

Budgeting for a Competitive Advantage!

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SACEA Technical Symposium 2007

Topics of Discussion

- n Introduction
- n Objective of this presentation
- n Investigating different approaches
- n Integrating these approaches into a model
- n Applying the integrated model
- n Linking competitive advantage with maintenance budgeting
- n Conclusion

Introduction

- n Adapting to change fast!
- n Globalisation of SA economy
- n Mechanisation – 2/3 of budget!
- n Never cancel – optimise maintenance costs!
- n Budgeting process is tedious!
- n “Gaming”, company politics, “horse-trading”
- n “Fat cutting”, “gut feeling”, “thumb sucking”
- n Severe oversights and “surprises”

Objective of this presentation

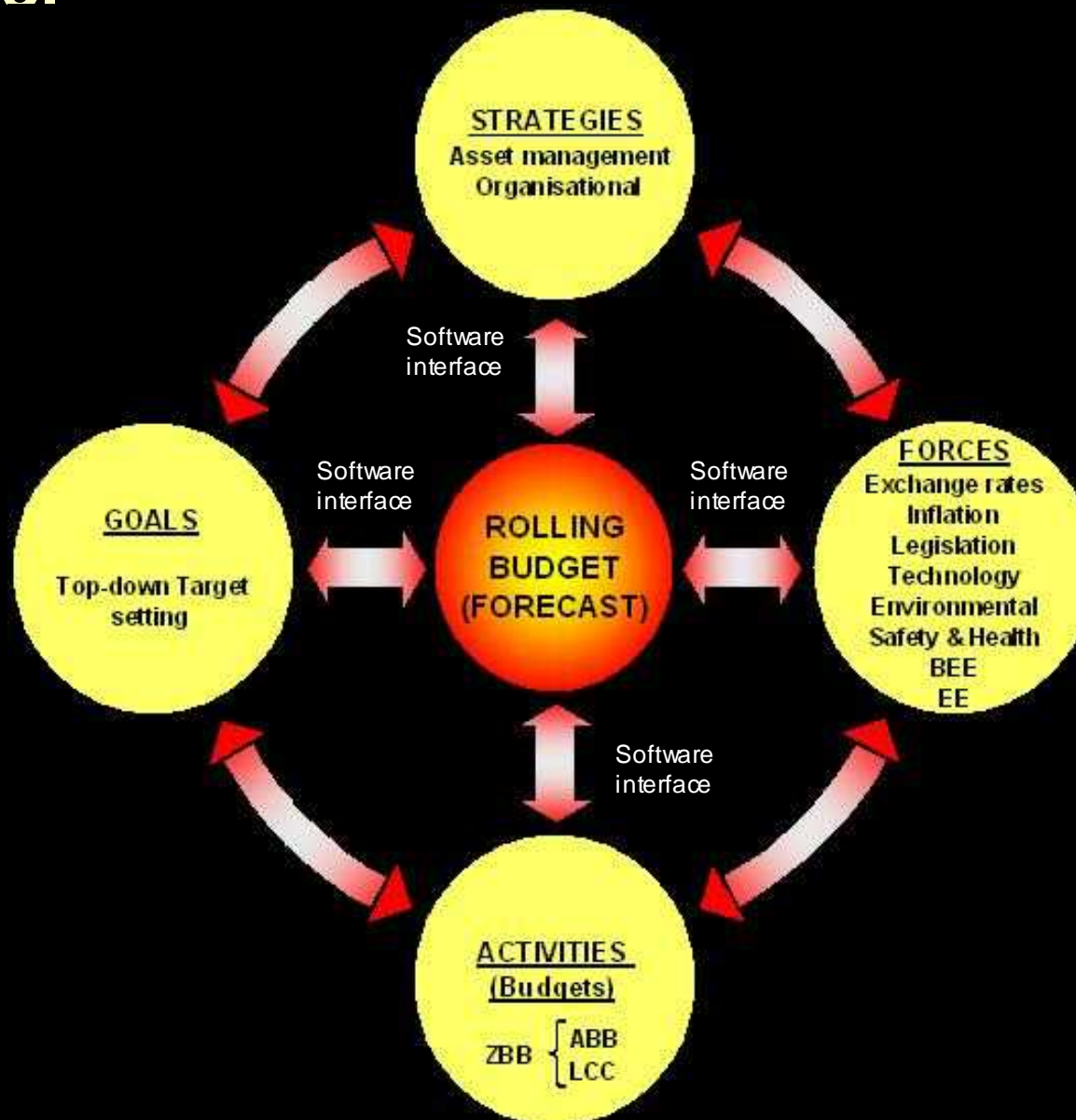
“What can be done to change the perceived status of the maintenance budget from something based on a “thumb suck” to something more scientific, and which is aligned with market reality giving the business a competitive advantage?”

