

Re: Ares vs DIRECT

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- *From:* Einar <enarbb@xxxxxxxxxx>
 - *Date:* Sat, 8 Dec 2007 13:34:53 -0800 (PST)
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On Nov 21, 12:10 am, Ross B Tierney <krai...@xxxxxxxxxxxxxxxxxx> wrote:

Jorge R. Frank wrote:

ohara...@xxxxxxxxxxxxxxxxxx wrote:

On Nov 18, 2:50 pm, "Jorge R. Frank"
<jfr...@xxxxxxxxxxxxx> wrote:

Brian Thorn wrote:

On Sun, 18 Nov 2007
13:30:11 -0500, Michael
Gallagher
<mikejo...@xxxxxxxxxx>
wrote:

....
NASA
would
simply
have
to
rename
the
DIRECT
vehicles
"Ares
II"
and
"Ares
III"
and
the
general
public
will
hardly
notice.

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Ares
V
would
still
be
a
possibility
for
Mars
farther
down
the
road.

Well, direct
wouldn't be
totally
"direct."

The name "Direct" comes
from "Direct Descendant of
the Shuttle" (same
SRBs, same ET diameter, as
opposed to FSB and 33 ft
core Ares), not
the mode of reaching the
moon.

A strong point of confusion, nevertheless,
and one that I've argued (to
no avail) to the DIRECT team that they
should fix. It's not a bad
architecture, if the objective is to minimize
transition costs from the
shuttle, but it is being sold so ineptly that
they've pretty much
ensured they'll never get a fair hearing until
at least 2009, by which
time it will be too late. If their prime
objective is to make themselves
public martyrs, they are succeeding beyond
their wildest dreams.

Jorge:

You may have discussed this previously but i missed it so
please

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expound on how you think it should be sold vs how they are trying.

I have not discussed this previously.

To understand why I think DIRECT is being sold ineptly, one must first:

1) Know Your Product. You may know already but for the benefit of the rest, DIRECT is not a concept that originated outside of NASA. It is a straightforward evolution of one of the concepts studied in NASA's ESAS report, called "LV-24" (crew launch vehicle) and "LV-25" (cargo launch vehicle). The key elements (4-segment SRBs, ET-derived 8.3 m core stage) were all there. The principal difference is the substitution of RS-68 engines for SSMEs on the core stage (as NASA eventually did with the Ares V). The other principal difference is that the ESAS report concluded that LV-24/25 was incapable of carrying out a manned lunar mission with two launches or less while DIRECT has found a way to do it with two. But the key here is that all the real analysis behind DIRECT comes from NASA, specifically a small group of engineers and managers, primarily (but not solely) from MSFC.

2) Know Your Customer. NASA is far from a monolithic entity but to generalize, NASA has high confidence in its own design capabilities (justified or not), which results in a strong "Not Invented Here" bias against external concepts. NASA is also politically vulnerable which results in a strong "circle the wagons" response to perceived external attacks.

So given the above, how did the DIRECT team choose to sell their concept?

1) Stay anonymous and get a bunch of internet frontmen outside NASA to push the concept. Probably the single biggest mistake. It creates the perception that LV-24/25 came from outside NASA, provokes the circle-the-wagons response, and makes it virtually impossible for Griffin to embrace the concept without losing face.

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2) Name the architecture "DIRECT". Betrays an extreme ignorance of history (namely, the Direct vs EOR vs LOR debates of the 1960s), leads to confusion.

3) Name the launch vehicle "Jupiter". Nice and catchy but the name has been used before, also leads to confusion, and it blurs the vehicle's actual origins as ESAS LV-24/25. They should have kept it as LV-24a and 25a internally, allowing it to smoothly transition into the Ares family.

4) Insult and belittle the customer. Not directly the fault of the managers/engineers who originated the concept, but sadly inevitable given the choice of internet frontmen.

5) Comparing oneself to John Houbolt. Again not the direct fault of those behind LV-24/25, but when one of your internet frontmen quotes Houbolt in his .sig, it's also kinda inevitable.

For my opinion on how LV-24/25 *should* have been sold, one need look no further than Houbolt. He pushed the concept strongly internally, but not anonymously. He signed his own name to everything he wrote, he put his own career on the line, he never went public while the debate was going on, he never invented his own names for concepts being debated internally, never even dreamed of having outside frontmen sell his concept for him, and he let Von Braun take credit for the decision. Of course, history vindicated him and now we all know Houbolt as the father of LOR.

LV-24/25 is a good concept, one that strongly deserves a second look now that Ares I/V are running into development problems, but the guys developing and selling it aren't worthy to shine Houbolt's shoes.

