

# THE GLOBAL AEROSPACE INDUSTRY MARKET - OVERVIEW AND TRENDS

*Prepared for*

## BAJA'S 2<sup>ND</sup> INTERNATIONAL AEROSPACE SUPPLIERS FORUM

TIJUANA, MEXICO

JULY 21, 2011

*Presented by*

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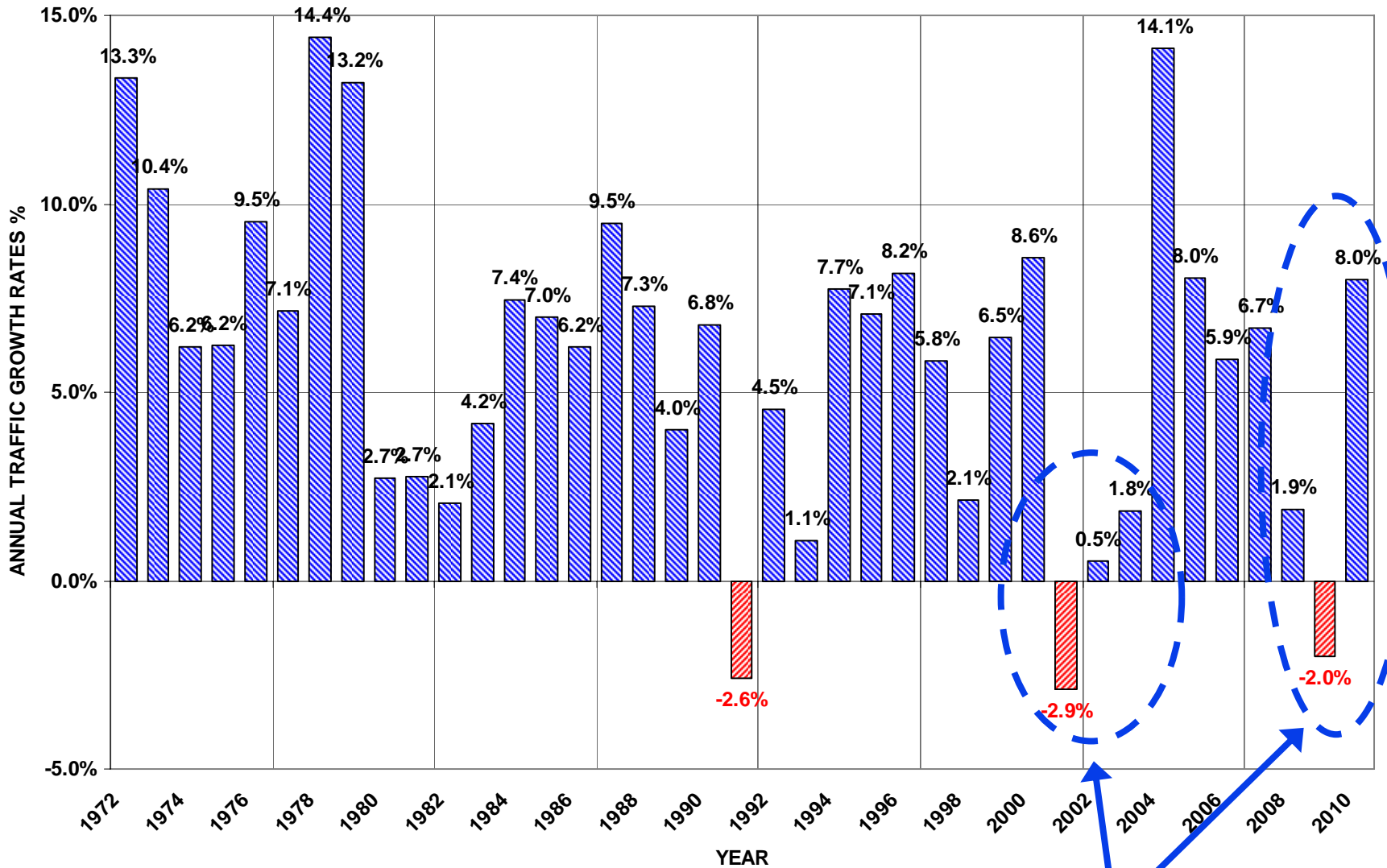
## SUMMARY – GLOBAL AEROSPACE MARKET TRENDS

- The global market for aerospace markets is a composite of a variety of divergent trends in each of its market sectors.
- The market for large commercial transport aircraft (Boeing and Airbus programs) deliveries has been very strong and will get even stronger.
- Regional jet aircraft (Bombardier and Embraer) have not experienced the same gains as the large transport aircraft and are struggling in this high oil price environment. Russia, China, and Japan are still committed to entering the regional jet aircraft market.
- The business jet aircraft market, after peaking at 1313 a/c deliveries in 2008, has collapsed to 763 global a/c deliveries in 2010. The hoped for rebound in this market in 2011 / 2012 has yet to materialize.
- The MRO (maintenance, repair and overhaul) markets are hurting as large numbers of older aircraft are being parked and underutilized.
- Military aircraft markets are feeling the effects of government budget constraints which were intensified during the global recession of 2008 / 2009. The JSF (F35) is the only major military aircraft program going forward at significant production quantities.
- International and U.S. Space programs will lose some of their inertia going forward as the Space Shuttle replacement program continues to drift to the right in terms of schedule and U.S. Administration support.
- Although not all of the above markets are not currently in a positive growth trend they are all still very large and very competitive.

# COMMERCIAL TRANSPORT AIRCRAFT BOEING / AIRBUS PROGRAMS

# AIRLINE TRAFFIC

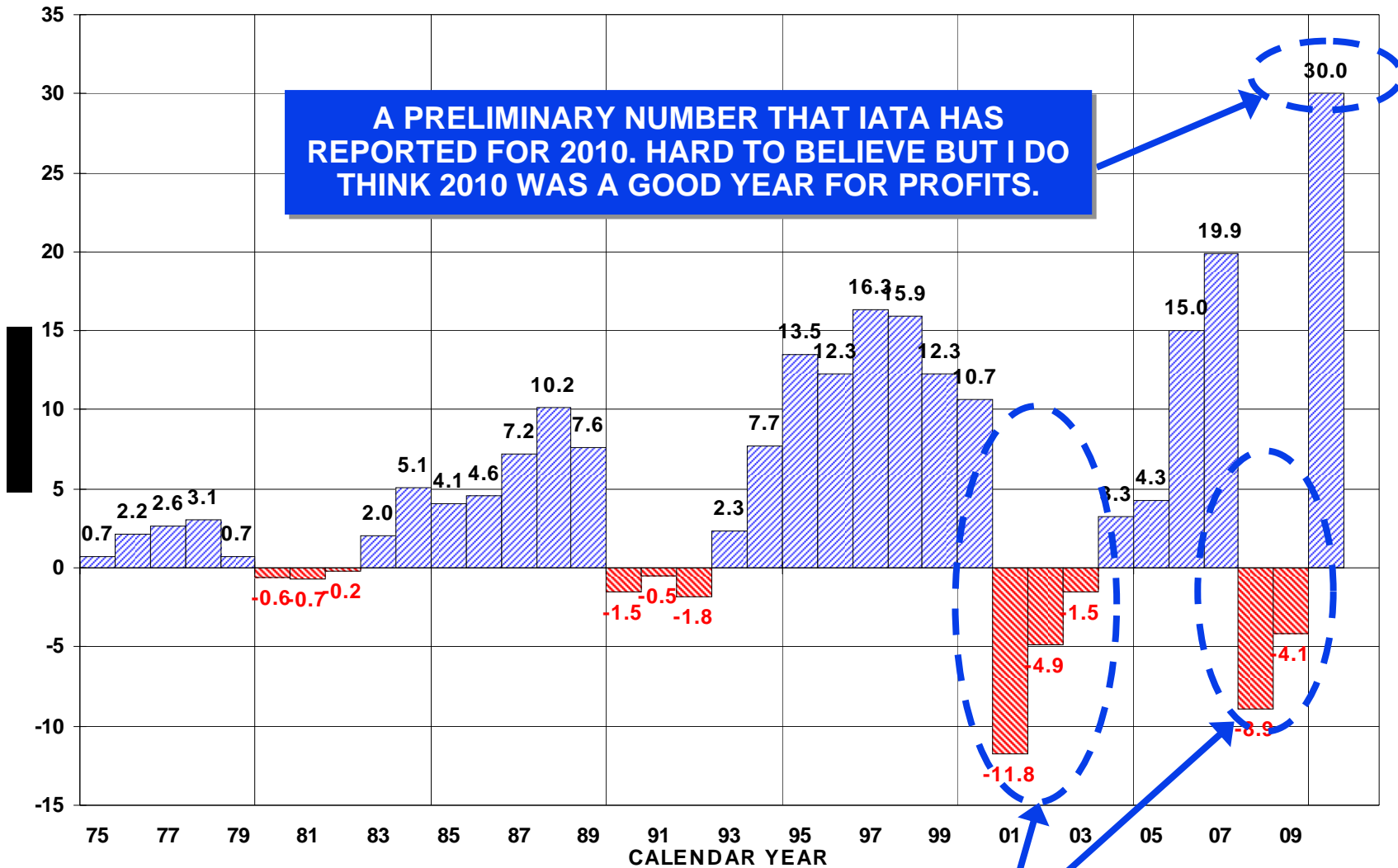
# WORLD SCHEDULED TRAFFIC GROWTH (RPMS) 1972 - 2010



**WORLD AIRLINE TRAFFIC HAS BOUNCED BACK FASTER IN THIS LAST CYCLE.**

# AIRLINE PROFITS

# ICAO WORLD SCHEDULED AIRLINES OPERATING PROFIT / LOSS



A PRELIMINARY NUMBER THAT IATA HAS REPORTED FOR 2010. HARD TO BELIEVE BUT I DO THINK 2010 WAS A GOOD YEAR FOR PROFITS.

