

ttk ohtk tks and mks

Extracts

The table of contents is in the back. The first edition was 66,000 words and the second edition is over 150,000, so there's a little more detail in this one. Don't bother with trying to find a copy of the first edition to read; there would be a copy or two out there, and of course I have about twenty of them myself, but it's not worth reading; it's essentially a first draft before I'd decided how much I was going to say about each of the elements. The second edition will be out August 31, 2019.

Firstly, I use epigraphs at the beginning of the chapters to help introduce tone and theme of the chapters, and here are a few of those:

ONE HQ SCHEDULE:

“The water that I take was never crossed; Minerva breathes and Apollo guides me, and nine Muses point out to me the bears.”

Dante Alighieri.

“When did the future switch from being a promise to being a threat?”

Chuck Palahniuk.

PRIORITIES:

“The world is a fine place and worth the fighting for.”

Ernest Hemmingway (For Whom the Bell Tolls).

FIRST MARS MISSION:

“It’s not going to do any good to land on Mars if we’re stupid.”

Ray Bradbury.

(My allusion to the people talking about game or reality shows on Mars; oh boy)

FIRST INTERSTELLAR MISSION:

“It’s a dangerous business, going out your door, and if you don’t keep your feet there’s no telling where you might be swept off to.”

From The Lord of the Rings, Fellowship.

ONE HQ RESEARCH:

“Leaders should lead as far as they can and then vanish. Their ashes should not choke the fire they have lit.”

H. G. Wells.

“Is that Earth; it’s so small.” – “It’s about to get a whole lot bigger.”

From the movie Star Trek First Contact.

(One of my favourite movie quotes; I wonder why)

THE FINAL WORD:

"No great discovery was ever made without a bold guess."

Isaac Newton.

"Truth is born into this world only with pangs and tribulations, and every fresh truth is received unwillingly."

Alfred Russel Wallace.

A few short quotes from the book:

What I'm proposing is about a century ahead of the (Space) suits used by the Apollo astronauts. This is not showing any disrespect, and considering the era we're about to head into, they'd better be at least fifty years ahead, isn't that right.

From SES Tech

When we went to The Moon in the sixties and seventies it was the culmination, an end; when we next go to The Moon this will not be the case.

From The Moon.

The future is not what it used to be, but it can be again.

From Mars Class tks Vessels.

What can you use a candle for; what can you use a glass of water for; what can you use a piece of paper for? Now what can you use a pair of glasses, a speaker and even a carburettor for; learn all the potential applications of a thing.

From Mars Terraforming.

It seems a redundant thing to say in a book like this, and an odd way for one who has created new terms for light speed velocities and measuring enormous distances to think, but I'll say it anyway. These stars are a really, long, long way away.

From The Centauri Stars.

People do not go into things to fail and they become almost immeasurably better with purpose. I was once average; I'm not average anymore.

From Mission Plans.

Do not assume that because our leaders must know more about an issue that what they know would justify their actions.

From First Contact Protocols.

So when we start going all the way to Mars every month, to The Moon once or twice a week; when we have conducted dozens of missions to the various moons in our solar system, and when we start travelling all the way out here and back again, and with some people staying behind and coming back

years later, we're going to need a new word for the dictionary. Cosmopolitan doesn't quite get there.

From First Interstellar Mission.

ALTT: Average Level Terrestrial Terrain is a new designation for altitude on planets where there is no Sea; a term we will need on our very first trip to another planet. No such thing as Above Sea Level on Mars.

From New Terms.

And now some larger passages:

From Introduction.

There are more than a few people who will view this as jumping forward fifty or a hundred years, and they'll be right, so how is such a thing even remotely possible? Do I have everything I say I have in here?

Putting together possible solutions to all the problems of Space travel was essentially my hobby over the period of time in which I was putting together all the details of the H3 organisation and The Prince Principle. When I realized how much I'd developed I decided to put it all together into a book as this quasi-proposal and let the chips fall where they may.

From Charge of the Light Brigade:

Back in the 1950s when we started to see UFOs around every corner we were wrong. Back in the 1960s when we thought we'd have flying cars, high functioning bipedal robots, and interplanetary Space travel by the end of the century we were wrong. In the early nineties when we thought we'd have all of these things by now we were wrong.

