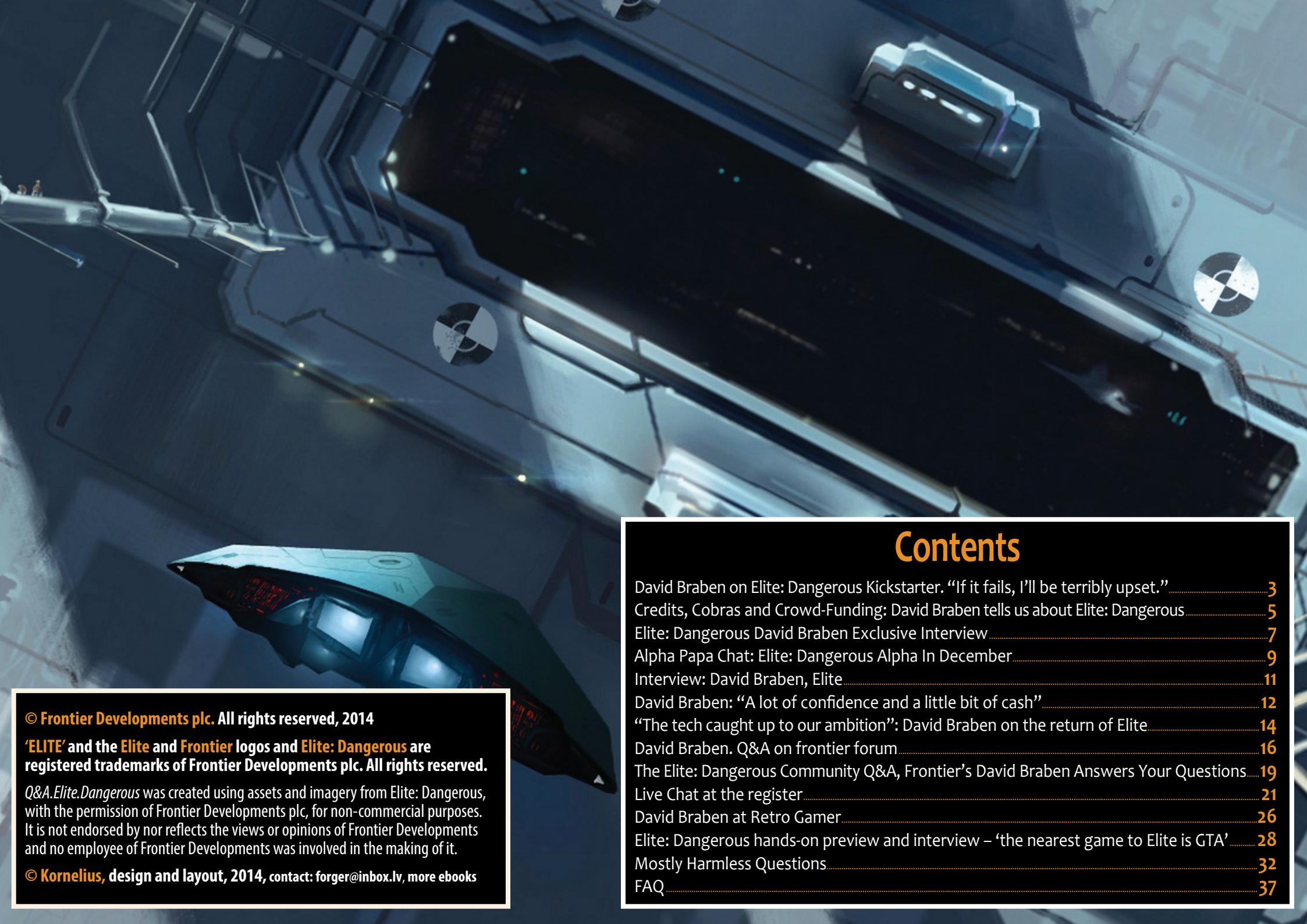


The logo for Elite Dangerous features a golden eagle with its wings spread wide, perched atop a stylized 'E' shape. Below the eagle, the words 'ELITE' and 'DANGEROUS' are written in a metallic, serif font.

ELITE
DANGEROUS

Q & A DAVID BRABEN
CEO Frontier Developments plc.



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David Braben on Elite: Dangerous Kickstarter. “IF IT FAILS, I’LL BE TERRIBLY UPSET.”

Elite: Dangerous is a new Elite game produced by David Braben's Frontier Developments. It's a long, long awaited return to the space-faring and trading series that made Braben famous. But it's not without controversy: Braben's pitch on Kickstarter is extremely bare-bones. To find out more, we sat down with David to talk through the Kickstarter, and the promise of a brand new Elite.

By Tim Edwards, 592 days ago, 0 Comments
Wednesday, 7 November 2012

PCGamesN: How much work has been done on Elite: Dangerous then. What have you go so far?

David Braben: We've been doing most of our work on the technology behind it. So we've got the networking layer, and we've been looking at technology, and how things are rendered, and that sort of thing, and we've already started looking and working on the game, but obviously we need to be confident that there is a market for it.

PCGN: So you don't have a demo or slice of the game ready to go?

David Braben: Not that we're ready to show yet. The thing with the game is that it takes a lot of art, and all that takes a lot of time to make.

PCGN: You mentioned in the Kickstarter that you've struggled to get this project off the ground. That it's been a battle. Can you give me a bit of background to that? What's been going on?

David Braben: The primary reason is that the project has been done as a skunkworks project, the issue is that because it's not a project with an official release, or that sort of thing, you end up pulling people away to work on other projects. The advantage of this: it becomes a proper official project and it gets the priority.

PCGN: There's always interest in Elite, and it seems odd that it's never got past the Skunkworks project. Why hasn't it ever got off the ground?

David Braben: Well, we have confidence in the design. We're happy that it's something we can go forward with. One option would have been for us to go with a publisher. If you look at the original Elite, if we'd have listened to a publisher we'd have had three lives, we'd have had a score, we'd have had a ten minute playtime. The fundamental problem is that it wouldn't have been the game we wanted to make.

PCGN: You haven't been working in the PC space for while – and it's a very different world now. How the audience reacts, what they like or dislike is very, very different... particularly around crowdsourced projects. Are you ready?

David Braben: Well, there's only one way to find out, right? In terms of the PC space, it's not hugely different... I do appreciate what you're saying, I think there are issues when it comes to DRM and that kind of thing... which I've always been dead against... but in terms of interacting space we're still selling lots of copies of RollerCoaster Tycoon 3. It hit the PC chart number 3 in summer of last year. I do take your point though... it's something we'll have to...

PCGN: I don't really mean about working on PC hardware. The kickstarters and games that are successful, and that people get behind are extremely responsive and dynamic... that's a very different environment to working on a product to spec...

David Braben: Yeah, I understand that. To be honest, that's actually a better match for how I'd want to develop games than what a traditional publisher method. The problem is that a paper design doesn't convert very well, you want to be able to tweak it, you want to be able to change it. You want to be able to spend time here, this bits much better than this, let's work on it.

PCGN: Okay. Let's talk about your vision for the game. We know it's an Elite game and that you'll be flying between space stations... but what else. What's progressed...

David Braben: The obvious biggie: it's multiplayer. I think that makes a huge difference to the game. Once you've got a multiplayer environment, it completely changes the dynamic of the game. You can co-operate, go on missions together, meeting your friend in a certain place. That brings in so many more game mechanics, I think it's fascinating. Then of course, there's the way you can interact with all those players, it's so much deeper than when you're just against a robot.

PCGN: How multiplayer are we talking? A few of your friends, 10s of players? Hundreds?

David Braben: Huge numbers. Potentially. A galaxy is almost perfect for this, in the sense you've already got the world split into little areas. Each system, you're talking about many tens of people. But that doesn't mean there aren't a lot more in the galaxy, if you jump to meet them.

PCGN: That's exactly how Eve works, where every system is an instance.

David Braben: Yes. And we can also shard the instances.

PCGN: You're talking about a persistent universe. It's not a single player game.

David Braben: I'd say 'a curious mix.' You're right, there is a degree of persistence.

PCGN: There's a lot of space games in development or published right now. Star Citizen is flying on Kickstarter, Notch is working on ox10C, and Eve's been around for years. What's changed? Is this a coincidence. Or has something changed?

David Braben: I think there's a strong latent demand for space games, and to be honest, Kickstarter has enabled it. I think that latent demand can be satisfied. If you talk to publishers, they're very cool on anything that's different to what is already out there. Because there hasn't been a big space game for quite a while, they say "oh, space games are very passe." It's a self reinforcing thing. It's also a desire from people within the business. The best games are those that the developers want to make. It's like in the film business – the best films are the ones when the director has always wanted to make that film. If the people working on it really care about it, they'll create something phenomenal.

PCGN: Okay, let's talk about the team. How many people are working on the game right now?

David Braben: It's still at a skunkworks stage now, and the plan is to increase it beyond that once we've got the thumbs up from Kickstarter.

PCGN: What if it doesn't work? What if you don't get the funds?

David Braben: It will be a tragic shame. But actually, it will probably be for the best. If there isn't the interest in the game, then it's probably better to know sooner rather than later. I mean, I'll be very upset about it, I won't deny it, but it's a sensible plan.

PCGN: Since the Kickstarter launched, there's been a bit of chatter about how barebones the pitch is. Can you see that?

David Braben: Oh sure, and I'm not saying there won't be more content up on the site. I think the other danger is, we're saying "here, this is what we want to do, we're laying out," and as we go, we'll start laying it out to people.

PCGN: Have you ever backed any other Kickstarter projects?

David Braben: No I haven't, and I intend to do so. 

Credits, Cobras and Crowd-Funding: David Braben tells us about Elite: Dangerous

At the time of writing, Frontier Developments' attempt to Kickstart a new entry in the venerable and classic Elite series is heading towards £600,000 GBP of a £1.25 million GBP target. The original project page for Elite: Dangerous was rather sparse, but the past few days have seen new concept art, information updates and videos released by the development team.

I asked Elite co-creator David Braben about the groundbreaking original in the series, why Frontier has waited so long to develop a new Elite title, the nature of the proposed multiplayer, and finding a delicate balance between the wishes of backers and the vision of the development team.

30 Nov 2012 by Peter Parrish

IncGamers: I'm going to assume most people reading this interview are familiar with the original Elite, but for those who may not be could you give a quick synopsis for the game

David Braben: Take 100 Credits and a basic space ship to make money legally or illegally – trade, bounty-hunt, pirate, assassinate your way across the galaxy. You fly seat-of-the-pants style for your life as you cross dangerous space routes to make your fortune. Buy food cheaply at a poor agricultural world and take it to an industrial power-house and make your fortune. That's if you make it there. Perhaps you'd prefer a life of piracy Pick off those juicy traders arriving with cargo bays loaded with valuable food instead and steal it, and deal with the police from time to time Or hunt those pirates for the bounty

IG: Elite is generally credited with being the first 'open world' (or 'open space' I suppose it should be!) game. Was that intentional in your original design from the very beginning, or something of a happy accident

David Braben: Yes it was, or rather the freedom was a key desire for the game. Most games of the time were entirely prescriptive. Fight off one 'wave' of baddies, then deal with another 'wave', that were slightly more challenging to beat, and keep doing this until you lose. Three times. Or four times if you manage to reach a score of 10,000. You certainly couldn't run away – or sneak past them!

We wrote the game primarily for ourselves – ie we were the judges of what the game should be, and we wanted something very different from what had gone before. That freedom was a big part of that, so yes, the freedom was our intention from the start, and the openness of the world was a key part of that.

IG: You say that Elite: Dangerous is the game you "have wanted Frontier to make for a very long time"; what has prevented you from doing this over the years since the company's formation in 1994

David Braben: Working with publishers is great, but as part of the process, inevitably the publisher will want to steer the game in a particular direction. It happened with "Elite" – the game was rejected by Thorne-EMI because it was so different to what had gone before; to what they believed would

be successful because those sort of games were successful before. They wanted three lives, a score and a ten minute play time. That was because that was the norm at the time. Today, we would be steered to make a game with cut-scenes that would appeal to an imagined audience. That is not the game I want to make.

Publishers had then, and still have now, established processes and a key part of that is the forecast ROI or return on investment. For that to work there has to have been a sufficiently similar game in the near past to base the forecast upon. The publisher will then try to ensure those similarities remain. Anything else will be 'too risky'. It is why we see so many sequels and 'me too' games.

IG: You've just (at the time of writing) added a pitch video and some artwork to the Elite: Dangerous Kickstarter page. Was it a deliberate decision to open the Kickstarter without those? What was the thinking there

David Braben: It was a matter of timing. We wanted to go live as Kickstarter went live in the UK. We actually thought that it would make sense to make a second 'splash' when we added more content to the site – we thought it would be a slow start. With hindsight we were wrong – particularly because of the huge splash the BBC story made.

IG: It sounds like multiplayer will be a key part of this entry in the series. If you're able to say at this point, how will the multiplayer system work Is the intent a persistent 'MMO' style world where every player will be present in the same universe, or more of a drop-in/drop-out, invasion/co-op system like Dark Souls

David Braben: It has elements in common with both. There will be significant elements of persistence – the world will gradually change, and everyone

will effectively (in some respects) be in the same universe, but you will also be able to select the players that you can meet in the game – perhaps just your friends – perhaps all-comers. You will also be able to leave the game, and your commander will be saved – you will not be able to be robbed while offline, for example.

IG: In the Kickstarter video, you refer to a hypothetical situation where a player could call another player for some co-op help with ferrying some cargo. Will co-op be ‘formalised’ in a situation like this, or would you be aiming for more of a trust-based system where, in theory, the person helping ferry the cargo could turn on the first player and steal the freight

David Braben: It will be a trust-based system. The helper could indeed turn on you and steal the cargo just as you’re about to complete the journey. Some missions will be based around encounters – things like distress calls or stumbling upon a shipwreck. They may be what they seem... but they might not be...

IG: Are you able to expand on what you mean by procedural generation techniques going “further” than in previous games Does that mean more detail with star systems, more procedural influence on the game’s economic/political models, or something else entirely

David Braben: All of these things, and we have procedural texturing, procedural cloudscapes and other things too.

IG: With so many more games being developed and published today, do you think it’s now much harder for titles to make such a stylistic, revolutionary jump as Elite did back in 1984

David Braben: It is certainly harder to make an impression, and stylistically there is such a broad range out there, it is hard for strong differentiation, but having said that, the best games still stand out.

IG: Space-based games seem to be cropping up a lot on Kickstarter (Star Citizen and Strike Suit Zero to name a couple). Is this simply down to a general lack of publisher interest in the genre pushing developers to Kickstarter, or is there more to it than that

David Braben: That is a big part of it. I think the assumption is that games set in space will not succeed because there hasn’t been a big success in space for a long time. A sort of circular, self-fulfilling argument!

IG: The first Elite was the game you and Ian Bell wanted to make; the vision of two men. With this crowd-funded project, will you be relinquishing a little of that development power to the players who’ll be funding the game (in the sense of beta feedback and other suggestions)

David Braben: Yes. It is important that we embrace the desires of those backing the project. We all have a similar goal already (which is part of the beauty of Kickstarter in the first place), as we have all come to Kickstarter with a very similar goal, and in the few cases where the goals are slightly different (for example emphasis of single player over multiplayer or vice-versa) we should be able to find a solution that accommodates both sides.

There can also be a huge benefit in having open discussions about ideas and plans for a game. We find it at Frontier with our “Game of the Week” discussions – more often than not the discussion about what might be a tricky issue in a design yields a solution that wasn’t originally in the mix.

IG: Kickstarter campaigns seem to fall into two categories; you have the projects launched by established developers as a way of bypassing publishers (yourself, Tim Schafer, Obsidian) and those launched by smaller teams hoping to get their first game made. As the former type become more numerous, is there a danger that they will begin to dominate the media coverage, to the detriment of the smaller projects

David Braben: Not at all. In fact I believe these are actually the same category – both are looking at it as a way of bypassing publishers. Those trying to get their first game made are doing it this way because the publishers won’t deal with them as they are set in their ways. That exact same issue applies to established developers too. The reasons are not too different.

