Subject: Eliminate ALVIN External Stills?

Dear ALVIN Users,

At the December DESSC meeting Barrie Walden showed high resolution video frame grabs of various seafloor objects including instruments, biology, and rock and sediment surfaces. He asked the community to evaluate these and make a recommendation regarding whether these could be used to substitute for the images from the existing external still cameras (most people use the external shots for publication). This subject will be discussed at the May DESSC meeting in WHOI.

Also Barrie had asked the community for input on WHOI's desire to shift from Hi8 to digital tapes. The Hi-8 tapes need to be transferred to another media as soon as possible to avoid degradation. There is a significant difference in cost between Hi8 and digital. The Hi8 video tape costs $8.29 while the digital video tape costs $30.90. For 175 dives/year for ALVIN the estimated Hi8 cost is $17,409 vs. $64,890 for digital. WHOI would like to shift over the ALVIN to digital because they feel that it would provide a better product. They will wait to convert the Jason media until further evaluation. On the support ship, there will be a capability to convert media for the science party before they leave the ship.

Your input to the decision making process regarding this matter is welcome. Input can be submitted to the UNOLS Office at, office@unols.org. Please reply by 15 May.

Thank you very much,

Patty Fryer

Subject: Input on ALVIN Data
Date: Mon, 01 May 2000 13:06:29 -0500
From: "Jeffrey Karson" <jkarson@acpub.duke.edu>
To: office@unols.org

Dear UNOLS:

As a long-time ALVIN user I am very familiar with the external still camera and video data collected during ALVIN dives. I have the following brief comments in response to Patty Fryer's call for input on proposed changes to these 2 systems:

1. I like the still video photographs. Sure electronic stills are good and getting better all the time, but they do not have the resolution of photographs. With the other systems leaning toward digital data, I think it would be a good idea to keep the 35 mm photographic quality in this particular system. I use these in my research and they are important to my publications. One can always digitize a photo, but one cannot go in the other direction.

2. I am fully in favor of moving from Hi-8 to digital video. We used digital video on our Hess Deep Cruise last year and it is terrific. The editing and reviewing are much better than with the Hi-8. Of course the increased cost is going to hard to swallow, but considering the convenience, versatility, and more permanent quality of digital video I think it is the right way to go. There will certainly be savings in archiving digital data over periodically updating analog media. My only concern is that WHOI consult with users before committing to a particular digital format. There are significant cost issues with regard to media and to equipment for us users and before going to a more expensive format, the rationale should be clear. Right now I am using 2 different digital formats, so it does not make so much difference to me.

If you want more information, please do not hesitate to contact me.

Jeff Karson

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EOS web page at: http://www.eos.duke.edu
EOS Structure & Tectonics at: http://www.eos.duke.edu
Hess Deep Expedition at: http://www.env.duke.edu/hessdeep.html

From: Marsh Youngbluth <Youngbluth@HBOI.edu>
To: "'pfryer@soest.hawaii.edu'" <pfryer@soest.hawaii.edu>
Subject: ALVIN and DESSC
Date: Mon, 1 May 2000 17:01:24 -0400
Status:

Hi Patty,

Go digital, nearly everyone will like it. The cost is really minor. Of course, a great monitor is essential too and the control panel for zoom and focus is crucial. But you know that. Get the best equipment possible but be ready to upgrade every 3 years or so, the camera systems keep getting better and better.

Regards, Marsh

--

From macdonald@geol.ucsb.edu Tue May 2 15:30:39 2000
Date: Tue, 02 May 2000 10:50:42 -0700
From: Ken Macdonald <macdonald@geol.ucsb.edu>
To: UNOLS Office <unols@gsosun1.gso.uri.edu>
Subject: Re: Eliminate ALVIN External Stills?

I would vote for abandoning the external 35mm and using the cost savings to go to digital for all 3 external video cameras. With time the digital tapes will become cheaper, there is a Sony digital cam and deck which records on Hi 8 tape; perhaps this should be considered.

Ken C Macdonald
Professor Marine Geophysics
University of California, Santa Barbara
web page:
http://www.geol.ucsb.edu/~ken

From clvand@facstaff.wm.edu Tue May 2 09:12:44 2000
Date: Tue, 02 May 2000 08:59:31 -0400
From: Cindy Lee Van Dover <clvand@facstaff.wm.edu>
To: UNOLS Office <unols@gsosun1.gso.uri.edu>
Subject: Re: Eliminate ALVIN External Stills?

