**POWER PLANT**

No. & Model ............ (6) J35-A-19
Mfr. .................... Allison
Engine Spec. No. .... Allison No. 280
Type & Stages ......... Axial (11)
Length .................... 138.0'”
Diameter .................. 37.0’'
Weight (dry) ............. 2210 lb

**ENGINE RATINGS**

S.L. Static LB - RPM
T.O: 4900 - 7800
Mil: 4900 - 7800
Nor: 4240 - 7400

**WEIGHTS**

Loading Lb L.F.
Empty ............ 88,427(E)
Basic ............ 89,788(E)
Design .......... 206,000 ............ 2.0
Combat .... *129,487
Max.T.O. .... 117,500
Max.Land ...... 1150,000

(E) Estimated
*For basic mission
†Limited by strength to 85% design
gross weight pending static test.
†Limited by strength.

**FUEL**

Location No. Tanks Gal.
Wings outb. ... *2 ............ 2478
Wings center ... 2 ............ 3992
Wings inb. .... 6 ............ 5696
Wings inb. ... *2 ............ 2522
*Self-sealing .... Total 14,688
Fuel Spec. AN-F-32, AN-F-48,
.......................... AN-F-58
Fuel Grade JP-1, 100/130, JP-3

**OIL**

Capacity (gal) ........... 88
Spec. .................. AN-0-9
Grade .................. 1610

**DIMENSIONS**

Span .................... 172.0’'
Length ................... 53.1’
Height .................... 20.1’
Tread .................... 44.2’

**MISSION AND DESCRIPTION**

The mission of the YRB-49A is to test the suitability of the flying wing configuration to photo-reconnaissance work.

The crew consists of pilot, co-pilot-radio operator, radar-navigator, photo-navigator, and flight engineer plus provisions for a photo-technician.

This aircraft is a modification of the B-35 (reciprocating engine) to accommodate six turbo-jet type engines and photographic equipment. The aircraft is of “pure” flying wing configuration using elevons (combination elevator & ailerons) and split type wing tip drag rudders for control. Four vertical fins are installed replacing four propellers and associated shaft housings.

The crew compartment is pressurized to maintain an equivalent of 5000 feet altitude up to 28,000 feet and a constant differential pressure above 28,000 feet. Emergency oxygen system is provided, as are window defrosting, air conditioning, dust protection and sound proofing. The landing gear is of the tricycle type with steerable nose wheel.

**DEVELOPMENT**

Construction completion 1st. airplane: ............ January 1950 (estimated)
First flight: ............ February 1950 (estimated)
First delivery: .......... September 1950 (estimated)

**CAMERAS**

No. Type Lens Usage
1 .... T-11 .6’’ .......... Mapping
5 .... K-17 .6’’,12’’,24’’
1 .... K-22 .6’’,12’’,24’’
1 .... K-37 .12’’
8 .... K-38 .24’’,36’’
1 .... O-15 .......... Radar Record

**BOMBS**

No. Size Type
6 ... 188 lb ... T-89 Flash Bombs

**GUNS**

NONE

**ELECTRONICS**

VHF Command .......... AN/ARC-3
Liaison ................... AN/ARC-8
Combat Interphone ............
Search Radar .......... AN/APQ-24
Navigational Radar .... AN/APN-9
### Loading and Performance - Typical Mission