What Kickstarter gives is the opportunity for those passionate about wanting to get something made to connect directly with others that also want to get that same thing made.

IG: Looking far, far ahead here, if Elite: Dangerous is funded and proves to be a success, is there any chance of The Outsider re-emerging as a Kickstarter project

David Braben: Perhaps. It is a great concept, perhaps a little before its time. 

ELITE: DANGEROUS

David Braben Exclusive Interview

David Braben is one of the most important game developers of all time. He is the father of absolute masterpieces like Elite and Frontier and he's finally back with an ambitious 1.5 million crowd fungind campaign on Kickstarter for Elite: Dangerous.

Apr 03, 2013 Registil English, News 0

MMORPGITALIA: Oh my god! Oh my god! Oh My god! It's David Braben! I played Elite for months and Frontier for years! You're my hero! Will you sign my boobs while I cry and scream like an overexcited little girl?

David Braben: I think it's best not to answer that one!

MMORPGITALIA: All right, let's be serious: Frontier was a coding miracle, in a time when resources were scarce and true miracles were needed. No game has ever reached its level of detail, of quality or of quantity. Today we have much more calculating power than we really need and gaming has been dumbed down to "press a button and something awesome happens". Will the new Elite be a true successor to the masterpiece Frontier is or are you too afraid to scare the mass market off?

David Braben: Following up from the previous games is a big task, but we plan to do the best we can to make it a true successor. I completely understand the concern about the 'dumbing down' – something that is all too common these days, and a reason we wanted to make this game without a publisher; we want to make this games for ourselves.

MMORPGITALIA: On a side note: have you tried Space Engine (en.spaceengine.org)? Billions of billions of billions of procedurally created star systems based on real data. Wouldn't it be a dream come true adopting something like that in a videogame about universe exploration?

David Braben: Frontier had 10^{12} Star systems back in 1993 – as many as the real galaxy, and so will Elite: Dangerous. We will also include the stars in the immediate vicinity of the sun, so the night sky will be accurate – but you will be able to visit each one if you choose.

MMORPGITALIA: Star Citizen is probably going to be your main opponent, there's plenty of news about it and everybody and their dogs speak about it, while Elite: Dangerous is left in a dark and dusty corner. Why is that? Do you have something extraordinary in mind I hope you're willing to tell us right here, right now, or are you still chosing on which tropical island to run and hide with all the money from Kickstarter?

David Braben: Star Citizen is a different type of game, but I think people are talking about both. I see this more as a return to space, and the presence of both games will keep each of us on our toes. Competition is a good thing!

MMORPGITALIA: History belongs to innovators. Elite was the first, one of a kind, something never seen before. Frontier went where no man had gone before. On the other hand, Kickstarter feels like a fashion, massive social forced interactions mandatory multiplaying feels like a fashion too. For whose traits will Elite: Dangerous be remembered in twenty years?

David Braben: I would hope "Elite: Dangerous" will still be being played in 20 years time, much as "Elite" is/was 20 years after it was released. There are many 'firsts' I would hope "Elite: Dangerous" will be remembered for including the approach to multiplayer, and some other things we haven't talked about yet! We were the Kickstarter with the highest target amount worldwide (so far) and we launched it as soon as Kickstarter opened in the UK, so we were not really following fashion – but I don't expect that will be what "Elite: Dangerous" will be remembered for.

MMORPGITALIA: Speaking of fashions: will there be any kind of skill tree, crafting system, unlockable stuff or anything like that?

David Braben: There will be stacks of things to discover in the game, and some of the elements will work a little like unlocks (for example trading in illegal goods will require you to know who to go to in order to do so, and you will need to build up trust with them), but we do not see this as a traditional RPG.

MMORPGITALIA: Excluding the blue skybox, Frontier is being remembered for its exasperated, brutal realism (which could be afforded on that time's computers, and was still a lot). Now I read that you're not really fond of it, that Elite: Dangerous will contain a lot of fly-by-wire to lessen the impact of newtonian physics and that there'll be nebulas which, in reality,

are less dense than on Earth mechanical produced void. Every today's reboot, remake or sequel have changed its predecessor ruleset, resulting in an inferior product which alienated fans. Do you think it's due to society's decadence or is catering to the lowest common denominator not only the present but the future of humanity too?

David Braben: Most of the 'brutal realism' of Frontier will continue. The real galaxy and so on. For the combat model we are doing more fly-by-wire than in Frontier, but this is to improve the feel of the game; the realism is still there. Don't forget there was fly-by-wire in Frontier too. In "Elite: Dangerous" space is essentially black, just as in real life, with a rich stellar backdrop. We are modelling real world nebulae, but this is not the huge magenta and green clouds you see in some representations of space – this is as accurate as we can make it. If you fly to a nebula you will indeed see it from inside, but it will have a realistic, ethereal property, and you will be able to see it from nearby systems.

MMORPGITALIA: I feel I'm being unnecessarily hostile, don't know why, maybe because one has huge expectations from his heroes, so here's an easy and accomodating question: you said planetary landing and on foot movement will be expanded in future. How?

David Braben: When the game ships, it will not have the ability to explore on foot because it is a huge undertaking to do well, and I don't want to include it if we can't do it well. Each of these things will be launched via updates after the first release of the game.

MMORPGITALIA: Question on a FAQ: "How many craft types will you be able to fly? At least 15 at launch, and we plan to add more after launch.". What do you mean with "types"? Like "Interceptors, bombers,

freighters" or "15 ships total"? I strongly hope the former, 15 ships seems very very little.

David Braben: We are planning to have 25 different playable ship types at launch. Some will have variant versions, and each will have a huge range of different equipment levels, so you could equip them as freighters, attack ships, explorers, etc. It really is a lot.

MMORPGITALIA: Balance. In a single player game of this genre the pursuit for balance is just an obstacle but in a multiplayer, PvP game it's its very essence. How different are going the ships to be? I want, I need to be able to pilot one of those gigantic superfreighters I saw parked beside orbital stations.

David Braben: Balance is important. It is why we are having an Alpha and Beta test period, but you are right it also affects a great many design decisions. The ships will range from the tiny Sidewinder – with little more than the facilities for the pilot and a few units of cargo – to the giant Anaconda and larger – with many decks, gun turrets, and a giant loading bay. They will all fly differently, and have different benefits. Some ships will be specialised for speed or combat, others for carrying vast amounts of cargo.

MMORPGITALIA: In closing: maybe inspired by "2001: A space odissey", those starships dancing on "By the beautiful blue Danube" were a stroke of genius. As a kid I could stare at them for a very long while and from there my passion for classical music was born. Can we expect the same kind of soundtrack or are we going to get the latest dubstep crap?

David Braben: No – we are going for a full classical musical style, and it will include the Blue Danube! 

ALPHA PAPA CHAT: Elite: Dangerous Alpha In December

The floating space head of David "Orson" Braben is transmitting more details about Elite: Dangerous. This is a particularly important dev diary, because it announces the alpha stage of the game. The backers who pledged to be part of the alpha will be getting the first new taste of Elite in nearly two decades this December. It's not the whole game, though: the alpha will be a series of test segments, enabling Frontier to tune parts of their space epic before the general public is allowed in. The first test will be of the combat systems. Being two months away from new Elite got me a bit excited, so I asked a courier to deliver a package of questions to Braben's home system, and he delivered it on time. Braben's space responses, and the alpha dev diary, are below.

By Craig Pearson on October 18th, 2013 at 3:00 pm.

RPS: The alpha is the first time the public will be playing a new Elite in nearly 20 years, which means you have both a legacy to live up to and a clean slate to start over with. How has that driven the design?

David Braben: The main factor for me is creating a compelling 'world' – ie a galaxy – that I want to explore and inhabit. The ambition for me is just as it was with Elite and Frontier, but now we have far more capability to do things that we couldn't even consider before.

Fundamentally it has been a balance between the 'clean slate' and embracing the heritage. The latter has provided a great framework, and we have expanded this hugely with a very rich tapestry to the world – something we didn't have before – detailing everything from how food is made, transported, consumed, how electoral systems work, what is in people's homes, who the corporations are and what they do, in addition to the obvious elements like what the spaceships look

like and what goes inside them, the technology of the time and its underlying physics. This may seem like superfluous detail, but it helps provide invaluable information for the associated fiction, for the subject matter of missions, and also in the whole immersion of the worlds.

RPS: Actually, given how long ago it was, and how the space genre waned over time, how many people on the team have a grounding in Elite and space games?

David Braben: Many of the team have a grounding in either "Elite" or "Frontier" – take a look at the 'Meet the team' interviews on our forums for more info, and the few that didn't – they do now!

RPS: What role do you play in all that?

David Braben: My role is to champion the game as a whole. To look at individual design decisions, and to try to make sure they are going to work well together – and that the eventual game will be one we will all want to play.

RPS: Any difficult decisions you've made? Cutting something the fans of the previous games might expect to be included? Will we all still be chatting on an intergalactic BBS system?

David Braben: We make difficult decisions every day! I think the most controversial is not to include landing on planetary surfaces in the first release. This is because as a player you expect there to be so much there; bustling cities, rich vistas, verdant forests full of exotic creatures, and so on. You expect to be able to get out and walk around. All of those things we want to, and plan to do with time. But not at first release.

RPS: And a sort of mirror of that question: with your initial design goals, has any part of the game expanded beyond how you initially envisioned it?

David Braben: Yes. Just about everything has expanded beyond our original design plan – but that is the process of making a rich game.

RPS: I understand the design forum has seen a lot of discussion between the team and the community. How much information have you given them? How have you been using their feedback?

David Braben: It's been incredibly useful. We have changed features, reworked features, and tweaked features. We have even added whole new sections of the game. I called out 'Super cruise' in the latest video where players want to be able to experience travelling between planets in a similar way to the way they could in Frontier using fast forwarding of time – clearly something not possible in a multi-player game – but we have come up with a method where it can work – and this will now be in the game, as we think it is a valuable addition – but it has meant large elements of the game have had to change as a result. And it will be better for it.

RPS: I think the most exciting thing for me is being able to play the game with friends. Will the alpha have multiplayer or co-op?

David Braben: The first combat test build will not, as we want to test combat with AIs first, but multi-player testing is a key priority for us so you can be sure we will get onto that soon.

RPS: What sort of uptime can people in the alpha expect? I understand you'll be testing various components. Will it allow people to keep playing (through the alpha and beta) to launch?

David Braben: Yes – people should be able to play pretty much throughout – though through the alpha a big portion of what we are planning are stand-alone feature tests, and also there may not be continuity of data structures across the alpha and beta – ie you will probably not be able to save data from one and reload in the next – for some stages at least.

RPS: What about ships and customisation within the alpha. Will people have the opportunity to choose their ship and how it'll be fitted, or is that separate component for testing at a later date?

David Braben: To some extent – more details to follow.

RPS: Will it be available to all alpha-backers at the same time?

David Braben: Yes.

RPS: Was the alpha access always scheduled for a year after the Kickstarter? What's the projected timeline for the beta and release date?

David Braben: Yes. It was always scheduled for December 2013. Thereafter we will take an 'it's ready when it's ready' approach. As we've seen with the DDF input, it's incredibly valuable to get feedback from players, and we are trying to take full advantage of the opportunity we have here to get the best possible end result, so we want to have the flexibility to react to feedback for the overall good of the game.

RPS: How playable is the game? Any interesting stories from your time with it?

David Braben: As I said, it's not a coherent whole – yet. Elements are playable, others are not. For me it is a fantastic release to be able to start doing the things I have wanted to do for a long time. One example is improving on the planet generation in Frontier – building a rich galaxy with an accurate night sky, where you can visit every visible star in it. There are already billions of stars in the game, created with careful attention to detail so that they match real life physics, including the approximately 120,000 stars that comprise the 'night sky' as seen from earth with the naked eye and telescopes. 

Interview: David Braben, Elite

When you hear all the enthusiasm out in the gaming industry for Linux, it's easy to forget that we're very much in a battle to prove our viability in so many areas, particularly to mainstream publishers. Do we need them though? Well, initially at least. As in other markets, Linux needs the corporate giants to cosy up – at least until the gaming industry changes – as it's the quickest way to get Linux in front of the average gamer. Interest from the big players has largely been muted, however. Unless, like Ubuntu, you count a couple of browser-based games from EA as a win. For us that's too close to getting leftover scraps from the EA's table. No, thank you.

But it's a different matter and a harder knock when our hero and gaming legend David Braben (co-creator of Elite) says he has doubts too. As you'll see in a short interview I managed to snag over email he admits there's no reason why Cobra, Frontier's own game engine can't run on Linux.

Everyone has to earn a crust, and if you're a game developer the uniformity of, for instance, Apple's iOS line-up also makes the process much easier. He did give us a glimmer of hope, though, with one golden nugget of an answer. Linux is something Frontier are "seriously looking at supporting." Right now, it's doubtful whether Elite: Dangerous (Braben's follow-up to Elite) will support Linux from launch, but the alpha opened recently and the game will be out this year.

Posted at 5:36pm on Monday January 20th 2014

Linux Format: What's your position on Linux for gaming?

David Braben: Linux is great because it is a truly open format. It is why we used it for Raspberry Pi. At Frontier we haven't previously supported Linux for one main reason; historically games on Linux do not sell as well as on other platforms, though of course figures are hard to come by.

It is not that they don't sell at all, it is just that the other potential platforms sell more. My guess is that there are a great deal more Xboxes, Playstations, Windows PC, and iOS machines, than Linux ones. Sadly, the openness of the platform, and the variations between setups make it a challenging platform too. Piracy is much easier because of that openness, but it is something we are seriously looking at supporting.

LXF: I believe you're using your own game engine – COBRA? Does that open the door to a Linux version?

David Braben: There is no reason Cobra cannot run on Linux, running through OpenGL.

LXF: What do you think is currently preventing Linux from being an unstoppable force for good in the gaming industry?

David Braben: With this sort of thing, it comes down to numbers. The fragmentation is an issue too (ie the number of subtly different set ups and OSes – making even the Windows PC appear pretty uniform).

LXF: What's your best guess as to the future for Linux gaming? Or maybe just your best hope for it.

David Braben: A common platform would help (and there are a number of these coming through, including Raspberry Pi). 

David Braben: “A lot of confidence and a little bit of cash”

Frontier has just signed a publishing deal for two new titles, but how key was its Game Of The Week process?

Frontier Developments is busy making Elite: Dangerous right now, but it's also just announced a new publishing deal for two unnamed titles. The new games will use the studio's Cobra technology and were both products of a Game Of The Week process, which allows members of staff to pitch their ideas.

Here David Braben, Frontier boss, explains why that process is still so important to the company, why the indie scene is like '70s rock and how you get a studio to its twentieth anniversary and still maintain a lustrous head of hair.

By Rachel Weber THU 27 FEB 2014 12:00PM

Q: You're not talking about what the games are yet, but what made them right for the deal?

David Braben: Our Game Of The Week process, which is what it came out of, has run for a quite a long time now. The first game that came out of it was Lost Winds and I think that created quite a buzz within the company, and it also validated the process. So we've been running Game Of The Week, but actually the opportunity to do games on our own ticket... in a good way we've been in really high demand because people have wanted to work with us. Kinectimals, Disneyland Adventures, Zoo Tycoon, and obviously doing Elite at the same time.

The Game Of The Week process is fantastic, we have an internal forum where people suggest ideas and other people essentially either shout them down or praise them. And it's quite clear that some ideas get a lot of traction quite quickly, they capture people's imaginations. And we've been looking at them in a very practical way, of the ideas that are good we've got various filters – is it a game that is novel in the marketplace? Is it a game that there's a big market

for? So if you do a game for a platform which is not necessarily very popular, and for an audience that isn't very much on that platform clearly it's not going to do very well.

We've had our own forecasting system internally where we've been forecasting just about everybody's games for a long time and it's been very successful for us because we forecast our own games as well but it's very easy to want to try and put a tilt on them. But if you systematise it that's a good way forward. If you add to that the energy behind people saying 'oh this is a great idea, I'd like to work on it...' one of the things which is good is to work on a game that you really care about and this is a very good way of filtering for those kind of ideas.

