

# Industry Practice Leader KEYNOTE



## Tom Reed

*Senior SEA Associate, Operational Excellence*

Tom has fifteen years of experience as a business leader, lean manufacturing expert, project manager and operations manager. Hands-on experience in the following areas: business process reengineering, Demand Flow Technology, development of operating plans and strategic planning.

Tom has experience in implementing lean manufacturing concepts into manufacturers, specifically Six Sigma Flow, to reduce costs, improve quality and increase on-time delivery. He has also designed and implemented Demand Flow Technology cells that improved quality up to 75%, reduced WIP up to 50%, and delivered daily customer orders.

# What's This?



# Is this really the answer?



# What's This?



2005

2005

2007

2008

# The Customer Is Still King!



# Success Stories

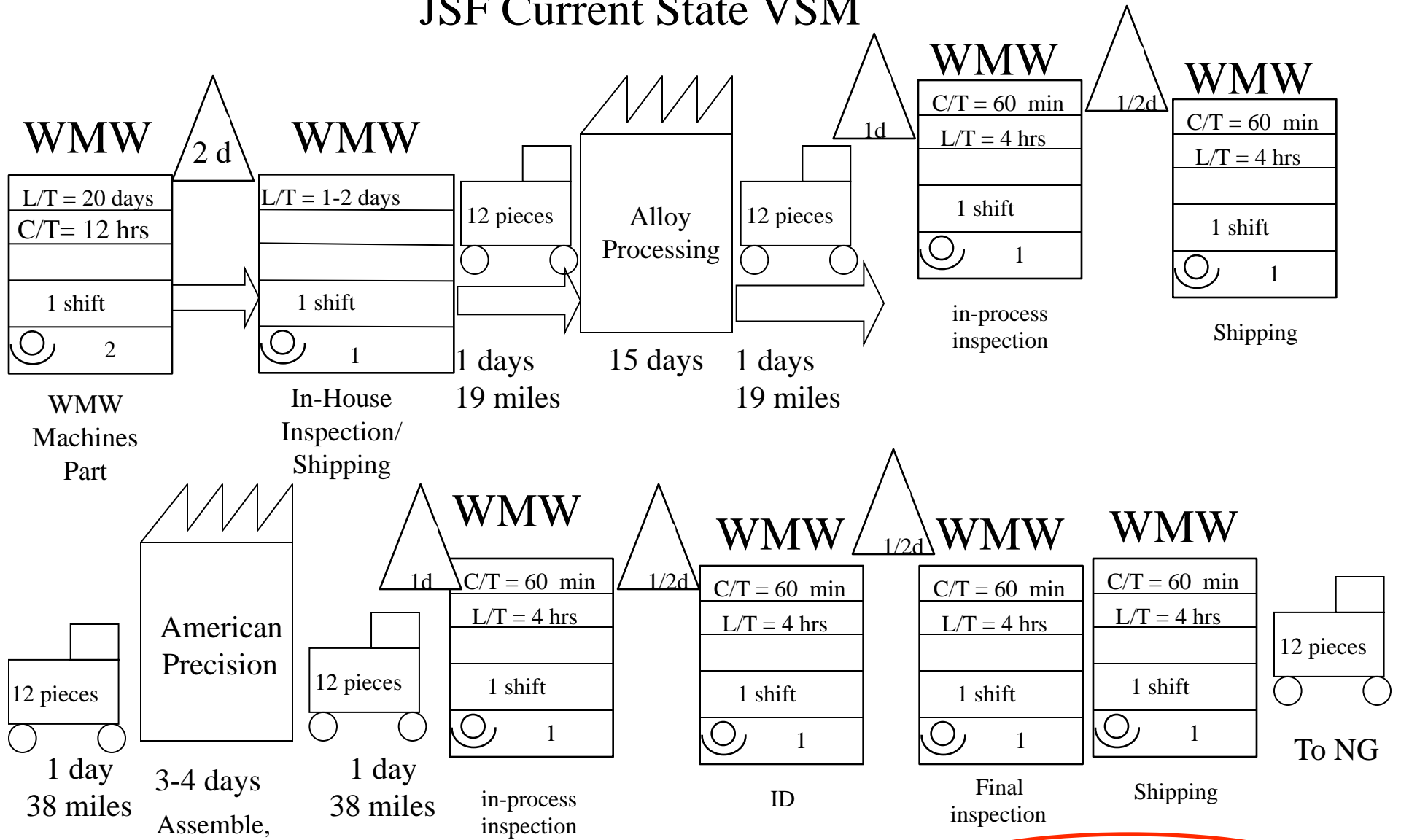
Supply Chain Compression

Office Cells

Supplier Collaboration