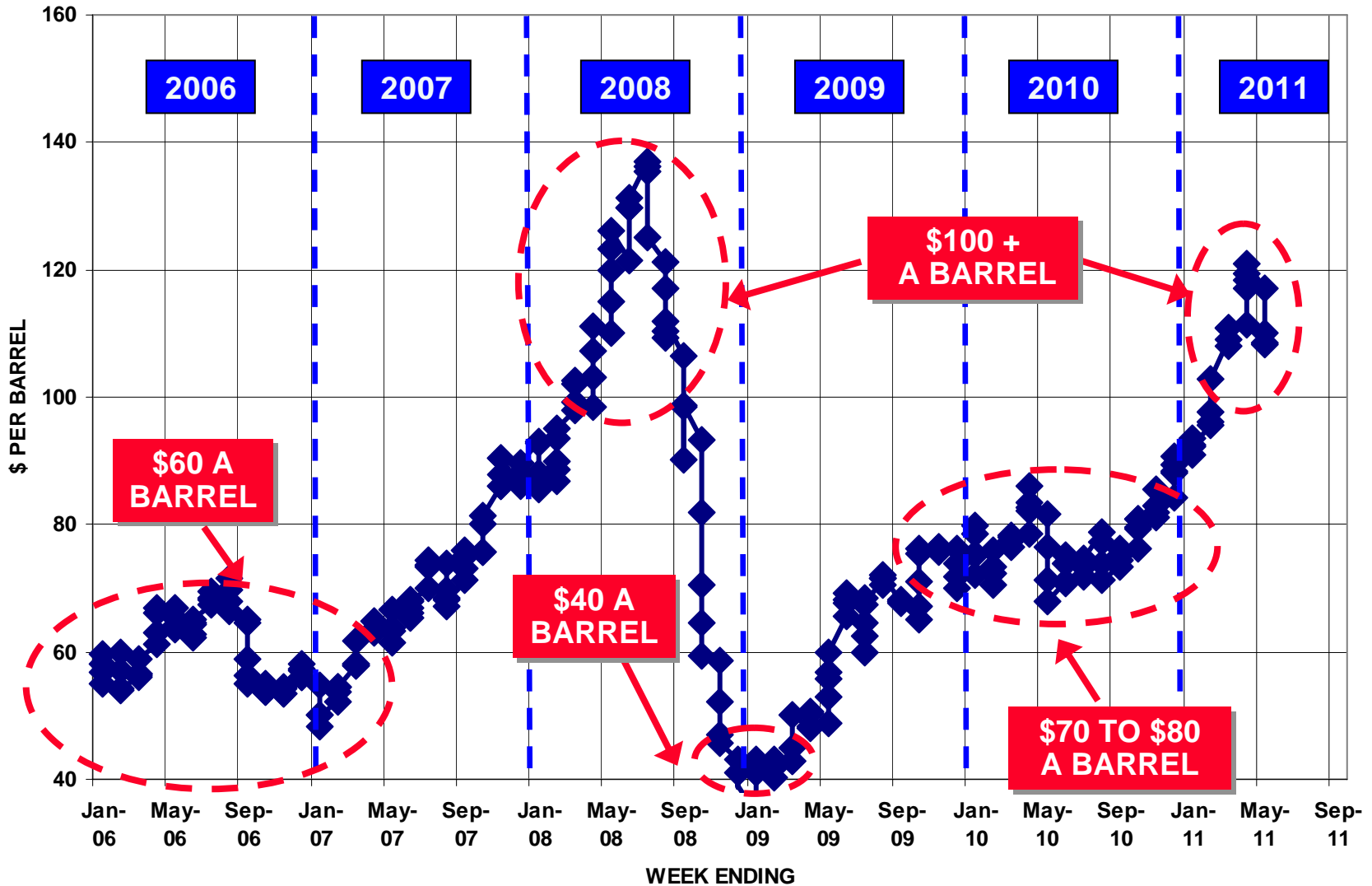
FROM AN OPERATING PROFIT PERSPECTIVE IT WAS NOT AS BAD AS THE PRIOR CYCLE.

SOURCE : ICAO

**OIL PRICES ARE A BOTH  
A MARKET DRIVER (FOR NEW A/C) AND A MARKET  
INHIBITOR (HIGHER PRICES FOR AIR TRAVEL)**



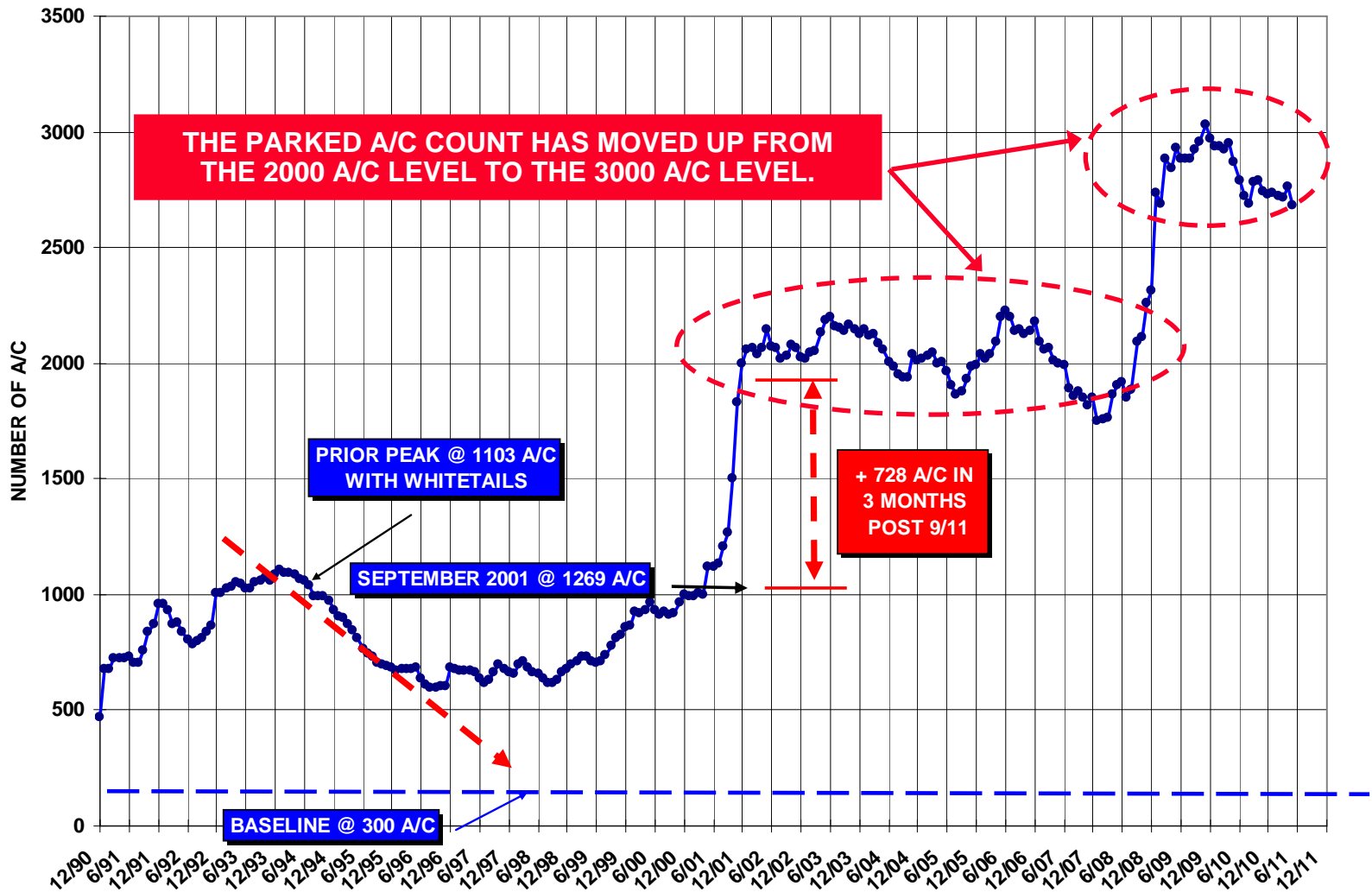
# WORLD CRUDE OIL PRICES (SPOT PRICES WEIGHTED BY EXPORT VOLUME)



