

STATE RAIL AUTHORITY

10 YEAR PLAN

FOR

ROLLINGSTOCK

MAINTENANCE

1985 - 1995

CHIEF ENGINEERING MANAGER
AND EXECUTIVE DIRECTOR, WORKSHOPS

17.10.85



Over recent years there have been dramatic changes in the business activities of the State Rail Authority and our rollingstock fleet has been extensively renewed, re-equipped and upgraded. All four wheeled wagons have gone and a large number of modern high capacity bogie wagons are now in use. Nearly 200 modern high horsepower locomotives have been added to the fleet and in what is probably the biggest change of all, the country passenger fleet is being completely transformed by the total replacement of non-air-conditioned stock by modern XPT trains, air-conditioned road coaches and more double deck interurban electric cars. In addition the very large suburban commuter fleet is being given a completely new image by the introduction of 450 of what is unquestionably the best suburban car in the world, the Tangara car.

The introduction of newer, higher technology rolling stock has required dramatic changes to fleet maintenance and traditional workshop functions:

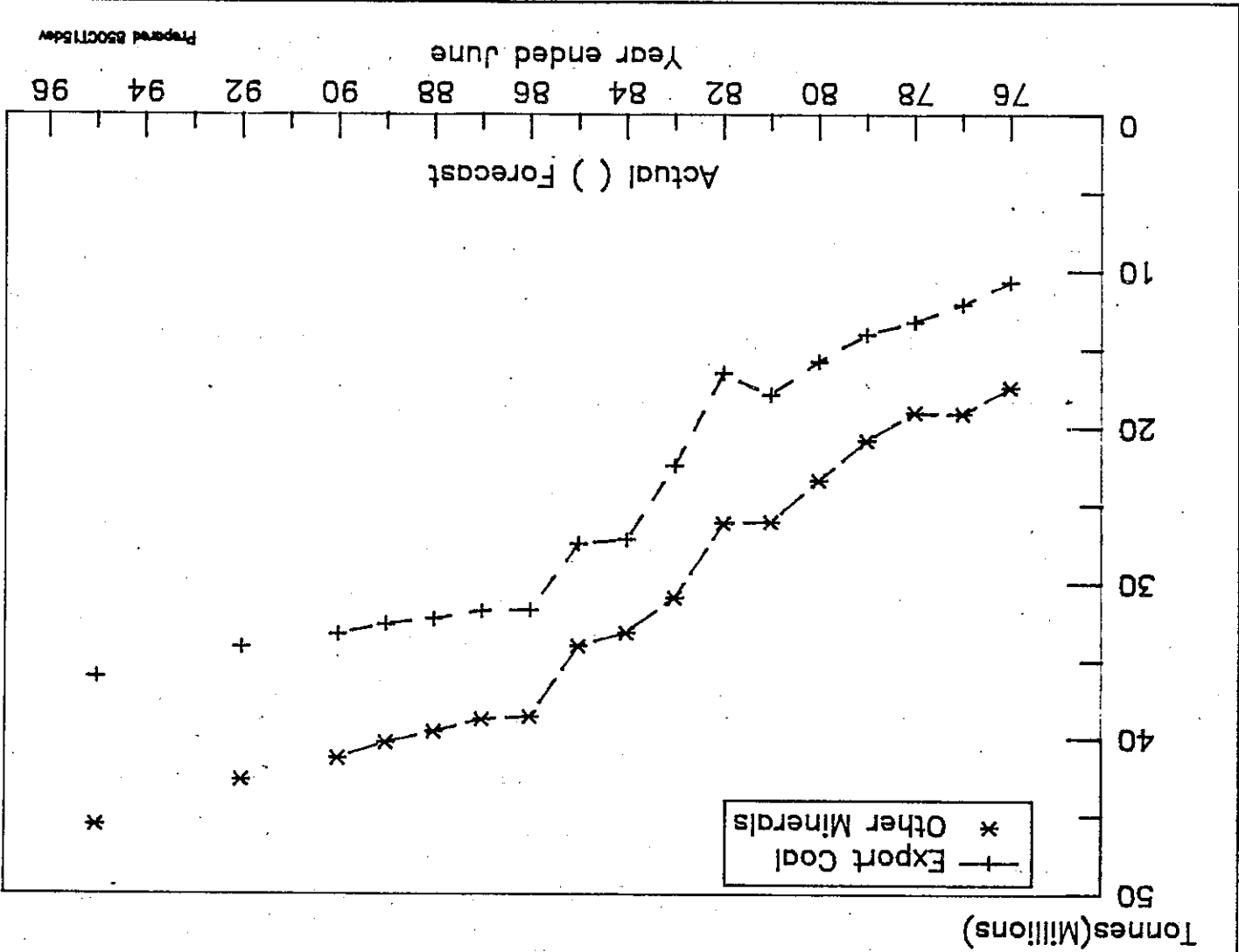
- (i) The workshops at Clyde, Goulburn and Bathurst have adequate capacity for the maintenance of today's wagon fleet given present levels of productivity but when the modernisation of this fleet is completed, up to one third of their capacity could be surplus to our requirements.
- (ii) The Chullora, Cardiff and Eveleigh locomotive workshops do not have the necessary capacity to overhaul today's fleet but with the modernisation of the locomotive up to 40% of present capacity could become surplus to our requirements.
- (iii) The Electric Car Workshops at Chullora cannot meet the combined maintenance needs of the current single deck and double deck suburban and interurban fleets. Until the old single deck cars are replaced, an interim electric car shop is to be set up at Eveleigh. When Elcar redevelopment is completed this shop is expected to have adequate capacity for all double deck suburban as well as interurban Fleet overhaul needs.
- (iv) The Carriage Workshops at Eveleigh already have excess capacity and when modernisation of the country passenger fleet has been completed, it is expected that most of the combined resources of the Rollingstock (passenger) Workshop at Chullora and the Carriage Workshops, Eveleigh will be surplus.
- (v) STS has continued to experience a decline in its traditional workload and the emergence of surplus capacity has occurred which will require further analysis.

This report describes the changes in business opportunities and rollingstock Fleet in detail and charts their impact on the workshops up to 1995. It represents our best endeavours to forecast future requirements.

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1 - Mineral Freight Tonneages

Revised October 1985

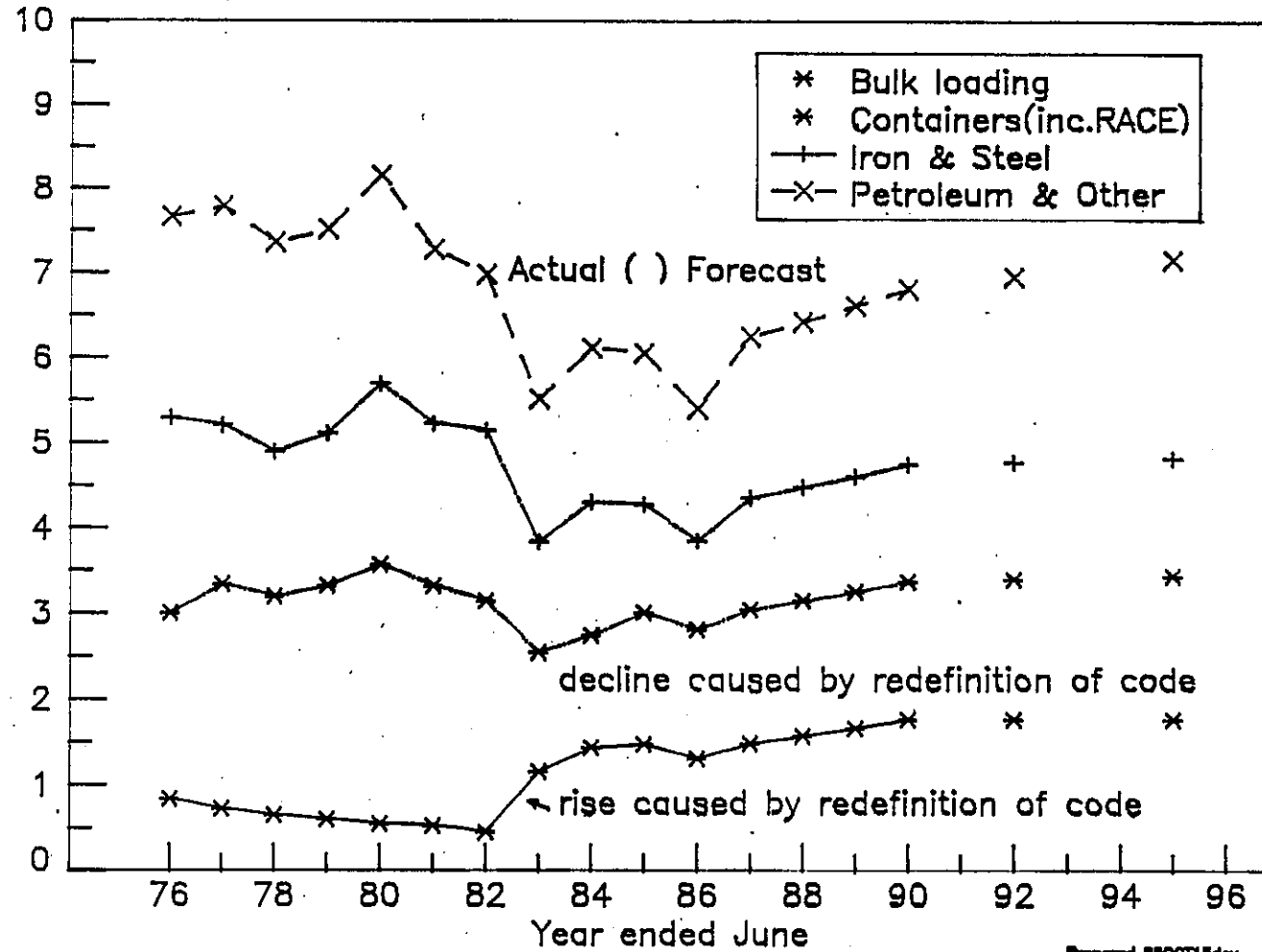


Prepared 850315dev

2 - General Freight Tonneages

Revised October 1985

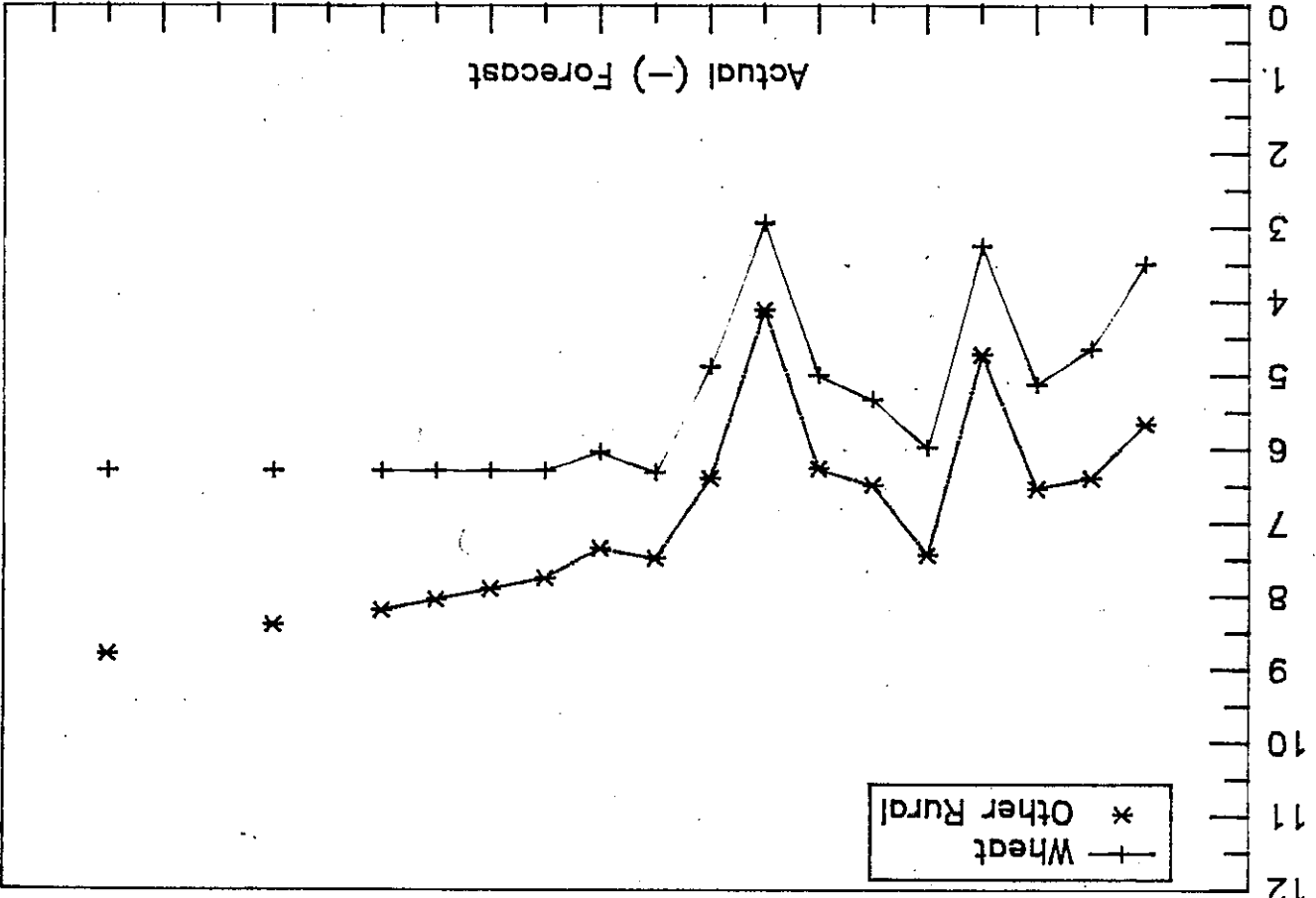
Tonnes (Millions)



