Following those initial attacks the F-
1 1 1 Fs operated in larger units. "After the first night we didn't do anything with six aircraft. When we went after something, we would go after it big time," Lennon ex-plained. "We would put up 20 to 24 aircraft against one airfield at one time. If we had to hit a target, we hit it with everything we had, all at once and got out of there."

MiG PURSUIT
During the early missions a few F-111F crews had encounters with MiG-29 Ful-crums. In such cases the F-lll's escape manoeuvre was to sweep its wings fully, accelerate to 600kt+ (l,110km/h+) and de-scend to 200ft using terrain-following radar to hug the ground at night.
This was invariably successful in shaking oil the enemy fighter — though one Amer-ican crew experienced a high-speed tail-chase lasting some 130km (70nm) before their would-be assailant broke away. Whenever they transmitted, the Iraqi surface-to-air missile (SAM) control radars (lor the SA-2, SA-3, SA-6, SA-8 and Roland systems) experienced harassment from the

defence-suppression aircraft. Lt Col Tommy Crawford describes the defenders' tactics. "At first there were cases of the guys on the ground getting the radar locked on through-out the engagement, but with the HARM firers supporting us, they didn't survive long if they did that. Then the SAM batteries changed their tactics. The radar would come on, they would lock on and fire their missile, then shut down the radar. They would send the missile up ballistically and hope that we didn't turn or anything. We could see them coming, so it was pretty easy to avoid them," he says.
Unaimed barrage fire from automatic anti-aircraft artillery (AAA) weapons (23mm, 30mm, 35mm and 37mm) pro-duced spectacular displays of tracer, but these weapons were ineffective much above 12,000ft. The shoulder-launched SAMs (SA-7 and SA-14) were ineffective against high-speed F-llls at any altitude, says the USAF. Initially F-lllFs carried a pair of AIM-
9M Sidewinder missiles for self-defence, which limited their offensive load of two PGMs. As the threat of fighter attack receded, the Sidewinders were removed and the aircraft carried four
PGMs per mission.
Once the Iraqi SAM
and fighter threats had
been contained, the
a I night flying F-lllFs re-
lied on the protection of
their own electronic
countermea'sures equip-

ment, SEAD and escorting fighters and conducted most of their attacks from me-dium altitude. Aircraft cruised in the band between 12,000ft and 20,000ft above the reach of most of the AAA. From then on, low-altitude attacks were used only if cloud in the target area prevented attacks from higher up.
When attacking clusters of targets, such as aircraft shelters or weapons storage bunkers, the F-lllFs would fly a "race-track" pattern with aircraft in trail at pre-briefed separation altitudes. Each F-11 IF carried out a bombing run, released a single LGB and guided it to impact. In the case of harder bunkers, two bombs were released with a Is interval and guided on to the same laser aiming point. Then the aircraft turned, flew around the racetrack and repeated the process.
If there were more aircraft than could be accommodated on one racetrack, the raiders employed the so-called "wagon wheel" in which each crew was assigned to one of a number of "racetracks" arranged like the spokes of a wheel placed horizontally over the centre of the target.
Using such methods the Wing set about meeting its aim of systematically dismem-bering the Iraqi war machine, with minimal risk to the aircrews involved.

WEATHER LIMITS

The F-lllF's electro-optical systems could not see through cloud and sometimes the Iraqi weather succeeded where the defence could not. For example, on the night
of 19/20 January a 20-aircraft strike
by the Wing on Tallil AB had to be aborted because of low cloud.
In addition to attacking airfields
I during the early part of the war, the 1 Wing attacked several munitions pro-duction and storage areas including the huge (about one-quarter the size I of Paris) Latifiyah munitions pro-duction complex and research centre near Baghdad.
One F-111F attack on
the night of 27/28 Janu-
ary made headlines all
over the world. Iraqi
troops had started to
pump millions of gallons
of crude oil into the Gulf
from two pumping sta-
tions at Al Ahmadi in
Kuwait. The 48th TFW
received orders to halt
the outflow and a force
of five F-lllFs (includ-
j ing airborne reserves)
took off to knock out the
pumping stations.

Hardened sheiters were
destroyed, and Pave Taek
could see dug-in tanks in
the dark

FLIGHT INTERNATIONAL 10 - 16 July. 1991