The 35 mm sponson cameras have provided disappointing results for about 75% of the dives I have been on. The poor quality is variously related to lighting and exposure, often exacerbated by manipulators and other paraphernalia in the field of view. The images are rarely publication quality, but they do contain information. If the cameras are removed, will they be replaced with a digital system on the sponson? Or will we have to rely on the pilots for the front viewport views (which inevitably takes extra time and can irritate some pilots, so that it seems like a burden to request that an image be taken)? It should also be noted that all pilots do not have the same camera skills.

I thought the high resolution images Barrie showed were taken by hand-held digital cameras rather than frame-grabbed from video. I also thought that the spectacular photos of tubeworms from Rich Lutz's cruise were frame-grabbed from a high def video system which is not a standard piece of ALVIN gear. To further complicate my ability to evaluate the proposed option, Rich Lutz has related that he had difficulty getting the same quality image that Billy Lange was able to get. I presume this has to do with the frame grabber and software -- who is going to tell the scientists how to replicate the quality presented, and how much will the accessories cost that must go with the system?

I do think the $$'s spent on the 35 mm cameras is largely wasted. It would be good to see a really professional alternative offered, with specs on how the user can duplicate from ALVIN video the frame-grabbing quality obtained on the ship or at WHOI.

Digital video sounds great -- we should get the specs out on recommended digital replay systems for PIs to purchase if they choose. I assume that PIs do get digital tapes if they so choose, with no extra cost? This needs to be clarified.

Cindy

Cindy Lee Van Dover
328 Millington Hall
Biology Department
College of William & Mary
Williamsburg, VA 23187
tel: 757 221-2229
fax: 757 221-6483
e-mail: cindy_vandover@wm.edu

The Ecology of Deep-Sea Hydrothermal Vents:
http://pup.princeton.edu/titles/6880.html

From childres@lifesci.ucsb.edu Wed May 3 14:36:55 2000
Date: Wed, 3 May 2000 10:29:18 -0700
From: Jim Childress <childres@lifesci.ucsb.edu>
To: UNOLS Office <unols@gsosun1.gso.uri.edu>
Subject: Re: Eliminate ALVIN External Stills?

Which DV standard is being proposed? MiniDV the usual consumer version or one of the pro versions with much more expensive playback equipment?
Thanks,
Jim Childress

****
* Jim Childress E-Mail childres@lifesci.lscf.ucsb.edu *
* Ecology, Evolution, & Marine Biology, Office Phone (805) 893-3203 *
* University of California Lab Phone (805) 893-3659 *
* Santa Barbara, CA 93106 FAX (805) 893-4724 *
****

From: Dudley Foster <dfoster@whoi.edu>
To: childres@lifesci.ucsb.edu
Subject: Re: [Fwd: Eliminate ALVIN External Stills? (fwd)]

> Hello Jim,

The current thought is to use the professional DVCAM format for the originals generated in the sub. Those would end up as the archive copy. The copy provided to science after the dive would "possibly" be duped onto the consumer MiniDV format. In the main lab, the science duping station would have the capability for science to copy the MiniDV (or whatever was made from the DVCAM tape) to MiniDV, Hi8 or VHS/SVHS.

There are some advantages and features available in the DVCAM format that are not available in the MiniDV that are useful for archive, duping and editing functions.

This plan is still in the planning/review stage.

Cheers, Dudley

From: Barrie Walden <bwalden@whoi.edu>
To: childres@lifesci.ucsb.edu
Subject: Re: Eliminate ALVIN External Stills? (fwd)

Hi Jim,

We have located a third DV variety which we are leaning towards - its much more expensive and tapes are almost impossible to obtain in this country. Of course, your opinion is always welcomed. I gather you would favor the MiniDV.

Barrie

From dkb@mahi.ucsd.edu Fri May 5 16:25:06 2000
Date: Fri, 5 May 2000 11:34:25 -0700 (PDT)
From: "Donna K. Blackman" <dkb@mahi.ucsd.edu>
To: unols@gsosun1.gso.uri.edu
Subject: Digital Video for ALVIN

Dear Patty,

As a science user, digital video is really the only format that makes sense both in term of ease of grabbing stills for publication and flexibility in analysis and display of the data. (Since I have not been down in ALVIN yet, I cannot speak to how 'grabbed' frames compare with shots from the external still camera.)

