BUREAU OF AERONAUTICS
NAVY DEPARTMENT

WING AREA—314 SQ. FT.
WING SECTION
N.A.C.A. 23018-23009
M.A.C. = 94°
PROP—HAMILTON STD. C.S.
BLADE DESIGN NO. 6837A-0

EXTREME SPAN
WINGS FOLDED
204.5 (17' 0.0"
17.051
156.17 (13' 7.0"
Nominal Dia.
150. (13' 1.2"
Actual Dia.

CATAPULT FITTING
145 (12") TREAD
491.726
40' 11.726"

HOIST SLUNG
414.15
(34' 6.15"
VHF ANTENNA
124.81
(10' 4.6"

AERO 144 BOMB AND
ROCKET LAUNCHERS
275 GAL (GAL)

ARMAMENT AND TANKS

BUREAU OF AERONAUTICS
NAVY DEPARTMENT

PROTECTION
1. PILOT FORWARD
2. PILOT AFT
3. SELF-SEALING CELLS

BULLET RESISTANT GLASS
ARMOR PLATE
SELF-SEALING TANKS
NON SELF-SEALING TANKS

234 GAL

20 M.M. CANNON 924 RDS. AMMUNITION

DROPABLE TANKS OR BOMBS

150 GAL

150 GAL

150 GAL

150 GAL

150 GAL

275 GAL (GAL)

A-B

A-B

A-B

VIEW A-A

VIEW B-B

SCALE

0 10' FT

1 JUNE 1953
### POWER PLANT

<table>
<thead>
<tr>
<th>No. &amp; Model</th>
<th>(1) R-2800-83WA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mfr.</td>
<td>Pratt and Whitney</td>
</tr>
<tr>
<td>Superch.</td>
<td>1 Stage, 2 Speed</td>
</tr>
<tr>
<td>Prop. Gear Radio</td>
<td>0.150</td>
</tr>
<tr>
<td>Prop. Dps. No.</td>
<td>6837A-0</td>
</tr>
</tbody>
</table>
| No. B/l. D/b | 4/13-2"

### RATINGS

<table>
<thead>
<tr>
<th>T. O.</th>
<th>2,300</th>
<th>2,800</th>
<th>S.L.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Combat</td>
<td>2,800</td>
<td>2,800</td>
<td>S.L.</td>
</tr>
<tr>
<td>MIL</td>
<td>2,300</td>
<td>2,800</td>
<td>11,000'</td>
</tr>
<tr>
<td>NORM.</td>
<td>1,800</td>
<td>2,500</td>
<td>8,500'</td>
</tr>
<tr>
<td>SPEC.</td>
<td>1,500</td>
<td>2,600</td>
<td>18,500'</td>
</tr>
</tbody>
</table>

(See NOTES)

### MISSION AND DESCRIPTION

The AU-1 is a high performance, propeller driven, single-seat, carrier-based or land-based, day ground support attack airplane. It is basically a model 245-5 airplane with an R-2800-83WA engine. The oil coolers have been relocated into the accessory section and additional armor has been installed in the cockpit and engine sections.

The airplane is of conventional stressed-skin construction with slotted flaps, frise ailerons, and horn-balanced elevator and rudder.

### DEVELOPMENT

First flight (prototype). September 1951
Service use. . . . . . . . February 1952

### DIMENSIONS

- **Wing**
  - Area: 51.4 sq. ft.
  - Span: 12' 0"
  - M.A.O: 7'-10"
  - Length: 14'-1"
  - Height: 12'-10"
  - Tread: 6"
  - Prop. Ord. Clearance: 6"

### WEIGHTS

- **Empty**: 9,850 lbs.
- **Basic**: 10,600 lbs.
- **Design**: 12,000 lbs.
- **Combat**: 13,425 lbs.
- **Max. T.O. (Field)**: 19,400 lbs.
- **Max. Land. (Field)**: 15,000 lbs.
- **Max. Arrest**: 13,000 lbs.

All weights are actual, *Max. anticipated loading*

### FUEL AND OIL

- **Gals.**: 234
- **No. Tanks**: 1
- **Location**: Fuselage, Seat
- **Wing, Drop**: 300

**FUEL GRADE**: 115/145

**FUEL SPEC**: MIL-F-5572

**OIL**

**CAPACITY (Gals.)**: 27.5

**GRADE**: 1100

**SPEC.**: MIL-G-6082

### ELECTRONICS

- **UHF Trans. Rec.**: AN/ARC-27
- **Provisions for UHF AN/ARC-1**
- **VHF Homing**: AN/ARR-2A
- **Range Rec.**: R-23A/ARC-5
- **Radio Altimeter**: AN/APK-1
- **IFF**: AN/APX-6
### PERFORMANCE SUMMARY