3 - Rural Freight Tonneages

Revised October 1985

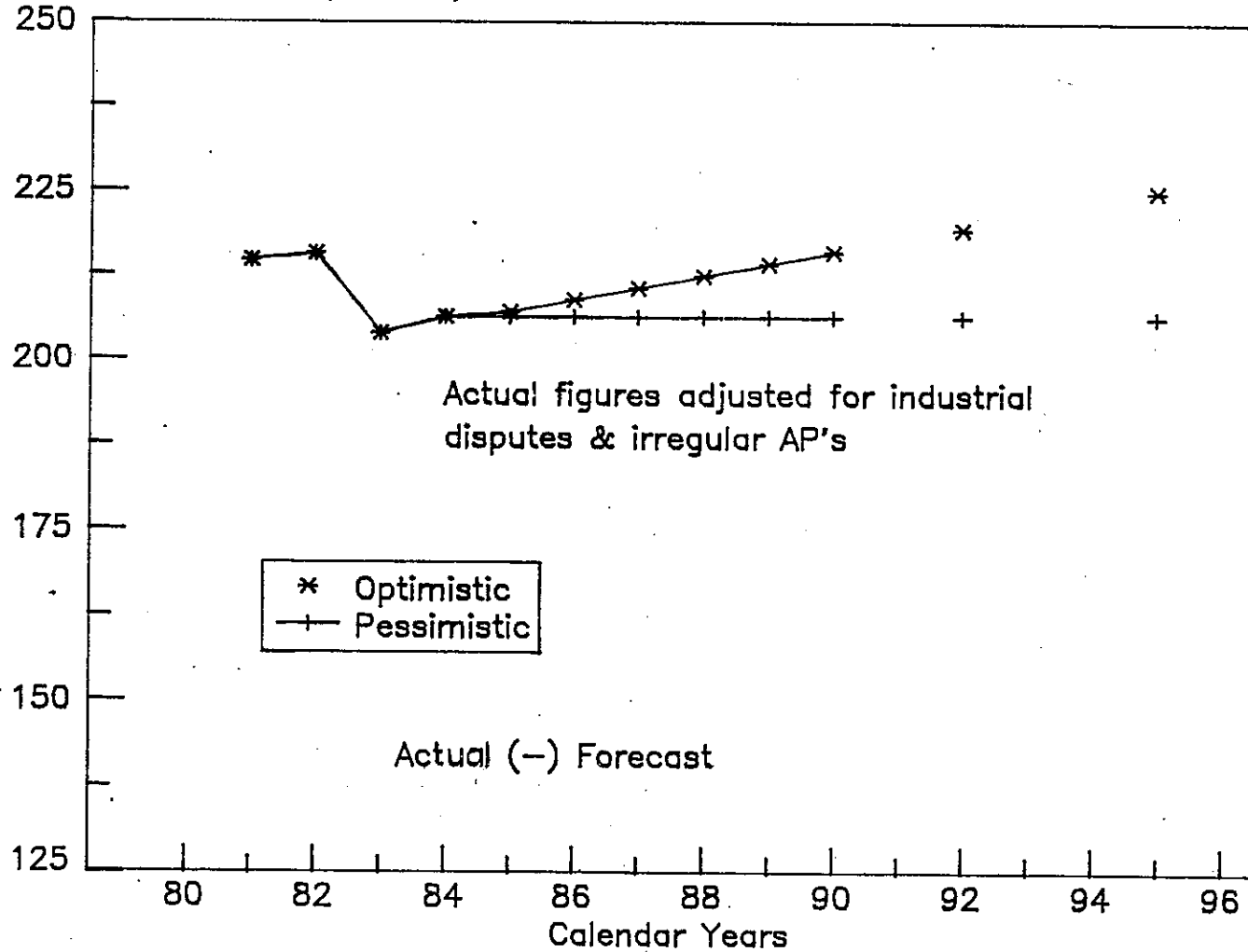
Tonnes (Millions)



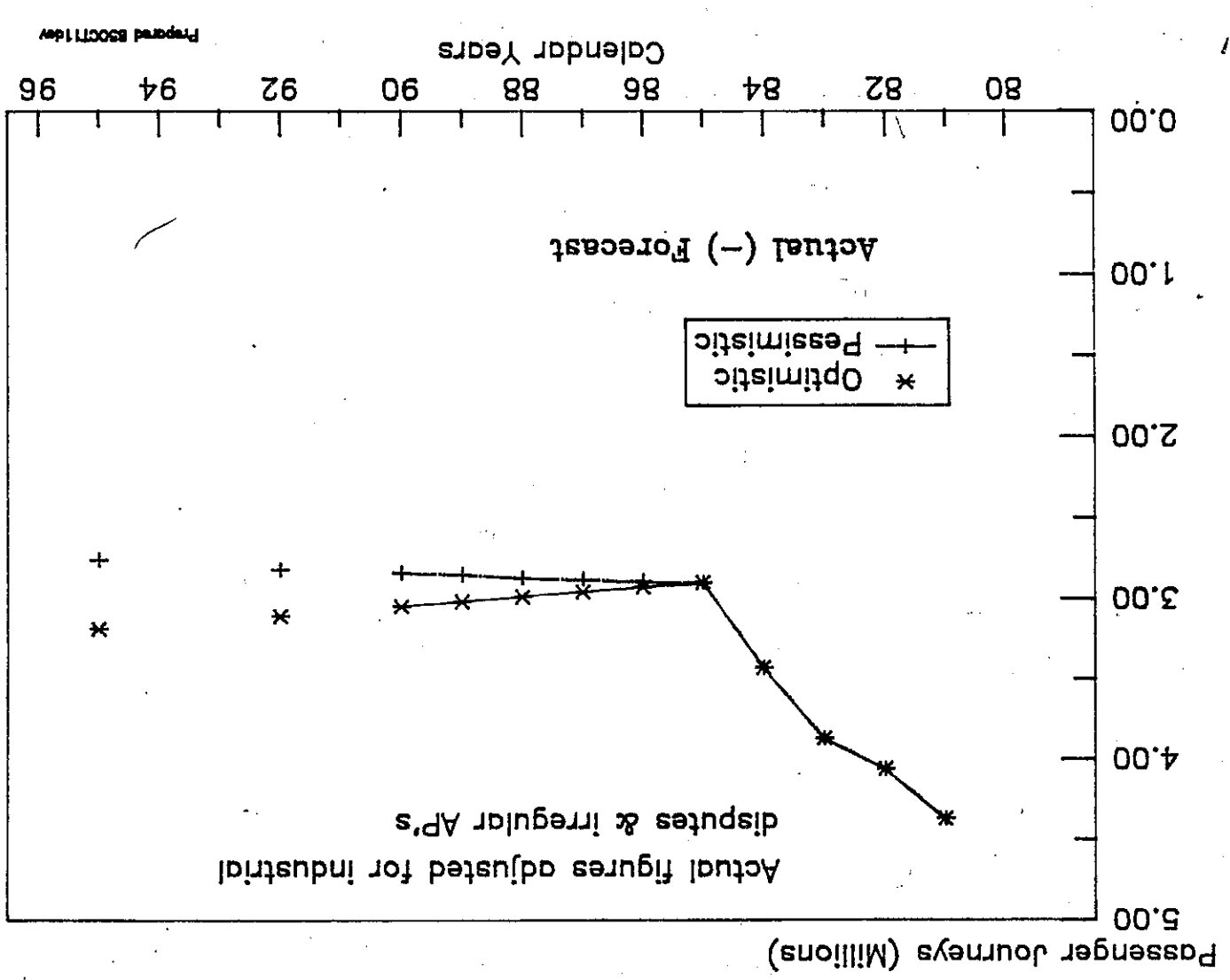
Prepared 85OCT15dv

4 - Trends in Suburban Patronage

Passenger Journeys (millions)