**WORLD OIL PRICES ARE STILL VERY UNSTABLE – PICK A NUMBER?**

# “PARKED” AIRCRAFT UPDATE

## "PARKED" TURBOFAN/JET A/C FLEET - WORLDWIDE

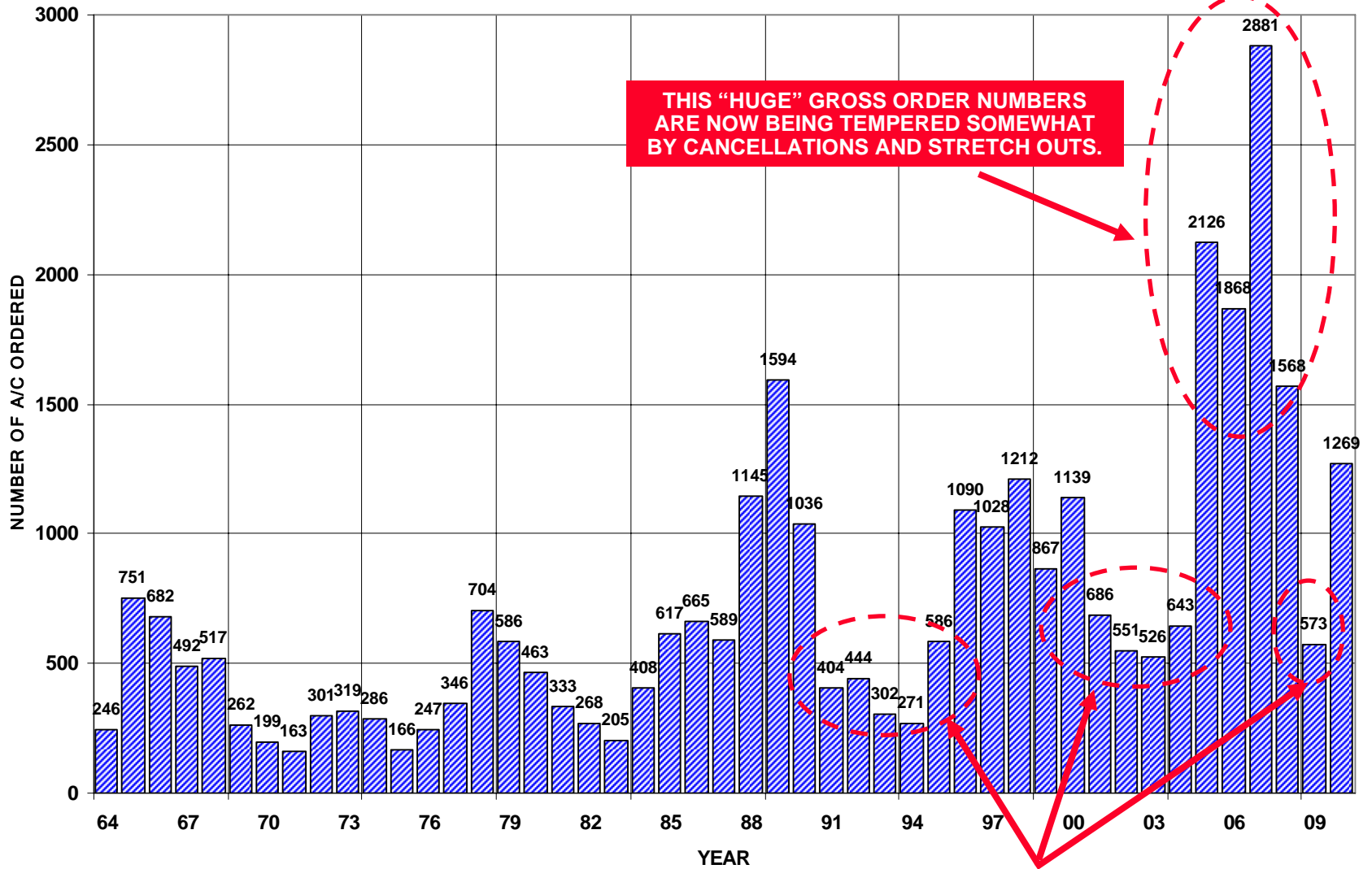


**IN THE PAST PARKED A/C WOULD RISE AS TRAVEL DEMAND FELL OFF. WE MAY NOW BE SEEING A RISE IN THE NUMBER OF A/C PARKED AS THE RESULT OF DISPROPORTIONATELY HIGHER FUEL PRICES?**

Data Source: Airclaims prior to 2008, ML Parked Aircraft Report 2008+

# NEW AIRCRAFT ORDERS / BACKLOG

# "FIRM" A/C ORDERS (GROSS) - WORLDWIDE COMMERCIAL TURBOFAN TRANSPORT A/C (100+ SEAT A/C)



**THIS "HUGE" GROSS ORDER NUMBERS ARE NOW BEING TEMPERED SOMEWHAT BY CANCELLATIONS AND STRETCH OUTS.**

**ORDERS HAVE BOUNCED BACK QUICKLY IN THIS CYCLE.**

# COMMERCIAL TRANSPORT DELIVERIES / ORDERS / BACKLOG

## STATUS - THROUGH 2Q OF 2011

<u>AIRCRAFT TYPE</u>	<u>PROGRAM</u>	<u>DELIVERIES</u>	<u>ORDERS</u>	<u>BACKLOG</u>
	<u>TOTAL</u>			
A318/319/320/321*	4728	202	706	2834
A330	796	46	53	344
A340	375	0	0	4
A350	0	0	6	567
A380	<u>51</u>	<u>10</u>	<u>12</u>	<u>185</u>
SUBTOTAL AIRBUS	5950	258	<u>777</u>	3934
737-600/700/800/900**	3687	181	141	2109
747-8	0	0	4	111
767	1003	9	13	54
777	942	32	72	291
787	<u>0</u>	<u>0</u>	<u>0</u>	<u>827</u>
SUBTOTAL BOEING	5632	222	<u>230</u>	3392
<u>OTHER MFGS OF TRANSPORT A/C</u>				
CSERIES	0	0	33	123
CRJ 1000	12	9	0	37
E195	75	11	0	30
C919	0	0	0	55
MS-21	0	0	0	190
SUPERJET 100	<u>0</u>	<u>1</u>	<u>15</u>	<u>170</u>
SUBTOTAL OTHER MFGS.	87	21	48	605
TOTAL - AIRBUS / BOEING	11582	480	<u>1007</u>	7326
OTHER MFGS OF TRANSPORT A/C	87	21	48	605
REGIONAL JETS (35+PAX)***	<u>3154</u>	<u>26</u>	<u>14</u>	<u>572</u>
TOTAL 35+ PAX JETS	14823	527	1069	8503

\*excludes 3 corporate aircraft deliveries  
 \*\*excludes 0 corporate aircraft deliveries  
 \*\*\*excludes 3 corporate aircraft deliveries

DATA SOURCE: Speednews

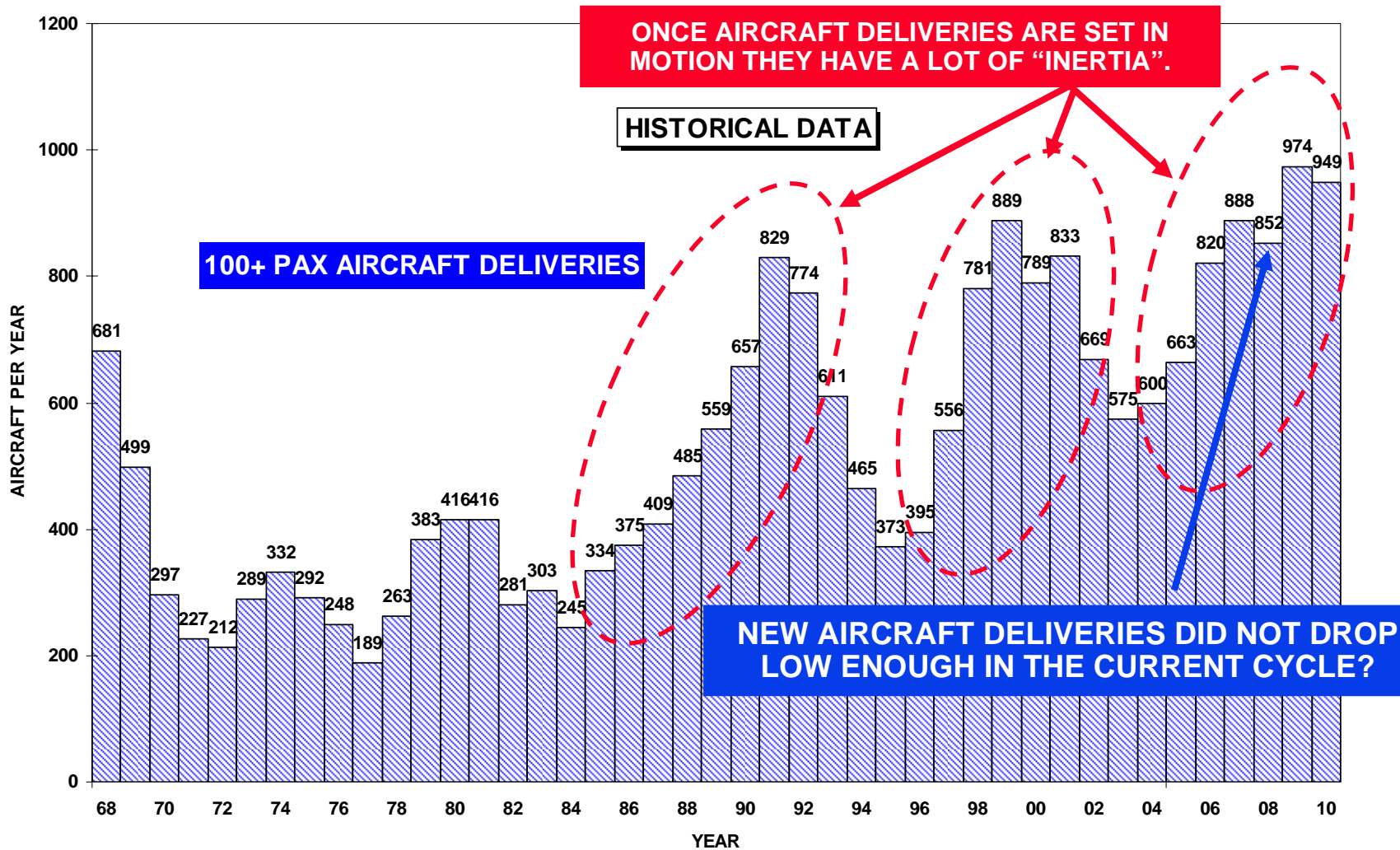
**AIRBUS DID WELL AT THE AIR SHOW.**

**THERE ARE STILL A SURPRISING NUMBER OF ORDERS BEING CANCELLED DURING THE CURRENT 2011 ORDER "REVIVAL".**

**AS OF THE END OF MAY 2011: AIRBUS – 176 GROSS ORDERS WITH 79 CANCELLED ORDERS  
 BOEING – 182 GROSS ORDERS WITH 49 CANCELLATIONS**

