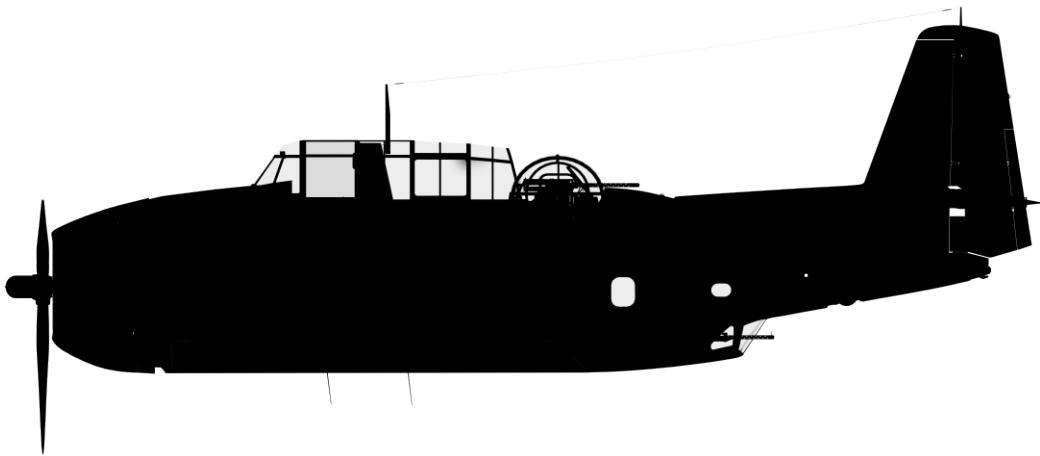


Vertigo Studios

TBM Avenger 3 & Tarpon III

Pilots Operating Manual



Microsoft Flight Simulator X®

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The Avenger

Introduction

The Avenger was the heaviest single-engine aircraft of World War II, and only the USAAF's P-47 Thunderbolt came close to equalling it in maximum loaded weight among all single-engined fighters, only being some 400 lb (181 kg) lighter than the TBF, by the end of World War II. The Avenger was the first design to feature a new wing-folding mechanism, intended to maximize storage space on an aircraft carrier.

The engine used was the Wright R-2600-20 (which produced 1,900 hp/1,417 kW). The aircraft took 25 gallons of oil and used one gallon per minute at start-up. There were three crew members: pilot, turret gunner and radioman/bombardier/ventral gunner. One .30 caliber machine gun was mounted in the nose, a .50 caliber (12.7 mm) gun was mounted right next to the turret gunner's head in a rear-facing electrically powered turret, and a single .30 caliber hand-fired machine gun mounted ventrally (under the tail), which was used to defend against enemy fighters attacking from below and to the rear. This gun was fired by the radioman/bombardier while standing up and bending over in the belly of the tail section, though he usually sat on a folding bench facing forward to operate the radio and to sight in bombing runs.

Later models of the TBF/TBM dispensed with the nose-mounted gun for one .50 caliber gun in each wing per pilots' requests for better forward firepower and increased strafing ability. There was only one set of controls on the aircraft, and no access to the pilot's position from the rest of the aircraft. The radio equipment was massive, especially by today's standards, and filled the whole glass canopy to the rear of the pilot. The radios were accessible for repair through a "tunnel" along the right hand side.



Noteworthy Features, Retail Deluxe Box and Digital Download

Digital Download

- 2 x models included, TBF 3 and Tarpon MkIII
- As with every Vertigo Studios aircraft, it is gorgeously constructed, inside and out.
- Comes complete with a comprehensive PDF manual.
- 3D 'Sound Cone' Technology with an amazing sound set, engineered using authentic Pratt & Whitney.
- DirectX 10 compatible models complete with virtual cockpit self-shadowing.
- Systems and Tru3D gauges for ultimate realism taken beyond what's available by default.
- Tru3D Instrumentation for the ultimate smooth flying experience.
- Customised high-resolution materials give the most realistic appearance to the aeroplane, whilst being optimised for great performance!
- 7 historically accurate and detailed paint schemes.
- Fuel delivery system is accurately simulated.
- 2D Pop-ups, GPS and Radio.
- Realistic canopy operation and animation.
- Fully operable weapons pack with multiple munitions, including guns, torpedo, bomb and rockets!
- Light bloom on glass and shiny materials.
- Exciting custom-made effects.
- Operational Cockpit Radio
- 2 FDE files, Advanced Flight Dynamics and Easy Flight Dynamics.

Retail Box

- 20 additional historically accurate and detailed paint schemes.
- Paint Kit included (The paint kit requires Adobe Paint-Shop to be used correctly.)
Located : Microsoft Games / Microsoft Flight Simulator X / SimObjects / Airplanes / VS Avenger / Paintkit

FDE Files (*Both the Digital Download and Retail box version contain both Flight Models*)

We have included '2' FDE files which enable you to fly either the easy flight model or the advanced version. To signify the differences between them both is show below :

- EFM = Easy Flight Model
- RFM = Real Flight Model

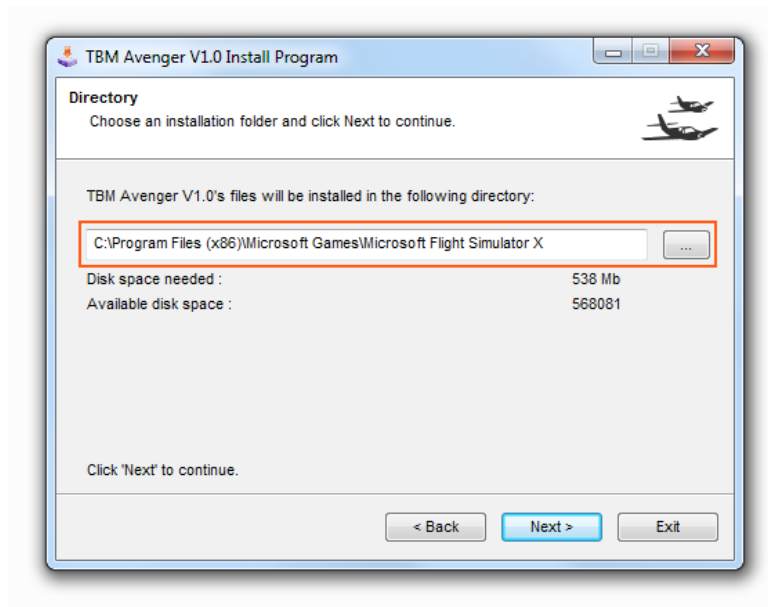
Each of the TBM models in your FSX startup screen either have EFM or RFM, dependant upon your experience, please choose which is more suited.

