

*Trainer*

~~CONFIDENTIAL~~  
DECLASSIFIED

NAVAIR 00-110AA3-7

GROUP 4 DOCUMENT  
DECLASSIFIED AFTER 12 YEARS  
DOD DIR 5200.10

CLASSIFIED BY DP65W  
DOWNGRADE TO: \_\_\_\_\_  
SECRET ON \_\_\_\_\_  
CONFIDENTIAL ON \_\_\_\_\_  
DECLASSIFY ON 12/31/73

# Standard Aircraft Characteristics

## NAVY MODEL TA-3B AIRCRAFT

*Attack*  
*"A 3D - 2T"*

(TITLE UNCLASSIFIED)

THIS PUBLICATION SUPERSEDES NAVAIR 00-110A-1 DATED  
1 MAY 1955 IN PART AND ALL ADDENDA THERETO

*This publication shall not be carried in aircraft on combat missions or when there is a reasonable chance of its falling into the hands of an unfriendly nation, unless specifically authorized by the "Operational Commander."*

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

NOTICE—This document contains information affecting the national defense of the United States within the meaning of the Espionage Laws, Title 18, U. S. C., Sections 793 and 794. The transmission or the revelation of its contents in any manner to an unauthorized person is prohibited by law.

~~CONFIDENTIAL~~  
DECLASSIFIED

1 JULY 1967

**UNCLASSIFIED**  
**NAVAIR 00-110AA3-7**

Reproduction for non-military use of the information or illustrations contained in this publication is not permitted without specific approval of the issuing service (NAVAIR or USAF). The policy for use of Classified Publications is established for the Air Force in AFR 205-1 and for the Navy in Navy Regulations, Article 1509.

**LIST OF CHANGED PAGES ISSUED**

**INSERT LATEST CHANGED PAGES. DESTROY SUPERSEDED PAGES.**

NOTE: The portion of the text affected by the current change is indicated by a vertical line in the outer margins of the page.

\* The asterisk indicates pages changed, added or deleted by the current change.

**ADDITIONAL COPIES OF THIS PUBLICATION MAY BE OBTAINED AS FOLLOWS:**

**NAVAIR**

ASAF ACTIVITIES.—In accordance with Technical Order No. 00-5-2.

NAVY ACTIVITIES.—Use DD FORM 1348 and submit in accordance with the instructions contained in NAVSUP PUBLICATION 437—Military Standard Requisitioning and Issue Procedures.

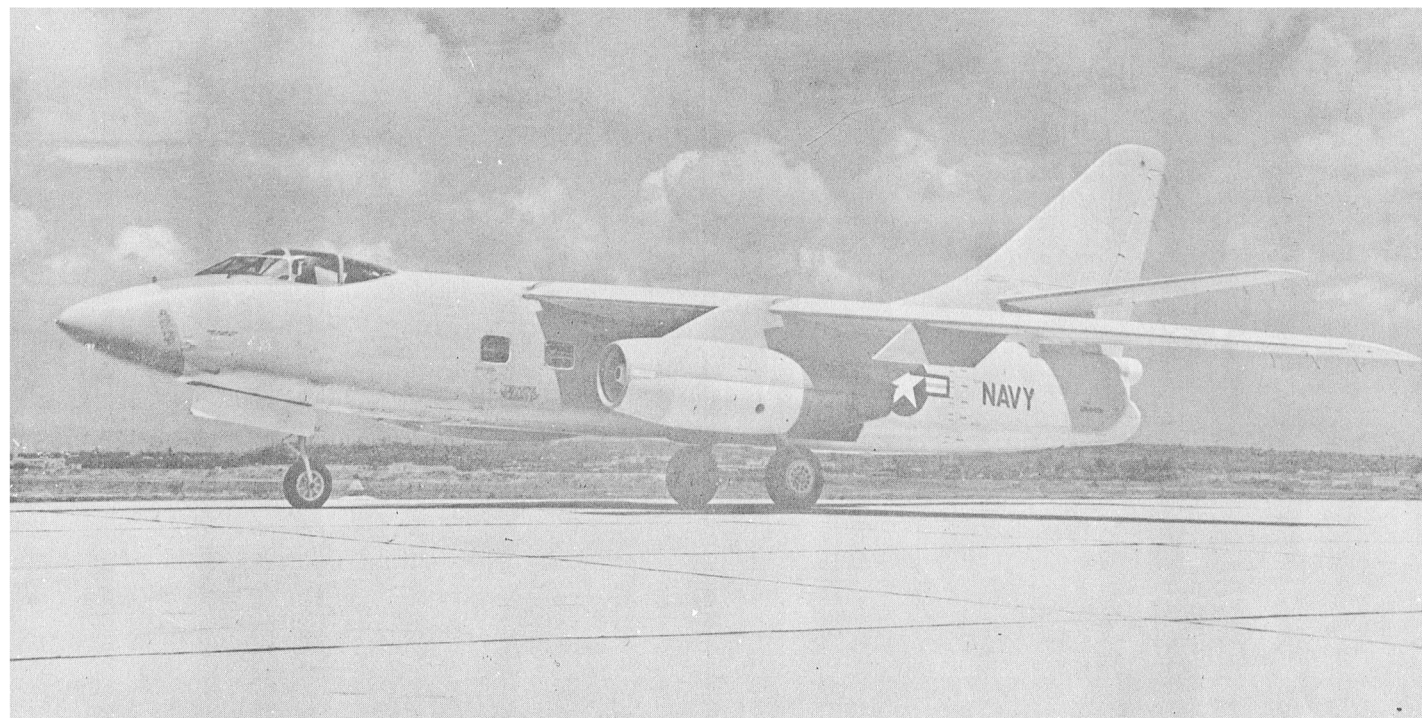
For information on other available material and details of distribution refer to NAVSUP PUBLICATION 2002, SECTION VIII and NAVAIR 00-500A.