**LARGE NUMBERS OF ORDERS CONTINUE TO BE PLACED FOR BOEING AND AIRBUS A/C.**

# COMMERCIAL TURBOFAN/JET TRANSPORT AIRCRAFT MARKET



DATA SOURCE: JET INFORMATION SERVICES / WALSH AVIATION FORECASTS

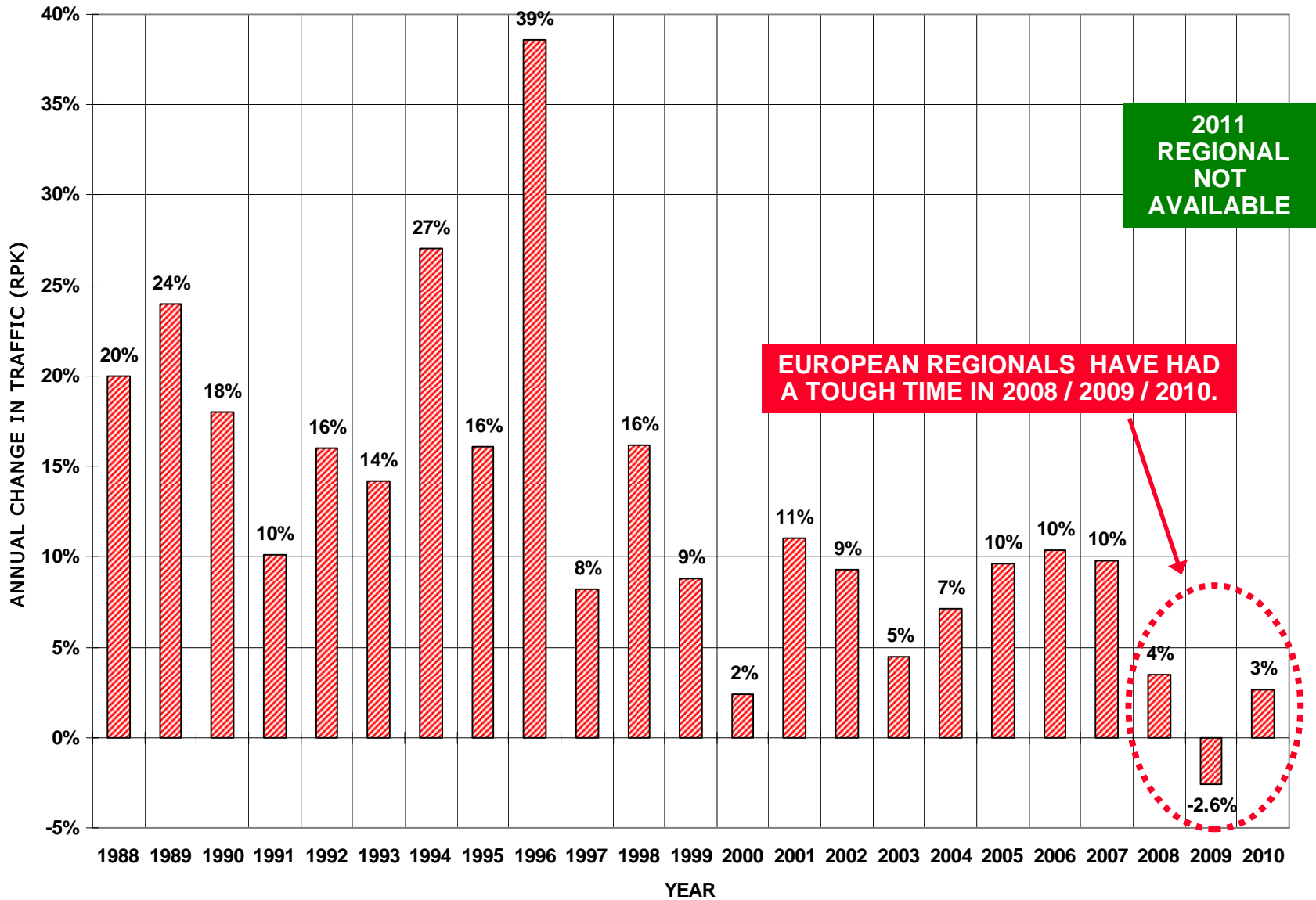
## SUMMARY – COMMERCIAL TRANSPORT AIRCRAFT

- The global and U.S. economies march on with their “statistical” recoveries while politicians and the media hammer away at the dismal employment numbers in the recovery to date.
- The Regional Jet market and Business Jet market were impacted by the 2008 / 2009 recession but the Large Commercial Transport market hardly skipped a beat in terms of increasing a/c deliveries.
- The Paris Air Show of 2011 generated significant aircraft orders with the A320 NEO receiving a lot of orders and commitments from existing Airbus customers. The capture of a large Boeing customer (AMR?) is the current Airbus campaign.
- Boeing is going to have a hard time not looking like they are just “sitting on the sidelines” as the narrow body a/c market gets gobbled up by the new manufacturers and re-engined aircraft from Airbus.
- Fare increases in the U.S. have been “hefty”. If oil prices back down and the airlines can hold onto their fare prices, 2011 could be another good year for operating profits.
- I continue to believe the current a/c order / delivery cycle is being driven by the strong airline belief that new a/c are the only attractive solution to the unpredictable price of oil. I also believe there is a large fleet replacement strategy underway that has not yet been confirmed by the physical scrapping out of older surplus a/c.
- Get ready for 1400 plus combined a/c deliveries by 2014 from Boeing and Airbus!



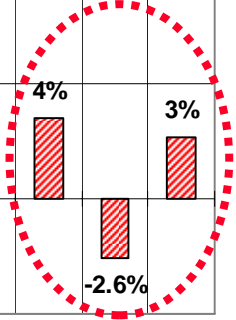
**REGIONAL AIRCRAFT**  
**BOMBARDIER / EMBRAER PROGRAMS**  
**(WITH MORE ON THE WAY)**

# ERA AIRLINE TRAFFIC GROWTH HISTORY

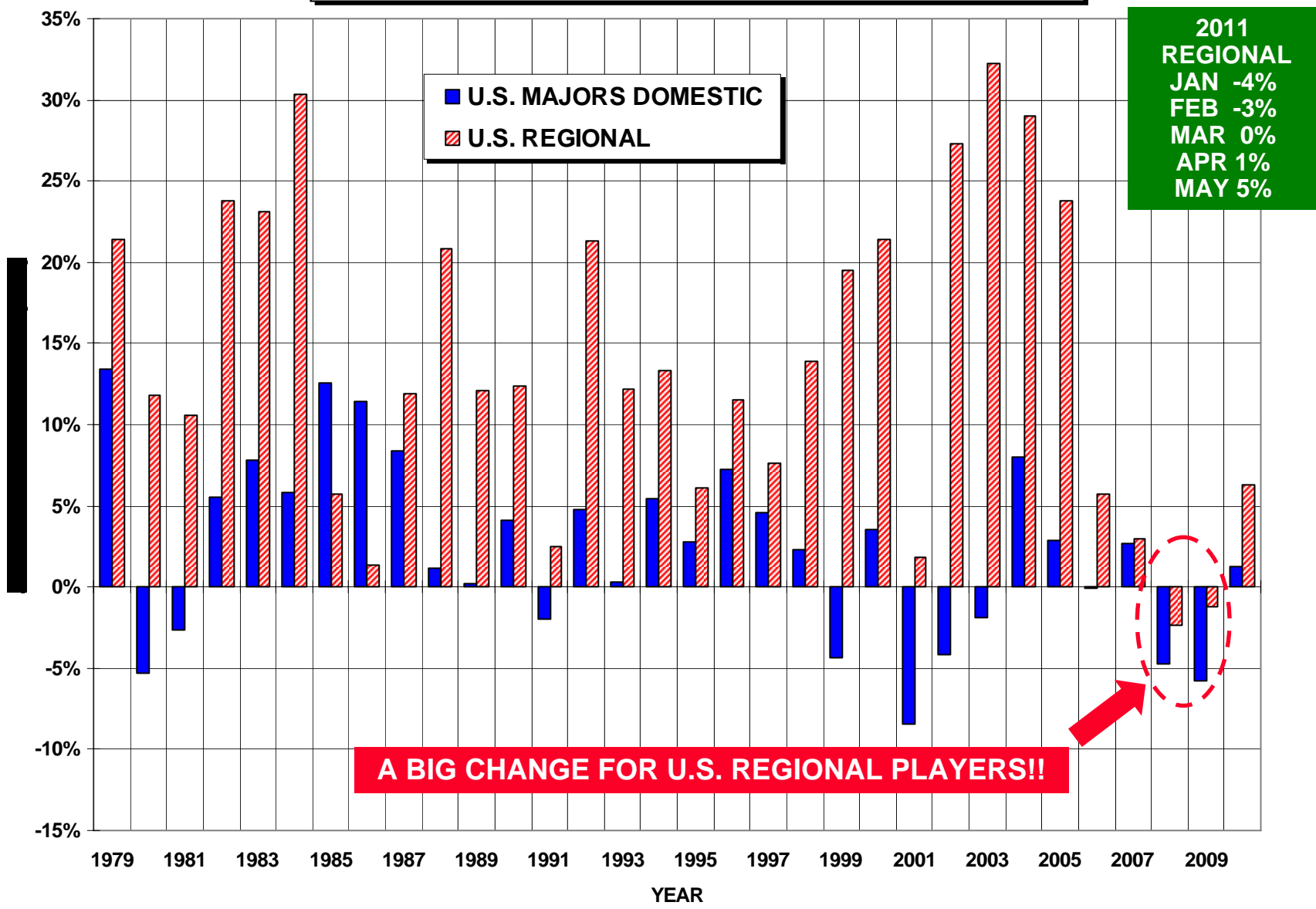


2011 REGIONAL NOT AVAILABLE

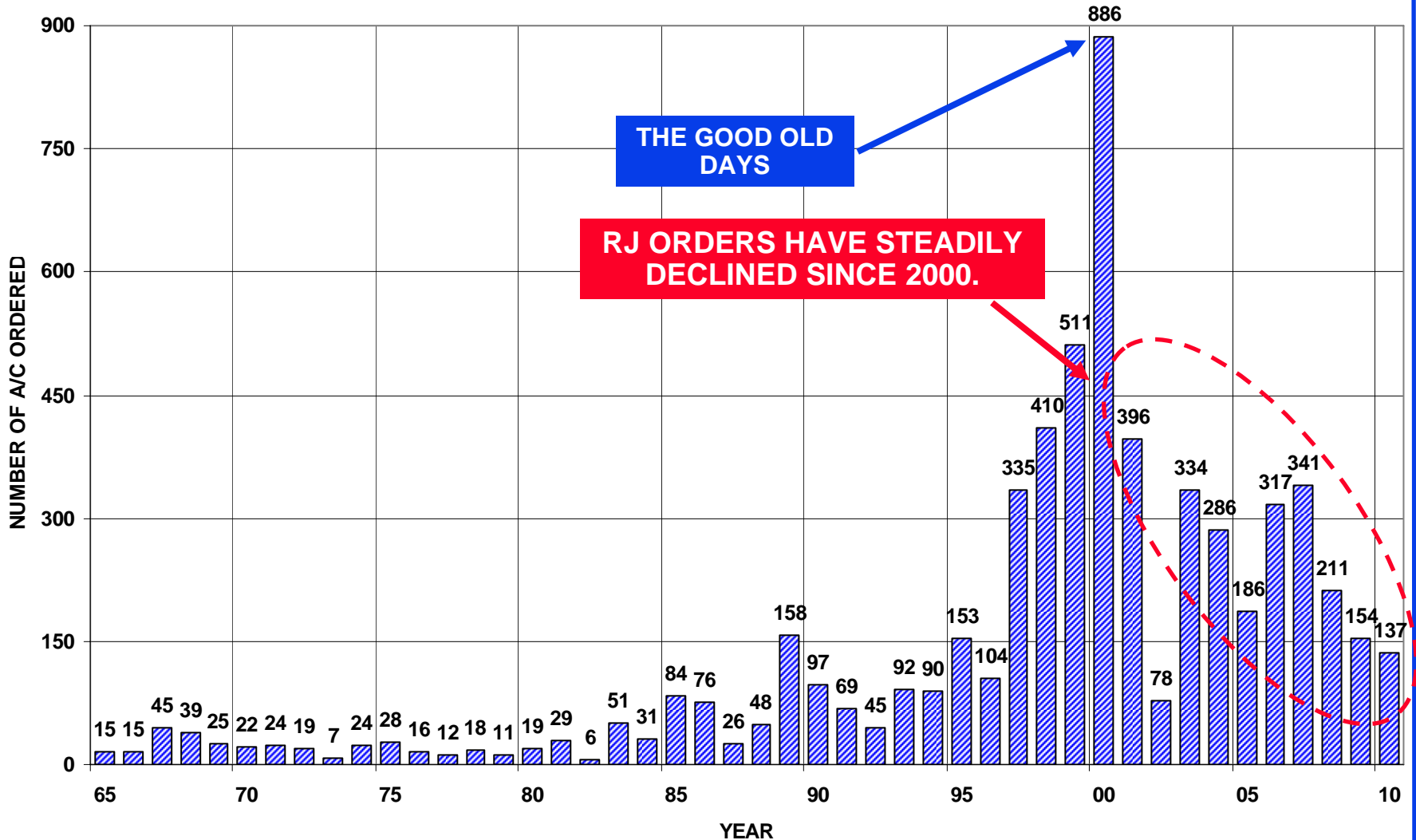
EUROPEAN REGIONALS HAVE HAD A TOUGH TIME IN 2008 / 2009 / 2010.