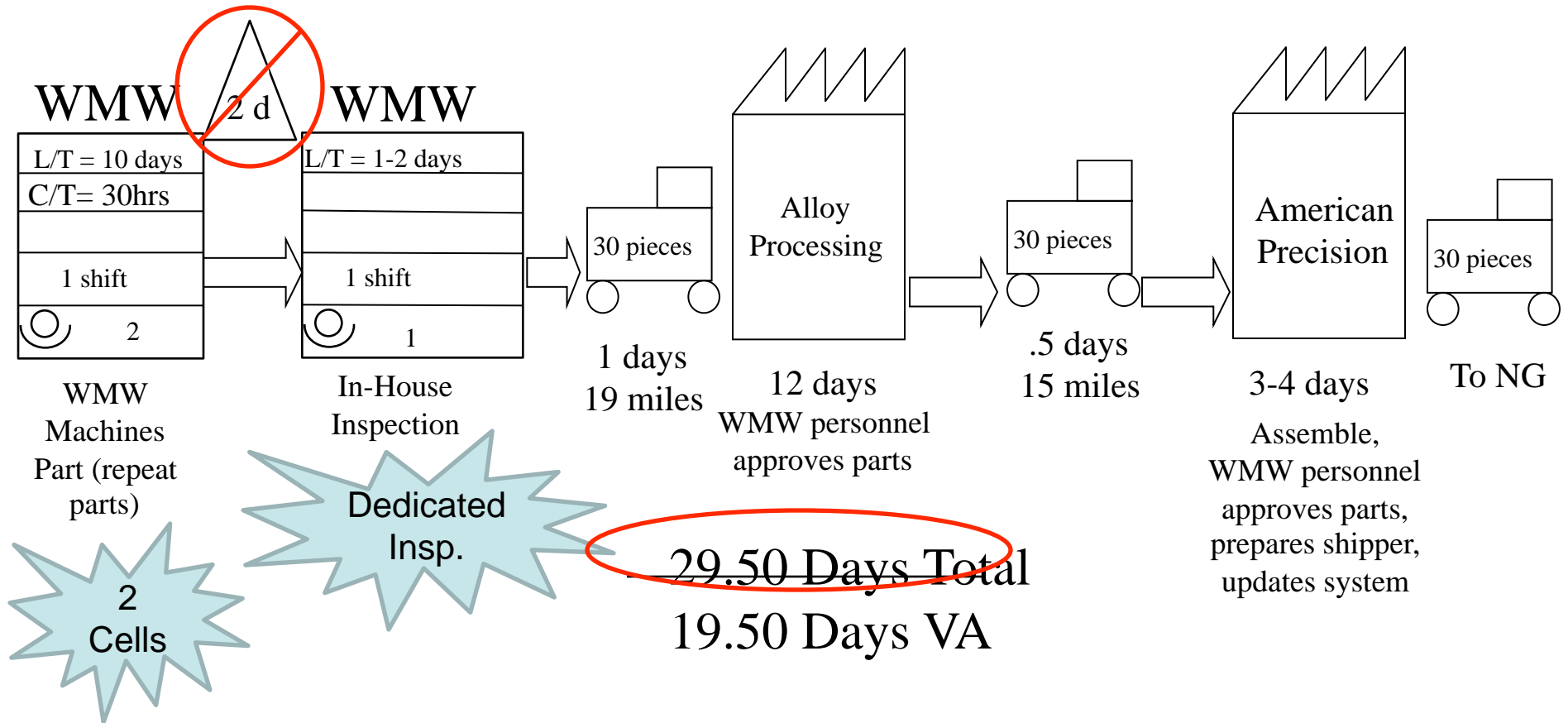
Machining Cells

# JSF Current State VSM



~~53.50 Days Total~~  
23.25 Days VA

# JSF Final Volume Future State VSM (30/month)





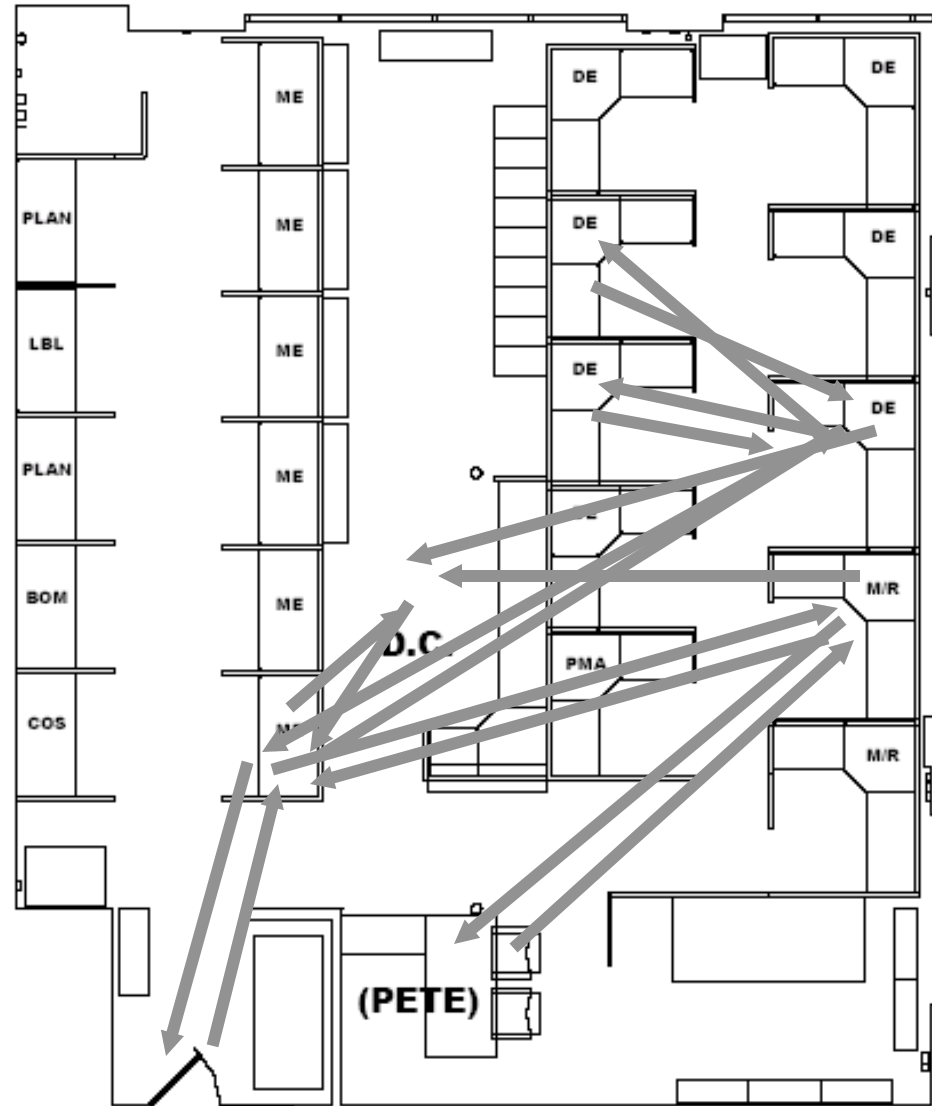
# Neglected Opportunity

## Office Operations:

- Can account for  $\frac{1}{2}$  of the total lead time
- Can represent more than  $\frac{1}{4}$  of the total cost
- Can drive ability to capture market share and new orders
- Are often neglected in favor of shop floor and materials flow

