Standard Aircraft Characteristics

NAVY MODEL
EC-121K
AIRCRAFT
(TITLE UNCLASSIFIED)

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PUBLISHED BY DIRECTION OF THE
COMMANDER OF THE NAVAL AIR SYSTEMS COMMAND

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STANDARD AIRCRAFT CHARACTERISTICS
EC-121K CONSTELLATION

LOCKHEED
POWER PLANT

NO. and MODEL (4) T-3350-34
1PS-5060234-A-4-C-4
SUPERCHARGE: 1 Stage, 2 Speed
REC. G.R.A. RATIO 1:1.19,000
PROF. O.PF.: 17.5 B.R.T. Nominal Standard
PROF. DES. NO. (4) 46039-0
MT. H.P./GAL: 365/298
C.V. = 28

RATINGS

SP: RPM: ALT.
T.O. 3,250 2,900 5,000
2,500 2,600 16,700
M.N.: 2,600 2,600 6,500
2,450 2,600 17,900

ORDNANCE

SEARCH RADAR: AN/APS-20
RADAR INCR. BOOM: AN/APA-56
RADAR RADIUS TRANS.: AN/ARM-38
RADAR RELAY RECEIVERS: AN/AMS-27A
RADAR HEIGHT FINDERS: AN/APS-45
IFF INTERMEDIATE: AN/APS-7
USP DIRECTION FINDERS: AN/AAR-35
BCM RECEIVERS: AN/AAR-36
BCM PARALYMPIC (100): AN/AAR-2
RADAR INDICATOR GUN: AN/AAR-61
BCM SIGNAL ANALYZER: AN/AAR-74
BCM RECEIVERS: AN/AAR-13
MARKER BEACON RECEIVERS: AN/AAR-12
RADAR ALTIMETER: AN/AAR-62
LOSER RECEIVERS: AN/AAR-70
COMMAND: AN/AAR-5
GLIDE SLIDE RECEIVERS: AN/AAR-18
VCR RECEIVERS: AN/AAR-21
NAVIGATION G.N.: AN/AAR-21
IFF TRANSDUCERS: AN/AAR-106
LF RECEIVERS: AN/AAR-10
HF RECEIVERS: AN/AAR-11
HF TRANSMITTER RECEIVERS: AN/AAR-36
HF TRANSMITTER RECEIVERS: AN/AAR-27
FLIGHT CONTROL: AN/AAR-10
EQUIPMENT: AN/AAR-36
PSR TRANSMITTER RECEIVERS: AN/AAR-69

MISSION AND DESCRIPTION

The JY-2 is a land based special search and air borne early warning airplane used as a combat control aircraft. The JY-2 provides an airborne platform for the direction of tactical aircraft.

The configuration features Fowler flaps, control surface boosters, rubber de-icing boots and a fully pressurized fuselage.

The JY-2 aircraft is a military adaptation of the commercial Lockheed model 1049 Super constellation. It carries a crew of 28.

DEVELOPMENT

First Flight: June 1953
Service Use: April 1953

WEIGHTS

LOADING: LBS.
EMPTY: 82,672
GROSS: 89,423
DETRI: 67,000
GROSS: 105,000
MAX. T.O.: 120,500
MAX. LANDING: 120,500

All weights are actual

FUEL AND OIL

CAPACITY (gallons): 115/145
FUEL SPEC.: applicable MIL-F-8572

DIMENSIONS

WING AREA: 1,625 Sq. Ft.
SPAN: 121' - 6"
MAC: 41' - 8"
SHEEP (L.B.) 71' - 2"
LENGTH: 121' - 6"
HEIGHT: 27' - 0"
THICK: 20' - 0"
PROF. GRD. CLIMABLE: 20'

PERSONNEL

CREW (BASIC): 26
ACTIVE CREW: 16
OTHER CREW PLACES
12 to 24 Space including, 12, 4 Pilots, 3 Technicians, 7 Radar Crew (Co-Pilot, Radar, Radar/Nav., Radar/Nav., Radar Operator, 3 Control Officers) and 1 Officer.