#### TAKE-OFF LOADING CONDITION

<table>
<thead>
<tr>
<th></th>
<th>BOMBER</th>
<th>BOMBER</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1)</td>
<td>(4)</td>
</tr>
<tr>
<td></td>
<td>2-1,000# Bombs</td>
<td>10-5&quot; HVAR</td>
</tr>
<tr>
<td></td>
<td>2-150 Gal.Tank</td>
<td>2-150 Gal.Tank</td>
</tr>
<tr>
<td><strong>TAKING-WEIGHT</strong></td>
<td>16,379</td>
<td>16,752</td>
</tr>
<tr>
<td><strong>Fuel</strong> (Fixed/Drop)</td>
<td>1,404/500</td>
<td>1,404/1,800</td>
</tr>
<tr>
<td><strong>Payload (Bombs/Rockets)</strong></td>
<td>4,600/2</td>
<td>1,400/4,000</td>
</tr>
<tr>
<td><strong>Wing loading</strong> (lb./sq.ft.)</td>
<td>68.4</td>
<td>53.4</td>
</tr>
<tr>
<td><strong>Stall speed - power-off</strong> (kn.)</td>
<td>92.0</td>
<td>93.2</td>
</tr>
<tr>
<td><strong>Take-off run at S.L. - calm</strong> (ft)</td>
<td>2,430</td>
<td>1,550</td>
</tr>
<tr>
<td><strong>Take-off run at S.L. 25 kn. wind</strong> (ft)</td>
<td>1,450</td>
<td>950</td>
</tr>
<tr>
<td><strong>Take-off to clear 50 ft. - calm</strong> (ft)</td>
<td>----</td>
<td>----</td>
</tr>
<tr>
<td><strong>Max. speed/altitude (A)</strong> (kn./ft)</td>
<td>207/2,900</td>
<td>259/19,700</td>
</tr>
<tr>
<td><strong>Rate of climb at S.L. (A)</strong> (fpm)</td>
<td>920</td>
<td>1,480</td>
</tr>
<tr>
<td><strong>Time: S.L. to 10,000 ft. (A)</strong> (min)</td>
<td>13.7</td>
<td>15.0</td>
</tr>
<tr>
<td><strong>Time: S.L. to 20,000 ft. (A)</strong> (min)</td>
<td>----</td>
<td>----</td>
</tr>
<tr>
<td><strong>Service ceiling (100 fpm)</strong> (A) (ft)</td>
<td>19,500</td>
<td>22,000</td>
</tr>
<tr>
<td><strong>Combat range</strong> (n.m.) (A)</td>
<td>420</td>
<td>1,105</td>
</tr>
<tr>
<td><strong>Average cruising speed</strong> (kn.)</td>
<td>160</td>
<td>175</td>
</tr>
<tr>
<td><strong>Cruising altitude (A)</strong> (ft)</td>
<td>15,000</td>
<td>15,000</td>
</tr>
<tr>
<td><strong>Combat radius</strong> (n.m.)</td>
<td>220</td>
<td>155</td>
</tr>
<tr>
<td><strong>Average cruising speed</strong> (kn.)</td>
<td>165</td>
<td>165</td>
</tr>
</tbody>
</table>

#### COMBAT LOADING CONDITION

<table>
<thead>
<tr>
<th></th>
<th>COMBAT</th>
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</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(2)</td>
<td>(3)</td>
</tr>
<tr>
<td><strong>COMBAT WEIGHT</strong></td>
<td>13,343</td>
<td>13,343</td>
</tr>
<tr>
<td><strong>Engine power</strong></td>
<td>Combat</td>
<td>Military</td>
</tr>
<tr>
<td><strong>Fuel</strong> (lb.)</td>
<td>1,404</td>
<td>1,404</td>
</tr>
<tr>
<td><strong>Combat speed/combat altitude</strong> (kn./ft)</td>
<td>31/4/S.L.</td>
<td>292/S.L.</td>
</tr>
<tr>
<td><strong>Rate of climb/combat altitude</strong> (fpm/ft)</td>
<td>4,620/S.L.</td>
<td>3,140/S.L.</td>
</tr>
<tr>
<td><strong>Combat ceiling (500 fpm)</strong> (ft)</td>
<td>28,800</td>
<td>28,800</td>
</tr>
<tr>
<td><strong>Rate of climb at S.L.</strong> (fpm)</td>
<td>4,520</td>
<td>3,620</td>
</tr>
<tr>
<td><strong>Max. speed at S.L.</strong> (kn.)</td>
<td>314</td>
<td>292</td>
</tr>
<tr>
<td><strong>Max. speed/altitude</strong> (kn./ft)</td>
<td>338/14,000</td>
<td>315/17,000</td>
</tr>
</tbody>
</table>

#### LANDING WEIGHT

<table>
<thead>
<tr>
<th></th>
<th>12,140</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fuel</strong> (lb.)</td>
<td>200</td>
</tr>
<tr>
<td><strong>Stall speed - power-off</strong> (kn.)</td>
<td>80.0</td>
</tr>
<tr>
<td><strong>Stall speed - with approach power</strong> (kn.)</td>
<td>72.0</td>
</tr>
</tbody>
</table>

(A) Normal power.

Performance is based on flight tests of the AU-1 airplane.

Engine ratings are based on use of 115/145 aviation gasoline, and do not agree with Pratt & Whitney Spec. No. A-5104-4, whose ratings are based on use of 100/130 aviation gasoline.

Range and radius are based on AAF fuel consumption data increased by 5%.

The combat configuration includes 3 M5-51 pylons and 10 Aero 14A launchers.

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**NOTES**

AU-1

I JUNE 1953
Spotting: 30 airplanes (wings folded) can be spotted in a rectangular area 200 ft long and 96 ft wide.

LOW ALTITUDE ATTACK COMBAT RADIUS PROBLEM (RECIPROCATING ENGINE)

WARM-UP, TAXI, TAKE-OFF: 10 minutes at normal power
CLIMB: on course to 15,000 feet at normal power
CRUISE-OUT: at 15,000 feet, at $V$ for long range. External fuel tanks dropped when empty.
DESCEND: to sea level. (No fuel used, no distance gained).
DROP BOMBS, FIRE ROCKETS
COMBAT: 15 minutes at sea level. (5 minutes at military power and 10 minutes at normal power).
CLIMB: on course to 5,000 feet at normal power.
CRUISE-BACK: at 5,000 feet at $V$ for long range.
RESERVE: 20 minutes at $V$ for long range at sea level plus 5% of initial fuel load.

\[
\text{COMBAT RADIUS} = \text{CLIMB} + \text{CRUISE OUT} = \text{CLIMB} + \text{CRUISE-BACK}
\]