The 'cleanest' approach to digital video would of course be to have the whole system converted but as a user, I don't see that it would make a big difference if the initial recording remained Hi-8 but the capability for making onboard copies for the science party included the analog-digital conversion (assuming no significant loss in image resolution). This is the approach we would like to use for our November 2000 cruise to the Mid-Atlantic Ridge. We included the cost of DVD tapes in our NSF budget for the project.

Let me know if I can provide any further input that could help speed the transition to digital recording- I have to admit that I was astonished to find out that the system wasn't already digital since I'd been under the impression that the DSOG group was pretty good at keeping up with recent, proven technologies.

Sincerely,
Donna Blackman

Subject: Alvin video and stills
Date: Tue, 2 May 2000 15:38:23 -1000
From: "Brian Midson" <bmidson@soest.hawaii.edu>
To: <office@unols.org>
CC: "Patty Fryer" <pfryer@soest.hawaii.edu>,
"Barrie Walden" <bwalden@whoi.edu>

Aloha Patty, Barrie.

We have been transitioning to digital video in the Pisces V for a couple of years now. Our continuous video has been recorded in 8mm and an alternate MiniDV camera had been provided for PIs to do a sort of running highlights tape of the best scenes. We found that the Sony VX-1000 digital camera was producing a better image than the Panasonic, even when recording to the 8mm deck. Also any capturing of images or video onto the computer is obviously better with MiniDV.

We have since changed all video to the MiniDV format, so we will have two VX-1000 cameras and two GV-D300 recording decks. There are several reasons to use the MiniDV format rather than standard DV. The quality is virtually the same. The size of decks was a big factor also. Hi8 decks fit nicely into the small racks in the sub, I could not find a "prosumer" standard DV deck that was small enough. The DHR-1000 is the best standard DV deck, we have one, but is way too big for the sub, it works nicely as an editing deck though, and reads MiniDV or DV. Price was also an issue. MiniDV tapes are about $9.50 each. The only drawback is tape length. MiniDV tapes only last 60 minutes, so you need twice as many and have to change them more frequently. We decided that this was OK considering the size and cost factors would have prevented us from upgrading to DV otherwise.

As for still images, we considered a High Definition Digital Camera, but that will have to wait for a future budget surplus... In my opinion the digital captures are very good, but less than an HDDC would produce. We are not yet ready to do away with our 35mm slides, the PIs are used to using them for presentations and publications, although the digital scans of the 35mm slides are not as good as the digital captures of the video.

The B&H catalog has good descriptions of much of the equipment we deal with, as well as comparison between media. The section about DV vs. MiniDV and DVcam, DVCpro etc. was enlightening. their website is www.bhphotovideo.com

I hope this helps, call or email if you want to discuss it further.

Brian Midson
Data Manager, HURL
University of Hawaii, MSB 322
1000 Pope Road, Honolulu HI 96822
(808) 956-6183; FAX (808) 956-2136
bmidson@soest.hawaii.edu
http://www.soest.hawaii.edu/HURL/

From esilver@emerald.ucsc.edu Mon May 1 15:37:50 2000
Date: Mon, 01 May 2000 11:44:40 -0800
From: Eli Silver <esilver@emerald.ucsc.edu>
To: UNOLS Office <unols@gsosun1.gso.uri.edu>
Subject: Re: Eliminate ALVIN External Stills?

Hi Patty,

I'm very supportive of the switch to digital. As long as NSF is on board with this concerning the cost, then it is clearly the better way to go.

I'll be out with Jason (hopefully) in January, so I should have some feeling for that change. My guess is that I will support digital also, but we'll see. Maybe we'll cross paths in Guam.

Cheers,

Eli

//
Eli Silver
Earth Sciences Department
Director, Institute of Tectonics
A112 E&MS Bldg
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Email: esilver@es.ucsc.edu
\\\

From gold@oce.orst.edu Mon May 1 15:38:13 2000
Date: Mon, 1 May 2000 11:57:38 -0700 (PDT)
From: Chris Goldfinger <gold@oce.orst.edu>
To: unols@gsosun1.gso.uri.edu
Subject: Re: Eliminate ALVIN External Stills?

My comment is that video frame grabs are still inferior to the stills, and would not remove them at this time.