**A**

**UNCLASSIFIED**

DECLASSIFIED  
CONFIDENTIAL

NAVAIR 00-110AA3-7



STANDARD AIRCRAFT CHARACTERISTICS  
TA-3B SKYWARRIOR

DOUGLAS

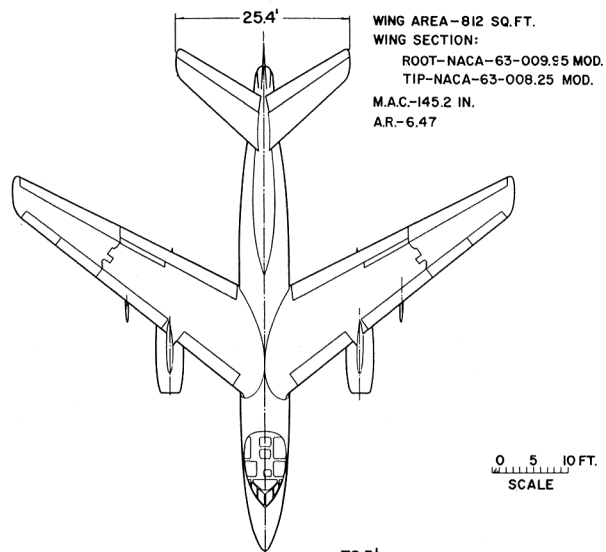
DECLASSIFIED  
CONFIDENTIAL

1

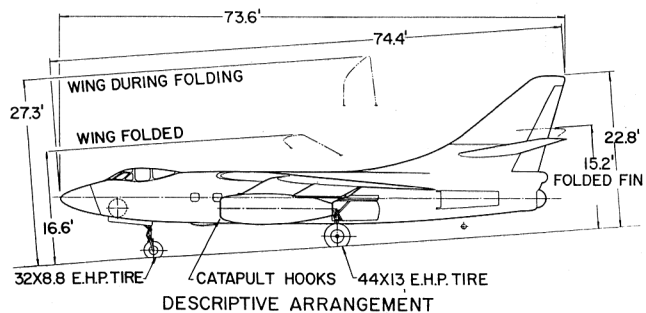
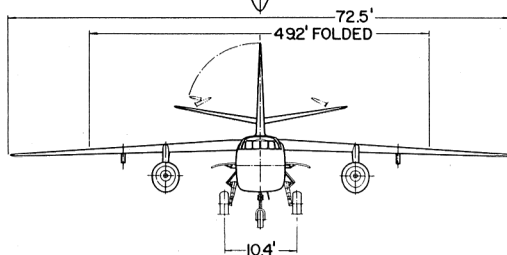
DECLASSIFIED

