



Mini Case Study

Roy Chadwick and the Vulcan

*Configuration evolution as shown
through the progression of drawings*



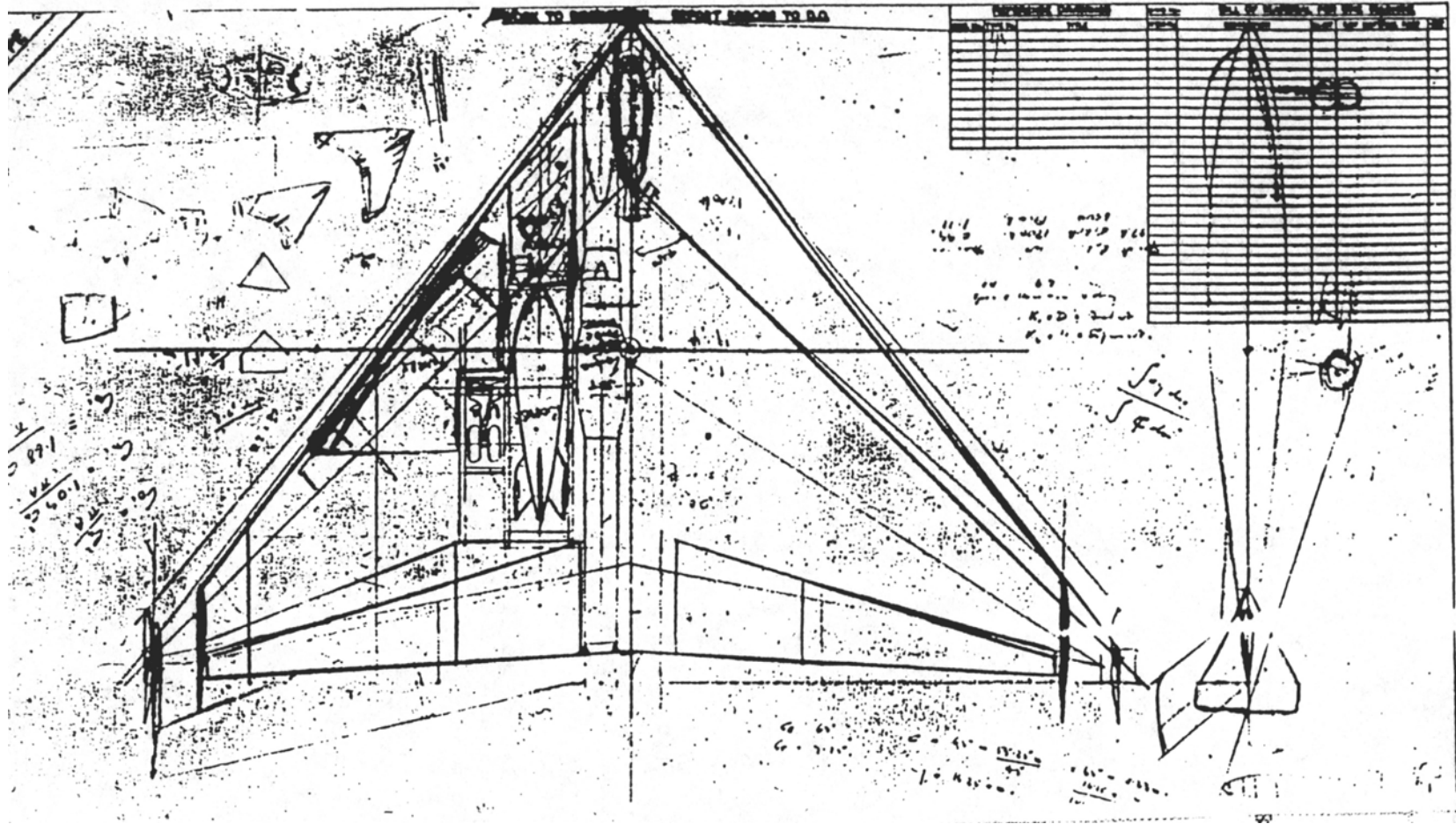
Originally collected
By
Nathan Kirschbaum