AS far as high 8 tapes, what media would replace them? Digital DV formats are also on tape for the most part, though as digital data, but this doesn't avoid the degradation problem. Would it go on DVD's?

Cheers, Chris

Chris Goldfinger
Oregon State University
Marine Geology
Active Tectonics Group

gold@oce.orst.edu
voice: (541) 737-5214 (New area code)
fax: (541) 737-2064
http://pandora.oce.orst.edu

Subject: FW: Eliminate ALVIN External Stills?
Date: Mon, 1 May 2000 15:03:45 -0400
From: Walsh Stephen T NSSC <WalshST@NAVSEA.NAVY.MIL>
To: "'office@unols.org'" <office@unols.org>
CC: "'Dr. Robert Ballard'"
    <IMCEACCMAIL-rballard+40ife+2Eorg+20at+20SMTP@NAVSEA.NAVY.MIL>

For what it is worth, PMS395A3 decided last week at the quarterly NR-1 Program Managers Meeting (PMM), to commence moving the Submarine NR-1 away from Hi 8 mm towards digital recording format due to its longer life expectancy and its sharper quality. The recommendation to do so was made by the fleet and concurred with by myself and will commence the implementation process shortly.

Steve Walsh
Assistant Program Manager
Deep Submergence Vehicle Support
Naval Sea Systems Command (PMS395A3)

Subject: Re: Eliminate ALVIN External Stills?
Date: Thu, 04 May 2000 08:30:16 -0400
From: Lauren Mullineaux <lmullineaux@whoi.edu>
Organization: WHOI
To: office@unols.org
CC: office@unols.org

Dear UNOLS folks,

1. For the ALVIN work my group does, the digital external camera probably will suffice.
2. For my use over the next several years, I would like to continue to leave the ship with high quality HI8 and VHS tapes in hand. I do not have the capability to deal with digital video, but may develop it in the future. So for now, it is fine with me for the ALVIN group to use digital media as long as 1) it doesn't increase the cost to the user (none of us have current budgets that could cover this); 2) it doesn't increase the time spent by the user at sea to procure a usable video product to take home (i.e., duping onto Hi8 or video be done by SSSG - the scientists should be doing science at sea, not transferring digital images); and 3) the Hi-8 or VHS product for the scientist not be of reduced quality.

I think the science community will make the transition to digital video images in the future, but we are not ready for them yet. It makes good sense for the ALVIN group to start using digital now, but they will need to continue to make traditional media available to the users with no negative impact on the users' cost, time, and quality of product.

Sincerely,
Lauren Mullineaux

Subject: ALVIN stuff
Date: Tue, 2 May 2000 12:25:13 -1000
From: Brian Taylor <taylor@soest.hawaii.edu>
To: office@unols.org

Digital vs. Hi8 video would be a great improvement.

Still camera shots are still much better than video frame grabs and should not be removed. However, if the video was digital, this may change.

Dr. Brian Taylor
SOEST, Univ. Hawaii
2525 Correa Rd
Honolulu HI 96822
808.956.6649 (wk)
808.956.3723 (fax)
taylor@soest.hawaii.edu

From skim@mlml.calstate.edu Fri May 12 08:32:15 2000
Date: Thu, 11 May 2000 17:20:03 -0700
From: Stacy Kim <skim@mlml.calstate.edu>
To: UNOLS Office <unols@gsosun1.gso.uri.edu>
Subject: Re: Eliminate ALVIN External Stills?

Hi Patty,
I have not seen the hi-res frame grabs that Barrie showed, but my experience with local work from various ROV systems leaves me believing that 35 mm is still better. Though I am not a funded vent researcher, I hope to use detailed photos for identification of small gastropods at some point, and right now 35 mm is still better than video grabs. I'd like to see the external still cameras retained.

I strongly support the shift to digital tapes, despite the added expense. Digital lasts better and is definitely better quality. As long as those of us who haven't got digital players available can still get hi-8 for teaching purposes, I think this is a great idea.
Regards, Stacy

[Part 2, "Card for Stacy Kim" Text/X-VCARD 14 lines]
[Unable to print this part]

From tshank@whoi.edu Fri May 12 12:01:10 2000
Date: Fri, 12 May 2000 09:29:26 -0400
From: "Timothy M. Shank" <tshank@whoi.edu>
To: UNOLS Office <unols@gsosun1.gso.uri.edu>
Subject: Re: Eliminate ALVIN External Stills?

