AIRPLANE CHARACTERISTICS & PERFORMANCE

BUREAU OF AERONAUTICS, NAVY DEPT.

COLUMN NUMBER		1	2	3	4
LOADING CONDITION		COMBAT *	COMBAT *	COMBAT *	FIGHTER 1-150 gal. Tank External
GROSS WEIGHT	LBS.	12800	12800	12800	13875
EMPTY WEIGHT - ACTUAL -	LBS.	9545			
FUEL / OIL	GALS.	237/13	237/13	237/13	387/20
FIXED GUNS/AMMUNITION		6-.50/2400			
FLEXIBLE GUNS/AMMUNITION		None			
ENGINE POWER USED FOR PERFORMANCE		COMBAT	MILITARY	NORMAL	NORMAL
WING LOADING	LBS./SQ.FT.	40.7	40.7	40.7	44.1
POWER LOADING ①	LBS./BHP.	4.9	6.1	7.5	8.2
V-MAX. SEA LEVEL	MPH.	363	335	311	296
V-MAX./CRITICAL ALT.	MPH./FT.	460/33400	453/38400	440/42600	413/42200
V-STALL GROSS WEIGHT ②	MPH.	89.7	89.7	89.7	94.6
V-STALL WITHOUT FUEL ②	MPH.	84.5	84.5	84.5	86.4
TIME-TO-CLIMB -10000 FT.-	MIN.	2.4	3.1	4.1	4.8
TIME-TO-CLIMB -20000 FT.-	MIN.	5.0	6.4	8.5	10.0
SERVICE CEILING	FT.	45700	45700	45600	43500
TAKE-OFF DISTANCE -CALM-	FT.	584	584	584	741
TAKE-OFF DISTANCE -15 KN.-	FT.	370	370	370	482
TAKE-OFF DISTANCE -25 KN.-	FT.	254	254	254	339
TAKE-OFF DISTANCE -50 FT. OBST.	FT.				
TAKE-OFF TIME	SECONDS				
RATE OF CLIMB -SL-	FT./MIN.	4210	3290	2520	2170
MAX. RANGE / V-AV. ③	ST. MI. / MPH.			1080/174	1575/173
RANGE / V-AV. -60% NSP-③-	ST. MI. / MPH.				
SEARCH RADIUS / V-AV. -20% R-	NMI. / KN.				
A.S.W. RADIUS / V-AV. -20% R-	NMI. / KN.				
COMBAT RADIUS MANUAL LEAN (P-1)				65	295(b)
COMBAT RADIUS AUTO LEAN (P-1)	N MI.			35	215(a)

ENGINE / PROP. GEAR RATIO: P & W R-2800-14W (.45) (Turbo)

ENGINE RATING BHP/RPM/ALT.	COMBAT	MILITARY	NORMAL	TAKE-OFF
	2600/2800/S.L.-28200'	2100/2800/S.L.-33500'	1700/2600/S.L.-37800'	2100/2800/S.L.

AUX. FIXED — TANKAGE IN GALLONS	OIL	FUEL
PROTECTED		237
UNPROTECTED (See Note - P-2)	24	
TOTAL-FIXED INTERNAL	24	237
DROPPABLE		
DROPPABLE Wing Pylons - 2 @ 150		300
TOTAL	24	537

OFFENSIVE ARMAMENT

Wing Pylons:
Bombs - 2 - 1600# 2 - 1000# 2 - 500# 2 - 250# or 6 - 100#
Rockets - 2 - 11.75" A.R.
Two pylons available for either bombs or droppable tanks.
Wings: MK5-1 launchers
Rockets - 8 - 5" A.R. or 8 - 5" HVAR

NOTE

STATUTE MILES USED-EXCEPT-RADIUS IS GIVEN IN NAUTICAL MILES & KNOTS

① BHP AT MAX. CRIT. ALT.