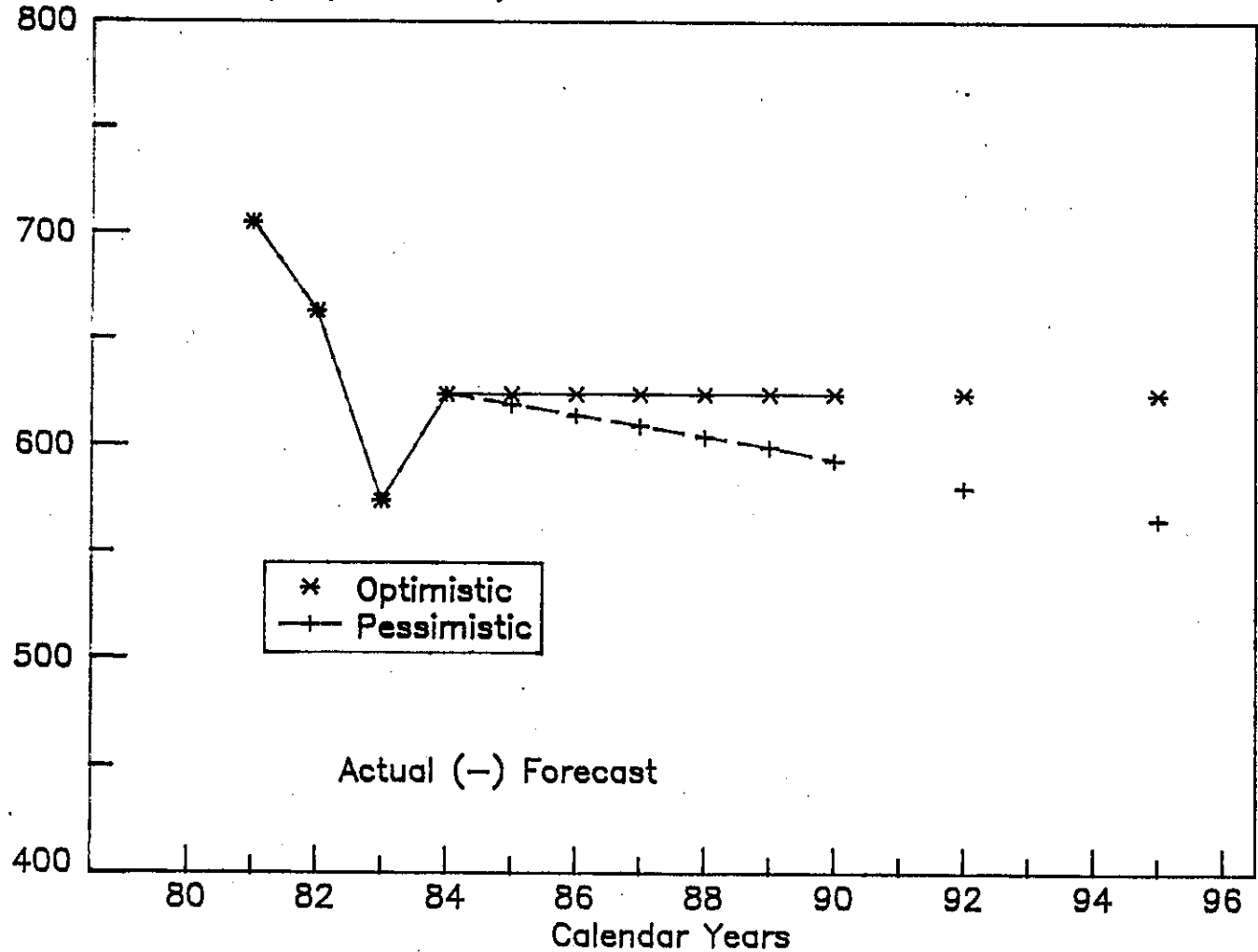


5 - Trends in Country Patronage



6 - Trends in Interstate Patronage

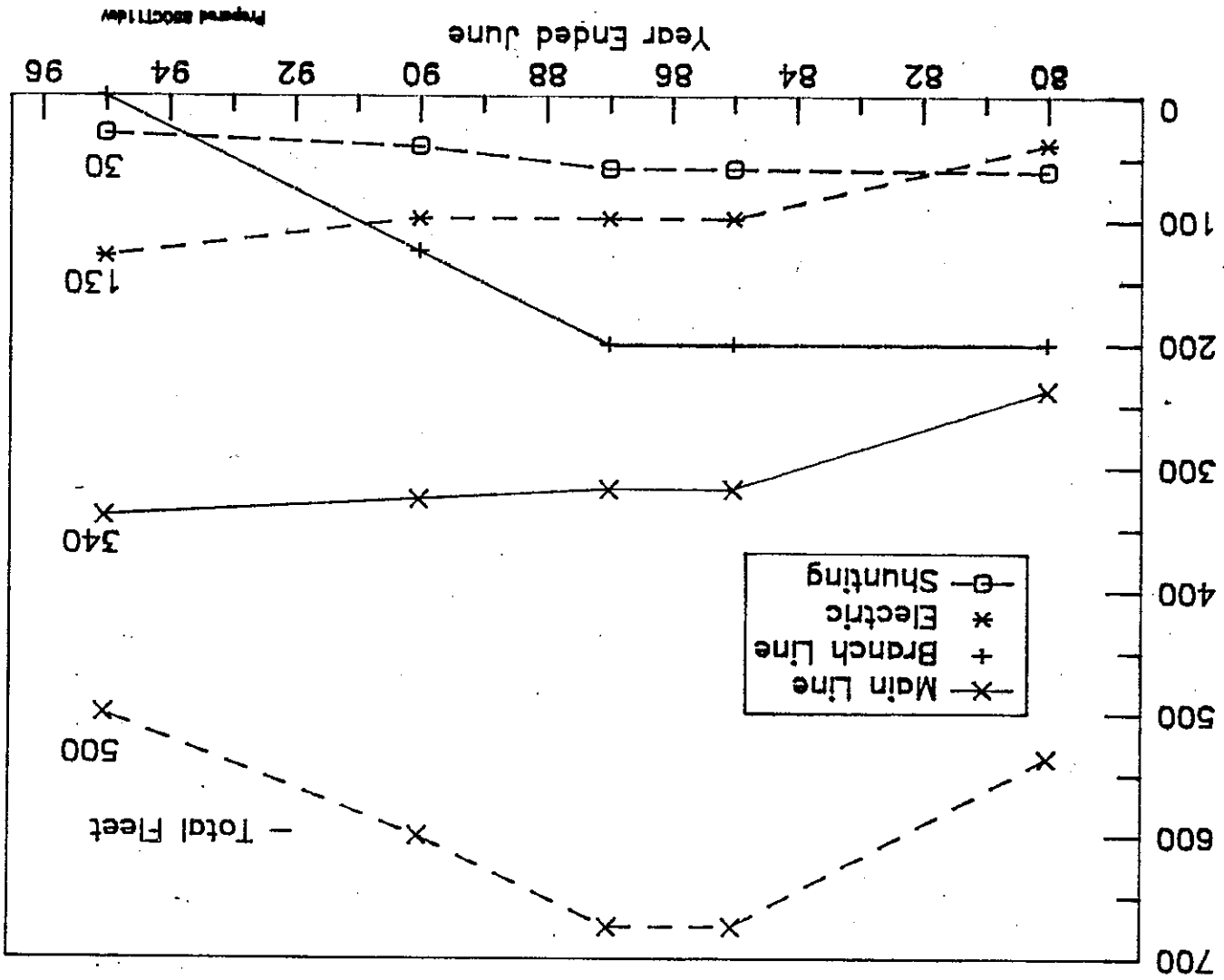
Passenger Journeys (thousands)



