

M A N U A L

# THUD RIDGE

American Aces in 'Nam



For IBM PC, Landy, and Compatibles. Licensed from Acme Animation, Inc.

## TABLE OF CONTENTS

Introduction	II
Hardware Requirements	III
Set-Up and Loading Instructions	III
Making a Back-up Copy/Hard Disk Installation	III
Graphics Mode/Joystick	III
final Menu/Scoring	IV
<b>Part 1 Flying the Thunderchief</b>	
Keyboard Layout	
Keyboard Layout Descriptions	2
Getting Airborne Fast/Practice Mode	3
Mission Selection	3
Weapons Selection	8
<b>Part 2 Guide to the Thunderchief</b>	
Cockpit Components	11
Keypad Layout	12
Joystick Functions	12
<b>Part 3 Flying the Mission</b>	
Takeoff Procedure	13
Flight Preparation	13
Hanoi Approach	13
<b>Part 4 Combat</b>	
Weapons Cursors	16
Firing the Shrike/APC	16
Strafing/Dog Fight	16
Bombing	17
Leaflets	18
Map Navigation	19
Inflight Refueling	20
Completing the Mission	20
<b>Part 5 Air War In Vietnam</b>	
History of the Thud	21
Thud Weapons	21
Rolling Thunder/"Wild Weasels"	22
Map of Southeast Asia	23
Thunderchief and MiG Specs	24
Glossary of Terms	25
Bibliography	26

## Introduction

*"Wild Weasel, Wild Weasel, they call me by my name.  
I fly up on Thud Ridge and play the big game.  
I fly o'er the valleys and hide 'hind the hills.  
I dodge all the missiles, then go in for kills.  
I'm a lonely Thud driver with a shit-hot fine Bear!"*

In Thud Ridge you are smack in the middle of the most hair-raising combat mission of the Vietnam War. Put your hands on the legendary F-105 Thunderchief. You are flying with the Wild Weasel, the squadron of American Aces who defied the odds--and the enemy--to run devastating air strikes into "Downtown Hanoi".

Thud Ridge is a range of mountains running down the east side of the Red River, 25 or 30 miles northwest of Hanoi. The ridge was 40 miles long with 6,000 ft. high mountains, pointing directly at the heart of Hanoi.

"Downtown Hanoi" was the most heavily defended target in the history of aerial warfare--three times the defenses that protected Berlin in World War II. Defensive weapons that ranged from SAMs and MiGs to 100 mm and 85 mm guns as well as 57 and 37 batteries and automatic weapons, rifles and pistols were engaged in the Vietnam War.

The F-105 or "Thud", was the ultimate American fighting machine--rugged, durable, fast and tough--the "Thud" could top out at 1,200 mph. Initially the Thunderchief was designed to deliver a nuclear weapon at supersonic speed--a mission it never performed. Instead, it delivered more conventional bombs to "Downtown Hanoi" than any other fighter.

The Thunderchief was also used as a "Wild Weasel" aircraft to draw fire from SAM and AA sites and to attack enemy air defense missile sites. In this task it proved to be a formidable weapon.



## HARDWARE

### Hardware Requirements

THUD RIDGE requires:

- 1 An IBM PC or compatible clone
- 1 512K RAM minimum
- 1 EGA (Enhanced Graphics Adapter) or CGA (Color Graphics Adapter) or Hercules (Graphics Adapter)
- 1 An EGA or CGA color monitor
- 1 DOS 2.0 or later
- A joystick is optional (A standard IBM-compatible joystick with a 15-pin game port interface card or adaptor.)

### Starting Thud Ridge

Floppy System:

Place your THUD RIDGE disk into drive A. From the A: prompt, type Thud (Enter) to run the game. Once the loading is complete, the Space Bar will advance you to the Mission Select Screen.

Hard Disk Installation:

To place a copy of THUD RIDGE on your hard disk, insert the appropriate EGA or CGA/Hercules/Tandy disk into Drive A and type A:Install (Enter). This will create a Thud directory on your C: drive. To start the game, place the original floppy in Drive A, log on to your Hard Disk, and type CD/Thud (Enter). Then type Thud (Enter).

Backup Copy

Each registered owner of THUD RIDGE may purchase one backup copy for \$7. In Canada, one backup copy may be purchased for \$10 (U.S. currency). California residents please add 7% sales tax. Checks or money order should be made out to Three-Sixty Pacific, Inc. This copy is for backup purposes only and is not for resale. Your backup disk is covered by Three-Sixty's limited warranty.

Graphics Mode

The Thud Ridge game disks are divided into EGA and CGA/Hercules/Tandy modes. If you have an EGA graphics card and color monitor, you will use the disk marked EGA Version. If you have a CGA/Hercules/Tandy graphics card, you will use the disk marked CGA/Hercules/Tandy Version.

## LOADING

Joystick

If you have your joystick plugged in, the program will ask you if you wish to use it. Select Yes/No. If you select Yes, then you will be asked to calibrate your joystick. Follow the instructions which appear on the screen. If you don't calibrate correctly, your plane will drift to one side even when the joystick is centered.

Final Menu

This screen should read:

- 1 Play Thud Ridge
2. Change Video Mode
3. Return to DOS

To play Thud Ridge, press 1. If you have chosen an incorrect video mode, press 2. Then make another selection. If you don't want to play Thud Ridge, then select 3.

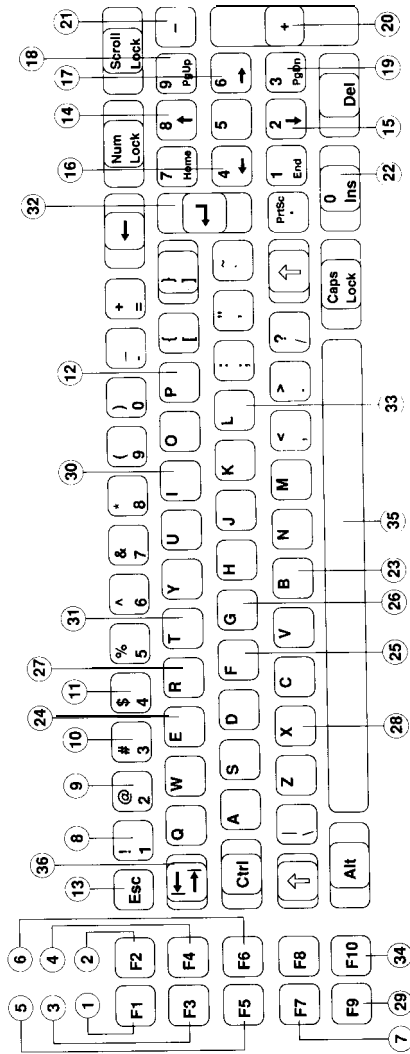
Scoring

Scoring is accomplished by successfully completing your assigned mission and returning to your home base.