CONFIDENTIAL

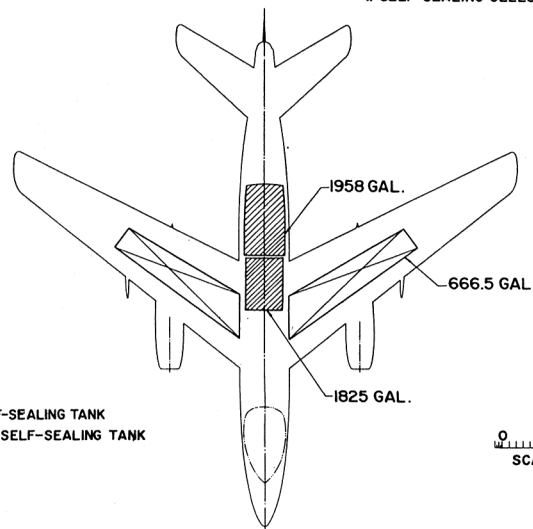
NAVAIR 00-110AA3-7



0 5 10 FT.  
SCALE



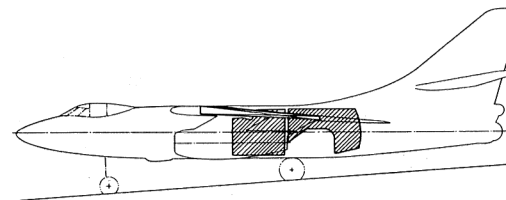
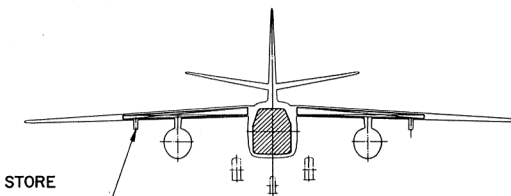
PROTECTION  
I. SELF-SEALING CELLS 739 LBS.



SELF-SEALING TANK  
NON SELF-SEALING TANK

0 5 10 FT.  
SCALE

MAX. STORE  
WEIGHT= 3600LB.



ARMAMENT & TANKAGE

CONFIDENTIAL

DECLASSIFIED

2

**POWER PLANT**

No. & Model----- (2) J57-P-10  
 MFR.-----Pratt & Whitney  
 Type----- Turbojet  
 Compr----- Dual Rotor Axial Flow  
 Lenght-----158 in.  
 Diameter----- 41 in.  
 No. & Type Assist...12-5KS4500Jato  
 Tail Pipe No. 22LE---Constant Exit  
 Area

**RATINGS**

SEA LEVEL STATIC			
THRUST	RPM		
LB.	N <sub>1</sub> *	N <sub>2</sub> **	
Maximum 10500	6450	9900	
Military 10500	6150	9900	
Normal 9000	5900	9650	

\*N<sub>1</sub> Speed of Low Pressure Compressor  
 \*\*N<sub>2</sub> Speed of High Pressure Compressor  
 Eng. Spec. No. N-1700-A

**ORDNANCE**

**WING PYLONS**

- 2 3343 Lb. T-65 Training Shapes
- 2 750 Lb. Aero 8A Practice Bomb Dispensers Carrying 4-MK 89 Bombs Each

No Provision for Internal Carriage of Stores

**MISSION AND DESCRIPTION**

The primary mission of the A3D-2T airplane is that of a trainer for bombardiers and navigators. The airplane is designed to operate from land bases and from CVA-19 and CVA-59 class carriers.

The airplane has a conventional swept wing and swept tail arrangement. Two turbo-jet engines are pylon-mounted in underwing nacelles. Provisions are made for a crew of eight men, consisting of a pilot, an instructor and six bombardier-navigator trainees.

The basic structure is nearly identical to the A3D-2Q. The wing has a cambered leading edge and full-span slats. One bomb rack is located under each wing to carry practice bomb dispensers. The rear compartment floor is adaptable to carrying cargo or transport type seats.

**DEVELOPMENT**

First Flight ----- May 1959  
 Service Use (Estimated)-----October 1959

**DIMENSIONS**

WING AREA----- 812 sq. ft.\*  
 SPAN----- 72.5 ft.  
 M.A.C.-----145.2 in.\*  
 SWEEPBACK-----36°  
 LENGTH-----74.4 ft.  
 HEIGHT----- 22.8 ft.  
 TREAD ----- 10.4 ft.