So what we did is we have a top few games and it's quite clear which ones bubble to the top and clearly the ones that we've chosen to go ahead with are at the top of that list. The games are all different styles as well so obviously there's been an element of involving a partner on that, which games are most suited to the platforms we want to target?

Q: You're a busy studio, so why is Game Of The Week something you invest time in?

David Braben: I think it's really important for all of us. What are the conversations you have over lunch, over coffee? What do people really care about? I suppose part of it is why do people want to work at a company like Frontier, and not a giant company like Electronic Arts or Microsoft. It's wanting to have that input, that indie feel where there is real likelihood that a game idea, if it's good enough, and by good enough I mean judged by your peers as being good enough, then there's a good chance that it will get made.

Q: Would you encourage more companies to adopt it?

David Braben: On a really small start-up you get it implicitly because if there are just two or three people you will make the ideas that those two or three people want to make because that's all there is. That's how these companies move forward. But actually in practice these small start-ups tend to end up working on work for hire because that's the one that brings in the money. You've got to have quite a lot of confidence and a little bit of cash behind you to be able to do this kind of thing. You've got to be able to work on the ideas before they ever generate money.

Having said that, yes, I think it's a very very good thing because it's a way of slightly dispassionately looking at what you're creating and saying 'is this really going to work?' Because some of the ideas that come through are really lovely ideas but they're so flipping impossible to play that actually they wouldn't necessarily do well in the market place. And then there are others that have that quirky addiction, I mean look at a game like Flappy Bird. Imagine a design document for that. It's so unbelievably simple and I think it was only one or two days work, I remember reading that somewhere. But it's strangely compelling.

It's coming up with a process to place that sort of thing alongside a truly huge adventure. Some

of them would require really big teams to deliver, others require really quite small teams so we can also match the opportunities. If we can see in our planning coming up there's an availability for 20 people to work on something for four months we can fit that to that slot. And so actually it creates an immense amount of flexibility for us as well. We're talking a hundred or more ideas here, we're not talking just a few.

Q: And I imagine some of those ideas become part of other projects?

David Braben: No question. Some of those ideas came through when we did a game called Thrillville: Off The Rails which had 50-odd arcade games actually embedded within it – some of those came from people's own creativity within the company

Q: How does Frontier maintain that indie sensibility as a 240 person studio?

David Braben: It's all of the people themselves who are here and get involved. It's very easy to talk about this sort of thing, it's harder to deliver on it and it's taken a while for us to get to the sort of scale where we can do this. It's in order to, and hopefully has, kept the indie feel going. I think by many people's definitions we're a bit big to be counted as an indie, even though we are still an indie. I think it's the independent atmosphere that's important, the fact that we do do the things, and in fact more so than many indies because we're less hand to mouth. We can sensibly say 'actually this is a great idea, let's pursue it.'

And what's wonderful in the case of these two projects is actually they're a fantastic hybrid because we're working with an external partner.

Q: On the publishing side, it's quite trendy to skip the publisher partnerships these days and go it alone, what value do publishers still hold for you?

David Braben: Well, the very fact that something is trendy is often a bad sign in this sort of industry because it means you're following the crowd. With a lot of these things being different from other people is a big advantage, not just in game design but in business model and approach.

The point is Frontier has been around now for more than 20 years and I've been doing this for more than 30 years. We've seen so many changes, but what we're always trying to be is in a place where we can take advantage of that change. Whether it's the move in 2008 to mobile, then the consolidation of the way console development is done, all these changes are really important and I think we've been on the leading edge of it. We've been at the right place at the right time but also we've been there and we've taken advantage of it.

There are changes in the way people get their content, I mean, how many games sold through various online stores actually don't sell very many? It's horrifying quite how many don't make a lot of money. It's how do you get your game to be seen? What we've managed to do is keep that visibility of our titles going where we have had many millions of downloads for games that we've made.

Q: So the successes get all the press, but there are plenty of games that struggle?

David Braben: The sad thing is that the life on an indie is much more typical to have that sort of issue than the stand out successes that we do see from time to time. The parallel is in the '70s and '80s with rock bands, for every Rolling Stones or Pink Floyd there were probably a hundred bands that you haven't heard of that spent ten or 15 years touring the pub circuit and then retired.

It's really because it takes someone in that team to move the company, or the band, into the public eye somehow and to keep it there. And going back to the sort of thing that we're doing, working with partners, is a good thing because it also means we can be in the early stages of hardware. With Microsoft we were a launch title on Kinect, we've been a launch title on Xbox One and that means we get early access to the hardware, we understand how it's being developed. And that gives us a big advantage and a lot of coverage.

Q: You celebrated your twentieth anniversary in January, what's been the secret to that longevity?

David Braben: There's an element of luck in it, no question. It's not standing still, is the other thing. Every one of the 30 years I've been in this business there's been a dramatic change, every single year. Some more than one change in a year. I think the key is trying to ride those changes and anticipate them rather than reacting to them after the event. Because they happen so quickly, and games development is not a quick process. You've got to be developing for where you think it will be when the game ships, not where it is now. 

“The tech caught up to our ambition”: David Braben on the return of Elite

He defined bedroom coding, and now David Braben is pushing boundaries again with Elite: Dangerous

By Henry Winchester from PCFormat 291 May 12th

On its release in 1984, Elite was the pinnacle of bedroom-programmed games. It was a title that had a vision beyond the limitations of mere hardware, executed by a pair of undergraduates who had barely escaped their teens. Now Elite: Dangerous brings the story full circle – although it's a bigger game with bigger costs, its Kickstarter funding and independent distribution give it a homespun feel.

David Braben and co-designer Ian Bell began work on Elite while they were studying natural sciences and mathematics respectively. Braben had an Acorn Atom computer, Bell had a BBC Micro and both had tried programming space simulations with varying degrees of success. Elite initially took shape as a space combat title, but it felt empty and unfocused. The pair then added the trading system – arguably Elite's greatest asset.

In 1984, Elite was released on the BBC Micro and its budget brother the Acorn Electron. At the time there was nothing else like it, and it was the game's sense of freedom and exploration that captured the public's attention. Here, in a mere 22 kilobytes of memory, was a game in which players were able to set their own path through the universe and make decisions about how they played.

We hope Elite: Dangerous includes a planet called Arse in tribute to the first game.

Of course, a game of such vast scale inhabiting such a small amount of memory meant some ingenious cutbacks had to be made, including the development of a procedural generation system for creating and naming the game's 2,000 systems and planets. It even caused one of the galaxies to contain a planet amusingly called “Arse”, but fortunately Braben and Bell noticed before the game was published with the bum word.

CUSTOM CODING

After its initial success, the game was ported to all the platforms that mattered: the Amiga, Atari ST, Apple II, Amstrad CPC, Commodore 64 and even the then-upcoming IBM PC. Each game acted a little differently to the original. For example, the Amstrad version had fewer ships and the Commodore 64 version included a reference to Stanley Kubrick's 2001: A Space Odyssey.

The fervent following that the game gathered led to fans taking it apart and reassembling it. For example, Angus Duggan's Elite A included more ship types and cargo delivery missions. In 1993, Frontier: Elite II was published. The successor included full-colour graphics, curved polygons and texture mapping, and Braben had managed to get the entire thing to fit on a 3.5-inch floppy.

It also included some ridiculously cool sci-fi mechanics, such as the ability to slingshot around stars and land on planets. Ultimately, though, the game divided players between those who found it too boring, and those who appreciated its dogged adherence to Newtonian physics.

Games have come in the last 30 years, but Elite's core ideas remain the same

Bolstered by Elite's success, Braben set up his own development studio – Frontier Developments – in 1994. The company created Elite's second sequel, Frontier: First Encounters, in 1995. However, due to disagreements between the studio and publisher GameTek, the version was full of bugs and it received

a lukewarm reception due to being half-finished. Braben went on to sue GameTek, and settled out-of-court four years after the game's release.

As well as developing Elite: Dangerous, Frontier Developments has also created some big games, including Rollercoaster Tycoon, acclaimed WiiWare launch title

LostWinds, and cute Xbox animal simulator Kinectimals. We're still waiting for The Outsider, though. This technothriller game relocates Elite's freedom into a real world scenario. It's currently “on hold”, but we hope Braben turns his attention to it once he's completed Elite: Dangerous. We spoke to him about the return of Elite, pushing the bounds of game development, and why space is back in style.

Why is Elite able to make a return now when we've had so many false starts before?

David Braben: Elite is in our DNA, and we have always had skunkworks development of relevant technologies that we have been building upon over the years. More recently, various things have come together to help catalyse it: the technology has finally caught up to our ambition, but Kickstarter has also offered an excellent opportunity.

Has anything completely unexpected happened during Elite: Dangerous' alpha?

David Braben: Yes – already in the alpha 2x multiplayer builds we have seen interesting player behaviours emerging. A good example is the Ethics and Credits scenario, which is really the first glimpse of the flexible second-by-second roles and choices that the game will offer.

Some players were patrolling in Sidewinders together. They were waiting for others to kill miners and would then collect the bounty on their heads. It's a great example of the value of having our backers getting involved during development. We're able to drill down into the balancing to maximise the opportunity for such emerging behaviours.

Are we going to have the same sort of epically accurate star map that we had in Frontier?

David Braben: Of course! In Elite: Dangerous we are going a lot further. We have some 150,000 star systems visible from Earth in real life; in the game this

will be backed up with some 100 billion more that will be scientifically accurate in terms of how they formed etc. They will be generated procedurally to fit the observational data as best we can, as most of these systems are not individually visible from Earth, even with Hubble.

Each of these will include stellar systems with different types of planets, gas giants, rocky moons, asteroid fields and so on. One great side effect of this is the night sky is “correct” when viewed from Earth and changes gradually as you travel to nearby systems. The constellations gradually become unrecognisable as you move further from Earth.

Why do you think that space games have been unfashionable for so long?

David Braben: I think games set in space became quite niche. They lost sight of what was the key element of Elite and Frontier – freedom. The true successors to Elite and Frontier were the Grand Theft Auto games. For me, the setting is secondary to the feeling of freedom.

The success of the Elite series has always been based on the freedom that players are given. It's all about individual choice in an open world – you don't select “pirate” or “bounty hunter” or “trader” from a list, you simply do what you want and events will unfold accordingly.

Traditional publishers have always regimented games into strict categories for forecasting and planning reasons, and somehow “space” became a category in itself – including games like Dead Space, Mass Effect and Halo, which are all quite different.

This screenshot weighs in at 535 kilobytes – the equivalent of 24 Elites

How much friendly competition is there between you and Chris Roberts – especially now you've got the Elite: Dangerous alpha out before Star Citizen's dogfighting module?

David Braben: I'd place the emphasis on “friendly” as we are both alpha backers of each other's games, and both want the other to succeed. The games we are making are very different – Star Citizen is a handcrafted story-based game – but there are common elements, the most obvious being that they are both set in space.

Many of you will have seen the discussion Chris and I had during the Elite Kickstarter campaign, where we discussed the return of the space game at length with Gary Whitta. If you haven't seen it, you can still check it out through our website or the Elite: Dangerous Kickstarter site. It's also not just Elite: Dangerous and Star Citizen, there are others, too. I think shows there is strong interest in this area, which is a very good thing.

What are your plans for player created content, such as companies or galactic organisations?

David Braben: To start with, players are just another commander, trying to make their way in what is quite a hostile galaxy. However, participants can form alliances with other players, and we do have plans down the line for building space stations and so on.

Is it generally easier or harder to program a game now compared to the 1980s?

David Braben: There are several dimensions to it, I think. Put in today's language, Ian and I were a micro-studio, and when you're in that environment, communication is so much easier. The largest game that Frontier Developments has made to date involved almost 400 people! While the Elite: Dangerous team isn't quite that huge, between 70-100 people are closely involved. It's still a different world when it comes to communication and getting a shared vision for all the different aspects of the game. In modern game development, team communication is probably the biggest challenge, and this didn't really exist in the 1980s.

Looking at just the programming, I think today it is a lot simpler to do the same sort of thing. Debuggers and the fancy programming aids we have nowadays make it much easier, but the expectations are also very much higher. The scope of what happens in a ship in Elite: Dangerous, and hence the complexity of the programming task, is far greater. This more than makes up for all the fancy tools we have available now. With the original Elite we literally used every byte of memory the BBC Micro could offer. We are trying to make sure we similarly push the boundaries of what's possible in Elite: Dangerous using modern computer hardware. Braben feels that sticking to his guns over Elite let to more creativity in games

When you were developing the original, was there a point when you realised you were completely changing what games could do?

David Braben: With the original Elite, I think the realisation came for me when we presented the game to Thorn-EMI in London. They wanted us to completely change the game – have three lives, a score, a typical playtime of 10 minutes, and no saves. They really didn't understand what we were trying to do. I started to think that we had a real hill to climb, to sell the idea to a publisher.

The fact that it was so different to any of the competition at the time meant that after Elite came out, publishers were much more prepared to experiment with different types of computer games. They were willing to look at ones that weren't derived from the arcades.

And have there been any similar moments while you have been designing Elite: Dangerous?

David Braben: With Elite: Dangerous, it was the realisation that we didn't have to follow publisher constraints in what we could do. It has allowed us to have a galaxy that continually changes based on player actions. I think this will prove to be very significant. 

David Braben.

Q&A on frontier forum

Date: June 5, 2014

Daffan, Vikinger, Sterlino: Why P2P and not central server?

It is neither of these – it is a hybrid. The important elements are moderated by the server and are slightly less time-critical, but much of the traffic goes peer to peer to reduce ping times. We will tune the emphasis throughout beta.

Wolf: Do I code? When was the last game?

Hi Wolf, sadly no, but I do miss it. I think there may still be a little bit of code left in some of the Cobra tool chain, but nothing for a good few years

Riedquat: Will I play E once released?
What aspect will I play?

Absolutely! I think the exploration is probably the biggest appeal to me.

Darkman: plans for the centre of the galaxy

The plan is to make it as realistic as we can. There is still quite a lot of uncertainty, but the stellar density is pretty well known, as is the evidence for a super-massive black hole – the X ray source Sagittarius A, so we will implement that.

Having said that, the galactic centre is not a very interesting place as there will be very few (if any) planets.

"Has any (more) thought been put into Crafting within Elite Dangerous?"

I'd love to mine the required resources and then deposit them into a rented factory along with a blueprint and make my own missiles etc"

There is already a sort of crafting loop in Premium Beta 1 – for example coltan is mined, then taken to be refined into tantalum, then turned into high-tech goods. Down the line mining machines (as featured in Frontier) and similar elements will be introduced, but that will most likely be after the first release.

"Can I be found in the Premium Beta, and what is my commander name?"

My commander name is Commander Braben, and yes – I am there from time to time.

irrstern: "Does the solution architecture of the game as a whole take into account a later upgrade of parts (e.g. the engine itself) to make use of the upcoming new hardware/software possibilities?"

Yes – we are planning for things that many don't have yet – Oculus, 3D, 4k etc etc – but yes we will also build in flexibility for the future too.

RobFisher: "Some of the proposals on the DDF are just awesome -- and very ambitious. But doesn't that mean there is soooooo much still to do? Or have you got a lot more in the bag that we haven't seen yet? Can it really be done?"

They are indeed – and the DDF has been great! I suspect this game will never be completely finished, but that is a good thing. The world will continually move on as we add new content.

Frank: "<puff puff> Am I too late? The game is going to be peppered with tributes. If you could pay homage to only one person, who would it be?"

Well, there is already a tribute that went into Alpha 4 (and is in PB1 too), to the excellent late Colin Pillinger and his Beagle 2 spacecraft – with the station "Beagle 2 Landing".

In Frontier there were plenty of tributes too – for example to the wonderful late Richard Feynman – the planet "Feynman" as the nearest exoplanet to Earth.

Ibastavd: "Two Questions for you:

1. Will there be a rear view added to the game at any point?
2. Will you consider adding a padlock view to the game?

Keep up the fantastic work – we love you! (but not in a man sort of way!"