② STALL-WITHOUT POWER

③ AT 1500' ALTITUDE MANUAL LEAN

MODEL- FG-3

NAVAER-15198 (Rev. 9-44)

AIRPLANE CHARACTERISTICS & PERFORMANCE

BUREAU OF AERONAUTICS, NAVY DEPT.

COLUMN NUMBER	5	6	7	8
LOADING CONDITION	FIGHTER ** 2-150 gal. Tanks External	BOMBER 1-1000# 1-150 gal. Tank External	BOMBER 2-1000#	ROCKET 8-5" HVAR 1-150 gal. Tank External
GROSS WEIGHT LBS.	14953	14870	14795	15026
EMPTY WEIGHT - ACTUAL - LBS.	9545			
FUEL/OIL GALS.	537/20	387/20	237/13	387/20
FIXED GUNS/AMMUNITION	6-.50/2400			
FLEXIBLE GUNS/AMMUNITION	None			
ENGINE POWER USED FOR PERFORMANCE	NORMAL	NORMAL	NORMAL	NORMAL
WING LOADING LBS/SQ.FT.	47.6	47.3	47.0	47.9
POWER LOADING (1) LBS./BHP.	8.8	8.7	8.7	8.8
V-MAX. SEA LEVEL MPH.	282	282	282	279
V-MAX./ CRITICAL ALT. MPH./ FT.	383/41400	383/41400	383/41400	378/41400
V-STALL. GROSS WEIGHT (2) MPH.	99.5	99.2	99.0	101.1
V-STALL. WITHOUT FUEL (2) MPH.	88.2	91.2	94.1	93.0
TIME-TO-CLIMB -10000 FT.- MIN.	5.6	5.6	5.5	5.7
TIME-TO-CLIMB -20000 FT.- MIN.	11.8	11.8	11.7	12.1
SERVICE CEILING FT.	41500	41500	41600	41200
TAKE-OFF DISTANCE -CALM- FT.	930	922	911	960
TAKE-OFF DISTANCE -15 KN.- FT.	620	614	607	643
TAKE-OFF DISTANCE -25 KN.- FT.	446	442	436	464
TAKE-OFF DISTANCE -50 FT. OBST. FT.				
TAKE-OFF DISTANCE SECONDS				
RATE OF CLIMB -SL- FT./MIN.	1870	1870	1890	1830
MAX. RANGE / V-AV. (3) ST. MI./ MPH.	1960/170	1370/178	820/176	1250/178
RANGE / V-AV. -60% NSP-(3)- ST. MI./ MPH.				
SEARCH RADIUS / V-AV. -20% R- NMI./ KN.				
A. S. W. RADIUS / V-AV. -20% R- NMI./ KN.				
COMBAT RADIUS MANUAL LEAN (F-1)	510	290	40	280
COMBAT RADIUS AUTO LEAN (F-1) NMI.	475	210(c)	0	205(d)

PERFORMANCE IS BASED ON - CALCULATIONS

RANGE & RADIUS ARE BASED ON PRELIMINARY AEL FUEL CONSUMPTION DATA INCREASED BY 15 PERCENT TO CONFORM WITH PAST EXPERIENCE.

*COMBAT CONDITION: Two capped pylons aboard, rocket launchers not aboard. At Combat Power:-
Combat Condition plus 8 Mk 5-1 launchers: V-max/SL= 356, V-max= 451/33200
Combat Condition less Pylon Caps: V-max/SL= 357, V-max= 453/33300

CLEAN CONDITION: Same as Combat Condition except pylons removed. At Combat Power:- V-max/SL= 370, V-max= 469/33600

ROCKET CONDITION: Rockets are suspended from Mk 5-1 rocket launchers.

FERRY CONDITION: Armor and Armament removed. Gross Weight 13526 with 537 gals. of fuel; Max. Range at 1500 ft. is 2150 st. miles at 172 mph.

OIL CAPACITY: Four gallons of the capacity listed on page one are reserved for turbo lubrication.

FUEL TRANSFER: Provisions are not incorporated for fuel transfer from droppable to main tanks after take-off.

