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Join Date: Jan 2005
Location: Munich/Gemany
Posts: 9

Tornado Avionics, Displays...

Dear Tornado-Techies,

in 2005 I asked on the "Spectators Balcony" of pprune regarding a black-box I got via eBay and which should be from the early RAF-Tornadoes where it has been replaced by something newer. In the last years I reverse engineered this one as a very interesting hobby project. This box called

PROGRAMMER ELECTRONIC CONTROL

contains a full 12bit computer with 8192 words of core memory and I was able to bring it back to live again, i.e. I can write programs for it now and I even connected a LCD to the box for a first "Hello World" program. A report on this restoration project can be found in the vintage computing mailing list via this link:

<http://www.classiccmp.org/pipermail/...ch/075079.html>

An slightly modified version is available via pdf from the following link:

<http://www.baigar.de/TornadoComputer... ReportPEC.pdf>

As I got quite far, the question arises, what the original purpose of this box in the Tornado aircraft was . From some input I conclude, that it must have been responsible for controlling some of the displays in the back cockpit. So I got some books from Dour Richardson and Andy Evans to learn about the Tornado and the displays in question are named the TV-tabs or the CRPMD.

Maybe on this forum there are people still knowing about technical details on these vintage displays and whether the "Programmer Electronic Control" was involved here, too?

Did the TV-tabs include some kind of analog storage included? From discussion in the German forum "www.flugzeugforum.de" it is obvious, that German and UK versions of the Tornado are different. Are the displays, too?

As every techie might imagine - the real dream would be to have one of these original displays to connect it to the box. In Germany trashed equipment is often sold on auctions (www.vebeg.de) to the public. Is there something similar in the UK or is there an other way to locate one of these vintage displays?

Any hints are highly welcome,

best regards,

Erik.

P.S. the RAF-version of early Tornado contained a TV-tab like display for the pilot, as well. Was this display technically similar to the TV-tab?

Last edited by baigar : 15th August 2007 at 12:36. Reason: Format looks bad...

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[Nige321](#)

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Join Date: Jul 2003
Location: Brum
Posts: 98



Erik

A fantastic piece of work, but don't you think you should get out more...🤔

N

[soddim](#)

I've only made a few posts so I don't feel the need to order a [Personal Title](#) and help support PPRuNe

Join Date: Feb 2003
Location: earth
Posts: 942



One of the stickers is from GEC Marconi - I know one major component of the early F2/3 made by them and it was little better than the concrete it replaced!

If your box is part of this equipment and you got it to work you did a lot better than the RAF who had to spend lots more money and effort to turn it into the good piece of kit it is today!

[Olly O'Leg](#)

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Join Date: Aug 2001
Location: Bonny Scotland
Posts: 118



Quote:

named the TV-tabs or the CRPMD.

Maybe on this forum there are people still knowing about technical details on these vintage displays

VINTAGE!?!?!?! Cheeky Monkey!!! 🤔

[WannaBeCiv](#)

Instead of being 'just another number' I could order a [Personal Title](#) and help support PPRuNe

Join Date: Jun 2007
Location: UK
Posts: 23



This doesn't really answer your question but to give you some more info - The F3 has 2 TV tabs in the back and 1 in the front. They were all monochrome (green) then a few years ago the rear ones were replaced with colour displays, but they can only be operated in monochrome (makes things a little tricky with 30 odd tracks on!) The front display is still the old tv tab (pilots dont break them anywhere near as often as clumsy navs🤔).

I think that the mono ones all went to the GR4 - but I could be wrong!



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Location: Munich/Gemany
Posts: 9

Hi and thanks for the answers so far. Maybe I have to apologize especially to Olly O'Leg for using the term "vintage" in my question as these displays seem still to be airborne and some people may be annoyed by this term!

For me the term "vintage" is in no way negative. As the development of the Tornado started (I think 1968), the computers of those days were PDP8 with 12bit and 4k of memory. The legendary PDP11 was released in 1970. Both were rather large 19" machines - so it was a masterpiece to put a machine like this into a box like the Programmer Electronic Control. Additionally IO-Devices in those days have been the keyboard and the teletype - graphics displays were NOT commonly available. So these TV-tab displays were ahead of time those days. This is the reason why many people spend their free time in getting hands on and keep machines like this running. So sorry again if anyone feels offended by my question. My only interest is understanding how this interesting technology was implemented...

Best regards,

Erik.

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Quote:

Originally Posted by **WannaBeCiv**
The F3 has 2 TV tabs in the back and 1 in the front. They were all monochrome (green)

In the book "Panavia Tornado" from Andy Evans there is a photo showing the F3's cockpit and your assumption is right. But the pilot's display looks different (only a few knobs below the display) than the normal TV-tabs.

So since the photo in the book shows even text on the pilot's display this is definitely some computer controlled display. Those days displays with internal analog storage were widely used since the computer could draw the information and the display will display it until a change has to be made - maybe the TV-tabs were of this type?

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Join Date: Feb 2006
Location: UK
Posts: 82

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Erik, an interesting project!

As for the box at the heart of your project, I do not recognise it, but I'll ask about.

