

## Viewpoints

# Reality of War

## Tornado GR1 JP233 Delivery (17 Jan 1991)

**‘Cluck cluck... Gibber, gibber... My old man... Sa mushroom’**

### **An Airman’s Perspective on the Reality of War**

By Wing Commander Andy Walters

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#### **Introduction**

On 15 January 1991, the long-awaited UN deadline for Saddam to vacate Kuwait came and went. But the next day, we were all called into the Pilot Briefing Facility (PBF). We crammed into the interconnected series of buried ISO containers with their struggling air conditioning where our Detachment Commander (DetCo) revealed each formation’s target for that night on an ISO-sized wall map. Our 4-ship’s target was tucked way up in the top right-hand corner, just west of Baghdad. It was going to be a very long flight to bomb the expansive runways at Al Taqaddum<sup>1</sup> with our JP233s airfield denial weapon<sup>2</sup>. DetCo reassured us that our formation was sequenced at the tail end of a large Coalition ‘package’ which would have suppressed the airfield’s defences before we arrived.

Our Wing’s initial missions had already been planned by the Squadron Commander and his Nav, the Squadron’s Weapons Leader. But our four crews set to refining their plan. As the junior crew in our 4-ship, our attack was to be straight ‘along’ the length of the runway to drop 60 SG357 cratering sub-munitions and 430 HB876 anti-personnel mines, while the other, more fortunate, crews were to attack ‘across’ the runways to cut the operating surfaces into short lengths. To focus our minds, my crew was asked to commence dropping our JP233 ‘stick’ short of the runway to take out the Roland surface-to-air missile (SAM) system positioned on the extended centreline.

With planning more than complete, we found ourselves with five hours to spare before needing to brief. So we drove back to our British Aerospace ‘married quarter’, a flimsy, two-bedroom tin-roofed bungalow, with beds crammed into every room other than the bathroom. This had been home to the eight of us since we had arrived in mid-November. When not flashing around the Great Nefud desert at very low levels, our main entertainment had been watching *Blackadder*

*Goes Forth* on a portable TV that had been generously donated to us. So, we crammed around the small screen, chuckling and pre-empting the punch lines. Four hours and six episodes later, twilight was upon us and Blackadder's team were just clambering out of their trench into a deadly wall of German machine gun fire on 'Operation Certain Death' when our formation leader's finger punched the video's clunky 'stop' button: 'Time to go, chaps'.

We drove to the PBF across the totally blacked-out base in silence, passing a local military vehicle whose driver had taken the black-out a little too seriously and driven into a tree with his headlights out.

Our formation was to be the first to brief and get airborne. Our flight commander started the brief but was gently told by the DetCo, sitting on the back row, to slow down. Briefing complete, we climbed into our crispy, virgin NBC<sup>4</sup> suits, flying kit and combat waistcoats. The RAF Regiment wing commander signed us out our Walther pistols, gold sovereigns, goolie chits<sup>5</sup> and two clips of ammo. 'Only two clips...?' I questioned. He started to talk about 'standard scaling', etc. when reality dawned on his face, and he handed me a heaped handful of spare rounds. I shovelled these into the deep pockets of my flying jacket where they stayed until I found them several months later once back in Germany. The whole ops team lined the exit to the PBF to wish us 'God's speed', a ritual they repeated until the end of hostilities.

We reached the jet in good time. It squatted ominously in the warm, moist darkness under its maximum weight of bombs and fuel, festooned with twice the normal number of gently fluttering safety pin ribbons for the pylon ejector release units, JP233s, AIM-9 Sidewinders and flare pod. Having climbed into the cockpit and found somewhere to stow our NBC respirators, the training snapped in and we busied ourselves with pre-flight checks, our hands knowing exactly what to do. We quickly found that the fly-by-wire 'CSAS' system was unserviceable. Fortunately, we had two spare aircraft, albeit we had been warned that the second spare had the new 2250-litre under-wing fuel tanks, recently adopted from the Tornado F3, which the test pilots had reported were not optimised for ultra-low or terrain-following flight 'sausage side'<sup>6</sup>. So, we jettisoned our aircraft, grabbed our kit and worked up a mix of sweat and tension rushing to the spare. With little excess time, we clambered aboard and rushed the checks. This time, my Nav found that the SkyShadow ECM<sup>7</sup> pod was failing its Built-In Test – a piece of kit deemed vital to penetrate Al Taqaddum's SAM defences. It was time to try our third Tornado of the evening. As the wagon sped us over to the next revetment, the rest of our formation were already getting airborne, their afterburners disappearing off into the blacked-out sky.