And now that our view has switched from the optimistic to the pessimistic and we think these things are way into the future, we are wrong again.

We've become so jaded that it would be absolutely impossible for people to believe that we are on a short path to all of these things.

So if I tell you that we will have our (autonomous but non-thinking) Terminator in about six years, and that we already have the ability to build the empty shell, the body, that could run like a human does at a hundred kilometres per hour using remote control, this is something that must be accompanied with the "yeah yeah, if you say so". After sixty years of empty promises it cannot simply be said anymore; you need to show it.

Now if I also tell you that we can build a spacecraft capable of travelling faster than the speed of light if you believe it is not a barrier, and at least a thousand times faster than any other spacecraft if you think it is a barrier, **right now**, then the "yeah yeah" must be accompanied by a yawn and a roll of the eyes as well.

If someone were to suggest they have that last one then they are also saying they have pushed a half a dozen other technologies up a generation because you couldn't test such a thing unless you had. Now of course if someone is suggesting they had all of that as well then I'm not sure where you go to after the "yeah yeah", and the yawn and the roll of the eyes, but suffice to say that Jerry Maguire would be screaming his lungs out; everybody remembers the main line screamed in that movie don't they. Who could disagree, and that is the whole point of this book.

You're not getting the whole technical picture, but I'm not exactly being withholding on the secrets, well, except one; but the biggest secret of all; the BIG one mentioned above; the spacecraft that will break our current Space speed record by a thousand times the current record and probably a lot more; that's in here.

From tks Propulsion:

This is the key technology that makes everything possible. When you need to accelerate for months to get to a velocity that could facilitate interstellar travel it helps if you don't need to expel any fuel out the back to get there.

tks Propulsion takes us away from what is traditionally considered propulsion and the technology itself doesn't expel any fuel out the back.....

So I suppose you want to know how tks

Propulsion works; how we get acceleration without expending fuel out the back?

This is a big moment; let yourself go and have a bit of fun by following the instructions on the coming pages. Right up until before the final action you can hold the book open in one hand as you perform the demonstration. I telegraph the final action by saying “this is it”. Now if you can’t quite see it with the description I’m about to give you and what comes immediately after, just hold off on your judgement until the very end of the chapter. If you’re not with me before that point, you will be after it.

Here we go:.....

From Light Speed Test:

Of all the elements in the ONE HQ operation and of all the chapters of this book, I think none of them evoke more excitement and hope than do these three little words when you put them together.

If you came out of the tks Propulsion chapter with the impression that tks seems very likely then these three words will be even more thrilling to you. If we wanted to take the risk of collisions on the way and a few other additional risks to boot, we could build and launch an interstellar vessel by the end of 2021; by the end of 2020 if we were willing to cut even more corners. This book contains everything else we need to do to prepare and that’s why it’s going to “take so long”. It would be very foolish to choose to do it by the end of 2020, but we could if we said damn

the torpedoes. And as always the qualifier, assuming it's all real and doable and the test turns out in the affirmative.

Before we continue on in the chapter I want you to remember (or go back and reread) what I said in the first chapter about light speed and time dilation. The bottom line is if I'm right about what I said about time dilation in The Prince Principle, then we are essentially starting from scratch in our understanding of light speed.

From First Moon Mission:

You know if The Moon had feelings it would probably be insulted by this chapter. Apart from a holiday destination and an additional location to conduct low gravity experiments (whose value is less clear than those we will conduct on our Space Stations), what reason do we have to go there?

Before we get into that let's look at some travel times. It will take us about an hour to get to the Gateway Station in orbit (even if we go for a geosynchronous orbit). These Orbital Shuttles will have a direct glide path and will not **need** to complete even one orbit let alone thirty, ten, or four. The journey to The Moon will also have a clear glide path, but the specific trajectory is something that remains to be defined. Those who've done it before or those who have studied The Moon landings would be inclined to just go for the way they did it with the Apollo missions, and this will probably be the way it

