Tornado Review

Back in 1993 Spectrum Holobyte released Digital Integration Inc.’s Tornado, which featured two versions of the Panavia Tornado: the GR4 IDS (Interdiction/Strike) and the F.3 ADV (Air Defense Variant). The Tornado is a two-seater, variable-geometry wing aircraft. DI modeled the front (pilot) and rear (navigator/weapons officer – NWO) cockpits.

Most sims modelled specific regions but DI wanted Tornado to be politically neutral, so the theater represented Europe but was not specific to the region. It was ‘greenish’ and included objects like mountains and rivers, airfields, factories, roads, and bridges, etc. The design was acceptable and had enough features to make pilots feel like they were operating in a European theater.

Regarding the Tornado, while the ADV variant was available, the sim seemed to focus on the GR4. Air-to-air engagements were a mixed bag, but the excitement lay in the air-to-ground missions. Air-to-air assets included weapons like the AIM-9L, AIM-7E, and Sky Flash missiles. Pilots could fly basic air intercepts, but their capabilities were limited. On the other hand, the air-to-ground experience showed off the GR4’s capabilities. It was designed to deliver tons of ordnance at high speeds and low altitudes. Its air-to-ground arsenal gave pilots access to general purpose, retarded, laser guided, and cluster bombs, the JP.233 runway denial dispenser, and ALARMs (Air Launched Anti-Radiation Missiles). Delivering the JP.233 and BL 755s provided exciting experiences because they had to be delivered at low altitudes and required overflying the target. Watching a runway or ground targets get demolished by a cluster of bomblets felt satisfying.

Delivering such ordnance required a complex avionics suite. Pilots could employ the terrain following radar, which was necessary because simmers had to spend a lot of time in the NWO’s seat, setting up weapon deliveries. The pilot had access to critical systems like the HUD, an MFD, RWR, and standard avionics, while the NWO accessed left and right TV TAB displays, an MFD, and a stores management display, along with other avionics. The TAB displays handled the TIALD (Thermal Imaging And Laser Designation) system which was unique to the Tornado and critical because crews flew most missions at night. Pilots designated targets with the NOW, which used the TV and thermal images. The Tornado also provided a variety of modes to deliver ordnance, including Laydown attack, CCIP, and Loft. Each mode had specific HUD modes associated with them.

Flying the tornado was a different experience because it was not a nimble dogfighter. It was designed to fly low and fast so pilots simply could not turn and burn. The flight model accounted for AOA, inertia, lift and drag, and other flight variables. Loadouts affected the aircraft’s performance. It performed well when flying its NOE (nap-of-the-Earth) profile, which was aided by terrain following radar, automatic throttle and altitude systems. DI also modelled single engine failures and spins, which required pilots to execute the appropriate procedure to recover. Landing was also an incredible experience because the sim modelled crosswinds. While the Tornado had an automatic approach mode it was sometimes necessary to hand fly the aircraft.

Tornado included a dynamic campaign and pilots executed sorties with up to six Tornados in a package. Unfortunately there were no comms but pilots still had to perform their role to impact the outcome of a mission. Mission outcomes were persistent and impacted subsequent missions. The dynamic campaign was driven by the comprehensive mission planner which was one of Tornado’s main features. It offered three levels of planning: single missions, campaign mission, and commander level. As implied users could fly a single mission, fly a campaign generated mission, or act as a mission commander. The planner included information on targets, flight plans, meteorological reports, and displayed features such as airfields, powerlines, rivers, lakes and the sort. The planner was deep and pilots could spend a lot of time in it. It was so complex that the manual included an entire chapter dedicated to it.

One cool feature while planning missions was observing TOT (time on target). You had to reach targets at specific times otherwise risk ordnance blowing up in your face. This feature added a level of tension to sorties. On more than a couple occasions I arrived late to targets only to have my aircraft damaged from exploding ordnance that was delivered by the AI Tornados.

The manual was a 332 page tome written in landscape format. It was comprehensive and covered everything from the user interface and the mission planner to the jet, systems, and combat operations. It required reading, especially if one wanted to understand the mission planner and how to effectively operate the jet.

Tornado featured a 2-player option, but it was limited to head-to-head engagements. Considering that the GR4 version was more interesting and the Tornado a two-seater, a single plane, multi-crew option would have been awesome.

In 1994, DI released Tornado: *Operation Desert Storm*, an add-on for Tornado, which added a series of new missions flown in the desert scenario, along with new aircraft, vehicles, and ground objects. DI not only replaced the European green with desert pink, but also added improvements to the graphics and 3D models. They added other tweaks to improve the overall simulator experience.

Ultimately, if you were looking for a sim that modeled a complex aircraft in a role that was different from current offerings, Tornado was the sim for you. It delivered complexity on a level of Falcon 3.0 with its flight model, avionics, weapon systems, campaign, and mission planner. The Operation Desert Storm add-on also extended the sim with a new theater and improvements. I cannot leave this space without mentioning Frankie Kam, a modder who kept the sim alive well into the 2020s with his releases of mods which added even more improvements to the sim.

System specs:

* OS: DOS, AmigaOS
* Computer Minimum 386SX/16 (PC), Commodore Amiga
* Graphics VGA
* Control: Keyboard or supported joystick
* Sound: Adlib, Sound Blaster, Roland LAPC-1/MT-32