Dear Patty,

As part of my work on the temporal changes in biological community structure at 9°50'N since 1991, I have extensively used and help push increasing the resolution/band width of Alvin's imaging capability: from 8mm, Hi-8, BETACAM SP, High definition, and DV digital. I think that it is critical to move to the digital (although Betacam SP actually appears to be better than digital for frame-grabbing for publication...but this may change) format in Alvin. Hi-8 footage begins to degrade after only a few playbacks, and is less than acceptable for today's publication standards. As for the substituting these video frame grabs for the 35mm external still cameras, I think would be a large mistake. I don't think that the video coverage (field of view) is wide enough to come close to yielding the spatial relationships one can glean from the sponson-mounted 35mm cameras. I certainly realize that only a small portion of the external frames are typically usable from a given dive, BUT the wide angle, high and oblique view is extremely helpful when there is a good image. The reason why so few shots are considered usable (for publication or information) is that the basket and starboard arm-mounted camera is typically "blocking" the field of view. So, since I would argue that the external camera angle (high and oblique) and image clarity yield usable and important datasets, I would suggest trying to either move the cameras so that the arm and basket are not in the way of the seafloor subject area, or move the 3-chip camera off the arm (I don't know where unless there is a pan and tilt constructed for the camera that would potentially sit in the basket). The only other suggestion I would like to see discussed is to look into the feasibility of placing digital still cameras in housings to be used in a similar manner to (and replacing) the curent external 35mm cameras. On the up side his would likely cut down on a large amount of processing costs back on the beach, but on the downside the amount of money required to maintain adequate storage of all of the images (shipboard and on the beach) might be prohibitive. Anyway, that's my two cents.

If you have any questions or would like to discuss this further, please
feel free to contact me.

best regards,
Tim

Timothy M. Shank, PhD
Biology Department
MS #34 1-16 Redfield
Woods Hole Oceanographic Institution
Woods Hole, MA 02543

From - Thu May 18 09:40:51 2000

From: perfit@geology.ufl.edu (Mike Perfit)

Subject: ALVIN stills

Hi All,

Just got back from 47 days at sea on the MELVILLE with DAN! (and I survived!) Great success with ARGO and DSL120...I was very impressed with the operations, data output, data reduction and the performance of both the DSL group and the MELVILLE crew. They should be commended.

My input regarding the hi res video: Yes I think it can replace the 35 mm still cameras PROVIDED the images are easily and readily available to the scientists (as available as the 35 mm).

I also think we should make the jump to digital recording at this point. It's worth the investment and the costs will probably decrease with time. Certainly its a better media and the reproductions will be very high quality and easier to make (CD or DVD).

Hope all is well in UNOLS land. Sorry I missed the celebrations for Jack.

Mike

Michael Perfit
Professor of Geology and Graduate Coordinator

*****Please note my new address**********

Department of Geological Sciences Office: 352-392-2128
University of Florida FAX: 352-392-9294
241 Williamson Hall, P.O. Box 112120
Gainesville, FL 32611-2120

http://web.geology.ufl.edu
http://web.ortge.ufl.edu/explore/v02n1/geology/
http://newport.pmel.noaa.gov/nemo/logbook/cal070299/

From - Fri May 19 08:33:25 2000
From: Joris Gieskes 858-534-4257 <jgieskes@ucsd.edu>
Eliminate ALVIN External Stills?

I HAVE THREE RESPONSES

Joris, while the digital film would be more expensive to take, it's much, much less expensive to process down the line and fairly trivial to archive. Altogether, I think there would be good savings and a substantial increase in quality of the processed images.

****

>Also Barrie had asked the community for input on WHOI's desire
>to shift from Hi8 to digital tapes. The Hi-8 tapes need to be
>transferred to another media as soon as possible to avoid
>degradation.

I support the move to digital tape despite the additional cost. The excellent resolution speaks for itself, but a very important feature is that there is no generational loss of resolution. Thus a 5th generation copy of a tape will look just as good as the original.

They should be aware that digital tapes "degrade" just as quickly as analog. All tapes, whether analog or digital, should be recopied every 5 years or so. The advantage with digital tape is that the new copy has no loss of quality.

****

Both are good ideas

JORIS GIESKES

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