

NASASpaceFlight.com Forum

General Discussion => Historical Spaceflight => Topic started by: RedTail48 on 2017-08-03, 23:34:38

Title: **Original Peter Hunter Photo Collections**

Post by: **RedTail48** on **2017-08-03, 23:34:38**

Hi All,

Firstly I'd like to emphasize that although these collections are titled with my name, this is for convenience of recognition, NOT to claim "ownership." They are the result of many people's efforts to preserve this information. I do claim to have consolidated photos and other information from those many sources.

In particular I'd like to recognize, for the Atlas Archive, the efforts of Bob Bradley and Dick Martin (RIP) of San Diego. Bob sorted through the immense numbers of negatives and positives from the old Convair/GD archives to select the images I scanned and processed. Dick hosted me whilst staying there and patiently input data into my database of Atlas flights, and supplied numerous schematics from his personal Library collected in his position as Honorary Atlas Historian.

Some of the sources for these materials preferred not to be acknowledged. I thank them for their willingness to share and shall honour their requests.

For all of the collections, Joel Powell and Art LeBrun (RIP) coordinated efforts to positively identify certain photos from various confusing situations arising from loss of photo archive catalogues, inaccurately captioned photos etc and supplied missing items from their own collections.

We all owe Jonathan McDowell a huge debt for his massive continuing on-line database which has been the basis of flight listing details. I must mention here that Flight Listing Reports and Photo Captions have become dated due to the declassification of several programs. I won't attempt to update the photo captions, but I will aim to update the Flight Listings and repost them. In the meantime I trust the other data in them will be useful.

I thank the various Publications who granted permission for their Articles to be reproduced.

We have all benefited from the quiet efforts of various people over the years who have evaded efforts to "clean out all that old stuff" as requested by new-broom management. Sadly, in following various leads, I met the reply "Yes, we had lots of that sort of stuff, but we had to get rid of it last year."

I would like to thank those folks who opened their doors to an enthusiast from far-off who talked a bit funny on the phone, but seemed to be worth supporting!

You will note my collecting, as far as Atlas and Delta goes, ceased with my retirement a few years ago. But I'm sure you'll be able to fill the following years without too much effort.

Now to business: Below are the links to my DropBox with the following content: Atlas 50th DVD, Thor-Delta DVD, Titan (images only) . Please advise soonest if they work ok!

I have not uploaded the full size 8x10 600dpi TIF image files. I can upload individual ones on request. If anyone wants a complete set I'll mail a small USB stick on condition they find a safe and permanent way of publicly archiving them.

Atlas: <https://www.dropbox.com/sh/aposvvnvjuig0nv4/AADfIEORE7KyImxKhzfYajuda?dl=0>

Thor-Delta: <https://www.dropbox.com/sh/oabua86jr8stbxc/AABTDKpU8PBHQhfahUgZvOUBa?dl=0>

Titan: https://www.dropbox.com/sh/ydq2w2o6yas3nqs/AAA4ZI5v1hfOIG3_lwgr1RWIa?dl=0

Happy Browsing!

Peter.

Title: **Re: Original Peter Hunter Photo Collections**

Post by: **RedTail48** on **2017-08-04, 08:35:21**

You might find the DropBox linked video of "Missile Malfunctions" of interest. I compiled it from bits of projected 16mm film I came across in my travels, copied with a video camera on a tripod, so the quality is so-so.

Let me know if this sort of thing is of interest, and with some work, I possibly could post some more material of this kind.

Peter.

https://www.dropbox.com/sh/9728hmtdcfs1ho4/AADDn7GgLCM9cmzBBr3_7Roma?dl=0

Title: **Re: Original Peter Hunter Photo Collections**

Post by: **Walle** on **2017-08-04, 12:00:03**

Quote from: RedTail48 on 2017-08-03, 23:34:38

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I can give you a couple corrections for the Atlas flight list. 3B and 139D/Midas 8 were not RSO destructs. 91D failed due to vibration in the adapter area, not Able ignition. 68D suffered from a LOX leak that led to a booster shutdown and thrust section explosion (shades of Atlas 3D). It still flew for almost two more minutes before self-destructing. 32E was destructed at 35 seconds into flight, not 50.

