STANDARD AIRCRAFT CHARACTERISTICS

AF-2W "GUARDIAN"

GRUMMAN

15 FEBRUARY 1952

CONFIDENTIAL
POWER PLANT

NO. & MODEL........0-1386-14G
MFR..............Fratt & Whitney
SUPERCH.........1 Stage, 1 Speed
PROP. GEAR RATIO....0.45
PROP. DTS. NO......6697A-6
NO. BL./DIA........4/131-28

MISSION AND DESCRIPTION

The AF-2W airplane's primary mission is that of radar search for submarines. This airplane, after detection of underwater craft, directs its companion airplane, the model AF-28 (attack version) onto the target to launch the attack.

The airplane is a half place land plane for operation ashore or aboard aircraft carriers, with or without the aid of a catapult.

The airplane is conventional in design and structure, with an all-metal 2 spar wing and a semi-monocoque fuselage. Landing gear, slotted flaps, wing folding and pilot's canopy are hydraulically operated. All doors are of sealed balance type with spring tabs and one trim tab. Rudder has a combination trim and 4 to 1 ratio balance tab. Elevators are interconnected; one is equipped with a spring tab and the other with a trim tab. Power plant installation is conventional with steel tube mount.

WEIGHTS

Loadings      Lbs.  L.F.
EMPTY...........15,035
BASIC...........16,517
DESIGN...........17,300
COMBAT...........18,629
MAX.T.O. (Field),21,825* 5,4
MAX.LAND. (Field),21,500

All weights are actual.

*Maximum anticipated loading.

FUEL AND OIL

Gals. No. Tanks Location
270 1 Fuel, S.S.
150 2 Wing, S.S.
300 2 Wing, Drop

FUEL GRADE.......AN/MIL-F-5672

OIL

CAPACITY (Gals.)....134
GRADE.............1100
SPEC................MIL-D-2605

ORDNANCE

None

CAMERAS

Recon, Camera...........K-25

DIMENSIONS

WING AREA............549 sq. ft.
SPAN..................60' - 0"
LENGTH...............131' - 5"
HEIGHT...............15' - 7"
TREAD..................14' - 5"
M.A.O..................9' - 7"
PROP. CLEAR...........9'

ELECTRONICS

VHF COMMUNICATION...AN/ARC-25
UHF COMM. (DUAL)...AN/ARC-27
(F.S.I., Repl. for AN/ARC-28)
MEF LIATION........AN/ARC-2
(Alternate Service Install. in lieu of 1 ARC-1 or ARC-27)
INTERPHONE........AN/ARC-1 or -1A
HOMING..............AN/ARC-2A
ROMING..............AN/ARC-21
(F.S.I., Repl. for AN/ARC-2A)
RADAR ALT..........AN/AIM-1 or -22
RANGE RECEIVER......B-23A/ARC-5

Continued on NOTES sheet

15 FEbruary 1952
## PERFORMANCE SUMMARY

### TAKE-OFF LOADING CONDITION

<table>
<thead>
<tr>
<th></th>
<th>(1) SEARCH</th>
<th>(3) SEARCH 2-190 Sel./Tank</th>
</tr>
</thead>
<tbody>
<tr>
<td>TAKE-OFF WEIGHT</td>
<td>lb.</td>
<td>19,637</td>
</tr>
<tr>
<td>Fuel (Fixed/Drop)</td>
<td>lb.</td>
<td>2,500/-</td>
</tr>
<tr>
<td>Payload</td>
<td>lb.</td>
<td></td>
</tr>
<tr>
<td>Wing loading</td>
<td>lb./sq.-ft.</td>
<td>38.8</td>
</tr>
<tr>
<td>Stall speed - power-off</td>
<td>km./hr.</td>
<td>76.8</td>
</tr>
<tr>
<td>Take-off run at S.L. - calm</td>
<td>ft.</td>
<td>989</td>
</tr>
<tr>
<td>Take-off run at S.L. 17,500 ft. wind</td>
<td>ft.</td>
<td>513</td>
</tr>
<tr>
<td>Take-off to clear 50 ft. - calm</td>
<td>ft.</td>
<td></td>
</tr>
<tr>
<td>Max. speed/altitude (1) km./ft.</td>
<td>230/3,200</td>
<td>221/3,200</td>
</tr>
<tr>
<td>Rate of climb at S.L.</td>
<td>ft.</td>
<td>1,565</td>
</tr>
<tr>
<td>Time: S.L. to 10,000 ft. (1) min.</td>
<td>6.5</td>
<td>8.3</td>
</tr>
<tr>
<td>Time: S.L. to 20,000 ft. (1) min.</td>
<td>23.8</td>
<td>37.5</td>
</tr>
<tr>
<td>Service ceiling (100 fps)</td>
<td>ft.</td>
<td>21,200</td>
</tr>
<tr>
<td>Combat range</td>
<td>n.m.</td>
<td>750</td>
</tr>
<tr>
<td>Average cruising speed</td>
<td>km.</td>
<td>148</td>
</tr>
<tr>
<td>Cruising altitude(s)</td>
<td>ft.</td>
<td>1,500</td>
</tr>
<tr>
<td>Combat radius</td>
<td>n.m.</td>
<td>500</td>
</tr>
<tr>
<td>Average cruising speed</td>
<td>km.</td>
<td>144</td>
</tr>
</tbody>
</table>