# U.S. AIRLINE DOMESTIC TRAFFIC GROWTH HISTORY

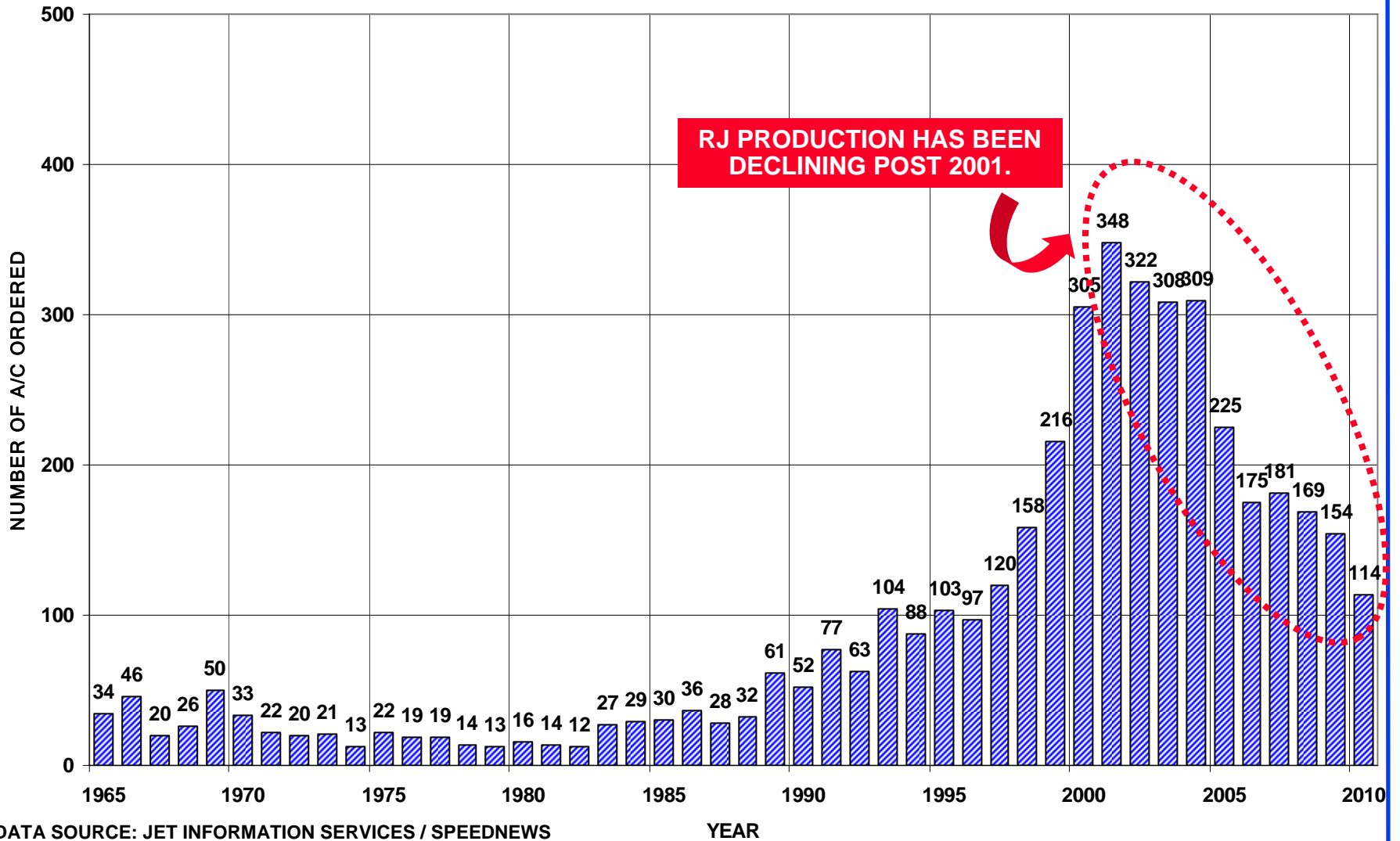


**"FIRM" AIRCRAFT ORDERS (GROSS) - WORLDWIDE  
REGIONAL JET A/C (35-100 SEAT A/C) - FOR REGIONAL AIRLINES**



DATA SOURCE: JET INFORMATION SERVICES / WALSH AVIATION FORECASTS

## WORLDWIDE REGIONAL JET A/C DELIVERIES (35-100 SEAT A/C)



DATA SOURCE: JET INFORMATION SERVICES / SPEEDNEWS  
 EXCLUDES BUSINESS JET APPLICATIONS OF RJ A/C DESIGNS

## REGIONAL JET DELIVERIES / ORDERS / BACKLOG

### STATUS - THROUGH 1Q OF 2011

<u>AIRCRAFT TYPE</u>	<u>DELIVERIES</u>	<u>ORDERS</u>	<u>BACKLOG</u>
<u>BOMBARDIER*</u>			
CRJ700	7	0	15
CRJ705/900	<u>5</u>	<u>0</u>	<u>17</u>
SUBTOTAL	12	0	32
<u>EMBRAER**</u>			
ERJ135/140/145	0	0	2
EMBRAER 170	1	0	9
EMBRAER 175	2	0	54
EMBRAER 190	<u>11</u>	<u>14</u>	<u>170</u>
SUBTOTAL	14	14	235
<u>OTHER MFGS.</u>			
ARJ21	0	0	240
MRJ	<u>0</u>	<u>0</u>	<u>65</u>
SUBTOTAL	0	0	305
TOTAL RJ	26	14	572

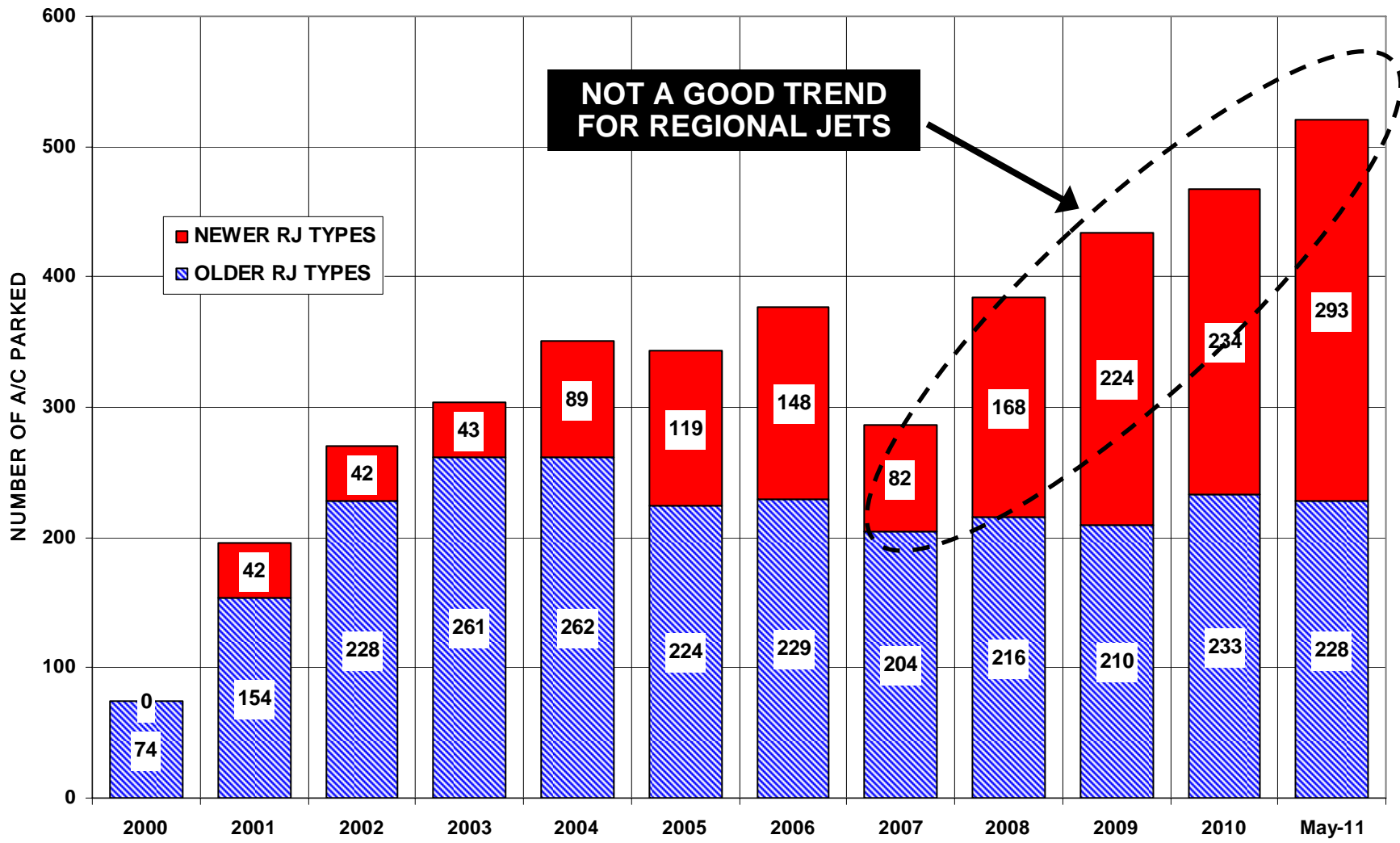
\* Excludes 0 corporate/shuttle aircraft deliveries