The unidentified Atlases in the failure video are 23D and 45F. There is also a nice video on Youtube also showing several VAFB failures including 102D which also did a cartwheel but in that case self-destructed (why the RSO didn't blow it up like with 23D I have no idea) and 64E. There's also Titan II N-7 and some Minuteman launch.

Title: **Re: Original Peter Hunter Photo Collections**

Post by: **gwiz** on **2017-08-04, 13:33:58**

Thanks, Peter, I've copied the Titan photos and updated my Atlas DVD. Looks like my Thor DVD was up to date.

Geoff

Title: **Re: Original Peter Hunter Photo Collections**

Post by: **Jim** on **2017-08-04, 13:37:02**

Quote from: WallE on 2017-08-04, 12:00:03

91D failed due to vibration in the adapter area, not Able ignition.

No, don't go changing history according to your reality.

Title: **Re: Original Peter Hunter Photo Collections**

Post by: **Jim** on **2017-08-04, 13:37:46**

Quote from: gwiz on 2017-08-04, 13:33:58

Thanks, Peter, I've copied the Titan photos and updated my Atlas DVD. Looks like my Thor DVD was up to date.

Geoff

What was different in the Atlas DVD?

Title: **Re: Original Peter Hunter Photo Collections**

Post by: **jj** on **2017-08-04, 14:06:34**

One good place for long term archiving of large amounts of historically interesting content for public consumption is the Internet Archive: www.archive.org.

And large as the collection is, it's a drop in the water of the Internet archive.

Using the Internet Archive save Chris large amounts of fees for hosting and hassles with yet more disk, and their reason for existence is long term archiving of digital content.

<https://archive.org/about/>

And Brewster Kahle is a great guy, anyway...

It's conceivable that they might take a USB stick by mail and put it on line: worth asking.

Title: **Re: Original Peter Hunter Photo Collections**

Post by: **gwiz** on **2017-08-04, 15:57:15**

Quote from: Jim on 2017-08-04, 13:37:46

What was different in the Atlas DVD?

My copy was dated 2001, the new material goes to 2006, so extra launch photos and tables extended.

Title: **Re: Original Peter Hunter Photo Collections**

Post by: **WallE** on **2017-08-04, 16:44:04**

This was from the Space Systems Division December 1960 activities review. It states that the recovered Able 5B had no signs of engine ignition. What's interesting here is that they also state that the Atlas-Able combination's aerodynamic profile was sound, or at least they believed it was anyway. I think it's pretty universally agreed that Able was an inappropriate upper stage and too small for the Atlas.

Title: **Re: Original Peter Hunter Photo Collections**

Post by: **Jim Davis** on **2017-08-04, 17:45:24**

Quote from: WallE on 2017-08-04, 16:44:04

I think it's pretty universally agreed that Able was an inappropriate upper stage and too small for the Atlas.

I think it could have been made to work. The OV1 stages were even smaller.

Title: **Re: Original Peter Hunter Photo Collections**

Post by: **Jim** on **2017-08-04, 18:37:22**

Quote from: Jim Davis on 2017-08-04, 17:45:24

I think it could have been made to work. The OV1 stages were even smaller.

Not a place for this discussion but no. Has nothing to do with size, it is the form and mission.

