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OXC-0201

OXCART DATA

31 December 1959

Aircraft Dimensions:

Length	98 3/4 feet
Height	18 1/4
Wing Span	59
Wing Area	1,795 square feet
Wing Configuration	Delta
Nacelle Configuration	Mid-wing
Gross Weight	112,000 lbs.
Fuel Weight	60,000 lbs (less reserves)

Aircraft Performance (as of 17 August - see attached) (b)(1)

Basic mission begins with climb and acceleration after subsonic refueling at 35,000 - 40,000 feet.

Cruise Speed	Mach 3.2
Cruise Altitude	
Start	84,500 feet
End	97,600 feet
Cruise Range	4,115 n. mi (Including climb and descent)

Basic mission is proceeded and followed by supersonic cruise legs of somewhat more than 4,000 n. mi each at cruise altitudes between 78,000 to 87,000 feet. Total flying time, including two (2) aerial refuelings, is approximately nine (9) hours maximum.

Extreme mission is similar to basic mission except two (2) penetration legs at 84,500 - 97,600 feet altitude are accomplished interrupted by subsonic air refueling outside enemy territory. Total time, including three (3) air refuelings, just under 12 1/2 hours maximum.

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Special Items: Engine - airframe design:

1. Engine augmentor: Because of mid-wing nacelle design, the augmentor at aft end of nacelle must be part of basic wing structive. Prime responsibility remains undecided but Lockheed Aircraft Corporation now wishes to do this.

2. Engine jet exhaust ionization: In order to minimize radar return from engine tail pipes, a special fuel tank containing a fuel slurry of potassium or other salts is needed to feed into the afterburner during basic combat leg of mission. This slurry is in addition to regular fuel normally burned in afterburner and is not used on inbound and outbound legs.

3. Increase in speed from Mach 3.2 to 3.5. The higher speed is expected to allow an increase of at least 3,000 feet in cruise altitudes. The airframe is being designed and tested structurally and aerodynamically (except for nacelle air inlets and augmentors) to Mach 3.5. Lead-time and cost of Mach 3.5 engine may dictate changes in planned quantity and delivery schedule of Mach 3.2 versions.

4. Engine, afterburner, and nacelle inlet control: Close integration of control functions must be maintained due to extremes in dynamic pressures and temperatures encountered during mission. Since Hamilton Standard are to supply basic engine-afterburner controls to P & W and inlet control to Lockheed, this seems to be in hand.

5. Engine accessory drive: The power take-off drive requires redesign due space limitations in the engine nacelle.

[redacted] (b)(6)

E. P. KIEFER
SA for TS

Attachment:
[redacted] (IN1443) (b)(1)
Encl #2 of OXC-0100 cy 1 Of 1

DPD-DD/P:EPKIEFER:amcb
Distribution:
~0 - DD/P w/att
2 - Ch/DB-DPD wo/att
1 - RI-DPD wo/att