SPOTTING: 200 foot length is required to spot 30 airplanes on the 96 foot wide deck immediately aft of the forward ramp on CV-9 class carriers.

NOTE: Water available for approximately 6 minutes at Combat Power
Two wing pylons (capped when not in use) aboard in all conditions except "CLEAN"
Rocket launchers carried in rocket condition only

AIRPLANE CHARACTERISTICS & PERFORMANCE

BUREAU OF AERONAUTICS, NAVY DEPT.

FIGHTER COMBAT RADIUS FORMULA NO. F-1-CONDITIONS NOS. 3 - 8 RADIUS = CLIMB + CRUISE-OUT = CRUISE BACK

WARM-UP	RENDEZVOUS	CLIMB	CRUISE OUT	DROP TANKS	COMBAT	CRUISE BACK	RESERVE
20 min.	20 min. at	to		and BOMBS	20 min.		60 min.
	sea level	15000 ft.	at 15000 ft.	**	at 15000 ft.	at 1500 ft.	at
TAKE-OFF	at	at	Vel.for	FIRE	10 min. WEP.	170 kts.TAS	Vel.for
1 min.	60% N.S.P.	60% N.S.P.	Max. Range	ROCKETS	10 min.Mil.Pr.		Max. Range
	Auto Lean.	Auto Rich.	Auto Lean.		and descend	Manual Lean	Manual Lean

FIGHTER COMBAT RADIUS FORMULA NO. F-1-CONDITIONS NOS.- 3 - 8 RADIUS = CLIMB + CRUISE-OUT = CRUISE BACK

WARM-UP	RENDEZVOUS	CLIMB	CRUISE OUT	DROP TANKS	COMBAT	CRUISE BACK	RESERVE
20 min.	20 min. at	to		and BOMBS	20 min.		60 min.
	sea level	15000 ft.	at 15000 ft.	**	at 15000 ft.	at 1500 ft.	at
TAKE-OFF	at	at	Vel.for	FIRE	10 min. WEP.	Vel. for	Vel.for
1 min.	60% N.S.P.	60% N.S.P.	Max. Range	ROCKETS	10 min.Mil.Pr.	Max. Range	Max. Range
	Auto Lean.	Auto Rich.	Auto Lean.		and descend	Auto Lean.	Auto Lean.

Combat Radii noted with ( ) are limited by amount of protected fuel available for combat and return. In the following conditions the listed amounts of fuel remain in the droppable tank on entering combat and must be dropped or used to increase cruise-out speed or to search.

Col. 4 (a) 37 gals. may be used to increase cruise-out speed to 273 Kn. or used for .65 hrs. search at V for max. Range.

Col. 4 (b) 12 gals. may be used to increase cruise-out speed to 237 kn. or used for .23 hrs. search at V for max. Range.

Col. 6 (c) 26 gals. max be used to increase cruise-out speed to 255 Kn. or used for .42 hrs. search at V for max. Range.

Col. 8 (d) 25 gals. may be used to increase cruise-out speed to 251 Kn. or used for .38 hrs. search at V for max. Range.