Primary Targets:	t 5,000 pts.
Secondary Targets:	t 2,000 pts.
SAMS (Defender Screen)	t 1,000 pts.
MiGs (Lt.Capt.)	t 1,000 pts.
MiGs (Col.)	t 2,000 pts.
Grey Ghost	t 5,000 pts.
Sampan	t 500 pts.
Hanoi Hilton	- 2,000 pts.
Off Limits	- 2,000 pts.

P A F

Keyboard Layout



P A R T 1

Keyboard Layout Descriptions

Item No.	Key	Function	Item No.	Key	Function
1	F1	Launch Shrike Missile	23.	B	Wheel Brake
2	F2	Launch Sidewinder Missile	24	E	Eject
3.	F3	Drop Bomb	25.	F	Flaps
4	F4	Fire Cannon	26.	G	Landing Gear
5	F5	Launch Anti-Personnel Cartridge	27	R	Signal For Refueling Plane
6.	F6	Drop Leaflets	28.	x	Extinguish Engine Fire
7.	F7	Drop Flare	29.	F9	Toggle From Top to Front View of Radar
8	1	Switch Aircraft Functions	30		Turn Ignition On
9	2	Switch Engine Functions	31	T	Start Turbine Rotating
10	3	Switch to SAM Screen	32	Enter	Change Map Screens
11	4	Switch to Map Screen	33	L	Low Level Flight (Lieutenant Only)
12	P	Pause Game	34	F10	Toggle Sound On and Off
13.	ESC	Exit Game	35.	Space Bar	Change To Previous Panel Screen
14	8 or Up Arrow	Push Stick Forward (Dive)	36.	Tab	Practice Mode- Automatic Takeoff Reloads Armament, Fuel and Resets Altitude to 10,000ft
15	2 or Down Arrow	Push Stick Backward (Climb)			
16	4 or Left Arrow	Push Stick Left (Bank Left)			
17	6 or Right Arrow	Push Stick Right (Bank Right)			
18.	9 or Page Up	Aim Missile Higher (SAM Screen Only)			
19	3 or Page Down	Aim Missile Lower (SAM Screen Only)			
20.	t	Increase Throttle			
21	-	Decrease Throttle			
22	INS	Toggle Afterburners			

## PART 1

### Getting Airborne Fast/Practice Mode

The title screen will appear while the program loads. Once the load is complete, press the Space Bar to see the Credit Screen. Press the Space Bar again to get the Mission Screen. If no key is pressed for 30 seconds the Demo Mode will begin.

For a quick start, select either the Lieutenant, Captain or Colonel Levels by pressing Enter. The missions specific to each level will appear. For instance, the first mission shown at the Lieutenant Level will require a leaflet drop on the Hanoi Hilton. Select any mission by pressing Enter. You may then load your F-105 Thunderchief with weapons by pressing Tab key and you will be re-fueled, re-loaded with weapons and your altitude returns to 10,000 ft. You will not be able to reach a high score in this mode if you use the Tab key.

Your Thunderchief is now on the runway and ready for takeoff. Press Tab and the aircraft will begin flying. You will be in Thud Ridge shortly after clearing the end of the runway. To steer, use your Left or Right arrow keys or Left or Right movements on the joystick. To climb (or dive) use the Up or Down arrow keys or Up or Down movements on the joystick.

When you are ready for your first mission, press Esc. Next, press Return to get to the Play Mode.

### Mission Selection

The title screen will appear while the program loads. Once the loading is complete, press the Space Bar to see the Credit Screen. Press the Space Bar again to get the Mission Screen. You are presented with a choice of levels or ranks.

Select from:

Lieutenant - Beginner  
 Captain - Intermediate  
 Colonel - Advanced

After reading through the missions, select your choice with the Space Bar and press Return. Details about each mission will appear along with a graphic blowup of your targets. Some targets will be off-limits. These Pentagon restrictions will vary from mission to mission.

### Off Limits

Targets declared Off-Limits were command designations imposed by Washington. Due to political pressures and the failure of the Pentagon to comprehend the nature of the

## PART 1

Vietnam war, certain targets were restricted from attack. Consequently, Thud pilots were often in the suicidal situation of having to avoid contact with MiG bases and restricted from attack although the enemy MiGs were free to retaliate.

### Primary Target

The primary target is labeled on your map with the number one. The mission will not be considered a success unless this target is destroyed. Once eliminated, proceed to the secondary and option targets marked numbered two and three, respectively.

### Flak Avoidance

Flak is Anti-Aircraft Artillery fired from the ground. Flak installations are placed around military bases and other important sites. Flak may also be fired from boats found around Hanoi.

### To Avoid:

Fly fast (over Mach 1.0) and climb high (plus 10,000ft.) because the enemy won't have time to respond to your burst of speed. A Thud in a power climb is hard to track.

### MiG Avoidance

- Outside Hanoi fly low.
- † Don't let MiGs get behind you.
- † Outrun MiG-21s with afterburner.
- Some MiGs may not have spotted you or be on other missions, don't alert them by randomly firing at them.
- † At Captain and Colonel levels don't fly over airbases.

### Grey Ghost

When the MiG Ace, known as the "Grey Ghost" is on the prowl, all other MiGs will be grounded. This is the Grey Ghost's way of challenging you to a duel.

The ten missions available to you are as follows,

### Lieutenant Level

The Lieutenant Level is recommended for beginners. You have three missions to choose from. All missions originate at one of three bases:

Lo Minh Air Base over the Gulf of Tonkin  
 Korat Air Base over rice paddies  
 Plei Trap Air Base through Thud Ridge

Thud pilots can expect minimal resistance from enemy vessels and aircraft. You will be flying under cover of night. Choose your mission from the following:

## P A R T 1

## 1. Hanoi Hilton

Objective: Leaflet drop on Hanoi Hilton

Weapons: Leaflets/Cannon

Approach: Thud Ridge

Hanoi Hilton American POW compound. Fly your Thud on a low-level run (500ft) and give your buddies a morale boost by dropping support leaflets and copies of Life Magazine.