is done; essentially a curved “as the crow flies” path. These new spacecraft have vastly superior capabilities to what we’ve used in the past, and we may decide there is a better way to do it with these additional capabilities. Instead of flying directly at where The Moon is going to be when we get there, as we did with Apollo, perhaps a truncated parabola where we come up behind it is a better option. For many years I’ve thought of entering orbit around moons and planets in this way, and perhaps I was only thinking in terms of something different and for the aesthetics and attractive perception of “running these things down”, but maybe there is a better way of doing it (than how the Apollo missions did it) when fuel and speed are no longer issues. However we’re going to do it let us assume travelling distance that is “a little more” than the 405,000km axis at its apogee. Let’s assume the distance we’ll travel will be something between 500,000 and 600,000 kilometres. If we accelerate for about two hours at about 1.5g we get up to a peak acceleration of about 360,000kmph. We flip the spacecraft and decelerate at the same gentle rate. With an average speed of about 180,000kmph the spacecraft will travel over 700,000km in those four hours. We adjust the acceleration and deceleration rate according to precise requirements and it translates into four or five hours before we land on The Moon; we’ll no doubt pause for reflection and effect (and a few final checks) after we attain orbit around The Moon on this (for us) first trip.

The end of First Mars Mission:

So we get to Mars in 2030 and on our very first mission the colonization process starts. Although nobody will be staying behind on this first mission, most of the general mission objectives directly serve the purpose of Mars colonization. We are going to have Mars Citizenship at some point so does everybody on this first mission get that (and therefore a passport), in addition to the fancy visa stamp in their current passport mentioned earlier? My original thinking on this was yes because the idea of having such a thing titillates me quite a bit. My thinking now is NO; we just get our visa because we're not going there to live; and there is something else to consider in this matter. All of us on this first mission get the satisfaction and prestige from being the first to set foot on Mars, and if we also take this (citizenship) prestige for ourselves, I feel as though we will be taking some substantial portion of enjoyment away from those who will actually be the first colonists; people who will be able to lay a valid claim to citizenship as the first actual residents of the planet. As you will have noticed in the book up to this point, I'm not someone who likes to hog all the fun stuff and credit for myself, so I think we need to leave the citizenship and first passports to the actual future residents of Mars (foiled by my own sense of fair play and decency again; rats!).

And by the way did everybody notice the throwaway mention of probes orbiting Mars. Try to

imagine how many other “procedural” elements there are that I didn’t mention in this book. I ran right over the top of another in this chapter as well; did you see it. Redefining and enhancing all that I’ve mentioned in this book is going to be a lot of fun, but filling in all of the corners I haven’t mentioned is going to be even more fun for those who prefer to do things from scratch. This IS going to be fun.

The final thing to point out is that although I’ve only made an allowance of twenty cubic metres for Nitrogen Fertilizer, it is conceivable that we’ll load up a significantly larger volume of nitrogen rich matter on every mission and shuttle service, even on the very first mission. The “Soil” reference in the Equipment and Supplies list includes humus and compost like materials so we get a lot of nitrogen in there as well. Perhaps there will be more allowance for this in all missions after the first, but this is probably enough for the first mission.

From Planet Finder:

This chapter was added for the second edition. I almost didn’t include it as a new chapter because to add a new chapter ruined the poetry of having “42” chapters in a book about heading out into the Universe. Arthur Dent can tell you what I’m talking about if you don’t already know.

If we are to start heading out into the Universe we’re going to need a next generation planet finder to give us direct observational proof that is more reliable

than what we currently have. The main reason I almost didn't include this as a new chapter is because although I am adding in a small new wrinkle to the idea (that may or may not have significant impact), this idea for a more reliable planet finder has been out there for a very long time.

Our next generation planet finder is going to have three or four (or five) largish optical telescopes (we'd use NASA's Terrestrial Planet Finder as the primary source technology). These telescopes will be separated by thousands of kilometres, eventually millions as we get better at this stuff. My wrinkle is to have a few radio telescopes added into the mix. Now superficially it would be easy to think that for direct detection planet finding, radio telescopes could not help, and perhaps even astronomers would hold this view and it may turn out to be the case. But this universe is one big anisotropic soup, whether we're talking about the CMB or other incidental radiation or particle density or icy and rocky debris or Dark Matter and Dark Energy (which could have enormous impact on how clearly we see objects at great distances if the two exist; I'm not convinced they do), so if we have two, three or four radio acquisition points each millions of kilometres away from each other, they will be able to provide data on this and subsequently give us an additional, possibly even critical, filter through which to interpret the data coming in through the optical telescopes in the array. I don't know if it will have any impact on our ability

