

A-84-019  
46-17

~~CONFIDENTIAL~~

UNCLASSIFIED

Major J. O. Ackerman

G. B. Kistiakowsky

Laboratory Program

PUBLICLY RELEASABLE  
LANE Classification Group

*JAB*  
MAY 20 1998

27 July 1945  
FINAL DETERMINATION  
UNCLASSIFIED  
L. M. Redman  
NOV 06, 1980

Reference is made to your memorandum to Mr. Gurinsky of July 25 on the same subject. I do not quite agree with your statement of our objectives and also think that they may have to be changed somewhat in light of decisions reached by the Project Planning Committee, the first meeting of which took place in the evening of July 26.

With your paragraph 3 I agree except that I do not think that too much effort should be devoted to research on casting in the present molds. As soon as a satisfactory casting technique and satisfactory explosives for the present molds have been obtained I think the procedures should be frozen and further work with the present molds limited to what might be suitably called "process control."

As regards your item 4, I agree again with the general statement but I do not think that this intermediate range program can include upside-down casting because such would involve radical changes in the molds and we are certain not to be able to procure them for use within three months. Rather I would feel that this intermediate program should determine the optimum explosive composition to be used with the present type of casting techniques. Such castings might be made in present molds; Group X-1 will determine the wave shape on the basis of which an altered design of the slow cap should be made including a thin layer of Baratol under the lens to eliminate sharp corners in Baratol casting. If the thus adopted combination of explosives results in a larger reduction in lens thickness than is needed for the above mentioned Baratol layer, we should also design a new spherical insert into the molds and thicken somewhat the inner charge by designing a new trimming tool; however, in no case so much that new inner charge molds will become necessary. Possibly the over-cast of Comp. B in lenses may also be introduced at this time since this change would involve no large amount of procurement of machined parts except for a new cutter. If we limit ourselves to these changes it is entirely possible that we may get new parts within a period of three months from now which appears to me a reasonable date for change over.

Beyond this program, I feel the high priority work on all-cast lenses should be stopped. I have, of course, no objections to research work with radically new cast slow

VERIFIED UNCLASSIFIED

*hmx* NOV 1980

no-  
CLASSIFICATION CANCELLED  
DOC REVIEW JAN 1973  
aw.  
UNCLASSIFIED

~~CONFIDENTIAL~~

2277 0304

UNCLASSIFIED

- 2 -

~~CONFIDENTIAL~~

explosives or with radically new casting techniques such as upside-down casting. However, I have some doubts whether large enough advance can be thus made to justify great expenditures of time, personnel, etc. to put them into production. Rather I think the efforts of S Site should be then largely devoted to cooperation with the Anchor Ranch Group in developing a lens incorporating non-cast slow explosive, since that appears to me the ultimate we can achieve during this war. With that development accomplished we possibly may all go home.

The Project Policy Committee has considered yesterday the desirability of introducing a multi-multi lens charge, possibly consisting of 92 all-cast lenses in order to produce a charge of higher performance within a shorter time than would be possible if we waited for sintered explosives. I have asked Henderson to look into this matter since it will be largely a question of designing molds to fit an explosive combination as defined in your paragraph 4. I do not think that at present the S Site will have to do any additional work on this matter since the casting techniques will be extremely similar to those to be used with 32L90 molds, the contemplated ones having almost the same size. However, I have emphasized to Henderson that no actual design of molds should be undertaken except after obtaining detailed instructions from S Site on the type of construction desired.

G. B. Kistiakowsky

GBK:he

Copies to: D. Gurinsky  
B. Weidenbaum

2277 0305

CLASSIFICATION CANCELLED  
PER DCC REVIEW JAN. 1973

UNCLASSIFIED

~~CONFIDENTIAL~~