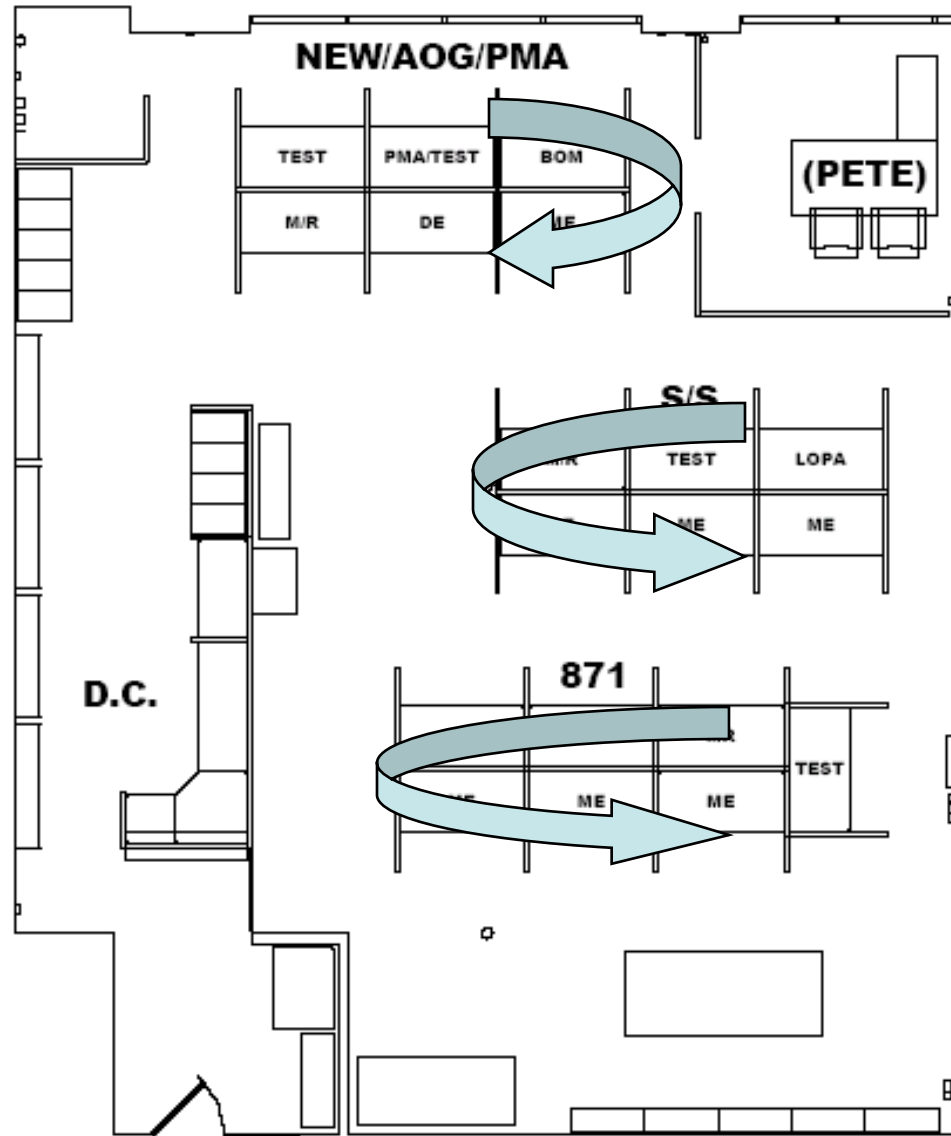
# Spaghetti Drawing-Before

Engineering  
Processes



# Spaghetti Drawing-After

Engineering  
Cells



# Collaboration among SEA engaged Suppliers



# Expected Savings

SCMG e-mail, E-mailing PO's/drawings,  
following Hixson checklist, scrap parts as  
a model

Returnable totes

Using Parker area for receiving

Hub location

Catia Reader at Hixson

Using Hixson first three weeks of month

## Estimated Savings

2 days in planning/engineering at  
Hixson

Eliminating nicks and dings and  
scrapped parts- **\$42,000** WMW  
\*Marzel to purchase for WMW

1 day in receiving/planning

1 day in shipping

Can process JSF parts

Saves **5** days in lead time

# Expected Savings

Removing 9 days from the process means the company can remove 9 days of WIP from their supply chain.

Average sales/day is \$45,833.

Material cost savings from removal of WIP is \$165,000

Eliminating nicks/dings saves \$42,000 for a total potential savings of \$207,000