to detect planets, but I do think it will allow us to filter out “background noise” so we can get clearer data about the many stellar phenomena we point our radio telescopes at. Who knows, perhaps multiple radio telescopes separated by millions of kilometres may be the only way we can receive clear radio data through the interstellar medium; I don’t think this is a terribly radical idea, and in fact several of the possible issues I allude to in the Interstellar Loops chapter would be at least partially addressed (if they are an issue), and what we’d learn from them being partially addressed would allow us to make well reasoned assumptions on how to clear “the picture” up even more. Did I put that in a way that can be easily understood? I hope so.

The end of ONE HQ:

ONE HQ itself is going to be very large. Imagine a large university campus (the Training Academy), then add seven landing platforms, four of which need to be one hectare each and three need to be two hectares each; and there should be about two hundred or three hundred metres of clear space around each. These landing platforms also need to be about one kilometre away from the main building and there needs to be an unobstructed view between them. We then add five shipyards and one maintenance facility that will each take up about two or three hectares. They will be positioned away from the landing platforms behind the main building on a large

circular (or elliptical) road that encircles the main building and leads to the landing platforms. We need the main building, and all of the other buildings required for 30,000+ administrative and Mission Personnel. We're going to do a lot of components manufacturing onsite rather than contract it out so we'll need a lot of room for that. We need manufacturing facilities to build all the support spacecraft and onboard equipment. We need large facilities for aeronautical, botanical, and astrophysics research, including a wide five and half kilometre long runway capable of handling aircraft/spacecraft larger than an A380 if necessary (we'll probably put another landing platform over here as well). We need room for however much residential accommodation we decide to build onsite, and we need plenty of room for expansion because this should be our main spaceport for a long time; and who knows what other buildings we'll need in the future. So when we add all of this up it's a site that is at least seven kilometres long and three kilometres wide for the facilities we know we want to put in now, and if we add another two kilometres to the width this should give us what we need for any future expansion. If I'm wrong about the sound of the Plasma ALP, and our initial experiments will tell us long before we start building the landing platforms, then we'll move them back from the main buildings another kilometre and add another five hundred metres or kilometre to site length if necessary.

And seeing as I've finally mentioned them in this chapter, what do you suppose the technical specifications are going to be for these takeoff and landing platforms? Large flat things like in Star Wars perhaps, or maybe they need to be a "little" more complicated? This is all going to be so much fun.

From ONE HQ Training Academy:

This is probably a good time to qualify intellect because I don't view it as most others view it, and it will have a significant impact on the criteria (for people getting into the Academy). Standard IQ tests, Mensa Tests, are only one indicator of intelligence and are not the most important. Most people believe that a higher intellect requires the absence of feelings and emotions and they actively seek to shed them. From everything I've seen true intellect is able to integrate feelings and emotions into the thought processes. If you try to get rid of them then you are actively seeking to exclude Right Brain thinking from your thought processes. Does this sound like a good idea when said like this; and it IS what you're doing when you try to do it; I insist!!!!!! Without emotional and psychological stability and maturity you can score the highest IQ test in the history of the world and you still will not qualify as having true intellect in my book. High IQ scores are not predictors of how a person can apply knowledge in the real world. High IQ scores are not predictors of being able to think creatively (in spite of what we've been led to think).

High IQ scores are not predictors of all the big I's of creativity; Insight, Inspiration, Improvisation, Intuition and a half a dozen other major "I" words that measure true intellect. You can study for an IQ test, you can study for a Mensa Test (yes I'm afraid you can and people do), but you cannot study to show a display of these "I" qualities that are a collective indicator of true intellect. I have a vague recollection of taking an IQ test back in the late eighties and coming up with something around 150, but that was when I was still predominantly a Left Brain type and I'm definitely not that now (and who knows that may even be a faulty memory or a rigged test by a commercial educational institution; unfortunately we humans all have faulty memories; it IS the nature of our beast to have them; and on the other point if you tell people they're really smart they're more likely to buy what you're selling). IQ tests are an indicator of a certain type of intelligence, but they are not the end of figuring out what somebody can do or might be able to do, they're just one of the "ten" measurements you need to make. Because so many people study for them these days, don't tell me what your IQ is just show me what you can do and what you know. Would I ever take an IQ test again, probably not, but I don't know. It could be fun to see everybody try to parse the idea of a person who can write and create everything inside Eden, Save Steps, The Prince Principle, and this book, not even being able to get 140 on an IQ test when the common wisdom is they