** Col. 5 One of the two 150 gal. droppable fuel tanks is self-sealing and is carried the entire distance.

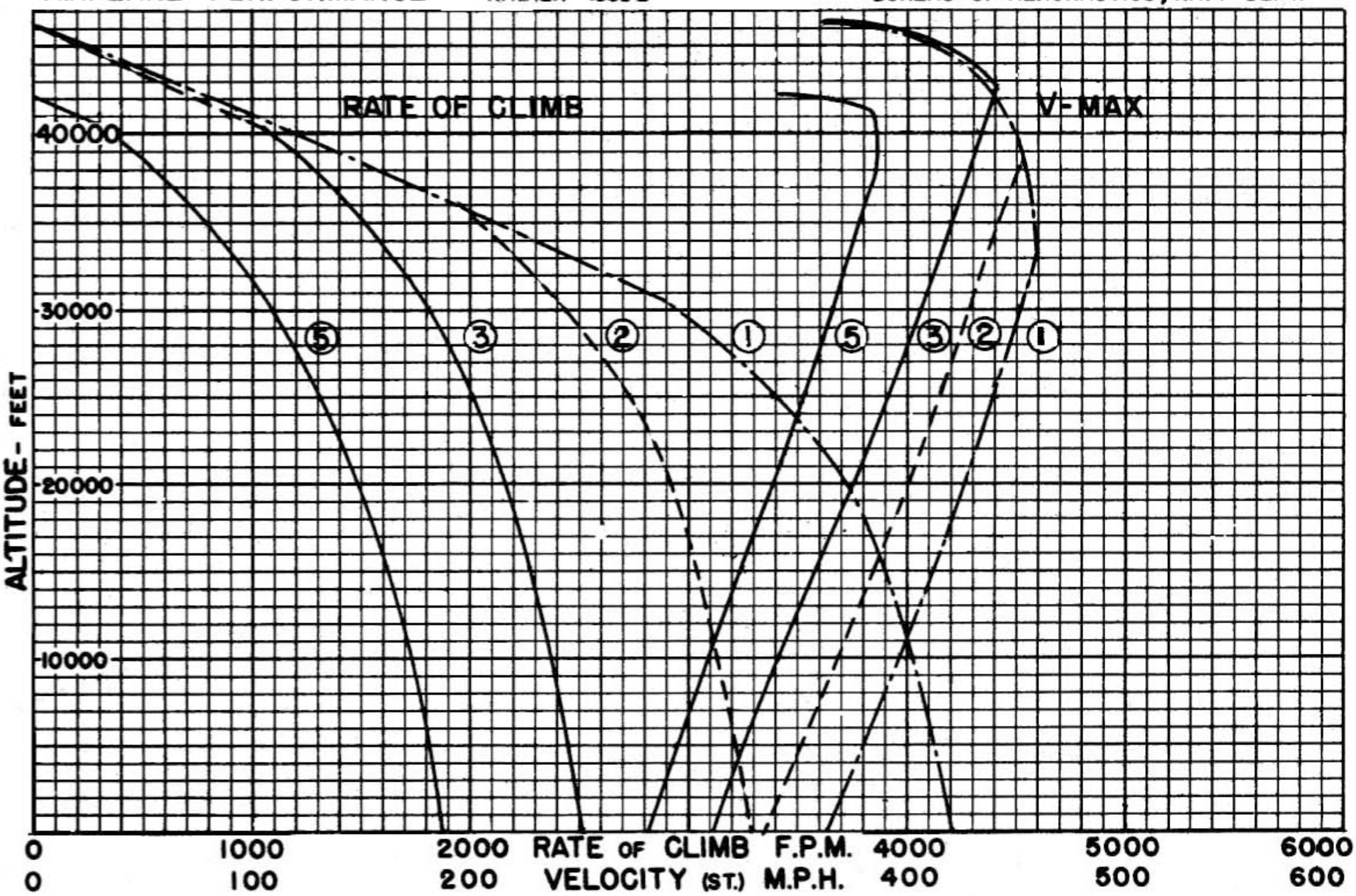
NOTE ON COMBAT RADIUS: The present carburetor on the R-2800-14W engine used in this airplane is designed to give sufficient enrichment at low power in automatic lean setting to provide satisfactory engine operation and entails a penalty in specific fuel consumption increasing rapidly below 635 H.P. The FG-3, with its exceedingly low power loading, will cruise on the return flight and during rendezvous at powers well below 635 H.P. Therefore, in order to obtain greater combat radii it will be necessary to use manual lean adjustment during cruiseback and rendezvous. The effect of this operation is shown in the two values of combat radius shown.