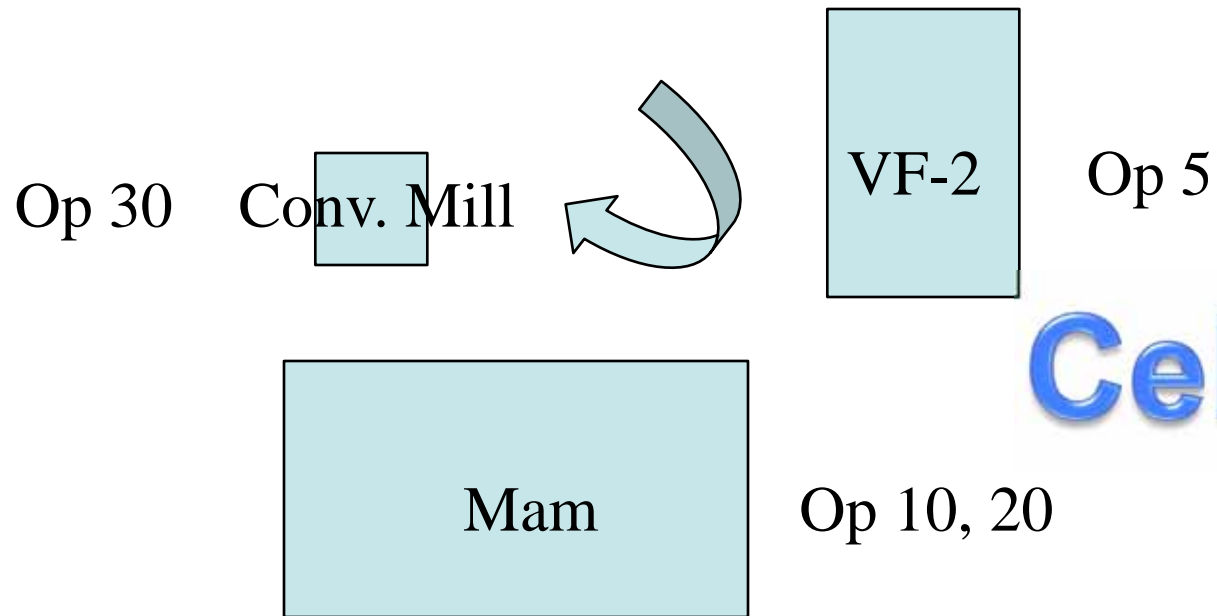
## Process Flow Diagrams

Med → Small → Man → Deburr → Insp → OP → ID → EOL  
Mill      5 Axis      Mill

5513056-807    5513056-808    6730502-12    315Z5910-1021  
10-2510-1      10-2510-2      2CSH00477-0003    315Z5910-1022  
2CSH20668-0015    2CSH20668-0016    F20-0035-3    F20-0035-4  
F20-0048-801 F20-0048-802 F20-0048-803      F20-0048-804

Med → Small → Man → Deburr → Insp → OP → ID → EOL  
Mill    5 Axis    Mach

2CBH32060-0003    2CBH32060-0001  
2CSH0796-5007    2CSH25514-0001  
2CHH51142-3005    2CHH51142-3006



# Cell Design



VF-2 located next to MAM and re-arranged





# Advantages

1. No Fixturing for the VF-2
2. Quick changeovers
3. Completed parts leave the cell
4. Additional throughput opportunities
5. Improved quality
6. Defined part path/routing
7. Simplified Programming
8. Easier to develop standard work

**Total Impact to the business**  
**\$339,460**

	Pre-kaizen	Post Kaizen	Difference	Savings
Personnel Req.	2	1	1	50%
Space Required	635 sq ft	535 sq ft	110 sq ft	15%
Distance Traveled	33 ft	9 ft	24	73%
Labor	\$83,200	\$42,600	\$40,600	50%
Haas	\$85,740	\$0		
Mam	\$335,500	\$720,000	\$298,860	71%

SEASON ▲	TEAM	G	AB	R	H	TB	2B	3B	HR	RBI	BB	IBB	SO	SB	CS	AVG
1993	<a href="#">CLE</a>	22	53	5	9	16	1	0	2	5	2	0	8	0	0	.170
1994	<a href="#">CLE</a>	91	290	51	78	151	22	0	17	60	42	4	72	4	2	.269
1995	<a href="#">CLE</a>	137	484	85	149	270	26	1	31	107	75	6	112	6	6	.308
1996	<a href="#">CLE</a>	152	550	94	170	320	45	3	33	112	85	8	104	8	5	.309
1997	<a href="#">CLE</a>	150	561	99	184	302	40	0	26	88	79	5	115	2	3	.328
1998	<a href="#">CLE</a>	150	571	108	168	342	35	2	45	145	76	6	121	5	3	.284
1999	<a href="#">CLE</a>	147	522	131	174	346	34	3	44	165	96	9	131	2	4	.333
2000	<a href="#">CLE</a>	118	439	92	154	306	34	2	38	122	86	9	117	1	1	.351
2001	<a href="#">BOS</a>	142	529	93	162	322	33	2	41	125	81	25	147	0	1	.306
2002	<a href="#">BOS</a>	120	436	84	152	282	31	0	33	107	73	14	85	0	0	.349
2004	<a href="#">BOS</a>	152	568	108	175	348	44	0	43	130	82	15	124	2	4	.308
2005	<a href="#">BOS</a>	152	554	112	162	329	30	1	45	144	80	9	119	1	0	.292
2006	<a href="#">BOS</a>	130	449	79	144	278	27	1	35	102	100	16	102	0	1	.321



**When Does He Improve?**

Sept

**Off-season**

Feb

# When do you improve?



**Is this an off-season?**

# What are you afraid of?

**"In playing ball, and in life, a person occasionally gets the opportunity to do something great. When that time comes, only two things matter: being prepared to seize the moment and having the courage to take your best swing."**

-- Hank Aaron, Baseball Player