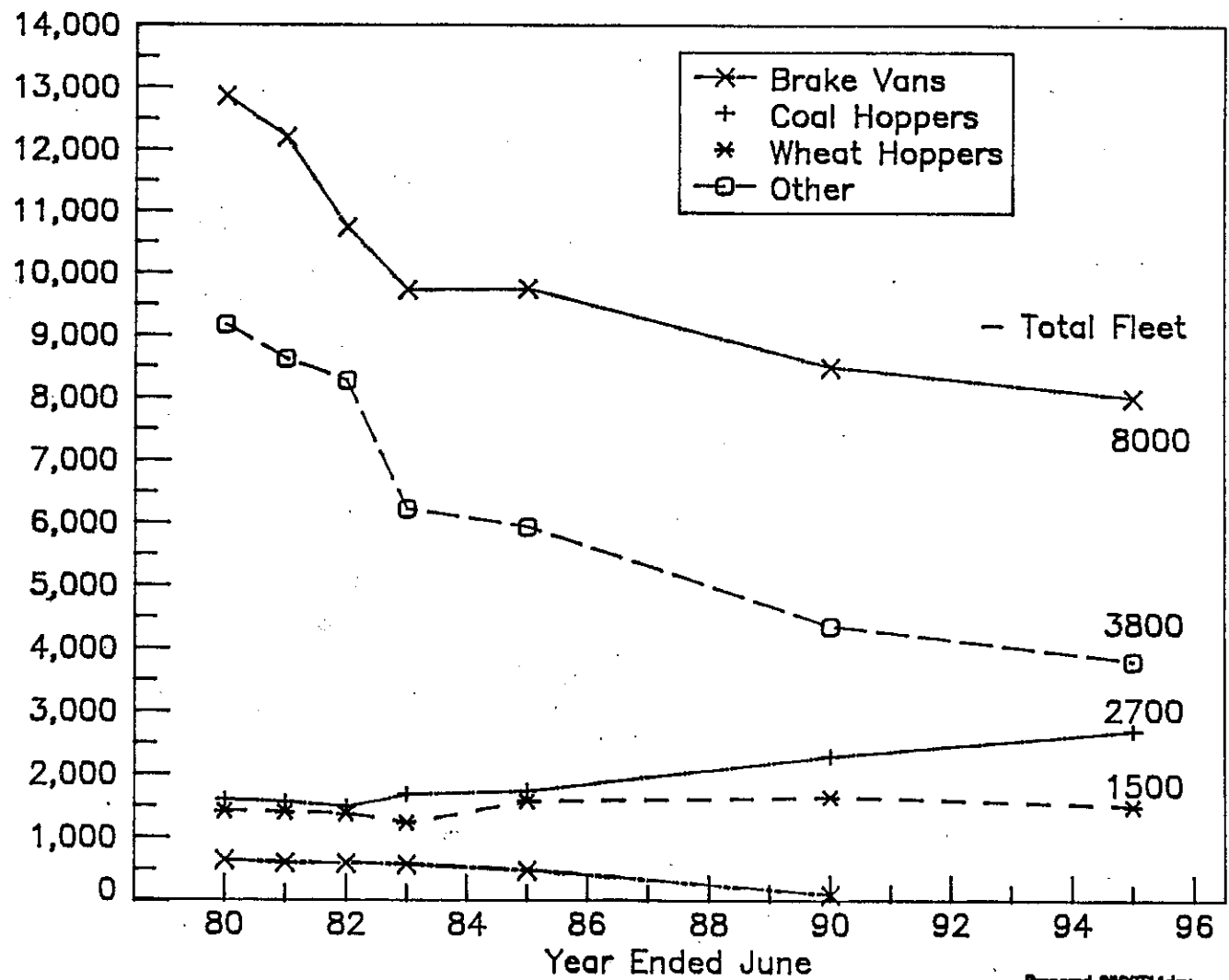
* Optimistic
+ Pessimistic

Actual (—) Forecast

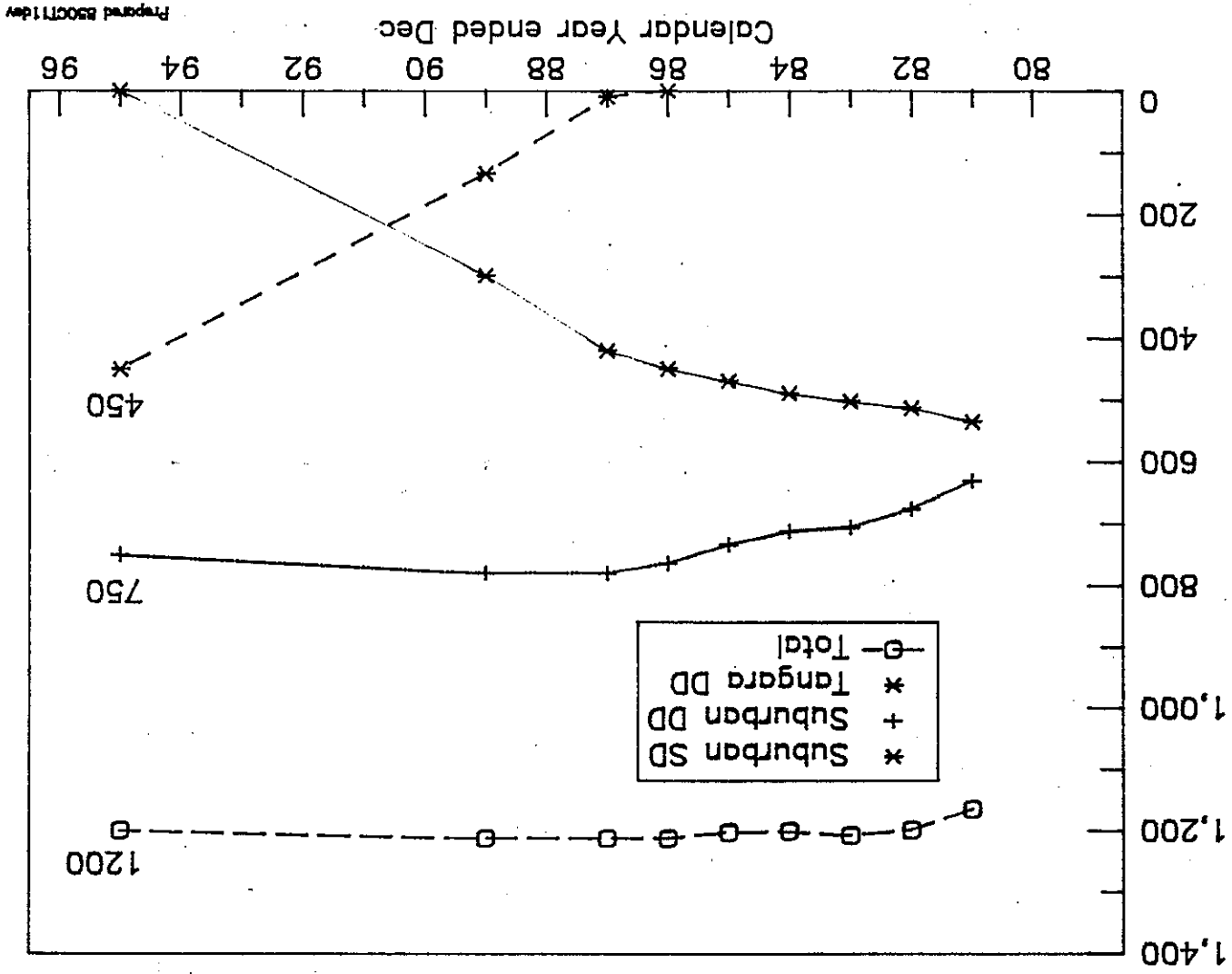
7 - Locomotive Fleet



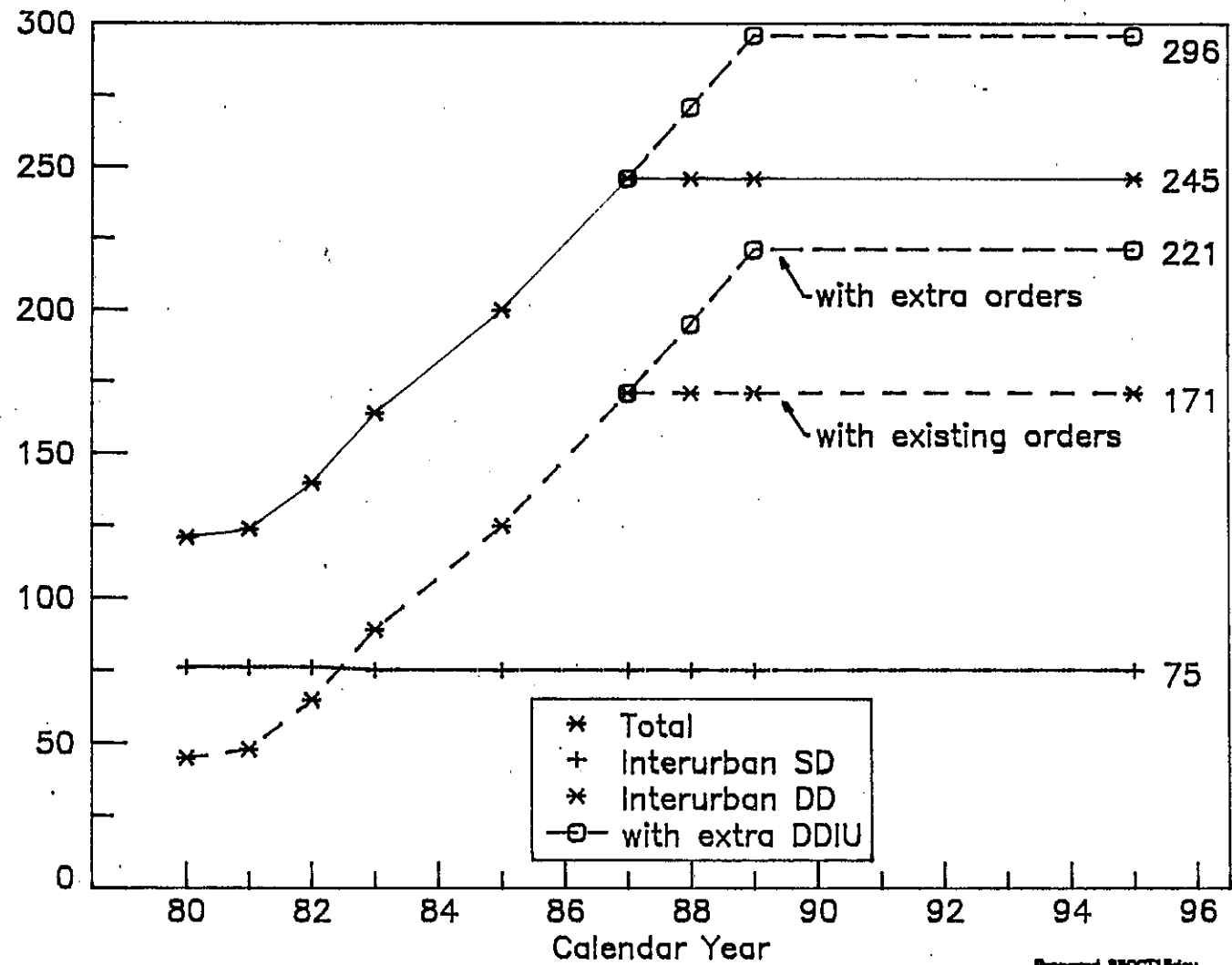
8 - Wagon Fleet



9 - Suburban Passenger Fleet

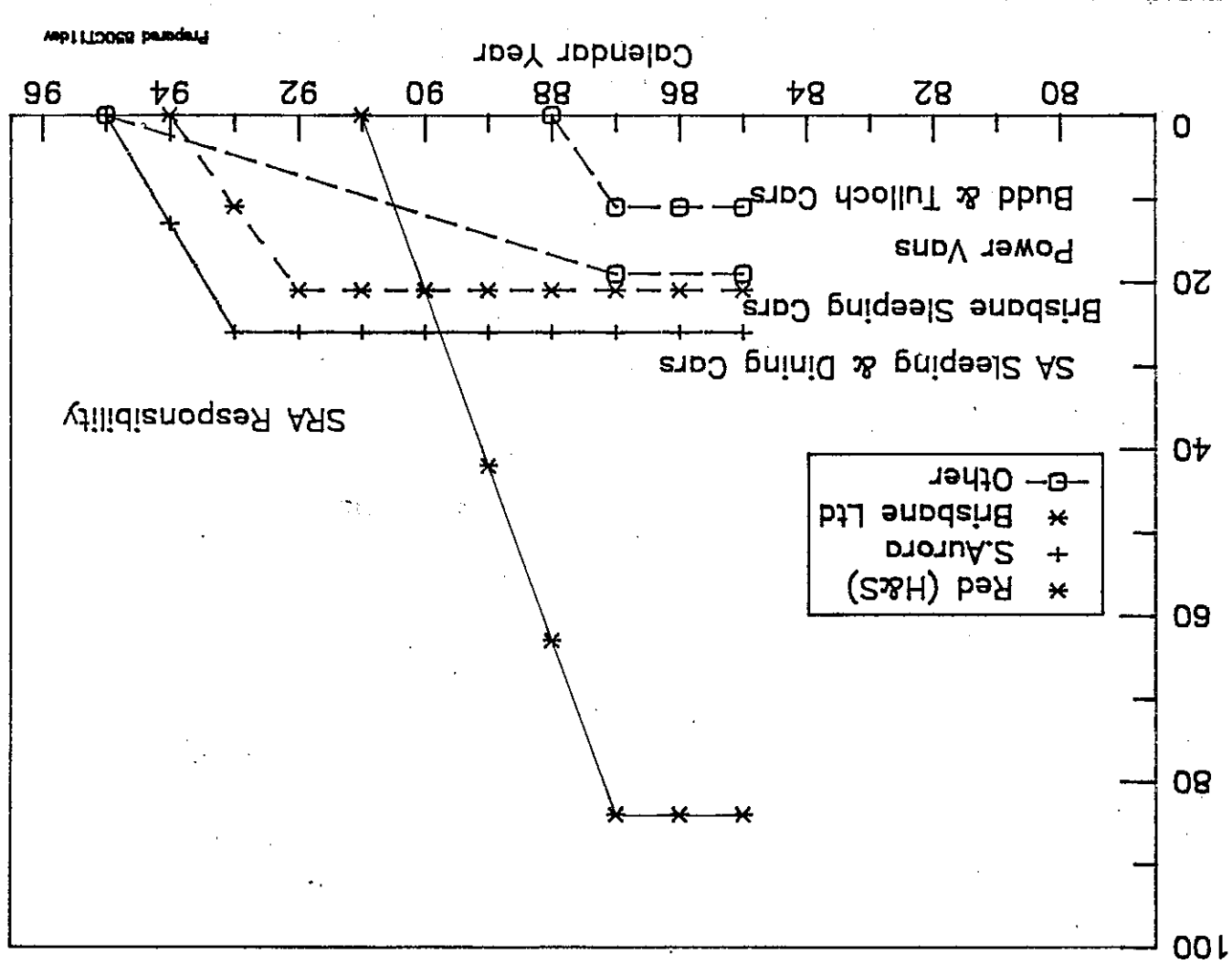


10 - Interurban Car Fleet



11 - Air-Conditioned Cars

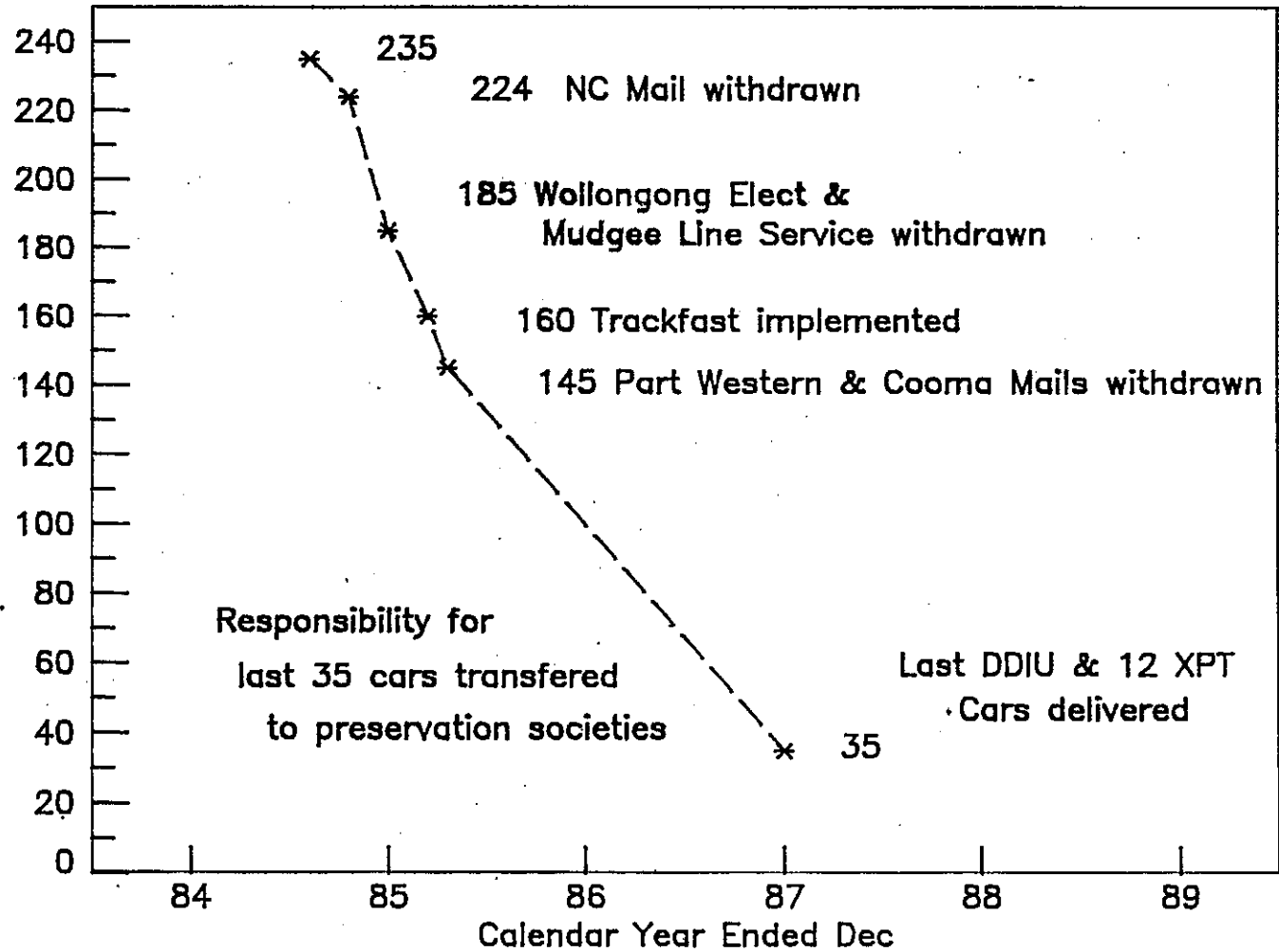
Locomotive Hauled



12 - Non Air-Conditioned Cars

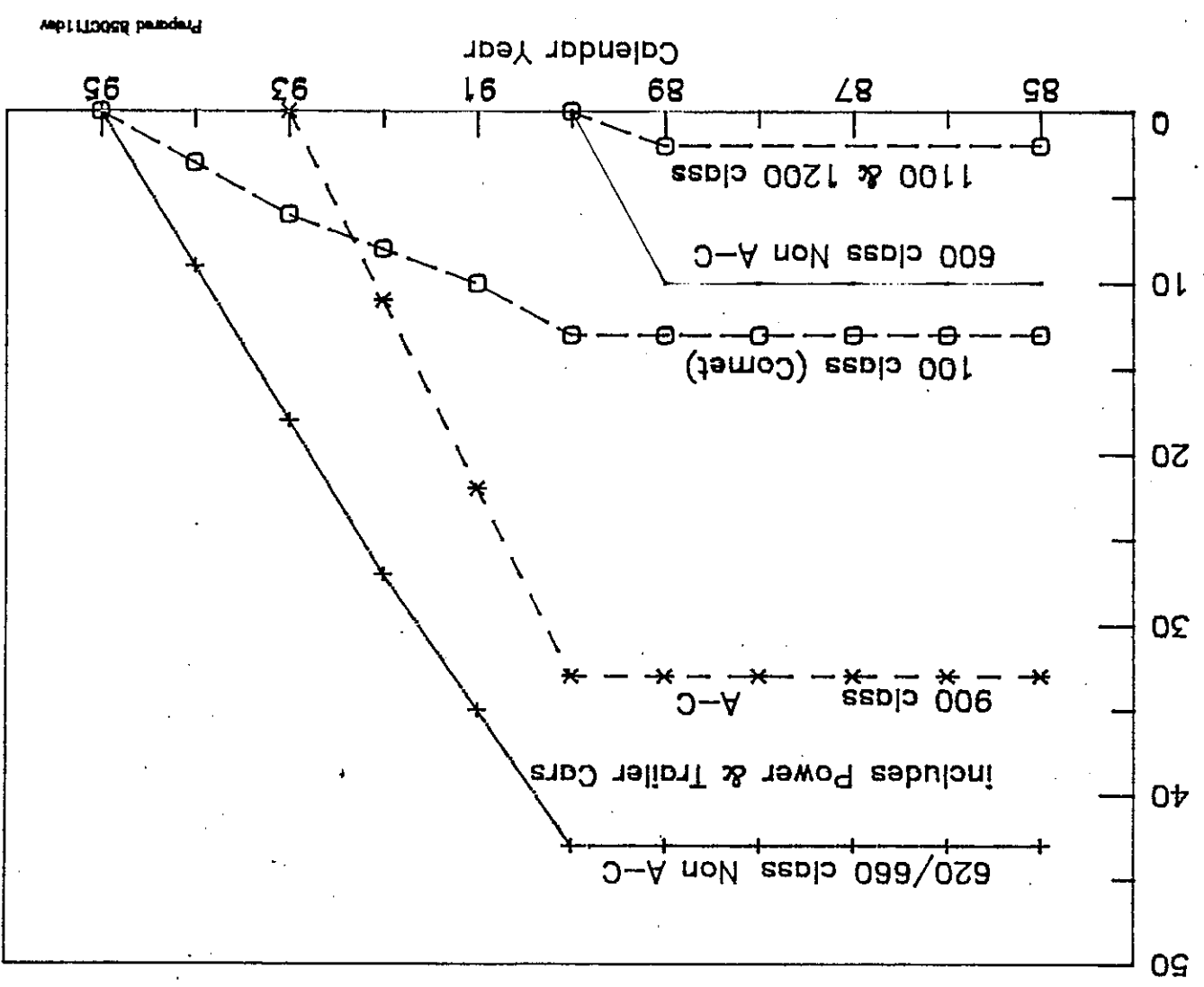
Locomotive Hauled

Cars in Service