Jorge,

Your post was forwarded to me yesterday. I am one of the "internet front-men", as you termed us, for the DIRECT proposal. Perhaps I'm thus in a good position to reply. I haven't spent much time on usenet for about ten years, so please forgive me if I'm a little rusty with the local netiquette these days :) This is going to be a *LONG* read, sorry.

I appreciate your comments, and actually agree with some. There

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are a few points which need clarification too. I think it would be beneficial if I walk you through the entire process from my personal perspective.

IN THE BEGINNING

I'm a self-confessed amateur rocket scientist myself, with no professional background in this industry, nor with any qualifications in the advertising/promoting world. I've never claimed to be more than I am – an outsider who got into something a lot bigger than himself.

I have a passion and deep interest in the works of NASA, and spent a lot of time following the release of the ESAS Report chasing details. "Something" never quite added up with that document for me though. I couldn't identify it, but it niggled me like a dull toothache until I was able to discover it. I initially supported NASA's choices though, even going so far as to write a three-part article supporting Ares-I. However, I eventually discovered a set of the ACI Draft version of the ESAS Report which included the cost figures behind ESAS which was the first crack in the proposal which I found. The real revelation came when I found the NASA costings for the pair of launchers ESAS had promoted – the LV-13.1 CLV and LC-27.3 CaLV (before they were named Ares) and realized that although we were deleting the complicated and very costly "Orbiter" element from the whole equation, the new launcher choice was still going to match the cost of the retiring system.

That simple fact just didn't make sense to me so I started investigating alternatives on my own – purely for fun at the time.

The argument I heard was that the new LV costs needed to match Shuttle thereby providing sufficient work for the existing workforce. This just didn't hold water for me because the EDS, LSAM, the Lunar Base elements and Science hardware are all going to be additional elements which have no correlation today. I was convinced that they would, together, be more than large enough programs to take up any slack created by reducing the launcher costs.

The ACI Draft ESAS Report showed very clearly that two vehicles would cost roughly double the cost of any individual one. It seems obvious now of course, but it was a revelation to actually see it in NASA's own documentation. From that point, it isn't a big leap to work out that one small launcher (CLV) and one very large launcher (CaLV) could likely be replaced by a single vehicle somewhere in the performance region in between. It seemed logical enough to me at the "broad strokes" level anyway so I decided to look around for alternatives.

Coincidentally with all this, I had just completed a fairly detailed study of the STS infrastructure, performance and costs at the time. It occurred to me that the standard Shuttle Stack was actually in precisely that middle-ground if only the system were re-configured by not making the payload carrier so heavy (99mT Orbiter) compared to the payload

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(16mT to ISS). An in-line solution (LV-24/25 in ESAS) seemed to back up this conclusion quite well, being only 25mT lower performance than the ESAS LV-27.3 CaLV without an EDS.

ESAS never published a figure for LV-24/25 performance with an EDS, which I found very 'curious' from the first moment. Also the explanation that LV-24/25 was a three launch solution requiring an LV-13.1 "Stick" launcher to loft the crew didn't hold water either given NASA's own Report showed that the LV-24 CLV variant exceeded NASA's minimum LOC requirement of 1:1000, yet was never included in the running for CLV use.

PEER REVIEW

Armed with this – and LOTS of questions – I put a brief summary together and put the idea on a public forum (nasaspaceflight.com – NSF) for peer review.

That was when things snowballed in a direction I had never considered. Within 48 hours I was contacted privately by about twenty different NASA & contractor engineers and managers who all said roughly the same thing: "well done, this is what we should be doing, need any help?".

While I had another hundred contacts who just expressed support, those 20 offered their time and expertise to refine the idea into something a lot more serious than I had ever planned. I was game if they were.

Most made it very clear though, that they wanted anonymity because they had serious concerns about speaking out against management's plans in any way. At this time there were already a lot of "stories" floating about regarding staff persecutions following Lockheed-Martin's attempts to convince NASA to look at Atlas-V again as an alternative for the CLV because they felt so very unfairly treated by ESAS.

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Just wanted to thank you for this enormously interesting post. I've sort of not been paying close attention to this matter for the last few month's and didn't realise that Nasa had such a severe problem with it's Ares'.

The idea you people are pushing appears to the standpoint of a pure know very little to be very sensible, if it's really true that all this extant infrastructure can be reused. Building a new one, and really two new ones must alone cost a bundle and then some.

I wish you people all the luck in the world and the satisfaction of

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seeing your proposal put into use, knowing you had positive influence.

Regards, Einar

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