Secondary Target: Downtown Hanoi

Option Target: Sam Base "B"

Pentagon Restrictions: MiG Bases

## 2. MiG Base

Objective: Destroy Ten Ho MiG base

Weapons: APC/Cannon

Approach: Over Gulf

Pentagon Restriction on Ten Ho MiG Base has been lifted. Use APC and cannon to eliminate.

Secondary Target: Fuel dump

Option Target: Sam Site F

Pentagon Restriction: Downtown Hanoi

## 3. SAM Site

Objective: Destroy SAM Site C

Weapons: Shrike

Approach: Thud Ridge

SAM Site "C" has been responsible for destroying four Thuds in the past five missions. It must be taken out. Utilize Shrike.

Secondary Target: SAM Site "E"

Option Target: SAM Site "F"

Pentagon Restriction: All MiG bases

Destroying all three primary targets and successfully returning to Lo Minh Air Base earns you a Bronze Star.

Captain Level

The Captain level is recommended for intermediate players. You have three missions as Captain. You will be taking an easterly approach which follows the Red River. You must destroy enemy Sampans enroute. Fly below 2,000 feet, and use cannon to

strafe enemy vessels. Avoid straying off route, above 2,000 feet and/or away from the river. You will attract MiG squadrons if you stray. These missions are conducted during daylight raids,

## 4. Thermal Plant

Objective: Destroy VC Thermal Plant

Weapons: Bombs/Missiles

Approach: Gulf

The VC Thermal plant is of critical value to the enemy. Use low-level bombing runs to disable.

Secondary Target: Fuel dump

Option Target: Ten Ho MiG base

Pentagon Restriction: All SAM Sites

## 5. Viet Cong Shipping

Objective: Eliminate Enemy ships

Weapons: Cannon/APC

Approach: Rice Paddies

Enemy ships are currently anchored near Paul Doumer Bridge. These are ideal targets of opportunity. Cannon and anti-personnel weapons should make their feet tingle.

Secondary Target: SAM Site "D"

Option Target: Yen Bai MiG Base

Pentagon Restriction: All bridges

## 6. Viet Cong Headquarters

Objective: Destroy enemy headquarters

Weapons: APC/Cannon

Approach: Gulf

This is the Grey enemy control center. The vital target is to be eliminated with APC and cannon. MIGSAM alert.

Secondary Target: Downtown Hanoi

Option Target: Sam Base "A"

Pentagon Restrictions: Bridges

Destroying all three primary targets and successfully returning to Korat Air Base earns you the Silver Star and promotion to the highest ranking of Colonel.

## Colonel Level

You will take off from Plei Trap Air Base and you will fly south to Downtown Hanoi. You must fly within the envelope otherwise you will attract enemy SAMs. Once you are through Thud Ridge, you will proceed to the targets of opportunity. You have four missions available to you as a Colonel. You will be flying night missions.

## 7 Paul Doumer Bridge

Objective: Eliminate Paul Doumer Bridge

Weapons: Bombs/Cannon

Approach: Thud Ridge

The Paul Doumer Bridge is the supply lifeline to the Viet Cong. It is one of the key targets for the Wild Weasels during the Vietnam War.

Secondary Target: Sam Site "D"

Option Target: VC Barracks

Pentagon Restriction: Train Bridge

## 8. Viet Cong Barracks

Objective: Destroy enemy barracks

Weapons: Cannon/Bombs

Approach: Over enemy-held rice paddies

The Viet Cong Barracks house 2,000-3,000 enemy personnel. It is a key activity center. The barracks are well protected by SAMs and MiGs.

Secondary Target: Train Bridge which supplies both sides of Red River.

Option Target: SAM Site "D"

Pentagon Restrictions on MiG bases.

## 9. Phuc Yen MiG Base

Objective: Destroy Phuc Yen MiG Base

Weapons: APC/Bomb

Approach: Over Red River/Rice Paddies

Phuc Yen MiG Base has been responsible for heavy Thud losses this season.

Destroy the base tower.

Secondary Target: Downtown Hanoi

Option Target: Train Bridge

Pentagon Restriction: SAM Sites

## 10. Grey Ghost

Objective: Seek and destroy enemy MiG Ace known as the "Grey Ghost"

Weapons: Cannon/Missiles

## Approach: Thud Ridge

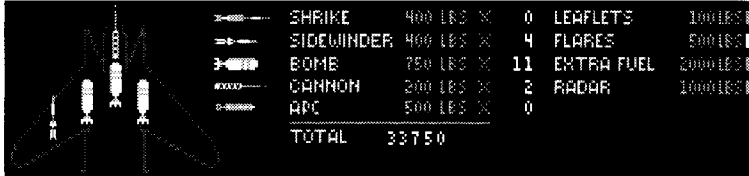
The "Grey Ghost" flies a VC MiG17 and has five Thud kills to his credit. He will try to come up your tail. This is a very dangerous mission,

Secondary Target: Yen Bai MiG Base

Option Target: Dhu Tai MiG Base

Pentagon Restriction: Downtown Hanoi

## Weapons Selection



SHRIKE	400 LBS	X	0	LEAFLETS	100 LBS
SIDEWINDER	400 LBS	X	4	FLARES	500 LBS
BOMB	750 LBS	X	11	EXTRA FUEL	2000 LBS
CANNON	200 LBS	X	2	RADAR	1000 LBS
APC	500 LBS	X	0		
TOTAL		33750			

This is the Weapons Select screen. If you want to proceed to Take off, press Return. If you want to change the weapons configuration, read on.

Note the total allowable weight and ratio of the weapons in the Captain and Colonel categories which allow you to properly select your own ordinance according to mission. Your Ordinance Officer will signal you with his beeper when you have reached maximum load.

Selecting the proper weapons for a mission is crucial. You don't want to be flying close behind a MiG-21 with only your handgun left to fire at him.

There are nine different types of weapons you can load on your Thud. Generally, rookie pilots have their planes preloaded according to the Wing Commander's recommendations. More experienced pilots would select their own weapons array. In Thud Ridge, Lieutenants have weapons preloaded while Captains and Colonels take care of the ordinance themselves.