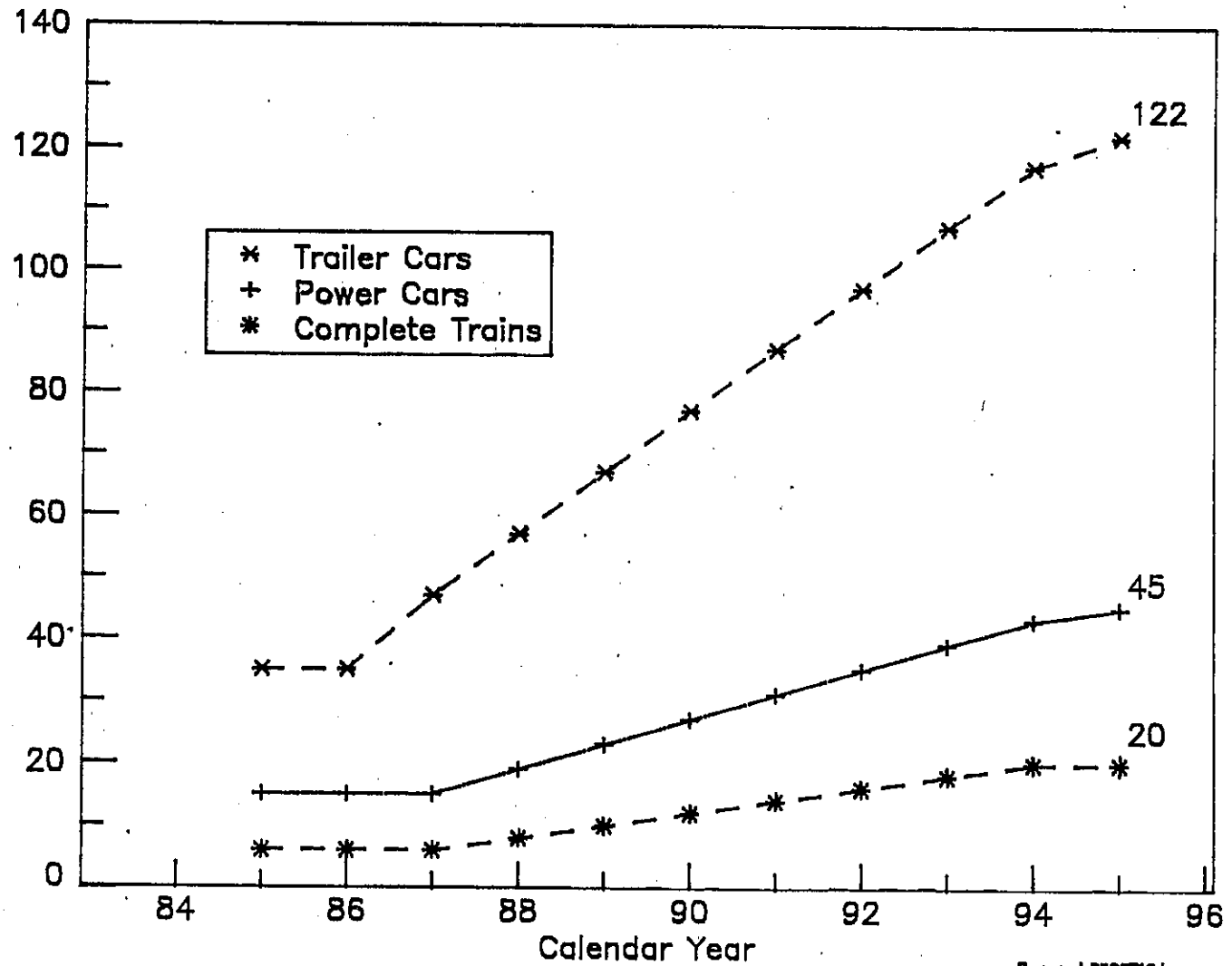


Prepared 23OCT11dvw

13 - Diesel Rail Car Fleet



14 - XPT Fleet Growth



Prepared 83OCT12dev

15 - Planned Preventative Maintenance

Rolling Stock

Planned Preventative Maintenance (PPM) produces better results than the previous Fix When Fail (FWF) policy.

PPM FWF

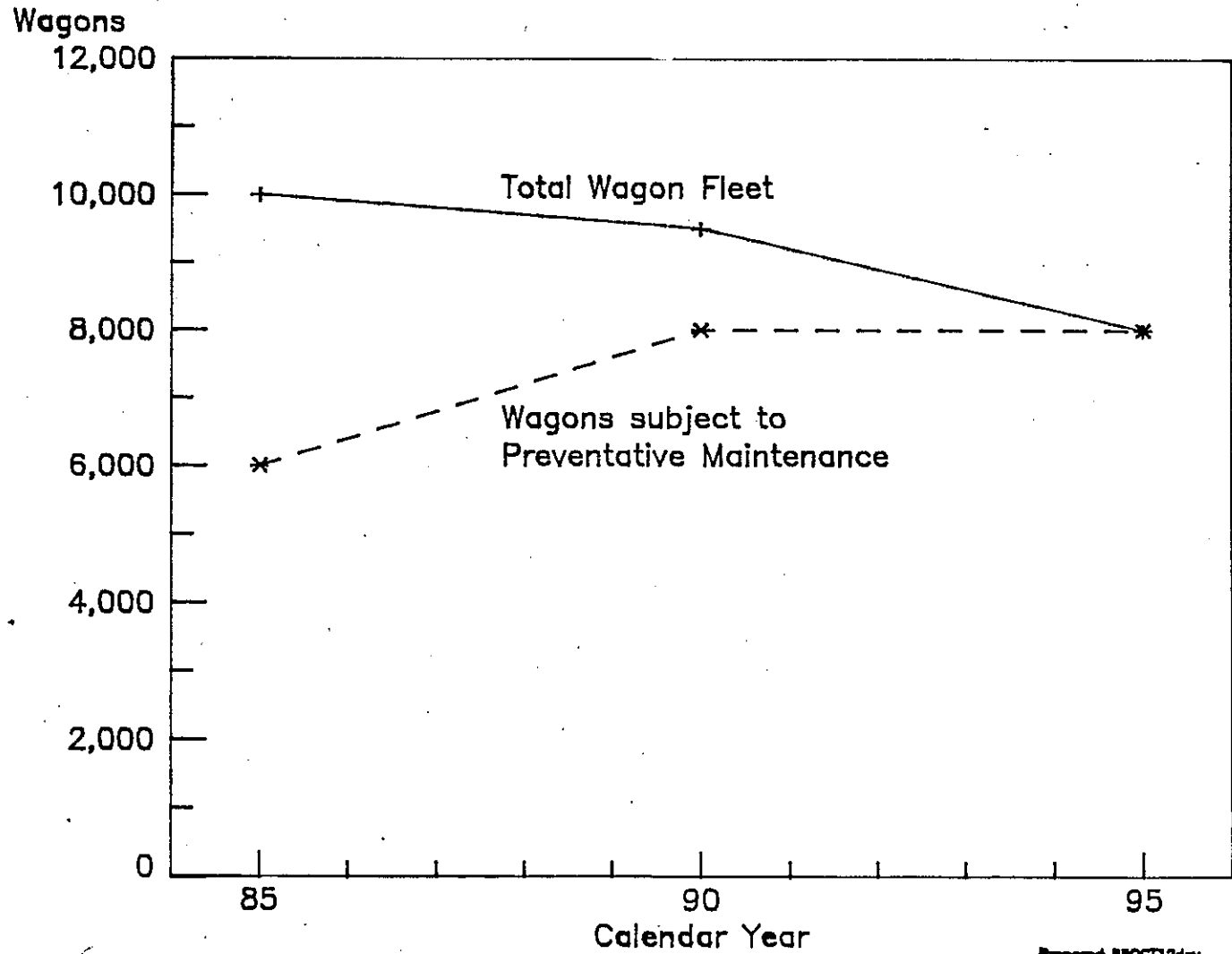
Number of Staff 617 482

Average Wagon Availability (of vehicles undergoing PPM) 88% 91%

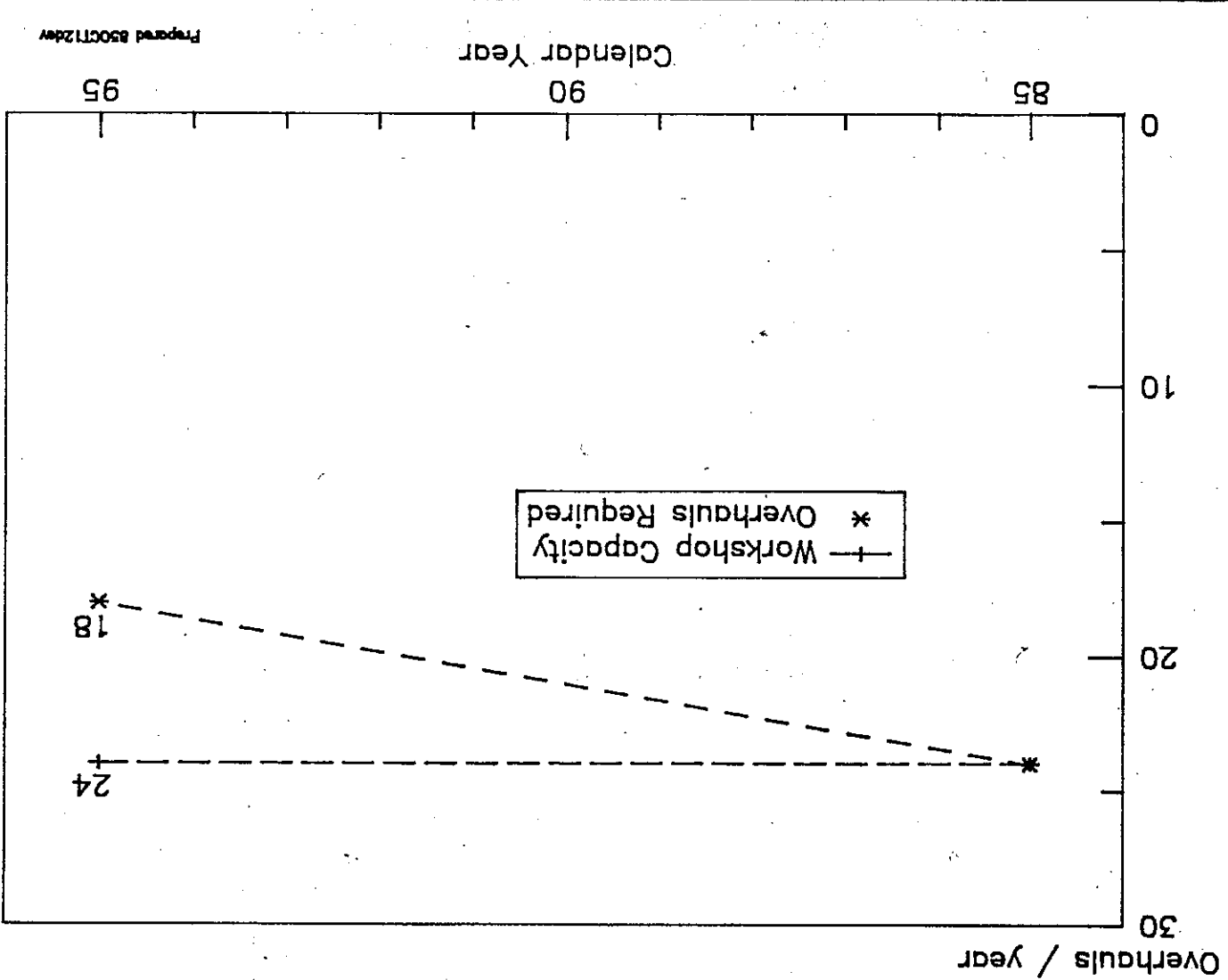
Reliability
Mean No. of Hot Boxes/year 75 22