We are looking at how best to include a rear view, and certainly it is being considered, especially for the larger ships – but we wanted to see how much it was really needed (oh, and I'm too stupid to know what you mean by a padlock view...).

teamkill: "Talking of exploration, do you envisage finding a new system and instantly knowing what planets/moons etc are there or will it remain 'dark' until someone finds them. Also will the discoverer be known throughout the universe. (news feed possibly)?"

Stellar systems that have not been explored will simply show the star or star(s) that can be seen there from a distance, and have a systematic name. Someone will have to explore them AND RETURN for them to become more generally known. They will also be able to stake a claim and name such a system.

Some 'dark' systems will not be shown at all, until someone actively scans that area of space, and makes that information available – and without that information (which will be tradable) it will not be possible to travel through hyperspace to it.

Sloma: "Are you focused atm on Federal / Independent side? Why are we not seeing any Imperial ship designs or any content related to Imperial faction?"

The area of space we chose happens to be a long way from Imperial space, hence the focus of PB1 etc. We have Imperial content too (as in the 'Damocles' video and the Imperial cruiser and Imperial fighters), but that will come as we open up space.

Colonel Kenney: "One interesting question I have. Much of the galaxy will take us a very long time to get to. Are there any plans of implementing any sort of "shortcuts" to different parts of the galaxy such as wormholes? Like something extremely rare but there are some hidden around for us to discover etc? Like how can we explore the center of the galaxy if it would take a year of gameplay to get there etc?"

No, we're not planning to implement shortcuts. For me, one of the attractions is it IS a big achievement to travel a long distance. I like the idea of the occasional meeting of a player far far out in the galaxy as a chance encounter. We do plan to seed things of interest out there too.

Ben Ryder: "Will there be a competition and a trophy for the first people to reach Elite?"

Nice idea! Yes, we certainly should do something – though this would be post-release.

Brodie: "Hello David, Walking around your ship and stations is something many of us are eager to see, but what practical in game function will the ability to move around your ship add to the game (beyond, of course, the awesome sense of immersion it will add). I understand that Station & Ship exploration is planned for an expansion, is this expansion a certainty or is it dependant upon the profitability of the initial Elite Dangerous release?

You recently tweeted a picture of yourself playing Elite: Dangerous whilst wearing the Oculus DK2, can you please describe this experience, especially in comparison to playing Elite: Dangerous using the Oculus DK1. "

Moving around your ship feels a little pointless on its own, but when it comes to getting out of your ship, boarding other ships, having other players on board your ship, it becomes a lot more interesting – and this feeds in to Station and Ship exploration.

On Oculus DK2 is great. The resolution is a big step to help with the immersion, as is the extra frame rate. The head-tracking also gives that little extra – you can lean forwards and down to see around the hull of your Lakon Type 9 for example, or lean beyond your chair to look back into the giant bridge deck.

Kroenen: "David: Is there any timescale on when we might start expanding past the 5 systems we have now? I'm sure many if not all are eager to start testing more procedural generated aspects."

This expansion will be gradual. More are coming, but we don't want to go too far too quickly, as we test out the systems.

Trying to answer all the questions is like drinking from a fire hose...

On the padlock view – no, I think it interferes with too many things – but that's not to say something like it couldn't be on a sub-screen (which is how we'd do a rear view anyway).

I am very interested to hear more about the planetary landing. What is planned?

How much detail will there be on the planets? Are they going to be limited in any way?

Planetary landings won't be a single thing. I think I've said before – it is what is down there that makes planetary landings compelling – and please remember all of this will be after first release of the game.

I imagine we will start with landings on airless moons. You would be able to see heavy industry, craters up close, and ultimately be able to deposit things on the surface (stash cargo or mining machines).

Atmospheric worlds are a bigger challenge – whether rocky or gas giant in nature – and a key element there is the atmosphere. They should have rich cloudscapes with lightning, turbulence etc.

The biggest challenge is with what we call 'outdoor worlds'. I would want rich and varied vegetation, wildlife, and so on.

He's there been any thought to having a loot system similar to Diablos, where you can salvage guns of varying stats from destroyed or abandoned ships? So say some skilled mechanic has invested a lot of time in improving their lasers and now they have a slightly more efficient cooling system, but consequently lower range (you get the point).

It does a lot of good for increasing the longevity of a game by making the random generation slightly more significant, so I hope something like that is on the cards?

Thanks for the great game though!

Yes – we have considered that. We are trying to balance the game, and want to be careful about introducing potentially destabilising elements, and one problem is that weapons are very valuable. The current plan is that damaged (and stolen) weaponry would have a much lower resale value, but that once we had that we could introduce such things into debris from time to time.

David, I am lucky enough to have been able to pledge at a level which gives me invites to the Launch Party, I will need several months notice however in order to book the time off work. Do you foresee that we will get a firm date with sufficient notice?

Oh and will you sign my wife's boobs? :P

Yes – that is a good point. We will make sure that we do. Err – and fortunately I missed that last bit... ;-)

Since there seems to be a big disinformation campaign against Elite, claiming that Elite IV (Dangerous) has been in development since 2005. Can we get, from the horses mouth, the head honcho, the big kahoonah, exactly what has been developed, when, and for how long? My understanding is that most of the development took place after the kickstarter and it was only skunkworks up until then. Can you end the debate, once and for all?

No problem!

I have wanted to do a sequel for a long time, and there has been 'skunk-works' development, on and off for quite some time, but full on development is mostly since (and somewhat during) the Kickstarter campaign. So you are correct.

How much has the industry changed since, in your opinion? Are we shifting that paradigm yet? Any shining examples?

Games are gradually changing from this. We are starting to see some more thoughtful elements and true emotion in story-based games. Games like "The Last of Us" for example. Construction games like "Minecraft" are outside this too.

As it's currently not noticeable in premium beta, will the gravity model in supercruise that allows things like slingshot-maneuvers around massive bodies still be implemented, as proposed in the DDF-thread on In-System-Travel? That bit was what hooked me to the game initially, and I would be kinda sad if that's something you decided to throw out.

I think that feature could be key to make supercruise more than the linear travel it kinda is right now, assuming you don't turn flight assist off. I saw a number of posts feeling bored when supercruising, I guess those would be satisfied if you would elaborate on gravity.

I also see this as huge potential towards immersion, as many of us probably always feel somewhat uncomfortable linearly traveling through space, when all of today's space travel is nothing but using gravity of our planets as efficiently as possible. There just needs to be one hint of it, nothing complicated, so we don't accidentally scare off the other bigger part of the community.

Yes – that was something I like too. I think it does do this a little, but it needs to be accentuated. 

The Elite: Dangerous Community Q&A, Frontier's David Braben Answers Your Questions

The Elite series is legendary. Father to the modern Space Exploration and Combat genre of games, it hailed a new era of involved gameplay with adult themes and expansive universes to explore. Now, almost 30 years after the release of the BBC-B original, Elite: Dangerous promises not only to bring the series back with a bang, but also to allow you to explore its universe through the wonders of virtual reality.

Elite: Dangerous is one of the most promising titles yet to feature support for the Oculus Rift VR Headset and has been warmly received by the community that backed the project during a hugely successful crowd funding project last year. Frontier recently celebrated Elite: Dangerous' Premium Beta release and you can still become a part of the universe with early access here.

David Braben, one half of the original team behind Elite, is behind the new venture and we asked him if he'd be willing to take your questions on Elite: Dangerous as part of a community Q&A. Gladly, he agreed and we asked you for your questions a couple of weeks ago via subreddit/r/oculus and this very website. The response was excellent and the quality of questions high. A selection of the queries you sent us were sent on to David for his replied, and here below are the responses.

June 6, 2014 by Paul James

John Horn (RtoVR): You've mentioned that planets within the Elite: Dangerous universe may feature wildlife. Will those be hand-designed or might you consider generating them procedurally?

David Braben: We've not put a lot of thought into this yet, but certainly some elements should be procedural.

monographix (RtoVR): Do you think that, once people have spent significant time experiencing games like Elite: Dangerous in virtual reality, that it may alter our perception of the real world?

David Braben: Just about any form of storytelling (ie games, films books) alter our perceptions a little. That is (partly) why we watch them. VR simply accentuates the experience, and I think in that sense it probably does accentuate the perception change a little too.

Just about any form of storytelling (ie games, films books) alter our perceptions a little. That is (partly) why we watch them. VR simply accentuates the experience, and I think in that sense it probably does accentuate the perception change a little too.

George (RtoVR): Will the Oculus Rift be listed under "Recommended System Requirements"?

David Braben: We already support various add-ons in the game like VR displays, 3D TVs, Track IR, a wide range of joysticks, foot pedals, control pads etc. Elite: Dangerous is a great game with or without these add-ons, and the experience you get with them is additive, certainly, but not essential. "Recommended System Requirements" for any add-on is perhaps taking it a little far, so no.

EdZ (RtoVR): In the beta of ED available to Kickstarter Premium backers, HUD UI elements are rendered inside the cockpit, causing convergence issues when focussing on targets. Will this be changed to infinite-depth rendering in the future?

David Braben: We're continually adjusting such things, so yes, they will improve with time.

John Horn (RtoVR): Will the planets in ED be procedurally generated using voxels, allowing terrain deformation and 'digging' for secrets?

David Braben: No, that's not the plan I'm afraid. We have considered surface damage to planets, but there are some serious network issues when syncing a whole planet full of voxels.

soap (RtoVR): Do you see many applications for virtual reality outside of gaming? What might those be?

David Braben: Yes. Many. Medical – especially when allowing a doctor to see inside a patient when doing keyhole surgery, as a way of visualising information from an ultrasound scanner. Firefighters or bomb disposal or rescue or exploration – similar techniques using ROVs are already used, but VR might help improve this further. Military. Architectural. Espionage. Virtual Tourism.

I was interested to see the new Parrot AR Drone using an Oculus Rift to allow you to fly virtually.

Apellono (reddit): You've been involved in the Raspberry Pi project and bringing the technology into schools to enhance the teaching of Computer Science. Do you see any place for virtual reality in the classroom? If so, what?

David Braben: It can help students visualise many things, so yes, I think there are many applications, much like my answer to the previous question!

chuan (reddit): Given the unfortunate fate of the shelved 'The Outsider' project at Frontier, is it likely that some of the ideas for the project might find their way into ED?

David Braben: Like with all our games, the technology is shared, so many elements have already been re-used in other games, and in Elite: Dangerous too, and perhaps more so, once you can walk about.

chuan (reddit): The original Elite was notable for many things, one of which being the longer simulation play time you could clock up which at the time was brand new. How do you feel VR might further alter player's engagement with games like Elite?

David Braben: It changes the depth of engagement more so than the duration. Personally I find I cannot play for so long with a VR headset, as I need to take it off after a while. I suspect this is more of an issue with the current generation than with the technology in general.

I didn't like the way in most games in the early 1980s that the odds were hopeless, and eventually you were ground down in a war of attrition. It felt odd you couldn't run away – but then the games were not designed to allow that.

chuan (reddit): I think it was David that came up with the original demo of a spinning 3D spaceship which lead to Elite being created. Can you briefly chat the conceptual leaps which lead from demo to full game?

David Braben: I put together a simple 3D game shooting spaceships. It had four spaceships and felt dull and repetitive. I didn't like the way in most games in the early 1980s that the odds were hopeless, and eventually you were ground down in a war of attrition. It felt odd you couldn't run away – but then the games were not designed to allow that. You got a smart bomb every 5,000 points and an extra life every 10,000. It also felt odd you couldn't choose. So these thoughts came together with the idea of 'spending score'. Brainstorming ways of changing this pattern, Ian and I realised we needed to make the player need to finish a mission – even if it meant running from the fight – hence travel. Score being money was not such a big stretch (especially in Thatcherite Britain!), so trading seemed an obvious choice – though both Ian and I thought it might be a bit dull.

Apellono (reddit): With a reported 400 billion (!) star systems in the game, do these systems actually exist on a hard-drive somewhere, or are they all contained as possibilities within the procedural code? Does a star system actually exist before someone visits it?

David Braben: They exist, in the same way they existed in Elite and Frontier. If you simply consider Procedural Generation as a fancy form of compression, then yes they do exist.

belle-and-sebastien (reddit): Do you think gaming technology (specifically virtual reality) has now caught up to allow the realisation of your vision of Elite

should be? If so, when did you realise this had become the case?

David Braben: To be honest, I don't think VR is essential to a game like Elite: Dangerous, but it is brilliantly additive. The technology simply continues to get better, so each year it is possible to fulfil more of the vision, and we will continue to do so through expansions and updates. Nevertheless, VR is very helpful in the immersion, especially the rapid spread of Oculus Rift.

Apellono (reddit): At what stage of development was Oculus/VR support included, and what design decisions got shaped or altered by choosing to support VR?

David Braben: We already had some thought about VR, but it was the Elite: Dangerous backers asking for it – and us wanting it too – and the fact we were already well set up to support it through our own engine – that we added it to Alpha 1 on 15th December 2013 – as a sort of Christmas present to the backers, together with Track IR, 3D TV, and anaglyph stereo.

RtoVR: Do you have plans to include support for the Development Kit 2 and in particular positional tracking once it's available?

David Braben: Well, I did Tweet an image of myself playing Elite: Dangerous using an Oculus DK2... So yes, Elite: Dangerous already supports positional tracking, and DK2. 🎉

Live Chat at the register

2014-06-13

NeilF: Is David able to give us a hint if external views will be offered to fully enjoy the Elite universe? And what limitations they will have to ensure they do not give any game play (combat) advantage?

David Braben: External views can be quite distancing from the experience of being in a cockpit – it also begs the question as to where to display key ship information. It is something we have been looking at, though.

billyboblee: My brother and I are having loads of fun with premium beta, how long will it be until we can choose the same serve and go hunting together?

David Braben: You are all on the same servers now, but the players get arbitrarily split into islands. Matchmaking and friends lists are coming in the summer.

Commander Brix: Will there be pirate hideout stations in Elite Dangerous that are built from remains of old ships (like Anacondas), maybe even anchored to asteroids?

David Braben: We do plan a 'bottom of the range' station that is made from a melted-then-inflated asteroid (as featured on the recent cover of EDGE magazine).

David Jones: For a multi-player game I find it a bit odd there are so many reported ways the game will offer

to hide players from one another. Are you concerned the multi-player side of the game is going to end up feeling like a singleplayer one?

David Braben: It is important that players enjoy the experience. We are writing this game for ourselves, and the fun of the game is the most important thing. Player-player encounters should be interesting, and part of this is the ability to hide – whether from other players or AIs.

Most of the ships you encounter will be AIs – and in many cases you will kill them – which is why we want the majority to be AIs. Generally speaking we expect players, even beginners, to be more of a challenge than an AI ship, and something that players will tend not to attack, but more cooperate with, and we are designing the bounty system (and others) to discourage PvP and encourage player cooperation.

Matt F: Given the success of the elite kickstarter would you consider something similar to allow you to complete "The Outsider" or another crowd funded game? (please finish elite first ;)

David Braben: We will of course finish Elite: Dangerous first, but crowd funding is something we would consider doing again.

Slawkenbergius: Has being situated in 'Silicon Fen' made any impact on Frontier as a games company, or on your career in general?

David Braben: Yes. Cambridge is a great place to both live and work. There is a thriving games community here, and of course the University. Frontier is hiring if you want to see what living and working in Cambridge is like ;-)

Chris: If so, My question is... How many of the features discussed in the original kickstarter videos will be present / achievable in Elite:dangerous. And which feature(s) are you and the team most looking forward to?

David Braben: I haven't gone through them again recently, but I think just about all of them will be present at release, with the exception of the elements we have called out for post release – like walking around ship interiors, landing on planet surfaces, big-game hunting etc, which we do intend to do, in time. I am most looking forwards to exploration, and encountering another player a thousand light years from Earth.

Toby: Will there be a Mac beta of Elite:Dangerous at all and thanks for the original Elite t-shirts, mine arrived today!

David Braben: There will be a beta at some point, but it will be after the PC beta, probably after the PC release.

