# West Coast Product Imports

## World Fuel Conference

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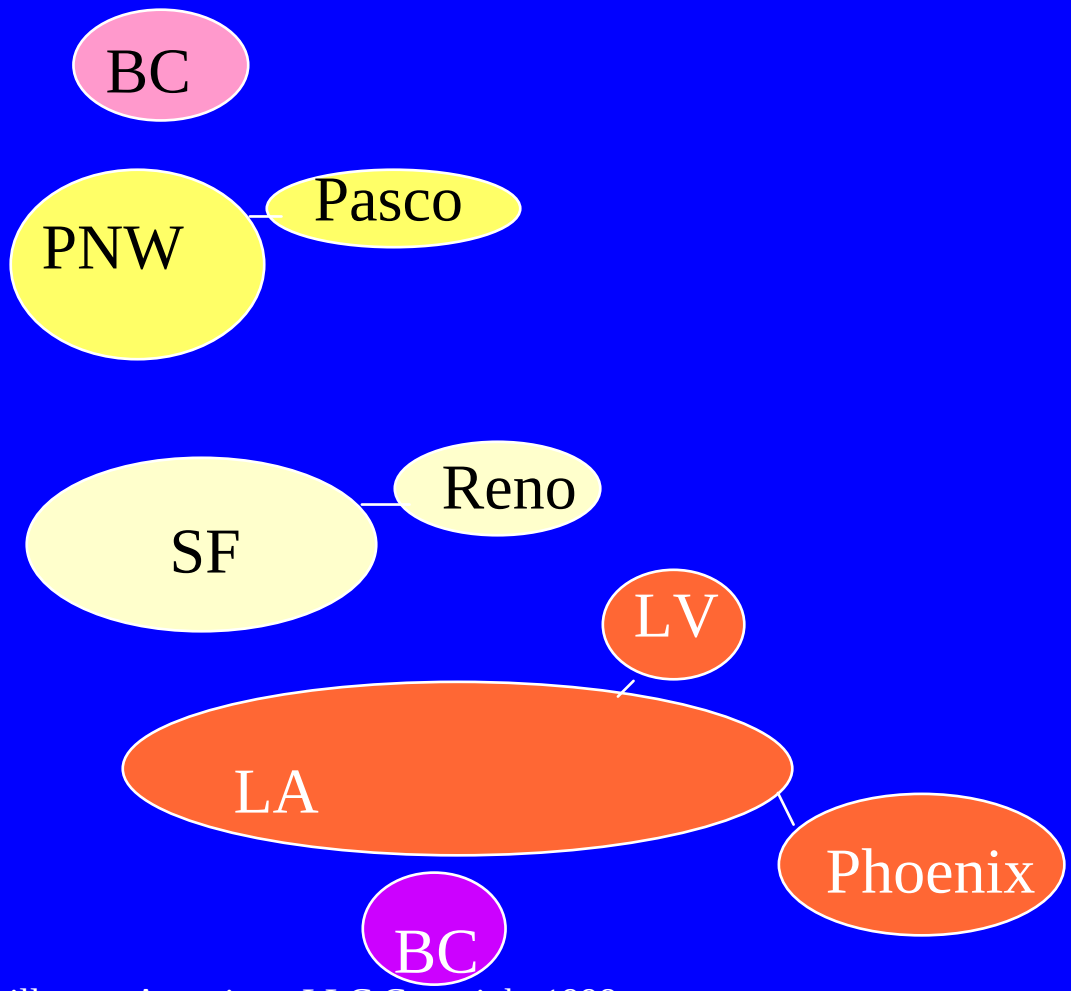
# Agenda

- Product Flows
- Imports
- Impact of the Unocal gasoline patents

# Product Flows

- The U.S. West Coast is an archipelago
  - Los Angeles
  - San Francisco Bay
  - Pacific Northwest
- The island chain includes both Canada & Mexico
  - Baja California
  - British Columbia

# The West Coast Archipelago



# Gasoline Import Overview

- Finished gasoline specs are tough, especially for California
- A number of refineries outside of California have done it
- Most gasoline range material are blendstocks
  - MTBE, alkylate, raffinates
- Basis risk for coming to the West Coast

# CARB Gasoline Imports

- Finished gasoline from:
  - Northwest Europe
  - US Gulf Coast
  - US Virgin Islands
- Blendstocks (ex MTBE) from:
  - NWE, USGC, USVI
  - Japan, Singapore, Australia