Mean No. of Main Line
derailments/year 75 48

16 - Wagon Maintenance



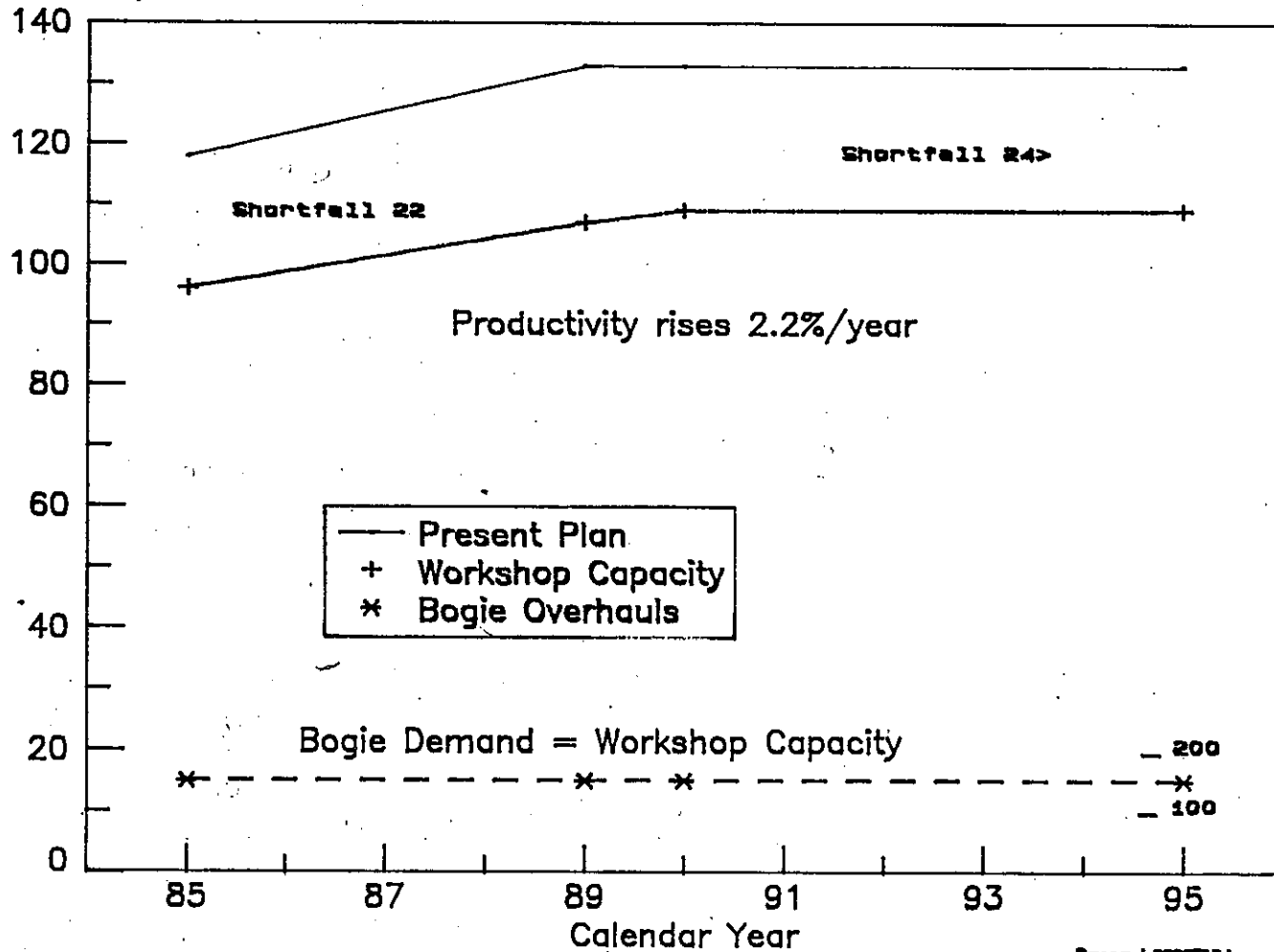
17 - Wagon Workshop Overhauls



18 - Diesel Locomotive Overhauls

Present Plans

Overhauls/Year

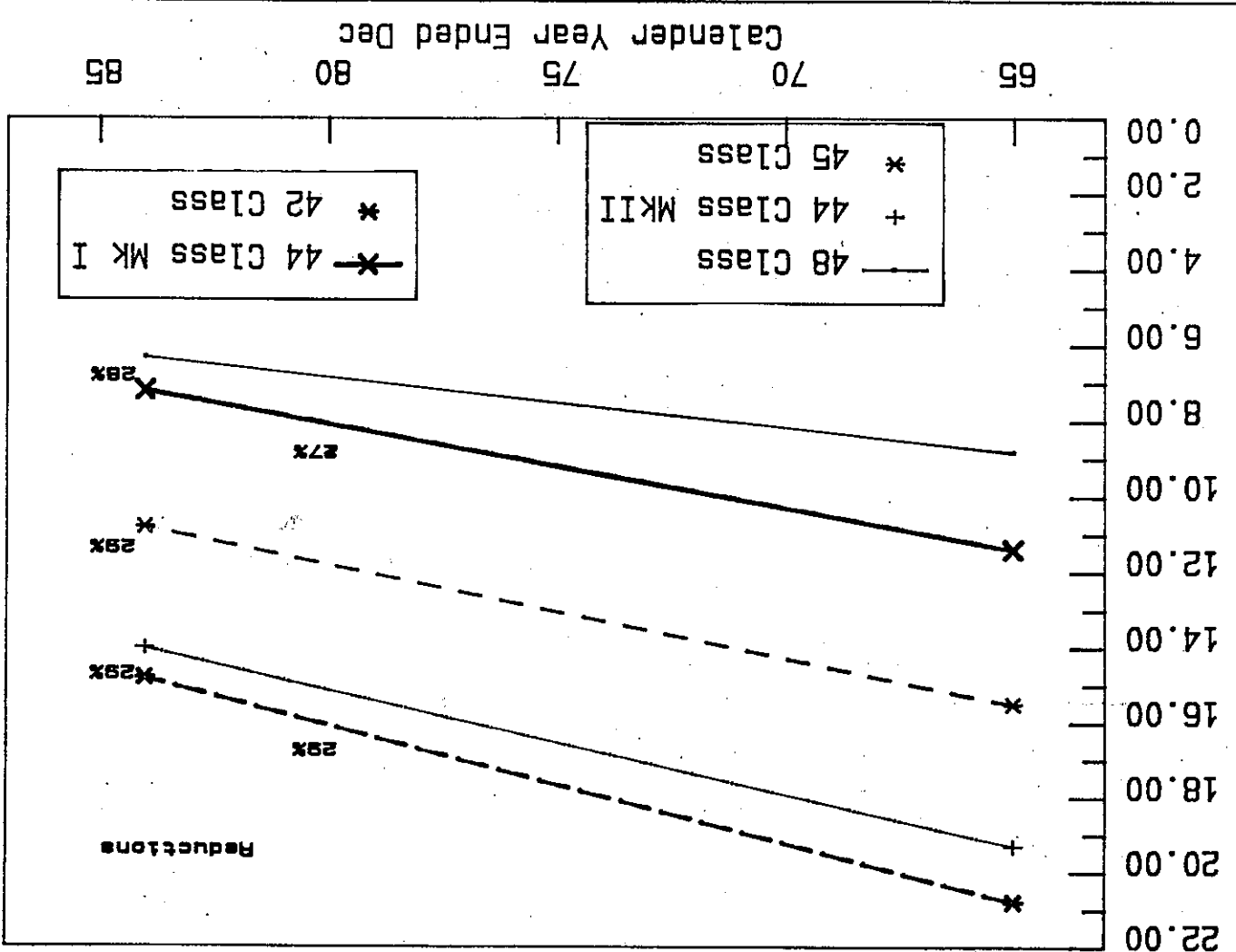


Prepared 89OCT126w

19 - Reductions in Locomotive-km

1000km / month

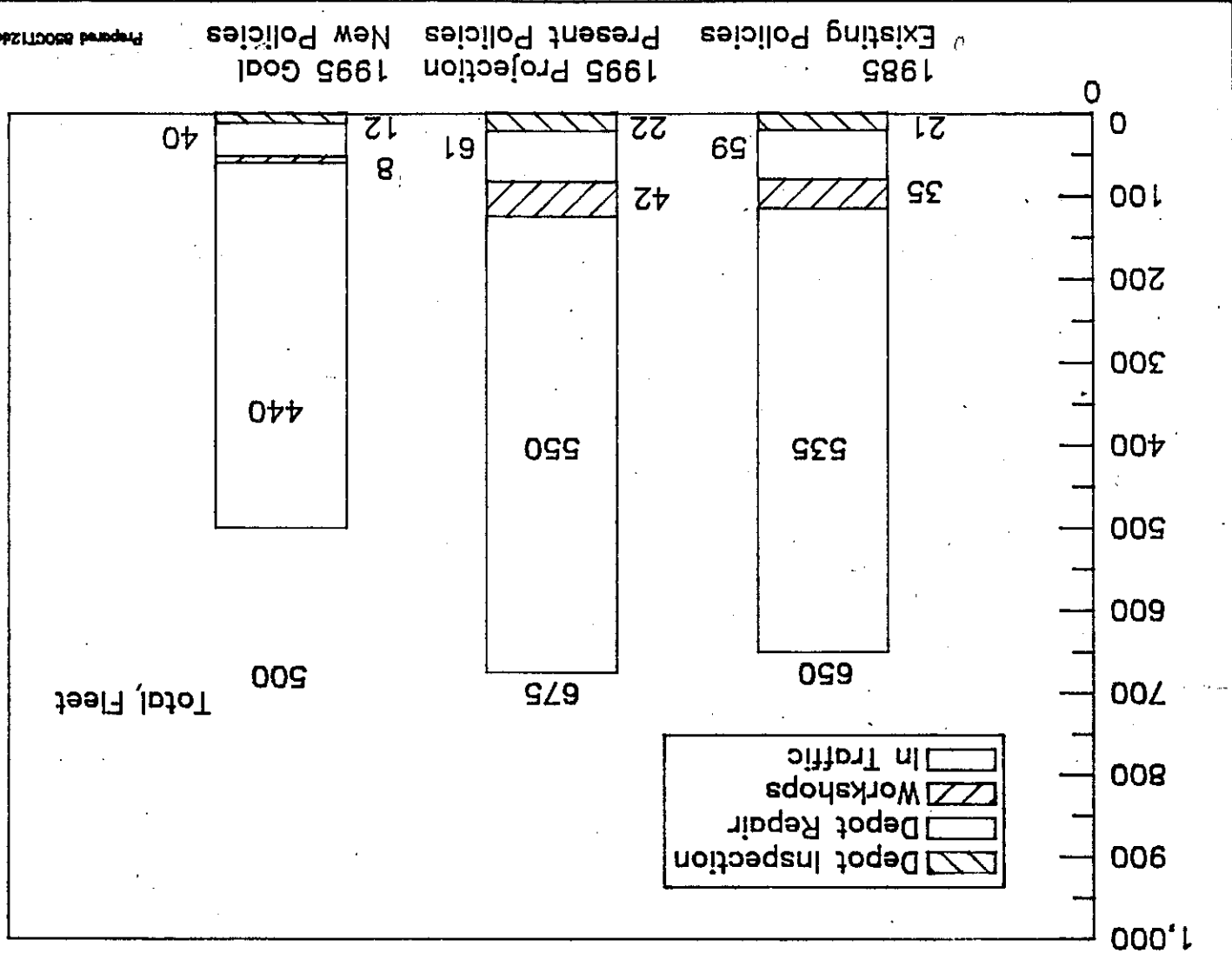
Prepared Aug 85



20 - Locomotive Overhaul Policy

CLASS	TOP/GENERAL O'HAUL CYCLE	
	Present Policy	Future Policy
MAIN LINE		
44 Mkl	3.5/7 years	Selected Maintenance
45	3.5/7	" "
44 MkII	3.5/7	4/8 years
421	3.5/7	4/8
422	3.5/7	4/8
442	3.5/7	Rebuild, then Comp. Ex.
80	4/8	Component Exchange
81	4/8	" "
BRANCH LINE		
47	4/8	5/10 years
48	4/8	5/10
49	4/8	5/10
ELECTRIC		
46	C.E & Rewire	Component Exchange
85	Component Exchange	" "
86	" "	" "

