YAP HUD PROTOCOL

Bound by the limitations of SF2 (our usual disclaimer) and with respect to as much realism as we can muster, without making the aircraft too difficult to fly and fight, we present here a short guide to the standardised YAP HUD system

PART ONE
NON-LCOS SYSTEMS

Aircraft without
Lead Computing Optical Sights

This is the A-4C cockpit view.
To see the instruments use the Hat Switch tilt-down or the Numpad 0 key to snap to the instruments, or look at the stuff in the little Red circle marked above.

AA MODE HUD

THERE IS NO GUNSIGHT ON THE AA MODE HUD.

There are no sights on the AA mode HUD. It is blank. It's sort of like before you switch the sight light on.
Think of it as sustainability. You don't want to burn out your bulb on the way to the target and then have a non-working sight.

The real reason it is blank is because in LCOS aircraft, that's where the LCOS goes, and this is a non-LCOS aircraft

When you select AA missiles, like Sidewinders and Sparrows, you are automatically switched to this HUD Mode.

AG MODE HUD

The AG mode HUD carries a single SIGHT graphic whose position changes depending on the weapon selected

When you select GUN, the AG mode automatically appears with a gunsight, which moves slightly as the aircraft moves.

With Rockets, the gunsight depresses to an optimum position for those weapons.

In Bombing mode the gunsight is totally fluid, and requires the aircraft to be manoeuvred to place the pipper on the target for accurate delivery.

The gunsight will show *OVER* the cockpit graphic. That's how it is.

CAGED/NAV MODE HUD

CAGED MODE or NAV MODE?

In the avionics .ini, this mode is referred to as NAV MODE.
In flight it is referred to as CAGED MODE.

The Gunsight is fixed.
It does not move as the aircraft moves.
It is Caged.

The principle difference between the CAGED MODE HUD
and the AG MODE HUD
is shown on the following page....

A-G MODE GUN

THE GUNSIGHT IS FLUID

CAGED MODE GUN

THE GUNSIGHT IS FIXED

CAGED MODE WHEN LANDING

WHEN YOU ARRIVE AT THE APPROACH WAYPOINT, CAGED MODE SWITCHES TO LANDING MODE.
THE GUNSIGHT BECOMES A FLIGHT PATH MARKER

The Flight Path Marker, FPM, indicates where your aircraft is going.

For a successful landing you place the pipper on the deck slightly ahead of the wires.

Don't forget to lower the hook.
And the wheels.

PART TWO
LCOS SYSTEMS

THE F-4E PHANTOM II COCKPIT

The LCOS (Lead Computing Optical Sight) is a means of taking the guesswork out of air-to-air gunnery.

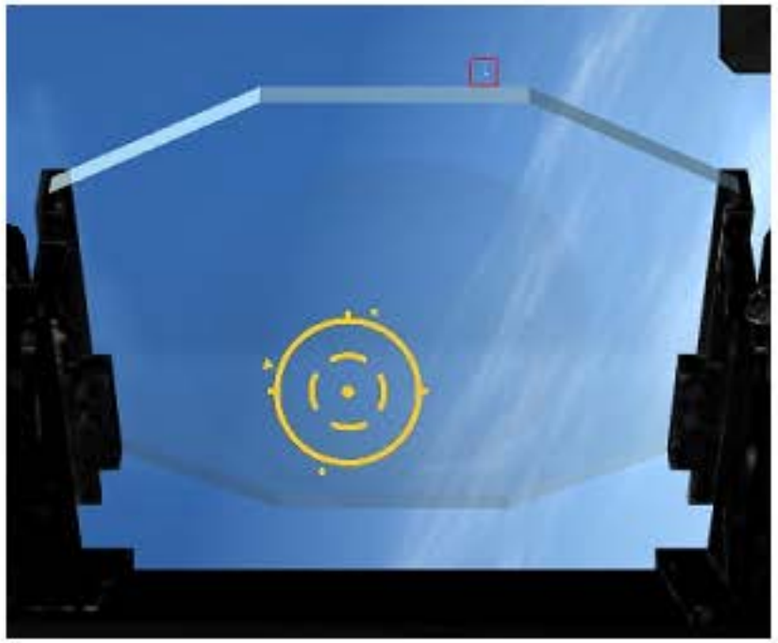
Pre LCOS, you had to use experience to determine by how much you led the enemy target with your gunsight in order to get a kill.

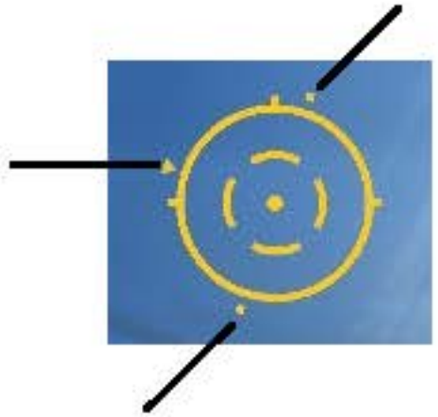
Now with the LCOS, the system works it out for you.
When you put the pipper on the bad guy, the bullets go into him.

AA MODE HUD

The AA mode HUD displays the SIGHT for the selected gun. The SIGHT is fluid, and not bound by the confines of the HUD.

It features ROLL TABS which help you to determine by how much roll the aircraft is exhibiting.