- n Providing a theoretical model
- n Compiling a realistic maintenance budget
- n Aligned with current market reality
- n Competitive advantage

Investigating different approaches

- n Traditional budgeting
- n Activity-based budgeting
- n Zero-base budgeting
- n Quality function deployment
- n Target budgeting
- n Life-cycle costing
- n Rolling budgeting

Integrating these approaches into a model



Applying the integrated model

n *STEP 1:*

- u Set goals and objectives

n *STEP 2:*

- u Develop a maintenance strategy

n *STEP 3:*

- u Prepare a cost breakdown structure

n *STEP 4:*

- u Develop expected component lives

Applying the integrated model (continued)

n *STEP 5:*

- u Establish the starting point for the scheduler

n *STEP 6:*

- u Schedule future repairs/replacements

n *STEP 7:*

- u Have maintenance budget approved

n *STEP 8:*

- u Continuous updating of maintenance budget

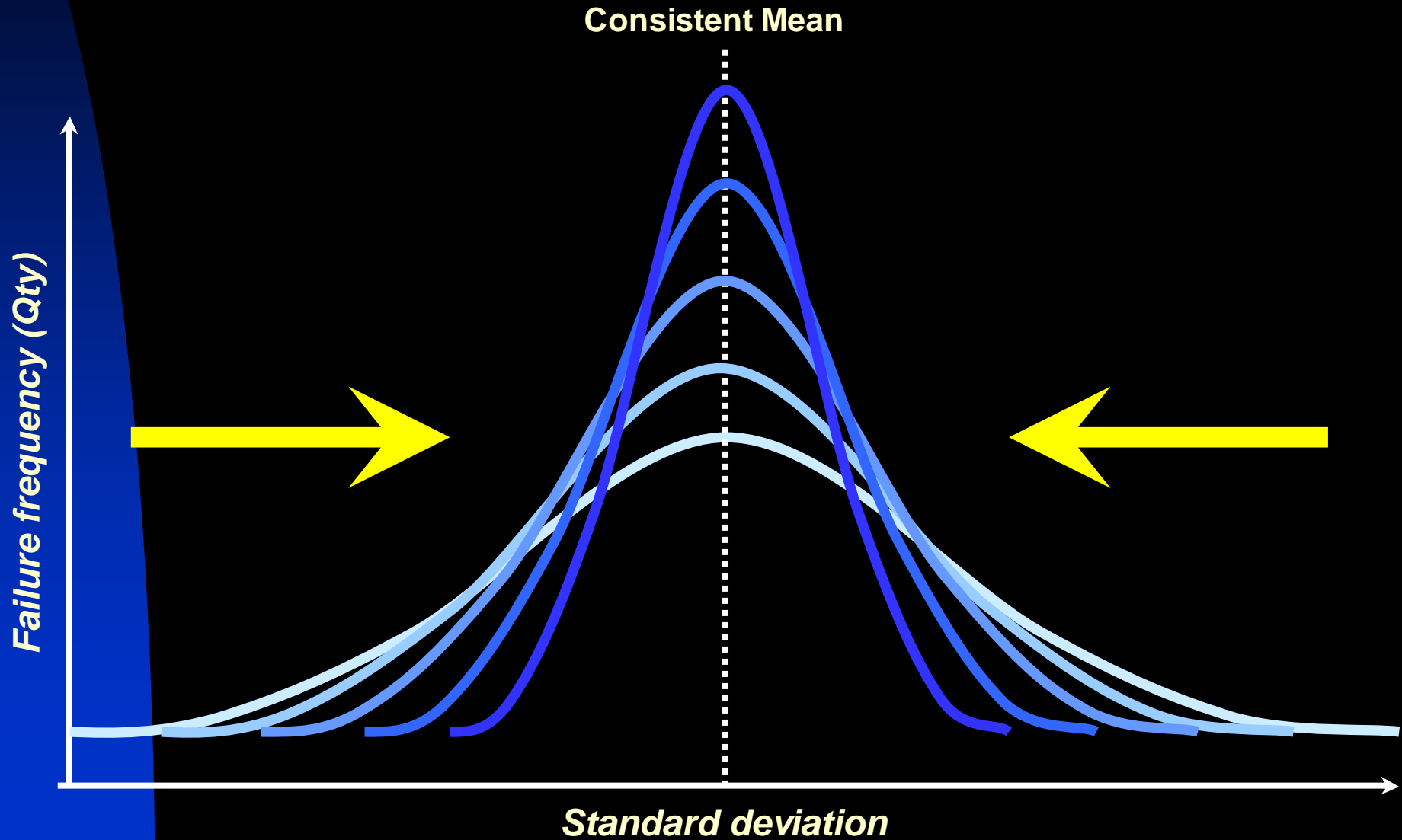
Linking competitive advantage with maintenance budgeting