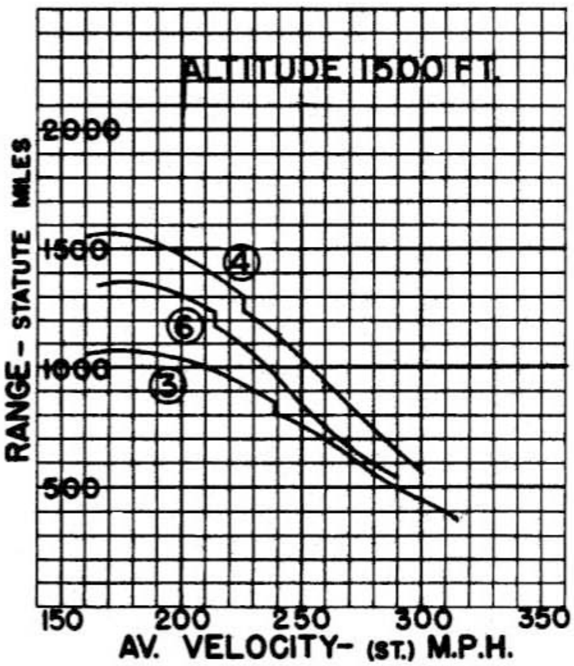
Performance on these sheets is based on the use of a Ham Std. C.S. - 13' - 2" diam. - 4 blade - des. 6501A-0 propeller. Installation of alternate Ham Std. C.S. - 13' - 2" diam. - 4 blade - des. 6559A-24 propeller results in the following changes.

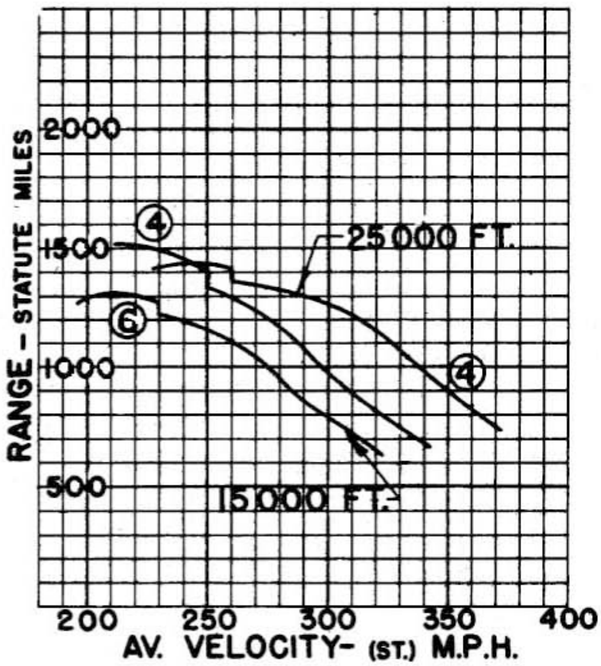
Condition (1) - V max/S.L. - decreased 3 mph
R/C /S.L. - Increased 20 fpm

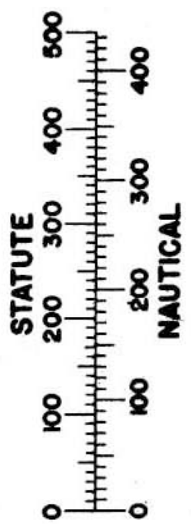
Condition (4) - Take-off distance - 25 Kn Wind - 315 ft.
Max. Range/V ave. - 1500 ft. - 1565/173

AIRPLANE PERFORMANCE NAVAER-1335 B BUREAU OF AERONAUTICS, NAVY DEPT.