\*All aerodynamic coefficients are based on the original wing area of 779 square feet and MAC of 140.14 inches

**WEIGHTS**

LOADING	LBS.	LF.
Empty	39933	
Basic	40579	
Design	55942	3.4
Combat	59690	
Max T.O. (Land)	78000	2.44
Max T.O. (Cat.)	73000	2.60
Catapult Design	70000	2.72
Max. Landing (Land) 56000		
Max. Landing (Carrier) 49000 (with ASC 155)		
	46000 (without ASC 155)	

**FUEL AND OIL**

GAL.	NO. TANKS	LOCATION
*1825	1	Fwd. Fuselage
*1958	1	Aft Fuselage
666.5 ea.	2	Wing

\* Self Sealing  
 Total Fuel Capacity 5116 Gals.  
 Fuel Grade ----- JP-5  
 Fuel Spec ----- MIL-F-5624

**OIL**

GAL.	NO. TANKS	LOCATION
11	2	Integral with Engine

Oil Spec.-----MIL-L-7808

**ELECTRONICS**

Radio Rec. ( VOR)-----AN/ARN-14-E  
 Radio Compass -----AN/ARN-6  
 Tacan -----AN/ARN-21  
 Direction Finder, (UHF)-----AN/ARA-25  
 Radio Altimeter -----AN/APN-22  
 IFF Transponder -----AN/APX-6B  
 Coder Group -----AN/APA-89

(without video coder)

Trans-Receiver, (UHF)-----AN/ARC-27A  
 Communication Radio -----AN/ARC-38  
 Radio Receiver (UHF)-----AN/ARR-40  
 Radar Bomb Director -----ASB-1A  
 Antenna Coupler-----CU-509(X)/AR

SERVICE

PERFORMANCE SUMMARY						
TAKE-OFF LOADING CONDITION		(1) HIGH ALTITUDE ATTACK 2 AERO 8A DISPENSERS	(3) HIGH ALTITUDE ATTACK 2 AERO 8A DISPENSER	(5) HIGH ALTITUDE ATTACK WITH TWO T-65 TRAINING STORES		
TAKE-OFF WEIGHT	lb.	70,000	78,000	78,000		
Fuel (JP-5)	lb.	25,781	33,788	28,595		
Fayload	lb.	1500	1500	6686		
Wing loading	lb./sq.ft.	86.2	96.1	96.1		
Stall speed - power-off	kn.	119.7	126.4	126.4		
Take-off run at S.L. - calm (A)	ft.	4600	5900	5900		
Take-off To Clear 50 ft. - Calm (A)	ft.	4920	6300	6300		
Take-off to clear 50 ft. - JATO (B)	ft.	2000	2850	2850		
Max. speed/altitude (C)	kn./ft.	531/S.L.	531/S.L.	533/S.L.		
Rate of climb at S.L. (C)	fpm.	4800	4200	4230		
Time: S.L. to 20,000 ft. (C)	min.	5.4	6.2	6.2		
Time: S.L. to 30,000 ft. (C)	min.	9.2	10.7	10.7		
Service ceiling (100 fpm) (C)	ft.	41,500	39,400	39,400		
Combat range	n.mi.	2200	2815	2295		
Average cruising speed	kn.	430	430	430		
Cruising altitude (a)	ft.	37600/4500	35600/44900	35600/42600		
Combat radius	n.mi.	1100	1405 (D)	1190		
Average cruising speed	kn.	430	430	430		
Mission Time	hr.	5.2	6.6	5.1		
Low Altitude Attack (Radius/Mission Time)n.mi./hr				1270/6.0		
COMBAT LOADING CONDITION		(2) 60% FUEL WITH STORES	(4) 60% FUEL WITH STORES	(6) 60% FUEL WITH STORES		
COMBAT WEIGHT	lb.	59,698	64,485	66,562		
Engine power		MILITARY	MILITARY	MILITARY		
Fuel	lb.	15,469	20,273	17,157		
Combat speed/combat altitude	kn./ft.	469/42,400	467/41,000	467/40,500		
Rate of climb/combat altitude	fpm/ft.	650/42,	700/41,000	700/40,500		
Combat ceiling (500 fpm)	ft.	43,200	41,700	44,900		
Rate of climb at S.L.	fpm.	5750	5200	5080		
Max. speed at S.L.	kn.	531	531	533		
Max. speed/altitude	kn./ft.	505/35,000	502/35,000	506/35,000		
LANDING WEIGHT	lb.	46,288	46,703	45,366		
Fuel	lb.	2521	2943	2647		
Stall speed - power-off	kn.	97.2	97.6	96.1		
Stall speed - with approach power	kn.	95.4	96.0	94.5		

