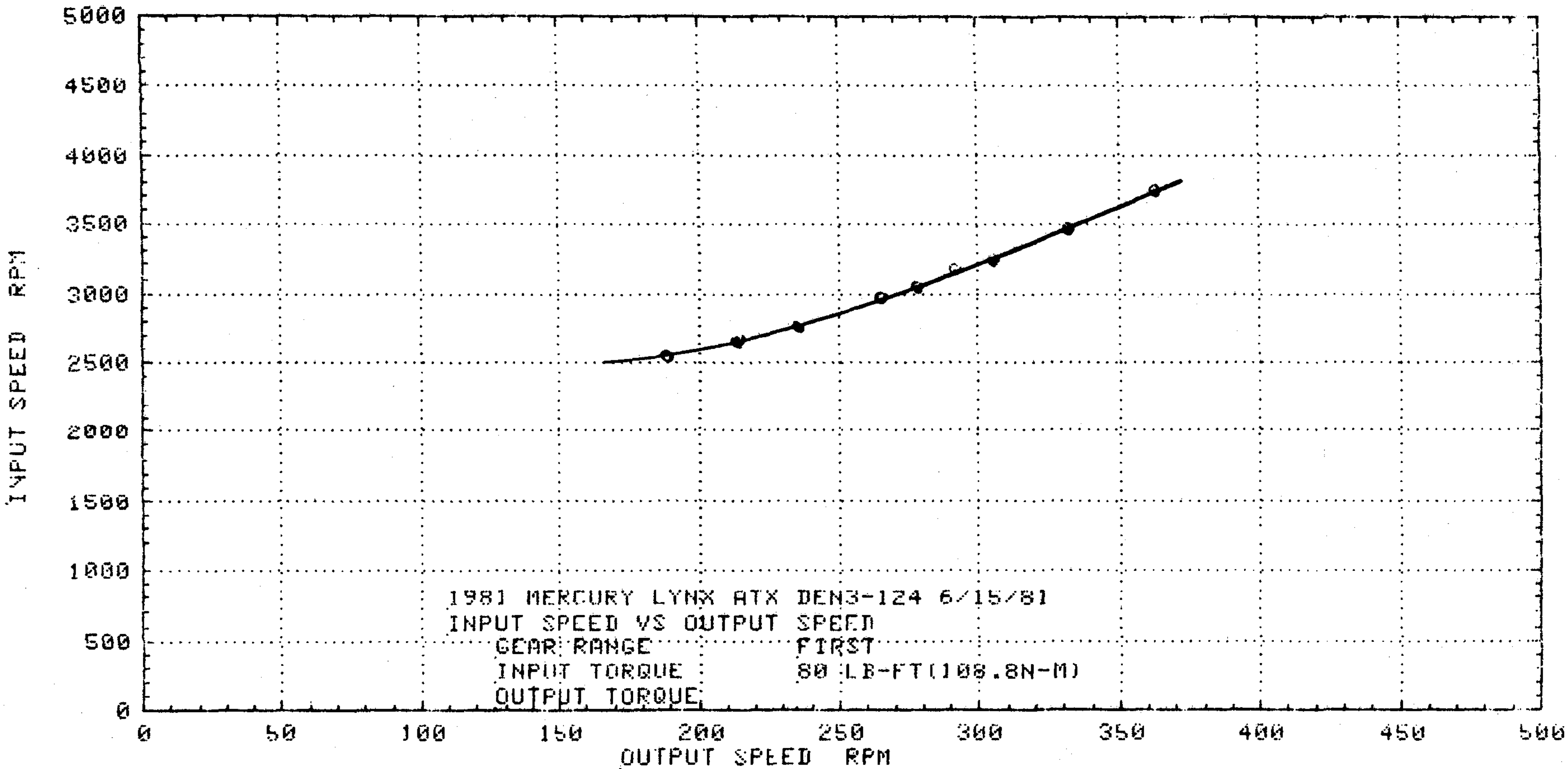

1981 MERCURY LYNX ATX DEN3-124 6/15/81
INPUT SPEED VS OUTPUT SPEED
GEAR RANGE FIRST
INPUT TORQUE 70 LB-FT(95.2N-M)
OUTPUT TORQUE
INPUT SPEED RPM
OUTPUT SPEED RPM
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
0
50
100
150
200
250
300
350
400
450
500


1981 MERCURY LYNX ATX DEN3-124 6/15/81
EFFICIENCY VS OUTPUT SPEED
GEAR RANGE FIRST
INPUT TORQUE 70 LB-FT(95.2N-M)
OUTPUT TORQUE
EFFICIENCY %
OUTPUT SPEED RPM
0
10
20
30
40
50
60
70
80
90
100
0
50
100
150
200
250
300
350
400
450
500

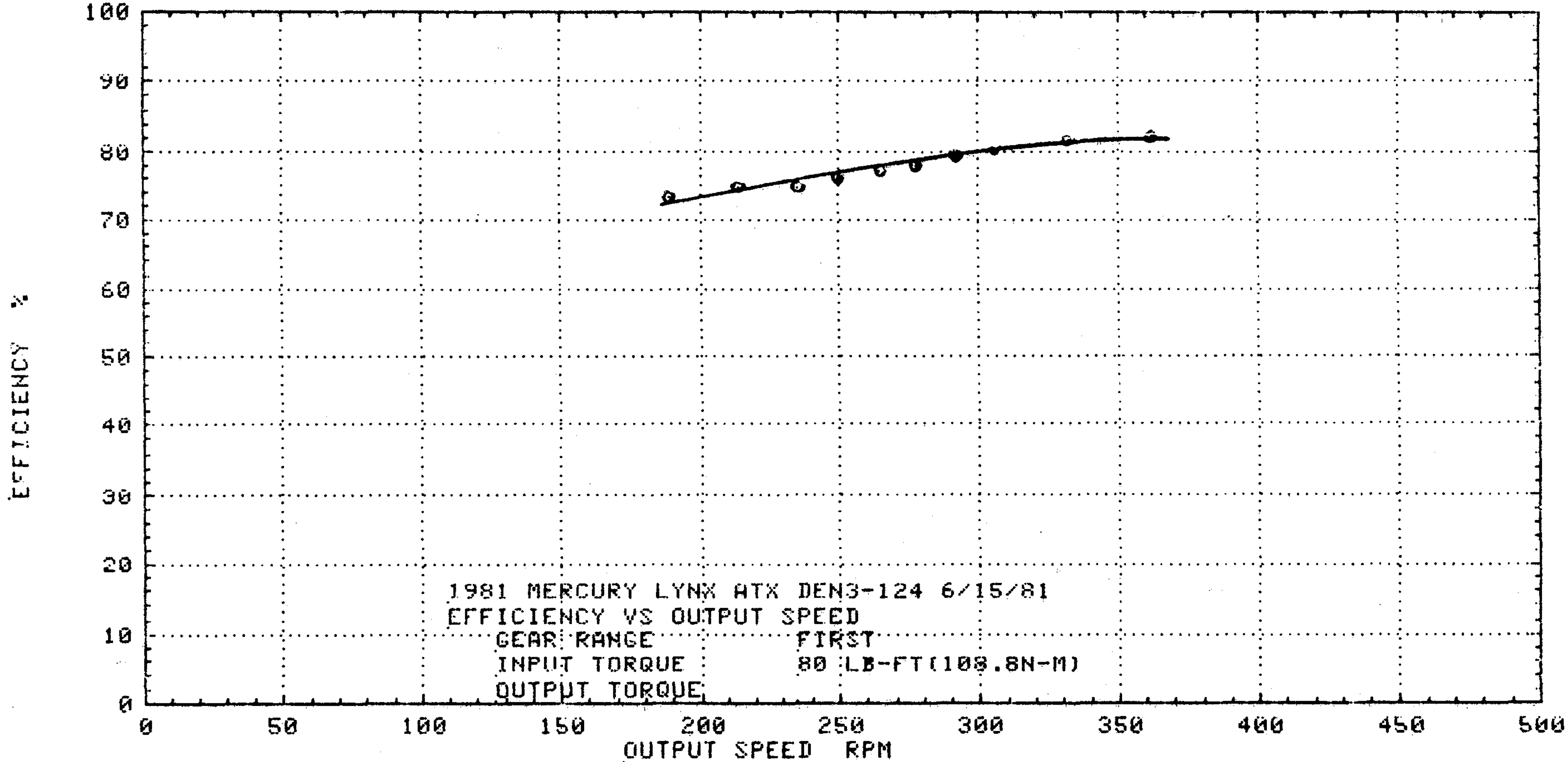

1981 MERCURY LYNX ATX DEN3-124 6/15/81
EFFICIENCY VS POWER OUT
GEAR RANGE FIRST
INPUT TORQUE 70 LB-FT(95.2N-M)
OUTPUT TORQUE
EFFICIENCY %
100
90
80
70
60
50
40
30
20
10
0
0
5
10
15
20
25
30
35
40
45
HP
50
POWER OUT
0
3
7
11
14
18
22
26
29
33
KW
37

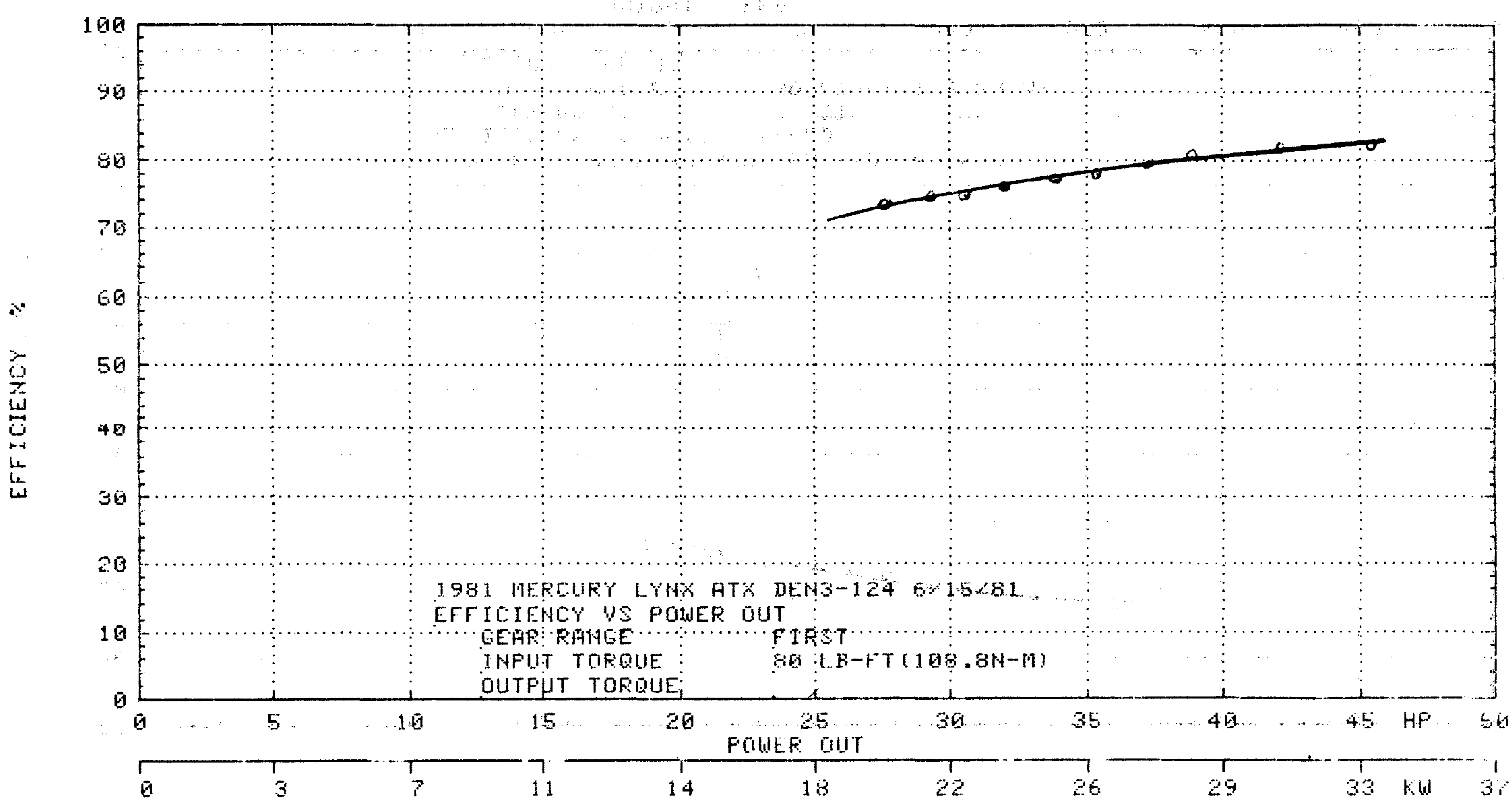

1981 MERCURY LYNX ATX DEN3-124 6/15/81
TORQUE RATIO VS OUTPUT SPEED
GEAR RANGE FIRST
INPUT TORQUE 80 LB-FT(108.8N-M)
OUTPUT TORQUE
TORQUE RATIO To/Ti
OUTPUT SPEED RPM
0
1
2
3
4
5
6
7
8
9
10
0
50
100
150
200
250
300
350
400
450
500


1981 MERCURY LYNX ATX DEN3-124 6/15/81
OUTPUT TORQUE VS OUTPUT SPEED
GEAR RANGE FIRST
INPUT TORQUE 80 LB-FT(108.8N-M)
OUTPUT TORQUE
OUTPUT TORQUE
N-M
LB-FT
1356 1000
1220 900
1085 800
949 700
814 600
678 500
542 400
407 300
271 200
136 100
0 0
0 50 100 150 200 250 300 350 400 450 500
OUTPUT SPEED RPM



5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
INPUT SPEED RPM
0
50
100
150
200
250
300
350
400
450
500
OUTPUT SPEED RPM
1981 MERCURY LYNX ATX DEN3-124 6/15/81
INPUT SPEED VS OUTPUT SPEED
GEAR RANGE FIRST
INPUT TORQUE 80 LB-FT(108.8N-M)
OUTPUT TORQUE


EFFICIENCY %
100
90
80
70
60
50
40
30
20
10
0
0
50
100
150
200
250
300
350
400
450
500
OUTPUT SPEED RPM
1981 MERCURY LYNX ATX DEN3-124 6/15/81
EFFICIENCY VS OUTPUT SPEED
GEAR RANGE FIRST
INPUT TORQUE 80 LB-FT(108.8N-M)
OUTPUT TORQUE



1981 MERCURY LYNX ATX DEN3-124 6/15/81
EFFICIENCY VS POWER OUT
GEAR RANGE FIRST
INPUT TORQUE 80 LB-FT(108.8N-M)
OUTPUT TORQUE
EFFICIENCY %
100
90
80
70
60
50
40
30
20
10
0
0 5 10 15 20 25 30 35 40 45 HP 50
POWER OUT
0 3 7 11 14 18 22 26 29 33 KW 37

DRIVE PERFORMANCE

2nd Gear

Graphs Contained in This Section

Torque Ratio -vs- Output Speed

Output Torque -vs- Output Speed

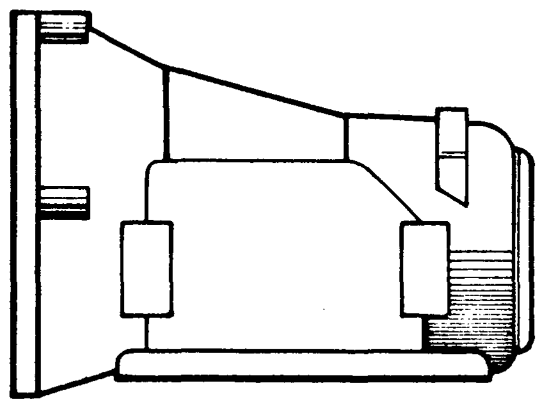
Input Speed -vs- Output Speed

Efficiency -vs- Output Speed

Efficiency -vs- Power Out

Torque In

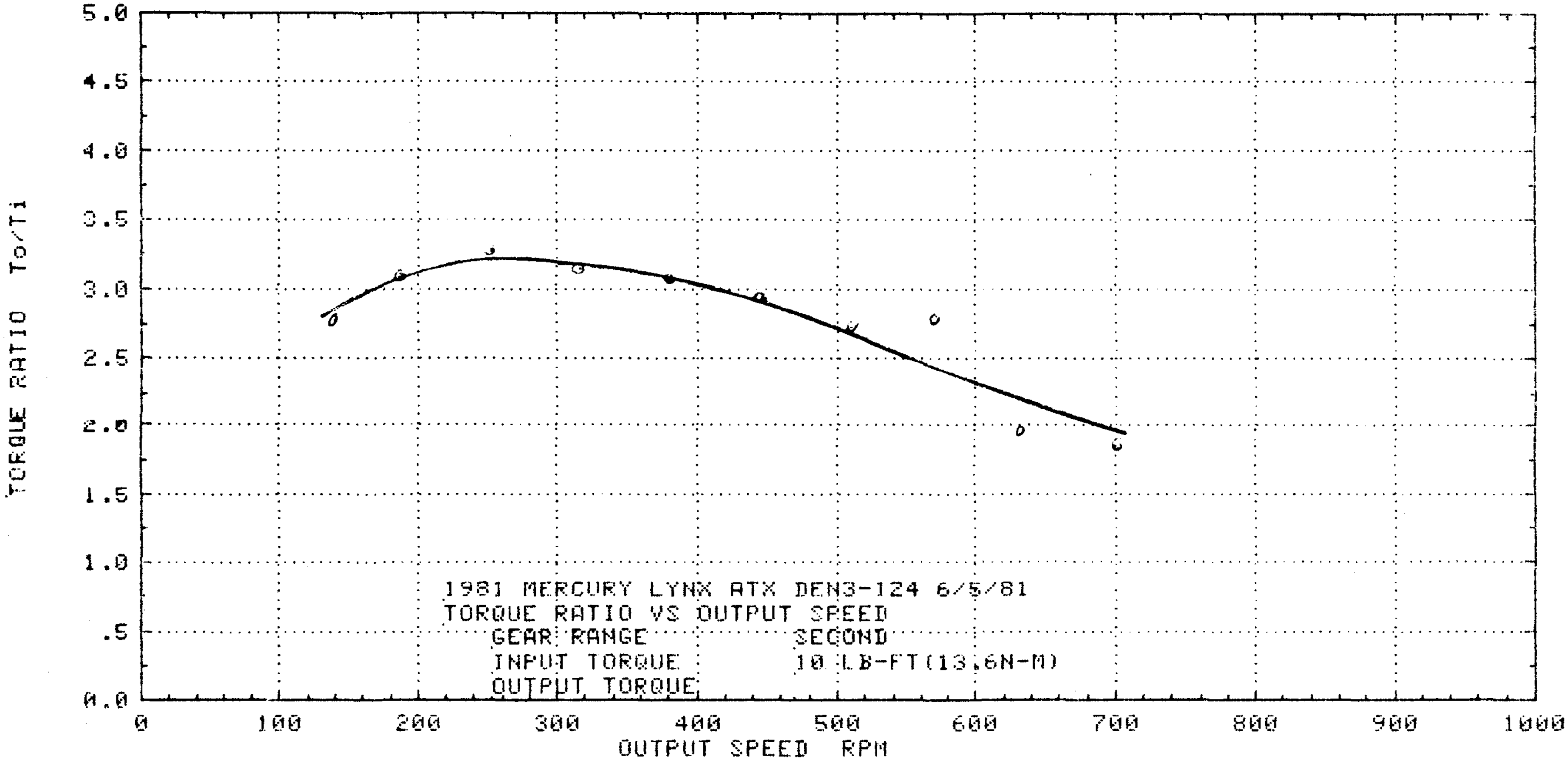
Speed In

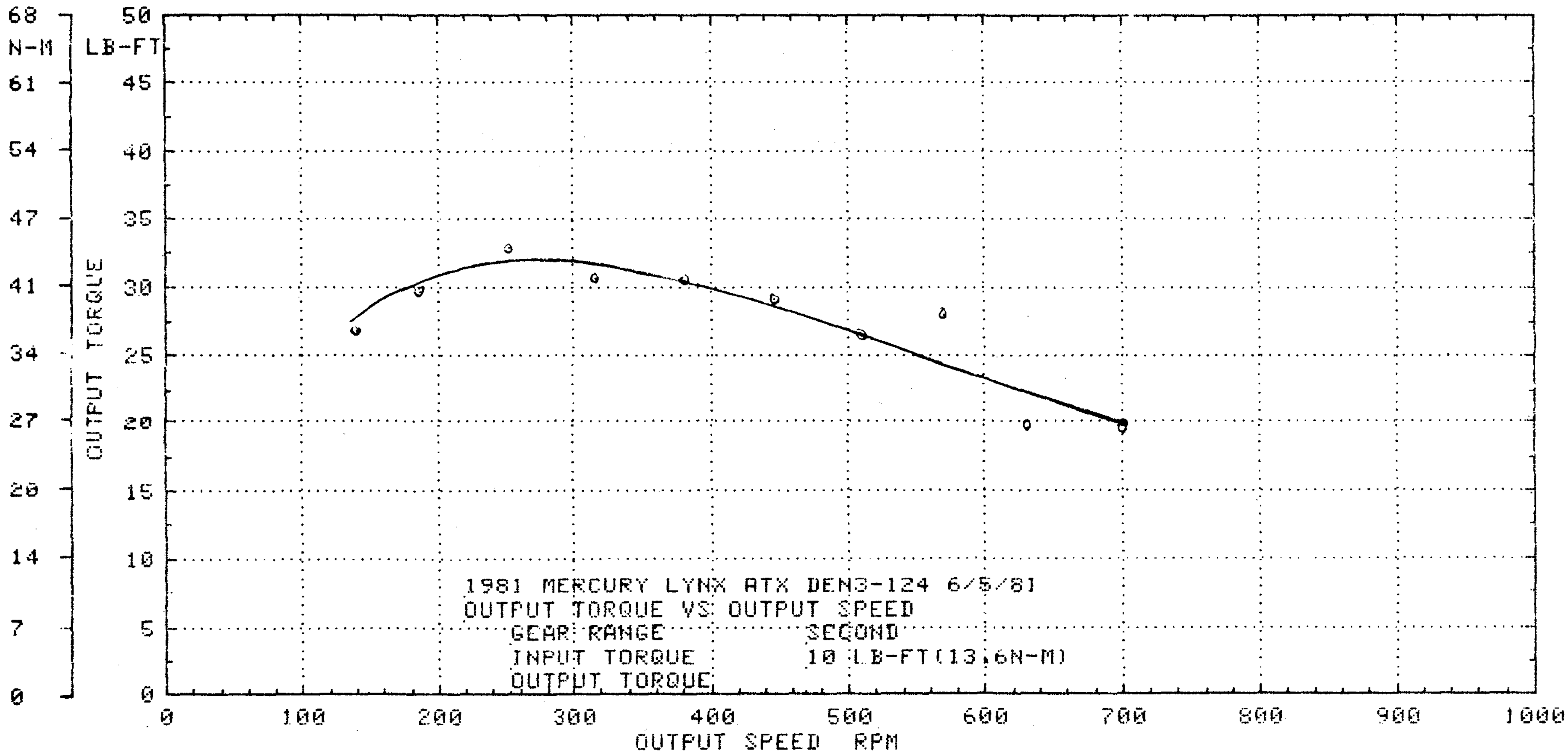


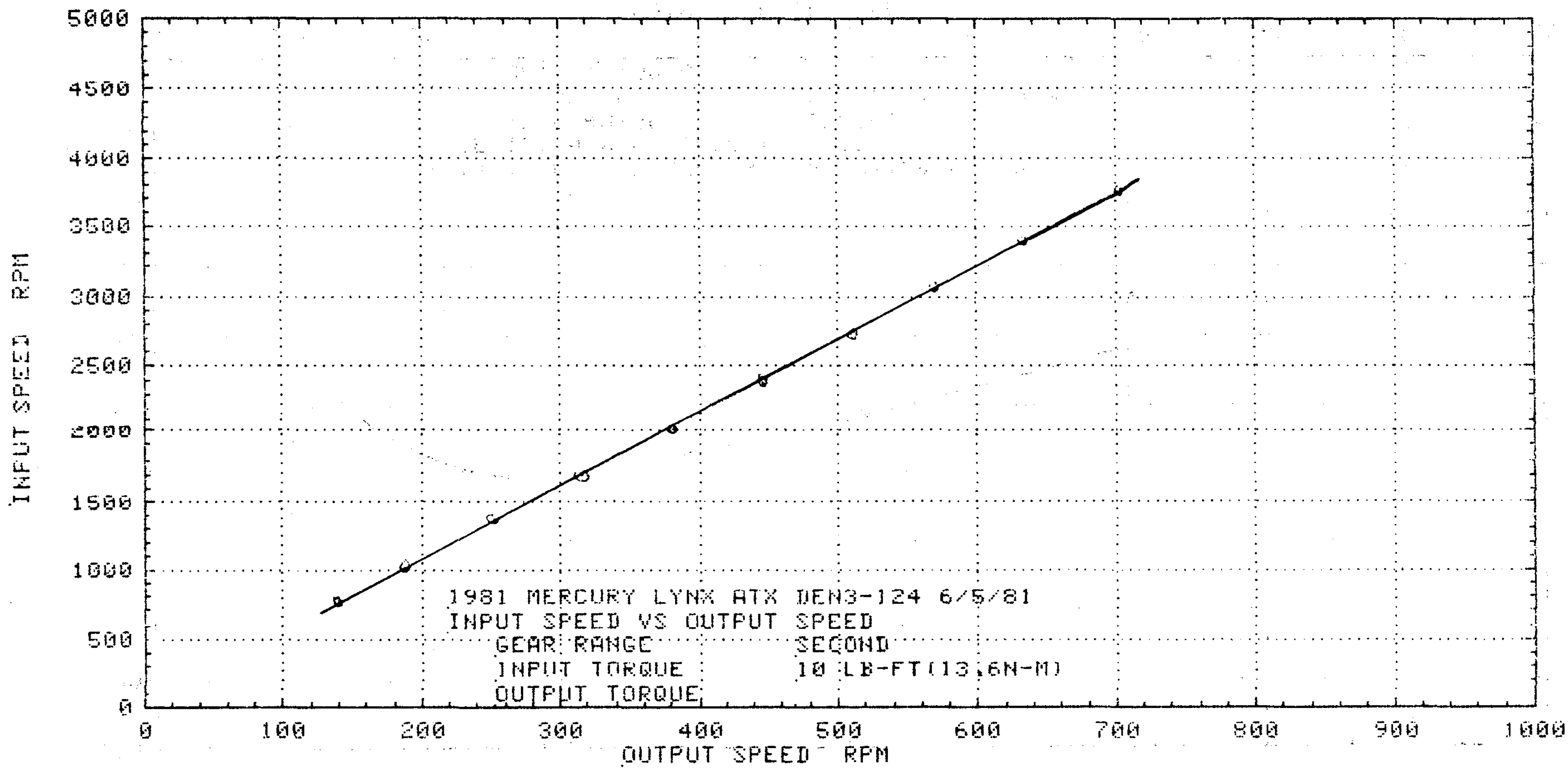
Torque Out

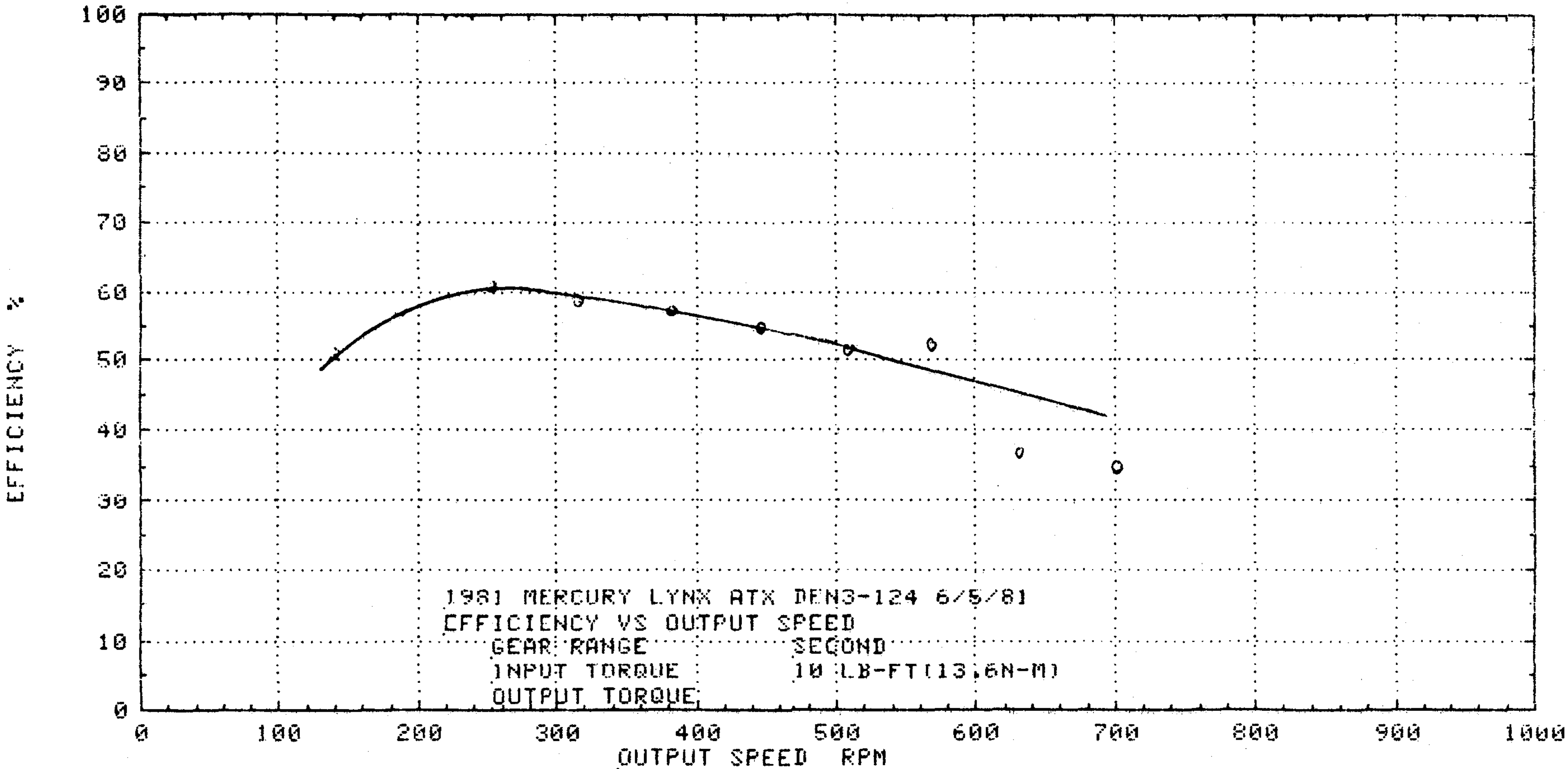
Speed Out

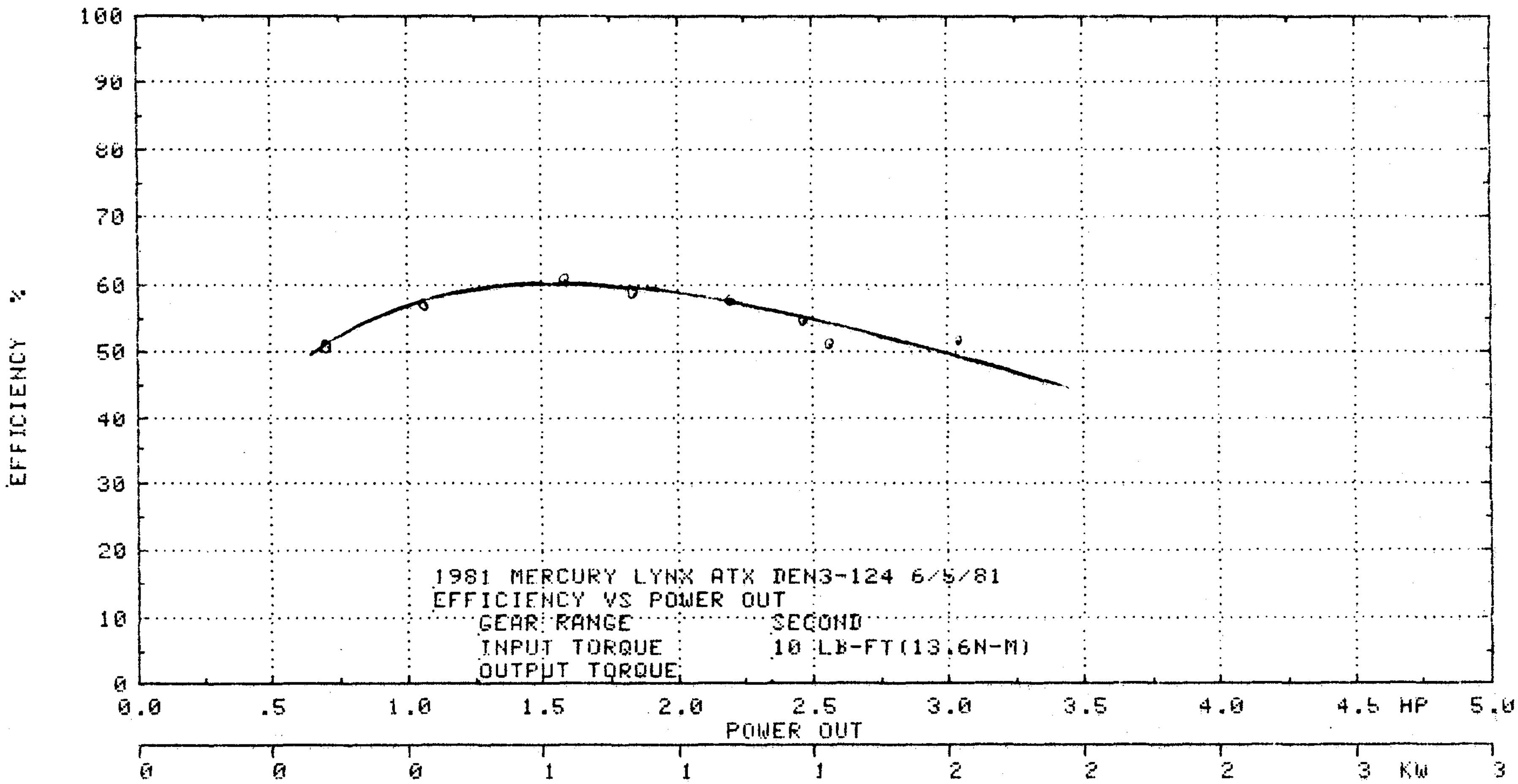
Drive Performance Tests

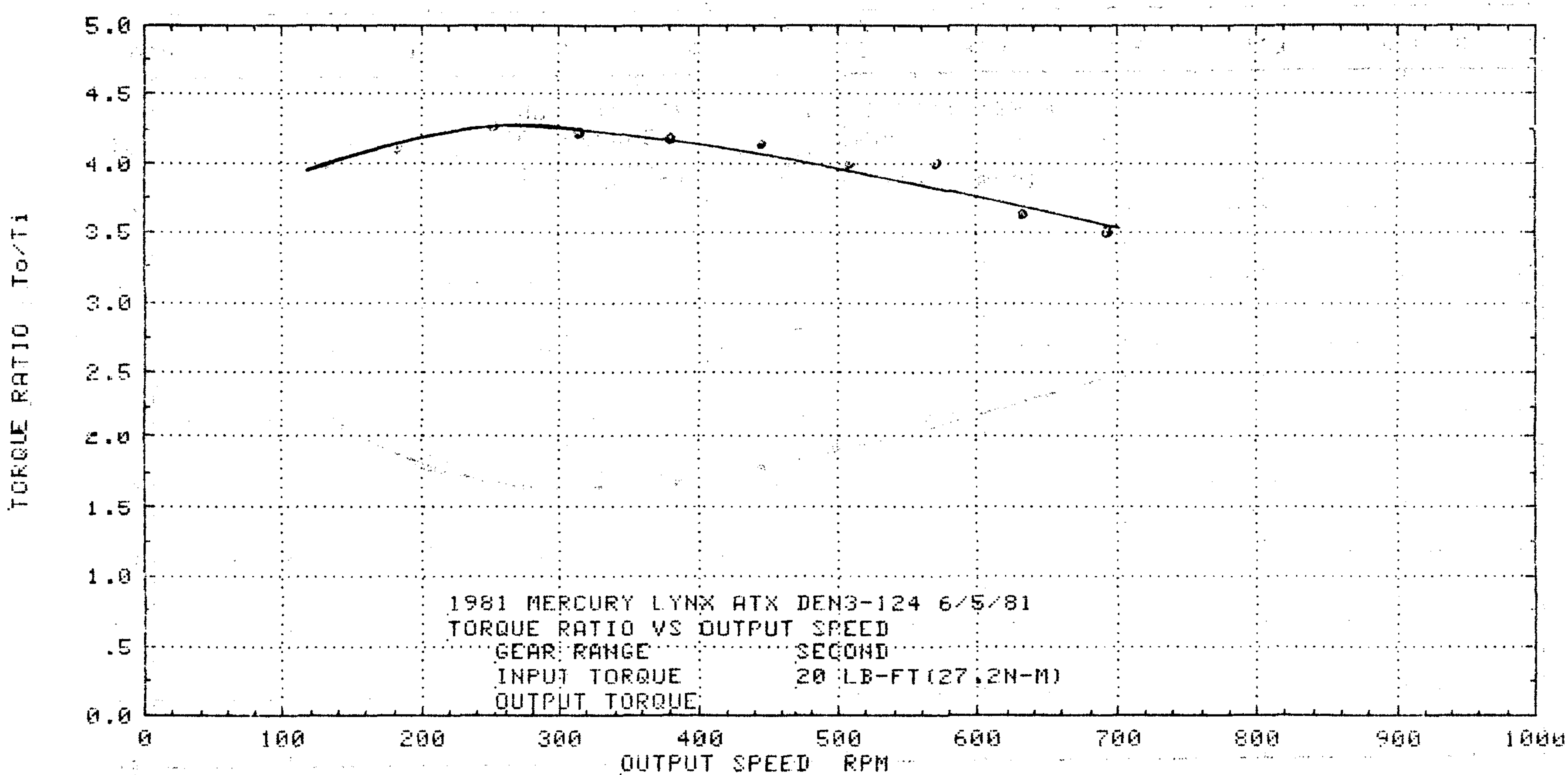

5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
.5
0.0
TORQUE RATIO To/Ti
0
100
200
300
400
500
600
700
800
900
1000
OUTPUT SPEED RPM
1981 MERCURY LYNX ATX DEN3-124 6/5/81
TORQUE RATIO VS OUTPUT SPEED
GEAR RANGE SECOND
INPUT TORQUE 10 LB-FT(13.6N-M)
OUTPUT TORQUE

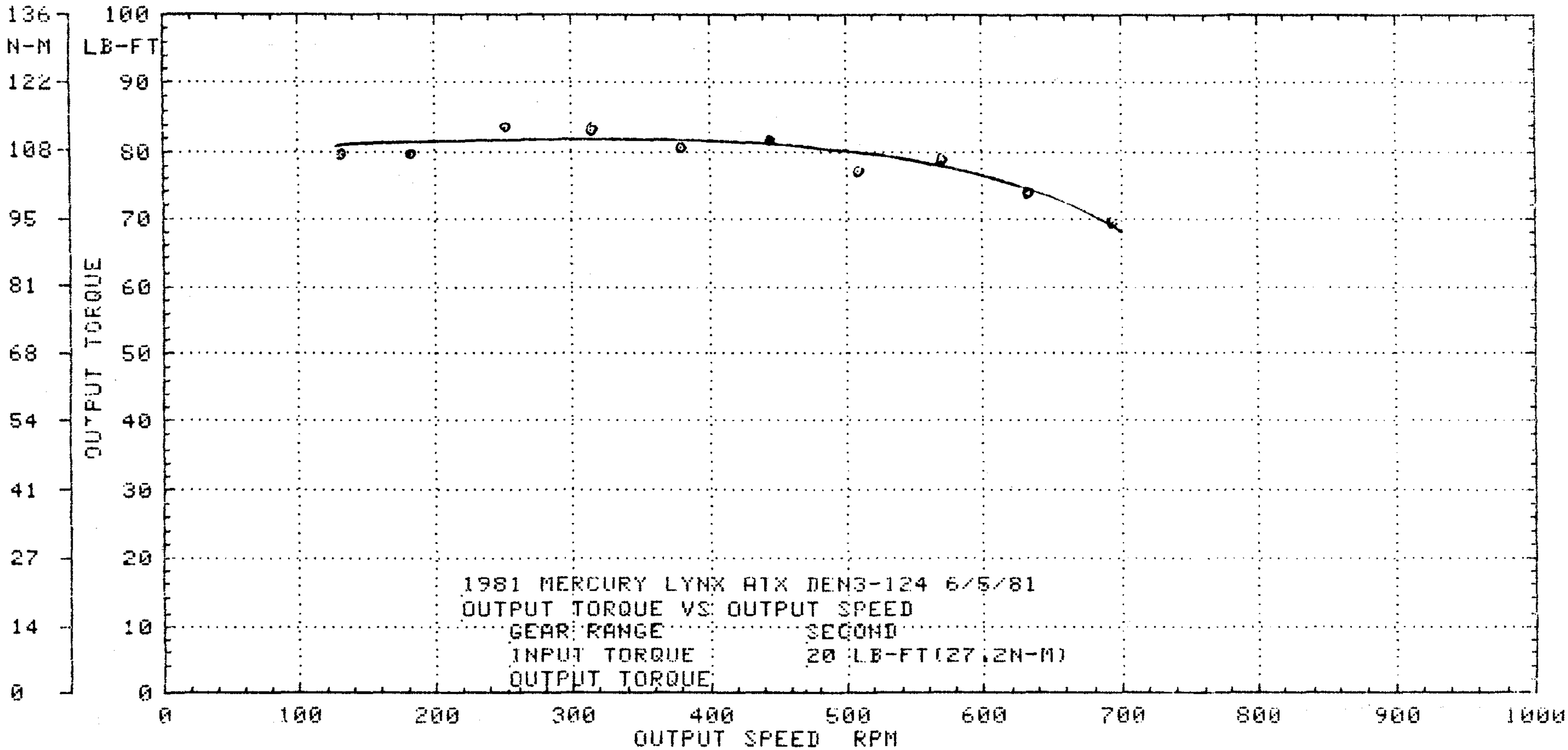

68
N-M
61
54
47
41
34
27
20
14
7
0
50
LB-FT
45
40
35
30
25
20
15
10
5
0
OUTPUT TORQUE
1981 MERCURY LYNX ATX DEN3-124 6/5/81
OUTPUT TORQUE VS OUTPUT SPEED
GEAR RANGE SECOND
INPUT TORQUE 10 LB-FT(13.6N-M)
OUTPUT TORQUE
0
100
200
300
400
500
600
700
800
900
1000
OUTPUT SPEED RPM


1981 MERCURY LYNX ATX DEN3-124 6/5/81
INPUT SPEED VS OUTPUT SPEED
GEAR RANGE SECOND
INPUT TORQUE 10 LB-FT(13.6N-M)
OUTPUT TORQUE
INPUT SPEED RPM
OUTPUT SPEED RPM
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
0
100
200
300
400
500
600
700
800
900
1000

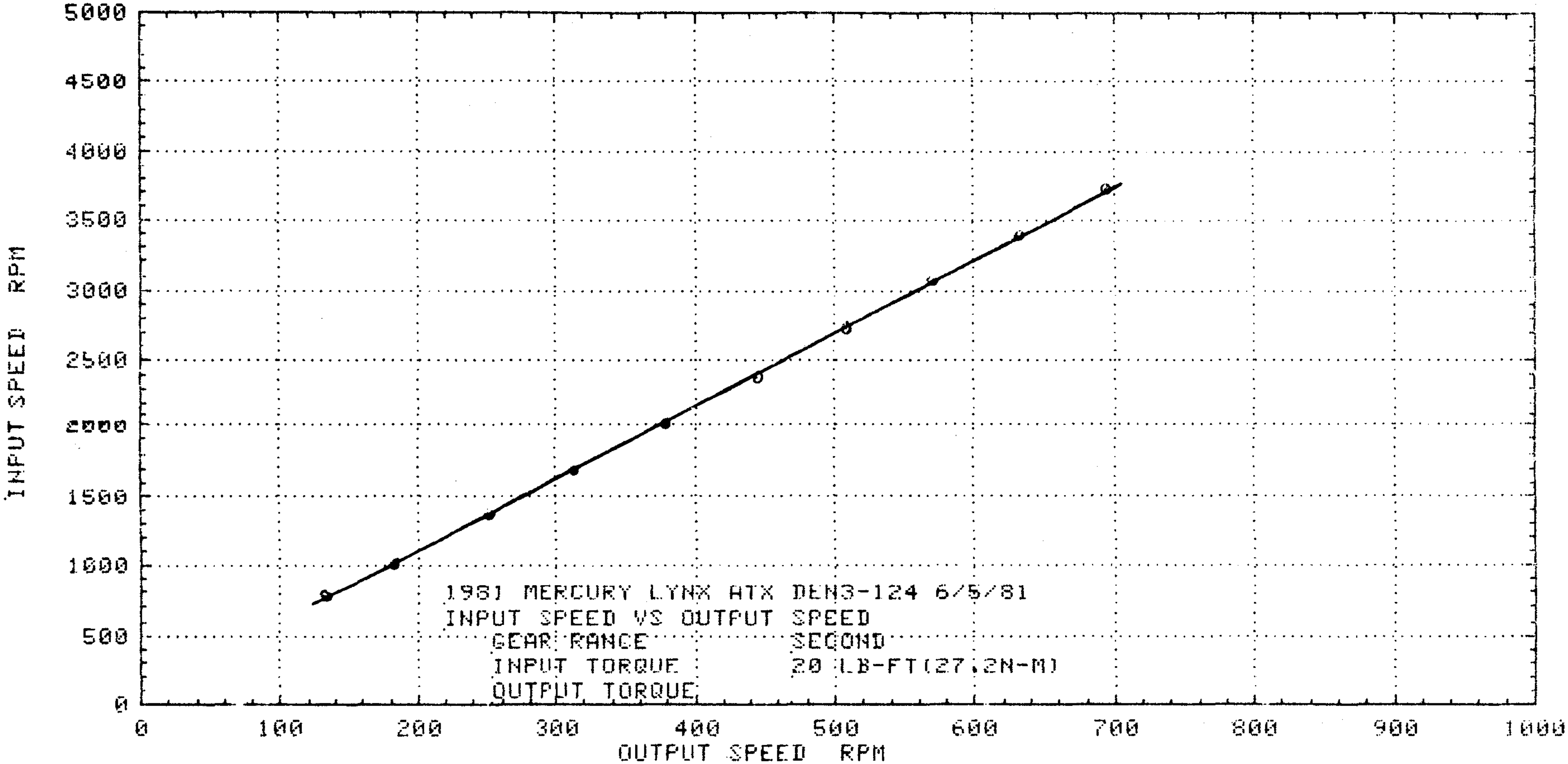

1981 MERCURY LYNX ATX DEN3-124 6/5/81
EFFICIENCY VS OUTPUT SPEED
GEAR RANGE SECOND
INPUT TORQUE 10 LB-FT(13.6N-M)
OUTPUT TORQUE
EFFICIENCY %
OUTPUT SPEED RPM
0
10
20
30
40
50
60
70
80
90
100
100
200
300
400
500
600
700
800
900
1000

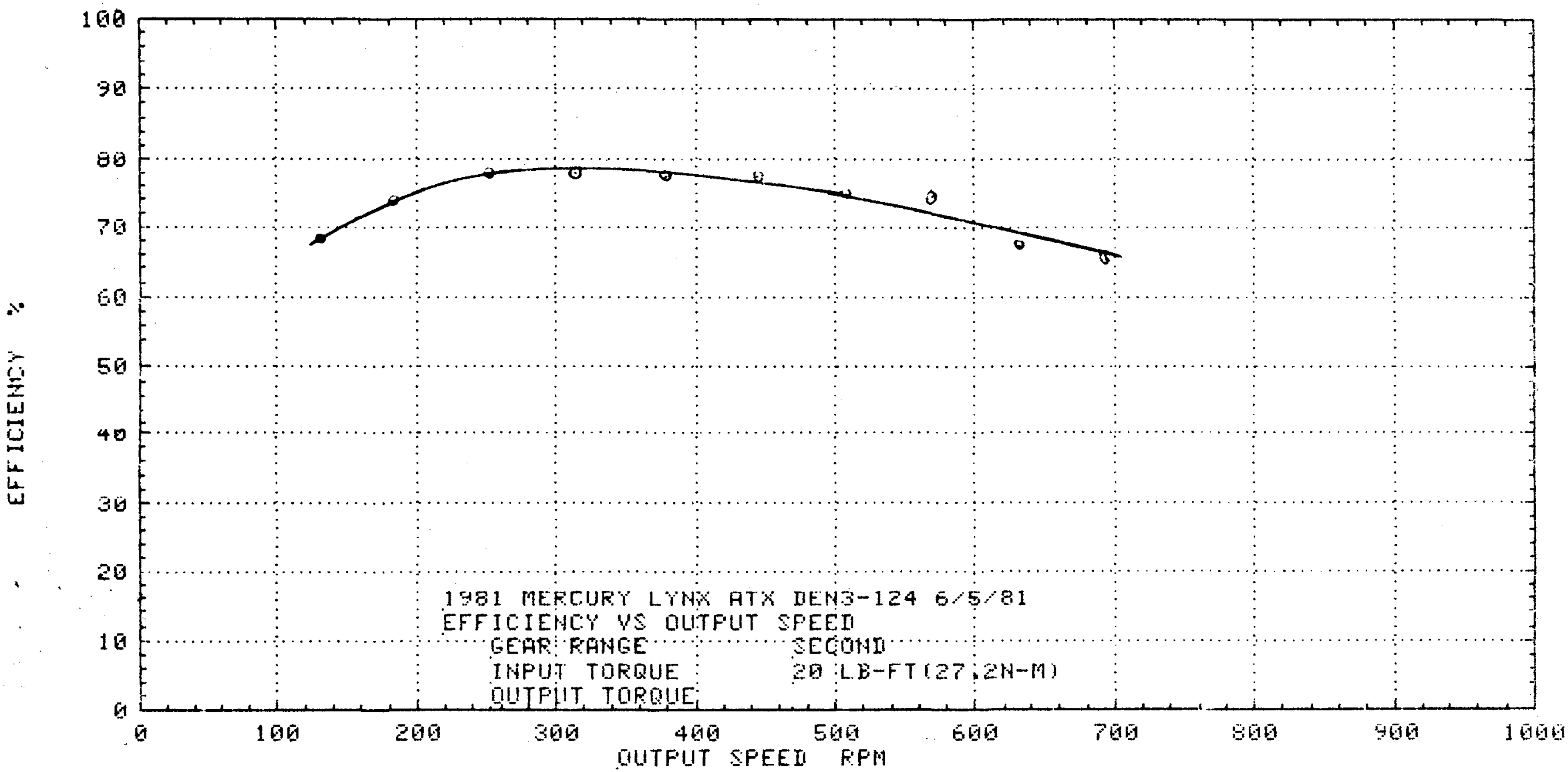

1981 MERCURY LYNX ATX DEN3-124 6/5/81
EFFICIENCY VS POWER OUT
GEAR RANGE SECOND
INPUT TORQUE 10 LB-FT(13.6N-M)
OUTPUT TORQUE
EFFICIENCY %
POWER OUT
HP
KW
100
90
80
70
60
50
40
30
20
10
0
0.0
.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
4.5
5.0
0
0
0
1
1
1
2
2
2
3
3

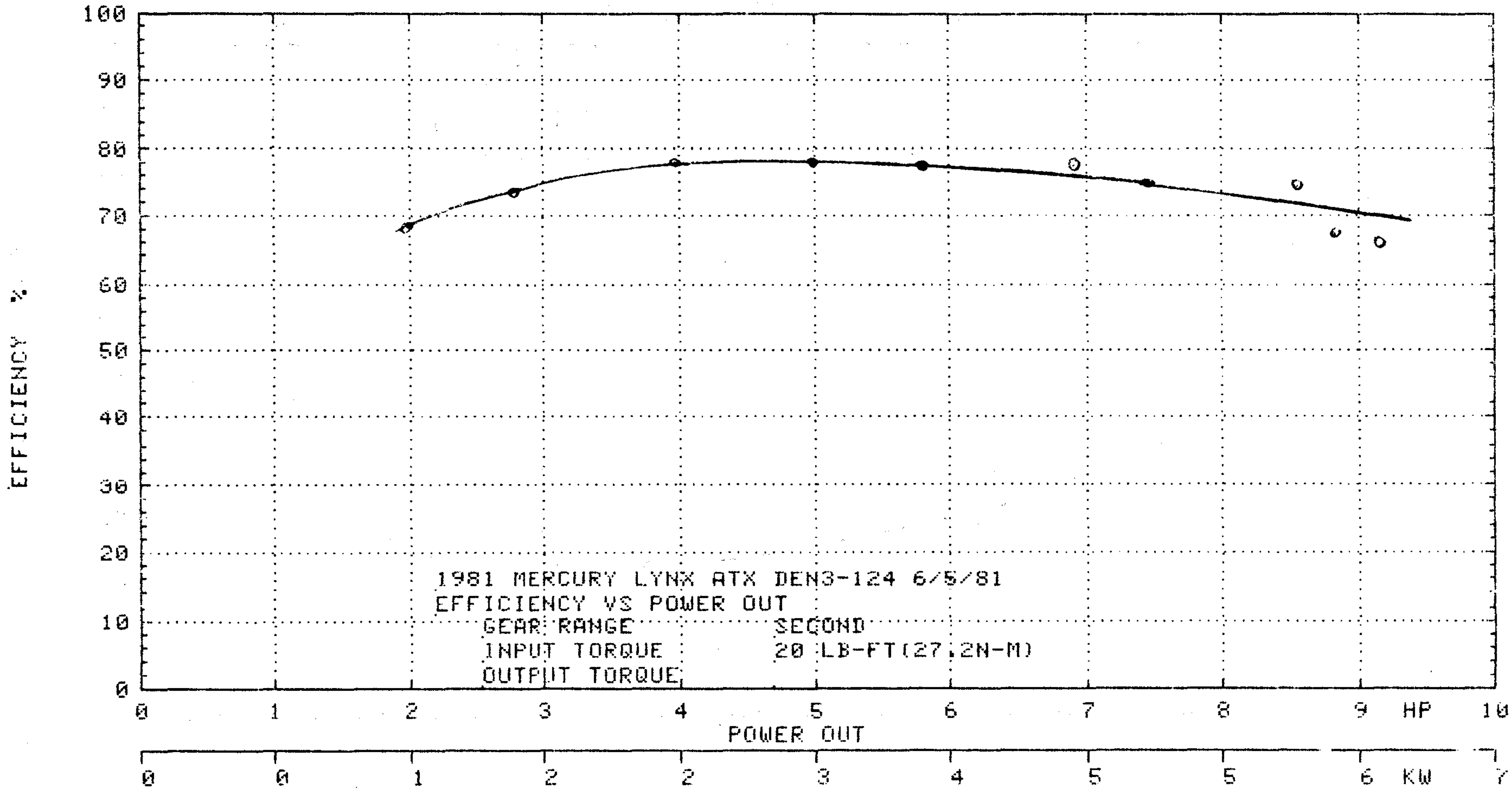

5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
.5
0.0
TORQUE RATIO To/Ti
0
100
200
300
400
500
600
700
800
900
1000
OUTPUT SPEED RPM
1981 MERCURY LYNX ATX DEN3-124 6/5/81
TORQUE RATIO VS OUTPUT SPEED
GEAR RANGE SECOND
INPUT TORQUE 20 LB-FT(27.2N-M)
OUTPUT TORQUE

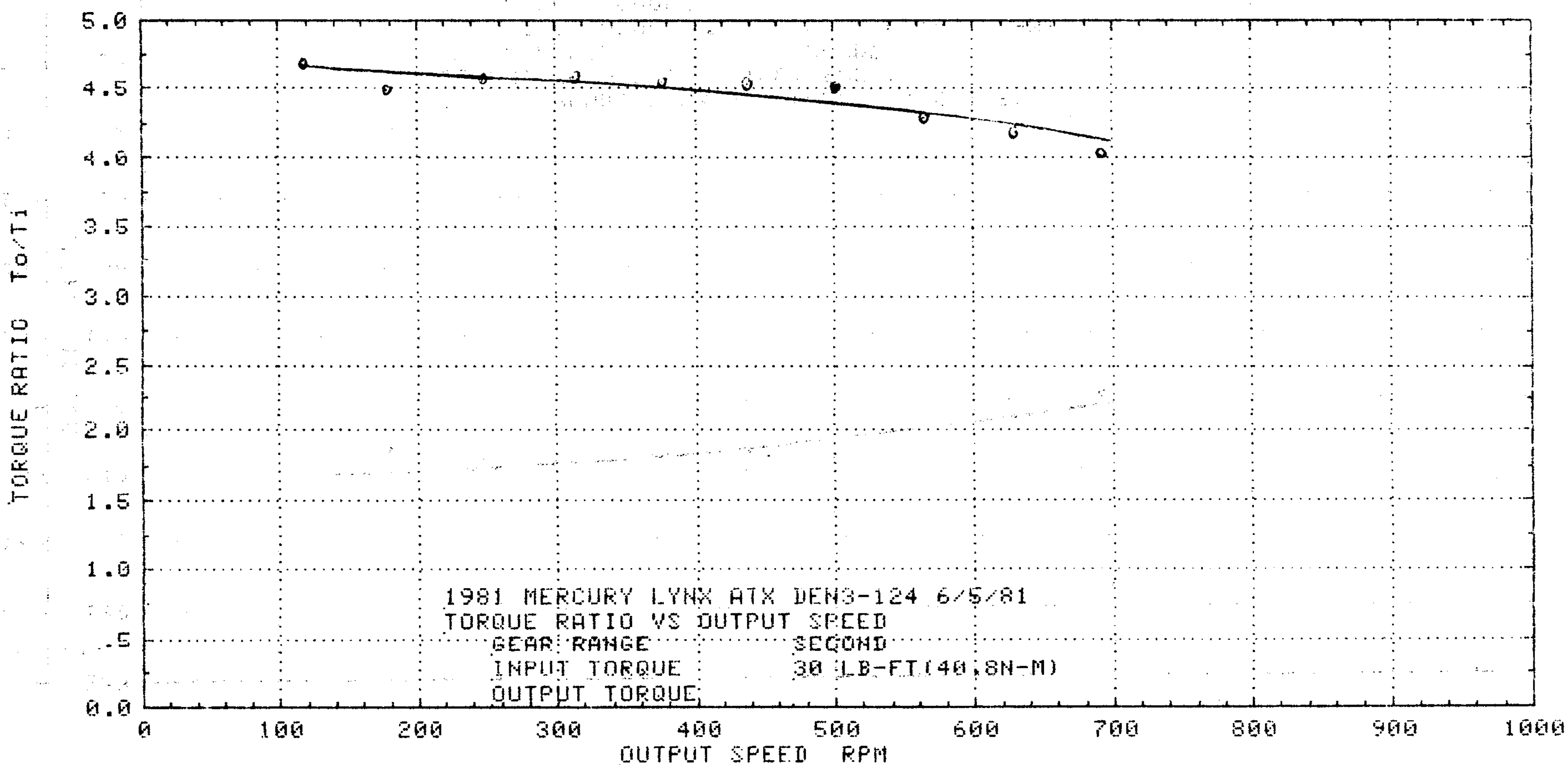


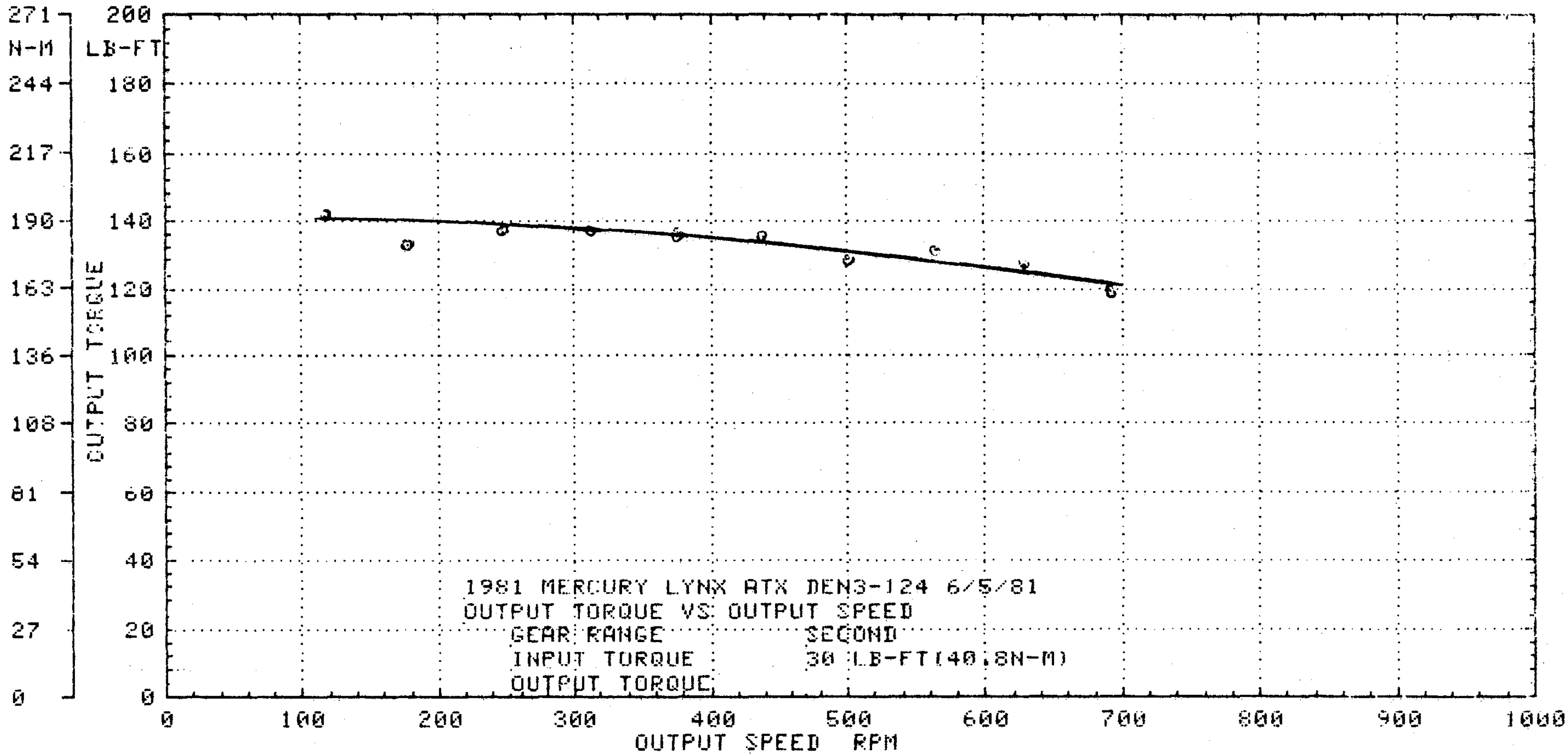
1981 MERCURY LYNX A1X DEN3-124 6/5/81
OUTPUT TORQUE VS OUTPUT SPEED
GEAR RANGE SECOND
INPUT TORQUE 20 LB-FT(27.2N-M)
OUTPUT TORQUE
N-M
136
122
108
95
81
68
54
41
27
14
0
LB-FT
100
90
80
70
60
50
40
30
20
10
0
OUTPUT TORQUE
0
100
200
300
400
500
600
700
800
900
1000
OUTPUT SPEED RPM

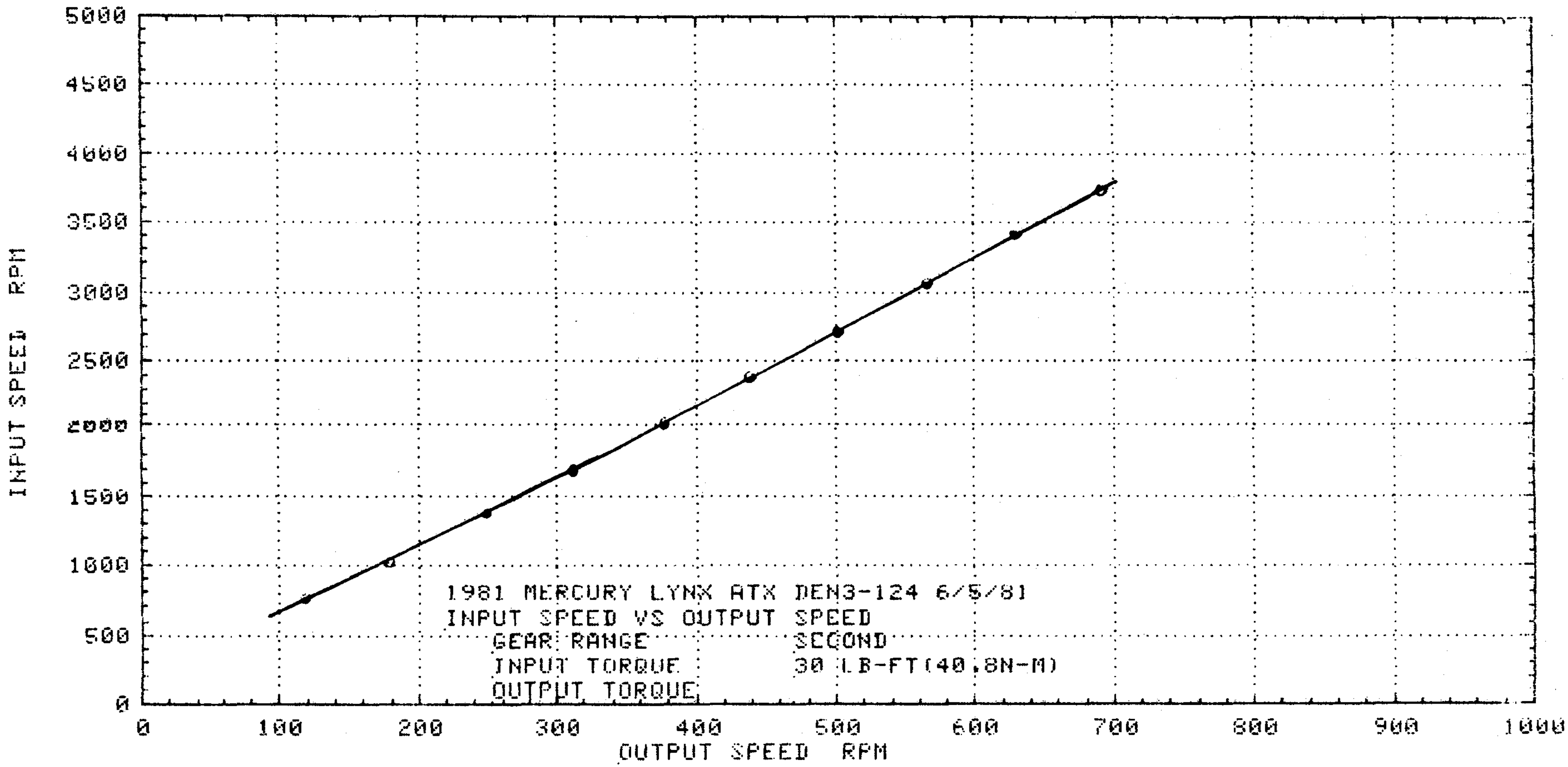

INPUT SPEED RPM
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
0
100
200
300
400
500
600
700
800
900
1000
OUTPUT SPEED RPM
1981 MERCURY LYNX ATX DEN3-124 6/5/81
INPUT SPEED VS OUTPUT SPEED
GEAR RANGE SECOND
INPUT TORQUE 20 LB-FT(27.2N-M)
OUTPUT TORQUE

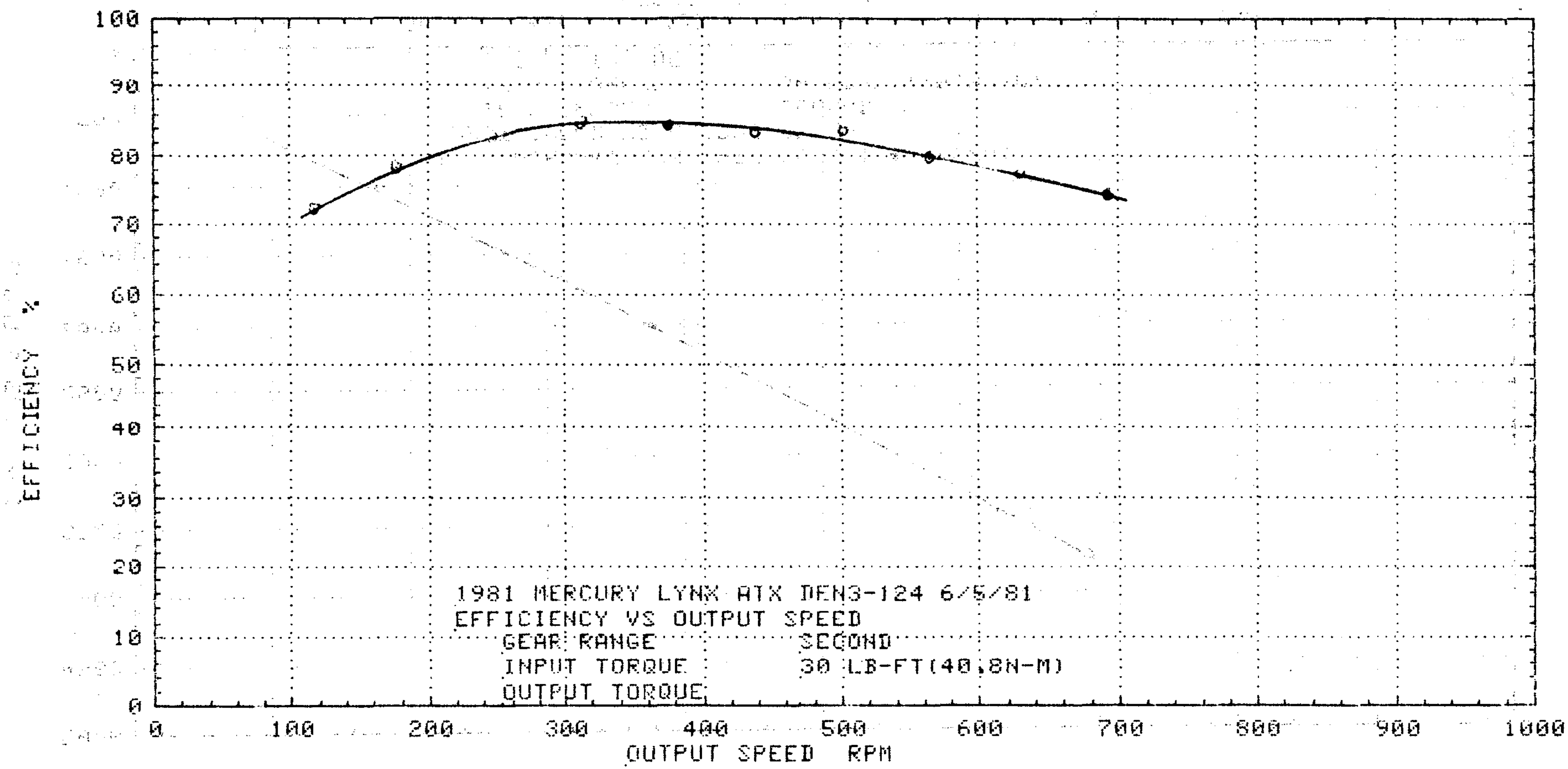

1981 MERCURY LYNX ATX DEN3-124 6/5/81
EFFICIENCY VS OUTPUT SPEED
GEAR RANGE SECOND
INPUT TORQUE 20 LB-FT(27.2N-M)
OUTPUT TORQUE
EFFICIENCY %
OUTPUT SPEED RPM
0
10
20
30
40
50
60
70
80
90
100
0
100
200
300
400
500
600
700
800
900
1000

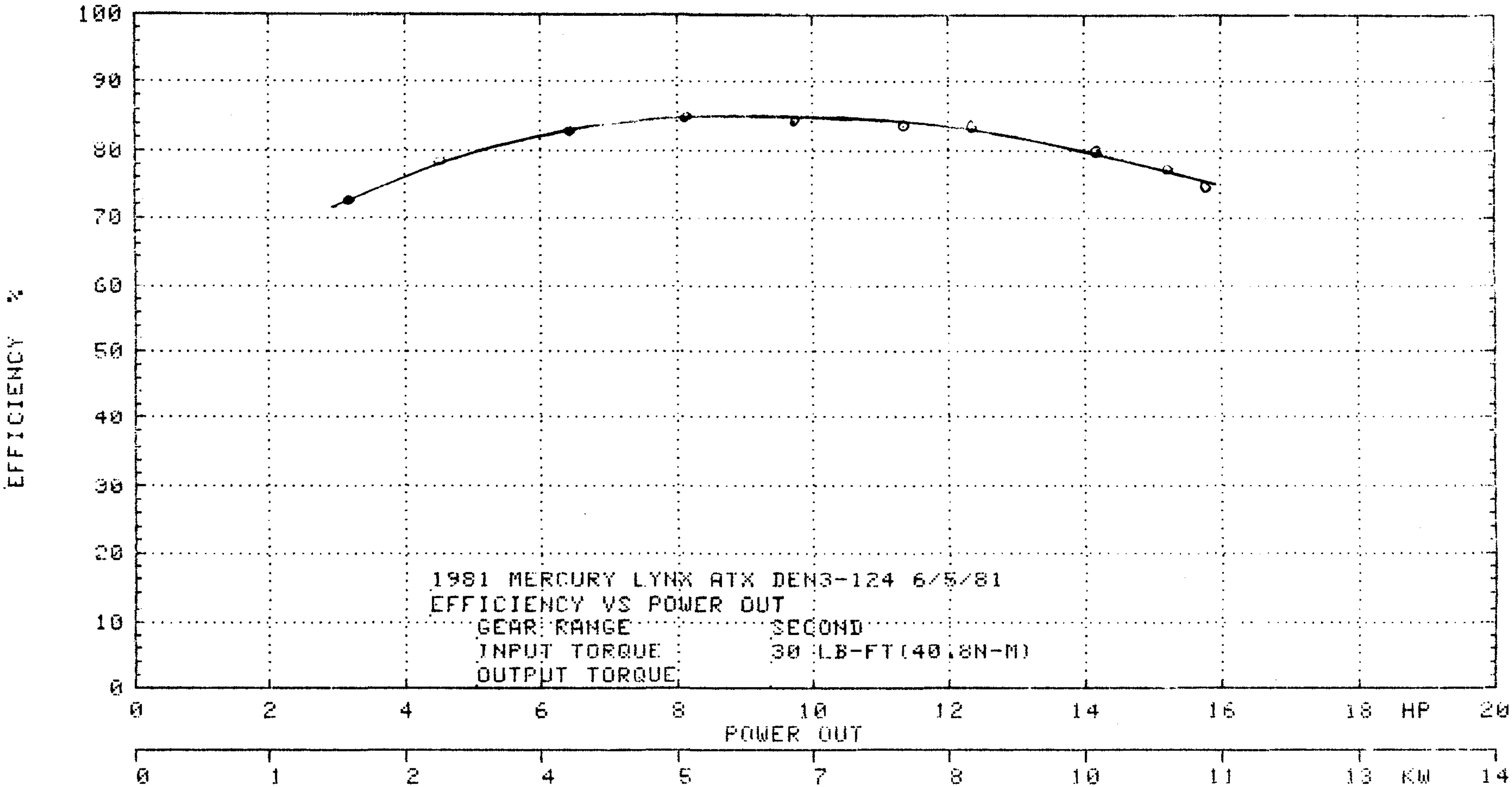

1981 MERCURY LYNX ATX DEN3-124 6/5/81
EFFICIENCY VS POWER OUT
GEAR RANGE SECOND
INPUT TORQUE 20 LB-FT(27.2N-M)
OUTPUT TORQUE
EFFICIENCY %
100
90
80
70
60
50
40
30
20
10
0
0 1 2 3 4 5 6 7 8 9 HP 10
POWER OUT
0 0 1 2 2 3 4 5 5 6 KW 7

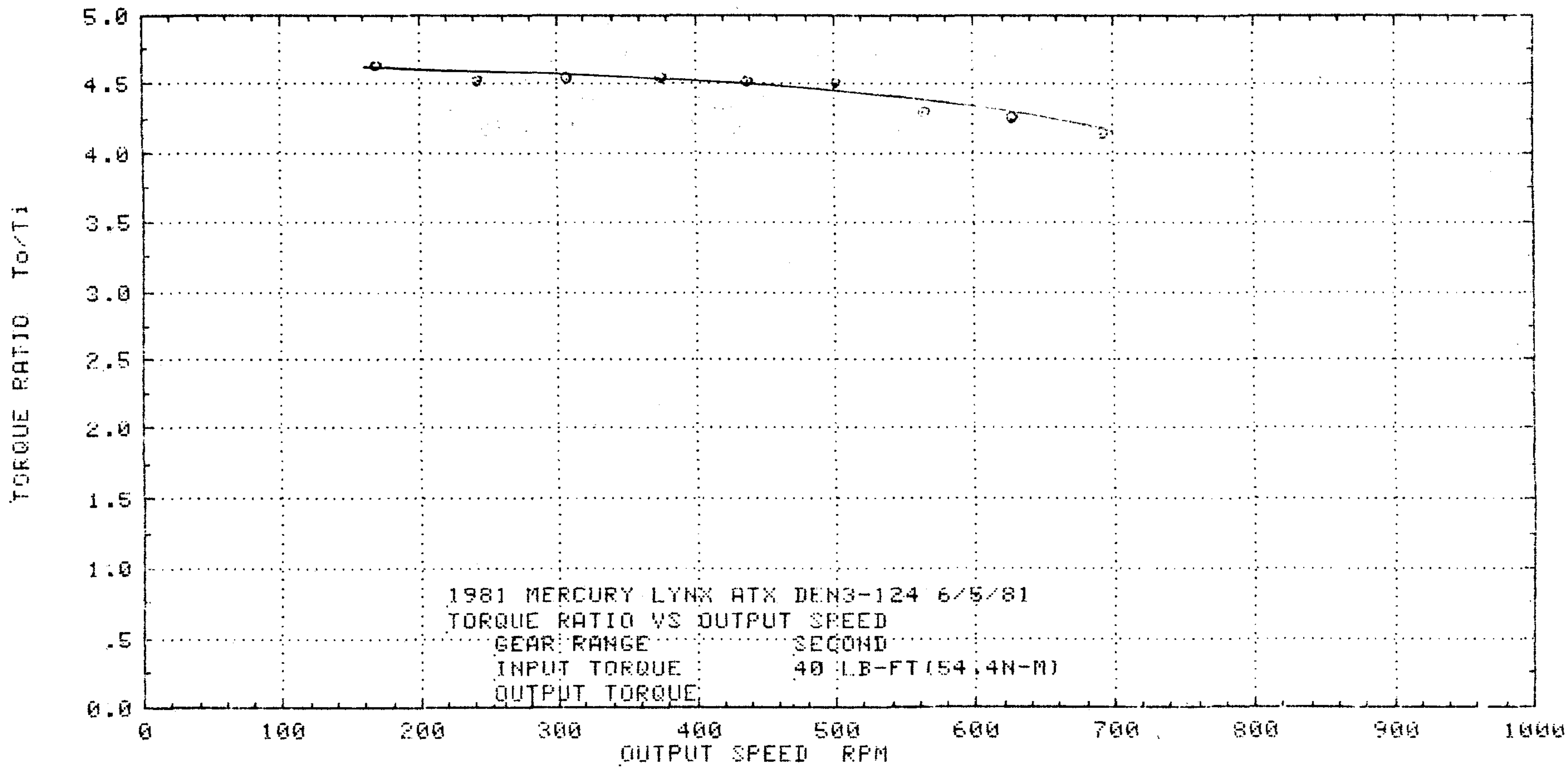

1981 MERCURY LYNX ATX DEN3-124 6/5/81
TORQUE RATIO VS OUTPUT SPEED
GEAR RANGE SECOND
INPUT TORQUE 30 LB-FT(40.8N-M)
OUTPUT TORQUE
TORQUE RATIO To/Ti
OUTPUT SPEED RPM
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
.5
0.0
0
100
200
300
400
500
600
700
800
900
1000


1981 MERCURY LYNX ATX DEN3-124 6/5/81
OUTPUT TORQUE VS OUTPUT SPEED
GEAR RANGE SECOND
INPUT TORQUE 30 LB-FT(40.8N-M)
OUTPUT TORQUE
OUTPUT TORQUE
N-M
LB-FT
OUTPUT SPEED RPM
271
244
217
190
163
136
108
81
54
27
0
200
180
160
140
120
100
80
60
40
20
0
0
100
200
300
400
500
600
700
800
900
1000

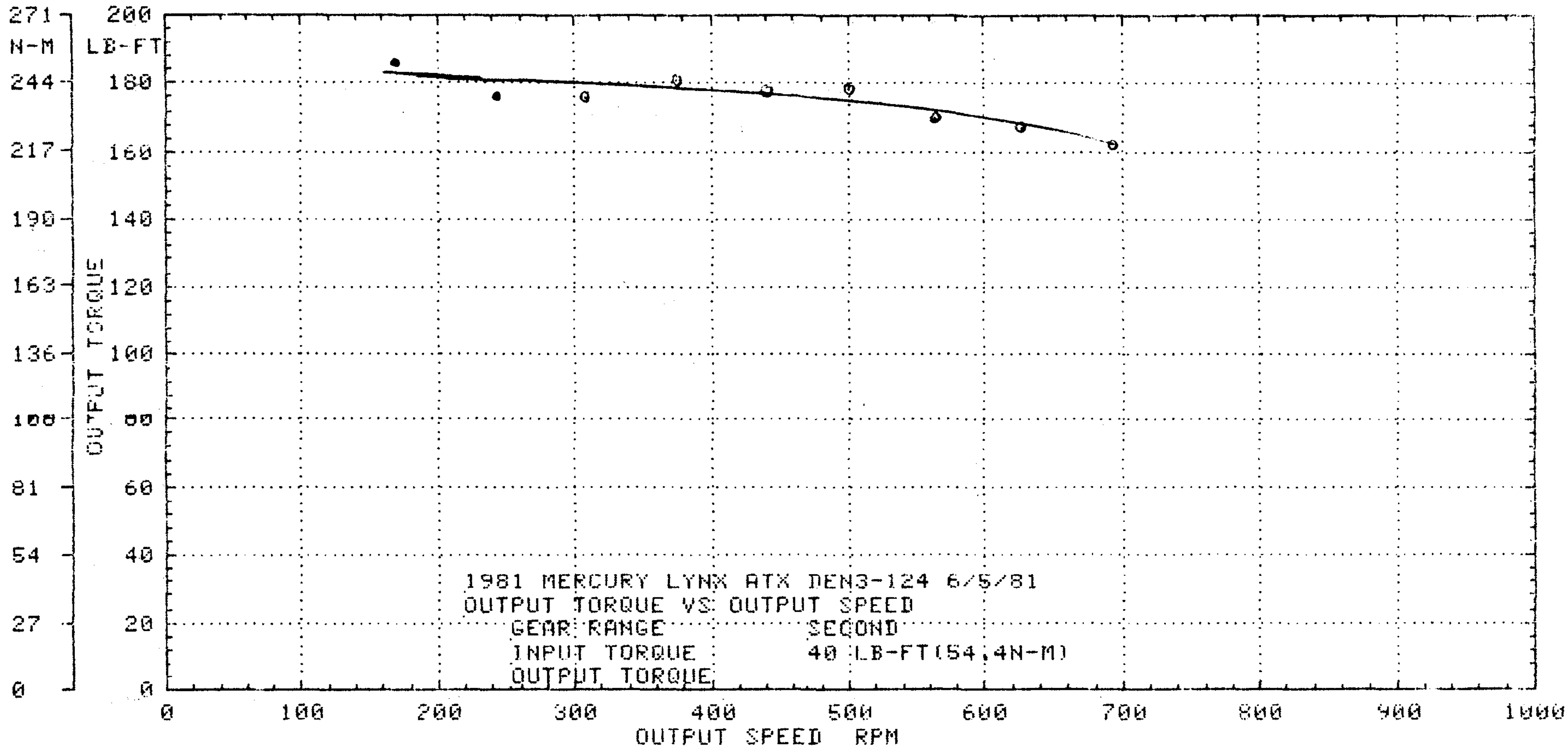

1981 MERCURY LYNX ATX DEN3-124 6/5/81
INPUT SPEED VS OUTPUT SPEED
GEAR RANGE SECOND
INPUT TORQUE 30 LB-FT(40.8N-M)
OUTPUT TORQUE
INPUT SPEED RPM
OUTPUT SPEED RPM
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
0
100
200
300
400
500
600
700
800
900
1000


1981 MERCURY LYNX ATX DEN3-124 6/5/81
EFFICIENCY VS OUTPUT SPEED
GEAR RANGE SECOND
INPUT TORQUE 30 LB-FT(40.8N-M)
OUTPUT TORQUE
EFFICIENCY %
OUTPUT SPEED RPM
0
10
20
30
40
50
60
70
80
90
100
0
100
200
300
400
500
600
700
800
900
1000

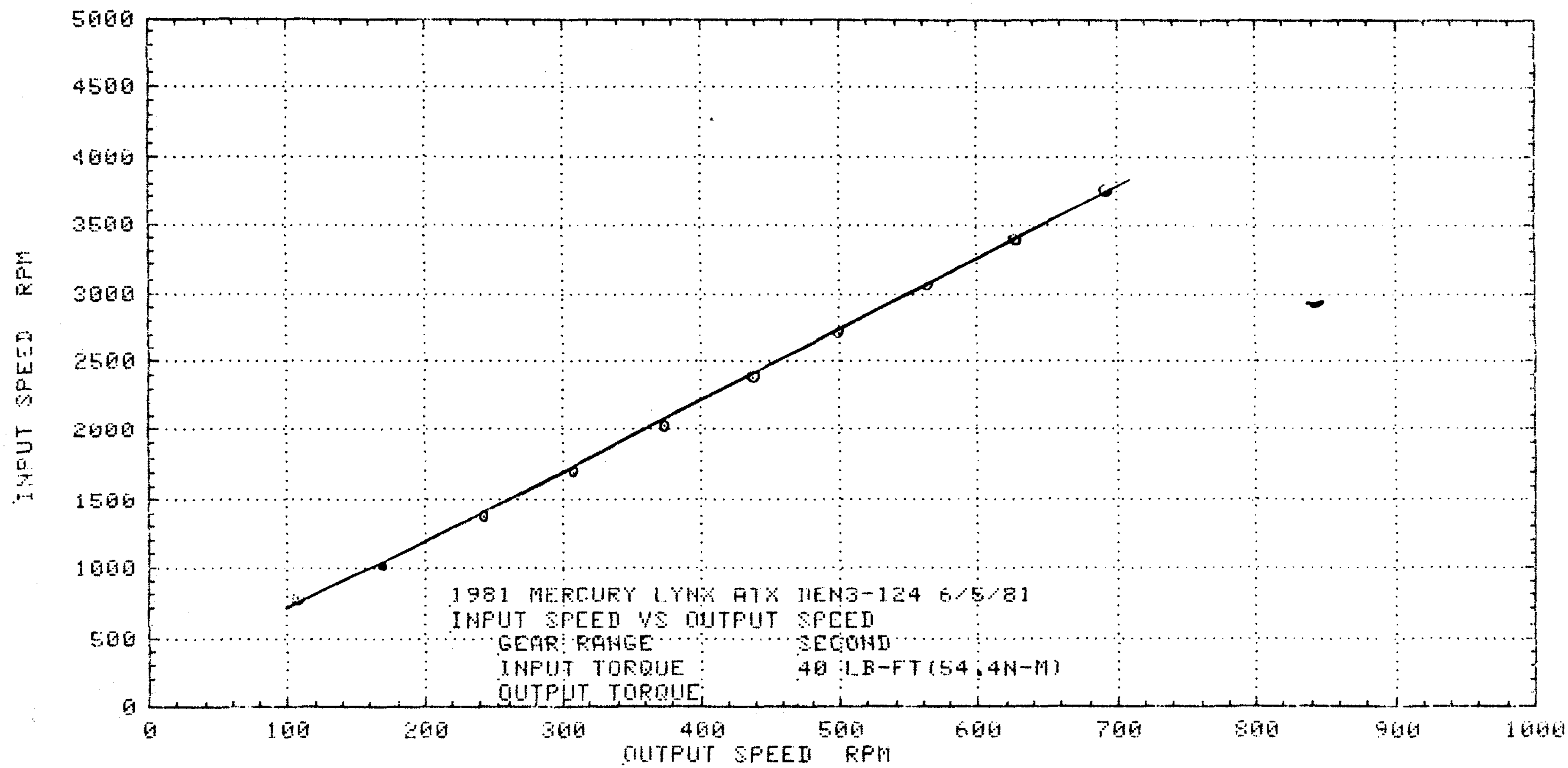

1981 MERCURY LYNX ATX DEN3-124 6/5/81
EFFICIENCY VS POWER OUT
GEAR RANGE SECOND
INPUT TORQUE 30 LB-FT(40.8N-M)
OUTPUT TORQUE
EFFICIENCY %
POWER OUT
HP
KW
0
10
20
30
40
50
60
70
80
90
100
0
2
4
6
8
10
12
14
16
18
20
0
1
2
4
5
7
8
10
11
13
14

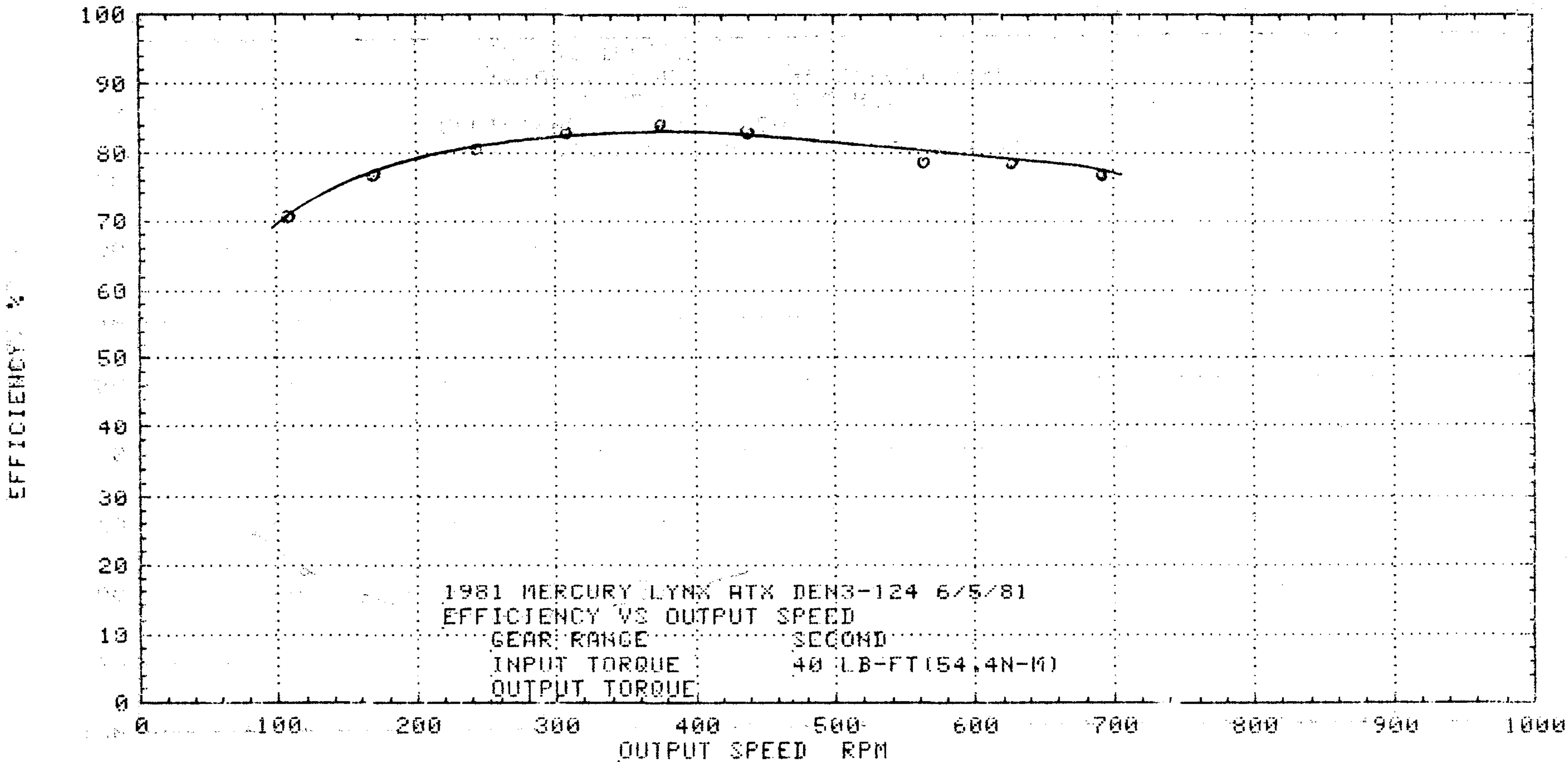


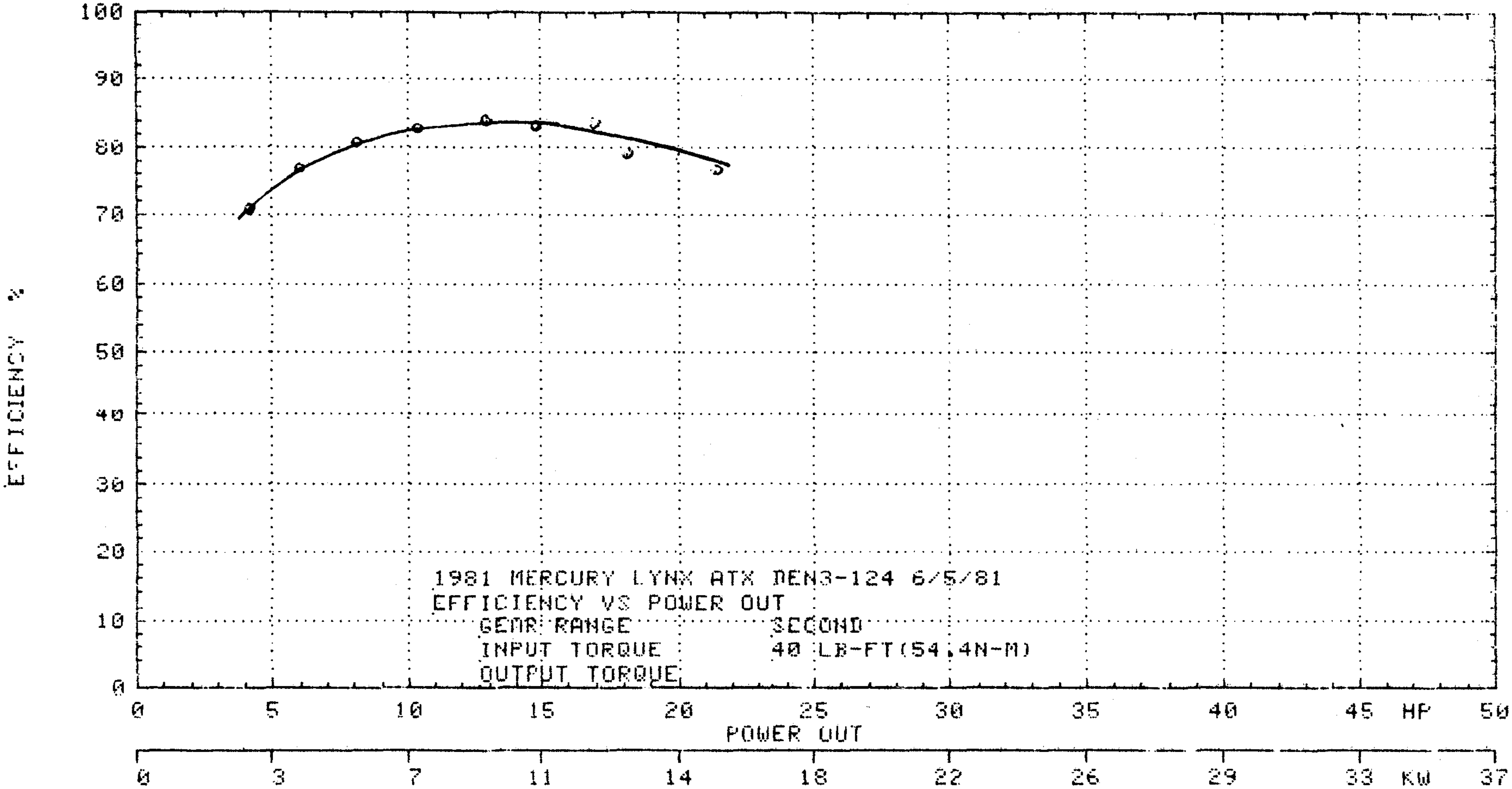
TORQUE RATIO To/Ti
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
.5
0.0
0
100
200
300
400
500
600
700
800
900
1000
OUTPUT SPEED RPM
1981 MERCURY LYNX ATX DEN3-124 6/5/81
TORQUE RATIO VS OUTPUT SPEED
GEAR RANGE SECOND
INPUT TORQUE 40 LB-FT(54.4N-M)
OUTPUT TORQUE

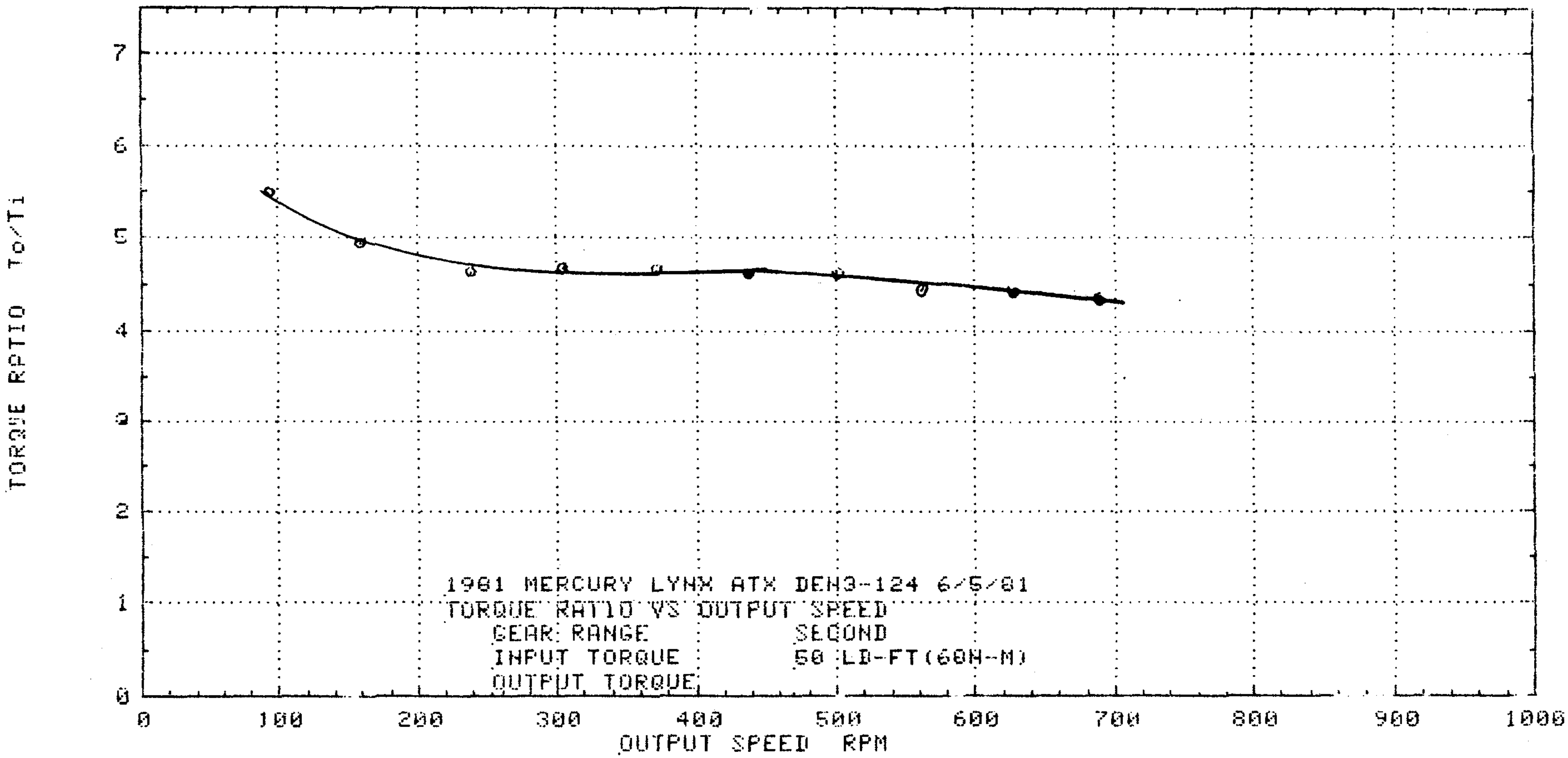


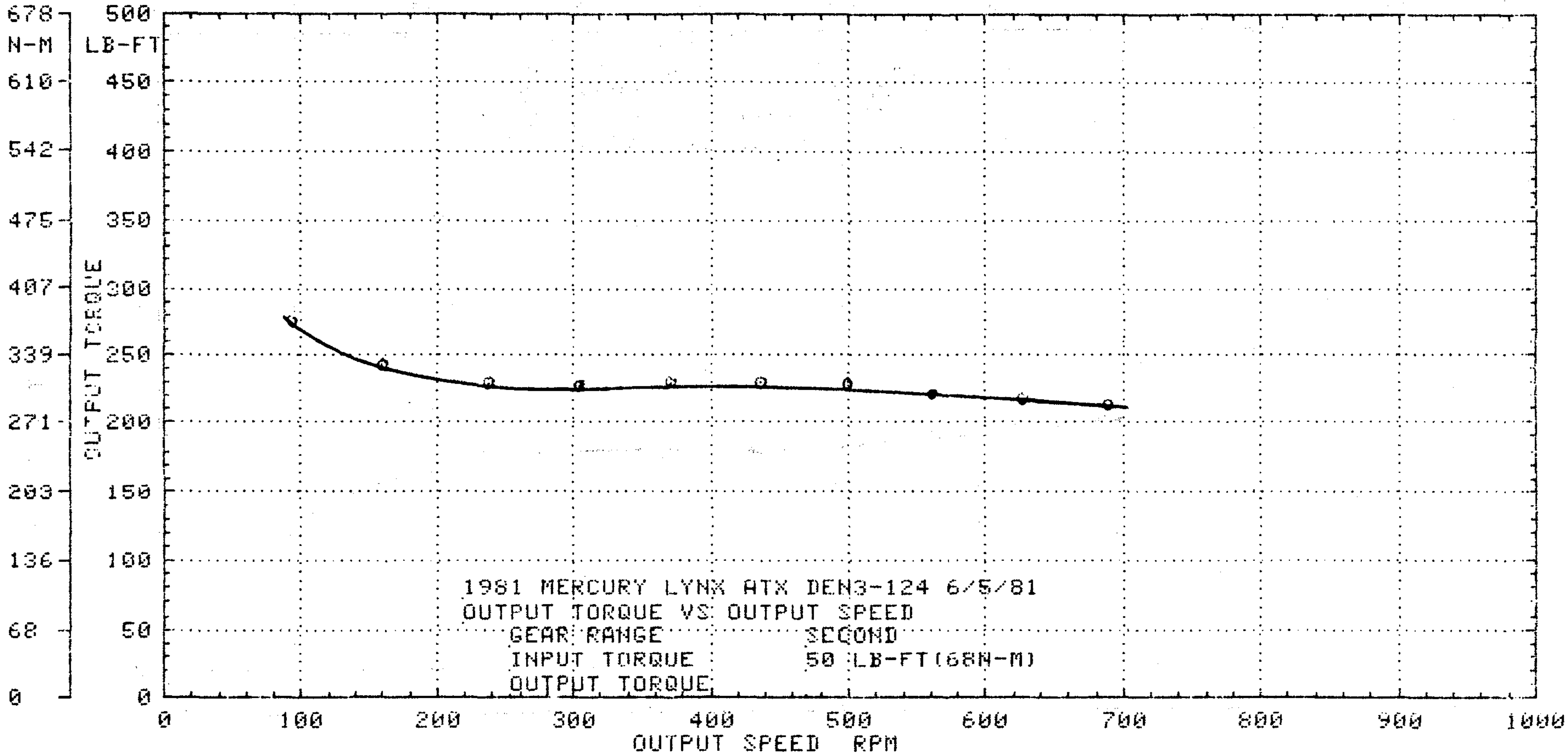
1981 MERCURY LYNX ATX DEN3-124 6/5/81
OUTPUT TORQUE VS OUTPUT SPEED
GEAR RANGE SECOND
INPUT TORQUE 40 LB-FT(54.4N-M)
OUTPUT TORQUE
N-M
LB-FT
OUTPUT TORQUE
OUTPUT SPEED RPM
271 244 217 190 163 136 108 81 54 27 0
200 180 160 140 120 100 80 60 40 20 0
0 100 200 300 400 500 600 700 800 900 1000

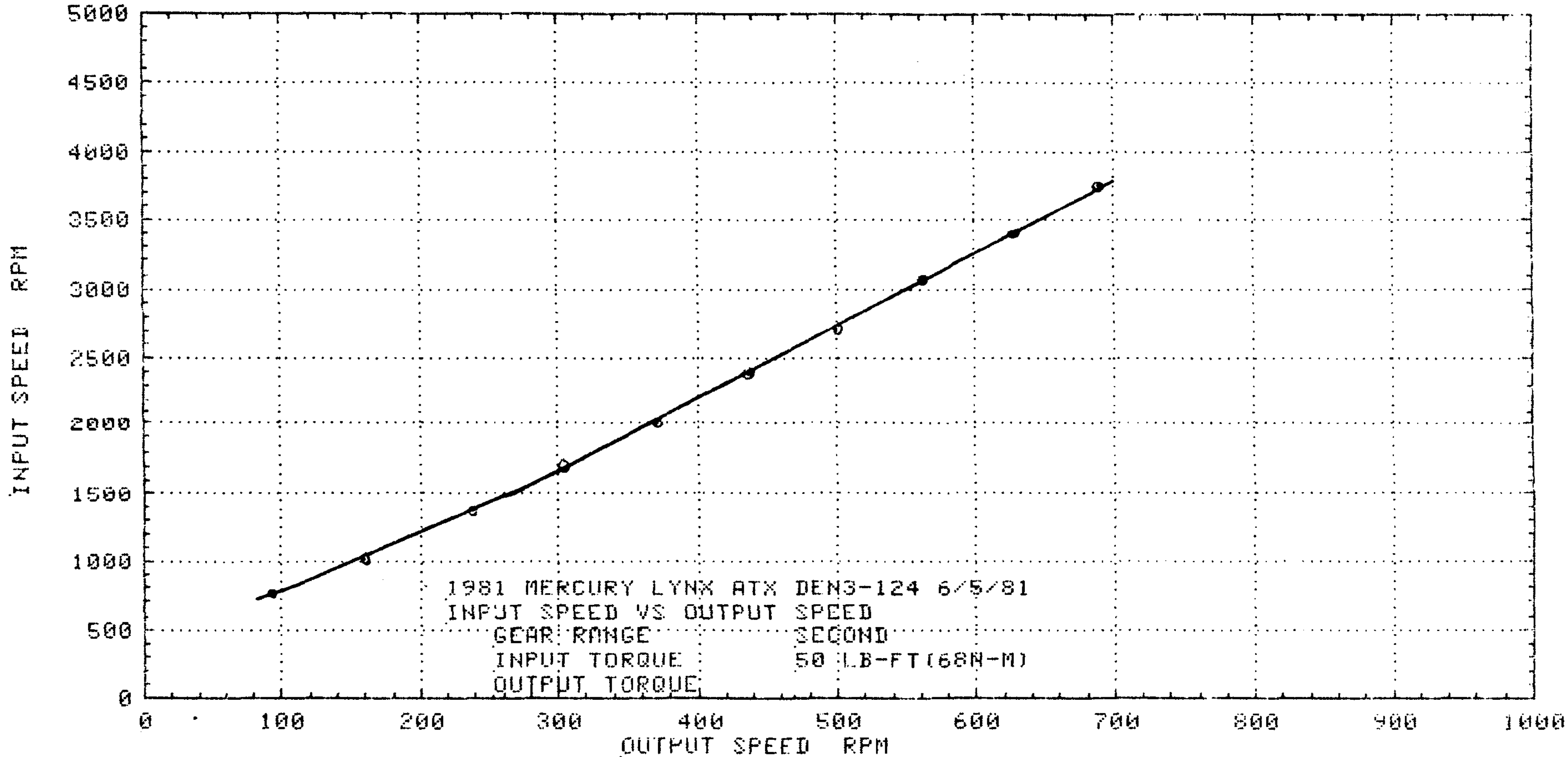

5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
INPUT SPEED RPM
0
100
200
300
400
500
600
700
800
900
1000
OUTPUT SPEED RPM
1981 MERCURY LYNX ATX DEN3-124 6/5/81
INPUT SPEED VS OUTPUT SPEED
GEAR RANGE SECOND
INPUT TORQUE 40 LB-FT(54.4N-M)
OUTPUT TORQUE

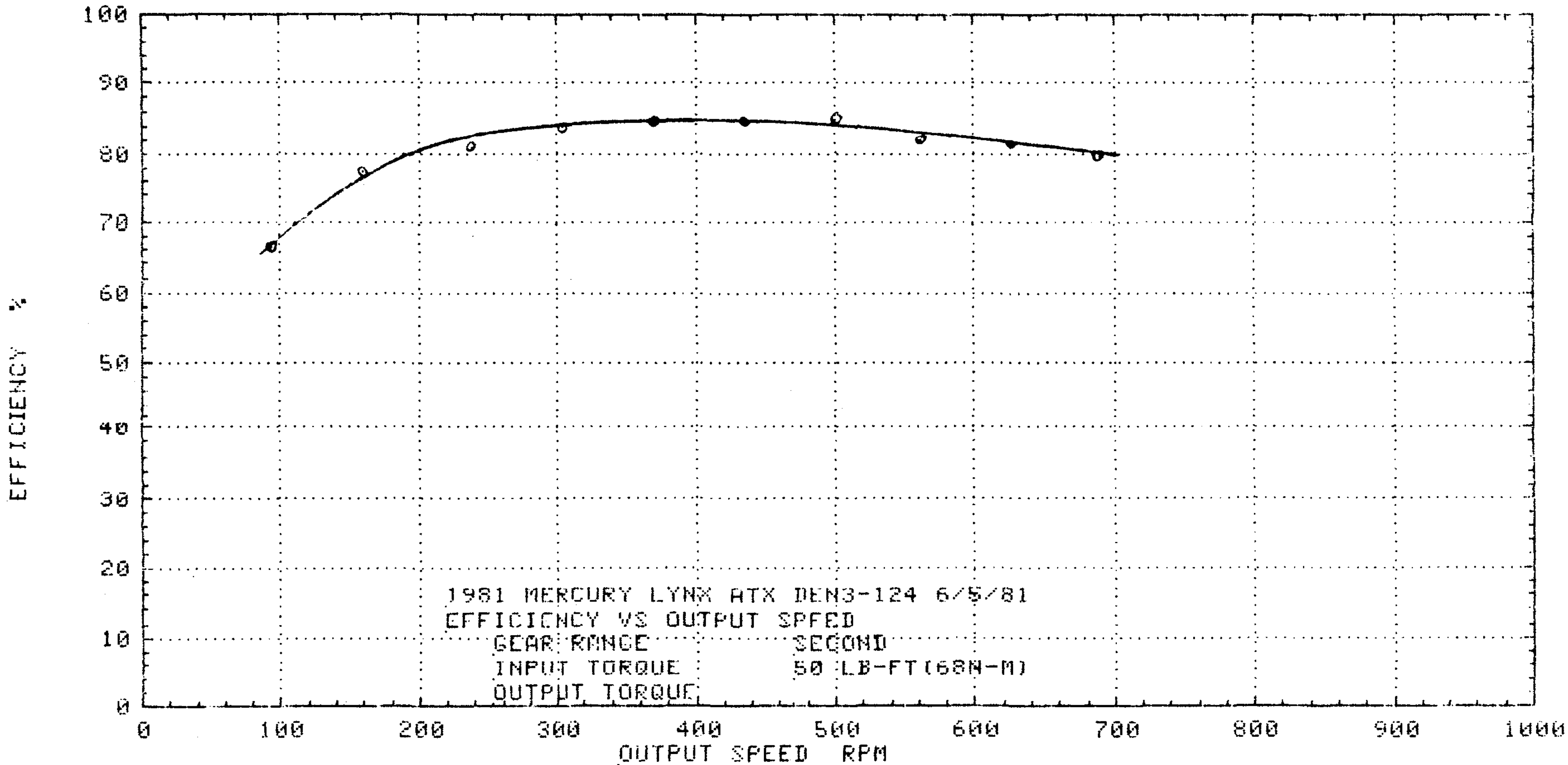

1981 MERCURY LYNX ATX DEN3-124 6/5/81
EFFICIENCY VS OUTPUT SPEED
GEAR RANGE SECOND
INPUT TORQUE 40 LB-FT(54.4N-M)
OUTPUT TORQUE
EFFICIENCY %
OUTPUT SPEED RPM
0
10
20
30
40
50
60
70
80
90
100
100
200
300
400
500
600
700
800
900
1000


1981 MERCURY LYNX ATX DEN3-124 6/5/81
EFFICIENCY VS POWER OUT
GEAR RANGE SECOND
INPUT TORQUE 40 LB-FT(54.4N-M)
OUTPUT TORQUE
EFFICIENCY %
POWER OUT
HP
KW

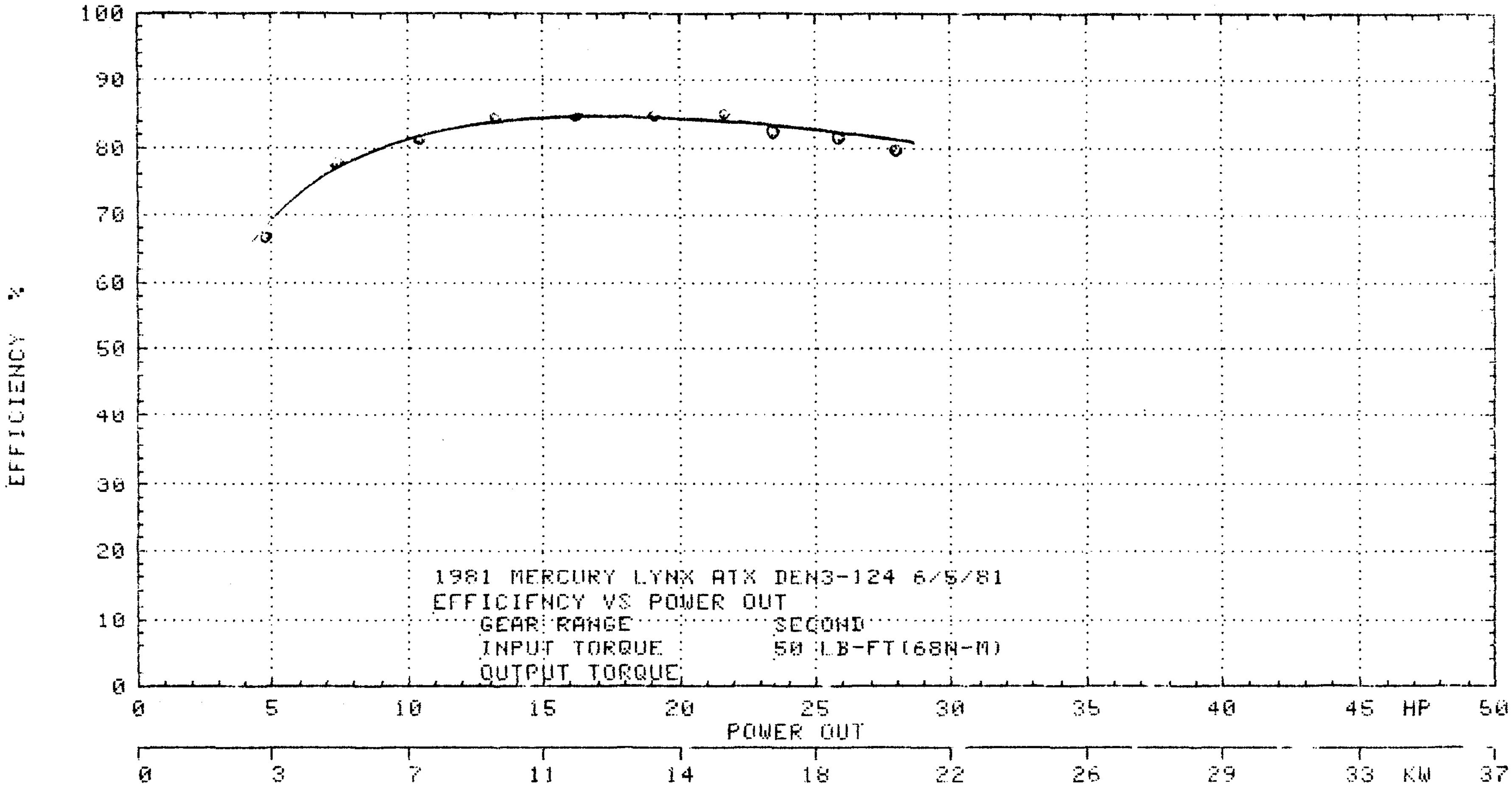

TORQUE RATIO To/Ti
7
6
5
4
3
2
1
0
0
100
200
300
400
500
600
700
800
900
1000
OUTPUT SPEED RPM
1981 MERCURY LYNX ATX DEH3-124 6/5/81
TORQUE RATIO VS OUTPUT SPEED
GEAR RANGE SECOND
INPUT TORQUE 50 LB-FT(68N-M)
OUTPUT TORQUE

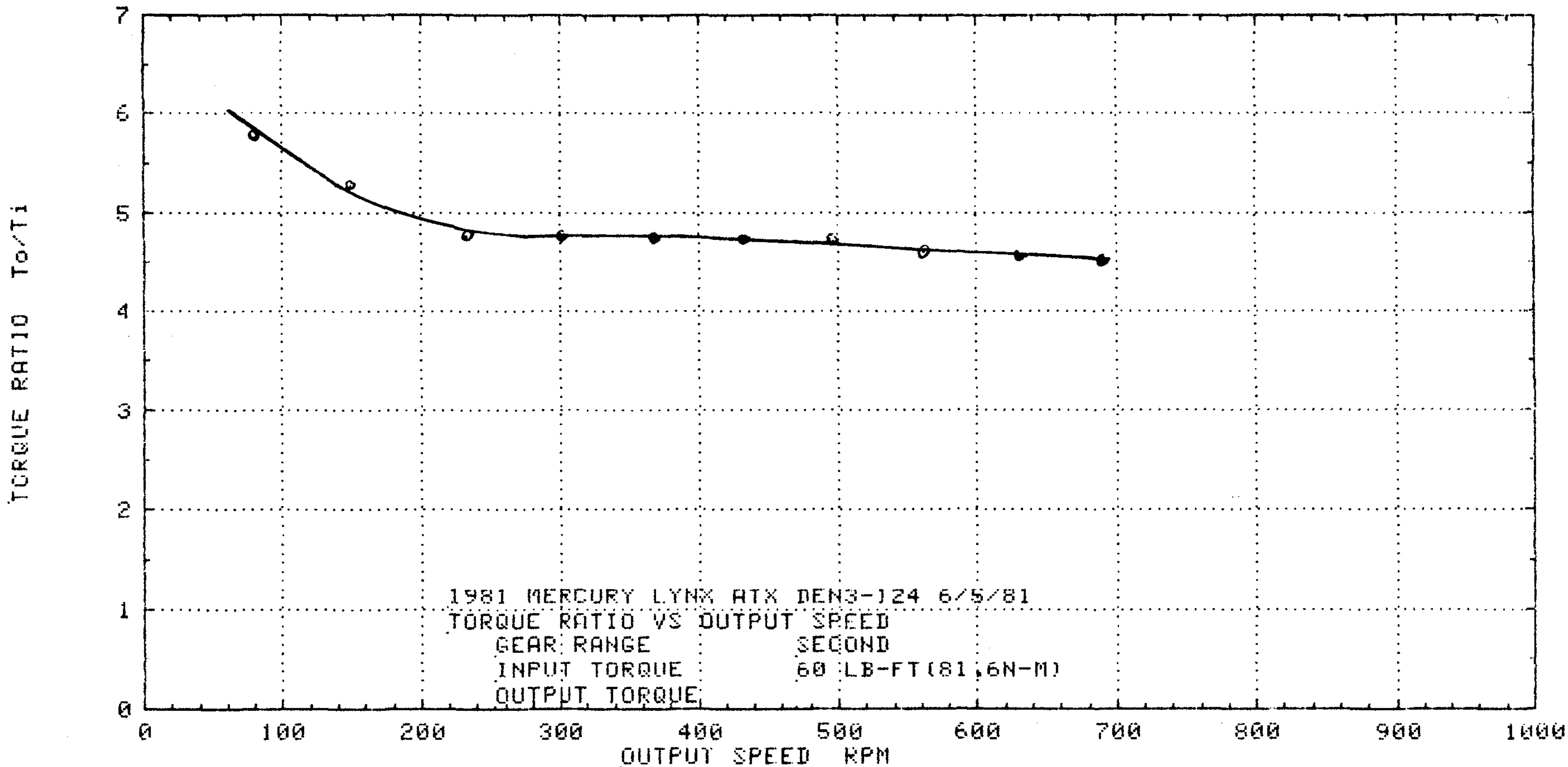

1981 MERCURY LYNX ATX DEN3-124 6/5/81
OUTPUT TORQUE VS OUTPUT SPEED
GEAR RANGE SECOND
INPUT TORQUE 50 LB-FT(68N-M)
OUTPUT TORQUE
OUTPUT TORQUE
N-M
LB-FT
OUTPUT SPEED RPM

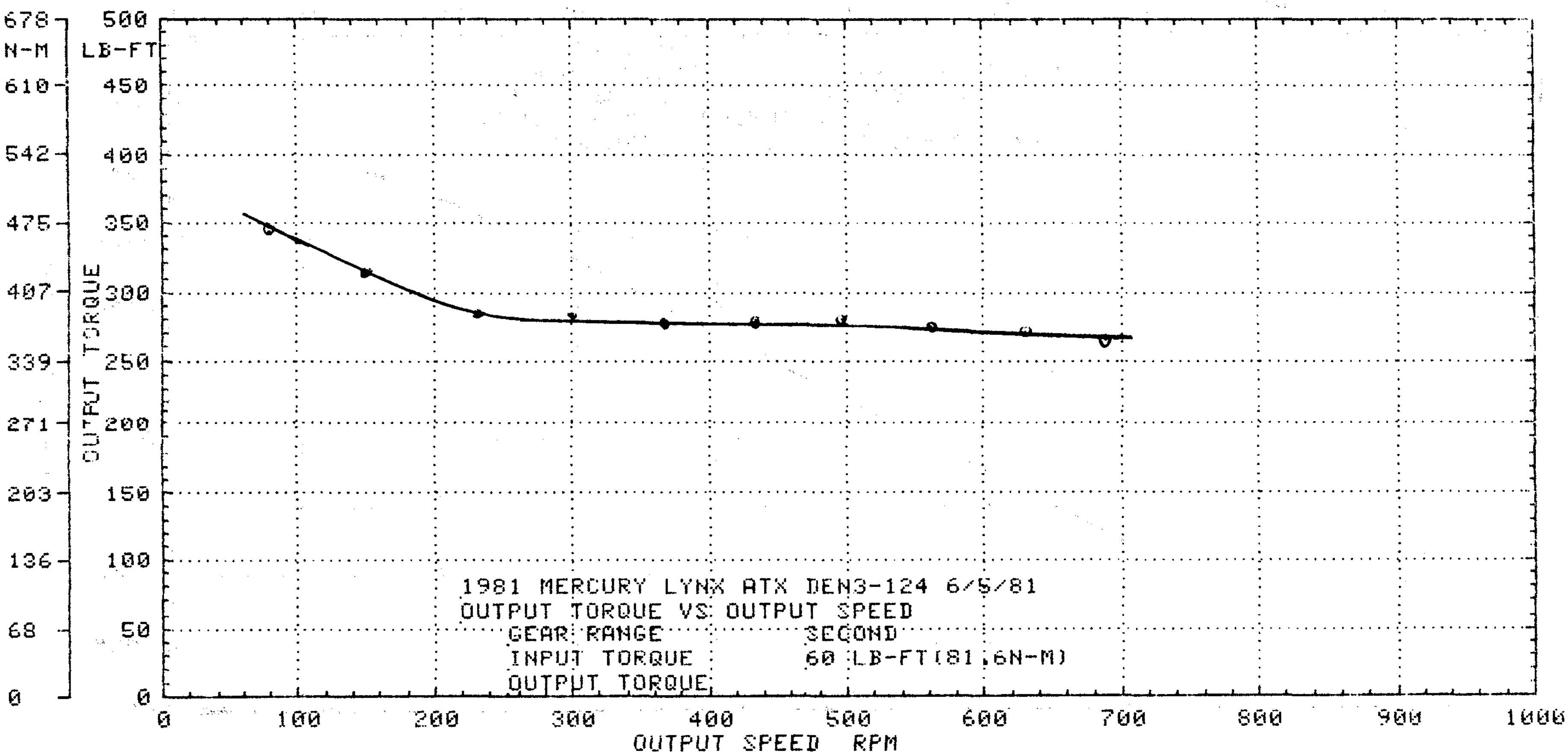

1981 MERCURY LYNX ATX DEN3-124 6/5/81
INPUT SPEED VS OUTPUT SPEED
GEAR RANGE SECOND
INPUT TORQUE 50 LB-FT(68N-M)
OUTPUT TORQUE
INPUT SPEED RPM
OUTPUT SPEED RPM
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
100
200
300
400
500
600
700
800
900
1000