Colonel Kenney: David thank you for rekindling our passion! Has your team come up with any sort of method to integrate the skybox into the galaxy map so that we can maybe put our hud into a type of "exploration mode" (Similar to supercruise)? SO we could point at a star from our cockpit have a context menu come up that will link us to the galaxy map data? Then maybe an option if within range to set as the current target?

David Braben: I'm not quite sure what you're asking for, but you will be able to select stars to jump to directly from the night sky.

Alexis: Any Information about the next patch? Thanks and you and your team keep your good work!

David Braben: Yes. The date for the next update will be announced announced shortly... ;-)

Guest: Congrats on the OBE, well deserved!

David Braben: Thanks! Though it is really for everyone here at Frontier.

MikeSnos: Will the Sol System be in any of the Betas or will it be one of the last to be implemented?

David Braben: It will be late on, but it should be in there. (It is in now, just you cannot go there...)

Guest: Are the current planets placeholder in some way, the gas giants seem very bumpy.. is this because they only have one LOD implemented right now or is this meant to be like this?

David Braben: Planets (and other elements) have been getting better continuously. LODs are getting better too – though the gas giants ARE supposed to be bumpy. Those towering clouds are moving (slowly), much as we think they do in real life.

Guest: How has choosing kickstarter as a fundraiser altered the project and development?

David Braben: Developing in the public eye has been interesting, but in many ways a helpful experience. It helps us concentrate on the things that really matter to people.

Frank Leonhardt: Raspberry PI – why so complicated? Something with embedded BASIC (like a PET, Atom,

Superboard, ZX-80 or... BBC Micro) would have been great for teaching the real fundamentals of programmer and controlling IO.

David Braben: True. If that's what you want you can boot into RiscOS, and run the excellent BBC BASIC.

John: Will the Thargoids make an appearance for the comercial release of the game, or before.

David Braben: They will be in there. Whether anyone finds them is another matter... ;-)

MikeSnos: Is Summer another word for 'soon' ;)

David Braben: ;-)

LevP: Hi David, will we have possibility to fine-tune ships? For example, maybe I want to sacrifice some speed for more cargo space.

David Braben: Yes. That's coming. You can swap out your drive for a smaller, less powerful, less capable one, increasing cargo space, or perhaps a more expensive more compact one of similar power – or sacrifice cargo and go for range and performance.

James Dean: What are the biggest changes you've made so far due to player feedback?

David Braben: Supercruise is probably the biggest change

Cmdr Wires: In the premium beta I have found smuggling of illegal goods surprisingly enjoyable, When can I expect to see a wider range of illegal products?

David Braben: Early in the beta, probably Beta 2.

Peteris Krisjanis: We have rainy clouds out here – so question is this – will systems have some kind of space weather? Some freak solar storm which can damage systems? Some unpredicted move from universe you can't really prepare for? :) Also we will see weather changes from space on planets (and later on landings)? Thunder storms, ciclons? :) And thanks David for making ED so amazing expirience.

David Braben: On planets (ie down the line) – yes, but not space weather (though who knows what happens in hyperspace...); -)

Alexis: Are there going to be an assist system to avoid kill-stealing?

David Braben: There is the concept of player alliances that should help with this.

David Jones: Notwithstanding REAL griefing why does the game design philosophy seem to biased against any kind of PvP? I enjoy co-op like you but I also love spontaneous sandbox PvP. Will this game be for me?

David Braben: Yes – you can PvP – you can even excel at it and become a notorious pirate, but bear in mind everyone wants to be the person to kill (and get the bounty for killing) a notorious pirate. Your location will be reported from time to time in the news feeds...

Alex Hamilton: Having seen my father play the original Elite and having played the original a fair amount now, how do you feel that players of the original versions will translate onto Dangerous? Aspects such as docking with the station and fuel scoops were quite an art, and this may put off new players, I'm relatively curious as to where the medium is set, thanks.

David Braben: There is plenty in there for players of Elite (or Frontier or First Encounters) to get their teeth into. Docking and Fuel Scoops are already in, and are an acquired skill.

Martin Jenkins: Hello, no console war wanted! Original Elite was eventually ported to all platforms. I am really hoping that Elite: Dangerous will eventually make it to PS4 etc. – and if that happens I would like to use my kickstarter £90 level to buy PS4 version (next year, or year after, whatever) rather than needing to buy a windows PC on which to play it. Is it possible to provide some feedback?

David Braben: Frontier has our own tools and technology that covers PC, Mac, consoles and mobile, so we would be foolish not to look at other platforms. We haven't announced specific platforms yet, but it is clearly something we will plan to do.

Steve T: Will the "matchmaking" process also put people of similar internet speeds in the same instances to avoid the current rubber banding issues?

David Braben: We are working to address those issues already, and you should see improvements throughout the beta. Matchmaking would be our last line of defence, so we are considering it – but we want to make sure we do our best for those with low bandwidth too – and they will still want to play with their friends.

James Dean: Several third-party tools have appeared to help with trading in Elite Dangerous; are Frontier happy for these to exist past release? Will the market information be available via an API?

David Braben: A public API is something we have considered for post release, but we need to balance this with the potential exploits.

Commander Sam: Will you be putting OBE on the end of your commander name, in game?
(Congratulations BTW)

David Braben: No!

Cmdr. Kerrash: Hi David, I am really interested in what you may be able to inject into the game in the future to keep the procedurally generated content fresh and varied?

David Braben: We will keep most such things secret, but things like famines, rebellions, and general progress (building new stations etc) will be there.

Colonel Kenney: A similar shorter version of the question would be – I've always dreamed of being able to look up at a star and instantly have all the data available about it instantly. Will we have such a feature in our HUD eventually?

David Braben: For the adjacent stars, you can get most of the info from the galactic map. It will become cumbersome to do it on the night sky (though we will think about it), but the other important thing is that many of those systems are unexplored, so the data (ie details on planets etc) will only available if an explorer has first gone there, scanned the system, and returned safely to register it.

Photosensitive: There have been a number of people on the forums recently looking for the difficulty of elite to be tones down, and obviously a number of people who like it exactly the way it is; how as a developer do you go about balancing these 2 view points?

PS: i like the almost dark souls in space aspect to the game.

David Braben: There are some elements to the difficulty we will address. For example if you mess up docking the damage is especially cruel as the station slowly rotates back into your ship, doing further damage. This is coming soon. Trading is also slowly being balanced to make it more cash generative.

Other elements are because of the choices you might make – so travelling through a busy anarchic system will always be hard and dangerous. Core systems will be a lot safer, and easier. Fitting your ship with great shields and powerful weapons will give you a major edge too.

Tapout: Is the net code one of the largest challenges facing the dev team?

David Braben: The network code is indeed a big challenge, probably the largest, but that's not to say the other challenges aren't pretty big!

Frank Leonhardt: Third try: Why was the Raspberry Pi so complicated, with Linux and X-Window? Something with embedded BASIC would have been great for teaching the real fundamentals of programming and interfacing to external devices.

David Braben: Yes, but you can boot the Raspberry Pi into a special version of RiscOS and BBC BASIC.

Colonel Kenney: This doesn't need to be answered. My point about information on stars in the hud is that we would only be able to pull up data on stars that are within an acceptable range and pull up info. It sort of randomizes the "exploration spirit" of the game. Such as I have a cargo full of food, I'm looking at the night sky click on a star that is industrial lets go there. It is an adventurer's spirit to just explore a random nearby star. Or to just spend time in the hud alone looking at the different stars. Trying to see where Earth is right now is difficult to find except from galaxy map. Thanks for your time!

Never mind Star Citizen, Destiny and Eve, there's a million space shooters all vying for our attention in 2014 / 2015. Was there some kind of zeitgeist, where everyone got singularly sick and tired of COD / GTA sequels? So how will DB ensure his latest offering stays float in this space barrage?

David Braben: Elite: Dangerous will, and I think does already, stand out from those other games. It is an open world space game. It is what we all want, and I look forwards to playing them, but they are very different. Notionally Mass Effect, Dead Space, Halo etc etc could all be space shooters, but they are very different.

James Dean: We've heard the 400 billion systems figure a lot – but how many populated systems will there be in the initial release?

David Braben: Human space is around 100,000 systems – with a larger halo of relatively uninhabited frontier systems around them – and many of the systems in human space without anything particularly remarkable there. The 400 billion number is for the immense galaxy.

Commander Brix: I had a lot of problems configuring the game with all the buttons (hard to remember them all) I even bought a HOTAS Joystick for it (still having problems to map them all). In flight the game seems to be heavily on the simulation side – Will there be simplifications for the more casual gamer?

David Braben: Yes – many of the sub-systems are only there for those who want that level of control (like the power distribution) and work fine if you don't use them.

Paul B: Hi David, SLI and Cross-Fire are mostly non-functional in ED at present, when could we realistically expect to see this kind of code optimisation?

David Braben: You're correct. We are just starting to look at optimisations now, and SLI will come too, but once we have the big performance wins first. For performance increases 'soon', for SLI, 'later'... Sorry to be vague.

CMDR Yan: When time for walking around comes, have you a solution to the age old problem of the boring conversation tree?

David Braben: Yes, but we're not talking about it yet.

Commander Sam: Do you think you'll be able to optimise the game to run faster with an Oculus Rift? You mentioned that at E3 that you were using a titan with a DK2, which is a pretty expensive bit of kit. Or is VR just so demanding we're all going to need to upgrade.

David Braben: The Titan gets 75 fps on a dual 1080p display on a DK2. Further optimisations will come, so yes that will help a good deal.

Athanasius: David, did you ever hear about some research done at The University of Birmingham in the early 90s to do with military cockpit layout/seating that used the BBC Model B version of Elite? I took part in it!

David Braben: Interesting. No. I did hear of a cockpit study NASA did, where the controls were activated by looking at them (VR style). Apparently it was very stressful as pilots tried very hard not to look at controls that might have nasty consequences – like the ejector seat!

Paul B: Is there a concern that the multiple ways of experiencing ED (Single player, group play and all-in MP) is going to fracture the player base, diluting the MP experience?

David Braben: I hope not. I'd like it if everyone played all-in.

Ben: Will there be area's such as low security star systems to where you cannot hide from players at will, and thus will be more "Dangerous" and rewarding?

David Braben: Those with no governments. We have an anarchic system in the Premium Beta already...

Philip: David, have you been surprised at the strength and creativity of the Elite community? I'm thinking in particular of things like Lavecon, Lave radio and all the other stuff that has sprung up since the kickstarter finished.

David Braben: Yes. It is great!

Eric Doyle: How involved are you now with Raspberry Pi and how important is it to get schools involved with coding? What value does it bring beyond being a skill

David Braben: I am still regularly involved. I go to board meetings every month, and communicate daily via email.

In my opinion it is important to 'put something back'. I was very lucky when I was a teenager that the Acorn Atom, then BBC Micro were available. Without them, learning to program would have been much harder (and more expensive) and I doubt I would have done it so early.

Pryrios: When you say we will walk inside ships and stations, are you thinking in first person view or third person view over the shoulder? If it's third person view, are you planning on doing some character creator to make different characters for players?

David Braben: First person.

Springy: Hi David, I was wondering if the game will work with TrackIR whilst we await consumer models of the Oculus Rift?

David Braben: Yes. It already (since Alpha 1.2) works with Oculus Rift, and Track IR. 

DAVID BRABEN at Retro Gamer

It's been 30 years since Elite blew BBC Micro owners away with its sheer scope and ambitious design. Three decades on and Elite Dangerous is finally getting ready to dock after being successfully funded on Kickstarter. We speak to David Braben about his first steps in the games industry and what led him to creating his original sci-fi epic.

by Retro Gamer Team, 18 June 2014

Let us start by going back to your days at school in the late Sixties and Seventies. Computers and gaming didn't really exist, so what were your aspirations back then?

At school I was very much into physics and that was my major passion. I enjoyed seeing how things worked and I also loved making things. I felt fascinated by science, but at the same time, I enjoyed unleashing my creativity.

Were you considering a career in science back then?

I liked the idea of being a research scientist. You know, looking into... well, lots of different things, I suppose. It was very interesting. I have also been fascinated with astronomy for a very long time. I am amazed at how little we understand the whole shebang. I mean, I look up into the sky today and I realise that it was only quite recently in historical terms that we had any idea of what kept the sun warm. And you know, we still don't understand gravity.

Would it be fair to say that you have a natural instinct to explore and discover?

I think so. There are a huge number of things that are out there that we have almost no comprehension of, you know? In fact, the things that we do have comprehension of are a very small percentage of what there is to understand.

How did you get into the development of games?

Well, I did sciences at university. I went to Cambridge to study natural sciences, which is specialising in physics, and in parallel I got a computer and started playing around with it. And I was fascinated by 3D graphics and put together various graphical things. I wanted to make a game because that seemed the best way to make use of graphics, if you see what I mean. It sort of started life as a hobby.

But if gaming hadn't existed, do you think you'd have become an astronomer, perhaps?

Quite possibly, yes, but you never really know. You know, if that hadn't... If games hadn't taken my fancy, maybe something else would. Personally, that was the path when I went to university that I was imagining I was going to go down.

Can you remember the first time you played a game?

Well it wasn't when I was a child because there were no such things at that time. When I went into the sixth form, games had just appeared in pubs and arcades. There were some Space Invaders cabinets from Taito – you know, the original Space Invaders. And then when I went to university, or maybe it was when I was still in the sixth form, I seem to recall seeing Galaxian and then Pac-Man.

Did they fascinate you?

The games then were very much centred around coin-operated machines. They weren't in the home.

I remember a machine came out at the end of the Seventies, where you had these six games and a machine that you plugged into the television. It would just make bleeps and it had rip-offs of Pong, Breakout, those sort of things. But, to be honest, computer games were just a hobby. They weren't as engaging as they are now, if that makes sense.

So games didn't particularly grab you right from the start?

These earlier games came along a bit late for me. I was already moving on by then, if that makes sense. I mean, we didn't have a computer at school until I was in the sixth form. But I was always fascinated by the sort of clever things that these machines could potentially do.

It sounds as if you were more interested in how games were constructed rather than the games themselves...

Yes. I quite enjoyed subjects like maths. I was a bit of a sado at heart [laughs] but I remember seeing an advert for an Acorn Atom, and you had to buy it as a kit and put it together. I remember being fascinated by the idea that you could build a computer to do things and I got very excited that using very, very simple logical steps you could make something really complicated.

Did this extend to your future in programming?

When I was a lot younger I had Lego and the mindset of making really complicated things out of things that were quite simple was really exciting. I think that's what got me interested. I mean, the Lego had gear wheels with it and you could make really quite complicated machines out of what seemed quite simple things. And it's that same sort of fascination, I think, with programming – designing things that could be exciting – but at the same time a way of trying out different sorts of technological solutions to things.

Given your love of physics and astronomy, it's little wonder that you created Elite...

One of the very first things I wrote on a computer was an expanding star field. I wanted to actually be able to fly through a star field, and I remember writing this in BASIC. I was really crestfallen because I was expecting it to run really quickly because at the time I thought, 'Oh, it's only drawing a few dots'. But you had to draw them again and again in a moving perspective and it took 10 or 20 seconds to draw them all up, so I was really disappointed. I was expecting it to be magical, you know; something really interesting to behold.

Did you give up on BASIC?

I started learning machine code. But I suppose the link between astronomy and gaming was ironic in that my very early program was driven by my astronomical interest.

Was there something of a parallel between astronomy and programming? Were they both appealing because they allowed open-ended exploration and the pushing of boundaries, or is that a bit of a strained comparison?

That's probably a bit strained. I think – and it's not just astronomy but most science – that there are actually great vast areas that we know pretty well nothing about or we have various sorts of understandings of to some degree, but they're not complete. And with programming, there's just the fascination of what you can do with it. It's like building a fantastic structure from bricks. Bricks are very simple but you can make amazingly complex structures, and I suppose one of the things I learnt then was that by very, very simple steps you can get things that appear to be extremely complicated. I don't know if you know about mathematic functions like the Mandelbrot set, but I remember being amazed at how, with such a simple equation, you can get such a complex outcome. I

think it's a whole exciting, fascinating thing to do from a programming point of view. And what I'll say is that the things that I was fascinated with back in the Eighties in terms of computing still exist. I suppose all of this is what's behind the sort of things we know with the Elite galaxy.