To select weapons, press the F key. The same keys fire the corresponding weapons. To remove weapons press the same F key along with the shift, Alt, or Control keys. The weight of each weapon is shown along with the amount selected and the total weight. The Thud weighs 23,000 lbs. empty and can be loaded to a total weight of 34,000 lbs.

**P A F**

Here are the weapons you may select:

F1 = Shrike Missile

The Shrike weighs 400 lbs. and the Thud's capacity is 8 Shrikes. This is an ARM-16 missile which can track the radar beam of a SAM site and destroy it.

F2 = Sidewinder

The Sidewinder missile weighs 400 lbs. and the Thud's capacity is 20 Sidewinders. This is a heat-seeking AA missile capable of following a MiG and destroying it. It can also be wire-guided to eliminate SAM missiles being fired at you in the Ridge. If you are running the Ridge it would be useful to have plenty of Sidewinders

F3 = Bombs

General purpose bombs weigh 750 lbs. each and your Thud's maximum capacity is 14. These are designed to be dropped on or near a target. They will cause maximum damage to buildings, runways and bridges.

F4= Cannon

The Cannon rounds weigh 200 lbs. each and you have a maximum capacity of 10. The Thud has a MG1 cannon installed in its nose. It fires 200 20mm rounds per second. These are effective for strafing Sampans and MiGs. Some damage may be done to buildings and bridges.

F5=APC

APC or Anti-Personnel Cartridges weigh 500 lbs. each and your Thud's capacity is 8 APC is a missile cartridge which launches 19 small missiles. It has the capacity to destroy small installations and personnel.

F6 = Leaflets

Leaflets weigh 100 lbs. per set of five (each package in a set weighs 20 lbs.) Drop the packets of leaflets over the Hanoi Hilton to support the POWs imprisoned there. This is accomplished similar to bombing but at an altitude of less than 1,000 ft This is worth bonus points.

F7 = Flares

Flares come in 500 lbs. sets of five (each package weighing 100 lbs.). Use the flares to detract heat-seeking missiles so that the missiles will go after the flares rather than your Thud's engine.

F6 = Extra Fuel Tanks

Your Thud has the capacity to hold 2,000 lbs. of fuel. This is worth having on advanced missions to avoid refueling and exposure to enemy fighters.

F9= RHAWS (Radar Homing and Warning System)

The RHAWS allows Thud pilots to "see" further in the Ridge. They weigh 1,000 lbs. and are worth having in the advanced play levels where you must run the Ridge.

Note: Once you have completed your weapons load, hit the Return key.

Press the F keys (F1-F9) to select weapons in the order they are listed on the screen. The same keys fire the corresponding weapons in the game:

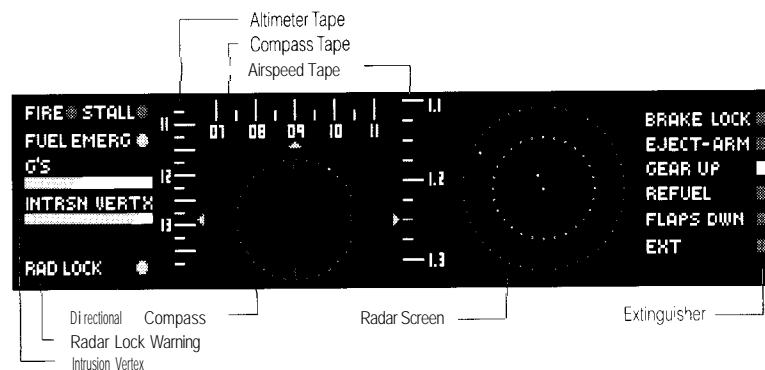
- 1 Shrike Missile
- 1 Sidewinder Missile
- 1 Bomb
- 1 Cannon
- 1 Anti-Personnel Cartridge
- 1 Packets of Leaflets
- 1 Flare
- 1 Extra Fuel
- 1 Advanced Radar



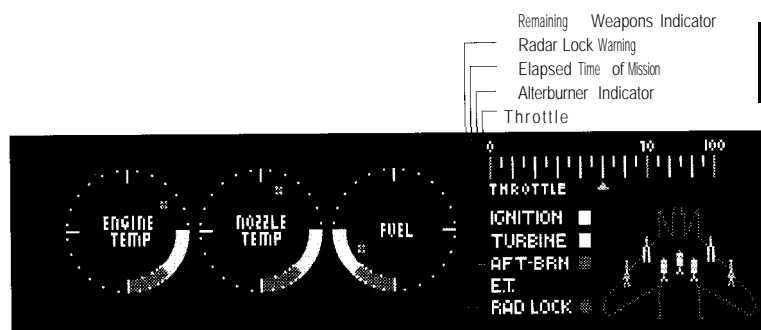
## PART 2

### Cockpit Components

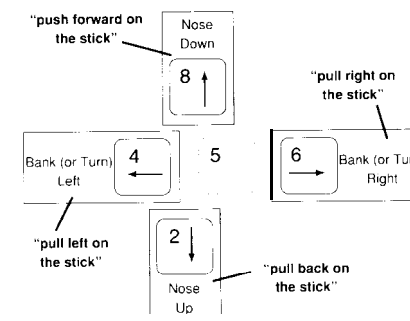
#### Aircraft Function Panel



#### Engine Function Panel

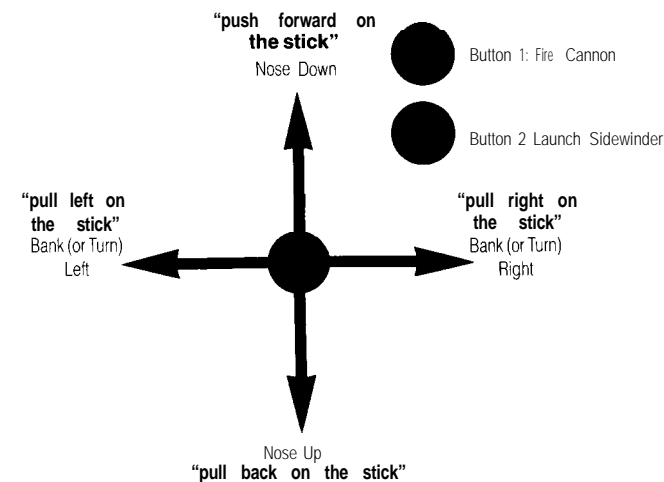


#### Keypad Layout



Thud Ridge utilizes a realistic approach in which the Thud's "stick" automatically centers itself after each keypress. This allows you to maintain a constant rate of turn, (eg. you press the Right arrow key once and your plane will bank right at a small constant rate and do so until you make another directional change.)