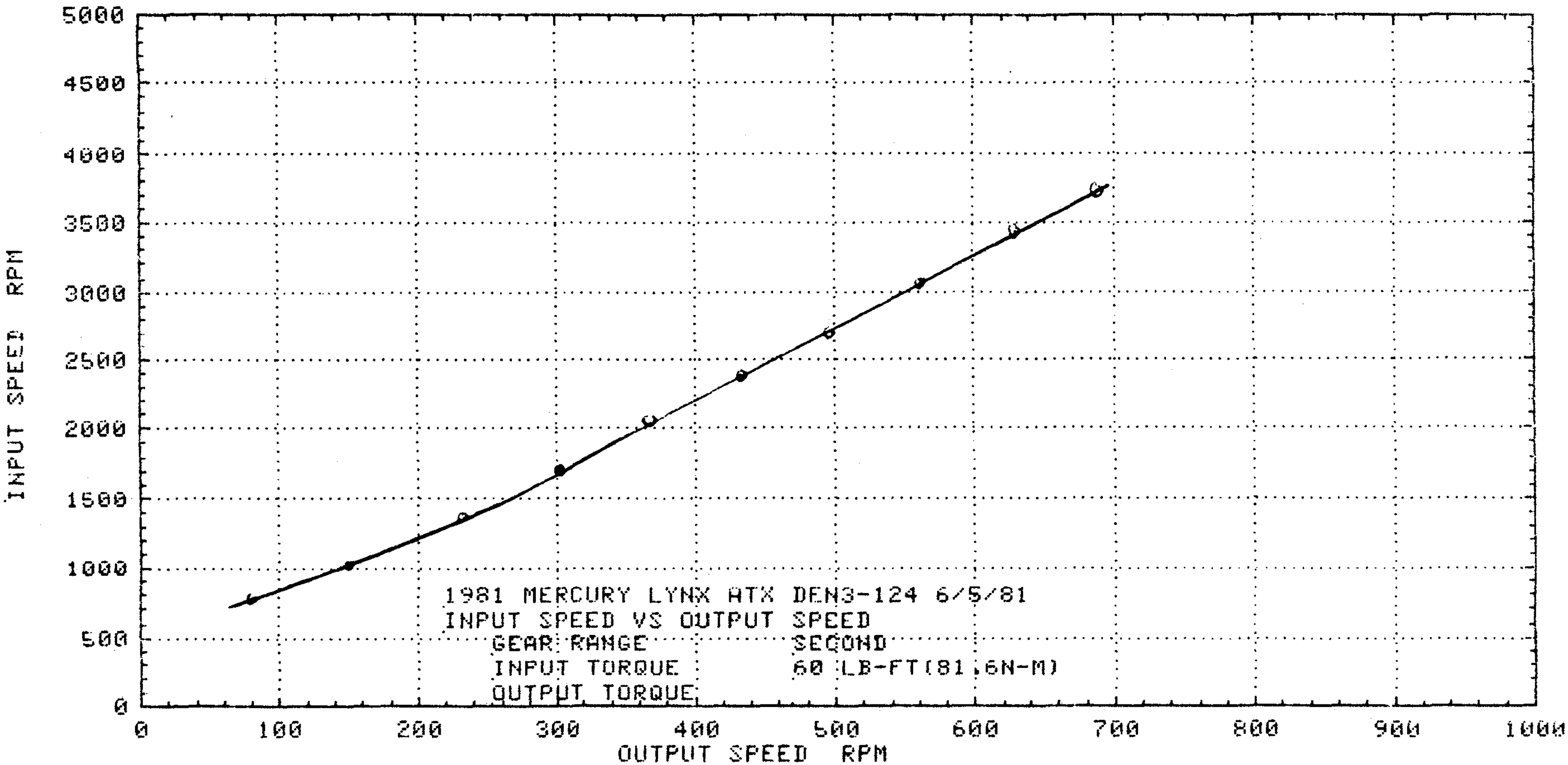


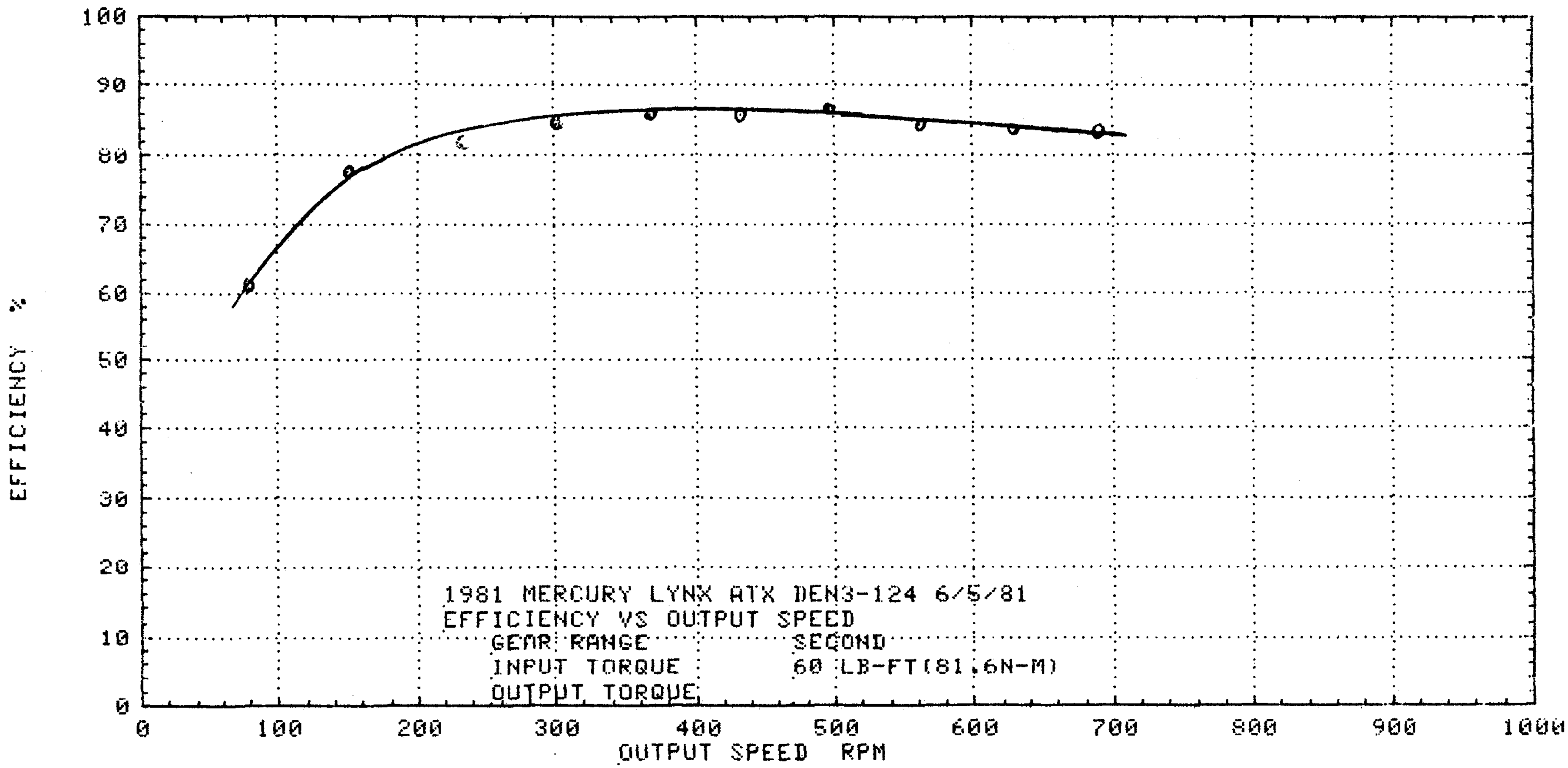
EFFICIENCY %
100
90
80
70
60
50
40
30
20
10
0
0
100
200
300
400
500
600
700
800
900
1000
OUTPUT SPEED RPM
1981 MERCURY LYNX ATX DEN3-124 6/5/81
EFFICIENCY VS OUTPUT SPEED
GEAR RANGE SECOND
INPUT TORQUE 50 LB-FT(68N-M)
OUTPUT TORQUE

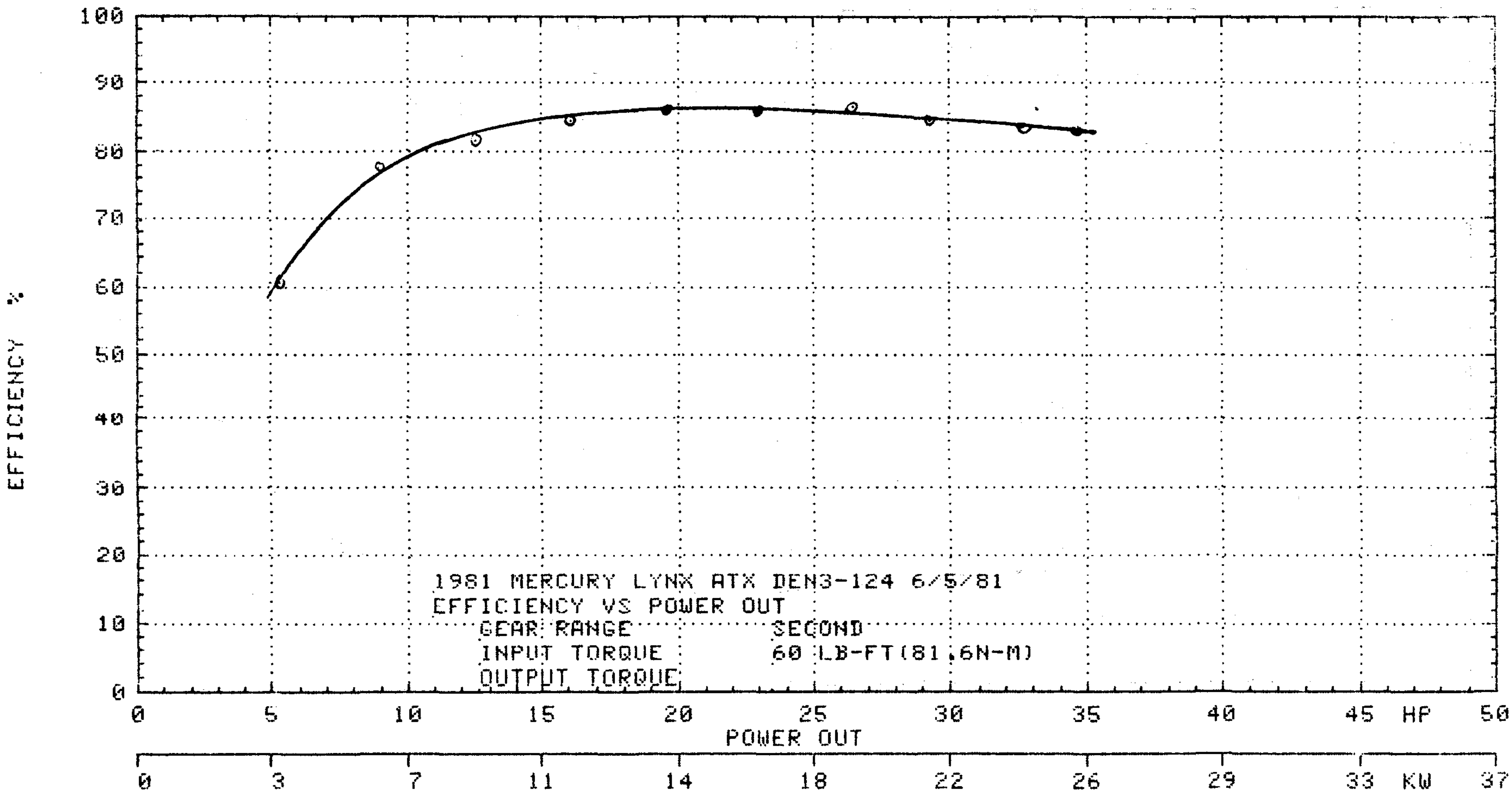

100
90
80
70
60
50
40
30
20
10
0
EFFICIENCY %
1981 MERCURY LYNX ATX DEN3-124 6/5/81
EFFICIFNCY VS POWER OUT
GEAR RANGE SECOND
INPUT TORQUE 50 LB-FT(68N-M)
OUTPUT TORQUE
0 5 10 15 20 25 30 35 40 45 HP 50
POWER OUT
0 3 7 11 14 18 22 26 29 33 KW 37


1981 MERCURY LYNX ATX DEN3-124 6/5/81
TORQUE RATIO VS OUTPUT SPEED
GEAR RANGE SECOND
INPUT TORQUE 60 LB-FT(81.6N-M)
OUTPUT TORQUE
TORQUE RATIO To/Ti
OUTPUT SPEED RPM
0
1
2
3
4
5
6
7
0
100
200
300
400
500
600
700
800
900
1000

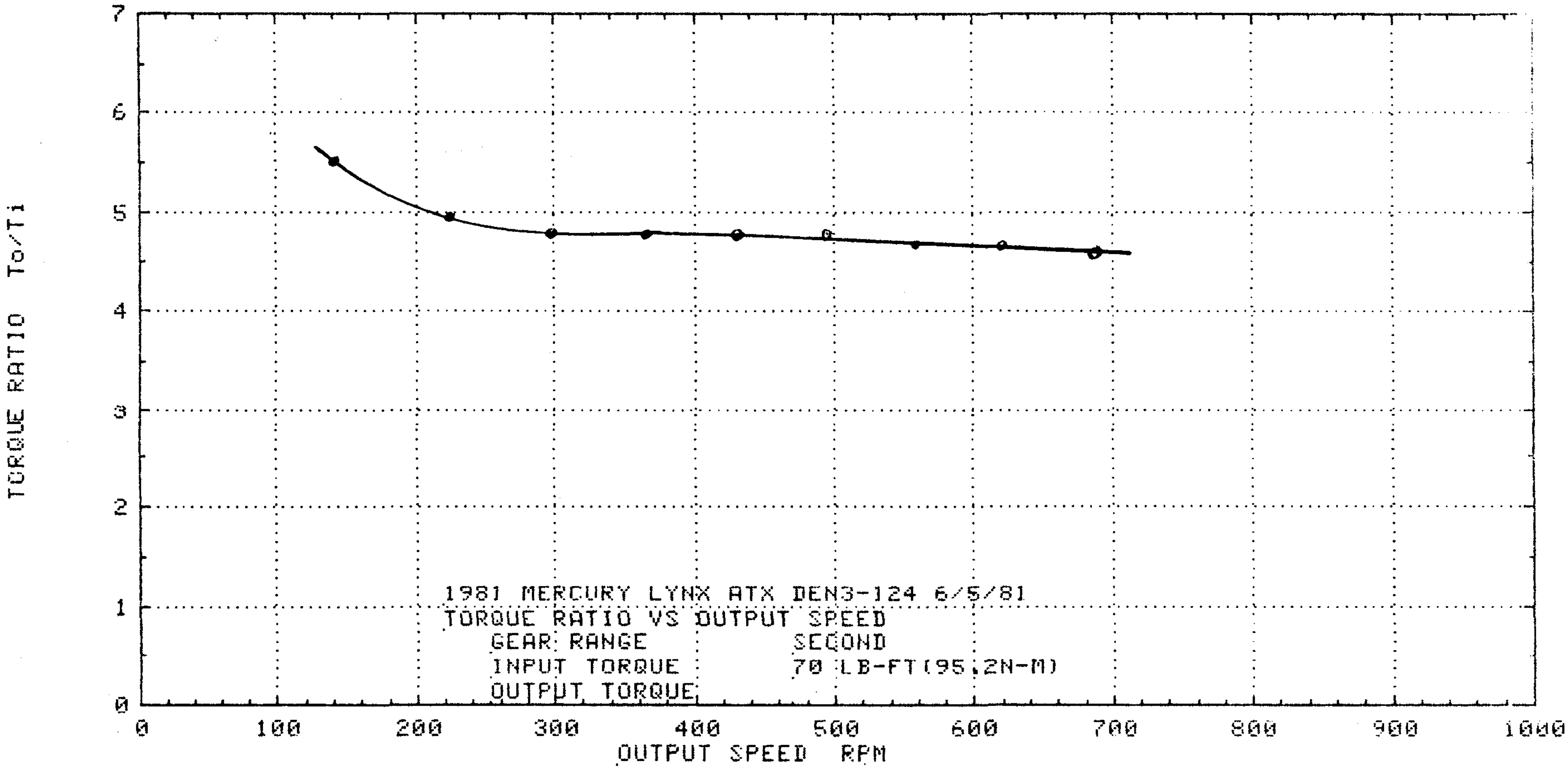

678
N-M
610
542
475
407
339
271
203
136
68
0
500
LB-FT
450
400
350
300
250
200
150
100
50
0
OUTPUT TORQUE
0
100
200
300
400
500
600
700
800
900
1000
OUTPUT SPEED RPM
1981 MERCURY LYNX ATX DEN3-124 6/5/81
OUTPUT TORQUE VS OUTPUT SPEED
GEAR RANGE SECOND
INPUT TORQUE 60 LB-FT(81.6N-M)
OUTPUT TORQUE


1981 MERCURY LYNX ATX DEN3-124 6/5/81
INPUT SPEED VS OUTPUT SPEED
GEAR RANGE SECOND
INPUT TORQUE 60 LB-FT(81.6N-M)
OUTPUT TORQUE
INPUT SPEED RPM
OUTPUT SPEED RPM
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
0
100
200
300
400
500
600
700
800
900
1000

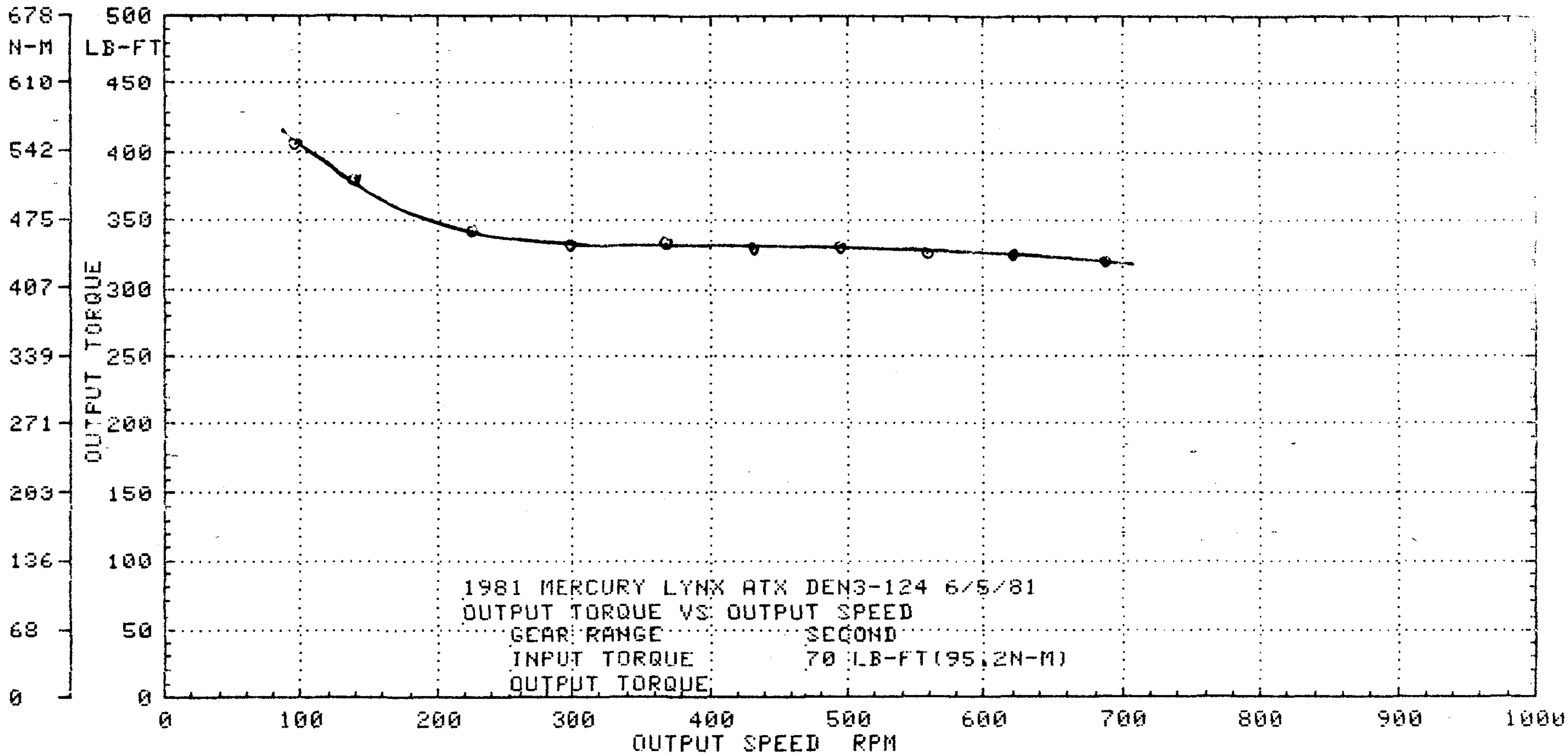

1981 MERCURY LYNX ATX DEN3-124 6/5/81
EFFICIENCY VS OUTPUT SPEED
GEAR RANGE SECOND
INPUT TORQUE 60 LB-FT(81.6N-M)
OUTPUT TORQUE
EFFICIENCY %
OUTPUT SPEED RPM
0
10
20
30
40
50
60
70
80
90
100
0
100
200
300
400
500
600
700
800
900
1000

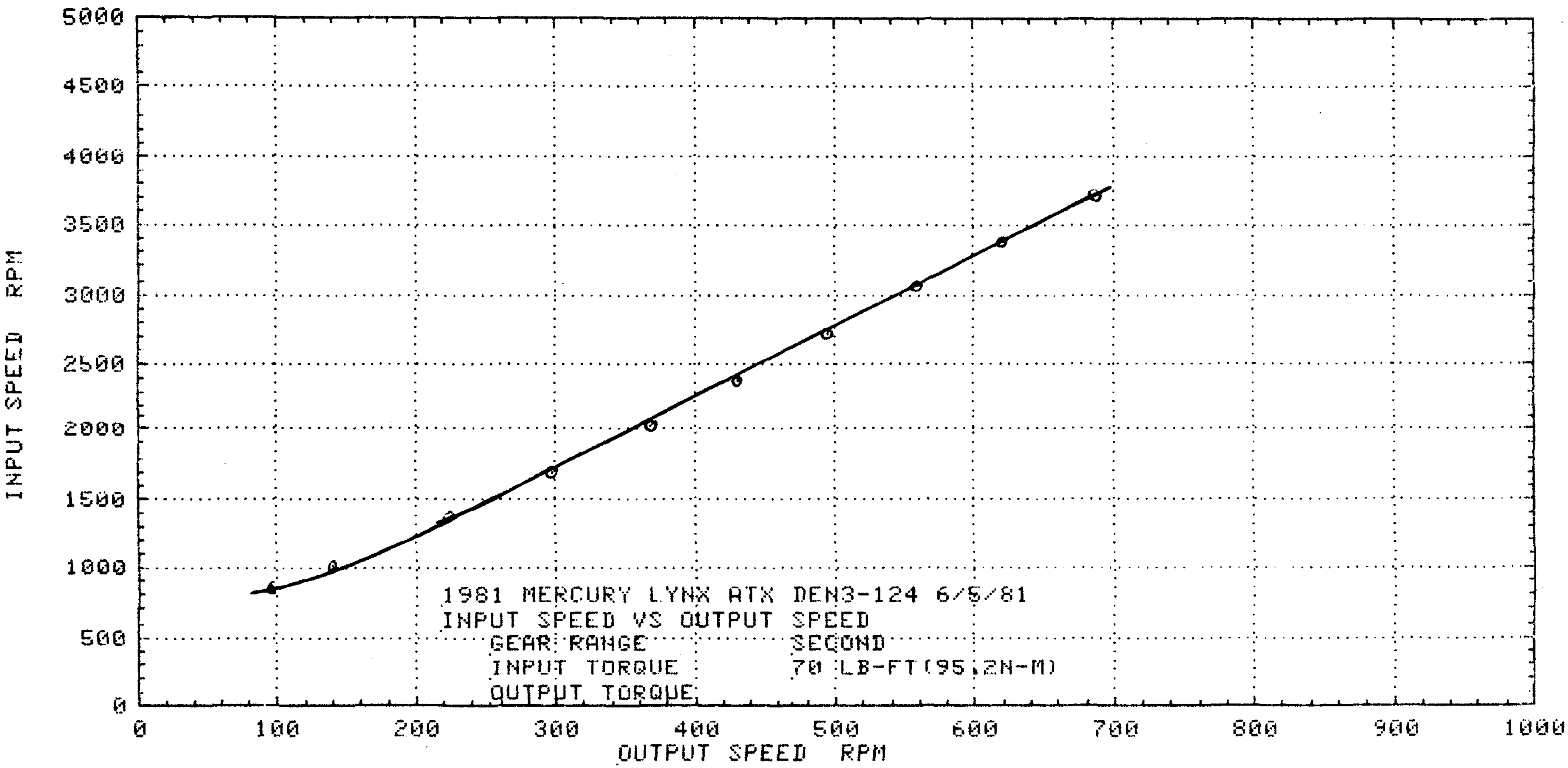


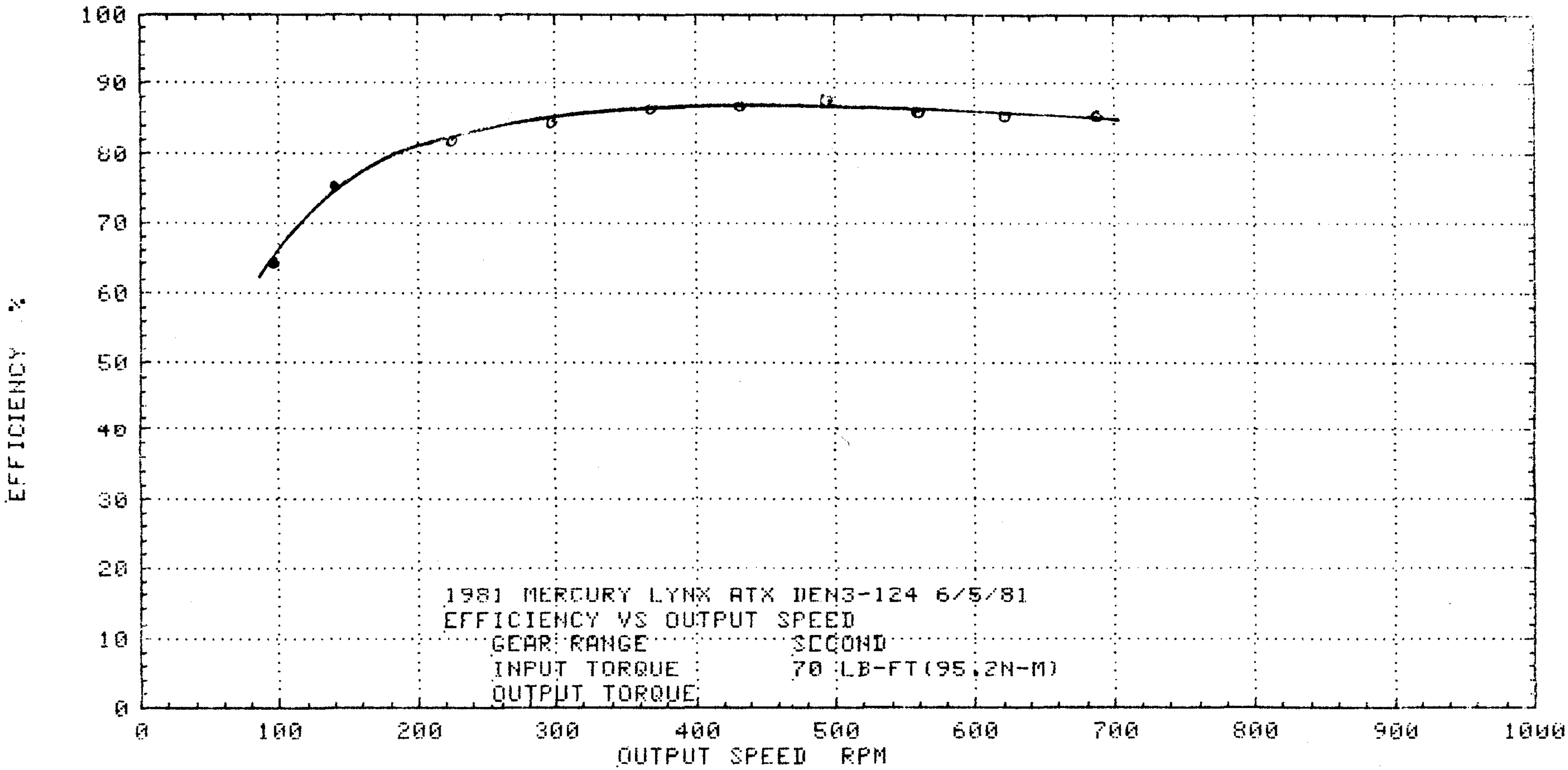
EFFICIENCY %
100
90
80
70
60
50
40
30
20
10
0
0
5
10
15
20
25
30
35
40
45
HP
50
POWER OUT
0
3
7
11
14
18
22
26
29
33
KW
37
1981 MERCURY LYNX ATX DEN3-124 6/5/81
EFFICIENCY VS POWER OUT
GEAR RANGE SECOND
INPUT TORQUE 60 LB-FT(81.6N-M)
OUTPUT TORQUE

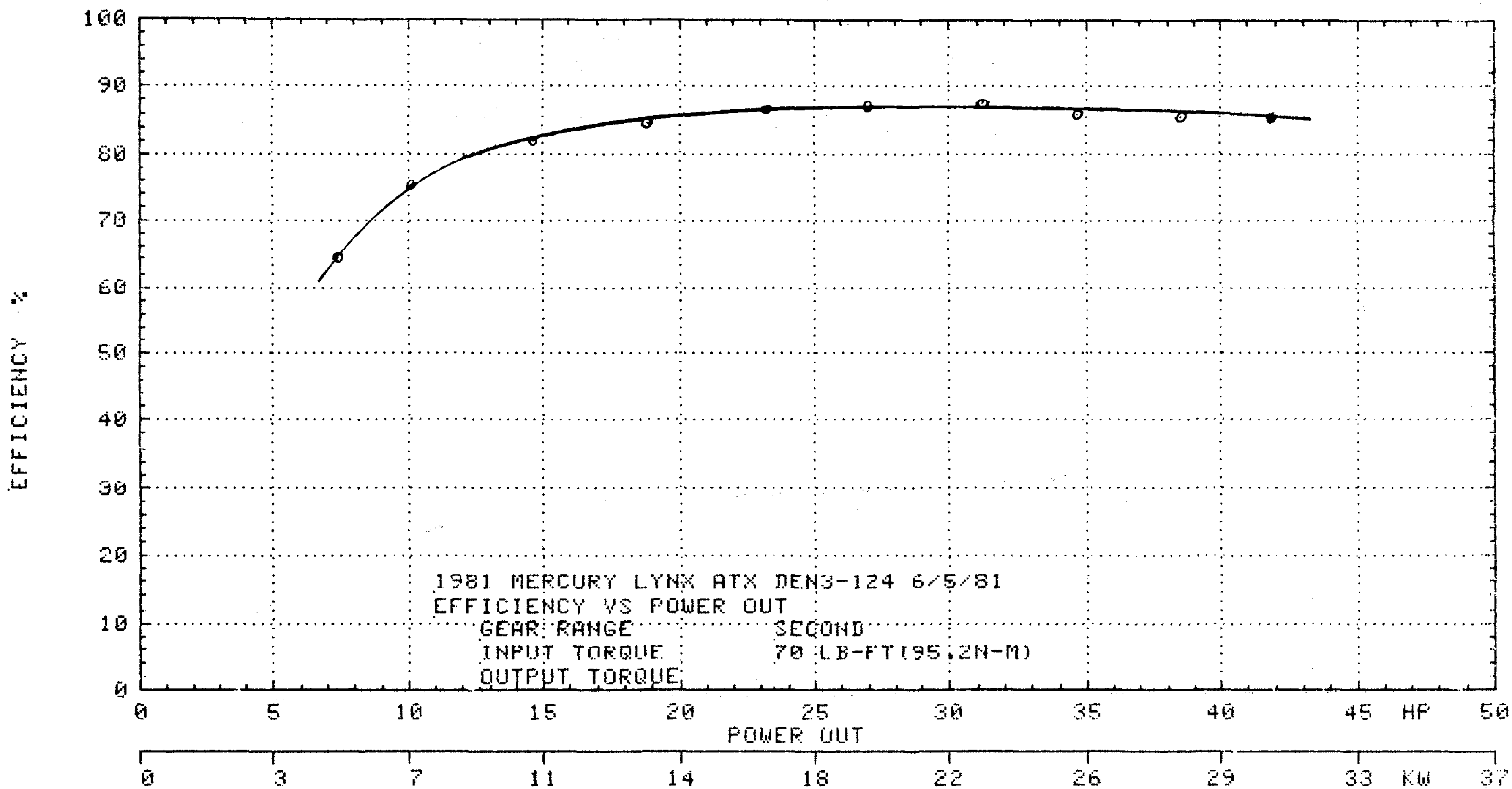


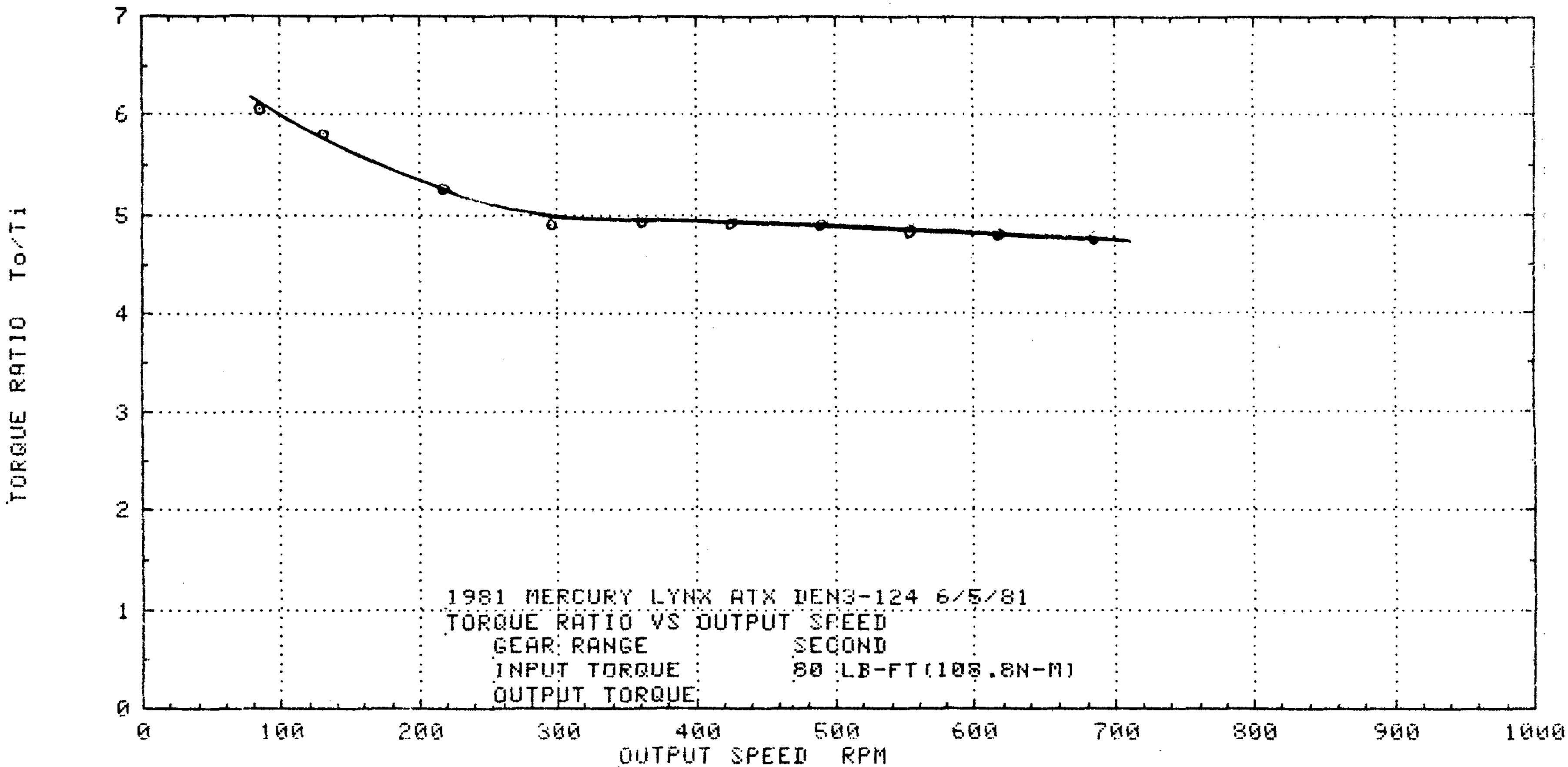
TORQUE RATIO To/Ti
OUTPUT SPEED RPM
1981 MERCURY LYNX ATX DEN3-124 6/5/81
TORQUE RATIO VS OUTPUT SPEED
GEAR RANGE SECOND
INPUT TORQUE 70 LB-FT(95.2N-M)
OUTPUT TORQUE
0 1 2 3 4 5 6 7
0 100 200 300 400 500 600 700 800 900 1000

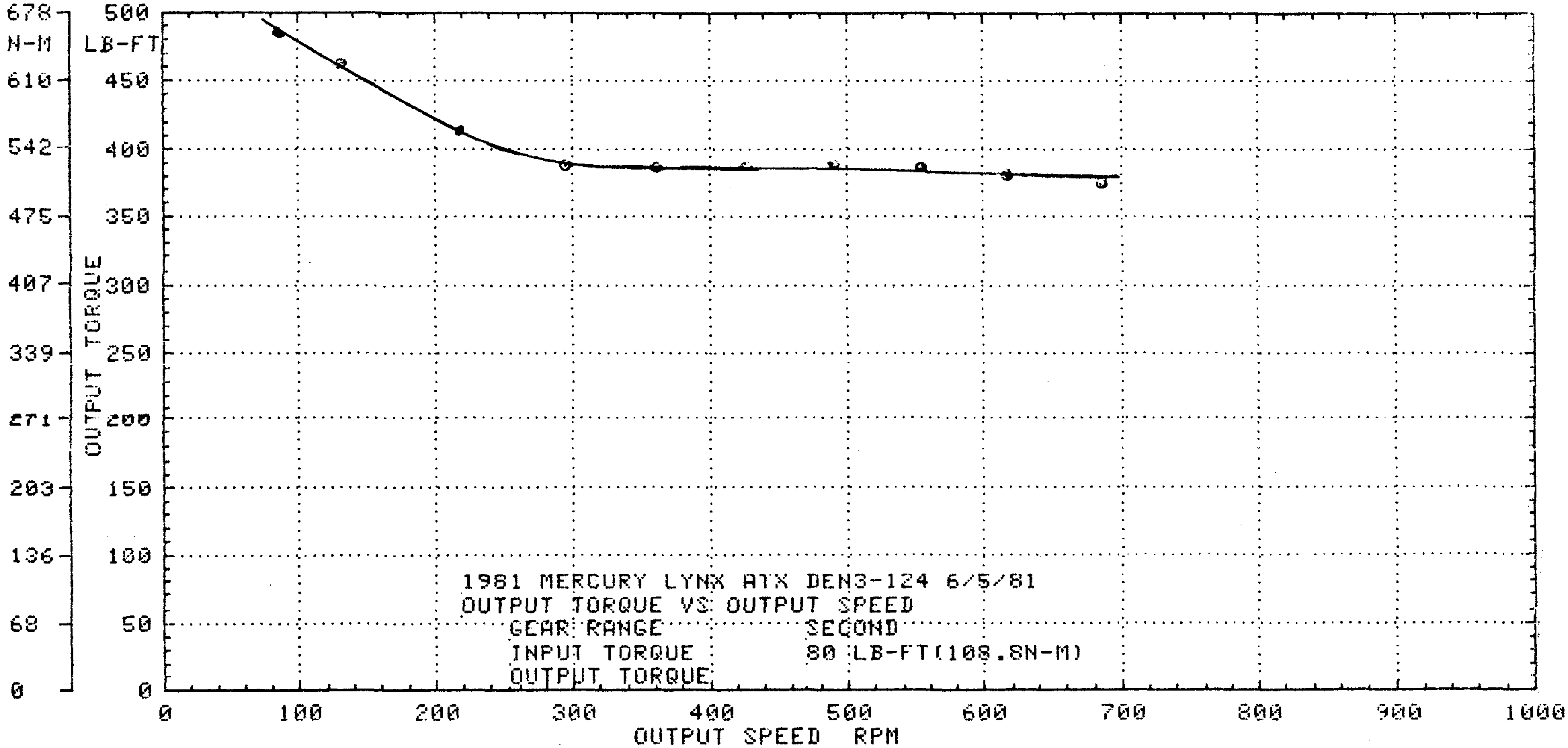

678
N-M
610
542
475
407
339
271
203
136
68
0
500
LB-FT
450
400
350
300
250
200
150
100
50
0
OUTPUT TORQUE
1981 MERCURY LYNX ATX DEN3-124 6/5/81
OUTPUT TORQUE VS OUTPUT SPEED
GEAR RANGE SECOND
INPUT TORQUE 70 LB-FT(95.2N-M)
OUTPUT TORQUE
0
100
200
300
400
500
600
700
800
900
1000
OUTPUT SPEED RPM

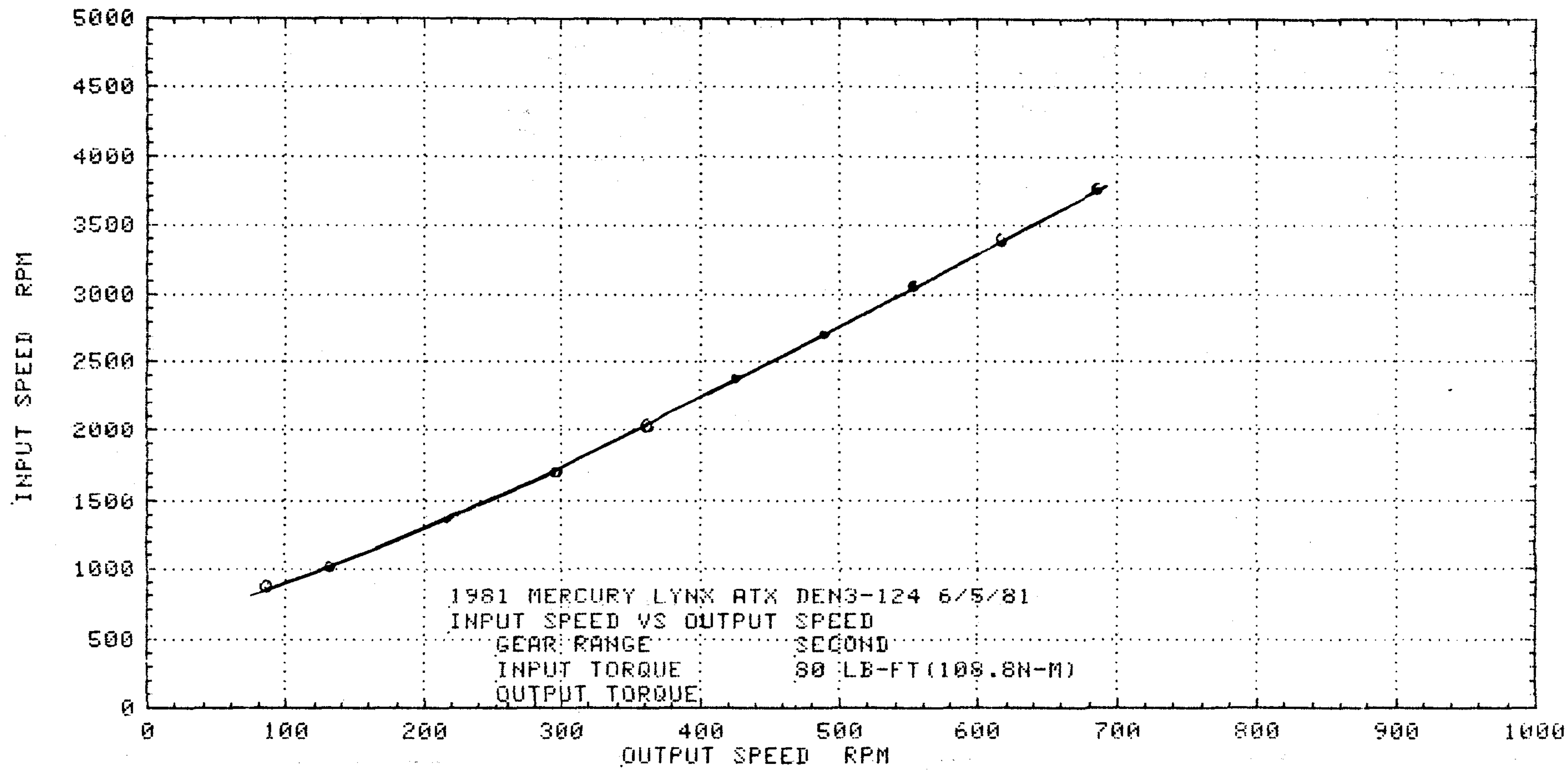

1981 MERCURY LYNX ATX DEN3-124 6/5/81
INPUT SPEED VS OUTPUT SPEED
GEAR RANGE SECOND
INPUT TORQUE 70 LB-FT(95.2N-M)
OUTPUT TORQUE
INPUT SPEED RPM
OUTPUT SPEED RPM
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
0
100
200
300
400
500
600
700
800
900
1000

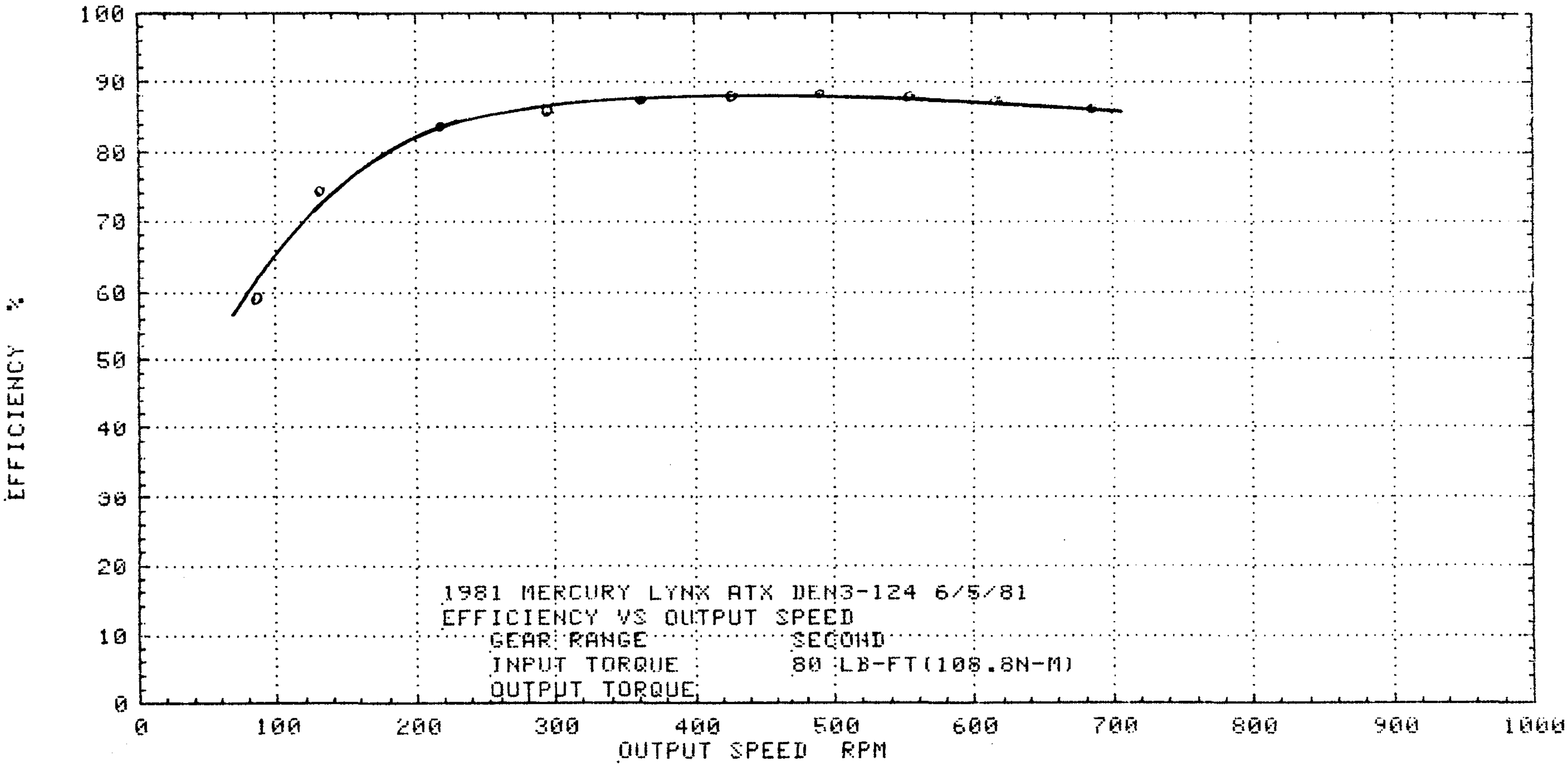

1981 MERCURY LYNX ATX DEN3-124 6/5/81
EFFICIENCY VS OUTPUT SPEED
GEAR RANGE SECOND
INPUT TORQUE 70 LB-FT(95.2N-M)
OUTPUT TORQUE
EFFICIENCY %
OUTPUT SPEED RPM
0
10
20
30
40
50
60
70
80
90
100
0
100
200
300
400
500
600
700
800
900
1000

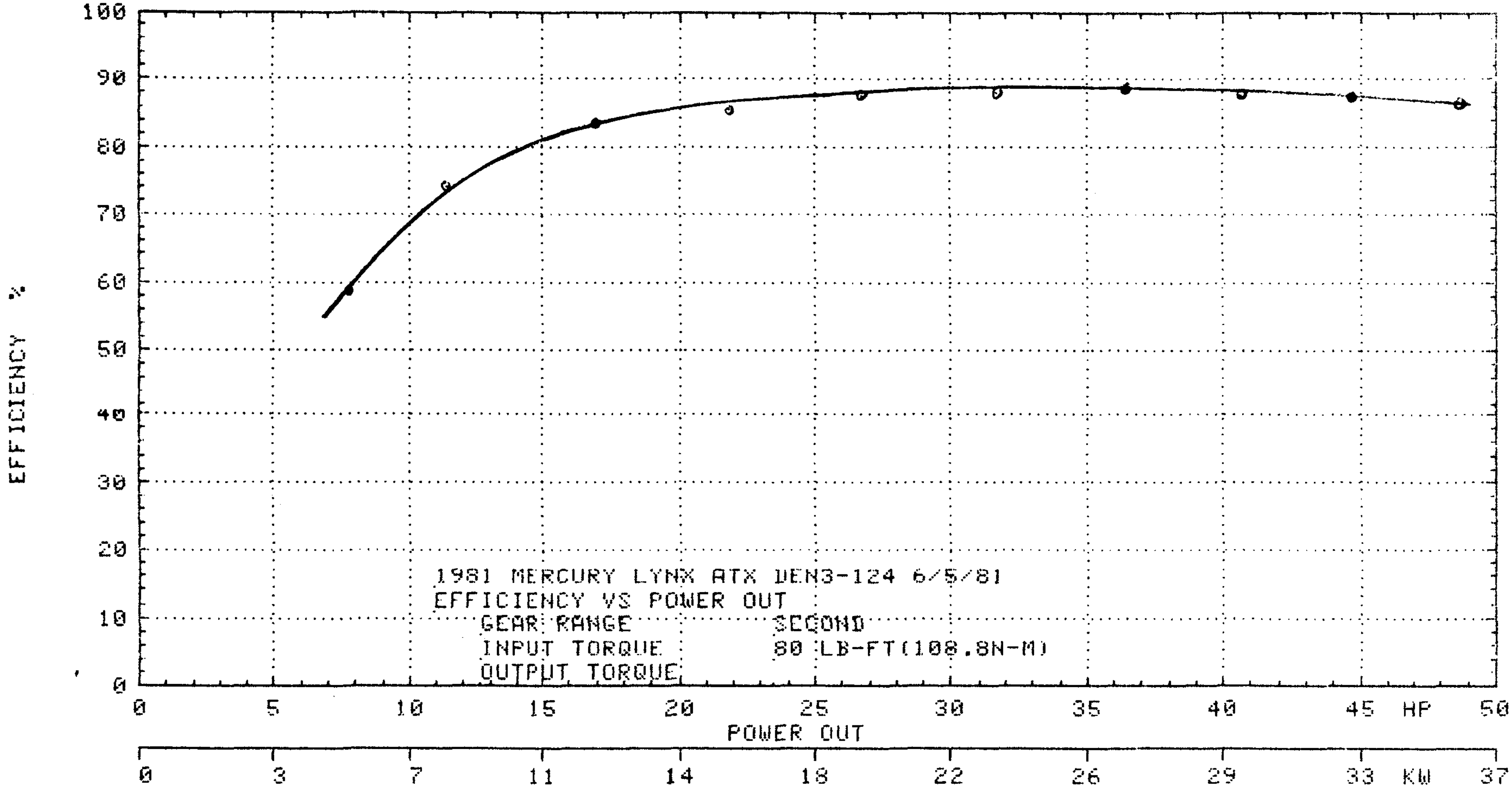

1981 MERCURY LYNX ATX DEN3-124 6/5/81
EFFICIENCY VS POWER OUT
GEAR RANGE SECOND
INPUT TORQUE 70 LB-FT(95.2N-M)
OUTPUT TORQUE
EFFICIENCY %
POWER OUT
HP
KW
100
90
80
70
60
50
40
30
20
10
0
0
5
10
15
20
25
30
35
40
45
50
0
3
7
11
14
18
22
26
29
33
37


1981 MERCURY LYNX ATX DEN3-124 6/5/81
TORQUE RATIO VS OUTPUT SPEED
GEAR RANGE SECOND
INPUT TORQUE 80 LB-FT(108.8N-M)
OUTPUT TORQUE
TORQUE RATIO To/Ti
OUTPUT SPEED RPM
0
1
2
3
4
5
6
7
0
100
200
300
400
500
600
700
800
900
1000


1981 MERCURY LYNX ATX DEN3-124 6/5/81
OUTPUT TORQUE VS OUTPUT SPEED
GEAR RANGE SECOND
INPUT TORQUE 80 LB-FT(108.8N-M)
OUTPUT TORQUE
N-M
LB-FT
OUTPUT TORQUE
OUTPUT SPEED RPM
678
610
542
475
407
339
271
203
136
68
0
500
450
400
350
300
250
200
150
100
50
0
0
100
200
300
400
500
600
700
800
900
1000


1981 MERCURY LYNX ATX DEN3-124 6/5/81
INPUT SPEED VS OUTPUT SPEED
GEAR RANGE SECOND
INPUT TORQUE 80 LB-FT(108.8N-M)
OUTPUT TORQUE
INPUT SPEED RPM
OUTPUT SPEED RPM
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
0
100
200
300
400
500
600
700
800
900
1000


1981 MERCURY LYNX ATX DEN3-124 6/5/81
EFFICIENCY VS OUTPUT SPEED
GEAR RANGE SECOND
INPUT TORQUE 80 LB-FT(108.8N-M)
OUTPUT TORQUE
EFFICIENCY %
OUTPUT SPEED RPM
0
10
20
30
40
50
60
70
80
90
100
100
200
300
400
500
600
700
800
900
1000


1981 MERCURY LYNX ATX DEN3-124 6/5/81
EFFICIENCY VS POWER OUT
GEAR RANGE SECOND
INPUT TORQUE 80 LB-FT(108.8N-M)
OUTPUT TORQUE
EFFICIENCY %
100
90
80
70
60
50
40
30
20
10
0
0 5 10 15 20 25 30 35 40 45 HP 50
POWER OUT
0 3 7 11 14 18 22 26 29 33 KW 37

DRIVE PERFORMANCE

3rd Gear

Graphs Contained in This Section

Torque Ratio -vs- Output Speed

Output Torque -vs- Output Speed

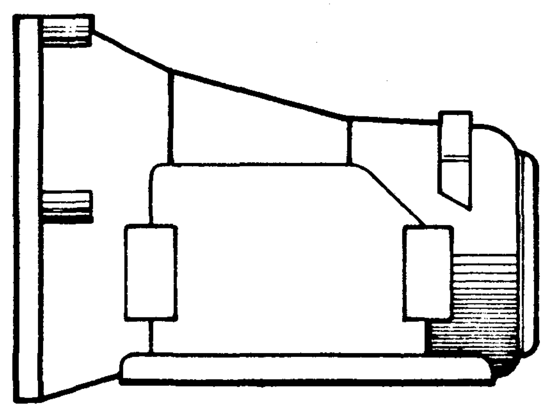
Input Speed -vs- Output Speed

Efficiency -vs- Output Speed

Efficiency -vs- Power Out

Torque In

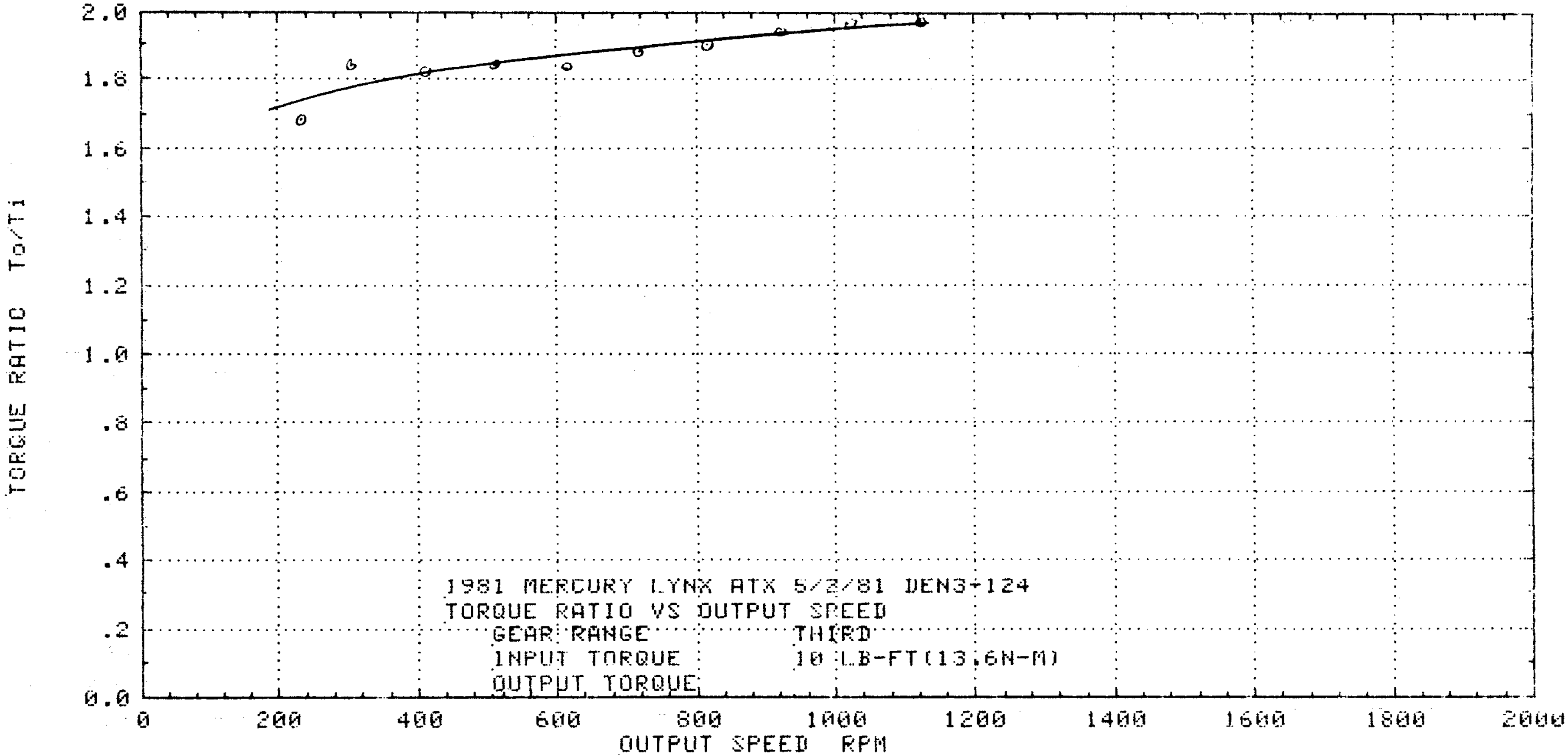
Speed In

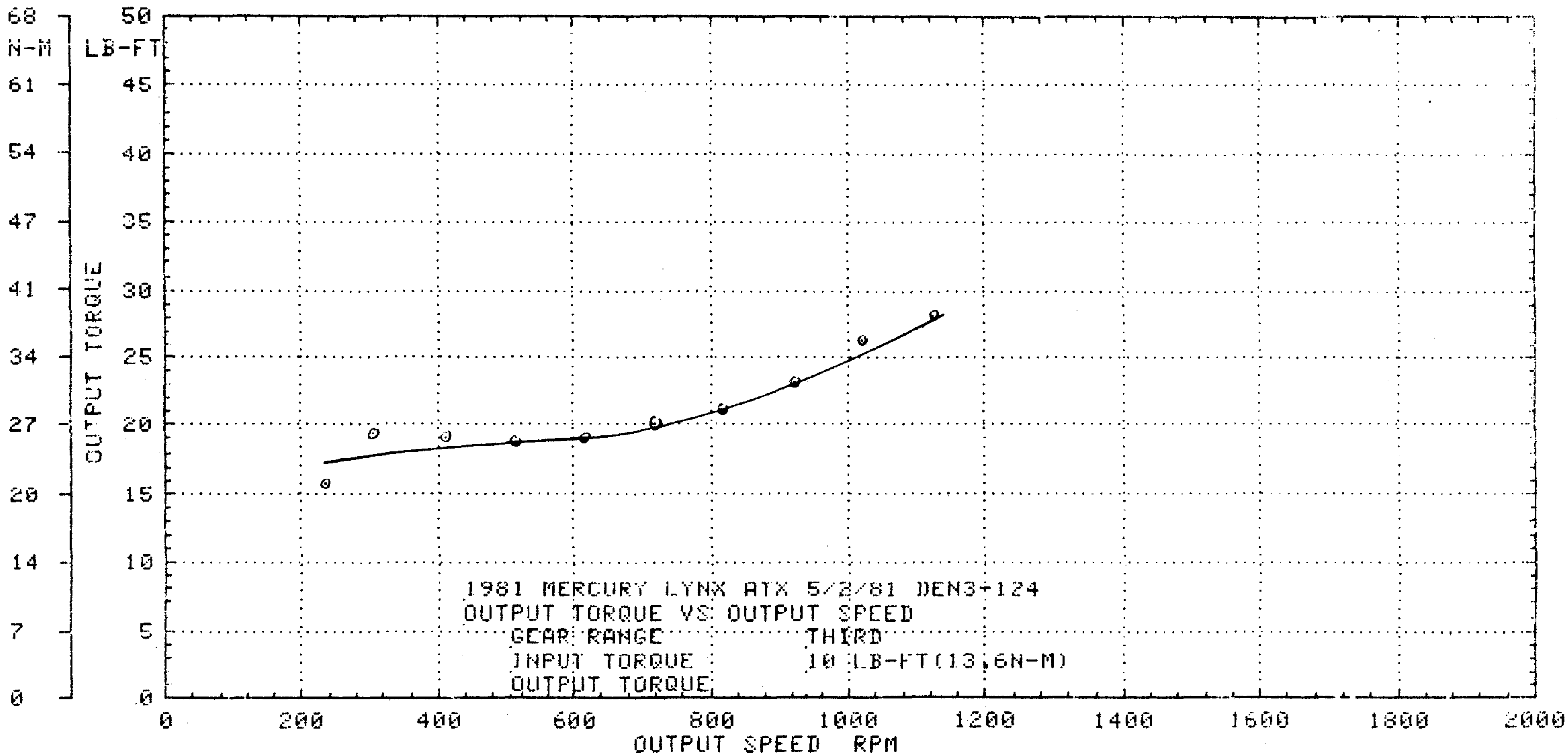


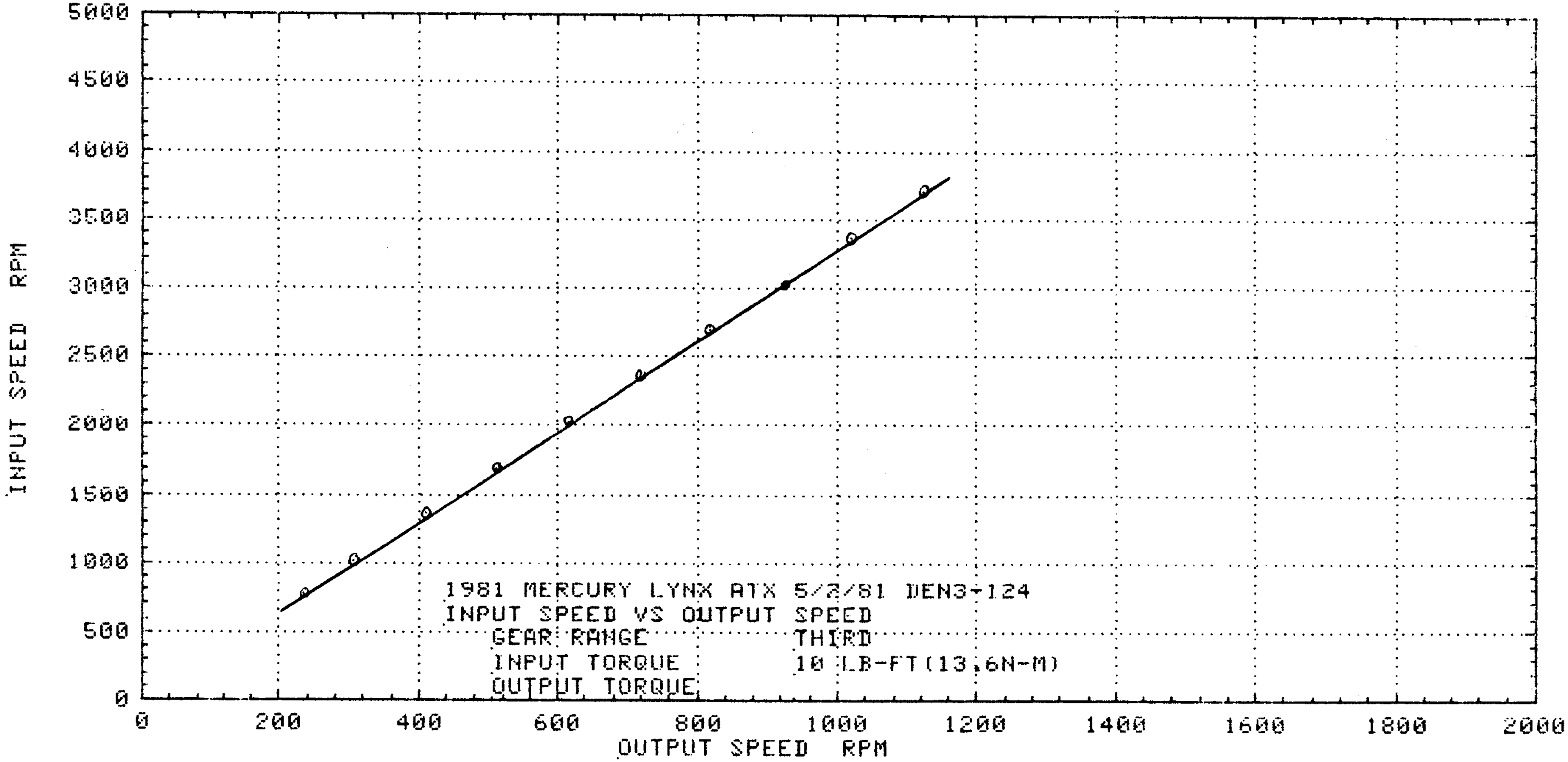
Torque Out

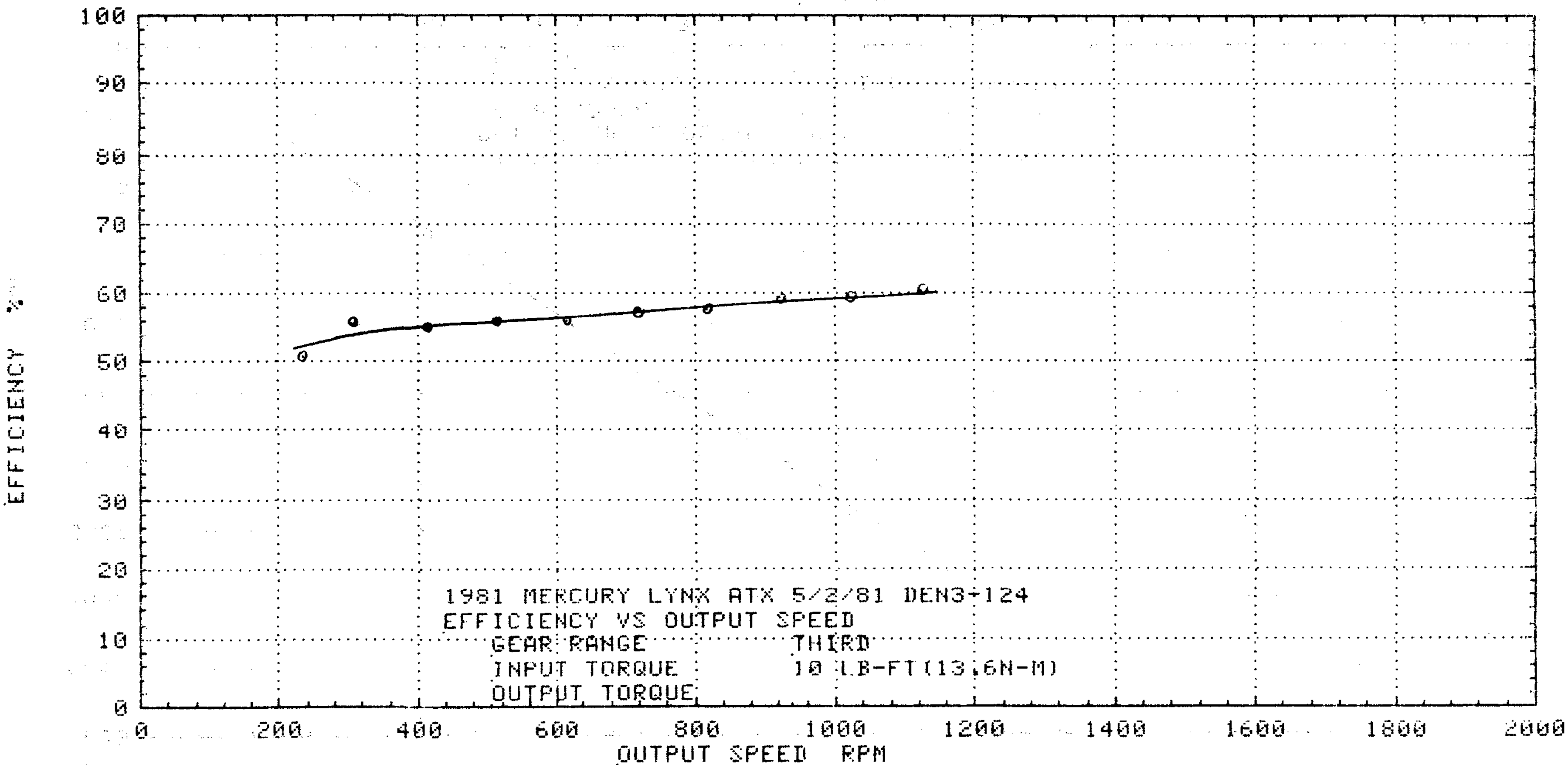
Speed Out

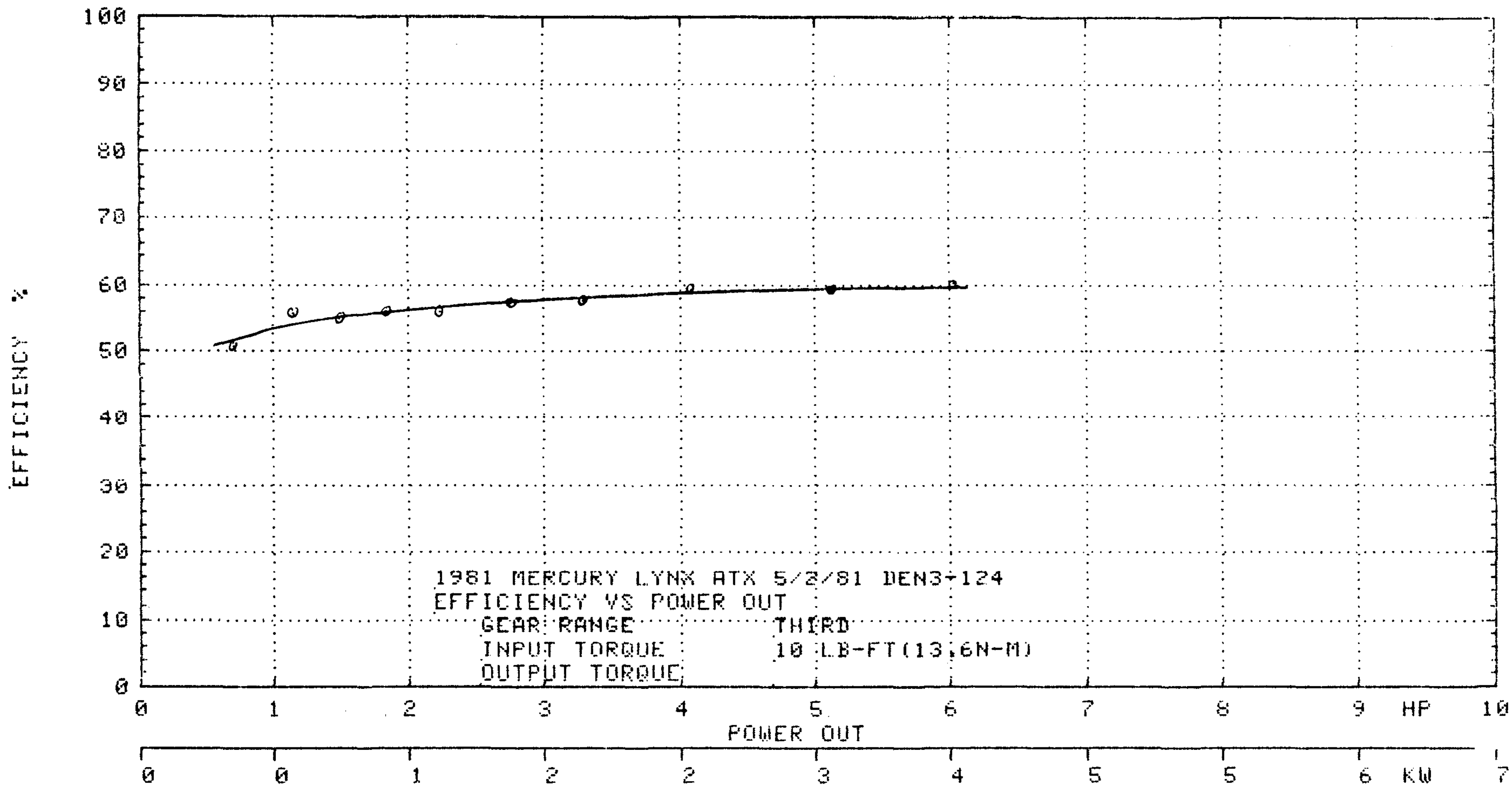
Drive Performance Tests

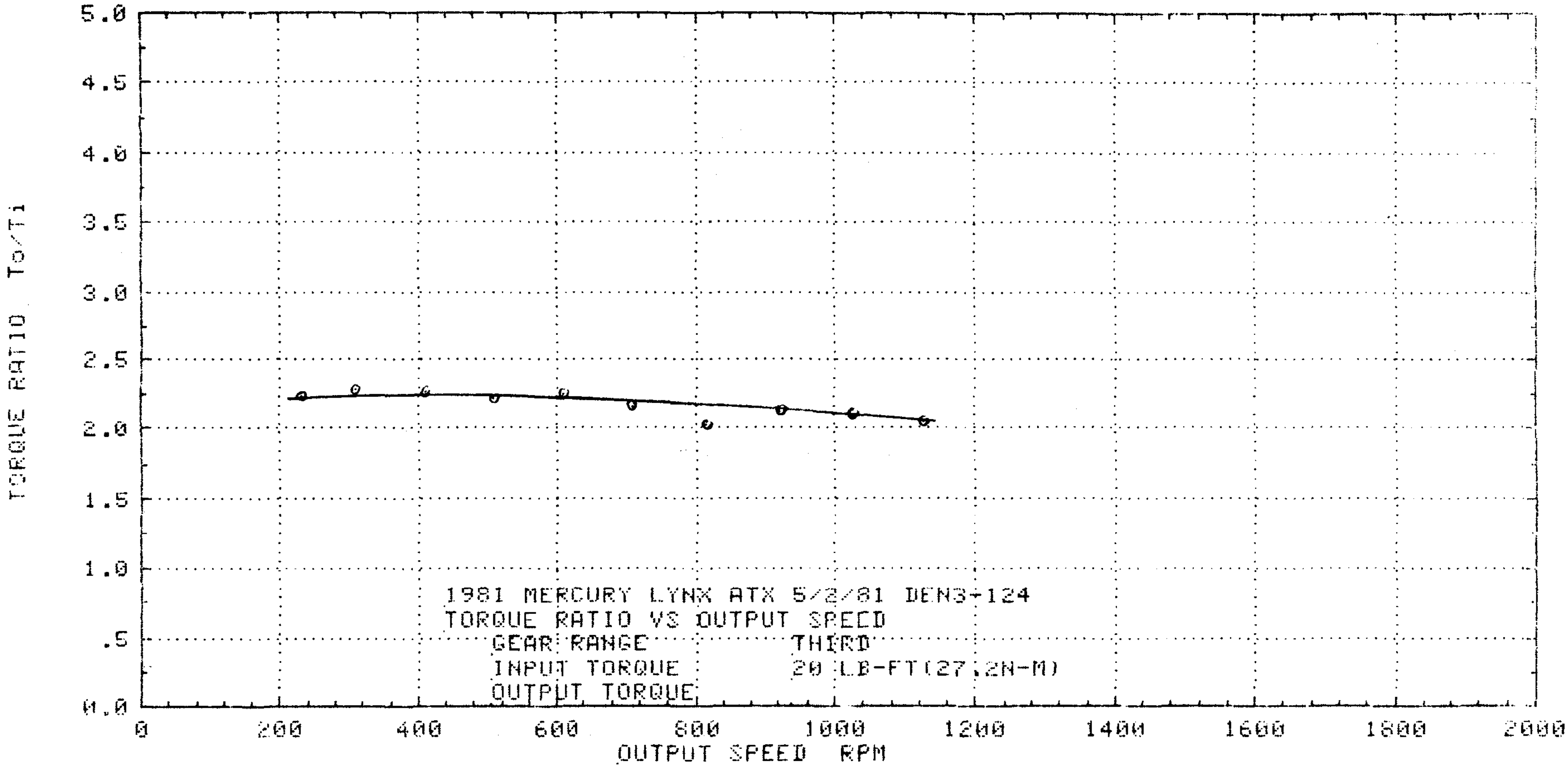

1981 MERCURY LYNX ATX 5/2/81 DEN3-124
TORQUE RATIO VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE 10 LB-FT(13.6N-M)
OUTPUT TORQUE
TORQUE RATIO To/Ti
OUTPUT SPEED RPM
2.0
1.8
1.6
1.4
1.2
1.0
.8
.6
.4
.2
0.0
0
200
400
600
800
1000
1200
1400
1600
1800
2000


1981 MERCURY LYNX ATX 5/2/81 DEN3-124
OUTPUT TORQUE VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE 10 LB-FT(13.6N-M)
OUTPUT TORQUE
N-M
LB-FT
OUTPUT TORQUE
OUTPUT SPEED RPM
0
200
400
600
800
1000
1200
1400
1600
1800
2000
0
5
10
15
20
25
30
35
40
45
50
0
7
14
20
27
34
41
47
54
61
68

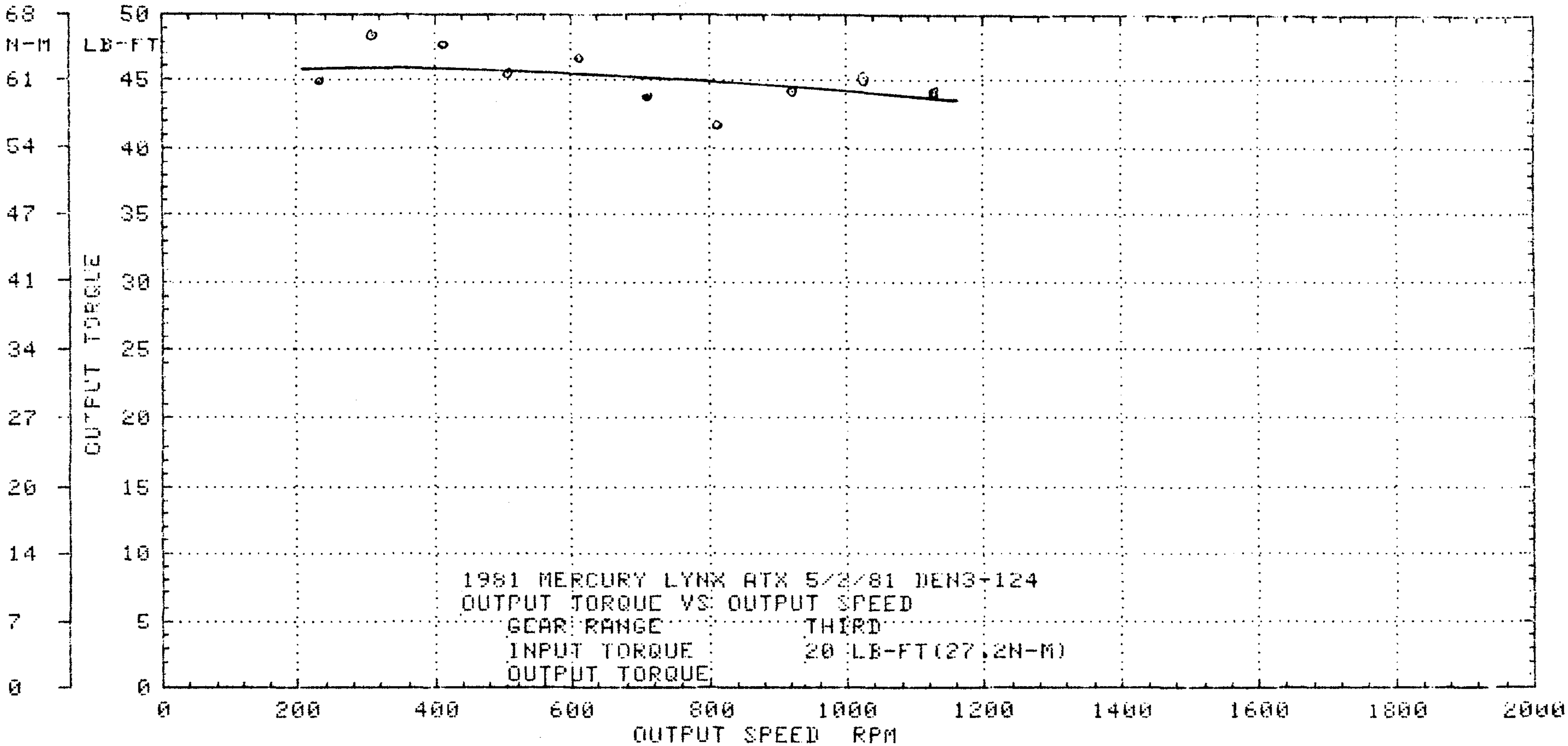

5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
INPUT SPEED RPM
0
200
400
600
800
1000
1200
1400
1600
1800
2000
OUTPUT SPEED RPM
1981 MERCURY LYNX ATX 5/2/81 DEN3-124
INPUT SPEED VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE 10 LB-FT(13.6N-M)
OUTPUT TORQUE

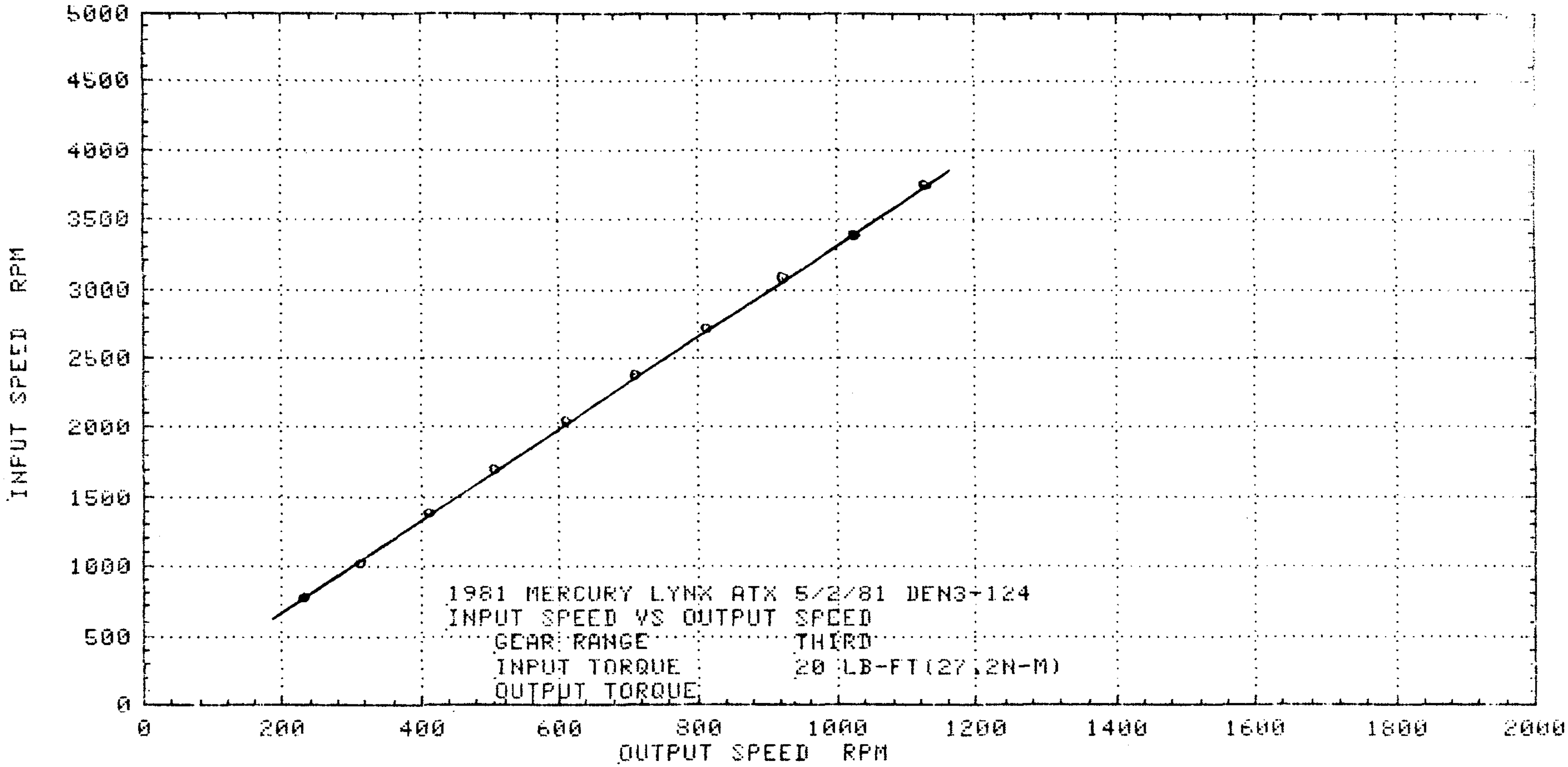

1981 MERCURY LYNX ATX 5/2/81 DEN3-124
EFFICIENCY VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE 10 LB-FT(13.6N-M)
OUTPUT TORQUE
EFFICIENCY %
OUTPUT SPEED RPM
0
10
20
30
40
50
60
70
80
90
100
200
400
600
800
1000
1200
1400
1600
1800
2000


1981 MERCURY LYNX ATX 5/2/81 DEN3-124
EFFICIENCY VS POWER OUT
GEAR RANGE THIRD
INPUT TORQUE 10 LB-FT(13.6N-M)
OUTPUT TORQUE
EFFICIENCY %
100
90
80
70
60
50
40
30
20
10
0
0 1 2 3 4 5 6 7 8 9 HP 10
POWER OUT
0 0 1 2 2 3 4 5 5 6 KW 7

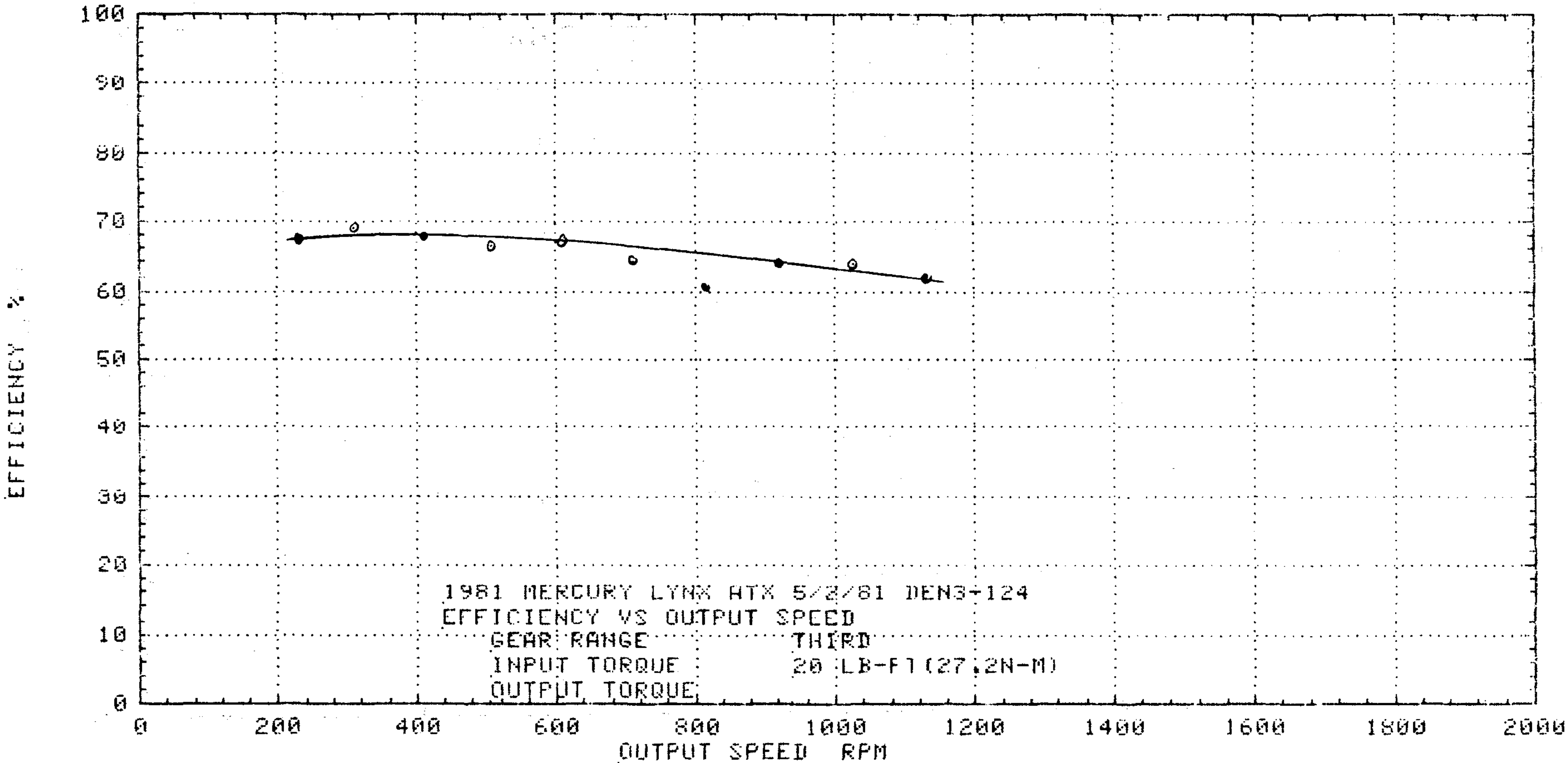


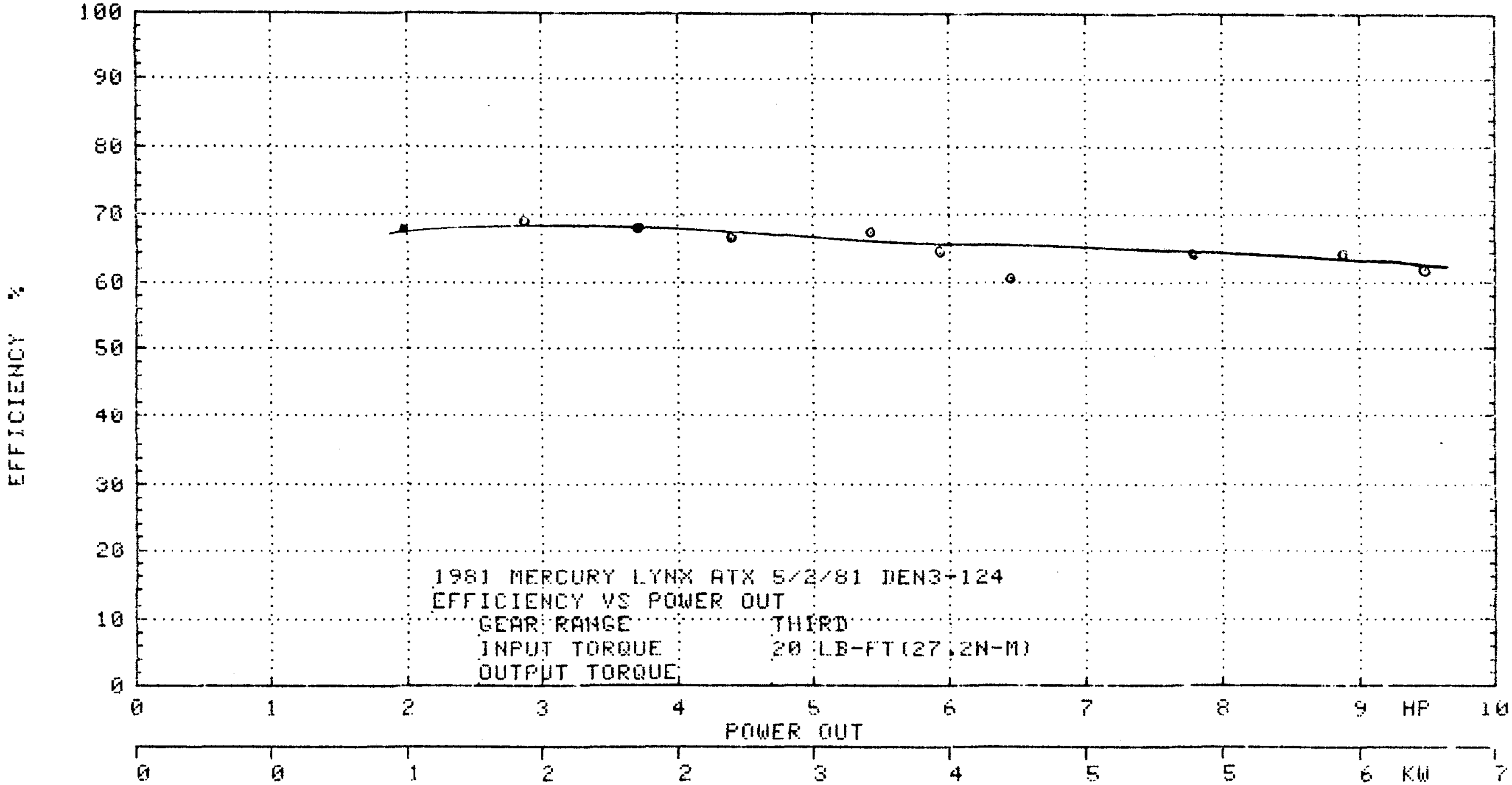
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
.5
0.0
TORQUE RATIO To/Ti
0
200
400
600
800
1000
1200
1400
1600
1800
2000
OUTPUT SPEED RPM
1981 MERCURY LYNX ATX 5/2/81 DEN3-124
TORQUE RATIO VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE 20 LB-FT(27.2N-M)
OUTPUT TORQUE

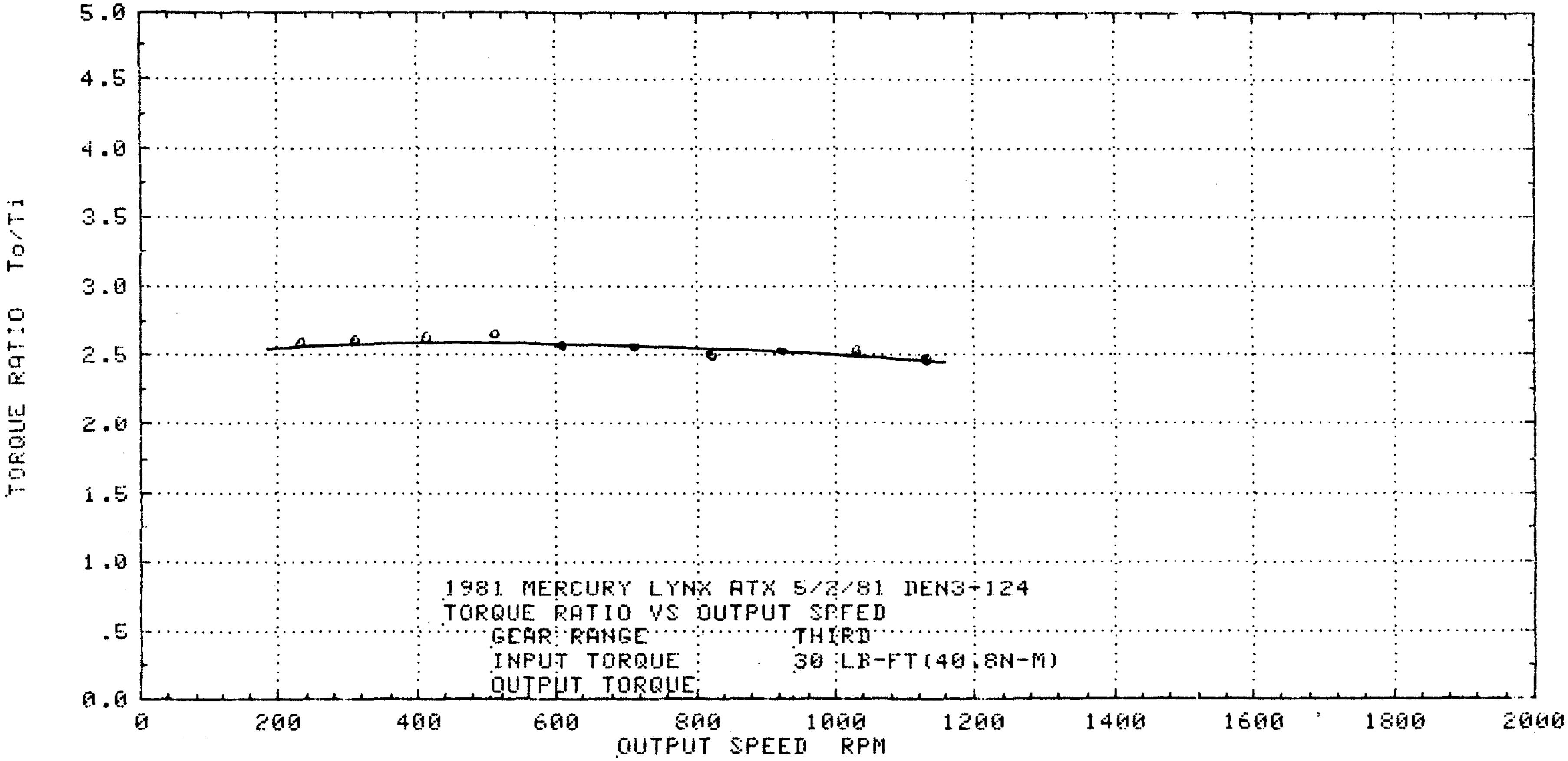

68
N-M
61
54
47
41
34
27
20
14
7
0
50
LB-FT
45
40
35
30
25
20
15
10
5
0
OUTPUT TORQUE
0
200
400
600
800
1000
1200
1400
1600
1800
2000
OUTPUT SPEED RPM
1981 MERCURY LYNX ATX 5/2/81 DEN3-124
OUTPUT TORQUE VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE 20 LB-FT(27.2N-M)
OUTPUT TORQUE



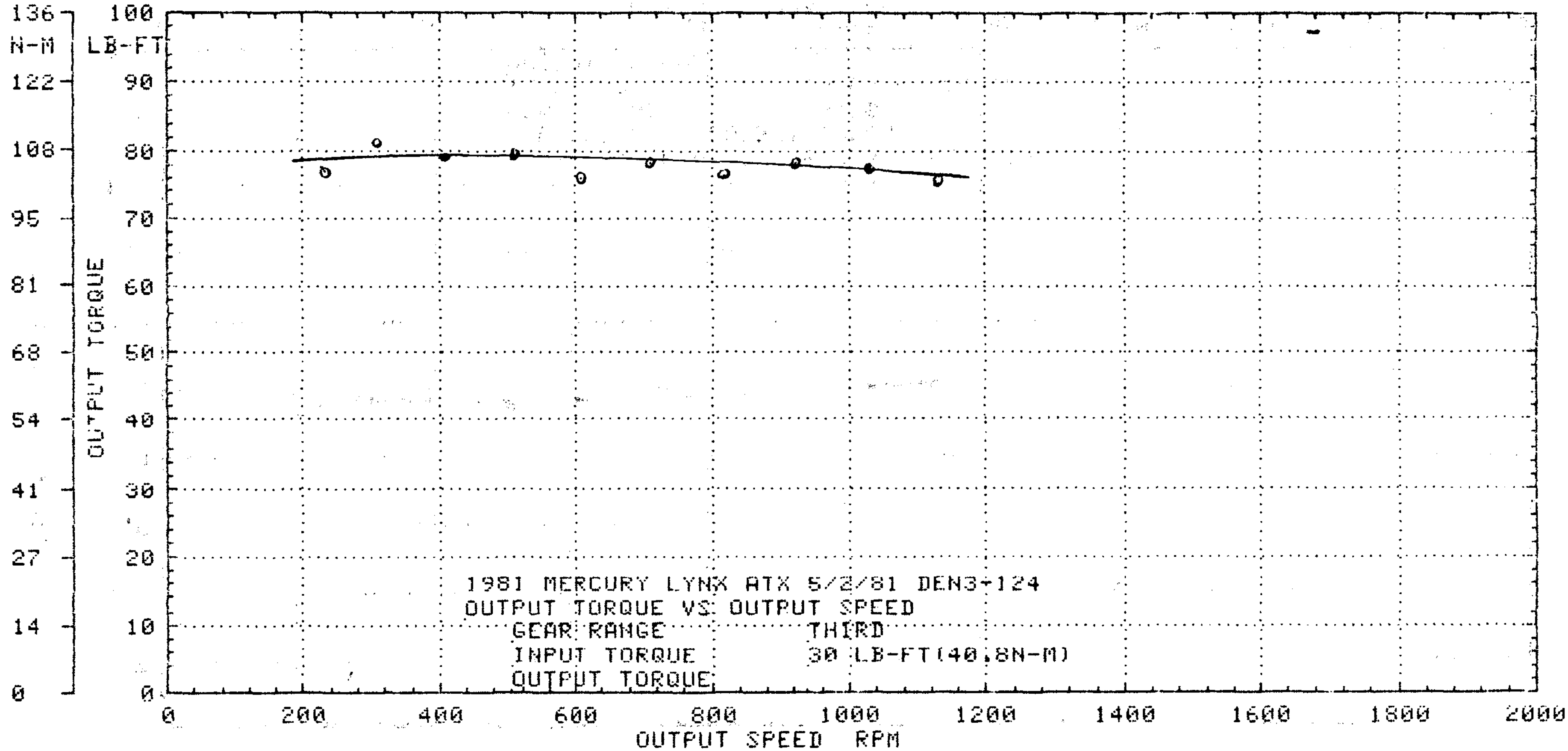
INPUT SPEED RPM
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
0
200
400
600
800
1000
1200
1400
1600
1800
2000
OUTPUT SPEED RPM
1981 MERCURY LYNX ATX 5/2/81 DEN3-124
INPUT SPEED VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE 20 LB-FT(27.2N-M)
OUTPUT TORQUE

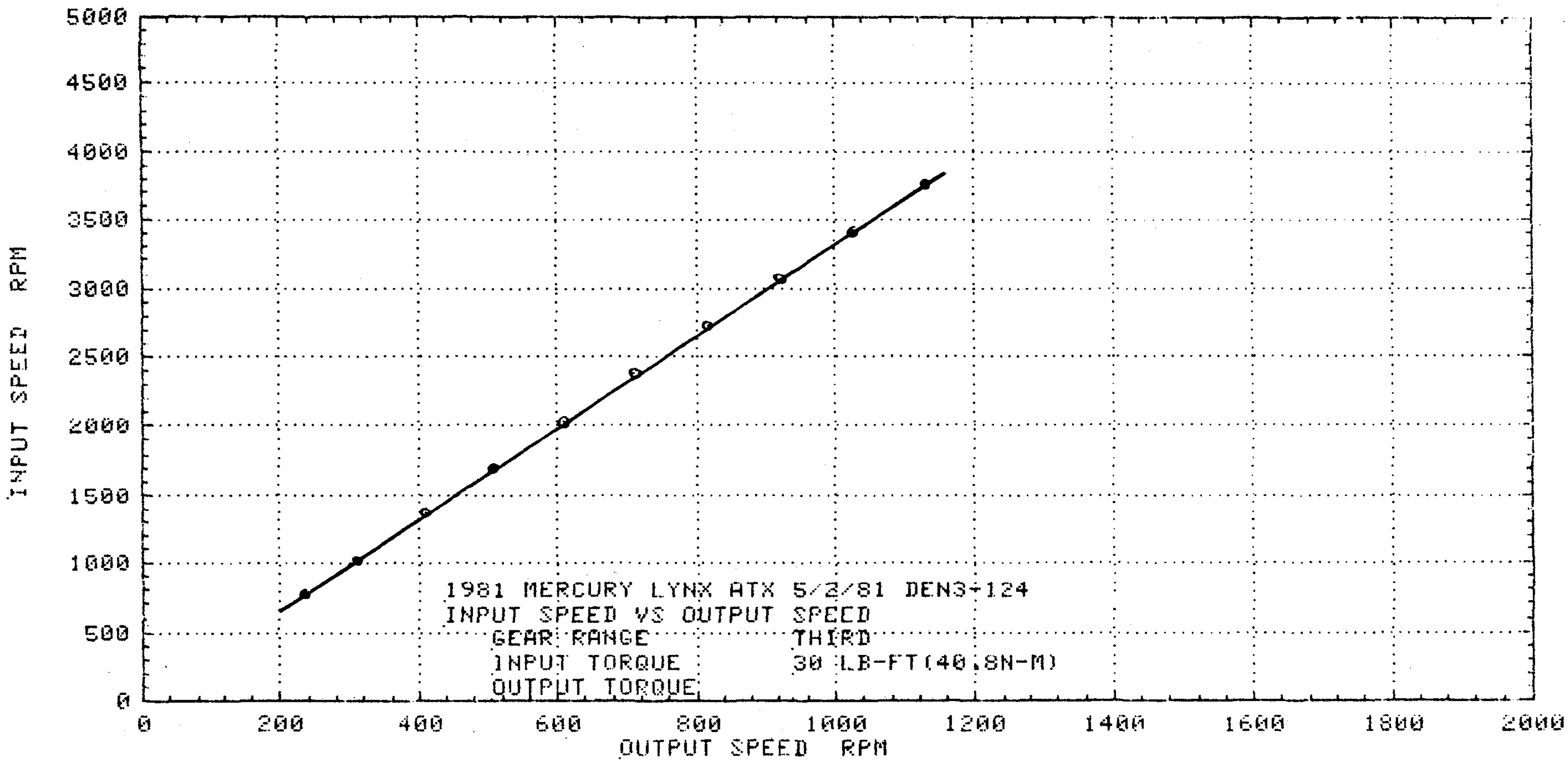

1981 MERCURY LYNX ATX 5/2/81 DEN3-124
EFFICIENCY VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE 20 LB-FT(27.2N-M)
OUTPUT TORQUE
EFFICIENCY %
OUTPUT SPEED RPM
0
10
20
30
40
50
60
70
80
90
100
0
200
400
600
800
1000
1200
1400
1600
1800
2000

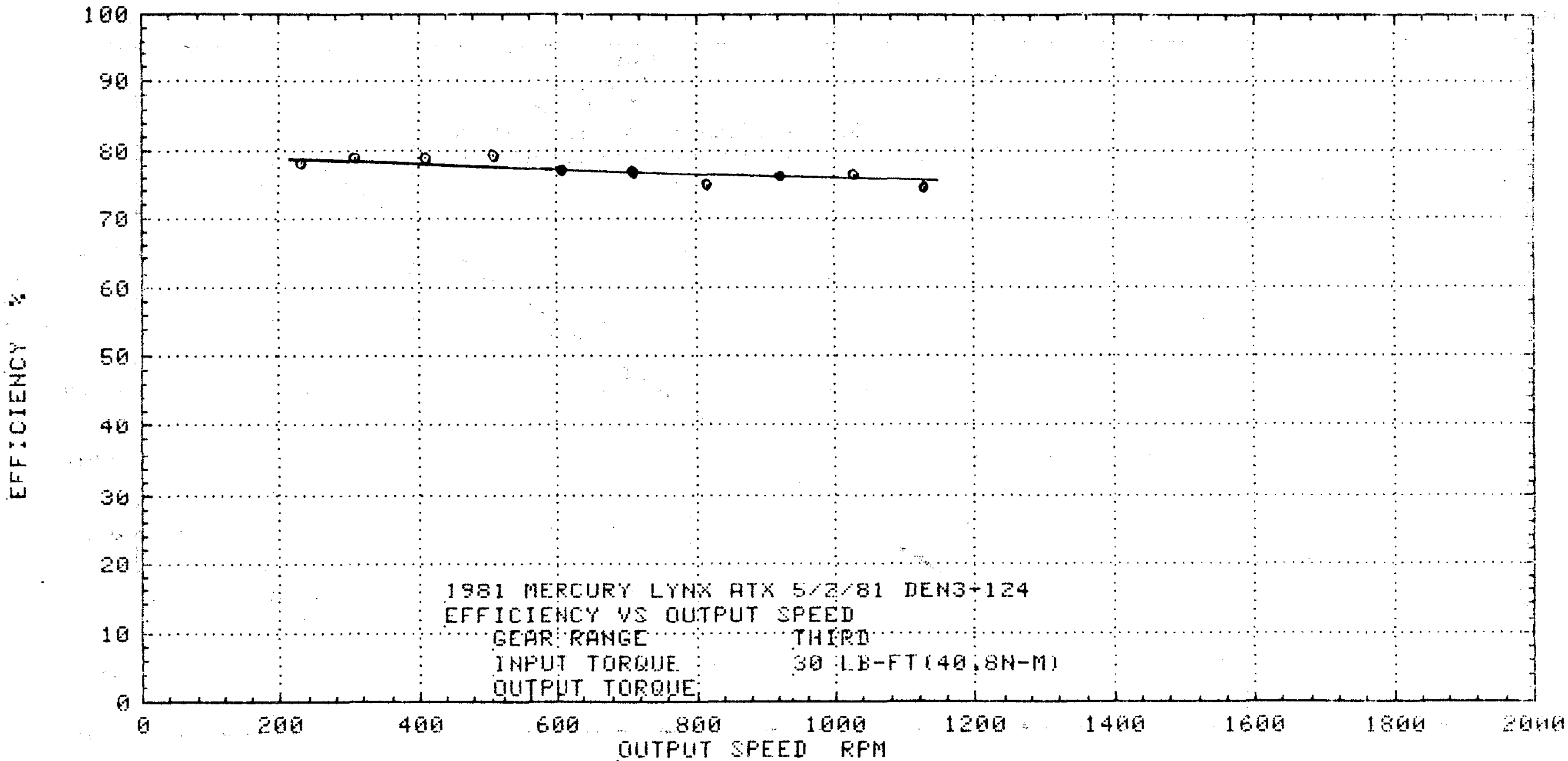

EFFICIENCY %
100
90
80
70
60
50
40
30
20
10
0
1981 MERCURY LYNX ATX 5/2/81 DEN3-124
EFFICIENCY VS POWER OUT
GEAR RANGE THIRD
INPUT TORQUE 20 LB-FT(27.2N-M)
OUTPUT TORQUE
0 1 2 3 4 5 6 7 8 9 HP 10
POWER OUT
0 0 1 2 2 3 4 5 5 6 KW 7



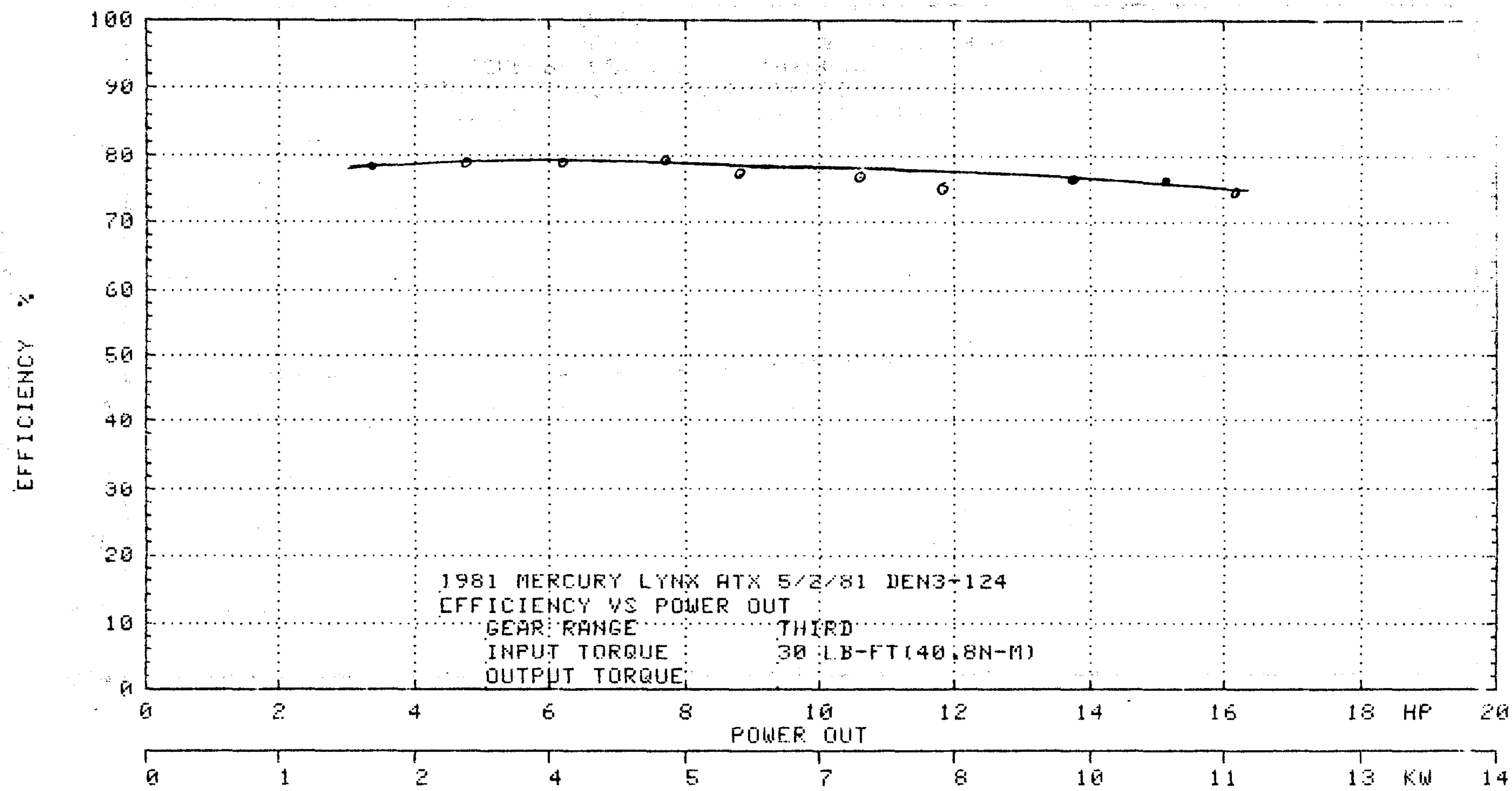
TORQUE RATIO To/Ti
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
.5
0.0
0
200
400
600
800
1000
1200
1400
1600
1800
2000
OUTPUT SPEED RPM
1981 MERCURY LYNX ATX 5/2/81 DEN3-124
TORQUE RATIO VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE 30 LB-FT(40.8N-M)
OUTPUT TORQUE

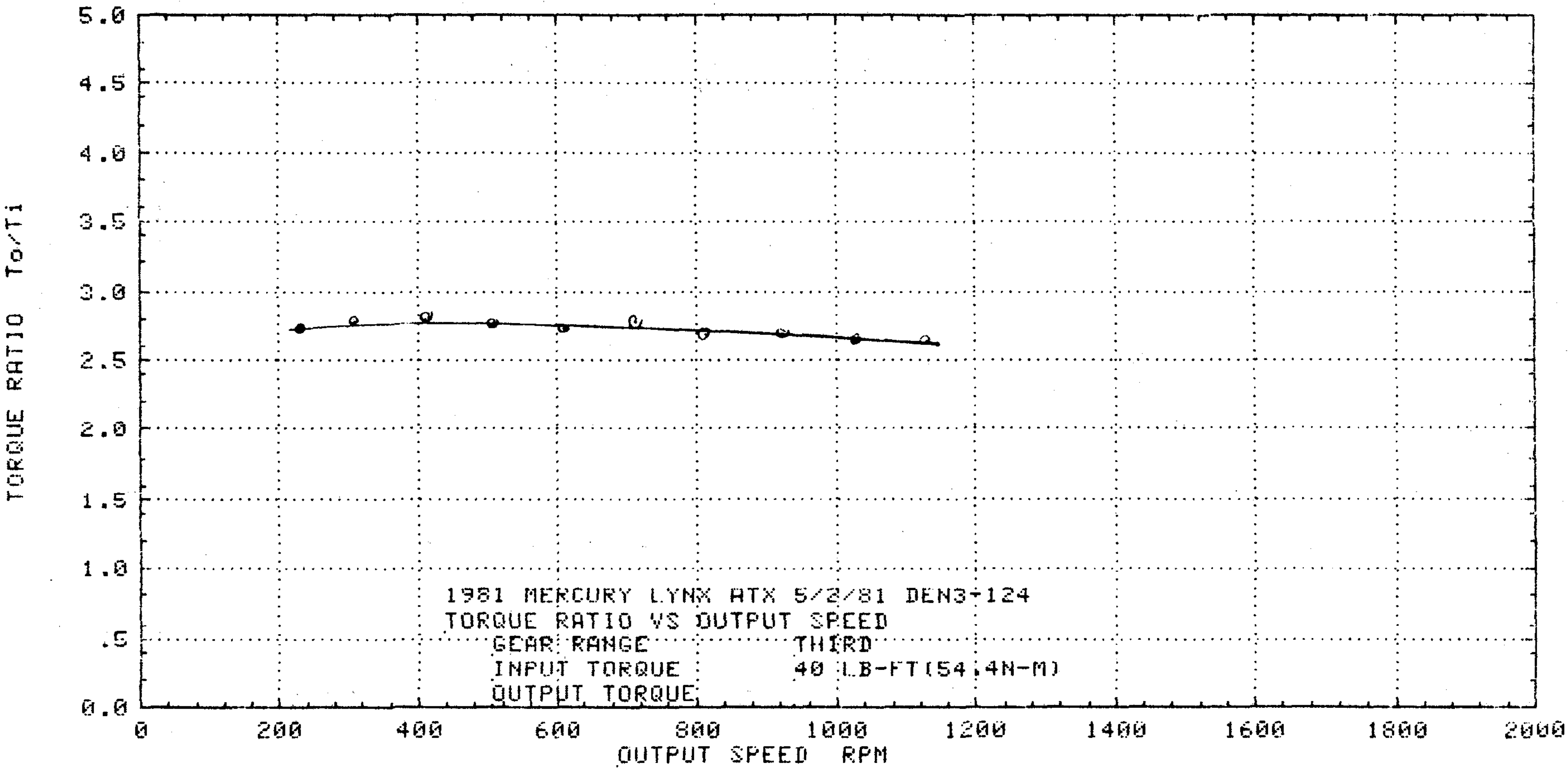

136
N-M
122
108
95
81
68
54
41
27
14
0
100
LB-FT
90
80
70
60
50
40
30
20
10
0
OUTPUT TORQUE
0
200
400
600
800
1000
1200
1400
1600
1800
2000
OUTPUT SPEED RPM
1981 MERCURY LYNX ATX 5/2/81 DEN3-124
OUTPUT TORQUE VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE 30 LB-FT(40.8N-M)
OUTPUT TORQUE

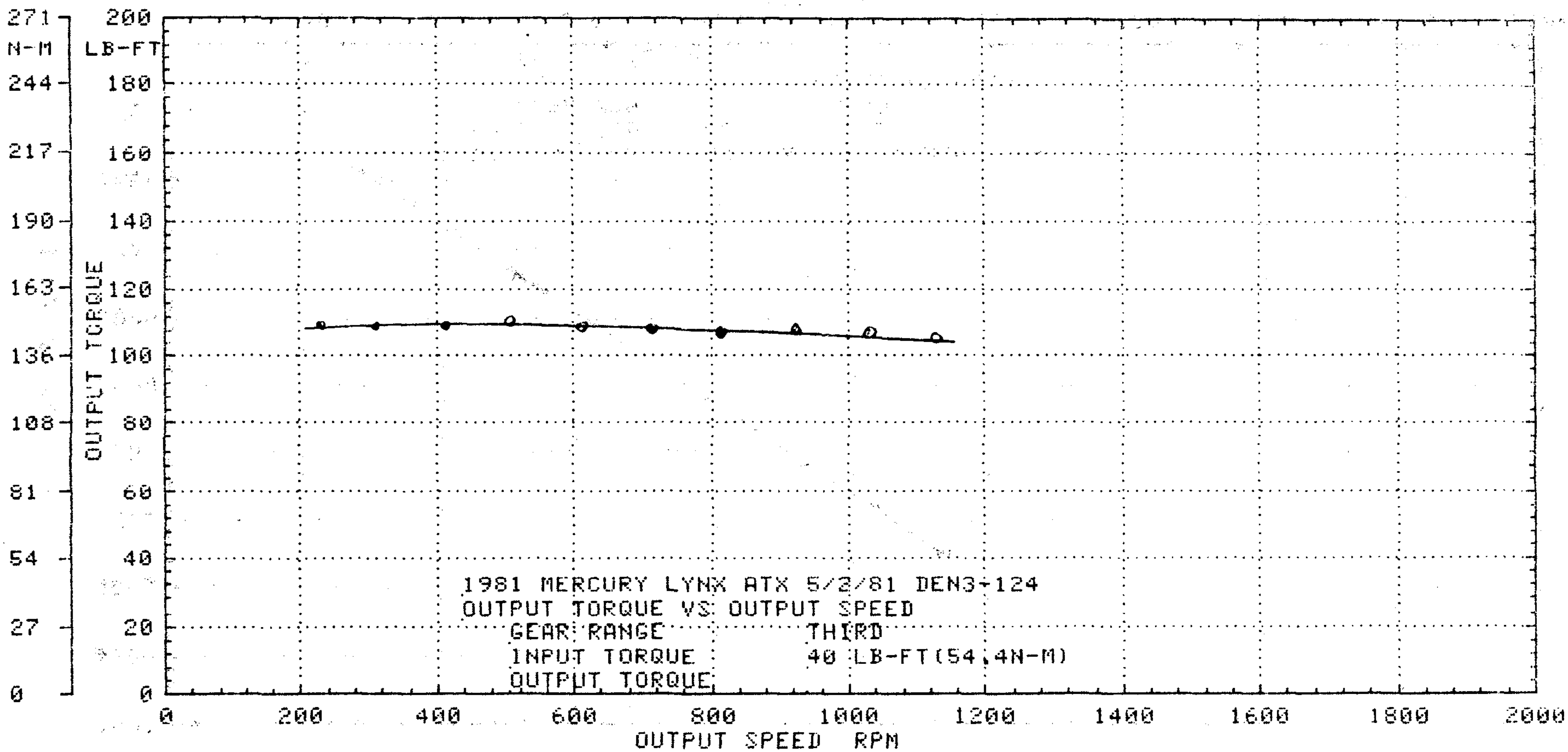

1981 MERCURY LYNX ATX 5/2/81 DEN3-124
INPUT SPEED VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE 30 LB-FT(40.8N-M)
OUTPUT TORQUE
INPUT SPEED RPM
OUTPUT SPEED RPM
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
0
200
400
600
800
1000
1200
1400
1600
1800
2000



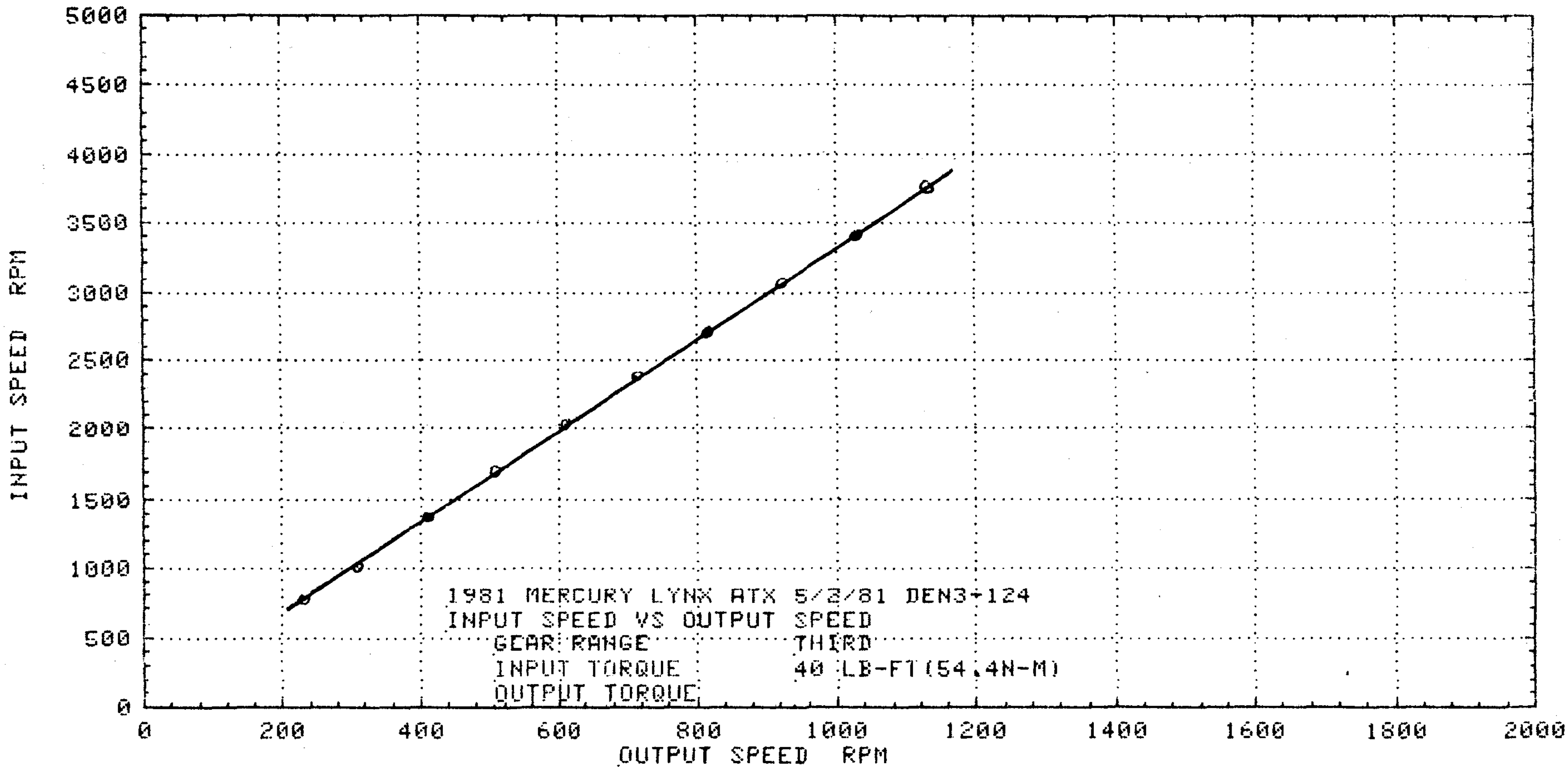
100
90
80
70
60
50
40
30
20
10
0
EFFICIENCY %
1981 MERCURY LYNX ATX 5/2/81 DEN3-124
EFFICIENCY VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE 30 LB-FT(40.8N-M)
OUTPUT TORQUE
0
200
400
600
800
1000
1200
1400
1600
1800
2000
OUTPUT SPEED RPM