Installation & Technical Support

The Avenger can be installed by simply double-clicking the package .exe file. The Avenger should be installed to the root directory of FSX. If you have purchased the Retail Box, please insert the media into your drive and allow the CD to run.

Once the installation window has opened, follow the on screen instructions.

By default the installer should locate your FSX installation directory automatically, however if your FSX installation directory is different, please select the location manually. (see example below)



To remove the Avenger from your PC go to : Start > All Programs > Vertigo Studios > TBM Avenger > Uninstall

A paint kit can be obtained by visiting the Avenger product page, the paint kit is located on the right hand side of the [product page](#). If you have purchased the Avenger Deluxe Retail Box the Paint Kit is already included. located :

WIN 7

C:\Program Files (x86)\Microsoft Games\Microsoft Flight Simulator X\SimObjects\Airplanes\ VS Avenger\Paintkit\

XP and Vista

C:\Program Files\Microsoft Games\Microsoft Flight Simulator X\SimObjects\Airplanes\ VS Avenger\Paintkit\

The paint kit requires Adobe Paint-shop to be used correctly. Product support is available 24/7 by means of our online support desk. In order to access product support, please use the following link located below :

<http://www.vertigostudios.co.uk/helpdesk>

When requesting product support please be as thorough as possible, this will enable us to recreate the problems your experiencing and finally, please state your order details and license key, without these we're unable to offer support. Whilst Vertigo Studios will endeavour to view and consider all forum posts, support can only be guaranteed via the correct (above) method. Vertigo Studios has no obligation to provide support on any third-party forum or community website.

Variants included (Avenger Digital Download)

If you have purchased the Avenger Digital download the following variants and paint schemes are included in the package.



Variants included (Avenger Deluxe Retail Box only)



External Fuel Tank

Adding the external fuel tank has never been easier. The tank is located with in the bomb bay which is usually used for endurance flights. To add or remove the External fuel tank, follow the steps below.

NOTE: The external fuel tank cannot be dropped from the Bomb Bay.

1. Adding the external fuel tank to your aircraft
 - To add the external fuel tank, make sure that the fuel quantity is 100% or 1650 lbs in the External 1 window. The maximum fuel level for the Tank is 1650 lbs
2. Removing the external fuel tank from your aircraft
 - To remove the external fuel tank from the aircraft, set the fuel quantity or weight to '0' zero

FUEL SETTINGS

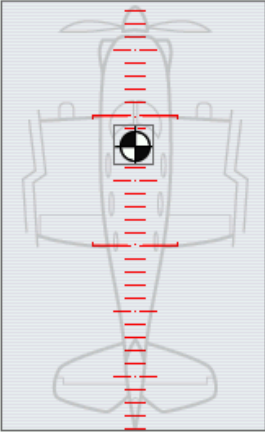
Grumman Tarpon III

☒ Display fuel quantity as weight

Tank	%	Pounds	Capacity
Center	99.0	861.3	870.0
Center 2	100.0	540.0	540.0
Center 3	100.0	540.0	540.0
External 1	100.0	1650.0	1650.0

Total fuel: 99.8 3591.3 0

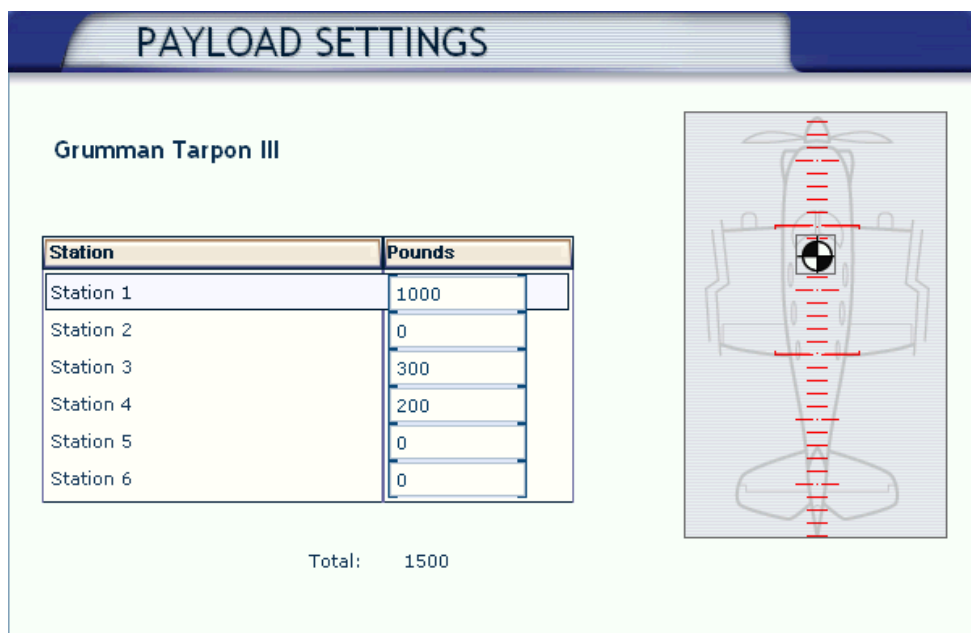
Fuel weight lbs/gal: 6.0



Weapons Selection & Operating Procedures

Payload Screen

By altering certain stations weight in the payload window (see image below) this will determine which armament you will carry on your flight. By following the below steps, you will be able to choose whether your aircraft is equipped with Rockets, a Bomb or Torpedo.



Station	Pounds
Station 1	1000
Station 2	0
Station 3	300
Station 4	200
Station 5	0
Station 6	0

Total: 1500

If you prefer to fly the aircraft without any weapons, edit all the station weights to '0' zero.