\*\* Excludes 2 corporate/military aircraft deliveries

**OUCH!!!!**

# PARKED REGIONAL JETS

# NUMBER OF IDLE REGIONAL JETS - WORLD WIDE



DATA SOURCE: AIRCLAIMS / MERRILL LYNCH



## REGIONAL JETS - PARKED FLEET\* STATUS

AIRCRAFT TYPE	YR. END 2000	YR. END 2001	YR. END 2002	YR. END 2003	YR. END 2004	YR. END 2005	YR. END 2006	YR. END 2007	YR. END 2008	YR. END 2009	YR. END 2010	MAY 2011
<b><u>OLDER RJ MODELS</u></b>												
Avro RJ 146	7	1	6	11	12	18	43	24				
BAC 1-11	12	32	31	43	53	55	52	62	86	95	99	106
F.28	37	35	67	67	59	22	22	17	20	20	20	20
Fokker 70	18	41	55	55	61	60	67	69				
Fokker 100	0	0	0	0	0	0	0	1				
	<u>0</u>	<u>45</u>	<u>69</u>	<u>85</u>	<u>77</u>	<u>69</u>	<u>45</u>	<u>31</u>	<u>110</u>	<u>95</u>	<u>114</u>	<u>102</u>
<b>TOTAL OLDER RJS</b>	<b>74</b>	<b>154</b>	<b>228</b>	<b>261</b>	<b>262</b>	<b>224</b>	<b>229</b>	<b>204</b>	<b>216</b>	<b>210</b>	<b>233</b>	<b>228</b>
<b><u>NEWER RJ MODELS</u></b>												
CRJ Regional Jet	0	38	27	12	17	59	100	55	74	92	130	134
CRJ7Regional Jet	0	0	0	0	11	1	7	3				
CRJ9Regional Jet	0	0	0	0	0	0	0	2				
Dornier 328Jet	0	0	9	21	48	42	35	16	26	35	36	50
ERJ-135	0	0	0	0	1	1	1	0				
ERJ-140/145	<u>0</u>	<u>4</u>	<u>6</u>	<u>10</u>	<u>12</u>	<u>16</u>	<u>5</u>	<u>6</u>	<u>68</u>	<u>97</u>	<u>88</u>	<u>109</u>
<b>TOTAL NEWER RJS</b>	<b>0</b>	<b>42</b>	<b>42</b>	<b>43</b>	<b>89</b>	<b>119</b>	<b>148</b>	<b>82</b>	<b>168</b>	<b>224</b>	<b>254</b>	<b>293</b>
<b>TOTAL ALL RJS</b>	<b>74</b>	<b>196</b>	<b>270</b>	<b>304</b>	<b>351</b>	<b>343</b>	<b>377</b>	<b>286</b>	<b>384</b>	<b>434</b>	<b>487</b>	<b>521</b>

\* DATA SOURCE: AIRCLAIMS / MERILL LYNCH

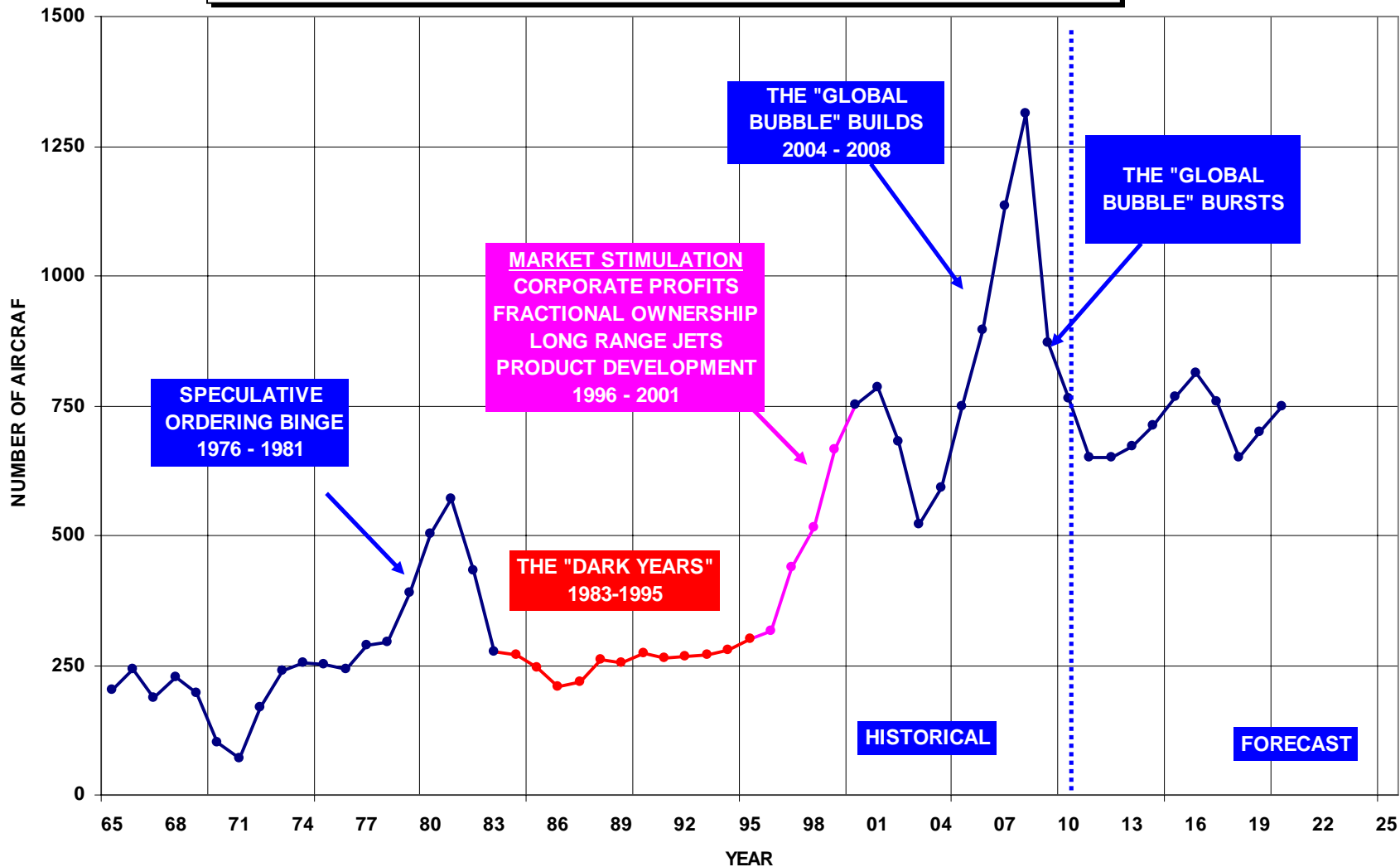
**THESE A/C ARE  
RELATIVELY "YOUNG" TO  
BE PARKED.**

# SUMMARY - REGIONAL JET AIRCRAFT MARKET

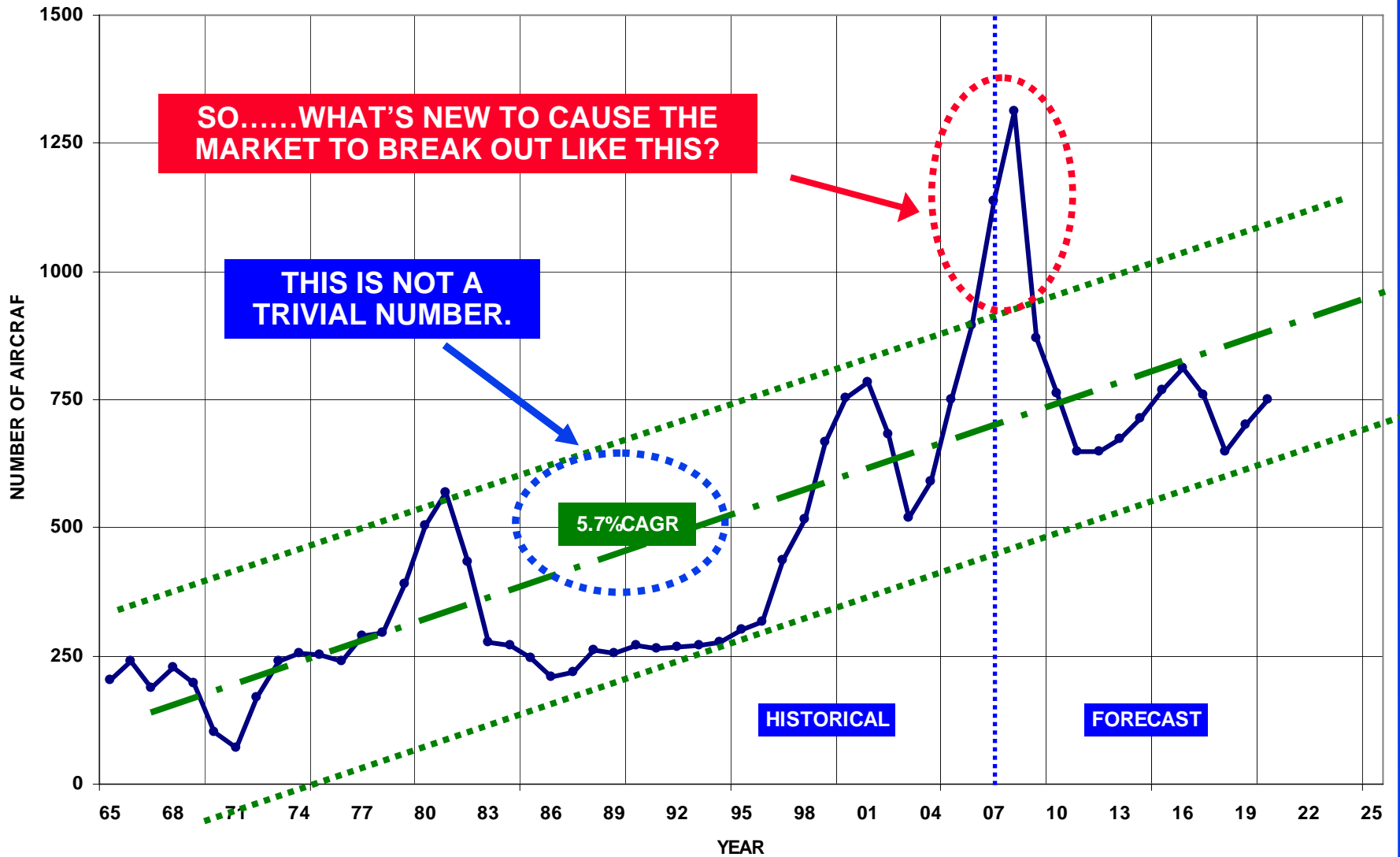
- U.S. regional traffic growth is still struggling as high fuel prices make flying small planes short distances a losing proposition.
- Embraer and Bombardier both have 100 plus regional jets “parked” with only 14 a/c delivered in 1Q2011.
- American Airlines appears to be ready to spin off its regional American Eagle operation as a stand alone subsidiary.
- Little or no progress is being made on scope clauses in the U.S. markets.
- The U.S. regional airlines reduced their value added a step too far. They are now at the point of being a “head shop” or a source of cheap contract labor for flying aircraft in a market that is not growing.
- I am not optimistic on this segment of the market – have not been for some period of time. I originally thought turboprops would have more of a sustained bounce?