This time, I checked nothing but the weapon settings on the rear of the JP233s and my bang seat. Radio silent 'EMCON' procedures<sup>8</sup> were an excuse not to let anyone know that we were probably going to be too late. But we weren't going to be left behind on Night One! It's remarkable how quickly you can be ready to taxi when you don't do your pre-flight checks. The groundcrew disconnected their headset. Now it was just me and my Nav.

We kept the burners in to 450kts to make up some time and, having carefully navigated the safe route out of the base defence zone's HAWK SAM, we encouraged our heavily-laden Tornado towards the tanker. But our radar revealed nothing but empty airspace at the planned rendezvous (RV). Scanning increasingly widely, my Nav found an inviting gaggle of aircraft which we closed upon. It became apparent that the tanker was at the normal peacetime RV rather than the slightly amended wartime towline. To the surprise of the rest of the formation, we bobbed up alongside them, sucked some fuel and headed north on the tanker trail.

Well short of the Iraqi border, we dropped off the tanker, accelerated and dived to low level on our Terrain Following Radar (TFR), completing our 'fence checks', which included arming our JP233s, AIM-9 Sidewinders and 27-mm cannons, preselecting our under-wing tanks for jettison in case we needed to evade any SAMs, switching our radars to war mode, reviewing our 'Escape & Evasion' plan and extinguishing the external lights. We knew the other three crews were in our planned widely-spaced 'card' formation, but couldn't see them – isolated from our virtual colleagues, but bonded by camaraderie and intent. The Iraqi border marched down our moving map displays at eight miles a minute. As we crossed 'sausage side' I had the feeling of trepidation that would repeat itself 26 times over the next few weeks and hundreds of times over the next 12 years.

Our world was now as black as a witch's tippie. Even the Moon was blacked out, denying us the sensation of 200 feet and 480 knots. Our sensory isolation was only broken by the occasional headlights of 4-wheel drive wagons driving across the desert almost level with us. But the cockpit lighting was far too bright, despite the plethora of rotary rheostats selected to their 'fully dim' position - Panavia's designers clearly hadn't experienced our envelopment in absolute, boundless darkness.

Deep inside Iraq, we could see afterburners being engaged high above us, the streak of air-to-air missiles coming off rails, a short flash, then the tumbling of a burning aircraft some way off. We felt fortunate to be way down here at low level! A few minutes out from the target, a remarkable, distant sight grew in our right one o'clock. I drew my Nav's attention to the silently twinkling hemisphere of detonating AAA shells, saying 'I'm glad we're not going over there!' He responded '90 seconds, next turn, right 30 degrees'. As the TFR hugged the dunes and gently turned us right, the mesmerising, glittering hemisphere gradually slid right-to-left, before settling on the nose as our wings rolled level. 'Visual with the target'.

We accelerated again, checking our weapon switches for the 'n'th' time. As we drew closer, the hollow dome of twinkles became filled with slightly dimmer tracer, so thick that it appeared impenetrable. 'Operation Certain Death' sprang to mind. We could now see the nav lights of the US Navy A6 Intruders bombing Al Taqaddum from medium level ahead of us, determinedly diving through the scintillating dome at high angle into its tracer-filled interior before climbing away. But so much for them suppressing the defences – Taqaddam was awake! We flashed across a dual carriageway inappropriately illuminated by the headlights of civilian road traffic. Didn't they know there was a war on?

Settling into our attack run, my Nav made a quick squirt of his radar in war mode to fix our nav kit. Our track took us over the huge expanse of Habbinaya Lake, immediately south of our target. The Mobile Met Man had assured us that the lake was full to the brim, given the recent rain. Intel had plotted a very nasty SAM-8 on the lake's right bank whose Missile Engagement Zone we would have to penetrate. We crossed over the water and were now inside the twinkling dome. Each line of unguided tracer rose lazily at first, then suddenly accelerated and whipped past our ears. I resisted the instinct to duck. Instead, we disconnected the TFR and descended to below 100 feet to avoid the AAA and SAMs. The TFR's 'E-scope' display warned us that we were below its minimum height of 200 feet by brightening up so much that the glare made it unusable. All four aircraft were unaware of the 70-foot high cliffs that lined the rapidly approaching shore...

