

# National Association of Rocketry

Plan No. 204

## PLAN PROGRAM FACT SHEET

Model Name Whispering Eagle

**NOTE:** The Whispering Eagle is not a beginner's model. It is a fairly advanced project. Its extremely high two-staged performance requires large open areas for flight.

The Whispering Eagle was designed by Steven G. Kushnir, NAR #469, and set a national altitude record of 1,770 feet for Class 4-BB models on 19 August 1960 during the NARAM-2. It may be flown as either a single-staged or two-staged model.

The top stage has a nose cone turned from hardwood. The body is a standard 13/16" o.d. paper tube 5-1/8" long. Four fins cut from 1/16" sheet balsa are glued to the aft end of the stage. Fins should be carefully aligned, and the model should be well-built to withstand the high air speeds of which it is capable. A streamer recovery system was installed in the original model. The top stage flies well as a single-staged bird launched from a tower.

The lower stage has three large fins cut from 1/16" balsa. The lower stage body is made from a standard 13/16" paper body tube 2-7/8" long. A paper collar around the front of the lower stage allows it to be mated with a sk slip fit to the top stage. The lower stage should slip smoothly into mate with the top stage so that there is little play between the two stages. But they should be able to separate. A launching lug cut from 5/32" aluminum model airplane tubing is glued to the paper collar on the lower stage. When the stages are mated, the fins should line up as shown in the Front View.

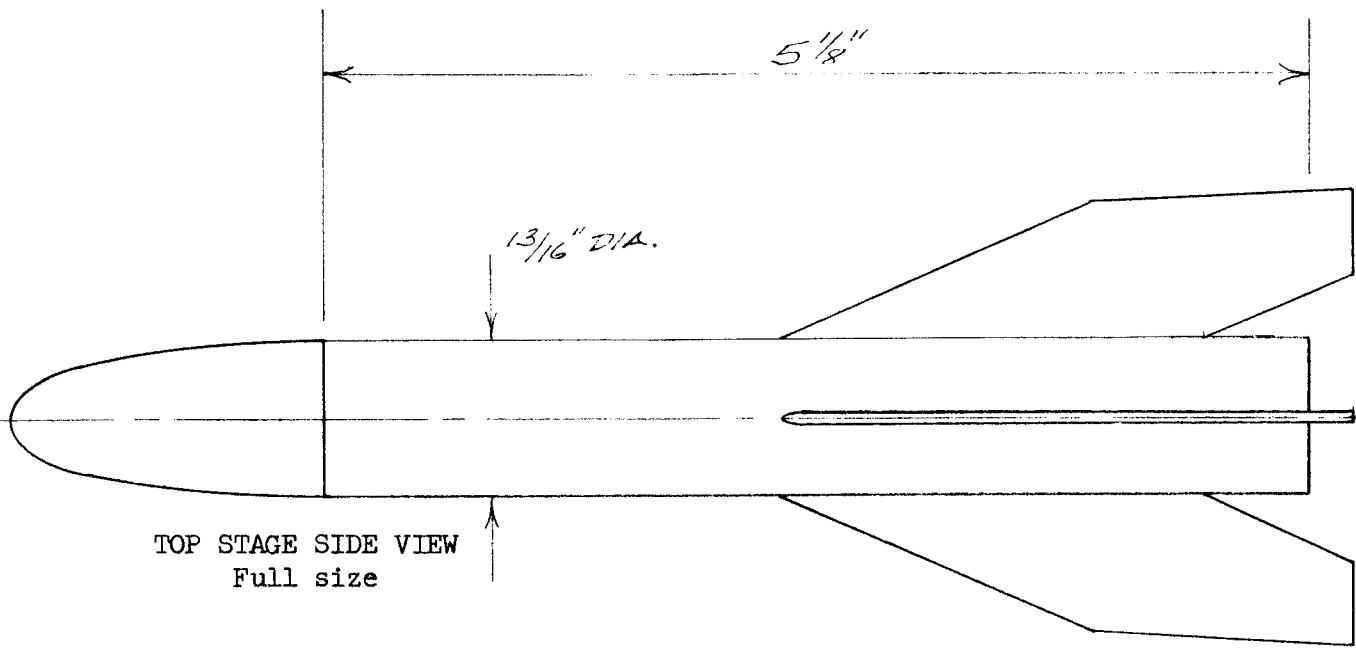
In the top stage, use an NAR Type A .8-4 or Type B .8-4 engine. Make certain the nozzle of this engine is clear before mating the stages. In the lower stage, use only an NAR Type B .8-0; use of a motor with a delay charge will result in a dangerous flight and destruction of the model. The lower stage engine is mounted in the lower stage body and fitted with an electrical igniter. The end of burning of the lower stage Type B .8-0 engine produces a puff of hot gas which travels forward through the hollow body of the lower stage and ignites the top stage engine; the pressure of this gas also separates the stages. The lower stage will flutter back to the ground like a falling leaf.