Title: **Re: Original Peter Hunter Photo Collections**

Post by: **RedTail48** on **2017-08-04, 22:20:31**

Re gaps in the collection:

No one source was comprehensive. The collection is a jigsaw of stuff from many sources - even the fabled San Diego archive, as per comments in the Atlas documentation, only provided "200+" of the final photos, compared with "300+" from other sources. I met frustration for various reasons. One example is at Rocketdyne, where I imagined copies of images would have been distributed, along with many of the other contractors. After an initial meet with a Public Relations person in northern LA, where I was passed a couple of glossy brochures, and told "I hope that helps you," I was promised it would be looked into more deeply. An earthquake (which busted one of the LA freeways) then intruded. There were concerns that one of the buildings was unsound, and I was told to "call back later." Subsequent enquiries were answered in various ways - "No we don't have anything else," "Yes we do but I'm not sure where," "Yes but they were moved inland to storage in another state," "No they were all destroyed..." Remember I was limited by time available in LA (1 useful day usually, given the need for post- and pre- flight rest!). This could maybe be still followed up by someone in the LA area. Another source I was unable to try was the then Aerojet business (for Titan) inland from San Francisco which my Company were not at that stage flying to, and anyway it would have been too far to repeatedly drive inland to even if they had material and allowed access to it. Scanning at quality is a time-consuming business....

Often the same photos of various qualities reappeared, so I've tried to pick just the best. I appreciate the value of multiple views, so you will see combined images where that was possible. I entered all images of whatever quality as a separate table in my database, so was able to produce reports linking that table to all the others. This allowed me to produce reports such as "List all images for particular payloads (to pick the best)," "List all images for particular Pads chronologically (for cross-checking pad features)," etc etc.

Re failure reasons: Originally I gave Dick Martin a long printout of all Atlas launches. He hand annotated it with comments including those for failures, from archival material he held at his home. I too came across contradictory information. He could offer no explanation for this. I'm happy to see if I can fit > 1 reason in the comments, and thanks for the info, WallE !!

Title: **Re: Original Peter Hunter Photo Collections**

Post by: **RedTail48** on **2017-08-04, 22:28:56**

Following on from my previous post, If there is a particular launch you want images of, drop me a private message. I can look up ALL images I have of that and maybe forward more of that one via DropBox, even if they are of lesser quality...

Title: **Re: Original Peter Hunter Photo Collections**

Post by: **RedTail48** on **2017-08-04, 22:41:50**

Re "Atlas 50th" differences from the first Edition:

This was an updated version for the large celebration held in San Diego for the 50th anniversary of the first Atlas flight (which luckily I was able to attend by suitable arrangement of my work roster!).

As far as I remember the only differences were to add launch photos and flight details to bring it up to date at that point.

Title: **Re: Original Peter Hunter Photo Collections**

Post by: **RedTail48** on **2017-08-04, 22:48:13**

I feel also I'd like to reinclude in this thread a comment I made in the other, for folks who will only read this thread, relating to the Titan photo collection:

"I would like to emphasize here the Titan photo collection is very much a combined effort: Art LeBrun (deceased), John Hilliard, Michael Nagel, and Joel Powell all contributed significantly. If you would be so kind, please give any Titan credits as : "via LeBrun,Hilliard,Hunter,Nagel,Powell.""

Dwayne Day also continues to write facinating articles illuminating various payloads launched on these vehicles, and in due course the Flight Listings will be updated with his information....

Title: **Re: Original Peter Hunter Photo Collections**

Post by: **Lar** on **2017-08-05, 14:00:35**

Title now fixed on all posts I think.

Unrelatedly. it's awesome that this collection has been shared and I second the suggestion to go to the internet archive to

see if they will host....

Title: **Re: Original Peter Hunter Photo Collections**
Post by: **WallE** on **2017-08-06, 09:57:51**

In regards to Titan launches, there were seven failures during operational Titan II launches between 1965-67. The details on them are unclear, some may have been RV malfunctions. Lists of Air Force serial numbers state that B-58 (9/21/65) and B-73 (12/22/65) "failed in launch", suggesting a problem with the main vehicle. Three launches (in 1967, 1971, and 1974) are also described as having been "aborted".

