



Interview with Eric Albrecht

The Techniclopedia creator and LEGO® Technic Blog member

By Hispabrick Magazine

Pictures and renders by Eric Albrecht

HM: Name

Eric Albrecht (aka Blakbird)

HM: Age

EA: 38

HM: Occupation

EA: Aerospace Engineer

HM: Nationality

EA: USA

Techniclopedia

HM: How did the idea of creating Techniclopedia come about?
(how did you get started on Techniclopedia?)

EA: I started buying Technic sets in the late 1990's. I quickly bought all I could find on the store shelves and found that I was not sated and still wanted more. I knew almost nothing of the AFOL community at the time, but I found Lugnet and was able to search the set database there to see what other Technic sets existed. Based on nothing but the small images available there, I made a list of the other sets I wanted to acquire. At the time, I used mostly eBay to start collecting those sets from around the world. As I went along, I found that many of the sets were not what I expected from the picture, and were almost always better. This led me to expand my wanted list gradually until it included everything.

Once I finished the collecting aspect I actually built a structure on my property which was part woodworking shop and part LEGO® display room. I put all of them on shelves and tried arranging them different ways, either by year of release or by

topic. As I did this it occurred to me that it would have been very helpful to me when making my wanted lists to have had access to some sort of list or database that actually compared the FUNCTIONS of the sets and not just pictures of their appearance. After some more checking on the Internet I found Jim Hughes wonderful Technica site. This was the only site I could find which was fully dedicated to Technic. I found the element registry marvelous and although the site also had a listing of sets, it still did not have the kind of details and comparisons for which I was looking.

Since I had spent so much time and effort collecting and was finally done, I felt that I needed an outlet for my LEGO energy and I wanted to give something back to the burgeoning LEGO community that had given so much to me. It also occurred to me that there may be very few people (if anyone) on the whole planet who actually had all the sets and would be capable of documenting all of them, and my engineering background put me in an excellent position to understand and describe the mechanics of the sets. Therefore in some way I felt it was my responsibility to take on this task in gratitude for being given the ability and resources to acquire all the sets in the first place.

Once I decided to document all the sets, I very quickly knew I wanted the site to be the most complete, technically accurate, and useable resource that I could produce. I always intended to do the whole thing on my own, although since then a number of people have contributed their help in various ways. I purchased the domain name and started work almost immediately after coming up with the idea. The original concept was to describe each set, organized by year, and explain in detail each function with a corresponding stop-motion animation. The scope has expanded since that time, and I continuously find myself going back to add improvements to the existing years such as more computer renders, LDraw files, and revolving animations. Other improvements are still planned.



HM: How many Technic sets do you own?

EA: The short answer is “all of them”. The longer answer is more complicated. According to my Lugnet set list I own 287 sets although not every one of those is Technic. The other complication is what you consider to be a Technic set. I always considered the Expert Builder series to be on the list, but what about all the supplemental sets? From a collectibility standpoint I want to get all of them, but most of them aren’t very interesting from the point of view of functionality since they are just extra parts. Later years get even more confusing because the Technic logo was put on various other products such as Star Wars™, Racers, and some of the first Bionicle sets. I have all of the Star Wars Technic sets and all of the Racers that I personally consider to be Technic whether they actually have the logo on them or not. I consider Bionicle a wholly different product than Technic and I no longer have any of those. I also don’t consider Mindstorms to be Technic even though it uses Technic pieces. These are my own decisions and other people no doubt have different opinions.

I also own about another 75,000 parts worth of Technic MOCs which I have on display designed by such people as Jennifer Clark, Crowkillers, Han, and Grazi.

HM: How long did it take you to get all of them?

EA: I started purchasing Technic sets ~1998, although I didn’t have the goal to get all of them until several years later. It was about 2006 when I considered my set “complete”, although to this day I still occasionally find a unique set that I never knew existed. Between that and the fact that new sets keep coming out twice a year, I will never be done. Don’t tell my wife.

HM: Which one was most difficult to get?

EA: There were several times during my collecting when there was a “Holy Grail” that I just couldn’t find and focused all of my energy. In the early days I did not know about Bricklink (or it didn’t exist yet) and I was doing all my searching on eBay.

I remember that I had an active search open for the 8862 Backhoe loader for 6 months before I was able to find a copy that was almost complete. Even then it was missing one of the big rear wheels (24x43). It turns out that particular part only exists in yellow in this one set so I thought I had no hope of replacing it. It sat on my shelf with no rear wheel for over 2 years until I found Bricklink. I now have 2 copies of this set but still don’t have a box.

The 858 Auto Engines were also extremely difficult to find, even on Bricklink. This set cost more money per part than any other set I have even though none of the parts are very unusual.