Station #1 :

- 1000 lb (enables bomb)

Station #2

- 2000 lb (enables Torpedo)

Station #3

- 300 lb (enables Rockets)

Station #4 :

- 200lb (Pilot)

Station #5

- 200 lb (Ball Turret Gunner visual model removed)

Station #6

- 200 lb (Radio man visual model removed)

Weapons Selection & Operating Procedures

Wing Mounted Guns

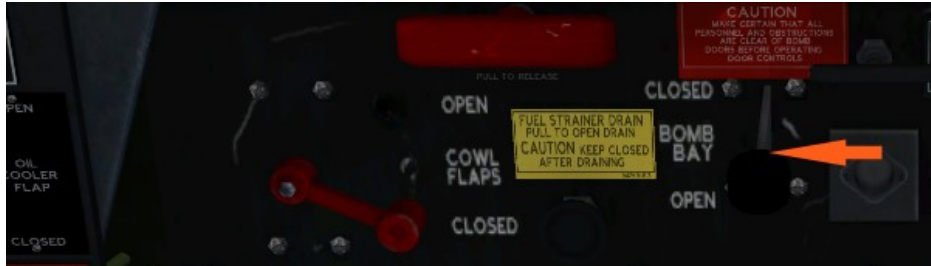
- Charging the Wing Guns -
 - The gun charging control valve is located on the right hand side of the instrument panel. This valve is designed to charge the guns ready for firing or to hold the action in SAFE position.
- Firing the Wing Guns -
 - The .50 caliber guns in the wing are hydraulically charged and electrically fired. The ammunition box for each gun is installed in a compartment out-board of the gun and the ammunition belt is guided by a connecting feed chute.
 - To fire the wing mounted guns, we have assigned the firing effect to the brake key. By default this is the period key.
- Prior to Landing -
 - **WARNING** : Prior to landing, make sure the gun charging valve is set back to safe, otherwise by hitting the brake key this will fire you wing mounted guns instead of bring your aircraft to a stop.



Weapons Selection & Operating Procedures

Bomb Release Procedure

- Bomb bay doors -
 - Before we're able to deploy the bomb we should take precautions of the unthinkable, so let's start by opening our bomb bay doors. To do this click the bomb doors switch which is located on the forward panel (see image below) Once the bomb doors switch is lit red, we're ready to ARM and FUSE the bomb.



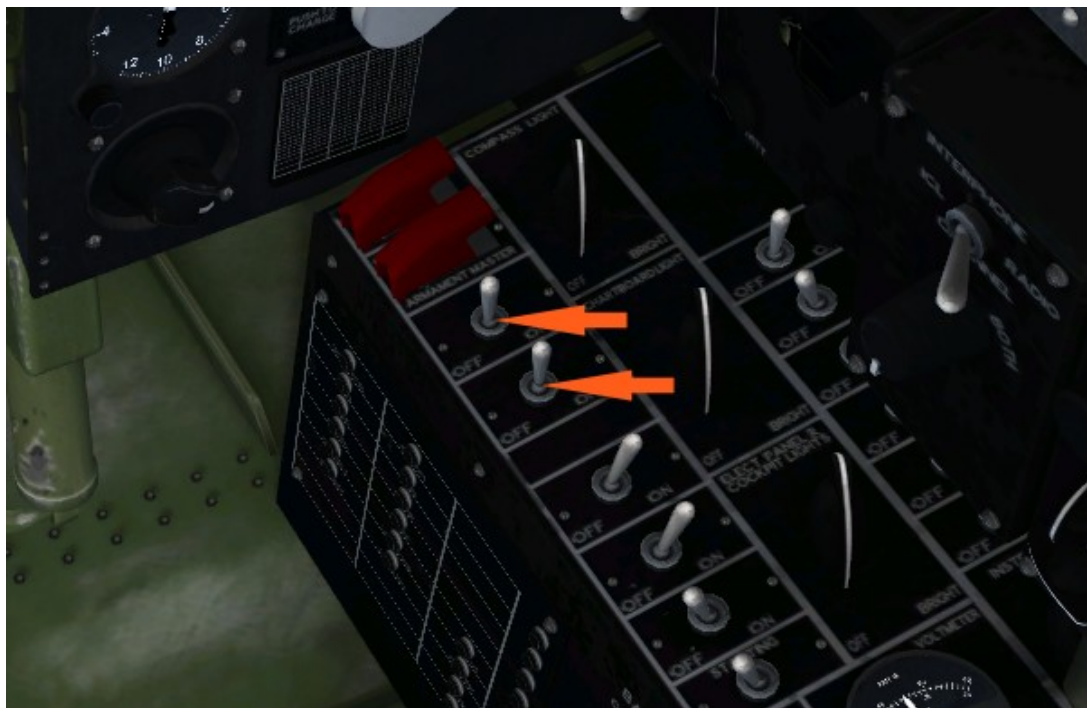
- Preparing your bomb load for firing -
 - Before your able to drop the payload you will need to flip open the 2 red switch covers (see image below)
- Fusing and arming -
 - Once the 2 red switch covers are open, you will see an additional 2 switches. To make the payload ready for dropping you will need to FUSE and ARM the weapon. To do this, simply flip the lower switch to FUSE and then flip the top switch to ARM the Bomb.
- Releasing your payload -
 - Now that the Bomb is FUSED and ARMED we are all set for release. Before releasing the Bomb, double check to see that the bomb bay is open by referring to the bomb bay light (see image below) if lit red we are all good to go. We have assigned the bomb release to the spoiler key, by default the key is assigned the forward slash key '/' hit this key and your bomb will release. Once released, be sure to close your bomb bay doors.



Weapons Selection & Operating Procedures

Rockets Release Procedure

- Preparing your rockets for firing -
 - Before your able to release the rockets, you will need to prepare the rockets for firing. To do this simply flip the rocket FUSE and ARM switch located on the lower right panel (see image below)



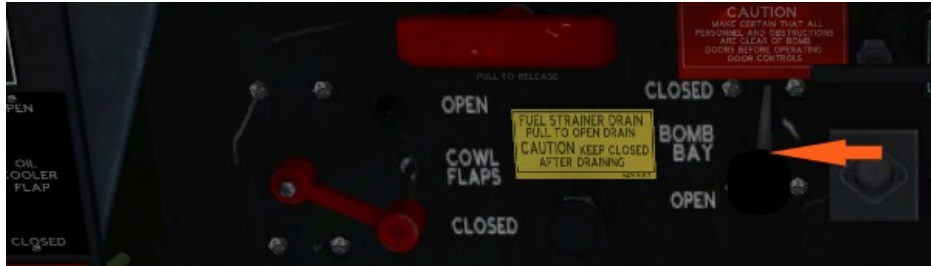
- Releasing your rockets -
 - Now that the Rockets are FUSED and ARMED we are all set for release. We have assigned the Rocket release to the cockpits flight stick, located on top of the flight stick is a red button. To fire the Rockets click the red button. (see image below)



Weapons Selection & Operating Procedures

Torpedo Release Procedure

- Bomb bay doors -
 - Before we're able to deploy the Torpedo we should take precautions of the unthinkable, so lets start by opening our bomb bay doors. To do this click the bomb doors switch which is located on the forward panel (see image below) Once the bomb doors switch is lit red, we're ready to ARM and FUSE the Torpedo.