Title: **Re: Original Peter Hunter Photo Collections**
Post by: **WallE** on **2017-08-06, 16:47:53**

Quote from: [edkyle99](#) on 2017-08-06, 16:09:56

The details for all were clearly described in Stumpf's book.
<https://www.amazon.com/Titan-II-History-Missile-Program/dp/1557286019>

Astronautix for some reason lists the launches in question as successful, but that site is extremely sloppy and often has outdated/missing information. I need to get a copy of that book, but you can read some of it on Google Books. It did reveal that Titan II B-54 suffered a first stage engine shutdown due to loss of pump lubrication. This seems very similar to Titan 34D-7, doesn't it? So maybe it wasn't insulation falling off the SRBs at all (after all, Titan ICBMs didn't have SRBs).

It does seem (as Peter said) that there aren't so many Titan images around. For example, have you ever seen a picture of the burned-out pad after B-5 and C-3? I haven't.

Title: **Re: Original Peter Hunter Photo Collections**
Post by: **WallE** on **2017-08-07, 16:37:43**

Atlas 5503A/Canyon 4 is still a bit of a mystery. The list describes an Atlas sustainer gas generator malfunction but other sources claim a guidance problem. In any case, it was an RSO destruct and it delayed an Intelsat launch two weeks until the Air Force mishap review board could release their findings and clear the Atlas-Centaur of guilt by association. The failure happened behind cloud cover, so there is no video of it and the photo database had no pictures of the vehicle, although there is video of the launch on Youtube (which clearly shows the gray, rainy weather conditions).

Regardless of whichever was the failure cause, it would not have affected Atlas-Centaur since the SLV-3A used a different model of sustainer engine and the standard GE radio ground guidance instead of the Centaur's inertial guidance. After the slight delay, AC-26 successfully orbited Intelsat 4 F3 on 12/20/71.

I'm more inclined to think it probably wasn't a guidance problem because the booster was destroyed early in flight and I don't think any discreet steering commands would be issued that early (although we don't have an exact sequence of events or know at what time the RSO destruct occurred). If the sustainer shut down, then it likely would go off-course (cf. Atlas 32E). A broken piece of plumbing or an obstruction somewhere could cause a gas generator malfunction, although whatever went wrong must not have been within the opening seconds of flight since the Youtube video shows an apparently normal engine start and liftoff.

Title: **Re: Original Peter Hunter Photo Collections**
Post by: **RedTail48** on **2017-08-08, 07:38:55**

Sorry, looks like I mucked up my previous link to the Titan Flight List.

https://www.dropbox.com/sh/3xs72w0ko3u944/AACKh7sctNK7RiRdJTwVHu__a?dl=0

Title: **Re: Original Peter Hunter Photo Collections**
Post by: **WallE** on **2017-08-08, 11:16:52**

I can see that list is pretty outdated and predates GAMBIT declassification. Here's a couple of additional details on failures.

B-5: A bad hold down relay allowed the missile to release before it was at 100% thrust, one of the pad umbilicals sent a signal cutting the engines off.

J-2: A hydraulic fitting popped loose due to liftoff-induced vibration, it was found to be the result of a manufacturing defect and other Titan Is were also found to have bad fittings.

V-4: This was essentially the same failure as Atlas 45F (stuck engine valve, it tipped over and exploded). I saw a video a long long time ago (I think early 2000s) but I haven't seen it since.

3B-35/GAMBIT 73: Agena pneumatic regulator failure

3B-43/GAMBIT 77: Stuck fuel valve prevented Agena engine start

Title: **Re: Original Peter Hunter Photo Collections**
Post by: **RedTail48** on **2017-08-08, 11:23:45**

Thanks for the Titan fails. I mentioned before I would hope to update all the Launch Listings with post-declass details and repost. Can't put a time on that.

Title: **Re: Original Peter Hunter Photo Collections**

Post by: **Walle** on **2017-08-10, 12:42:59**

It has been said that Mariner 2's booster suffered an uncontrolled roll shortly before BECO that nearly threatened the mission. This was attributed to a loose wire in the missile programmer pushed back into place by the centrifugal force of the roll.