### COMBAT LOADING CONDITION

<table>
<thead>
<tr>
<th></th>
<th>(2) COMBAT</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMBAT WEIGHT</td>
<td>lb.</td>
</tr>
<tr>
<td>Engine</td>
<td>Military</td>
</tr>
<tr>
<td>Fuel</td>
<td>lb.</td>
</tr>
<tr>
<td>Combat speed/combat altitude</td>
<td>km./ft.</td>
</tr>
<tr>
<td>Rate of climb/combat altitude</td>
<td>fpm/ft.</td>
</tr>
<tr>
<td>Combat ceiling (700 fps)</td>
<td>ft.</td>
</tr>
<tr>
<td>Rate of climb at S.L.</td>
<td>fpm.</td>
</tr>
<tr>
<td>Max. speed at S.L.</td>
<td>km.</td>
</tr>
<tr>
<td>Max. speed/altitude</td>
<td>km./ft.</td>
</tr>
</tbody>
</table>

### LANDING WEIGHT

|                        | lb.        | 17,368                      |
| Fuel                   | lb.        | 751                         |
| Stall speed - power-off| km./hr.    | 71.9                        |
| Stall speed - with approach power | km./hr. | 67.2                        |

### NOTES

1) Normal Power

Performance is based on NATO flight test of the AF-2W airplane.

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

All conditions include APS-200 radome beneath fuselage.

All climbs are made with rich mixture for satisfactory engine cooling.

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NOTES

Spotting: 200 ft. length is required to spot 16 airplanes on the 96 ft. wide deck immediately aft of the forward ramp on the CV-9 class carriers.

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ASW RANGE AND RADIUS PROBLEM

WARM-UP, TAXI, TAKE-OFF: 10 minutes at normal power.
CLIMB: On course to 1,500 ft. at normal power.
COMBAT RANGE: Cruise at V for long range at 1,500 ft. External fuel tanks dropped when empty.
RESERVE: 20 minutes at V for long range plus 5% of initial fuel load.

COMBAT RADIUS = 40% OF COMBAT RANGE

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ELECTRONICS (Continued)

COUNTERMEASURE REC. (RADAR)...........AN/APR-98
COUNTERMEASURE (RADAR).............AN/APX-70C
RADAR.....................................AN/APS-200
SPEED CONTROL KIT........................AN/APS-20
RADAR RECEIVING SET....................AN/APR-12 (P.S.I.)
RADAR RELAY TRANS..............AN/ART-26 or -28
GROUND POSITION INDICATOR, AN/APA-57A or 57C
GROUND POSITION INDICATOR.............AN/APA-81

GROUND POSITION INDICATOR.............AN/APX-2 or -2A
IFF...........................................AN/APX-6
IFF...........................................AN/APX-7

(P.S.I., Replacement for AN/APX-5)
COMBINED TILT-STABILIZED RADAR-IFF
ANTENNA SYSTEM..........................AS-539/APS-20

(F.S.I., when installed Speed Control

Kit is to be removed)

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This chart supersedes previously issued chart dated 1 October 1949.
Reason for release: NATO flight test data available.

AF-2W

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