- Preparing your Torpedo for dropping -
 - Before your able to drop the payload you will need to flip open the 2 red switch covers (see image below)
- Fusing and arming -
 - Once the 2 red switch covers are open, you will see an additional 2 switches. To make the payload ready for dropping you will need to FUSE and ARM the weapon. To do this, simply flip the lower switch to FUSE and then flip the top switch to ARM the Torpedo.
- Releasing your payload -
 - Now that the Torpedo is FUSED and ARMED we are all set for release. Before release, double check to see that the bomb bay is open by referring to the bomb bay light (see image below) if lit red we are all good to go. We have assigned the payload release to the spoiler key, by default the key is assigned the forward slash key '/' hit this key and your Torpedo will release. Once released, be sure to close your bomb bay doors.



Cockpit Tour

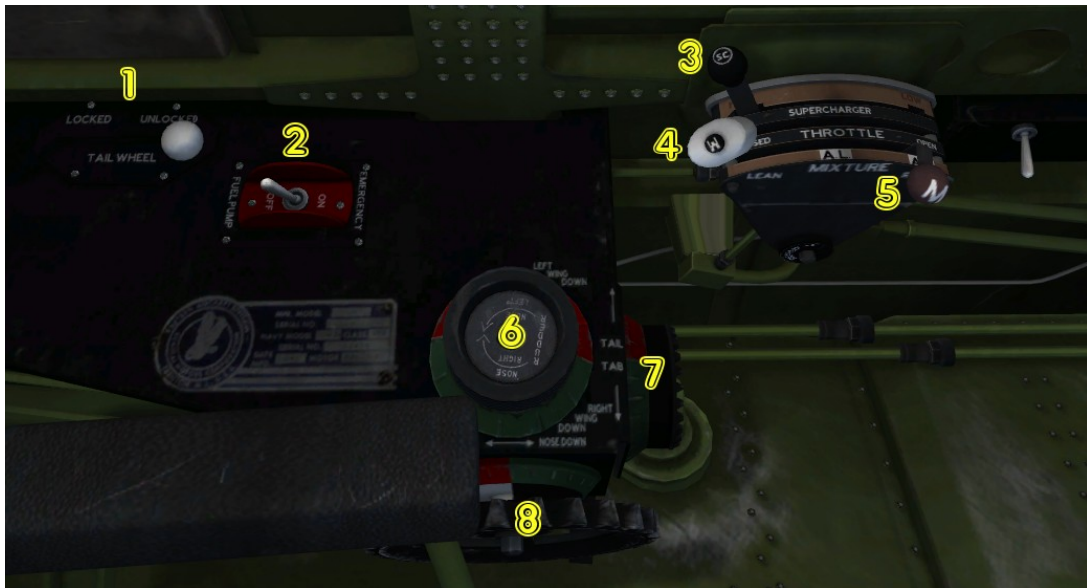
Front Panel



- | | |
|------------------------------|--|
| 1 Manifold Pressure Gauge | 17 Prop Control |
| 2 Altimeter | 18 Oil Cooler lever |
| 3 Air speed indicator | 19 Cowl Flaps |
| 4 Radio altimeter lights | 20 Arresting hook |
| 5 Pilot's Director indicator | 21 Bomb bay doors |
| 6 Tachometer | 22 Wing fold |
| 7 Climb Indicator | 23 Air Pressure |
| 8 Turn and Bank Indicator | 24 Oil |
| 9 Directional Gyro | 25 Fuel Gauge |
| 10 Bank and climb Gyro | 26 Cylinder Temp Gauge |
| 11 A.Y.D. Limit switch | 27 Flaps lever |
| 12 A.Y.D. Altimeter | 28 Landing Gear Lever |
| 13 Carb air control | 29 Remote indicating compass |
| 14 Map tray | 30 G Meter |
| 15 Clock | 31 Gun charger |
| 16 Mag switches | 32 Fuel selector valve |
| | 33 Auto-pilot (see auto pilot panel below) |
| | 34 Gyro Drift adjust |

Cockpit Tour

Left Panel



1 Tail wheel lock

2 Fuel pump

3 Super Charger

4 Throttle lever

5 Mixture lever

6 Rudder trim wheel

7 Aileron trim wheel

8 Elevator trim wheel

Right Panel



- 1 Avionics Master Switch
- 2 Com 1
- 3 Com 2
- 4 Nav
- 5 Landing Light Switch
- 6 Nav Lights
- 7 Tail Running Light
- 8 Map Table Light
- 9 Radio Station Lighting
- 10 Aux Light Switch
- 11 Panel Lighting
- 12 Cabin Light Switch
- 13 Panel Post Lights
- 14 Panel Post Lights

- 15 Fuse Bomb and Arm Bomb
- 16 Ready Fire Rockets
- 17 Arm Rockets
- 18 Gun Camera
- 19 Gun Sight
- 20 Engine Primer
- 21 Engine Start
- 22 Pitot Heat Switch
- 23 Battery Switch
- 24 Formation Lights Red
- 25 Formation Lights Green
- 26 Formation Lights Amber
- 27 Formation Lights Blue
- 28 Communications Radio Tuner large Numbers
- 29 Communications Radio Tuner Small Numbers

Auto Pilot and Operating Procedures



1 Heading Trim Position Lever

2 Rudder Position Indicator Display

3 Rudder Trim Select Control

4 Wing Lever control (hold)

5 Wing position Indicator Display

6 Aileron Trim Position Lever

7 Altitude Hold

8 Elevator Position Indicator Display

9 Elevator Pitch Trim Position Lever

This airplane is equipped with a pilot stability system, which is designed to provide control of rudder, ailerons and elevators, maintaining directional, lateral and longitudinal stability as set by the human pilot, thereby relieving him of the physical duty of flying. The pilot stability system gives an instrument indication of all the normal movements of the airplane for both manual and automatic flight. Its operated by hydraulic pressure supplied by the engine-driven pump.