The GD/A doc "Atlas Autopilot Difficulties" reveals that Atlas 179D's autopilot was a mess and required extensive repair work during prelaunch preparations ("A History of Project Ranger" mentions the awful Q/C and numerous repairs almost every Atlas-Agena vehicle required after delivery). Oddly, there is no mention anywhere of the incident during launch. It might be in the postflight evaluation report for 179D, but we don't have that.

What's even more strange is that 145D and 179D had the old electromechanical "round" autopilot instead of the transistorized "square" autopilot. I would have assumed all SLV Atlases delivered after early 1961 had the square autopilot. In any case, given the difficulties with 179D's autopilot, they were lucky a loose wire was the most that went wrong and Mariner 2 didn't end up swimming with the fishes like its predecessor.

Title: **Re: Original Peter Hunter Photo Collections**

Post by: **RIB** on **2017-08-10, 14:21:23**

any detailed info on the flight and failure of the GT-9 Atlas-Agena launch ?

Title: **Re: Original Peter Hunter Photo Collections**

Post by: **Walle** on **2017-08-10, 15:06:04**

Quote from: RIB on 2017-08-10, 14:21:23

any detailed info on the flight and failure of the GT-9 Atlas-Agena launch ?

It had a control failure shortly before BECO. One of the booster engines went hard over and the Atlas pinwheeled around and started heading back towards earth. The Atlas sustainer and verniers cut off around 300 seconds, followed by Agena separation. Telemetry from the Agena continued until 450 seconds and then stopped.

Since it was a cloudy day, tracking cameras at CCAS failed to record the incident, but cameras several miles down the beach showed the Atlas flipping over. Agena engine start after staging did not occur because the proper altitude and velocity had not been achieved, so the guidance system was blocked from issuing the start command to it. The Atlas sustainer section and Agena impacted in the ocean about 120 miles downrange. The control failure was found to be the result of a short in the Atlas programmer servoamplifier, suspected to be from either a pinched wire or something being frozen from LOX leakage.

By 1966, Q/C on Atlas vehicles had improved significantly compared to 4-5 years earlier due to the standardized Atlas SLV, however incidents like this and the Canyon failure mentioned earlier show that random component malfunctions could still occur and result in the loss of a mission.

Title: **Re: Original Peter Hunter Photo Collections**

Post by: **RIB** on **2017-08-10, 18:31:14**

any photos or video of the Atlas flipping over?

Title: **Re: Original Peter Hunter Photo Collections**

Post by: **Walle** on **2017-08-10, 18:57:56**

Quote from: RIB on 2017-08-10, 18:31:14

any photos or video of the Atlas flipping over?

<https://www.youtube.com/watch?v=ieMXCFqrGn0>

This newsreel clip shows the tracking camera footage of the Atlas cartwheeling. You can also see the booster jettison take place. Also there's video on Youtube of the CBS live coverage of the launch. Best part? Where someone says "I don't know how the Range Safety Officer has permitted the flight to continue." From watching the CBS coverage, it seems there was a bit of "deer in the headlights" syndrome going on and nobody in the blockhouse knew exactly what was happening.

DTIC (Defense Technical Information Center) lists a failure investigation report for the launch but there's no download link. They list a whole bunch of Atlas flight reports, but half of them don't have a download. Also they're all East Coast launches, there's no reports for any West Coast flights except Atlas 303D (failed Nike-Zeus test in 1966, no download link).

Atlas 68E experienced an extremely similar failure 16 years later, although in that case a propulsion rather than an autopilot malfunction caused it to flip over and descent back towards earth. The Range Safety Officer blew it up that time though.

Title: **Re: Original Peter Hunter Photo Collections**

Post by: **Walle** on **2017-08-26, 23:01:43**

There are several different accounts of what went wrong on Mariner 1, the most accurate-sounding explanation appears to come from the book "The U.S. Air Force In Space, 1945 to the Twenty-First Century".