Now, the Tornado was designed to operate at low level. But its radar altimeter had a known habit of cunningly 'unlocking' (ie, suddenly reading zero) below about 50 feet – just when you really need it. The German and Italian air forces modified their 'radalts' with a filter so they operated down to zero. The MOD's 'pen pushing jotter blotters' had taken a different approach and stated that there was no requirement to fly below 200 feet. Well, there was tonight...

As we grazed over the top of the cliffs, our radalt unexpectedly 'unlocked', leaving us without any height data and causing various compelling red and aural warnings. 'Pull up, pull up!' my Nav shouted, as I sharply pitched up, apexing at about 250 feet. Our Radar Homing and Warning Receiver (RHWR) then indicated we were locked up by AAA radars, and some of the blindly-firing tracer immediately slewed towards us. 'Get down, get down!' offered my Nav as I hastened back down to our weapon release height of 180 feet. The tracer reverted to barrage mode as our SkyShadow ECM pod's active jamming light gently glowed. An 'R' for Roland appeared on the nose – at least we were on track! Fifteen seconds to weapon release. Our world was now a blaze of lights and we could smell the cordite from the Iraqi AAA ingested by our engines. We made one last check of the switchology and I pressed hard on the control column's Weapon Release Button (termed 'committing'), giving the aircraft's Main Computer permission to release the JP233s in 3... 2... 1... and... absolutely... nothing... happened...

My brief thought that 'this JP233 is a really smooth weapon!' was shattered by my Nav shouting 'Commit, commit!!!' 'I am...!!!' I quipped. Another check confirmed our weapon switches were all good. So, having penetrated what we later discovered was 148 individual AAA positions, surprised Lake Habbinaya's cliffs, bounced over a Roland, we then flew beautifully straight and level along the runway for twelve seconds without dropping a single one of our 490 sub-munitions.

We hadn't yet exited the pleasure-dome but I had a head-full of contradictory thoughts. 'Never re-attack' is a fundamental rule. But our aircraft had the big external tanks so, whereas everyone else was now on minimum fuel, we had 1200 Kgs for another go. In hindsight, this was the

selfish thought of an unmarried, task-focussed, 27-year-old pilot. My Nav, albeit the same age, had a wife and three young children back home, and I'd promised them that I'd look after him. Two sharp thumps through the airframe and the decision had been made. My Nav punched off the lame JP233s and consigned them to the desert. Now outside the main hemisphere and subjected to a little less tracer, I made a habitual check of our fuel. We'd lost 1200 Kgs! 'Shit' was the response from the back – 'I've punched off the tanks, not the JP233s!' Three sharp thumps followed as first the left-hand SG dispenser, then the right, and finally both HB dispensers punched off the aircraft at 300 millisecond intervals. Our insubordinate JP233s were finally gone.

Now, the Tornado had been in service many years, yet a few days beforehand, someone had miraculously discovered that if you fired the laser rangefinder (the primary height sensor) with live weapons, the aircraft's Main Computer could reject the inertial navigation system's input (the primary attitude sensor), leaving you reliant on a very lackadaisical 1950s back-up gyro called the 'SAHR' and an even older Doppler radar to point the aircraft in the right direction while TFR'ing at 200 feet and 500 knots. So we purposefully hadn't used the laser. But my Head Up Display symbology was now very, very wobbly...

My question concerning our nav mode was answered by a short quip of 'the IN's off-line...!' We tried to reselect it, to no avail. To distract my Nav from his angst, I suggested he complete the 'Doppler/SAHR' checks. A few seconds later, all the HUD data disappeared in a brief green flash coincident with a simple, sharp retort of 'bugger' from the back.

The SAHR had a somewhat sticky rotary switch labelled 'free' (the normal mode), 'slave' (for when the INs weren't working) and 'off'. In hindsight, this isn't a good combination of functions, as we discovered as my Nav overshot 'slave' and turned the whole system off. So now I didn't even have any 1950s technology as we approached a WMD site<sup>9</sup> defended by a SAM-6. I found myself staring at an E2B bubble compass that looked like the thing my father stuck inside his car windscreen, the head-down artificial horizon (only used during QFI instrument rating torture sessions) and a now unstabilised TFR E-scope (that was STILL too bright). 300 feet seemed a better height right now.