THE ROLL TABS

When you approach the target in steady flight, the SIGHT remains in its centre position.
If you fired now, the bullets would go where the SIGHT is

As the target manouevres away to the right, and you follow, your SIGHT lags behind the centre of the HUD.

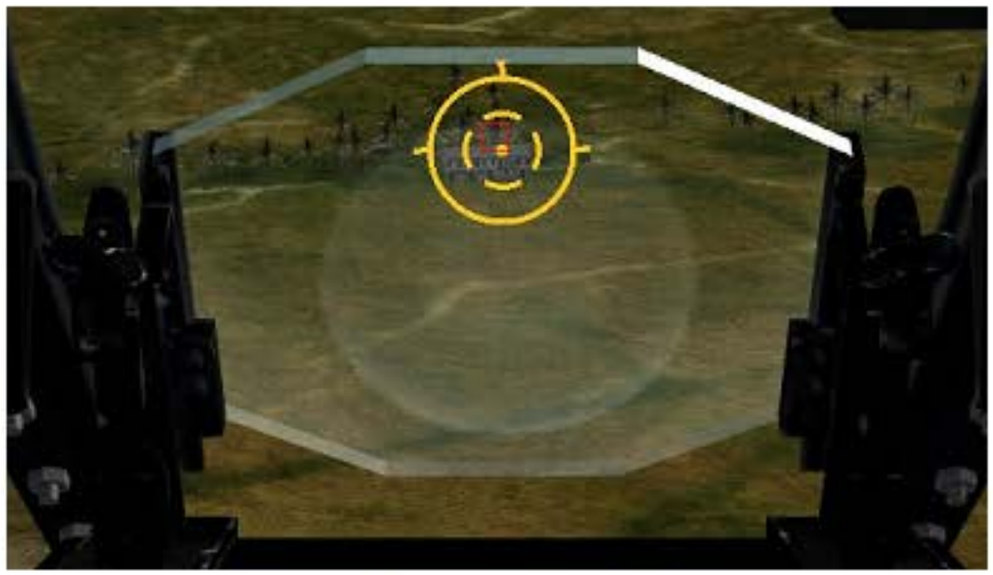
Your bullets still leave the aircraft at HUD centre, but they will end up where the SIGHT is.
To get the kill, you need to put the SIGHT on the target.

THE BULLETS ALWAYS GO WHERE THE SIGHT IS

AG MODE HUD

The AG mode HUD carries a single SIGHT graphic whose position changes depending on the Weapon selected.

Above is the sight with bombs chosen
Note the Roll Tabs.



This is the SIGHT with Rockets selected.

The sight moves as you manouevre the aircraft. If you are at optimum height and speed for delivery, the rockets will go where the pipper is placed.

Note that unrealistically, the AG sights are not restricted by the bounds of the HUD

CAGED MODE HUD

In Caged Mode (also known as NAV Mode), the Gunsight is fixed. It does not move as you manouevre the aircraft.

In steady flight the bullets go through the pipper. But when manoeuvring in air-to-air combat, the bullets will drag behind it. You have to estimate by how much ahead of the target you need to place the sight in order to get a kill.

WHEN YOU ARRIVE AT THE APPROACH WAYPOINT, CAGED MODE SWITCHES TO LANDING MODE. THE GUNSIGHT BECOMES A FLIGHT PATH MARKER

The Flight Path Marker, FPM, indicates where your aircraft is going.

THE GUN POD

THIS SECTION SPECIFICALLY REFERENCES THE F-4C AND F-4D PHANTOM II AIRCRAFT WHEN FITTED WITH GUN PODS

The F-4E could also carry Gun Pods,
but was fitted with LCOS,
as described previously

The only sight guide that is supplied for the non-LCOS aircraft with Gun pods is the Caged HUD mode.
Until the SUU-23/A gun pod came along, there wasn't even a sight.
Earlier models had to be targeted by guesswork. Like in the old days

WHEN YOU GET IN THE COCKPIT, THE HUD IS SET TO CAGED MODE

HUD MODES WHICH HAVE GUNSIGHTS

	NON-LCOS	LCOS	GUNPOD
AA	no	yes	no
AG	yes	no	no
CAGED	yes	yes	yes

YOU CAN ALWAYS SWITCH TO CAGED MODE TO GET A SIGHT

FROM CAGED MODE, SELECTING AN AA WEAPON SWITCHES THE HUD TO AA MODE AND ARMS THE APPROPRIATE WEAPON

WITH THE GUN, IT CYCLES TO AA MODE AND THEN CAGED MODE

WEAPON	SIGHT
GUN	CAGED
SIDEWINDER	no
SPARROW	no

YOU CAN ALWAYS SWITCH TO CAGED MODE TO GET A SIGHT

FROM CAGED MODE, SELECTING AN AG WEAPON SWITCHES THE HUD TO AG MODE AND ARMS THE APPROPRIATE WEAPON

WEAPON	SIGHT
GUN	yes
BOMB	yes
ROCKET	yes
BULLPUP	no
WALLEYE	no
SHRIKE	no
HARM	no
MINES	yes
DISPENSER	yes

IF A SELECTED WEAPON DOES NOT HAVE A SIGHT, SWITCH THE HUD TO CAGED MODE IF YOU REQUIRE ONE

CAGED MODE PERMANENTLY DISPLAYS A SIGHT