<table>
<thead>
<tr>
<th>CONDITIONS</th>
<th>BASIC</th>
<th>BASIC</th>
<th>OVERLOAD</th>
<th>FERRY</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>RADIUS</td>
<td>RANGE</td>
<td>RADIUS</td>
<td>RANGE</td>
</tr>
<tr>
<td><strong>TAKE-OFF WEIGHT</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fuel &amp; Oil (gal)</td>
<td>12,260/88</td>
<td>18,260/88</td>
<td>14,666/86</td>
<td>12,450/88</td>
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<tr>
<td>Military Load (Flash Bombs)</td>
<td>1,128</td>
<td>1,128</td>
<td>None</td>
<td>None</td>
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<tr>
<td>Total Ammunition (rds/cal)</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Wing Loading (lb/sq ft)</td>
<td>43.75</td>
<td>43.75</td>
<td>46.00</td>
<td>43.75</td>
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<tr>
<td>Stall Speed (power off) (kn)</td>
<td>88</td>
<td>88</td>
<td>92</td>
<td>88</td>
</tr>
<tr>
<td><strong>TAKE-OFF DISTANCE SL</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ground Run (ft)</td>
<td>4280</td>
<td>4280</td>
<td>5700</td>
<td>4280</td>
</tr>
<tr>
<td>To Clear 50ft Obst</td>
<td>5380</td>
<td>5380</td>
<td>7300</td>
<td>5380</td>
</tr>
<tr>
<td><strong>CLIMB FROM SL</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rate Of Climb at SL (fpm)</td>
<td>1460</td>
<td>1460</td>
<td>1300</td>
<td>1460</td>
</tr>
<tr>
<td>Time To 10,000 Feet (min)</td>
<td>7.95</td>
<td>7.95</td>
<td>9.28</td>
<td>7.95</td>
</tr>
<tr>
<td>Time To 20,000 Feet (min)</td>
<td>20.45</td>
<td>20.45</td>
<td>33.00</td>
<td>20.45</td>
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<tr>
<td>Service Ceiling (100 f.p.m.)</td>
<td>29,200</td>
<td>29,200</td>
<td>27,000</td>
<td>29,200</td>
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<tr>
<td><strong>COMBAT RANGE</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Avg. Cruising Speed (kn)</td>
<td>336</td>
<td>340</td>
<td>334</td>
<td>340</td>
</tr>
<tr>
<td>Total Mission Time (hr)</td>
<td>6.8</td>
<td>6.7</td>
<td>6.9</td>
<td>6.8</td>
</tr>
<tr>
<td>Cruising Altitude (ft)</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
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<tr>
<td><strong>COMBAT WEIGHT</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Combat Altitude (ft)</td>
<td>35,000</td>
<td>39,500</td>
<td>32,000</td>
<td>35,000</td>
</tr>
<tr>
<td><strong>SPEED</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Max Speed (combat alt) (kn)</td>
<td>380</td>
<td>381</td>
<td>372</td>
<td>380</td>
</tr>
<tr>
<td>Max Speed (Optimum alt.) (kn)</td>
<td>381/35,332</td>
<td>381/40,000</td>
<td>381/35,800</td>
<td>381/36,500</td>
</tr>
<tr>
<td><strong>CLIMB</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rate Of Climb (combat alt) (fpm)</td>
<td>495</td>
<td>600</td>
<td>580</td>
<td>495</td>
</tr>
<tr>
<td>Rate Of Climb At SL (fpm)</td>
<td>2900</td>
<td>3940</td>
<td>2750</td>
<td>2900</td>
</tr>
<tr>
<td><strong>CEILING</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Combat Ceiling (500 fpm) (ft)</td>
<td>34,500</td>
<td>40,000</td>
<td>33,500</td>
<td>34,500</td>
</tr>
<tr>
<td>Service Ceiling (100 fpm) (ft)</td>
<td>40,000</td>
<td>45,500</td>
<td>39,000</td>
<td>40,000</td>
</tr>
<tr>
<td>Service Ceiling (100 fpm) (ft)</td>
<td>37,300</td>
<td>42,600</td>
<td>36,250</td>
<td>37,300</td>
</tr>
<tr>
<td><strong>LANDING WEIGHT SL</strong> (lb)</td>
<td>99,929</td>
<td>99,929</td>
<td>100,731</td>
<td>100,043</td>
</tr>
<tr>
<td>Ground Roll (ft)</td>
<td>1440</td>
<td>1440</td>
<td>1500</td>
<td>1445</td>
</tr>
<tr>
<td>From 50' Obst. (ft)</td>
<td>3050</td>
<td>3050</td>
<td>3060</td>
<td>3050</td>
</tr>
</tbody>
</table>

**NOTES:**
1. Take-off power
2. Max power
3. Normal power
4. Take-off and landing distances are obtainable at sea level using normal technique. For airport planning add 25% to distances shown.
5. Detailed descriptions of the RADIUS & RANGE missions are given on page 6.

**CONDITIONS:**
(a) Performance Basis: Estimated data
(b) In computing Radius and Range, specific fuel consumption has been increased 5% to allow for variations of fuel flow in service aircraft.
(c) Performance is based on powers shown on page 3.
FORMULA: RADIUS MISSION I

Warm-up and take-off (allow 5 minutes normal power SL static fuel flow) climb on course at maximum power to initial cruising altitude of 27,200 feet. Cruise toward target at long range speeds utilizing a cruising climb arriving at 33,500 feet 6 minutes prior to bomb drop. Conduct 6 minute run into target at normal power, drop bombs, and conduct 6 minute normal rated power evasive action (no distance). Using cruising climb return to base at long range speeds arriving over base of 40,000 feet. Landing and endurance reserve is 10% of initial fuel load.

FORMULA: RANGE MISSION II

Same as out bound leg of Mission I continued to point where 90% of fuel load has been consumed. Altitude at bomb drop is 39,500 feet. Landing and endurance reserve is 10% of initial fuel load.

FORMULA: RADIUS MISSION III

Same as Mission I except for increased fuel load and take-off weight. Initial cruise altitude is 24,000 feet, altitude over target is 32,000 feet, final altitude over base is 36,500 feet. Allowances are same as Mission I.

FORMULA: RANGE MISSION IV

Same as Mission II except for replacement of military load by fuel.