- n Engineering decisions are cost benefit or ROI decisions
- n Decisions normally based on component life cycles – long-term impacts
- n Skillfully smooth-out peaks and valleys
- n Asset management – lowest combined cost
- n Market changes to consider:
 - u Exchange rate
 - u Inflation rates
 - u Steel pricing, etc.
- n Real-time budgeting/forecasting

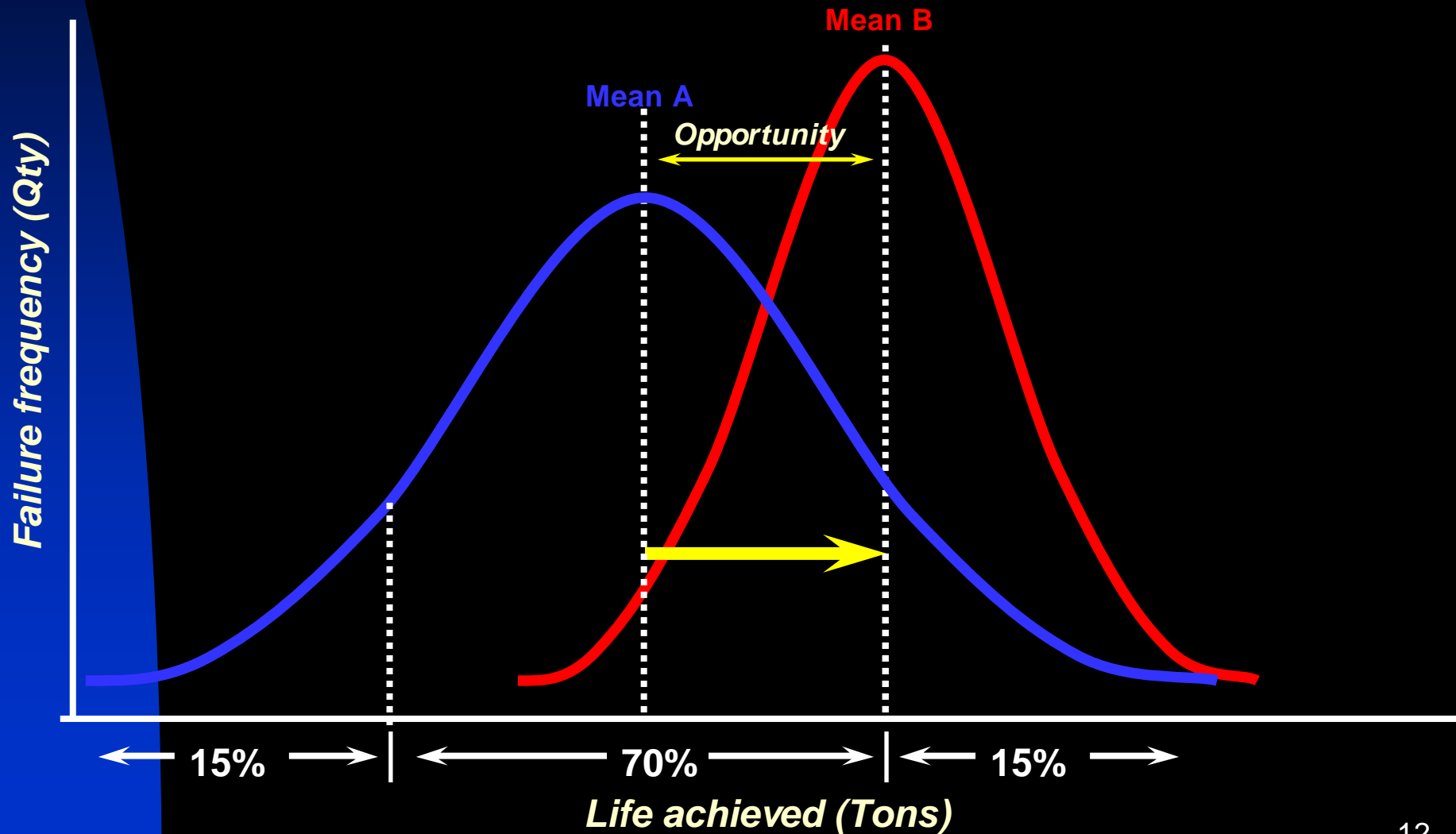
Conclusion

- n Maintenance budgets to be aligned with maintenance strategies
- n Manage evolution of budgeting systems
- n Real-time budget updating remains a challenge
- n Embrace technology to quickly capture and disseminate raw data
- n Change management principles to be incorporated