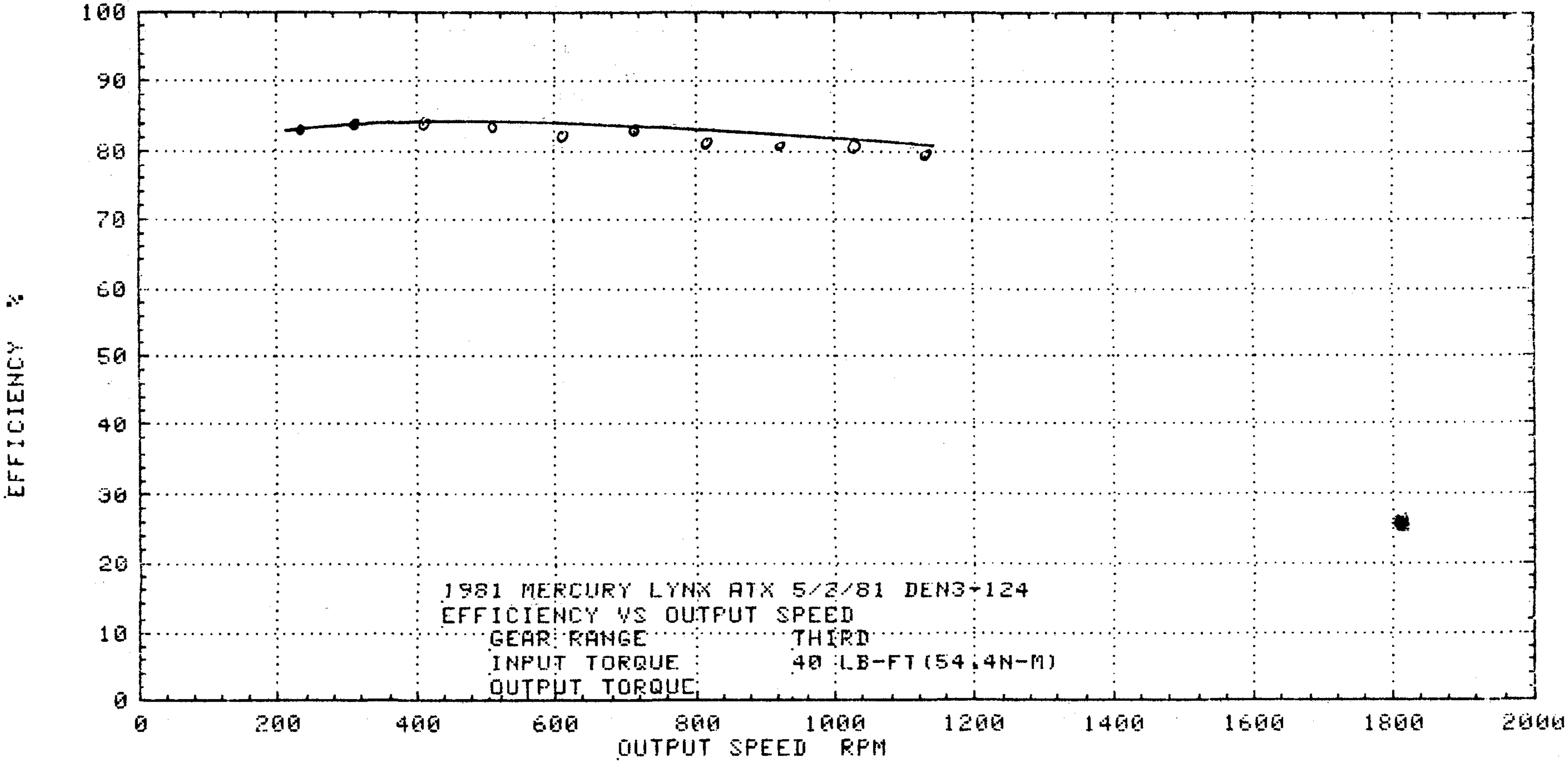

1981 MERCURY LYNX ATX 5/2/81 DEN3-124
EFFICIENCY VS POWER OUT
GEAR RANGE THIRD
INPUT TORQUE 30 LB-FT(40.8N-M)
OUTPUT TORQUE
EFFICIENCY %
100
90
80
70
60
50
40
30
20
10
0
0 2 4 6 8 10 12 14 16 18 HP 20
POWER OUT
0 1 2 4 5 7 8 10 11 13 KW 14


5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
.5
0.0
TORQUE RATIO To/Ti
1981 MERCURY LYNX ATX 5/2/81 DEN3-124
TORQUE RATIO VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE 40 LB-FT(54.4N-M)
OUTPUT TORQUE
0
200
400
600
800
1000
1200
1400
1600
1800
2000
OUTPUT SPEED RPM

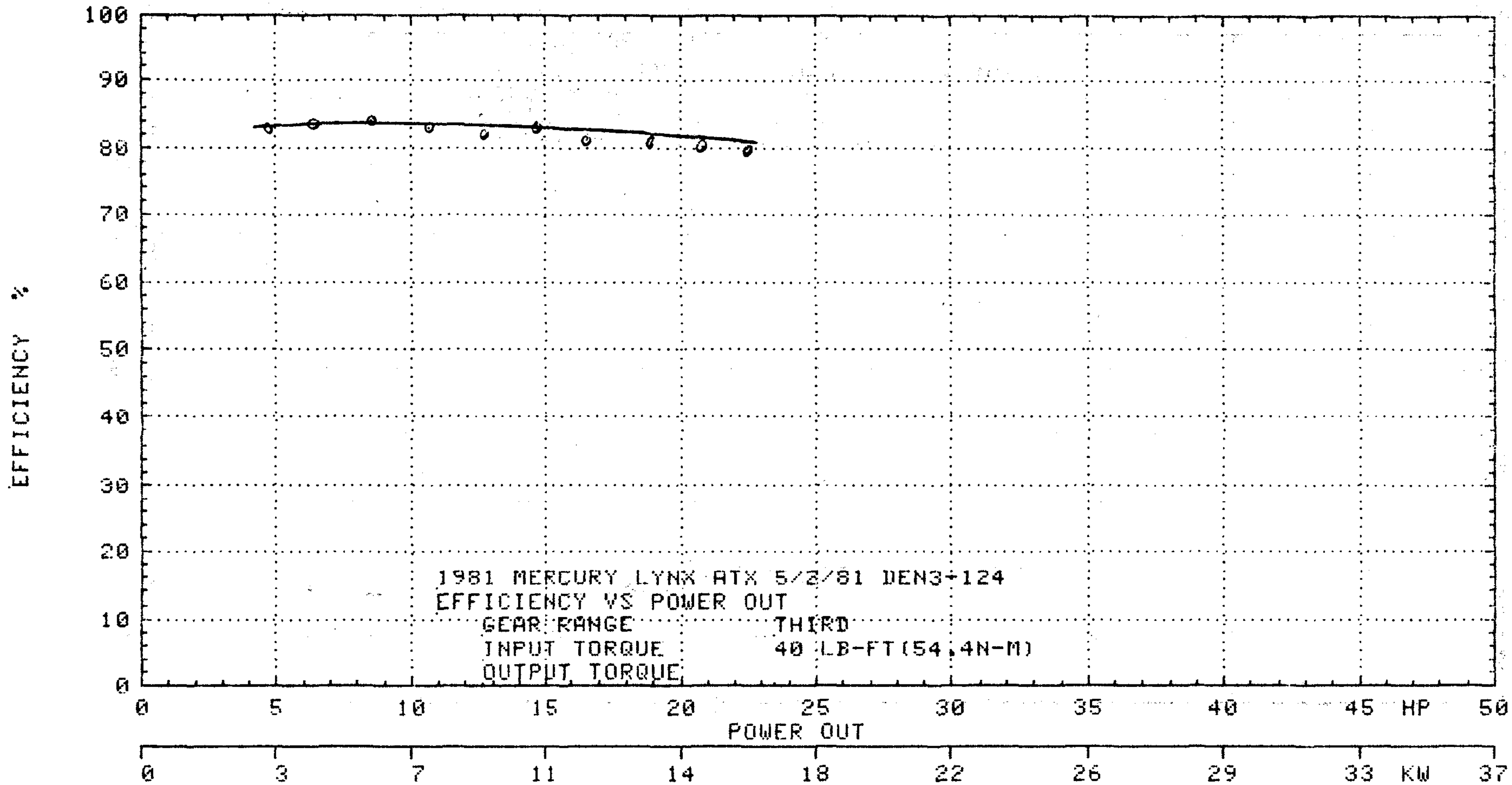


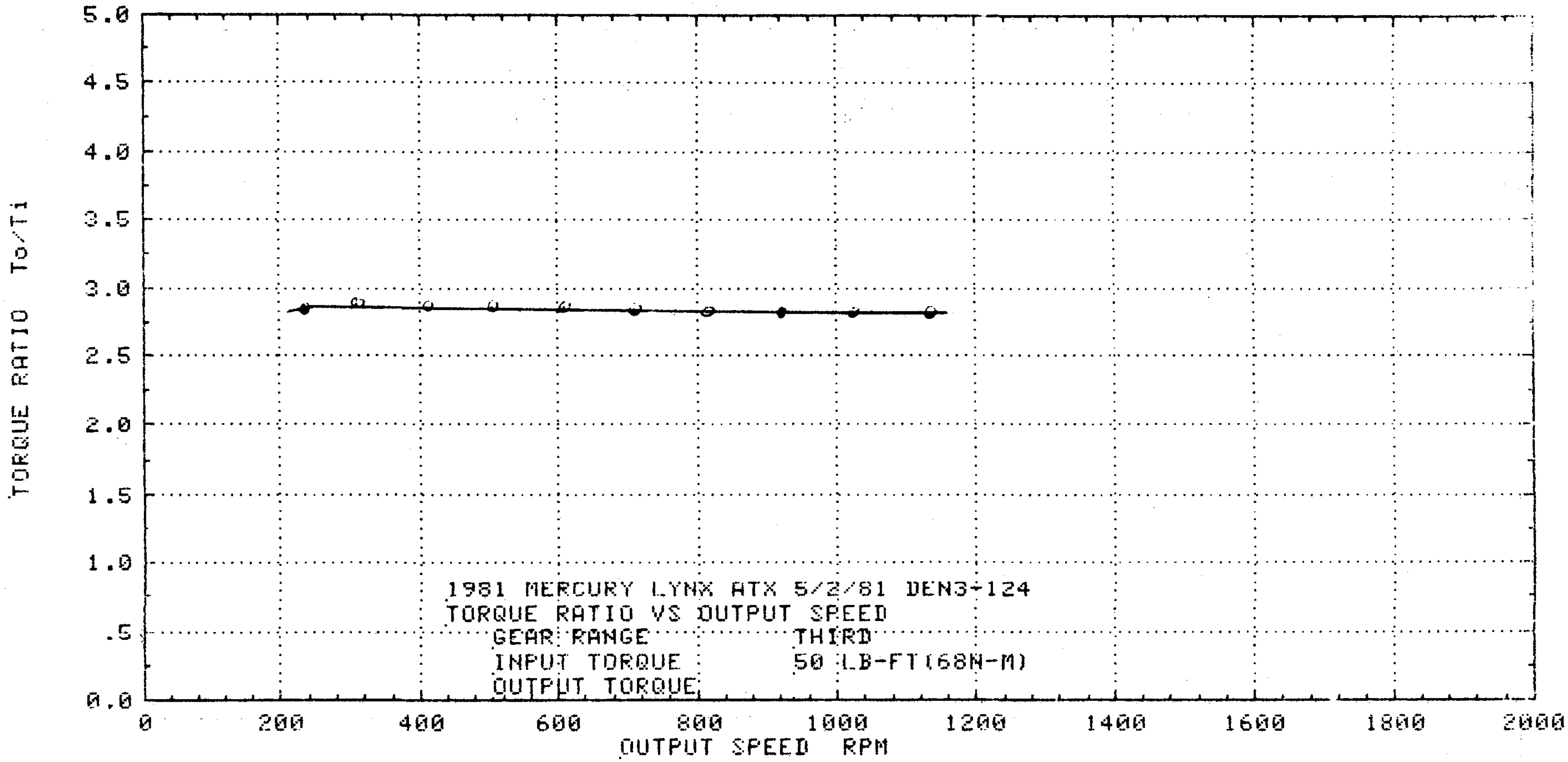
271
N-M
244
217
190
163
136
108
81
54
27
0
200
LB-FT
180
160
140
120
100
80
60
40
20
0
OUTPUT TORQUE
0
200
400
600
800
1000
1200
1400
1600
1800
2000
OUTPUT SPEED RPM
1981 MERCURY LYNX ATX 5/2/81 DEN3-124
OUTPUT TORQUE VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE 40 LB-FT(54.4N-M)
OUTPUT TORQUE


INPUT SPEED RPM
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
0
200
400
600
800
1000
1200
1400
1600
1800
2000
OUTPUT SPEED RPM
1981 MERCURY LYNX ATX 5/2/81 DEN3-124
INPUT SPEED VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE 40 LB-FT(54.4N-M)
OUTPUT TORQUE

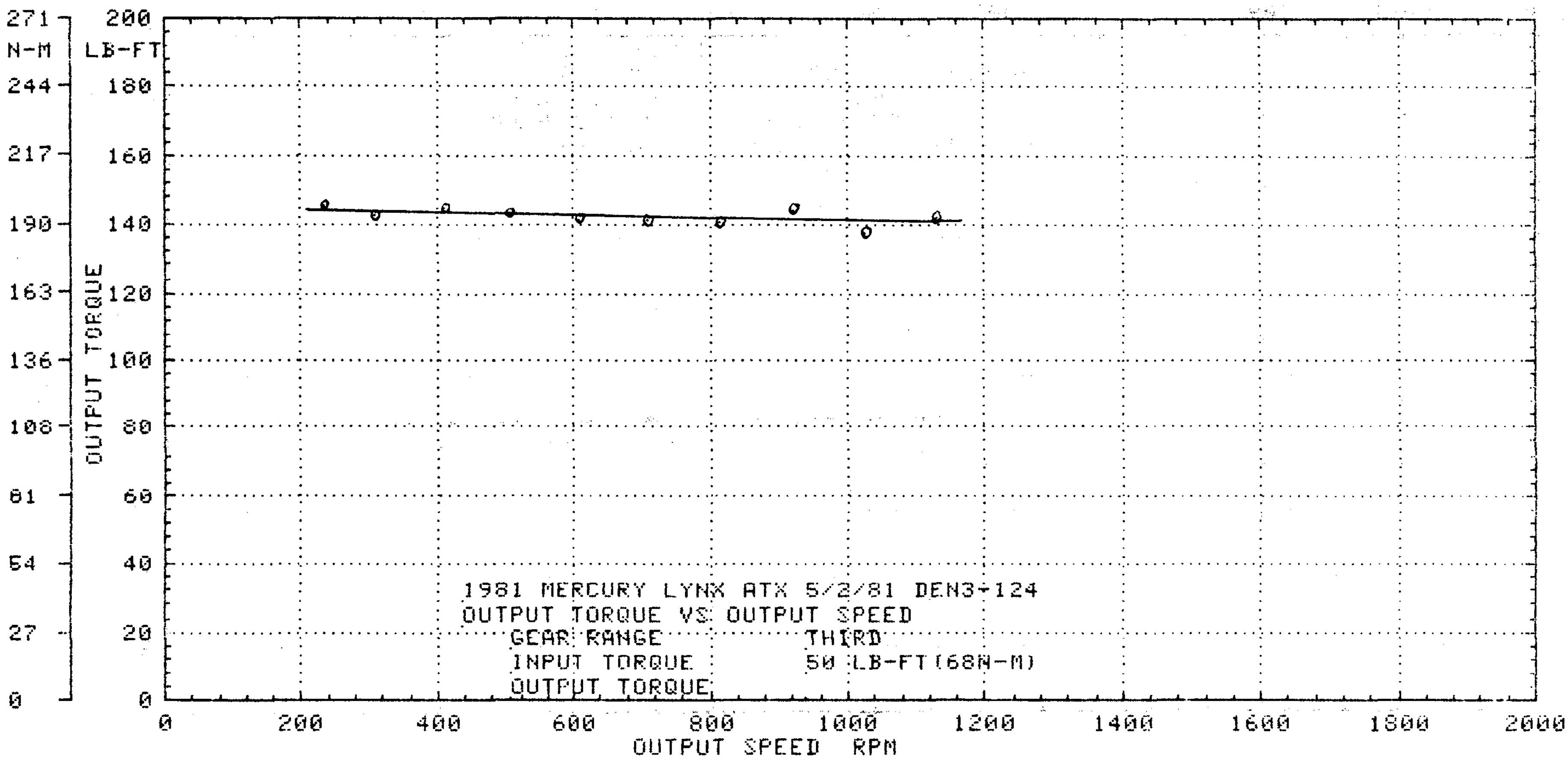


100
90
80
70
60
50
40
30
20
10
0
EFFICIENCY %
0
200
400
600
800
1000
1200
1400
1600
1800
2000
OUTPUT SPEED RPM
1981 MERCURY LYNX ATX 5/2/81 DEN3-124
EFFICIENCY VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE 40 LB-FT(54.4N-M)
OUTPUT TORQUE

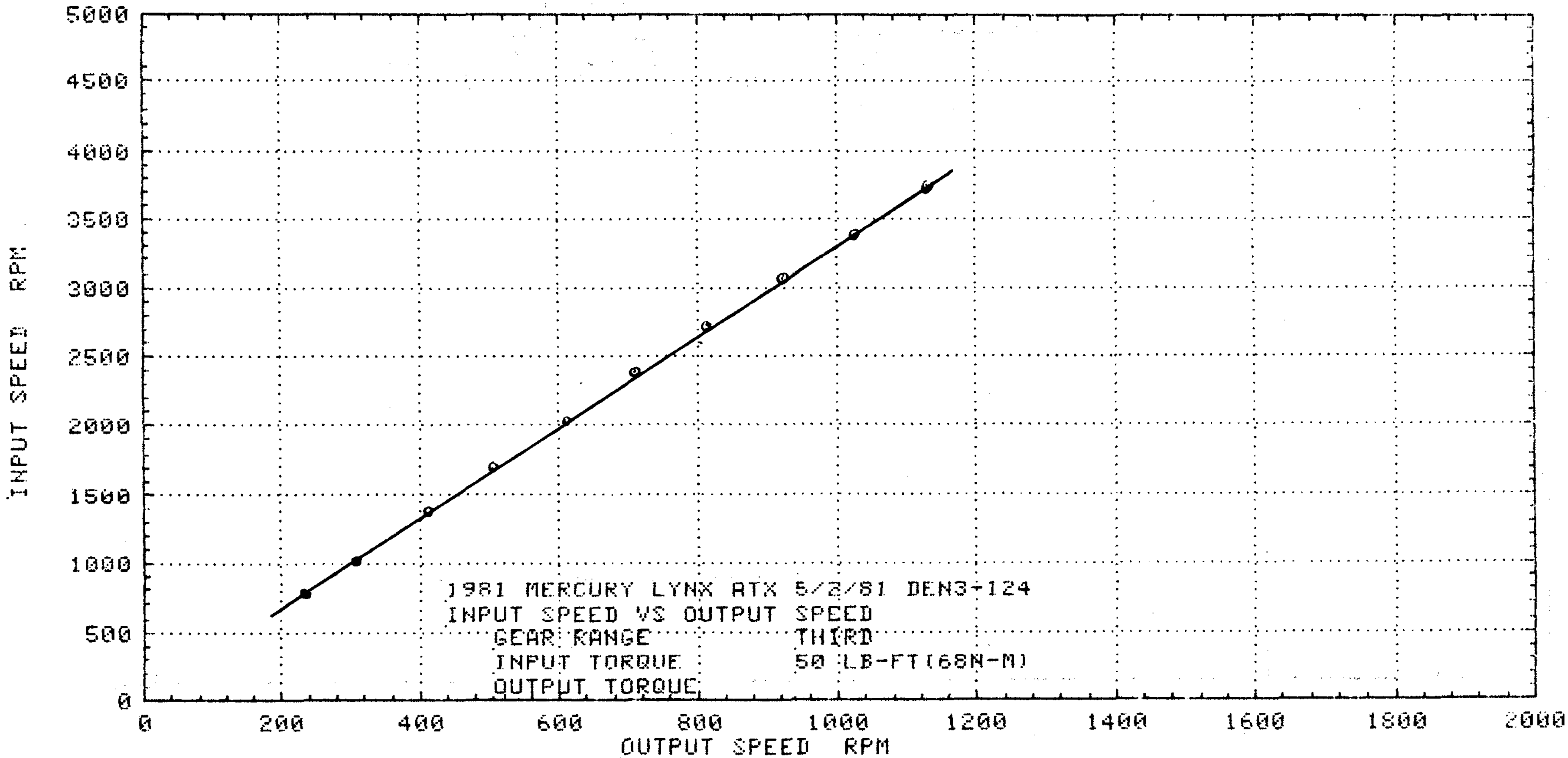

1981 MERCURY LYNX ATX 5/2/81 DEN3-124
EFFICIENCY VS POWER OUT
GEAR RANGE THIRD
INPUT TORQUE 40 LB-FT(54.4N-M)
OUTPUT TORQUE
EFFICIENCY %
100
90
80
70
60
50
40
30
20
10
0
0 5 10 15 20 25 30 35 40 45 HP 50
POWER OUT
0 3 7 11 14 18 22 26 29 33 KW 37

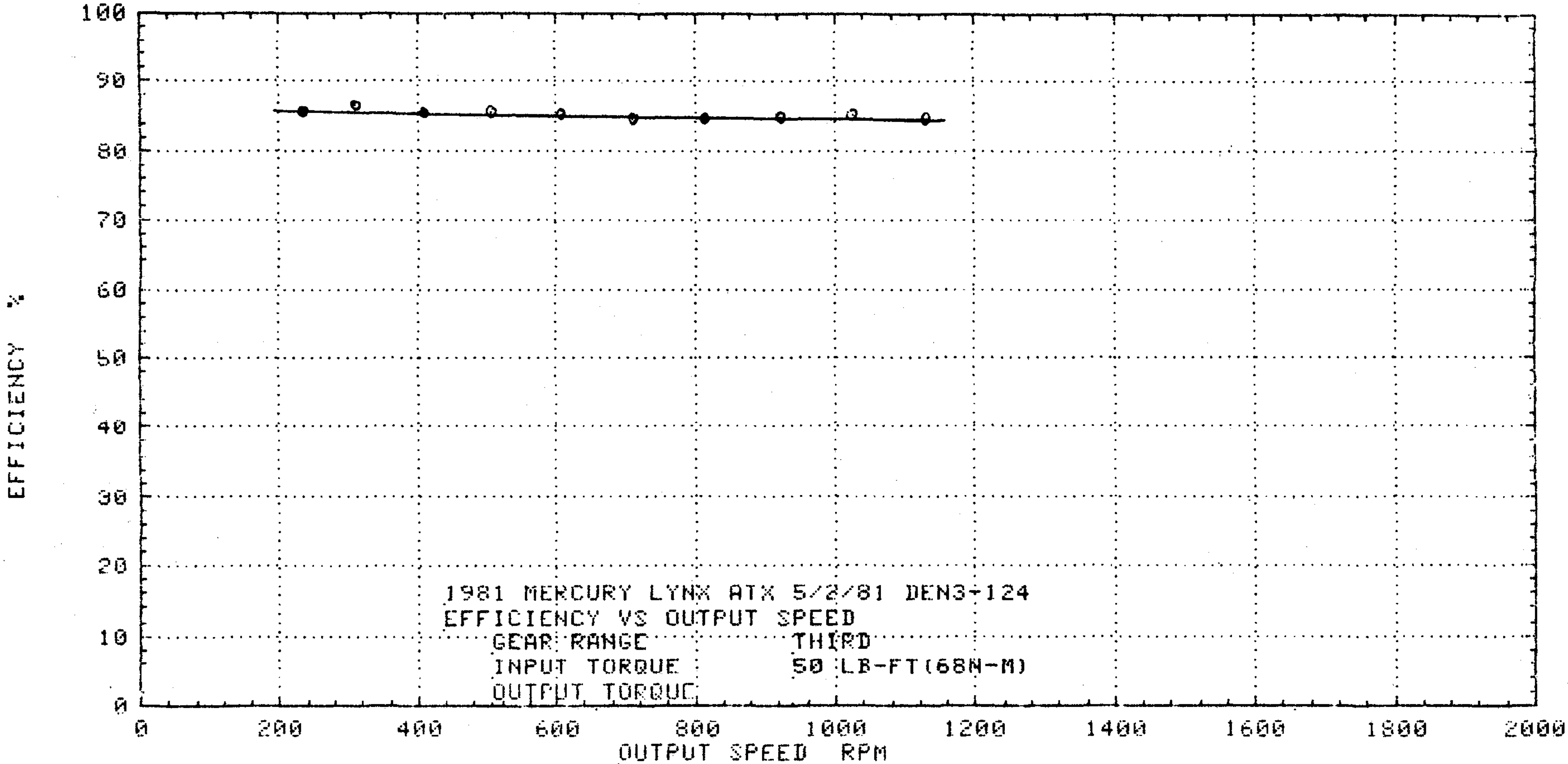


TORQUE RATIO To/Ti
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
.5
0.0
0
200
400
600
800
1000
1200
1400
1600
1800
2000
OUTPUT SPEED RPM
1981 MERCURY LYNX ATX 5/2/81 DEN3-124
TORQUE RATIO VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE 50 LB-FT(68N-M)
OUTPUT TORQUE

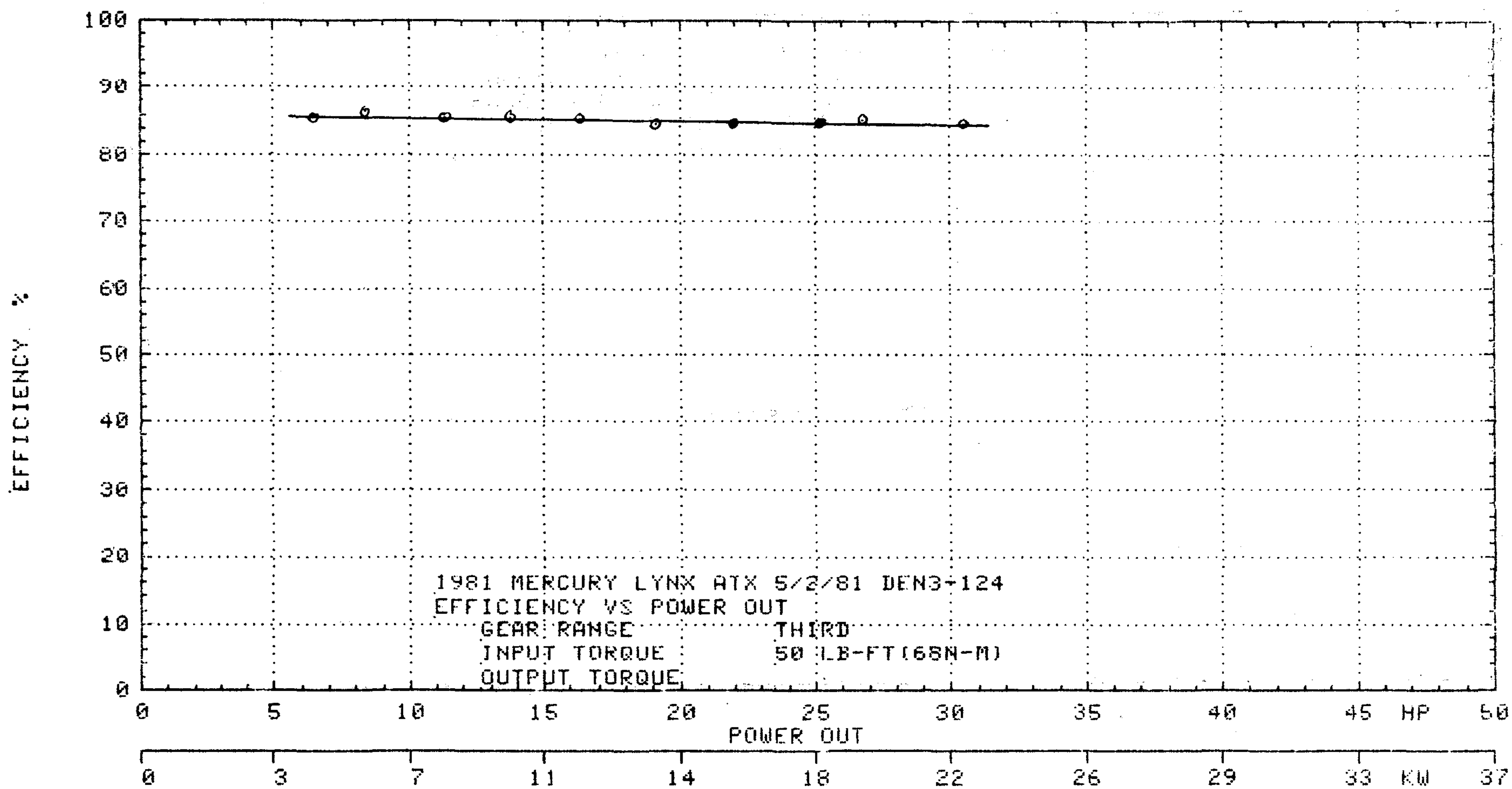


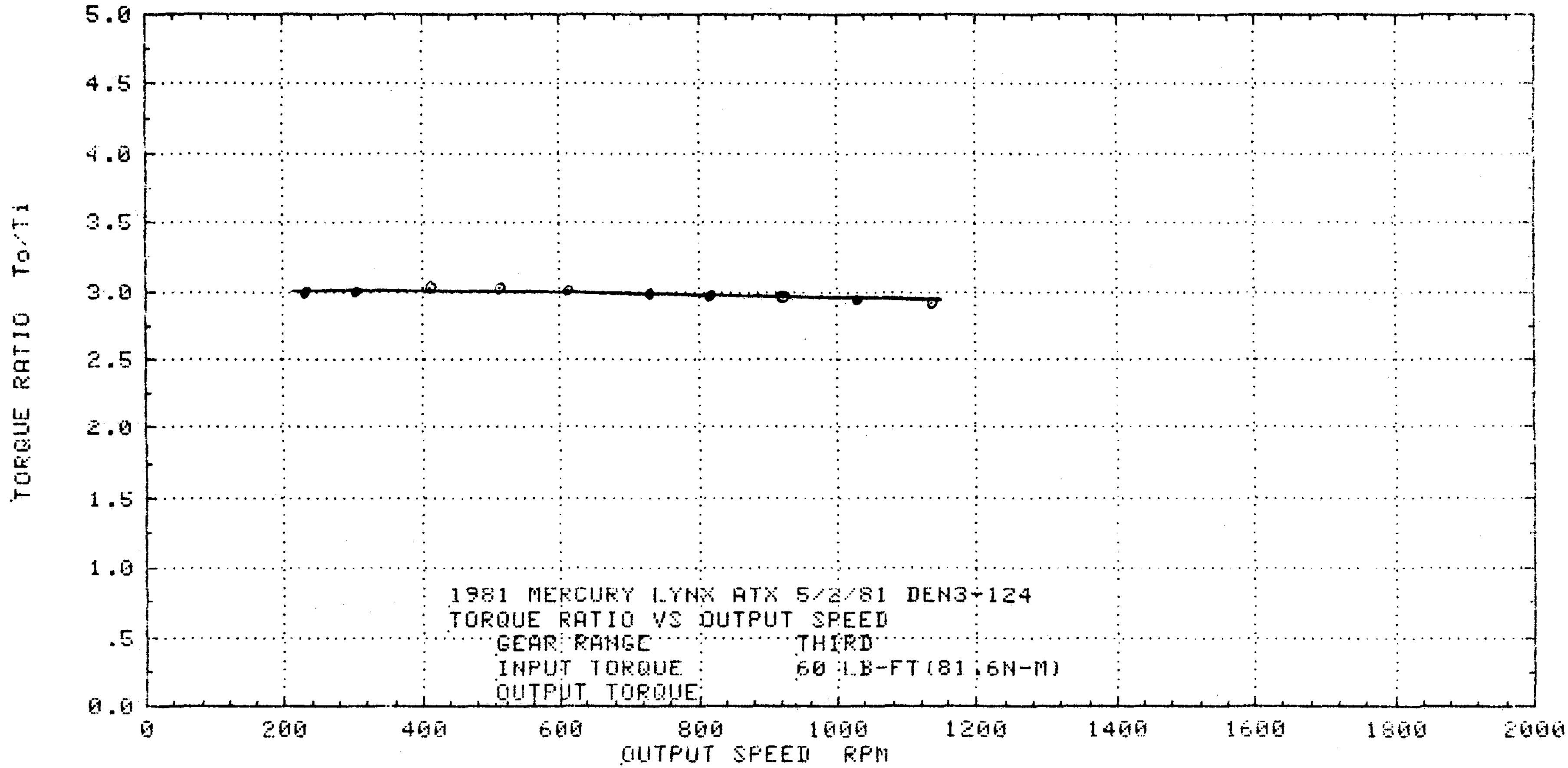
271
N-M
244
217
190
163
136
108
81
54
27
0
200
LB-FT
180
160
140
120
100
80
60
40
20
0
OUTPUT TORQUE
1981 MERCURY LYNX ATX 5/2/81 DEN3-124
OUTPUT TORQUE VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE 50 LB-FT(68N-M)
OUTPUT TORQUE
0
200
400
600
800
1000
1200
1400
1600
1800
2000
OUTPUT SPEED RPM

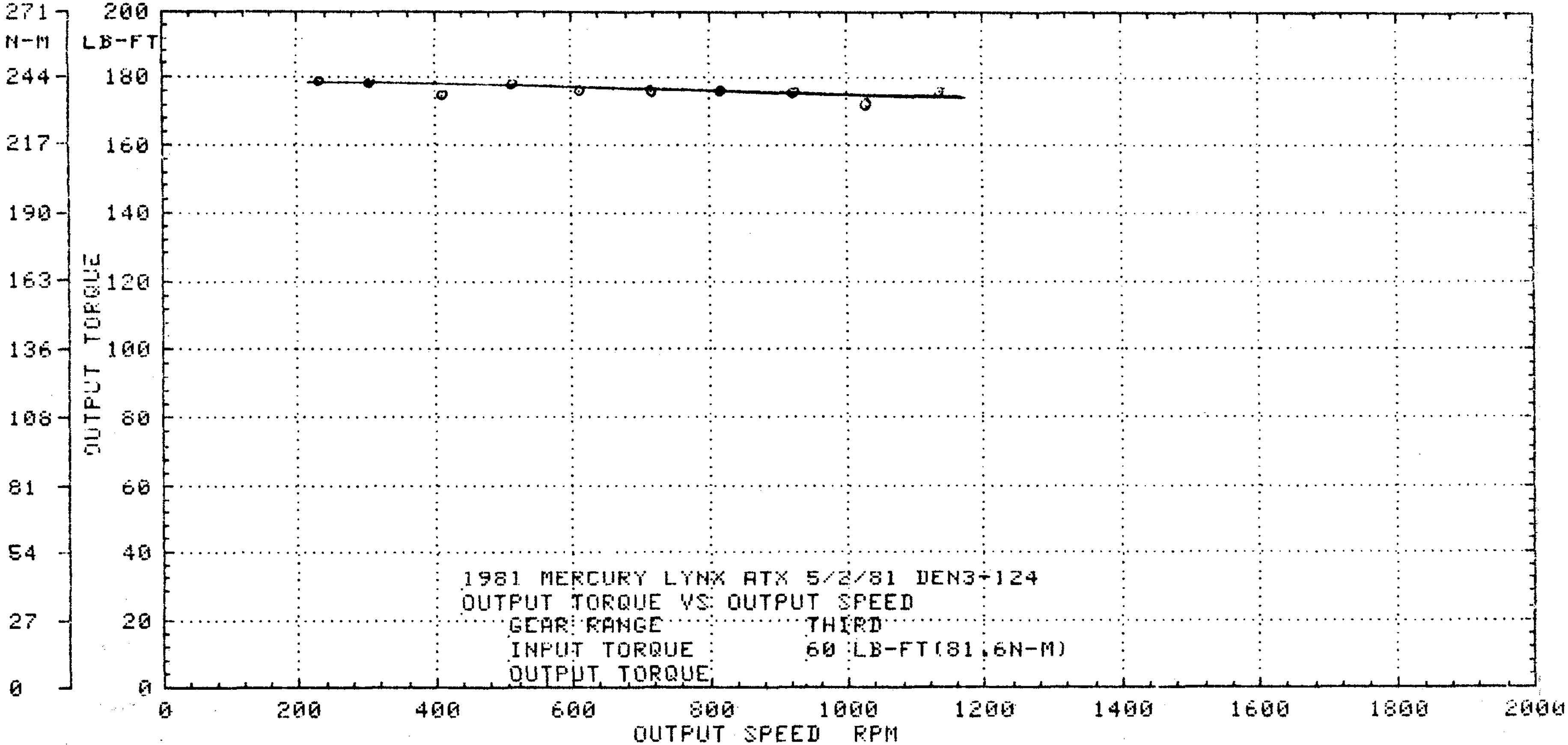

1981 MERCURY LYNX ATX 5/2/81 DEN3-124
INPUT SPEED VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE 50 LB-FT(68N-M)
OUTPUT TORQUE
INPUT SPEED RPM
OUTPUT SPEED RPM
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
0
200
400
600
800
1000
1200
1400
1600
1800
2000

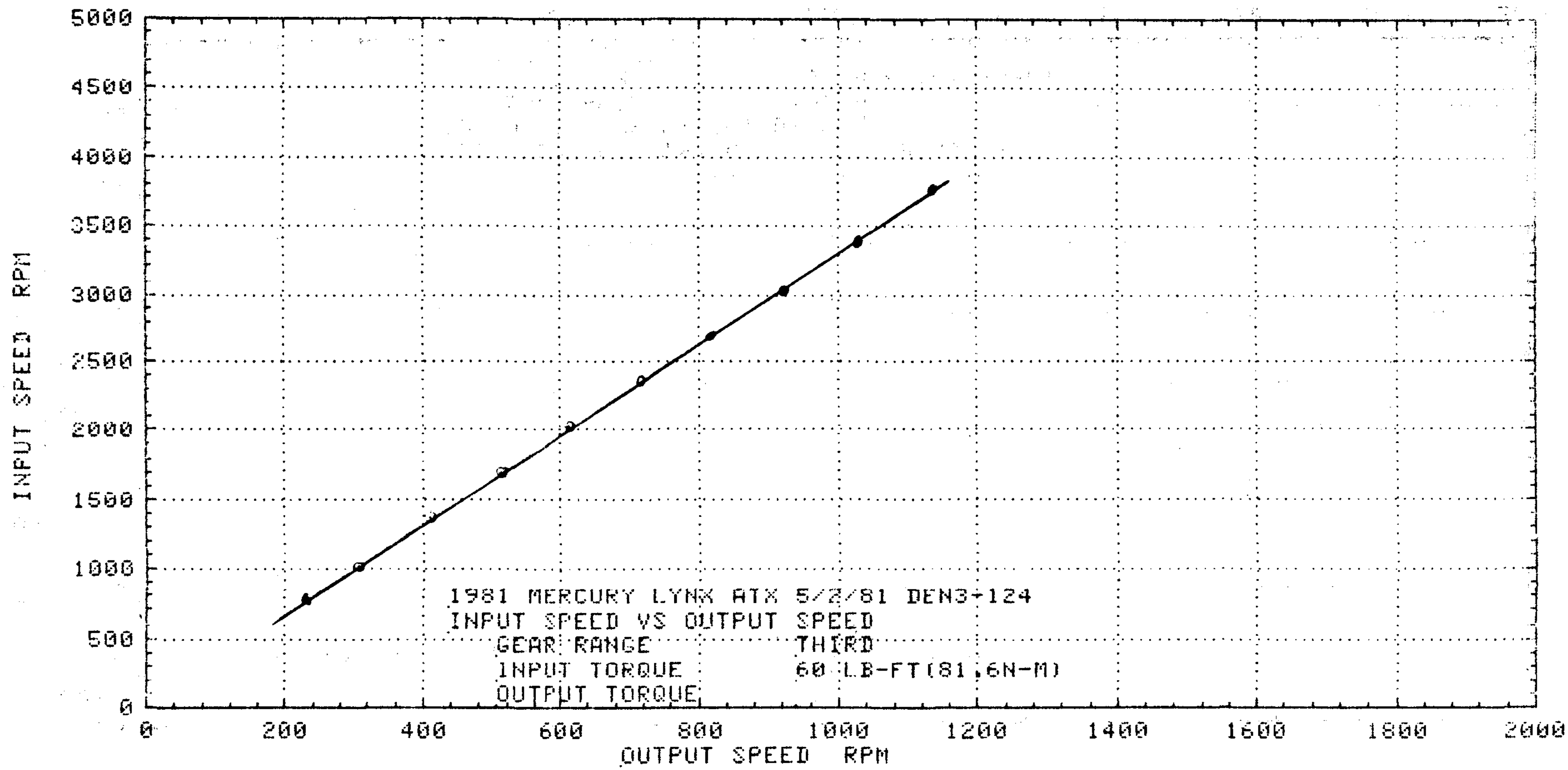


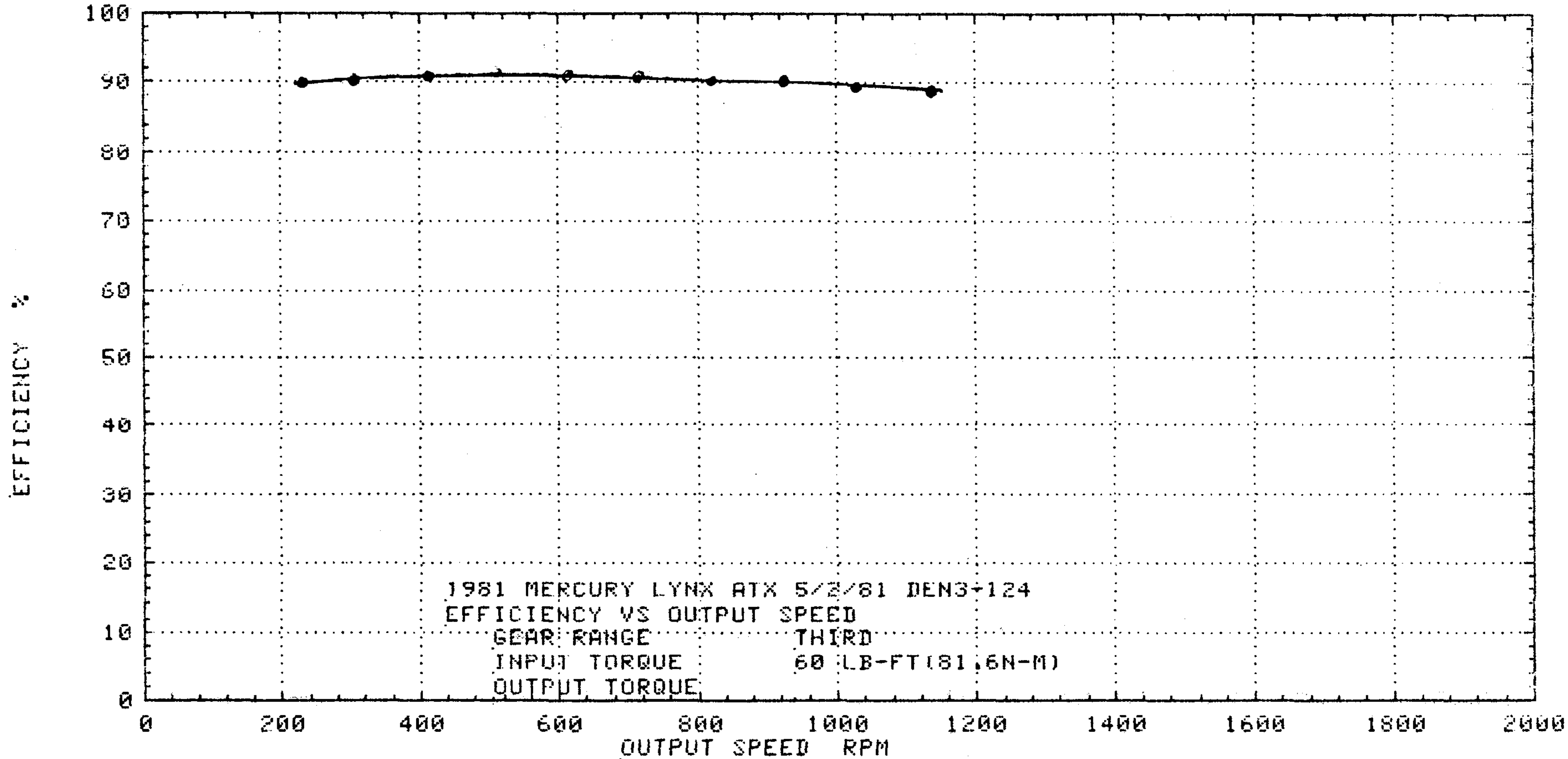
1981 MERCURY LYNX ATX 5/2/81 DEN3-124
EFFICIENCY VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE 50 LB-FT(68N-M)
OUTPUT TORQUE
EFFICIENCY %
OUTPUT SPEED RPM
0
10
20
30
40
50
60
70
80
90
100
0
200
400
600
800
1000
1200
1400
1600
1800
2000

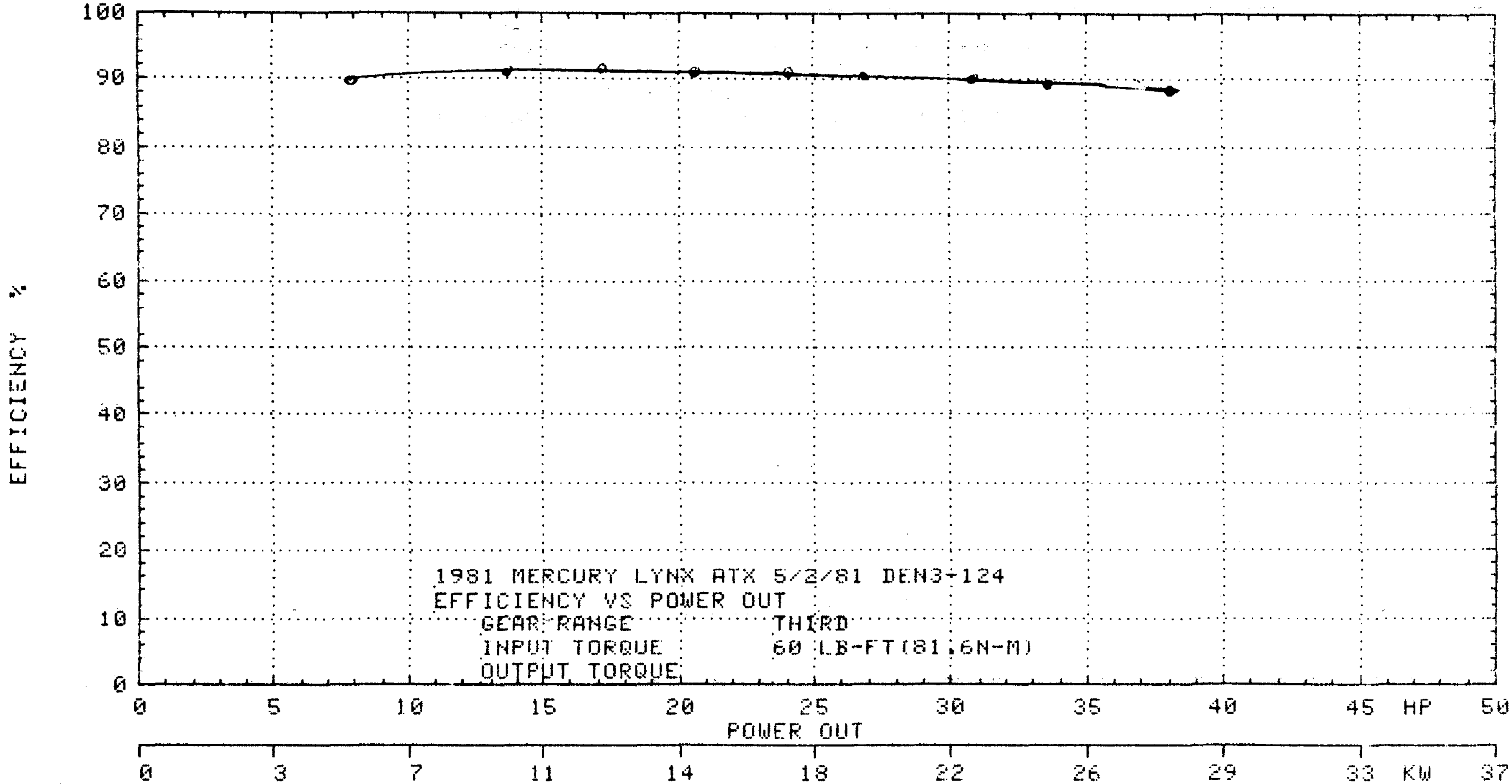

1981 MERCURY LYNX ATX 5/2/81 DEN3-124
EFFICIENCY VS POWER OUT
GEAR RANGE THIRD
INPUT TORQUE 50 LB-FT(68N-M)
OUTPUT TORQUE
EFFICIENCY %
POWER OUT
HP
KW
100
90
80
70
60
50
40
30
20
10
0
0
5
10
15
20
25
30
35
40
45
50
0
3
7
11
14
18
22
26
29
33
37

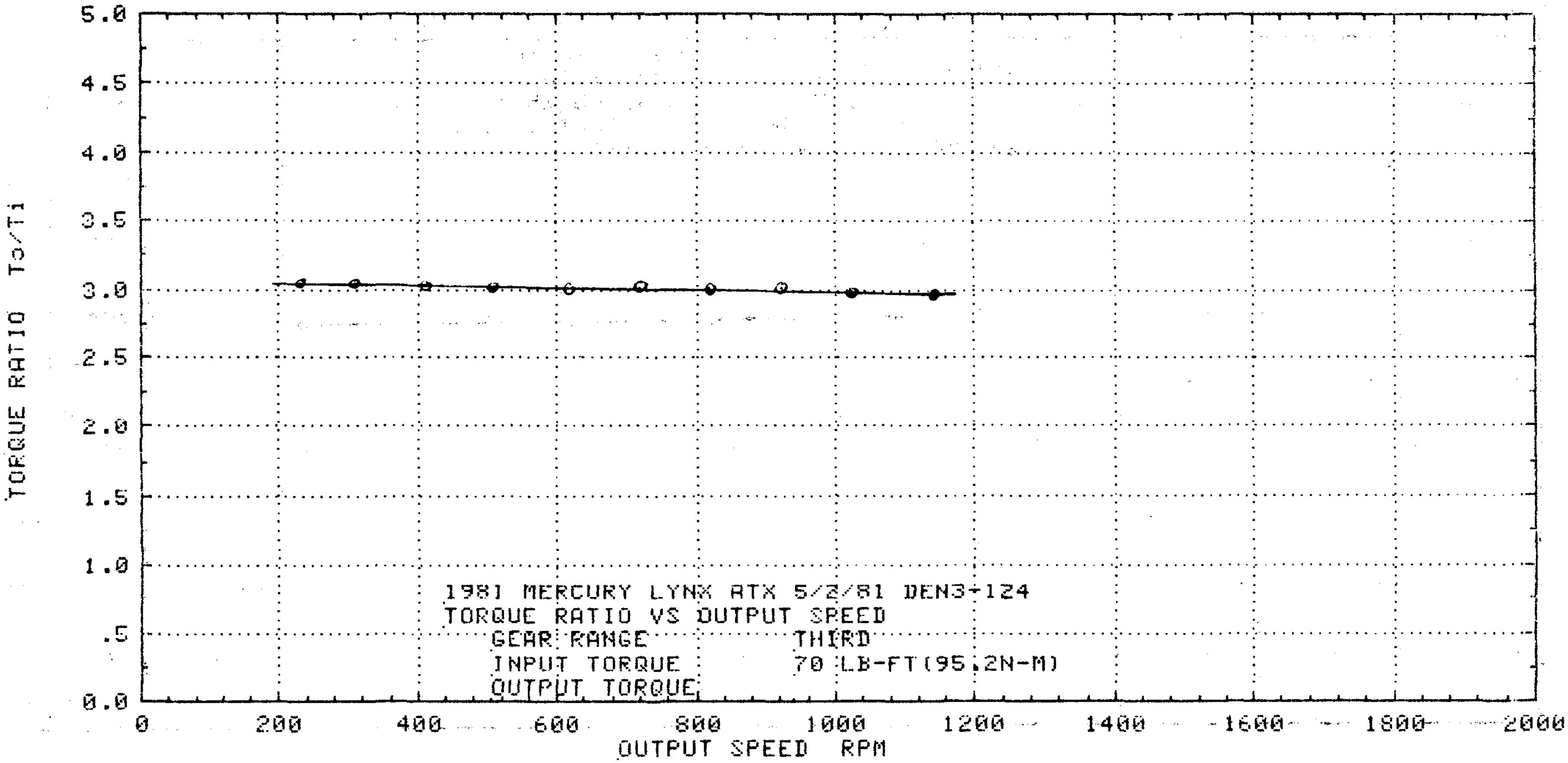

1981 MERCURY LYNX ATX 5/2/81 DEN3-124
TORQUE RATIO VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE 60 LB-FT(81.6N-M)
OUTPUT TORQUE
TORQUE RATIO To/Ti
OUTPUT SPEED RPM
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
.5
0.0
0
200
400
600
800
1000
1200
1400
1600
1800
2000

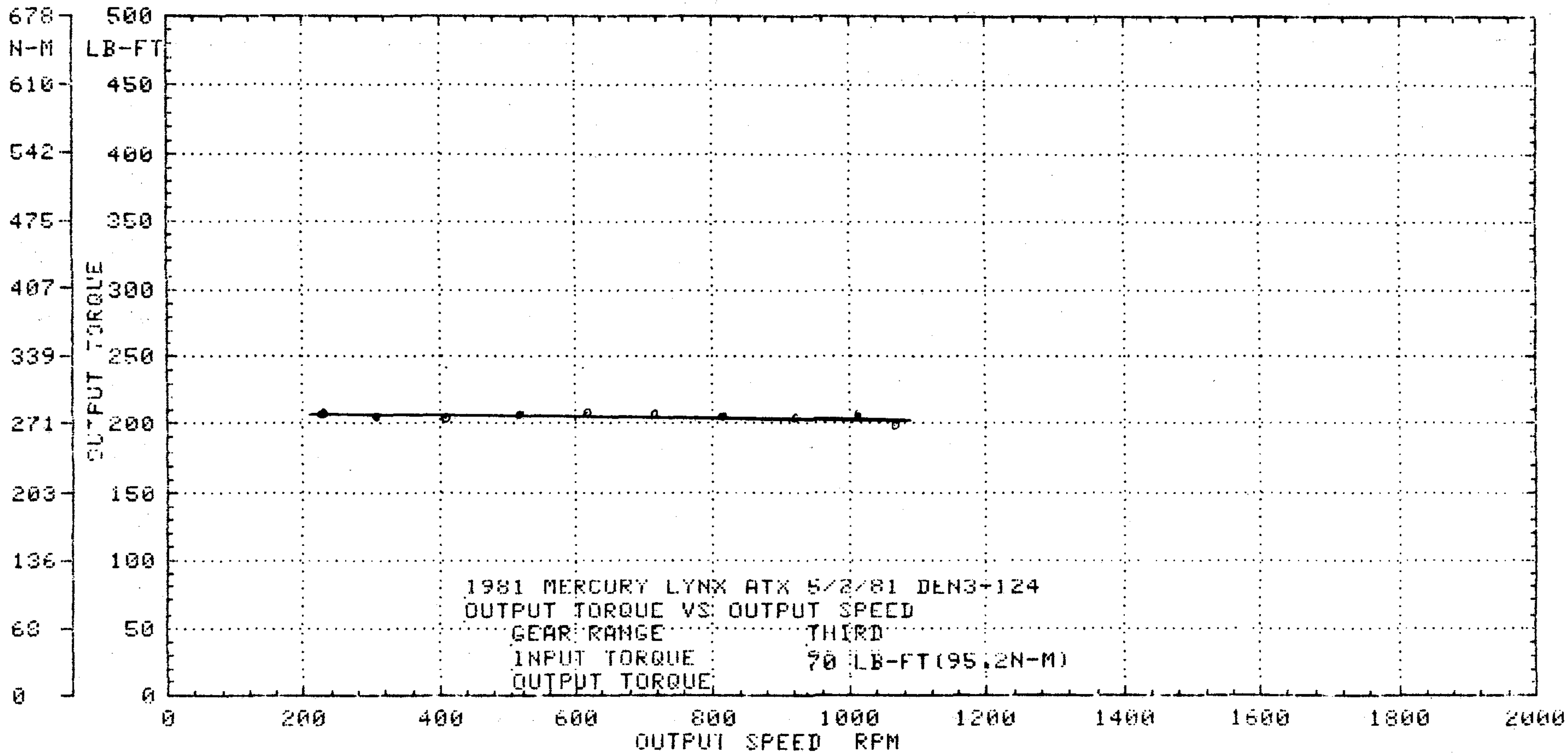

1981 MERCURY LYNX ATX 5/2/81 DEN3-124
OUTPUT TORQUE VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE 60 LB-FT(81.6N-M)
OUTPUT TORQUE
OUTPUT TORQUE
N-M
LB-FT
OUTPUT SPEED RPM
271
244
217
190
163
136
108
81
54
27
0
200
180
160
140
120
100
80
60
40
20
0
200
400
600
800
1000
1200
1400
1600
1800
2000

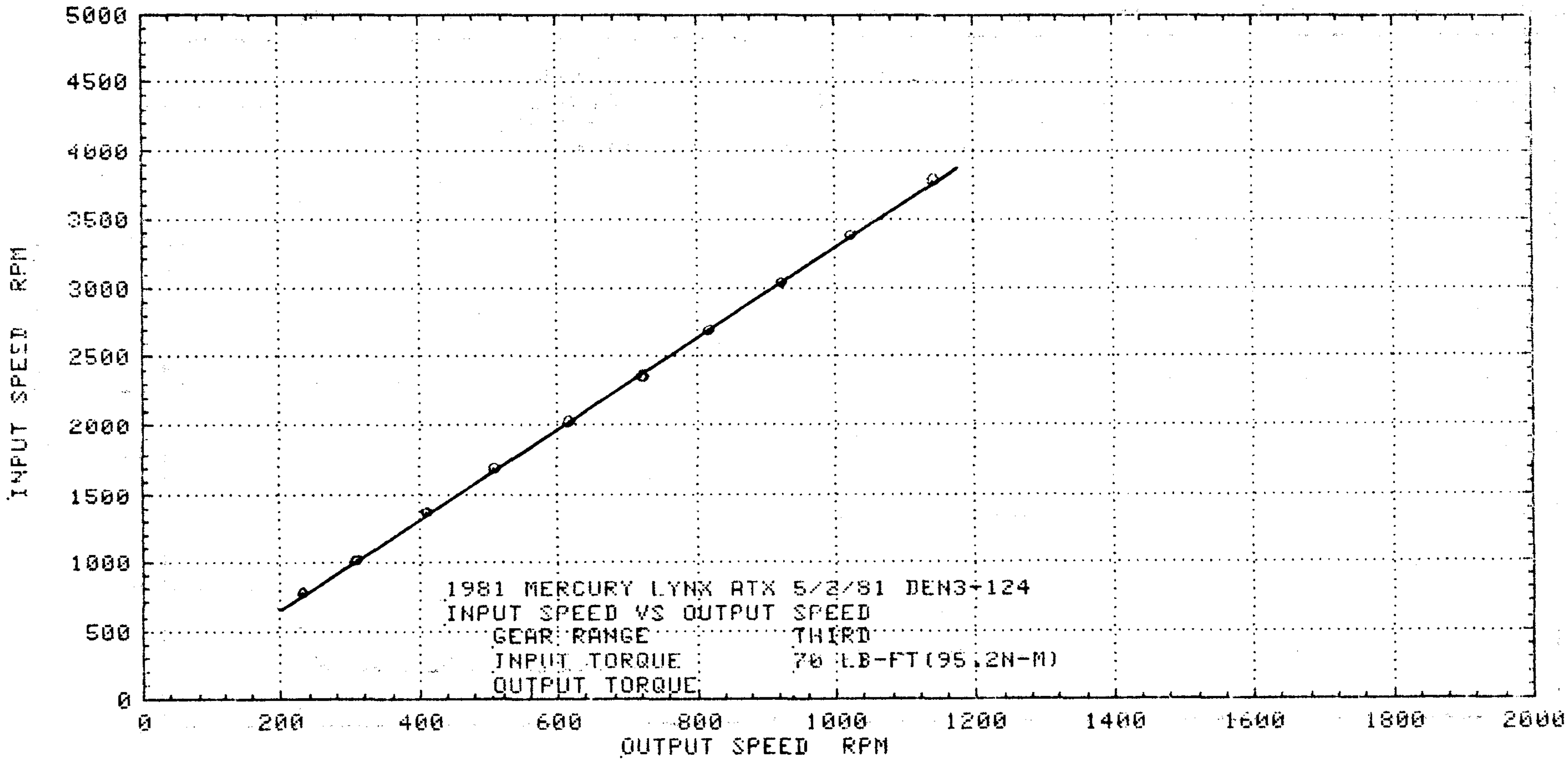

1981 MERCURY LYNX ATX 5/2/81 DEN3-124
INPUT SPEED VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE 60 LB-FT(81.6N-M)
OUTPUT TORQUE
INPUT SPEED RPM
OUTPUT SPEED RPM
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
200
400
600
800
1000
1200
1400
1600
1800
2000


1981 MERCURY LYNX ATX 5/2/81 DEN3-124
EFFICIENCY VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE 60 LB-FT(81.6N-M)
OUTPUT TORQUE
EFFICIENCY %
OUTPUT SPEED RPM
0
10
20
30
40
50
60
70
80
90
100
200
400
600
800
1000
1200
1400
1600
1800
2000

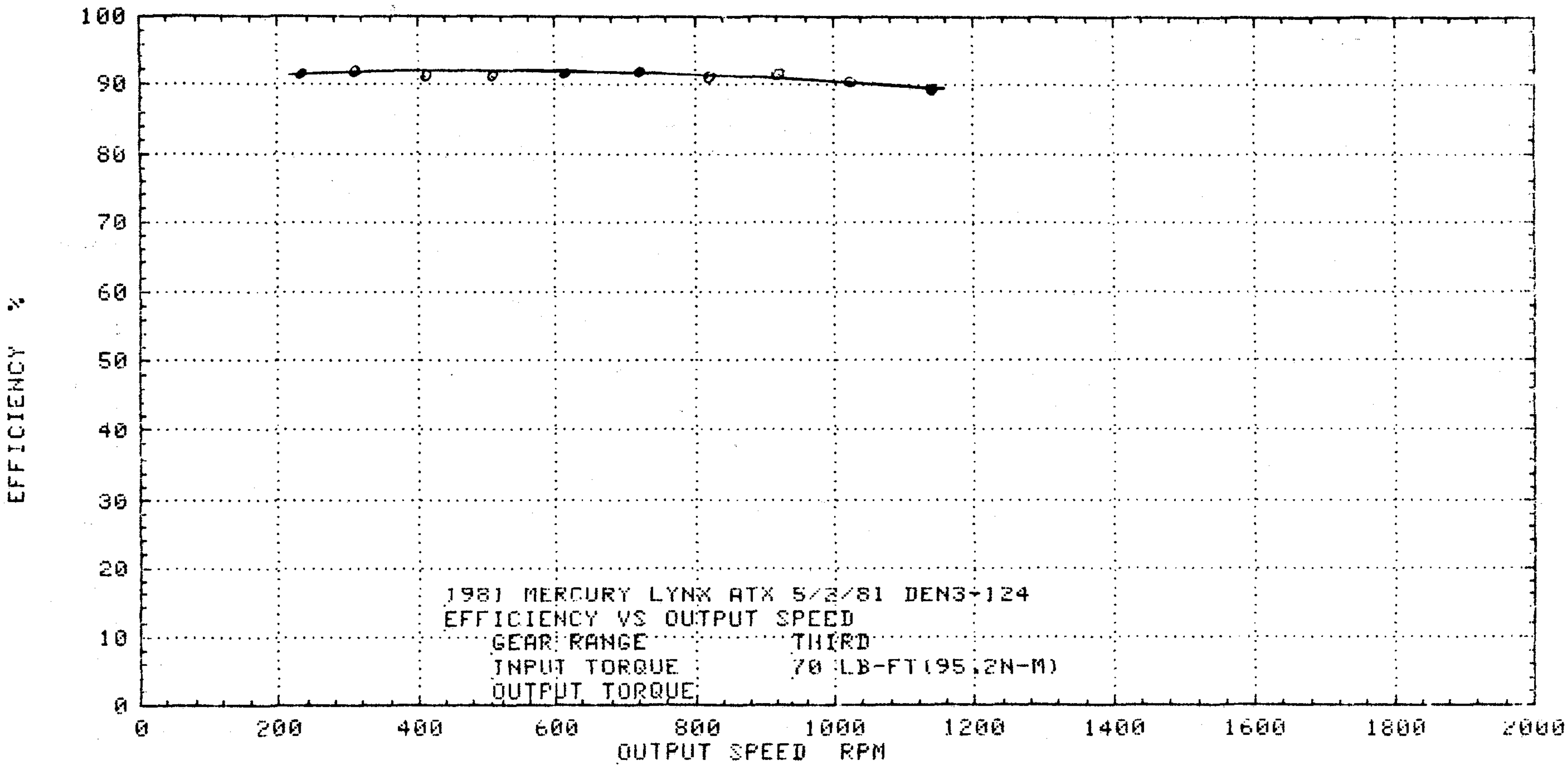

1981 MERCURY LYNX ATX 5/2/81 DEN3-124
EFFICIENCY VS POWER OUT
GEAR RANGE THIRD
INPUT TORQUE 60 LB-FT(81.6N-M)
OUTPUT TORQUE
EFFICIENCY %
100
90
80
70
60
50
40
30
20
10
0
0 5 10 15 20 25 30 35 40 45 HP 50
POWER OUT
0 3 7 11 14 18 22 26 29 33 KW 37

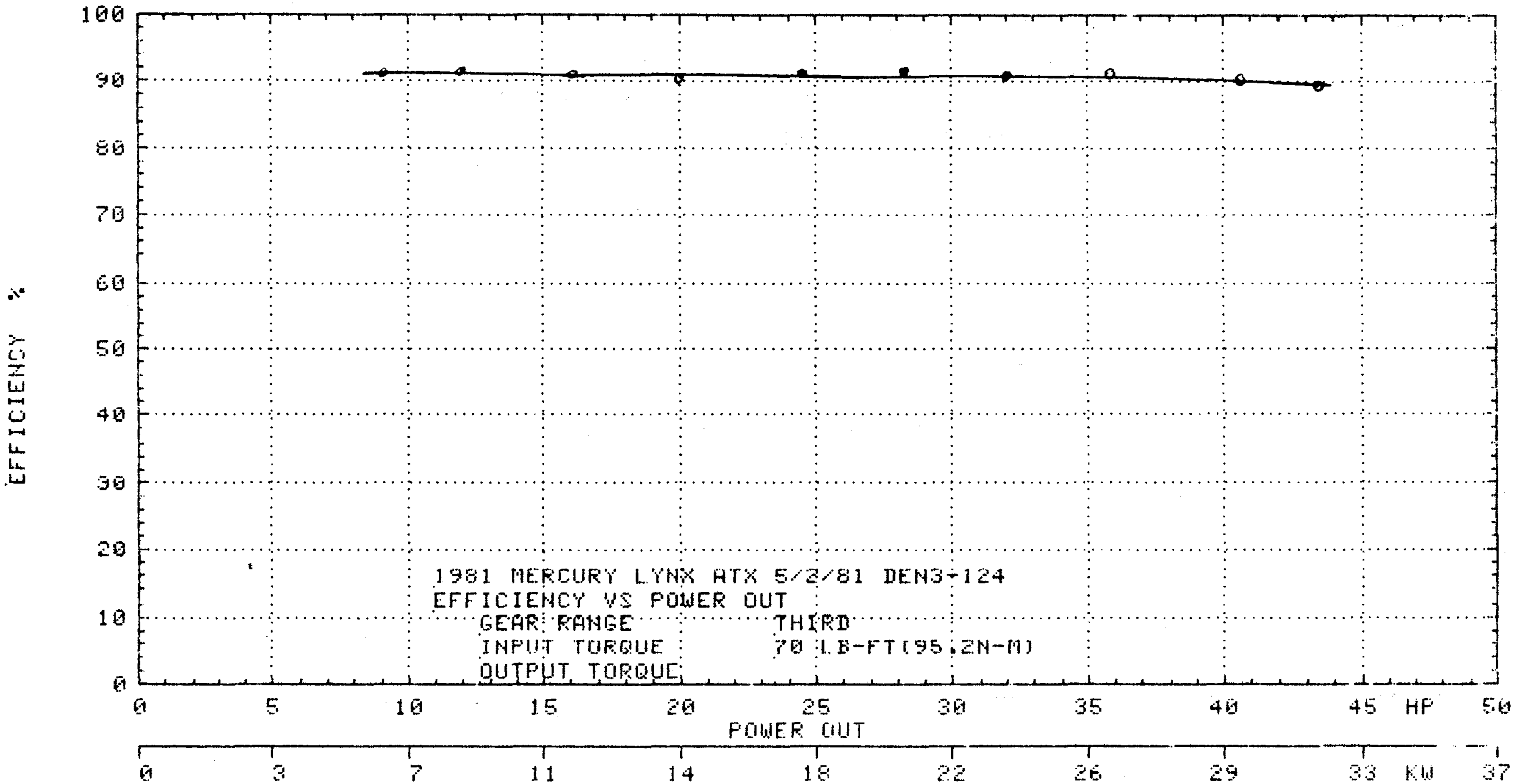

5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
.5
0.0
TORQUE RATIO To/Ti
0
200
400
600
800
1000
1200
1400
1600
1800
2000
OUTPUT SPEED RPM
1981 MERCURY LYNX ATX 5/2/81 DEN3-124
TORQUE RATIO VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE 70 LB-FT(95.2N-M)
OUTPUT TORQUE

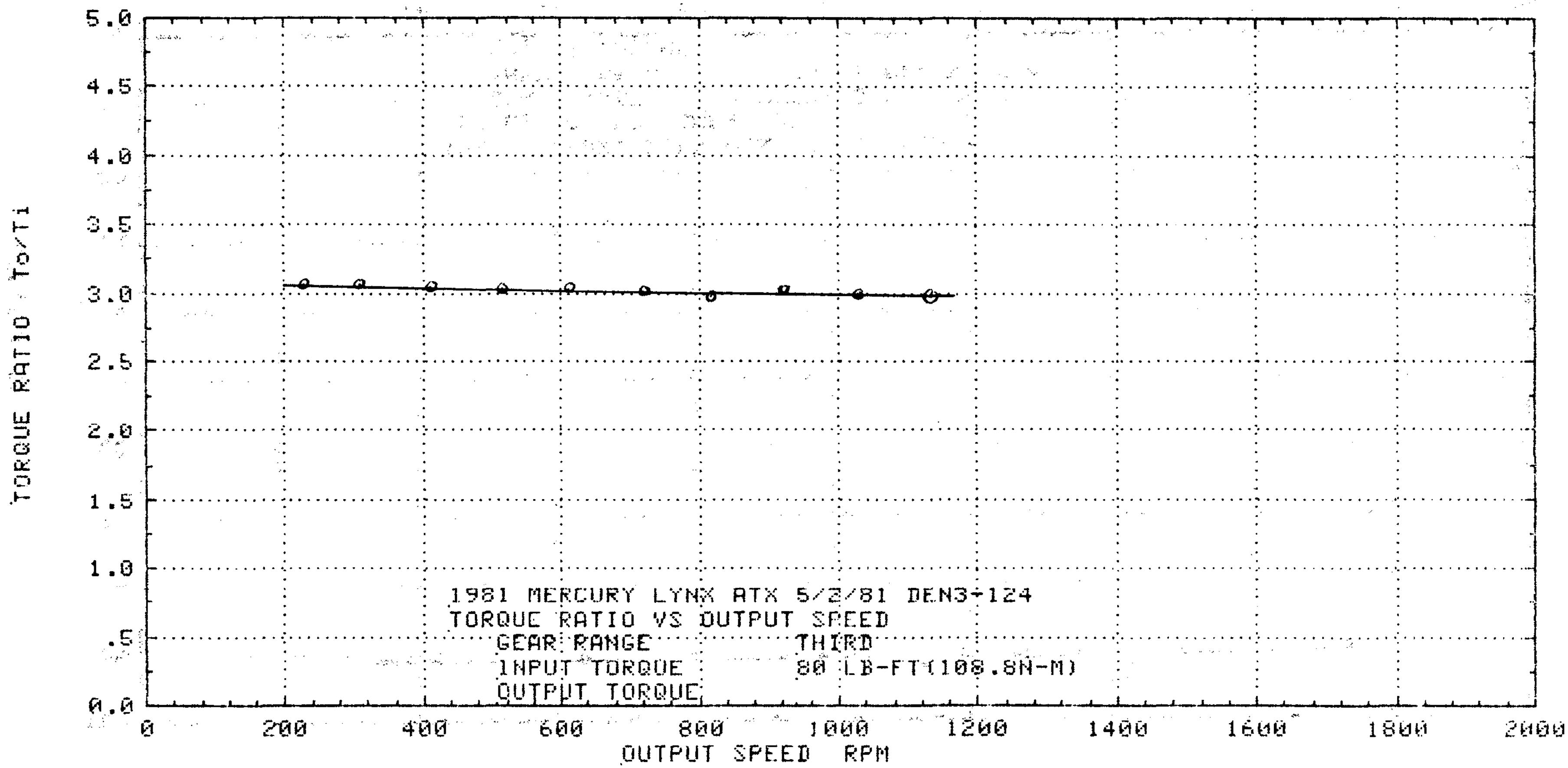

678
N-M
610
542
475
407
339
271
203
136
68
0
500
LB-FT
450
400
350
300
250
200
150
100
50
0
OUTPUT TORQUE
0
200
400
600
800
1000
1200
1400
1600
1800
2000
OUTPUT SPEED RPM
1981 MERCURY LYNX ATX 5/2/81 DEN3-124
OUTPUT TORQUE VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE 70 LB-FT(95.2N-M)
OUTPUT TORQUE

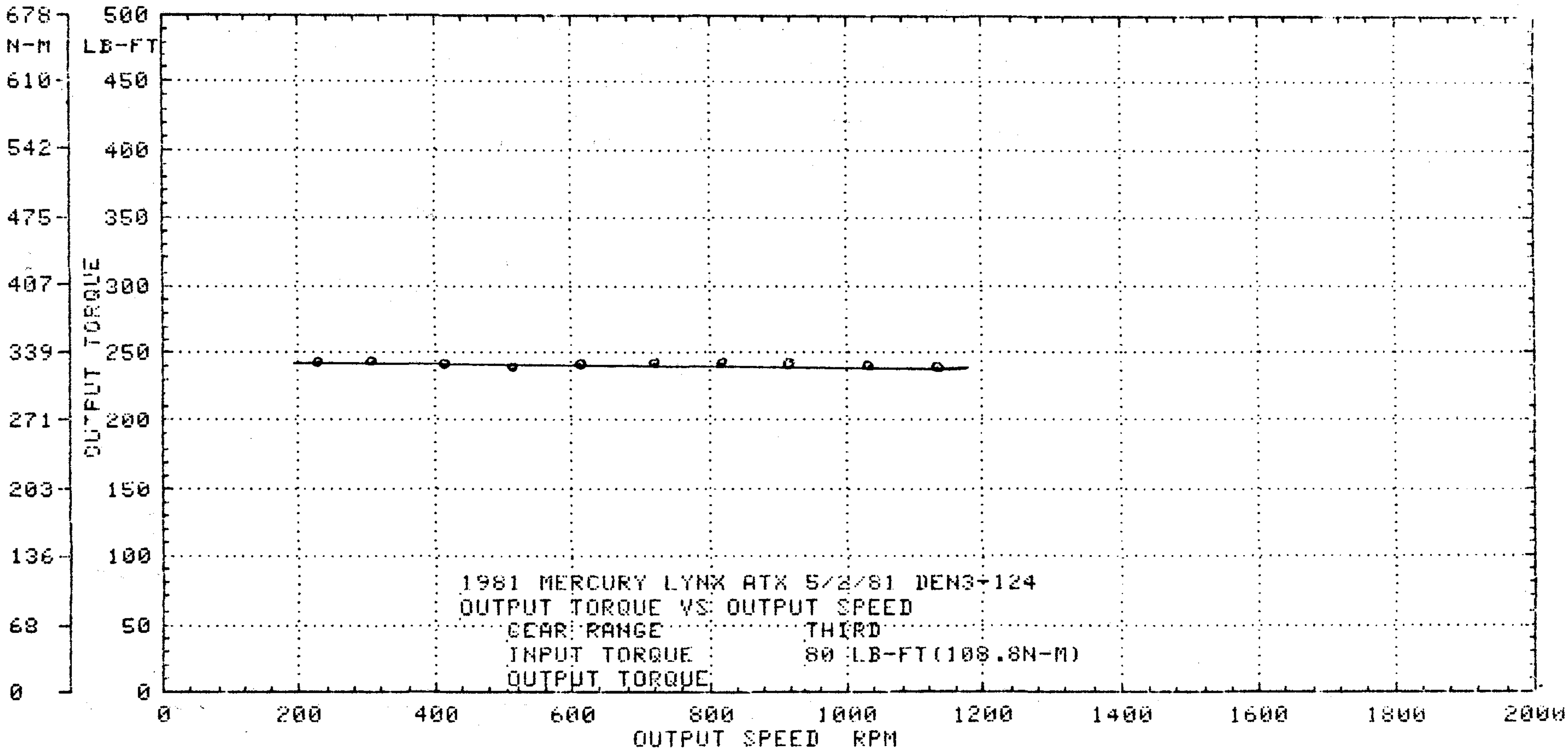


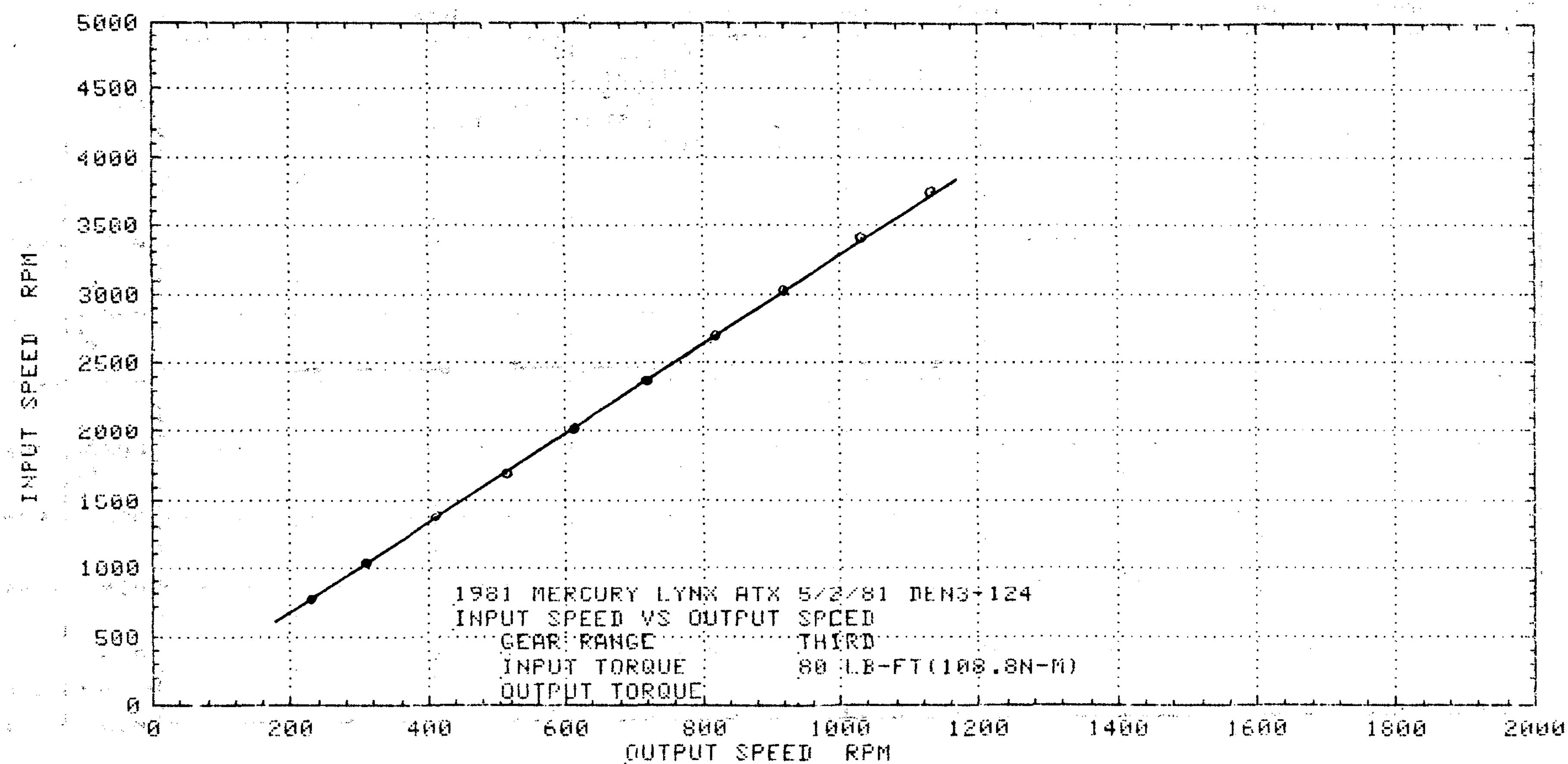
1981 MERCURY LYNX ATX 5/2/81 DEN3-124
INPUT SPEED VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE 70 LB-FT(95.2N-M)
OUTPUT TORQUE
INPUT SPEED RPM
OUTPUT SPEED RPM
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
0
200
400
600
800
1000
1200
1400
1600
1800
2000

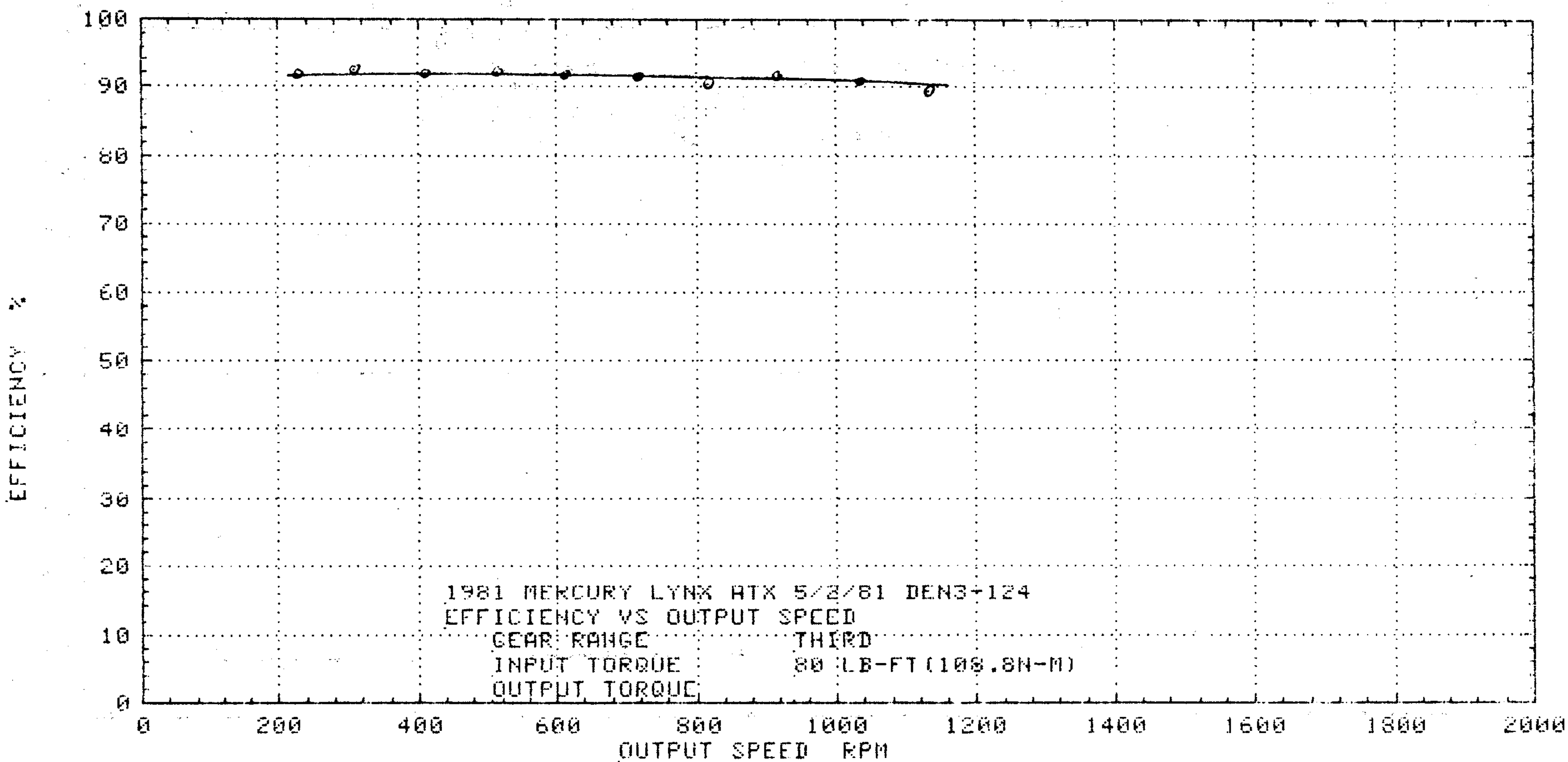

1981 MERCURY LYNX ATX 5/2/81 DEN3-124
EFFICIENCY VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE 70 LB-FT(95.2N-M)
OUTPUT TORQUE
EFFICIENCY %
OUTPUT SPEED RPM
0
10
20
30
40
50
60
70
80
90
100
200
400
600
800
1000
1200
1400
1600
1800
2000


1981 MERCURY LYNX ATX 5/2/81 DEN3-124
EFFICIENCY VS POWER OUT
GEAR RANGE THIRD
INPUT TORQUE 70 LB-FT(95.2N-M)
OUTPUT TORQUE
EFFICIENCY %
100
90
80
70
60
50
40
30
20
10
0
0 5 10 15 20 25 30 35 40 45 HP 50
POWER OUT
0 3 7 11 14 18 22 26 29 33 KW 37

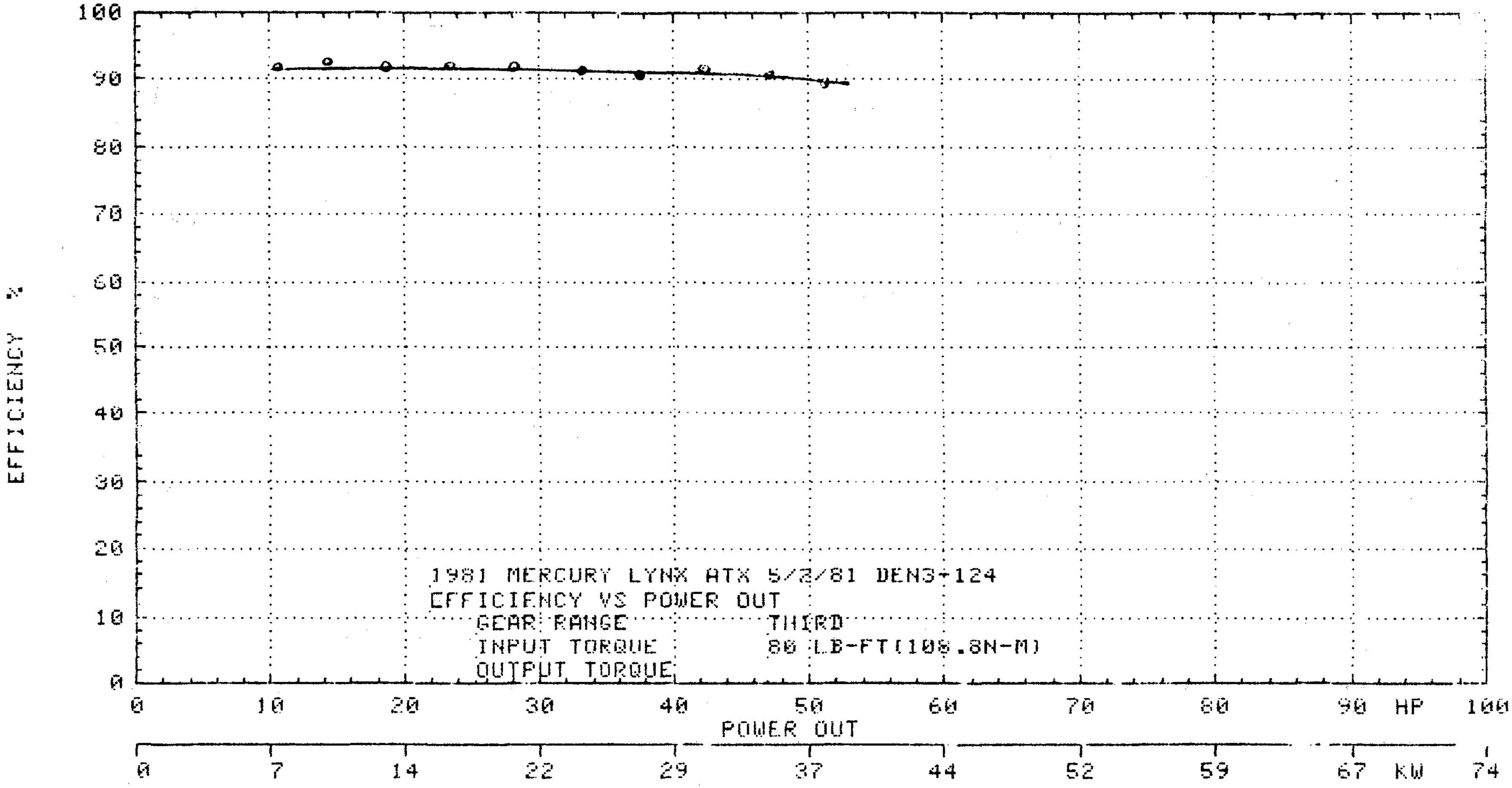

1981 MERCURY LYNX ATX 5/2/81 DEN3-124
TORQUE RATIO VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE 80 LB-FT(108.8N-M)
OUTPUT TORQUE
TORQUE RATIO To/Ti
OUTPUT SPEED RPM
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
.5
0.0
0
200
400
600
800
1000
1200
1400
1600
1800
2000


1981 MERCURY LYNX ATX 5/2/81 DEN3-124
OUTPUT TORQUE VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE 80 LB-FT(108.8N-M)
OUTPUT TORQUE
OUTPUT TORQUE
N-M
LB-FT
678 610 542 475 407 339 271 203 136 68 0
500 450 400 350 300 250 200 150 100 50 0
OUTPUT SPEED RPM
0 200 400 600 800 1000 1200 1400 1600 1800 2000


1981 MERCURY LYNX ATX 5/2/81 DEN3-124
INPUT SPEED VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE 80 LB-FT(108.8N-M)
OUTPUT TORQUE
INPUT SPEED RPM
OUTPUT SPEED RPM
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
0
200
400
600
800
1000
1200
1400
1600
1800
2000



1981 MERCURY LYNX ATX 5/2/81 DEN3-124
EFFICIENCY VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE 80 LB-FT(108.8N-M)
OUTPUT TORQUE
EFFICIENCY %
OUTPUT SPEED RPM
0
10
20
30
40
50
60
70
80
90
100
0
200
400
600
800
1000
1200
1400
1600
1800
2000



1981 MERCURY LYNX ATX 5/2/81 DEN3-124
EFFICIENCY VS POWER OUT
GEAR RANGE THIRD
INPUT TORQUE 80 LB-FT(108.8N-M)
OUTPUT TORQUE
EFFICIENCY %
POWER OUT
HP
KW

CROSS SECTIONAL ROAD LOAD PERFORMANCE

3rd Gear

Graphs Contained in This Section

Torque Ratio -vs- Output Speed

Output Torque -vs- Output Speed

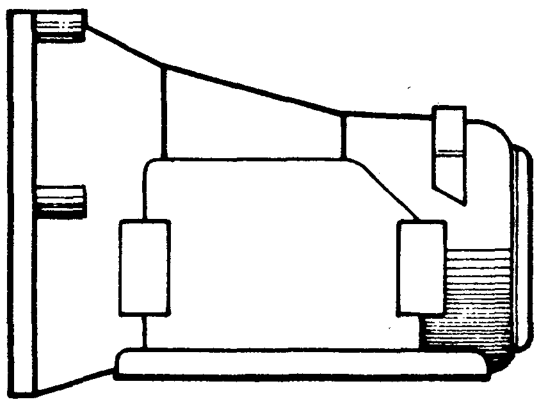
Input Speed -vs- Output Speed

Efficiency -vs- Output Speed

Efficiency -vs- Power Out

Torque In

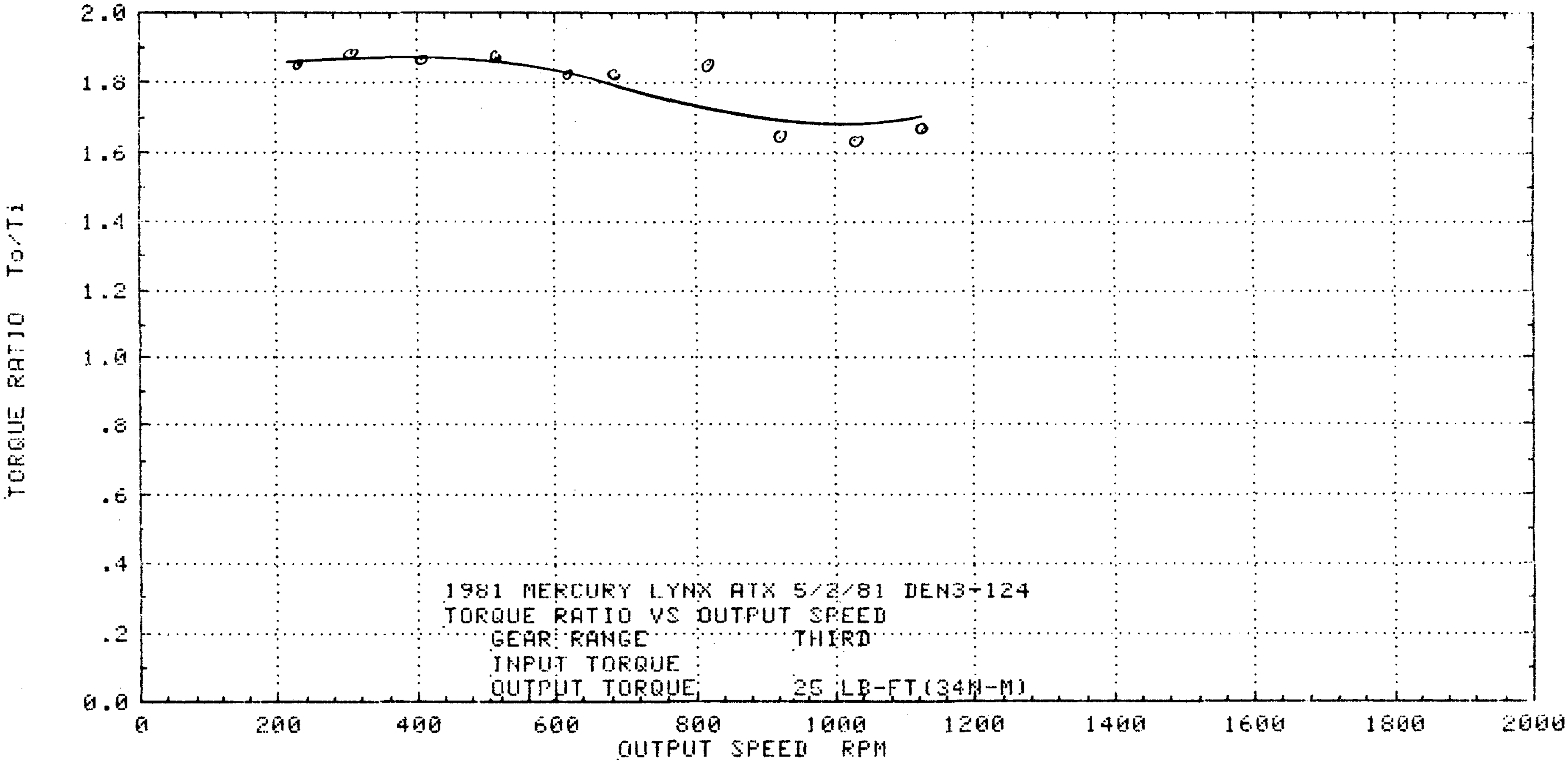
Speed In

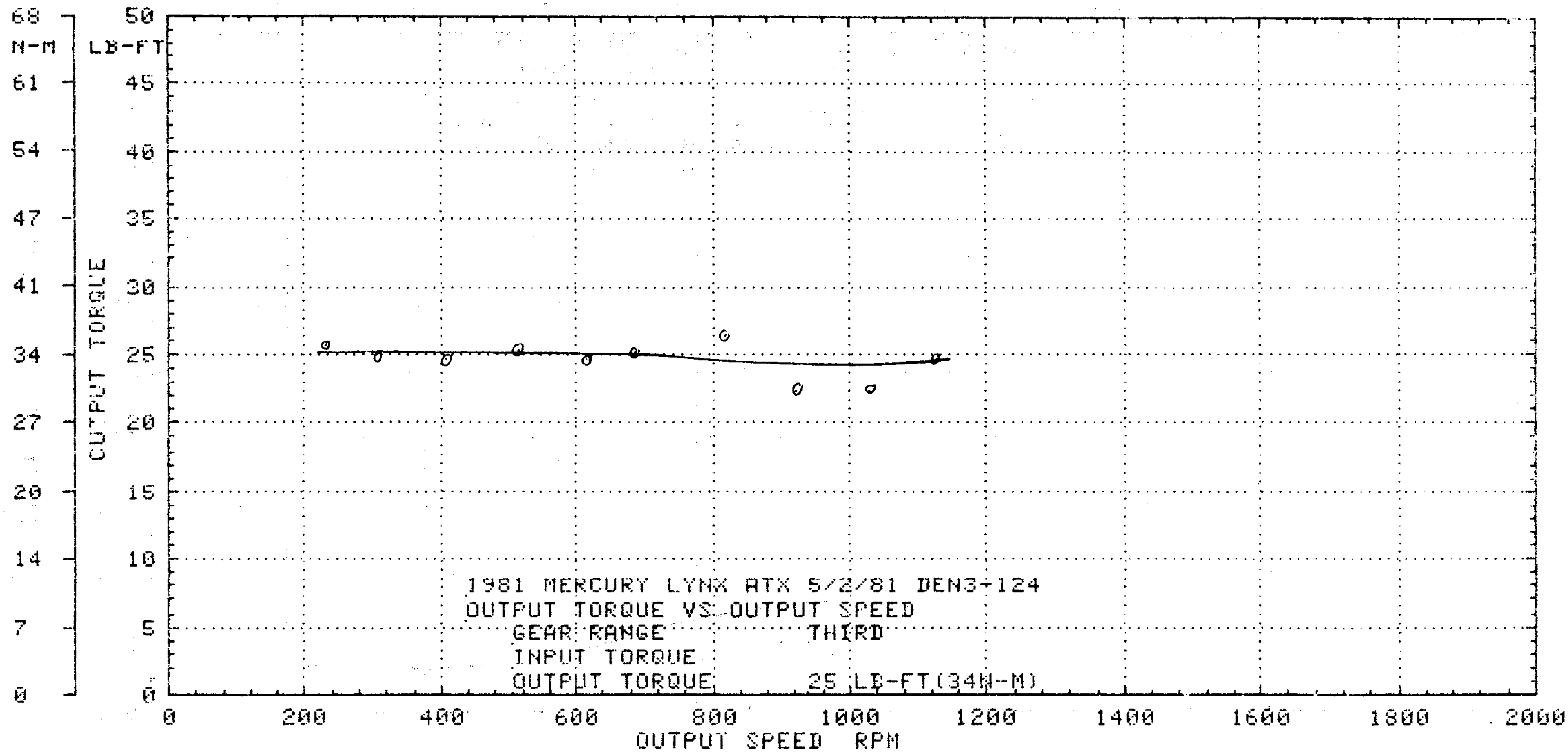


Torque Out

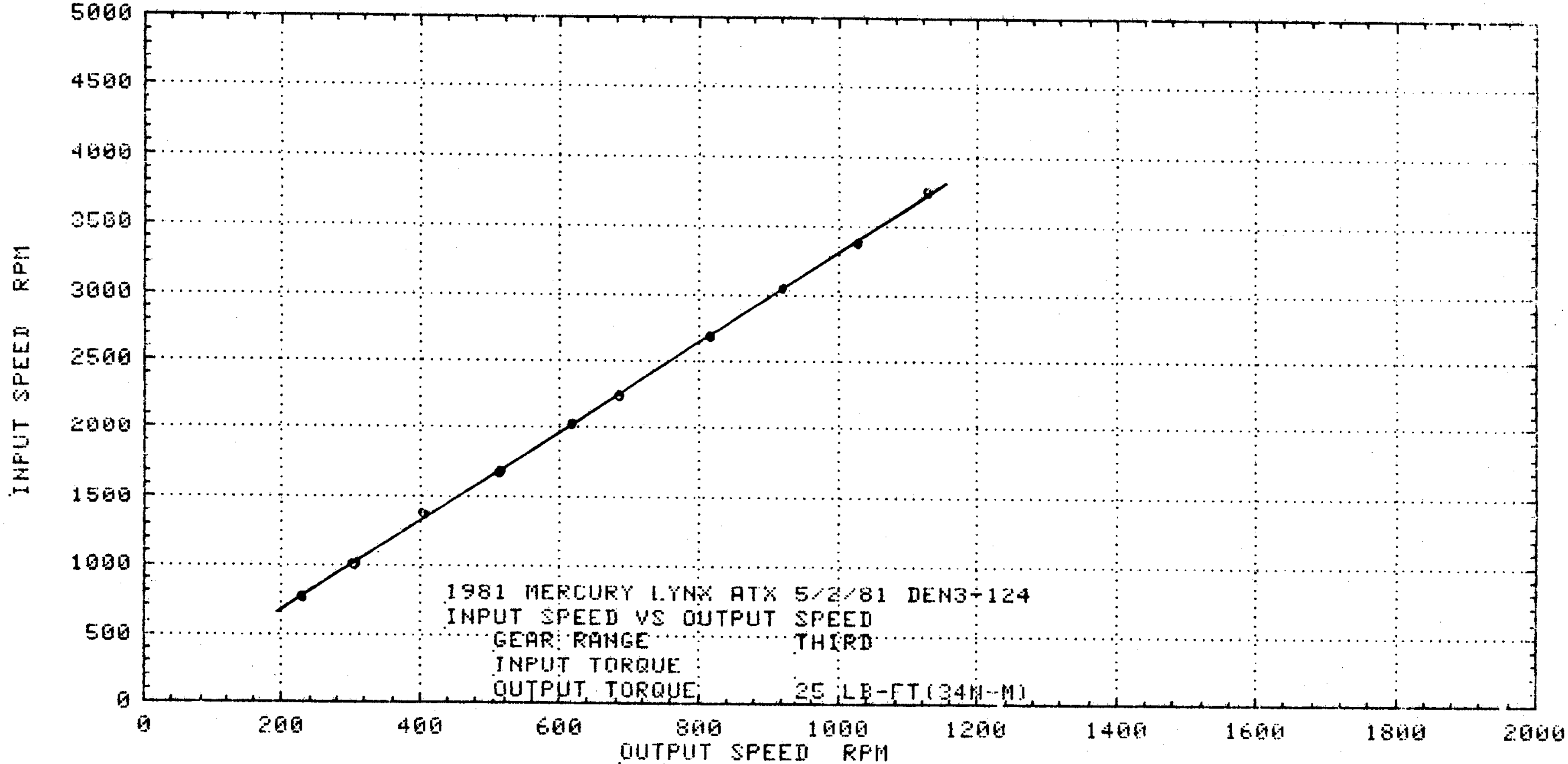
Speed Out

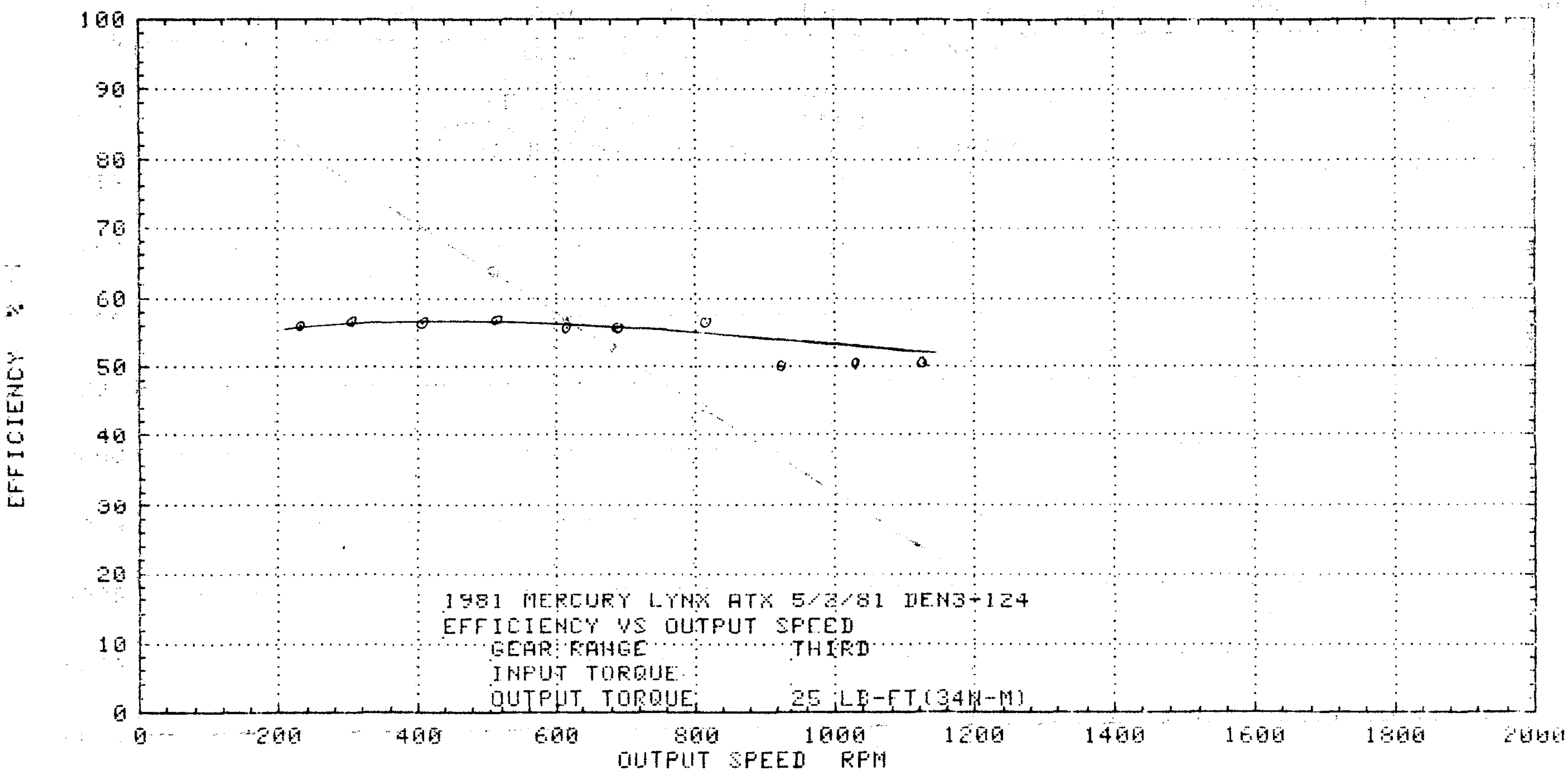
Drive Performance Tests


1981 MERCURY LYNX ATX 5/2/81 DEN3-124
TORQUE RATIO VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE
OUTPUT TORQUE 25 LB-FT(34N-M)
TORQUE RATIO To/Ti
OUTPUT SPEED RPM
2.0
1.8
1.6
1.4
1.2
1.0
.8
.6
.4
.2
0.0
0
200
400
600
800
1000
1200
1400
1600
1800
2000

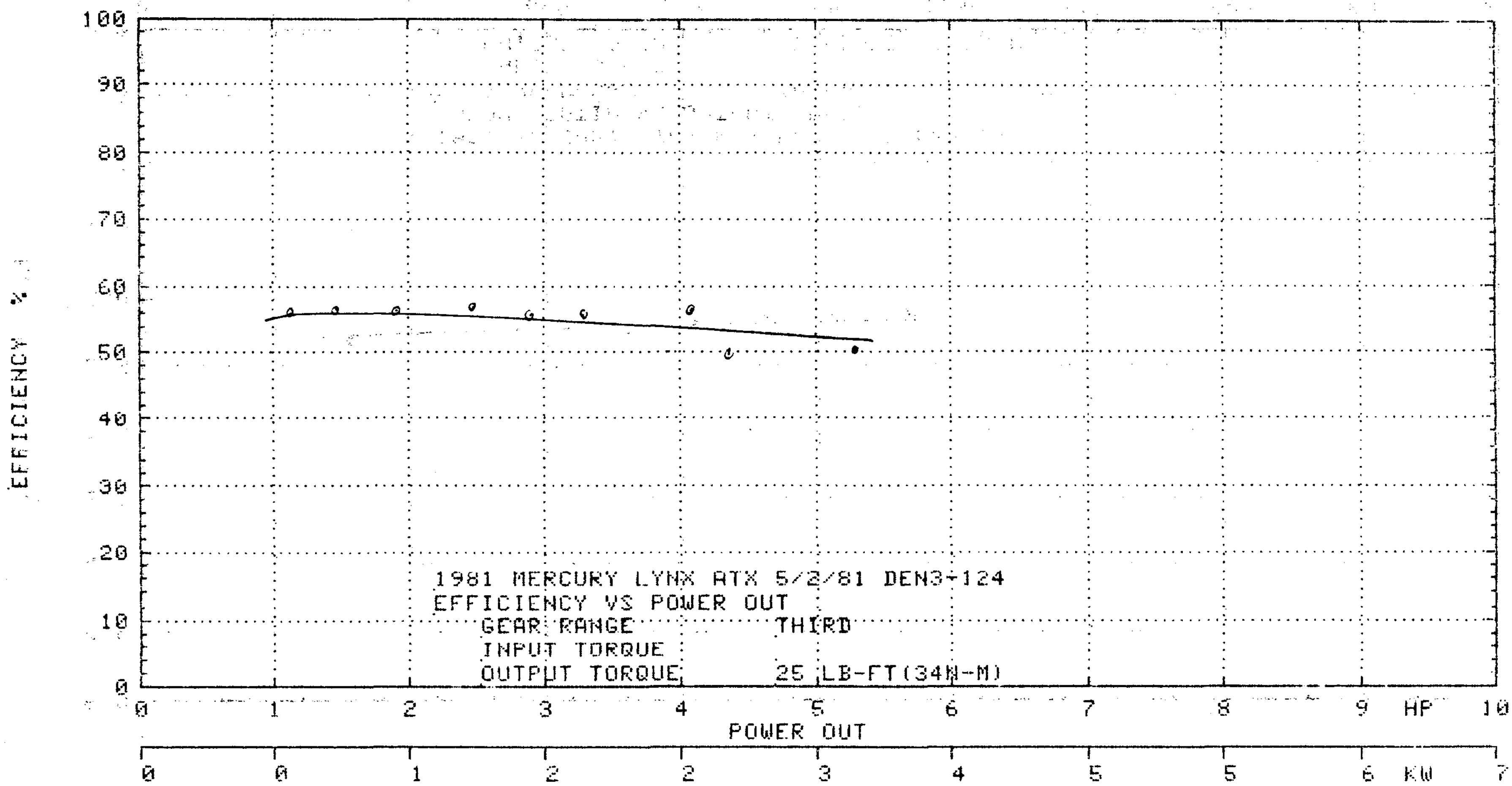


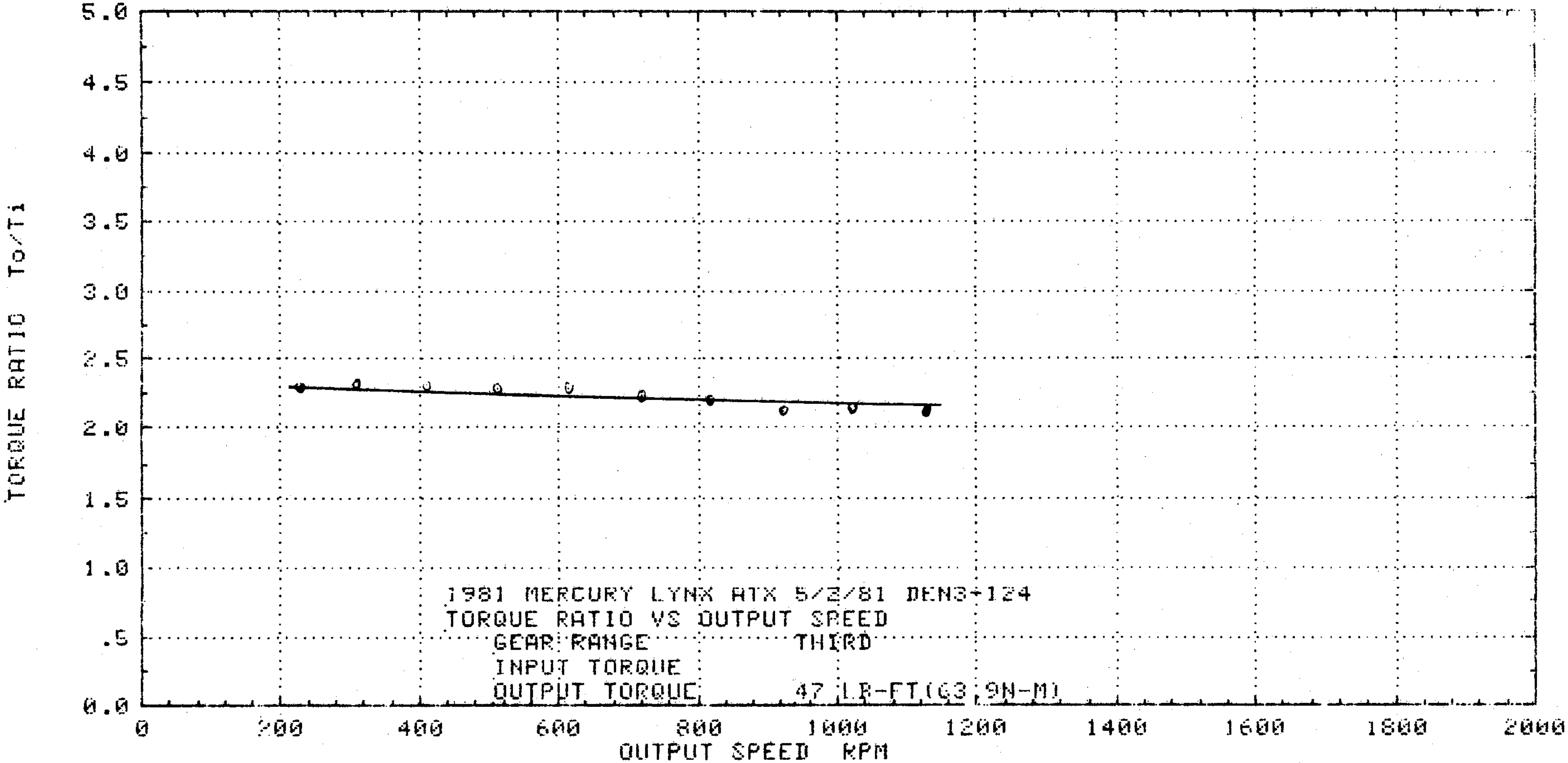
68
N-M
61
54
47
41
34
27
20
14
7
0
50
LB-FT
45
40
35
30
25
20
15
10
5
0
OUTPUT TORQUE
0
200
400
600
800
1000
1200
1400
1600
1800
2000
OUTPUT SPEED RPM
1981 MERCURY LYNX ATX 5/2/81 DEN3-124
OUTPUT TORQUE VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE
OUTPUT TORQUE 25 LB-FT(34N-M)

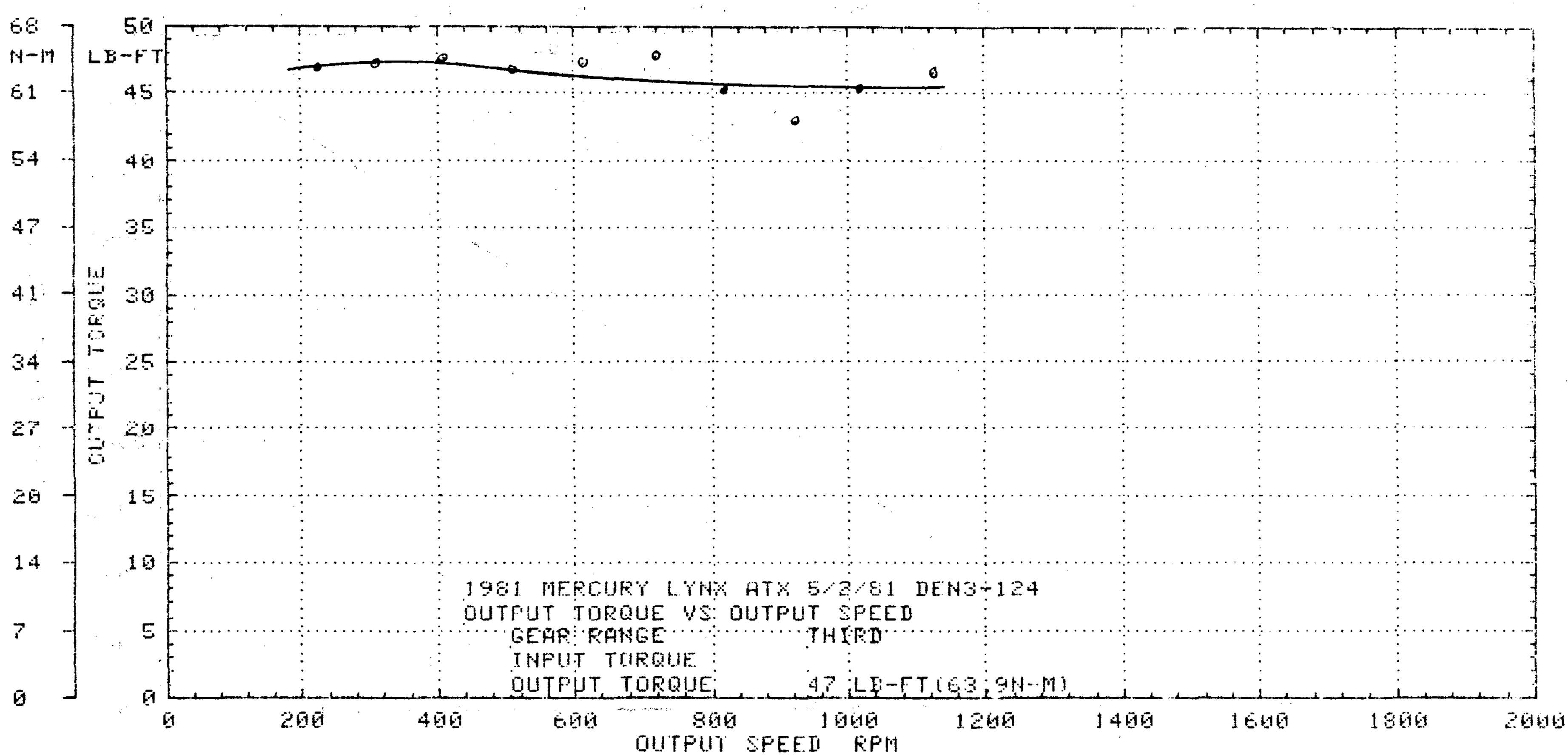

1981 MERCURY LYNX ATX 5/2/81 DEN3-124
INPUT SPEED VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE
OUTPUT TORQUE 25 LB-FT(34N-M)
INPUT SPEED RPM
OUTPUT SPEED RPM
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
200
400
600
800
1000
1200
1400
1600
1800
2000

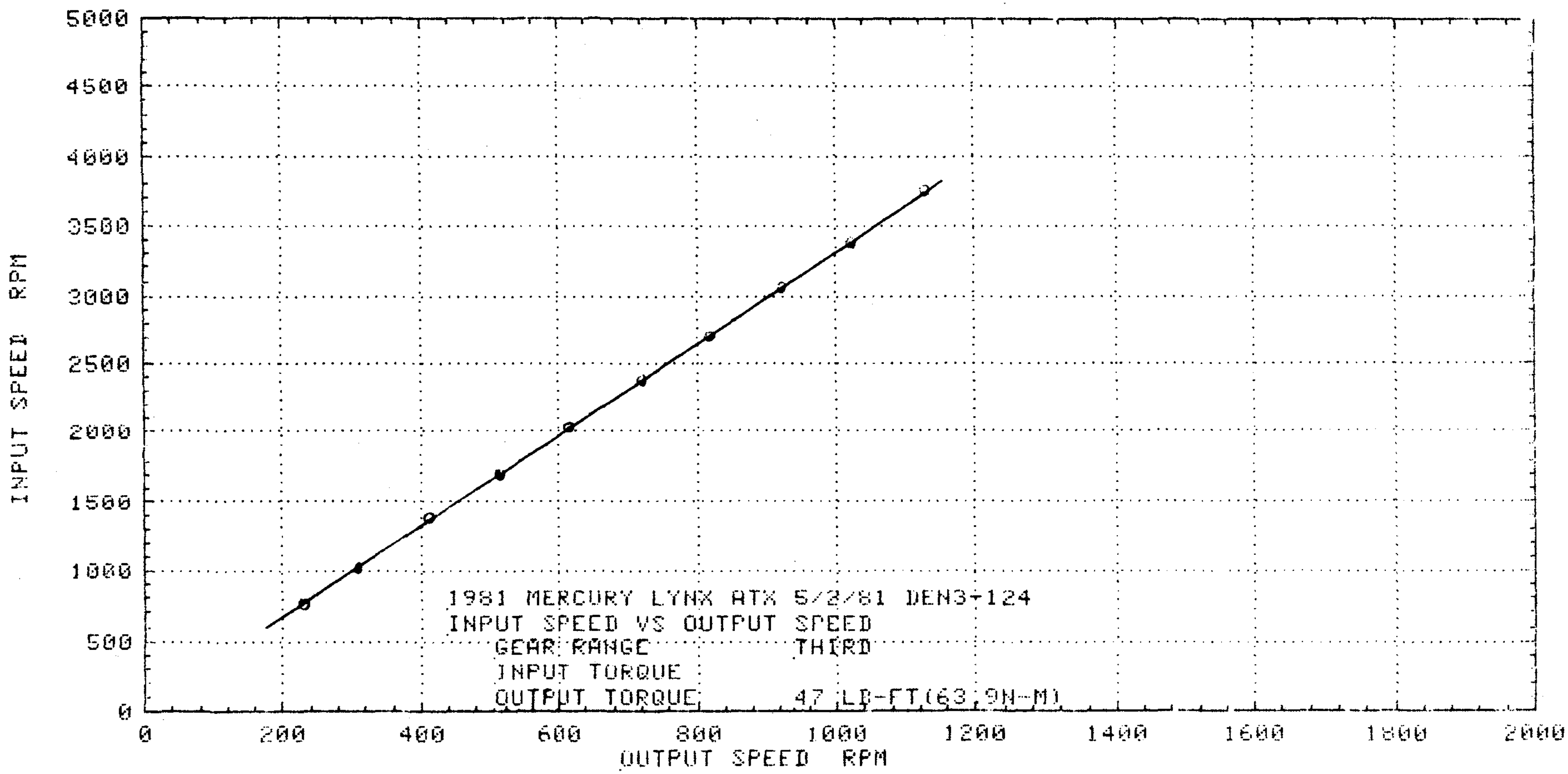


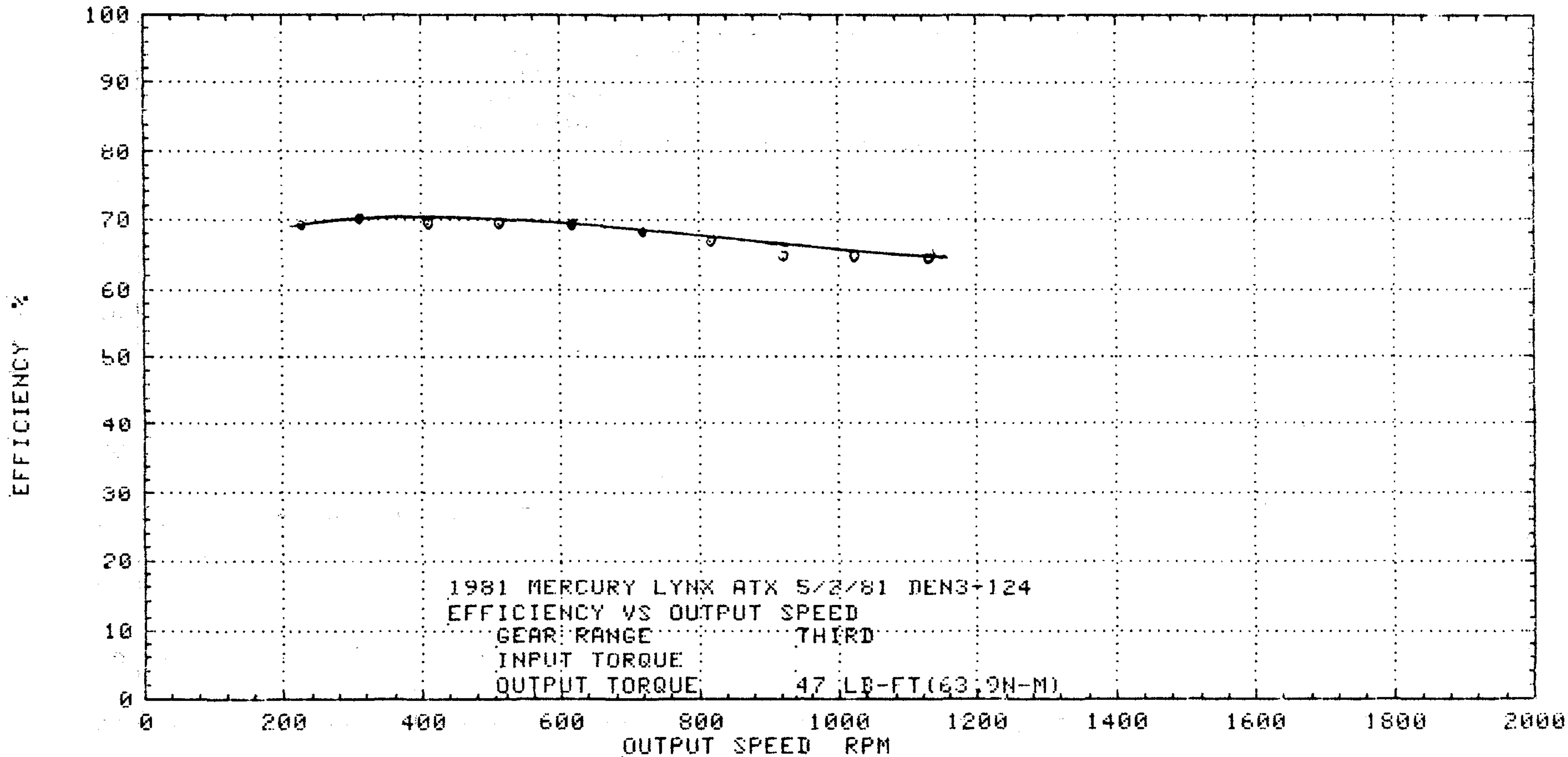
100
90
80
70
60
50
40
30
20
10
0
EFFICIENCY %
0
200
400
600
800
1000
1200
1400
1600
1800
2000
OUTPUT SPEED RPM
1981 MERCURY LYNX ATX 5/2/81 DEN3-124
EFFICIENCY VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE
OUTPUT TORQUE 25 LB-FT(34N-M)

