Dear Paul, 6/6/77

Your June 1 was delayed by a side trip to Newark N.J. Came today and I thank you for the information in it and the enclosures. It is helpfus and it raises more questions.

I's glad you approve what I have been quoted as saying. I recall no misquetations and there must be stories I have not seen. Today's in the Times I'll see tomorrow when I's in D.C., whether or not there is a Hall hearing.

In case the lady-like language of the Los Angeles Nember reaches you, "that son-of-a-bitch has been out to get use from the first," it is false. While I had doubts I hope you share about Doming and Consales, I went to some trouble, including when I was ill and weak, to be of help and gace them a very large stack of significant saterial. The only reason their occursel did not leave with more last ctober is because he did not want to take more. This was on hing. They were coming on JFK and neverdid. Not my fault, my break was over ethical and legal questions and the cheapest kind of Philadelphia-lawyer lying. While I have little concern for what is said, more than enough of this is in writing.

After I wrote you I had a response from ERDA. I'd filed and FOIA mequest. They referred to their S.F. office, as by now you may have heard.

It is pretty farout a if a respect "obel luareate lies and says he was supported by federal money if in fact he was not. Especially when it is included on the inside-back cover as a required "legal notice." (Even is including a discla iner of the assurance of accuracy.)

There remains what I regard as a basic questions if not true why did Alvares say it?

You have no doubt of Wak mishandling. It is not too late to provide Jim with suggestions. We are still in court on that one.

When I referred to alveres having been turned on by students I recalled, I think clearly, that he said years ago the animated discussions by and with his students turned him on. As I also recall it at that time there were only two books, WW and Inquest. I recall nothing of this nature in Inquest, at least not in the required detail. Therefore I did assume that however he learned, alvares learned from WW, despite a studied contrary pretense in this never drek.

You say you recall having little to do with this. I am not asking to criticise you and if you discussed it with him what is there to cricize? Nothing. My sole interest is knowing what happened as it relates here to the possible WW original source.

What I find provocative- and not I'm not beating around the bush with words like interesting or fascinating - is "His interest in the head snap started after he asked me what the single most convincing piece of evidence for a conspiracy was."

For a man of science I believe any one is inadequate because any one can be equivocal or even wrong while many others could be right. From this I am wondering if for his own reasons be was looking for what he did - making a basic assault on a major criticism of the Report and the official account.

Later you say "Maybe we can agree that the Zapruder film is not simple to interpret" as others like Downing think. You have forgotten. Or perhaps I never told you. Anyway, when I most about the head-smap part in 1966 (it is toward the end of WWII) I believed it would not be credited and rewrote it down to almost nothing but a mention. If I do not go as far as you do in what is possible interpretatively if you switch to acceptability there is no disagreement. Where there is disagreement is where most disagree with mo. I do not regard it is scientific or reasonable to isolate individual items of evidence.

(I've been over three hours getting this far. The phone, over the Hall hearing in* Washington tomor ow and the NITimes story today, has been busy. * marks the spot when I got a California call a half half ago-last half hour. SO I'm sorry if I am disjointed.)

There are, I remind you, two separate items, one the jiggle, as you call it and then the Tink -ing, as I do. Tink's book was not out for about another year. But was the Alvarez suggested explanation the business of the head moving into the force that hit it? By memory has misled me. I thought the idea originated with Usen.

When they appeared a reed some of the books on the 'p_enheiser case. Alvarez' name then meant nothing to me. You say they contain unflattering portraits. Are you saying he is one of those who went after 0 and in doing it presented hisself in this unflattering way to those who wrote later? My own view is that what happened to 0 was McCarthyian in its more principled aspects. You need not agree but with this my opinion if alvarez k joined in the political has and cry that is a self-pertrait to me.

Not inconsistent with his Operation Jason career. I've forgotten the details of it. The Eisnehower phrase is ilktary-Industrial complex. My recollection is that this was big brains justifying everything (that I would not justify).

There is an undercurrent of defensiveness in your graf where you say of course a melon is not a head. I'm not a scientist and I'm not going to go through all that business again but I am saying that an eminence grise of the scientific worl knows better than the experiment of w ich you were part. I'm glad to know that soder and Sagan, of whom I have no recollection, agree with my chicken-farmer's notion that with the bone in it the skull is relatively rigid. There is much more that can be said than this. Note than the absence of replacement of bone, nerves, attachment, etc. But this from a Nobel laureste and it is called science? You and Obson were kids, perhaps overwhelmed by his reputation.

You do not respond to my question about where in the melon the shots were sized and about even with an unattached melon would you expect the same reaction if the force were applied in the middle as you would get with it applied at the top. We have learned such since what I remember as the time of those shootings.

I like "on Newhall and I've never found his irresponsible. If I've forgotten that conversation what you say is an understatement of what I thought. Lariner is understating considerably and engracealy. I do not ask why. It is scant confort to find that just about everyone who has had any contact with the committee has come around to my sarly opinion-and predictions. (I have not seen the Rawls story but I'm confident it is also understated.) These interruptions just seen like they'll not end. One told me that the consittee has issued a vacuous press release attacking Rawls for not waiting another 8 months to see that by then they do not have what they now ment believed at long last they have. Snother is that those who can get other jobs are looking. It is not just on Wall and the news stories. But on the stories I presume the reporters begin with the assumption that they must be tisid to get past the deaks and then the deaks eviscerate them more. My impression of Rawls is that he is a good person and an first-rate reporter.