#### Joystick



### Takeoff Procedure

Before taking off, familiarize yourself with the Thunderchief. Compare the cockpit display with the illustrations in this manual. Use your quick reference guide during initial flights. Press the "P" key to pause the game. You will find this very handy when getting acquainted with the complexities of the F-105 Thunderchief. The directional control of your aircraft is similar to other flight simulation programs.

### Flight Preparation

1. Call up the engineer's screen (#2) and turn on the ignition (I key) and the turbine (T key). Put the throttle (t) to 70 percent.
2. Call up aircraft functions screen (#1). Drop the flaps (F key) and release the wheel brake (B key). Reach and maintain an airspeed of .6 Mach then pull the nose of the plane up (press down Arrow key on keypad) and you are airborne. (If you are carrying a full load of weapons, you will have to kick in the afterburner. Press the Ins key to activate afterburner and the yellow light will turn on. Do not forget to turn off the afterburner once you are airborne, otherwise you will burn up valuable fuel, not to mention your valuable engine) After a short duration, retract the landing gear (G key) and raise the flaps (F key).

#### Caution

If you overrun the engine or leave the afterburner on too long, you will have an engine fire. The engine and afterburner will shut down automatically. Extinguish by hitting the X key and restarting the engine. You can only use the extinguisher once.

### Hanoi Approach

Depending on which mission you choose, the approach to Hanoi will be:

- 1 Thud Ridge
- 1 Gulf of Tonkin
- 1 Laos (Rice Paddies)

A. Running the Ridge  
(see pages 14-15)

B. Gulf of Tonkin

Fly North over the Gulf of Tonkin from Lo Minh Air Base. You may encounter enemy flak from Sampans. If you fly below 8,000 ft. you will encounter heavy fire from enemy vessels. VC MiGs may be encountered by flying above 12,000 ft. Once you reach the North Shore of the Gulf, you will enter the "bottom" region of Hanoi

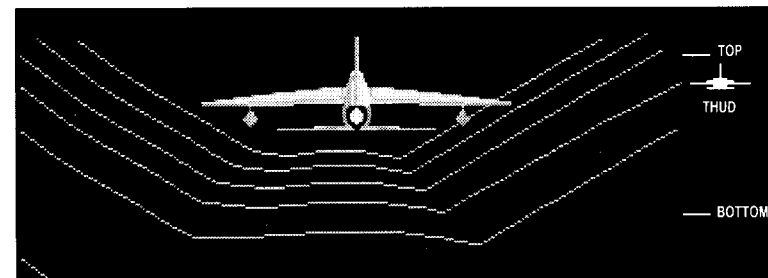
## PART 3

### C. Laos (Rice Paddies)

Fly East from Korat Air Base to Hanoi. Follow the altitude patterns established in the Gulf of Tonkin approach. Eliminate enemy Sampans (if possible) in order to reduce danger to Phantoms and other Thuds. You will enter on the west side of Downtown Hanoi.

#### Running the Ridge

Once you have reached the Ridge, your "envelope" indicator will appear on the right panel.



The line above your aircraft icon represents the top and bottom of the SAM radar envelope. Thud pilots had to fly the Ridge at low levels and within this space in order to avoid SAMs. Keep an eye on the arrows as the envelope widens and narrows. If your Thud strays above the top envelope marker you'll be picked up by enemy radar and SAMs will be launched against your aircraft. The longer you stay above the envelope the greater the intensity of SAM attack.

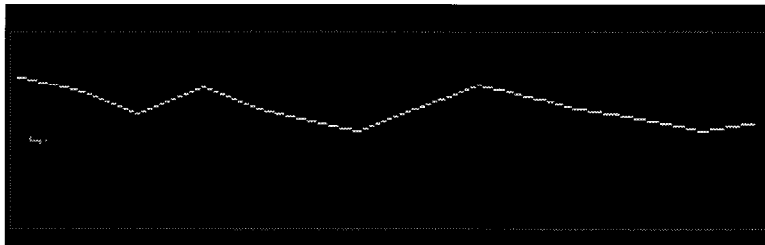
Once the enemy launches a SAM against your Thud, the instrument panel will display a Wide Angle Radar that gives you a total view of both your aircraft, the SAM site and the SAM itself on course against your Thud.

Once a SAM has been launched you must act quickly. You have three options:

1. Launch a missile F2 at the SAM and "wire-guide" it to eliminate the enemy missile. A filament-thin wire attached to the Thud's missiles allowed the pilot to direct his weapon to the target. Guide the missile up and down with the Pg Up and Pg Dn keys. You cannot launch a second missile until the first has made contact with a SAM or hit the ground. If you miss the SAM, "key" your missile into the ground and launch again, if you have time.

## PART 3

2. When the SAM is dangerously close to your Thud, drop a flare and the heat-seeking SAM will go past harmlessly as it follows the flare. Timing is critical here, practice is useful. Press the F7 key to drop a flare.
3. Try "jinking" or maneuvering up and down at the last moment before the SAM makes impact. You might be able to avoid collision. The Thud can sustain some damage but more than three SAM hits and you're history.



## PART 4

### Weapons Cursors

The Thud has automatic weapons cursors which pop-up on the screen informing you which weapons are useful. They do not show up if you have run out of that weapon.

- |  |                           |
|--|---------------------------|
| <input type="checkbox"/> Around SAM Site (F1 Shrike) | t On MiG (F4 Cannon)      |
| [ ] Around MiG (F2 Sidewinder)                       | ◇ Around Building (F5APC) |
| :: On Map (F3 Bomb)                                  | :: On Map (F6 Leaflets)   |

### Firing the Shrike/APC

Begin your approach near the target at about 8,000 ft. Go into a shallow dive toward the target, maneuvering until the target is in front and slightly above your Thud. When you are in range, the appropriate weapons cursor will turn on. At that time, strike the correct F key. Pull-up in a steep climb to get out of the area fast. If you successfully hit your target you will see a crater appear on the map where the target was. Remember, if you fire too close, the missile doesn't have time to lock onto the target.