# THE BUSINESS JET MARKET

# BUSINESS JET AIRCRAFT DELIVERIES - 10 YEAR FORECAST



# WORLDWIDE BUSINESS JET AIRCRAFT DELIVERIES - 10 YEAR FORECAST



# FROM THE BOMBARDIER 2009 FORECAST

## Business Jet Market Segmentation

	Very Light Jet	LIGHT JETS			MEDIUM JETS		LARGE JETS	
		Light Jet	Super Light Jet	Midsize Jet	Super Midsize Jet	Large Jet	Super Large Jet	Ultra Long-Range Jet
Bombardier		L40XR	L45XR	L60XR L85	CL-300	CL-605 CL-850	G5000	GEX-XRS
Cessna	Mustang CJ1+ CJ2+	CJ3 CJ4 Encore+	XLS+	Sovereign	CX			
Dassault						F2000DX F2000EX/ LX	F900DX F900EX/ LX	F7X
Gulfstream			G150	G200 G250	G350	G450	G500 G550 G650	
Hawker Beechcraft	Premier 1A/II	H400XP/ 450XP	H750	H850XP H900XP	H4000			
Embraer	Phenom 100	Phenom 300	Legacy 450	Legacy 500	Legacy 600		Lineage 1000	
Others	HondaJet	SJ30-2						

**WITH 7 PLUS  
MFGS. AND 40  
PLUS PROGRAMS  
THIS WILL BE A  
VERY CROWDED  
MARKET**

36 In production      13 In development

**NEW PRODUCT  
INTRODUCTION IS  
STILL VERY  
AGGRESSIVE.**

## Summary – The Business Jet Aircraft Market

- **World GDP / Corporate Profits – the recession is over, economic growth is modest, corporate profits have rebounded sharply but there is typically a lag of 2 years or so for business jet aircraft deliveries to respond with an upturn.**
- **The fractional business jet a/c market segment was hit very hard. The charter market was expected to take up the slack but gains have been modest to date.**
- **The number of used business jets for sale is a near term negative for new a/c sales with low prices and eager sellers in abundance for all a/c types. The average number of hours flown per a/c is still not back to pre-recession levels.**
- **Manufacturing Industry forecasts – there is no rational reason to return to prior peak deliveries because there was no rational reason to have reached the 2008 peak in the first place. The market needs some time to stabilize before the next growth spurt.**
- **High end of the market – doing better than the other segments – a/c getting larger, longer range, improved performance. The low end of the market continues to struggle with credit issues an added factor.**
- **New a/c starts are still a big plus for the industry, the manufacturers and the supply chain.**

