

THE MAKING OF...

JET FORCE GEMINI

During the N64's lifespan, only one studio was able to match Nintendo when it came to games, and that was UK-based Rare. Join Damien McFerran as he goes behind enemy lines to uncover the story behind one of the company's most ambitious titles

Early concept art for Juno shows a more elaborate look.

Concept art for Mizar, the game's ultimate bad guy.

THE MAKING OF: JET FORCE GEMINI

Back in the late Nineties, being an N64 owner was a testing experience. Having to listen to your PlayStation-owning chums constantly droning on about Lara Croft and Solid Snake was enough to put any Nintendo devotee in a bad mood, but the general lack of quality software towards the end of the console's lifespan was especially galling. Bearing this in mind, it's relatively easy to see why Rare is held in such high esteem with veterans of the N64 era. Thanks to a string of stunning releases including *Diddy Kong Racing*, *Perfect Dark*, *GoldenEye 007* and *Blast Corps*, the company found itself in a position of regard usually reserved for the Big N itself. Another game, which cemented Rare's relationship with its fans, was *Jet Force Gemini*, arguably the company's most innovative and inventive piece of software from that period.

An epic third-person sci-fi adventure, *Jet Force Gemini* saw the player assume control of a plucky team of futuristic freedom fighters – consisting of humanoid siblings Juno and Vela, cyber-pooch Lupus and Floyd the robot – as they attempt to release the galaxy from the vice-like grip of the evil Mizar. Work began on the title in 1997, and while Rare pooled some of its key talent to work on the game, lead programmer Paul Mountain was relatively new to the company. "I joined Rare as a software engineering graduate in 1996 and worked on *Diddy Kong Racing*," he reveals. "After *Diddy Kong Racing's* completion in 1997, I moved to a new prototype project as the lead engineer. This was to become *Jet Force Gemini*."

Falling somewhere in between Rare's cute and cuddly platforming titles and its more mature first-person shooters, *Jet Force Gemini's* inspirations were manifold. "It's fair to say that many games from the team's collective past influenced *Jet Force Gemini*, from Eighties arcade classics right up to the most recent titles of the day," recalls



[N64] The game's protagonists went through several design changes before they were finally rendered in 3D.

“Many games influenced *Jet Force Gemini*, from Eighties classics right up to recent titles”

LEAD PROGRAMMER PAUL MOUNTAIN ON JFG'S INSPIRATIONS

Mountain. "The free-roaming nature of *Super Mario 64* influenced the scale and the openness of some of the backgrounds and settings. In equal measure, the behaviour of the bad guys was a mixture of arcade space shooter formations and *Quake*-style 'attack and cover' mechanics. *Super Metroid* was also an influence on some areas of the game, such as the collecting and upgrading of weapons. I suppose, in short, we were inspired by all the good stuff we'd played and enjoyed playing."

It wasn't just in terms of gameplay that the title borrowed from other sources, either.

"Visually, it tried to pull from all over the place," admits lead artist Lee Musgrave. "There are elements of *Star Wars* in there, *Aliens*, *Dune*, *Battle Of The Planets*, even *Stargate*. It was a real mix of everything and anything space-related."

Despite Rare's close affiliation with Nintendo, the creative process was free from unwanted interference. "Nintendo took regular looks at the game during development and we listened to any feedback that they gave us, but it was essentially a Rare-developed title," explains Mountain. Outside pressure did result in one major change, though: the game's protagonists originally sported an overly cute visual style, but this was altered at Nintendo's behest. "I remember us showing Shigeru Miyamoto an early build," says Musgrave. "After some particularly candid feedback on the characters, we made changes."

However, it wasn't just Miyamoto's suggestions that instigated such aesthetic alterations, as Musgrave is quick to point out: "The art team grew in confidence and ability throughout the creation of *Jet Force Gemini* and started to push things harder technology-wise. There were elements that were redone just because we had learned how to do them better."

Although the N64 had been available for a couple of years, developers were still getting to grips with its innovative analogue controller, and the *Jet Force Gemini* team



[N64] Third playable character Lupus features a number of cybernetic augmentations.