21 - Locomotive Availability Goals



1985 Existing Policies
 1995 Projection
 1995 Goal
 New Policies
 Prepared 8/20/77

22 - Changes in Locomotive Inspections

Mainline Locomotives

Days out of service

12

10

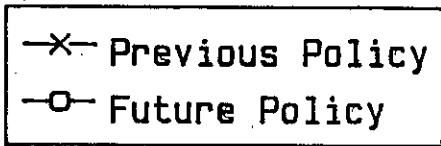
8

6

4

2

0



10/year

D
x

6/year
F

Letter indicate type
of service

SEPY 1985

0

60

120

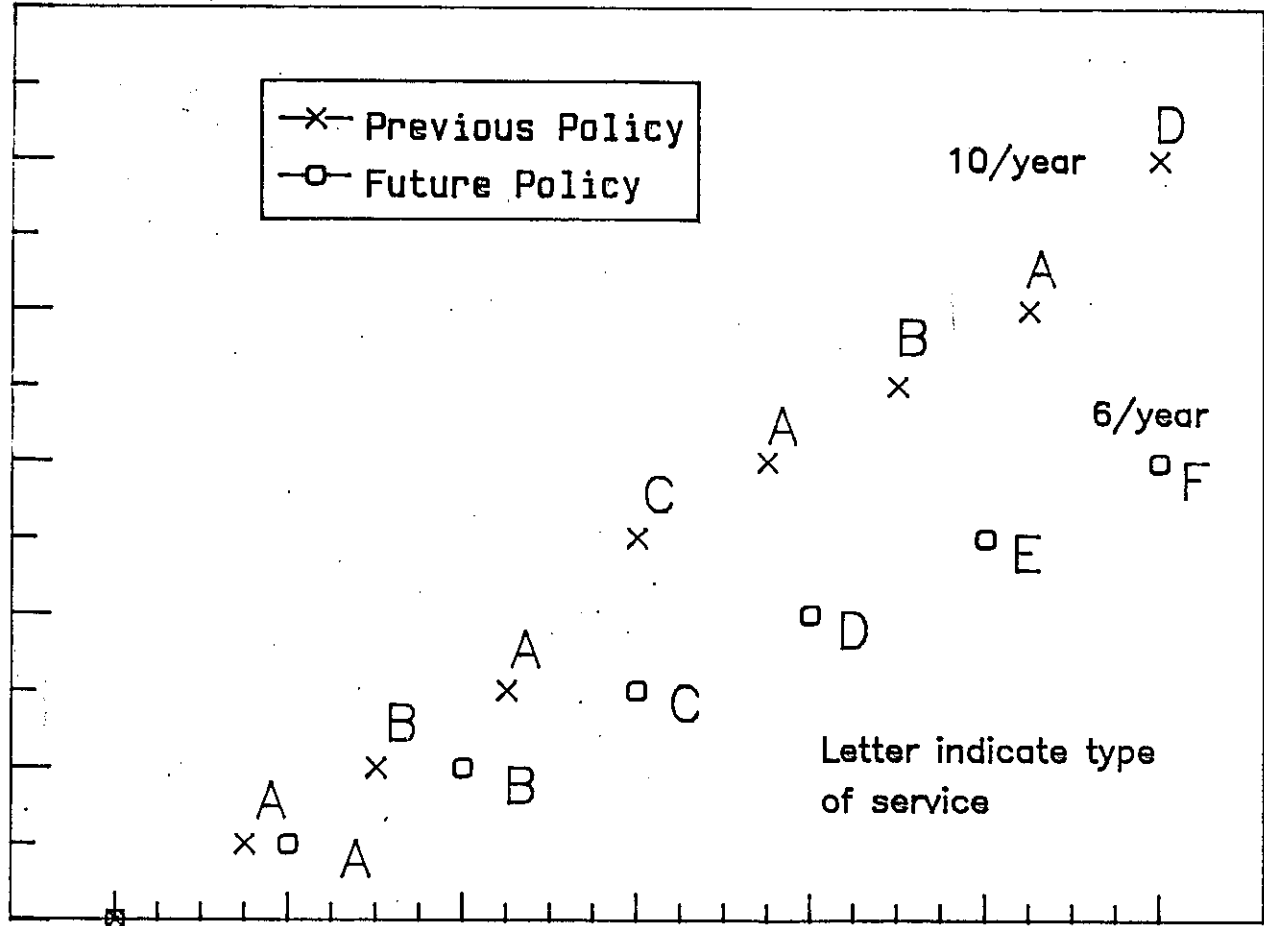
180

240

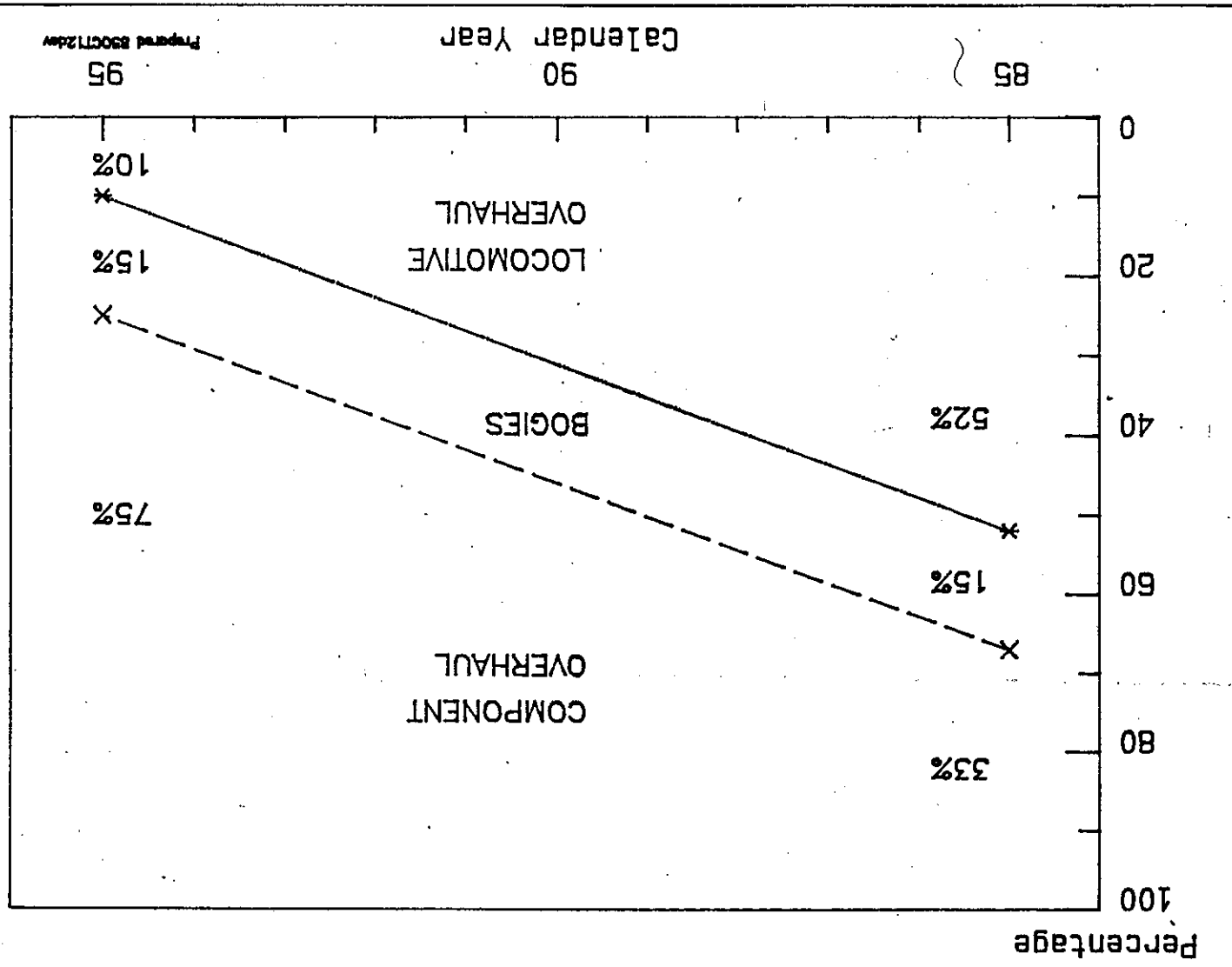
300

360

Timing Days



23 - Workshop Activity

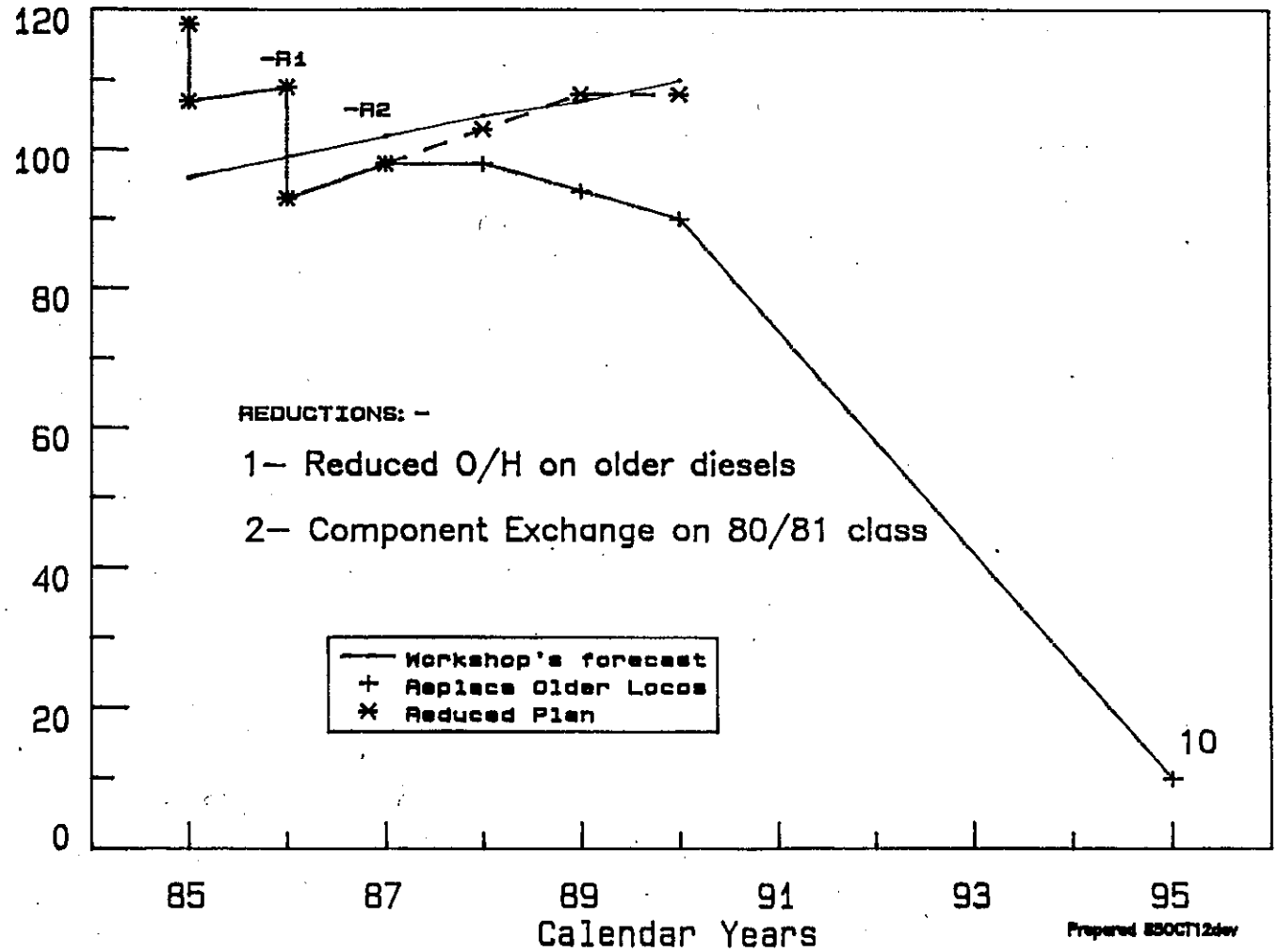


Prepared 25OCT124m