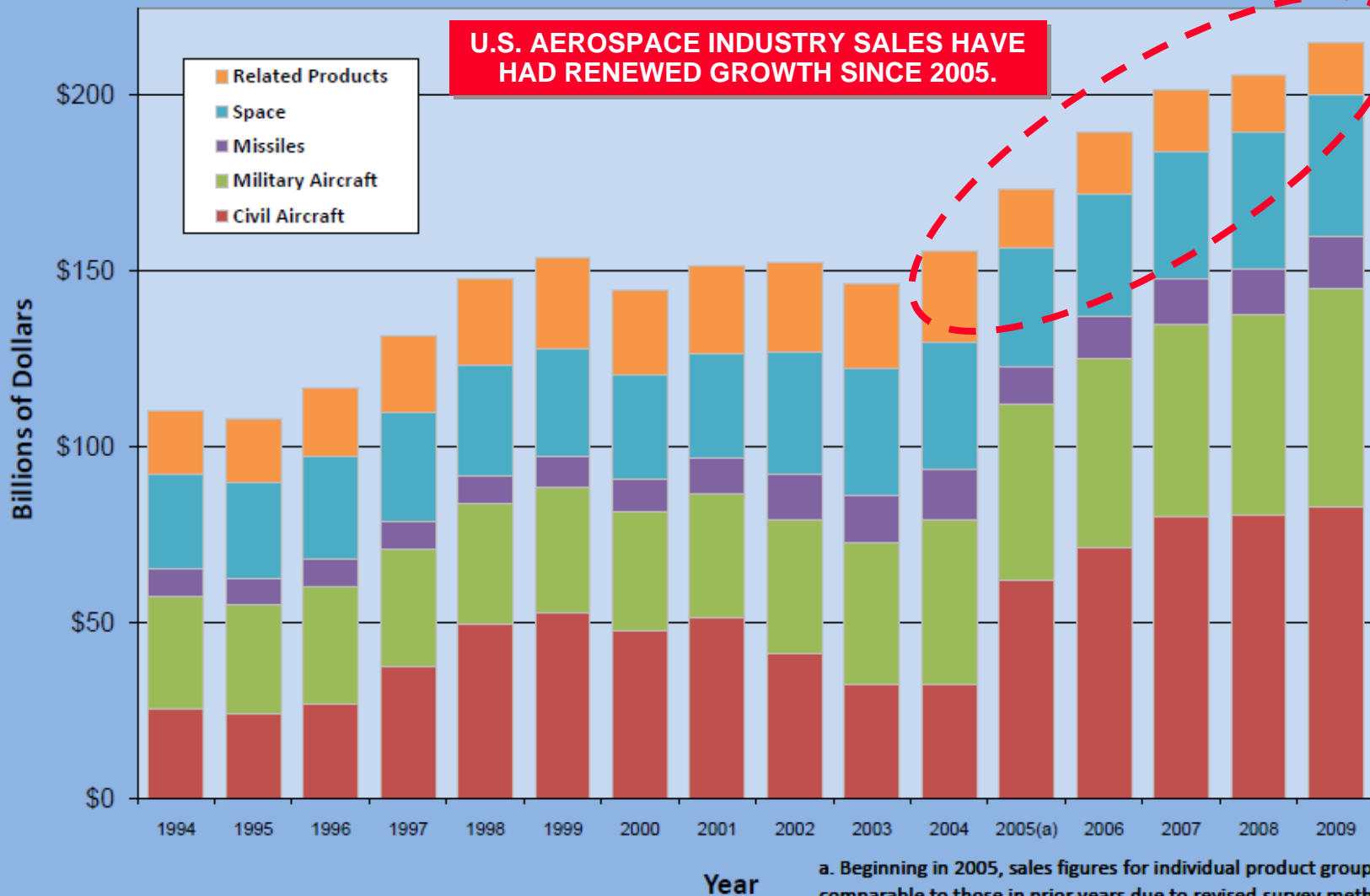
**THE U.S. AEROSPACE MARKETS HAVE BEEN  
EXPERIENCING SOME DIVERGENT TRENDS**



# U.S. Aerospace Sales

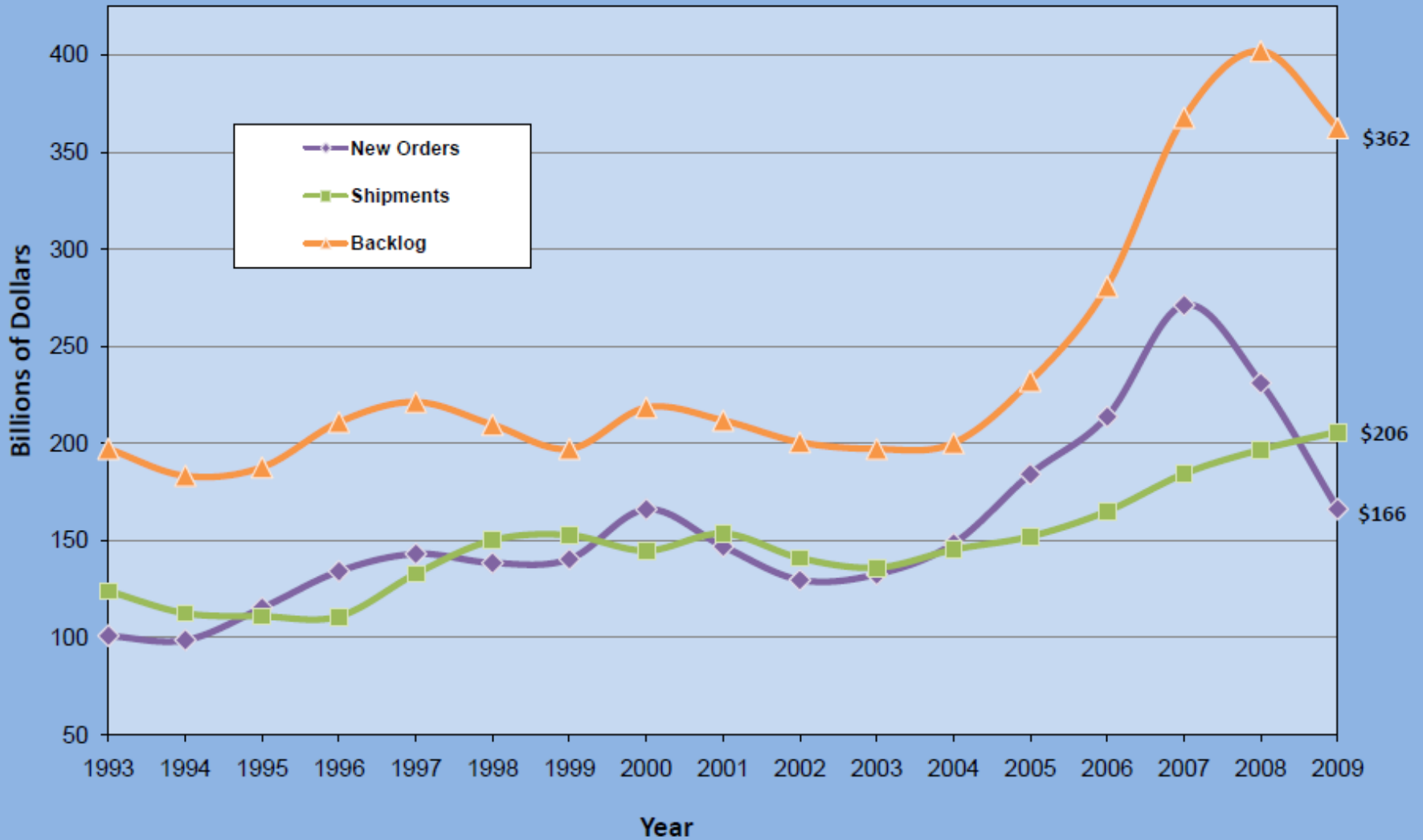


**U.S. AEROSPACE INDUSTRY SALES HAVE HAD RENEWED GROWTH SINCE 2005.**

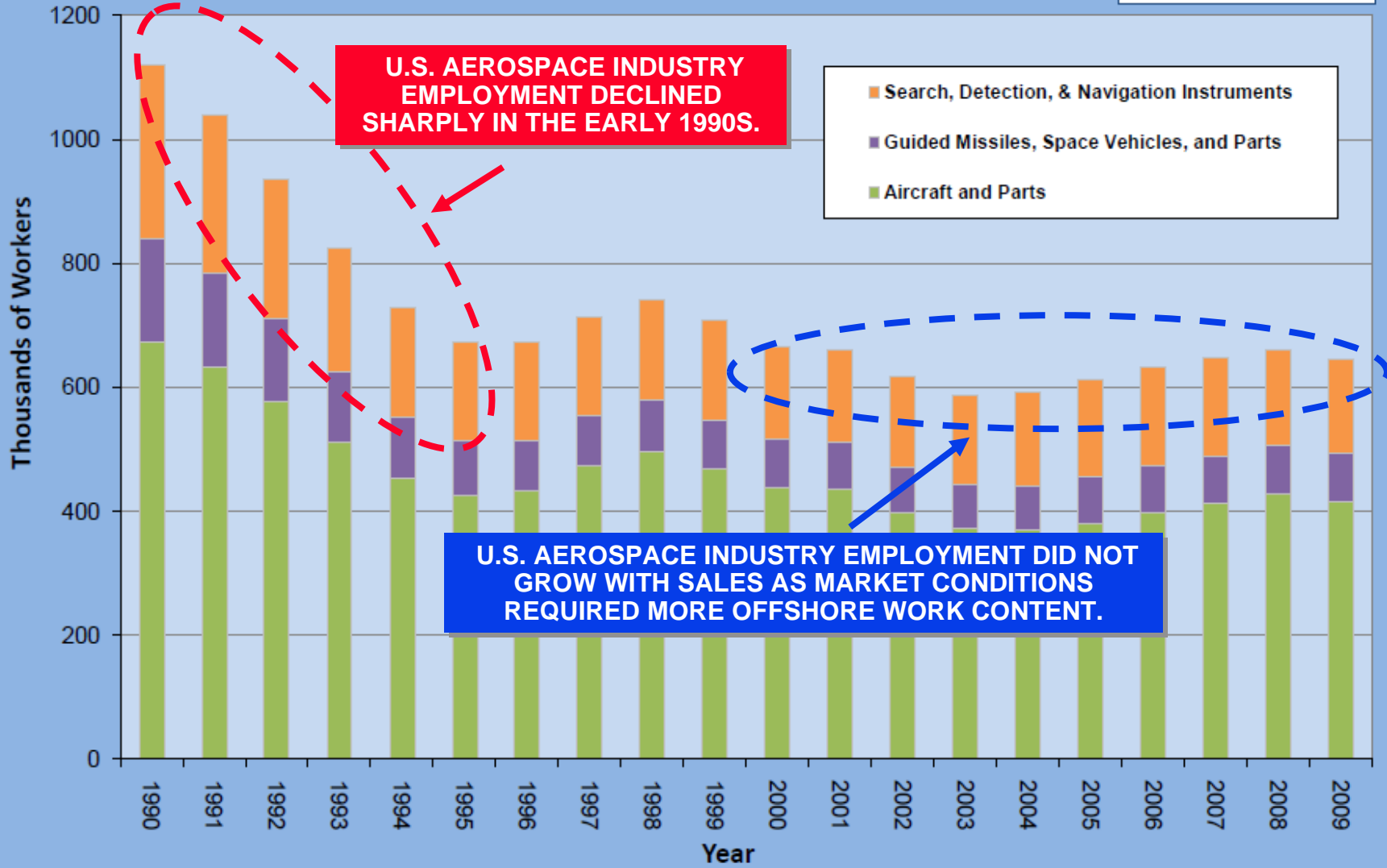


a. Beginning in 2005, sales figures for individual product groups are not comparable to those in prior years due to revised survey methodology. However, total annual sales data remain comparable across all years.

# Aerospace Orders, Shipments, and Backlog



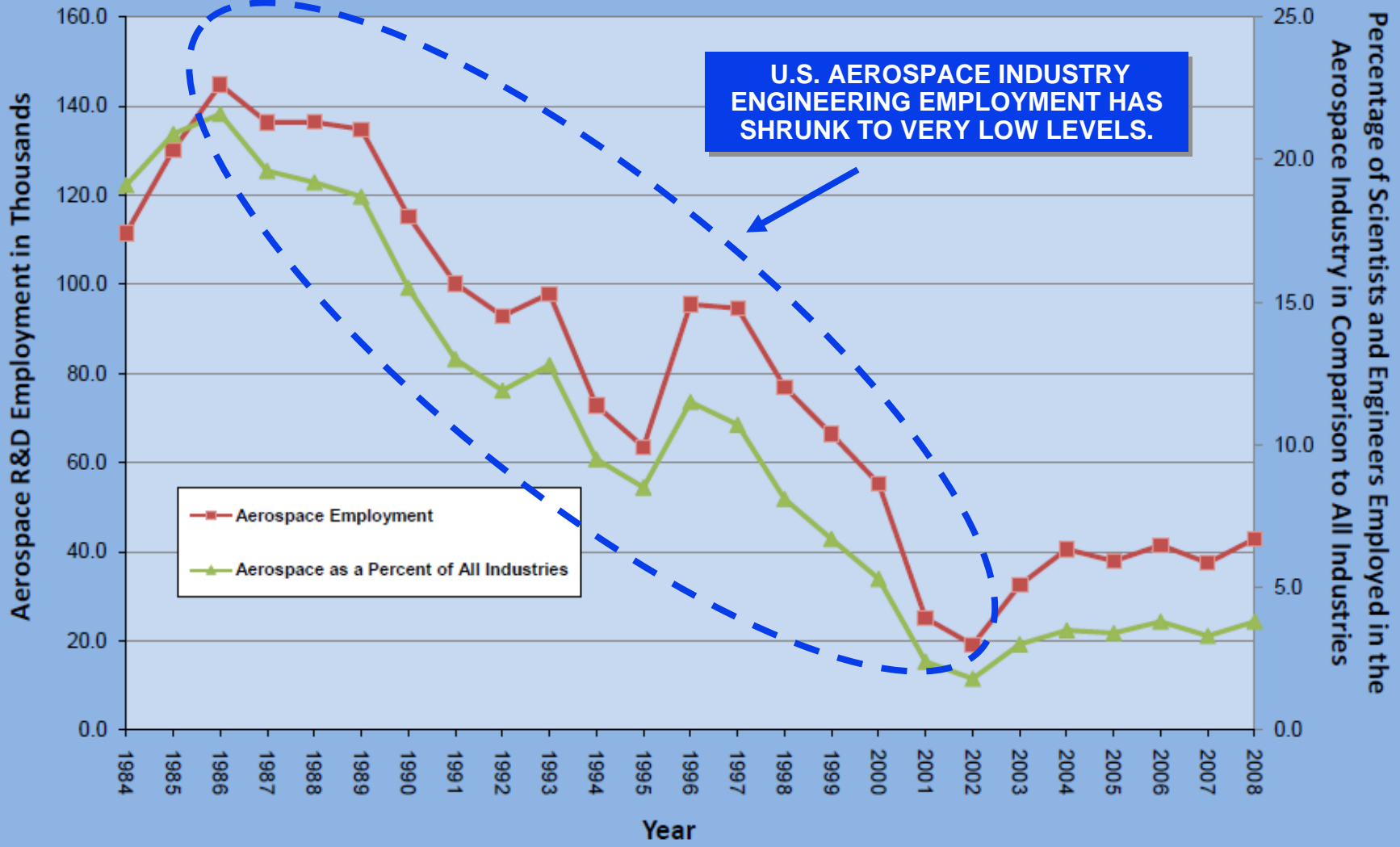
# Aerospace Employment



**U.S. AEROSPACE INDUSTRY EMPLOYMENT DECLINED SHARPLY IN THE EARLY 1990S.**

**U.S. AEROSPACE INDUSTRY EMPLOYMENT DID NOT GROW WITH SALES AS MARKET CONDITIONS REQUIRED MORE OFFSHORE WORK CONTENT.**

# Employment of Research and Development Scientists and Engineers in the Aerospace Industry and as a Percentage of Total Industry



## SUMMARY – THE GLOBAL AEROSPACE MARKET

- The global aerospace industry has always been a cyclical market. In terms of where we are today it is a relatively attractive point in the cycle for Baja's Aerospace interests in attracting manufacturers.
- Boeing and Airbus programs are headed for all time high production rates and they will need to look everywhere for resources to supply components for existing narrow body and wide body aircraft.
- The bad news in business jets and regional jets is hopefully behind us now and the focus will be on the ability of these markets to stabilize and move forward with increasing delivery rates.
- All of the aerospace markets discussed in this presentation have a sharp focus on costs with a track record of demonstrated reliability and high quality being the drivers for selecting suppliers.
- Keep in mind that a lot of the charts being shown today are in the tens and hundreds of billions of dollars. You do not need all of that – one or two billion would be just fine for most of us.
- Bottom line – there are a lot of aerospace program and business opportunities out there. The aerospace industry is cyclical but it is not the dotcom market of years gone by.