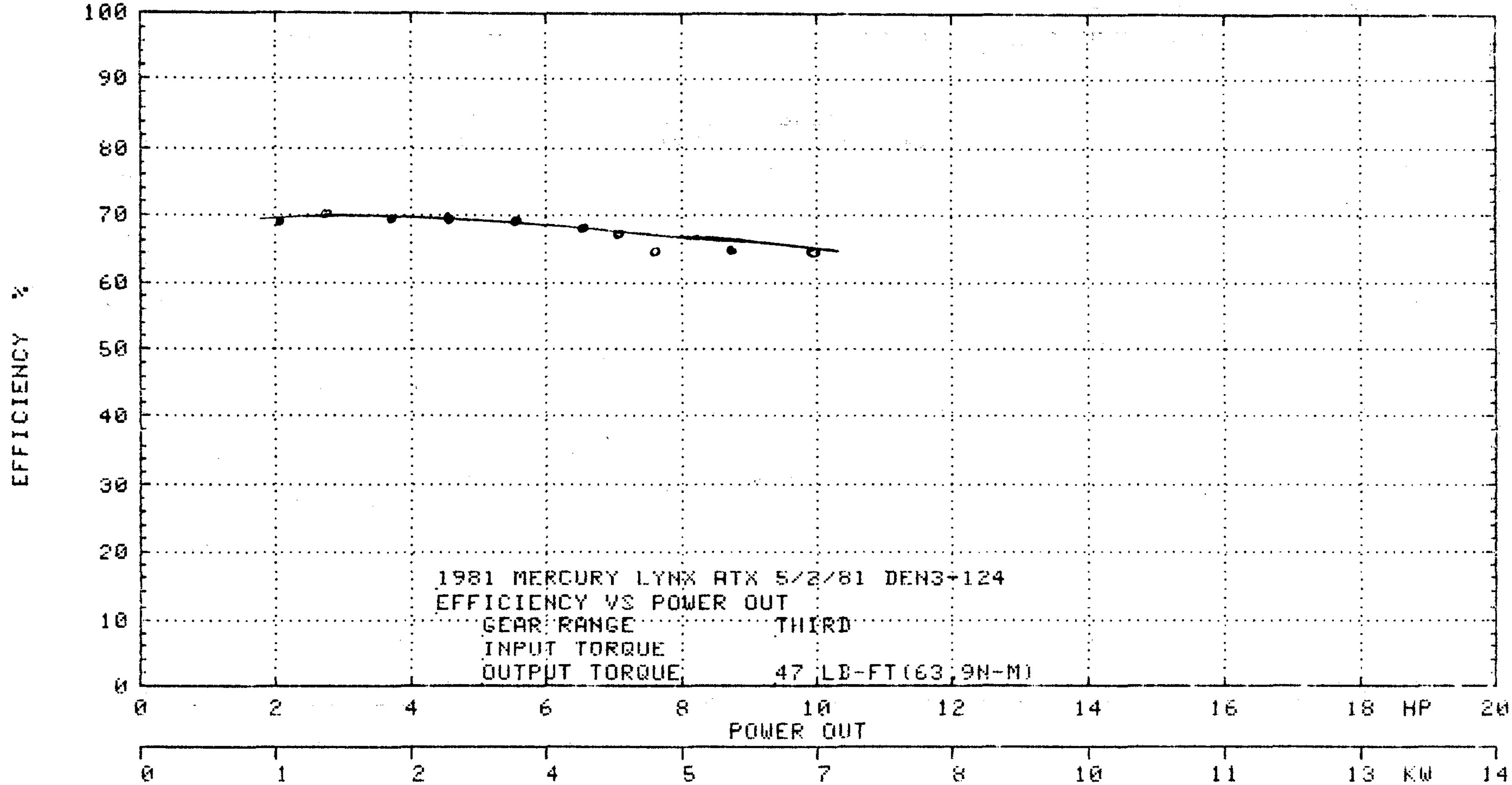

1981 MERCURY LYNX ATX 5/2/81 DEN3-124
EFFICIENCY VS POWER OUT
GEAR RANGE THIRD
INPUT TORQUE
OUTPUT TORQUE 25 LB-FT(34N-M)
EFFICIENCY %
100
90
80
70
60
50
40
30
20
10
0
POWER OUT
0 1 2 3 4 5 6 7 8 9 HP 10
0 0 1 2 2 3 4 5 5 6 KW 7

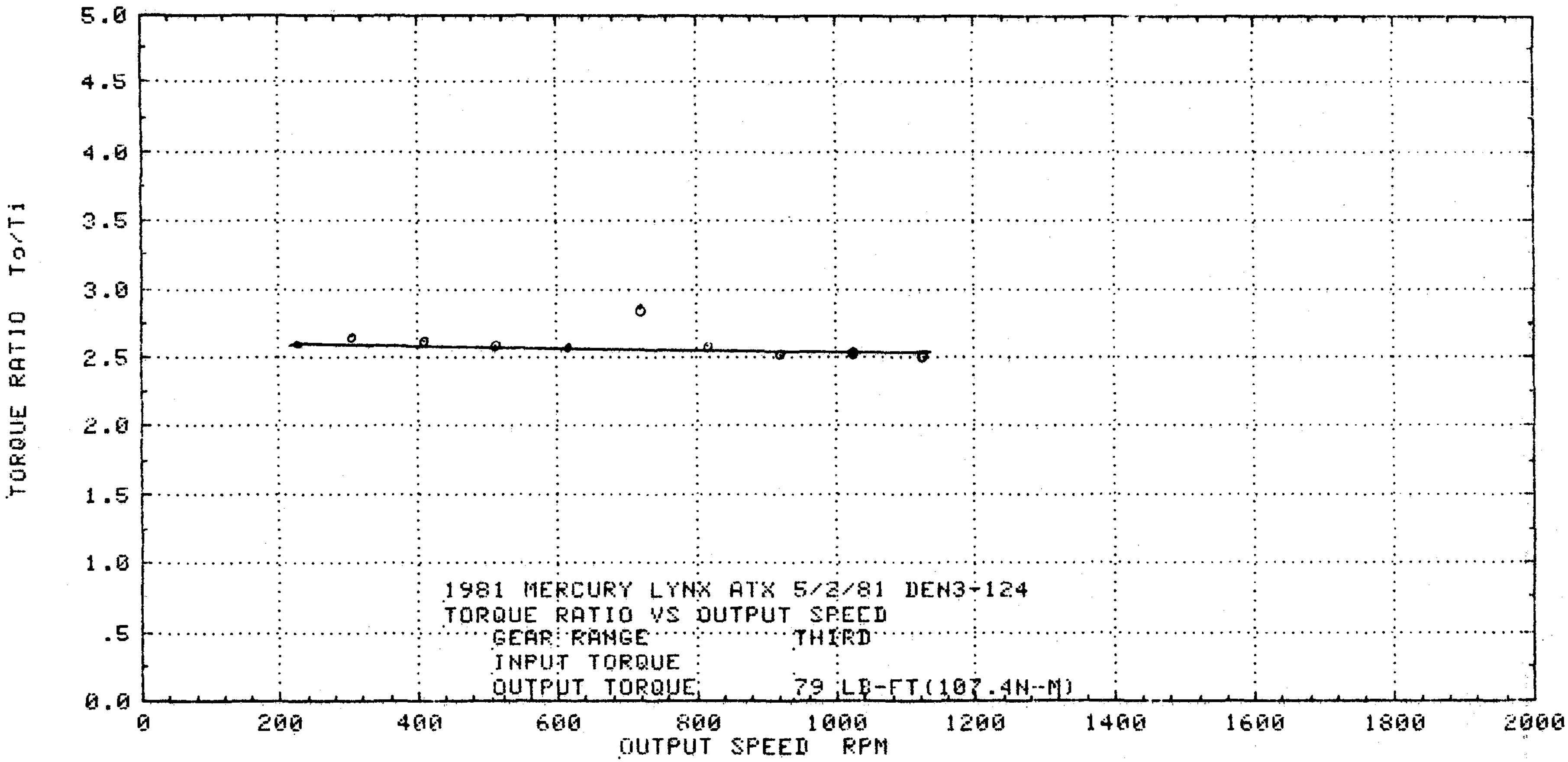

TORQUE RATIO To/Ti
OUTPUT SPEED RPM
1981 MERCURY LYNX ATX 5/2/81 DEN3+124
TORQUE RATIO VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE
OUTPUT TORQUE 47 LB-FT(63.9N-M)
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
.5
0.0
0
200
400
600
800
1000
1200
1400
1600
1800
2000

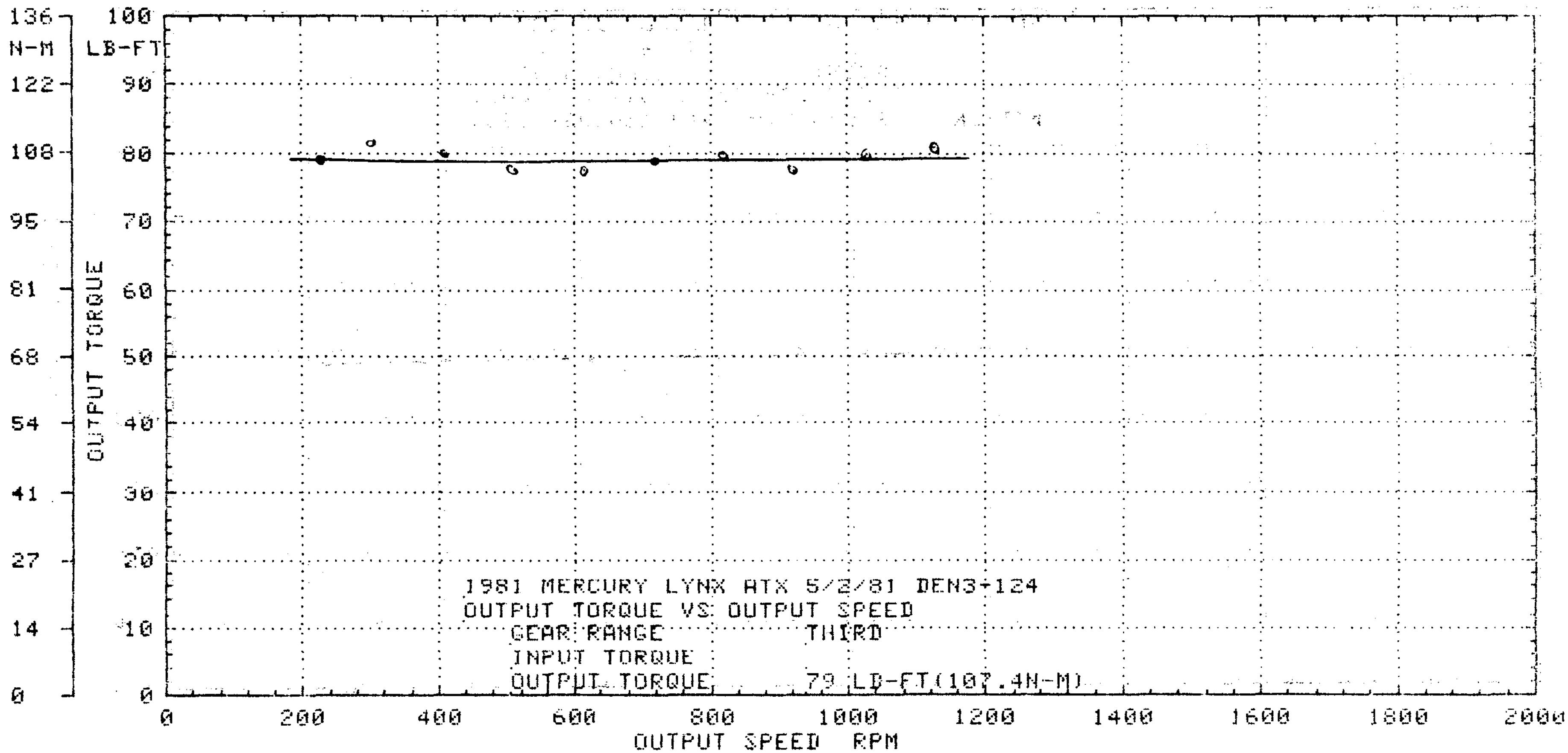

1981 MERCURY LYNX ATX 5/2/81 DEN3-124
OUTPUT TORQUE VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE
OUTPUT TORQUE 47 LB-FT(63.9N-M)
OUTPUT TORQUE
N-M
LB-FT
68
61
54
47
41
34
27
20
14
7
0
50
45
40
35
30
25
20
15
10
5
0
OUTPUT SPEED RPM
0
200
400
600
800
1000
1200
1400
1600
1800
2000


1981 MERCURY LYNX ATX 5/2/81 DEN3-124
INPUT SPEED VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE
OUTPUT TORQUE 47 LB-FT(63.9N-M)
INPUT SPEED RPM
OUTPUT SPEED RPM
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
200
400
600
800
1000
1200
1400
1600
1800
2000

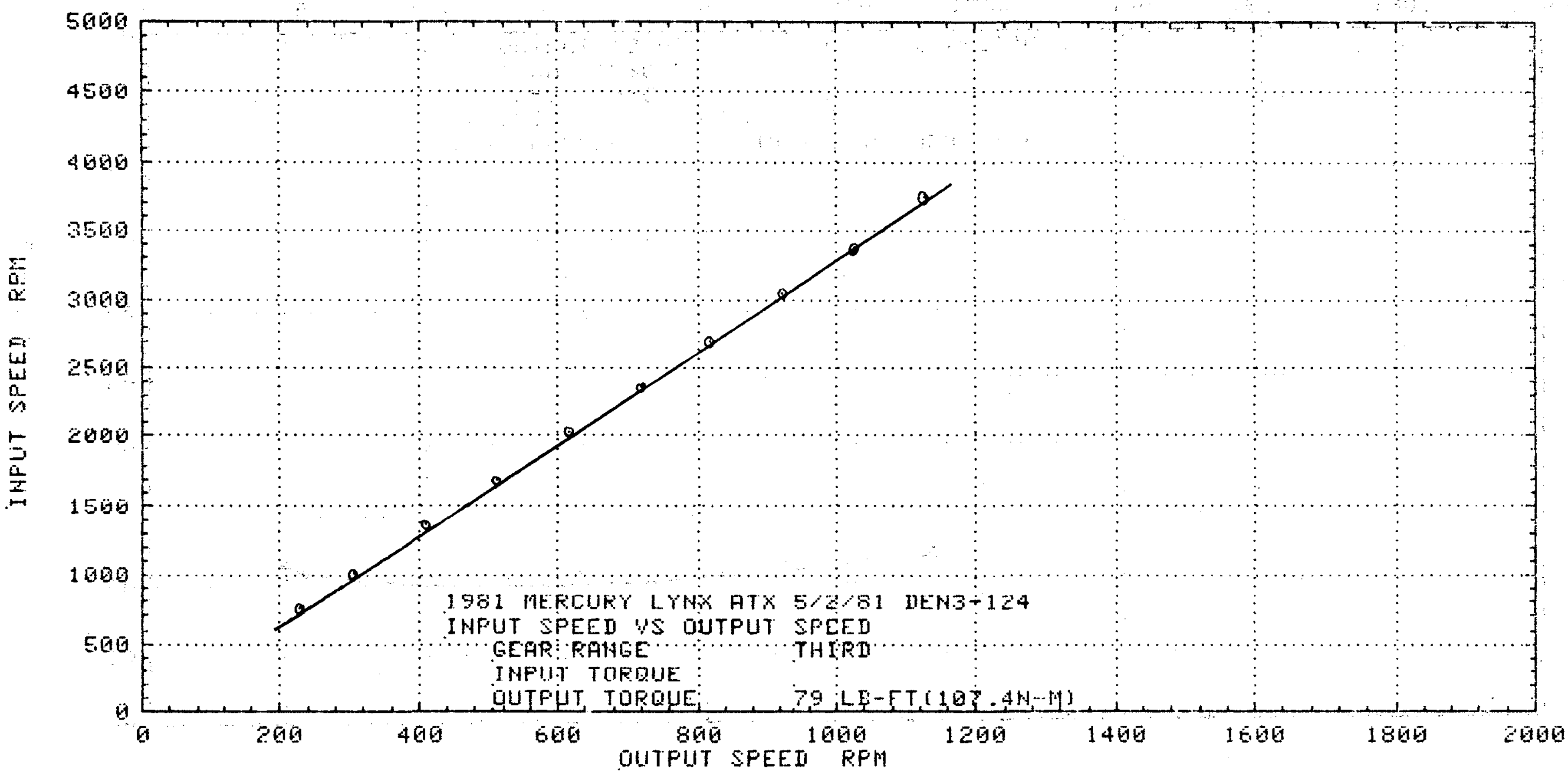

1981 MERCURY LYNX ATX 5/2/81 DEN3-124
EFFICIENCY VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE
OUTPUT TORQUE 47 LB-FT(63.9N-M)
EFFICIENCY %
100
90
80
70
60
50
40
30
20
10
0
200
400
600
800
1000
1200
1400
1600
1800
2000
OUTPUT SPEED RPM


1981 MERCURY LYNX ATX 5/2/81 DEN3-124
EFFICIENCY VS POWER OUT
GEAR RANGE THIRD
INPUT TORQUE
OUTPUT TORQUE 47 LB-FT(63.9N-M)
EFFICIENCY %
100
90
80
70
60
50
40
30
20
10
0
POWER OUT
0 2 4 6 8 10 12 14 16 18 HP 20
0 1 2 4 5 7 8 10 11 13 KW 14

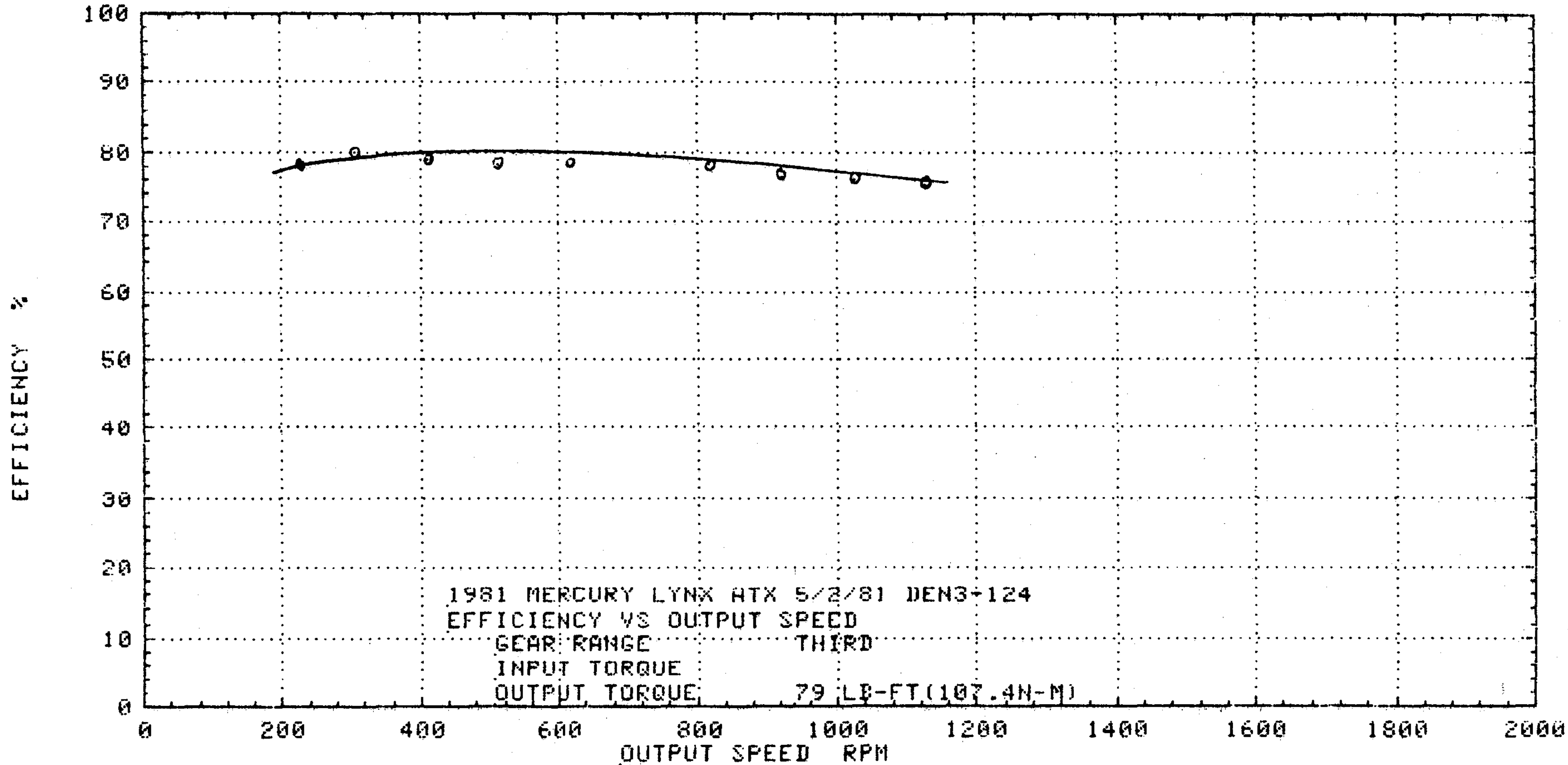

1981 MERCURY LYNX ATX 5/2/81 DEN3-124
TORQUE RATIO VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE
OUTPUT TORQUE 79 LB-FT(107.4N-M)
TORQUE RATIO To/Ti
OUTPUT SPEED RPM
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
.5
0.0
0
200
400
600
800
1000
1200
1400
1600
1800
2000

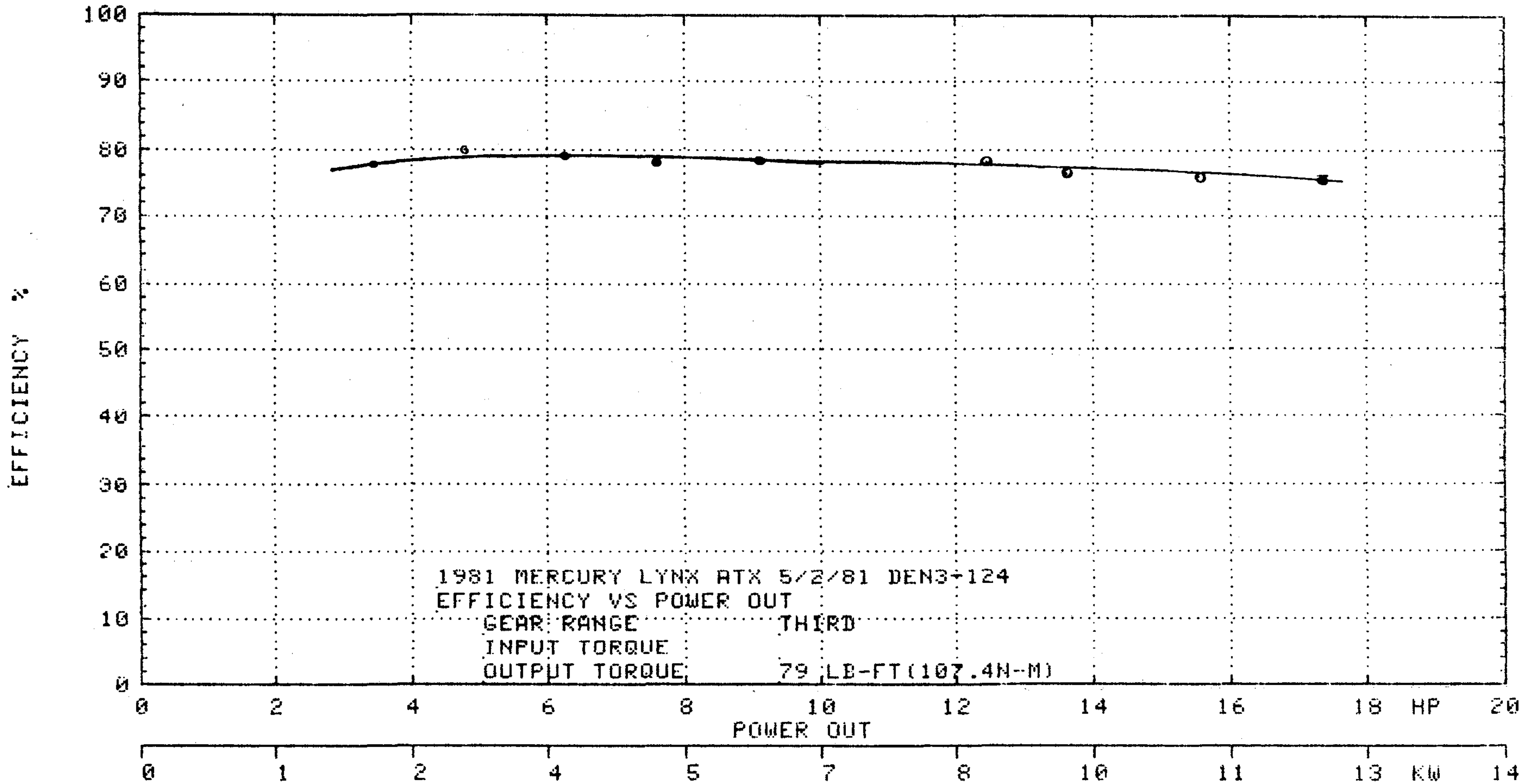


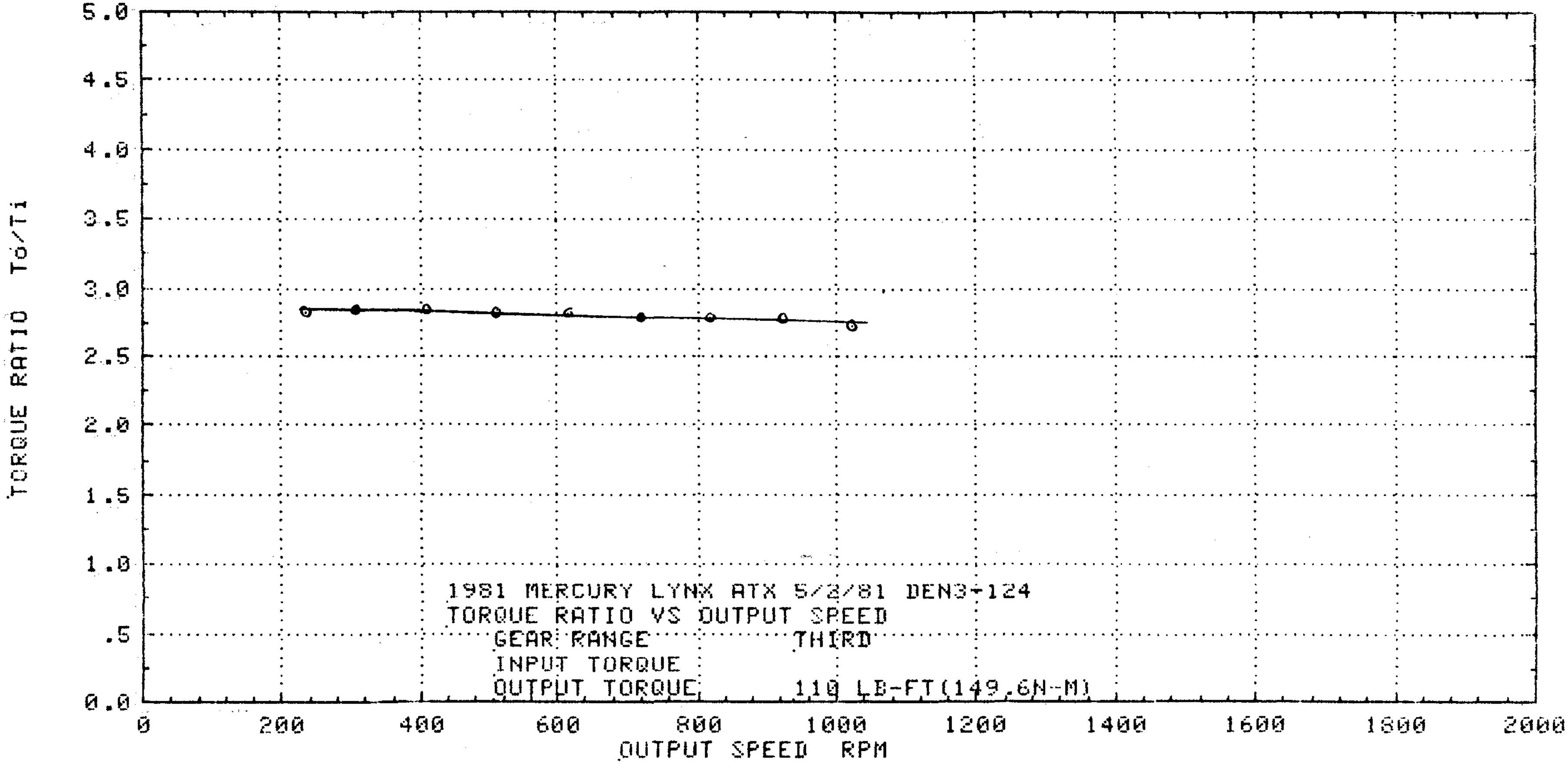
136
N-M
122
108
95
81
68
54
41
27
14
0
100
LB-FT
90
80
70
60
50
40
30
20
10
0
OUTPUT TORQUE
0
200
400
600
800
1000
1200
1400
1600
1800
2000
OUTPUT SPEED RPM
1981 MERCURY LYNX ATX 5/2/81 DEN3-124
OUTPUT TORQUE VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE
OUTPUT TORQUE 79 LB-FT(107.4N-M)



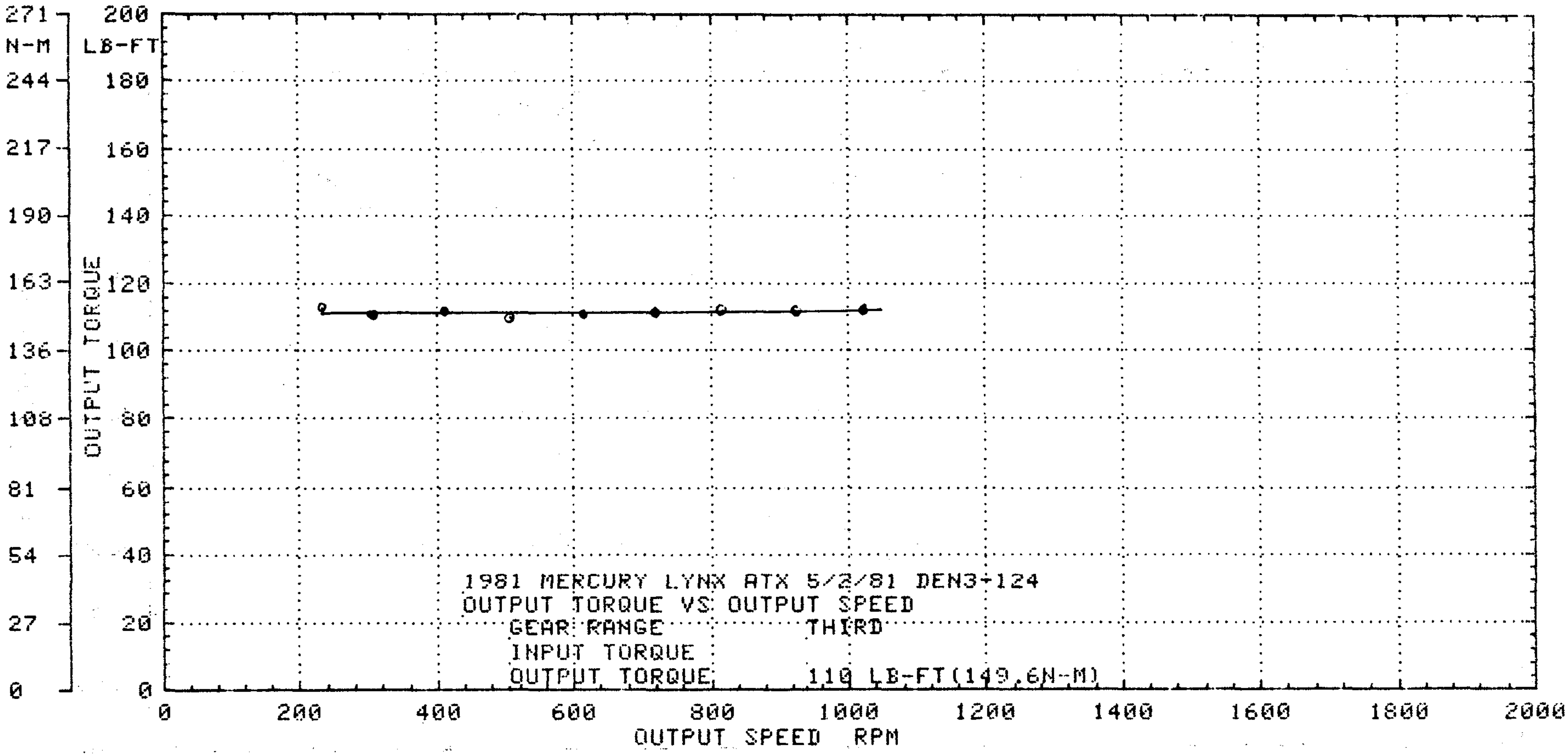
1981 MERCURY LYNX ATX 5/2/81 DEN3-124
INPUT SPEED VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE
OUTPUT TORQUE 79 LB-FT(107.4N-M)
INPUT SPEED RPM
OUTPUT SPEED RPM


1981 MERCURY LYNX ATX 5/2/81 DEN3-124
EFFICIENCY VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE
OUTPUT TORQUE 79 LB-FT(107.4N-M)
EFFICIENCY %
OUTPUT SPEED RPM
0
10
20
30
40
50
60
70
80
90
100
200
400
600
800
1000
1200
1400
1600
1800
2000

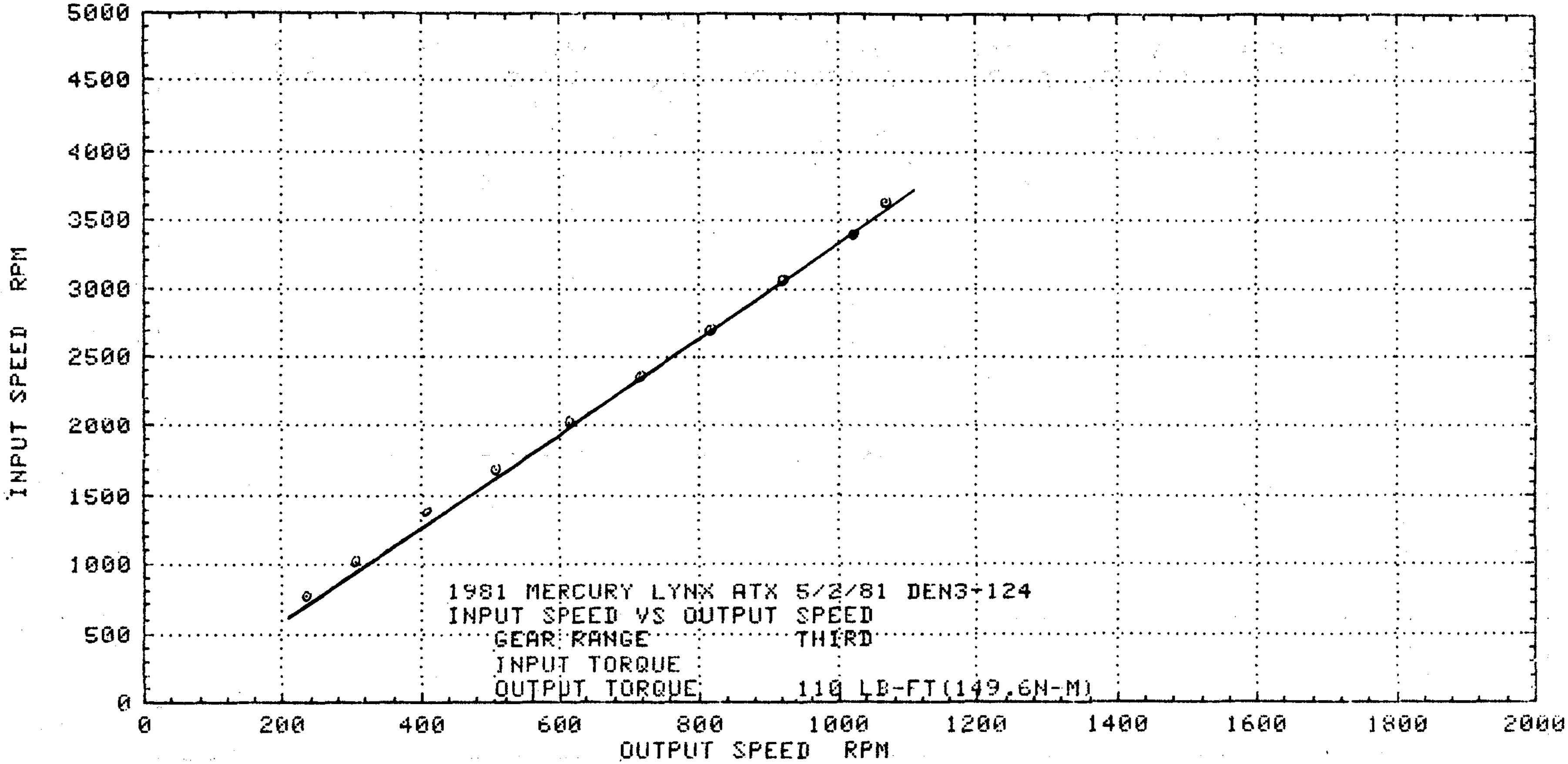

1981 MERCURY LYNX ATX 5/2/81 DEN3-124
EFFICIENCY VS POWER OUT
GEAR RANGE THIRD
INPUT TORQUE
OUTPUT TORQUE 79 LB-FT(107.4N-M)
EFFICIENCY %
100
90
80
70
60
50
40
30
20
10
0
0
2
4
6
8
10
12
14
16
18
HP
20
POWER OUT
0
1
2
4
5
7
8
10
11
13
KW
14



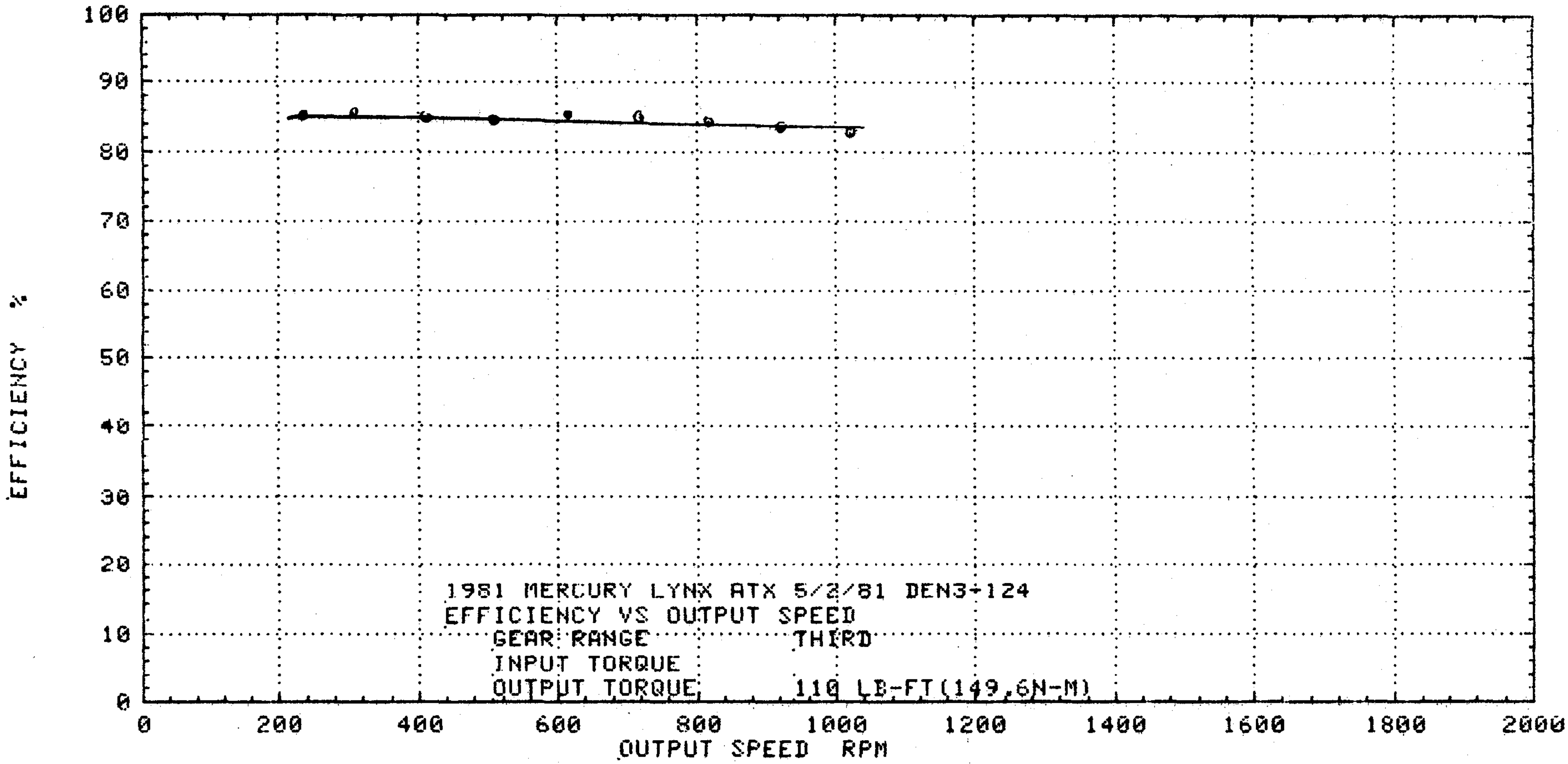
TORQUE RATIO To/Ti
OUTPUT SPEED RPM
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
.5
0.0
0
200
400
600
800
1000
1200
1400
1600
1800
2000
1981 MERCURY LYNX ATX 5/2/81 DEN3-124
TORQUE RATIO VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE
OUTPUT TORQUE 110 LB-FT(149.6N-M)



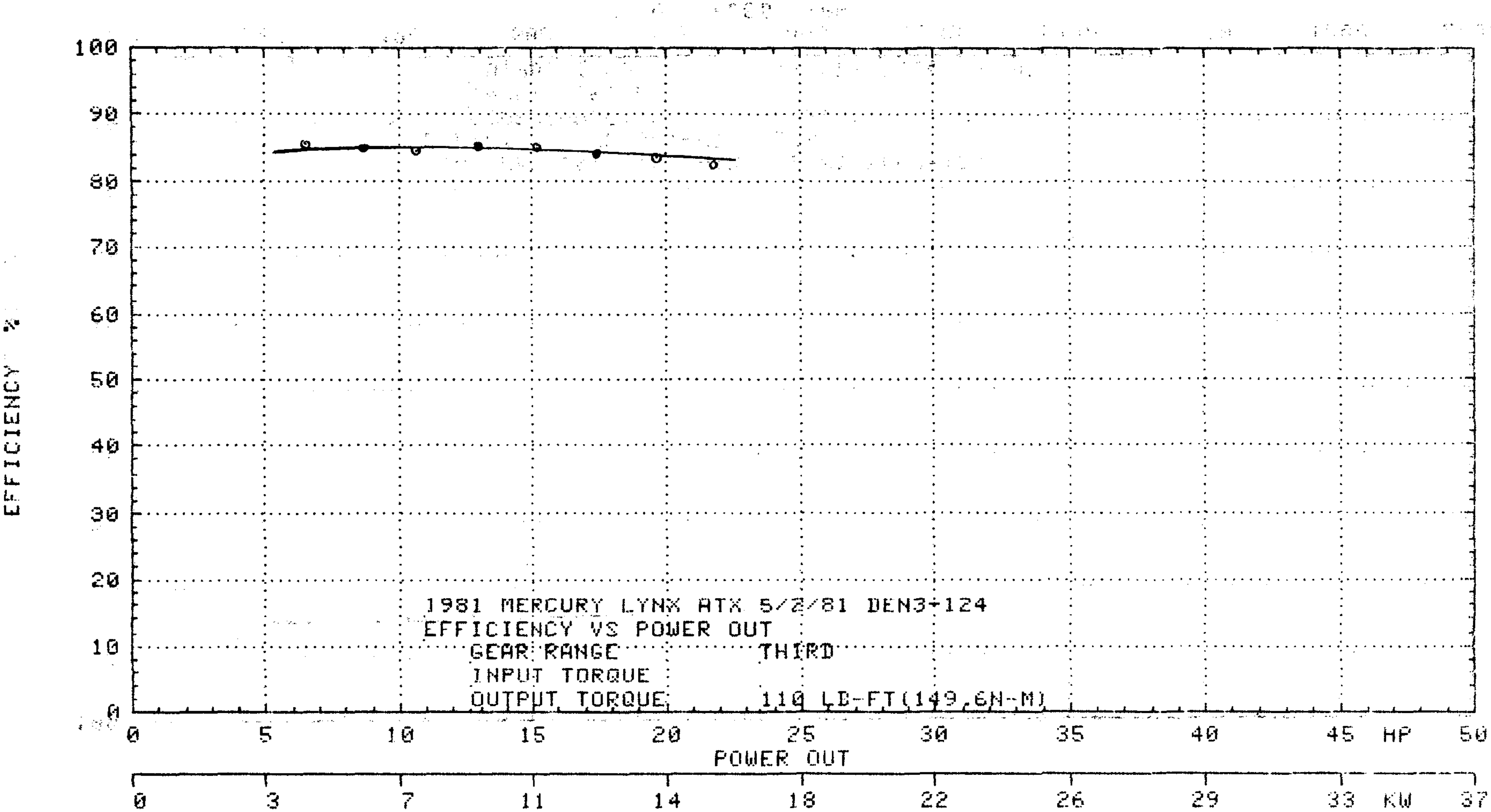
271 N-M 244 217 190 163 136 108 81 54 27 0
200 LB-FT 180 160 140 120 100 80 60 40 20 0
OUTPUT TORQUE
0 200 400 600 800 1000 1200 1400 1600 1800 2000
OUTPUT SPEED RPM
1981 MERCURY LYNX ATX 5/2/81 DEN3-124
OUTPUT TORQUE VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE
OUTPUT TORQUE 110 LB-FT(149.6N-M)



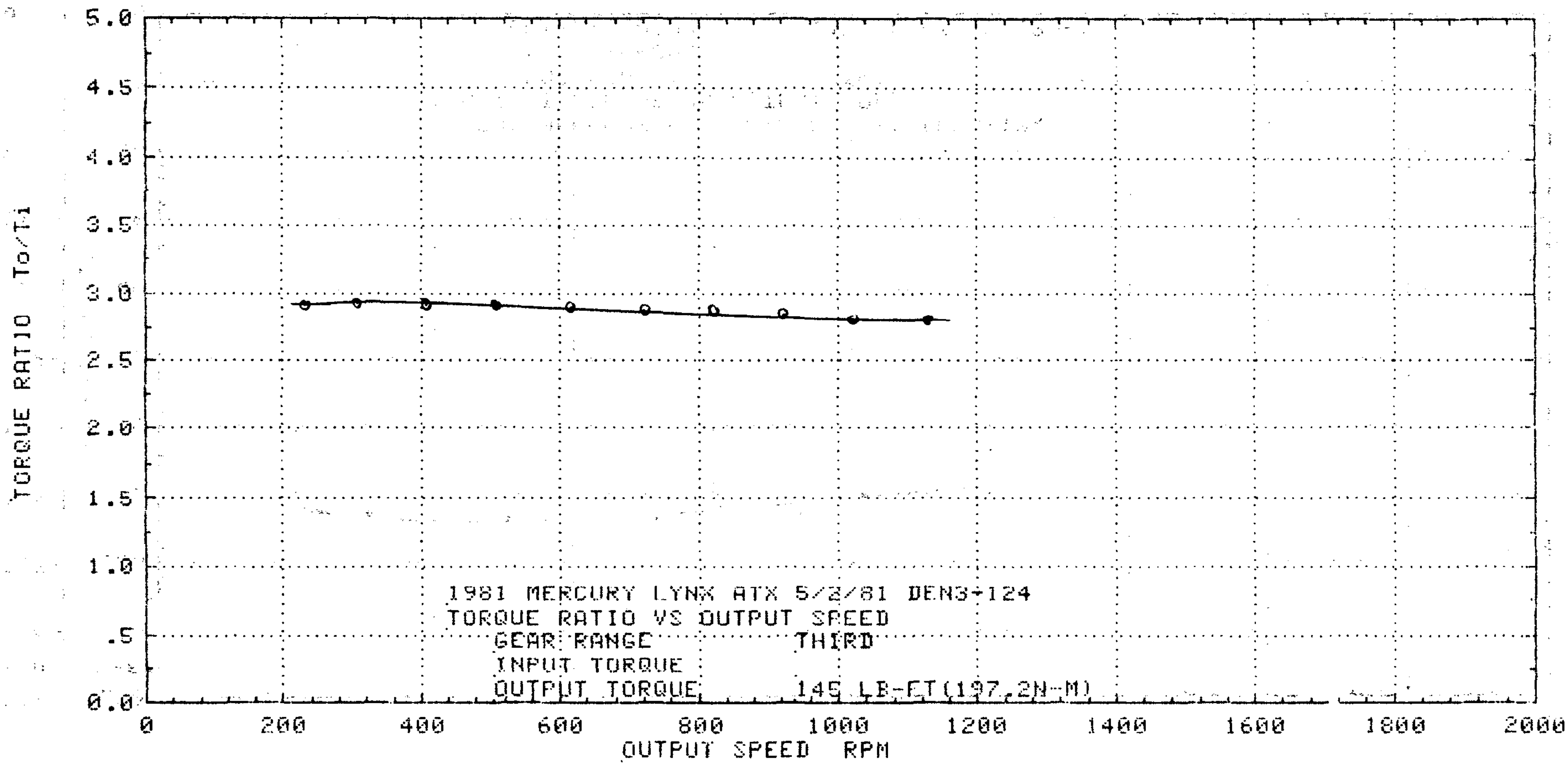
1981 MERCURY LYNX ATX 5/2/81 DEN3-124
INPUT SPEED VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE
OUTPUT TORQUE 110 LB-FT(149.6N-M)
INPUT SPEED RPM
OUTPUT SPEED RPM
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
0
200
400
600
800
1000
1200
1400
1600
1800
2000

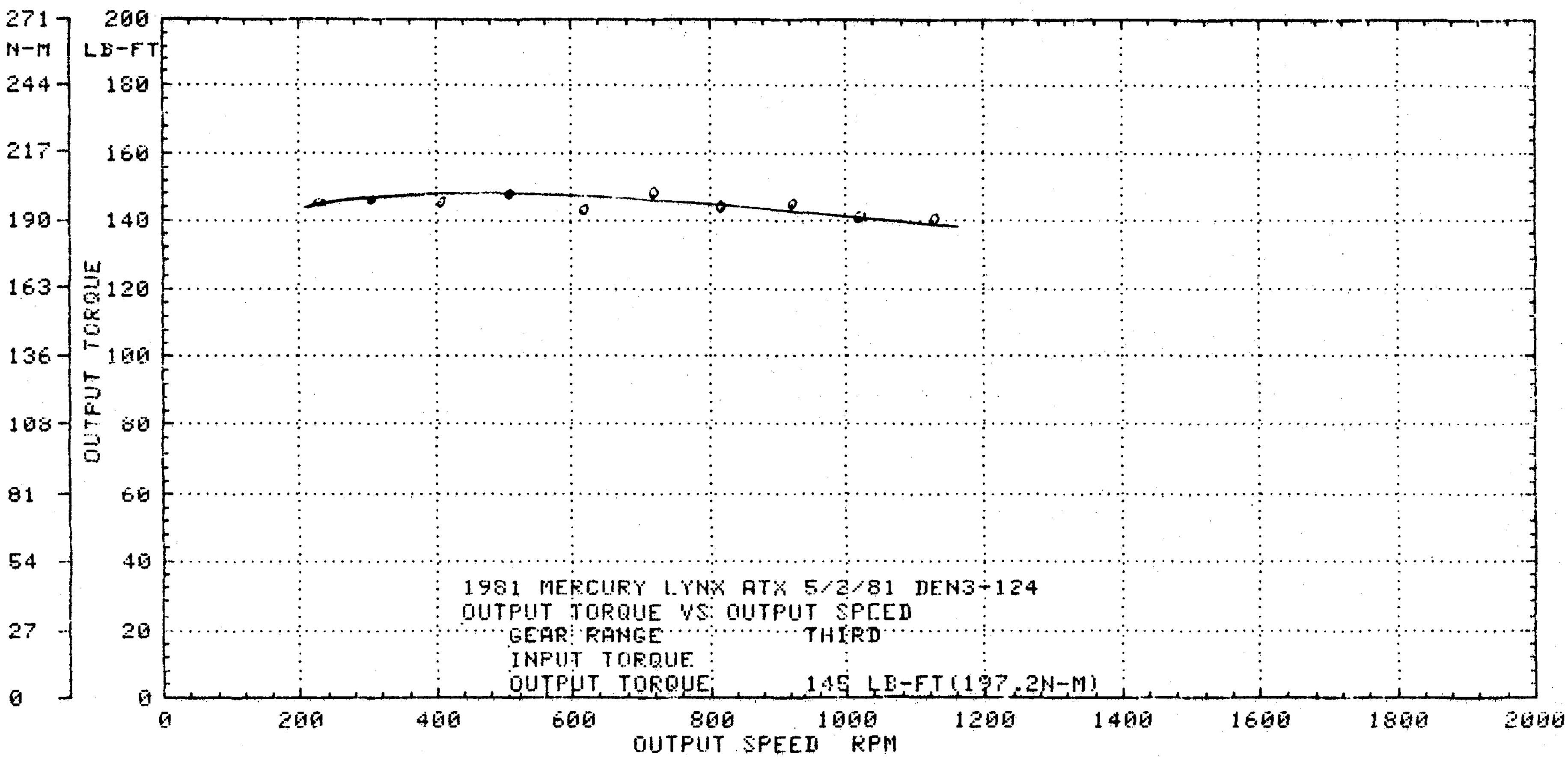


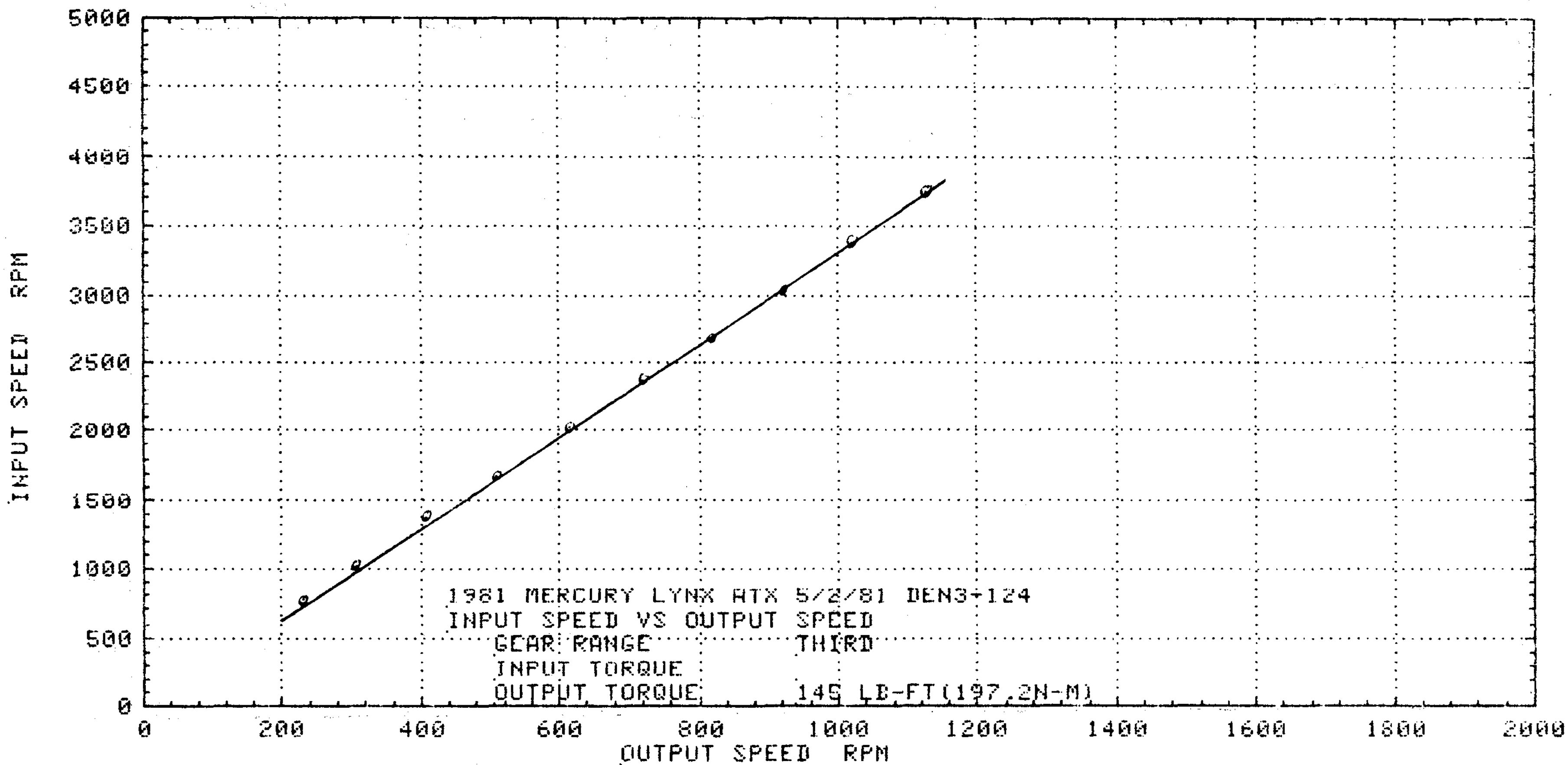
1981 MERCURY LYNX ATX 5/2/81 DEN3-124
EFFICIENCY VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE
OUTPUT TORQUE 110 LB-FT(149.6N-M)
EFFICIENCY %
OUTPUT SPEED RPM
0
10
20
30
40
50
60
70
80
90
100
200
400
600
800
1000
1200
1400
1600
1800
2000

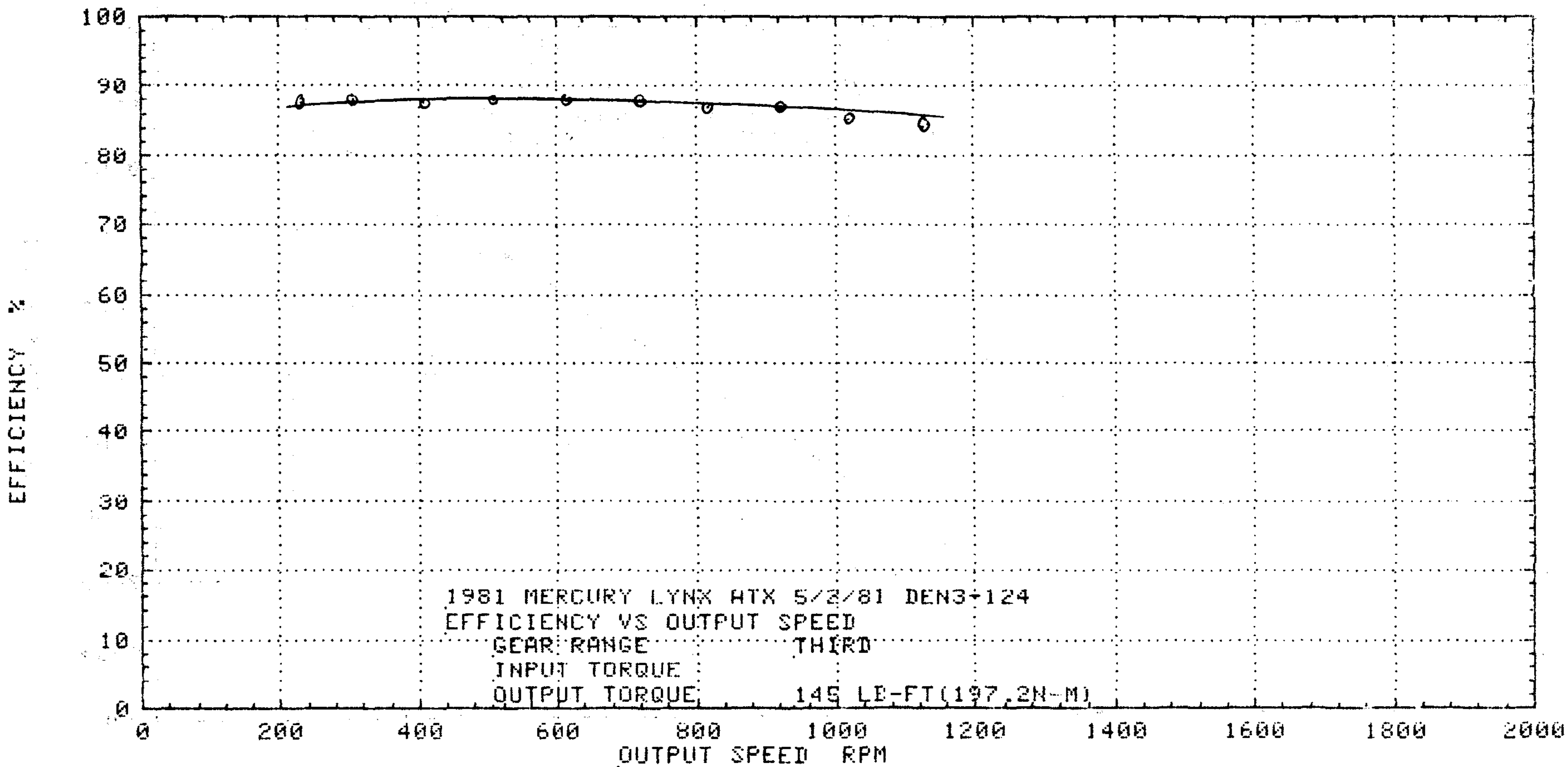


1981 MERCURY LYNX ATX 5/2/81 DEN3-124
EFFICIENCY VS POWER OUT
GEAR RANGE THIRD
INPUT TORQUE
OUTPUT TORQUE 110 LB-FT(149.6N-M)
EFFICIENCY %
100
90
80
70
60
50
40
30
20
10
0
0 5 10 15 20 25 30 35 40 45 HP 50
POWER OUT
0 3 7 11 14 18 22 26 29 33 KW 37

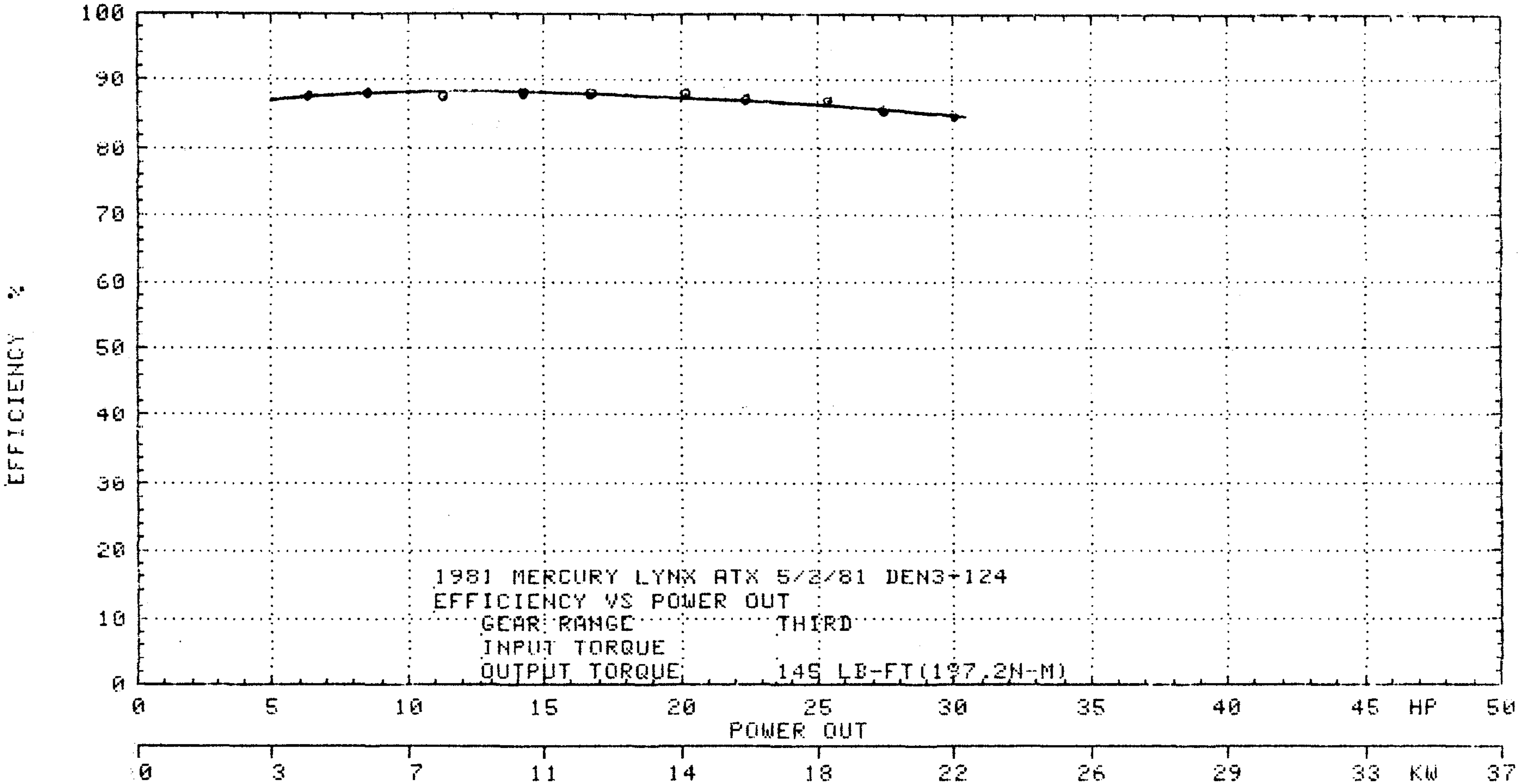

TORQUE RATIO To/Ti
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
.5
0.0
0
200
400
600
800
1000
1200
1400
1600
1800
2000
OUTPUT SPEED RPM
1981 MERCURY LYNX ATX 5/2/81 DEN3-124
TORQUE RATIO VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE
OUTPUT TORQUE 145 LB-FT(197.2N-M)

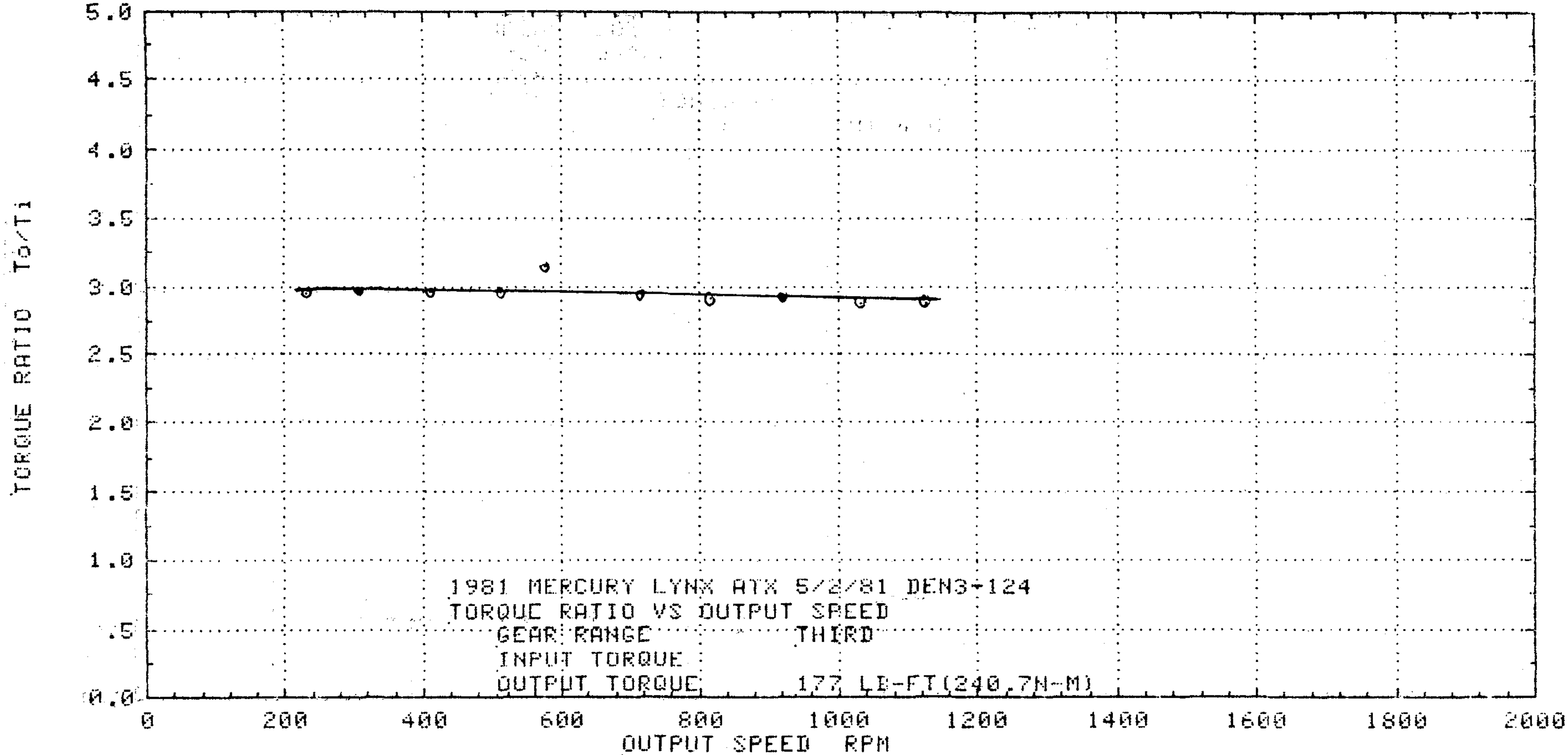

271 N-M
LB-FT
OUTPUT TORQUE
1981 MERCURY LYNX ATX 5/2/81 DEN3-124
OUTPUT TORQUE VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE
OUTPUT TORQUE 145 LB-FT(197.2N-M)
OUTPUT SPEED RPM

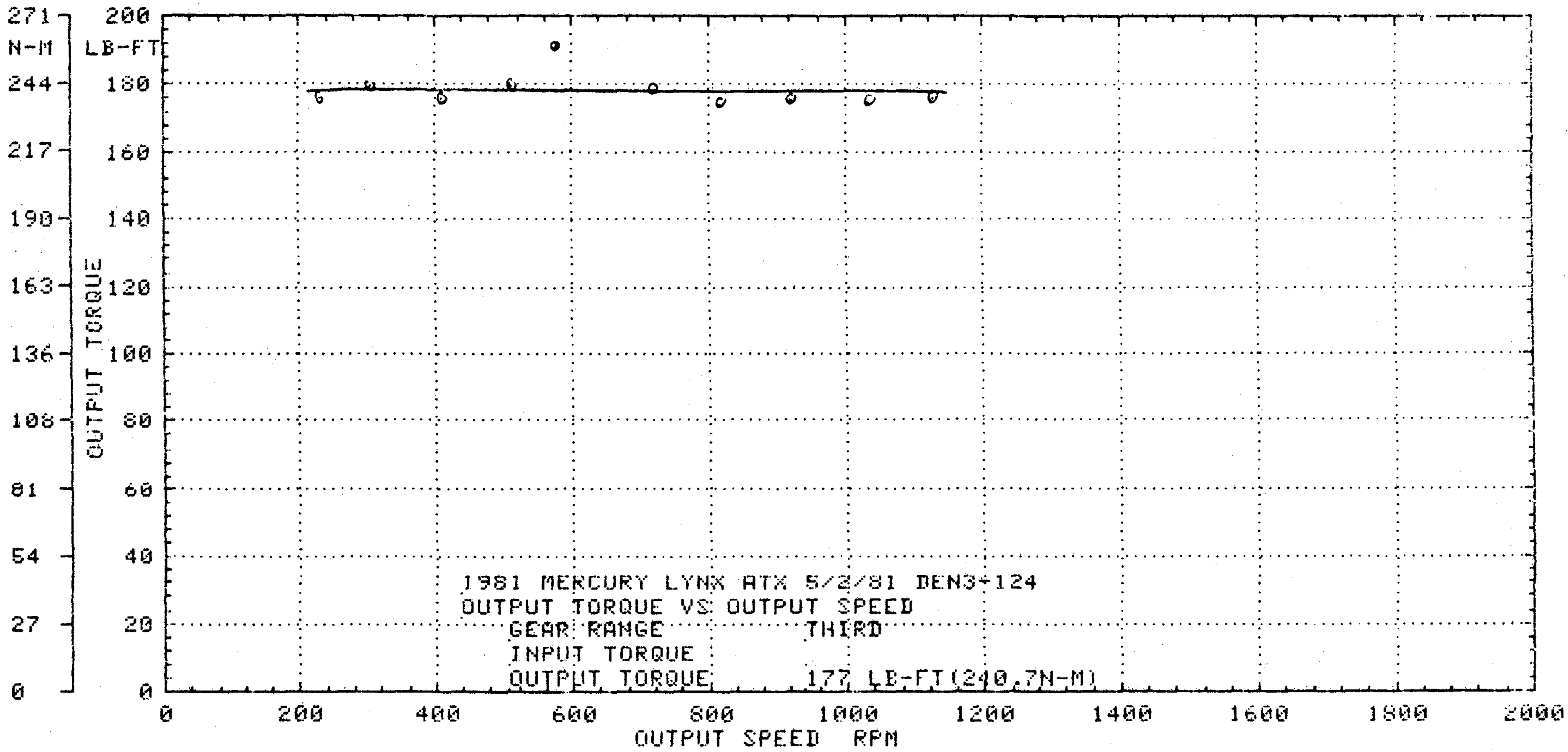

1981 MERCURY LYNX ATX 5/2/81 DEN3-124
INPUT SPEED VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE
OUTPUT TORQUE 145 LB-FT(197.2N-M)
INPUT SPEED RPM
OUTPUT SPEED RPM
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
0
200
400
600
800
1000
1200
1400
1600
1800
2000

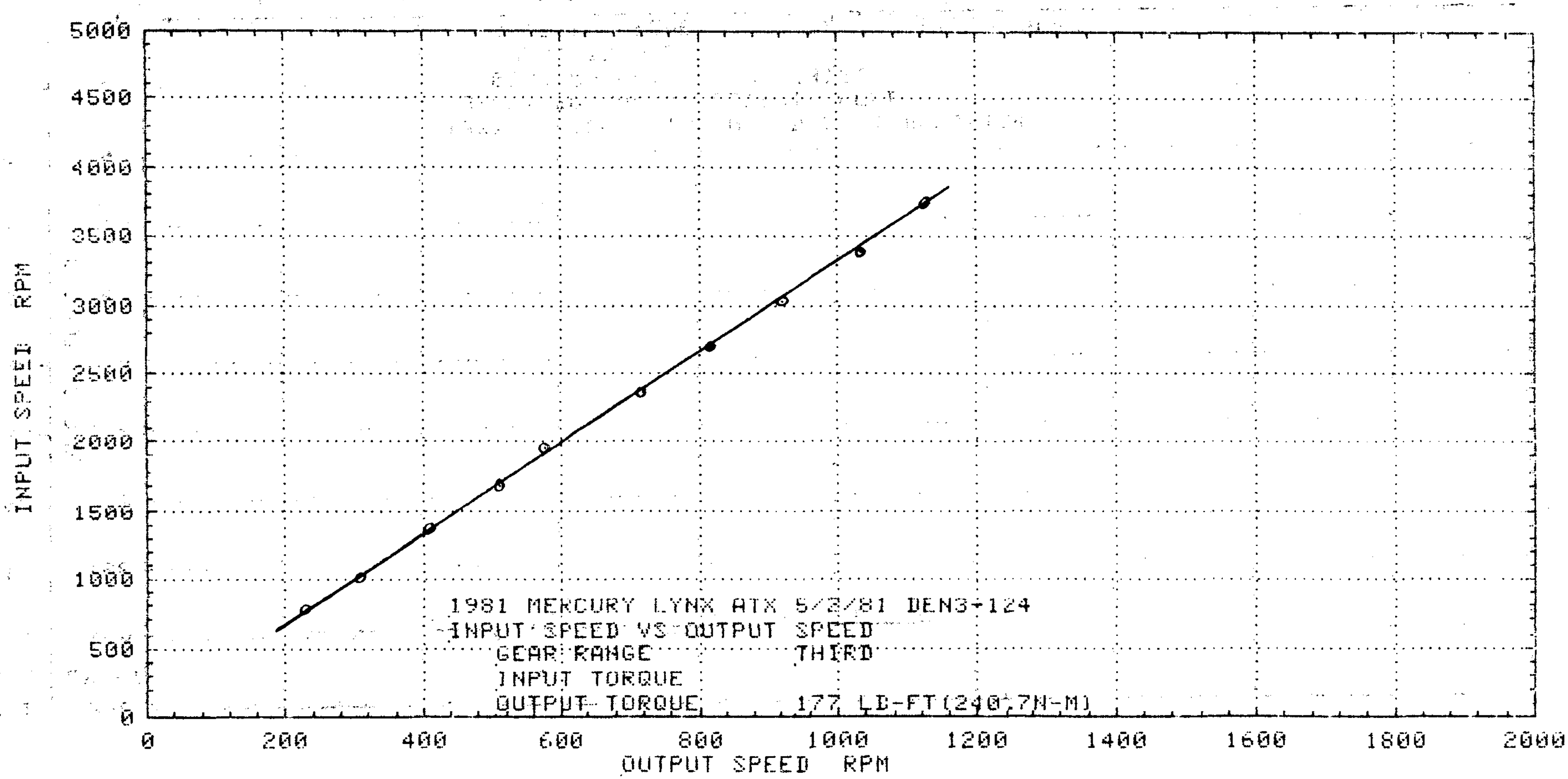


100
90
80
70
60
50
40
30
20
10
0
EFFICIENCY %
0
200
400
600
800
1000
1200
1400
1600
1800
2000
OUTPUT SPEED RPM
1981 MERCURY LYNX ATX 5/2/81 DEN3-124
EFFICIENCY VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE
OUTPUT TORQUE 145 LB-FT(197.2N-M)

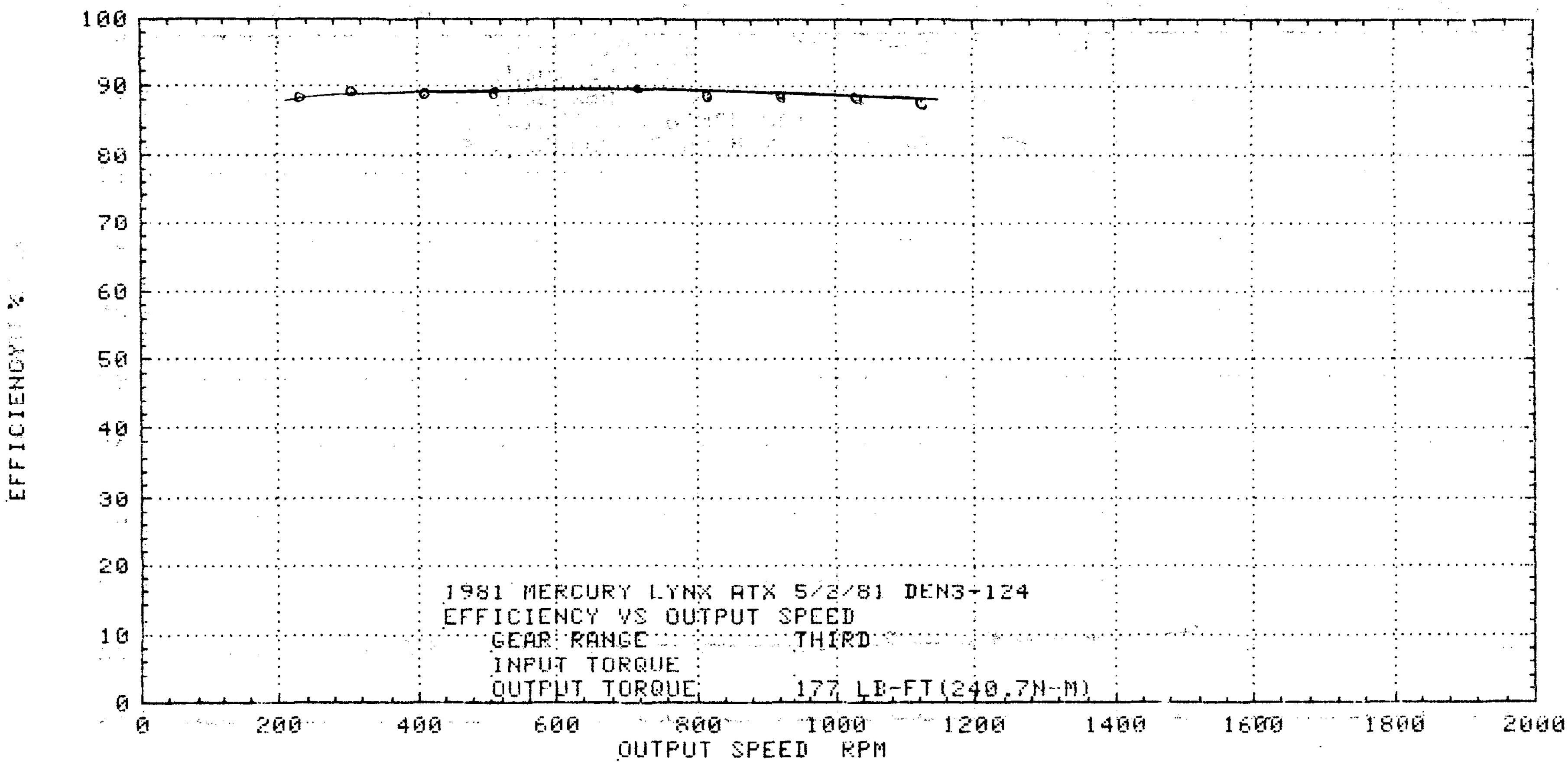

1981 MERCURY LYNX ATX 5/2/81 DEN3-124
EFFICIENCY VS POWER OUT
GEAR RANGE THIRD
INPUT TORQUE
OUTPUT TORQUE 145 LB-FT(197.2N-M)
EFFICIENCY %
0 10 20 30 40 50 60 70 80 90 100
POWER OUT
0 5 10 15 20 25 30 35 40 45 HP 50
0 3 7 11 14 18 22 26 29 33 KW 37


TORQUE RATIO To/Ti
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
.5
0.0
0
200
400
600
800
1000
1200
1400
1600
1800
2000
OUTPUT SPEED RPM
1981 MERCURY LYNX ATX 5/2/81 DEN3-124
TORQUE RATIO VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE
OUTPUT TORQUE 177 LB-FT(240.7N-M)

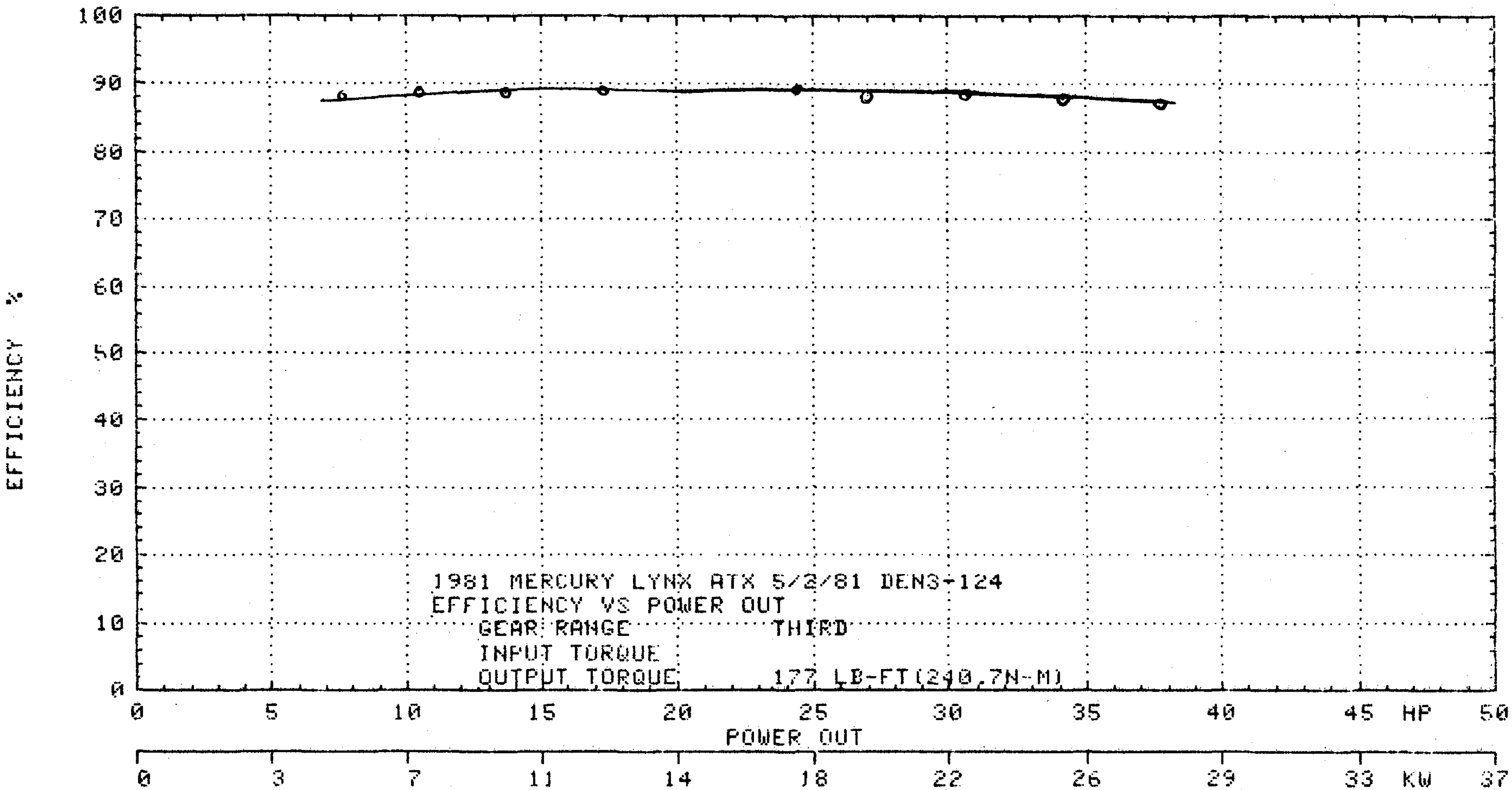

271 N-M
200 LB-FT
244 180
217 160
190 140
163 120
136 100
108 80
81 60
54 40
27 20
0 0
OUTPUT TORQUE
0 200 400 600 800 1000 1200 1400 1600 1800 2000
OUTPUT SPEED RPM
1981 MERCURY LYNX ATX 5/2/81 DEN3-124
OUTPUT TORQUE VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE
OUTPUT TORQUE 177 LB-FT(240.7N-M)

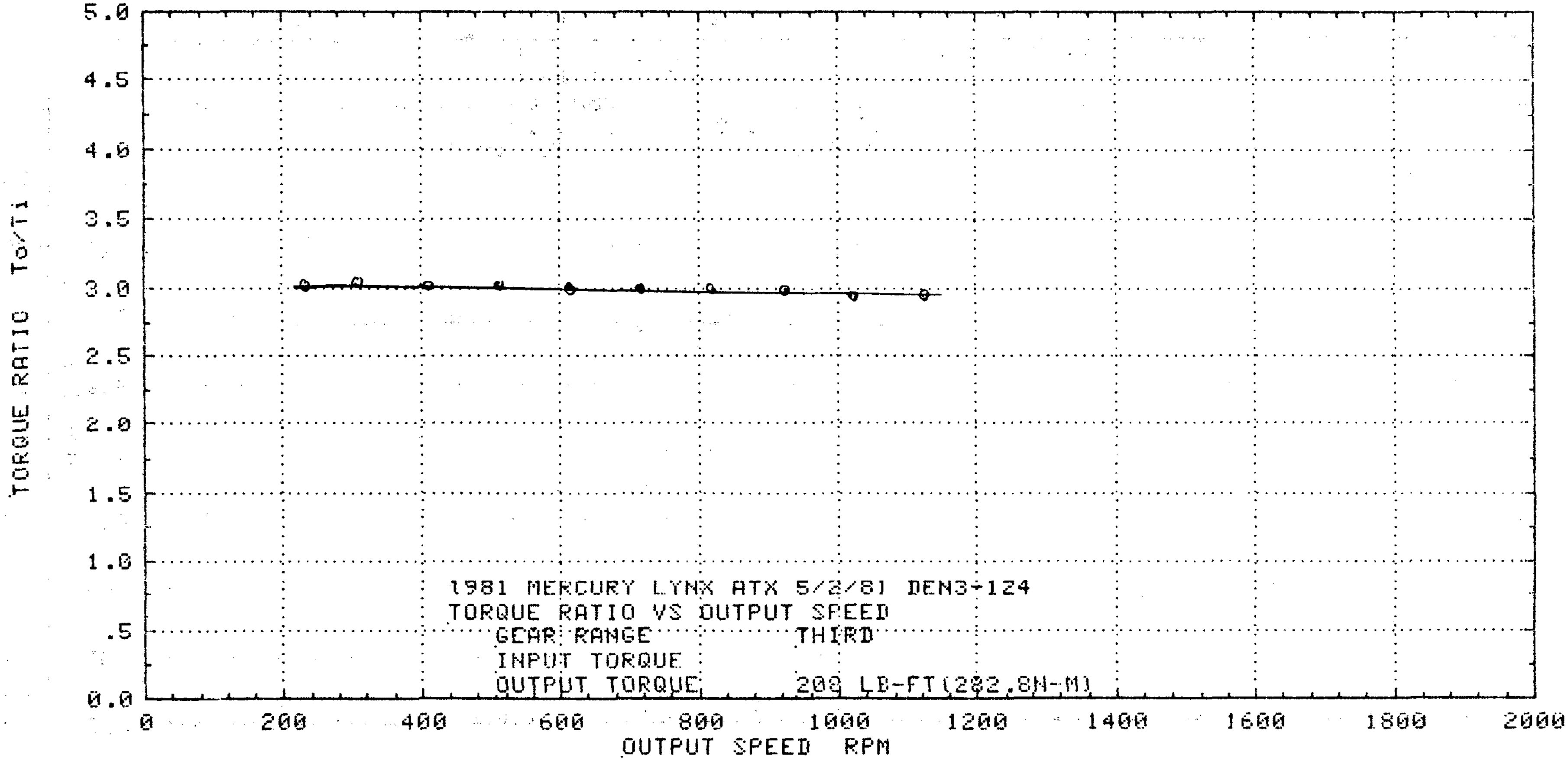


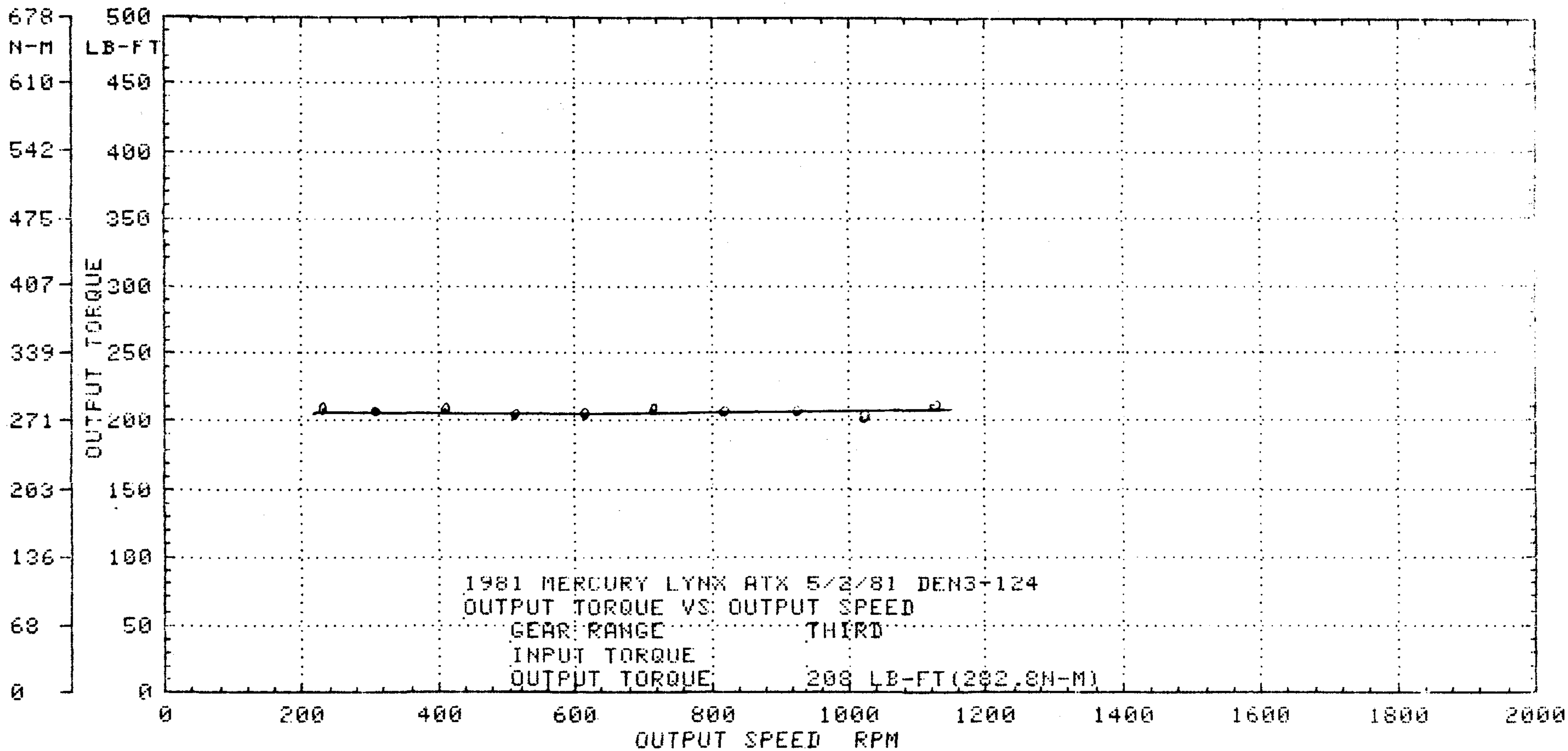
1981 MERCURY LYNX ATX 5/2/81 DEN3-124
INPUT SPEED VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE
OUTPUT TORQUE 177 LB-FT(240.7N-M)
INPUT SPEED RPM
OUTPUT SPEED RPM
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
0
200
400
600
800
1000
1200
1400
1600
1800
2000



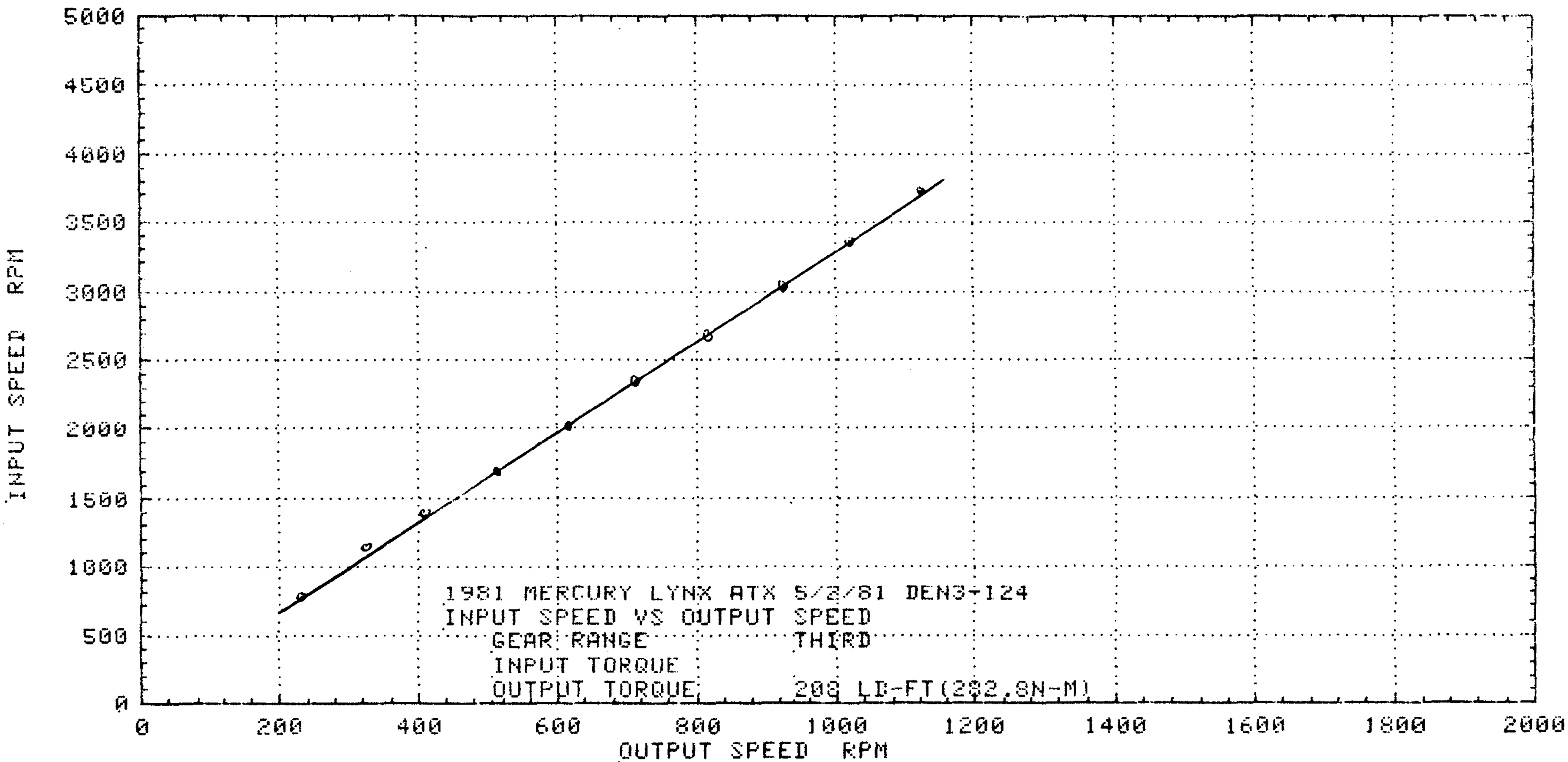
1981 MERCURY LYNX ATX 5/2/81 DEN3-124
EFFICIENCY VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE
OUTPUT TORQUE 177 LB-FT(240.7N-M)
EFFICIENCY %
OUTPUT SPEED RPM
0
10
20
30
40
50
60
70
80
90
100
0
200
400
600
800
1000
1200
1400
1600
1800
2000


1981 MERCURY LYNX ATX 5/2/81 DEN3-124
EFFICIENCY VS POWER OUT
GEAR RANGE THIRD
INPUT TORQUE
OUTPUT TORQUE 177 LB-FT(240.7N-M)
EFFICIENCY %
100
90
80
70
60
50
40
30
20
10
0
0 5 10 15 20 25 30 35 40 45 HP 50
POWER OUT
0 3 7 11 14 18 22 26 29 33 KW 37

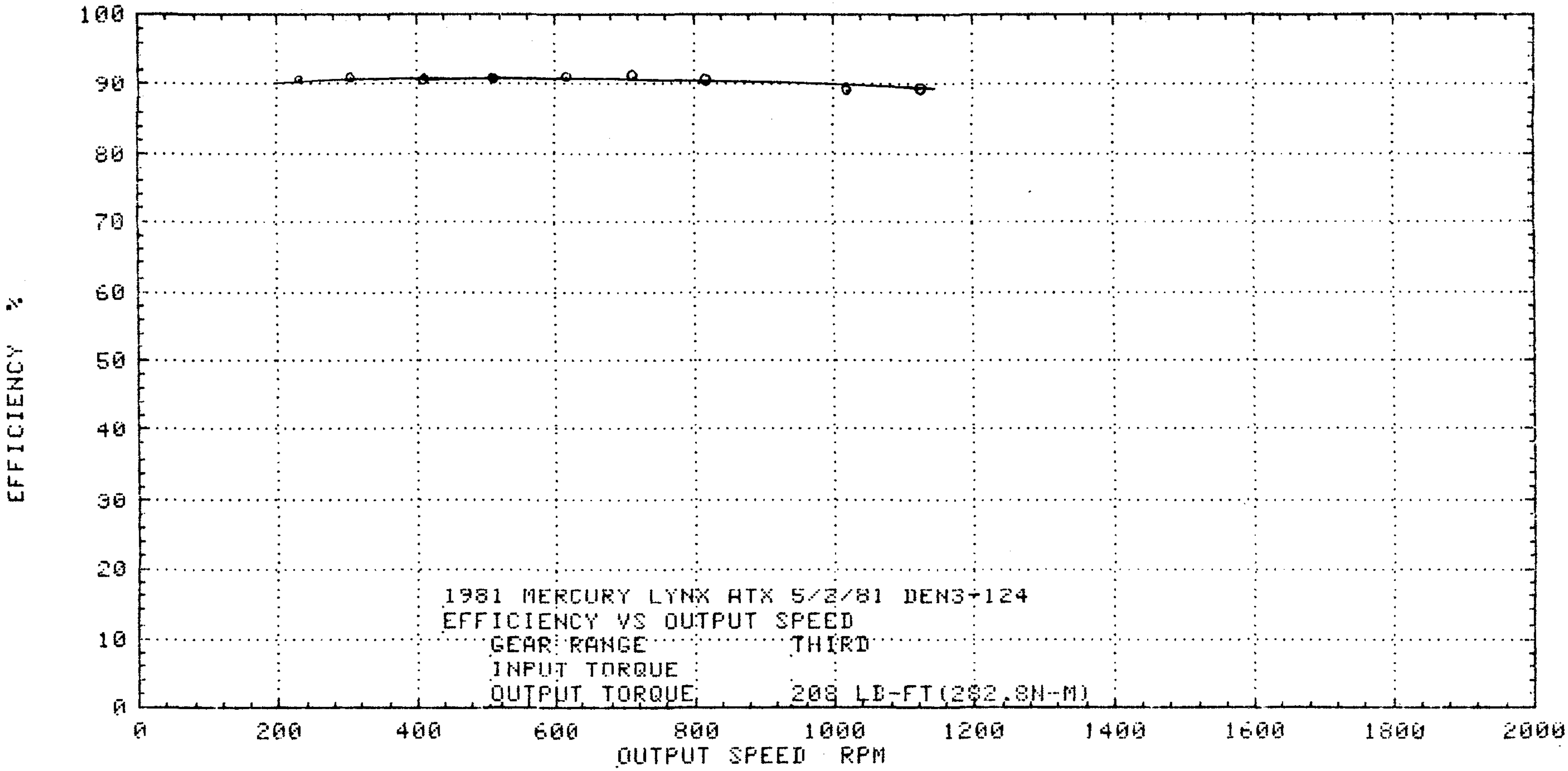

1981 MERCURY LYNX ATX 5/2/81 DEN3-124
TORQUE RATIO VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE
OUTPUT TORQUE 208 LB-FT(282.8N-M)
TORQUE RATIO To/Ti
OUTPUT SPEED RPM
0.0
.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
4.5
5.0
0
200
400
600
800
1000
1200
1400
1600
1800
2000



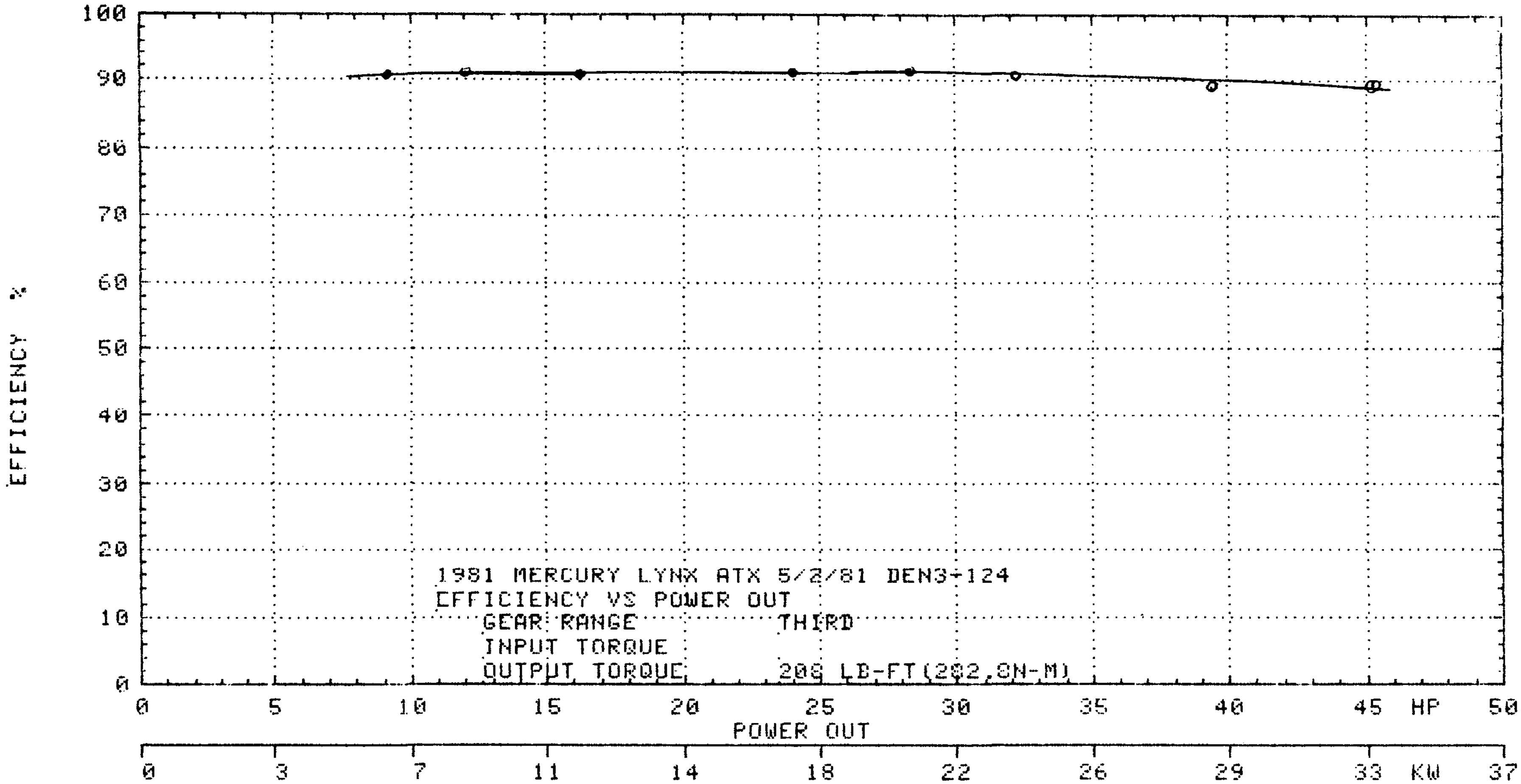
678 N-M
500 LB-FT
610 450
542 400
475 350
407 300
339 250
271 200
203 150
136 100
68 50
0 0
OUTPUT TORQUE
0 200 400 600 800 1000 1200 1400 1600 1800 2000
OUTPUT SPEED RPM
1981 MERCURY LYNX ATX 5/2/81 DEN3-124
OUTPUT TORQUE VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE
OUTPUT TORQUE 208 LB-FT(282.8N-M)



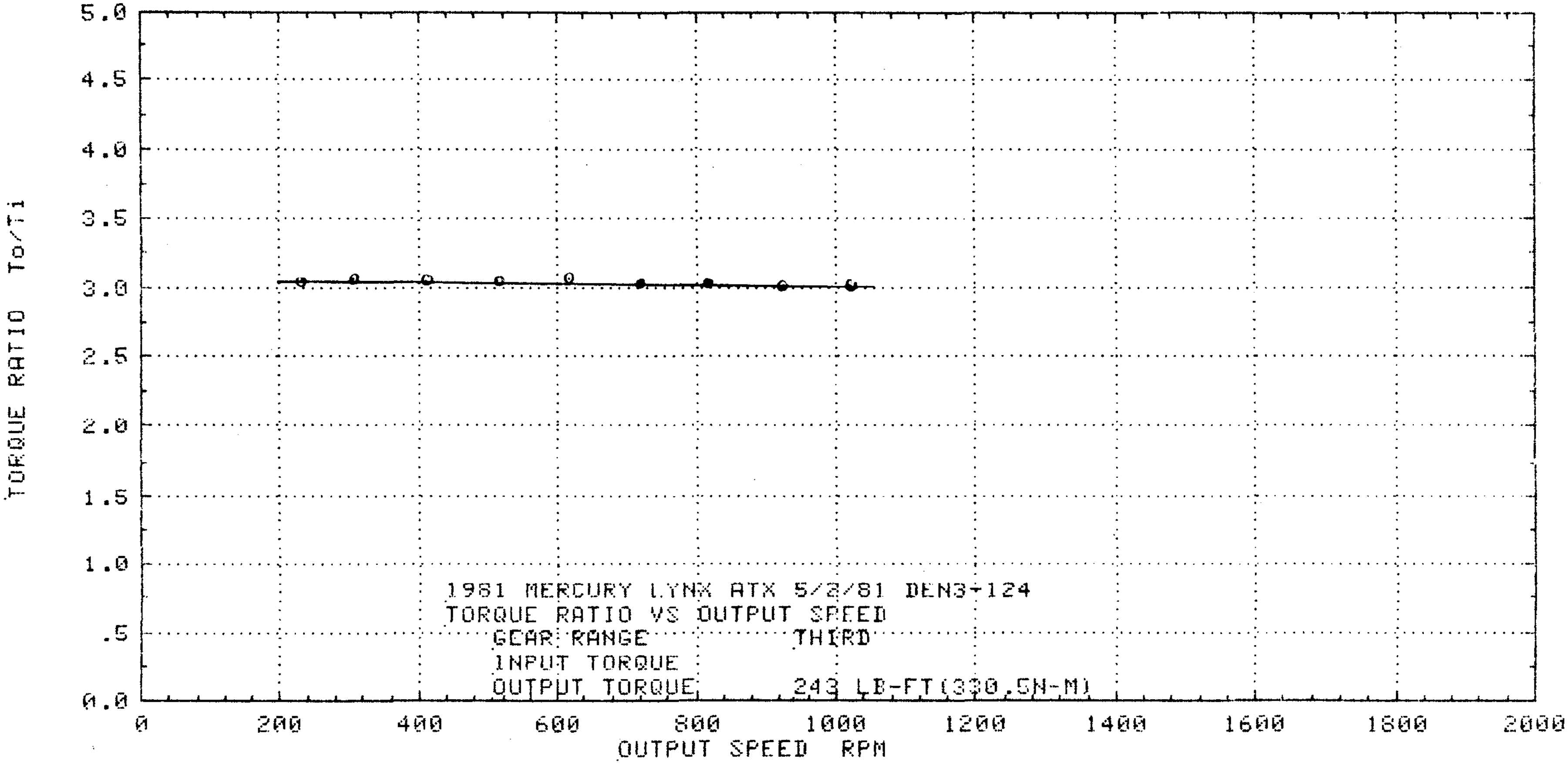
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
INPUT SPEED RPM
0
200
400
600
800
1000
1200
1400
1600
1800
2000
OUTPUT SPEED RPM
1981 MERCURY LYNX ATX 5/2/81 DEN3-124
INPUT SPEED VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE
OUTPUT TORQUE 208 LB-FT(282.8N-M)



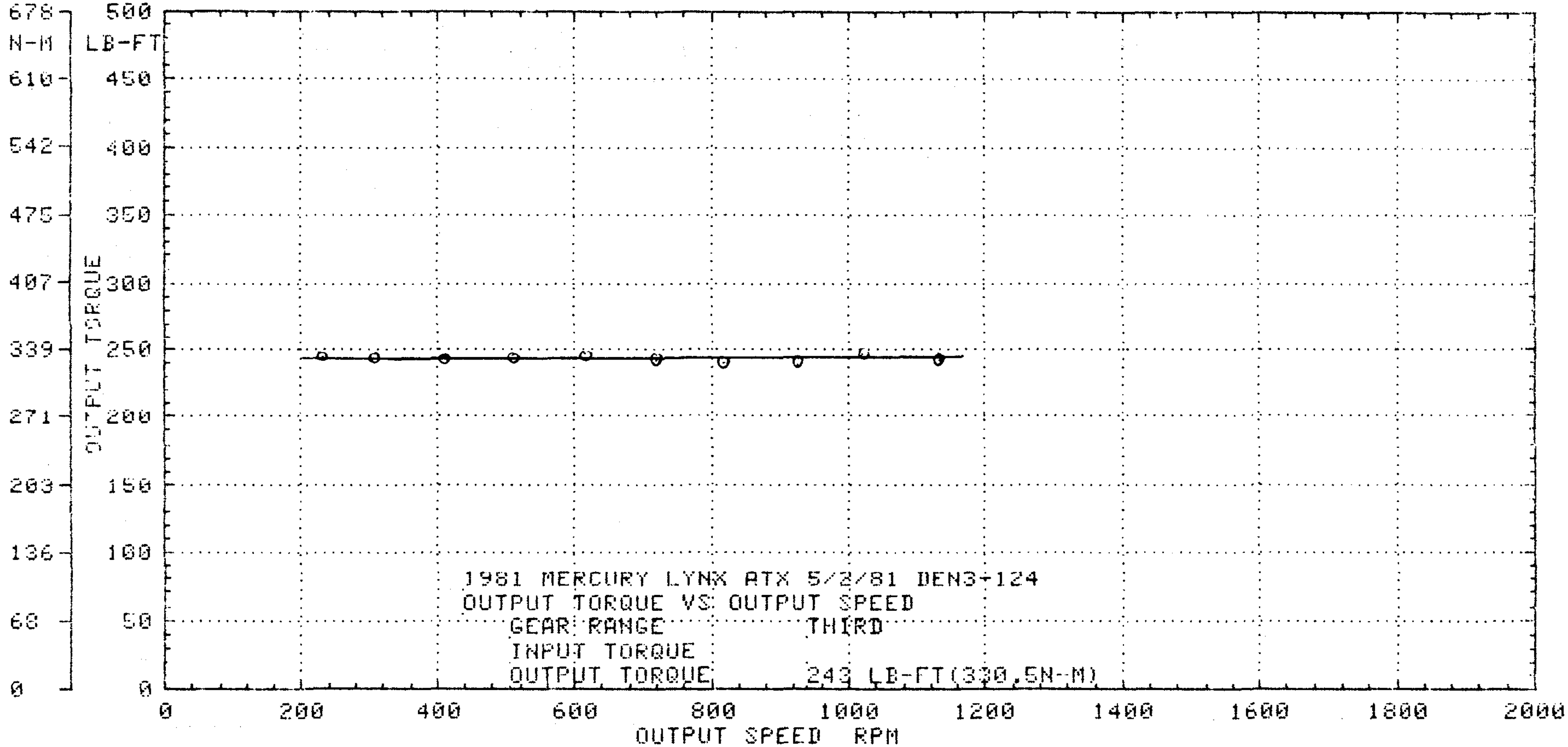
1981 MERCURY LYNX ATX 5/2/81 DEN3-124
EFFICIENCY VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE
OUTPUT TORQUE 208 LB-FT(282.8N-M)
EFFICIENCY %
OUTPUT SPEED RPM
0
10
20
30
40
50
60
70
80
90
100
0
200
400
600
800
1000
1200
1400
1600
1800
2000

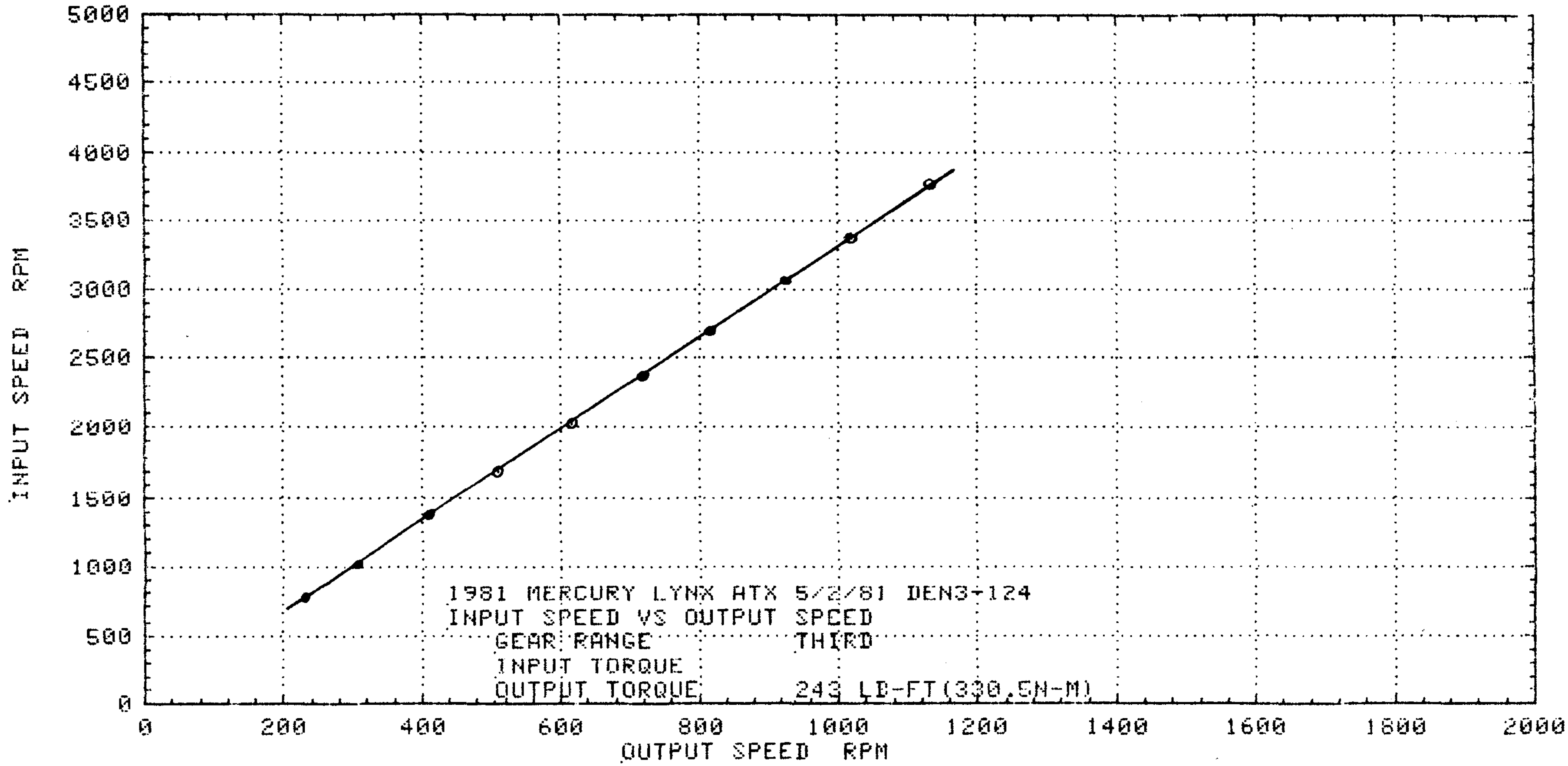


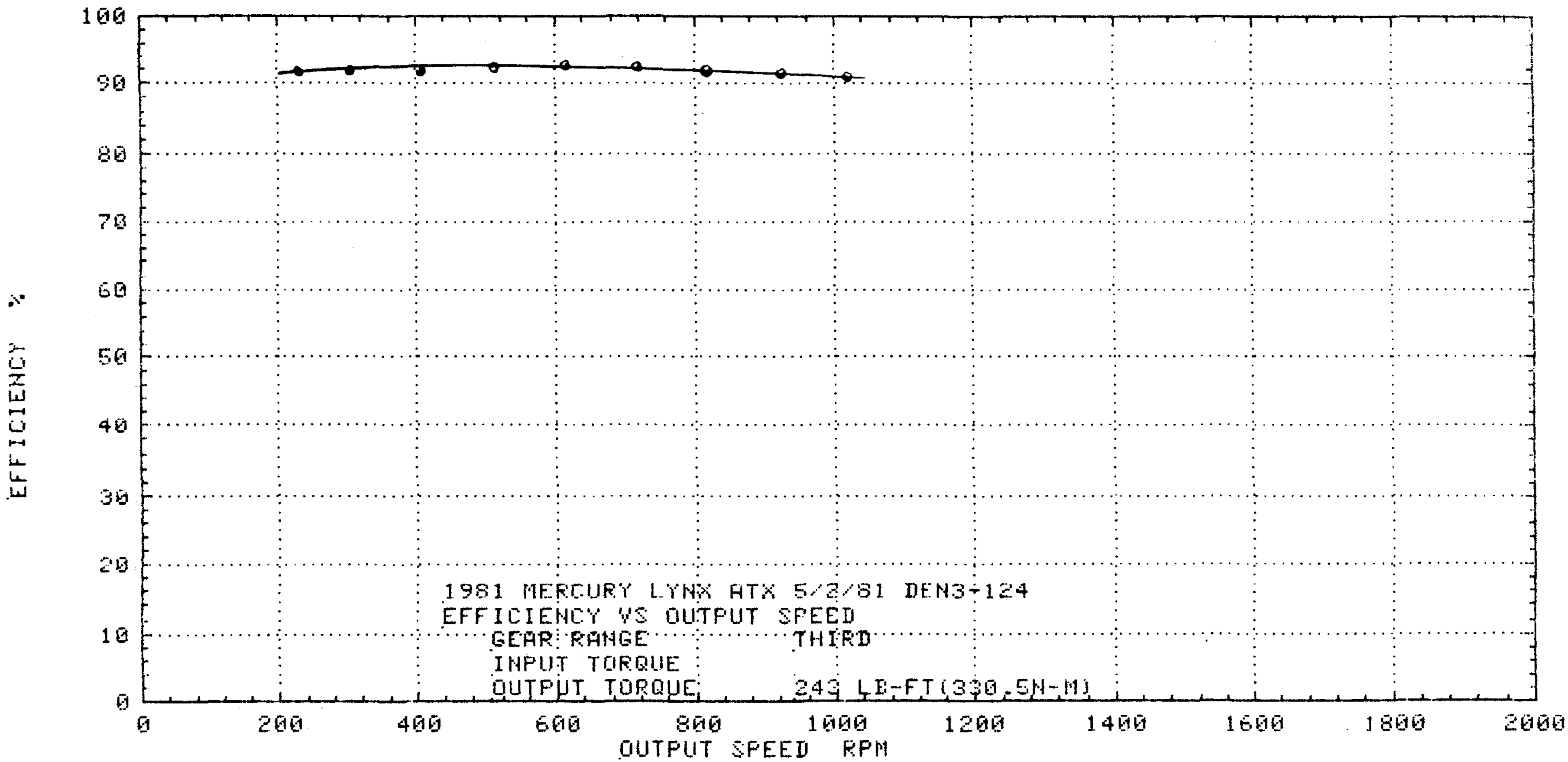
EFFICIENCY %
100
90
80
70
60
50
40
30
20
10
0
1981 MERCURY LYNX ATX 5/2/81 DEN3-124
EFFICIENCY VS POWER OUT
GEAR RANGE THIRD
INPUT TORQUE
OUTPUT TORQUE 208 LB-FT(282,8N-M)
0 5 10 15 20 25 30 35 40 45 HP 50
POWER OUT
0 3 7 11 14 18 22 26 29 33 KW 37