should rate off the scale. I can state with absolute certainty that I would NOT rate off the scale or even close to the top. If I recall correctly speed is an issue in these tests, and I've purposely slowed my brain down over the last twenty years because I viewed it as an avenue to getting better quality thinking; I would definitely NOT rate off the scale.

From First Contact Protocols:

Our region of Space is not going to be brimming over with Klingons and Romulans and Cardassians and Breen and Andorians and Tellarites (that they're all incredibly belligerent is another issue altogether). I'm happy to let others prepare the First Contact Protocol for when we run into the "Tellarites". A set of protocols for when we encounter our first society of Lucys is a far more important task.

Now if our local neighbourhood **is** brimming over with intelligent life at roughly the same stage in the development cycle as us, I would view this as an indication that there just might be a God after all. The chances of our local group containing intelligent life this comparable, and lots of it are, I don't know what the next step up from astronomical is. This wouldn't convince me there was a God but it would be a very big step closer. My current beliefs on God are wait and see (to put it sweetly), and such a thing would be a hell of a show and tell. I would be getting old by the time we found out, so it just might convince me. Of course the amusing little showstopper on that last

idea is that we are so advanced now, and we can think so far ahead into a technological future, that there is nothing, Nothing, NOTHING, that could provide proof of God anymore. Any amazing God like feat, even every amazing story in The Bible, and feats far more amazing than those, can be explained away as something a civilization that is millions of years ahead of us could conceivably do, and of course it wouldn't even need to be millions of years if we add pharmacology into the mix now would it; or whatever a species replaces pharmacology with when they get to that point?

From Interstellar Loops:

And one more relevant idea that I also mentioned in an earlier chapter, is that we may well be getting a thousand Alien visitors per day, and there is not a chance in a billion we would ever know if they didn't want us to know. It's a safe bet that none of these UFO sightings would be alien spacecraft. In as little as two hundred years from now our technology will be at such a level, that another species at our current stage of development would not be able to detect us. That's just two hundred years; and any other advanced species in our neighbourhood would almost certainly be tens of thousands, hundreds of thousands or millions of years ahead of us, so what chance us detecting them? Even if there were a thousand advanced civilizations within two hundred light years (or about 190htk in the new terminology), the

chances of any one of them being within a hundred years of us, developmentally speaking, is well over a thousand to one. And finally on this point, many have said something like, “if they exist and are close enough to visit, why would they bother with this backward little planet”? Such a thing is an overwhelmingly silly view to hold. How many microbiologists, bacteriologists, virologists, entomologists, anthropologists, archaeologists, and palaeontologists do we have on this planet? Science! Any advanced civilization is not going to continue to be an advanced civilization if all they want to do is zoom around the cosmos for superficial pleasures; indeed, science is going to be a large part of their recreation. We WOULD be a scientific curiosity, even if there were ten thousand other nuclear age civilizations currently developing in The Milky Way.

But of course the button hole for all of what I’ve just said is, if the “galactic civilizations” are numerous, and if there are any close enough for us to have been noticed (it’s a big galaxy let alone Universe). I believe it to be as certain as anything we know right now (yes that certain) that not only is there other life out there, but there is other intelligent life out there; and that from the perspective of the entire Universe, that there are millions of advanced civilizations out there. At this point we have no data, NO DATA, to tell us either way, so to suggest that there may be only a few in our galaxy, or a few million (in our galaxy alone), is a superficial conversation to

have for fun. There is no science-based conversation to be had on the subject; not at the moment. Now many would believe that I've just done a "Romney" or a "Ryan" or a "trump" in saying one thing and then essentially contradicting myself in the very next sentence. Let's have a look at that and see if I just did:.....