HM: Asking you for your all-time favourite Technic set would probably be asking for the impossible, but could you narrow it down to maybe 5 or so?

EA: You’re right, that is a very difficult request! Since I have so many, I tend to favor sets which are unusual or special in some way. I love all of the Auto Chassis sets although 8880 is my favorite. 8480 is near the top of the list because of its tremendous functions, beautiful looks, and unique subject. Both Control Centers (8094 and 8485) are incredibly clever and unusual as is the 8479 Barcode Multi Set. I can’t neglect the 8868 Airtech Claw Rig with its pneumatic compressor. All 3 of the big F1 cars (8458, 8461, 8674) are magnificent and have incredible tires. Among the newer sets, I really like the 8421 Mobile Crane and the 8265 Wheel Loader.

That’s more than 5 isn’t it?

HM: And you favourite mechanism?

EA: For gear systems, I love any of the sets with synchronized transmissions like the 8880, 8448, and 8466 cars. The 8480 uses the same transmission for switching functions instead of switching gears, and so does the much newer 8258 Crane Truck. The 8258 was also the first time in an official set that dual concentric gear functions were passed through a rotating turntable. Bravo.

For pneumatics, the 8868 Airtech Claw Rig and 8455 Backhoe Loader are the best.

For mechanical linkages, I really like the lift mechanisms on the 8292 Cherry Picker and the 8289 Fire Truck. The geometry is just perfect to allow both primary and secondary booms to stow in the correct position and also to extend to full height with only one input.

HM: What mechanism would you like to see in an official LEGO® set?

EA: The dual functions passing through a turntable I mentioned above is something which AFOLs had used for several years and many people were waiting for in an official set. Now that it has been done, another long time request is an electrically operated pneumatic valve.

Personally, I would like to see some sort of planetary gear set (the Power Miners gets close, but is very specific). Technic introduces kids to many different kinds of gearing including spur, bevel, rack, and worm. The LEGO differential first taught me how such a device worked. Planetary gear sets are some of the hardest to grasp conceptually, and are yet among the most useful. I'd like to see a real planetary gear set in which the sun gear, the ring gear, and the planetary carrier can all be used as either input or output. This would allow you to properly simulate an automotive automatic transmission as well as making large gear reductions very compact and efficient.

HM: When do you expect to finish the Techniclopedia project?

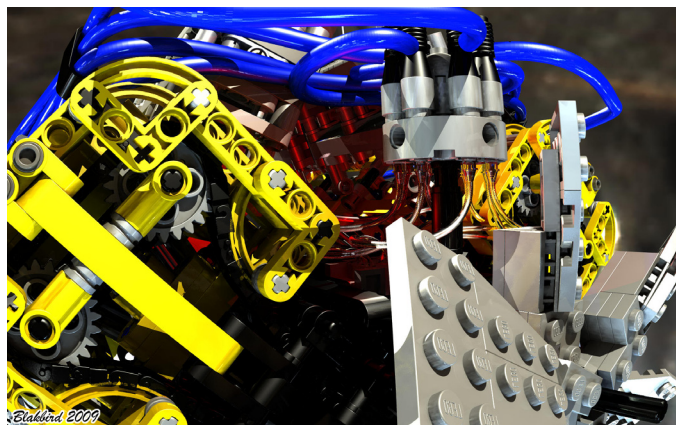
EA: As I mentioned above, I don't think it will ever be truly done. When I started, I was covering about 1 year of models every month. With about 30 years to cover, I would have theoretically been done in less than 3 years. However, later years have more complex models and more of them, and I find that I have less and less time to spend on it. So far this year, I have released only one update. I have been "almost done" with 1995 for the last 4 months! Realistically, I would be pleased if I could catch up to present releases within the next 3 years.

HM: In one word, Liftarm or Technic Brick?

EA: Technic Brick is two words. I like them both and both have their optimum uses. Liftarms are better for trusses and linkages, bricks are better for rigid structure and chassis. I hope the old bricks never go away completely.

HM: Are you a fan of any other LEGO product lines?

EA: Yes. Before I collected Technic I collected Space and I had every Space set from Futuron through Star Wars of 2008. At



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about that time I had some major life changes and was forced to sell almost all of them to live. I still have the Star Wars UCS sets and several of the Sculptures like the Taj Mahal and Statue of Liberty.

LDraw

HM: Why do you enjoy making LDraw instructions of MOCs?