How did you get started on Elite?

Well, I'd put a lot of time into playing around with 3D graphics and 3D spaceships, and how to draw them, and how to draw them very quickly, and then I met Ian Bell at university and he was working on a game called Free Fall with Acornsoft, and I thought, 'Oh, it would be excellent to make a game from this and publish it.' I showed him my spaceships flying around with sort of 3D star fields and things like that.

How receptive was he?

He was very receptive. But the problem we had was that, fundamentally as a game, it would just be too empty, so we just, you know, we talked about how we could make it more interesting, have a galaxy to fly around trading and all that sort of thing, and that's where Elite was born. I mean, trading came from the need for an excuse, almost a justification for why the player was doing what they were doing. We didn't want a game that just took ten minutes to play.

Did you feel it would be a success from the start?

Well, we knew it wasn't similar to other games out there at the time and so when we came to getting the game to market, we started to struggle. We'd already been turned down by publishers and I think I've said a lot publicly about Thorn EMI rejecting the game. I think the point was the game was very different to what was out there and so we were confident that it was going to do really well.

What was your biggest fear?

I think really, certainly my biggest fear was someone else getting there first, doing a good 3D game before we did, and I was obviously delighted that it didn't happen. But it's one of those things that once it's there, I thought other people would see it and go, 'Oh wow. I will do one like that,' and we would just be one of many. I think we were very lucky in that we had the field to ourselves for a while.

Can you take us through how you went about visualising Elite?

We didn't really have any doubts about what we were doing because we were writing the game for ourselves and we were just hoping that there would be other people like us. That this was a game we would have liked to play was the point. The bigger doubts were either that we were going to get somehow ripped off, or someone else would do a similar game and come out before we did, you know, because why were we in any way special? We were lucky really. We thought maybe someone else had started before us and kept it secretive.

Was it difficult juggling programming with your studies?

Yes, it was a challenge because the masters for Elite went off for duplication about a week before my end of final exams. So that was difficult balancing priorities.

How did your friends react to the game and the time you spent on it?

They probably thought I was an idiot, but nothing changes. I'm sure they still do. [laughs] Good friends were supportive. They just thought it was a bit of fun – you know, a job on the side. I think they were mostly critical actually, but in a good way. ☺

Elite: Dangerous hands-on preview and interview – ‘the nearest game to Elite is GTA’

GameCentral gets to play the Oculus Rift version of Elite: Dangerous and talk to creator David Braben about the ultimate Han Solo sim.

Thursday 19 Jun 2014 2:03 am

We've been waiting to play this game for over 20 years. Although the series is not generally well known in the US any British gamer in the '80s and early '90s will have known Elite as one of the biggest franchises in gaming. A space trading simulator so ahead of its time that it was doing open world exploration and free form gameplay of a style that would only return again with the likes of Grand Theft Auto and Skyrim.

But because it's only well known in the UK and Europe many Americans and younger gamers know only later equivalents such as Wing Commander: Privateer and Freelancer. There was a sequel, subtitled Frontier, in 1993, and a quick follow-up in Frontier: First Encounters two years later, but since then nothing at all from creator David Braben.

And until the advent of Kickstarter almost no big budget, modern equivalents of any kind except EVE Online. But as we discussed with Braben the rise of indie gaming, and the ability for fans to help fund games themselves, has brought with it a whole host of new space combat sims and space traders, from Star Citizen to No Man's Sky.

Before we spoke to him though we got to play the game itself, already in beta and available to backers of the original Kickstarter campaign (a boxed product will be released later this year). But if you're not familiar with the series, or the concept, simply imagine Skyrim but with you playing a Han Solo type character exploring, trading, and pirating your way across the galax

We start the demo docked at a spacestation and are immediately struck by how good the graphics are. The Elite: Dangerous Kickstarter was successful, but it still has a much lower budget than Star Citizen. Even so, the visuals are exactly what our young selves would've imagined of a 21st century space trader, especially as we're viewing it all through an Oculus Rift headset.

We'll have a separate feature soon on all the Oculus Rift games we played at E3 (including fellow space combat sim EVE Valkyrie) shortly but one particularly cool feature was that glancing to the left or right causes (currently non-interactive) menus to automatically pop-up, which we've not seen before in a VR game.

It's also the only VR title we've seen where moving your hand on the joystick also sees your virtual hand move as well, although admittedly that's easier in Elite because we're using a joystick throttle – and so the game already knows exactly where your hand is.

Flying out of the spacestation the controls do feel remarkably like the original Elite, and not the fussy, unsatisfying set-up of Frontier – which was based on accurately modelled Newtonian physics. It's still not as fluid as something like X-Wing or Freespace, but then it's not meant to be. Elite is not pure fantasy and both the movement of the ship and the map of the galaxy are based on real science.

(In fact we're told, before Braben turns up, that to travel from the outer rim to the centre of the galaxy would take several months in real-time; giving the developer time to plan what will be there when players finally arrive. Although they can't put off that decision

forever as some fans are already planning a 'Great Expedition'.)

Since we only have 15 minutes or so to fly around there's no time to worry about cargo or missions, so instead we just have fun shooting what we think (but aren't too worried about verifying) are pirates. Again the action is reminiscent of the original but more nuanced, with the other pilots seeming to react sensibly to our attacks and none of the simpler tricks of the original games working for long.

Just like Skyrim, Elite is a game to savour over hours, not minutes; but despite the impossible weight of anticipation this is already looking like it will fulfil many of our childhood hopes for the game. And if all goes to plan it'll only get better with time...

GC: I don't know what I'm going to do about E3 previews now, if I can't warn people that Elite IV won't be there.

David Braben: [laughs] I know, I know. It's taken a long time for us to get to this stage.

GC: And yet it's very strange that suddenly there are all these other space combat simulators emerging at the same time. The genre's been dead for at least a decade and now they're arriving like overdue buses.

David Braben: I think it's because... I'm trying to think what the last one was, Freelancer?

GC: Yeah, probably that was... early 2000s. That was the last big one for the PC. But it never did that well.

David Braben: Exactly, and one of the problems for publisher-funded games is there's a lot of caution. Understandably and sensibly so. And what they look at is what game will it be like? And they say, 'Right, okay return on investment will be comparable to that'.

It might be 20 per cent better or 20 per cent worse and they go, 'Oh, that's not very good' and 'Do we really want to make another one of those or do we want to make another Call Of Duty or, you know...' And so to them it's an easy decision to say, 'No, we don't want that'. So there's been a real lack, for a long time, of space games. I also think that the way they categorise them is not very sensible.

GC: Space combat simulator is a horrible phrase.

David Braben: Yeah, but it's not... I see Elite as an open world game. I see Elite as similar to the... the nearest game to Elite is GTA; and it just happens to be in space. Because when Elite was originally conceived I wanted to make a game that was free, free to do whatever you like. And back in the '80s space was the one thing that was easy to render. [laughs] Space, the clue is in the name. And it fitted really, but actually I've always been a huge fan of astronomy anyway and hopefully you'll see some of that in this game. We've gone a bit over the top in the background, I don't deny it, but it makes the world rich. I just love the idea that you can look back at...

GC: I was talking to the Destiny guys before, I don't know how much you know about that game?

David Braben: Only a little bit.

GC: They've got things like Venus and Titan represented fairly realistically, and it's always frustrated me that games and movies don't use real planets as their settings. With lakes of methane and sulphuric acid rain. That almost sounds too silly, except it's completely real.

David Braben: That's right. Well, it's the Star Trek rubber suits. They're all basically the same shape as people...

GC: But with funny eyebrows.

David Braben: Exactly! Funny eyebrows, funny ears and that's it.

GC: You must've been thinking about all this for literally years.

David Braben: Yeah.

GC: So I'm curious, that golden era of space combat simulators, that came after Frontier, have you taken anything from that in this new game? Because the fluidity of combat in something like X-Wing is very different to Frontier in particular, but does that mean it's just too fantastical to be of interest to you?

David Braben: We've looked at many of them, but I've wanted to make this game for a long time and it's really trying to build out every part of the game in a way...

GC: Just now it still felt a lot like you were playing it on the Amiga, which I assume is because it's still based on the same physics theories?

David Braben: Ah no, it's all new, everything in the game is new. But we tried to get some of the similar feel, and with all these... the detail we're putting in, we've tried to work out how to best do the project in a way that addresses each stage in a sensible manner. The first one is the moment-to-moment gameplay, which is the feel of the ship. And if we can't get that right there's not a lot of point carry on! So we put a lot of effort into the single-player combat, which was the first alpha phase we released and then we added things like Oculus Rift – mainly as a Christmas present to the backers, because they all wanted it and 3DTV. And then we followed on with multiplayer, which is the next biggest risk. And we've just followed on that sort of way,

addressing the list one at a time – being quite focused, quite narrow. But the way it feels is really important, and what's great is different people say it feels like different favourite games they've played. And what I mean is, I think they have in mind things that they really liked; and it feels solid, it feels heavy, it feels rich in terms of what you can do.

GC: Where exactly do you find the balance between realism and fantasy? Because I think trying to be too realistic did hurt Frontier.

David Braben: It's about feel. And the sad thing is, I think, if you go back to play Elite or Frontier now you'll actually realise it's quite simple. But your mind was saying, 'It's a giant craft and you're pulling a great heavy stick back, and you're jousting in space with these other big ships!' One of the things we've had to address in this, which we didn't have to in Elite or Frontier, is the symmetry of the situation. What I mean by that is that to make the game fun we could adjust the AI to make it fun, with them tending to come in front of you. But we can't do that now because the other guy might be a player. So we've got genuine symmetry, so we've done a lot of testing of the control system against other players.

GC: The other thing about Elite is, you would play it for a certain amount of time – I'm not going to say how much...

David Braben: [laughs]

GC: And you would learn the controls and the enemy AI to such an accurate degree that it not only became very easy but you'd literally seen everything the game could do. The combat wasn't one note per se, but it was possible to have a plan for pretty much every eventuality. A lot of that was just the limitations of the time but how do you avoid that problem here?

David Braben: Oh yes, that's right. Well it's the amount of variation, it was very small in the originals. The great thing with Elite: Dangerous of course, is that we've introduced real players. So that introduces infinite variation all by itself. And also, all the AI pilots have different skill levels, so they do different things. Some of the AI pilots don't use a lot of the fancy features in the ship, whereas others will use them to really great effect.

Bizarrely it's easy to write an AI that's utterly unbeatable. The hard thing is to come up with AI that feels about right. So we have to do things like delaying all the decisions: they notice something but they don't react instantly, just like a real person doesn't. So building all that sort of thing, so you get a good feel for how good a pilot the guy is you're chasing, if it's an AI, is very important.

GC: So how does the multiplayer work? I'm guessing that's not a separate option on the main menu or something?

David Braben: No, it's always multiplayer.

GC: So at any point a player could appear and do whatever they do, and there's nothing you can do to filter them out?

David Braben: Well, we do have the option – this is coming, but it's not in yet – where you can filter whether it's just your friends list that you see, or whether actually it's essentially a single-player experience. Still connected online but you won't see anyone else. Which is a shame, and I hope people won't do that...

GC: Oh, sure. I'm not suggesting it's a good idea. I'm just curious if the option is there. But another great thing about the original, and it seems odd to critique a game that's 20 years old...

David Braben: 30, this year. The original Elite is 30 this year.

GC: Don't say that! Well, the Amiga version must've been what, 25?

David Braben: [laughs] I guess so.

GC: And I suppose Frontier is what, 20? I remember going to see that at ECTS during the school holidays or something.

David Braben: ECTS! I remember that.

GC: But one of the big differences between the first one and the second one was the humour. The original was very funny and very British and very obviously influenced by Hitchhiker's Guide to the Galaxy. The second one though was a lot more dour, it took itself a lot more seriously.

David Braben: Well I wanted to... but yeah, you're right. It probably was.

GC: So how are you going to handle that side of things this time?

David Braben: It'll be something of its own. I think each game...

GC: Because a sense of humour is not what these sorts of games, any game really, tend to be known for. And it's another way to differentiate yourself from all these American-made games.

David Braben: Indeed, there's a balance to be had between sort of taking itself too seriously and just being silly. There were some things where I think the original Elite took it a bit far, because we had

the original planet descriptions. You had things like 'edible mountain poets', which annoyed me most.

GC: [laughs] But couldn't you have that just be a rumour and you get there and it's just a misunderstanding?

David Braben: Yeah, you could but then that's making it dour again. That's what I'm saying: it's a balance.

GC: And in terms of balance, the trading... again I remember in Frontier... Sorry, I don't like to complain to you about 20-year-old video games.

David Braben: [laughs] No, go for it!

GC: But again, by taking itself that much more seriously, it became a lot more complicated and seemed to lose some of its accessibility. It forced you to deal with things you didn't really care about. I wanted to trade but I didn't want to get into that much detail about it...

David Braben: The first one was great because it was very straightforward, but what I liked about the second one is that it didn't have the symmetry of illegal goods. In the first one illegal goods were always illegal, whereas in the second one you could buy something legally, like firearms, and then take them somewhere where they were illegal. I liked the asymmetry.

GC: No, that was better, I agree.

David Braben: The same with narcotics.

GC: I get the impression this is going to be an ongoing game, essentially like a MMO?

David Braben: It is an MMO.

GC: It is an MMO, okay. So you'll be adding stuff ad infinitum then by the sound of it.

David Braben: Yeah.

GC: But is there an end goal at all? Or at least a point where you say that's stage one complete?

David Braben: We have a first release. And then other things will build on that first release. We'll build all sorts of additional functionality, like walking around inside your spacecraft, landing on planets, all this sort of thing...

GC: This is really surreal for me because now I'm going to talk to you about rumours I read in C&VG when I was in English class back in the '90s. And the next Elite was going to have all this amazing stuff, the things you've just spoken about... so all that was true? You are planning to put it in?

David Braben: We intend to do it, yes.

GC: So in the end it will become... my dream game is a Han Solo simulator. I can't believe human society has advanced to this point and such a thing still doesn't exist.

David Braben: [laughs] I agree! I know exactly what you mean.

GC: I don't mean necessarily in terms of an official Star Wars game, although that'd be nice, but just a game that lets you do all the things you imagined him getting up to.

David Braben: No question, absolutely. Doing dodgy deals and all that stuff.

GC: I'm glad you were actually thinking the same things I assumed you were all those years ago.

David Braben: [laughs] It will take a while to get there though.

GC: Oh, that's fine. But would you put a ballpark on that? Two, three years?

David Braben: That sort of time scale.

GC: That's great, thanks very much for your time.

David Braben: No problem, lovely talking to you. ↗

Mostly Harmless Questions

HUANG

Once a tranquil and beautiful resort planet,
HUANG is now better known for its corrupt legal

Newsletters 1-29

Cathy: Are there any secret societies, chivalric orders or the like planned for the Elite universe?

"Yes, secretive, certainly (which includes the Pilot's Federation), and some only known to their members. There will be all sorts of illegal activities – even trading in illegal goods will require you to know someone who you can deal with, who is prepared to trust you – accessed through the mission structure."

Slawkenbergius: What will the political map of the galaxy look like?

"Most (ie more than 99%) of the galaxy is unexplored at the start of the game. That is not to say that there is no politics there... Human politics is dominated by the three main powers. The Federation, based in the Solar system, The Empire, based in the Achenar system, and The Alliance, based in the Alioth system. In addition there are numerous independent worlds, and many powerful corporations, which are far more powerful than any single independent world, and a few might even challenge the big powers."

Andrew Sayers: The Outer Space Treaty declares space to be part of the common heritage of mankind. How did that treaty break down? Did the Americans decide the flag on the moon was a land claim after all? Did kids run off with it and cause an interplanetary incident?

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"The treaty didn't so much break down; it was simply ignored. As industry moved into space and started manufacturing there, people started living

there, people started misbehaving up there, and pretty quickly jurisdictions began to be established. Initially using extensions of the laws of the sea for ships or planes in international waters/air space (where the jurisdiction that applies is the jurisdiction of the registered flag of a ship/plane), but pretty soon people started laying claim to asteroids, and then claims to land on planets and moons, or more particularly to their mineral rights, as ever more sophisticated automated mining techniques emerged."

bedroc: Hi, If you explore far out, will there still be stations and an ability to trade?