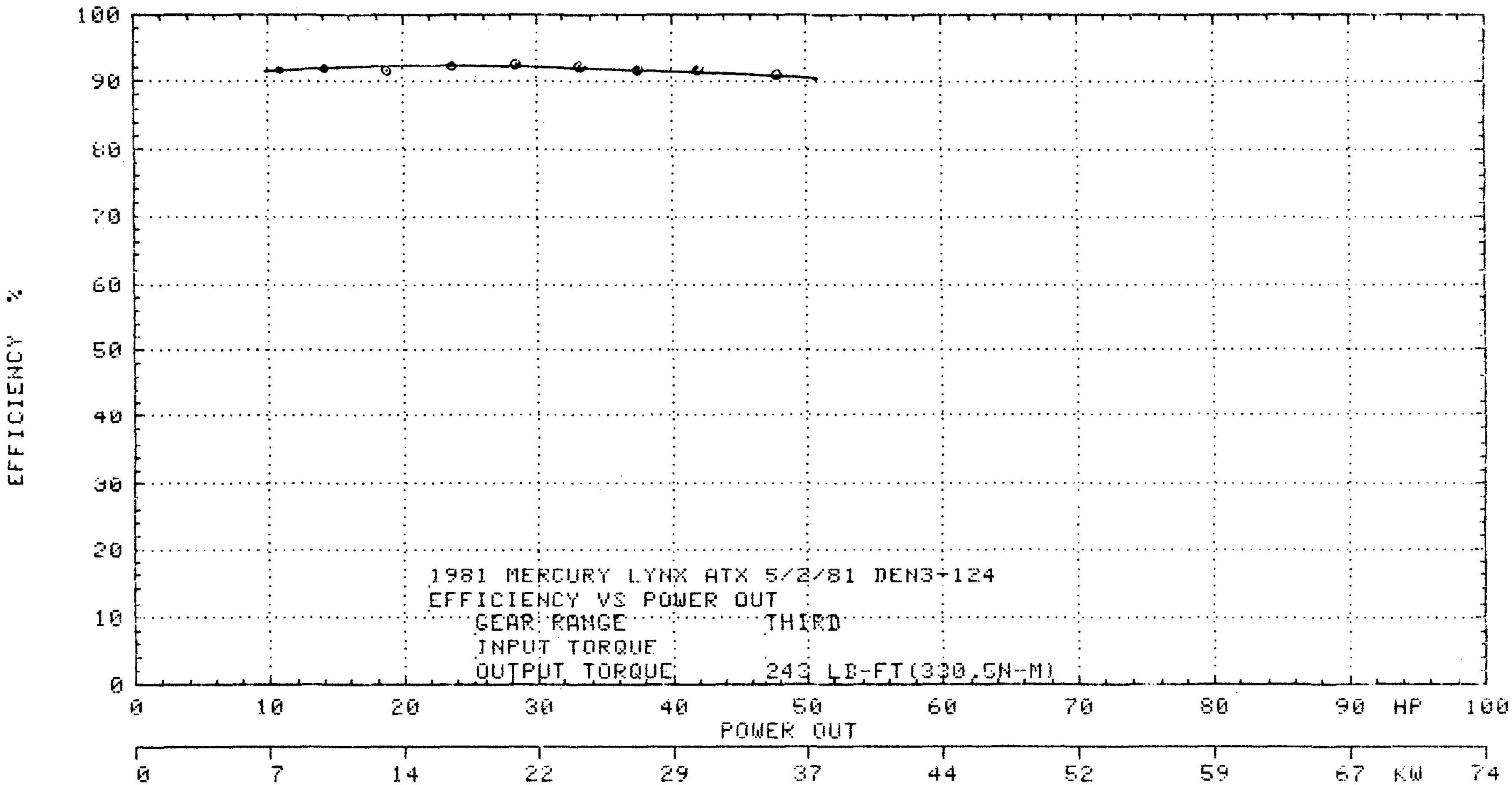
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
.5
0.0
TORQUE RATIO To/Ti
0
200
400
600
800
1000
1200
1400
1600
1800
2000
OUTPUT SPEED RPM
1981 MERCURY LYNX ATX 5/2/81 DEN3-124
TORQUE RATIO VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE
OUTPUT TORQUE 243 LB-FT(330.5N-M)


678
N-M
610
542
475
407
339
271
203
136
68
0
500
LB-FT
450
400
350
300
250
200
150
100
50
0
OUTPUT TORQUE
0
200
400
600
800
1000
1200
1400
1600
1800
2000
OUTPUT SPEED RPM
1981 MERCURY LYNX ATX 5/2/81 DEN3-124
OUTPUT TORQUE VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE
OUTPUT TORQUE 243 LB-FT(330.5N-M)


1981 MERCURY LYNX ATX 5/2/81 DEN3-124
INPUT SPEED VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE
OUTPUT TORQUE 243 LB-FT(330.5N-M)
INPUT SPEED RPM
OUTPUT SPEED RPM
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
0
200
400
600
800
1000
1200
1400
1600
1800
2000



1981 MERCURY LYNX ATX 5/2/81 DEN3+124
EFFICIENCY VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE
OUTPUT TORQUE 243 LB-FT(330.5N-M)
EFFICIENCY %
OUTPUT SPEED RPM
0
10
20
30
40
50
60
70
80
90
100
0
200
400
600
800
1000
1200
1400
1600
1800
2000



EFFICIENCY %
100
90
80
70
60
50
40
30
20
10
0
1981 MERCURY LYNX ATX 5/2/81 DEN3-124
EFFICIENCY VS POWER OUT
GEAR RANGE THIRD
INPUT TORQUE
OUTPUT TORQUE 243 LB-FT(330.5N-M)
0 10 20 30 40 50 60 70 80 90 HP 100
POWER OUT
0 7 14 22 29 37 44 52 59 67 KW 74

COAST PERFORMANCE

1st Gear

Graphs Contained in This Section

Torque Ratio -vs- Output Speed

Output Torque -vs- Output Speed

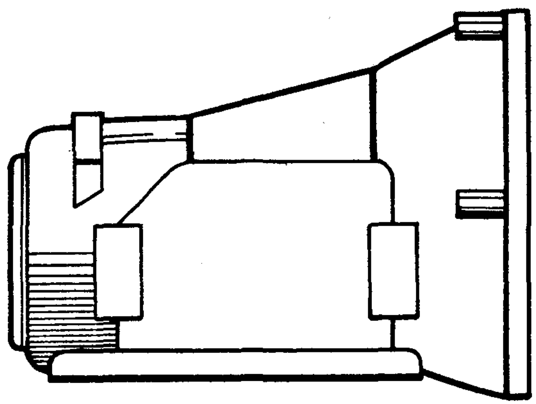
Input Speed -vs- Output Speed

Efficiency -vs- Output Speed

Efficiency -vs- Power Out

Torque In

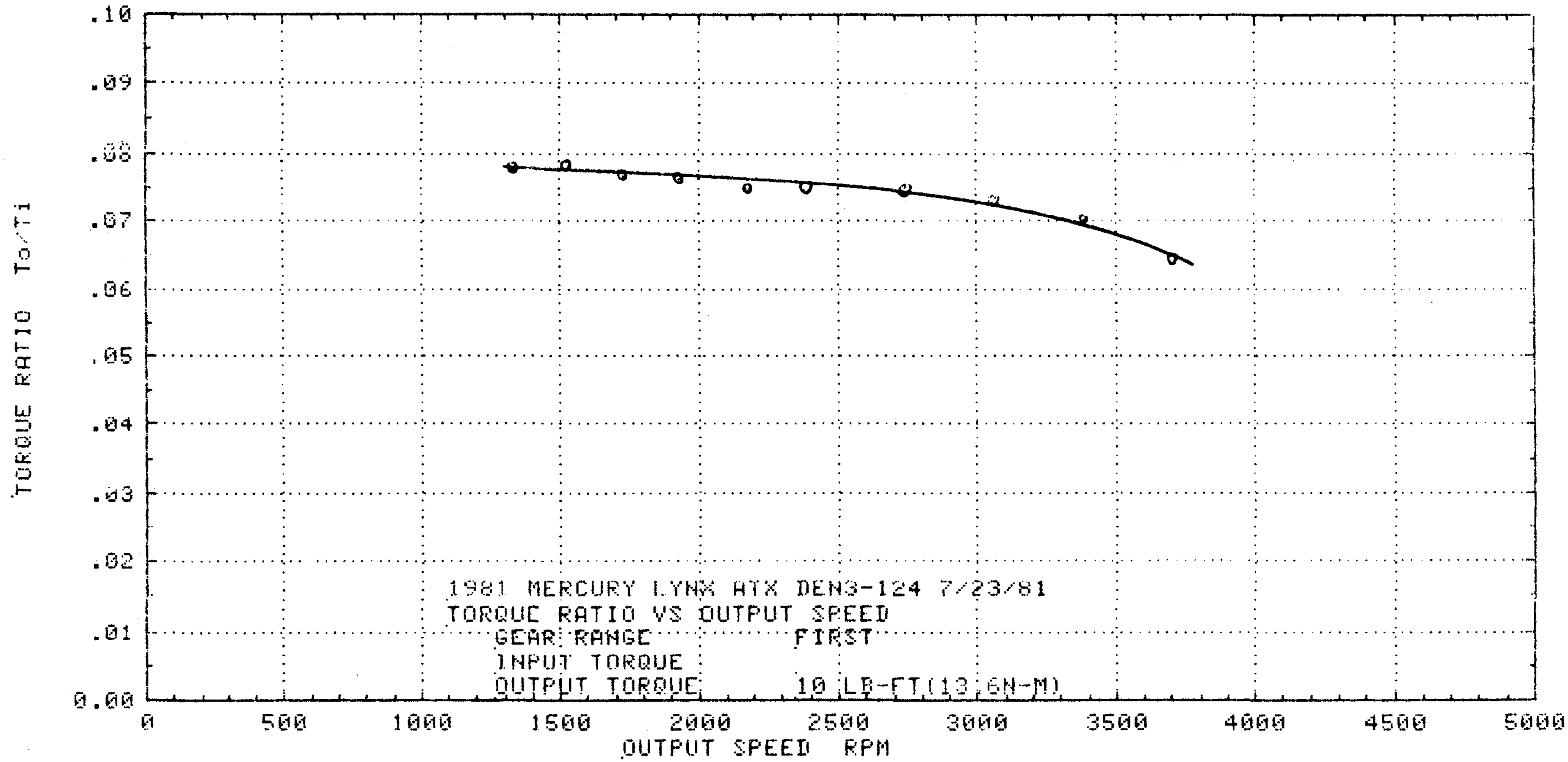
Speed In



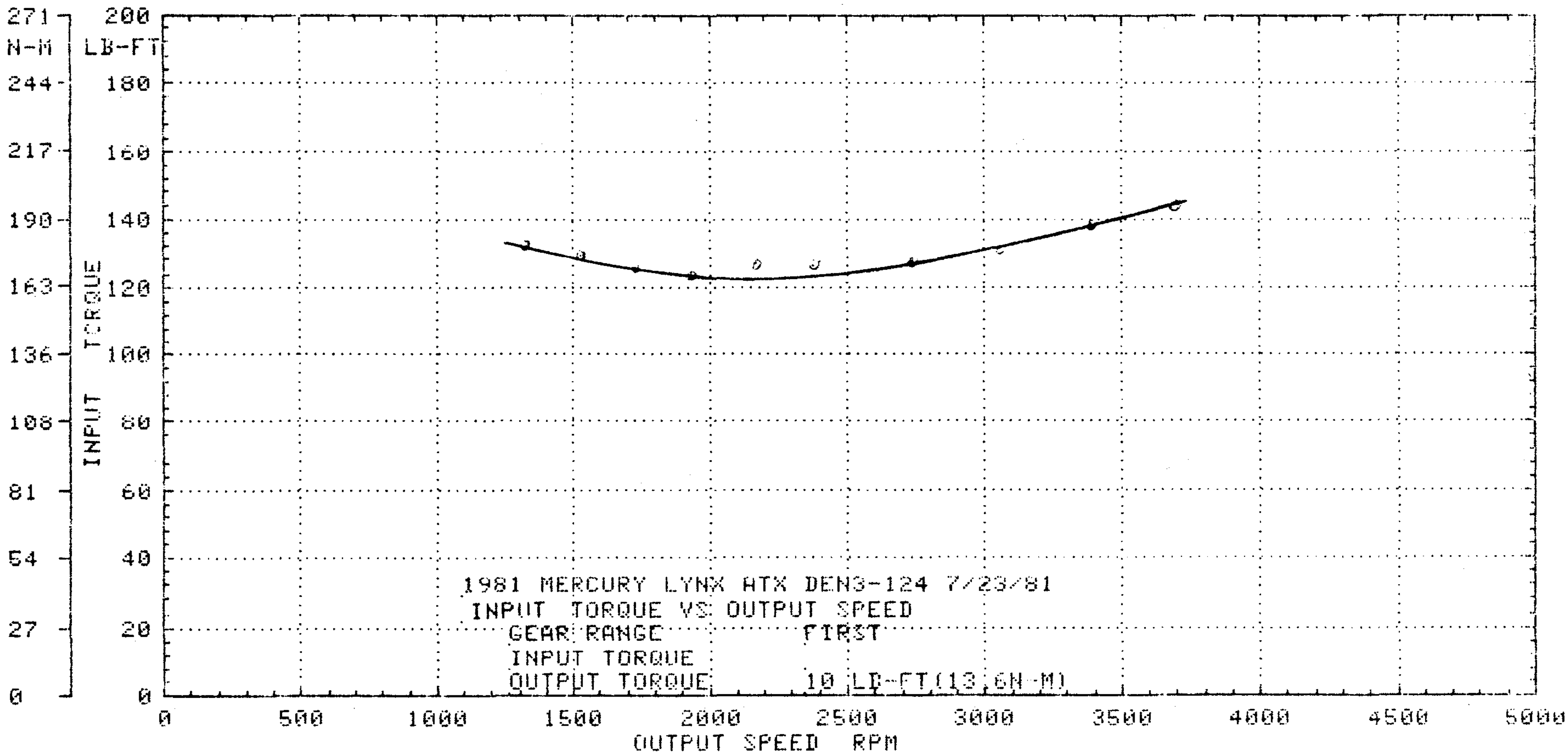
Torque Out

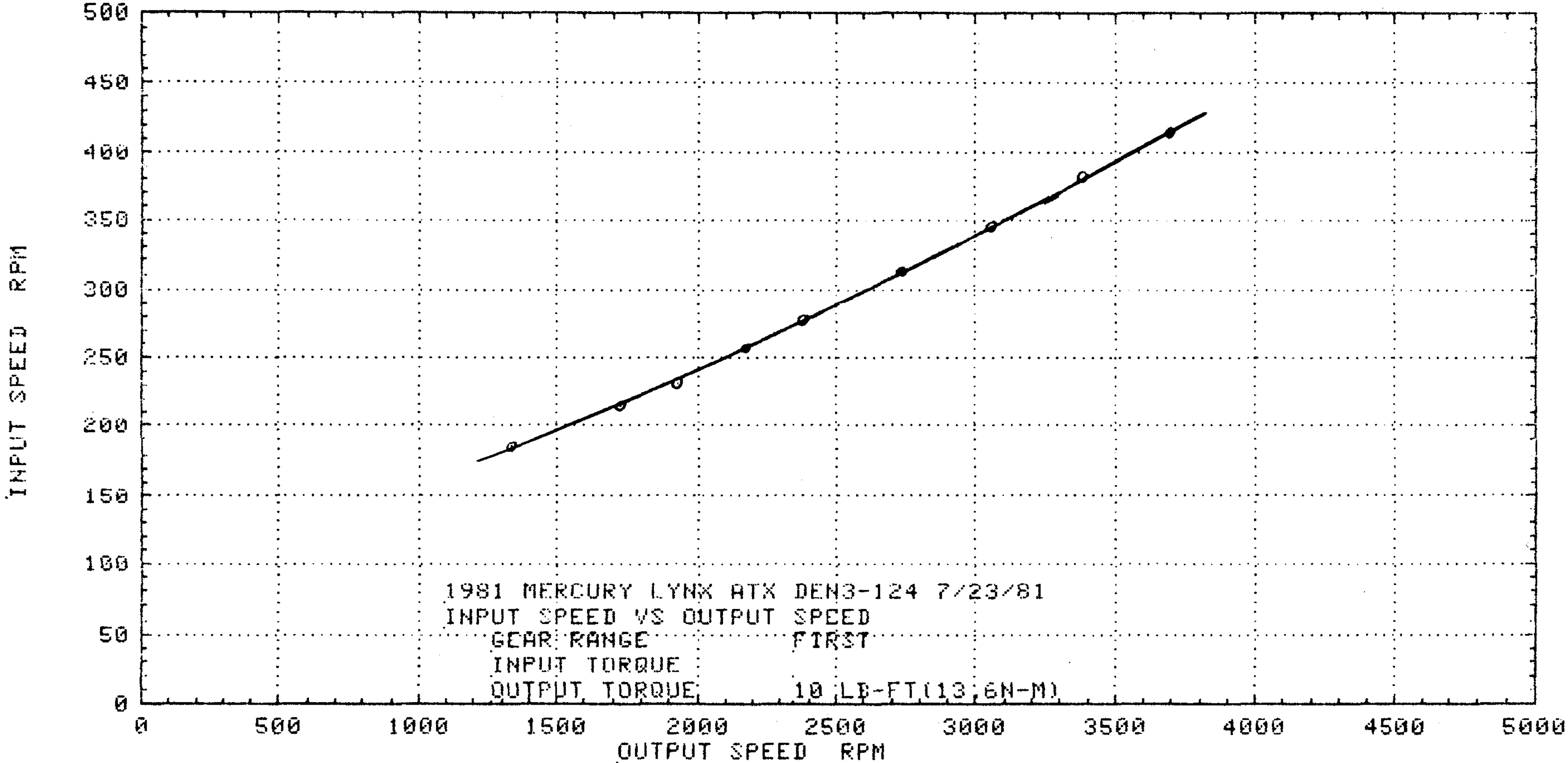
Speed Out

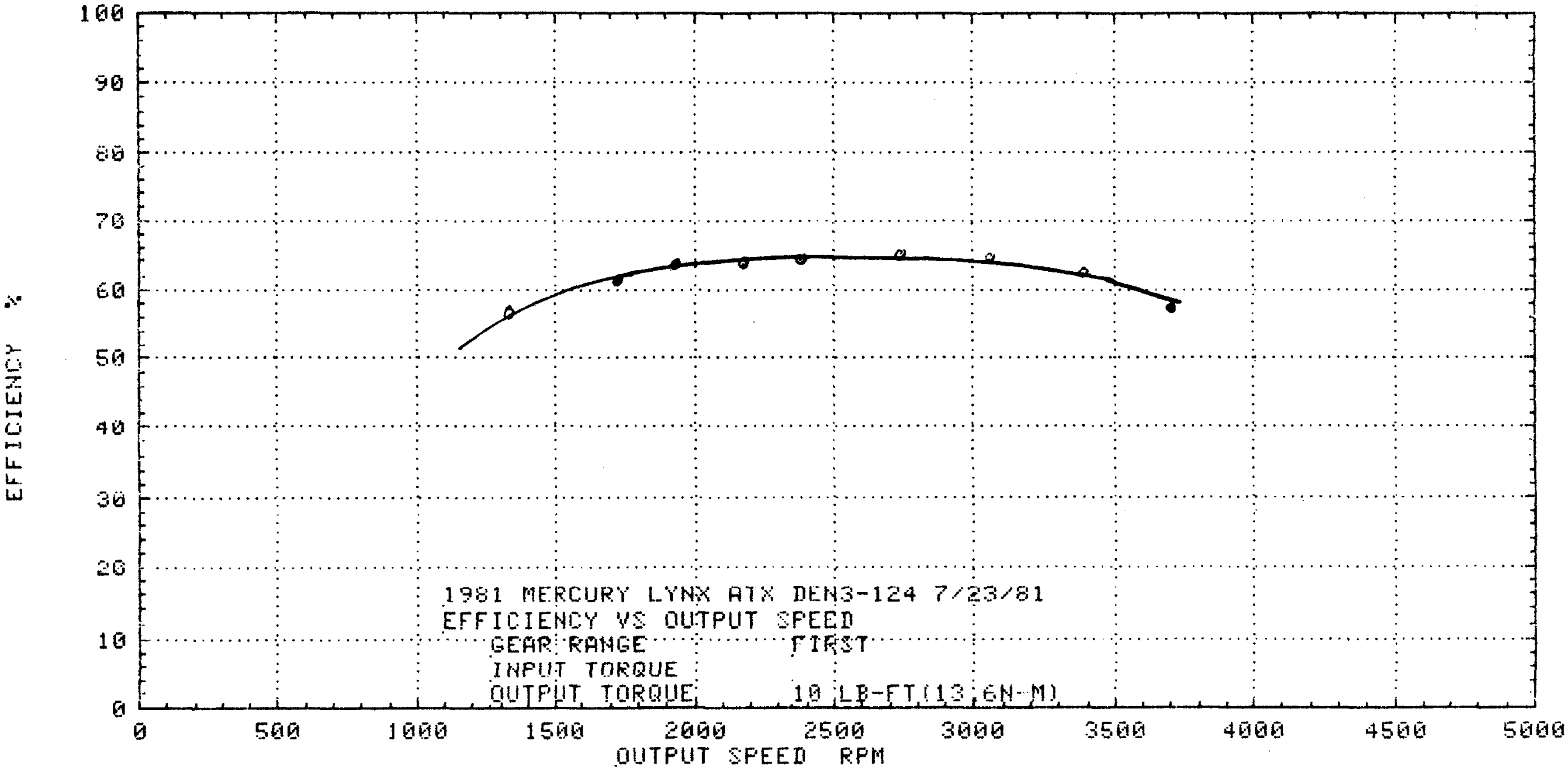
Coast Performance Tests



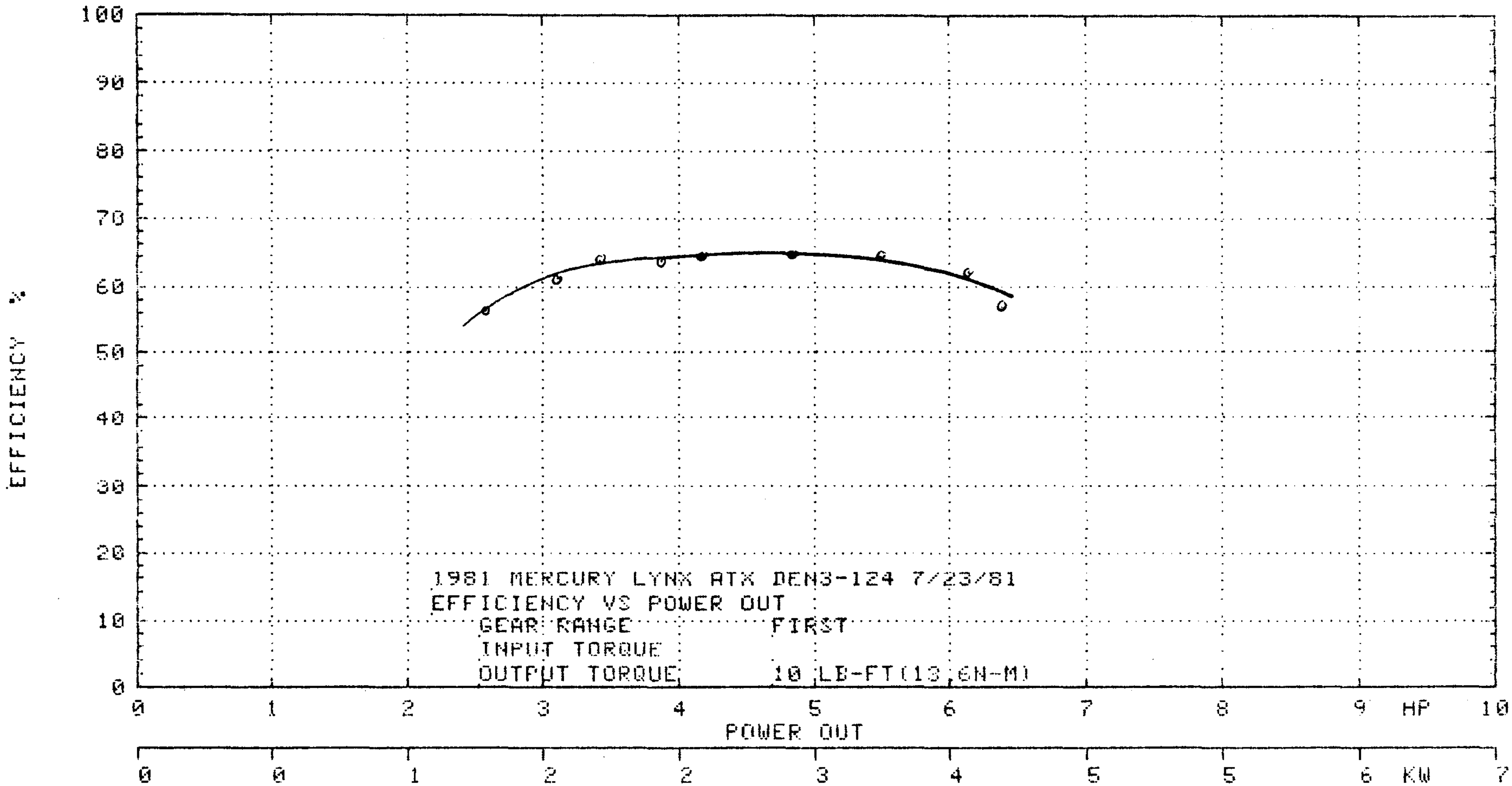
1981 MERCURY LYNX ATX DEN3-124 7/23/81
TORQUE RATIO VS OUTPUT SPEED
GEAR RANGE FIRST
INPUT TORQUE
OUTPUT TORQUE 10 LB-FT(13.6N-M)
TORQUE RATIO To/Ti
OUTPUT SPEED RPM
.10
.09
.08
.07
.06
.05
.04
.03
.02
.01
0.00
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000

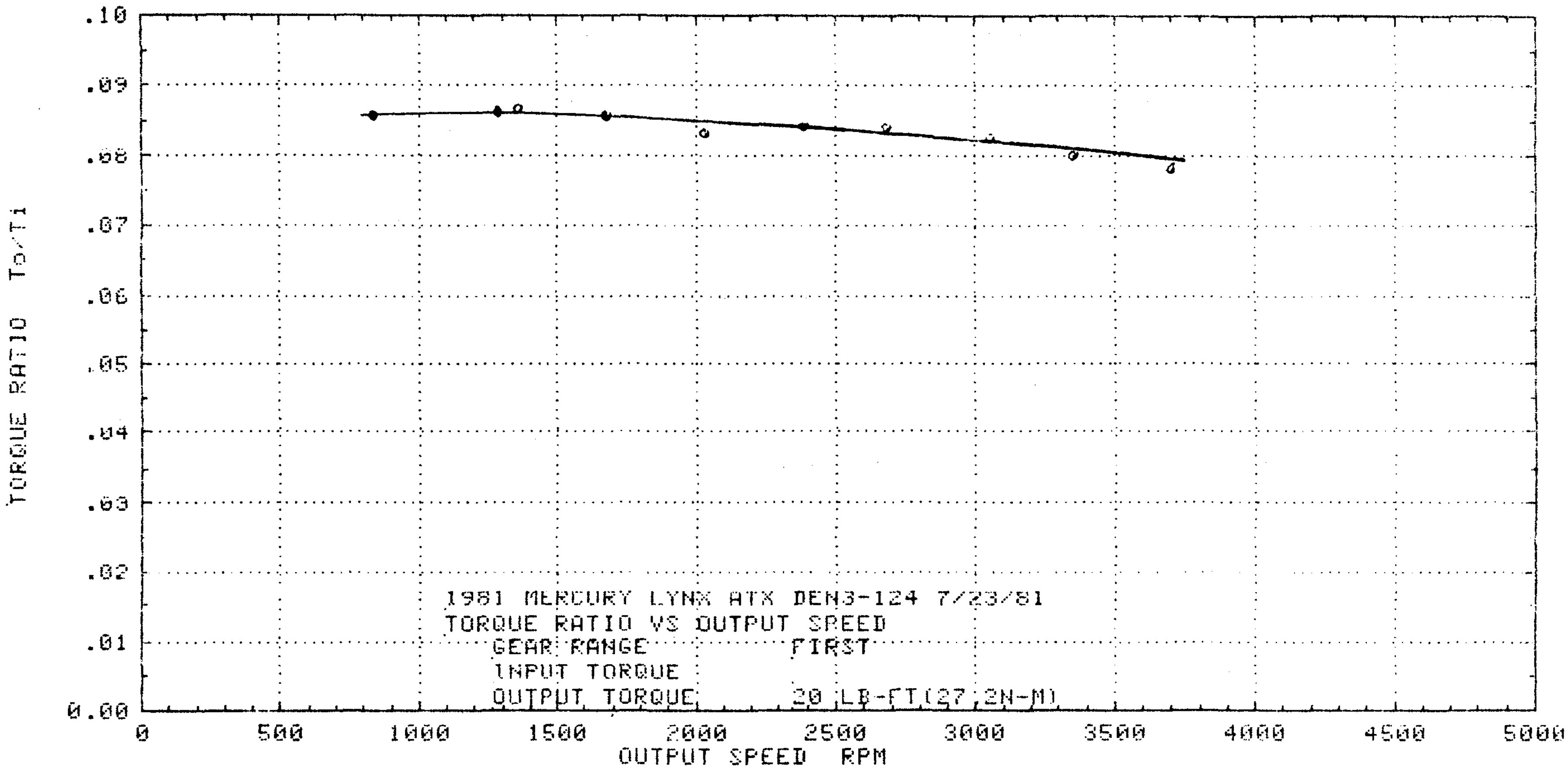

1981 MERCURY LYNX ATX DEN3-124 7/23/81
INPUT TORQUE VS OUTPUT SPEED
GEAR RANGE FIRST
INPUT TORQUE
OUTPUT TORQUE 10 LB-FT(13.6N-M)
INPUT TORQUE
N-M
LB-FT
271
244
217
190
163
136
108
81
54
27
0
200
180
160
140
120
100
80
60
40
20
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
OUTPUT SPEED RPM

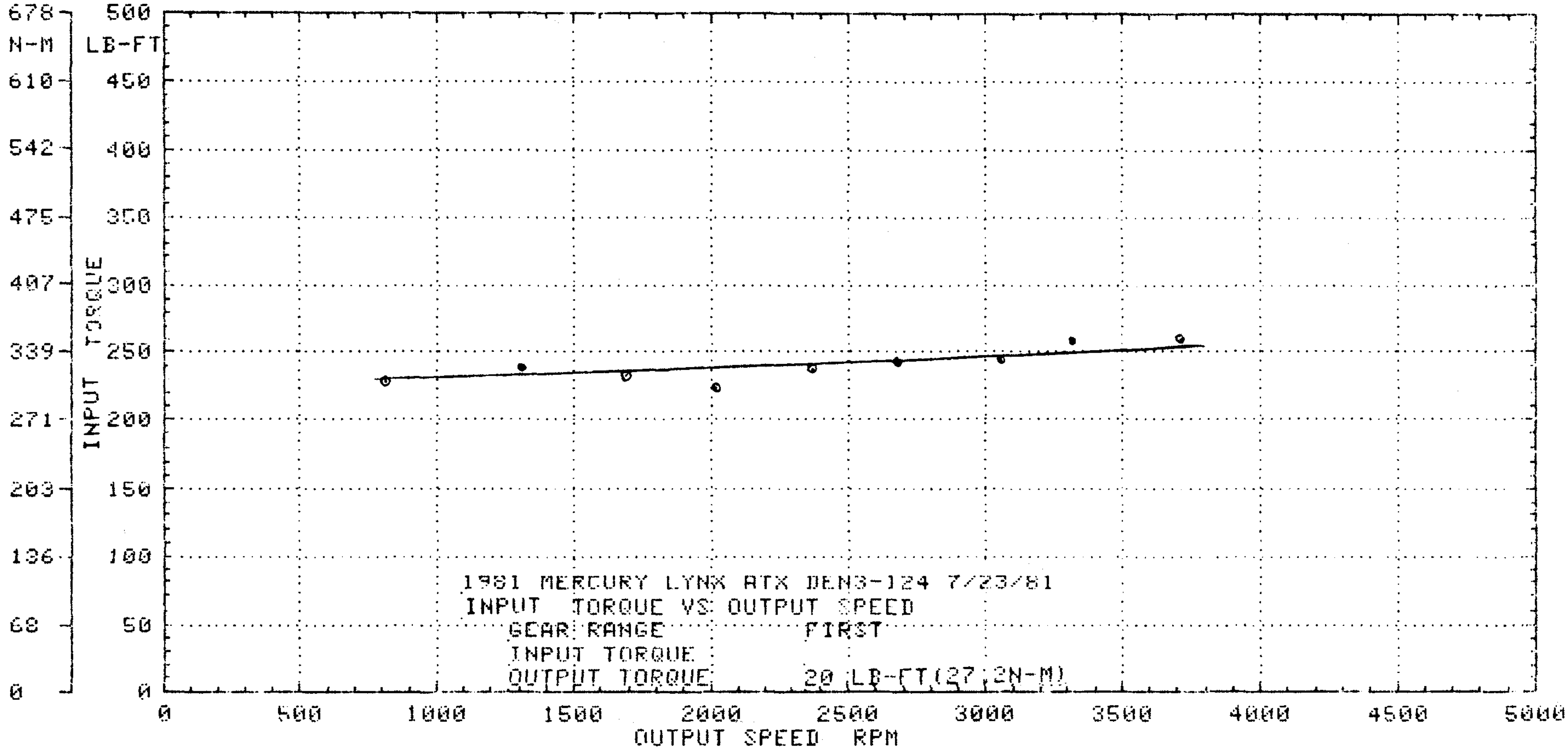

1981 MERCURY LYNX ATX DEN3-124 7/23/81
INPUT SPEED VS OUTPUT SPEED
GEAR RANGE FIRST
INPUT TORQUE
OUTPUT TORQUE 10 LB-FT(13.6N-M)
INPUT SPEED RPM
OUTPUT SPEED RPM
0
50
100
150
200
250
300
350
400
450
500
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000

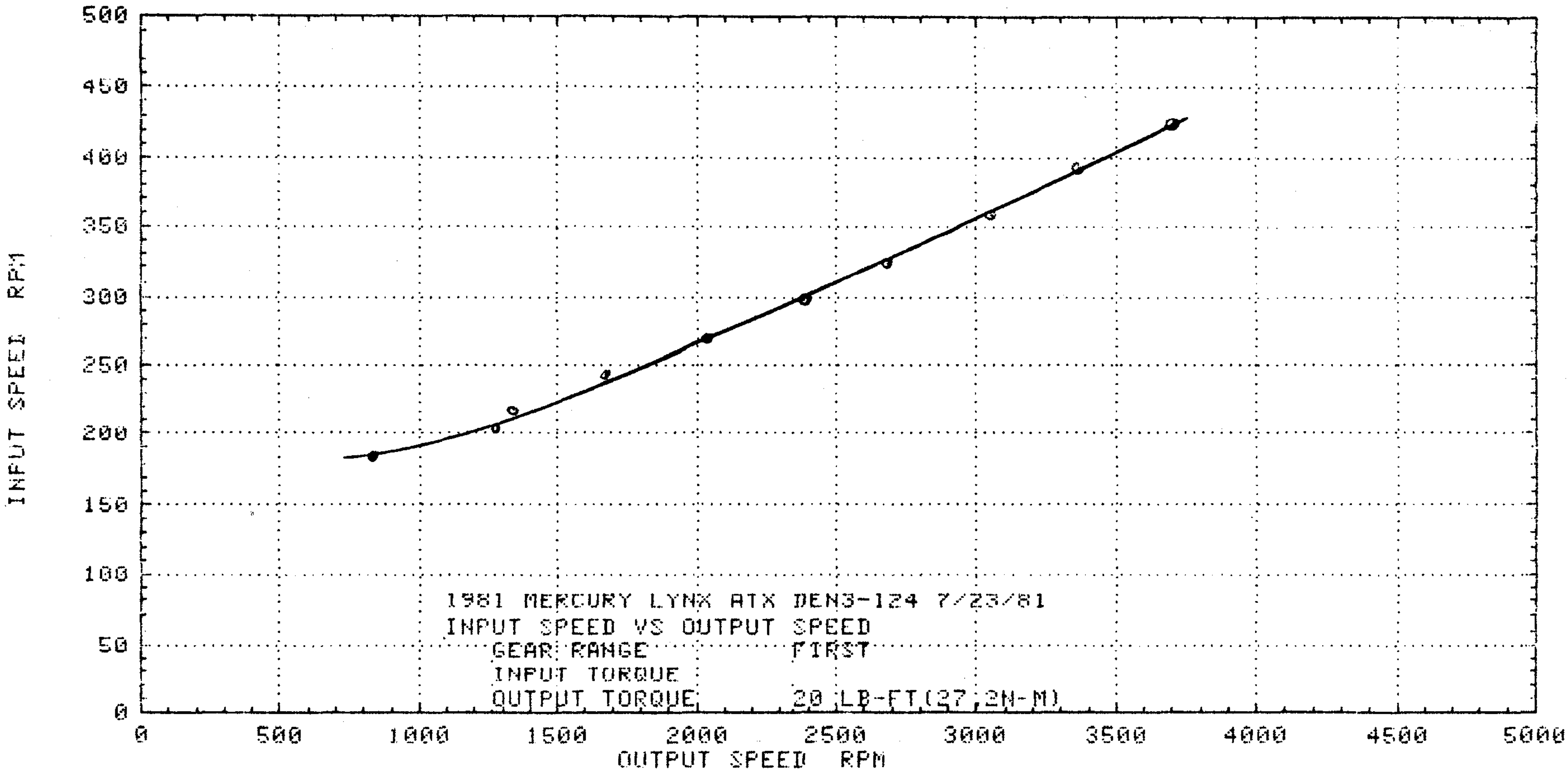


100
90
80
70
60
50
40
30
20
10
0
EFFICIENCY %
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
OUTPUT SPEED RPM
1981 MERCURY LYNX ATX DEN3-124 7/23/81
EFFICIENCY VS OUTPUT SPEED
GEAR RANGE FIRST
INPUT TORQUE
OUTPUT TORQUE 10 LB-FT(13.6N-M)

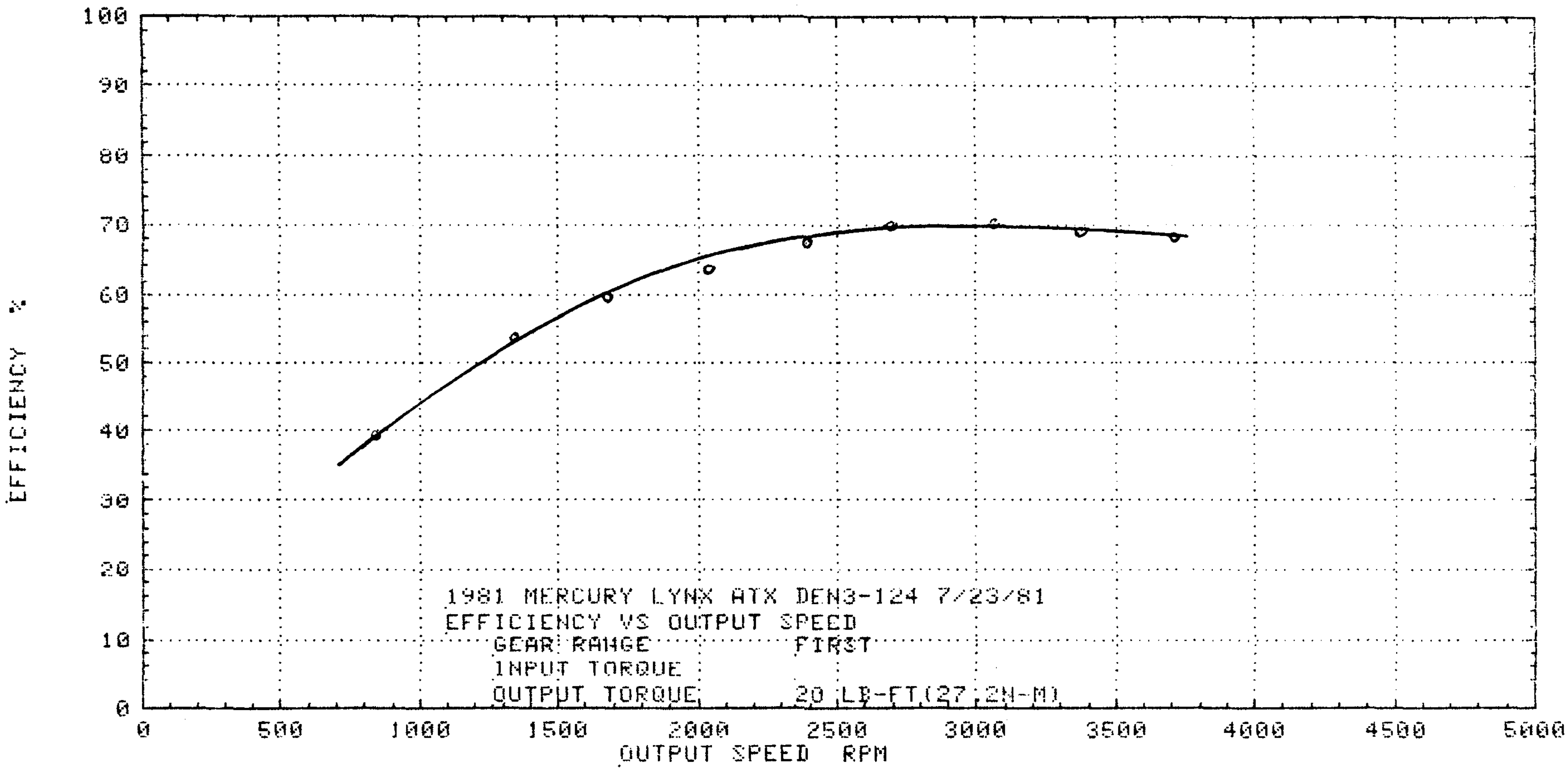

1981 MERCURY LYNX ATX DEN3-124 7/23/81
EFFICIENCY VS POWER OUT
GEAR RANGE FIRST
INPUT TORQUE
OUTPUT TORQUE 10 LB-FT(13.6N-M)
EFFICIENCY %
100
90
80
70
60
50
40
30
20
10
0
0 1 2 3 4 5 6 7 8 9 HP 10
POWER OUT
0 0 1 2 2 3 4 5 5 6 KW 7

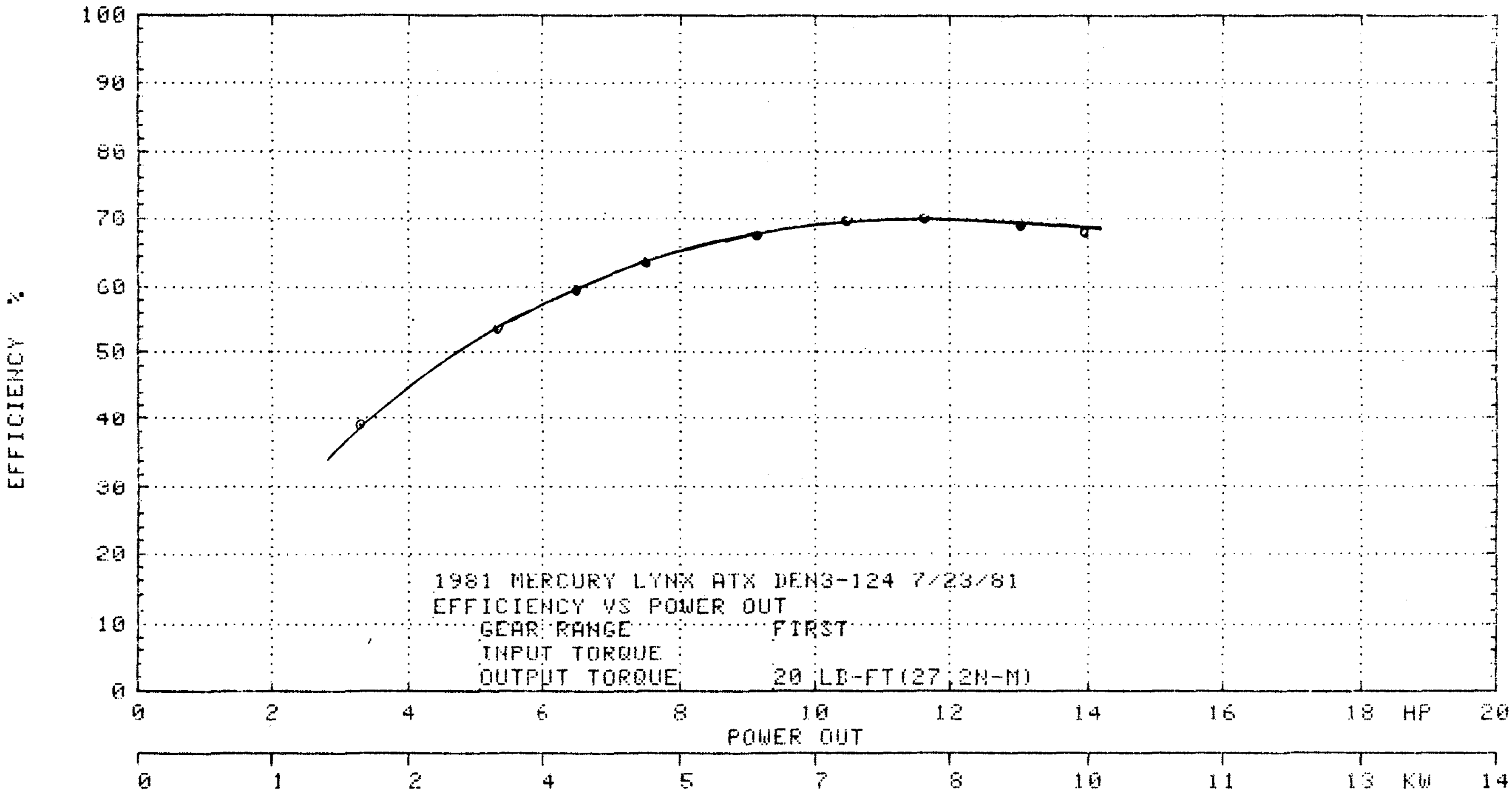

1981 MERCURY LYNX ATX DEN3-124 7/23/81
TORQUE RATIO VS OUTPUT SPEED
GEAR RANGE FIRST
INPUT TORQUE
OUTPUT TORQUE 20 LB-FT(27.2N-M)
TORQUE RATIO To/Ti
OUTPUT SPEED RPM
.10
.09
.08
.07
.06
.05
.04
.03
.02
.01
0.00
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000


678 N-M 610 542 475 407 339 271 203 136 68 0
500 LB-FT 450 400 350 300 250 200 150 100 50 0
INPUT TORQUE
0 500 1000 1500 2000 2500 3000 3500 4000 4500 5000
OUTPUT SPEED RPM
1981 MERCURY LYNX ATX DEN3-124 7/23/81
INPUT TORQUE VS OUTPUT SPEED
GEAR RANGE FIRST
INPUT TORQUE
OUTPUT TORQUE 20 LB-FT(27.2N-M)

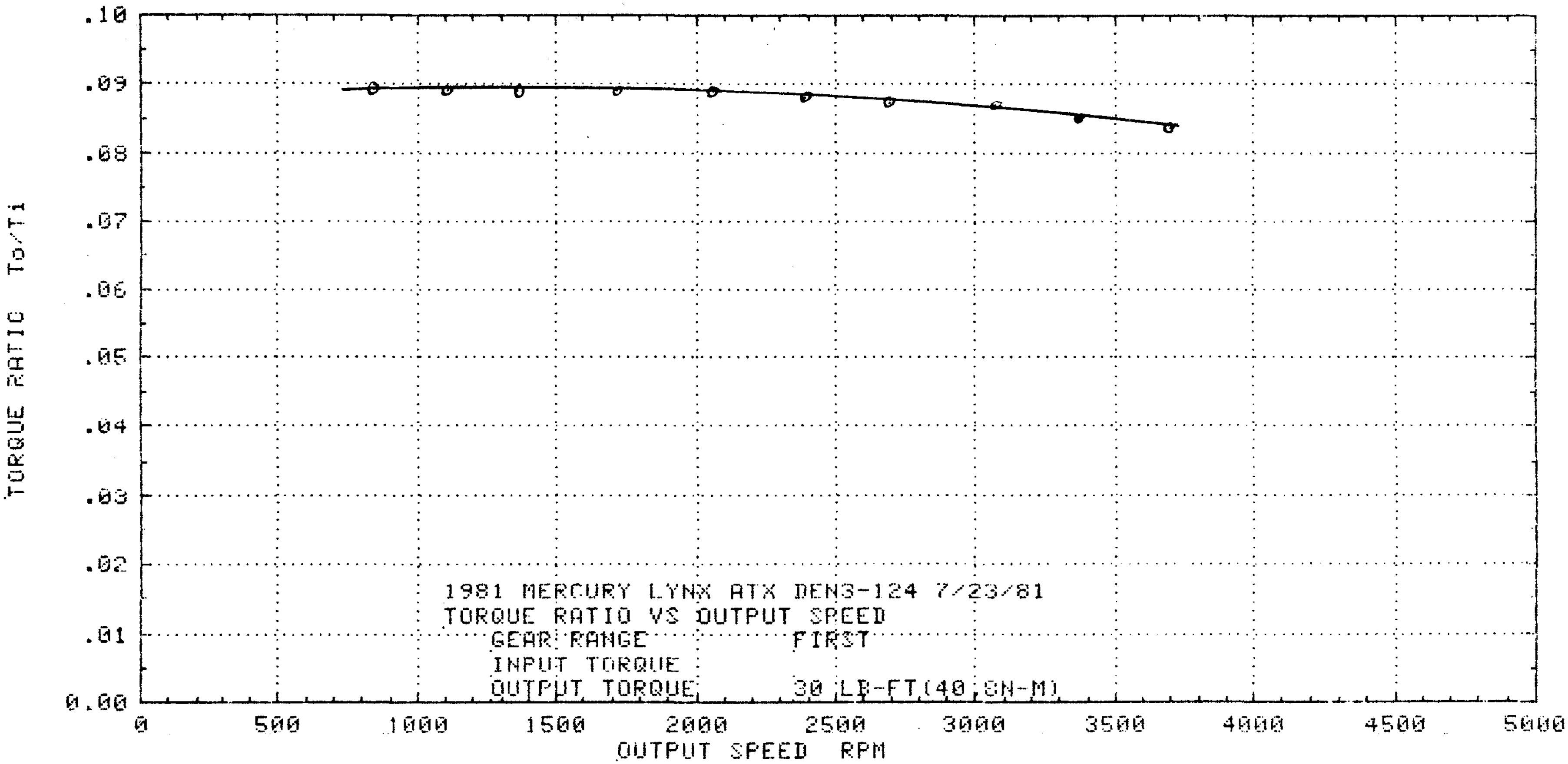


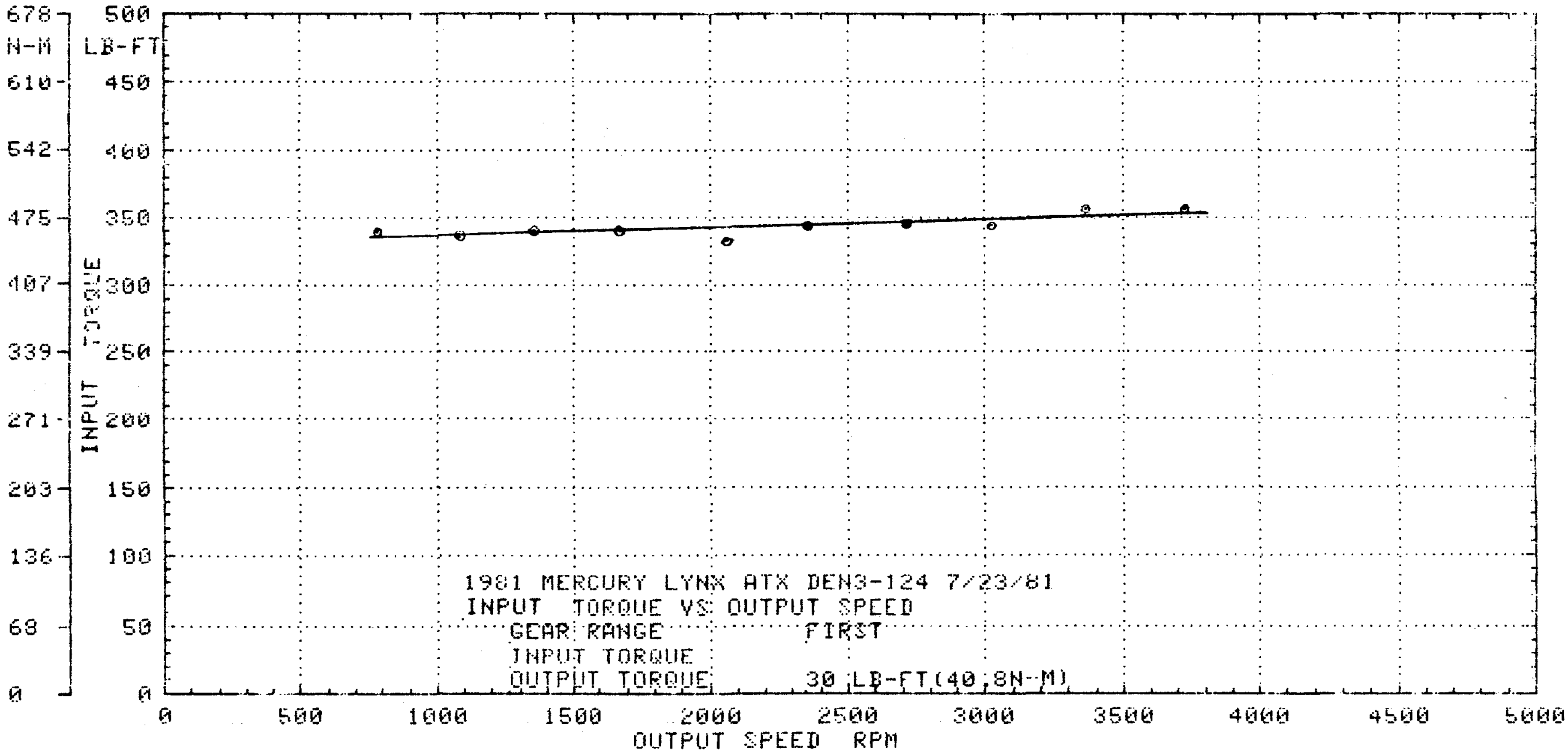
1981 MERCURY LYNX ATX DEN3-124 7/23/81
INPUT SPEED VS OUTPUT SPEED
GEAR RANGE FIRST
INPUT TORQUE
OUTPUT TORQUE 20 LB-FT(27.2N-M)
INPUT SPEED RPM
OUTPUT SPEED RPM
0
50
100
150
200
250
300
350
400
450
500
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000

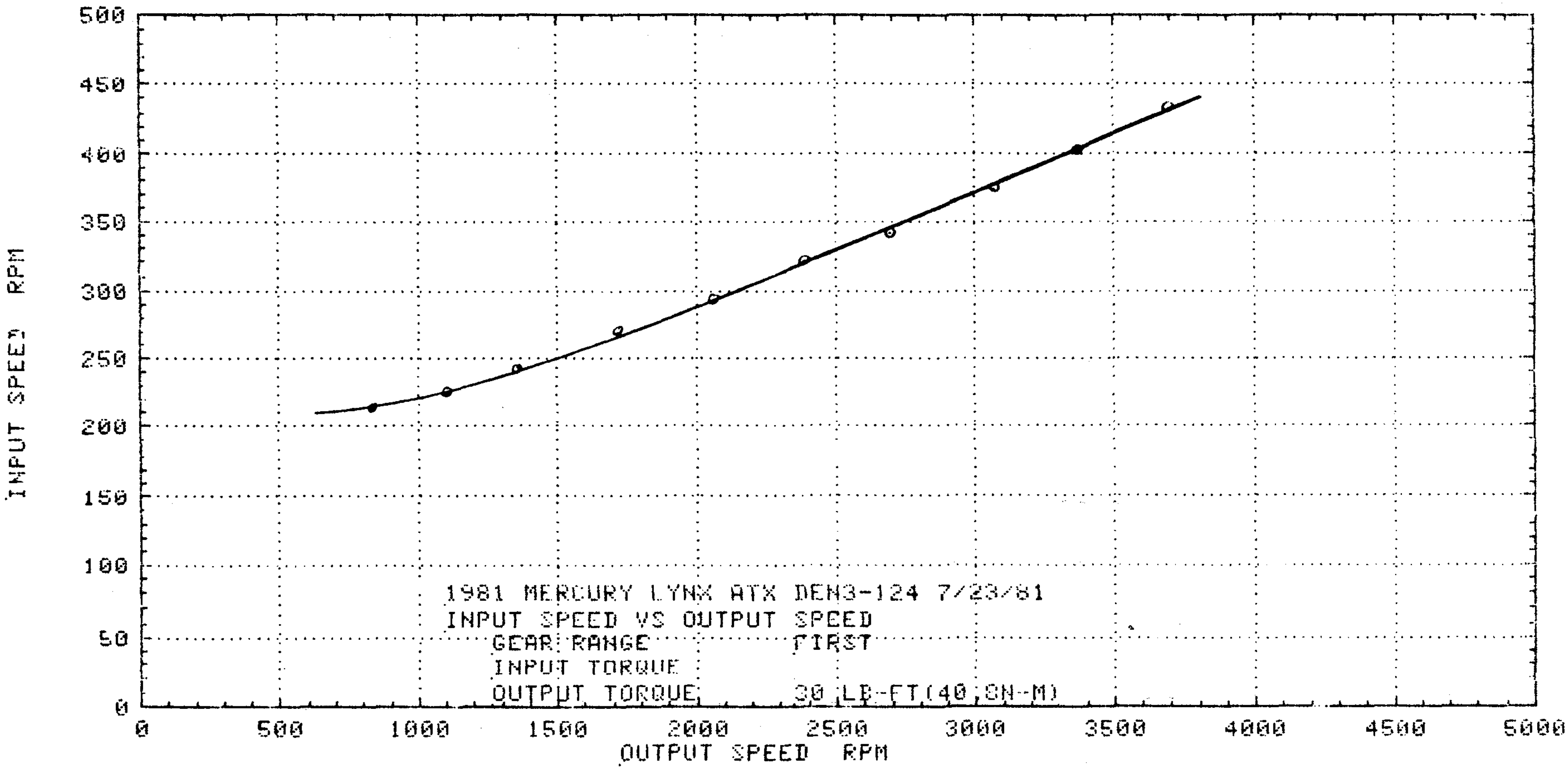

1981 MERCURY LYNX ATX DEN3-124 7/23/81
EFFICIENCY VS OUTPUT SPEED
GEAR RANGE FIRST
INPUT TORQUE
OUTPUT TORQUE 20 LB-FT(27.2N-M)
EFFICIENCY %
OUTPUT SPEED RPM
0
10
20
30
40
50
60
70
80
90
100
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000

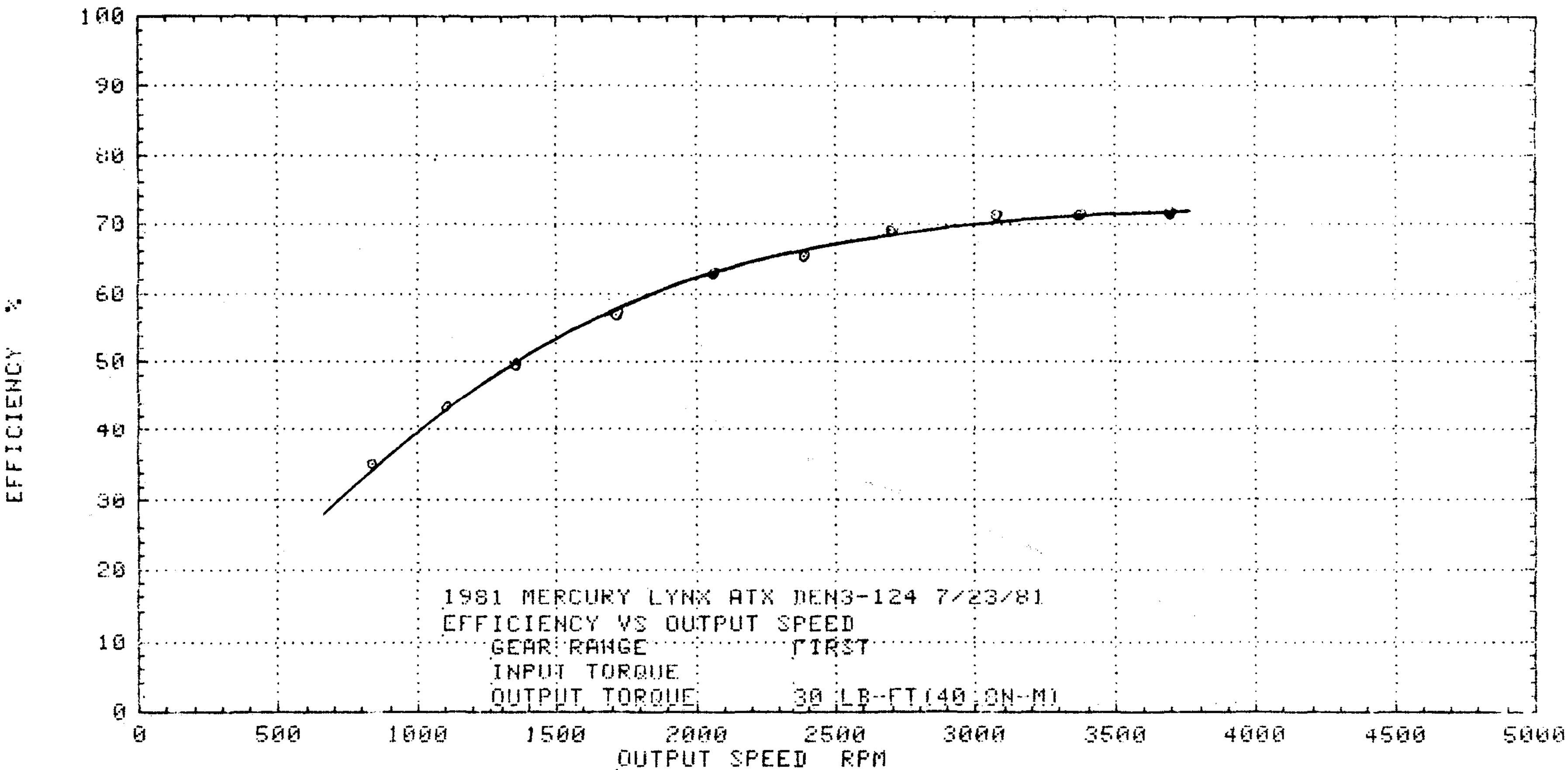


100
90
80
70
60
50
40
30
20
10
0
EFFICIENCY %
1981 MERCURY LYNX ATX DEN3-124 7/23/81
EFFICIENCY VS POWER OUT
GEAR RANGE FIRST
INPUT TORQUE
OUTPUT TORQUE 20 LB-FT(27.2N-M)
0 2 4 6 8 10 12 14 16 18 HP 20
POWER OUT
0 1 2 4 5 7 8 10 11 13 KW 14

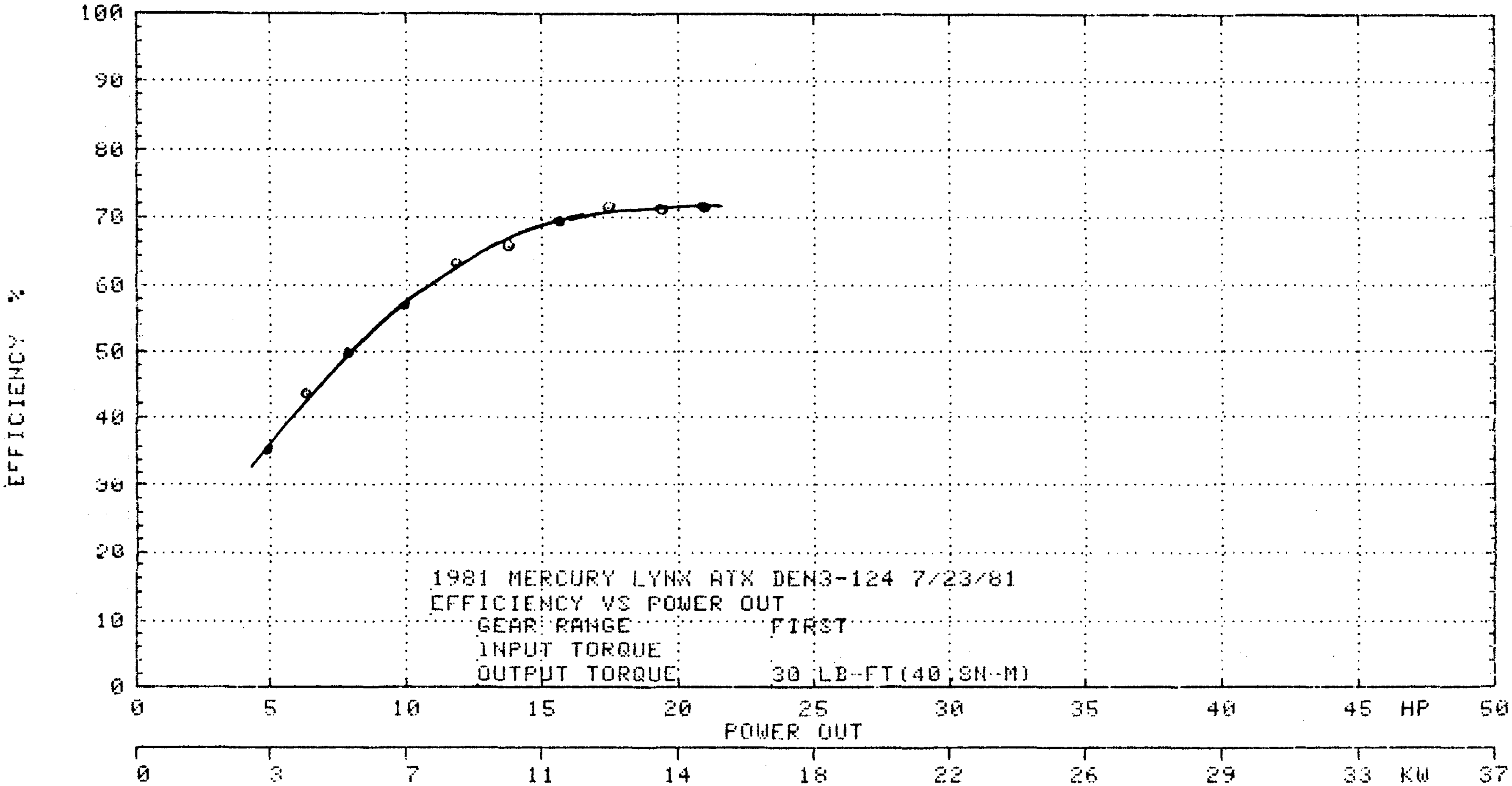

1981 MERCURY LYNX ATX DEN3-124 7/23/81
TORQUE RATIO VS OUTPUT SPEED
GEAR RANGE FIRST
INPUT TORQUE
OUTPUT TORQUE 30 LB-FT(40.8N-M)
TORQUE RATIO To/Ti
OUTPUT SPEED RPM
.10
.09
.08
.07
.06
.05
.04
.03
.02
.01
0.00
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000

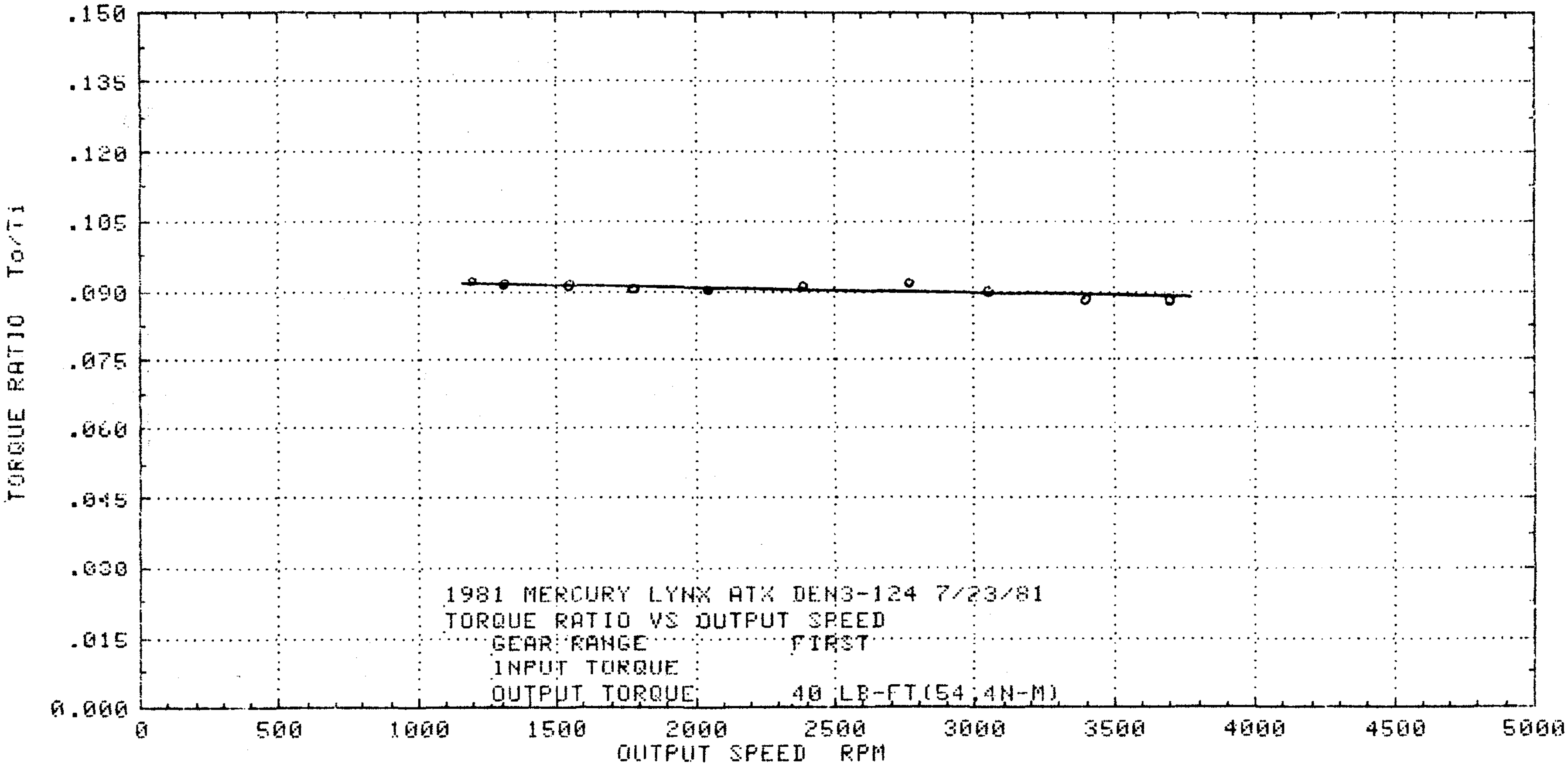

678
N-M
610
542
475
407
339
271
203
136
68
0
500
LB-FT
450
400
350
300
250
200
150
100
50
0
INPUT TORQUE
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
OUTPUT SPEED RPM
1981 MERCURY LYNX ATX DEN3-124 7/23/81
INPUT TORQUE VS OUTPUT SPEED
GEAR RANGE FIRST
INPUT TORQUE
OUTPUT TORQUE 30 LB-FT(40.8N-M)

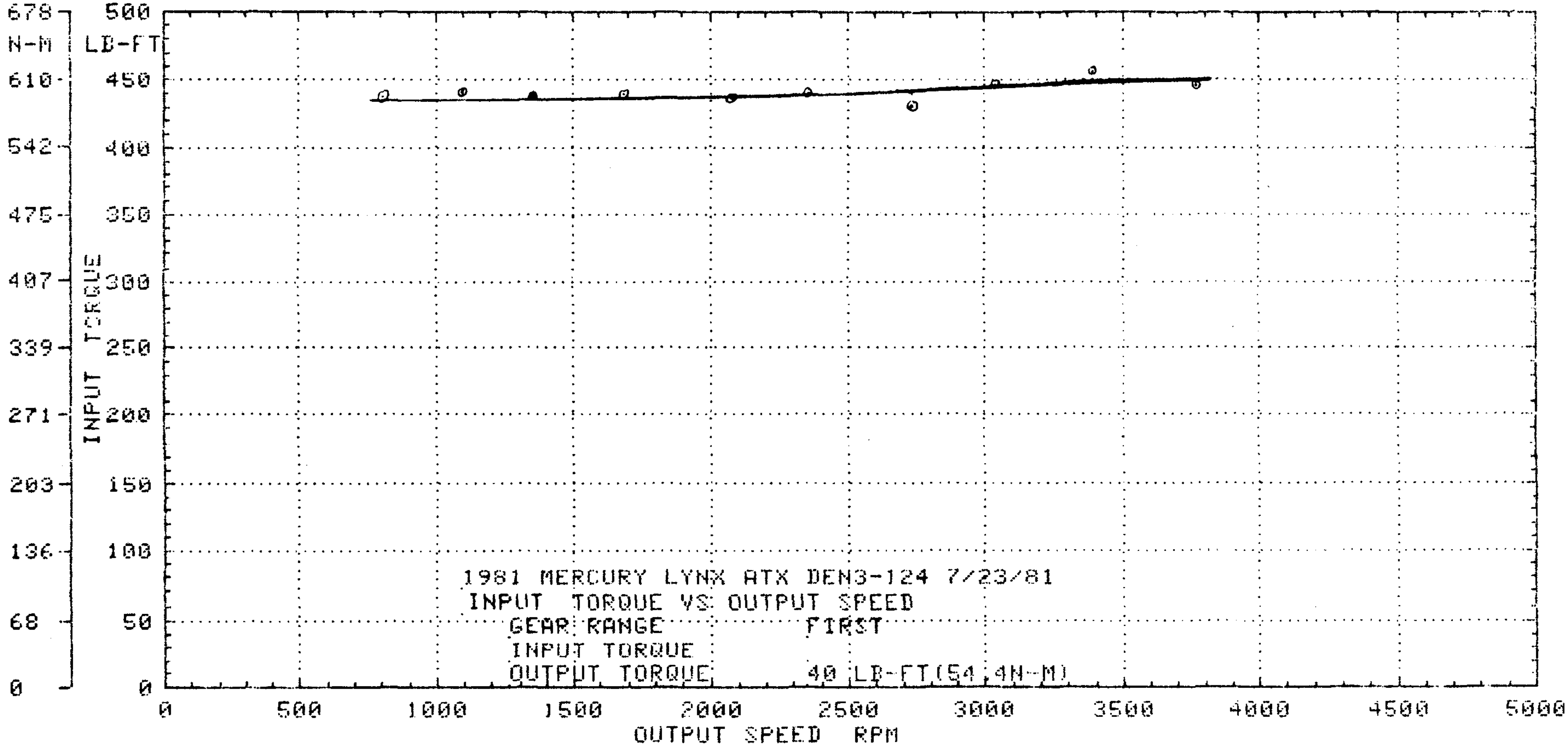

1981 MERCURY LYNX ATX DEN3-124 7/23/81
INPUT SPEED VS OUTPUT SPEED
GEAR RANGE FIRST
INPUT TORQUE
OUTPUT TORQUE 30 LB-FT(40.8N-M)
INPUT SPEED RPM
OUTPUT SPEED RPM
0
50
100
150
200
250
300
350
400
450
500
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000

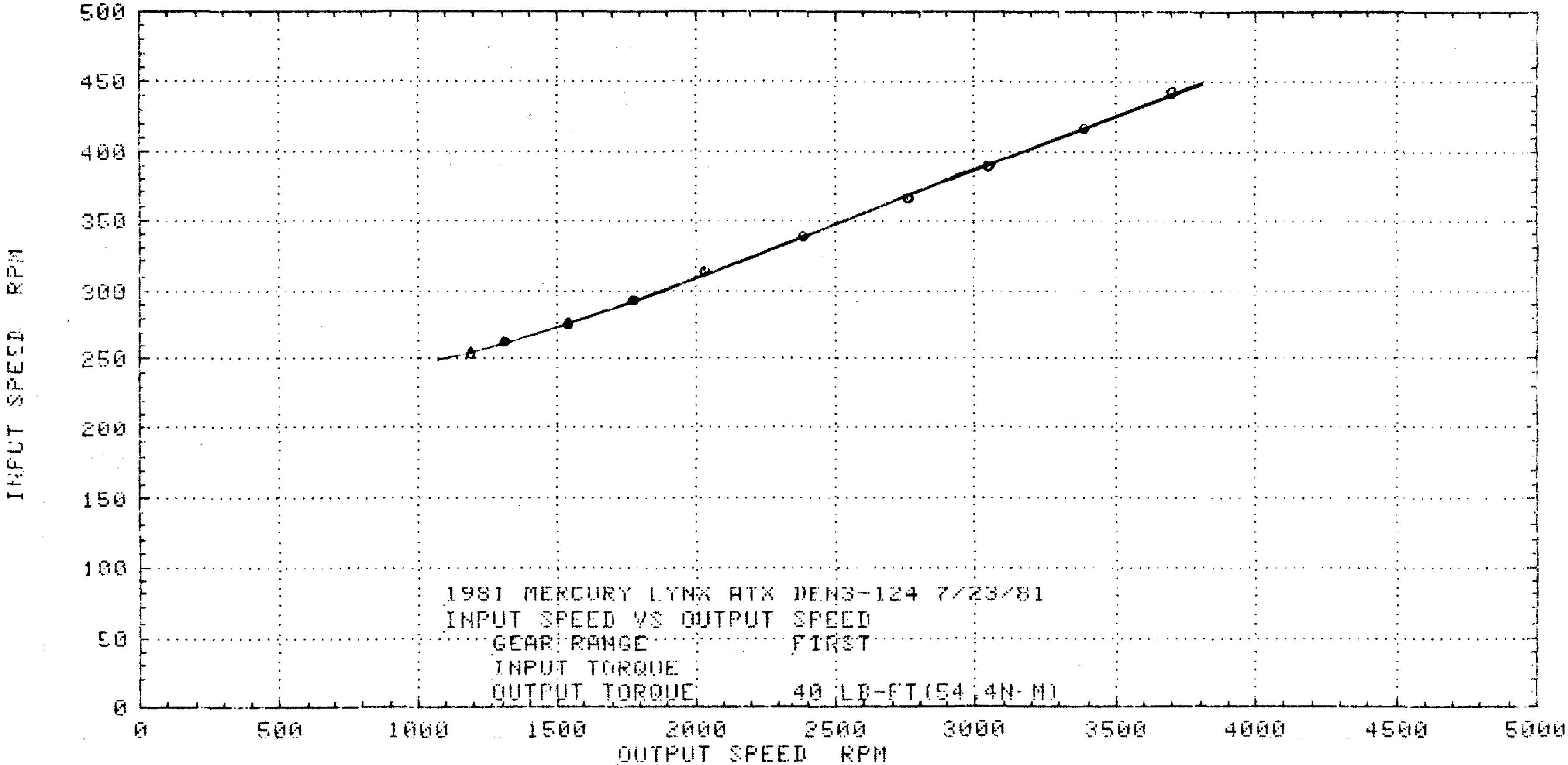


EFFICIENCY %
100
90
80
70
60
50
40
30
20
10
0
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
OUTPUT SPEED RPM
1981 MERCURY LYNX ATX DEN3-124 7/23/81
EFFICIENCY VS OUTPUT SPEED
GEAR RANGE FIRST
INPUT TORQUE
OUTPUT TORQUE 30 LB-FT(40.0N-M)

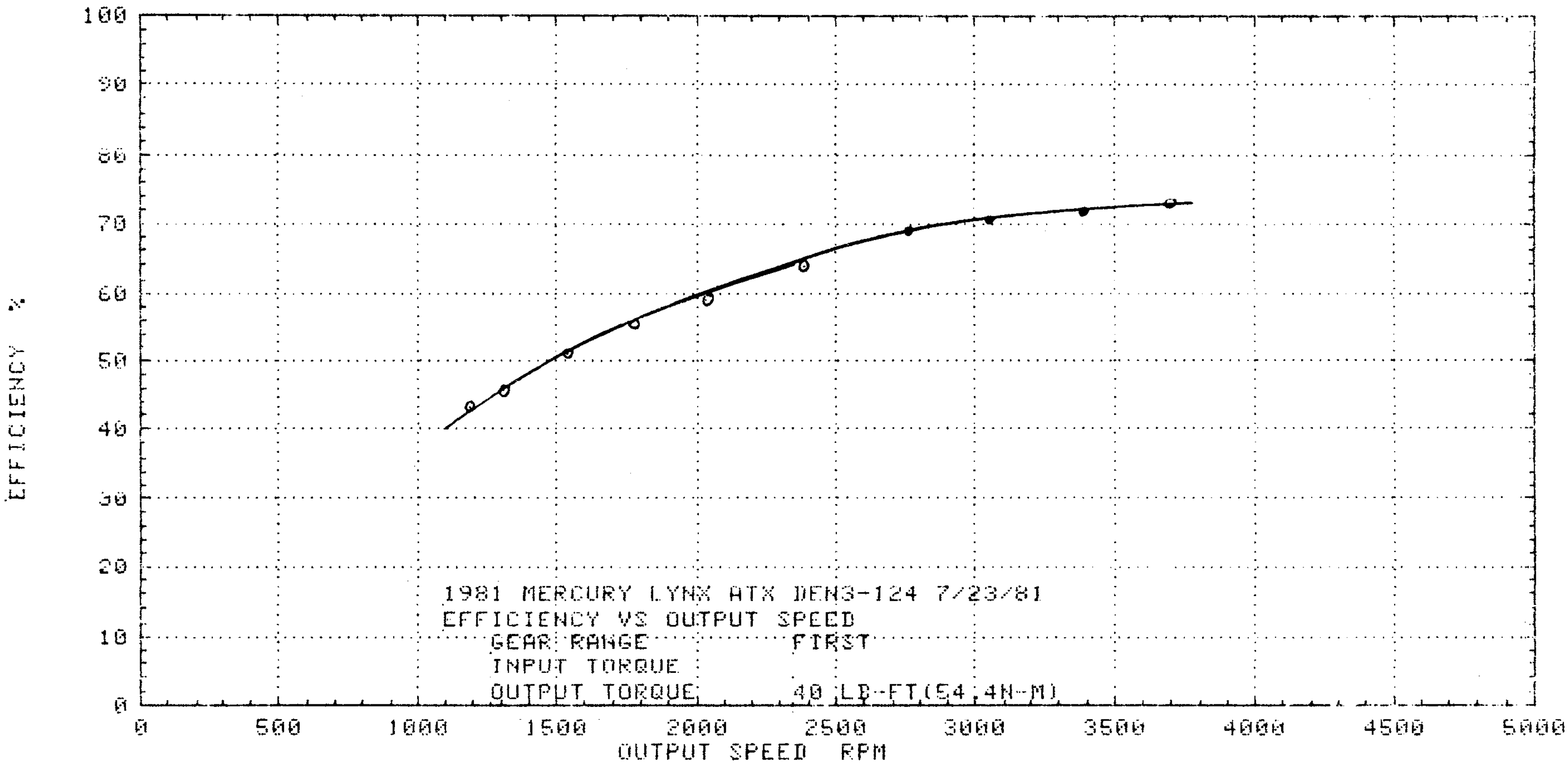

100
90
80
70
60
50
40
30
20
10
0
% EFFICIENCY
1981 MERCURY LYNX ATX DEN3-124 7/23/81
EFFICIENCY VS POWER OUT
GEAR RANGE FIRST
INPUT TORQUE
OUTPUT TORQUE 30 LB-FT(40.SN-M)
0 5 10 15 20 25 30 35 40 45 HP 50
POWER OUT
0 3 7 11 14 18 22 26 29 33 KW 37

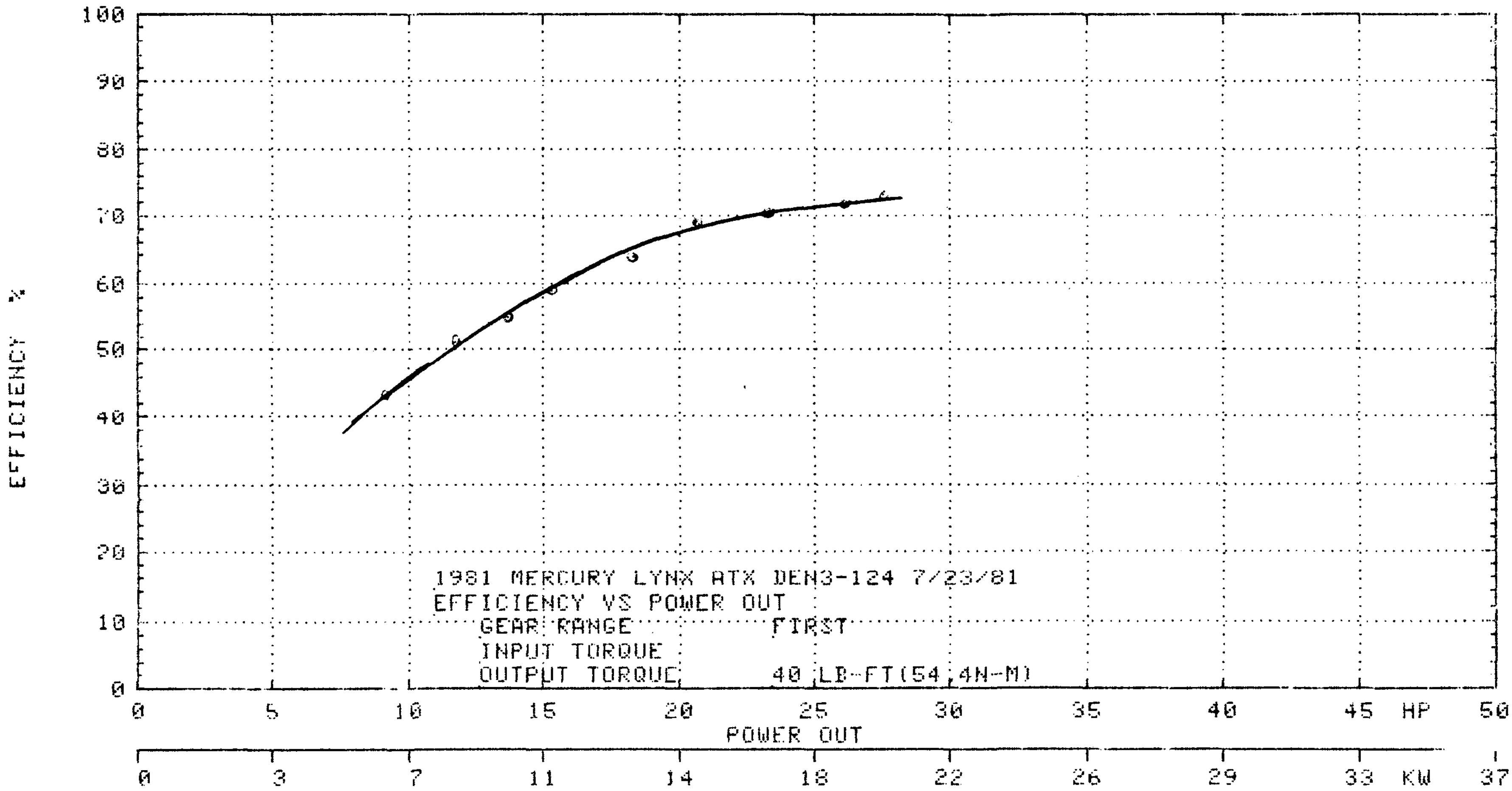

.150
.135
.120
.105
.090
.075
.060
.045
.030
.015
0.000
TORQUE RATIO To/Ti
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
OUTPUT SPEED RPM
1981 MERCURY LYNX ATX DEN3-124 7/23/81
TORQUE RATIO VS OUTPUT SPEED
GEAR RANGE FIRST
INPUT TORQUE
OUTPUT TORQUE 40 LB-FT(54.4N-M)

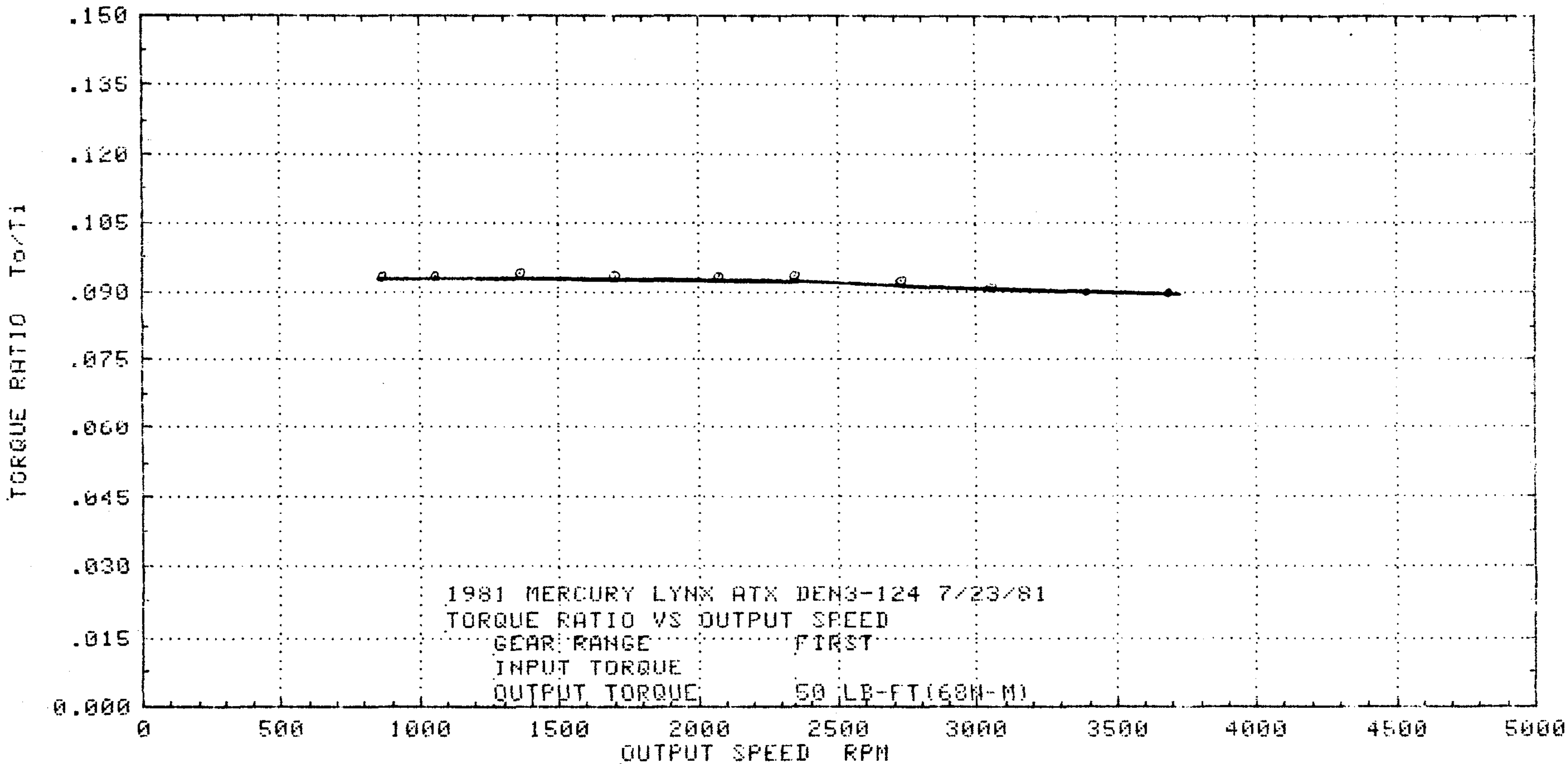

1981 MERCURY LYNX ATX DEN3-124 7/23/81
INPUT TORQUE VS OUTPUT SPEED
GEAR RANGE FIRST
INPUT TORQUE
OUTPUT TORQUE 40 LB-FT(54.4N-M)
INPUT TORQUE
N-M
LB-FT
678
610
542
475
407
339
271
203
136
68
0
500
450
400
350
300
250
200
150
100
50
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
OUTPUT SPEED RPM



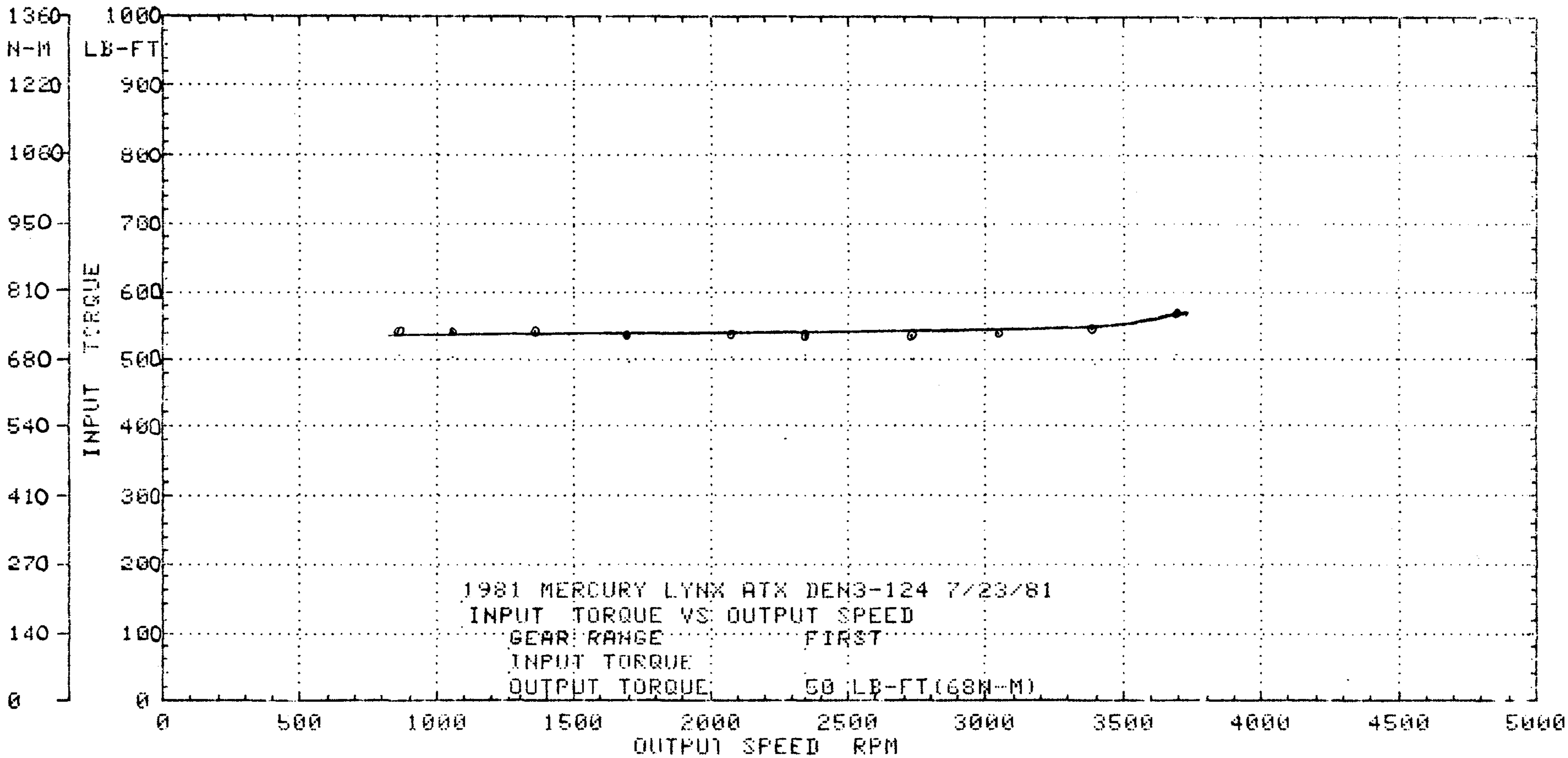
INPUT SPEED RPM
500
450
400
350
300
250
200
150
100
50
0
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
OUTPUT SPEED RPM
1981 MERCURY LYNX ATX DEN3-124 7/23/81
INPUT SPEED VS OUTPUT SPEED
GEAR RANGE FIRST
INPUT TORQUE
OUTPUT TORQUE 40 LB-FT(54.4N-M)

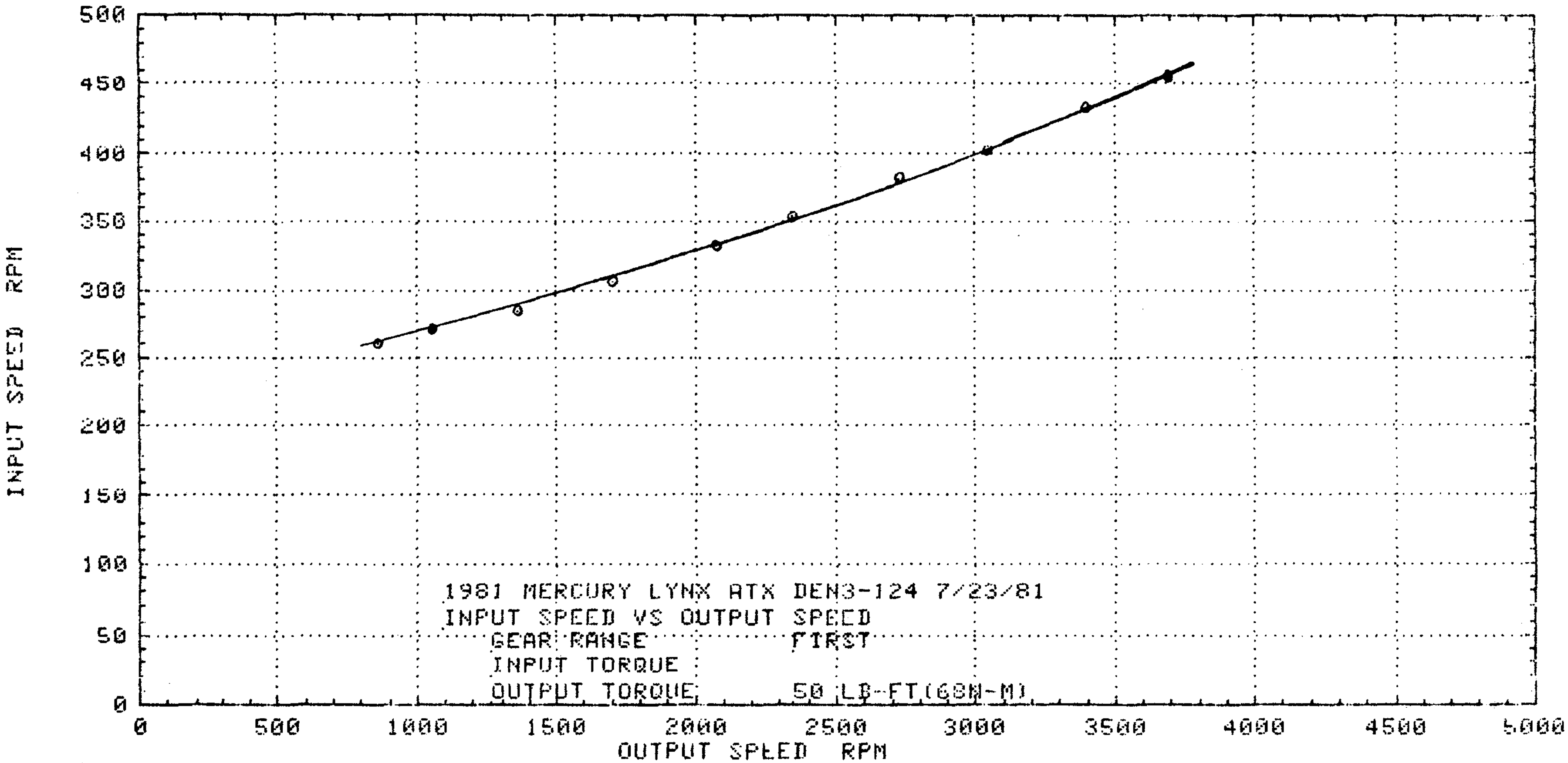

1981 MERCURY LYNX ATX DEN3-124 7/23/81
EFFICIENCY VS OUTPUT SPEED
GEAR RANGE FIRST
INPUT TORQUE
OUTPUT TORQUE 40 LB-FT(54.4N-M)
% EFFICIENCY
100
90
80
70
60
50
40
30
20
10
0
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
OUTPUT SPEED RPM


1981 MERCURY LYNX ATX DEN3-124 7/23/81
EFFICIENCY VS POWER OUT
GEAR RANGE FIRST
INPUT TORQUE
OUTPUT TORQUE 40 LB-FT(54.4N-M)
EFFICIENCY %
100
90
80
70
60
50
40
30
20
10
0
POWER OUT
0
5
10
15
20
25
30
35
40
45
HP
50
0
3
7
11
14
18
22
26
29
33
KW
37

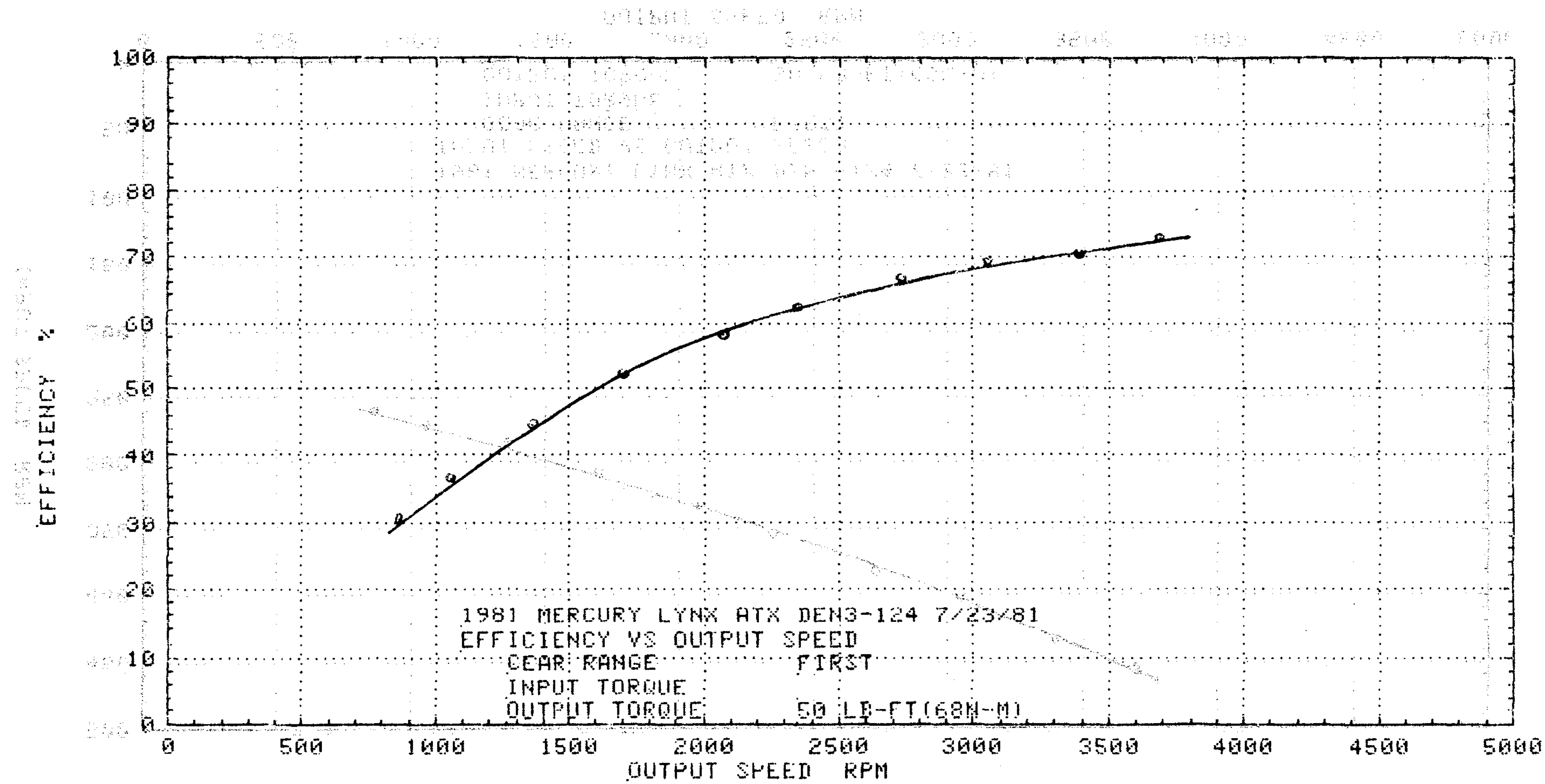


.150
.135
.120
.105
.090
.075
.060
.045
.030
.015
0.000
TORQUE RATIO To/Ti
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
OUTPUT SPEED RPM
1981 MERCURY LYNX ATX DEN3-124 7/23/81
TORQUE RATIO VS OUTPUT SPEED
GEAR RANGE FIRST
INPUT TORQUE
OUTPUT TORQUE 50 LB-FT(68N-M)

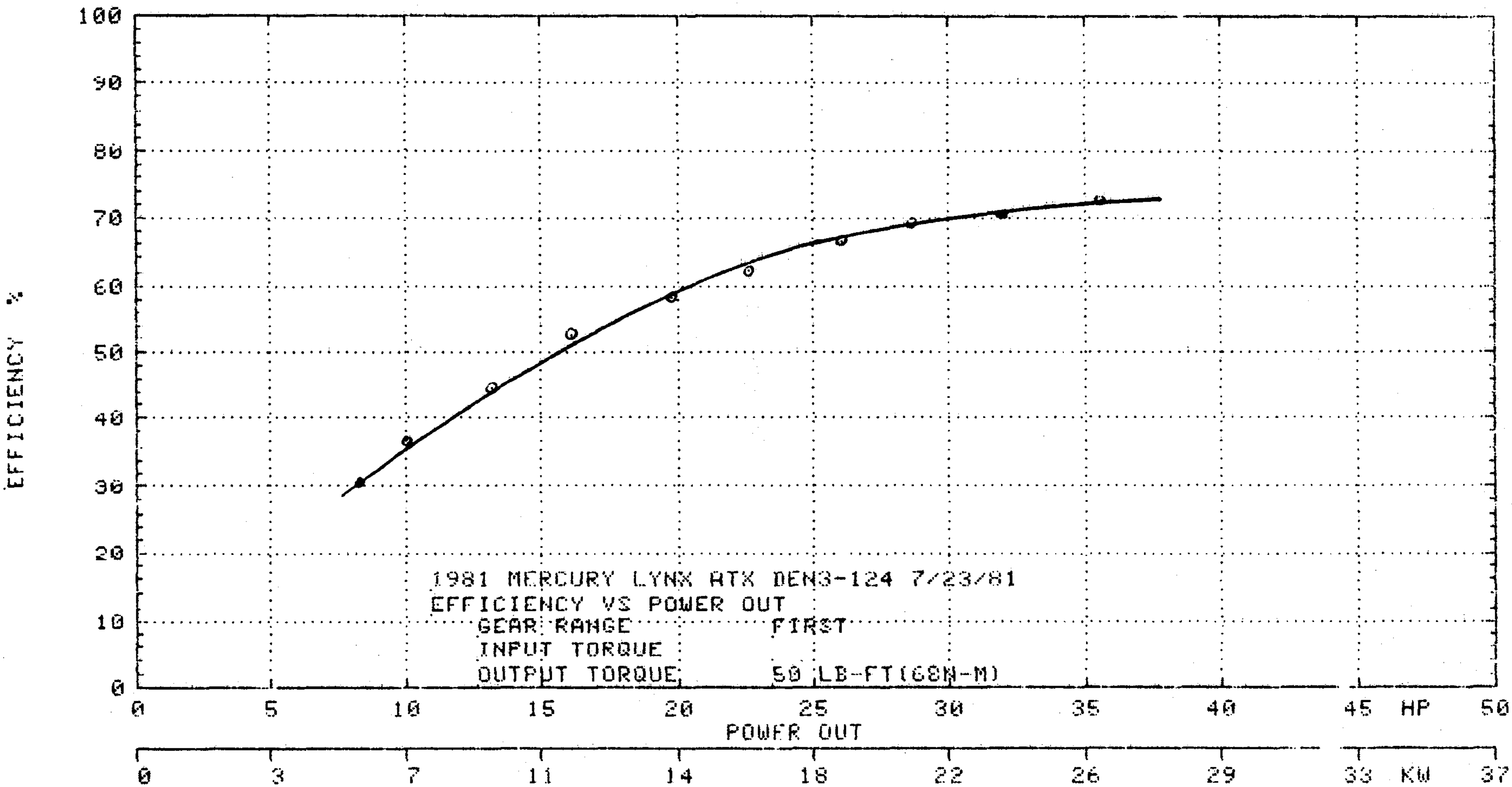

1360 N-M
1000 LB-FT
1220
900
1080
800
950
700
810
600
680
500
540
400
410
300
270
200
140
100
0
0
INPUT TORQUE
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
OUTPUT SPEED RPM
1981 MERCURY LYNX ATX DEN3-124 7/23/81
INPUT TORQUE VS OUTPUT SPEED
GEAR RANGE FIRST
INPUT TORQUE
OUTPUT TORQUE 50 LB-FT(68N-M)



1981 MERCURY LYNX ATX DEN3-124 7/23/81
INPUT SPEED VS OUTPUT SPEED
GEAR RANGE FIRST
INPUT TORQUE
OUTPUT TORQUE 50 LB-FT(68N-M)
INPUT SPEED RPM
OUTPUT SPEED RPM
0
50
100
150
200
250
300
350
400
450
500
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000



1981 MERCURY LYNX ATX DEN3-124 7/23/81
EFFICIENCY VS OUTPUT SPEED
GEAR RANGE FIRST
INPUT TORQUE
OUTPUT TORQUE 50 LB-FT(68N-M)
EFFICIENCY %
OUTPUT SPEED RPM
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
10
20
30
40
50
60
70
80
90
100


100
90
80
70
60
50
40
30
20
10
0
EFFICIENCY %
1981 MERCURY LYNX ATX DEN3-124 7/23/81
EFFICIENCY VS POWER OUT
GEAR RANGE FIRST
INPUT TORQUE
OUTPUT TORQUE 50 LB-FT(68N-M)
0 5 10 15 20 25 30 35 40 45 HP 50
POWER OUT
0 3 7 11 14 18 22 26 29 33 KW 37

COAST PERFORMANCE

2nd Gear

Graphs Contained in This Section

Torque Ratio -vs- Output Speed

Output Torque -vs- Output Speed

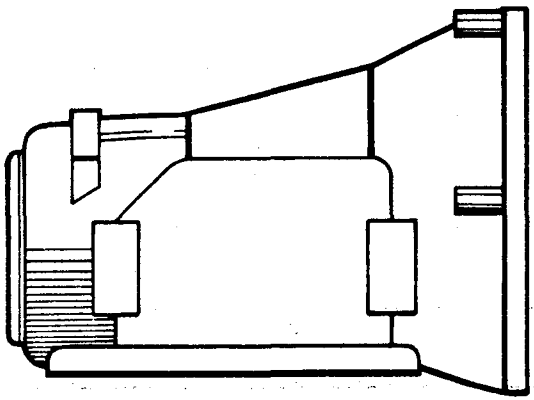
Input Speed -vs- Output Speed

Efficiency -vs- Output Speed

Efficiency -vs- Power Out

Torque In

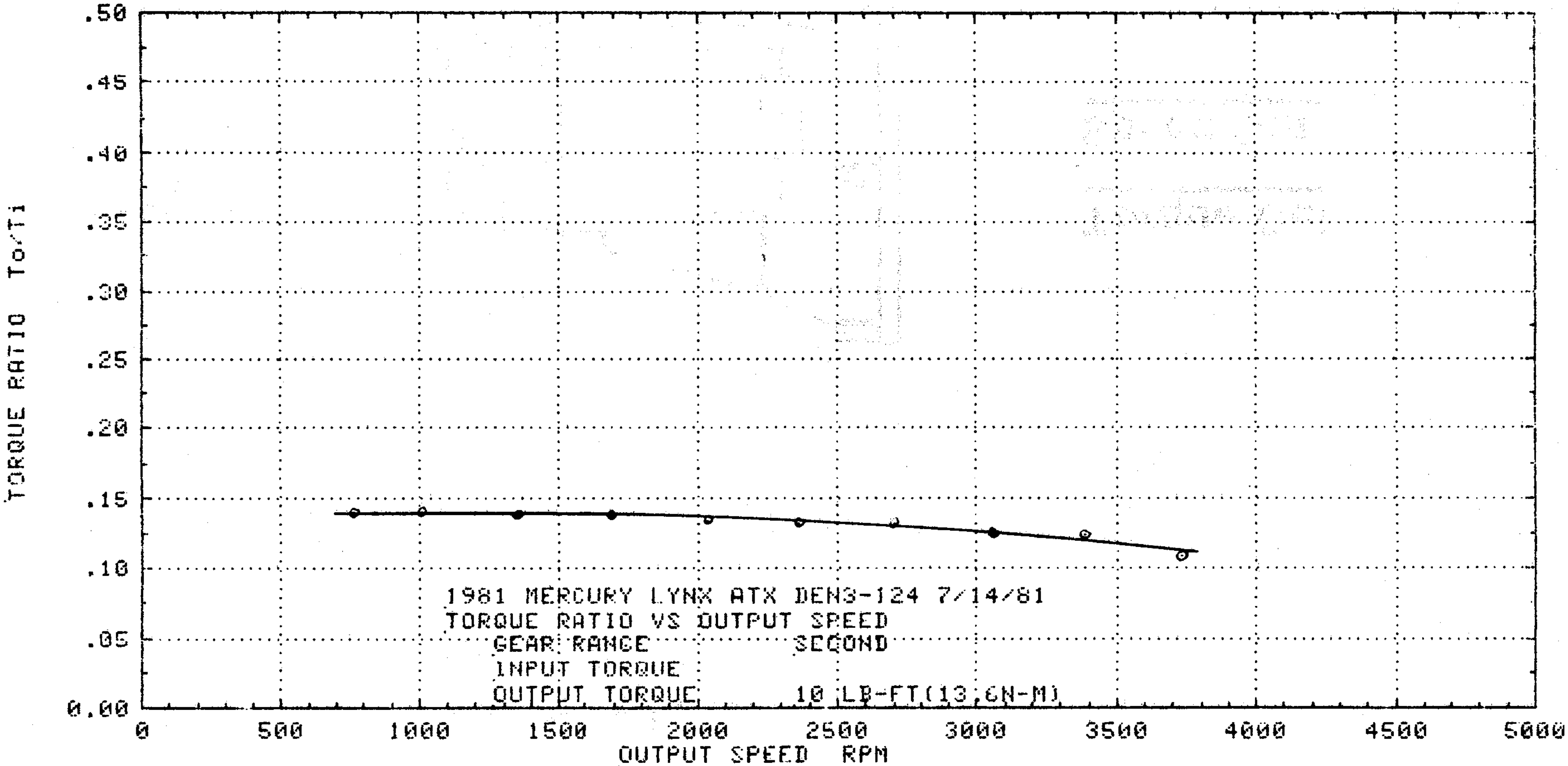
Speed In



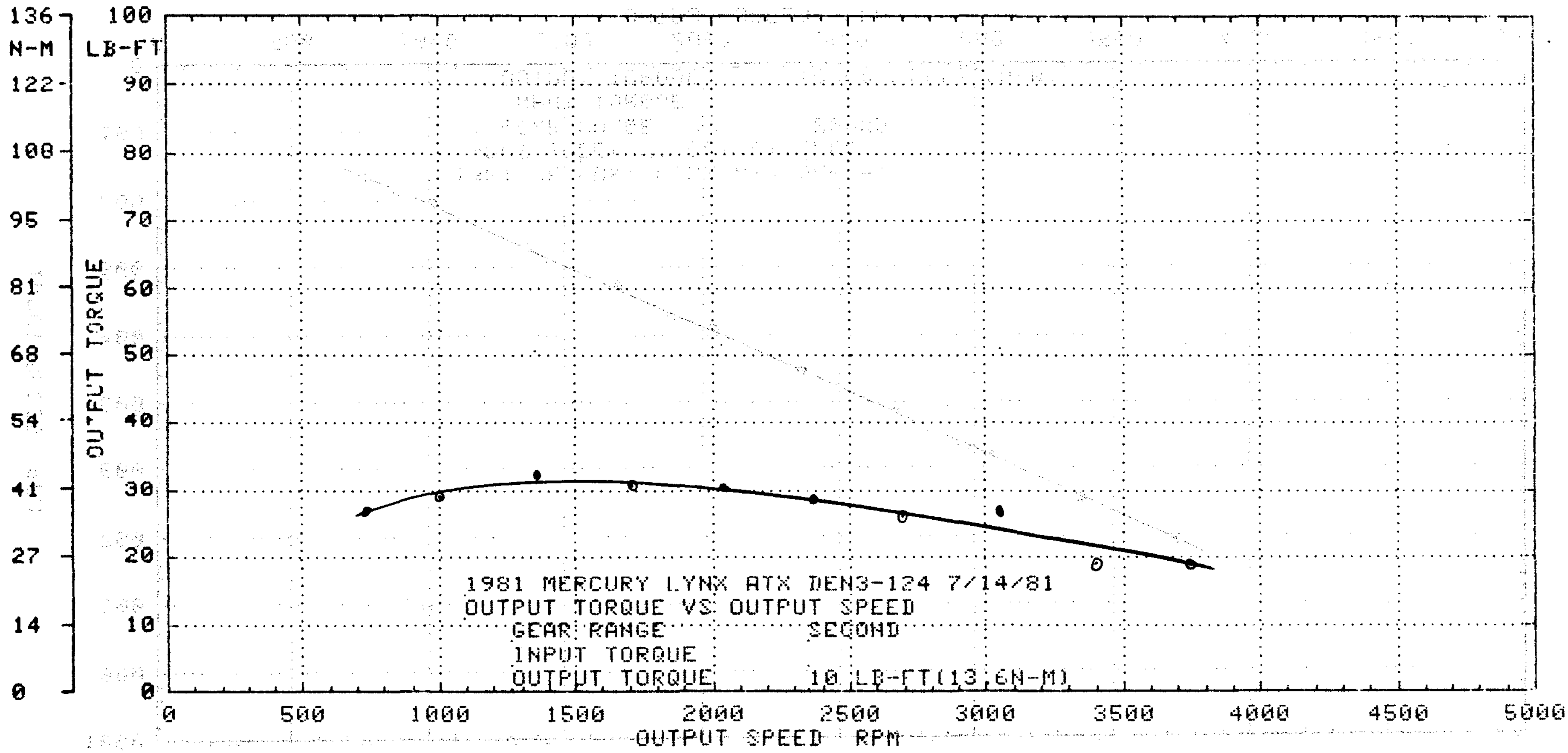
Torque Out

Speed Out

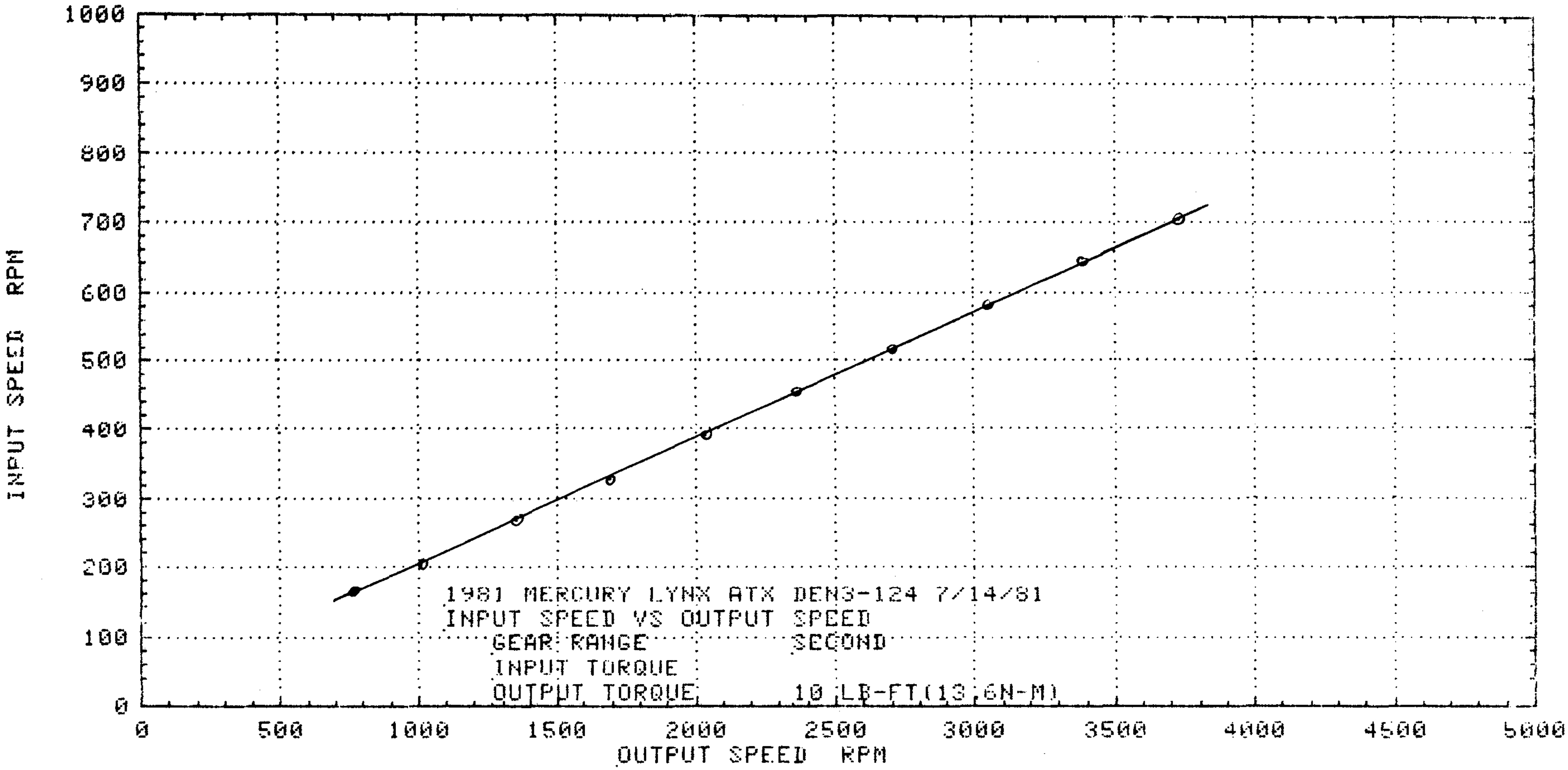
Coast Performance Tests



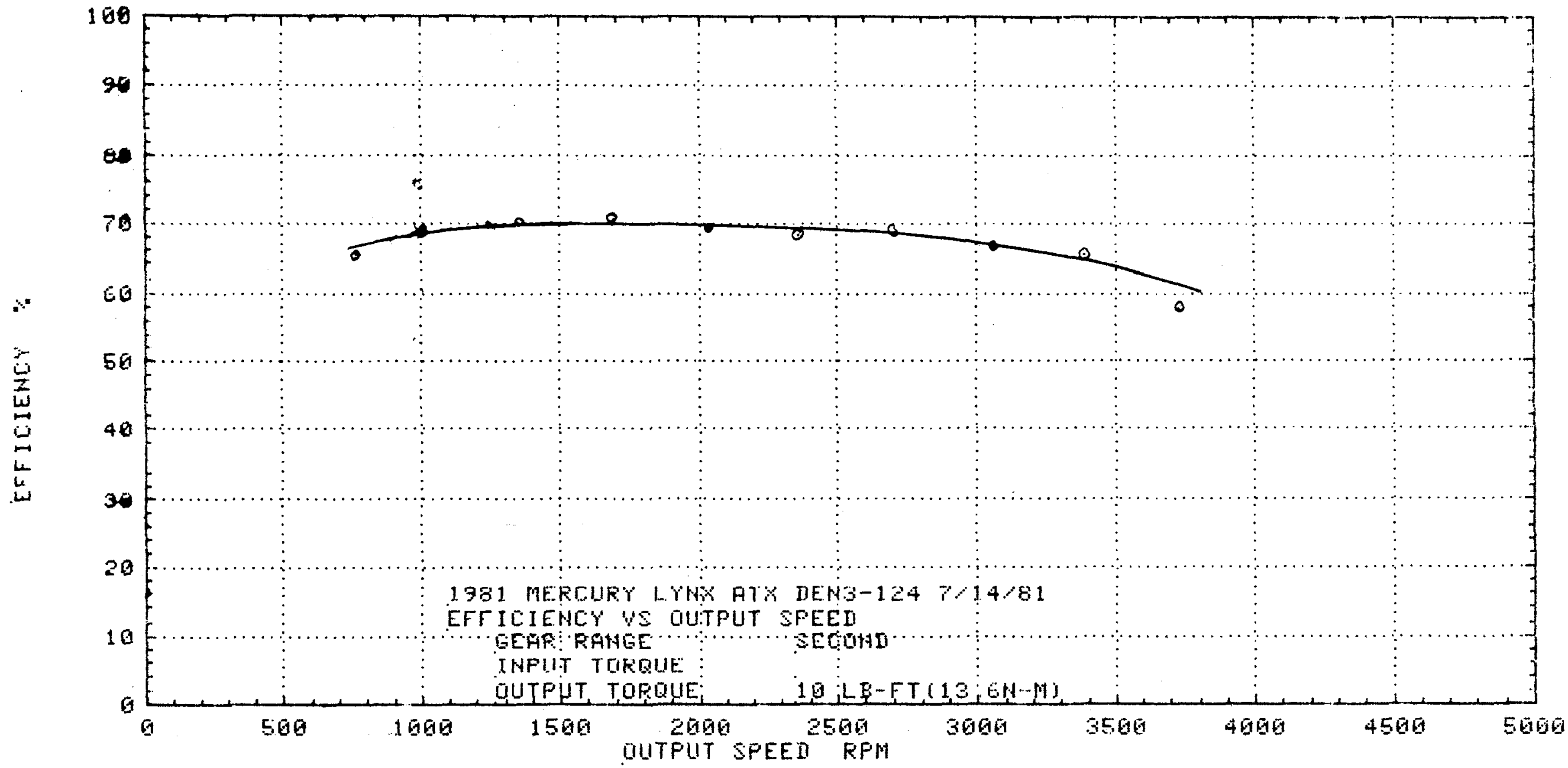
TORQUE RATIO To/Ti
.50
.45
.40
.35
.30
.25
.20
.15
.10
.05
0.00
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
OUTPUT SPEED RPM
1981 MERCURY LYNX ATX DEN3-124 7/14/81
TORQUE RATIO VS OUTPUT SPEED
GEAR RANGE SECOND
INPUT TORQUE
OUTPUT TORQUE 10 LB-FT(13.6N-M)