The controls are located on the upper part of the pilots instrument panel.

To operate the stability of the control surfaces, move you mouse over highlighted numbers 3, 6 and 9, hover over the switch and roll the mouse wheel, this will allow you to move the control surface in the desired direction in degrees, pay special attention to the control surface position indicator display. To reset the the trim instrument indicators, simply reset them to to zero degrees.

Radio Altimeter



The APN-1 Radio Altimeters were installed in the aircraft to provide direct measurement of altitude relative to the terrain during flight.

The altitude limit switch is used to set a determined altitude at which flight is desired between range 50 to 300 feet. Indicator lights on the instrument panel indicate the altitude of the airplane as compared to the set altitude.

- Amber – Flight is at SET altitude
- Green – Flight is ABOVE set altitude
- Red – Flight is BELOW set altitude

The Altitude indicator range :

- Range – 50 to 300

Operating the Equipment, to place the altimeter equipment in operation, proceed as follows :

1. Altitude limit switch – set the altitude limit switch for the desired pre-set altitude. One of the eleven different altitudes may be pre-selected by the switch.
2. Power – Turn the power switch clockwise to the “on” position. A “green” signal will appear immediately on the altitude limit indicator and will be sustained for a few seconds.
3. When nearing close proximity of the target, pay special attention the amber light on the front panel, once the amber light is displayed you are at the perfect height for releasing the torpedo.

Radio Familiarization



1. COM 1
2. COM 2
3. NAV 1
4. Frequency Tuning Head 1
5. Frequency Tuning Head 2

To operate, simply click on COM 1 or COM 2 and then use the tuning heads numbered 4 and 5 to set your frequency.

Starting the Engine

Head the airplane into the wind and lock wheels. Check Fuel Supply of all tanks and check oil. Set the controls in the following positions :

- Ignition / starter switch, accessory switches OFF
- Mixture automatic rich
- Supercharger low (not simulated)
- Propeller low pitch (full out)
- Cowl flaps open
- Throttle open (full forward position)
- Auxiliary fuel pump on
- Pull the propeller slowly by hand in the normal direction of rotation through at least three complete revolutions (not simulated)

Immediately before starting, adjust the following controls as noted

- Oil cooler flap closed
- Throttle set for a maximum of 1200 RPM
- Fuel supply cock center main tank
- Mag switch to both
- Batter switch on
- Starter switch
 - The amount of priming may be varied as indicated by experience. If the engine is warm, priming may not be necessary.

Engine Warm-up

- Head airplane into wind
- Set the controls as follows
 - Fuel Selector valve main
 - cowl flaps open
 - Oil cooler flap closed
 - mixture control auto rich
 - Propeller control high RPM (full out)

Taxing Instructions

Tail wheel unlocked, canopy open, the minimum engine speed when taxing should be 7000 RPM. Check the operation of the brakes, do not taxi with the wings folded, unless absolutely necessary.

Take-Off

Normal Take off check off list

- Wings spread and locked
- Bomb Doors Closed
- Mixture control Auto Rich
- Propeller control High RPM
- Cowl flaps open
- Oil cooler flaps open
- Fuel tank selector left or right main tanks
- Elevator Trim Tab Neutral
- Rudder Trim Tab 1 degree nose right
- Aileron Trim Tab Neutral
- Tail wheel locked
- Canopy Open
- Manifold Pressure, Open throttle slowly to 49"
- Fuel pump on until normal altitude is attained

Minimum take-off, the following will aid if minimum take-off runs are desired

- Flaps fully lowered
- Take-off power reached with the airplane held by brakes before starting run.
- Tail raised by moderate force on controls during first part of run
- When take-off speed is reached, pull tail down to reach maximum angle of attack at the moment of leaving ground.
- Wheels raised when clear of ground. Apply brakes to prevent tire wear as the wheels retract into the wheel wells.
- After reaching an airspeed of about 100 knots (115 mph), flaps raised and airplane re-trimmed longitudinally at the same time.

Catapult take off

- Flaps full down
- Elevator tab about 1.5 deg nose down
- Rudder tab about 3 deg nose right
- Aileron tab about 1 deg left wing down
- Stick in the neutral position
- Use Full manifold pressure
 - Flight simulator X
 - Move your aircraft to the Catapult Box
 - Press SHIFT + i for catapult attach
 - Press SHIFT + spacebar to launch

Maneuvers Prohibited, Stalls, Spins, Acrobatics

Maneuvers Prohibited

- Aileron roll
- Snap roll
- Immelmann turn
- Inverted flight
- Intentional spins
-

Stalls

- The stall is less pronounced in the average airplane. Due to the variable loading conditions, the pilot should become thoroughly familiar with the peculiarities of the stall and the recovery characteristics as soon as possible.
- Recovery is greatly expedited by rapid and full control movements.
- DO NOT stall the airplane and low altitudes, since considerable altitude may be lost before complete recovery can be effected.

Spins

- Voluntary spins in this airplane are not permitted.
- Recovery from an inadvertently entered spin may be accomplished by the standard spin recovery technique.
- All control movements should be smooth, but rapid.

Acrobatics

- All acrobatics are strictly prohibited in this airplane.

Diving

Steep prolonged dives are not permitted with this airplane.

Glide Bombing may be carried out with any combination of useful load and with the bomb bay doors open or closed, with the landing gear extended or retracted provided the following limitations are not exceeded :

Gross Weight Pounds	Permissible Positive Accel	Permissible Negative Accel	Permissible Speed knots
13000 and less	4.6g	2.0g	315
13500	4.4g	2.0g	315
14000	4.2g	2.0g	315
14500	4.0g	2.0g	315
15000	3.8g	2.0g	305
15500	3.6g	2.0g	295
16000	3.4g	2.0g	285
16500	3.2g	2.0g	275
17000	3.0g	1.9g	265
17500	2.8g	1.8g	255
18000	2.6g	1.7g	245

This airplane will safely withstand existing limiting speeds and accelerations. The only unknown quantity that may have catastrophic results in flight is the magnitude of vertical gusts in turbulent air. When turbulent conditions are known to exist or can be expected. Speeds must be reduced and pull-outs must be executed with due regard for increased accelerations resulting from this turbulence. The use of aileron at high speeds or during pull-outs must be undertaken with caution.