There will be some isolated stations and bases for trading, repair and re-supply. These will be more infrequent the further you travel, although there will be some surprises for you to discover. Special equipment and supplies can be purchased to allow ships to travel further without support, but we also expect players to co-operate so that they can reach even further.

One of the key features for the evolving galaxy is that new stations (or suitable ships) can be deployed to extend humanity's reach even further into the galaxy.

Duncan147: How will you manage and prioritise the scope of this work to ensure that you maximise the value delivered at the initial release?

There are a number of core features that defines the game as Elite (these are defined by David and the development team), the alpha test process we are currently undertaking takes each of the core features (like combat, trading, docking and travel to name a

few) in isolation to ensure that each of these features achieves what we want from them. Features that are not deemed core will either be included in the beta, or in the case of significant new additions (like spaceship boarding and planetary landings) will be tackled in expansions after the game's initial release.

Lestat: Will there be technology that you can purchase that can slowly repair damage to your ship automatically?

Some self repair systems will be available, although they will be quite specialised so will require investment from the player. The same technology can also be used to reduce wear and tear on your ship's systems. Serious damage will still need to be repaired in a traditional shipyard.

Rollo: Is the Sirius Corporation a significant player in Elite: Dangerous?

Yes, the Sirius Corporation (and it's plethora of divisions) are the biggest corporation in human existence, as well as owning several systems outright they are also the dominating player in fuel and power technology, their products can be found throughout human space.

Moriarte: Star Citizen is using cry engine, while Elite is using an unique engine of its own. What advantages and disadvantages do you have, when using a homemade engine, while making the space simulator?

As a developer we've used our own game engine throughout the company's history so we have considerable experience in our own technology. For Elite: Dangerous the game presents a number of challenges that we have to solve. The first (and most obvious) is the scale of the game, putting aside the requirements of procedural generation for

a moment the spatial size of the game's locations are an immense (pun intended!) problem. It's quite common in space games to fudge the scale to make things look good and work, however this results in spatial locations being condensed. In Elite everything is the scale it should be, so the planets are the correct size and distances between objects are also correct. Using the Cobra engine means that we can tailor our solutions to fit the game rather than the other way round.

Luniticisi: Is Elite: Dangerous a sequel to Elite, or a sequel to Frontier, or a mix of both?

Elite: Dangerous is a game in its own right. In terms of the game history it follows on from Frontier and First Encounters, with Elite before that, but it has been such a long gap since the previous games (Frontier was released over 20 years ago) that the breadth of what we can do now is breathtaking. The term 'Elite 4' was used for a while internally, but we are not fans of numeric sequels, especially given the elapsed time and the fact that what we have feels all new.

Slawkenbergius: Will planets and stars be to actual scale?

Yes, celestial bodies and the distances between them will be correctly scaled, wherever possible real astronomical data is being used. To give you an idea we're currently at 116,000 stars from various catalogues and includes pulsars and black holes as well as main sequence stars. Exo-planets are the other big import which we're about to start working on!

COMMS

<DAVE> ANYONE AT HOME DIER THIN
<DRW> YEAH
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<FORD> CAN I THUMB A RIDE?

Scot: Will the old design of the PYTHON be in the game?

The Python will be in the game.

Le-Betz: Will there be ships without hyperspace capability in the game?

Yes, some ships are too small to have hyperdrives (such as the small fighters and some shuttles).

Perrie67: How will E:D make travelling the insane distances for exploring the galaxy without making it too easy to travel around the populated systems?

There are two modes of super luminal (faster than light) travel.

Super cruise (or frame shifting) is used for travel inside systems. It was originally conceived as a sub-luminal drive, but based on the fantastic collaboration we have been having with our Design Decision Forum backers it was re-worked and is now itself a super luminal system to allow relatively rapid travel within systems.

Hyperspace drives are used to travel between star systems. Hyperdrives with different ranges, charge up times and fuel consumption parameters are available, and so your particular model of hyperdrive governs your specific ability to move around the galaxy.

Both will make their debut in Alpha 4 (not counting the early version of hyperspace in Alpha 3).

CURRENT LOCATION

bedroc: Hi, If you explore far out, will there still be stations and an ability to trade?

Most of humanity inhabits a few hundred light year bubble around Sol, Achernar and Alioth. Beyond this are a lower density of isolated systems with small communities on them that can be used by explorers to resupply, with small/basic orbital stations. These are the "Frontier" systems. Beyond this, you will still encounter occasional ships (including other players), but no stations; not to start with at least. There will be ship-ship docking though too, so it will still be

possible to resupply. The ships suited for long range exploration will require a greater degree of self-sustainability, for example fuel scoops and repair and maintenance equipment, and we expect players to cooperate to meet the challenge!

Wreckage: Is the Kepler data for planets being figured into the galaxy map?

We're striving to make the Elite: Dangerous Milky Way as accurate as possible. As part of this we are using a variety of sources for the celestial bodies data, and that includes confirmed exoplanets from the Kepler data and many other sources.

JohnStabler: Are we going to see the return of the Imperial Trader and Courier?

The Imperial Courier is planned for initial release, the Imperial Trader isn't, although may make a later expansion.

bsivko: I would like to ask a question about support of reality in E:D Universe. As you mentioned, you will include into release all of possible data of real Universe. But what will be after release? For example, if humanity discover thousand planets more, or find new objects like wandering planets between stars. Do you plan to change the E:D Universe according to that kind of events or not?

Yes, we will be changing the galaxy to keep up to date with the latest discoveries and observations – it's one of the benefits of the connected world we now live in that we can update the game as needed! But hopefully, we won't need to update things *too* often; we think the physics we have used to predict new exo-planets is pretty good – it'll be fascinating to see how close we are!

Slawkenbergius: Will Elite: Dangerous use a physically-based shading/rendering system?

Short answer: yes it does.

Once again I must planet
HUAN: Elite: Dangerous adopted a physically-based rendering (PBR) model right from the start – we want it to look as good as possible under a variety of lighting conditions (and space certainly gives you that!). We expect the visual quality of Elite: Dangerous will continue to improve as we progress through development.

It's worth mentioning though that PBR isn't a one-size-fits-all solution as much as it's the start of a discussion that could probably occupy someone for their entire career – kind of like the way "High Dynamic Range" was quickly adopted by everyone years ago but people are still arguing over the fine details!

SzaryWilk: How many commodities will be in Elite Dangerous ??

We're still refining the design, at the moment we're testing with around 100 different core commodities, with other specialised ones based off them. Such specialist or 'rares' are a separate type of tradable item ('Lavian Brandy' for example). We've seen the recent plea for tea and it looks like we might be adding that to the list.

EUTROPIA

Brodie: Apart from freight and possibly ammo will ship components such as rare weapons or engines drop or be salvageable from destroyed NPC ships?

Currently the design is that you can salvage raw materials and data from derelict ships. An idea we're considering is that enhancement technology from specific weapons and modules can provide temporary augmentations for your equipment.

Jant: How much freedom will there be to customise our ships from a purely aesthetic standpoint (like different cockpits, paint jobs, etc)?

The intention is to support as wide a range of customisation as possible, we're still working out some of the details but support for skins and decals is certain, ways to customise your cockpit are also something we're interested in. This can be expanded further when we expand the game to allow walking around ships and stations, not only with the ship but the player's avatar as well. In other words – yes, leather upholstery is on the cards!

ZENAIS

FS3DPete: Will explorers be able to receive recognition and a finder's fee for discovering new bodies, such as planets?

Exploration is a form of data trading, discovering new systems and celestial bodies generates data that can then be traded for credits. Significant finds could also be reported in the newsfeeds and will also help guide the expansion of human space.

Patrick_68000: When we fly over planets, what minimum altitude will be allowed?

We will allow fuel skimming on gas giants and make sure that starports can be placed in suitable orbits. Throughout beta there will be an ongoing process to optimise and improve our already cool looking planets at ever closer distances.

Le-Betz: Will there be Generation Ships?

It would be fun to have them, certainly!

KALLISTRE

Kerrash: What is the smallest detail of the procedural content that is being considered? and will we be able to customize it or will it be engine controlled?

Dust particles are probably as small as it goes – or perhaps details on procedural textures. Alpha backers will already have flown over ring systems at super-luminal speeds and then looked down and seen the billions of individual rocks hurtling by below, perhaps heading down in to them.

Listeri69: What benefits can we expect to see from becoming an explorer?

The excitement of discovering something unusual – and perhaps even staking a claim (though this has to be registered). Finding a metal-rich system that is untouched for example would be a great find – and lucrative too.

Philip Coutts: Why did you pick the Sidewinder for the basic starting ship?

It is to give us more headroom in the ship progression. The Sidewinder is much smaller than say, the Cobra. For much the same reason the Eagle was the default starting ship in Frontier: Elite 2.

insanephoton: Seeing as there should be some amazing visuals, will there be any in game screen grab/screen shot manager?

The game already supports screen capture, just press the F10 and it's saved to your local hard drive. It's unlikely that we'll provide a game-specific screenshot manager, there are already plenty of image library apps available for this purpose.

Cathy: Will there be hidden societies such as secret orders to encounter in Elite: Dangerous?

Yes, there'll be a range of characters representing a number of organisations ranging from the major power blocs, to crime syndicates and organisations

with hidden agendas. Part of the appeal of the Elite: Dangerous galaxy is the breadth of human interaction that you can become involved in. The primary vehicle for this interaction will be the missions, and of course it's something we will build on as we further expand the game, notably when you're able to get out of the cockpit.

Iluamiani: Will guilds/clans be supported and how?

Everyone is enrolled as a member of the Pilot's Federation, and within that there will be 'groups' functionality that allows people to form organic associations. There are also the three major power blocs of Federation, Empire and Alliance of Independents that you can cosy up to (or act against) as you wish. Specifically created clans are something we will investigate after the first release of the game.

Davidtq: Will we be able to customise the appearance of ship interiors and exteriors?

Yes! We plan to offer extensive customization options – please 'watch this space' for details as we release them; you'll hear it here first.

Arn: Will it be possible to upgrade modules such as the engine, shield and power plant?

Absolutely – in Premium Beta ships and weapons are upgradable; as we progress you will get increasing choice of which system components to use, each having different strengths and weaknesses and suitability for a particular role. You will be able to switch systems such that you can 'downgrade' your ship if you want to, too – whether to free up some cash, or outfit your ship for a particular job.

Serge: Can you talk about the expectations of the Mac version?

We have said that the Mac version will follow around 3 months after the PC version. Currently we have been focusing on building the fundamentals of Elite: Dangerous on PC. Now we have got to Premium Beta we have enough of the game present that it makes sense for us to start focusing on Mac specific porting and optimization tasks using our cross-platform Cobra game engine software. We have been laying the groundwork for the Mac version in the background for a while now, and have just started to ramp up the activity. We'll keep you posted as we have progress to share!

Sloma: "Are you focused atm on Federal / Independent side? Why are we not seeing any Imperial ship designs or any content related to Imperial faction?"

The area of space we chose happens to be a long way from Imperial space, hence the focus of PB1 etc. We have Imperial content too (as in the 'Damocles' video and the Imperial cruiser and Imperial fighters), but that will come as we open up space.

Colonel Kenney: "One interesting question I have. Much of the galaxy will take us a very long time to get to. Are there any plans of implementing any sort of "shortcuts" to different parts of the galaxy such as wormholes? Like something extremely rare but there are some hidden around for us to discover etc? Like how can we explore the center of the galaxy if it would take a year of gameplay to get there etc?"

No, we're not planning to implement shortcuts. For me, one of the attractions is it IS a big achievement to travel a long distance. I like the idea of the occasional meeting of a player far far out in the galaxy as a chance encounter. We do plan to seed things of interest out there too.

Brodie – "Has any (more) thought been put into Crafting within Elite Dangerous?"

I'd love to mine the required resources and then deposit them into a rented factory along with a blueprint and make my own missiles etc". There is already a sort of crafting loop in Premium Beta 1 – for example coltan is mined, then taken to be refined into tantalum, then turned into high-tech goods. Down the line mining machines (as featured in Frontier) and similar elements will be introduced, but that will most likely be after the first release.

"Can I be found in the Premium Beta, and what is my commander name?"

My commander name is Commander Braben, and yes – I am there from time to time.

Dinbar: Will you be building any specific "role play" emotes, tools etc.

We aren't looking at using emotes as they don't really fit the communications system (which is one of the features we're currently working on). Beyond the Text and Voice communications we are looking at there will be pre-defined messages that have additional game play effects, such as the ability to "declare piracy" – an act that can affect your reputation and trigger specific AI responses.

Steve Taylor: Will it be possible to find our NPCs in the finished game?

Players will be able to find starports and systems that they have named by exploring the galaxy! Named NPCs will be encountered randomly during game play.

Duvand: I really like to explore in games, will there be rewards in the game for doing this and what form will they take?

Once a tranquil and beautiful desert planet, HUAN is now being harvested by corporations looking for exploration including straightforward credit payments, access to rare or restricted ship modules, and increases in reputation which open up new mission and event possibilities, as well as increase the likelihood of favourable outcomes when dealing with NPCs and factions.

Caribou: Will there be long range scanners, or some kind of small robot scanner that can hyperspace to a distant system and return some basic info on it?

One of the aspects of exploration we are working towards does indeed have hyperspace-capable “probes” that gather and transmit useful information back to the ship.

Veep: Which ships will get multiple independent shield sections?

Ships roughly the size of the Cobra or larger will have multiple shield zones, and the ability to “push” shield power between them.

Kipper: Little has been said about the mission system as yet, what can you reveal?

Missions fall into several types, but what I suspect you mean is the sort you actively engage in through a contract. These are coming in the Beta, and can earn you both credits and status within the organisation you are working for, whether it is a disreputable criminal group or the Federation or Empire themselves. Initially these will be arranged either through direct messages or on a common message board. More details to follow.

Slawkenberguis: During the Kickstarter we were shown images of ships that were heavily damaged, but still flyable. Is that kind of damage model still something that's still being worked on? If so, have there been any further developments you can share with us?

Yes, it is still being worked on. Major damage, like we showed on the Anaconda in the Kickstarter is coming in Beta. Smaller ships will not survive anything other than minor damage, but the larger ships should still be able to fly (albeit with a ‘limp’) as long as the damage is not to a critical system.

SzaryWilk: Is there a possibility of hiring warehouse space on space stations?

We are taking care of elements that could unbalance the game. We do plan to allow you to store ships (rather than sell or trade them in), but we want to avoid people ‘playing the markets’ with vast amounts of cargo – and the danger is it could become the fastest way of making money, so not at first, at least.

Arn: Will the game include detailed technical breakdowns for ships, weapons, modules and other equipment?

Yes. We will be providing more information than is there now, and also more variants on each type. Most elements of your ship will also have the ability to be ‘tuned up’ to get extra performance/efficiency/weight reduction as appropriate.

Shadowcat: Will it be possible for a player to head towards a sun to temporarily blind an attacker following behind them?

That is not planned (but it is an interesting idea). We have tried to avoid things like this that could work for AIs but might be frustrating for players. We

intentionally darken stars so that you can see them, and if looking towards or flying towards the sun blinded a player, that would spoil the game.

insanephoton: Will NPC ships be generated on the fly each time you enter a new system or will they be persistent objects that you could follow on their trade routes etc?

There are a mix. Some will be persistent, some triggered by circumstances. Following an AI is something that should be possible, once we have tracking through supercruise and hyperspace.

FAQ

IS THERE A GAME MANUAL?

A WIP game manual can be downloaded here:
http://elite.frontier.co.uk/download...Manual_WIP.pdf

I'M NEW TO THE FORUMS, SO WHAT THREADS SHOULD I READ FIRST?

Before posting we recommend that you search for existing threads on the topic you wish to post. There's also some useful threads for getting started with the main discussions on the boards. Yaffle's list of common topics is an excellent place to start:

<http://forums.frontier.co.uk/showthread.php?t=18606>

WHERE CAN I FIND IN-SYSTEM MAPS FOR THE SYSTEMS?