We'd agreed as a formation to break radio silence briefly off target with an encoded Blackadder quote to confirm we were all still there. Sometime during all this excitement our formation leader called 'Cluck cluck!'... 'Gibber, gibber' we responded. 'My old man'... 'Sa mushroom' followed sequentially from numbers 3 and 4. Unexpectedly, we were all still there. We headed south and left the AAA behind us.

The SAHR eventually realigned itself. I was now very grateful for its 1950s technology, although we weren't entirely sure where we were. We crossed the Saudi border with relief and switched the external lights on as we passed a pre-designated line a little further south. To our surprise, the lights of our other three formation aircraft were vaguely where we hoped they'd be,

despite our meandering nav kit. We climbed up to medium level on vapour-filled internal tanks. The RHWR showed a friendly F15 fighter closing from our left 8 o'clock. 'So NOW we've got an escort' I thought, picking up his dim formation lights visually. Depth perception is always difficult at night, but he seemed to be closing rather quickly. He went belly-up to us, blooming in the canopy. I bunted fully forward just before the F15 slashed through the airspace we should have been occupying and disappeared into the murk, never to be seen again.

We closed up with our formation leader. At least THEY knew where they were. 'Homeplate' appeared on our moving maps along with our next challenge. We trusted the base defence HAWK only slightly more than Taqaddum's Roland. It had been rumoured that this SAM had been left on automatic and had shot down a host nation aircraft sometime in the past – no doubt an unfair myth, but we treated it with due respect. So we stuck close to our leader as he navigated the base defence zone's safe lane. As we lined up on long finals, the runway lights were obligingly switched on, welcoming us home. But we weren't trained in night formation landings, so I reduced speed even more and gradually fell into trail behind our leader. Just as we flared, we hit his wake and experienced some unexpected and unusual attitudes, before landing rather firmly a couple of times. My Nav commented that this was his most frightening moment of the night.

Climbing out into a crowd of waiting groundcrew, we felt strangely embarrassed about the missing under-wing tanks. The ecstasy of having survived and the frustration of not having dropped were replaced by the sudden realisation of having to repeat the whole thing again the next night. It transpired that a Main Computer pulse failure had stopped the JP233s from releasing. Fortunately, we banished our demons the next night when our 4-ship achieved four perfect cuts across the runways of another very heavily defended Iraqi airfield.

Twelve years later, I found myself landing at Al Taqaddum in a Blackhawk helicopter and examining the repaired craters in its runway caused by my colleagues' sub-munitions. I even briefly stood in an eroding revetment once occupied by a Roland.

## Notes

<sup>1</sup> Al Taqaddum was originally built by the RAF in 1952 as an extension airfield to RAF Habbaniya to accommodate the larger jet aircraft which could not land at the original 1930s RAF airfield nearby.

<sup>2</sup> The JP233 airfield denial weapon was originally developed as a collaborative programme between the UK (Hunting Engineering ) and the USA (where the USAF intended to employ it on the FB-111) but after the US pulled out due to rising costs, it was brought into service by the UK alone. The Tornado GR1 carried two large pods on its shoulder pylons, each pod carrying both types of sub-munition.

<sup>3</sup> *Blackadder Goes Forth* was a 1989 satire on the First World War; it was the fourth and final series of the BBC sitcom *Blackadder*, written by Richard Curtis and Ben Elton.

<sup>4</sup> Nuclear, Biological and Chemical (NBC).

<sup>5</sup> A goolie chit was originally known as a blood chit. It is a notice carried by military personnel and addressed to any civilians who may come across an armed-services member – such as a shot-down pilot – in difficulties. As well as identifying the force to which the bearer belongs as friendly, the notice displays a message requesting that the service member be rendered every assistance. The gold sovereigns were intended as an added ‘incentive’ to anyone assisting the aircrew.

<sup>6</sup> ‘Sausage side’ was slang for enemy territory and is a reference taken from the 1989 TV comedy *Blackadder Goes Forth*.

<sup>7</sup> Electronic Counter Measures (ECM).

<sup>8</sup> Emission Control (EMCON).

<sup>9</sup> Weapon of Mass Destruction (WMD).

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