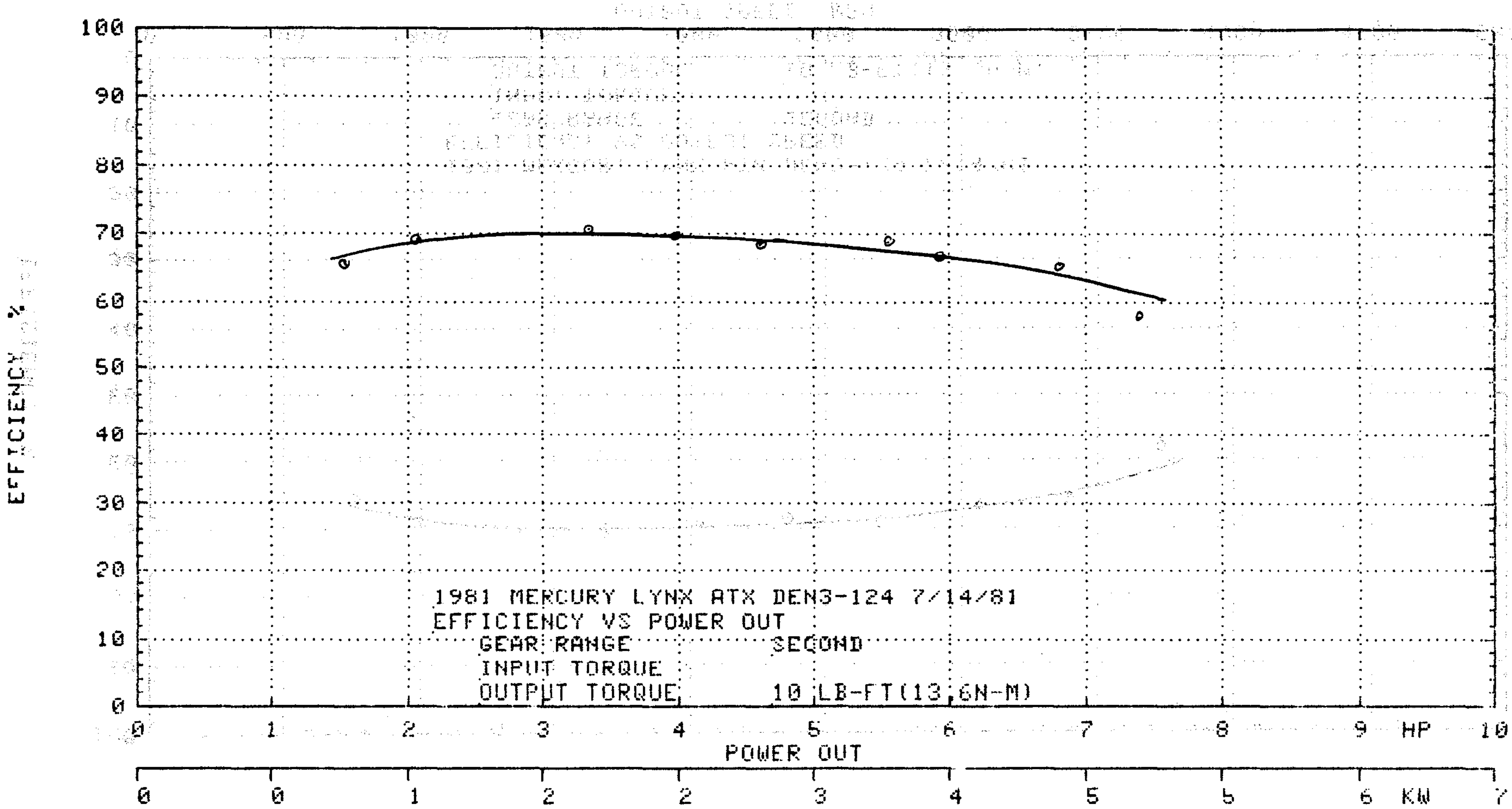


136
N-M
122
108
95
81
68
54
41
27
14
0
100
LB-FT
90
80
70
60
50
40
30
20
10
0
OUTPUT TORQUE
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
OUTPUT SPEED RPM
1981 MERCURY LYNX ATX DEN3-124 7/14/81
OUTPUT TORQUE VS OUTPUT SPEED
GEAR RANGE SECOND
INPUT TORQUE
OUTPUT TORQUE 10 LB-FT(13.6N-M)

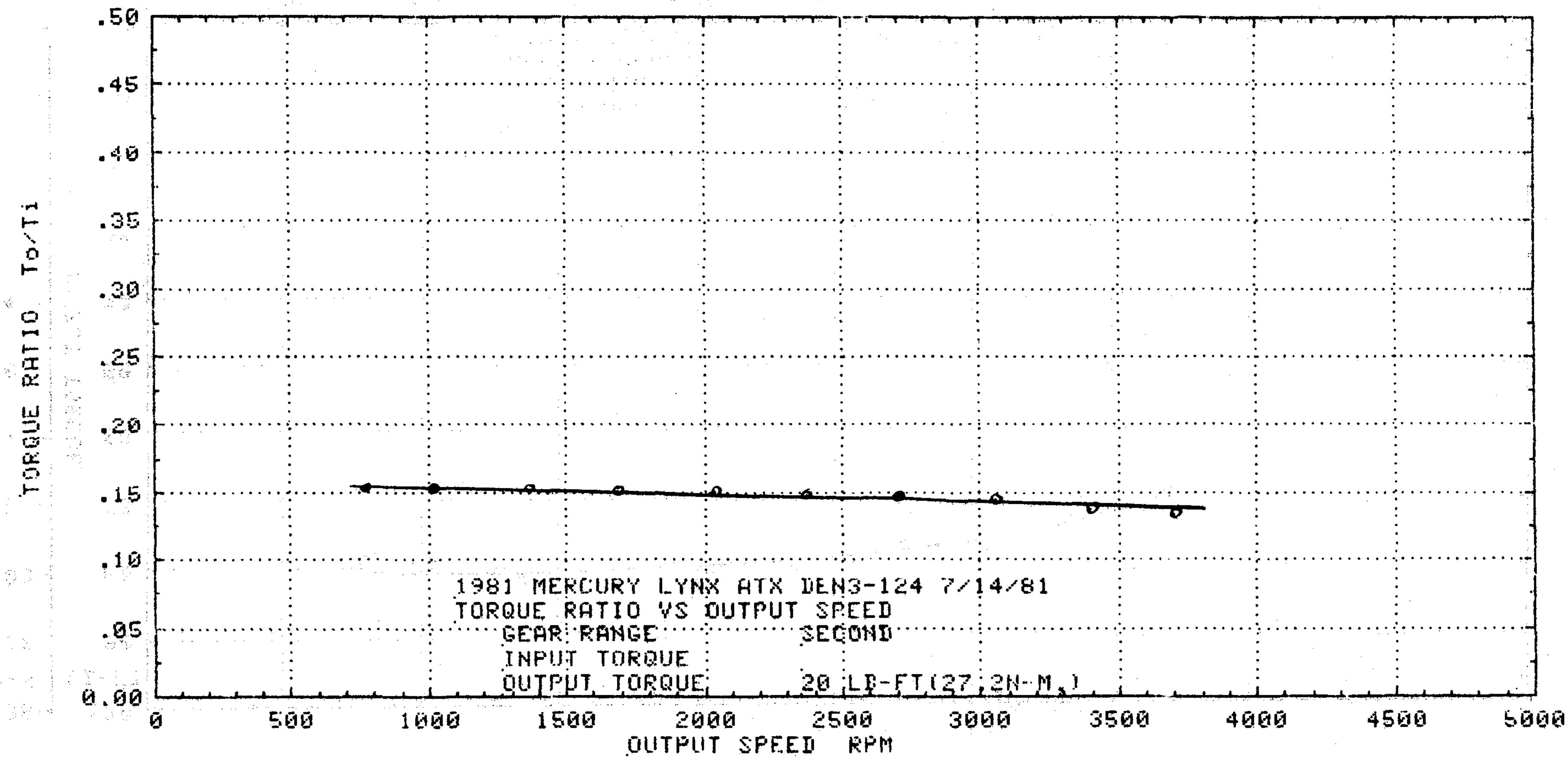


INPUT SPEED RPM
OUTPUT SPEED RPM
0
100
200
300
400
500
600
700
800
900
1000
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
1981 MERCURY LYNX ATX DEN3-124 7/14/81
INPUT SPEED VS OUTPUT SPEED
GEAR RANGE SECOND
INPUT TORQUE
OUTPUT TORQUE 10 LB-FT(13.6N-M)

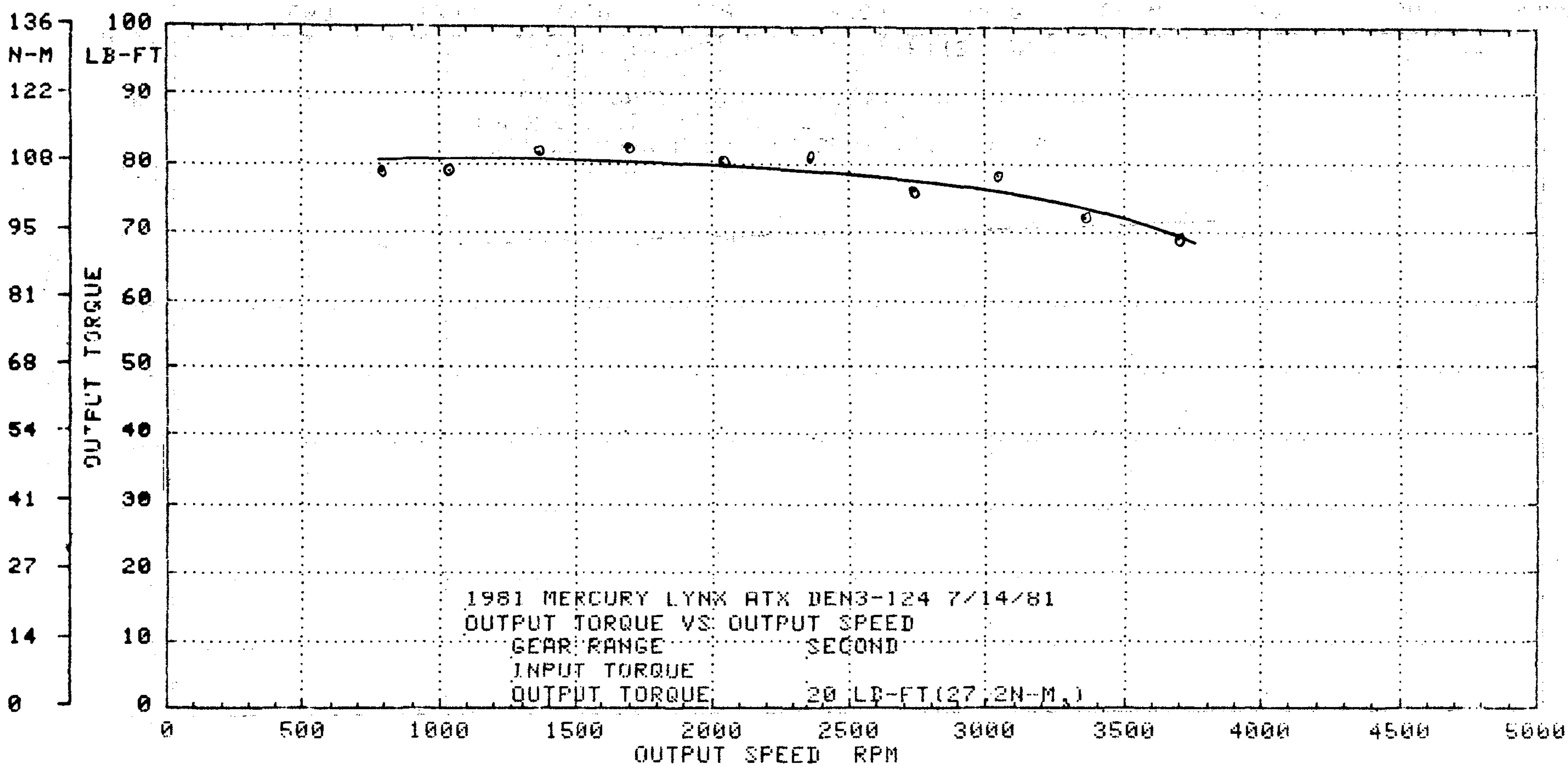

1981 MERCURY LYNX ATX DEN3-124 7/14/81
EFFICIENCY VS OUTPUT SPEED
GEAR RANGE SECOND
INPUT TORQUE
OUTPUT TORQUE 10 LB-FT(13.6N-M)
EFFICIENCY %
OUTPUT SPEED RPM
0
10
20
30
40
50
60
70
80
90
100
500
1000
1500
2000
2500
3000
3500
4000
4500
5000

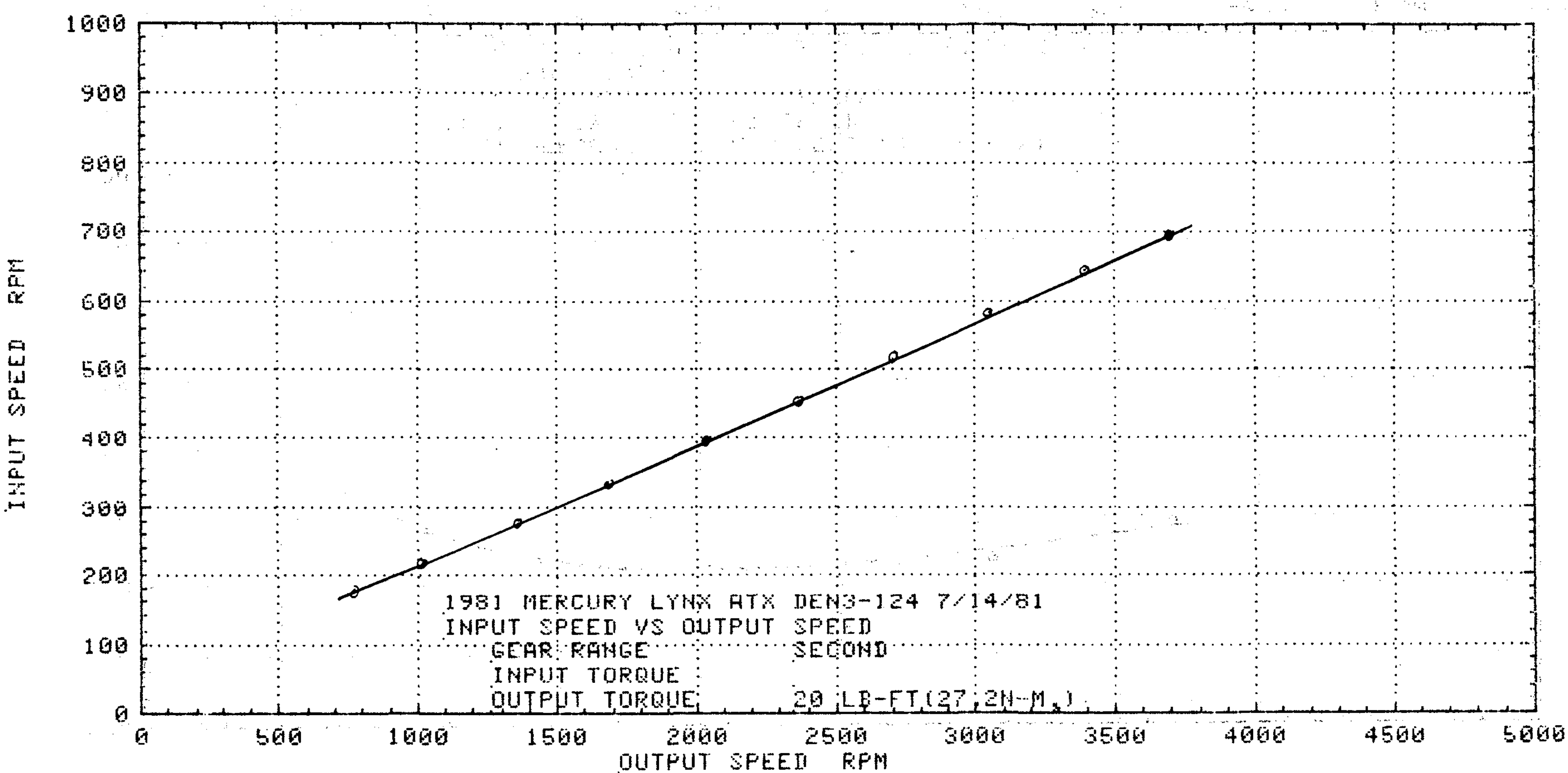


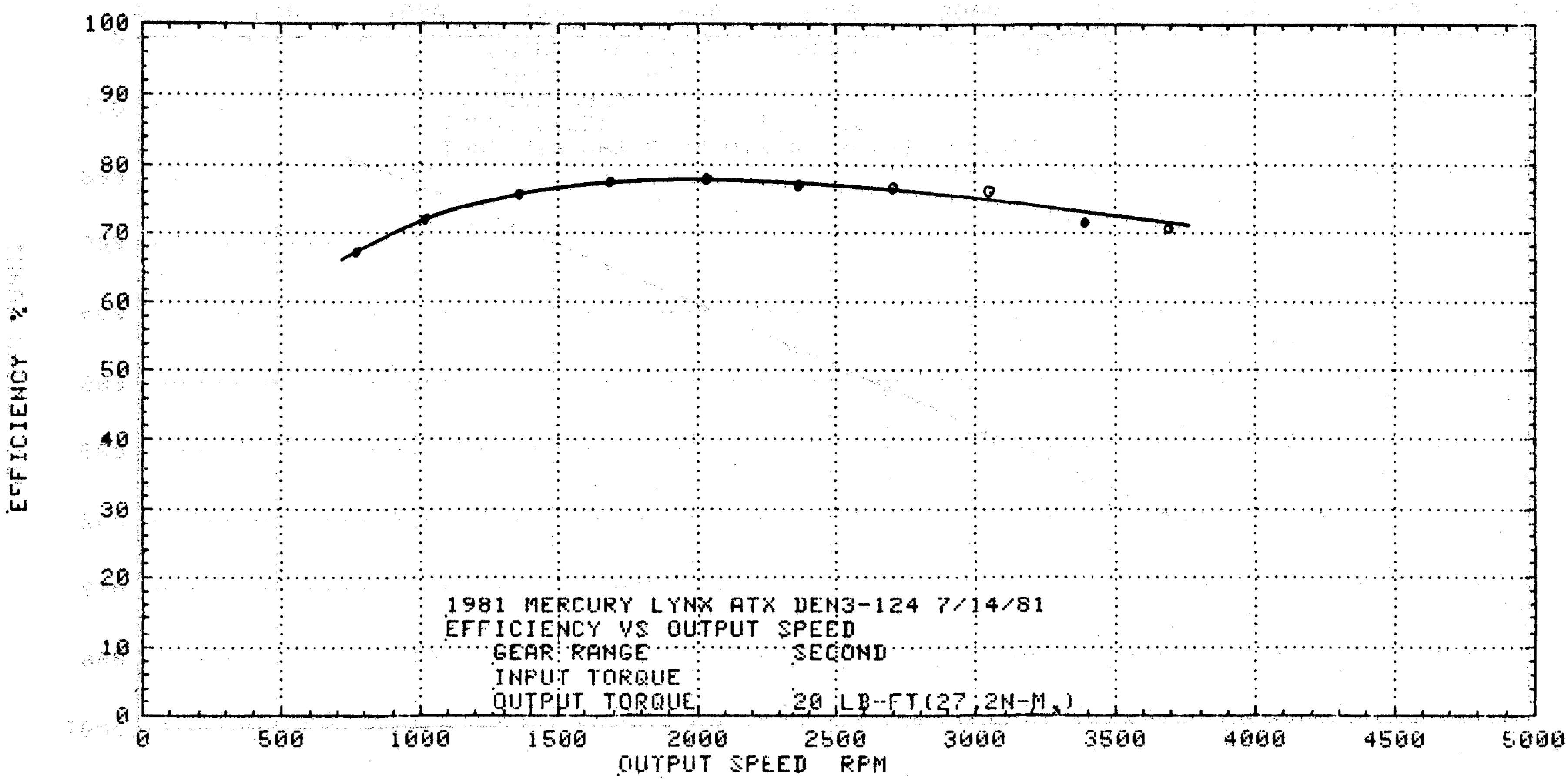
1981 MERCURY LYNX ATX DEN3-124 7/14/81
EFFICIENCY VS POWER OUT
GEAR RANGE SECOND
INPUT TORQUE
OUTPUT TORQUE 10 LB-FT(13.6N-M)
EFFICIENCY %
100
90
80
70
60
50
40
30
20
10
0
0 1 2 3 4 5 6 7 8 9 HP 10
POWER OUT
0 0 1 2 2 3 4 5 5 6 KW 7

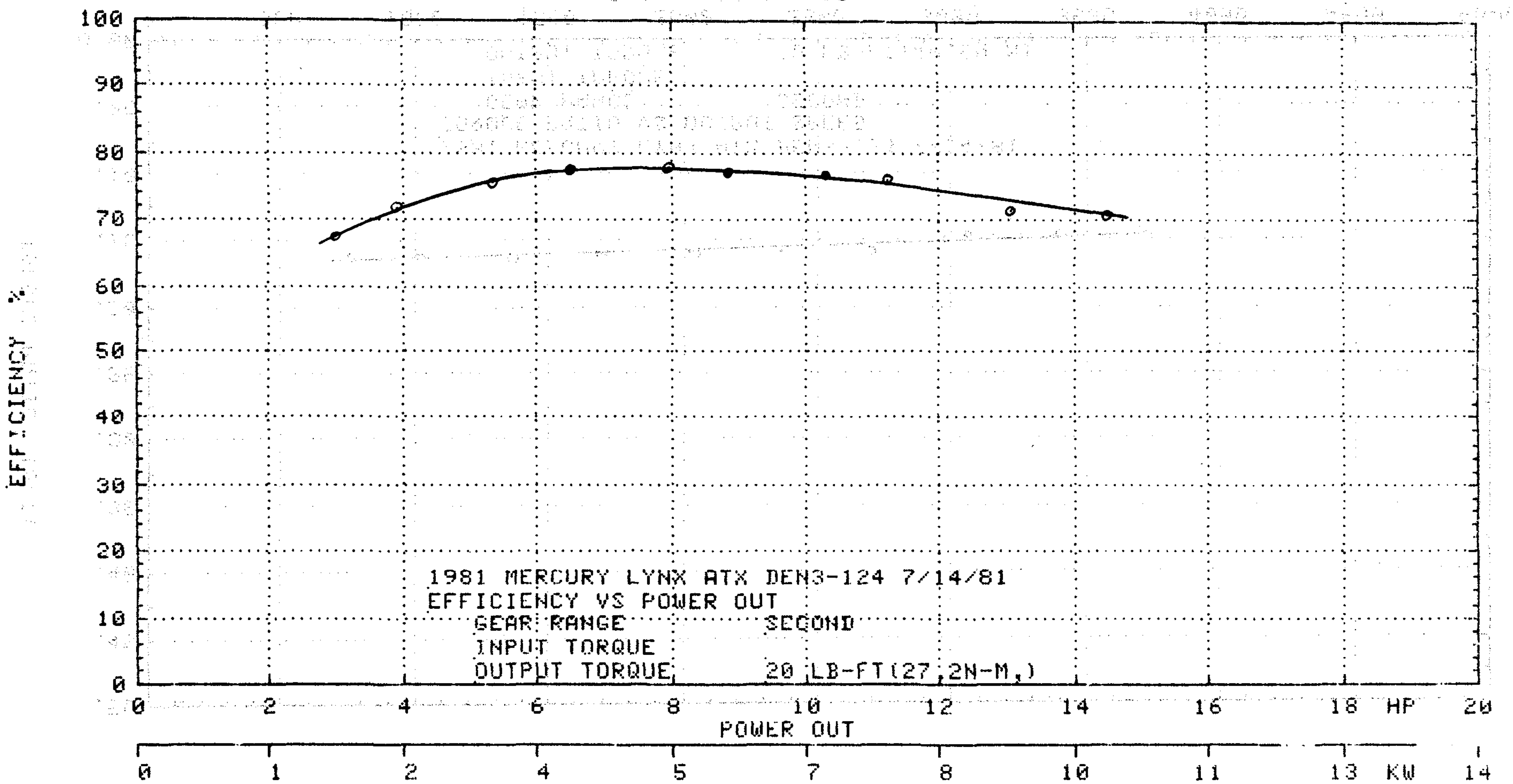


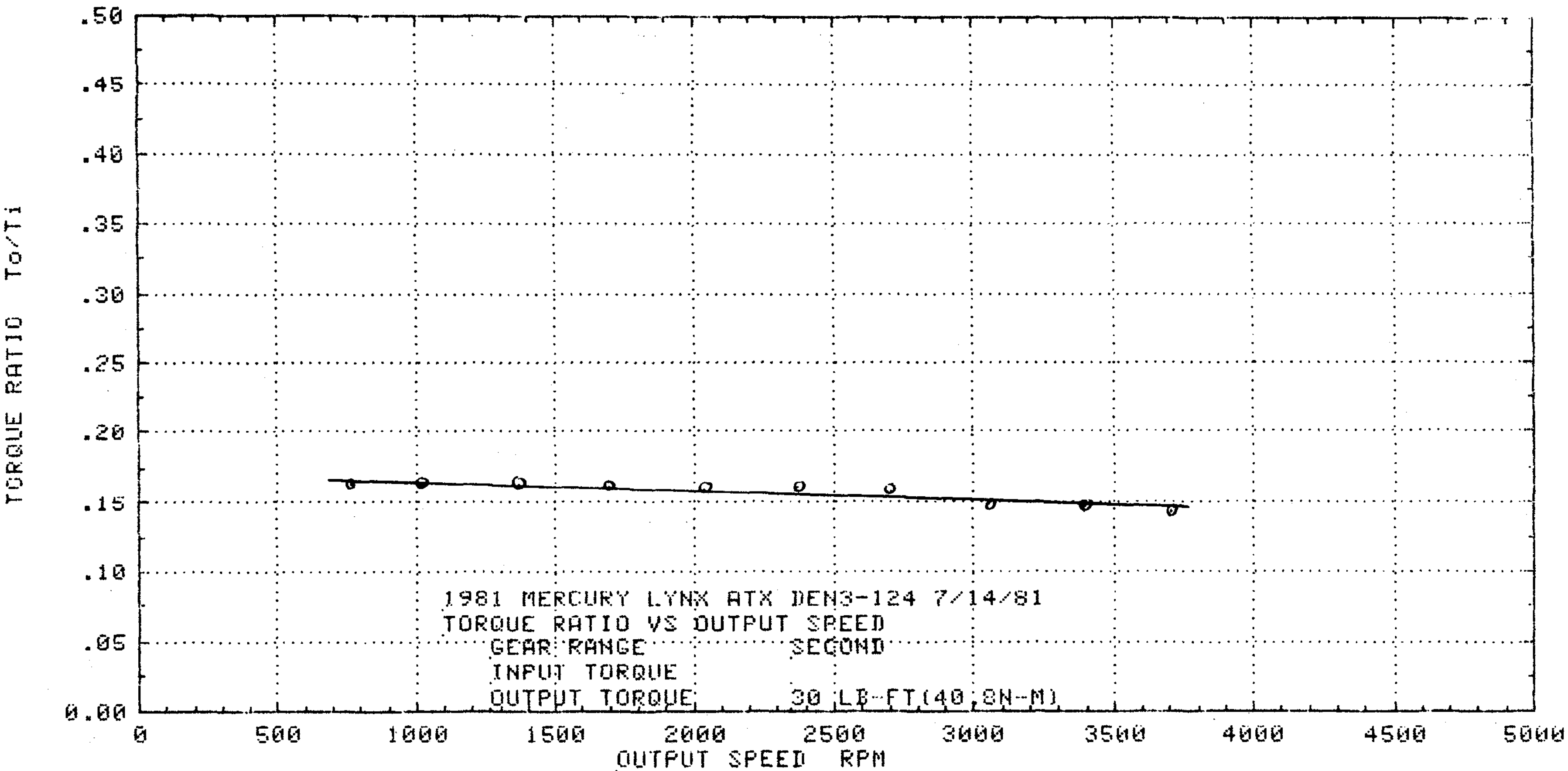
TORQUE RATIO To/Ti
.50
.45
.40
.35
.30
.25
.20
.15
.10
.05
0.00
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
OUTPUT SPEED RPM
1981 MERCURY LYNX ATX DEN3-124 7/14/81
TORQUE RATIO VS OUTPUT SPEED
GEAR RANGE SECOND
INPUT TORQUE
OUTPUT TORQUE 20 LB-FT(27.2N-M.)


136
N-M
122
108
95
81
68
54
41
27
14
0
100
LB-FT
90
80
70
60
50
40
30
20
10
0
OUTPUT TORQUE
1981 MERCURY LYNX ATX DEN3-124 7/14/81
OUTPUT TORQUE VS OUTPUT SPEED
GEAR RANGE SECOND
INPUT TORQUE
OUTPUT TORQUE 20 LB-FT(27.2N-M.)
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
OUTPUT SPEED RPM

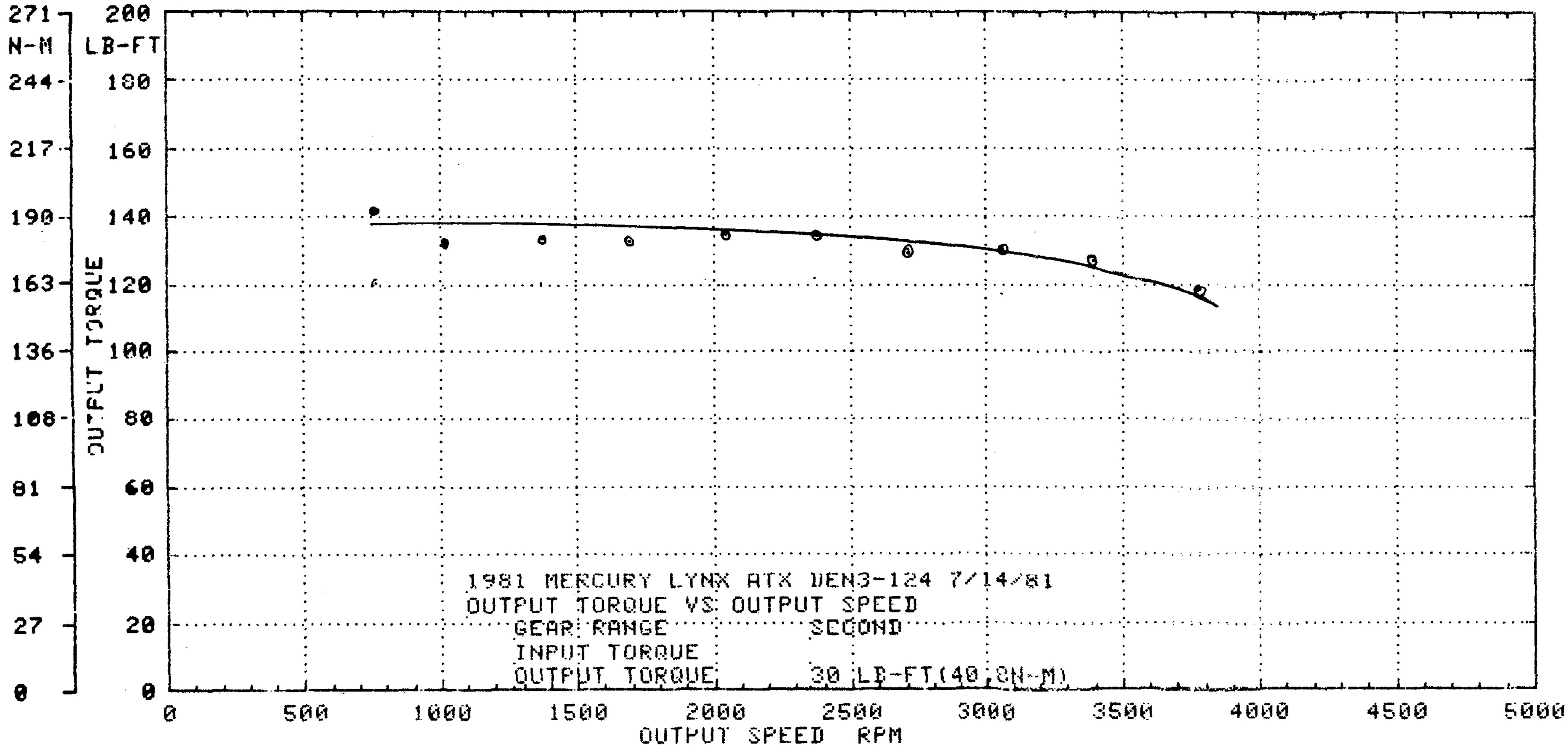

1981 MERCURY LYNX ATX DEN3-124 7/14/81
INPUT SPEED VS OUTPUT SPEED
GEAR RANGE SECOND
INPUT TORQUE
OUTPUT TORQUE 20 LB-FT(27.2N-M.)
INPUT SPEED RPM
OUTPUT SPEED RPM
0
100
200
300
400
500
600
700
800
900
1000
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000


1981 MERCURY LYNX ATX DEN3-124 7/14/81
EFFICIENCY VS OUTPUT SPEED
GEAR RANGE SECOND
INPUT TORQUE
OUTPUT TORQUE 20 LB-FT(27.2N-M.)
EFFICIENCY %
OUTPUT SPEED RPM
0
10
20
30
40
50
60
70
80
90
100
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000

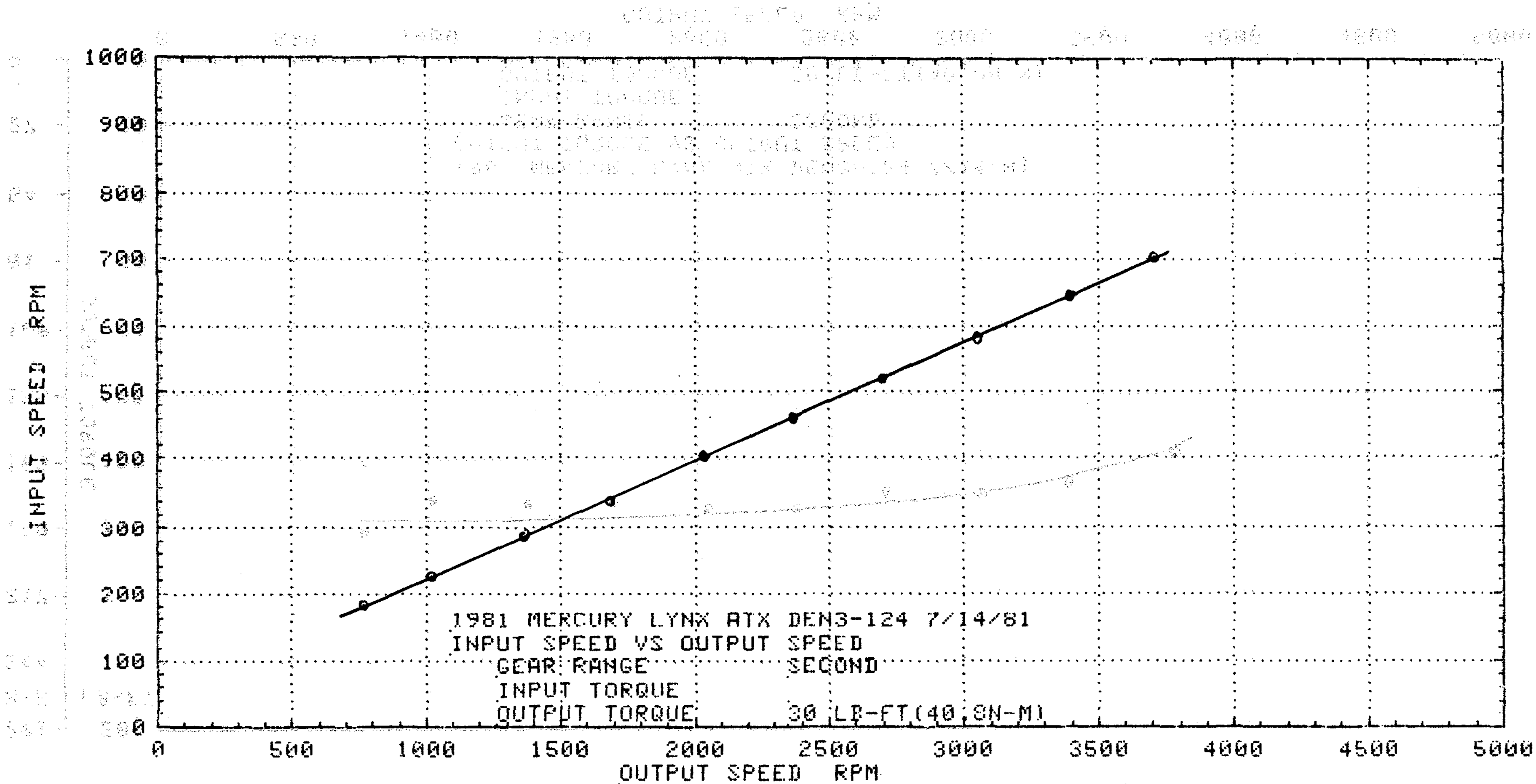

1981 MERCURY LYNX ATX DEN3-124 7/14/81
EFFICIENCY VS POWER OUT
GEAR RANGE SECOND
INPUT TORQUE
OUTPUT TORQUE 20 LB-FT(27.2N-M.)
EFFICIENCY %
POWER OUT
HP
KW
100
90
80
70
60
50
40
30
20
10
0
0
2
4
6
8
10
12
14
16
18
20
0
1
2
4
5
7
8
10
11
13
14

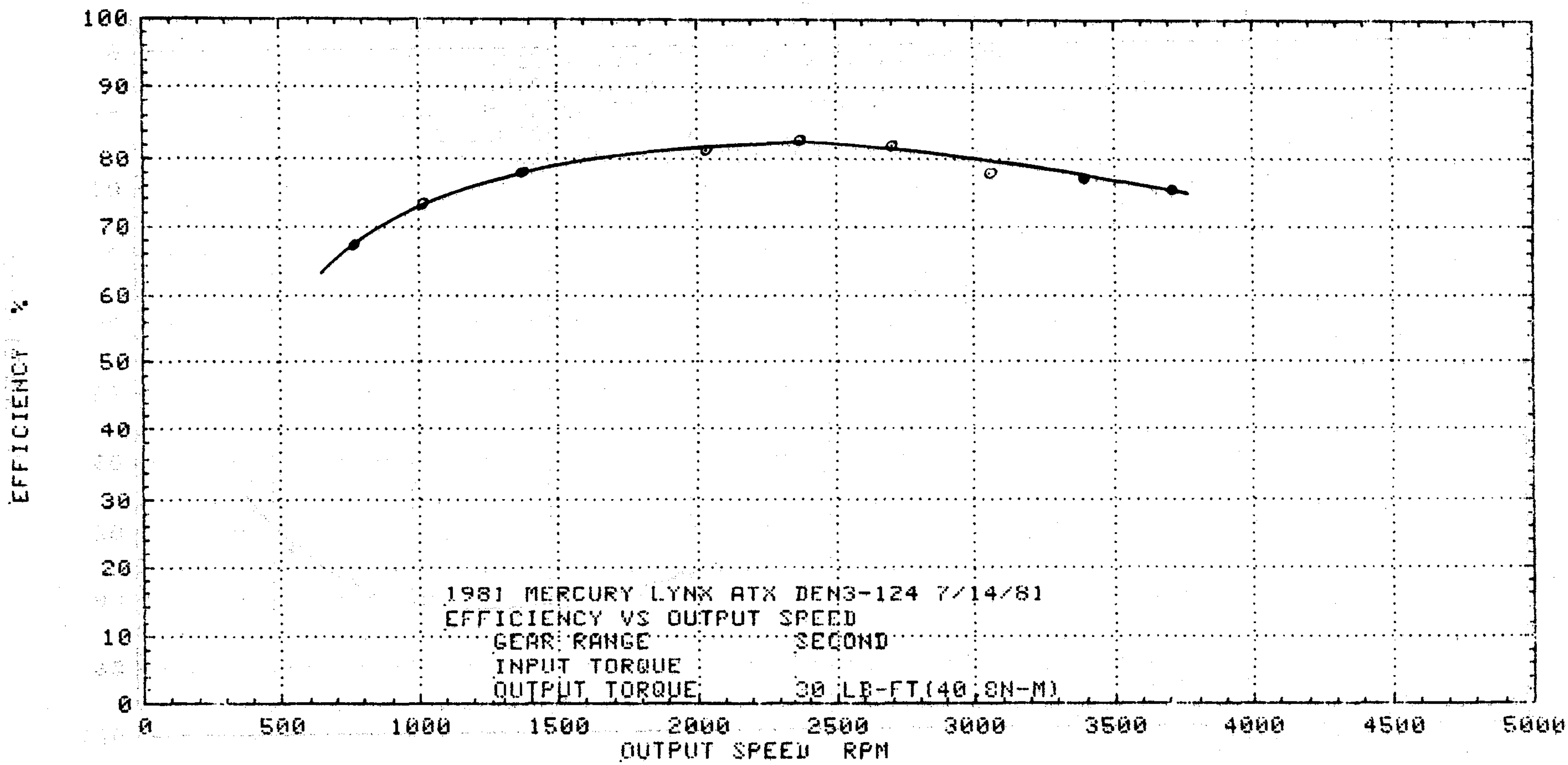


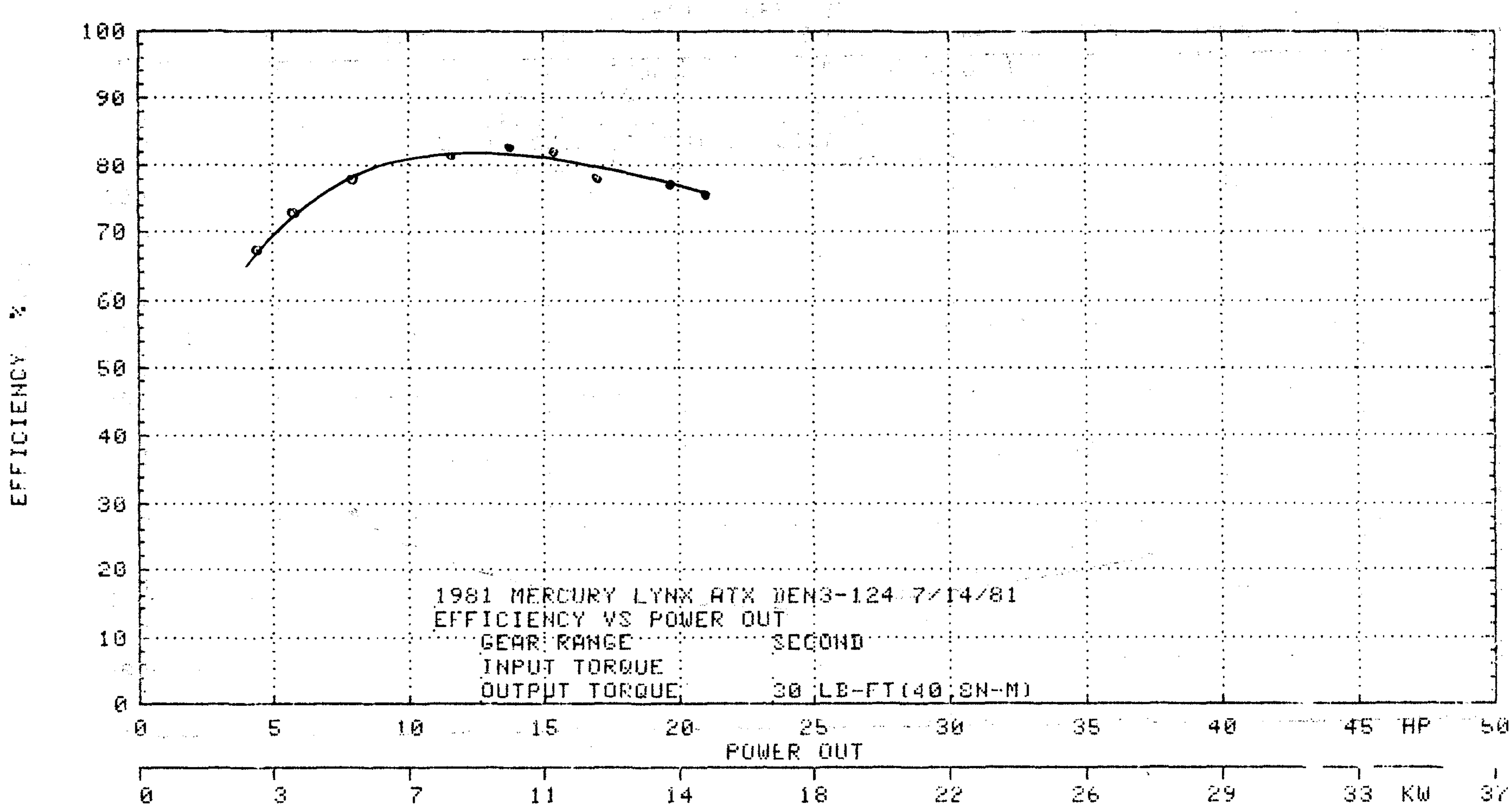
.50
.45
.40
.35
.30
.25
.20
.15
.10
.05
0.00
TORQUE RATIO To/Ti
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
OUTPUT SPEED RPM
1981 MERCURY LYNX ATX DEN3-124 7/14/81
TORQUE RATIO VS OUTPUT SPEED
GEAR RANGE SECOND
INPUT TORQUE
OUTPUT TORQUE 30 LB-FT(40.8N-M)



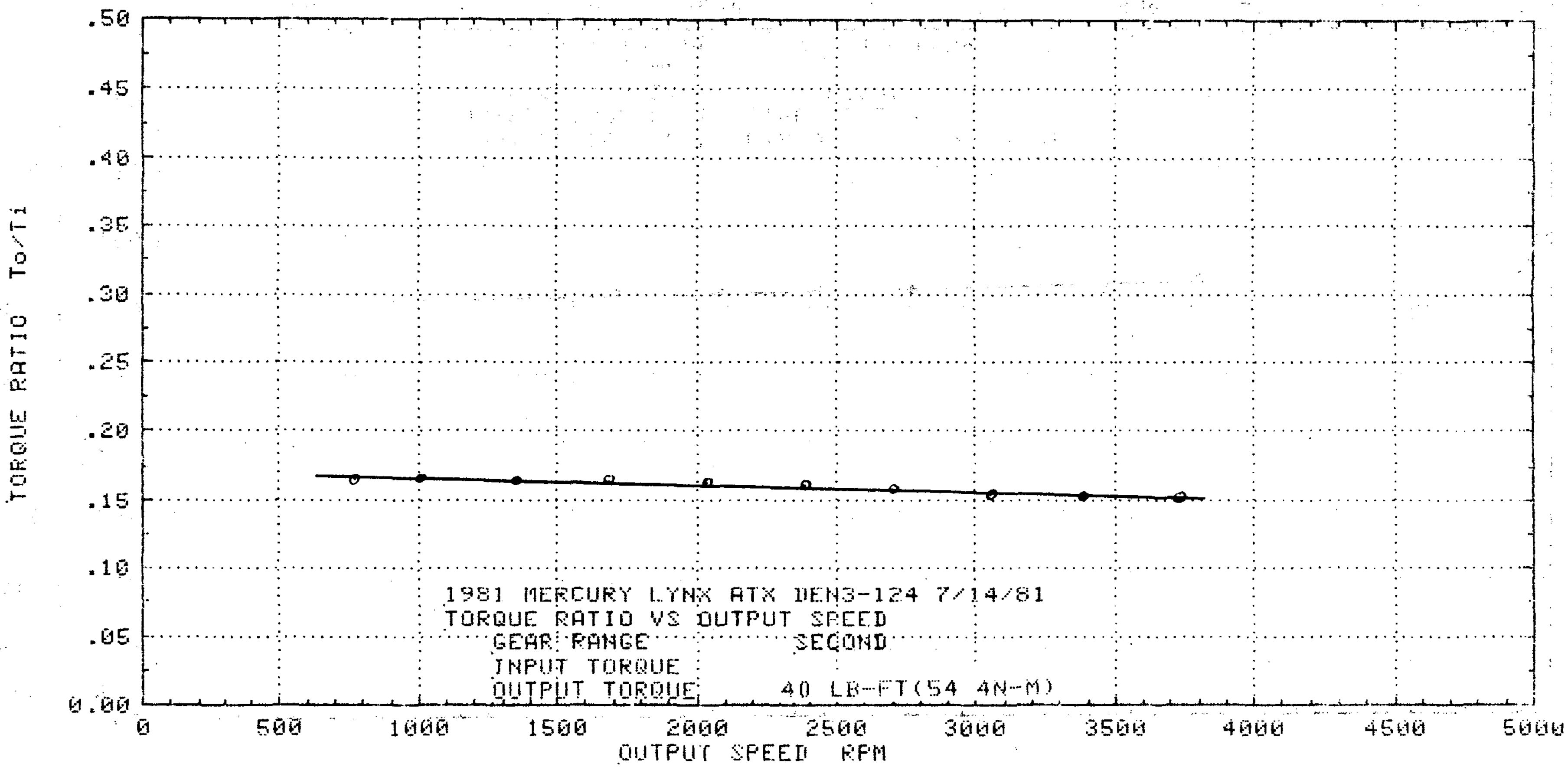
271
N-M
244
217
190
163
136
108
81
54
27
0
200
LB-FT
180
160
140
120
100
80
60
40
20
0
OUTPUT TORQUE
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
OUTPUT SPEED RPM
1981 MERCURY LYNX ATX DEN3-124 7/14/81
OUTPUT TORQUE VS OUTPUT SPEED
GEAR RANGE SECOND
INPUT TORQUE
OUTPUT TORQUE 30 LB-FT(40.8N-M)


1981 MERCURY LYNX ATX DEN3-124 7/14/81
INPUT SPEED VS OUTPUT SPEED
GEAR RANGE SECOND
INPUT TORQUE
OUTPUT TORQUE 30 LB-FT(40.8N-M)
INPUT SPEED RPM
OUTPUT SPEED RPM
0
100
200
300
400
500
600
700
800
900
1000
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000

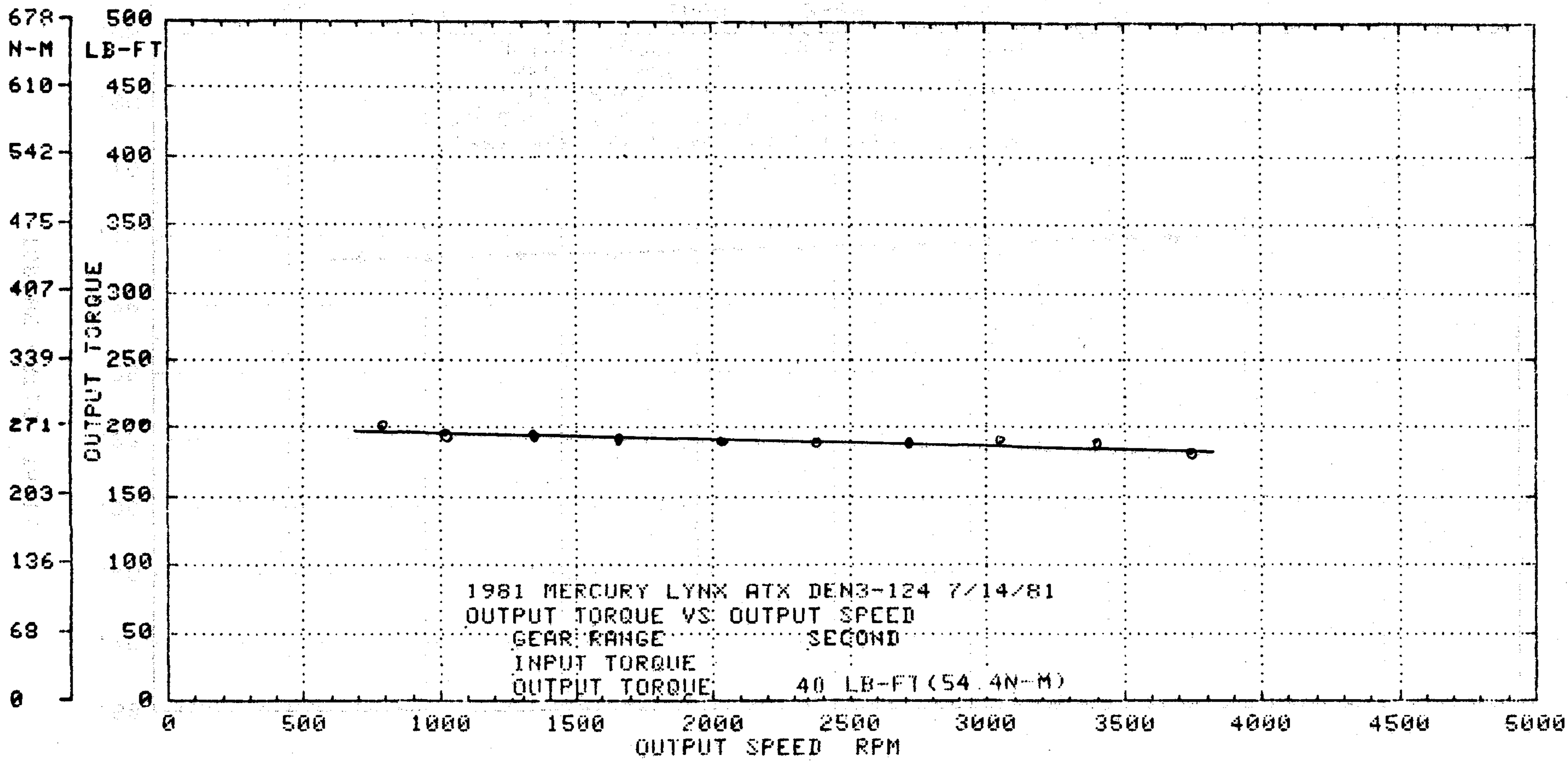

100
90
80
70
60
50
40
30
20
10
0
EFFICIENCY %
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
OUTPUT SPEED RPM
1981 MERCURY LYNX ATX DEN3-124 7/14/81
EFFICIENCY VS OUTPUT SPEED
GEAR RANGE SECOND
INPUT TORQUE
OUTPUT TORQUE 30 LB-FT(40.8N-M)

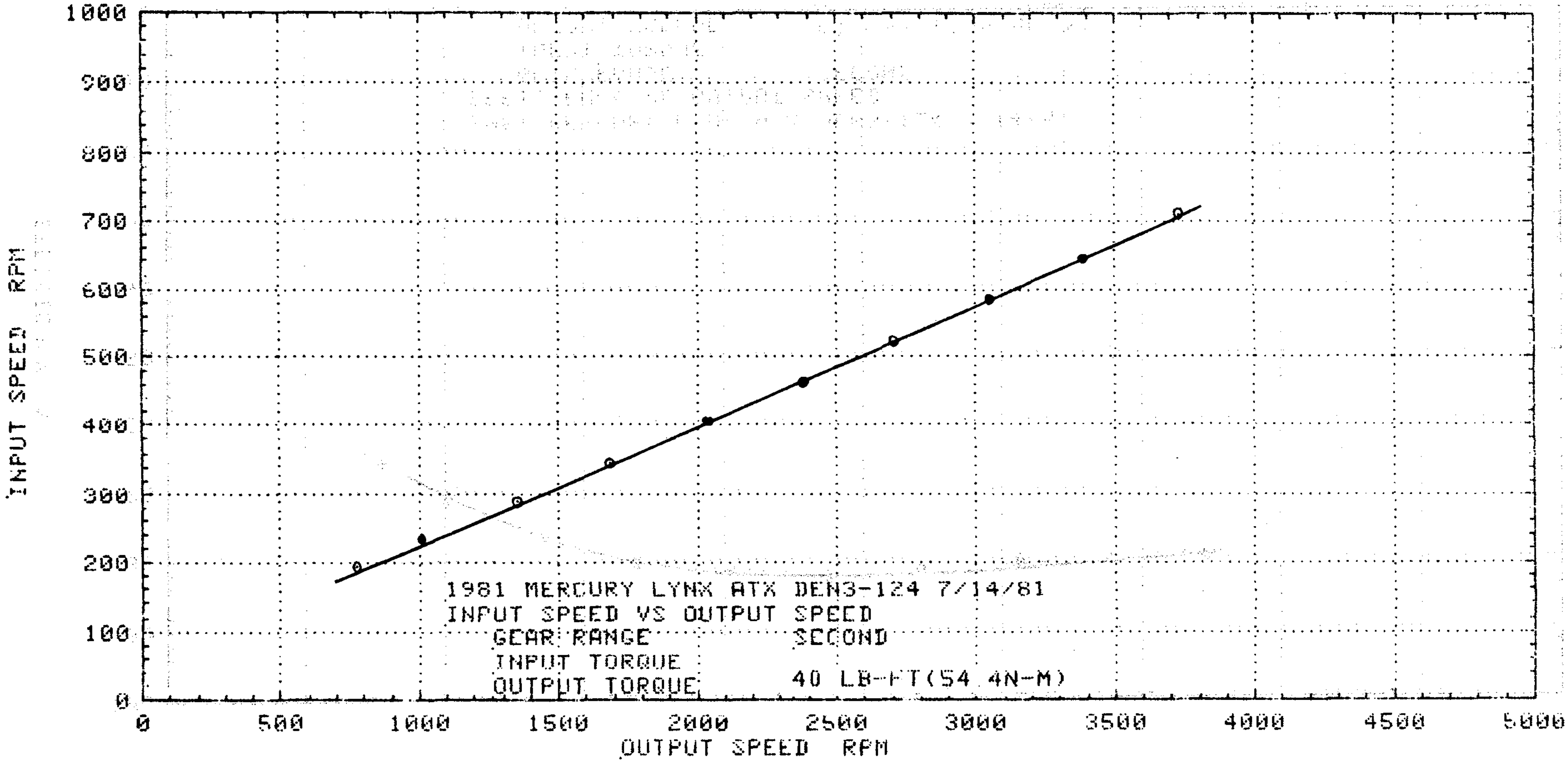


1981 MERCURY LYNX ATX DEN3-124 7/14/81
EFFICIENCY VS POWER OUT
GEAR RANGE SECOND
INPUT TORQUE
OUTPUT TORQUE 30 LB-FT(40.8N-M)
EFFICIENCY %
POWER OUT
HP
KW
0
10
20
30
40
50
60
70
80
90
100
0
5
10
15
20
25
30
35
40
45
50
0
3
7
11
14
18
22
26
29
33
37

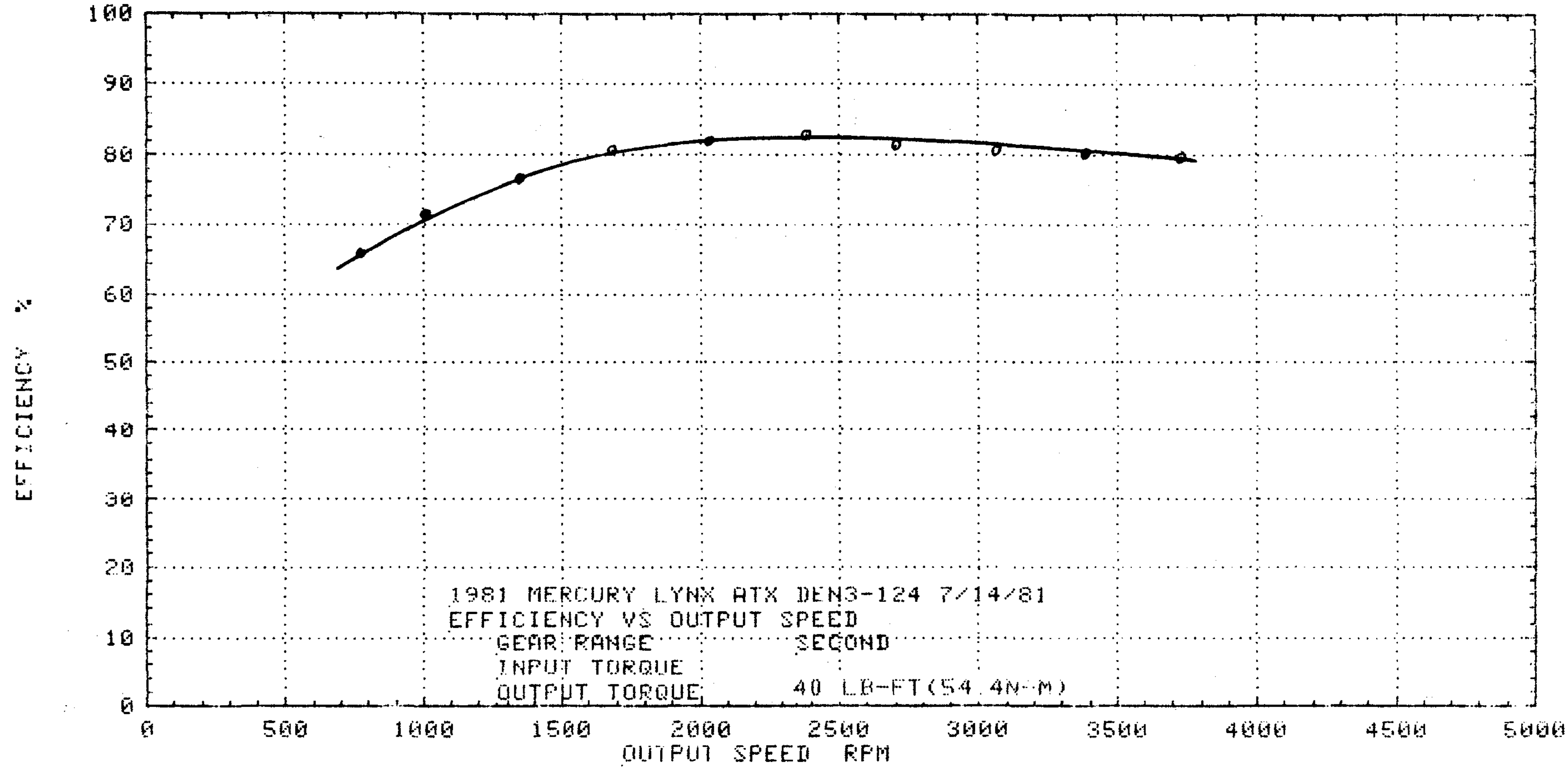


.50
.45
.40
.35
.30
.25
.20
.15
.10
.05
0.00
TORQUE RATIO To/Ti
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
OUTPUT SPEED RPM
1981 MERCURY LYNX ATX DEN3-124 7/14/81
TORQUE RATIO VS OUTPUT SPEED
GEAR RANGE SECOND
INPUT TORQUE
OUTPUT TORQUE 40 LB-FT(54 4N-M)

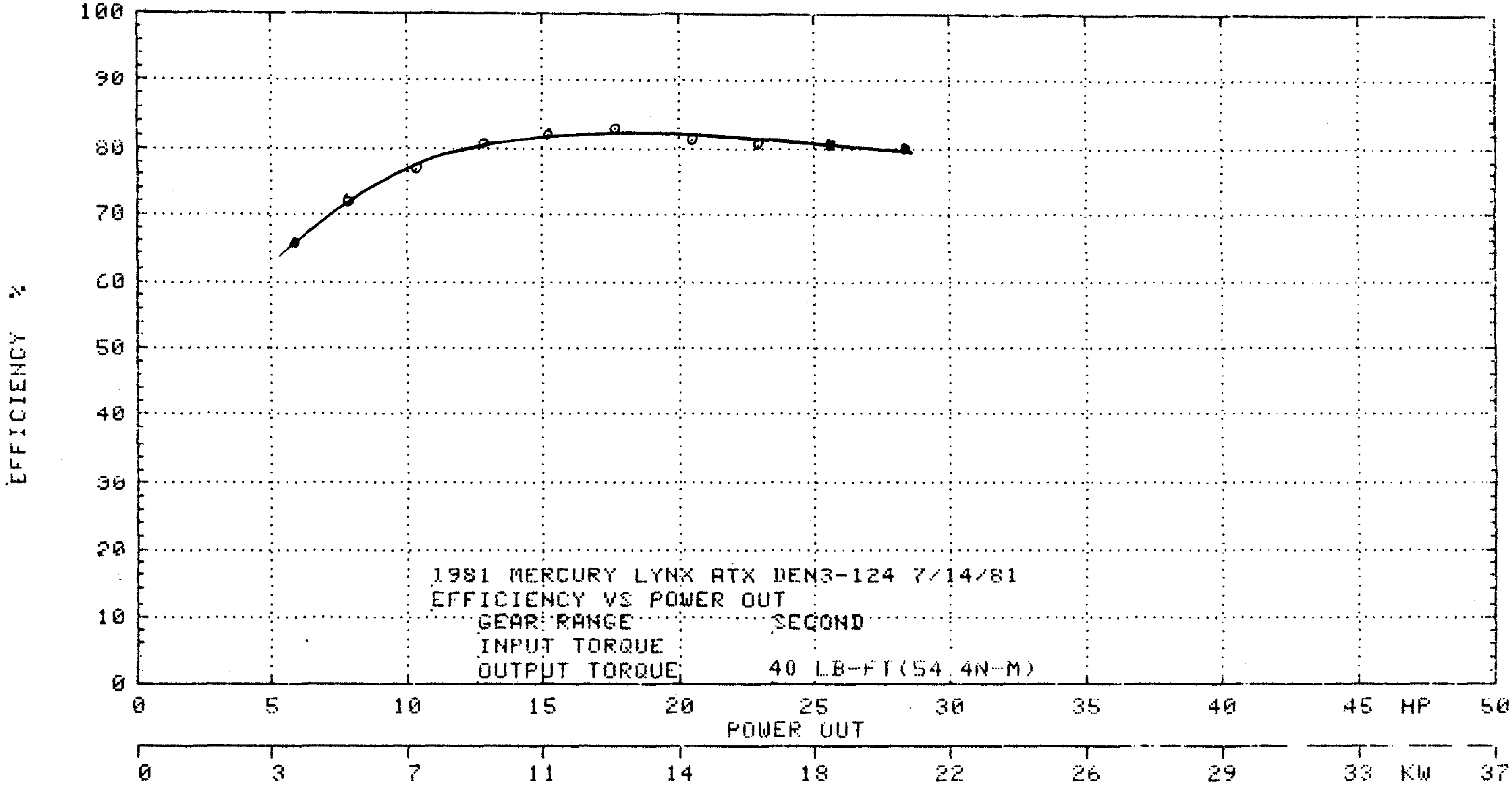

678
N-M
610
542
475
407
339
271
203
136
68
0
500
LB-FT
450
400
350
300
250
200
150
100
50
0
OUTPUT TORQUE
1981 MERCURY LYNX ATX DEN3-124 7/14/81
OUTPUT TORQUE VS OUTPUT SPEED
GEAR RANGE SECOND
INPUT TORQUE
OUTPUT TORQUE 40 LB-FT (54.4N-M)
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
OUTPUT SPEED RPM



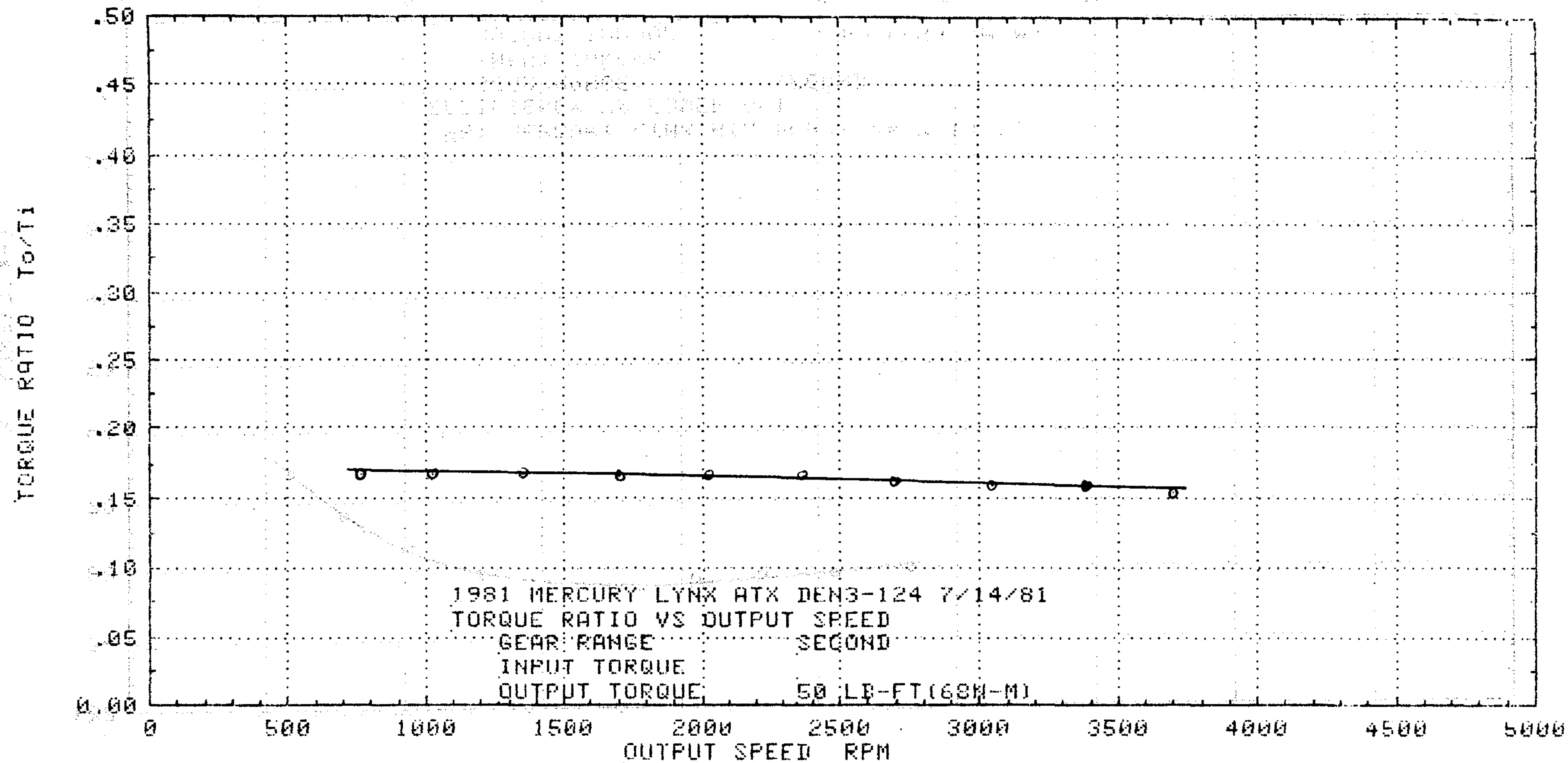
1981 MERCURY LYNX ATX DEN3-124 7/14/81
INPUT SPEED VS OUTPUT SPEED
GEAR RANGE SECOND
INPUT TORQUE
OUTPUT TORQUE 40 LB-FT(54.4N-M)
INPUT SPEED RPM
OUTPUT SPEED RPM
0
100
200
300
400
500
600
700
800
900
1000
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000

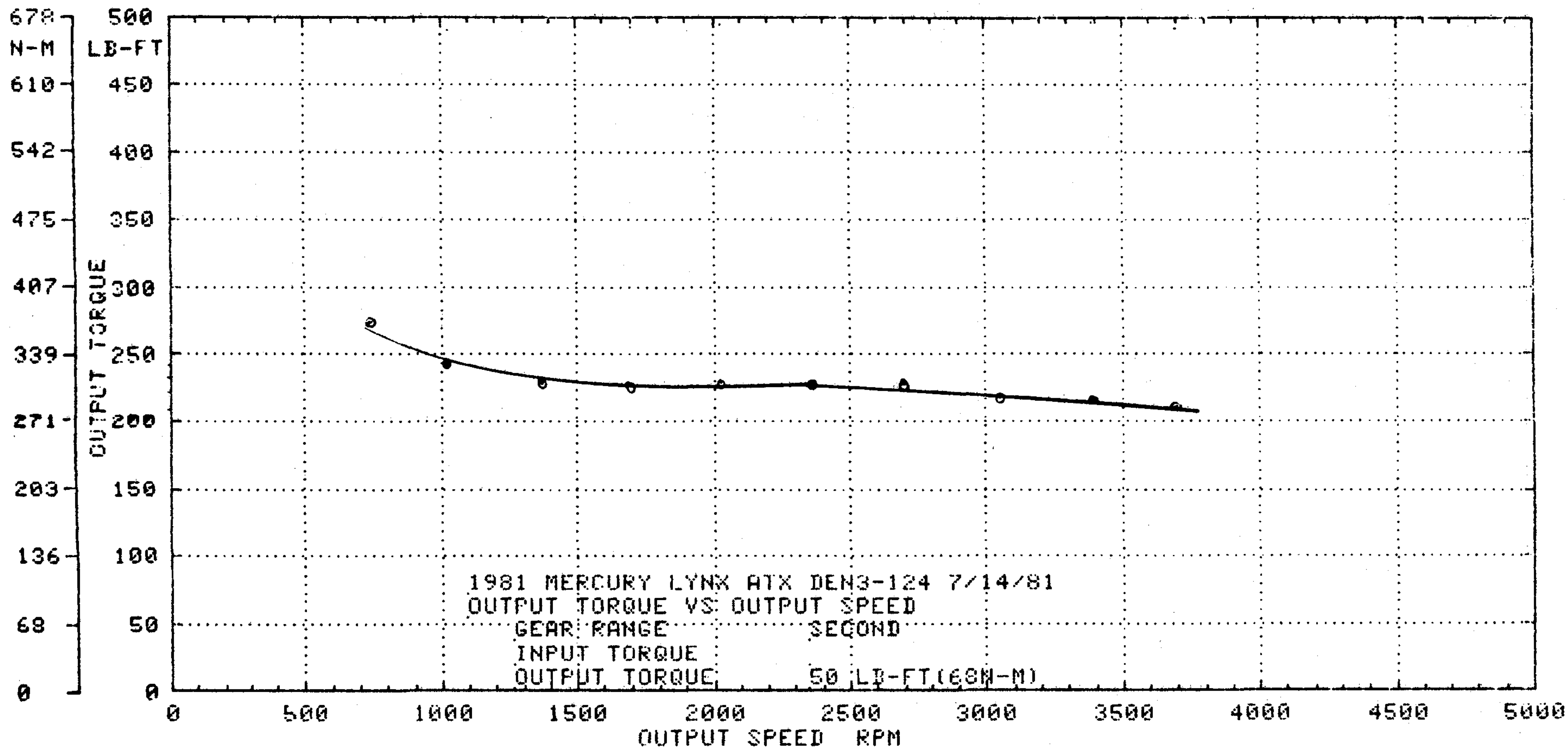


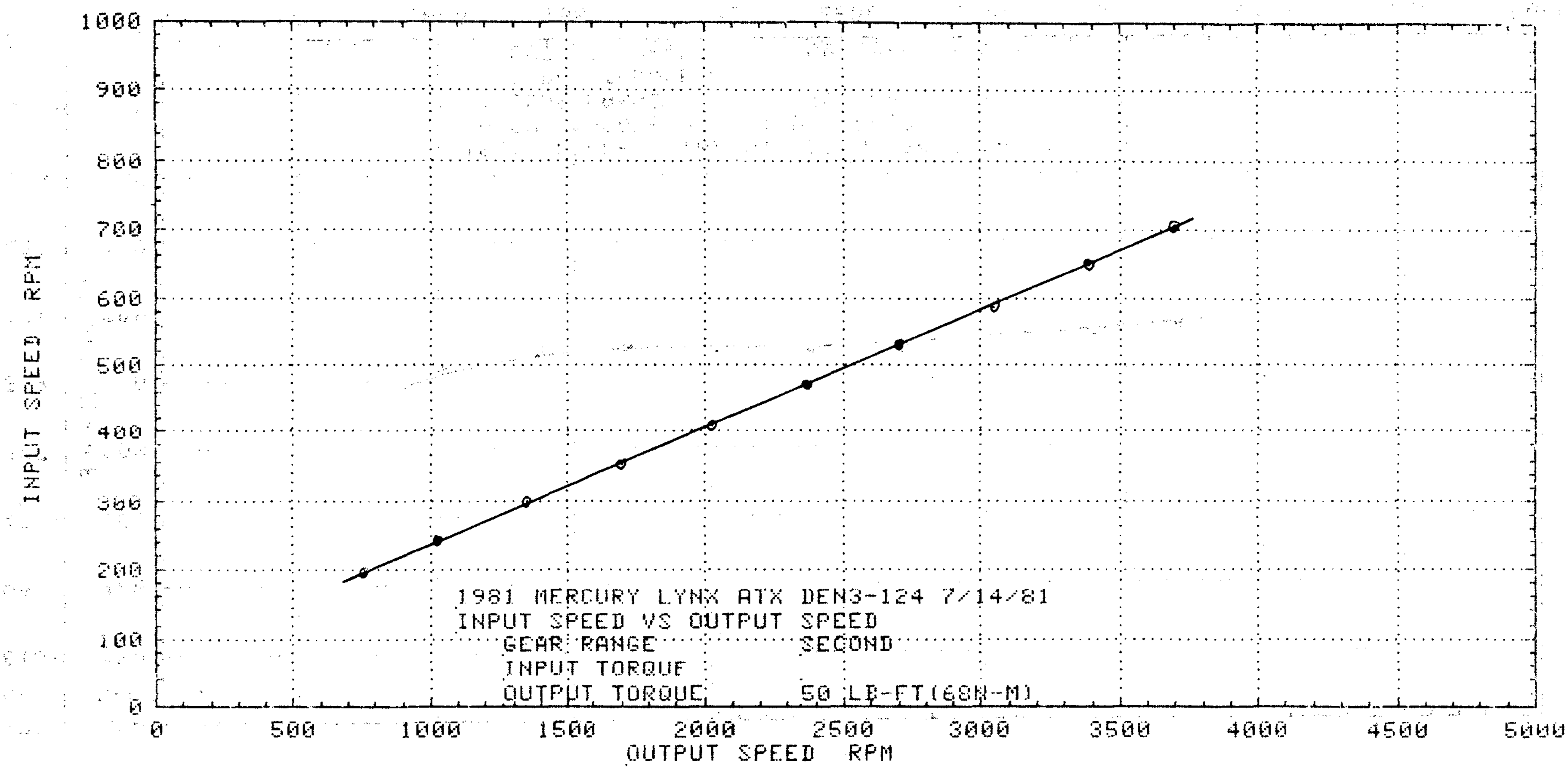
1981 MERCURY LYNX ATX DEN3-124 7/14/81
EFFICIENCY VS OUTPUT SPEED
GEAR RANGE SECOND
INPUT TORQUE
OUTPUT TORQUE 40 LB-FT(54.4N-M)
EFFICIENCY %
OUTPUT SPEED RPM

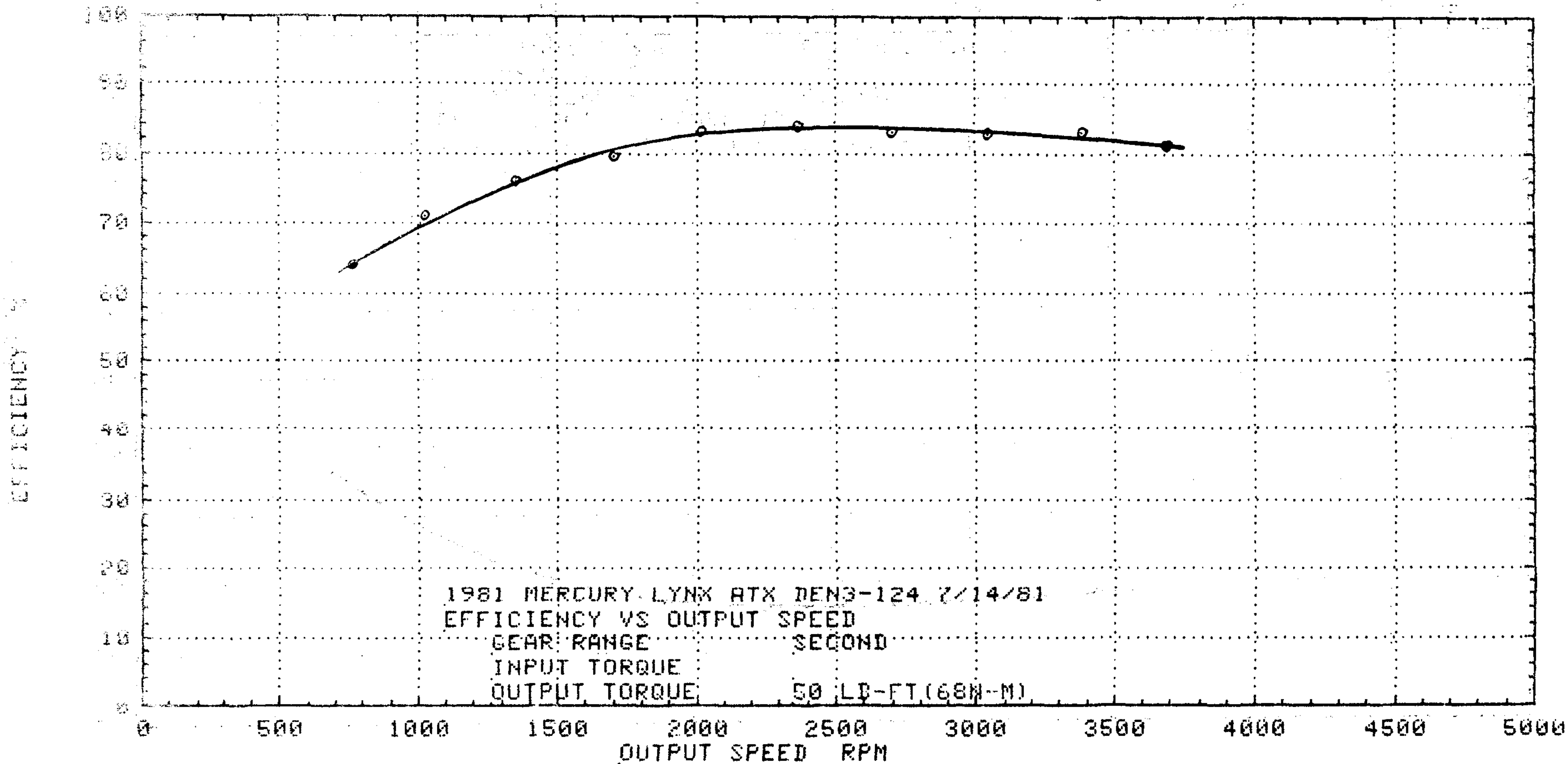


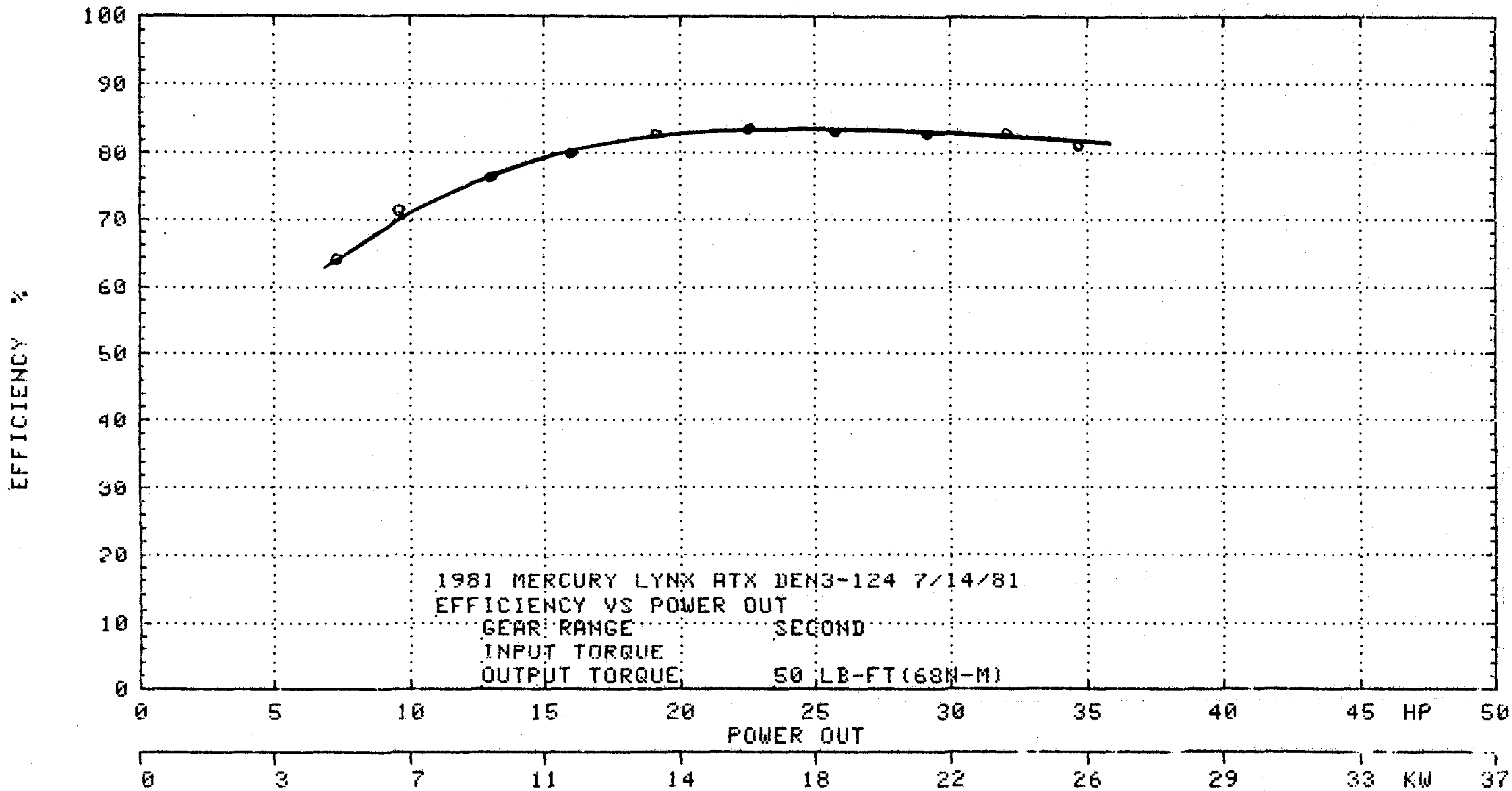
100
90
80
70
60
50
40
30
20
10
0
EFFICIENCY %
1981 MERCURY LYNX ATX DEN3-124 7/14/81
EFFICIENCY VS POWER OUT
GEAR RANGE SECOND
INPUT TORQUE
OUTPUT TORQUE 40 LB-FT(54.4N-M)
0 5 10 15 20 25 30 35 40 45 HP 50
POWER OUT
0 3 7 11 14 18 22 26 29 33 KW 37

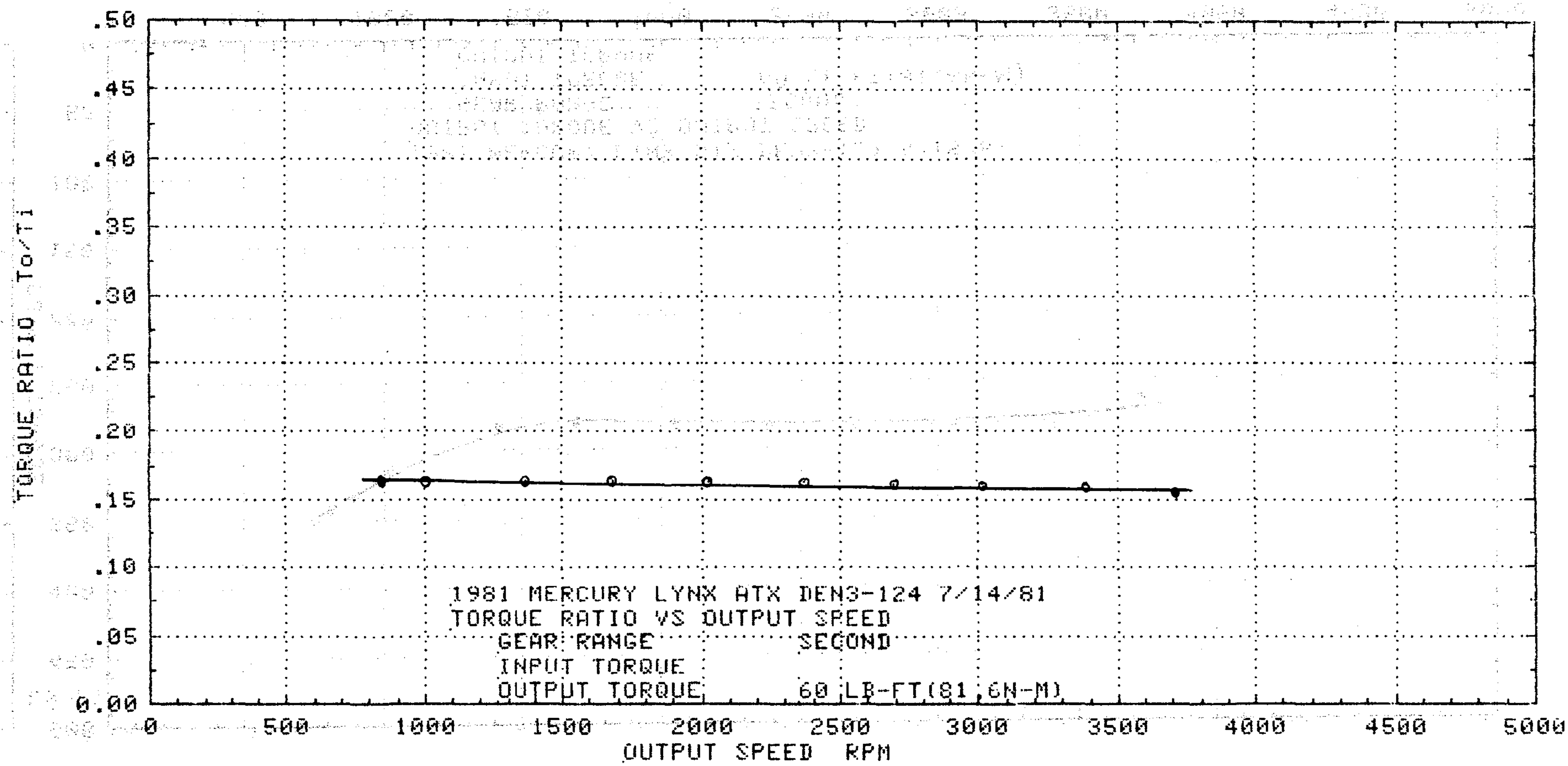

1981 MERCURY LYNX ATX DEN3-124 7/14/81
TORQUE RATIO VS OUTPUT SPEED
GEAR RANGE SECOND
INPUT TORQUE
OUTPUT TORQUE 50 LB-FT(68N-M)
TORQUE RATIO To/Ti
OUTPUT SPEED RPM
.50
.45
.40
.35
.30
.25
.20
.15
.10
.05
0.00
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000


1981 MERCURY LYNX ATX DEN3-124 7/14/81
OUTPUT TORQUE VS OUTPUT SPEED
GEAR RANGE SECOND
INPUT TORQUE
OUTPUT TORQUE 50 LB-FT(68N-M)
OUTPUT TORQUE
N-M
LB-FT
678
610
542
475
407
339
271
203
136
68
0
500
450
400
350
300
250
200
150
100
50
0
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
OUTPUT SPEED RPM

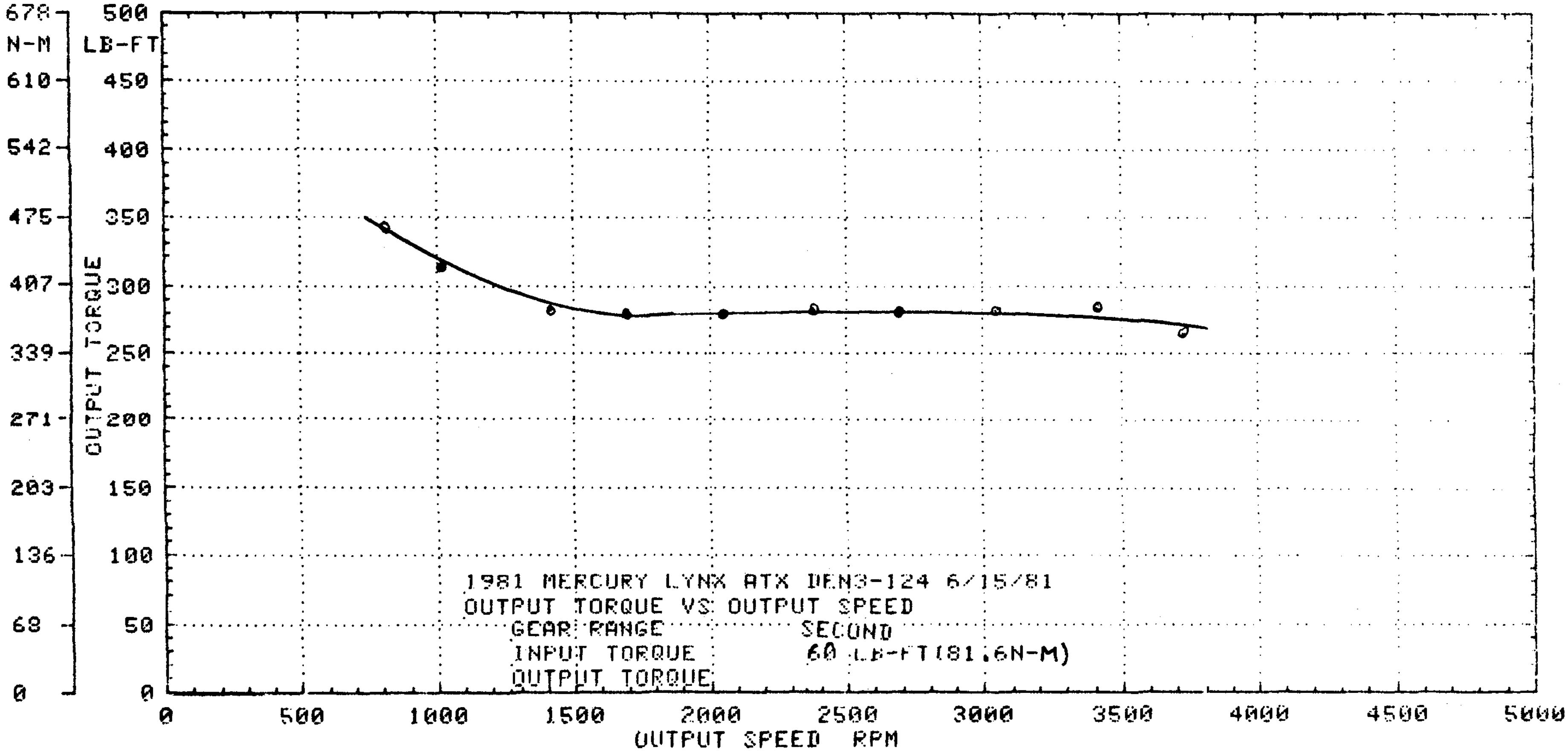

1000
900
800
700
600
500
400
300
200
100
0
INPUT SPEED RPM
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
OUTPUT SPEED RPM
1981 MERCURY LYNX ATX DEN3-124 7/14/81
INPUT SPEED VS OUTPUT SPEED
GEAR RANGE SECOND
INPUT TORQUE
OUTPUT TORQUE 50 LB-FT(68N-M)

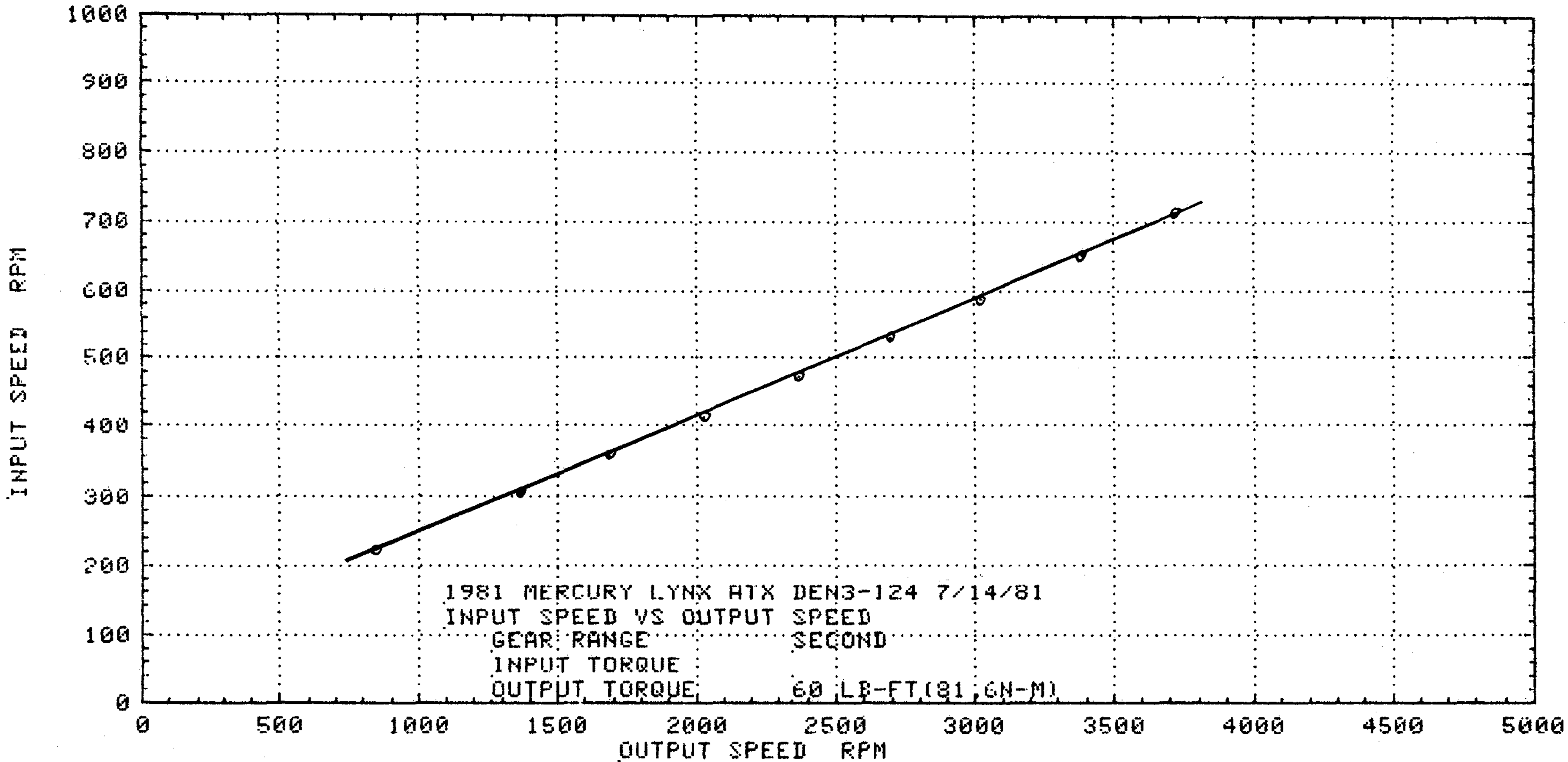

1981 MERCURY LYNX ATX DEN3-124 7/14/81
EFFICIENCY VS OUTPUT SPEED
GEAR RANGE SECOND
INPUT TORQUE
OUTPUT TORQUE 50 LB-FT(68N-M)
EFFICIENCY
OUTPUT SPEED RPM
0
10
20
30
40
50
60
70
80
90
100
500
1000
1500
2000
2500
3000
3500
4000
4500
5000


1981 MERCURY LYNX ATX DEN3-124 7/14/81
EFFICIENCY VS POWER OUT
GEAR RANGE SECOND
INPUT TORQUE
OUTPUT TORQUE 50 LB-FT(68N-M)
EFFICIENCY %
100
90
80
70
60
50
40
30
20
10
0
0 5 10 15 20 25 30 35 40 45 HP 50
POWER OUT
0 3 7 11 14 18 22 26 29 33 KW 37

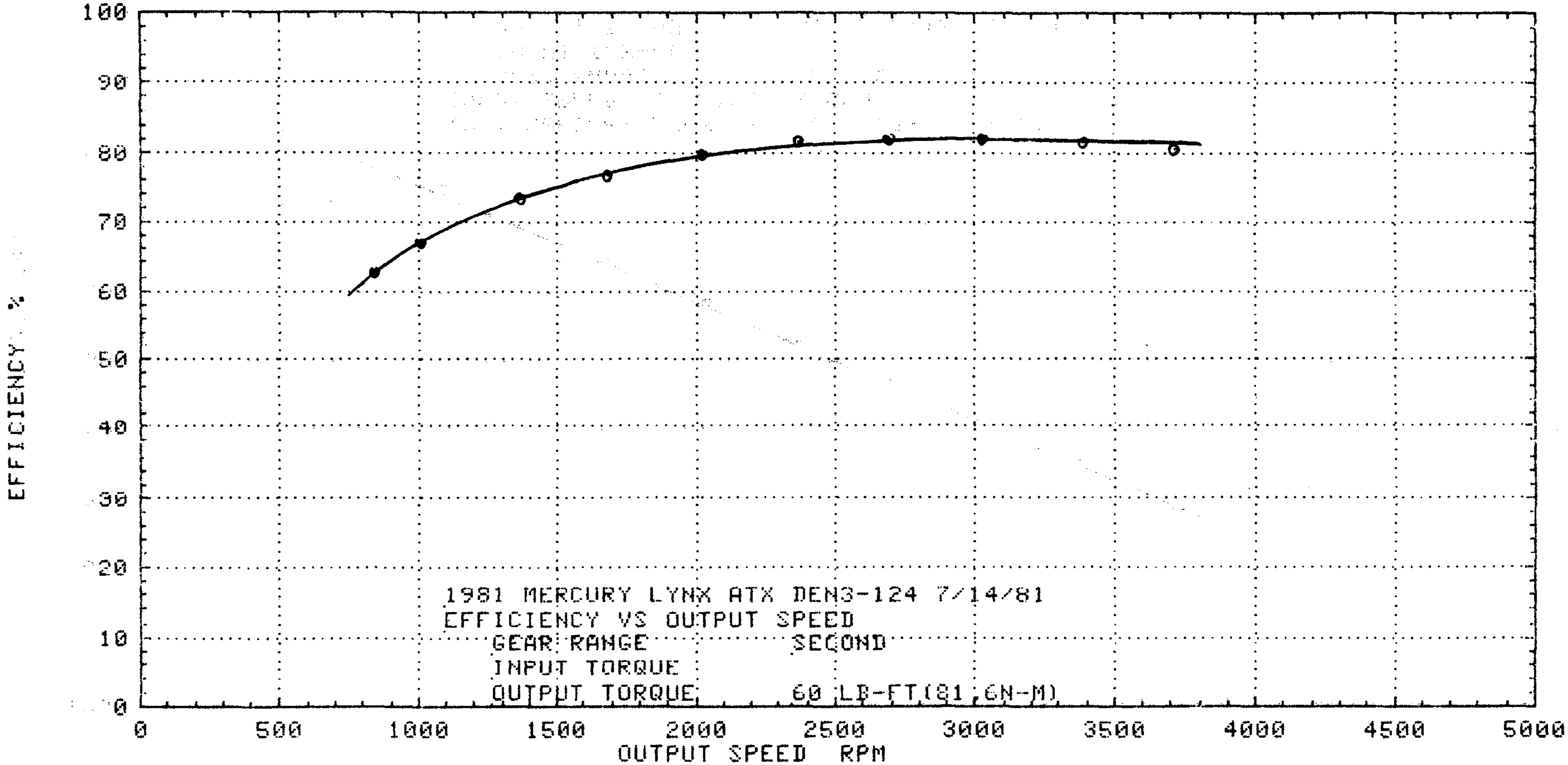


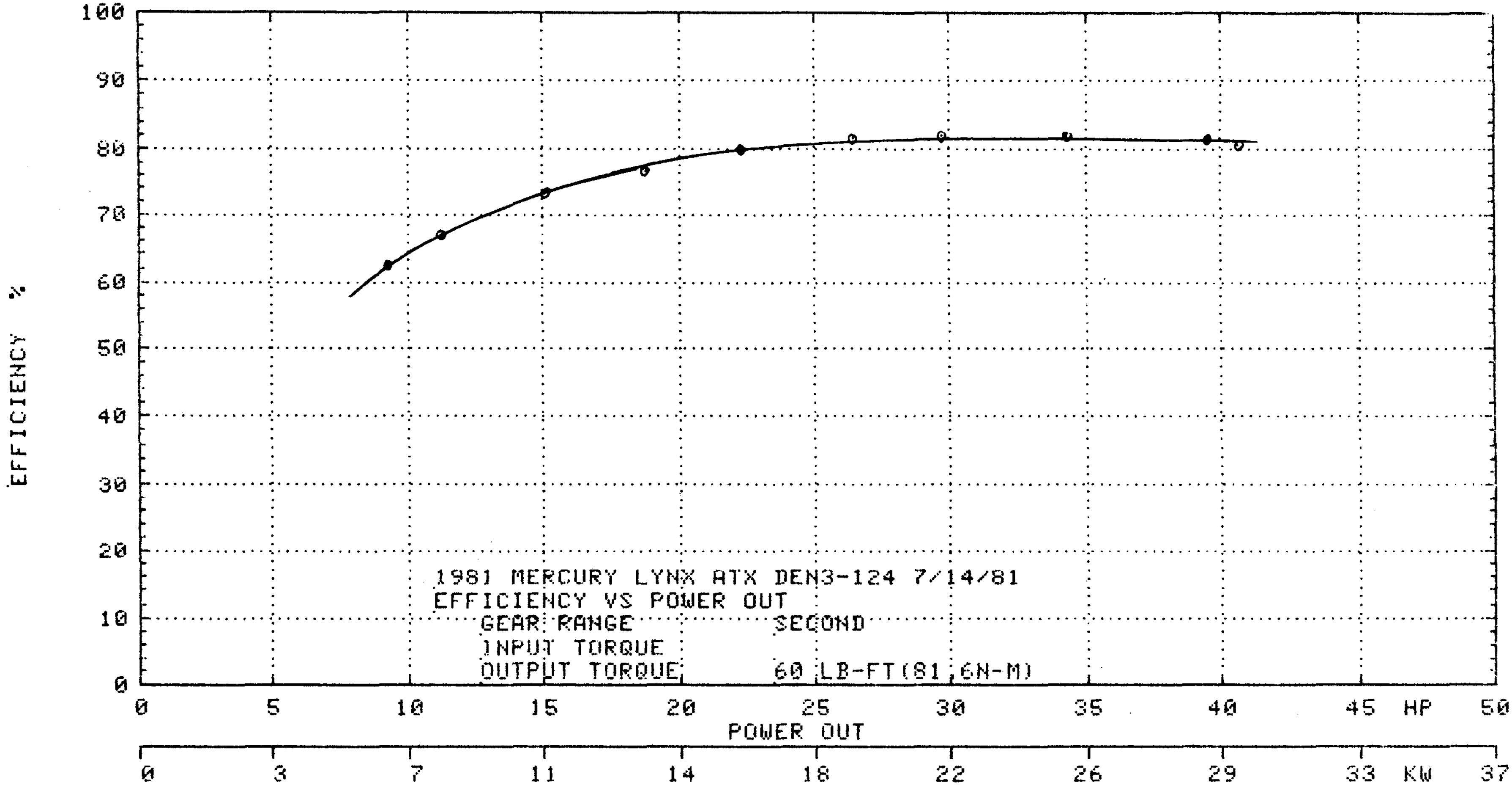
1981 MERCURY LYNX ATX DEN3-124 7/14/81
TORQUE RATIO VS OUTPUT SPEED
GEAR RANGE SECOND
INPUT TORQUE
OUTPUT TORQUE 60 LB-FT(81.6N-M)
TORQUE RATIO To/Ti
OUTPUT SPEED RPM
.50
.45
.40
.35
.30
.25
.20
.15
.10
.05
0.00
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000

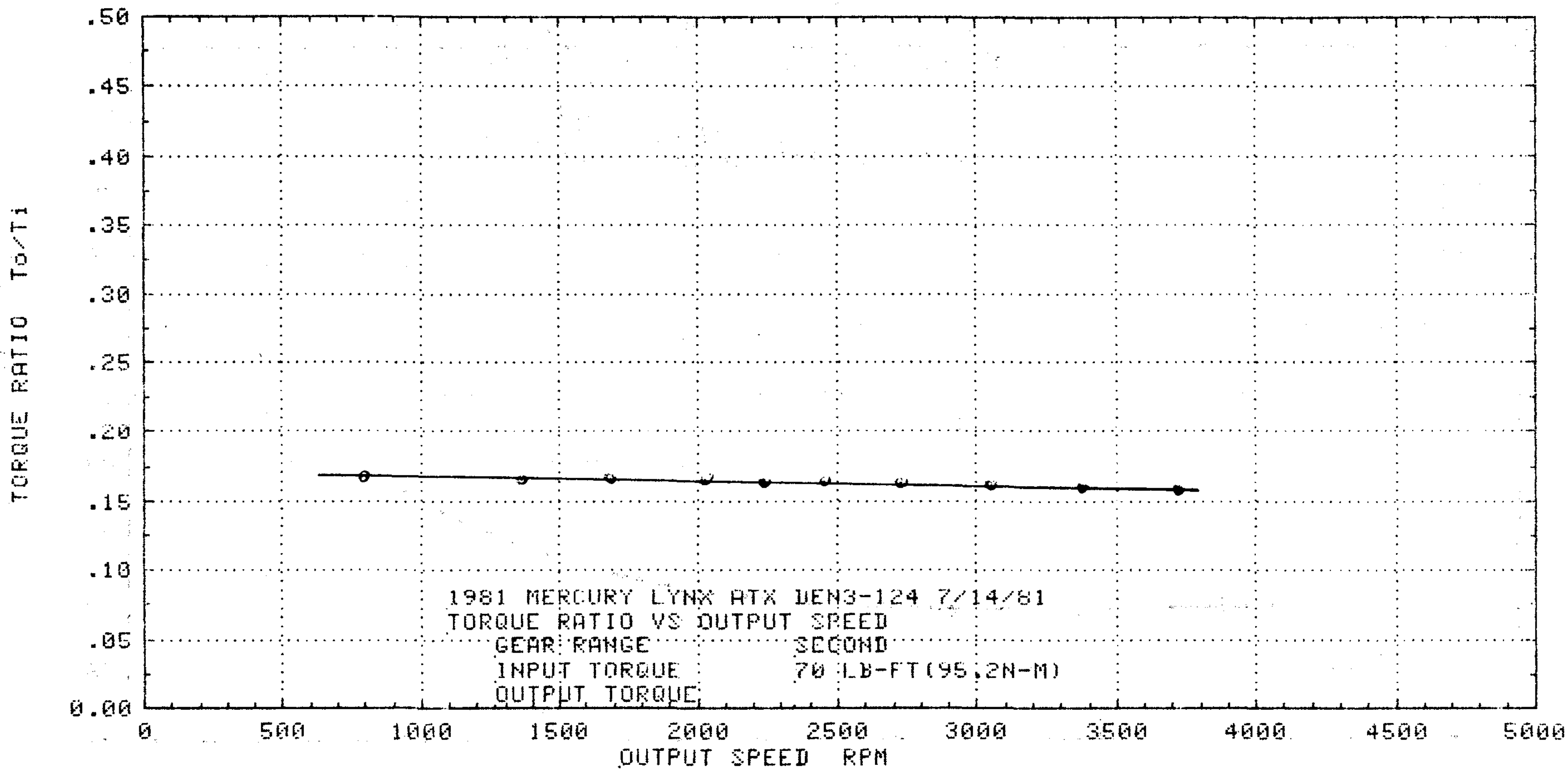

678
N-M
610
542
475
407
339
271
203
136
68
0
500
LB-FT
450
400
350
300
250
200
150
100
50
0
OUTPUT TORQUE
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
OUTPUT SPEED RPM
1981 MERCURY LYNX ATX DEN3-124 6/15/81
OUTPUT TORQUE VS OUTPUT SPEED
GEAR RANGE SECOND
INPUT TORQUE 60 LB-FT(81.6N-M)
OUTPUT TORQUE



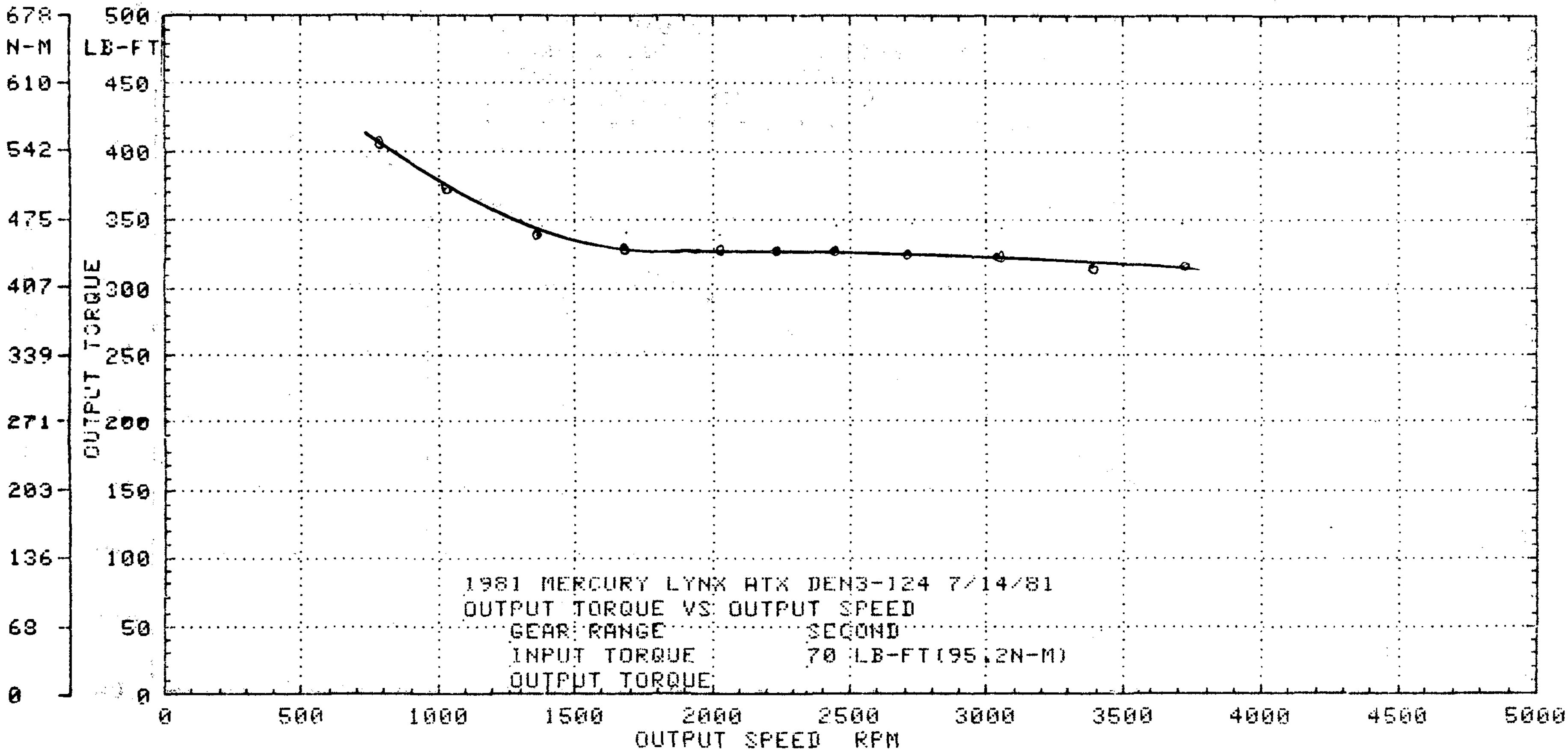
1981 MERCURY LYNX ATX DEN3-124 7/14/81
INPUT SPEED VS OUTPUT SPEED
GEAR RANGE SECOND
INPUT TORQUE
OUTPUT TORQUE 60 LB-FT(81.6N-M)
INPUT SPEED RPM
OUTPUT SPEED RPM
0
100
200
300
400
500
600
700
800
900
1000
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000

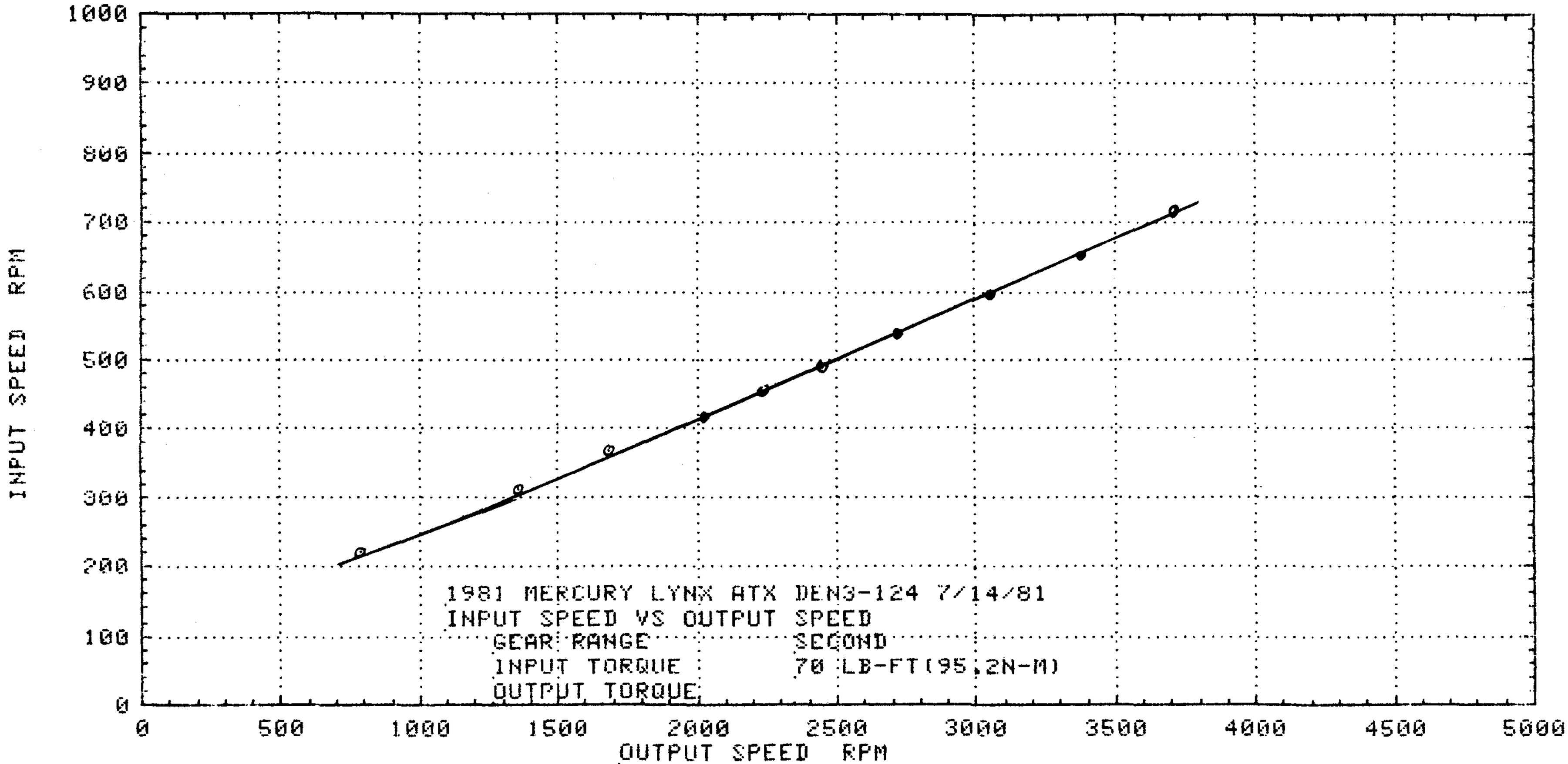

1981 MERCURY LYNX ATX DEN3-124 7/14/81
EFFICIENCY VS OUTPUT SPEED
GEAR RANGE SECOND
INPUT TORQUE
OUTPUT TORQUE 60 LB-FT(81.6N-M)
EFFICIENCY %
OUTPUT SPEED RPM
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
10
20
30
40
50
60
70
80
90
100

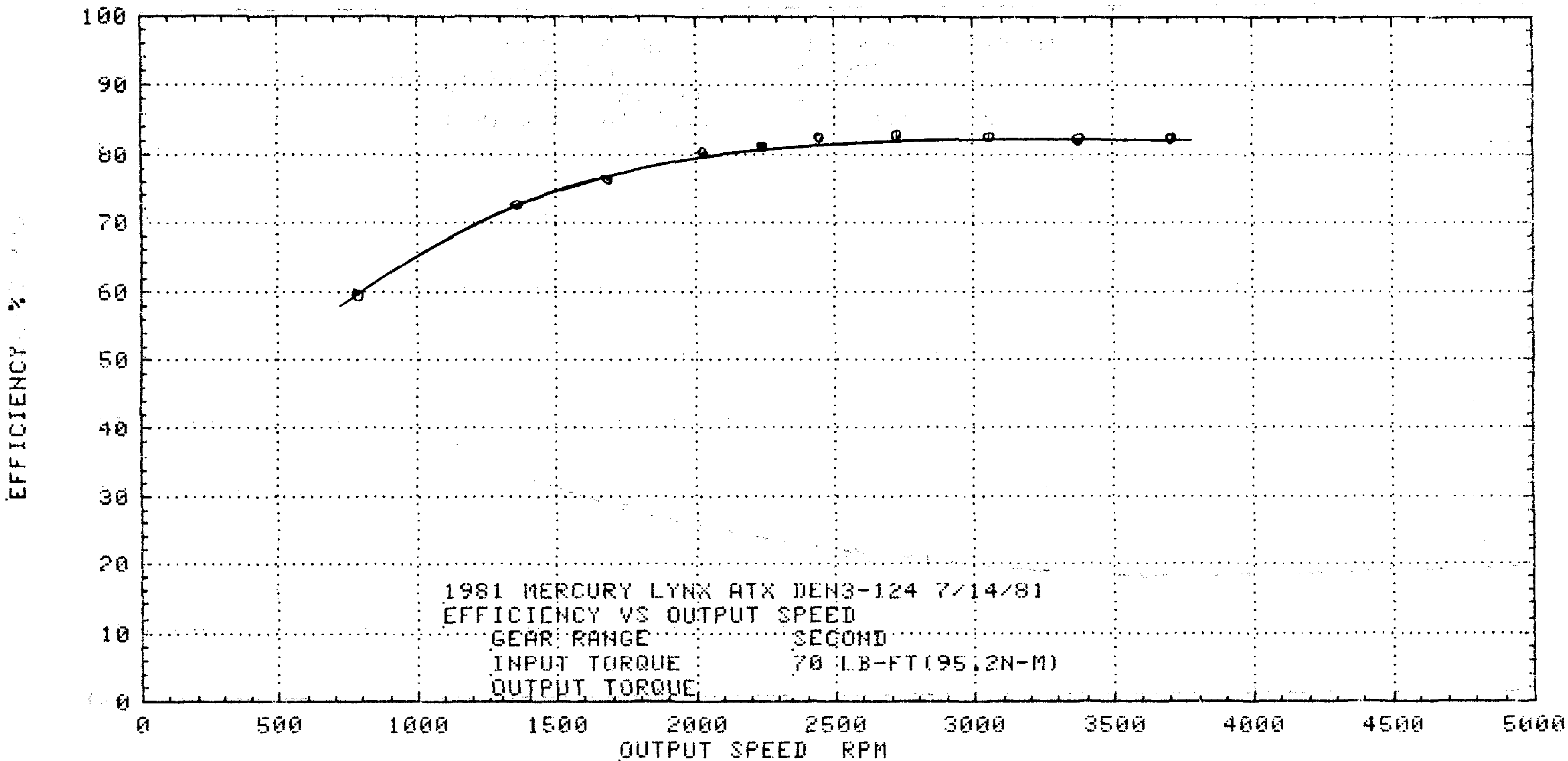

1981 MERCURY LYNX ATX DEN3-124 7/14/81
EFFICIENCY VS POWER OUT
GEAR RANGE SECOND
INPUT TORQUE
OUTPUT TORQUE 60 LB-FT(81.6N-M)
EFFICIENCY %
POWER OUT
HP
KW
0
10
20
30
40
50
60
70
80
90
100
5
15
25
35
45
3
7
11
14
18
22
26
29
33
37