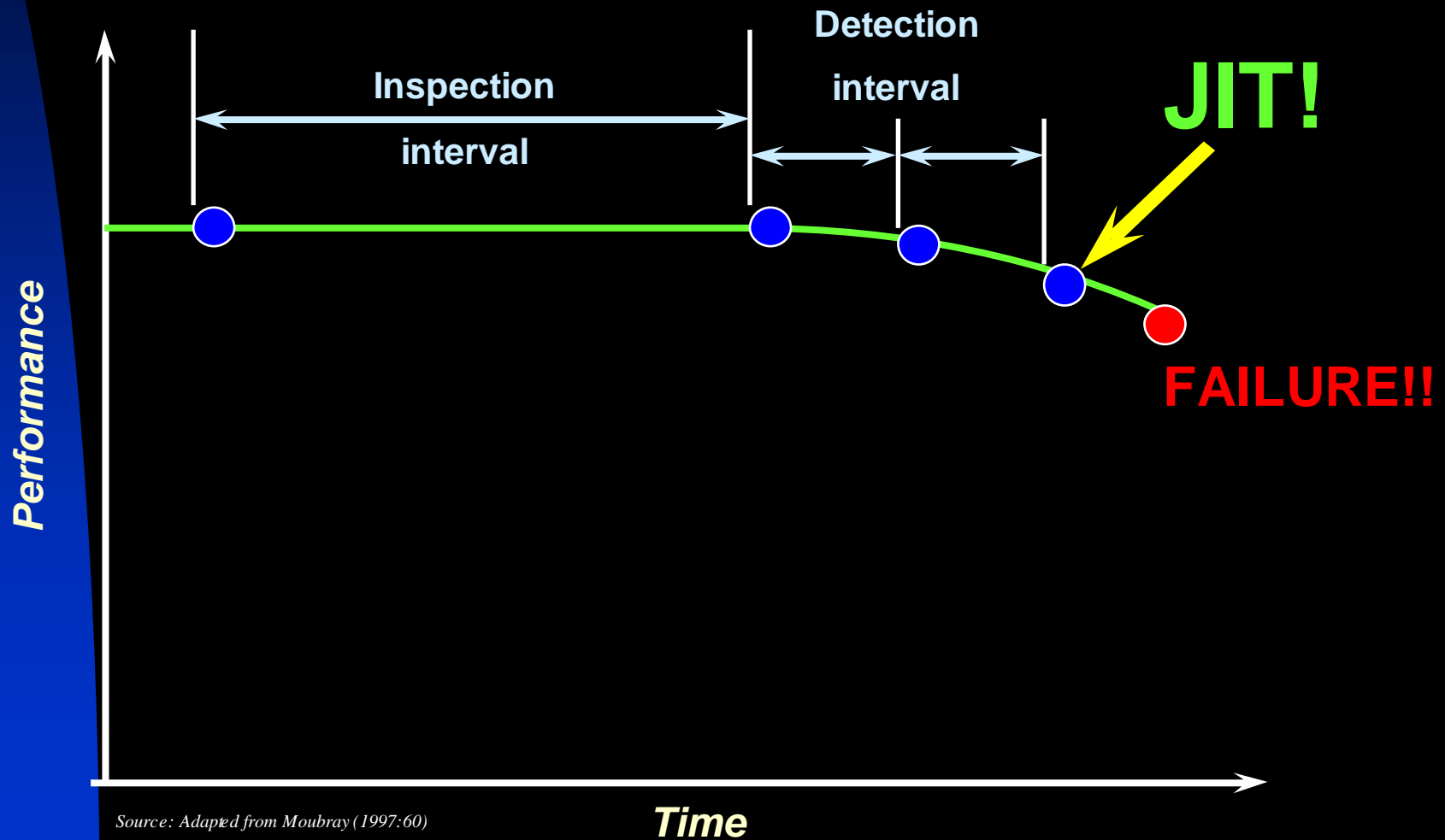
Component failures



Expected component life improvement



Optimal component replacement point

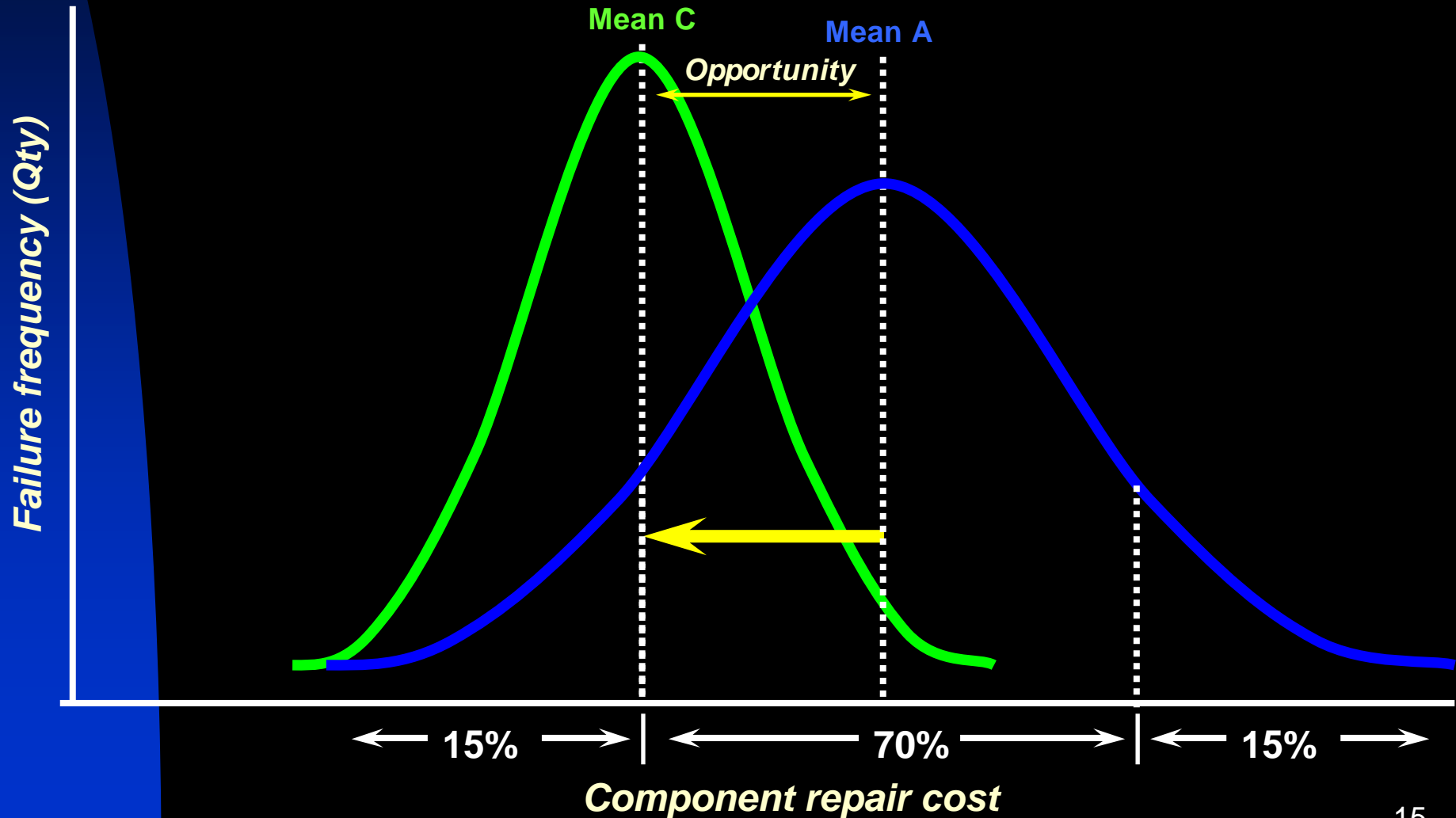


Source: Adapted from Moubray (1997:60)

Expected component lives

Description	Expected
	Life (Hours)
(A)	(B)
Cylinders	
Steer Cylinder L/H	15,000
Steer Cylinder R/H	15,000
Hoist Cylinder L/H	15,000
Hoist Cylinder R/H	15,000
Steering Ball Stud L/H	7,500
Steering Ball Stud R/H	7,500
Steering Line Boring	5,000
Hoist Cyl Bearing Set	7,500
Hoist Cyl Line Boring	7,500