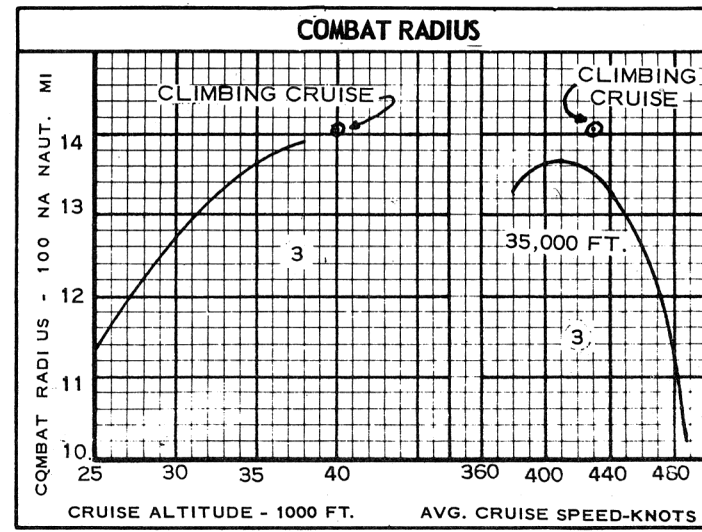
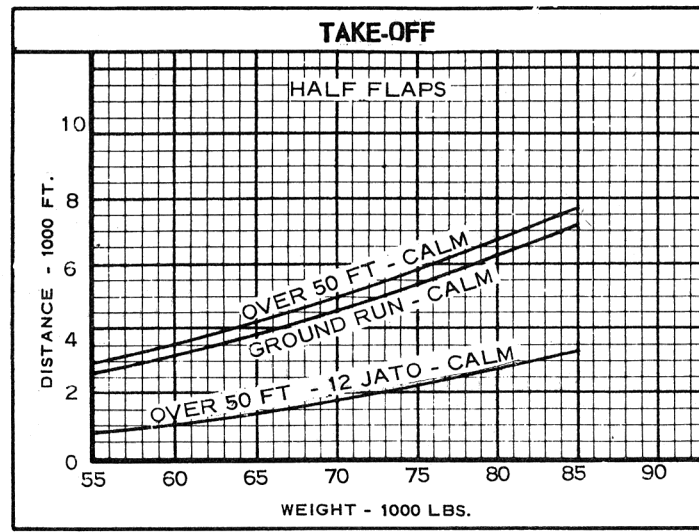
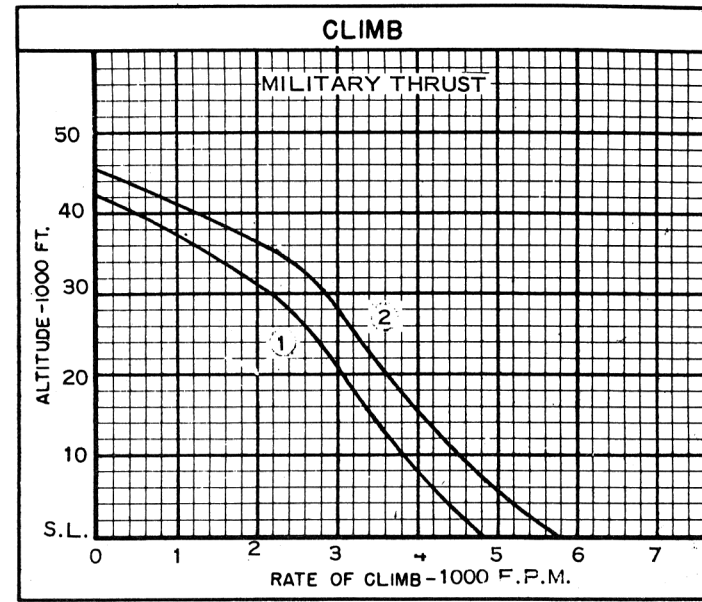
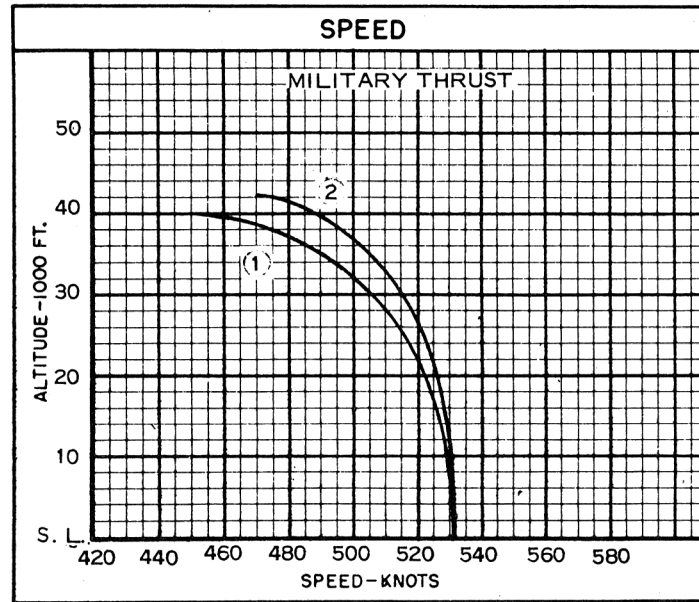
NOTES