Fifteen inches of manifold pressure is recommended during prolonged glides to keep the engine warm. Caution should be observed in gliding from high altitude as manifold pressure will build up rapidly at a constant throttle setting. Caution should also be observed to open throttle very closely at completion of the dive so partly cooled engine will not cut out.

Approach and Landing

Check-off list

- Bomb doors closed
- Gear down
- Wing flaps down
- Tail wheel
 - Shore base, locked
 - Carrier base, unlocked after landing gear has been lowered
- Canopy open

Set power plant controls as follows

- Mixture control Auto Rich
- Propeller control 2400 RPM
- Fuel tank selector Left or right main tank
- Throttle closed
- Oil cooler open (this is done to dissipate heat if “take-off” power is required in an emergency)
- Cowl flaps cracked
- In the final approach, change the propeller governor control from 2400 RPM to “take-off” RPM
- Fuel pump on
- If landing cannot be made, open the throttle to obtain take-off power and proceed in accordance with the instructions for take-off, as outlined in this manual.

Stopping the engine

- After landing, unlock the tail wheel for taxiing.
- Cowl flaps open
- Oil cooler flap open
- Move the mixture control to the idle cut-off position. The engine will stop in a few seconds. The mixture control should be in the idle cut off position at all times when the engine is not running.
- After the propeller stops turning move the mag switch to the off position. Set throttle control to open
- Turn all transmitter switches and all other accessory switches to off
- Turn battery switch to off
- Turn fuel selector valve to off
- Secure plane before leaving unattended.

Official Chart Data

Manual V1.00 EU / TBM V1.01
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1-1-35
825-500

AIRCRAFT MODEL (S)
XTBM-3
ENGINE: **WRIGHT R2600-20**

FLIGHT OPERATION INSTRUCTION CHART
CHART WEIGHT LIMITS: 14,000 TO 16,000 POUNDS

EXTERNAL LOAD ITEMS
NONE

LIMITS	RPM	M.P. (M.P.G.)	BLOWER POSITION	MIXTURE POSITION	TIME LIMIT	CYC. TEMP.	TOTAL G.P.H.	COLUMN I		COLUMN II		COLUMN III		COLUMN IV		COLUMN V	
								STATUTE	NAUTICAL	STATUTE	NAUTICAL	STATUTE	NAUTICAL	STATUTE	NAUTICAL	STATUTE	NAUTICAL
WAR EMERG.																	
MILITARY POWER	2600	445/385-6000 FT	LOW	AL.	30 MIN.	248 °C	220										

RANGE IN AIRMILES		RANGE IN AIRMILES		RANGE IN AIRMILES		RANGE IN AIRMILES		RANGE IN AIRMILES		RANGE IN AIRMILES		RANGE IN AIRMILES		RANGE IN AIRMILES		RANGE IN AIRMILES	
STATUTE	NAUTICAL	STATUTE	NAUTICAL	STATUTE	NAUTICAL	STATUTE	NAUTICAL	STATUTE	NAUTICAL	STATUTE	NAUTICAL	STATUTE	NAUTICAL	STATUTE	NAUTICAL	STATUTE	NAUTICAL
145	125	100	200	175	350	250	500	435	600	300	260	100	340	295			
290	250	200	400	350	700	500	1000	870	1200	600	520	200	680	590			
435	380	300	600	520	1040	750	1500	1275	1800	900	780	300	1020	880			

MAXIMUM CONTINUOUS				PRESS				APPROX.				APPROX.				APPROX.															
M.P. INCHES	M.P. INCHES	M.P. INCHES	M.P. INCHES	ALT. FEET	TOT. GPH	T.A.S. KTS.	T.A.S. KTS.	TOT. GPH	T.A.S. KTS.	TOT. GPH	T.A.S. KTS.	TOT. GPH	T.A.S. KTS.	TOT. GPH	T.A.S. KTS.	TOT. GPH	T.A.S. KTS.														
																		MIX-TURE	MIX-TURE	MIX-TURE	MIX-TURE	MIX-TURE	MIX-TURE	MIX-TURE	MIX-TURE	MIX-TURE	MIX-TURE	MIX-TURE	MIX-TURE	MIX-TURE	MIX-TURE
2400	40.5	A.L.	185	265	230	6,000	2200	33	A.L.	115	235	204	2200	30.5	A.L.	90	225	195	2100	29.5	A.L.	70	210	183	6,000	1800	23.5	A.L.	55	180	156
2400	41.5	A.L.	185	255	222	3,000	2100	31.5	A.L.	110	224	195	2100	30	A.L.	85	215	187	1800	29.5	A.L.	65	190	185	3,000	1600	25.5	A.L.	43	145	126

SPECIAL NOTES

- (1) MAKE ALLOWANCE FOR WIND-UP, TAKE-OFF & CLIMB (SEE FIG. 73)
- (2) MAKE ALLOWANCE FOR WIND, RESERVE AND COMBAT AS REQUIRED.

EXAMPLE

475,500 LBS. GROSS WEIGHT WITH 300 GAL. OF FUEL
(AFTER REDUCING TOTAL ALLOWANCES OF 30 GAL.)
TO FLY 900 STAT. AIRMILES AT 3000 FT. ALTITUDE
MAINTAIN 1800 RPM AND 29.5 IN. MANIFOLD PRESSURE
WITH MIXTURE SET: A.L.

LEGEND

- ALT. : PRESSURE ALTITUDE
- M.P. : MANIFOLD PRESSURE
- GPH : U.S. GAL. PER HOUR
- T.A.S. : TRUE AIRSPEED
- KTS. : KNOTS
- S.L. : SEA LEVEL
- A.L. : AUTO-LEAD

DATA AS OF 10-20-44 BASED ON: FLIGHT TEST AT 15,500 LBS.