I'll be out there briefly in a little over a week. I have no schedule. I'm going to Dallas for some FOIA work and then to Lafer other work. I expect to go to SF just long enough to see the Whites. Hel has been silent, unresponsive, for years. Thanks and best,

Dear Harold,

Thanks for your letter of the 27th.

I only have a single copy of the Alvarez preprint, so I have Xeroxed the front and back work covers for you (along with the first page). When kx the published version came out, I checked it against the preprint, and my recollection is that there were no non-trivial changes.

I've also enclosed the cover page from my xeksi thesis, which shows the same contract number. I'm pretty sure that is a general contract covering

all the work of the Lab.

Yes, I would be surprised if ERDA authorized Alvarez to use any money for this project. In fact, if I wouldn't be surprised if they had no knowledge of this work until it was done and written up! (Of course I have no evidence on this point.)

I have no doubt that there could be a major story in how the NAA was

(mis)handled. That is probably an unrelated story, I would guess.

My recollection is that I had very little to do with Alvarez' first interest in the Z film (which led to the much-maligned, thanks to CBS) "jiggle" theory. My xmm office-mate at the time, who spent quite a bit of time talking about the JFK case with me, was one of the mux students who frequently talked with Alvarez over lunch or coffee; I wasn't. I recall that there was so little contact at that time kwam that when Alvarez wanted to check the film in the 26 volumes, he went to the law library and didn't even contact me.

His interest in the head snap started after he asked me what the single most convincing piece of evidence for a conspiracy was. I told him about the head snap and (I think) loaned him Tink's book. He came up with a suggested explanation, and then Olson and Buckingham joined us in testing it experimen-

I don't know anything about Ruxiest Project Jason, so I can't help you on that.

For what it's worth, yauxarexmatxthe the WC critics are not the first people to find Alvarez difficult, arrogant, or whatever. If you check some of the books on the Oppenheimer case and other events of that period, you will find some quite unflattering portraits. Actually, he's mellowed quite a bit in the last 10 years or so. But I do think that's all irrelevant to our major concerns.

Of course a head is not the same as a melon, and we weren't trying to simulate a head in detail. Let me try KKRKKRK stating my understanding of what the Alvarez experiment has established: if the WC critics are to argue that the head shot could not have come from the rear, we cannot do so simply from a general principle ("A target always goes away from the gun") but must base the argument on the specific properties of the skull, the bullet, and the motion which distinguish them from the situation in the Alvarez experiment. The most persuasive criticism I recall hearing (and I think it came from Soder or Sagan at Cornell) is that the relatively rigid skull (bone) would require more forward momentum to be imparted. But that is also a hypothesis, which would have to be tested experimentally. Maybe we can agree that the Zapruder film is not simple to ix interpret (as people like Rep. Downing think), and that the proper scientific study to get all possible information from it has not been done.

Jon Newhall of Zodiac News (who told me he had talked with you) gave me some waxi details about the House Committee's interaction with Loran Hall which make the Committee look far worse than what was printed in Lardner's piece - which MR was bad enough. A couple of people from their investigative staff talked with me for an hour when them they were out here a couple of weeks ago, and did nothing to change my opinion that the Committee doesn't have its act together and is showing no signs of doing so in the wax near future. I saw you comments to Lardner when the last HSC report came out, and I thought they were well taken points*.

A MEASUREMENT OF THE K (890) MASS DIFFERENCE IN THE REACTIONS $\pi^{+}d \rightarrow (p)\Lambda K^{*+}$ AND $\pi^{-}p \rightarrow \Lambda K^{*0}$

Paul L. Hoch (Ph. D. Thesis - Part 3) October 16, 1972

Prepared for the U.S. Atomic Energy Commission under Contract W-7405-ENG-48



A PHYSICIST EXAMINES THE KENNEDY ASSASSINATION FILM

Luis W. Alvarez

July 1975

Prepared for the U.S. Energy Research and Development Administration under Contract W-7405-ENG-48



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Introduction:

In the eleven years since the Warren Commission published its 26 volume report on the assassination of President Kennedy, a controversy has continued over the validity of the Commission's findings. Dozens of books and countless articles have been written to show, for example, that Lee Harvey Oswald had nothing to do with the event, or that he was part of a conspiracy with the CIA or other parties in planning the assassination. Some of the books, such as Mark Lane's "Rush to Judgement," were best sellers. In December 1966 Esquire published an article listing thirty-five different theories that had been advanced by as many authors, each suggesting a variation on the Warren Commission's official scenario of the assassination. And since then, many more theories have appeared.

In the light of such a long history of unsettled controversy, the reader might well wonder why yet another author would feel moved to write on the subject. The reasons are quite simple; in the first place, I continue to read, and to hear on radio and television that "The laws of physics require that the President must have been shot from the front, whereas the Warren Commission places his assassin, Lee Harvey Oswald, behind him."

Such statements involve the backward snap of the President's head, immediately after the shot that killed him. I will show, both theoretically and experimentally, that such statements are simply incorrect; the laws of physics are more in accord with the conclusions of the Warren Commission than they are with the theories of the critics.

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