IN THE KNOW

- PUBLISHER: NINTENDO
- DEVELOPER: RARE
- PLATFORM: N64
- RELEASED: 1999
- GENRE: ACTION PLATFORMER
- EXPECT TO PAY: £10+

DEVELOPER HIGHLIGHTS

- WIZARDS & WARRIORS X: FORTRESS OF FEAR
SYSTEM: GAME BOY
YEAR: 1990
- GOLDENEYE 007
SYSTEM: NINTENDO 64
YEAR: 1997
- BANJO-KAZOOIE: NUTS & BOLTS (PICTURED)
SYSTEM: XBOX 360
YEAR: 2008



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was certainly no exception. "The overriding aim was to create a control system that was both fun and as easy to pick up and play as possible while retaining the variety of gameplay that we wanted," explains Mountain. "Although much of this was completed in the first half of development we continued to playtest and tweak throughout the project."

Just as it had enabled *Super Mario 64* to shine, the N64 pad became intrinsic to the *Jet Force Gemini* experience. "The analogue controller was essential to us to get the game playing how we wanted. A digital system could not have given the same level of control and targeting finesse," asserts Mountain. *Jet Force Gemini's* control scheme is a two-part affair; walking around was very much like your typical 3D platformer, but entering a combat situation triggers a switch to a closer viewpoint. This unique system has since been replicated in games such as *Resident Evil 4* and *Gears Of War*. "The idea behind the system was to retain a character-based game – hence the frequent use of a third-person view where you see the character you are playing as – but to bring in some of the tightness and accuracy of a first-person shooter," reveals Mountain. "After many attempts to automate the change of view and targeting mode based on the context of the action, we settled on a manual system with the targeting camera fixed behind the character's head, as we felt this delivered the best gameplay experience." The decision was a success. "The solution we ended with is a beautiful thing," says Musgrave with a smile. "It feels very old-school to me: difficult, unforgiving, but ultimately precise."

One of the most refreshing aspects of the game was the way in which the player's progression throughout the various levels was handled. Initially, the only character available is Juno, but eventually other heroes are added to the roster, each faced with a slightly different route through the game world. "The characters all had an ability that

was unique to them," explains Mountain. "These were playtested and fine-tuned against specific parts of the environment, which we developed to take advantage of one of the abilities. This enabled certain 'forks in the road' to be introduced into the game, where two characters would be forced to go in one direction but the third would have the option – providing they recognised the opportunity – to take a different route. For example, Vela was able to swim under the water, so she could negotiate areas like underwater tunnels while Lupus was able to hover for short periods of time, giving him the ability to cross wide gaps that couldn't be jumped. This introduced challenges into the level layout and timing of game events, such as the points where you unlocked or upgraded characters. These were resolved with a mixture of forward-planning and extensive playtesting."

While the game was pushing the boundaries of what was possible in an N64 action title, it also displayed some of Rare's famous experimentation – namely some brilliant racing mini-games. "We were initially trialling the introduction of a small hover ship," says Mountain. "This proved to be quite fun to fly around in so we wanted to do a bit more with it than simply hover about a few levels. Several members of the team – myself included – loved racing games and had worked on *Diddy Kong Racing*, so we knocked together some tracks and basic race mechanics to amuse ourselves with. Because these proved to be fun we decided to work them into the game and they formed the futuristic ant racing and the top-down arcade racing games."

When *Jet Force Gemini* was eventually released in 1999, it received overwhelmingly positive



SUDDEN DEATH

JET FORCE GEMINI pushed the N64 hardware to breaking point yet, for the most part, it managed to stay on the right side of acceptable. However, one area where the developer probably went a little too far was the deathmatch mode, inspired by the excellent four-player iteration previously witnessed in *GoldenEye 007*. "A good feature, but maybe a step too far," is Musgrave's opinion, but Mountain is less repentant. "I would stand by the decision to include this in the final game. Although it wasn't perfect by any means, we had many fun hours playing this during development and hoped that players would get the same enjoyment out of it. In retrospect, given the limitations of the screen resolution, the split-screen multiplayer would have been much more suited to a first-person camera view as this would have made the player's involvement in the action feel tighter and more focused. Although this view of the action would have gone against the ethic of the main game, to some extent, it is something I would certainly address if I could turn back time." Musgrave sums it up nicely: "It didn't do *GoldenEye* any harm, so we thought it prudent to include."



► [N64] Some of the boss encounters seriously pushed the N64 hardware to its limits. You'll struggle to find a better visual experience on the console.



► [N64] The game's innovative targeting system in full effect.