The Requirement

- British issue RFP for a strategic nuclear jet bomber: 1947
 - 10,000 lb bomb, 3,350 miles, final cruise at 50k ft.
 - Mach = 0.875
- This starts the V-series bombers
- First flight of Vulcan prototype: Aug. 1952
- Operational in RAF: May 1956 - the B.1
- First flight of Vulcan B.2: Aug. 1958

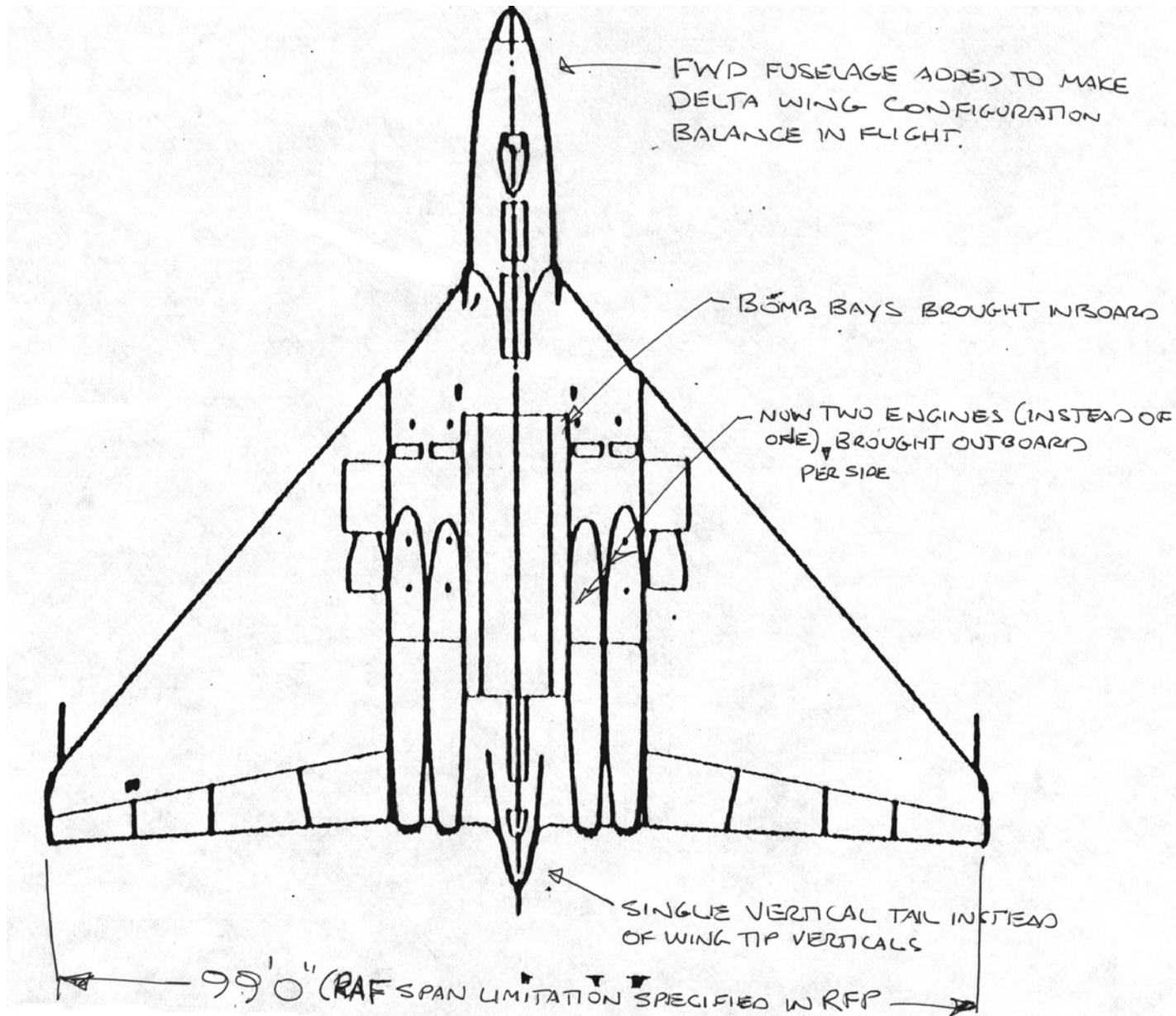
Chadwick's initial concept

This historic sketch is believed to be the very first Avro 698 delta drawing. The "doodles" are by the late Roy Chadwick and his team.