### Strafing

The following will provide you with basic strategies to successful cannon strafing:

1. Climb to 6,000-8,000 ft. almost directly above your target.
1. Airspeed should be approximately Mach 1.0.
1. Begin your attack, keeping the target in full view, just above the canopy.
1. When you get under the 2,000 ft. level on your altimeter, fire the cannon and aim by shifting the Thud in line with the target.
1. If you are successful, the target will turn black and be replaced by a black crater. If you missed, try again.

### Dog Fight

#### Strategies

Always watch your radar and listen for the beeping sound when a MiG has locked on to your Thud. The radar gives you two views of the enemy's location relative to your Thud's position in the center of the circles:

1. Bird's eye view showing your Thud from above.
1. Rear view showing your Thud from behind.

The radius of the inner circle is 1,000 ft. and the outer circle is 5,000 ft. MiGs outside the inner circle are not visible.

## PART 4

Toggle between the two views until you get the MiG in front of you. If the MiG is pulling away, hit your afterburner for quick acceleration, (Do not forget to turn it off). Your Thud is faster than the MiGs.

Line the MiG up over your right wing. When a box appears around the MiG, hit F2 to launch a missile. The MiG will explode. If you are out of missiles, hit F4 to fire the cannon. If you are successful, it will roll over and flame out.

The MiG's get tougher and smarter as you work up through the ranks. When you reach the Colonel level it will be quite difficult to track behind the MiGs. Try not to fly over the MiG bases. They will scramble and attempt to shoot you down.

### Bombing

#### Overview

There are three steps in bombing with the F-105 Thud. Phase one is called "pickling". Phase two is the "approach". Phase three is the "release".

#### Pickling

The purpose of pickling is to obtain a visual lock on the target. Your altitude should be above 10,000 ft. Go into a shallow dive (20 degrees) and fly towards the target, maneuvering until it is in the center of the screen and moving towards you.

#### Approach

Begin the approach by leveling out your aircraft. Fly in a straight line towards the target. The target will soon be out of your visual range. Turn to map screen (4) and locate your aircraft. The four dots in front of the plane show the "impact area" where a bomb would land if you released it now. As you increase your altitude, the dots move farther apart. Your accuracy is best at lower altitudes. If you are lower than 2,000 ft. the blast may damage your aircraft. If you are higher than 10,000 ft. your accuracy is greatly diminished. Also, as you increase your airspeed, the dots move farther away from your aircraft. At higher speeds you have less time to release the bombs. Your airspeed should be less than Mach 1.0 for maximum accuracy.

#### Release

When the impact area is over the target on the map, release your bombs. You should begin dropping bombs before the target and spread them out across your path. Pull up in a steep climb to leave the area. Failure to pull up quickly may result in damage from flak to your plane. Depending on your altitude, the time that it takes the bombs to explode will vary.

## PART 4

### Confirmation

Craters will be shown on the map after the dust clears. A gray crater with a black center indicates a miss while a yellow crater with a red center indicates a hit. The program will make sure that you will always be able to see your hits even when there are misses around it. Avoid the temptation to go back and get a look at the damage you have done. The enemy will be waiting for you. Any installations that have been destroyed will appear as black craters on the ground.

### How Many Bombs?

Your Thud can carry up to fourteen 750 lb. bombs packed under the fuselage and inside the bomb bay. When armed this heavily you are capable of delivering a crushing blow to the enemy.

The amount of bombs to drop depends on the situation. If you intend to destroy only the primary target then all bombs should be used. If you intend to bomb secondary targets then release only part of your bombs on this target. Remember that the primary target must be eliminated to succeed on bombing missions. If you are not lined up with the target you may choose to abort the bombing run and try again. Remember that time is precious and another chance to bomb the target may not be available. It is not worth risking your life to drop a single bomb, so try not to leave "orphan" bombs after a run. The following is the suggested Pentagon requirements for destroying enemy installations, assuming perfect hits with each bomb.

### Perfect Hit Requirements-North Vietnam/Hanoi 1968

Sam Site	1 bomb	MiG Base	2 bombs
VC Headquarters	1	Thermal Plant	2
VC Barracks	1	Train Bridge	2
Fuel Dump	1	Paul Doumer Bridge	3

### Leaflets

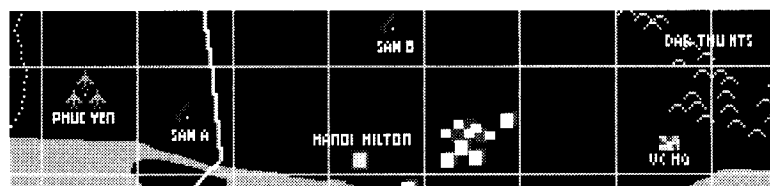
Drop the packets of leaflets you have loaded over the Hanoi Hilton to give your POW buddies a morale boost. This will give you bonus points. To prevent the wind from scattering your packets away from the target, fly at an altitude of less than 1,000 ft., aim for your target just as you do when bombing, and press F6. You have five packets of leaflets to drop. With a little practice you should be able to do this in one fly over.

## PART 4

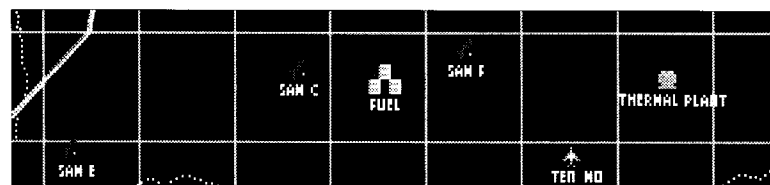
### Map Navigation

The following three maps show slices of downtown Hanoi. Targets that are important to your mission are marked for you. Each of these targets is marked with a white dot which pinpoints the exact location used for bombing. Your Thud is represented by a small red icon. You cannot fly off the edges of the map unless you have completed your mission. To do this, fly back off the map towards the side you came from and the game will end. A summary screen will then brief you on your mission success rate, damage report and performance status.