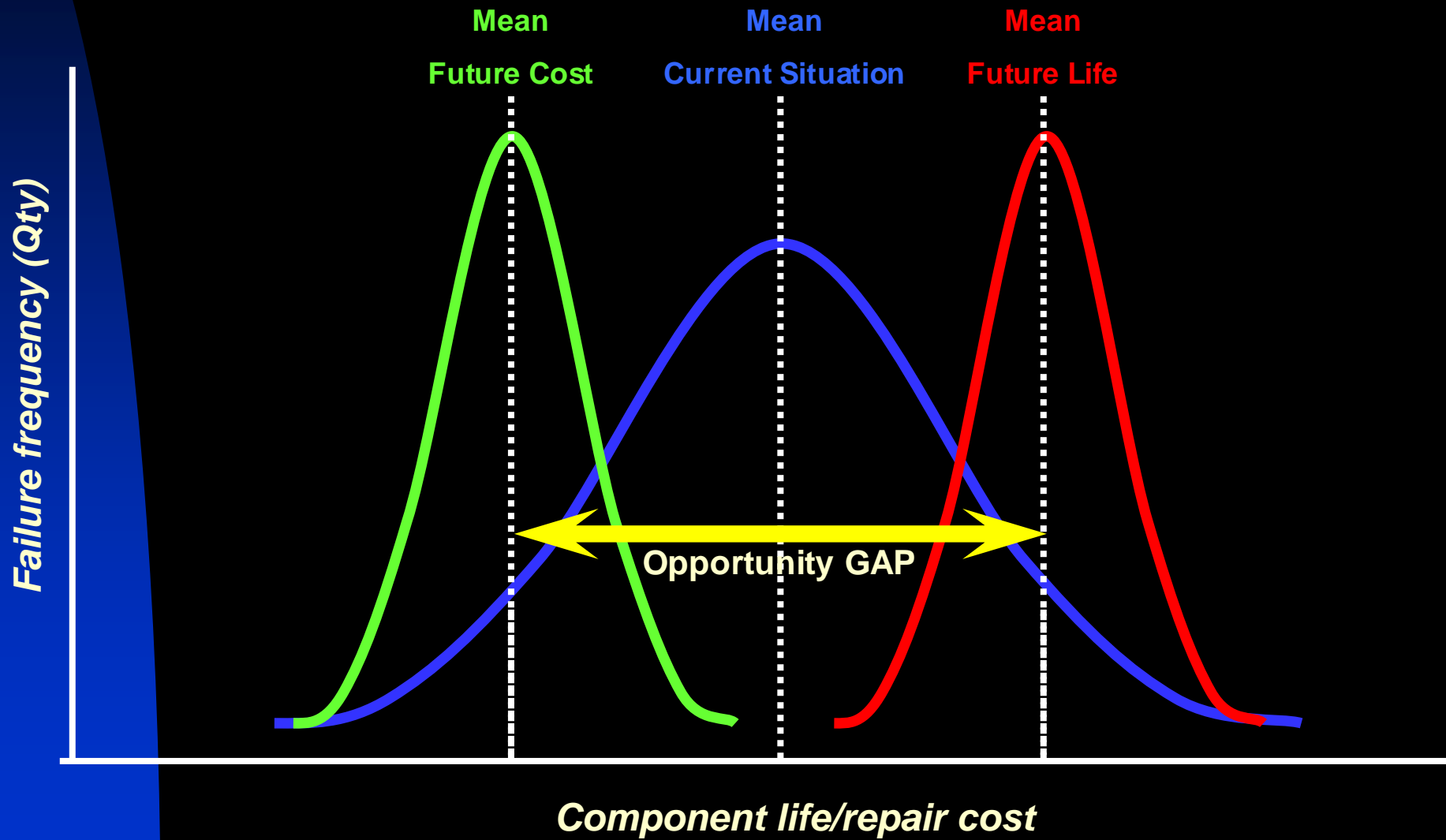
Expected component price improvement



Cost breakdown structure

Description	Current
(A)	Cost (Rand)
(A)	(D)
Cylinders	
Steer Cylinder L/H	14,270
Steer Cylinder R/H	14,270
Hoist Cylinder L/H	26,850
Hoist Cylinder R/H	26,850
Steering Ball Stud L/H	7,115
Steering Ball Stud R/H	7,115
Steering Line Boring	3,500
Hoist Cyl Bearing Set	9,200
Hoist Cyl Line Boring	3,500