► [N64] Saving all of the Tribals in each stage was the only way to complete the game – but they often died too easily, forcing you to replay entire levels.



ACROSS THE LEVEL YOU WILL FIND THE TRIBALS.

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IT TAKES TWO TO TANGO

ONE ASPECT OF *Jet Force Gemini* that was arguably ahead of its time is the co-op mode. This feature is unlocked once the player has successfully reassembled the fourth playable character, the amusingly named Floyd the Droid. Rather than allow both players to go off and do their own thing, the second participant would provide fire support for the first. "Like every feature it needed thought and planning to get this in the game," says Mountain. "Because of the simple approach that we took with the co-operative play it made this less of a headache than it could have been. Floyd, who was your flying robot sidekick, was easier to position in the environment than a fully controllable second character. From a gameplay standpoint, this freed up the second player to concentrate entirely on helping out their playmate by targeting the bad guys, which meant the same environments could be approached in a subtly different way while, hopefully, keeping the game control as pure as possible."



► [N64] *Jet Force Gemini* featured a wide range of different locations, ranging from enclosed spaces to wide-open arenas.



reviews and became a vital weapon in the N64's armoury as it entered a period of uncertainty. With the recent worldwide launch of Sega's 128-bit Dreamcast, Nintendo could no longer boast that it had the most powerful console on the block. *Jet Force Gemini* was unquestionably a headline release, but despite this there were some voices of dissent in the crowd: many people felt that the light-hearted visuals belied the incredibly harsh challenge contained within. Much of the criticism was levelled at the game's insistence on having to save every one of the Ewok-esque Tribals in order to fully complete the game. "From a personal viewpoint, if I approached this today I would definitely be more forgiving on the requirement to save all the Tribals before being able to progress to the finale," admits Mountain. Musgrave shares a similar sentiment: "This feature was actually a late addition to the game and was quite a brutal stroke for us at such a late stage... I'm not sure we would make the same move again."

Another area where critics were quick to attack was the manner in which *Jet Force Gemini* pushed the N64 hardware to its limits, which resulted in what is arguably one of the best-looking games on the

console, but also gave rise to painful bouts of slowdown. However, Musgrave remains unrepentant. "We grew as developers and artists throughout *Jet Force Gemini*. It was the proving ground for many people still at Rare today, and as we got better we found new and inventive ways to make the N64 sing... and strain." Mountain agrees: "As a developer who wants to push everything to the limit, and beyond sometimes, there nearly always arises a craving for more power from the hardware." With this in mind, why, then,

“Jet Force Gemini was the proving ground for many people still at Rare today”

LEAD ARTIST LEE MUSGRAVE ON JFG'S LEGACY

did the company not choose to make use of the recently released 4MB Expansion Pak? "Although the Pak was due to be released with *Donkey Kong 64*, it remained something that all N64 owners would not necessarily have access to," explains Mountain. "We wanted to deliver the same experience to all players and were confident that we could do this using the standard 4MB of RAM on the console. This decision allowed us to focus all of our efforts on getting everything that we wanted working on an unexpanded console, and I firmly believe that we were able to do this." Musgrave adds another explanation: "It would have made the production costs go

up and the release timescale less favourable. We were confident that we could graphically outdo many games that were using the Pak regardless. We were right."

Both Musgrave and Mountain are still employed by Rare and they both have fond memories about *Jet Force Gemini*. "I love the epic nature of the whole thing – it really feels like an adventure as you play through, and I like the old-school feel too," gushes Musgrave. "I think the art team did a great job in pushing things as far as they could go at the time, and I also love the variety of gameplay in the product – proper value for money!"

Mountain is equally pleased with the end result: "I am very proud of the whole game. It was a terrific game to work on with an imaginative and enthusiastic team of game players developing it. I enjoy some of the slightly more off-the-wall humour that is dispersed throughout the game and, as an engineer, I can hopefully say this without ego: the graphics were beautiful. I am glad that we took on the challenge of producing a third-person shooter and also glad that we produced a title that, although challenging, never takes itself too seriously. It was fun to incorporate so many elements into the title with – to name a few – the multiple characters and weapons, the bosses, the ability to disguise yourself, the nightclub complete with DJ, the racing games and the Floyd mini-games hopefully providing great variety for players. It was a great project to be involved with and I feel very proud of what it achieved."