From Ship Naming and Names:

I believe this method or something similar to it is the best avenue for naming our spacecraft, but as with everything else, I'm not tied to it. Having designed what is in the H3 Agenda, and then everything in this book as well (as always assuming it's all real and doable) there are a few things I would like to name:

The word Albedo (in this context) means the reflected light of the world, and there is therefore no better name for both a world capital and the first spacecraft that is part of the group of spacecraft (tks Class Vessels) that will take us all the way out into the Universe.

Al Sirat (or the most popular iteration of that name) is the name I would like to put on the first Kuiper Class. It is the term used in the Muslim faith for the bridge to paradise, and you are transported across it at great speed if you have done good deeds in your life.

Bifröst is the name of the rainbow bridge from Midgard (Earth) to Asgard, which is always depicted as being a very long distance, and this is the name I

would like for the first Centauri Class. In the wake of the Thor movies we should probably learn how to say it as well. There is no such thing as a bi-frost. The pronunciation should be beevrost, or beefh-rost if you're having a hard time getting your brain around the idea that an "f" can sound like a "v".

These are unusual names, which is a big plus, and the symbolism behind them couldn't be more appropriate. These are the things I want to name.

From New Terms:

Standardized Star and Planet Naming System:

Nomenclature designed to simplify classifications once we start actually getting out there and visiting other planets. In the name of the star, A or B first, then numerical designation, then word designation. For planets in the system we add 1 to 9 or more representing its place in the solar system, and then if we wish to refer to a moon around a particular planet we use a, b, c etc. So if we want to refer to the fifth moon of the eighth planet around a star currently named Lalande 21185 we would refer to it as 21185Lalande8e. To refer to the second moon of the second planet around Centauri B we would use BCentauri2b. To refer to the first moon around the sixth planet of the alpha star of 61 Cygni we would use A61Cygni6a. We do need to standardize this system at some point otherwise it will get terribly confusing when seeking to reference planets and moons around stars such as Luyten 726-8 A or the other examples

suggested above. It doesn't need to be this, but numbers and letters need to be out of each other's way and this seems to be roughly in accord with how we humans think.

Standardized Star Classifications (Spectral Class):

Instead of O B A F G K M and numbers down to 7 to classify stars, the new classification is both simplified and has more specificity. An O7 Main Sequence star would now be a 1gMS or maybe 1.7MS would be an even better option. There is no need to make the rudimentary references harder to remember than is absolutely necessary; there is enough complexity out there already, and it's about to get a whole lot more so. I'm okay with the Fine Girls Kissing Me and so would all others who have been brought up on it, but a decimal system seems to me to be more appropriate here.

(If you don't already get it, you can't get "any joy" by looking up Fine Girls Kissing Me on the Internet, so you can either ask an astronomer or wait for the book and look up the glossary. I suppose you could look up "O B A F G K M" on the Internet and that'd give you the answer.)

From The Final Word:

I had an idea, about a dozen years ago now, and to actually talk about it at this early stage would sound ridiculous to almost everybody. When I related this back in the first edition I both suggested it as a possibility and sort of mocked it at the same time.

This idea has had another seven or eight years to cook inside me, and although it is still in the realm of the fanciful, I'm leaning more towards it now than I used to. I guess that's the way some things go in that I used to be more for Quantum Entanglement being real or useful in the way we need it to be; some things seem less likely after cooking and some seem more likely.

Allow me to preface this by having a brief interlude on neutrinos. Billions of them are passing through you all the time and you can't feel a thing. We haven't been able to see them directly yet and this would be consistent if they travelled faster than light. We assume they cannot travel faster than light because it's "impossible" to travel faster than light. We can't detect or measure them directly so we can only assume their properties based on rare interactions with matter. They can pass straight through us and everything else without harming anything primarily because they are chargeless. The circular logic comes in again to allow us to assume they are chargeless because they can pass through everything without harming (or interacting with) anything (mostly). We can't detect them directly so we need to assume a lot based on the view we currently have of the Universe, and we've recently given them a promotion from massless to having some indefinable mass so the picture is still changing in our view on neutrinos. How much does this picture change and in what direction does our research go if we learn that there is no cosmic speed limit?

We are about to move into the age of either close to light speed propulsion or faster than light propulsion; there is no doubt about that (tkS IS going to work). For the sake of this final word, let us look forward and say that it will be faster than light.

The idea I had was if we were.....

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