At 93 seconds into launch, the rate beacon on the guidance system failed. The rate beacon was supposed to provide the ground guidance computer with information about the launch vehicle's velocity/trajectory which it would then use to make

adjustments to the flight path, but if the beacon failed, erroneous guidance commands could be sent, so the guidance program included a hyphen which instructed the computer to ignore rate data if it lost its link on the beacon.

Problem was, the guidance program used on Atlas-Agena B vehicles at CCAS didn't have the hyphen in it since someone apparently forgot to add it in. There had not been a rate beacon failure in the four Atlas-Agena B launches from CCAS to date, so this glitch had been heretofore undiscovered. So on Mariner 1's launch, the rate beacon did fail, and as soon as discreet guidance commands were initiated at BECO, the loss of rate data caused the computer to start generating erroneous commands. With no hyphen in the guidance program, the computer had no way of knowing it was supposed to ignore the rate data due to the beacon malfunction and it so kept sending incorrect steering discreets. The Atlas yawed from left to right during sustainer phase and finally ended up pointing to the left and downward of the direction it was supposed to be flying in, and so the Range Safety officer sent the destruct command shortly before SECO, fearing that the Agena and spent Atlas would land in the crowded North Atlantic shipping lanes or some other populated location. Telemetry from Mariner 1 was lost for three seconds following vehicle destruction, then resumed and continued intermittently for another minute and a half. Presumably the probe remained secure inside its payload shroud until impact in the ocean.

Mariner program manager Jack James doubted that the booster was going to come down anywhere near a populated area and thought the Range Safety officer had been too trigger-happy.

The GE Mod III-G guidance system used on Atlas-Agenas (and its West Coast version the Mark II-A) was basically a Mod III-B (Atlas D ICBM guidance system) that had its vacuum tube electronics replaced with transistors, but this didn't work very well and caused multiple in-flight failures, so during 1963, it was completely redesigned to properly accommodate transistor electronics. A few months after Mariner 1, Ranger 5 experienced another rate beacon failure, but the guidance program had been corrected since then, so no difficulties happened.

As for Mariner 2, apparently the uncontrolled roll was caused by an electrical short in the vernier feedback transducer. The V2 engine went hard over at BECO and caused the booster to roll for almost an entire minute of flight. Eventually control was restored and the launch continued as normal. Improved fabrication of wiring harnesses and preflight testing was implemented afterwards.

Title: **Re: Original Peter Hunter Photo Collections**

Post by: **Jim** on **2017-08-27, 03:34:09**

Quote from: Walle on 2017-08-26, 23:01:43

Problem was, the guidance program used on Atlas-Agena vehicles at CCAS

CCAS name was only used from 1994 to 2000. At the time of Mariner 1, it was the Cape Canaveral Missile Test Annex (CCMTA)

Title: **Re: Original Peter Hunter Photo Collections**

Post by: **RedTail48** on **2018-06-24, 21:53:23**

Folks,

I think enough time has passed with these collections available on my DropBox, for those who are interested to have downloaded them.

I'll be deleting them from DropBox and closing the paid version in another month or so.... in line with cutting my costs in retirement....

Peter.

Title: **Re: Original Peter Hunter Photo Collections**

Post by: **catdir** on **2018-06-24, 22:12:54**

Quote from: RedTail48 on 2018-06-24, 21:53:23

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I'll be deleting them from DropBox and closing the paid version in another month or so.... in line with cutting my costs in retirement....

Peter.

Peter,

Thanks from all of us that appreciate your effort to bring this collection to our attention and allowing us to enjoy them.

Tony

Title: **Re: Original Peter Hunter Photo Collections**

Post by: **brickmack** on **2018-06-25, 21:56:10**

Quote from: RedTail48 on 2018-06-24, 21:53:23

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Peter.

Nervously looks at download time remaining

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