CONFIDENTIAL
## PERFORMANCE SUMMARY

**TAKE-OFF LOADING CONDITION**

<table>
<thead>
<tr>
<th></th>
<th>(1) NORMAL LOAD</th>
<th>(3) OVERLOAD LOAD</th>
<th>(5) FERRY</th>
</tr>
</thead>
<tbody>
<tr>
<td>TAKE-OFF WEIGHT</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fuel</td>
<td>120,000</td>
<td>148,500</td>
<td>162,500</td>
</tr>
<tr>
<td>Weight</td>
<td>24,960</td>
<td>52,500</td>
<td>52,500</td>
</tr>
<tr>
<td>Stall speed - power-off</td>
<td>78.7</td>
<td>90.0</td>
<td>87.0</td>
</tr>
<tr>
<td>Take-off run at S.L. - calms</td>
<td>3,000</td>
<td>6,150</td>
<td>5,450</td>
</tr>
<tr>
<td>Take-off to clear 50 ft. - calms</td>
<td>5,000</td>
<td>8,950</td>
<td>7,050</td>
</tr>
<tr>
<td>Max. speed/altitude (g)</td>
<td>285/19,300</td>
<td>285/19,300</td>
<td>277/19,300</td>
</tr>
<tr>
<td>Rate of climb at S.L. (g)</td>
<td>1,060</td>
<td>760</td>
<td>820</td>
</tr>
<tr>
<td>Time: S.L. to 10,000 ft. (g)</td>
<td>10.8</td>
<td>15.6</td>
<td>13.8</td>
</tr>
<tr>
<td>Time: S.L. to 20,000 ft. (g)</td>
<td>30</td>
<td>55</td>
<td>45</td>
</tr>
<tr>
<td>Service ceiling (100 fps) (g)</td>
<td>21,900</td>
<td>18,900</td>
<td>18,900</td>
</tr>
<tr>
<td>Search range (n.m.)</td>
<td>2,580</td>
<td>3,590</td>
<td>3,590</td>
</tr>
<tr>
<td>Average cruising speed</td>
<td>258</td>
<td>314</td>
<td>252</td>
</tr>
<tr>
<td>Cruising altitude(s)</td>
<td>10,000</td>
<td>10,000</td>
<td>10,000</td>
</tr>
<tr>
<td>Search radius (g)</td>
<td>1,425</td>
<td>1,790</td>
<td></td>
</tr>
<tr>
<td>Time on station at 1000 m.a.s.l. (g)</td>
<td>2.7/12.0</td>
<td>9.0/18.3</td>
<td></td>
</tr>
<tr>
<td>Landing weight</td>
<td>116,010</td>
<td>127,950</td>
<td>122,560</td>
</tr>
<tr>
<td>Engine power</td>
<td>Normal</td>
<td>Normal</td>
<td>Normal</td>
</tr>
<tr>
<td>Fuel</td>
<td>20,980</td>
<td>31,500</td>
<td>31,500</td>
</tr>
<tr>
<td>Combat speed/combat altitude</td>
<td>277/10,000</td>
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</tr>
<tr>
<td>Rate of climb/combat altitude</td>
<td>1,000/10,000</td>
<td>790/10,000</td>
<td>870/10,000</td>
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<tr>
<td>Combat ceiling (500 fps)</td>
<td>2,000</td>
<td>17,700</td>
<td>18,600</td>
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<tr>
<td>Rate of climb at S.L. (g)</td>
<td>1,350</td>
<td>1,120</td>
<td>1,120</td>
</tr>
<tr>
<td>Max. speed at S.L. (g)</td>
<td>254</td>
<td>250</td>
<td>253</td>
</tr>
<tr>
<td>Max. speed/altitude (kn/ft.)</td>
<td>285/19,300</td>
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**COMBAT LOADING CONDITION**

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<td>COMBAT WEIGHT</td>
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<td>Engine power</td>
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**LANDING WEIGHT**

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<tbody>
<tr>
<td>Fuel</td>
<td>1,425</td>
</tr>
<tr>
<td>Stall speed - power-off</td>
<td>10,000</td>
</tr>
<tr>
<td>Stall speed - with approach power</td>
<td>76</td>
</tr>
</tbody>
</table>

**NOTES**

- Take-Off Power
- Normal Power
- At 10,000 feet with zero search time on station.

**PERFORMANCE BASIS:** Performance is based on WV-2 flight test data.

**RANGE AND RADIUS:** Range and radius are based on WV-2 flight test fuel consumption increased by 5%.
NOTES

SEARCH RADIUS PROGRAM

WARM-UP, TAXI, TAKE-OFF: 10 minutes at normal rated power at sea level.
CLIMB: On course to cruise altitude of 10,000 feet at normal rated power.
Cruise-OFF: To a 1,000 nautical mile radius point at long range airspeeds.
CLIMB or DESCEND: To search altitude. Fuel used and distance gained in climb but not in descent.
SEARCH: at search altitude at maximum endurance speeds.
RETURN: To radius point at the end of search. Fuel is used and distance gained in climb but not in descent.
Cruise-BACK: At 10,000 feet at speeds for long range.
RESERVE: Fuel allowance for 2 hours at long range airspeeds at 1,500 feet.

RING PROGRAM

WARM-UP, TAXI, TAKE-OFF: 10 minutes at normal rated power at sea level.
CLIMB: On course to cruise altitude of 10,000 feet at normal rated power.
Cruise-OFF: At long range airspeeds at 10,000 feet.
RESERVE: Fuel allowance for 30 minutes at sea level at maximum endurance speed plus 5% of the initial fuel load.

10,000 Ft.

No Loiter -
(Profile same for other than basic mission except for climbing or descending to loiter altitude and loiter.)