# Distillate Activity

- Most activity is export
  - High sulfur diesel out of the Pacific Northwest
  - Heavier gasoils that can’t be cracked to gasoline
- Import activity
  - primarily jet into Los Angeles
  - CARB diesel
  - low aromatic components for CARB diesel blending

# The Unocal Patents - overview

- First patent filed in December 1990
  - CARB's regs finalized in mid '91
- Patent issued by the patent office in Feb '94
- Announced by UNOCAL in January '95
- Arco, Chevron, Exxon, Mobil, Shell, and Texaco filed suit in April '95
- The jury upheld the patent in Oct '97
- Final phases of trial continue to be delayed

# What Is the Patent?

- Three patents, filed over 5 years
- ‘393 patent was the original - 41 formulations
  - Object of the lawsuit between UNOCAL and the refiners
- ‘567 patent, filed 3/22/95, issued 1/14/97
  - 40 formulations
- ‘866 patent, filed 6/5/95, issued 8/5/97
  - 58 formulations

# Patent Claims

- Individual claims include combinations of 3 to 7 of the following chemical or physical properties:
  - RVP (below 7.5 psi, summer specs)
  - T10/T50/T90
  - Octane
  - Olefins
  - Paraffins

# The Jury's Findings

- Upheld the patent
  - UNOCAL had "invented" cleaner burning gasoline before others
- Defendants had infringed on the patent
  - Royalties set at 5.75 cpg
  - 25% of the 20-30 cpg cost to outhaul non-conforming gaso & return spec CARB

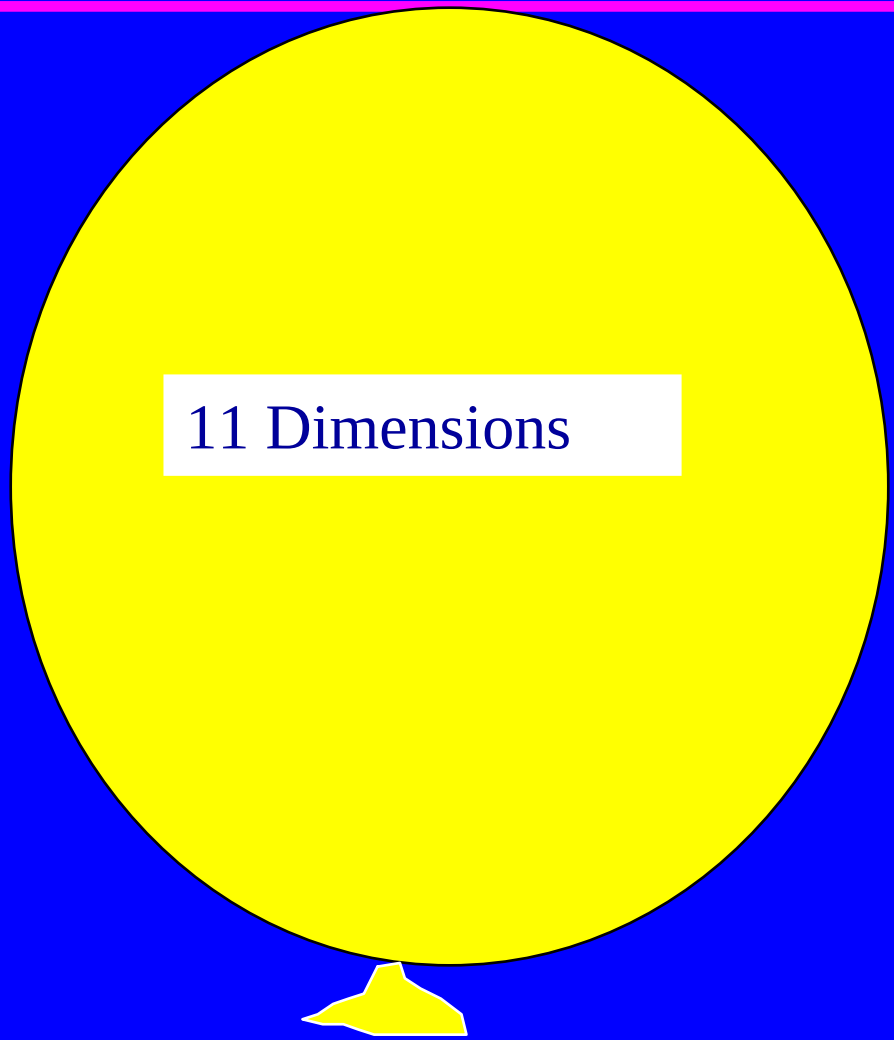
# What Is the Impact?