Expected total improvement



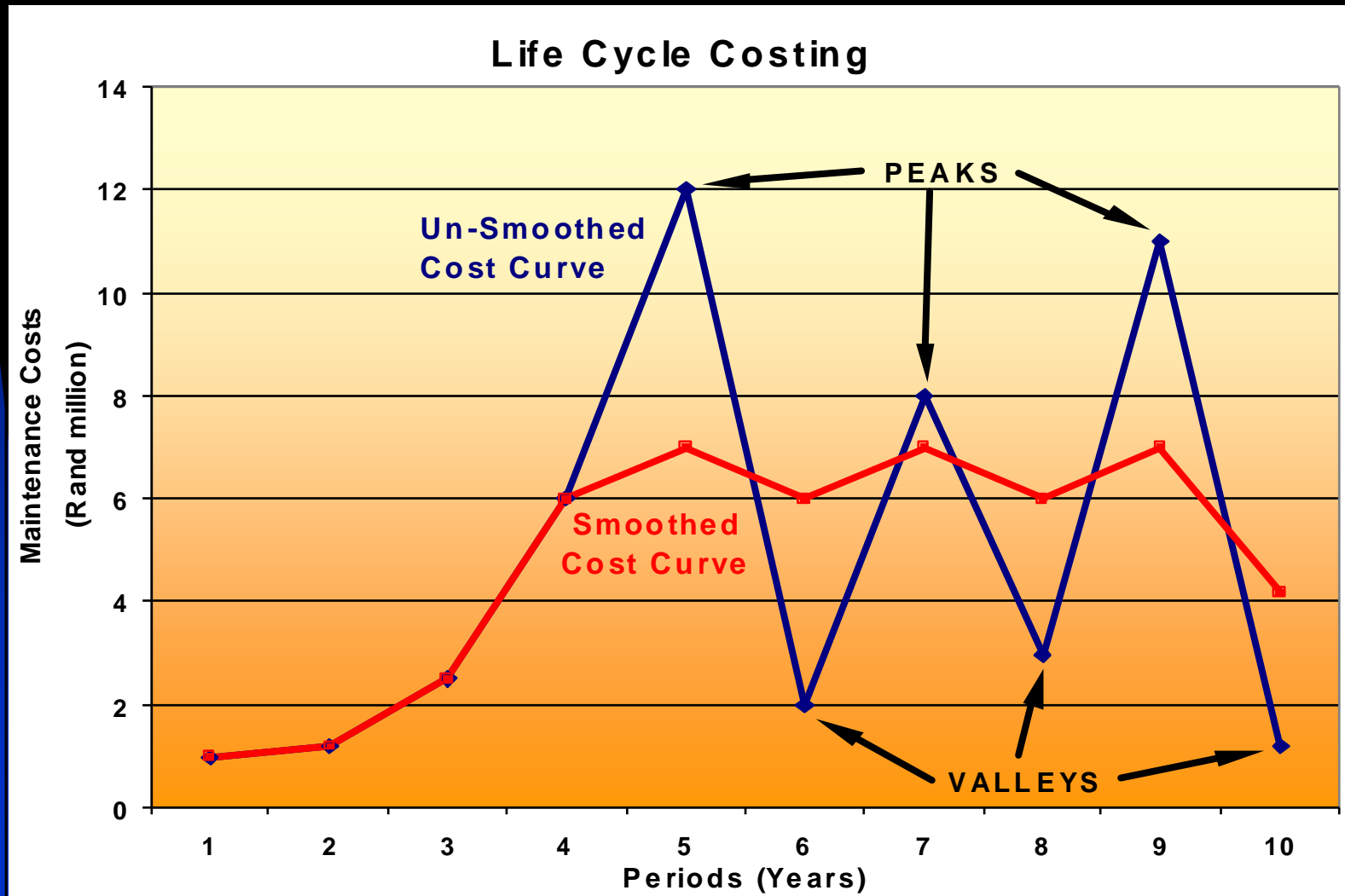
Establish starting point for scheduler

Machine Number:	BF 002	
Machine Type:	CAT 789	
Current Exch Rate (R/\$):	6.30	
Remain Budget Hours	1,354	
Description	Expected	Current
	Life (Hours)	Life (Hours)
(A)	(B)	(C)
Cylinders		
Steer Cylinder L/H	15,000	10,575
Steer Cylinder R/H	15,000	1,020
Hoist Cylinder L/H	15,000	8,759
Hoist Cylinder R/H	15,000	12,228
Steering Ball Stud L/H	7,500	541
Steering Ball Stud R/H	7,500	541
Steering Line Boring	5,000	541
Hoist Cyl Bearing Set	7,500	541
Hoist Cyl Line Boring	7,500	541