24 — Diesel Locomotive Overhauls

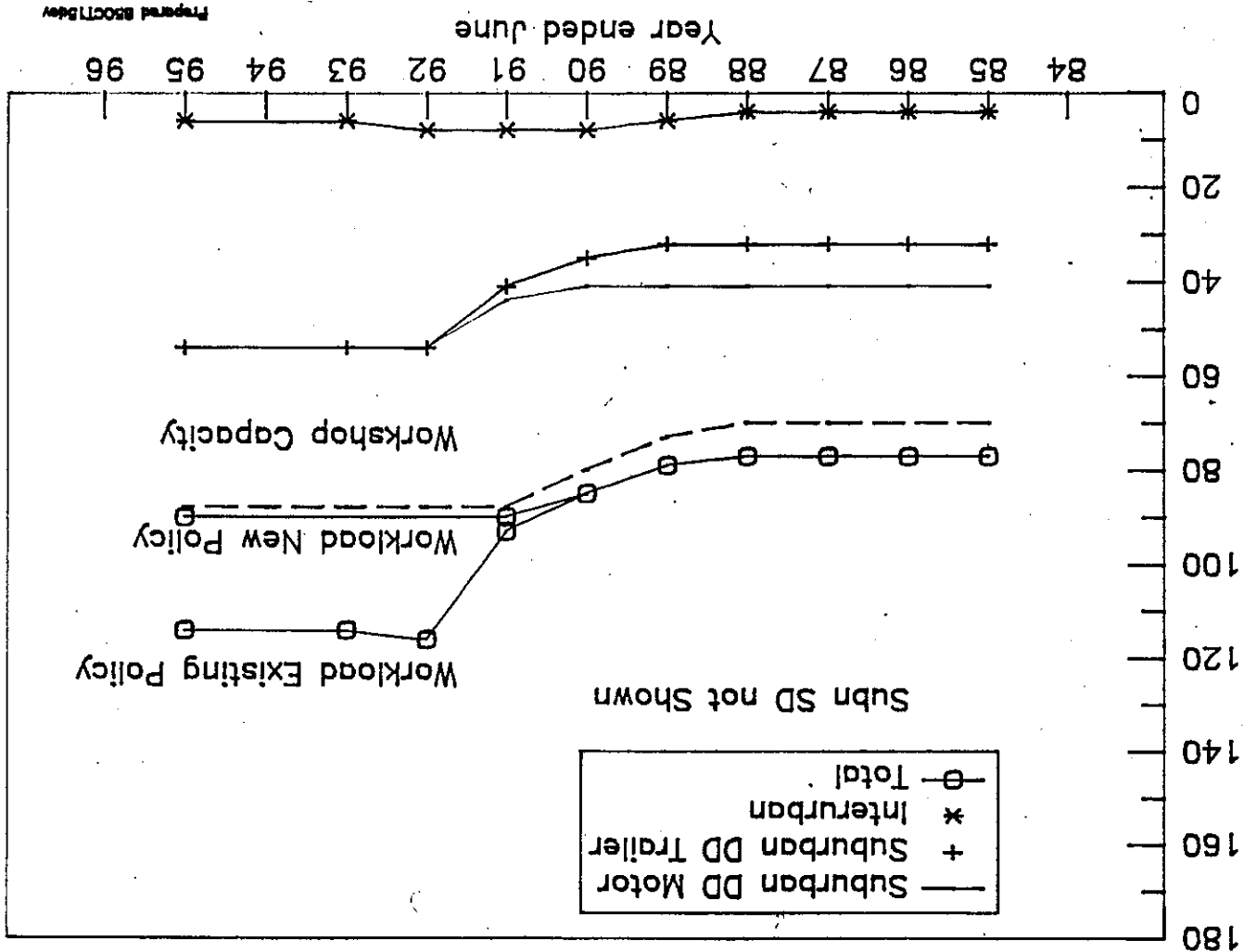
Based on New Plans

Overhauls/year



25 - Electric Passenger Cars

Major Overhauls/Year



Prepared 8/30/96

26 - Air-Conditioned Car Overhauls

Locomotive Hauled

Overhauls/Year

60

50

40

30

20

10

0

- - S/Steel Cars
- + Red AC (including asbestos removal)

85

87

89

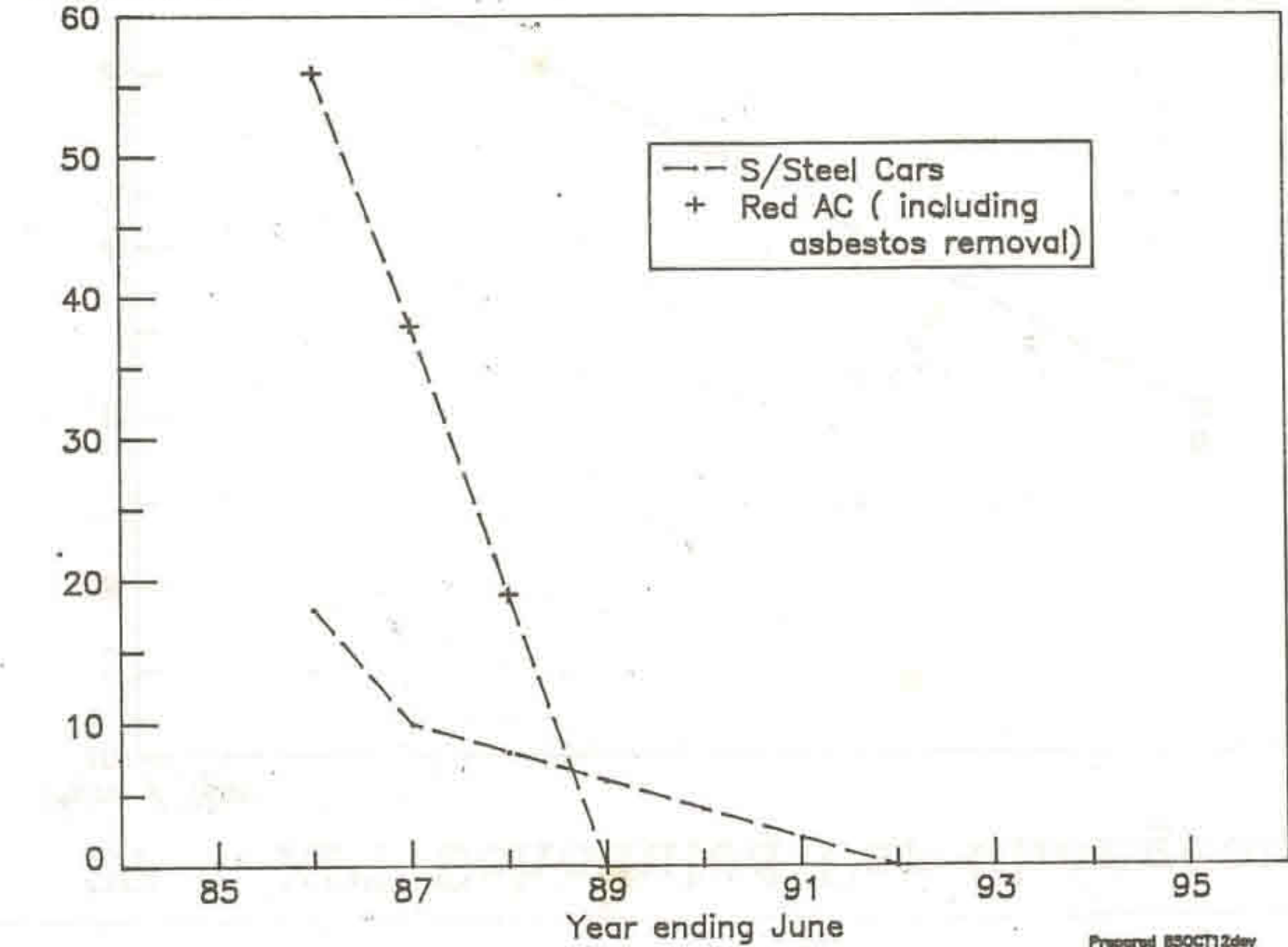
91

93

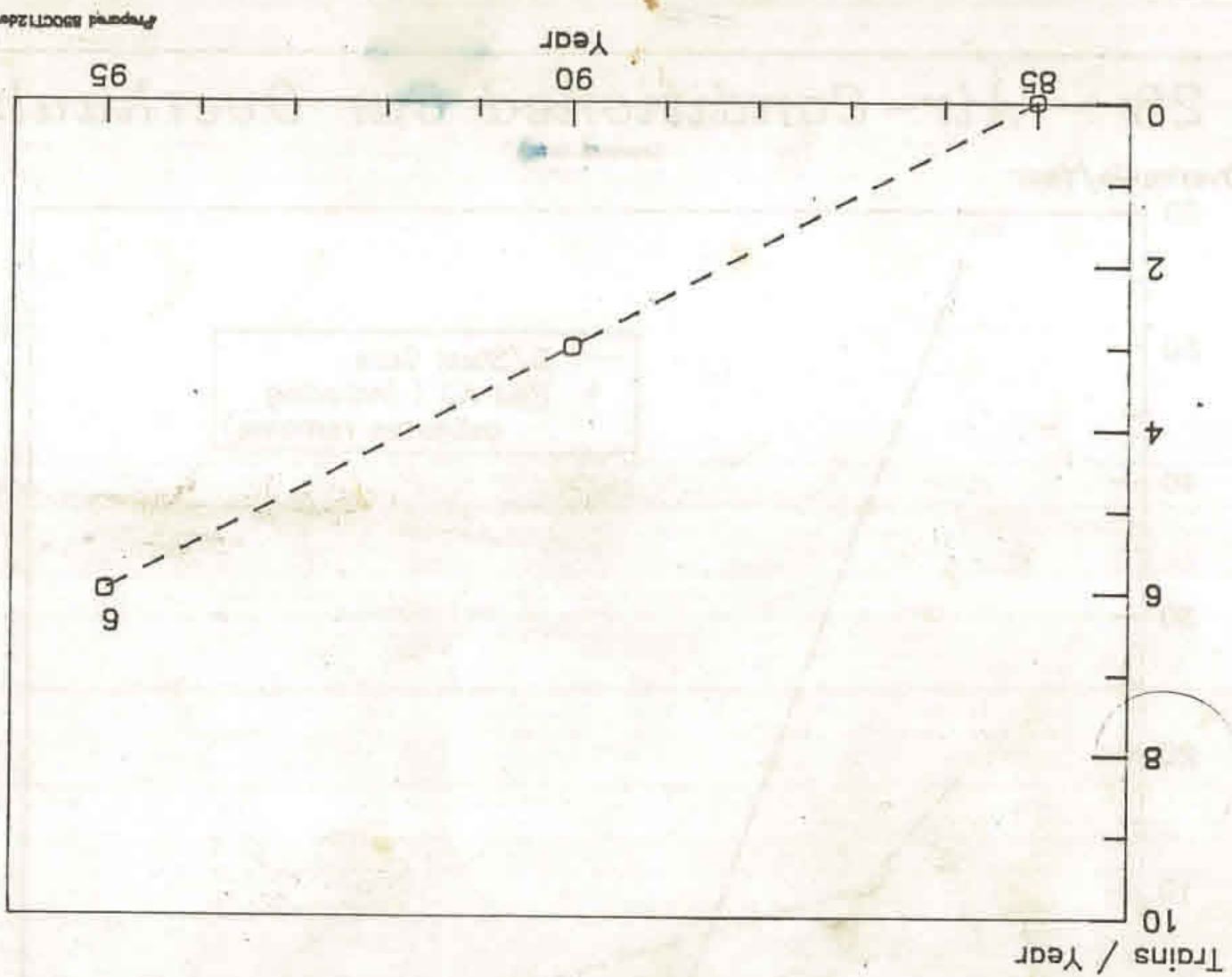
95

Year ending June

Prepared 85OCT12dev



27 - XPT Scheduled Car Changeouts



Prepared 15 OCT 1995