- Need to understand the Predictive Model

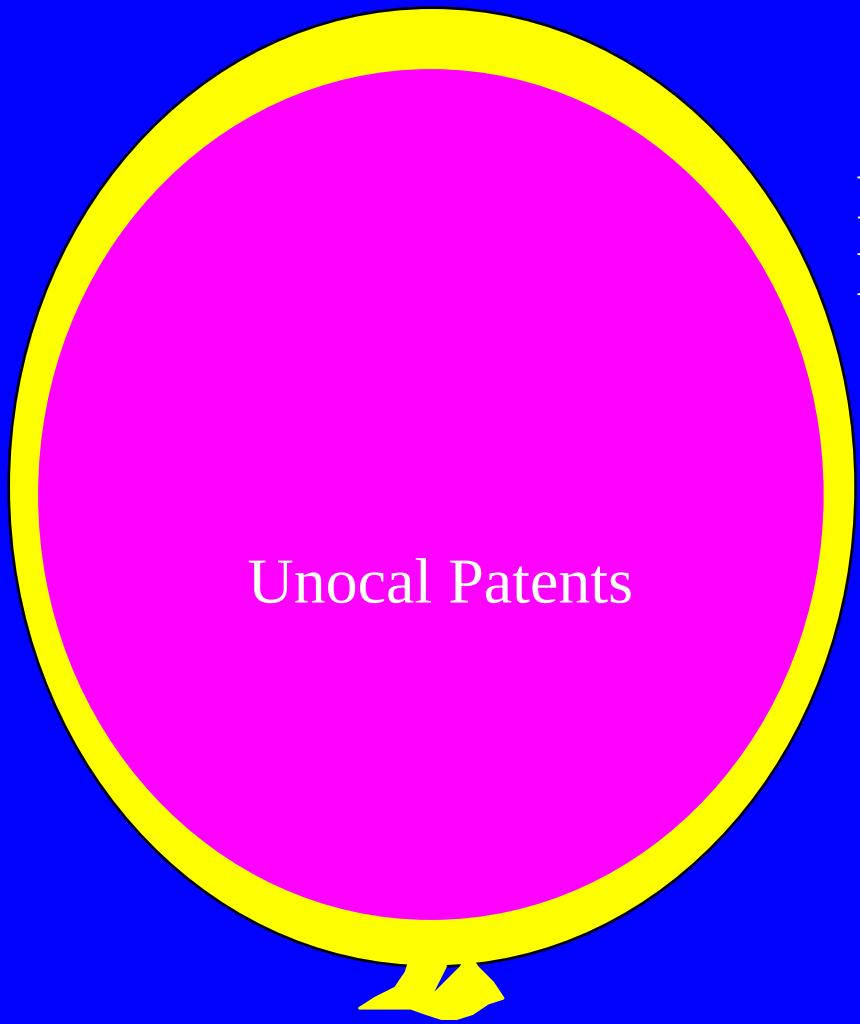
# The Predictive Model

- An 11 dimensional formula that encompasses:
  - Aromatics, including benzene
  - Distillation
  - Sulfur
  - Olefins
  - Oxygenates
  - Emissions reductions
- The model will “trade off” one spec for another - low sulfur for higher distillation

# Predictive Model - The Big Balloon



# The Small Balloon - Inside




Predictive Model

# Refiners' Next Steps

- Find out how much room there is between the big balloon & the small - blend around
- Work to make the big balloon bigger
- Figure out where the small balloon has gaps

# Who's concerned?

- The Refinery Manager:
  - The plant won't be able to produce as much CARB gasoline
- The people in the operations processes
  - Blend around pushes the technology envelope
  - Expect a learning curve on blending

# Who's concerned? (cont.)

- The importers:
  - The CARB rules and the basis risk are tough enough without the patent
- Observers considering the impact of a potential supply shortfall

# What's the impact?

- Short run - volatility on the supply side
  - Reduced yields
  - Operating Problems
  - Reduced Imports
- Long run
  - The refiners will figure it out