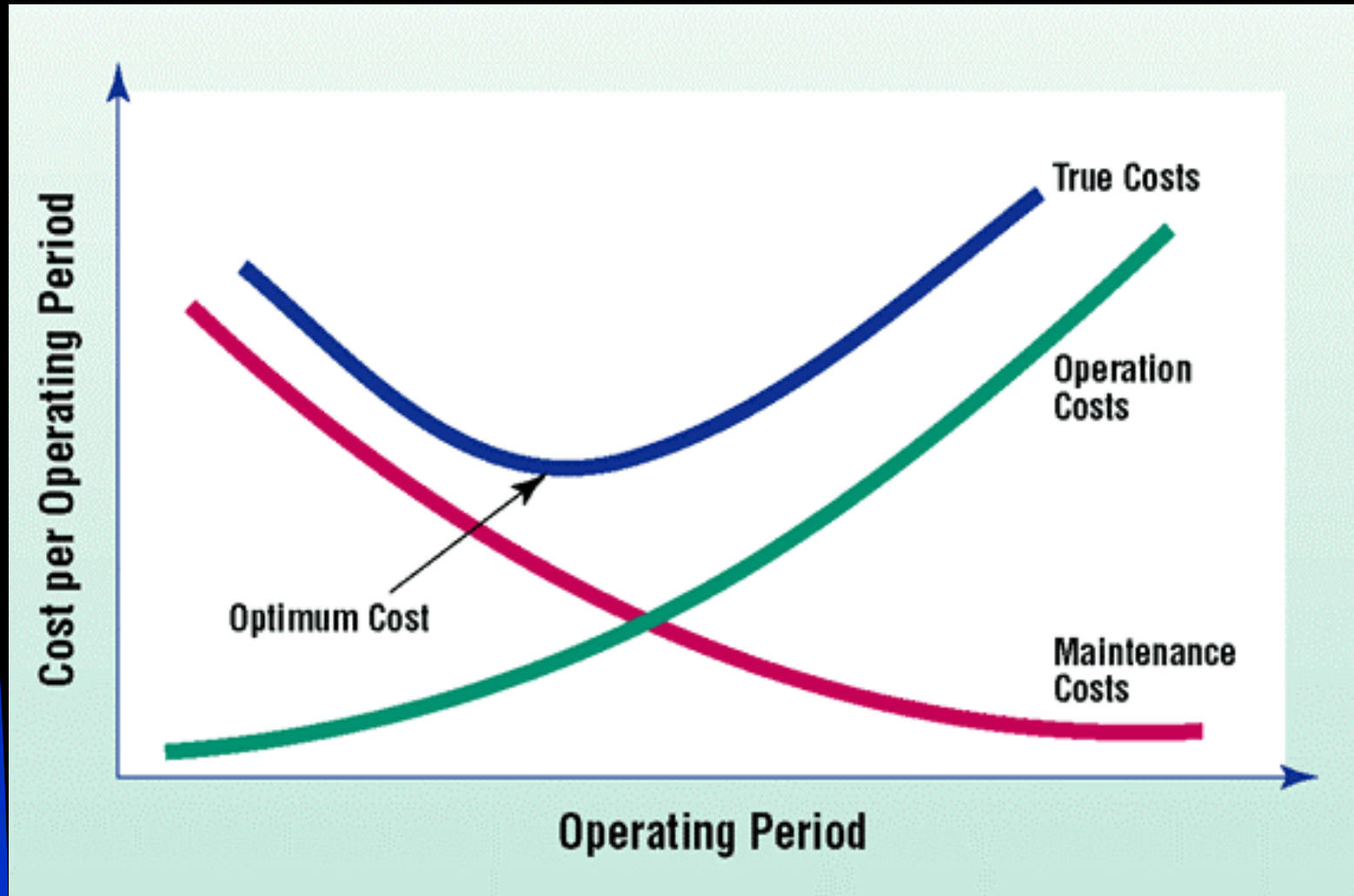
Budget for the first period

Machine Number:	BF 002								
Machine Type:	CAT 789								
Current Exch Rate (R/\$):	6.30					Period 1		Budget Hours:	3836
Remain Budget Hours	1,354					Exch Rate:	6.30	PPI:	0.055
Description	Expected Life (Hours)	Current Life (Hours)	Current Cost (Rand)	R/Hr Rate	Import Factor	Start Life	Exp. Repair Cost (Rand)	Budget Cost	R/Hr
(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)
Responsible Code:	470512								
Cylinders									
Steer Cylinder L/H	15,000	10,575	14,270	0.95	0.75	1 1929	14,466	14,466	3.77
Steer Cylinder R/H	15,000	1,020	14,270	0.95	0.75	2374	14,466	0	0.00
Hoist Cylinder L/H	15,000	8,759	26,850	1.79	0.75	10113	27,219	0	0.00
Hoist Cylinder R/H	15,000	12,228	26,850	1.79	0.75	13582	27,219	27,219	7.10
Steering Ball Stud L/H	7,500	541	7,115	0.95	1	1895	7,115	0	0.00
Steering Ball Stud R/H	7,500	541	7,115	0.95	1	1895	7,115	0	0.00
Steering Line Boring	5,000	541	3,500	0.70	0	1895	3,693	3,693	0.96
Hoist Cyl Bearing Set	7,500	541	9,200	1.23	1	1895	9,200	0	0.00
Hoist Cyl Line Boring	7,500	541	3,500	0.47	0	1895	3,693	0	0.00
Sub-total			112,671					45,378	11.83

Cost smoothing



Lowest combined cost



Source: Wireman (1998:5)

Thank you!

Any questions??