PERFORMANCE BASIS: Flight Test of A3D-1, wind tunnel tests of A3D-2 (cambered wing) and calculations.

RANGE AND RADIUS are based on engine spec. fuel consumption increased by 5%

SPOTTING: A total of 27 airplanes can be accommodated in a landing spot on the flight and hangar decks of a CVA-19 class angled deck carrier

- (A) HALF FLAPS
- (B) HALF FLAPS 12 JATO UNITS INCREASE TAKE-OFF WEIGHTS SHOWN BY 2712 LBS.
- (C) MILITARY THRUST
- (D) WITH ONE REFUELING ON THE OUTBOUND LEG, THE HIGH ALTITUDE ATTACK RADIUS IS INCREASED TO 2036 N.MI. (WITH A MISSION TIME OF 9.54 HOURS)



○ LOADING CONDITION COLUMN NUMBER

DECLASSIFIED

CONFIDENTIAL

NAVAIR 00-110AA3-7

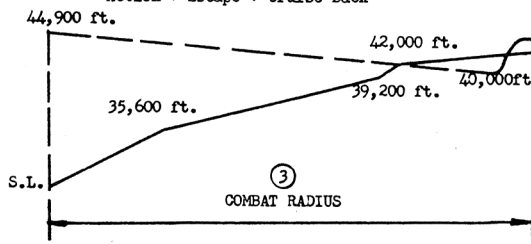
SERVICE

# NOTES

## HIGH ALTITUDE ATTACK

WARM-UP, TAKE-OFF AND ACCELERATE: 5 minutes at normal thrust at sea level  
 CLIMB: On course to optimum cruise altitude with military thrust  
 CRUISE-OUT: At altitudes and speeds for maximum range  
 CLIMB: With maximum thrust on course to cruise ceiling  
 BOMB RUN: 15 minutes at normal thrust at combat altitude  
 DROP BOMBS:  
 EVASIVE ACTION: 2 minutes with normal thrust at combat altitude (no distance gained)  
 ESCAPE: 8 minutes with normal thrust (assume escape ends at optimum cruise back altitude)  
 CRUISE-BACK: At altitudes and speeds for maximum range  
 RESERVE: 20 minutes at speed for maximum endurance at sea level plus 5% of initial fuel load

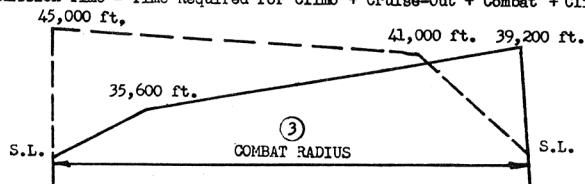
Combat Radius = Climb + Cruise-Out + Climb + Run-In + Escape + Cruise-Back  
 Mission Time = Time Required for Climb + Cruise-Out + Climb + Bomb Run + Evasive Action + Escape + Cruise-Back



## LOW ALTITUDE ATTACK AND GROUND SUPPORT

WARM-UP, TAKE-OFF AND ACCELERATE: 5 minutes at normal thrust at sea level  
 CLIMB: On course to optimum cruise altitude with military thrust  
 CRUISE-OUT: At altitudes and speeds for maximum range  
 DESCEND TO SEA LEVEL: No fuel consumed, no distance gained  
 DROP BOMBS:  
 COMBAT: 5 minutes at military thrust at sea level (no distance gained)  
 CLIMB: On course to optimum cruise altitude with military thrust  
 CRUISE BACK: At altitudes and speeds for maximum range  
 RESERVE: 20 minutes at speed for maximum endurance at sea level plus 5% of initial fuel load

Combat Radius = Climb + Cruise-Out = Climb + Cruise-Back  
 Mission Time = Time Required for Climb + Cruise-Out + Combat + Climb + Cruise-Back



LOADING CONDITION COLUMN NUMBER

CONFIDENTIAL

DECLASSIFIED

63