RED FIGURES ARE PRELIMINARY DATA, SUBJECT TO REVISION AFTER FLIGHT CHECK

AIRCRAFT MODEL (S)										FLIGHT OPERATION INSTRUCTION CHART										EXTERNAL LOAD ITEMS																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
XTBM-3 TBM-3										CHART WEIGHT LIMITS: 16,000 TO 18,000 POUNDS										NONE																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
ENGINE (S): WRIGHT R-2600-20										INSTRUCTIONS FOR USING CHART: SELECT FIGURE IN FUEL COLUMN MOVE HORIZONTALLY TO RIGHT OR LEFT AND SELECT RANGE VALUE EQUAL TO OR GREATER THAN THE STATUTE OR NAUTICAL AIR MILES TO BE FLOWN. VERTICALLY BELOW AND OPPOSITE VALUE NEAREST DESIRED CRUISING ALTITUDE (ALT.) READ RPM, MANIFOLD PRESSURE (M.P.) AND MIXTURE SETTING REQUIRED.										NOTES: COLUMN I IS FOR EMERGENCY HIGH-SPEED CRUISING ONLY. COLUMNS II, III, IV AND V GIVE PROGRESSIVE INCREASE IN RANGE AT A SACRIFICE IN SPEED. AIR MILES PER GALLON (MI./GAL.) AND MILES PER HOUR (M.P.H.) AND TRUE AIRSPEED (T.A.S.) ARE APPROXIMATE VALUES FOR REFERENCE. RANGE VALUES ARE FOR AN AVERAGE AIRPLANE FLYING ALONE (NO WIND) TO OBTAIN BRITISH IMPERIAL GAL. (59 & P.M.) DIVIDE BY 1.2. U.S. GAL. (OR G.P.M.) BY 10 THEN DIVIDE BY 12.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
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M.P.H.		T.A.S.		M.P.		MIXTURE		POSITION		CYL. POSITION		TOTAL LIMIT TEMP.		ALT.		FEET		R.P.M.		M.P.H.		T.A.S.		M.P.		MIXTURE		POSITION		CYL. POSITION		TOTAL LIMIT TEMP.		ALT.		FEET		R.P.M.		M.P.H.		T.A.S.		M.P.		MIXTURE		POSITION		CYL. POSITION		TOTAL LIMIT TEMP.		ALT.		FEET		R.P.M.		M.P.H.		T.A.S.		M.P.		MIXTURE		POSITION		CYL. POSITION		TOTAL LIMIT TEMP.		ALT.		FEET		R.P.M.		M.P.H.		T.A.S.		M.P.		MIXTURE		POSITION		CYL. POSITION		TOTAL LIMIT TEMP.		ALT.		FEET		R.P.M.		M.P.H.		T.A.S.		M.P.		MIXTURE		POSITION		CYL. POSITION		TOTAL LIMIT TEMP.		ALT.		FEET		R.P.M.		M.P.H.		T.A.S.		M.P.		MIXTURE		POSITION		CYL. POSITION		TOTAL LIMIT TEMP.		ALT.		FEET		R.P.M.		M.P.H.		T.A.S.		M.P.		MIXTURE		POSITION		CYL. POSITION		TOTAL LIMIT TEMP.		ALT.		FEET		R.P.M.		M.P.H.		T.A.S.		M.P.		MIXTURE		POSITION		CYL. POSITION		TOTAL LIMIT TEMP.		ALT.		FEET		R.P.M.		M.P.H.		T.A.S.		M.P.		MIXTURE		POSITION		CYL. POSITION		TOTAL LIMIT TEMP.		ALT.		FEET		R.P.M.		M.P.H.		T.A.S.		M.P.		MIXTURE		POSITION		CYL. POSITION		TOTAL LIMIT TEMP.		ALT.		FEET		R.P.M.		M.P.H.		T.A.S.		M.P.		MIXTURE		POSITION		CYL. POSITION		TOTAL LIMIT TEMP.		ALT.		FEET		R.P.M.		M.P.H.		T.A.S.		M.P.		MIXTURE		POSITION		CYL. POSITION		TOTAL LIMIT TEMP.		ALT.		FEET		R.P.M.		M.P.H.		T.A.S.		M.P.		MIXTURE		POSITION		CYL. POSITION		TOTAL LIMIT TEMP.		ALT.		FEET		R.P.M.		M.P.H.		T.A.S.		M.P.		MIXTURE		POSITION		CYL. POSITION		TOTAL LIMIT TEMP.		ALT.		FEET		R.P.M.		M.P.H.		T.A.S.		M.P.		MIXTURE		POSITION		CYL. POSITION		TOTAL LIMIT TEMP.		ALT.		FEET		R.P.M.		M.P.H.		T.A.S.		M.P.		MIXTURE		POSITION		CYL. POSITION		TOTAL LIMIT TEMP.		ALT.		FEET		R.P.M.		M.P.H.		T.A.S.		M.P.		MIXTURE		POSITION		CYL. POSITION		TOTAL LIMIT TEMP.		ALT.		FEET		R.P.M.		M.P.H.		T.A.S.		M.P.		MIXTURE		POSITION		CYL. POSITION		TOTAL LIMIT TEMP.		ALT.		FEET		R.P.M.		M.P.H.		T.A.S.		M.P.		MIXTURE		POSITION		CYL. POSITION		TOTAL LIMIT TEMP.		ALT.		FEET		R.P.M.		M.P.H.		T.A.S.		M.P.		MIXTURE		POSITION		CYL. POSITION		TOTAL LIMIT TEMP.		ALT.		FEET		R.P.M.		M.P.H.		T.A.S.		M.P.		MIXTURE		POSITION		CYL. POSITION		TOTAL LIMIT TEMP.		ALT.		FEET		R.P.M.		M.P.H.		T.A.S.		M.P.		MIXTURE		POSITION		CYL. POSITION		TOTAL LIMIT TEMP.		ALT.		FEET		R.P.M.		M.P.H.		T.A.S.		M.P.		MIXTURE		POSITION		CYL. POSITION		TOTAL LIMIT TEMP.		ALT.		FEET		R.P.M.		M.P.H.		T.A.S.		M.P.		MIXTURE		POSITION		CYL. POSITION		TOTAL LIMIT TEMP.		ALT.		FEET		R.P.M.		M.P.H.		T.A.S.		M.P.		MIXTURE		POSITION		CYL. POSITION		TOTAL LIMIT TEMP.		ALT.		FEET		R.P.M.		M.P.H.		T.A.S.		M.P.		MIXTURE		POSITION		CYL. POSITION		TOTAL LIMIT TEMP.		ALT.		FEET		R.P.M.		M.P.H.		T.A.S.		M.P.		MIXTURE		POSITION		CYL. POSITION		TOTAL LIMIT TEMP.		ALT.		FEET		R.P.M.		M.P.H.		T.A.S.		M.P.		MIXTURE		POSITION		CYL. POSITION		TOTAL LIMIT TEMP.		ALT.		FEET		R.P.M.		M.P.H.		T.A.S.		M.P.		MIXTURE		POSITION		CYL. POSITION		TOTAL LIMIT TEMP.		ALT.		FEET		R.P.M.		M.P.H.		T.A.S.		M.P.		MIXTURE		POSITION		CYL. POSITION		TOTAL LIMIT TEMP.		ALT.		FEET		R.P.M.		M.P.H.		T.A.S.		M.P.		MIXTURE		POSITION		CYL. POSITION		TOTAL LIMIT TEMP.		ALT.		FEET		R.P.M.		M.P.H.		T.A.S.		M.P.		MIXTURE		POSITION		CYL. POSITION		TOTAL LIMIT TEMP.		ALT.		FEET		R.P.M.		M.P.H.		T.A.S.		M.P.		MIXTURE		POSITION		CYL. POSITION		TOTAL LIMIT TEMP.		ALT.		FEET		R.P.M.		M.P.H.		T.A.S.		M.P.		MIXTURE		POSITION		CYL. POSITION		TOTAL LIMIT TEMP.		ALT.		FEET		R.P.M.		M.P.H.		T.A.S.		M.P.		MIXTURE		POSITION		CYL. POSITION		TOTAL LIMIT TEMP.		ALT.		FEET		R.P.M.		M.P.H.		T.A.S.		M.P.		MIXTURE		POSITION		CYL. POSITION		TOTAL LIMIT TEMP.		ALT.		FEET		R.P.M.		M.P.H.		T.A.S.		M.P.		MIXTURE		POSITION		CYL. POSITION		TOTAL LIMIT TEMP.		ALT.		FEET		R.P.M.		M.P.H.		T.A.S.		M.P.		MIXTURE		POSITION		CYL. POSITION		TOTAL LIMIT TEMP.		ALT.		FEET		R.P.M.		M.P.H.		T.A.S.		M.P.		MIXTURE		POSITION		CYL. POSITION		TOTAL LIMIT TEMP.		ALT.		FEET		R.P.M.		M.P.H.		T.A.S.		M.P.		MIXTURE		POSITION		CYL. POSITION		TOTAL LIMIT TEMP.		ALT.		FEET		R.P.M.		M.P.H.		T.A.S.		M.P.		MIXTURE		POSITION		CYL. POSITION		TOTAL LIMIT TEMP.		ALT.		FEET		R.P.M.		M.P.H.		T.A.S.		M.P.		MIXTURE		POSITION		CYL. POSITION	