EA: Because I have serious mental problems. ;-) I had actually never used an LDraw tool prior to starting Techniclopedia. I found that I could not get all of the images I needed of the mechanisms through traditional photography. I needed to be able to strip away the structure and just see the mechanisms. I quickly found that most of the Technic sets had never been modelled in Ldraw (that I could find), so I had to start creating much of the material myself. At first I was terrible at it. MLCAD is not really set up for Technic since the parts often do not align to a stud grid and may be placed at odd angles. In the early days, I spent about 75% of the time for documenting each year of Techniclopedia on the computer images. Later I had some generous help from Owen Dive and Benjamin Wendl who contributed Ldraw files for many sets, and I also got MUCH better with the tools.

As for why I like making instructions, I guess it is just because it is a major challenge and there aren't very many people doing it. Technic instructions are hugely complicated to produce and there is a sense of satisfaction I get from completing a complex model. One of the first models for which I made instructions was the 4000 piece tow truck from Grazi, so obviously I didn't start small. I've also done a couple of secret projects which may some day be revealed.

HM: What is the secret to your fabulous renders?

EA: I've only been rendering for 1.5 years. There's no secret that I could describe in this space except that it is all about lighting.

Just a few years ago, it was quite complicated to get a model converted from LDraw to POV-Ray. These days, if you have Travis Cobbs' LDView and Lutz Uhlmann's LGEO library (both of which are free), getting a very good quality render is trivially simple. Just export from LDView and the result is very, very good.

I take it a few steps farther by changing the part color definition, replacing the default point lights with area lights, and using a high dynamic range light probe with radiosity. You can read about most of that in Koyan's excellent tutorial on Brickshelf. Occasionally I do even more and add trees, mountains, clouds, etc. I spent a lot of time experimenting with different types of and numbers of lights to get what I thought was an optimum result.

One little secret I'll reveal is that there is virtually no such thing as white light. By default, POV-Ray uses white lights, but in the real world virtually no light source produces every part of the visible light spectrum. I always reduce the blue on my lights by 10% to give a slightly yellow tint which seems much more natural.

HM: Do you have any tips or advice for people who wish to make their own instructions with LDraw?

EA: If you are doing Technic instructions, you have to think very carefully about the build order. System models can just build from the bottom up, but you can't do that with Technic.



I use the latest version of LPub which makes the process reasonably simple, but some concepts like Buffer Exchange are very difficult to learn and not intuitive. I recommend using lots of submodels so smaller assemblies can be shown as callouts on the page. But really, the only way to learn is to experiment for yourself. Don't be afraid to ask questions if you get stuck. Lugnet still has a pretty active CAD forum. There's always more to learn. Kevin Clague's LPub is truly a marvelous work, but it is still free software developed in his spare time! Sometimes there are problems. Right now for instance I am doing a 100+ page set of instructions and for some reason LPub is totally ignoring one of my submodels. I have no idea why.

LEGO Technic Blog

HM: In November 2009 you and two other AFOLs (Fernando "Conchas" Correia and Paul "Sariel" Kmiec) started participating in the LEGO® Technic Blog. So far, what do you think of the experience? Have you received any feedback?

EA: That was a big surprise to me and has been a very positive experience. LEGO is one of the best companies in the world at community outreach, and Monica with the Technic team has been truly inspiring with which to collaborate. It is exciting to be able to reach the audience that the Technic site allows, and it is humbling to realize that a large company like LEGO is willing to let non-employees contribute in such a public way. I even got a Christmas card from the whole LEGO Technic team!

Miscellaneous

HM: What do you think about the use of custom parts in Technic MOCs, like some famous builders have done?

EA: Personally, I have no problem with it. LEGO is an outlet for creativity, but not everything can be accomplished with stock parts. In these cases, I can understand why people choose to extend the medium to make their creations fully come to life. On the other hand, my preference would be to try to find a full LEGO solution whenever possible since that is part of the challenge of model building.

HM: Some people were a bit critical when you decided to sell instructions for the Crowkillers Gallardo. Would you like to

comment?

EA: A bit? ;-) From what I have seen, the single biggest request from commenters on MOCpages and Flickr is for instructions. Everyone wants them and practically no one wants to make them. The reason is that making instructions is significantly more time consuming than building the model itself and at the end you don't really have anything for your efforts. It took me a couple of hundred hours to do the Gallardo which I mostly just did for myself. But I thought I would put the instructions out there and see if the interest level was high enough to do that more often. I am surprised that some are so critical of what other people choose to do with their time and talents. Each person can make the choice of sharing their work for free or for profit, and each person can choose whether or not to buy it.

HM: If you had the chance, would you leave your job to become a LEGO Technic Designer?

EA: That would certainly be a dream come true, but at the moment I would not be able to leave the Seattle area since I only get to see my kids part time and I would not see them at all if I moved to Denmark. But in the future after they are older I would be very interested. My wife and I have even talked about the possibility.

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