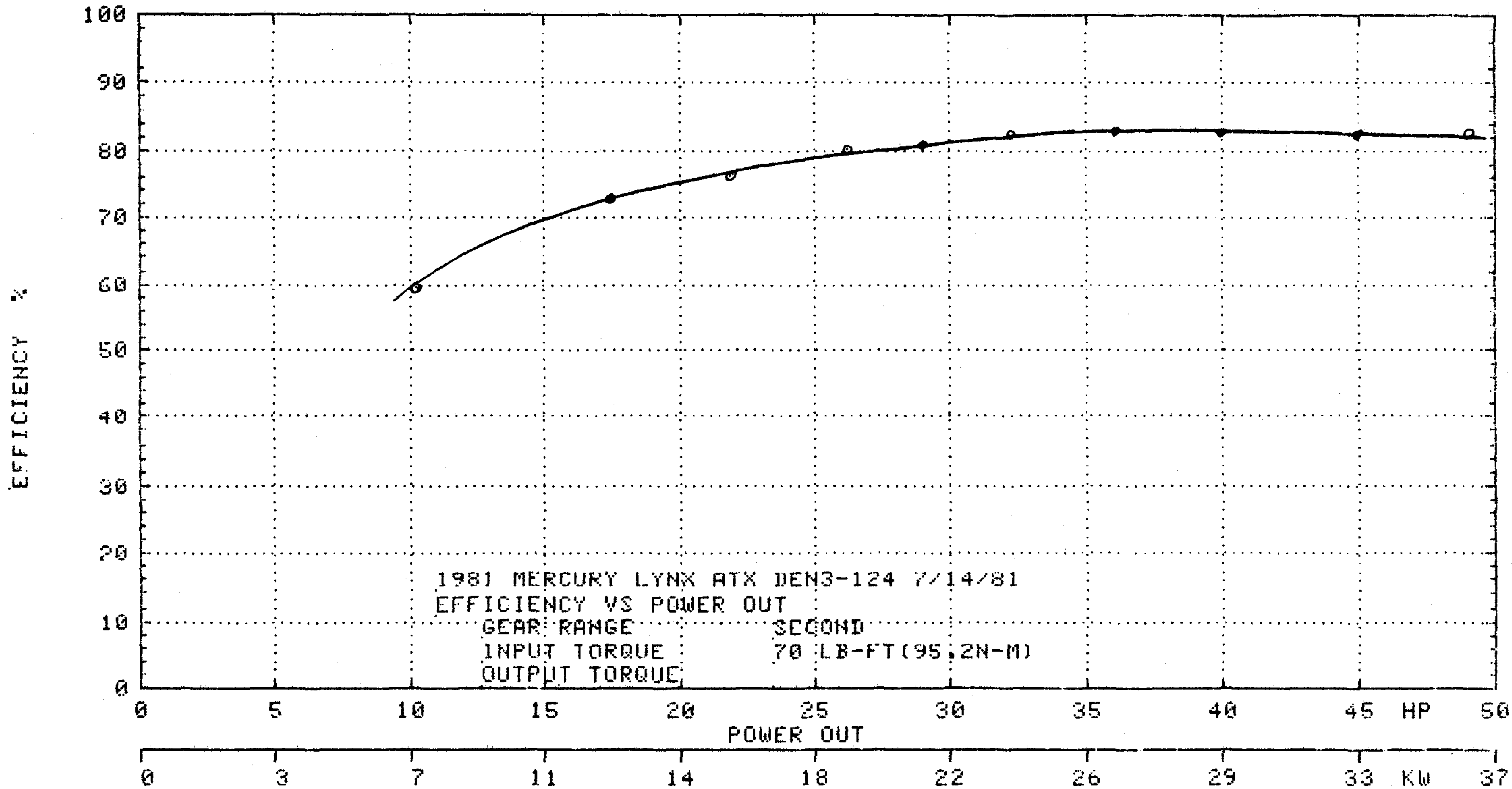


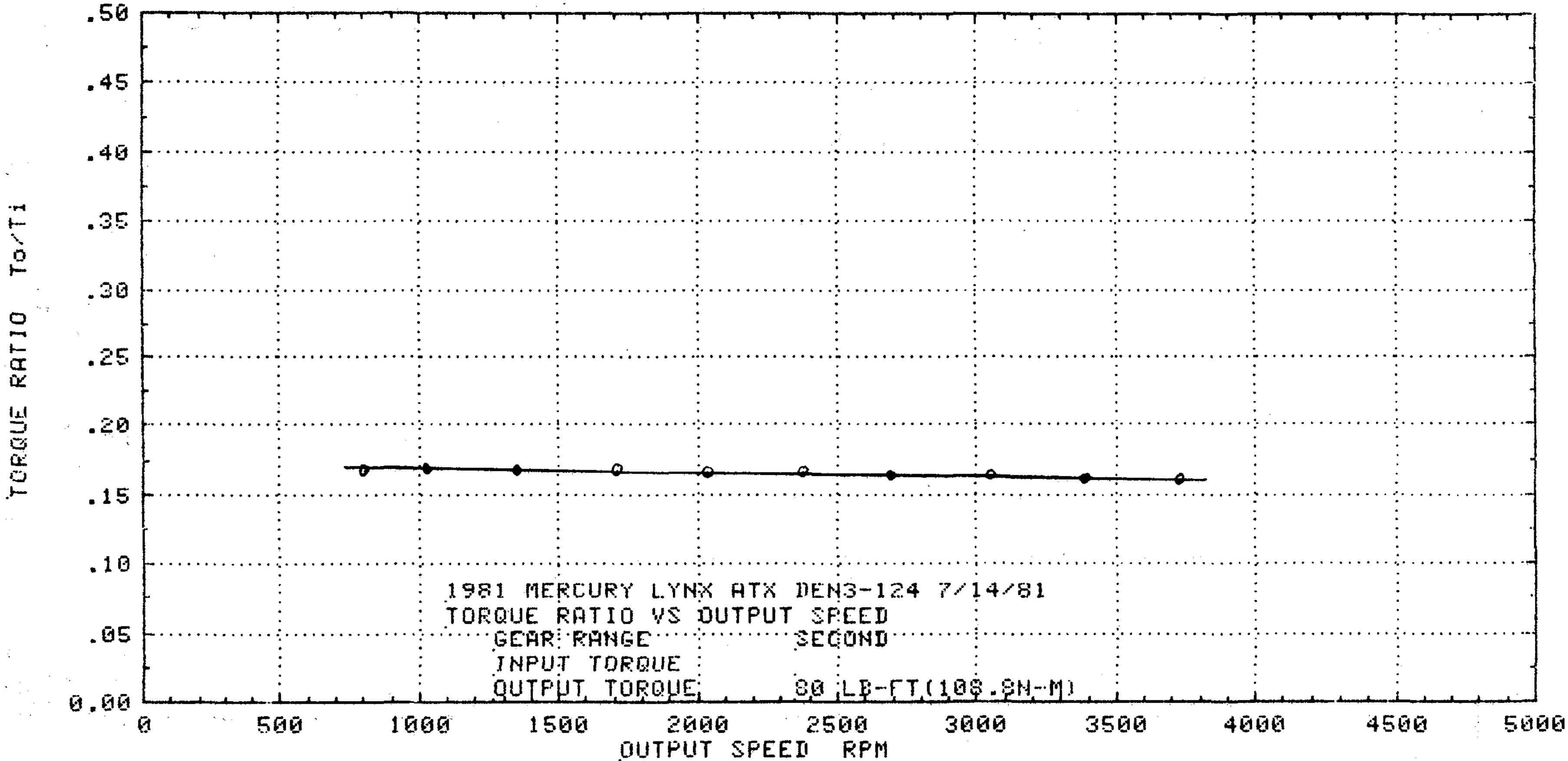
TORQUE RATIO To/Ti
.50
.45
.40
.35
.30
.25
.20
.15
.10
.05
0.00
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
OUTPUT SPEED RPM
1981 MERCURY LYNX ATX DEN3-124 7/14/81
TORQUE RATIO VS OUTPUT SPEED
GEAR RANGE SECOND
INPUT TORQUE 70 LB-FT(95.2N-M)
OUTPUT TORQUE

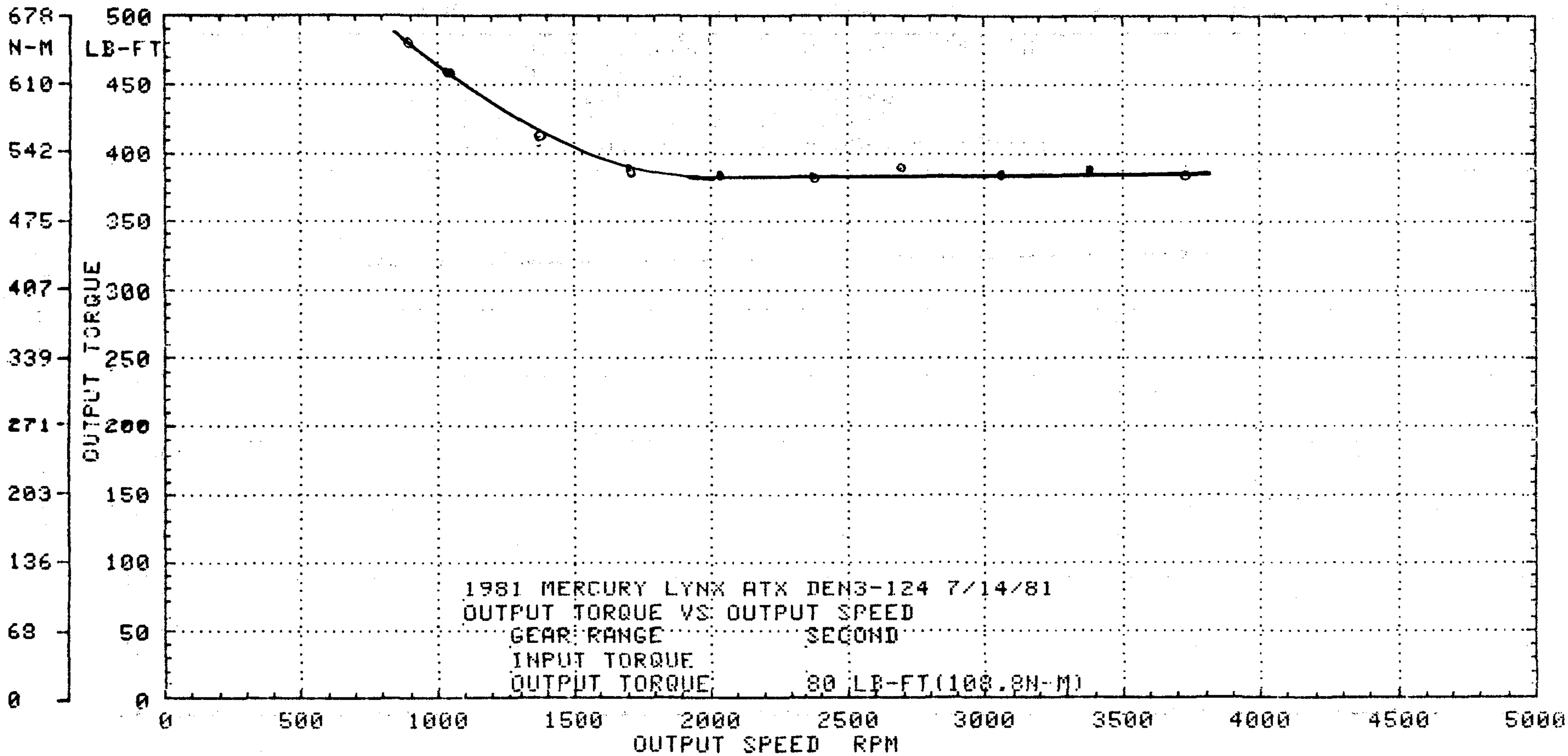

678
N-M
610
542
475
407
339
271
203
136
68
0
500
LB-FT
450
400
350
300
250
200
150
100
50
0
OUTPUT TORQUE
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
OUTPUT SPEED RPM
1981 MERCURY LYNX ATX DEN3-124 7/14/81
OUTPUT TORQUE VS OUTPUT SPEED
GEAR RANGE SECOND
INPUT TORQUE 70 LB-FT(95.2N-M)
OUTPUT TORQUE

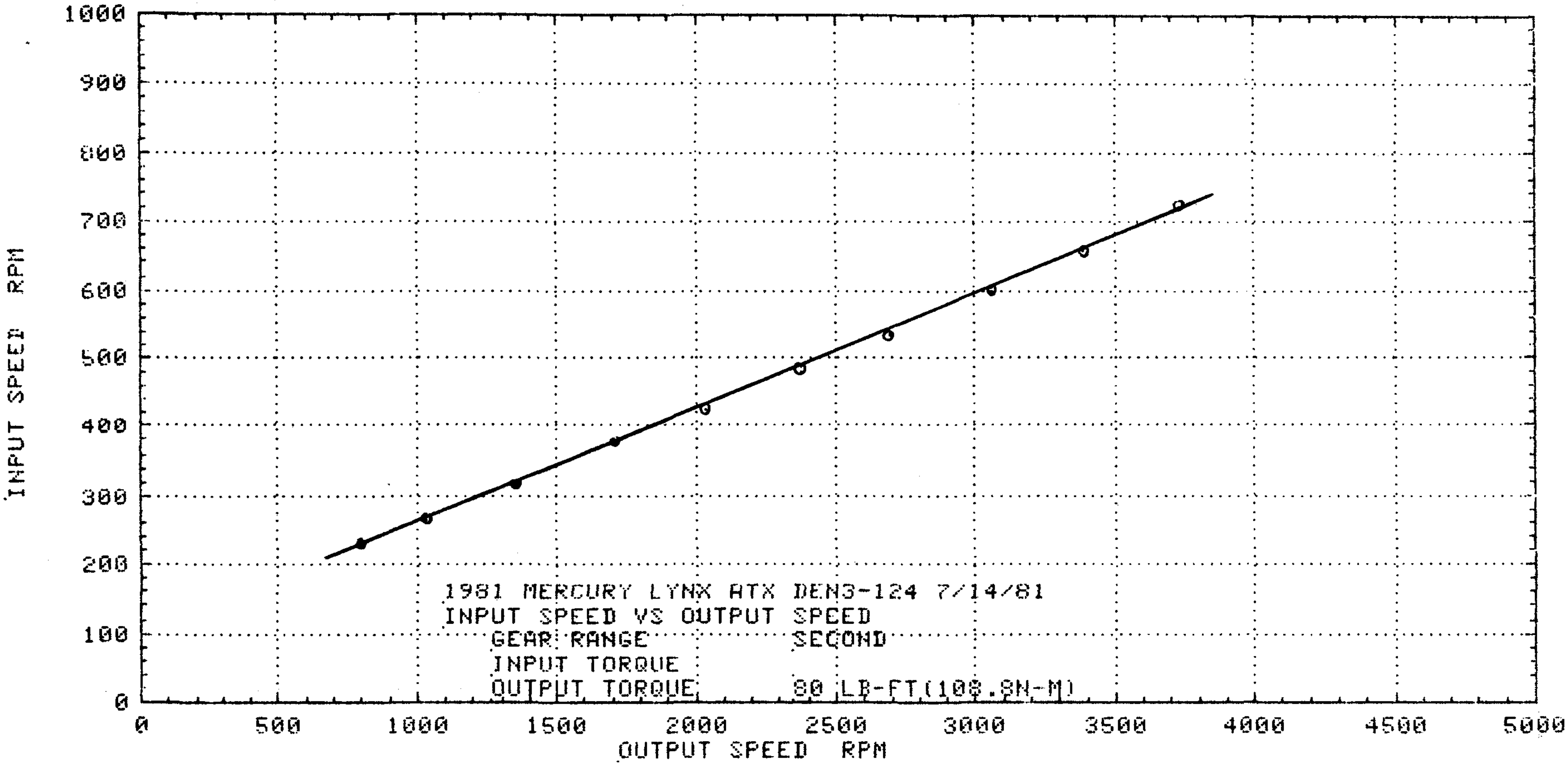

1000
900
800
700
600
500
400
300
200
100
0
INPUT SPEED RPM
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
OUTPUT SPEED RPM
1981 MERCURY LYNX ATX DEN3-124 7/14/81
INPUT SPEED VS OUTPUT SPEED
GEAR RANGE SECOND
INPUT TORQUE 70 LB-FT(95.2N-M)
OUTPUT TORQUE

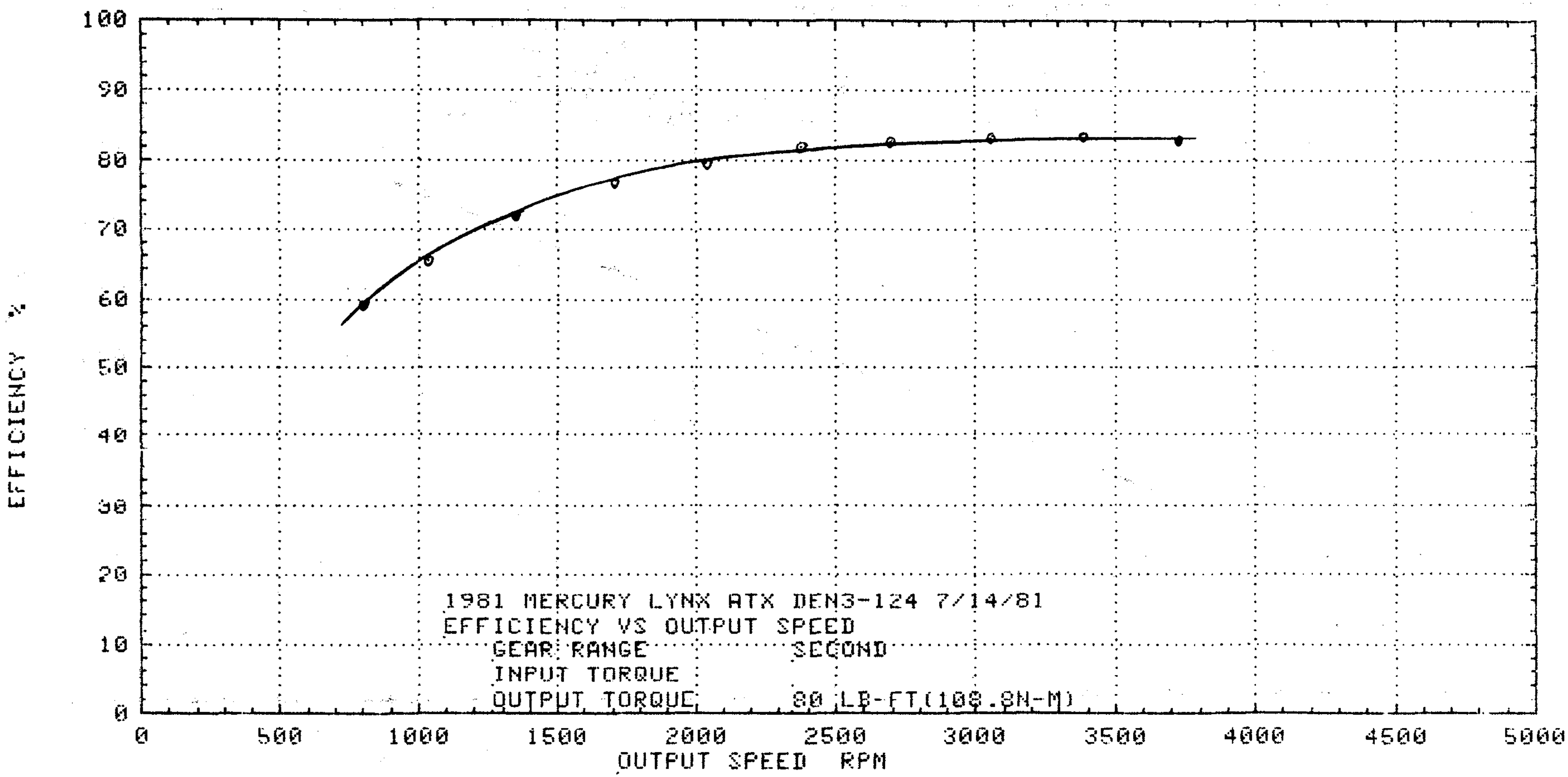

100
90
80
70
60
50
40
30
20
10
0
EFFICIENCY %
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
OUTPUT SPEED RPM
1981 MERCURY LYNX ATX DEN3-124 7/14/81
EFFICIENCY VS OUTPUT SPEED
GEAR RANGE SECOND
INPUT TORQUE 70 LB-FT(95.2N-M)
OUTPUT TORQUE

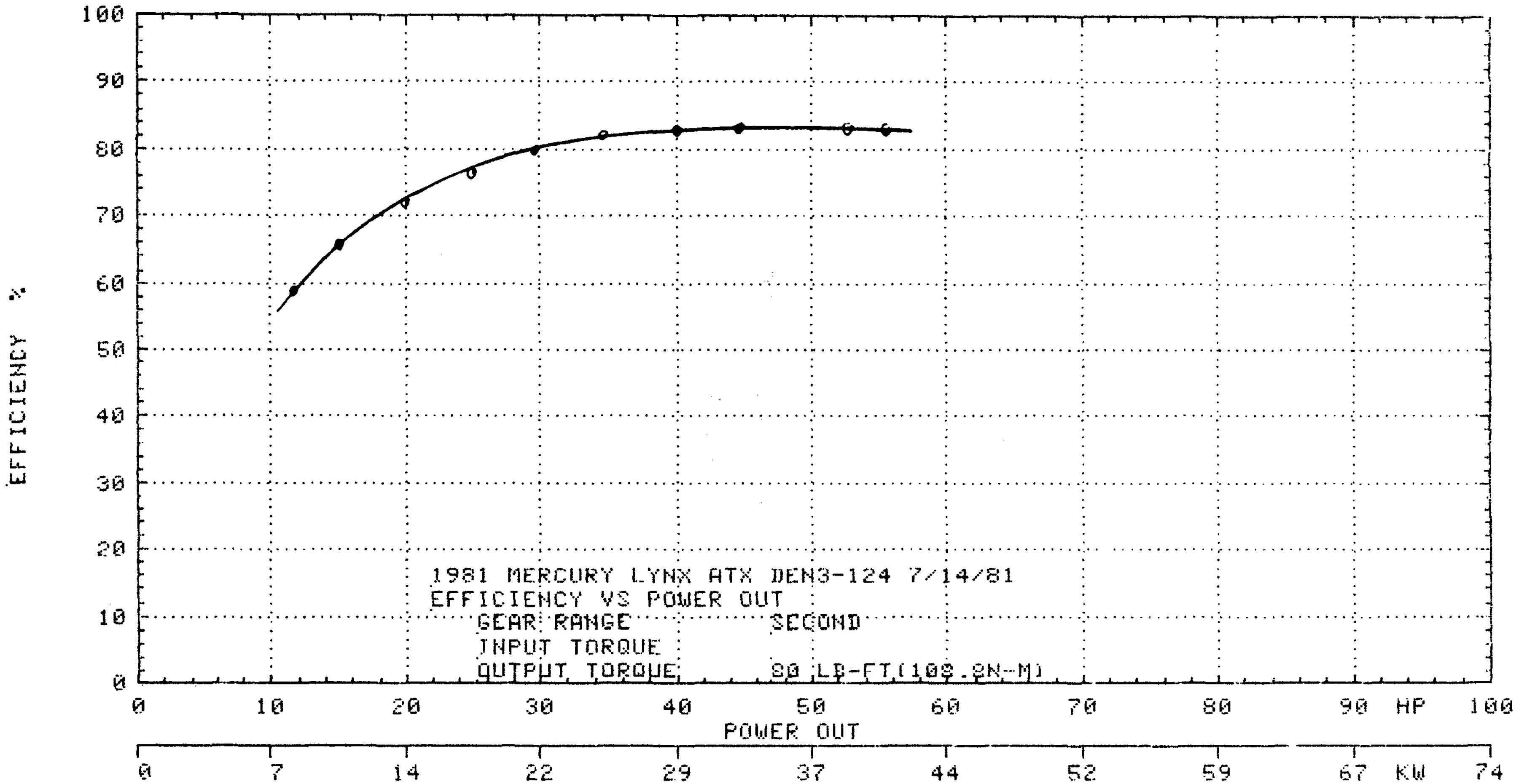

1981 MERCURY LYNX ATX DEN3-124 7/14/81
EFFICIENCY VS POWER OUT
GEAR RANGE SECOND
INPUT TORQUE 70 LB-FT(95.2N-M)
OUTPUT TORQUE
EFFICIENCY %
POWER OUT
HP
KW
0
10
20
30
40
50
60
70
80
90
100
0
5
10
15
20
25
30
35
40
45
50
0
3
7
11
14
18
22
26
29
33
37


.50
.45
.40
.35
.30
.25
.20
.15
.10
.05
0.00
TORQUE RATIO To/Ti
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
OUTPUT SPEED RPM
1981 MERCURY LYNX ATX DEN3-124 7/14/81
TORQUE RATIO VS OUTPUT SPEED
GEAR RANGE SECOND
INPUT TORQUE
OUTPUT TORQUE 80 LB-FT(108.8N-M)


678 N-M
610
542
475
407
339
271
203
136
68
0
500 LB-FT
450
400
350
300
250
200
150
100
50
0
OUTPUT TORQUE
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
OUTPUT SPEED RPM
1981 MERCURY LYNX ATX DEN3-124 7/14/81
OUTPUT TORQUE VS OUTPUT SPEED
GEAR RANGE SECOND
INPUT TORQUE
OUTPUT TORQUE 80 LB-FT(108.8N-M)


1981 MERCURY LYNX ATX DEN3-124 7/14/81
INPUT SPEED VS OUTPUT SPEED
GEAR RANGE SECOND
INPUT TORQUE
OUTPUT TORQUE 80 LB-FT(108.8N-M)
INPUT SPEED RPM
OUTPUT SPEED RPM
0
100
200
300
400
500
600
700
800
900
1000
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000


1981 MERCURY LYNX ATX DEN3-124 7/14/81
EFFICIENCY VS OUTPUT SPEED
GEAR RANGE SECOND
INPUT TORQUE
OUTPUT TORQUE 80 LB-FT(108.8N-M)
EFFICIENCY %
OUTPUT SPEED RPM
0
10
20
30
40
50
60
70
80
90
100
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000


1981 MERCURY LYNX ATX DEN3-124 7/14/81
EFFICIENCY VS POWER OUT
GEAR RANGE SECOND
INPUT TORQUE
OUTPUT TORQUE 80 LB-FT(108.8N-M)
EFFICIENCY %
0
10
20
30
40
50
60
70
80
90
100
POWER OUT
HP
KW
0
7
14
22
29
37
44
52
59
67
74

COAST PERFORMANCE

3rd Gear

Graphs Contained in This Section

Torque Ratio -vs- Output Speed

Output Torque -vs- Output Speed

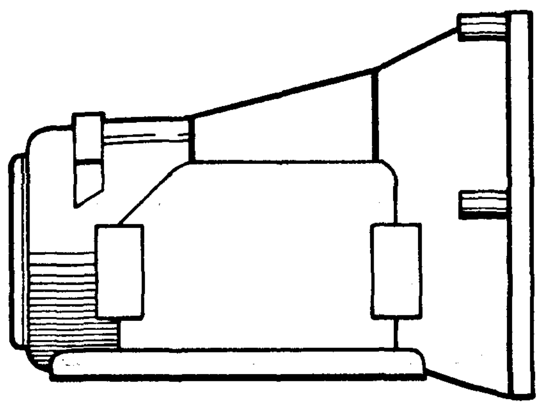
Input Speed -vs- Output Speed

Efficiency -vs- Output Speed

Efficiency -vs- Power Out

Torque In

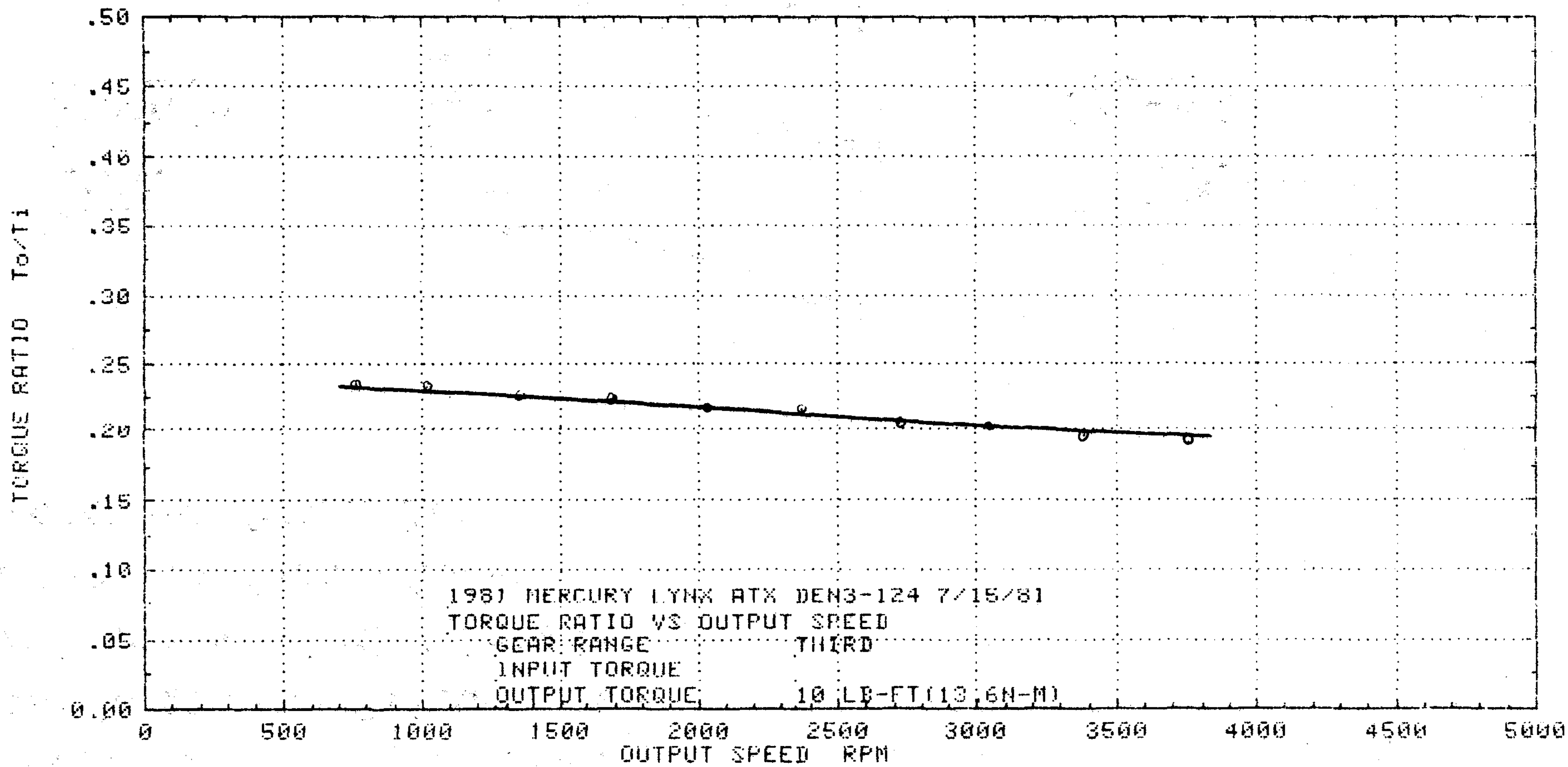
Speed In

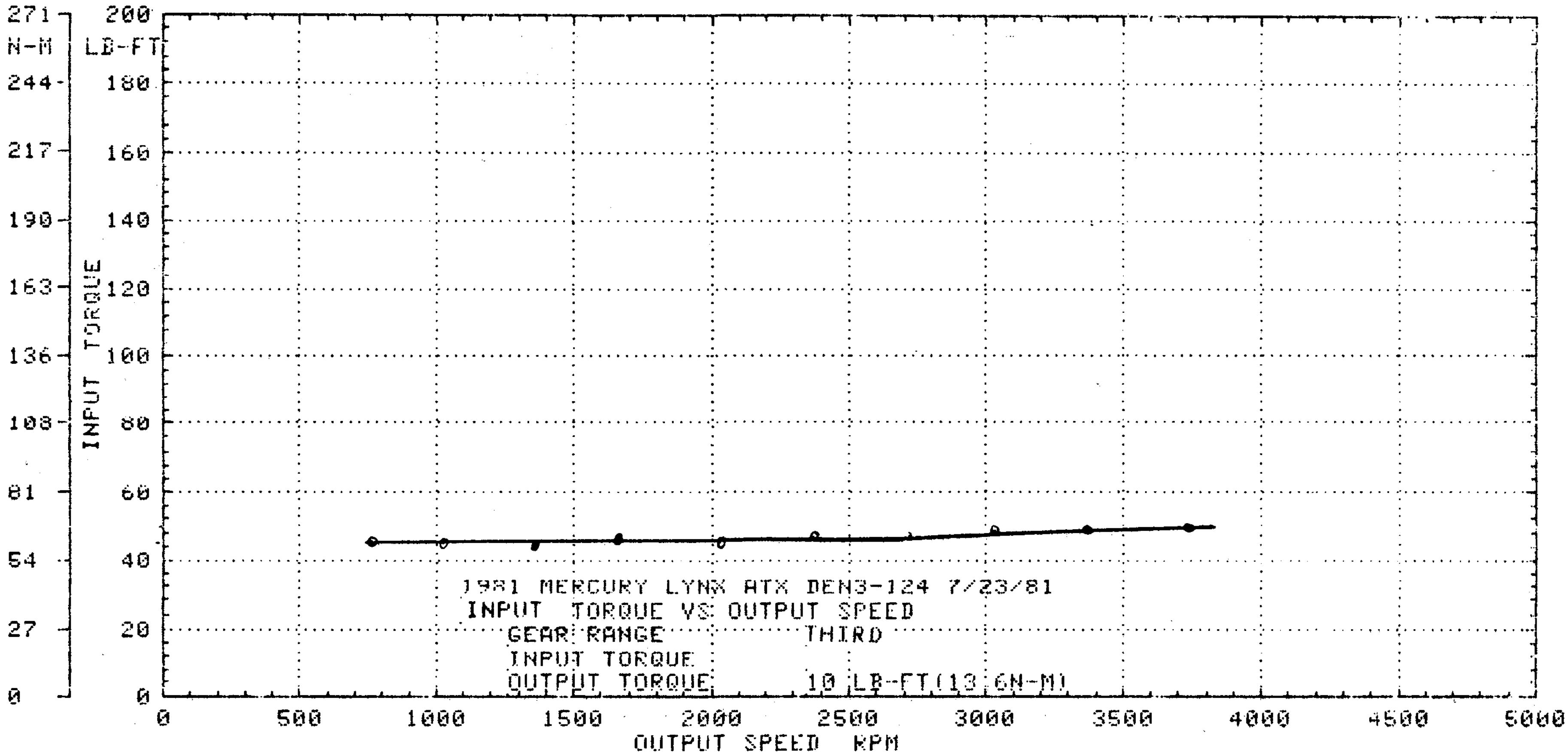


Torque Out

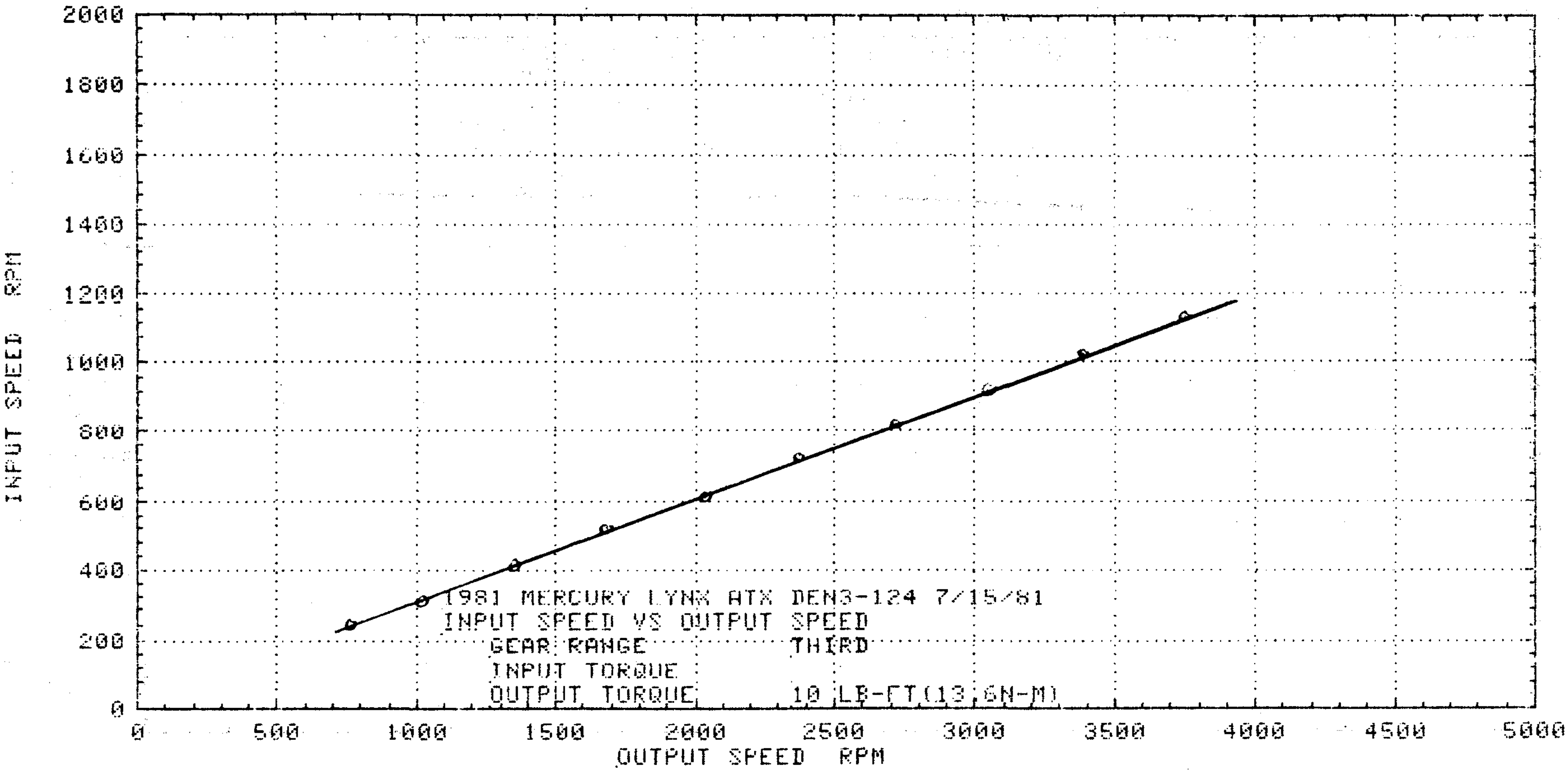
Speed Out

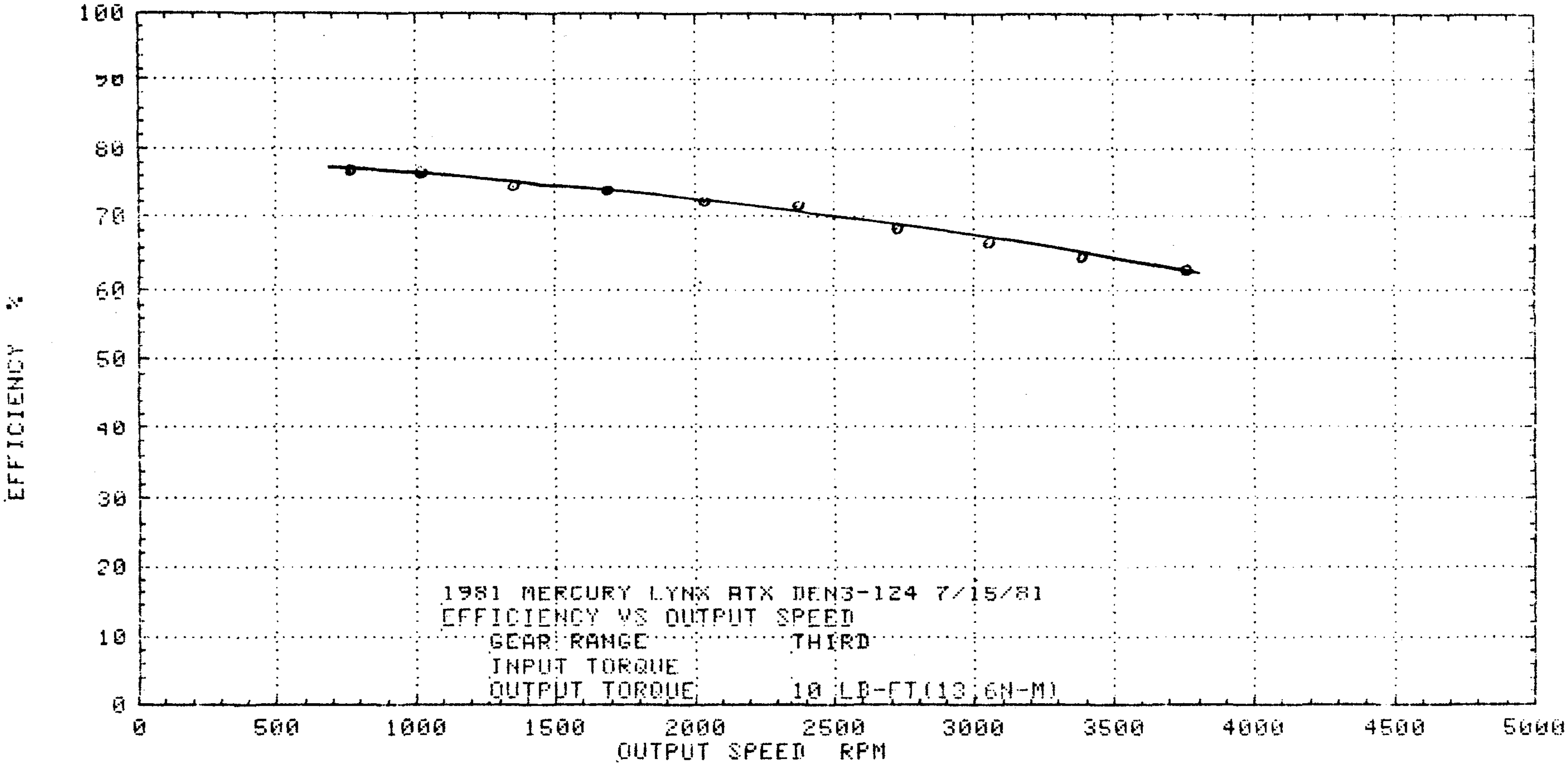
Coast Performance Tests

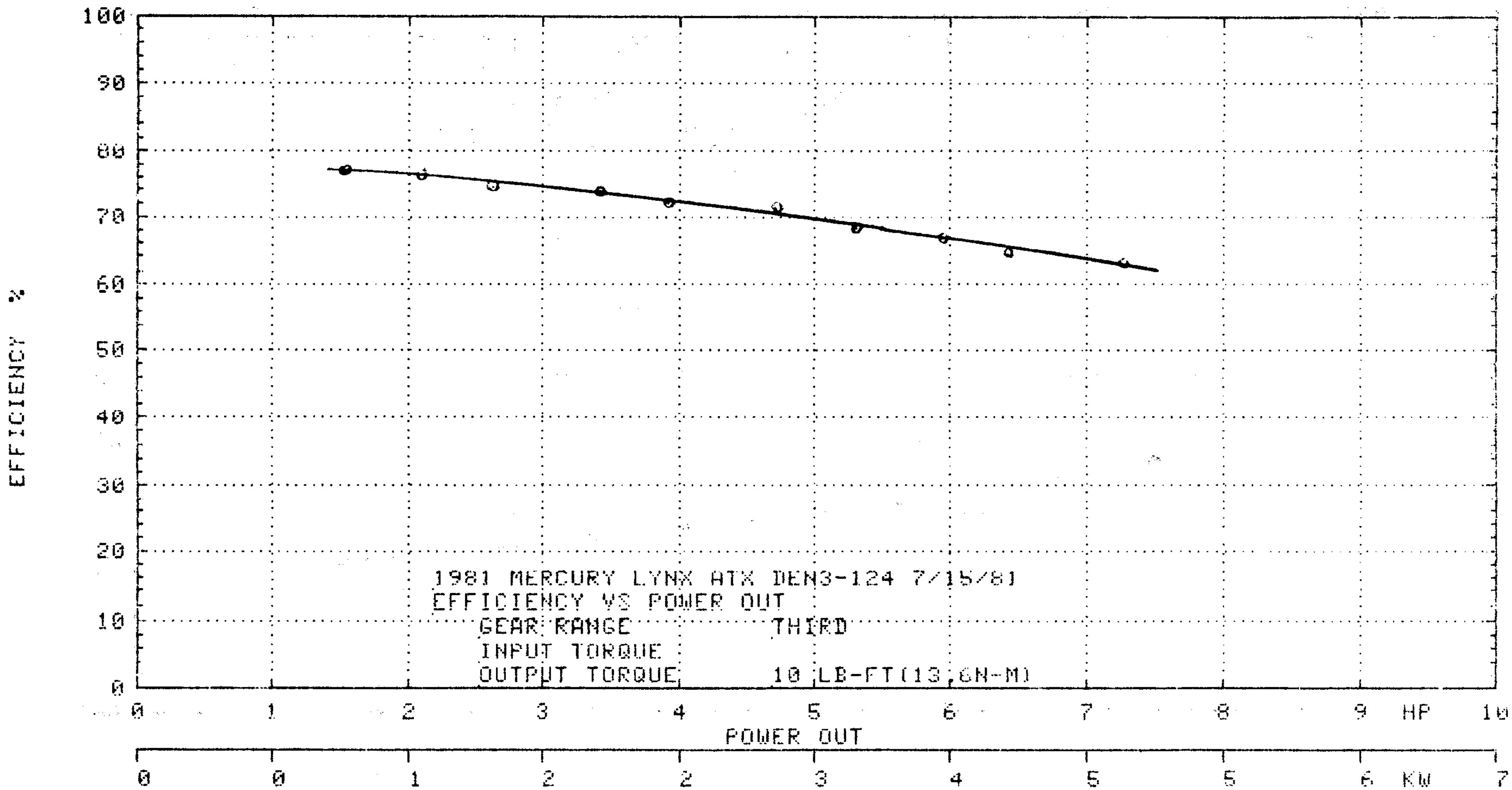

TORQUE RATIO To/Ti
.50
.45
.40
.35
.30
.25
.20
.15
.10
.05
0.00
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
OUTPUT SPEED RPM
1981 MERCURY LYNX ATX DEN3-124 7/15/81
TORQUE RATIO VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE
OUTPUT TORQUE 10 LB-FT(13.6N-M)

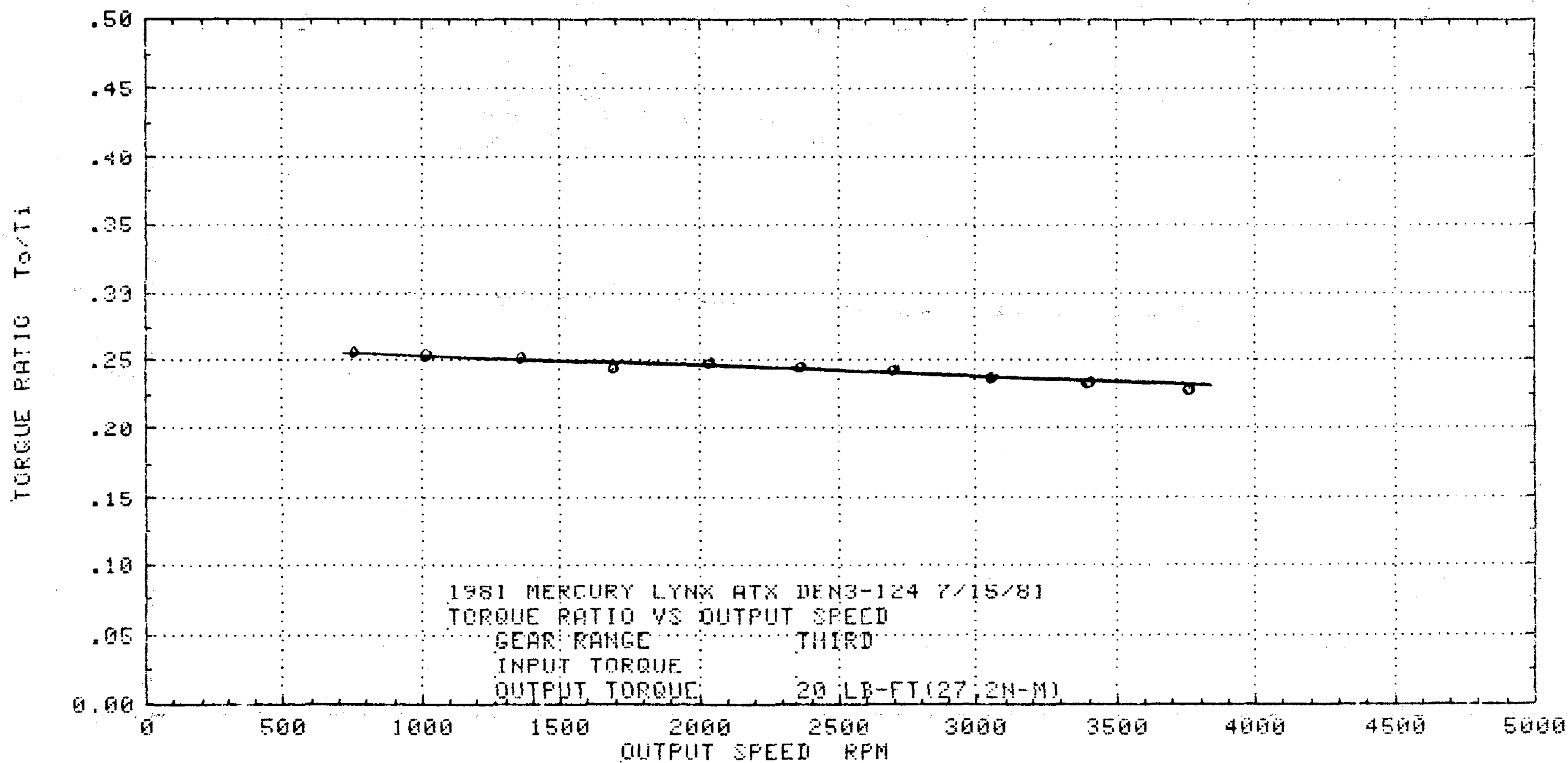


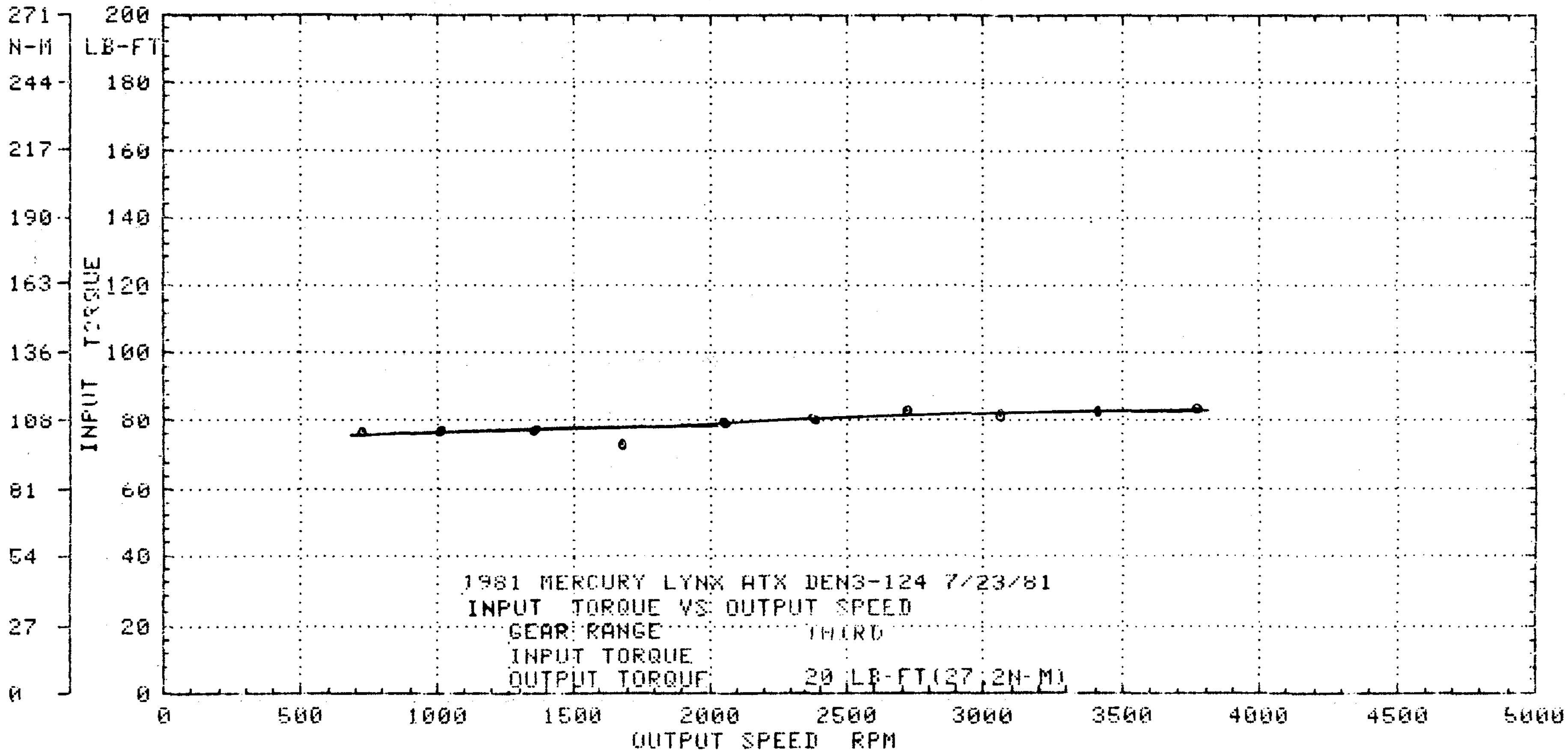
271 N-M
200 LB-FT
244 180
217 160
190 140
163 120
136 100
108 80
81 60
54 40
27 20
0 0
INPUT TORQUE
0 500 1000 1500 2000 2500 3000 3500 4000 4500 5000
OUTPUT SPEED RPM
1981 MERCURY LYNX ATX DEN3-124 7/23/81
INPUT TORQUE VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE
OUTPUT TORQUE 10 LB-FT(13.6N-M)

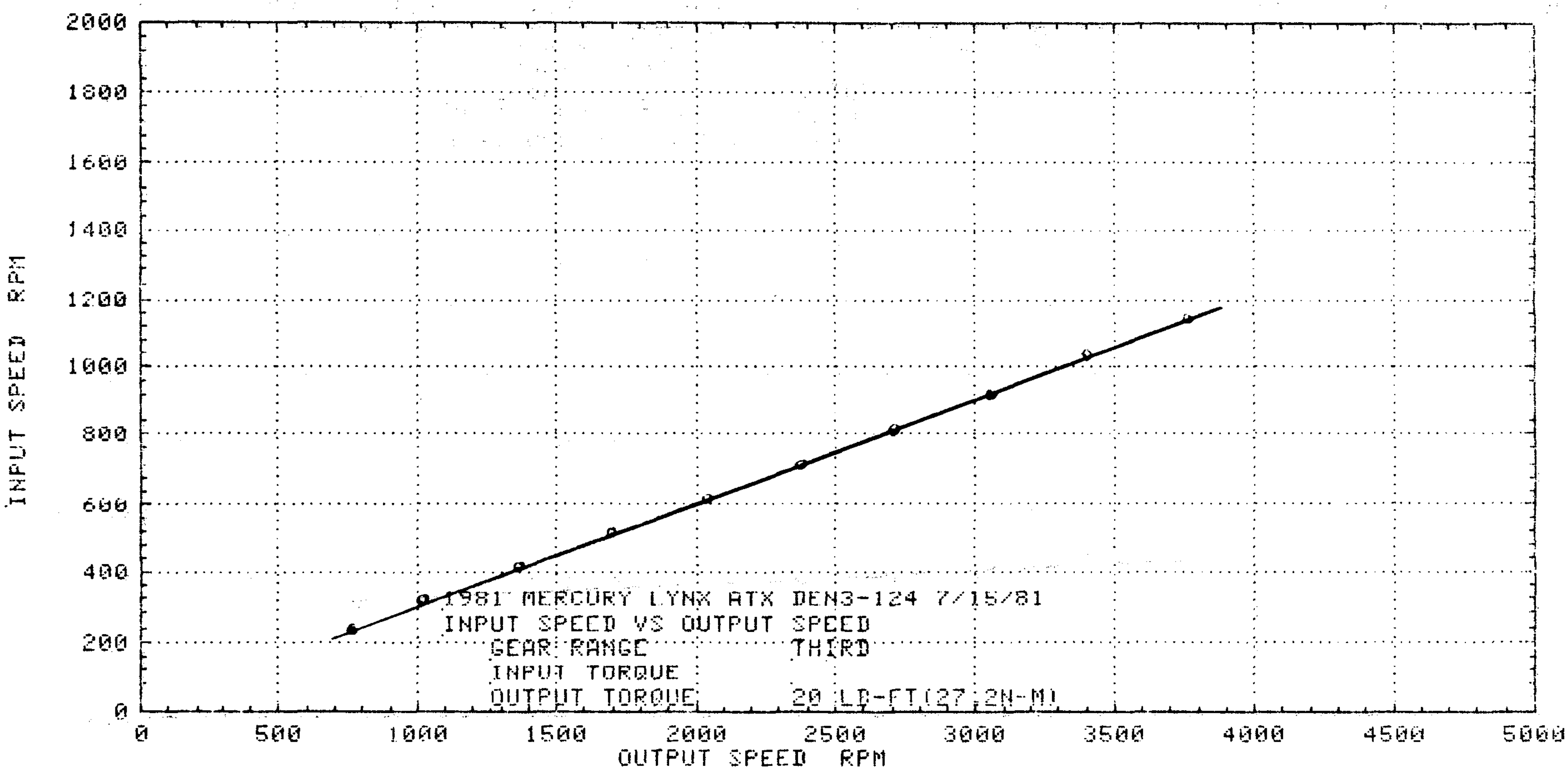

1981 MERCURY LYNX ATX DEN3-124 7/15/81
INPUT SPEED VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE
OUTPUT TORQUE 10 LB-FT(13.6N-M)
INPUT SPEED RPM
OUTPUT SPEED RPM
0
200
400
600
800
1000
1200
1400
1600
1800
2000
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000


1981 MERCURY LYNX ATX DEN3-124 7/15/81
EFFICIENCY VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE
OUTPUT TORQUE 10 LB-FT(13.6N-M)
EFFICIENCY %
OUTPUT SPEED RPM
0
10
20
30
40
50
60
70
80
90
100
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000

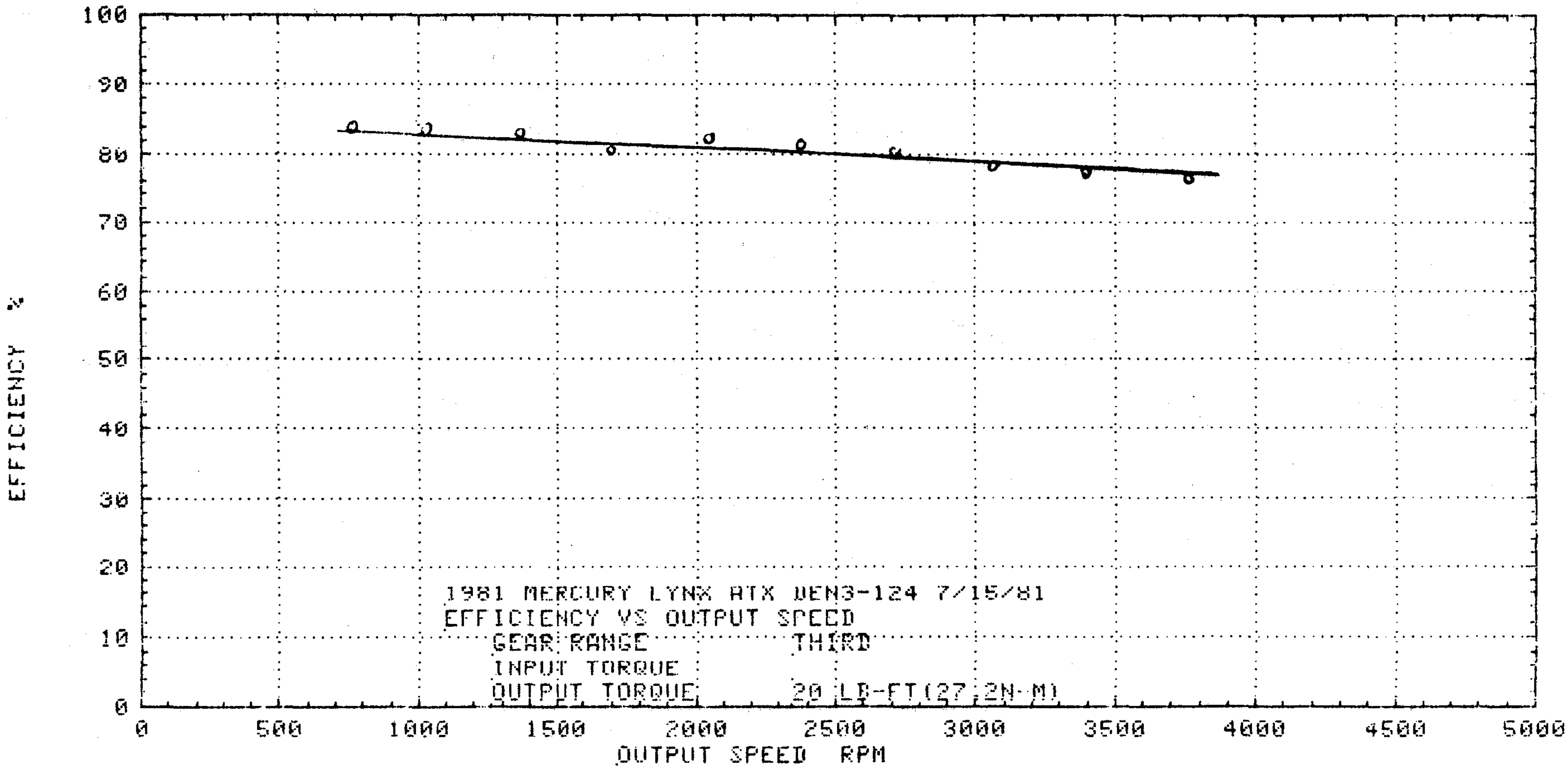

1981 MERCURY LYNX ATX DEN3-124 7/15/81
EFFICIENCY VS POWER OUT
GEAR RANGE THIRD
INPUT TORQUE
OUTPUT TORQUE 10 LB-FT(13.6N-M)
EFFICIENCY %
0
10
20
30
40
50
60
70
80
90
100
POWER OUT
0 1 2 3 4 5 6 7 8 9 HP 10
0 0 1 2 2 3 4 5 5 6 KW 7

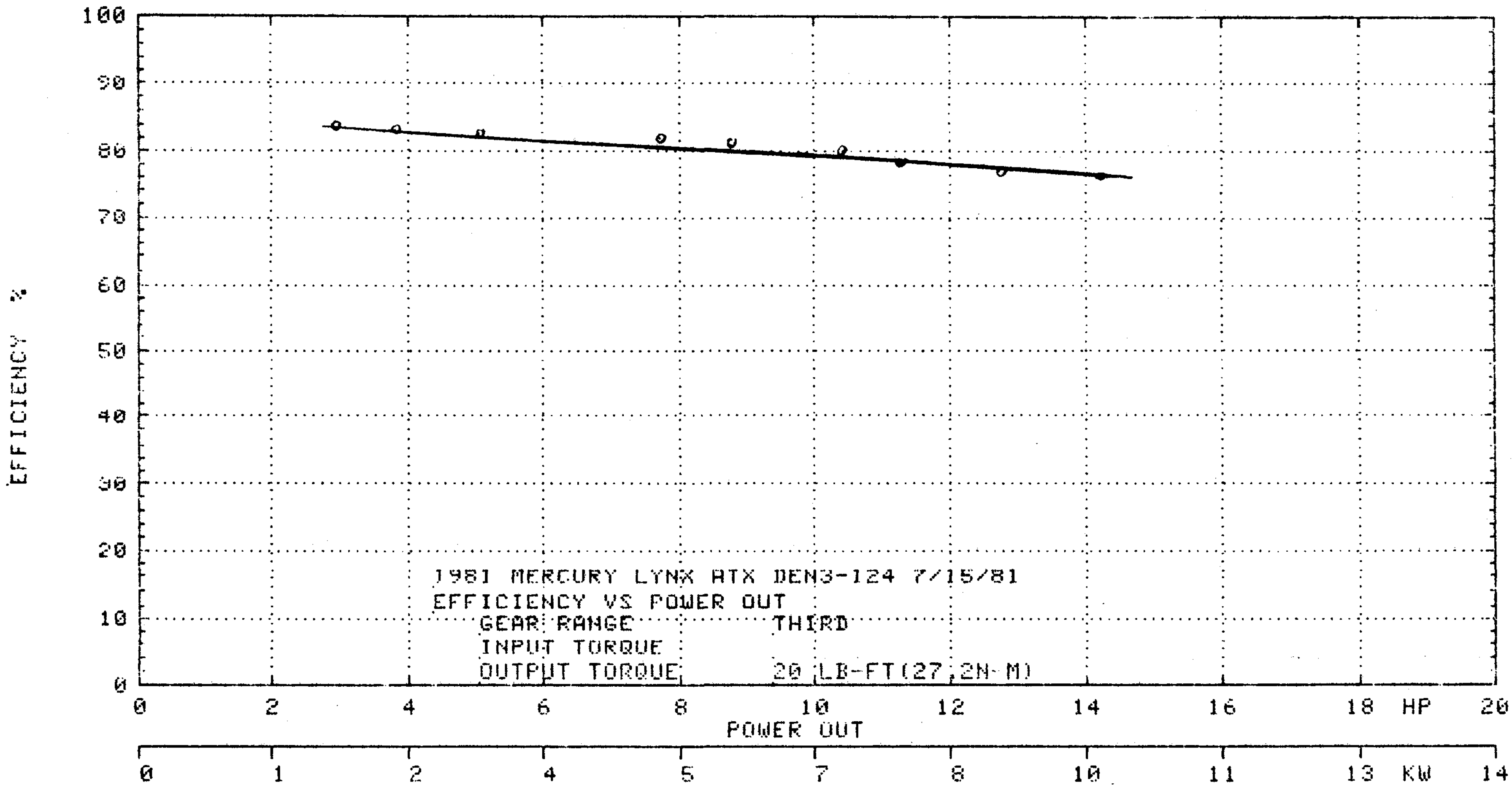

1981 MERCURY LYNX ATX DEN3-124 7/15/81
TORQUE RATIO VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE
OUTPUT TORQUE 20 LB-FT(27.2N-M)
TORQUE RATIO To/Ti
OUTPUT SPEED RPM
.50
.45
.40
.35
.30
.25
.20
.15
.10
.05
0.00
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000

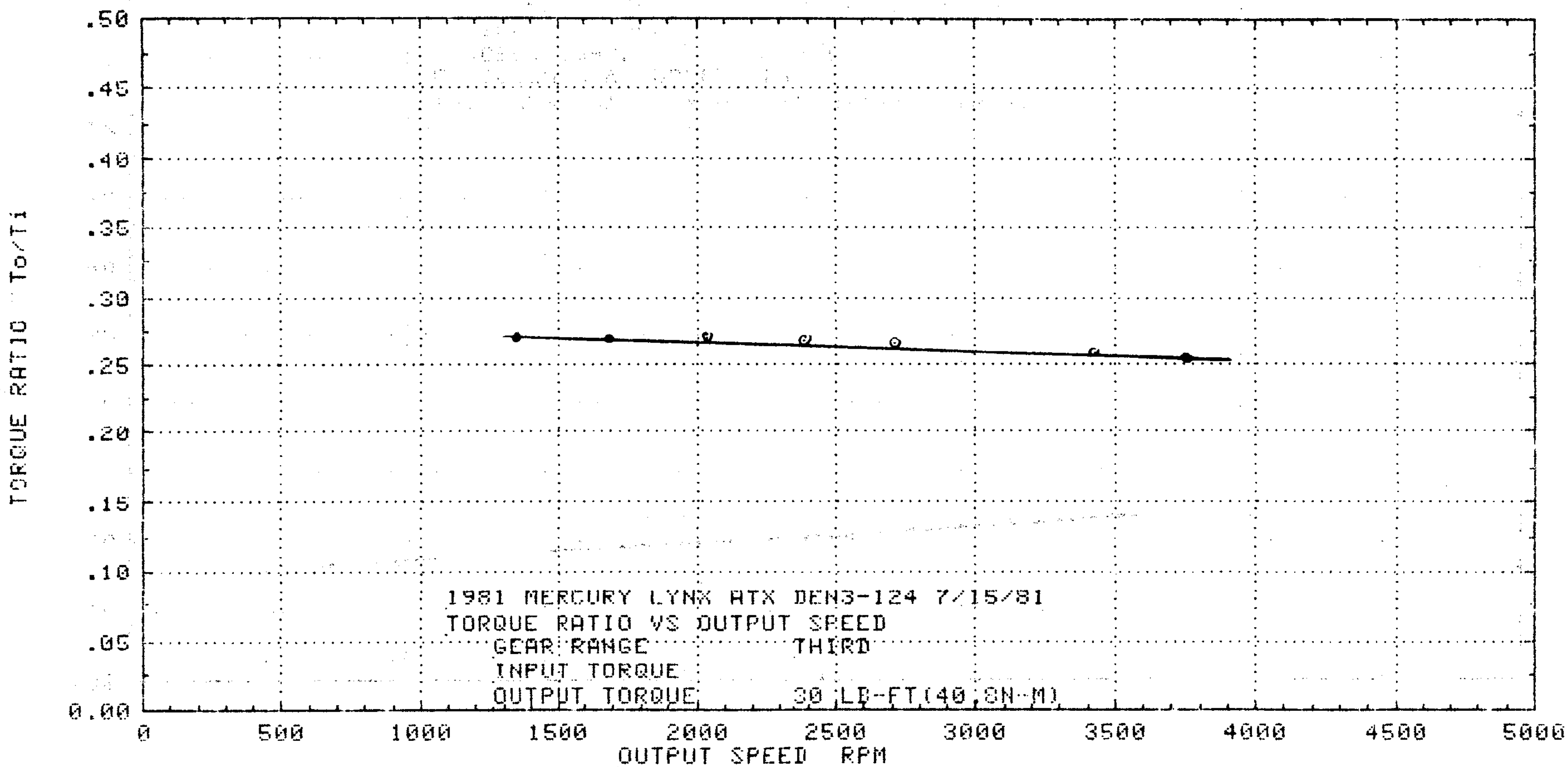

271
N-M
244
217
190
163
136
108
81
54
27
0
200
LB-FT
180
160
140
120
100
80
60
40
20
0
INPUT TORQUE
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
OUTPUT SPEED RPM
1981 MERCURY LYNX ATX DEN3-124 7/23/81
INPUT TORQUE VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE
OUTPUT TORQUE 20 LB-FT(27.2N-M)



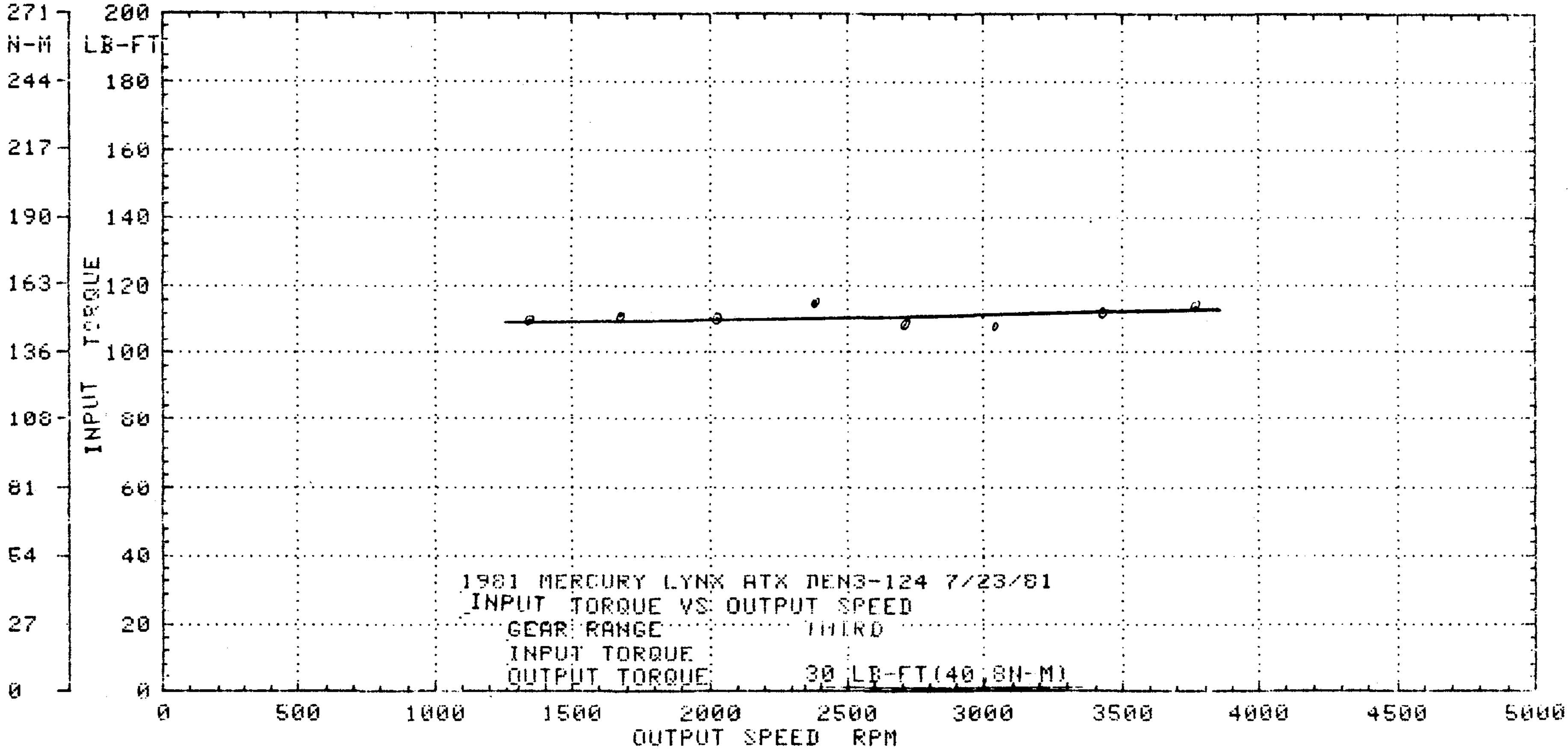
1981 MERCURY LYNX ATX DEN3-124 7/15/81
INPUT SPEED VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE
OUTPUT TORQUE 20 LB-FT(27.2N-M)
INPUT SPEED RPM
OUTPUT SPEED RPM


100
90
80
70
60
50
40
30
20
10
0
EFFICIENCY %
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
OUTPUT SPEED RPM
1981 MERCURY LYNX ATX DEN3-124 7/15/81
EFFICIENCY VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE
OUTPUT TORQUE 20 LB-FT(27.2N-M)

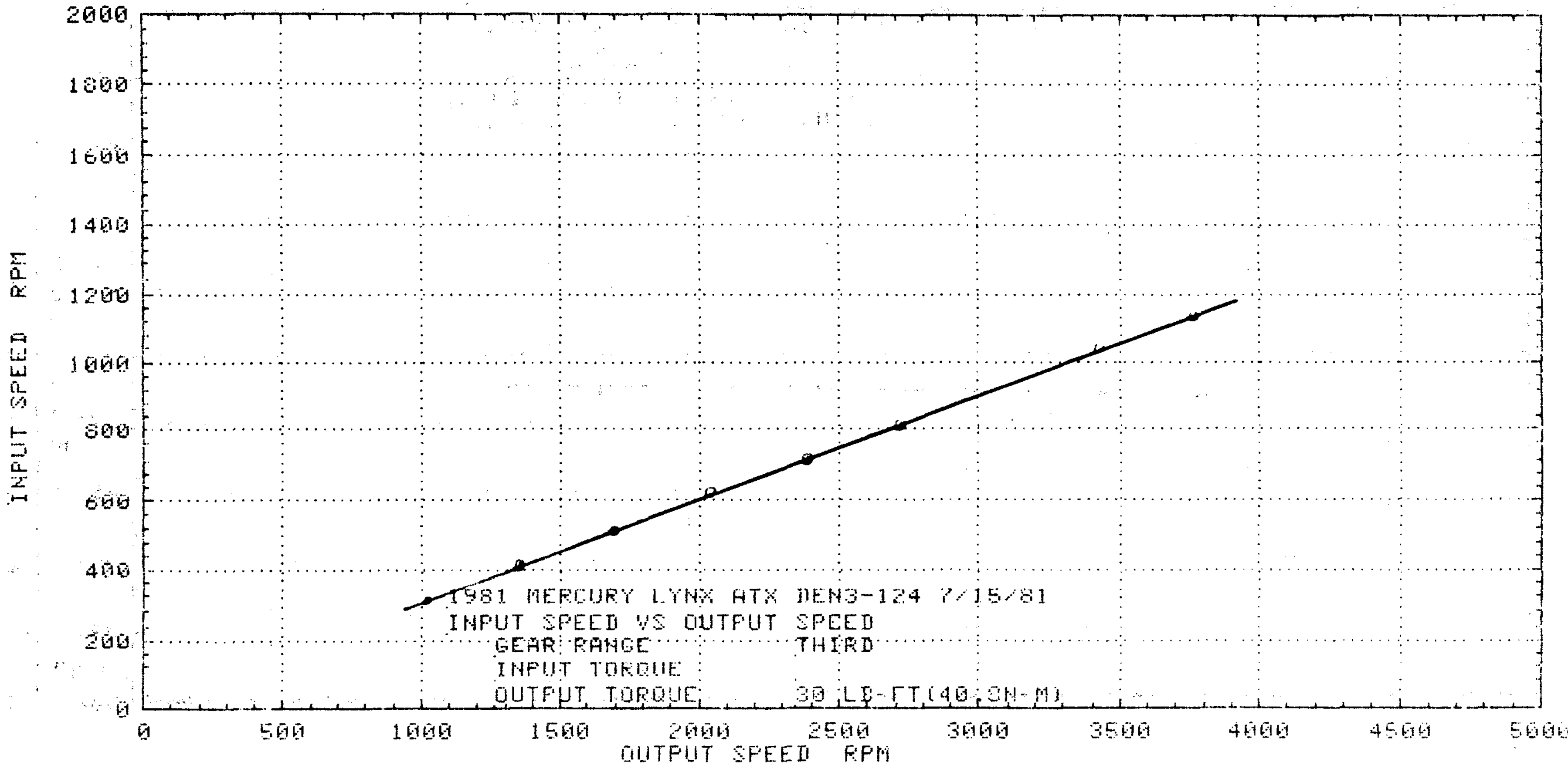

1981 MERCURY LYNX ATX DEN3-124 7/15/81
EFFICIENCY VS POWER OUT
GEAR RANGE THIRD
INPUT TORQUE
OUTPUT TORQUE 20 LB-FT(27.2N-M)
EFFICIENCY %
100
90
80
70
60
50
40
30
20
10
0
0 2 4 6 8 10 12 14 16 18 HP 20
POWER OUT
0 1 2 4 5 7 8 10 11 13 KW 14



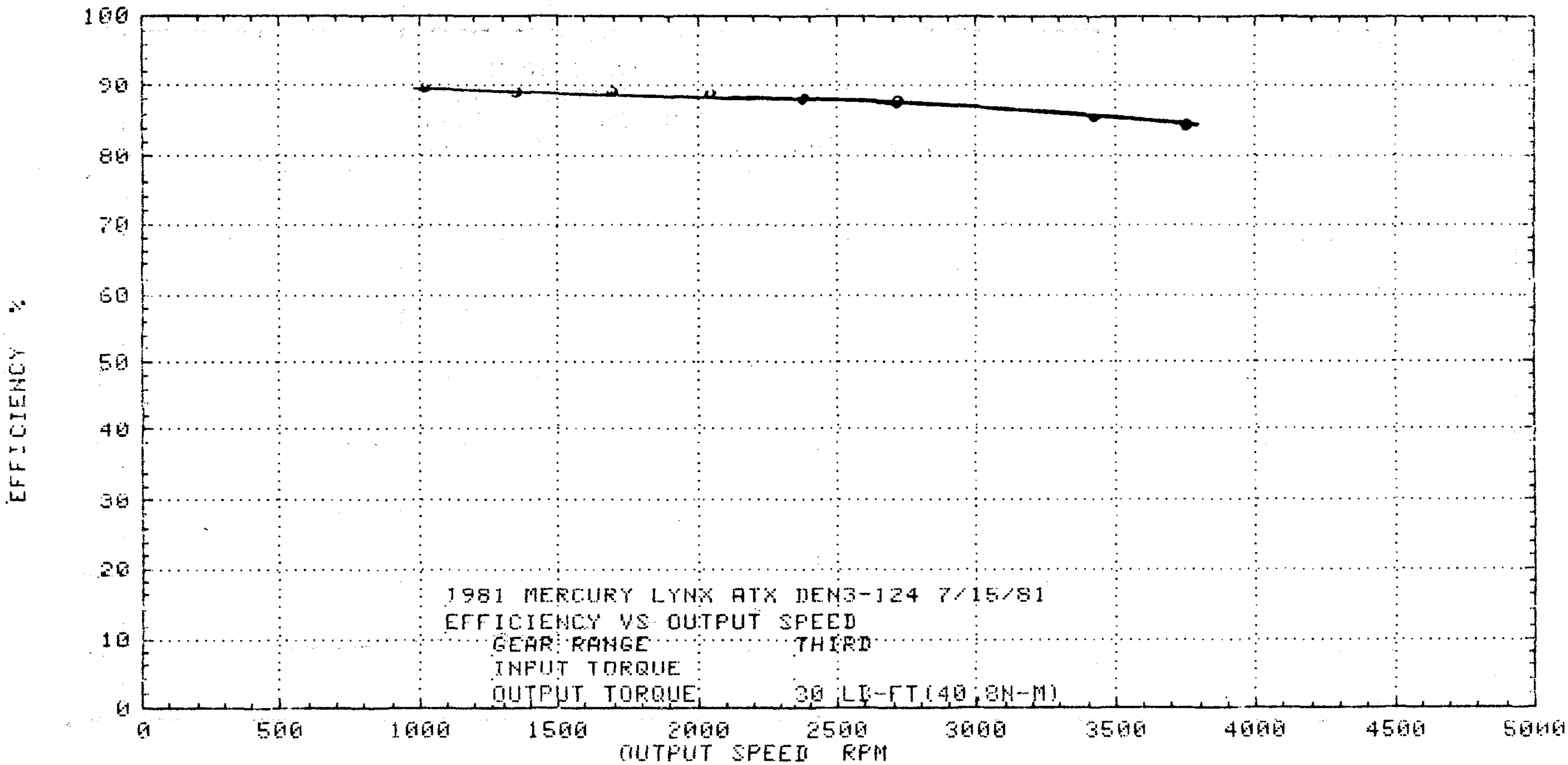
TORQUE RATIO To/Ti
.50
.45
.40
.35
.30
.25
.20
.15
.10
.05
0.00
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
OUTPUT SPEED RPM
1981 MERCURY LYNX ATX DEN3-124 7/15/81
TORQUE RATIO VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE
OUTPUT TORQUE 30 LB-FT(40.8N-M)

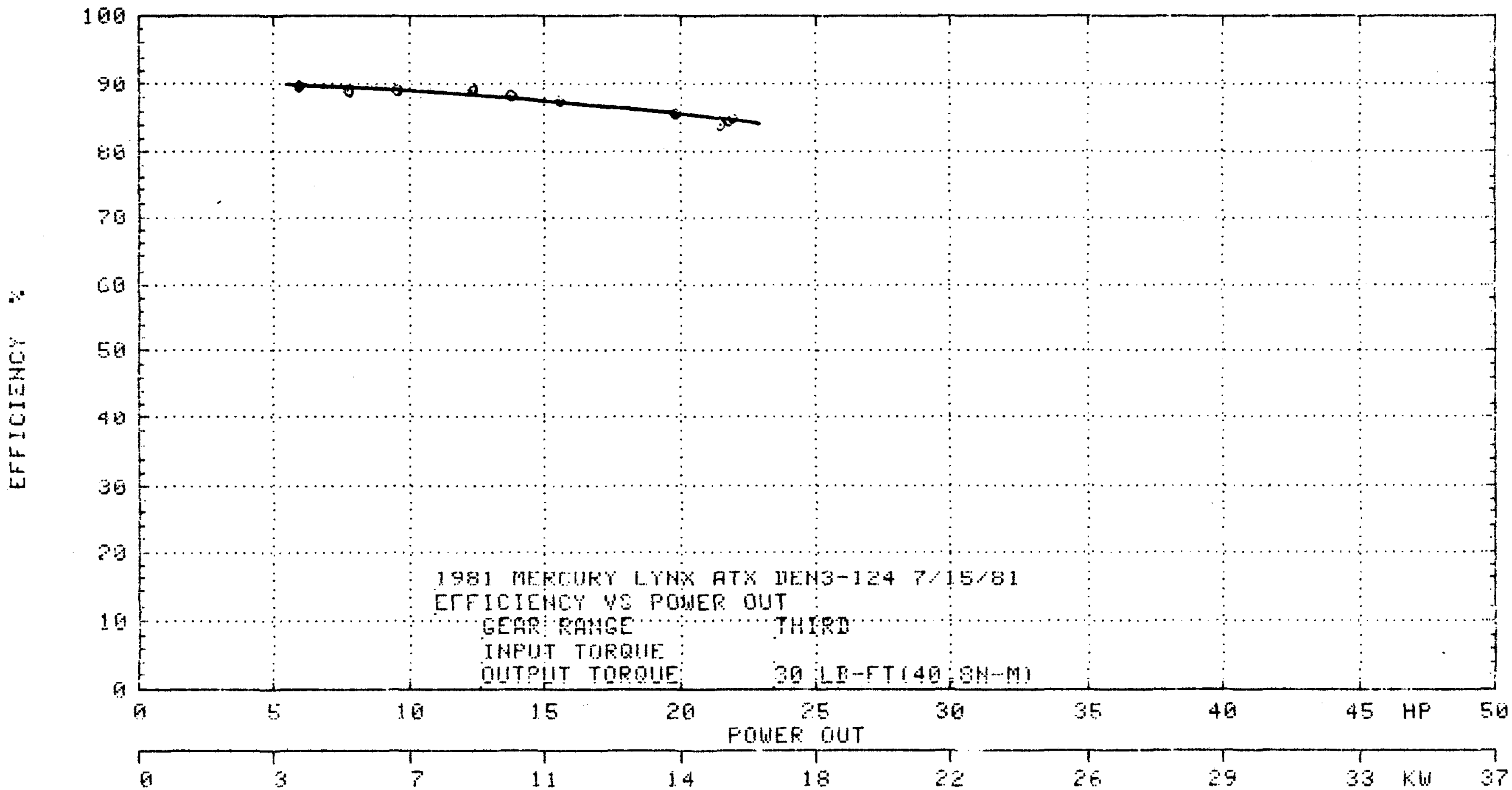


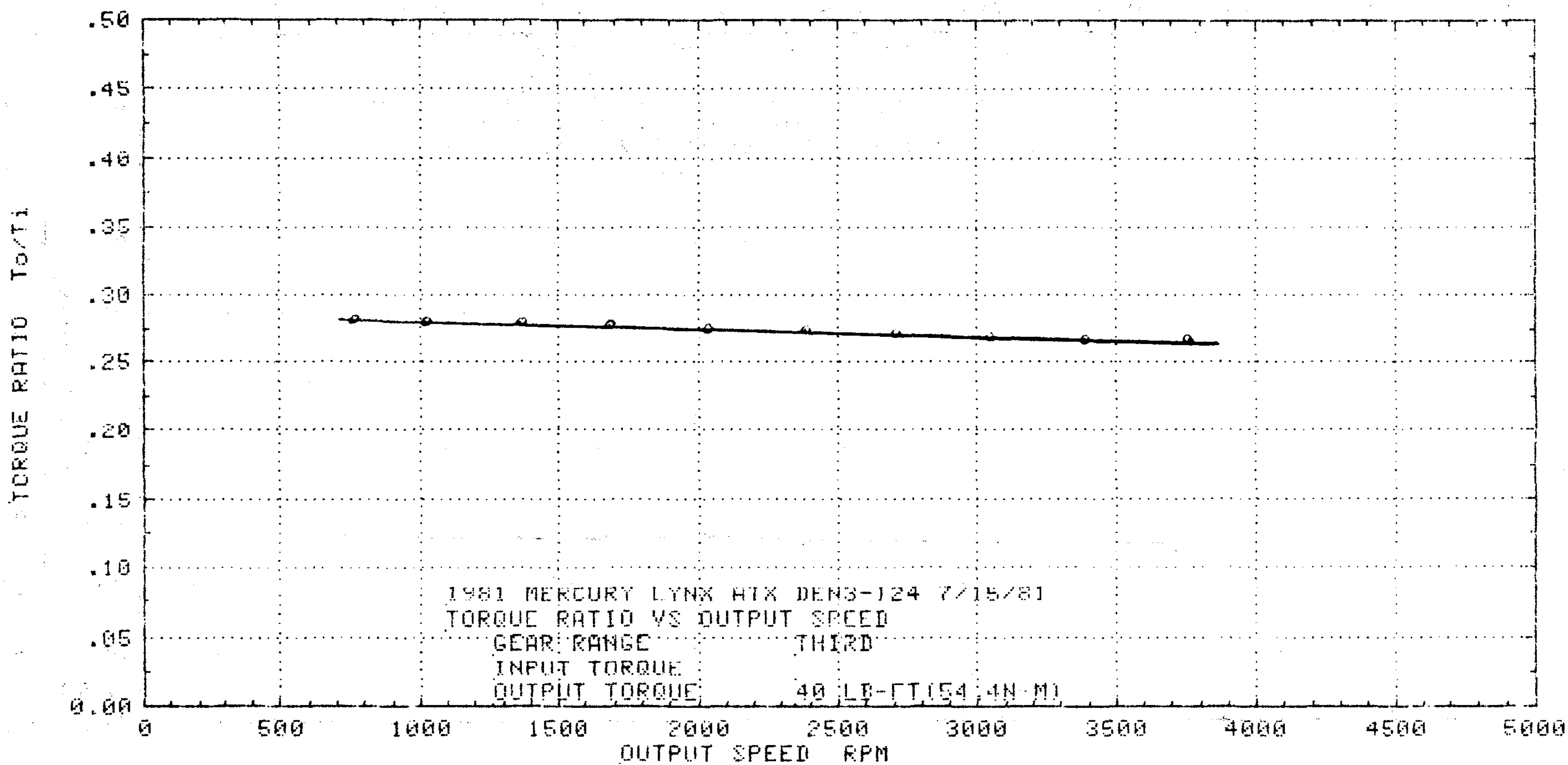
271
N-M
244
217
190
163
136
108
81
54
27
0
200
LB-FT
180
160
140
120
100
80
60
40
20
0
INPUT TORQUE
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
OUTPUT SPEED RPM
1981 MERCURY LYNX ATX DEN3-124 7/23/81
INPUT TORQUE VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE
OUTPUT TORQUE 30 LB-FT(40.8N-M)

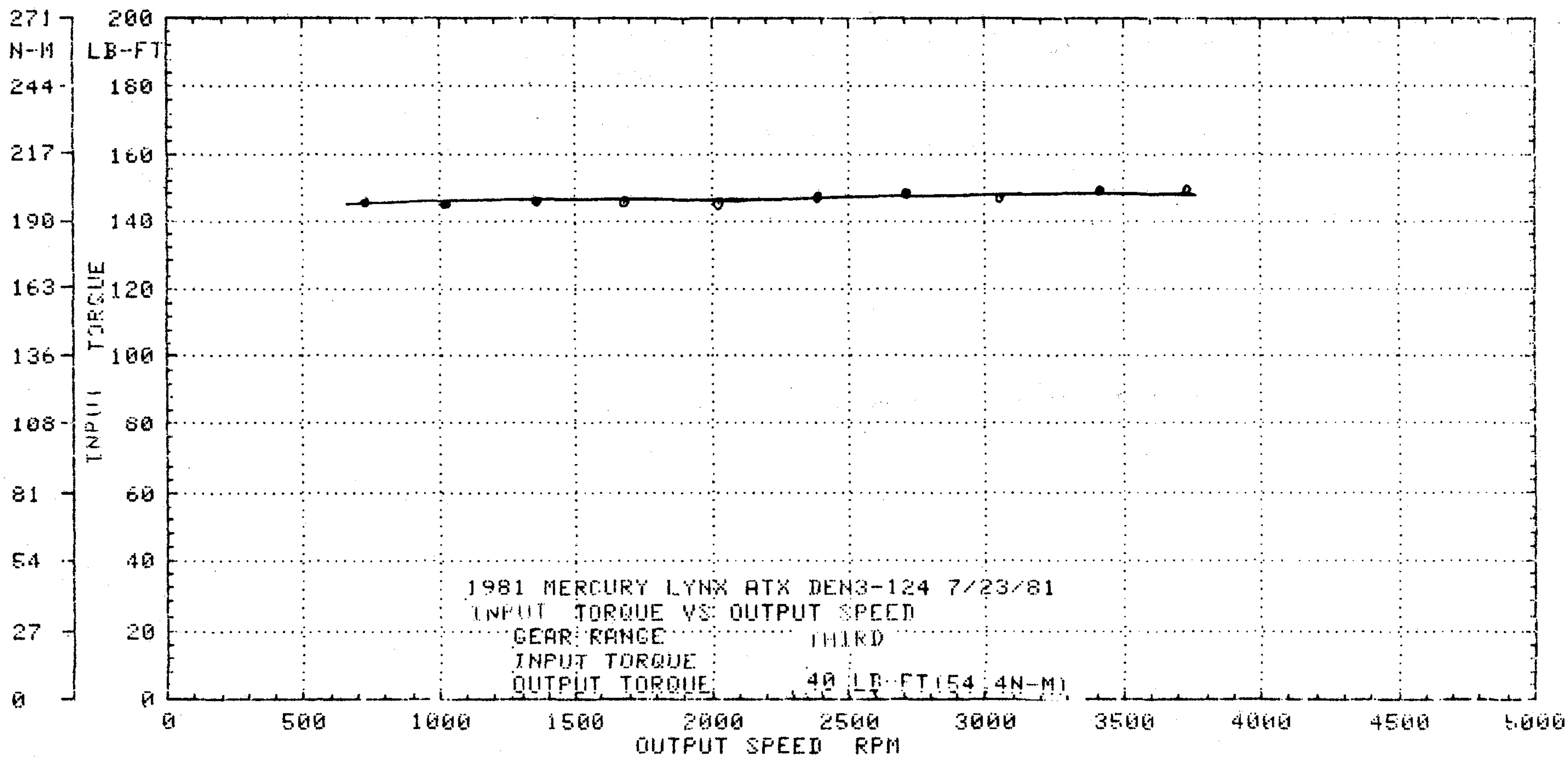


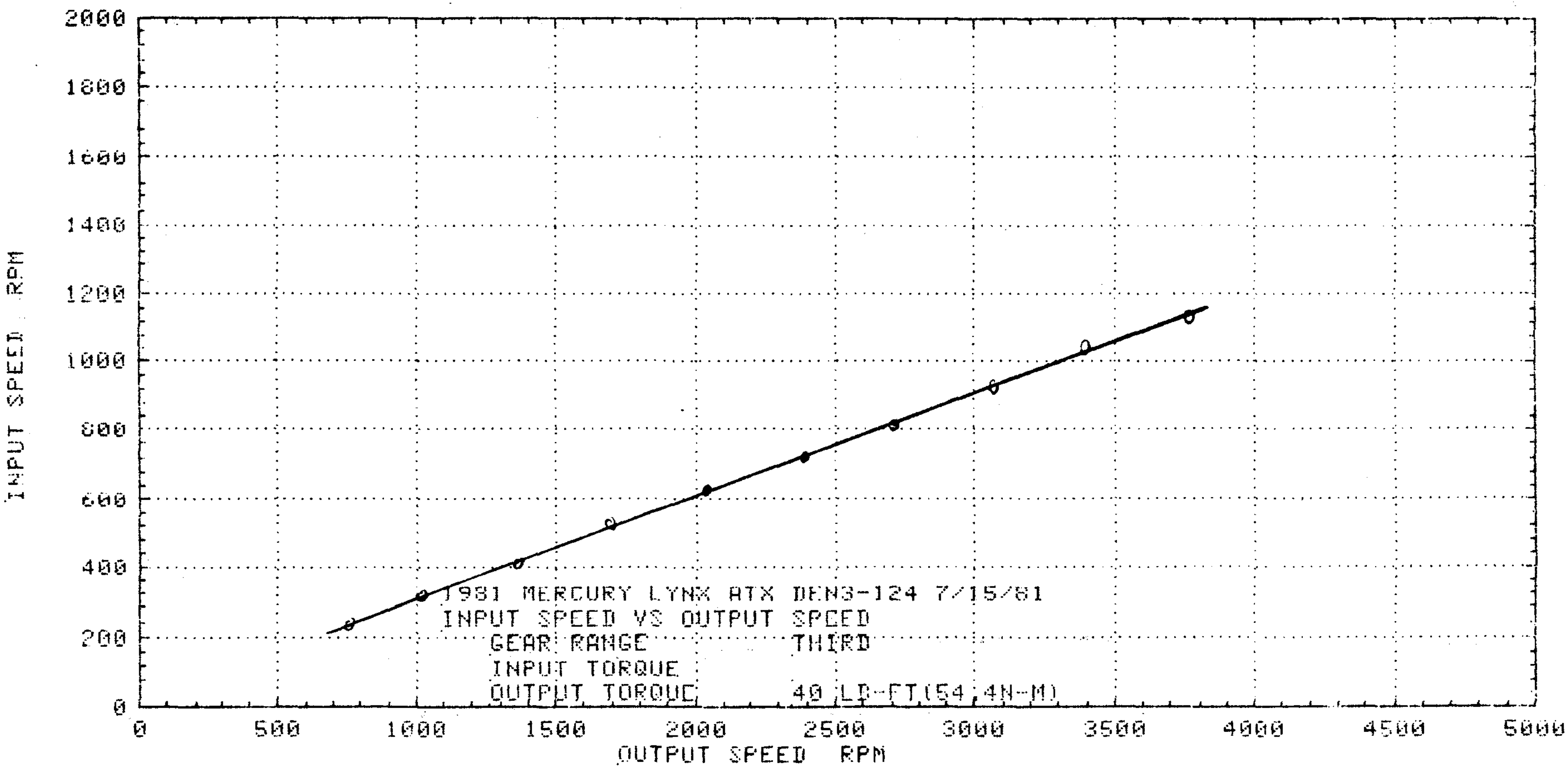
INPUT SPEED RPM
2000
1800
1600
1400
1200
1000
800
600
400
200
0
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
OUTPUT SPEED RPM
1981 MERCURY LYNX ATX DEN3-124 7/15/81
INPUT SPEED VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE
OUTPUT TORQUE 30 LB-FT(40.3N-M)

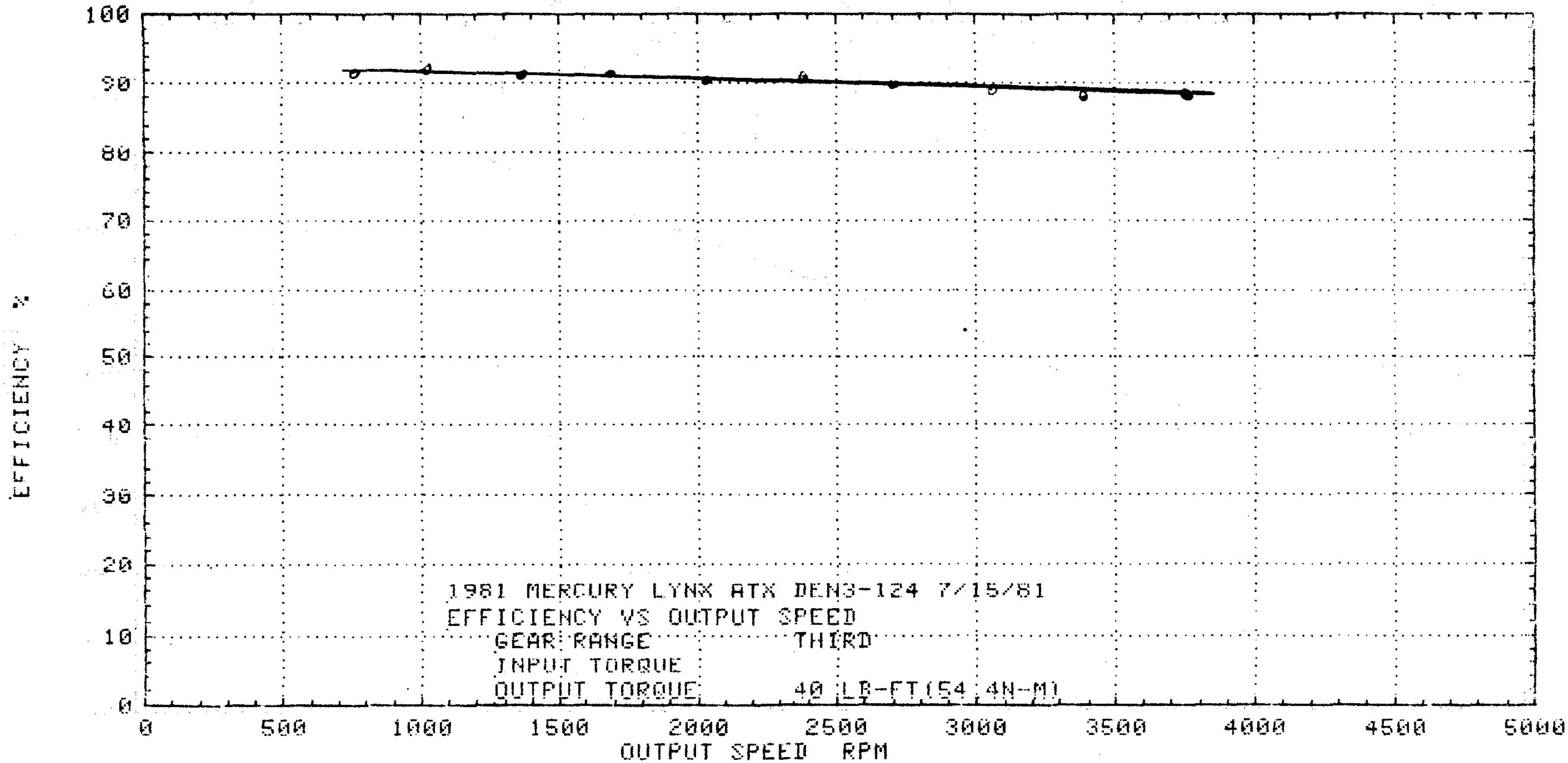

1981 MERCURY LYNX ATX DEN3-124 7/15/81
EFFICIENCY VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE
OUTPUT TORQUE 30 LB-FT(40.8N-M)
EFFICIENCY %
OUTPUT SPEED RPM
0
10
20
30
40
50
60
70
80
90
100
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000


1981 MERCURY LYNX ATX DEN3-124 7/15/81
EFFICIENCY VS POWER OUT
GEAR RANGE THIRD
INPUT TORQUE
OUTPUT TORQUE 30 LB-FT(40.8N-M)
EFFICIENCY %
POWER OUT
HP
KW

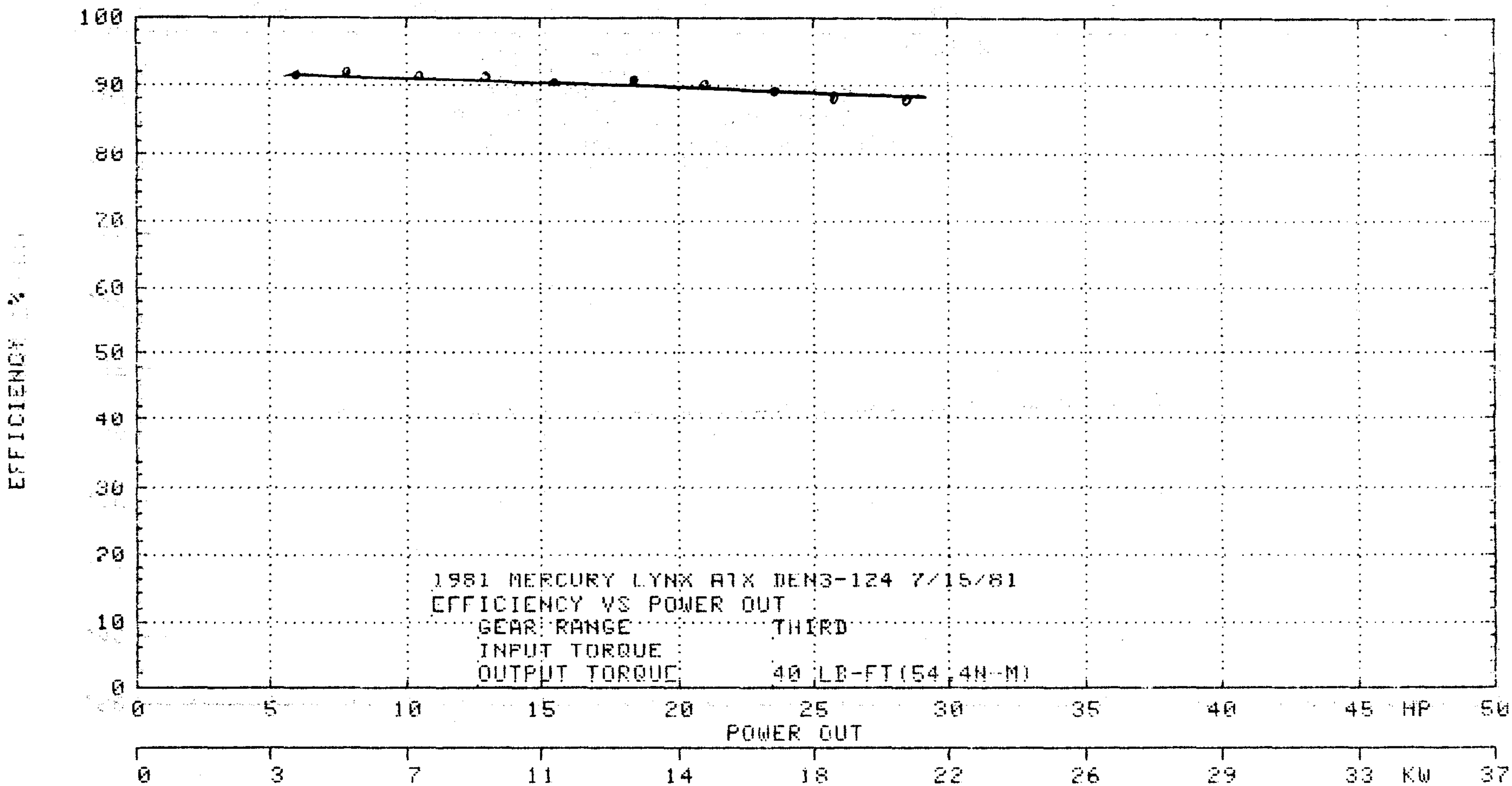

TORQUE RATIO To/Ti
.50
.45
.40
.35
.30
.25
.20
.15
.10
.05
0.00
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
OUTPUT SPEED RPM
1981 MERCURY LYNX ATX DEN3-124 7/15/81
TORQUE RATIO VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE
OUTPUT TORQUE 40 LB-FT(54.4N-M)

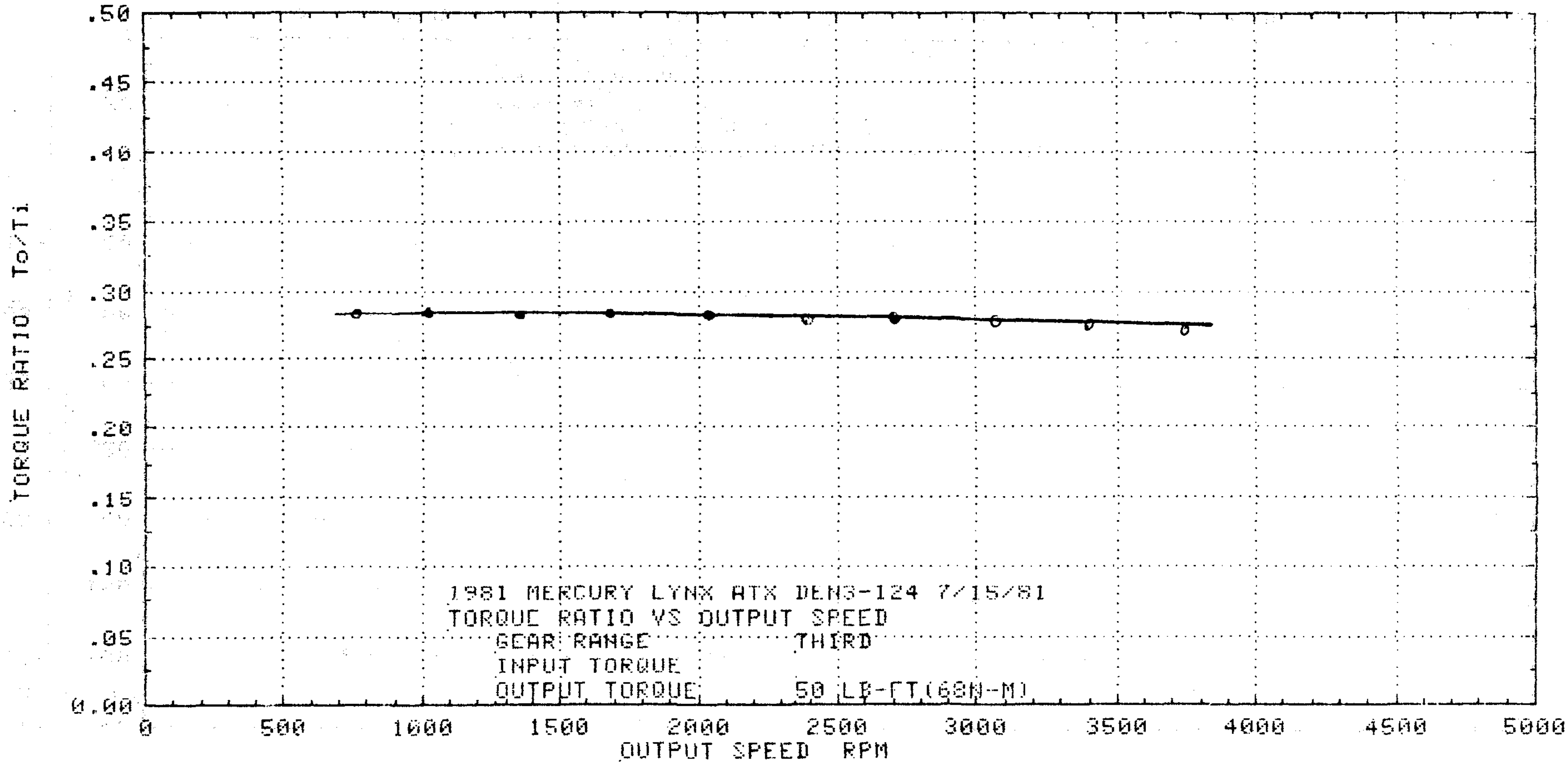

271
N-M
244
217
190
163
136
108
81
54
27
0
200
LB-FT
180
160
140
120
100
80
60
40
20
0
INPUT TORQUE
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
OUTPUT SPEED RPM
1981 MERCURY LYNX ATX DEN3-124 7/23/81
INPUT TORQUE VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE
OUTPUT TORQUE 40 LB-FT(54.4N-M)

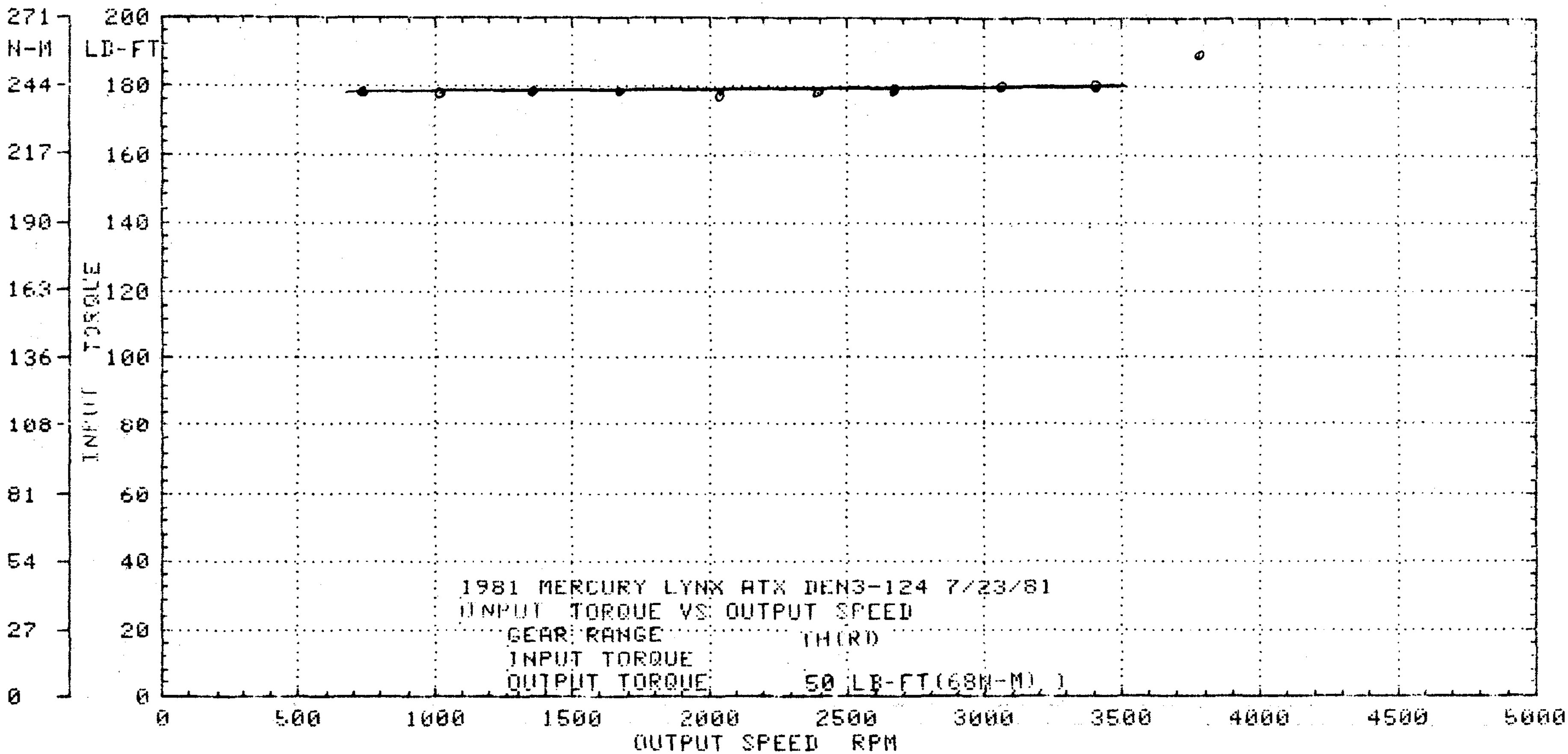

1981 MERCURY LYNX ATX DEN3-124 7/15/81
INPUT SPEED VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE
OUTPUT TORQUE 40 LB-FT(54.4N-M)
INPUT SPEED RPM
OUTPUT SPEED RPM
0
200
400
600
800
1000
1200
1400
1600
1800
2000
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000



100
90
80
70
60
50
40
30
20
10
0
EFFICIENCY %
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
OUTPUT SPEED RPM
1981 MERCURY LYNX ATX DEN3-124 7/15/81
EFFICIENCY VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE
OUTPUT TORQUE 40 LB-FT(54.4N-M)


1981 MERCURY LYNX A1X DEN3-124 7/15/81
EFFICIENCY VS POWER OUT
GEAR RANGE THIRD
INPUT TORQUE
OUTPUT TORQUE 40 LB-FT(54.4N-M)
EFFICIENCY %
100
90
80
70
60
50
40
30
20
10
0
0 5 10 15 20 25 30 35 40 45 HP 50
POWER OUT
0 3 7 11 14 18 22 26 29 33 KW 37


1981 MERCURY LYNX ATX DEN3-124 7/15/81
TORQUE RATIO VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE
OUTPUT TORQUE 50 LB-FT(68N-M)
TORQUE RATIO To/Ti
OUTPUT SPEED RPM
.50
.45
.40
.35
.30
.25
.20
.15
.10
.05
0.00
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000


271 N-M
200 LB-FT
244
180
217
160
190
140
163
120
136
100
108
80
81
60
54
40
27
20
0
0
INPUT TORQUE
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
OUTPUT SPEED RPM
1981 MERCURY LYNX ATX DEN3-124 7/23/81
INPUT TORQUE VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE
OUTPUT TORQUE 50 LB-FT(68N-M))

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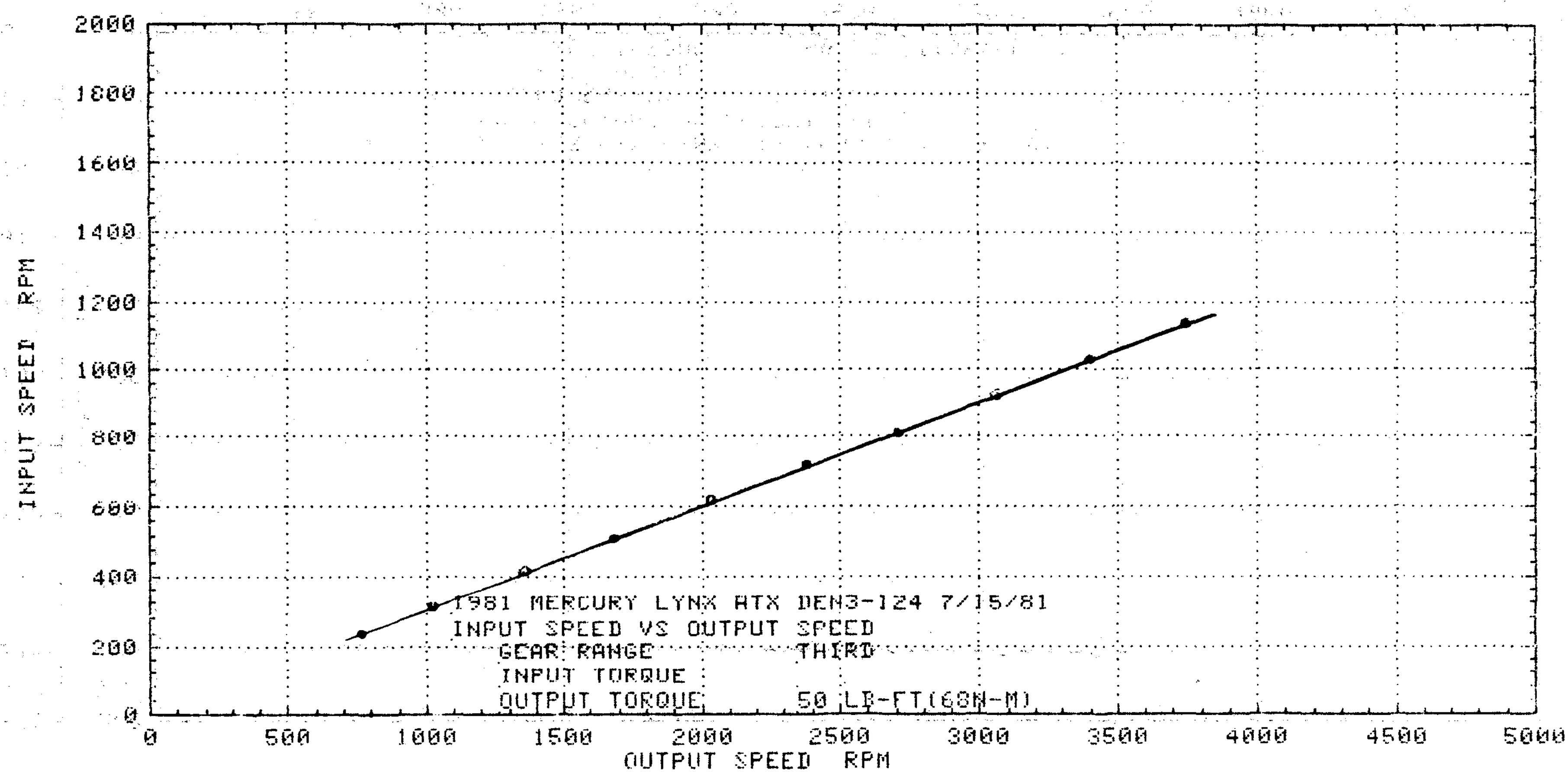
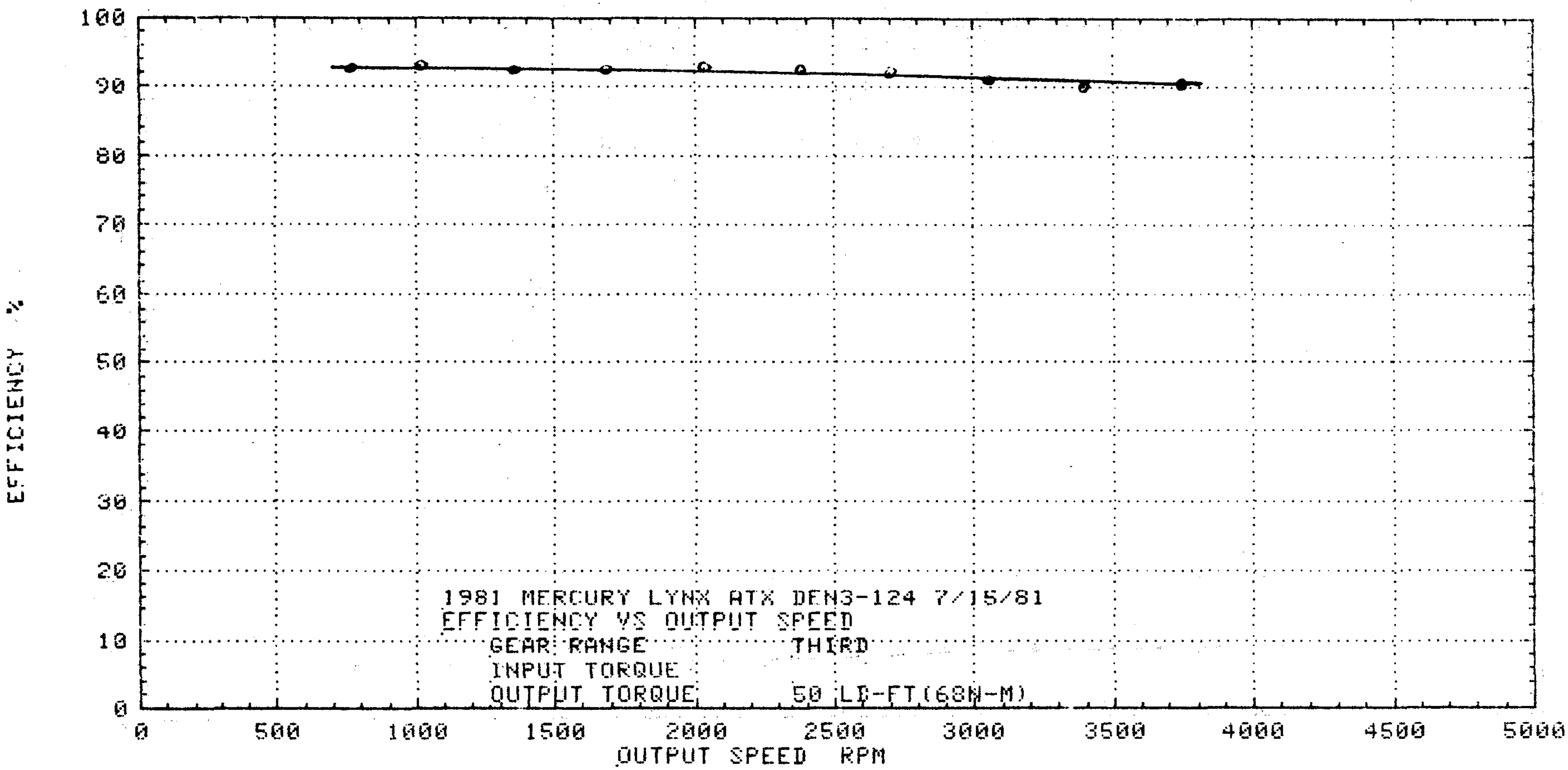
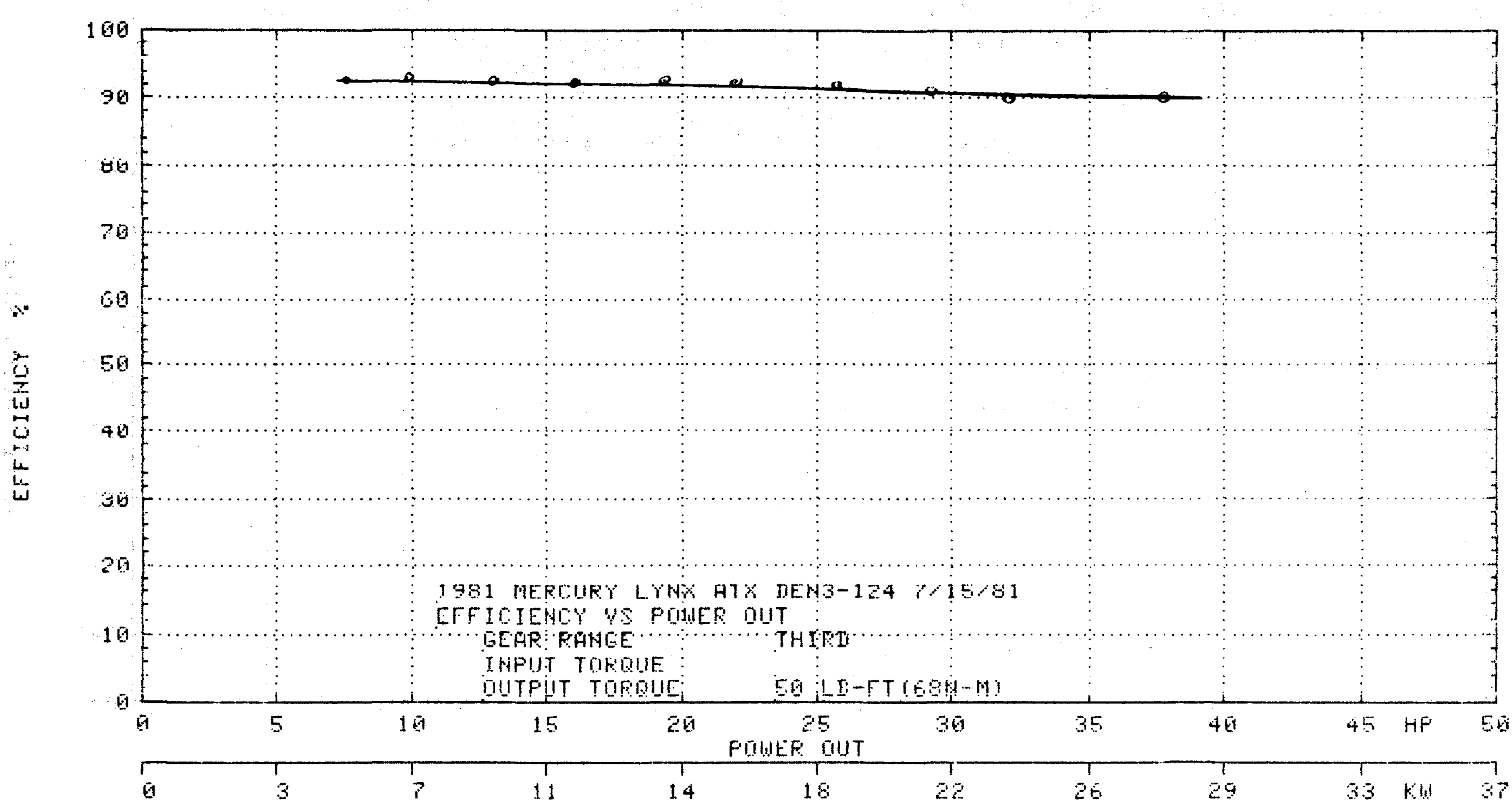
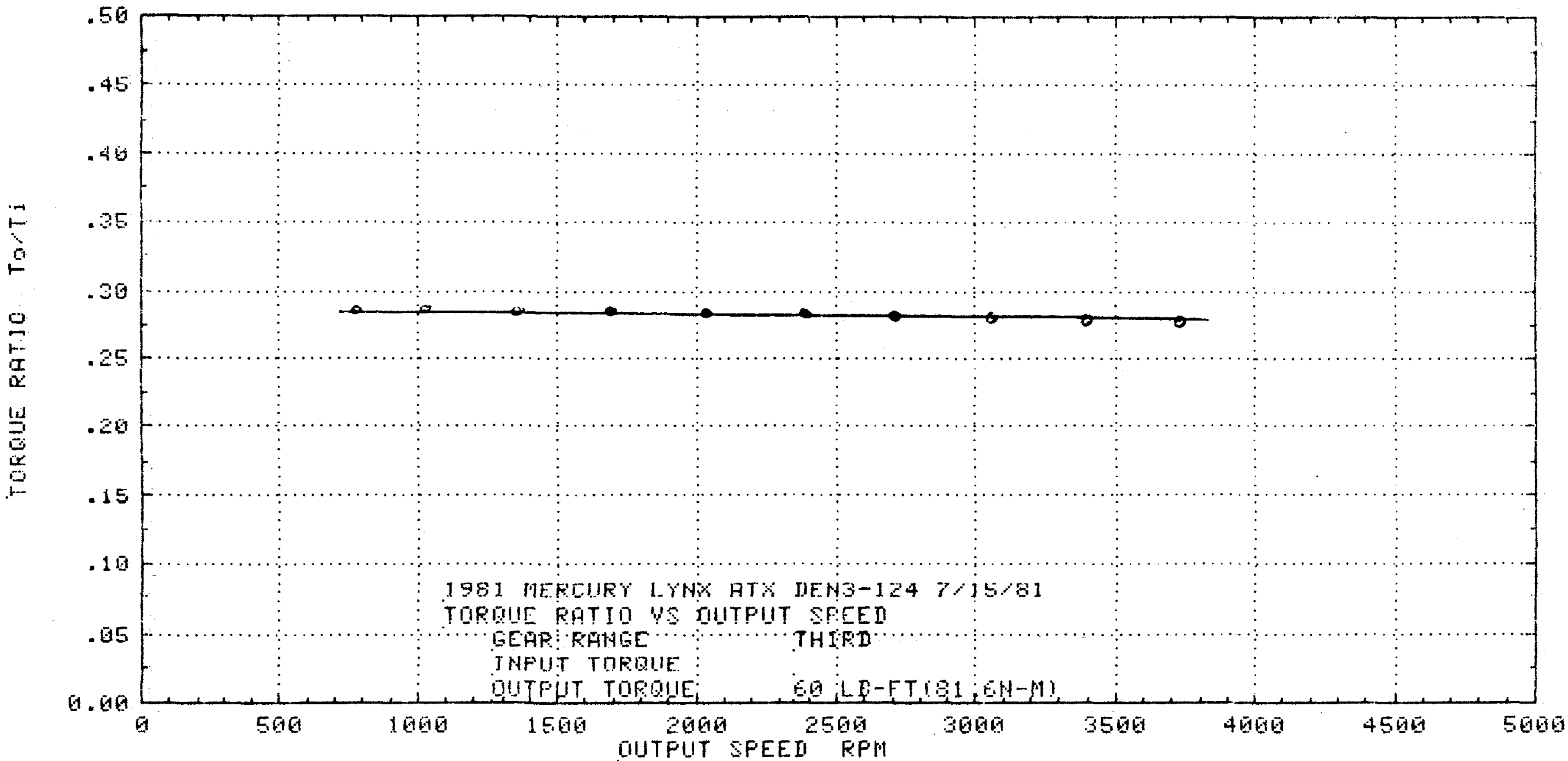
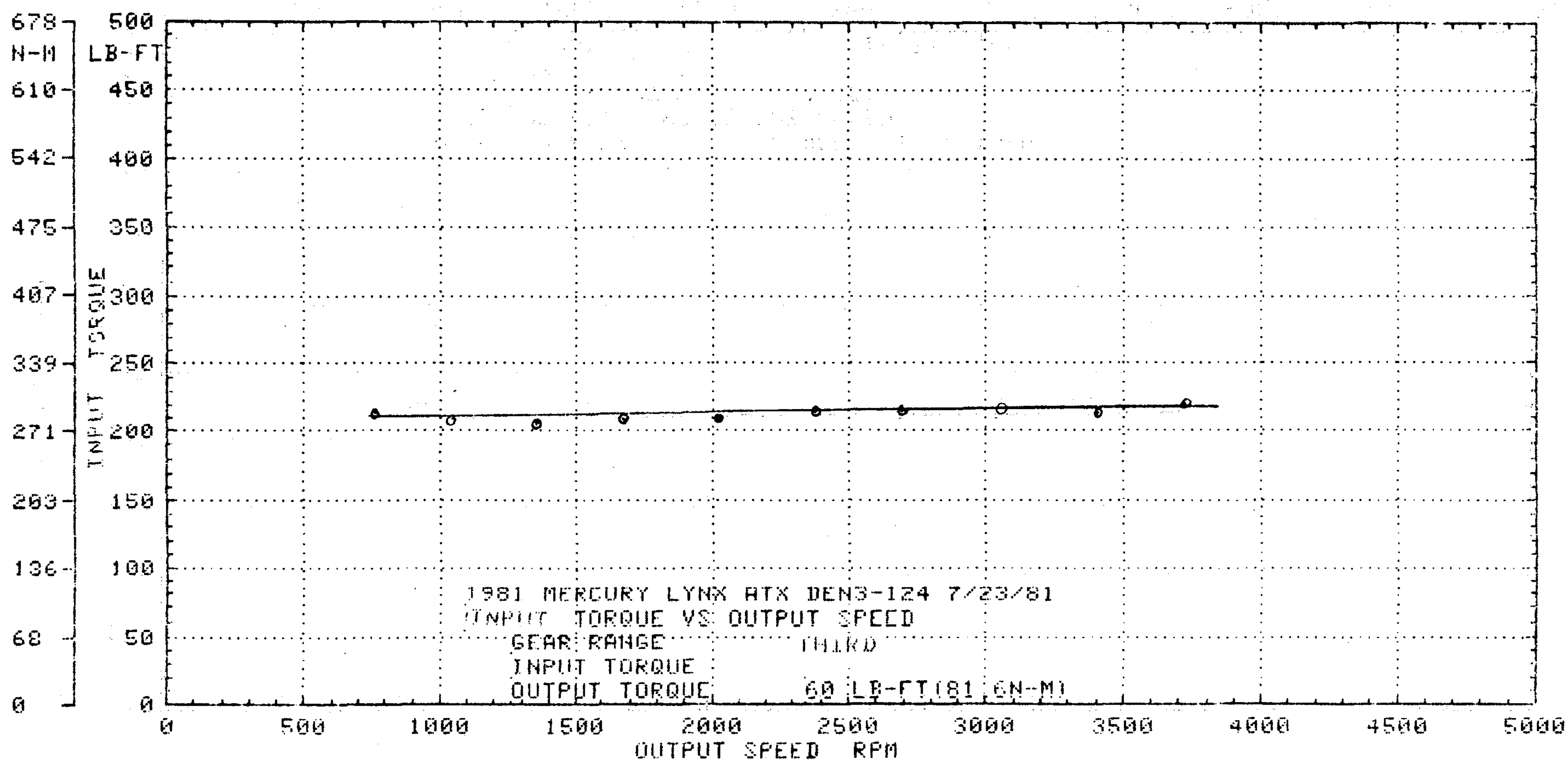
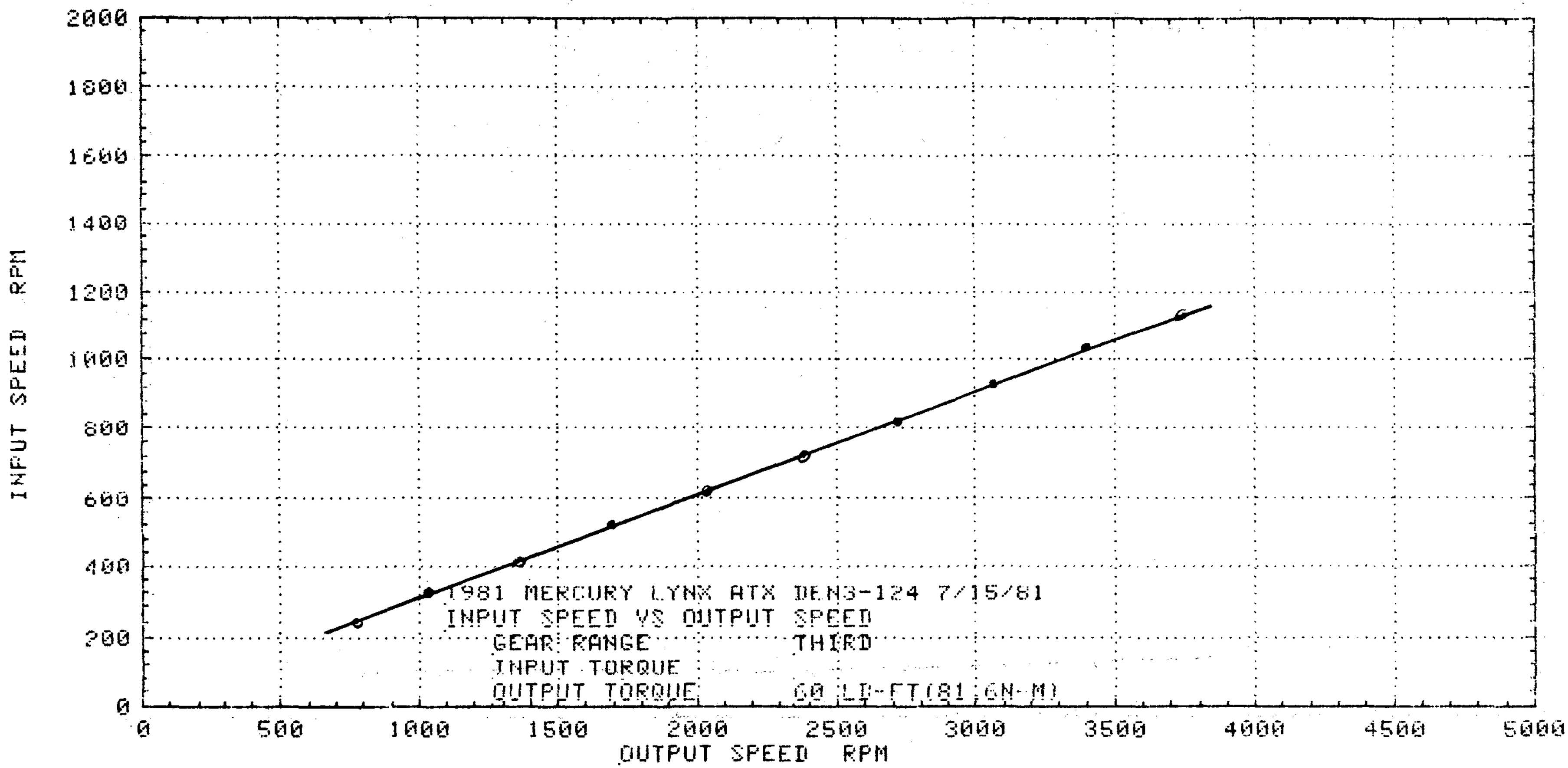