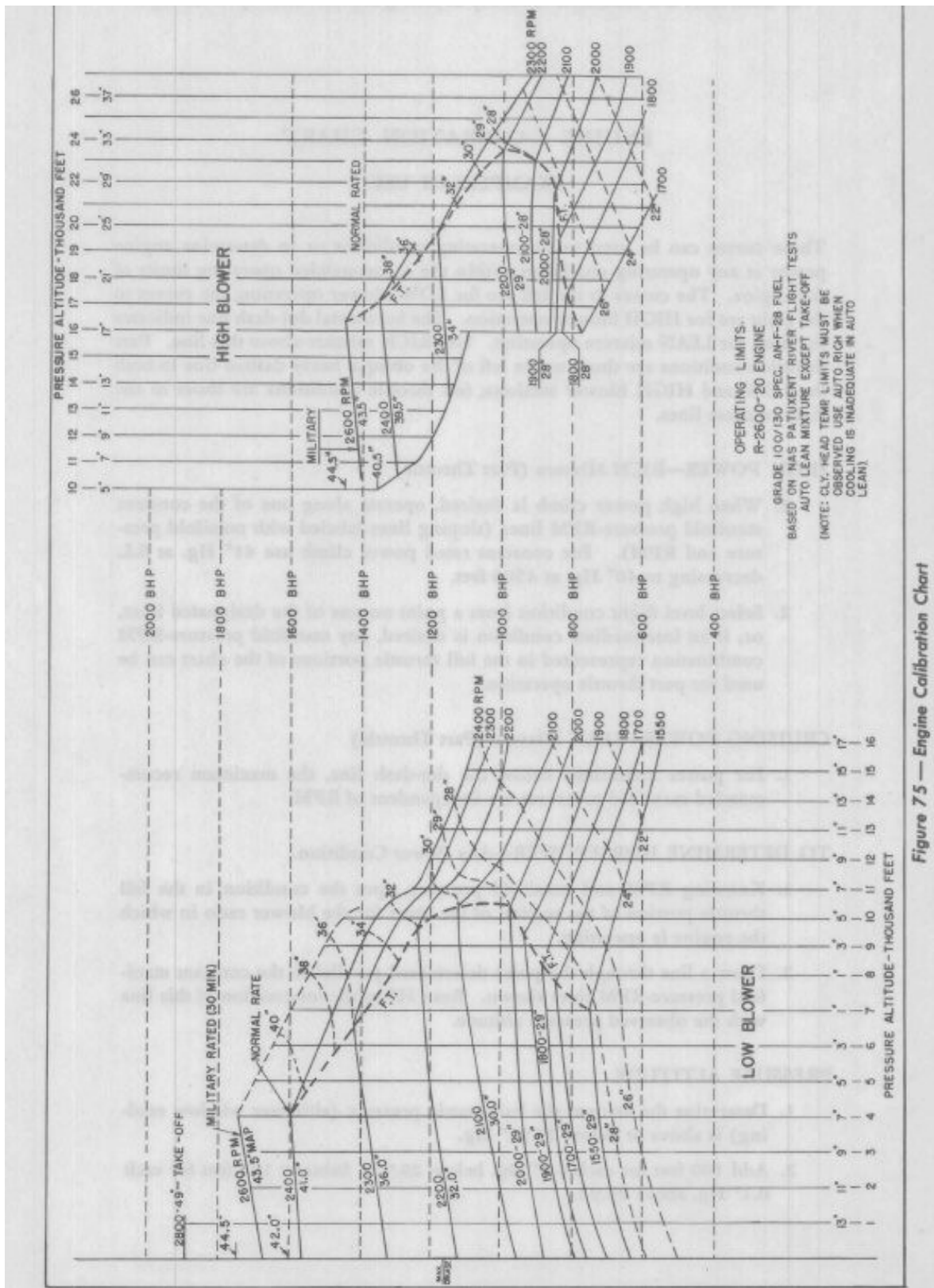


Figure 75 — Engine Calibration Chart