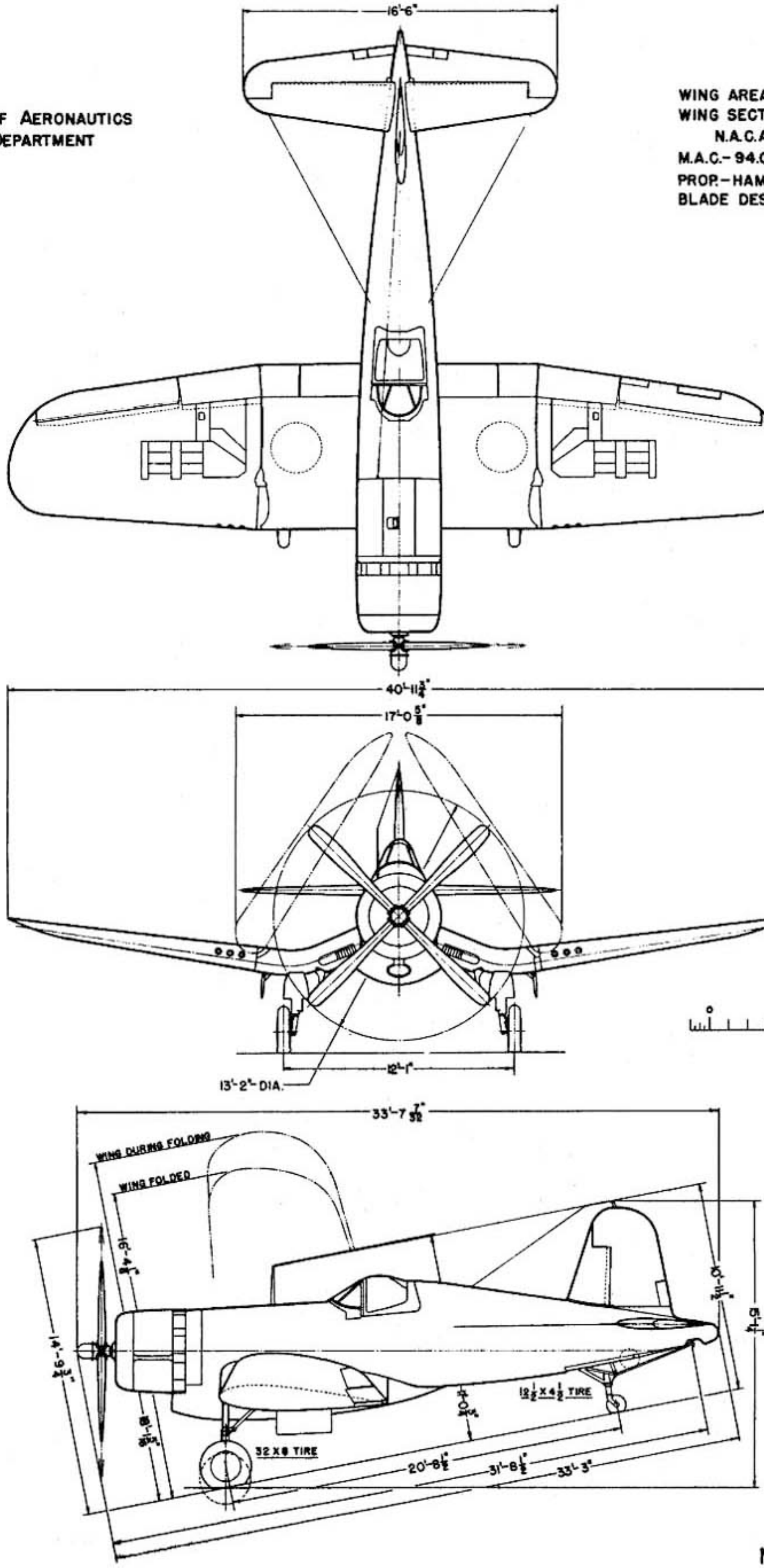




○ LOADING CONDITION COLUMN NUMBER

BUREAU OF AERONAUTICS
NAVY DEPARTMENT

WING AREA - 314 SQ. FT.
WING SECTION -
N.A.C.A. 23016-23009
M.A.C. - 94.0"
PROP. - HAMILTON STD. C.S.
BLADE DESIGN NO. 6501A-0



0 5 10 FT.
SCALE

MODEL - FG-3

MODEL FG-3

BUREAU OF AERONAUTICS
NAVY DEPARTMENT

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

PROTECTION

1.	PILOT FORWARD	40 LBS.
2.	PILOT AFT	53 LBS.
3.	SELF-SEALING CELLS	177 LBS.
4.	DEFLECTION PLATE	25 LBS.