1981 MERCURY LYNX ATX DEN3-124 7/15/81
INPUT SPEED VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE
OUTPUT TORQUE 50 LB-FT(68N-M)
INPUT SPEED RPM
OUTPUT SPEED RPM
0
200
400
600
800
1000
1200
1400
1600
1800
2000
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000

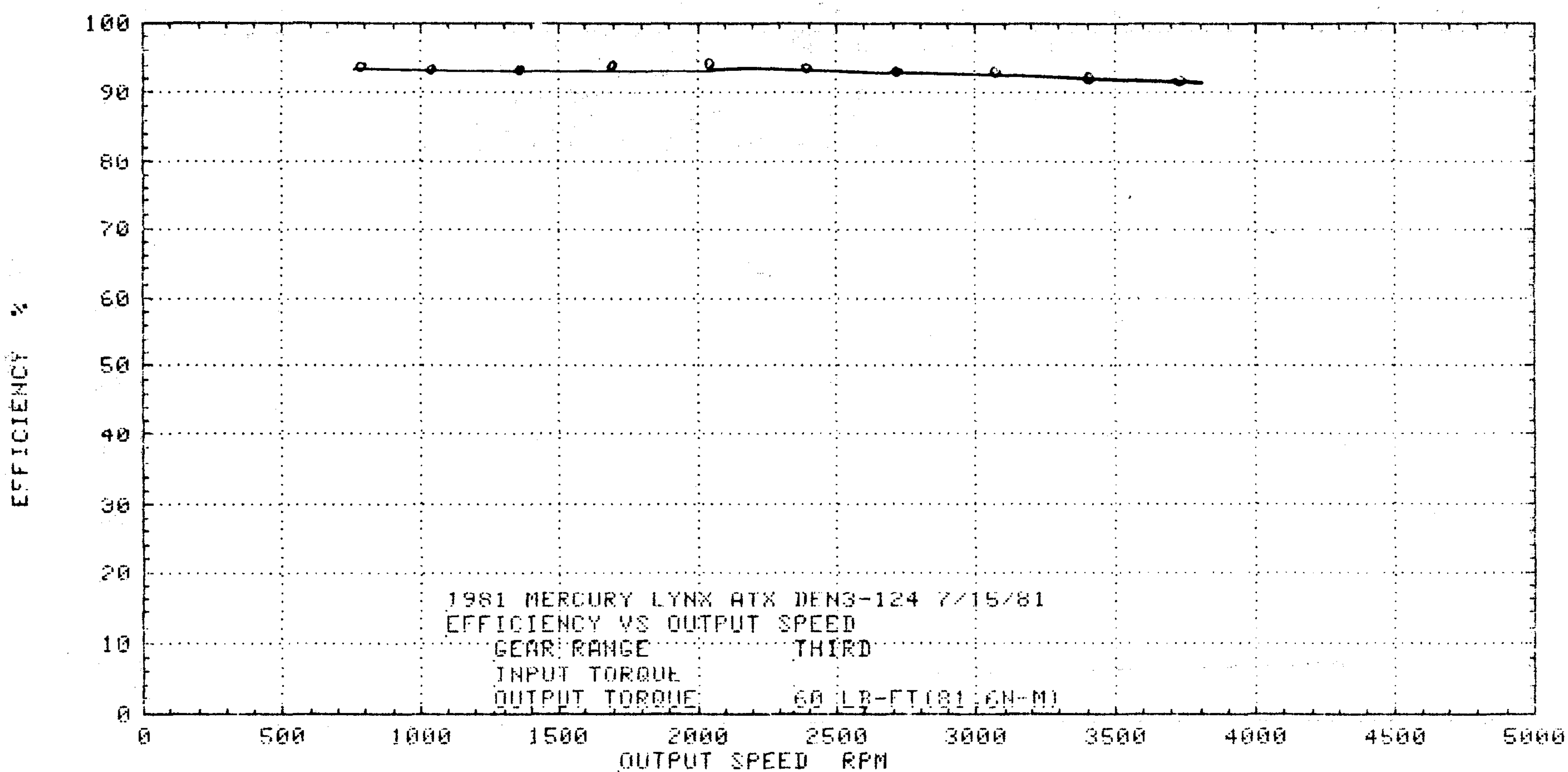

1981 MERCURY LYNX ATX DEN3-124 7/15/81
EFFICIENCY VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE
OUTPUT TORQUE 50 LB-FT(68N-M)
EFFICIENCY %
OUTPUT SPEED RPM
0
10
20
30
40
50
60
70
80
90
100
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000


1981 MERCURY LYNX ATX DEN3-124 7/15/81
EFFICIENCY VS POWER OUT
GEAR RANGE THIRD
INPUT TORQUE
OUTPUT TORQUE 50 LD-FT(68N-M)
EFFICIENCY %
100
90
80
70
60
50
40
30
20
10
0
0 5 10 15 20 25 30 35 40 45 HP 50
POWER OUT
0 3 7 11 14 18 22 26 29 33 KW 37

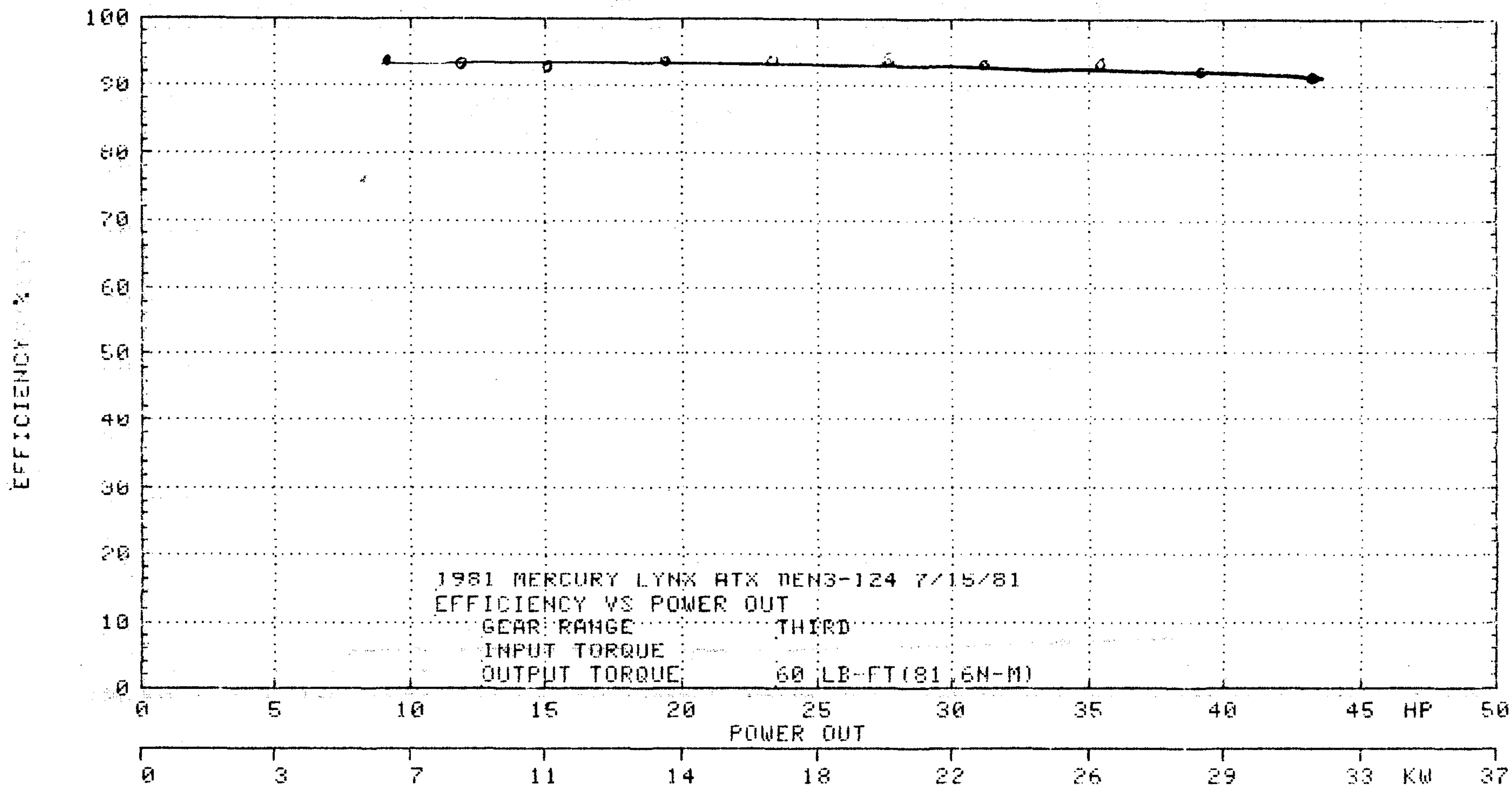

1981 MERCURY LYNX ATX DEN3-124 7/15/81
TORQUE RATIO VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE
OUTPUT TORQUE 60 LB-FT(81.6N-M)
TORQUE RATIO To/Ti
OUTPUT SPEED RPM
.50
.45
.40
.35
.30
.25
.20
.15
.10
.05
0.00
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000


1981 MERCURY LYNX ATX DEN3-124 7/23/81
INPUT TORQUE VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE
OUTPUT TORQUE 60 LB-FT(81.6N-M)
INPUT TORQUE
N-M
LB-FT
OUTPUT SPEED RPM
678
610
542
475
407
339
271
203
136
68
0
500
450
400
350
300
250
200
150
100
50
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000

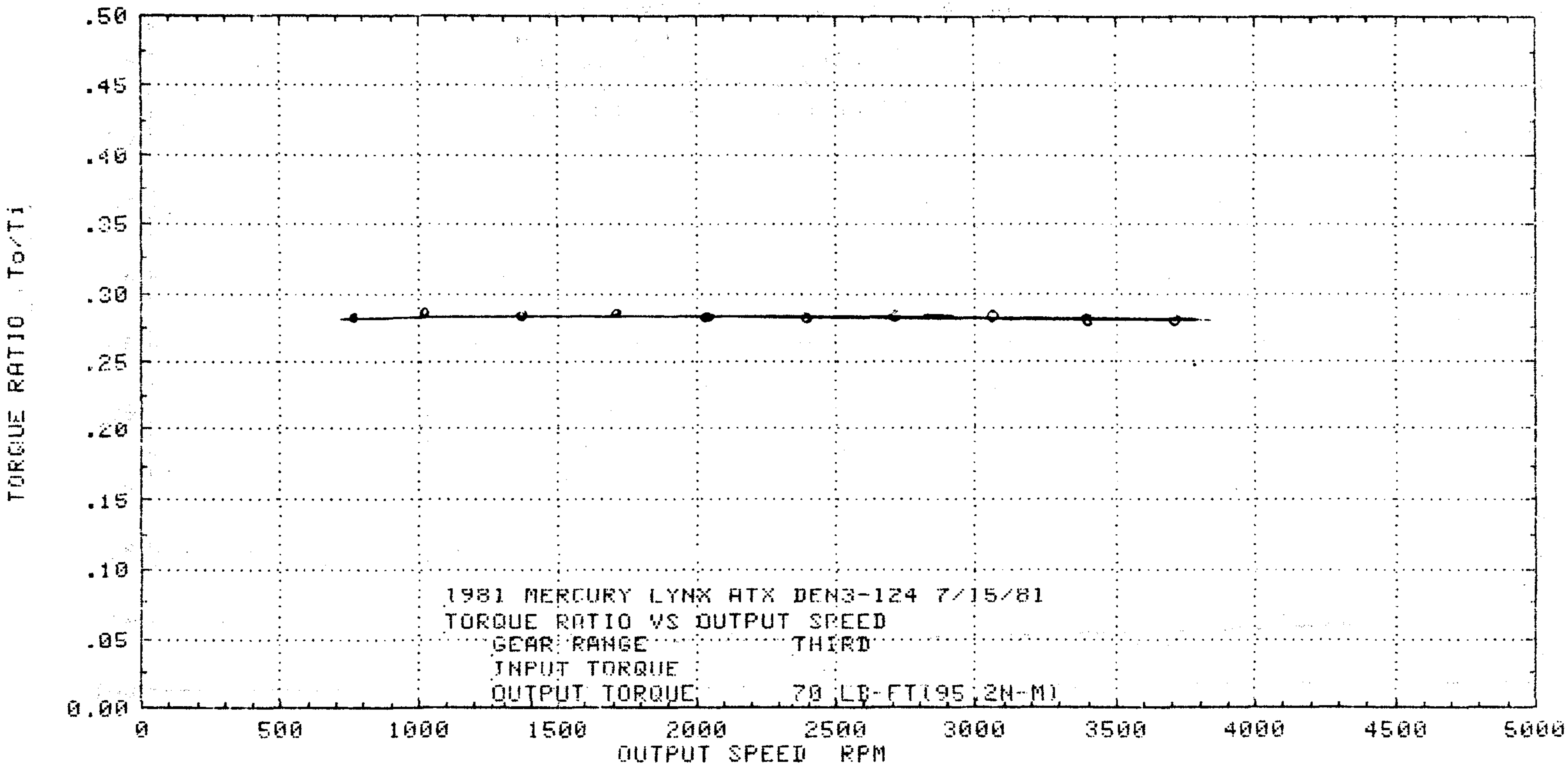

2000
1800
1600
1400
1200
1000
800
600
400
200
0
INPUT SPEED RPM
1981 MERCURY LYNX ATX DEN3-124 7/15/81
INPUT SPEED VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE
OUTPUT TORQUE 60 LB-FT(81.6N-M)
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
OUTPUT SPEED RPM



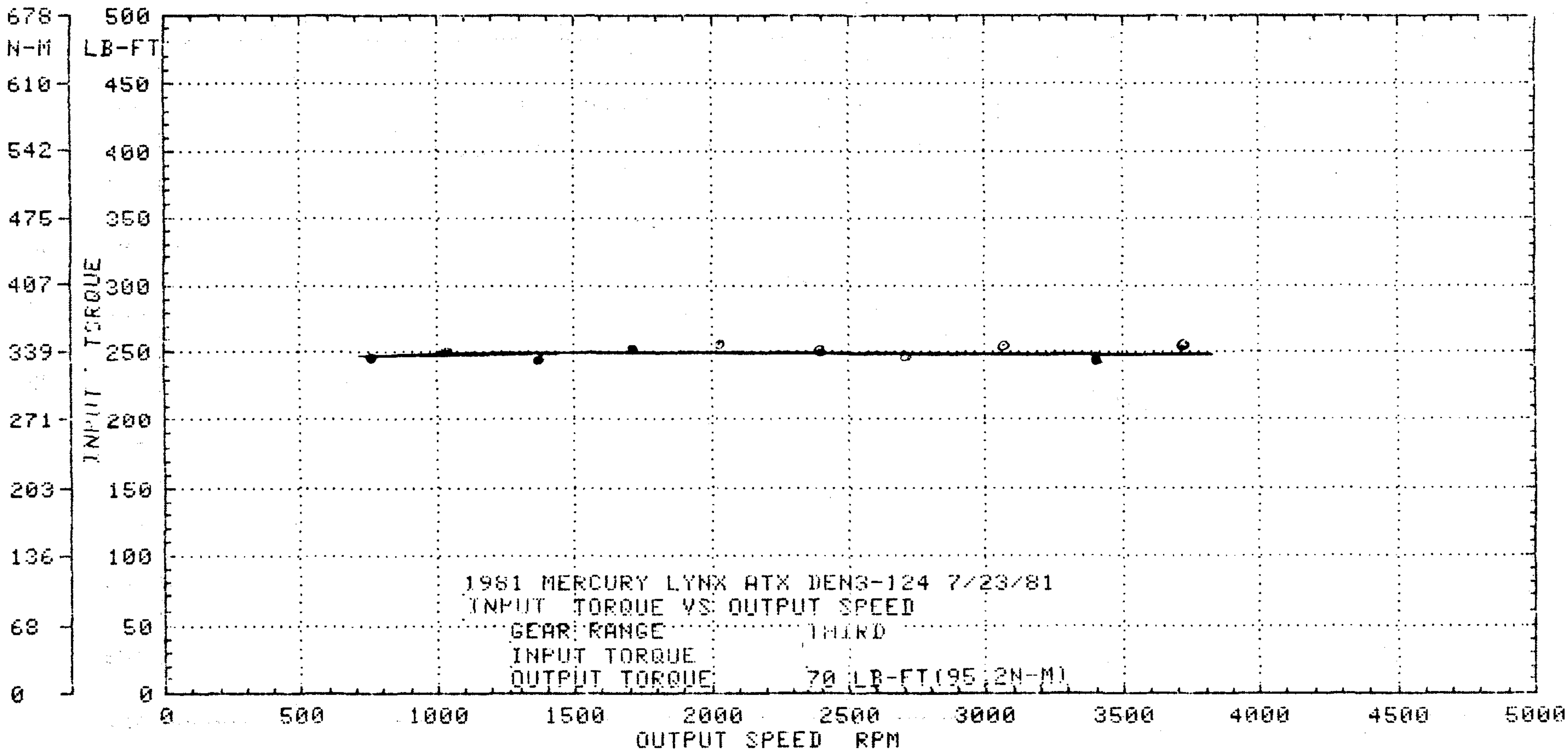
100
90
80
70
60
50
40
30
20
10
0
EFFICIENCY %
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
OUTPUT SPEED RPM
1981 MERCURY LYNX ATX DEN3-124 7/15/81
EFFICIENCY VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE
OUTPUT TORQUE 60 LB-FT(81.6N-M)



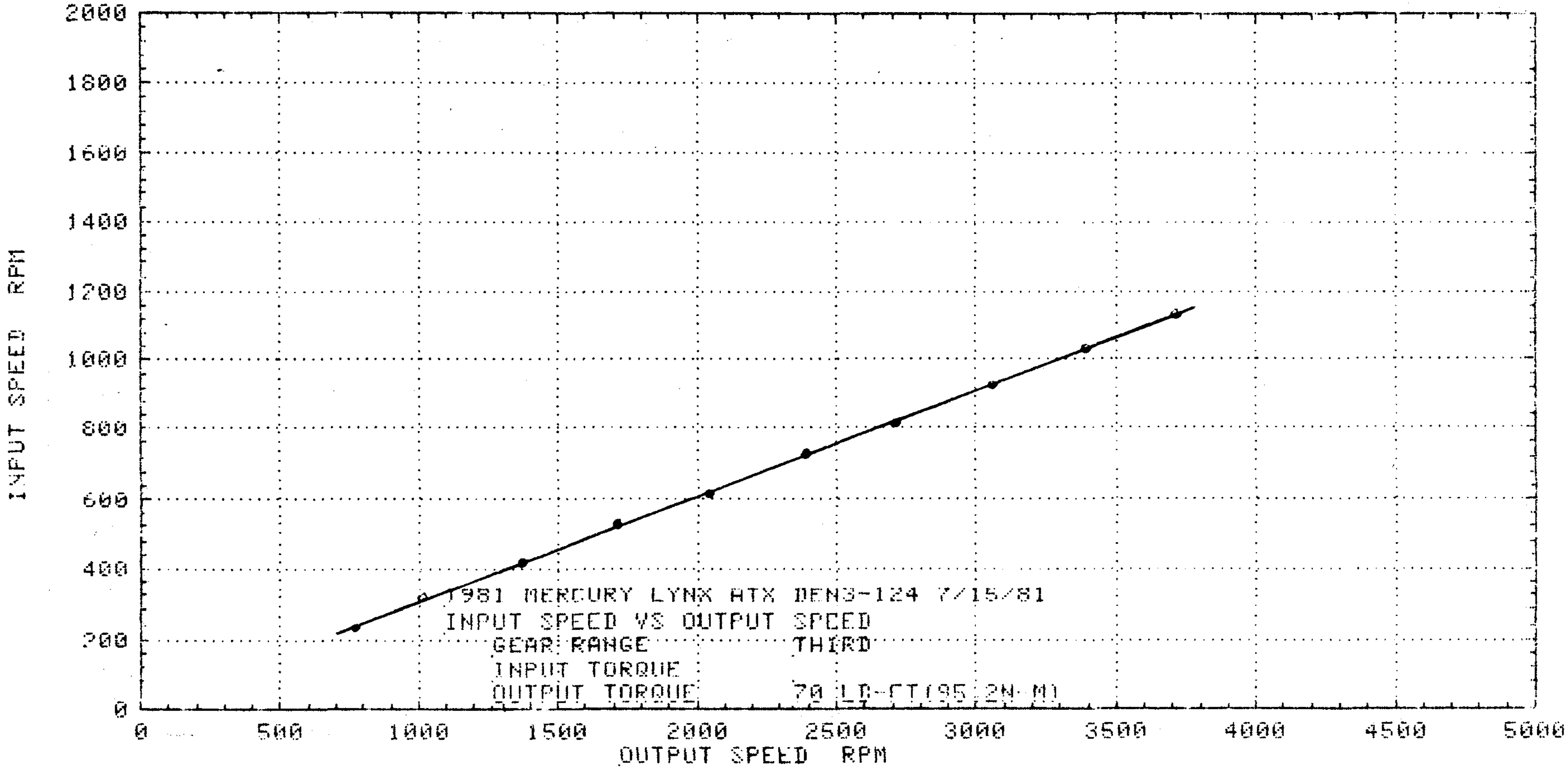
1981 MERCURY LYNX ATX DEN3-124 7/15/81
EFFICIENCY VS POWER OUT
GEAR RANGE THIRD
INPUT TORQUE
OUTPUT TORQUE 60 LB-FT(81.6N-M)
EFFICIENCY %
POWER OUT
HP
KW



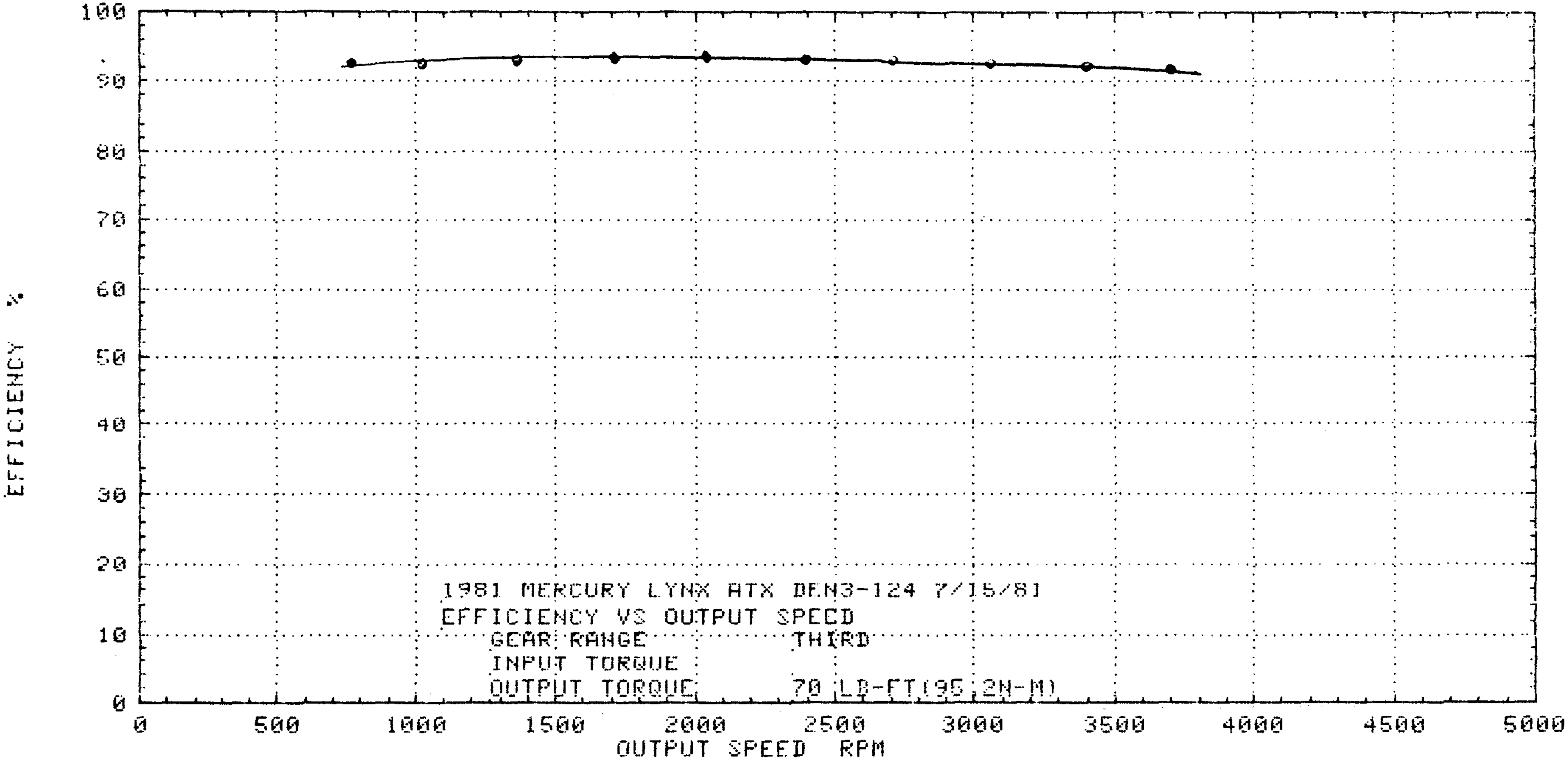
1981 MERCURY LYNX ATX DEN3-124 7/15/81
TORQUE RATIO VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE
OUTPUT TORQUE 70 LB-FT(95.2N-M)
TORQUE RATIO To/Ti
OUTPUT SPEED RPM
.50
.45
.40
.35
.30
.25
.20
.15
.10
.05
0.00
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000



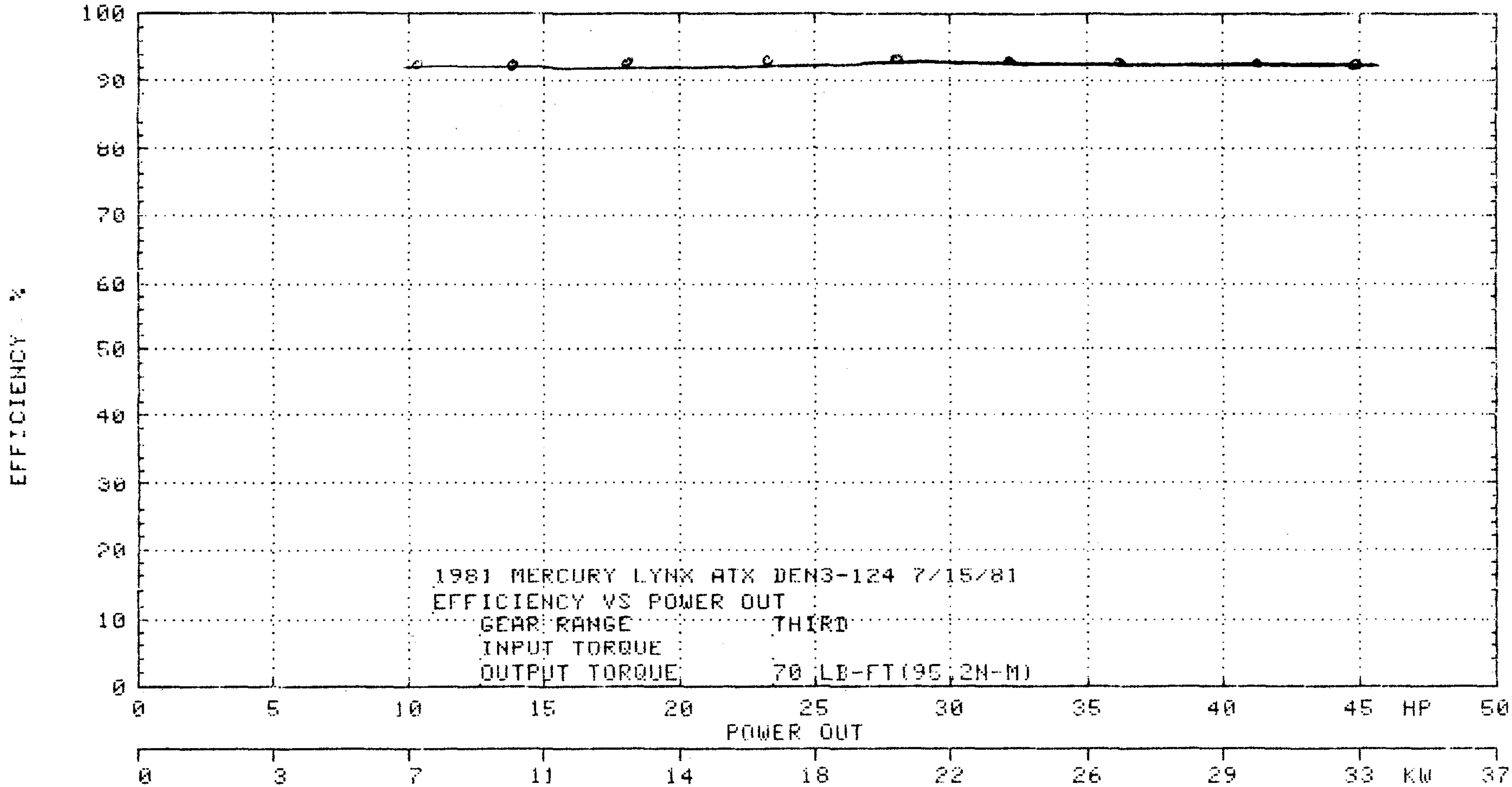
678
N-M
610
542
475
407
339
271
203
136
68
0
500
LB-FT
450
400
350
300
250
200
150
100
50
0
INPUT TORQUE
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
OUTPUT SPEED RPM
1981 MERCURY LYNX ATX DEN3-124 7/23/81
INPUT TORQUE VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE
OUTPUT TORQUE 70 LB-FT(95.2N-M)



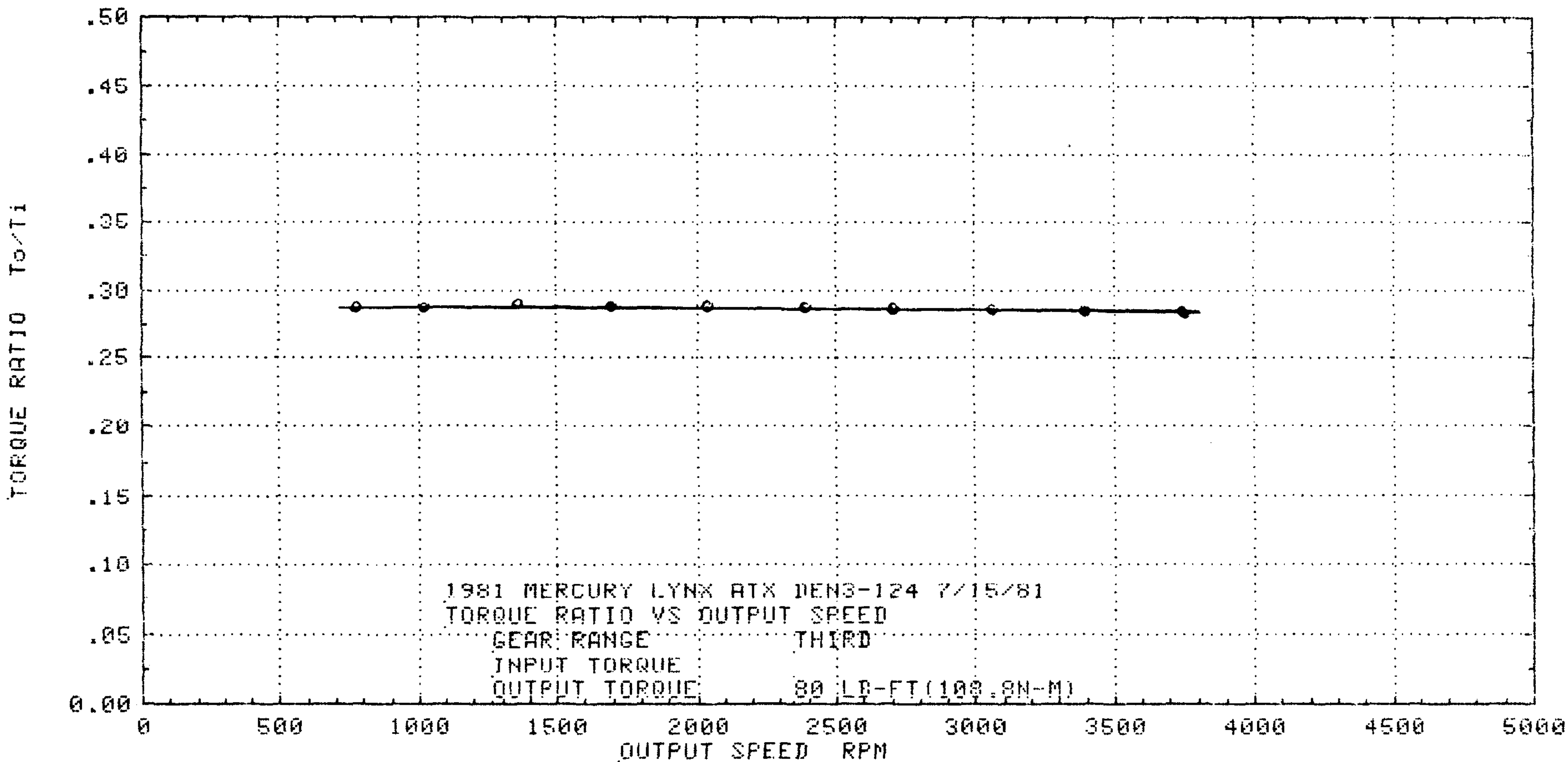
1981 MERCURY LYNX ATX DEN3-124 7/15/81
INPUT SPEED VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE
OUTPUT TORQUE 70 LB-FT(95.2N-M)
INPUT SPEED RPM
OUTPUT SPEED RPM
0
200
400
600
800
1000
1200
1400
1600
1800
2000
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000



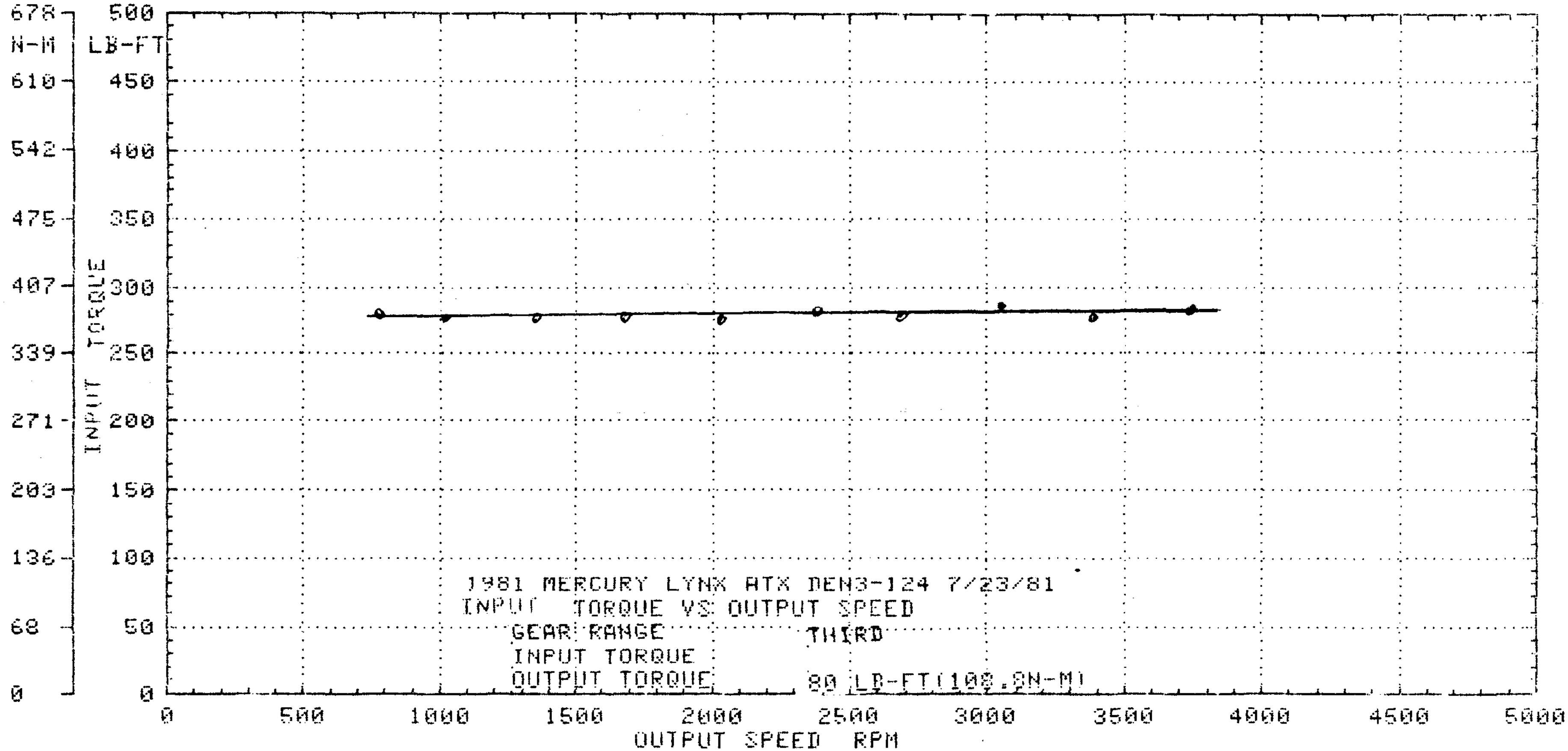
1981 MERCURY LYNX ATX DEN3-124 7/15/81
EFFICIENCY VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE
OUTPUT TORQUE 70 LB-FT(95.2N-M)
EFFICIENCY %
OUTPUT SPEED RPM
0
10
20
30
40
50
60
70
80
90
100
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000

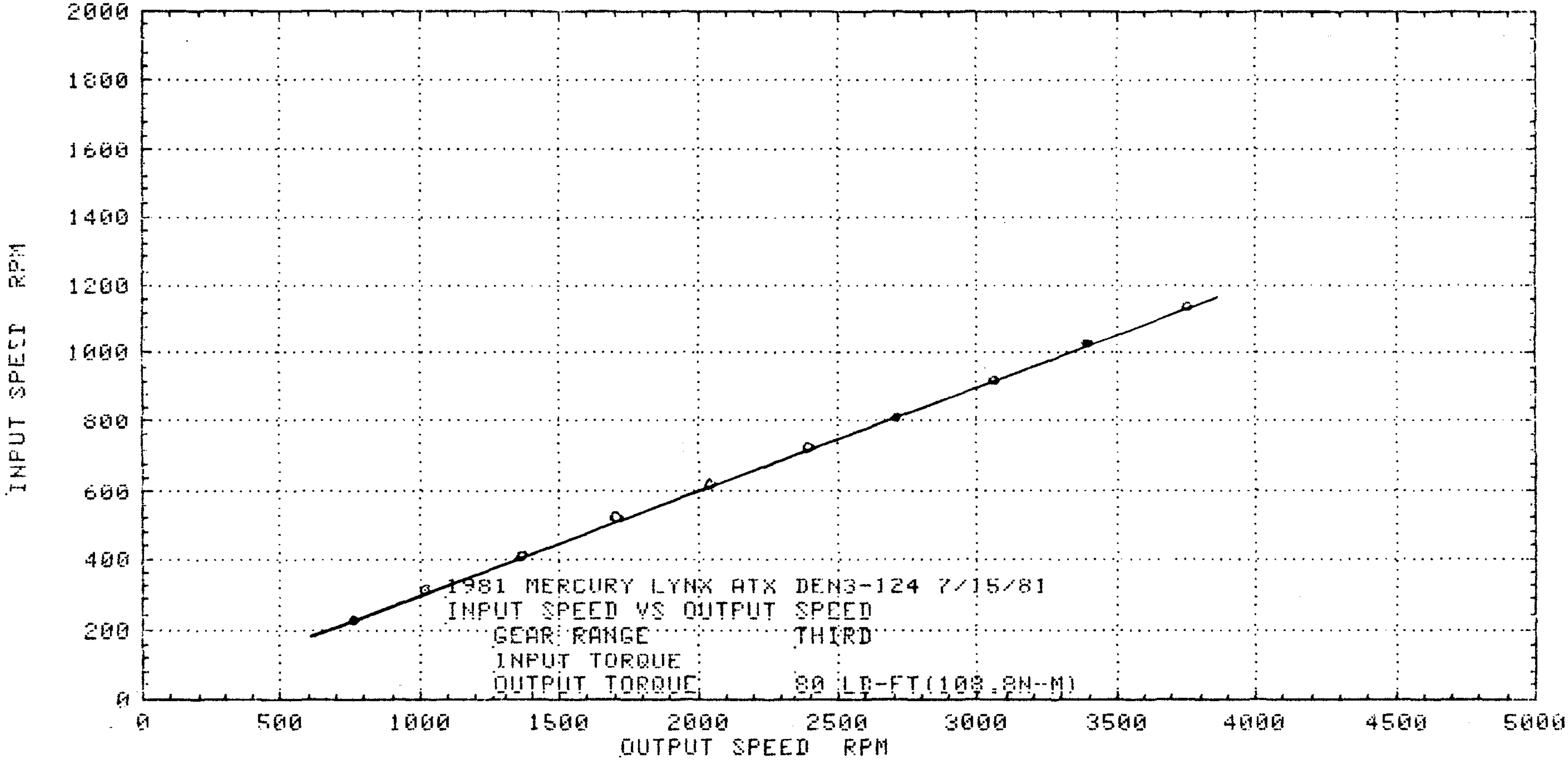


1981 MERCURY LYNX ATX DEN3-124 7/15/81
EFFICIENCY VS POWER OUT
GEAR RANGE THIRD
INPUT TORQUE
OUTPUT TORQUE 70 LB-FT(95.2N-M)
EFFICIENCY %
100
90
80
70
60
50
40
30
20
10
0
0 5 10 15 20 25 30 35 40 45 HP 50
POWER OUT
0 3 7 11 14 18 22 26 29 33 KW 37

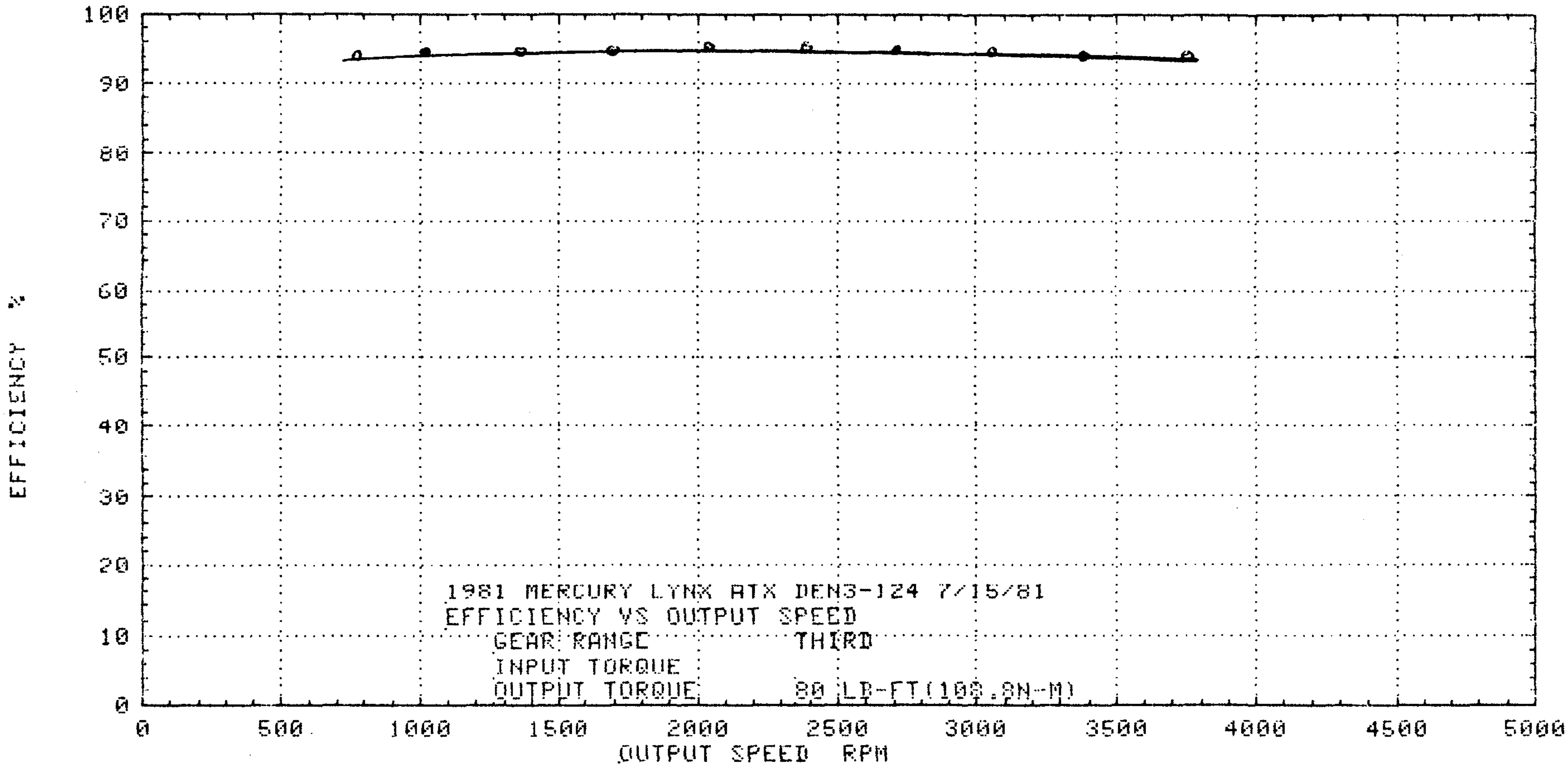


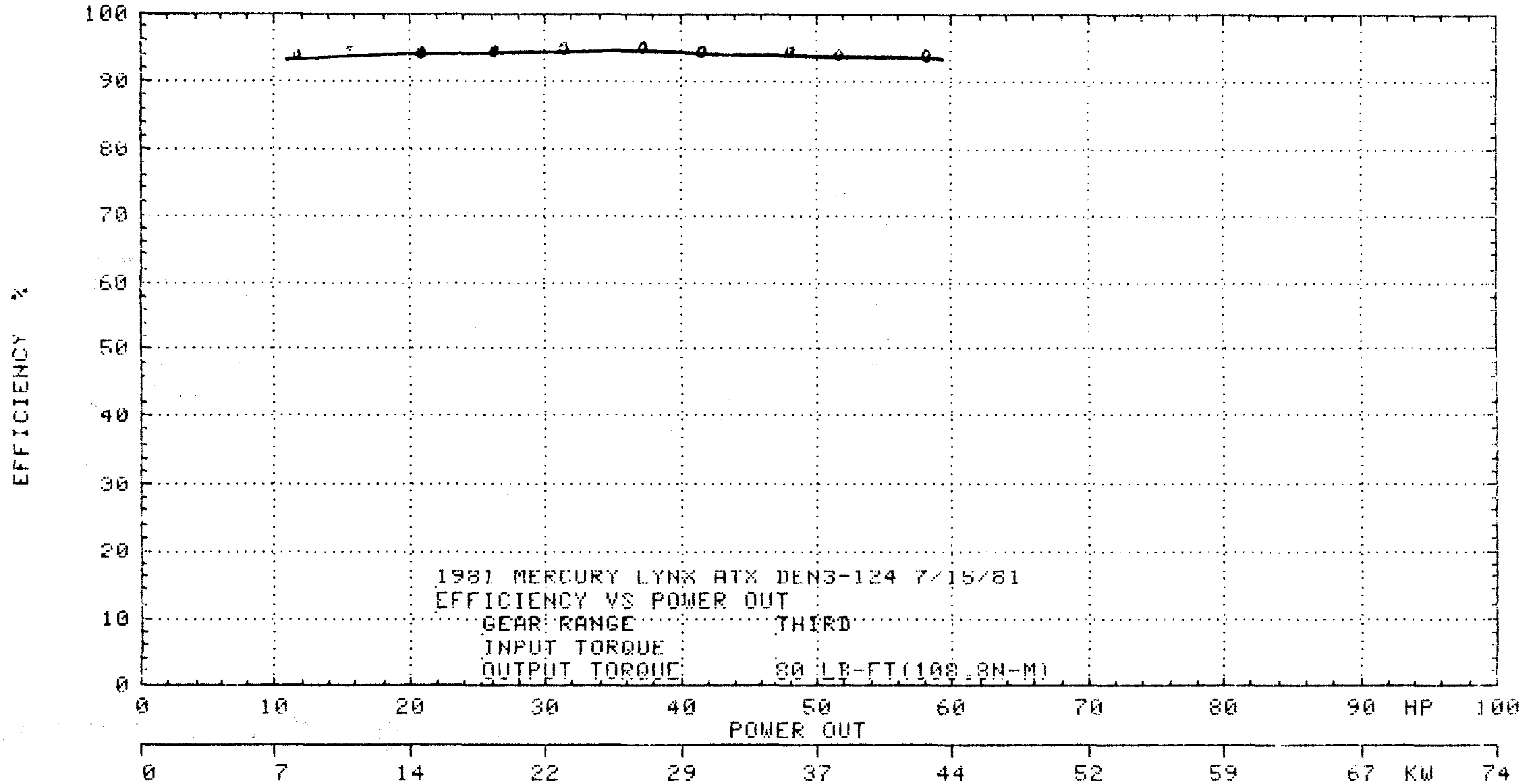
1981 MERCURY LYNX ATX DEN3-124 7/15/81
TORQUE RATIO VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE
OUTPUT TORQUE 80 LB-FT(108.8N-M)
TORQUE RATIO To/Ti
OUTPUT SPEED RPM
.50
.45
.40
.35
.30
.25
.20
.15
.10
.05
0.00
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000


678
N-M
610
542
475
407
339
271
203
136
68
0
500
LB-FT
450
400
350
300
250
200
150
100
50
0
INPUT TORQUE
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
OUTPUT SPEED RPM
1981 MERCURY LYNX ATX DEN3-124 7/23/81
INPUT TORQUE VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE
OUTPUT TORQUE 80 LB-FT(108.8N-M)



1981 MERCURY LYNX ATX DEN3-124 7/15/81
INPUT SPEED VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE
OUTPUT TORQUE 80 LB-FT(108.8N-M)
INPUT SPEED RPM
OUTPUT SPEED RPM
0
200
400
600
800
1000
1200
1400
1600
1800
2000
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000


1981 MERCURY LYNX ATX DEN3-124 7/15/81
EFFICIENCY VS OUTPUT SPEED
GEAR RANGE THIRD
INPUT TORQUE
OUTPUT TORQUE 80 LB-FT(108.5N-M)
EFFICIENCY %
OUTPUT SPEED RPM
0
10
20
30
40
50
60
70
80
90
100
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000

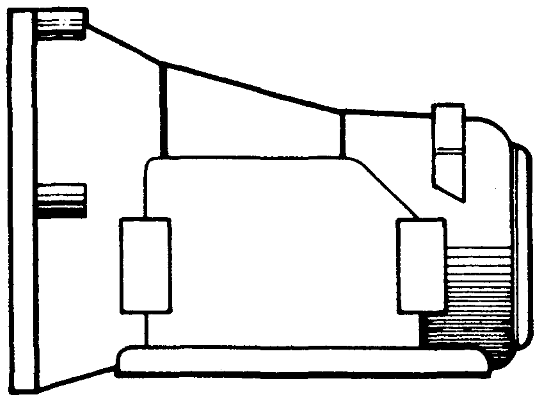

1981 MERCURY LYNX ATX DEN3-124 7/15/81
EFFICIENCY VS POWER OUT
GEAR RANGE THIRD
INPUT TORQUE
OUTPUT TORQUE 80 LB-FT(108.8N-M)
EFFICIENCY %
100
90
80
70
60
50
40
30
20
10
0
0 10 20 30 40 50 60 70 80 90 HP 100
POWER OUT
0 7 14 22 29 37 44 52 59 67 KW 74

Graphs Contained in This Section

Torque Loss -vs- Input Speed

Torque In

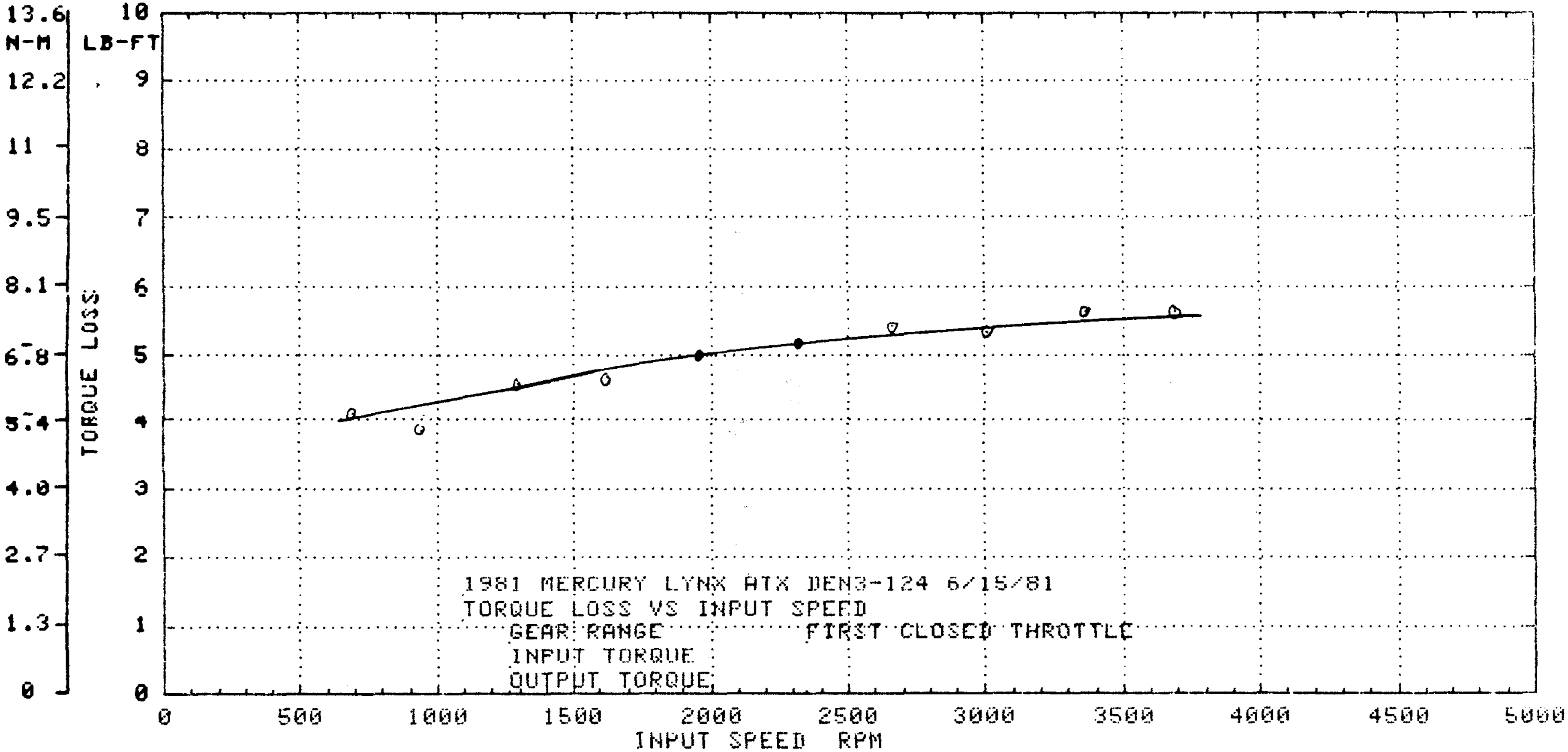
Speed In



No Load Losses

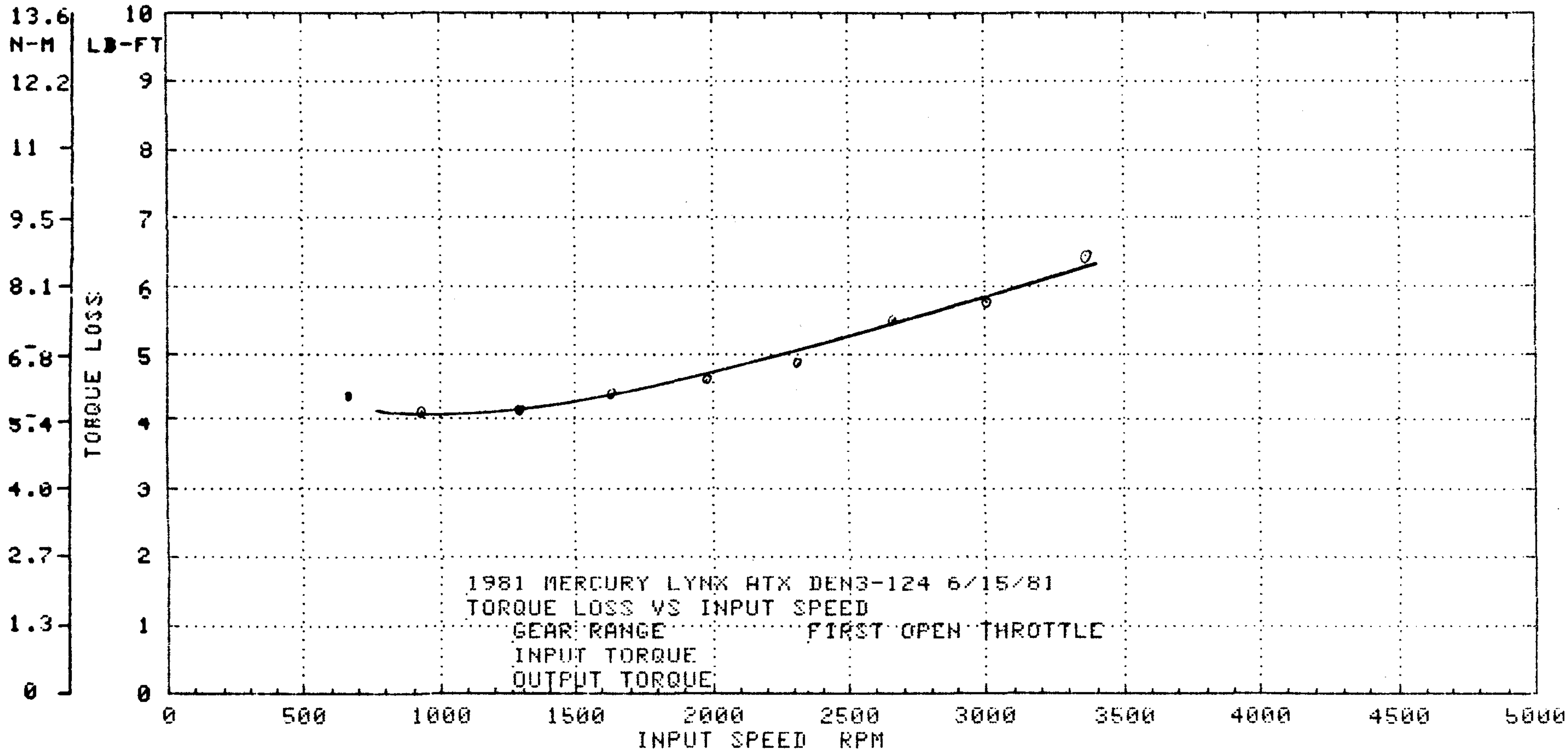
NO LOAD LOSSES

1st Gear (Closed Throttle)


13.6
N-M
12.2
11
9.5
8.1
6.8
5.4
4.0
2.7
1.3
0
10
LB-FT
9
8
7
6
5
4
3
2
1
0
TORQUE LOSS
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
INPUT SPEED RPM
1981 MERCURY LYNX ATX DEN3-124 6/15/81
TORQUE LOSS VS INPUT SPEED
GEAR RANGE
FIRST CLOSED THROTTLE
INPUT TORQUE
OUTPUT TORQUE

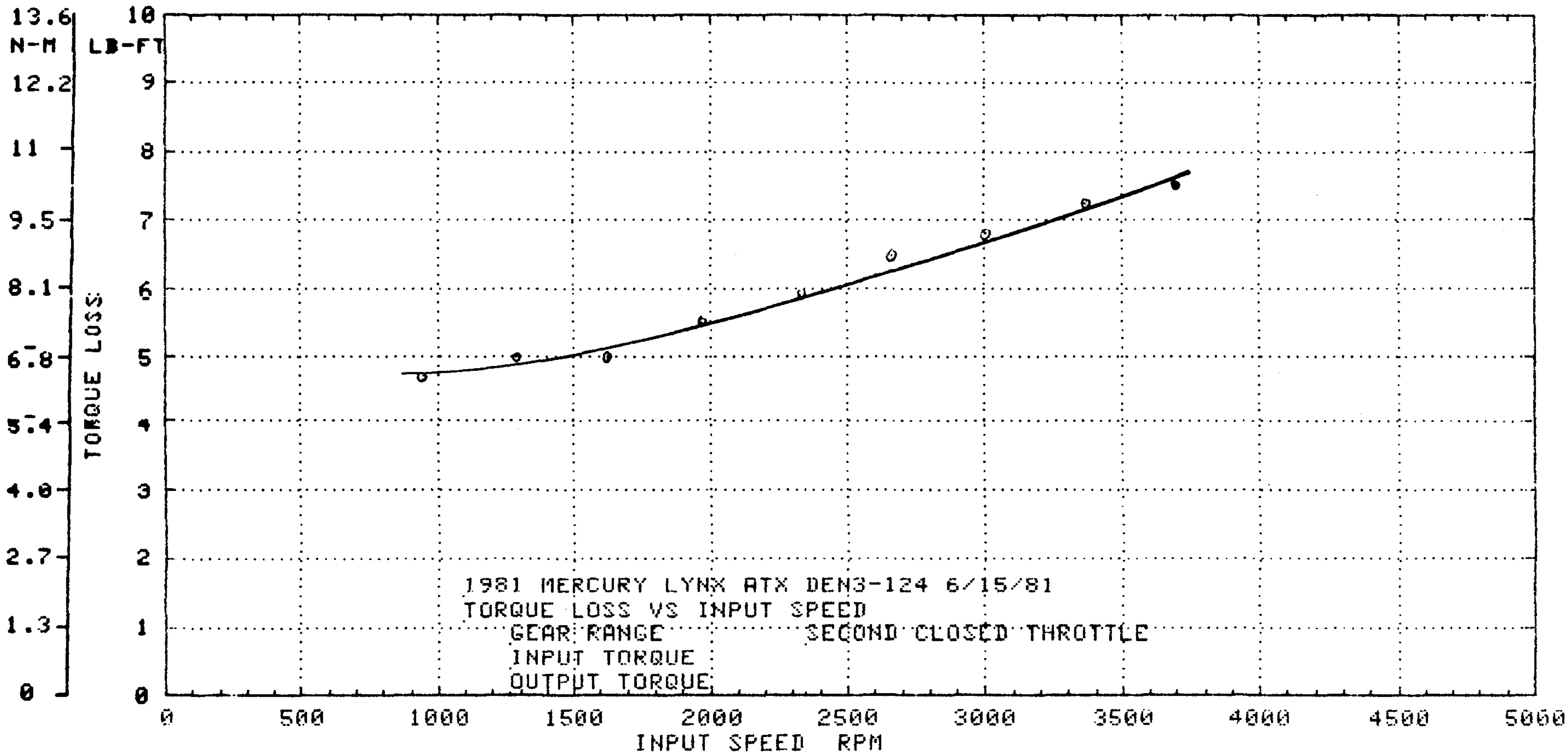
NO LOAD LOSSES

1st Gear (Open Throttle)


13.6
N-M
12.2
11
9.5
8.1
6.8
5.4
4.0
2.7
1.3
0
10
LB-FT
9
8
7
6
5
4
3
2
1
0
TORQUE LOSS
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
INPUT SPEED RPM
1981 MERCURY LYNX ATX DEN3-124 6/15/81
TORQUE LOSS VS INPUT SPEED
GEAR RANGE FIRST OPEN THROTTLE
INPUT TORQUE
OUTPUT TORQUE

NO LOAD LOSSES

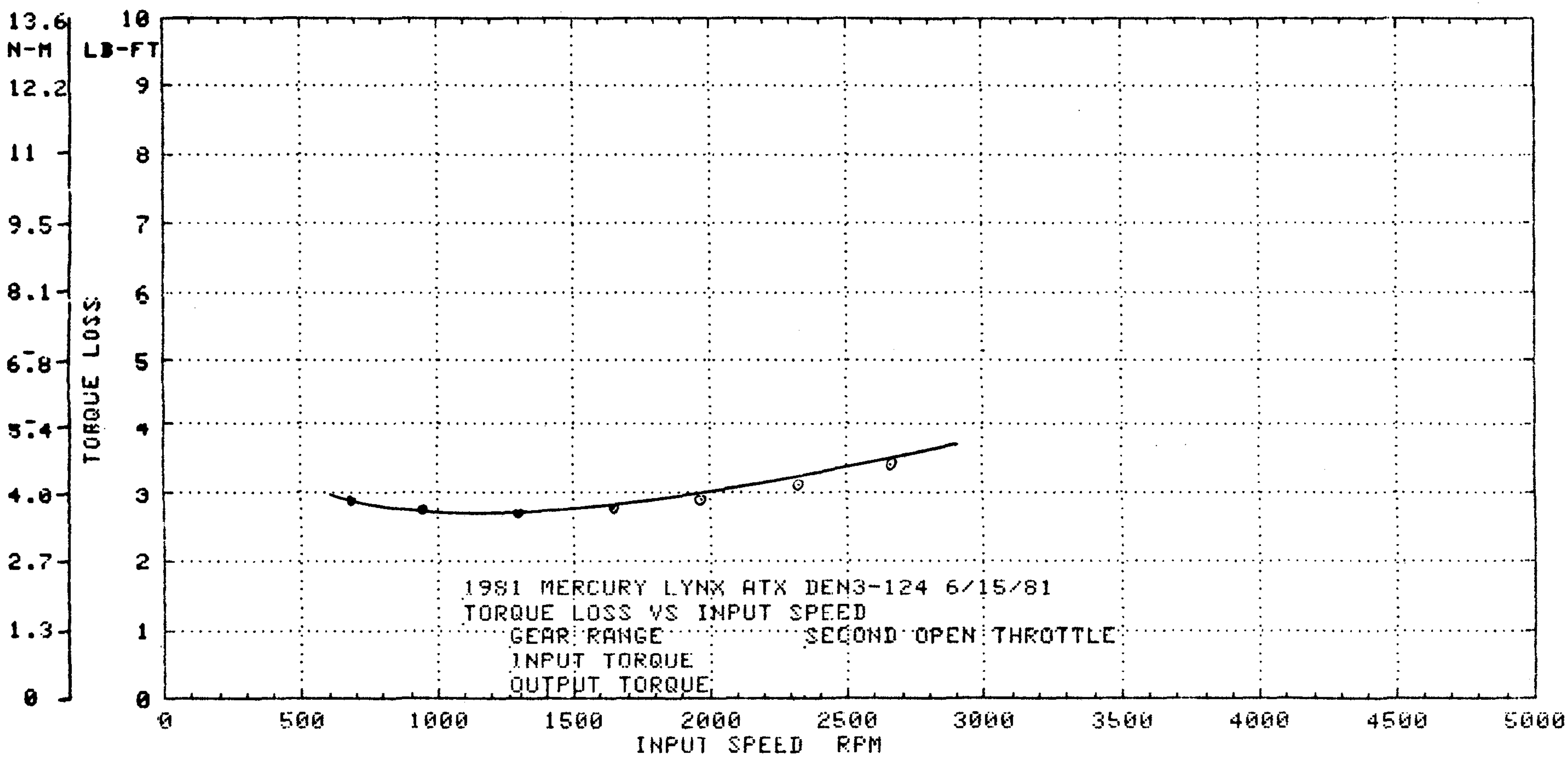
2nd Gear (Closed Throttle)


13.6
N-M
LB-FT
12.2
11
9.5
8.1
6.8
5.4
4.0
2.7
1.3
0
10
9
8
7
6
5
4
3
2
1
0
TORQUE LOSS
1981 MERCURY LYNX ATX DEN3-124 6/15/81
TORQUE LOSS VS INPUT SPEED
GEAR RANGE SECOND CLOSED THROTTLE
INPUT TORQUE
OUTPUT TORQUE
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
INPUT SPEED RPM

NO LOAD LOSSES

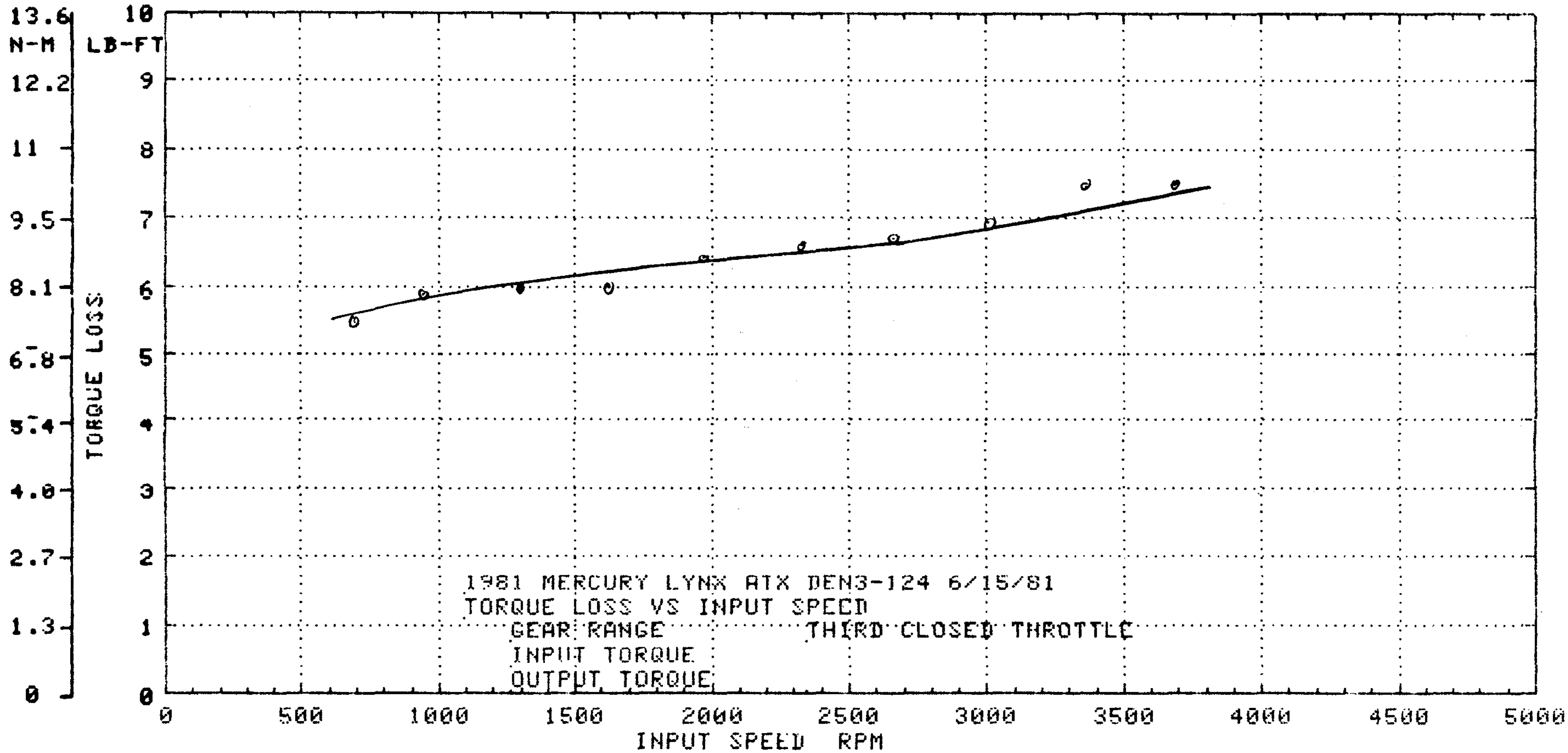
2nd Gear (Open Throttle)

314


13.6
N-M
12.2
11
9.5
8.1
6.8
5.4
4.0
2.7
1.3
0
10
LB-FT
9
8
7
6
5
4
3
2
1
0
TORQUE LOSS
1981 MERCURY LYNX ATX DEN3-124 6/15/81
TORQUE LOSS VS INPUT SPEED
GEAR RANGE
SECOND OPEN THROTTLE
INPUT TORQUE
OUTPUT TORQUE
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
INPUT SPEED RPM

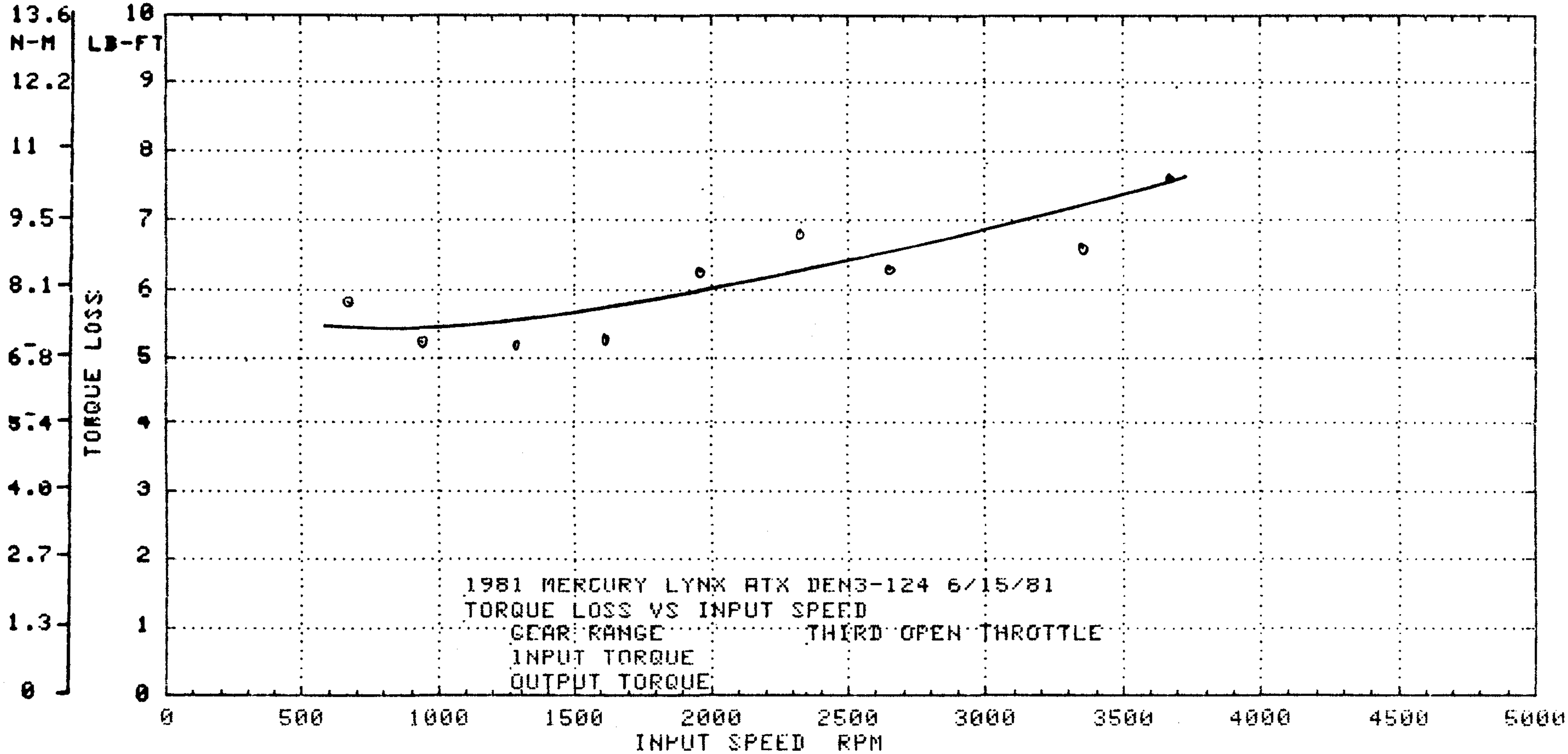
NO LOAD LOSSES

3rd Gear (Closed Throttle)


13.6
N-M
12.2
11
9.5
8.1
6.8
5.4
4.0
2.7
1.3
0
10
LB-FT
9
8
7
6
5
4
3
2
1
0
TORQUE LOSS
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
INPUT SPEED RPM
1981 MERCURY LYNX ATX DEN3-124 6/15/81
TORQUE LOSS VS INPUT SPEED
GEAR RANGE THIRD CLOSED THROTTLE
INPUT TORQUE
OUTPUT TORQUE

NO LOAD LOSSES

3rd Gear (Open Throttle)



13.6
N-M
LB-FT
12.2
11
9.5
8.1
6.8
5.4
4.0
2.7
1.3
0
10
9
8
7
6
5
4
3
2
1
0
TORQUE LOSS
1981 MERCURY LYNX ATX DEN3-124 6/15/81
TORQUE LOSS VS INPUT SPEED
GEAR RANGE THIRD OPEN THROTTLE
INPUT TORQUE
OUTPUT TORQUE
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
INPUT SPEED RPM

APPENDIX

ROOT MEAN SQUARE METHOD

$$\text{TORQUE ERROR (HIMMELSTEIN)} = \sqrt{(\text{TORQUE TRANS. ERROR})^2 + (\text{TAPE RECORDER ERROR})^2 + (\text{ANALYZER ERROR})^2}$$
$$= \sqrt{(0.18)^2 + (0.05)^2 + (0.048)^2} = \pm 0.193\% \text{ of Full Scale}$$

$$\text{TORQUE ERROR (LEBOW)} = \sqrt{(\text{TORQUE TRANS. ERROR})^2 + (\text{TAPE RECORDER ERROR})^2 + (\text{ANALYZER ERROR})^2}$$
$$= \sqrt{(0.41)^2 + (0.05)^2 + (0.048)^2} = \pm 0.416\% \text{ of Full Scale}$$

$$\text{SPEED ERROR} = \sqrt{(\text{SPEED SENSOR})^2 + (\text{SPEED CONDITIONER})^2 + (\text{TAPE RECORDER ERROR})^2 + (\text{ANALYZER ERROR})^2}$$
$$= \sqrt{(0.025)^2 + (0.10)^2 + (0.05)^2 + (0.048)^2} = \pm 0.124\% \text{ of Full Scale}$$

$$\text{POWER OUT ERROR} = \sqrt{(\text{TORQUE ERROR (LEBOW)})^2 + (\text{SPEED ERROR})^2 + (\text{COMPUTER CALCULATION ERROR})^2}$$
$$= \sqrt{(0.416)^2 + (0.124)^2 + (0.5)^2} = \pm 0.662\% \text{ of Full Scale}$$

$$\text{EFFICIENCY ERROR} = \sqrt{(\text{TORQUE ERROR (LEBOW)})^2 + (\text{SPEED ERROR})^2 + (\text{TORQUE ERROR (HIMM)})^2 + (\text{SPEED ERROR})^2 + (\text{COMPUTER CALCULATION ERROR})^2}$$
$$= \sqrt{(0.416)^2 + (0.124)^2 + (0.193)^2 + (0.124)^2 + (0.5)^2} = \pm 0.701\% \text{ of Full Scale}$$

SUM OF ERROR METHOD

TORQUE ERROR (HIMMELSTEIN) = (TORQUE TRANSDUCER ERROR) + (TAPE RECORDER ERROR) + (ANALYZER ERROR)
= (0.18) + (0.05) + (0.048) = ±0.278% of Full Scale

TORQUE ERROR (LEBOW) = (TORQUE TRANS. ERROR) + (TAPE RECORDER ERROR) + (ANALYZER ERROR)
= (0.41) + (0.05) + (0.048) = ±0.508% of Full Scale

SPEED ERROR = (SPEED SENSOR) + (SPEED CONDITIONER) + (TAPE RECORDER ERROR) + (ANALYZER ERROR)
= (0.025) + (0.1) + (0.05) + (0.048) = ±0.223% of Full Scale

POWER OUT ERROR = (TORQUE ERROR (LEBOW)) + (SPEED ERROR) + (COMPUTER CALCULATION ERROR)
= (0.508) + (0.124) + (0.5) = ±1.132% of Full Scale

EFFICIENCY ERROR = (TORQUE ERROR (LEBOW)) + (SPEED ERROR) + (TORQUE ERROR (HIMM)) + (SPEED ERROR) + (COMPUTER CALCULATION ERROR)
= (0.508) + (0.223) + (0.278) + (0.223) + (0.5) = ±1.732% of Full Scale

The inter number computer calculation error was determined by taking a set of sample calculations and comparing the accurate multiplication to the computer multiplication. A sample comparison is given below.

DATA DRIVE
PERFORMANCE

T_i=80 LB-FT	ACCURACY CALCULATION	COMPUTER CALCULATION
T_i=80.8853, T_o=241.4830	T_o/T_i = 2.9855	T_o/T_i=2.9849

Comparison = ((2.9855 - 2.9849)/2.9855) x 100 = 0.020%

Since every calculation was not checked in this manner, a factor of safety was added to 0.020%, and 0.5% was used as the inter number computer calculation error.

A-3

OTHER MANUALS

To locate specific manuals in the documentation shipped with the system, refer to the System Configuration Notice for the contents of each binder.

SYSTEM SPECIFICATIONS & CHARACTERISTICS

The specifications in Table 1-1 describe the system's warranted performance. Those items under the heading of "Characteristics" go beyond the guaranteed specifications and give typical performance for some additional parameters and operations. These are included only to give you information which may be useful in applying the system.

Table 1-1. System Specifications and Characteristics

SPECIFICATIONS
(Specifications describe the standard system's warranted performance.)

ANALOG-TO-DIGITAL CONVERTER

Input Voltage Range: ±0.125V to ±8V peak in steps of 2.
Input Coupling: dc or ac.
Input Channels: 2 channels wired for 4 standard. 4 channels optional with plug-in cards.
Resolution: 12 bits including sign.
Input Frequency Range: dc to 50 kHz, 5 Hz to 50 kHz, ac coupled (100 kHz optional).
Sample Rate:
Internal: 100 kHz max. (1, 2, 3, or 4 channels simultaneously). (200 kHz optional on 1, 2, 3, or 4 channels.) [50 kHz max. (3 or 4 channels simultaneously).†]
External: An external time base may be used to allow external control of the sampling rate up to 100 kHz (200 kHz optional). One sample can be taken for each clock pulse (TTL level).
Internal Clock Accuracy: ±0.01%.

DISPLAY UNIT

Vertical Scale Calibration: Data in memory is automatically scaled to give a maximum on-screen calibrated display. The scale factor is given in volts/division, volts^2/division, or in dB offset.
Log Display Range: 80 dB with a scale factor ranging from 0 to +998 dB. Offset selectable in 4 dB steps.
Linear Display Range: ±4 divisions with scale factor ranging from 1×10^{-512} to 5×10^{512} in steps of 1, 2, and 5.
Digital UP/DOWN Scale: Allows 8 up-scale and 2 down-scale steps (calibrated continuous scale factor).
Horizontal Scale Calibration:
Linear Sweep Length: 10, 10.24 or 12.8 divisions.
Log Horizontal: 0.5 decades/division.
Markers: Intensity markers every 8th or every 32nd point.

BASE SOFTWARE

Transform Accuracy: The expected rms value of computational error introduced in either the forward or inverse FFT will not exceed 0.1% of the rms value of the transform result.
Dynamic Range: >75 dB for a minimum detectable spectral component in the presence of one full scale spectral component after twenty ensemble averages for a block size of 1024.

EXECUTION TIMES*

Fourier Transform: <55 ms
Stable Power Spectrum Average: <80 ms
Stable Tri-Spectrum Average: <220 ms

REAL TIME BANDWIDTHS*

Fourier Transform: >7.5 kHz
Stable Power Spectrum Average: 5.4 kHz
Stable Tri-Spectrum Average: 1.9 kHz

MASS STORAGE SOFTWARE

MAXIMUM REAL TIME DATA ACQUISITION RATE (Single Channel):
BS 256: 10 kHz
BS 1024: 39 kHz (25 kHz†)
BS 4096: 80 kHz (30 kHz†)

OFF-LINE BSFA SOFTWARE

Center Frequency Range: dc to one-half the Real Time Data Acquisition Rate.
Center Frequency Resolution: Continuous resolution to the limit of the frequency accuracy for center frequencies >0.02% of the sampling frequency.
Frequency Accuracy: ±0.01%
Bandwidth Selection: In steps of f/5n where n = 2, 3, 4, etc.
Max. Resolution Enhancement: >400
Dynamic Range:** 90 dB from peak out-of-band spectral component to the peak level of the passband noise.
80 dB from peak in-band spectral component to the peak level of the passband noise.
Out-of-Band Rejection: >90 dB
Passband Flatness of the Digital Filter: ±0.01 dB

ENVIRONMENTAL CONDITIONS

Temperature Range: 0°C to 40°C (104°F).

*For band limited random noise type signals at block size 1024, no display, no Hanning.
**After eight ensemble averages of a power spectrum at block size 1024. Reduced by 10 dB at the exact center of the band.
†These rates apply to systems with modules 5466B and 54451A/B having a serial prefix lower than 1842.

FM RECORD/REPRODUCE SPECIFICATIONS

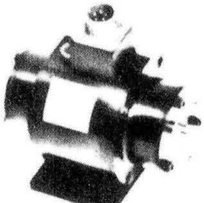
Input Sensitivity:	0.1 to 2.5 volts rms; adjustable with input attenuator for ±40% deviation. Can be extended to 10 volts.
Nominal Input Level:	±1.4 volts peak.
Nominal Input Impedance:	100 K ohms resistive, shunted by less than 100 pf, unbalanced to ground.
Frequency Response:	
Flat Amplitude Filter	DC to 20 KHz, at 60 ips, ±0.5 db; ±40 deviation.
Linear Phase Filter	DC to 12 KHz, at 60 ips, ±0.5 db; ±40% deviation.
	DC to 20 KHz at 60 ips, ±0.5, -3 db; ±40% deviation.
Frequency Responses (Optional):	DC to 80 KHz at 120 ips using ±40% deviation with IRIG intermediate band center frequency of 432 KHz. Upper frequency limit and center frequencies are proportionately lower at lower speeds, to 3-3/4 ips. DC to 10 KHz at 60 ips using ±40% deviation with IRIG low band frequency of 54 KHz for improved S/N ratios. Upper frequency limit and center frequencies are proportionately lower at lower speeds.
DC Drift (Oscillator and Discriminator):	Less than ±0.5% of peak-to-peak deviation per 10°F after 20 minute warm-up.
Signal/Noise Ratio	46 db at 60 ips.

DC Linearity:	Less than ±0.5% of peak-to-peak deviation reference to best straight line through zero.
AC Distortion:	Less than 1.5% total harmonic distortion at all speeds.
Transient Response (60 ips):	
Flat Amplitude Filter (±1/2db)	Rise Time (10% to 90% points) - 22 microseconds. Overshoot - less than 15%.
Linear Phase Filter (+1/2, -3 db)	Rise Time (10% to 90% points) - 18 microseconds. Overshoot - less than 2.5%.
Output Level (±40% deviation):	±1.4 volts peak, into 1000 ohms, with short circuit protection (SCP).
Output Current (±40% deviation):	±3 milliamperes peak with SCP.
Output Impedance:	Less than 50 ohms, unbalanced to ground, with SCP.

GENERAL

Configuration:	One standard 19 inch wide equipment enclosure for 14 channel FM or Direct Record/Reproduce System. For 28-32 vdc operation. Additional enclosure furnished for operation from other power supplies. Optional Rack Mounting Kit available.
Recorder Size (28-32 v):	26-1/8 inches high by 19 inches wide by 12 inches deep for a 7 channel-6 speed record/reproduce system or a 14 channel-6 speed record, 2 speed reproduce system. Additional enclosure (7-1/2 inches height) which attaches to portable

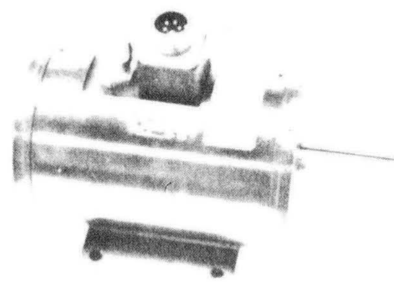
Rotating Shaft Torque Sensors



Model 1602
Low capacity torque sensors.

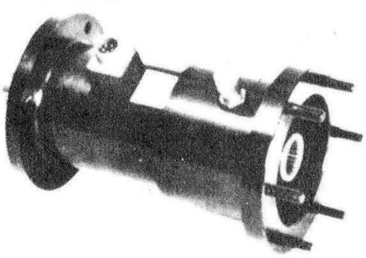
Capacity (Oz. In.)	Max. Speed (RPM)	Model	Protected for Overloads to (Oz. In.)	Torsional Stiffness (Lb. In./Rad.)	Rotating Inertia (Lb.-In.²)	Weight (Lbs.)
50	20,000	1602-50	150	400	.35	3¼
100	20,000	-100	300	1,000	.35	3¼
200	20,000	-200	600	2,500	.35	3¼
500	20,000	-500	1,500	5,500	.35	3¼
1,000	20,000	-1K	1,500	8,000	.35	3¼

Models 1604, 1605 & 1607
Utility rotating shaft torque sensor recommended for general application.



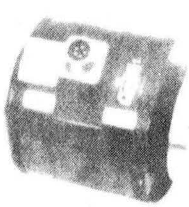
Capacity (Lb. In.)	Max. Speed (RPM)	Model	Protected for Overloads to (Lb. In.)	Torsional Stiffness (Lb. In./Rad.)	Rotating Inertia (Lb.-In.²)	Weight (Lbs.)
50	15,000	1604-50	150	5,000	1.0	18
100	15,000	-100	300	13,500	1.0	18
200	15,000	-200	600	33,000	1.0	18
500	15,000	-500	1,500	85,000	1.0	18
1,000	15,000	-1K	3,000	150,000	1.0	18
2,000	15,000	-2K	6,000	225,000	1.0	18
2,000	15,000	1605-2K	6,000	700,000	3.25	28
5,000	15,000	-5K	15,000	950,000	3.25	28
10,000	15,000	-10K	20,000	1,000,000	3.25	28
20,000	4,000	1607-20K	60,000	6,800,000	52.0	75
50,000	4,000	-50K	150,000	11,800,000	57.0	75
100,000	4,000	-100K	150,000	19,950,000	180.0	75

Model 1615
Standard-flange housing mount with AND pads to match Army-Navy mountings standard.



Capacity (Lb. In.)	Max. Speed (RPM)	Model	Protected for Overloads to (Lb. In.)	Torsional Stiffness (Lb. In./Rad.)	Rotating Inertia (Lb.-In.²)	Weight (Lbs.)
50	15,000	1615A-50	150	1,500	1.0	24
100	15,000	-100	300	4,000	1.1	24
200	15,000	-200	600	10,000	1.2	24
500	15,000	-500	1,500	20,000	1.3	24
1K	15,000	-1K	1,500	25,000	1.4	24
50	15,000	1615K-50	75	1,620	1.04	25
100	15,000	-100	150	4,570	1.05	25
200	15,000	-200	300	12,900	1.06	25
500	15,000	-500	750	940,000	1.97	25
1,000	15,000	-1K	1,500	204,000	2.00	25
2,000	15,000	-2K	3,000	347,000	2.08	26
5,000	15,000	-5K	7,500	500,000	2.38	26
10,000	15,000	-10K	15,000	574,000	2.76	26

Model 1648
Flange drive units recommended for use when short length is mandatory.



Capacity (Lb. In.)	Max. Speed (RPM)	Model	Protected for Overloads to (Lb. In.)	Torsional Stiffness (Lb. In./Rad.)	Rotating Inertia (Lb.-In.²)	Weight (Lbs.)
2,000	5,000	1648-2K	3,000	742,000	23.0	23
5,000	5,000	-5K	7,500	1,811,000	23.0	23
10,000	5,000	-10K	15,000	2,248,000	23.0	23
20,000	5,000	-20K	30,000	3,507,000	23.5	23

GENERAL SPECIFICATIONS: (All Models)

SENSOR: Four arm bonded foil strain gage bridge
BRIDGE RESISTANCE: 350 ohms nominal
BRIDGE VOLTAGE: 20 volts maximum, 3 KHz
OUTPUT: 2 to 2.5 millivolt/volt nominal
LINEARITY: 0.1% of full scale

COMPENSATED TEMPERATURE RANGE: 30°F to 150°F
USEABLE TEMPERATURE RANGE: 0°F to 200°F
EFFECT OF TEMPERATURE ON ZERO: .002% of full scale/°F
EFFECT OF TEMPERATURE ON OUTPUT: .002% of reading/°F

TECHNICAL SPECIFICATION

MCRT®6-02T Non-Contact Torquemeter

MAX. TORQUE–15,000 lb.-in.
SPEED – 0 - 7,500 rpm

GENERAL DESCRIPTION

The MCRT®6-02T is a compact, high accuracy, flanged torquemeter well adapted for vehicle drive-line measurements and continuous monitoring and feedback applications. It uses a rotating strain gage torque bridge, temperature compensated for drift and modulus. The bridge is connected to a stationary electronic readout via integral, non-contact rotary transformers.

The torquemeter is immune to water, lubricants, coolants, vibration, etc. The elimination of slip-rings permits high accuracy low level measurements with long, maintenance-free life. Thrust and bending loads are inherently cancelled by the transducer design. An optional, integral non-contact speed pickup may be specified when ordering.

Linearity: 0.1%

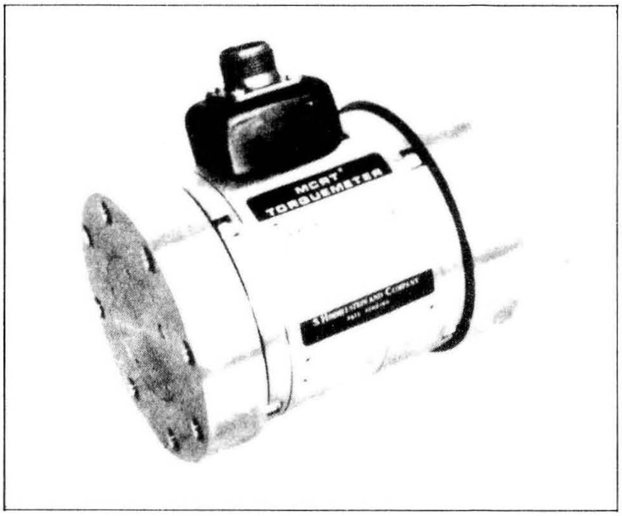
Temperature Effects: From 75 to 175° F maximum drift is 0.2% of full scale and maximum error due to modulus change is 0.2% of reading.

Maximum Operating Temperature: 220° F, assuming permanent lubrication. Above 175° F, the maximum shaft speed may have to be de-rated.

Readout: Any carrier amplifier suitable for strain gage service may be used.

Excitation Voltage: 10 volts rms, maximum.

Nominal Output: 0.75 millivolts/volt (open circuit).



Standard Ratings:

MODEL	FULL SCALE TORQUE	TORSIONAL STIFFNESS	MAXIMUM BENDING MOMENT	MAXIMUM ROTATING INERTIA	MAXIMUM WEIGHT
MCRT®6-02T	(lb. – in.)	(lb. – in./rad.)	(lb. – in.)	(in. – oz. sec.^{2})	(lbs.)
–(1-3)	1,000	602,000	500	0.60	13.8
–(2-3)	2,000	1,375,000	1,000	0.60	13.8
–(4-3)	4,000	2,640,000	2,000	0.60	13.8
–(6-3)	6,000	2,430,000	3,000	0.90	17.0
–(10-3)	10,000	2,930,000	5,000	0.90	17.0
–(15-3)	15,000	3,530,000	5,500	0.90	17.0

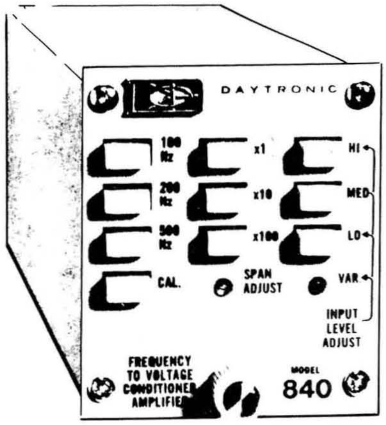
Overload Capacity: 2 times full scale rating.

Shaft Speed: 0 to 7,500 rpm, bi-directional. Optional speed pickup produces 60 pulses per shaft revolution.

Construction: Load carrying members (flanges, shaft) are 17-4 PH high strength stainless steel.

NOTES:

[1] Maximum speed rating assumes permanent lubrication. Consult factory for higher speed operation.
[2] When combined axial and bending loads are present, the bending capacity must be de-rated. Consult factory.
[3] Stator should be compliantly restrained from rotating.



MODEL
840

FREQUENCY-TO-VOLTAGE CONVERTER

The Model 840 Frequency-to-Voltage Converter is a conditioner-amplifier module that accepts input signals in a wide range of frequencies, wave shapes, and voltage levels and produces standard system output voltages precisely proportional to the frequency or repetition rate of the input signal. It is intended for use in "800" systems for measurement of **flow, rpm,** and similar phenomena that can be derived from magnetic pickups, turbine flowmeters, or other frequency-producing sources.

Nine selectable frequency ranges accommodate virtually all mechanical measurement requirements. An internal crystal oscillator reference and adjustable output span allow precise calibration of the indicating device in terms of *frequency, rpm,* or any other chosen units appropriate to the particular measurement. In flow measurement, for example, the Model 840 can be used with the Model 890 Digital Indicator and calibrated, using the front panel controls, so as to indicate directly in *gallons per minute* or *gallons per hour,* provided only that the flowmeter **K Factor** *(cycles per gallon)* is known.*

The Model 840 is also used in conjunction with the Model 862 Multiplier Module in an instrument that can display *torque, rpm, and shaft horsepower* in digital engineering units. Additional information on this and other instrument combinations is contained under the Model 862 description.

*If fluid specific gravity is also known, calibration can be made in units of *mass flow*, such as Pounds per Hour. For applications where specific gravity is subject to change, corrections can be entered manually on a calibrated dial (see Model 868, p 46) or applied automatically by a temperature sensing channel (see Model 862, page 42).

SPECIFICATIONS

Input:

Type: . . . . any AC signal, grounded or floating, irrespective of waveform.

Sensitivity: . . . Three ranges (Lo, Med, & Hi), plus vernier, allow adjustment of threshold level from 5 mv to 50 volts (peak). Maximum continuous input voltage is 25 v, 100 v, & 250 v (RMS), respectively. Input is undamaged by momentary peak voltage of 500 volts on any range. Differential input impedance is 20K ohms, 400K ohms, and 8 Megohms, respectively.

Common mode rejection . . . greater than 60 dB to 2 kHz and greater than 30 dB to 100 kHz.

Frequency ranges: . . . . 100 Hz, 200 Hz, and 500 Hz; with multipliers of X1, X10, and X100; each with 100% overrange.

Output:

Standard One Volt Data Signal: . . . . (see Table One, page 7).

Standard Ten Volt Output Signal: . . . . (see Table One, page 7).

Step-function response (to 99% of final value): . . . . 800 ms for X1 multiplier, 80 ms for X10 and X100 multipliers.

Step-function response (to 99.9% of final value): . . . . 2.5 sec for X1 multiplier, 250 ms for X10 and X100 multipliers.

Ripple and noise (max.): . . . . . . less than 0.2% of full scale from 10% to 100% of scale.

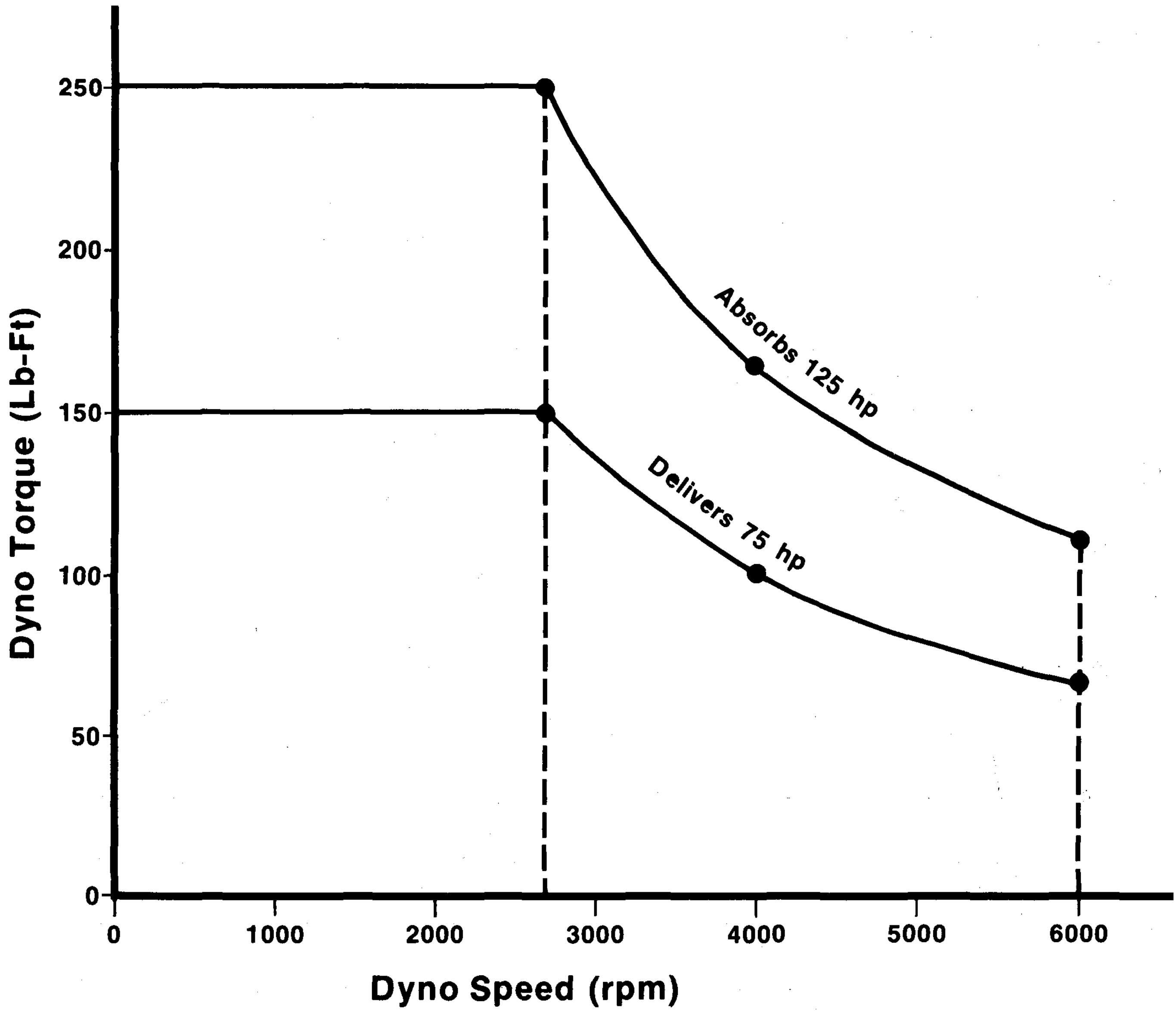
Accuracy: . . . . .0.05% of scale (based on average value of DC output).

Housing: . . . . standard full-width module.

Operating temperature range: . . . . +50 to +120 degrees F.

Power requirements: . . . . 105-130 volts, 50-400 Hz.

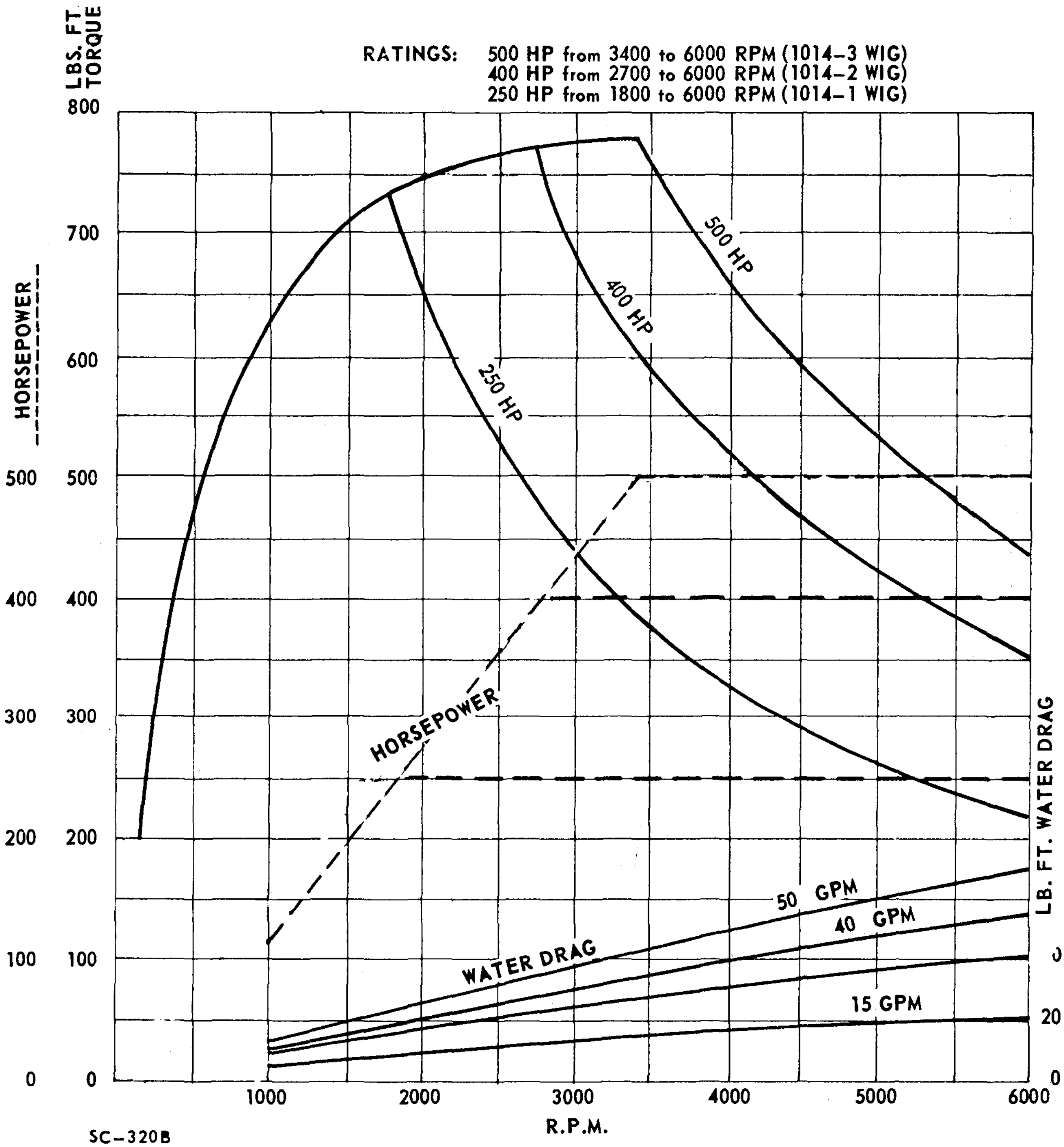
PRICE: Model 840 Frequency-to-Voltage Converter $495.00



Dynamometer Characteristics

General Electric

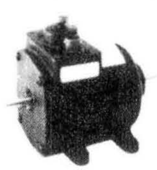
No 1739498	Type TCL-20	Class 4-125-2700
Amperes 360	Volts 250	
Absorbs 125 hp	Delivers 75 hp	
Speeds 2700/6000		
Torque Arm 15.756	Insts. GE I-7360-B	


LBS. FT. TORQUE
RATINGS: 500 HP from 3400 to 6000 RPM (1014-3 WIG)
400 HP from 2700 to 6000 RPM (1014-2 WIG)
250 HP from 1800 to 6000 RPM (1014-1 WIG)
HORSEPOWER
800
700
600
500
400
300
200
100
0
500 HP
400 HP
250 HP
HORSEPOWER
WATER DRAG
50 GPM
40 GPM
15 GPM
LB. FT. WATER DRAG
20
0
1000
2000
3000
4000
5000
6000
R.P.M.
SC-320B

SLIP RING TORQUE SENSORS

Model 1102 **Model 1103**

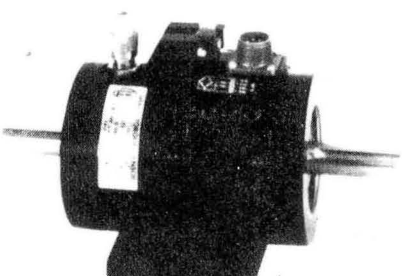
Low capacity torque sensors.



Capacity (Oz. In.)	Max. Speed (RPM)	Model	Protected for overloads to (Oz. In.)	Torsional Stiffness (Lb. In./Rad.)	Rotating Inertia (Lb.-In.^{2})	Weight (Lbs.)	Brush Life Factor × 10^6	Ring Diameter (In.)
10	20,000	1103-10	20	112	.01	¾	NA	NA
20	20,000	-20	40	113	.01	¾	NA	NA
50	20,000	1102-50	150	665	.676	2	8.2	0.750
100	20,000	-100	300	1,070	.678	2	8.2	0.750
200	20,000	-200	600	1,790	.680	2	8.2	0.750
500	20,000	-500	1,000	3,480	.682	2	8.2	0.750
1,000	20,000	-1K	1,500	4,850	.685	2	8.2	0.750

Models 1104 thru 1109, 1114, 1118 and 1121

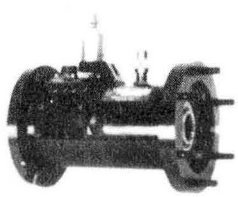
Standard rotating shaft torque sensor for general application.



Capacity (Lb. In.)	Max. Speed (RPM)	Model	Protected for overloads to (Lb. In.)	Torsional Stiffness (Lb. In./Rad.)	Rotating Inertia (Lb.-In.^{2})	Weight (Lbs.)	Brush Life Factor × 10^6	Ring Diameter (In.)
100	16,000	1114-100	300	7,800	1.11	11	25.9	1.187
200	16,000	-200	600	17,200	1.12	11	25.9	1.187
500	16,000	-500	1,000	25,300	1.09	11	25.9	1.187
1,000	16,000	-1K	1,500	36,200	1.10	11	25.9	1.187
100	9,000	1104-100	150	6,430	1.52	11	15.4	2.000
200	9,000	-200	300	17,000	1.53	11	15.4	2.000
500	9,000	-500	750	45,200	1.59	11	15.4	2.000
1,000	9,000	-1K	1,500	103,000	1.59	11	15.4	2.000
2,000	9,000	-2K	3,000	182,500	1.60	11	15.4	2.000
5,000	8,500	1105-5K	7,500	475,000	3.59	28	14.0	2.187
10,000	8,500	-10K	15,000	750,000	4.09	28	14.0	2.187
20,000	6,500	1106-20K	30,000	2,610,000	15.18	42	10.2	3.000
50,000	4,000	1107-50K	75,000	7,220,000	53.06	74	7.2	4.250
100,000	4,000	-100K	150,000	12,450,000	58.14	74	7.2	4.250
120,000	2,400	1108-120K	180,000	15,400,000	265.41	162	5.3	5.750
240,000	2,400	-240K	360,000	23,300,000	285.35	162	5.3	5.750
360,000	2,100	1109-360K	540,000	28,000,000	400.00	240	4.4	7.000
600,000	2,100	-600K	900,000	40,000,000	577.00	240	4.4	7.000
840,000	450	1118-840K	1,260,000	Consult Factory			3.3	9.000
1,200,000	450	-1200K	1,800,000	Consult Factory			3.3	9.000
1,800,000	450	-1800K	2,700,000	Consult Factory			3.3	9.000
2,400,000	350	1121-2400K	3,600,000	Consult Factory			3.0	10.000
3,000,000	350	-3000K	4,500,000	Consult Factory			3.0	10.000

Model 1115

Flange housing mount with AND pads to match Army-Navy mountings standard. Spline drive.

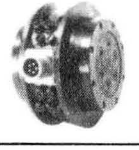


Capacity (Lb. In.)	Max. Speed (RPM)	Model	Protected for overloads to (Lb. In.)	Torsional Stiffness (Lb. In./Rad.)	Rotating Inertia (Lb.-In.^{2})	Weight (Lbs.)	Brush Life Factor × 10^6	Ring Diameter (In.)
100	24,000	1115A-100	300	5,230	2.44	24	25.9	1.187
200	24,000	-200	600	14,700	2.92	24	25.9	1.187
500	24,000	-500	1,000	25,900	2.43	24	25.9	1.187
1,000	24,000	-1K	1,500	37,600	2.44	24	25.9	1.187
100	8,000*	1115K-100	300	5,740	3.01	28	15.4	2.000
200	8,000*	-200	600	19,600	3.49	28	15.4	2.000
500	8,000*	-500	1,000	46,400	3.00	28	15.4	2.000
1,000	8,000*	-1K	1,500	103,000	3.01	28	15.4	2.000
2,000	8,000*	-2K	3,000	156,000	3.03	28	15.4	2.000
5,000	8,000*	-5K	7,500	342,000	3.05	28	15.4	2.000
10,000	8,000*	-10K	12,000	420,000	3.25	28	15.4	2.000

*12,000 RPM with air-oil mist lubrication.

Models 1228, 1248, 1241

Flange drive for use when short length is mandatory.



Capacity (Lb. In.)	Max. Speed (RPM)	Model	Protected for overloads to (Lb. In.)	Torsional Stiffness (Lb. In./Rad.)	Rotating Inertia (Lb.-In.^{2})	Weight (Lbs.)	Brush Life Factor × 10^6	Ring Diameter (In.)
2,000	5,000	1228-2K	3,000	1,455,000	4.38	8	12.7	2.530
5,000	5,000	-5K	7,500	2,141,000	4.39	8	12.7	2.530
10,000	5,000	-10K	15,000	2,820,000	4.59	8	12.7	2.530
20,000	5,000	1248-20K	30,000	4,657,000	15.53	17	9.4	3.250
50,000	3,000	1241-50K	75,000	12,840,000	193.7	54	6.5	4.750
100,000	3,000	-100K	150,000	23,460,000	196.3	54	6.5	4.750

Specifications	Standard	"H" Option
Output at rated capacity: millivolts per volt nominal	2 to 2.5	5
Nonlinearity: of rated output	±0.1%	±0.15%
Hysteresis: of rated output	±0.1%	±0.15%
Repeatability: of rated output	±0.05%	±0.07%
Zero balance: of rated output	±1.0%	±1.0%
Bridge resistance: ohms nominal	350	350
Temperature range, compensated °F	+70 to +170	+70 to +170
Temperature range, useable °F	65 to +200	65 to +200
Temperature effect on output: of reading per °F	±0.002%	±0.003%
Temperature effect on zero: of rated output per °F	±0.002%	±0.003%
Excitation voltage, maximum: volts DC or AC rms	20	20
Insulation resistance, bridge/case: megohms at 50 VDC	>5000	>5000
Number of bridges	1	1

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15. Supplementary Notes

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16. Abstract

The small passenger car transmission test was initiated to supply electric vehicle manufacturers with technical information regarding the performance of commercially available transmissions. This information would enable EV manufacturers to design a more energy efficient vehicle. With this information the manufacturers would be able to estimate vehicle driving range as well as speed and torque requirements for specific road load performance characteristics. This report covers the testing of a Mercury Lynx automatic transmission. This transmission was tested in accordance with a passenger car automatic transmission test code (SAE J651b) which required drive performance, coast performance, and no load test conditions. Under these conditions, the transmission attained maximum efficiencies in the mid-ninety percent range both for drive performance test and coast performance tests. The major results of this test are the torque, speed and efficiency curves which are located in the data section of this report. These graphs map the complete performance characteristics for the Mercury Lynx automatic transmission.

17. Key Words (Suggested by Author(s))	18. Distribution Statement
Electric vehicles Transmissions Torque converters	Unclassified - unlimited STAR Category 37 DOE Category UC-96

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