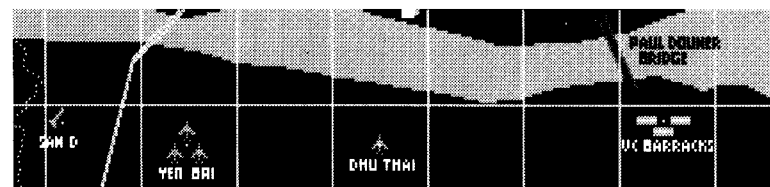
MAP A



MAP B



MAP C



## PART 4

### Inflight Refueling

In order to maximize the armament, your Thud's fuel supply has been kept to a minimum. At some point in your mission, (ie: shortly after the Ridge Run) you will want to refuel from one of the USAF air tankers (Big Bertha) circling at 15,000 ft. over Hanoi.

Fly to 15,000 ft. maintain a level altitude and the tanker will lower its nozzle. Your tanks will be topped off and you and your Thud can proceed with the mission.

### Completing the Mission:

Fly off the Hanoi map at the same point you entered the mission. The status screen will appear to rate your performance. Your score is "zeroed" once you strike the Tab or L keys.

## P A R T 5

**History of the THUD**

Developed and manufactured by Republic in the 1950's the F-105 Thunderchief was the most advanced fighter of its time. The powerful Pratt and Whitney J-75 engine, churning 23,500 pounds of thrust (in afterburner), hurled the F-105 through the air at 1,245 mph during an official flight test. Still, when unveiled to the fighter pilots, the huge single-engine fighter with short, stubby wings, and an internal bomb bay, was met with wide-eyes and a few smirks. How could this be a Thunderchief? It had to be a "Thunder-THUD"!

The snickers were soon replaced with smiles when the pilots climbed into the cockpit of the Thud and fell in love with the aircraft. It was the ultimate fighter pilot's aircraft fast, comfortable to fly in spite of its enormous size, easy to maneuver, and just as tough as its World War II ancestor, the P-47 Thunderbolt, also known as the "Jug." Another predecessor included the F-84, tagged with the nickname, "Lead Sled" or "Hog;" and the name was not spoken with the affection the Thud could claim.

When the F-105 was designed during the 50's, most aircraft designers were pushing the flight combat technology to the limit. Despite this, the F-105 remained in service for nearly 30 years, carrying a significant portion of the airwar over Southeast Asia.

**Thud Weapons**

A typical weapons configuration would vary from Thud to Thud, ie: F-105s carried: 600 gallon centerline fuel tank, CBU-24s on inboard wing stations (the cluster Bomb Unit-24s were anti-personnel weapons intended to kill SAM site crews), AN/ALO-71 ECM pod on one outboard station, AGM-45 Shrike Anti-Radiation missile on the other outboard station.

(The 390 lb. Shrike was a Mach Two missile with 7-10 mile range which would come home on the radar emissions of the SAM fire control radar).

The F-105D was armed with six 500 lb. bombs on the center line, 450 gallon fuel tanks on the inboard wing, an ECM pod on one outboard station and a Shrike missile on the other outboard station.

**Rolling Thunder**

Rolling Thunder was the name given the aerial campaign against North Vietnam. It was precipitated by the Tonkin Gulf Incident and by the Viet Cong attack on Pleiku in February of 1965. It was carried out by USAF and US Navy 7th Fleet from the Gulf of Tonkin. Rolling Thunder lasted from 1965 until the unconditional bombing halt announced by President Johnson in March of 1968.

**"Wild Weasels"**

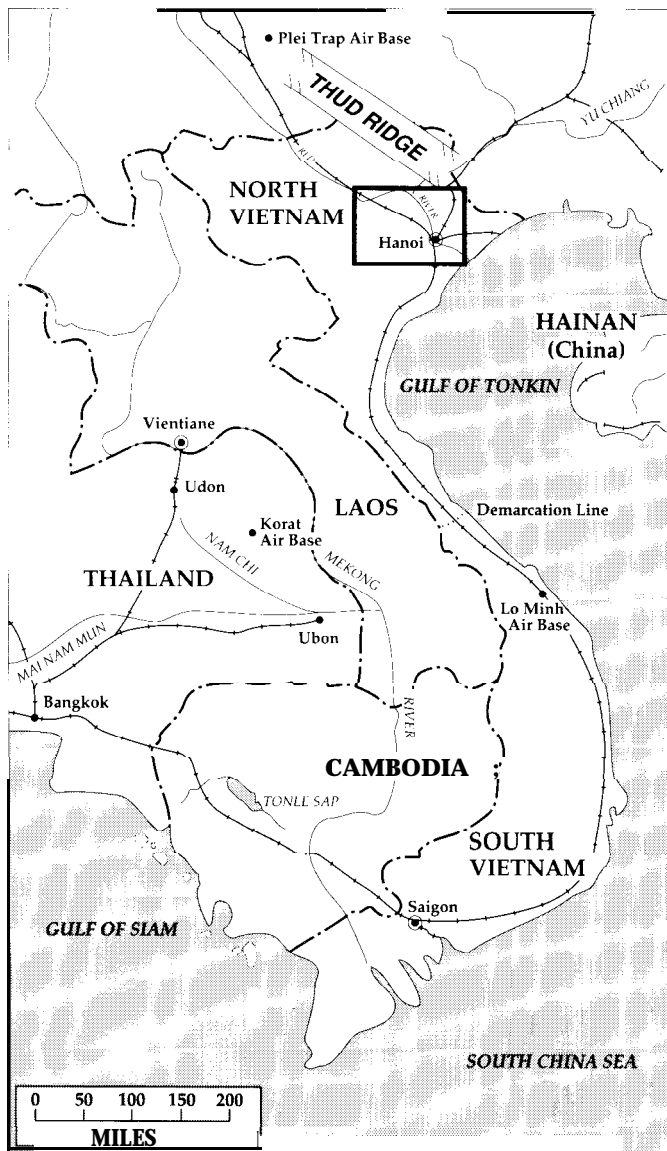
The original idea of the Wild Weasel Fighter Squadron dates back to World War II when rapid strides were made in electronic warfare. Late in WWII, counter measures had become an accepted part of attack operations. In addition to electronic jamming, the first efforts to use the enemy's own radar beams as a means of locating and ultimately destroying the targets were developed. The RAF Hawker Typhoon fighter was fitted with a homing receiver which would locate and follow the radar beam to its source. It then marked the radar installation with a smoke rocket for following aircraft to destroy.

During the Vietnam War, SAM installations in the Hanoi/Haiphong region were creating serious problems for Thud squadrons. The same "radar suppression" techniques used in WWII were adapted by specially equipped "Wild Weasel" squadrons. The Shrike missiles proved especially effective at locking onto the SAM and then riding the radar home.