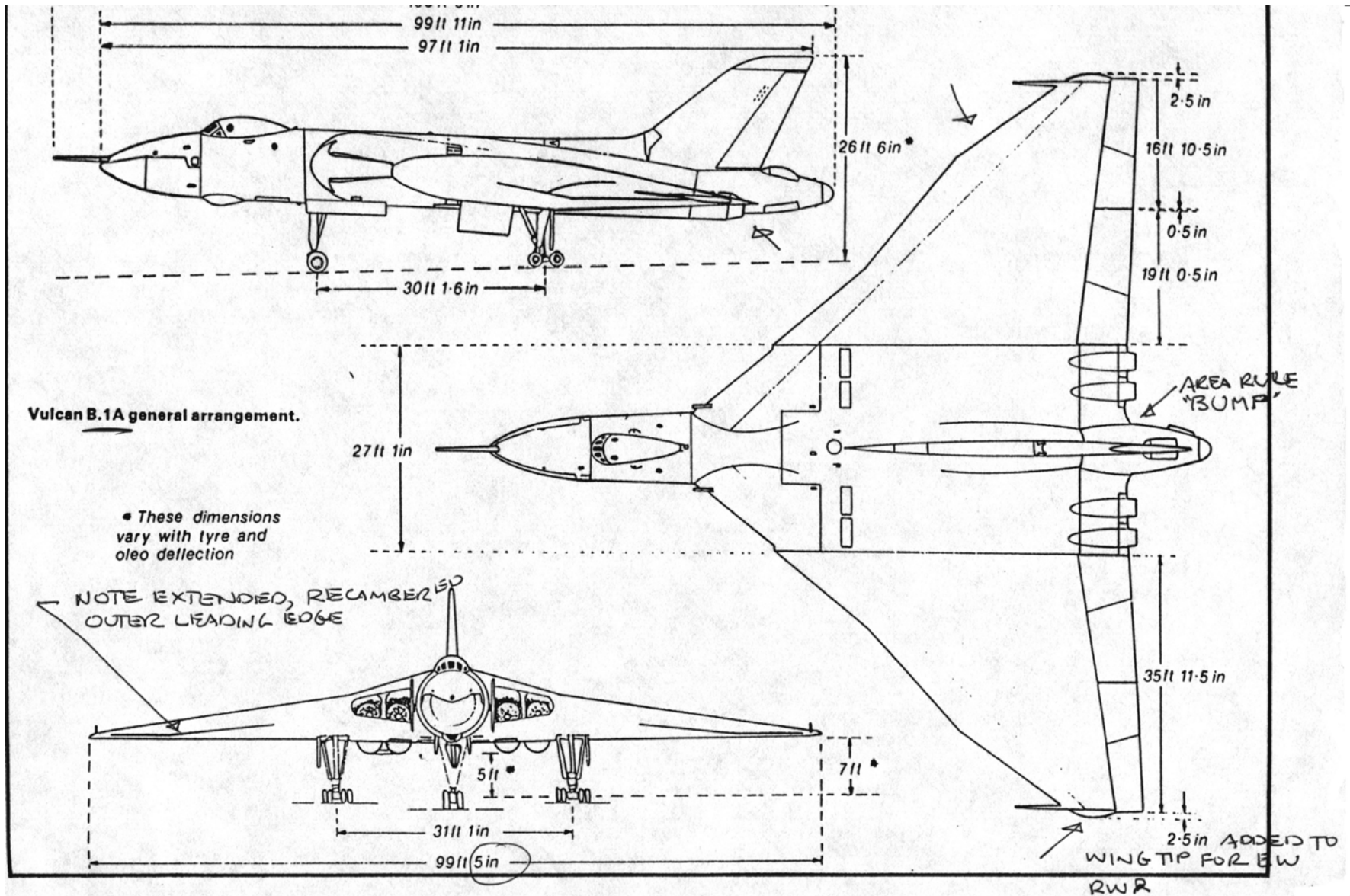


Chadwick had been known as the father of the Lancaster

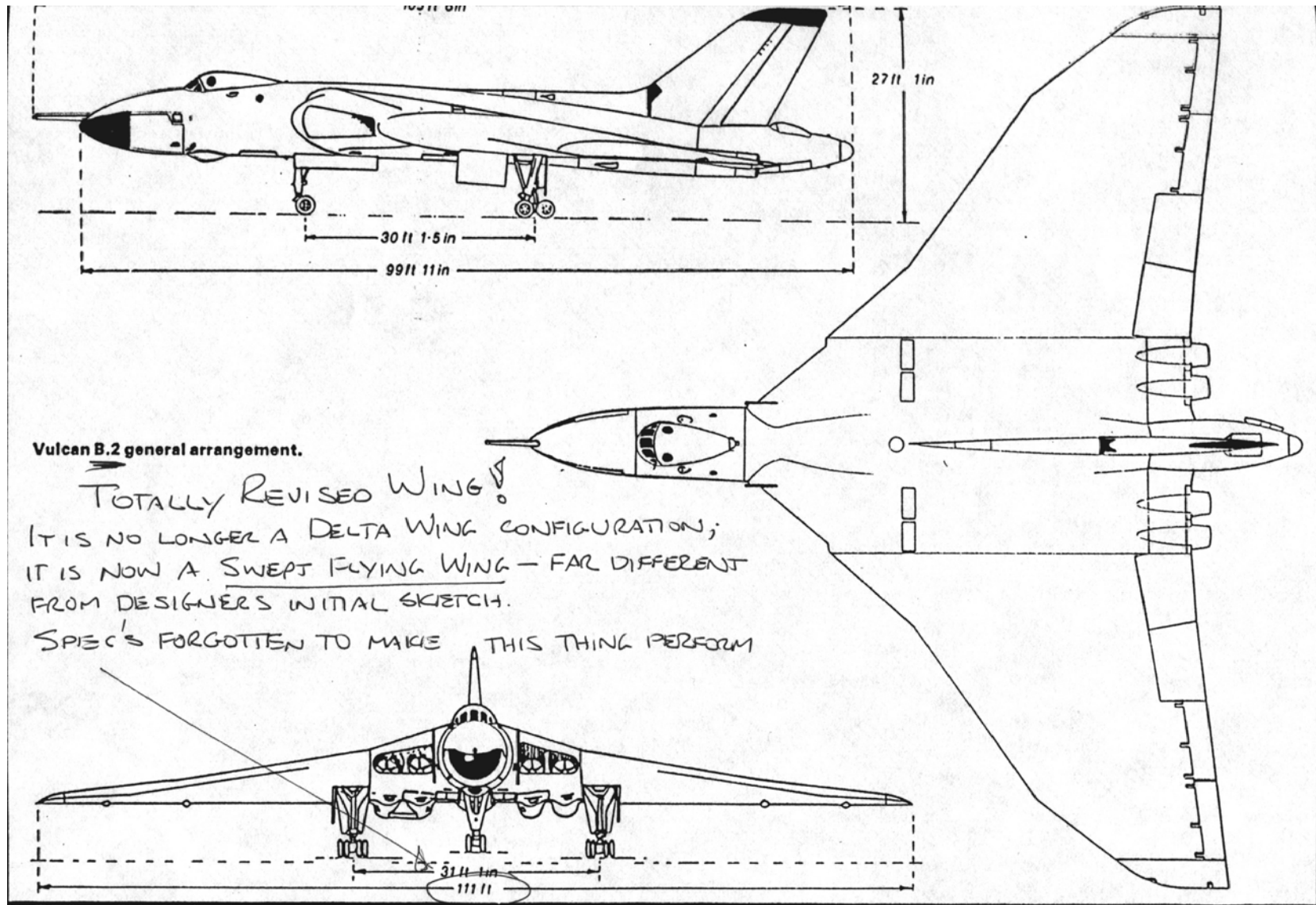
The concept gets defined in detail



The first model: the B.1A



The final configuration: Model B.2



A true classic!



By Andy Leitch, www.avrovulcan.org.uk



The lessons?



- The concept needs to be continually revised as more understanding is gained: *iteration*
- Understanding of the issues in terms of basic physics is key

PS - Roy Chadwick died in an AVRO Tudor crash in 1947

In the cockpit of this very
plane, Nov. 1999
Note Scott Bland in back



Note: This plane flew again in 2007!

Hoping to get one flying again



Andy Leitch, www.avrovulcan.org.uk