You can find concept for the available systems in Premium Beta 1.0 here:
<http://forums.frontier.co.uk/showthread.php?t=16655>

I'M POSTING A NEW TOPIC SO WHICH FORUM SHOULD I POST IN?

For general beta discussion post in the Beta Discussion forum:
<http://forums.frontier.co.uk/forumdisplay.php?f=52>
 For bugs and technical support for the beta post in the Beta Support forum:
<http://forums.frontier.co.uk/forumdisplay.php?f=53>
 For general Elite: Dangerous discussion post in the Elite: Dangerous General forum:
<http://forums.frontier.co.uk/forumdisplay.php?f=30>
 For gameplay ideas and discussion post in the Elite:

Dangerous Gameplay and Features forum:
<http://forums.frontier.co.uk/forumdisplay.php?f=32>
 For official Elite fiction post in the Elite Fiction forum:
<http://forums.frontier.co.uk/forumdisplay.php?f=45>
 For Elite fan creations and discussion post in the Elite: Dangerous Fan Creations forum:
<http://forums.frontier.co.uk/forumdisplay.php?f=31>
 For general technical support and discussion post in the Elite: Dangerous Support forum:
<http://forums.frontier.co.uk/forumdisplay.php?f=50>

WHERE WILL I FIND THE FORUM RULES?

The forum rules, which we expect all members to follow can be found here:
<http://forums.frontier.co.uk/showthread.php?t=18103>

HOW CAN I EARN MONEY AT A CONFLICT ZONE OR DISTRESS CALL?

Open the right panel, navigate to the last tab*, open the entry "faction" and select your faction there. You cannot change the faction unless you leave the area (with supercruise or by leaving the game) and join again. When you have joined a faction, the opposing side will be displayed red on the scanner, for every enemy ship you kill you will be paid some money (usually 500cr).

HOW DO BOUNTIES WORK?

When you target a ship and the automatic scan has completed, along with the pilot's name you will see either the mark "Clean" or "Wanted". "Wanted" means they have a bounty on their head, if you manage to kill them, you will be paid a sum of money that depends on the crimes the target has committed. You can view the amount that a target is worth in the contact list on the left panel.
 When you shoot at a ship that you haven't scanned

yet or is marked as "Clean", you will get a bounty on yourself, and other pilots may hunt you for money.

HOW IS A KILL COUNTED FOR BOUNTIES OR CONFLICT ZONE PAYMENT?

Whoever scores the last hit before the ship reaches zero health gets paid. Hits after it is already at zero health but tumbling for a few seconds do not count.

HOW DOES SHIP INSURANCE WORK?

When your ship is destroyed, you can choose to receive a free Sidewinder identical to what you started with the first time (with light armor and one pulse laser). You will keep all your money and can get a free Sidewinder as often as you like. If you choose to receive your old loadout again, the sum of money displayed will be removed from your account, and you will respawn with a ship and equipment identical to what you had before it was destroyed, fully repaired. If you don't have enough money, you can only receive the free Sidewinder (later you will be able to loan money in order to keep your old loadout when you are broke). Regardless of your choice, you will respawn at the last station where you have docked.

WHY DO I NOT SEE ANY PLANETS?

You probably have turned on the "AMD crash fix" in the graphics options. This option should not be needed any more, it is a leftover from earlier stages of the game.

HOW DO I USE SUPERCRUISE?

Take a look at Fangrim's excellent guide to supercruise:
<http://forums.frontier.co.uk/showthread.php?t=18617>

HOW DO I GET PERMISSION FOR DOCKING?

Bring up the interface and select the left hand panel. Select Contacts and if you're close enough you should see Coriolis Station or something like that or maybe the name of the station. Select the station and you should get a choice of Lock target or Request Docking Permission. Select the Request Docking Permission option and you should get a message on the centre of your hud just above the scanner.

WHY DOES MY NEW WEAPON NOT FIRE?

You need to set them up in a fire group using the fire groups panel on the right of the cockpit. Weapons within the fire group can be set as the primary or secondary weapons so that they are fired by their respective controls.

HOW DO I FIND THE DOCKING PORT FOR A SPACEPORT?

It is always positioned on an 'end' that is spinning anti-clockwise. Looking for the advertising holograms often helps.

WHY HAVE I RECEIVED A BOUNTY?

Probably because you fired on a ship. If you did that deliberately, then be aware that to be legal you must be in a 'warzone' or the other ship must have a bounty. To find it it has a bounty in the current faction, target and point at the ship to perform a scan. It will show as 'wanted' or 'clean' in the target box on your HUD. To find if it has a bounty outside the current faction, see Kill Warrant Scanner. If you did not fire deliberately, then be aware that a stray bullet or laser that hits a 'bystander' when you are fighting another ship, is enough for you to get a bounty for attacking them: the game does not know your intent!

You can also receive a bounty if you are scanned carrying stolen items or items that are illegal in the current faction.

HOW DO I CLEAR A BOUNTY?

Visit Contacts/Pilot's Federation when Docked, and pay the fine. The fine is a bit more than the bounty.

HOW DO I SEE THE CARGO OF ANOTHER SHIP?

You need to have a cargo scanner installed on your ship and then when you are in range scan the ship for the required length of time.

HOW DO I SEE THE CURRENT FRAME RATE?

Press CTRL+F to bring up the frame rate counter.

HOW DO I FIND OUT MORE ABOUT THE CURRENT GAME DESIGN?

Much of the game's design was discussed in detail in the DDF, you can find an archive of those discussions here:

<http://forums.frontier.co.uk/forumdisplay.php?f=36>

HOW DO I SET MY COMMANDER NAME?

Use the following process to set or change your commander name:

1. Login at: <https://support.orerve.net/>
2. Navigate to the 'COMMANDER PROFILE' tab
3. Enter your desired new commander name in the 'Request a New Name' field and press the 'Request Name Change' button.
4. If this is approved it will update the commander name at the top of the page.
5. If it is automatically denied a red message will appear above the field, stating the reason for the rejection.

6. If it is manually denied the player will receive an email telling them that their name has been rejected, once the batch update is complete.

Note that changing your name will make your previous name available for others to use.

Also note that approvals and import into the game can take a few days.

WHAT ARE THE DIFFERENT WAYS I CAN MAKE MONEY?

You can:
buy and sell commodities in the hope of turning a profit
take part in the ongoing conflict between Dahan and Eranin (remember: choose a faction when you arrive at a conflict zone location in these systems!)
hunt pirates and collect their bounties (from interdictions and at various locations)
Pirate ships to steal their cargo and sell on the starport black market (remember: not every starport has a black market); the best pirates target their victim's cargo hatch, causing malfunctions that eject multiple cargo canisters
Visit unidentified signal sources in the hope of locating and stealing unattended cargo drops
Run into mobile traders looking to buy resources (just fly near to them with the correct cargo to make the sale)

WHAT ARE THE DIFFERENCES BETWEEN WEAPONS?

There are many differences between weapons, some subtle others not so. As a general rule, laser-based weapons are more effective against shields, explosives are the most effective against hull, and projectile weapons offer the best penetration to reach subsystems. Laser weapons tend to put the most pressure on the ship's weapon cooling system and projectiles and explosives require ammunition.

As well as the weapon types, the mounting platform also plays a significant role: gimballed weapons have limited motion, allowing them to track and hit targets that are not directly in front, whilst turrets have full motion and can attack hostiles independently of the commander's main target. Such advanced mounts have their downsides though, tending to be more expensive and less powerful than their fixed bore counterparts.

WHY DO SHIPS SOMETIMES DISAPPEAR WHEN ATTACKED?

This can be caused by a number of issues. The main one is that there is a bug in the code that determines if and when ships should flee to super cruise, causing them to flee almost all the time. This, coupled with the fact that there is currently no feedback for such a manoeuvre manifests as a "disappearing ship" event. Other, less frequent causes can be loss of network communication between human commanders. It goes without saying that we're looking at fixes for these issues (and others as they are discovered).

HOW DO I USE THE AUTO FIELD MAINTENANCE UNIT?

Once this kit is fitted, when you view your module list (it's one of the tabs on the right hand side multi-function displays), you can highlight a module and select it: instead of toggling the module on/off, you will now be cycling it between on/off/repair if it is damaged. Remember: the AFM uses resources to repair and can be restocked by using the "munitions" option when docked at a starport.

WHAT DOES THE KILL WARRANT SCANNER DO?

The Kill Warrant Scanner is a specialised piece of bounty hunting equipment. When you target and

face a vessel, your ship will perform a quick basic scan, revealing the ship's/commander's name, hull and shield strength and the presence of a local bounty if present. Performing a Kill Warrant Scan (remember: assign the Kill Warrant Scanner to a fire group and "fire" it like a gun at the target) cross references the target ship with all known jurisdictions, revealing all bounties associated with it, not just the bounty from the current jurisdiction. When you destroy a ship, you are only awarded bounties that you know about, so this scanner allows you to maximise your profits when bounty hunting. Remember: the Kill Warrant scanner *does not* give you free range to attack; if you open up on a target who is clean in the local jurisdiction you will be committing a crime.

HOW DO I TAKE SCREENSHOTS?

Press F10. The images are saved in:
"your name"\Saved Games\Frontier Developments\Elite Dangerous\Screenshots

I KEEP GETTING INTERDICITED BY PIRATES AND KILLED, WHAT SHOULD I DO?

If you don't want to stand your ground, run! Full power distribution to engines, full thrust away from the radar contacts, and use engine boost 2 or 3 times until you can hit 'C' to supercruise away.

I'VE JUST STARTED AND KEEP GETTING KILLED, WHAT SHOULD I DO?

Discretion is the better part of valour, especially in an unmodified starter Sidewinder. Choose your area of operations and targets wisely – tackling an Anaconda in a basic Sidewinder may not end well. Being too ambitious, too soon, is a common way of requiring an escape pod trip back to the station.... Running

away is a perfectly valid course of action in combat – deciding when it is necessary takes some experience. Combat is not the only option – trading can be a useful way of earning credits to allow ship upgrades (making your Sidewinder less puny).

N.B.: If you upgrade your ship you must pay a 5% insurance excess to receive a direct replacement in the event of a total loss. Remember, the 5% applies to the ship and any weapons and other equipment modifications.

HOW DO I SURVIVE AND THRIVE AT A CONFLICT ZONE/DISTRESS CALL?

If you see any *hollow* triangles/boxes on radar, those are other human players. Be very careful. See who they are attacking, then join the other faction, or you may face a difficult foe!

Select the faction you want to assist using the Functions tab of the right cockpit UI
Look for isolated red radar blips away from the main fight and target them.

NPC enemies usually won't attack you unless you get close, so manoeuvre into a good firing position behind them. Commence combat.

Congratulations, you've earned 4/500CR!
Keep an eye out for hollow red triangles (human players) joining the other side.

If your shields are damaged, retreat in normal flight a few km away from the combat zone to recharge
If you have hull damage, consider returning to a station to get your ship repaired.

Repeat the above as long as you want.

WHAT IS FLIGHT ASSIST ? HOW DO I USE IT ?

Flight assist helps stabilize your ship's maneuvers. When it activated, all you have to do is stop the ship from turning/rolling and let go of the commands, The flight computer will activate the thrusters in the appropriate way so it goes back to straight flight.

There's a penalty in maneuverability, this can make it harder to keep an enemy ship in your aim reticle. With FA off, the ship behaves according to Newton's law of inertia. This means any movement you start, will continue unless you counter-act. So, if you start a roll maneuver, the ship will keep rolling until you command another roll in the opposing direction. With FA off, your ship is more maneuverable, very useful for combat if used correctly. Used incorrectly, it can be disorienting and get you killed.

HOW DO I FIND MY ALLOCATED PAD/NAVIGATION TARGET?

The ship's compass to the right of the scanner points towards the currently allocated docking pad and navigation target. The indicator will be smaller if the target is behind you.

HOW DO I READ THE SCANNER?

The scanner is the circle in the centre of your console (bottom centre of your screen). Objects are shown as a vertical stick with either a triangle or square at the end of them. The other end shows where the object is on the horizontal plane of your ship and their length shows how far above or below you they are. The scanner is logarithmic by default (so a distance at the edge of the scanner represents further than the same distance at the centre). You can change this in the functions on the right hand panel.

Friendly ships are shown green.

Enemy ships are shown red.

Neutral ships are shown yellow.

Other objects (missiles, cannisters, nav beacons) are shown white.

Ships firing at you flash white.

In an asteroid field the larger asteroids are shown as a hollow depiction of an asteroid.

NPCs are shown as a solid marker, players are shown with a hollow marker.

Ship contacts which appear with a square have their hardpoints retracted, whereas those with a triangle have their hardpoints deployed.

WHAT DOES A POINT DEFENCE TURRET DO AND HOW DO I USE IT?

Point defence turrets attempt to shoot down incoming missiles. They are not infallible though, and they require ammunition. Currently they must be assigned to a fire group, though this is likely to change.

WHY IS SIDE-TO-SIDE MOVEMENT (YAW) SLOW?

This is one of several design decisions to improve the feel of gameplay. To quickly target an enemy to one side, roll your ship until your target is above you then pitch up.

HOW DO I INSTALL THE GAME ON A DRIVE OTHER THAN THE C DRIVE?

Currently the installer doesn't support install directory selection although this functionality is planned. In the meantime you can workaround this with the following procedure:

Run the Client-Installer.exe

Choose the drive and/or folder you wish to use. In my case D:\Elite

Let the launcher install finish, if it is running, close the launcher window, do not login

Navigate to where you installed the launcher, in my case D:\Elite, and create a folder called Products in the launcher folder. EG: – D:\Elite\Products

Now start the launcher again, log in and install the client.

When the download is complete you should see the install as automatically installed the client in the folder you created called Product.

If the \Products folder is not in the root of the launcher folder it will default to your boot drive.

HOW DO I LEARN THE COCKPIT LAYOUT?

You can see Keeval's excellent cockpit guide here: <http://forums.frontier.co.uk/showthread.php?t=10215>

WHAT DO THE MARKS UNDERNEATH THE SCANNER INDICATE?

The show the current range of the scanner, it can be increased or decreased by default on the Page Up and Page Down keys.

I WAS ABOUT TO DOCK AND THE STATION DISAPPEARED, WHAT DO I DO?

If this happens then save and quit the game to the main menu. Close the game and the launcher and restart both and then resume your game.

Michael

I PICKED UP A CARGO CONTAINER, AND I SEE IT IN MY HOLD, BUT I CAN'T SELL IT! WHY?

It's marked as "Stolen". You'll need to sell it on the Black Market. (Located under "Station Contacts").

WHAT'S THE BLUE GLOW ON MY SPEED SETTINGS?

The "Sweet Spot" for maneuvering. If you keep your speed in the blue zone, your ship will maneuver better.

I AM AT THE RIGHT LANDING PAD WITH THE LANDING GEAR DOWN BUT STILL IT WON'T ALLOW ME TO DOCK? WHAT AM I DOING WRONG?

You are possibly facing the wrong way. Make sure you are facing the control tower with the spinning radar dish to successfully dock.

I CAN USE MY THRUSTERS TO MANOEUVRE WHEN LANDING BUT NOT IN SPACE. WHY?

Check the options to see which controls are set for using the thrusters, there is also an override so different controls can be used when your landing gear is deployed.

I AM UNABLE TO COME OUT OF SUPERCRUISE EXCEPT AS AN EMERGENCY. WHY?

Your speed needs to be less than 200km/s in order to successfully exit supercruise.

HOW DO I SCOOP CARGO?

To deploy the cargo scoop go to the right (systems) menu, then in the functions sub-menu select "cargo scoop" and it will change to "deployed".

When you select a cargo cannister on the left radar, rather than seeing a representation of the cannister, a blue square with crosshairs will appear. In this is a representation of a cannister.

This is like a mini-game. You now need to use that to keep the representation of the cannister in the crosshairs until it's picked up by the scoop. Don't fly too fast, it will bounce off and take damage. 