The F-105 system had three major components, first the Vector IV 360 degree RHAWS which had four spiral receiver antennas--two in the nose and two in the fin--each facing outwards at 45 degrees to the centerline; secondly the IR-133 panoramic receiver, which classified the radar type, (ie: SAM, AAA, etc.); and thirdly the WR-300 launch warning receiver, later standardized as the APR-26.

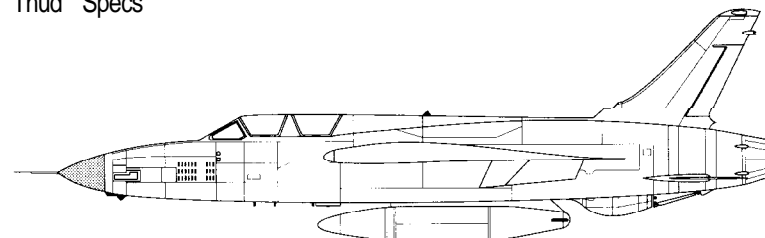
The F-105s were immediately successful, knocking out a string of SAM and AAA sites and often leading hunter-killer teams with Shrike-armed F-105Ds. One of the premier Wild Weasels was Capt. Merlyn Dethlefsen, who knocked out two SAM sites while dodging 96 guns and four MiGs during an attack on the Thai Nguyen steel works; a feat which earned him the Medal of Honor. Major Leo. K. Thorsness was also awarded the Medal of Honor as a "Weasel" driver.

# M A P



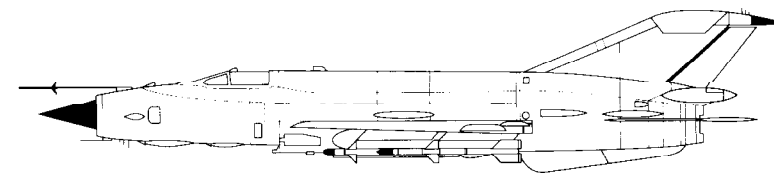
# S P E C S

## Thud Specs



Engine:	Pratt&Whitney J75P-19W turbojet
Length:	67 ft 0 in.
Height:	20 ft. 1 in.
Wingspan:	34ft. 11 in.
Weight (max):	34,000 lbs.
Range:	510 miles with auxilliary fuel tanks
Top Speed:	1245 mph

## MiG Specs



Engine:	Tumansky R-13 turbojet
Length:	51 ft. 9 in.
Height:	14ft.9in.
Wingspan:	23ft. 6 in.
Weight (max):	18,800 lbs.
Range:	400 miles

## G L O S S A R Y

### Glossary of Terms

AA	Air-To-Air
AAA	Anti-Aircraft Artillery
AB	- Air Base
AFB	- Air Force Base
AG	Air-To-Ground
ARM	Anti-Radiation Missile
Atol	MI6 heat-seeking missile.
BUF	- Big Ugly Fellows Polite version of what Thud pilots called B-52 Bomber crews.
Capping	- Monitoring something/someone below
Close Support	- Assisting ground forces achieve specific objective
Combat Operations Center	- Where all combat communications are accepted and dispatched
CONUS	- Continental United States
ECM	Electronic CounterMeasures
EW	Electronic Warfare
EWO	Electronic Warfare Officer
FAC	Forward Air Controller
Frag	- Fragmentary portion of headquarters instructions relating to specific wing's effort for future missions
Frag Breaker	- Mission Planner
Green 'em up	- Activating bombs during dive bombing run
IFR	- Instrument Flight Rules
Jinking	- Art of weaving, bobbing, twisting to avoid enemy gunfire as you come off a dive bomb run
LRU	- Line Replaceable Unit
RCS	- Radar Cross Section
Rescap	- Rescue attempt
RHAWES	Radar Homing and Warning System
Route Packages	Six segments of North Vietnam
SAC	Strategic Air Command
SAM	- Surface to Air Missile
Sigint	Signals Intelligence
Strike Mission	- Bombing a specific building area
TFS	Tactical Fighter Squadron
TFW	Tactical Fighter Wing
Wing	- Made up of three fighter squadrons
Wing Weenie	- Wing commander assistant
VFR	- Visual Flight Rules

## B I B L I O G R A P H Y

### Bibliography

- 1 Chinnery, Phil, Air War in Vietnam, Bison Books, London, England, 1987.
- 2 Drendel, Lou, THUD, Squadron Signal Publications, Carrollton, TX, 1974.
- 3 Gettleman, Marvin E., Jane Franklin, Marilyn Young and H. Bruce Franklin, Vietnam and America: A Documented History, Grove Press, Inc., New York, NY, 1985
- 4 Kinzey, Bert, F-105 Thunderchief, Aero, Blue Ridge Summit, PA, 1982.
- 5 Schutts J.C., F-105 Thunderchief, Charles Scribner's Sons, New York, NY, 1981.
- 6 Sweetman, Bill, MiG's, Arco Publishing, New York, NY, 1985.
- 7 Van Geffen, Theodore W, Republic F-105 Thunderchief, Profile Publications, Berkshire, England, 1971.
- 8 War Plane Magazine, Wild Weasel Operations (Part 1), Aerospace Publishing LT., London, England 1988.

### Copyright Notice

The software and manual herein are copyrighted 01988 by Three-Sixty Pacific, Inc Thud Ridge is a licensed product of Acme Animation, Inc. All rights reserved worldwide. No part of this document may be reproduced, transmitted, transcribed, stored in any retrieval system, or translated into any language by any means without the express written consent of Three-Sixty Pacific, Inc., 2105 Bascom Ave., Campbell, CA95008.

Thud Ridge concept and design by Dave O'Malley, Tris Orendorff, Brian Hilchie and Michael Bate IBM program designed by Tris Orendorff with Brian Hilchie. Graphics by Dan Hoecke Product Manager Michael Bate.

Thud Ridge and Acme Animation Inc., are trademarks of Acme Animation Inc. 01988 Acme Animation Inc. All rights reserved IBM PC, PC/XT, and PC/AT are registered trademarks of International Business Machines Corporation. Tandy is a registered trademark of Tandy Corporation. COMPAQ is a registered trademark of Compaq Computer Corporation. Hercules is a registered trademark of Hercules Computer Technology.