The two-staged model must be launched from a 1/8" diameter steel rod at least 36" long. Always fly this model vertically, and do not fly if strong winds are blowing. Fly in a large open area. This model is capable of extremely high performance if properly built, so take extraordinary precautions when flying it.

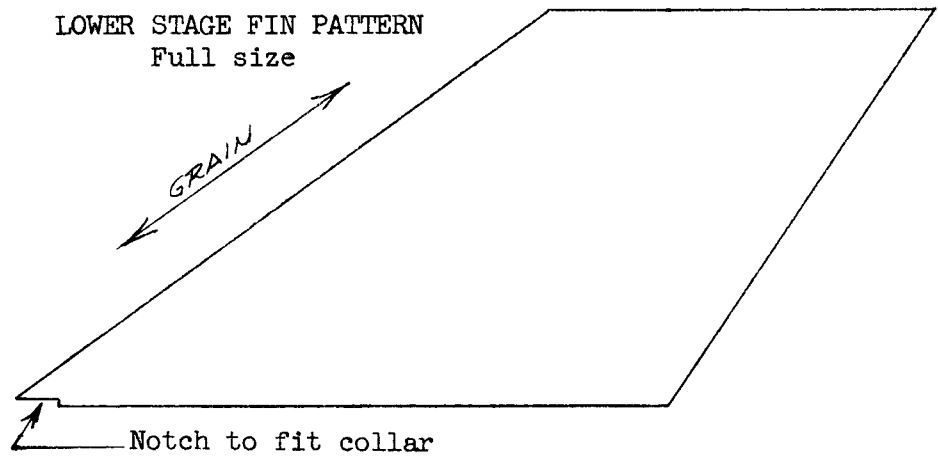
At the time the Whispering Eagle achieved its record altitude, it was the highest flight ever tracked and officially recorded by a model rocket. At the time it set the Class 4-BB record, it was more than 150 feet higher than the best Open Altitude Class record.

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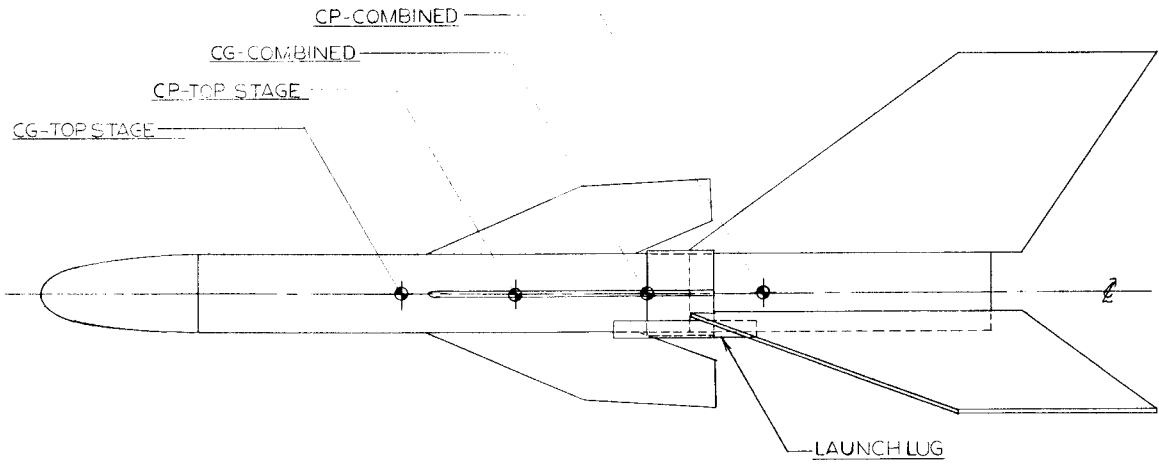
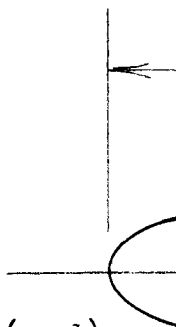
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LOWER STAGE FIN PATTERN  
Full size



NOSE CONE (wood)  
Full size



SIDE VIEW COMBINED STAGES

Half-size

Paper Collar

Launch Lug

LOWER STAGE SIDE VIEW  
Full size

2 7/8"

1 1/16"

7

7

1 5/8"

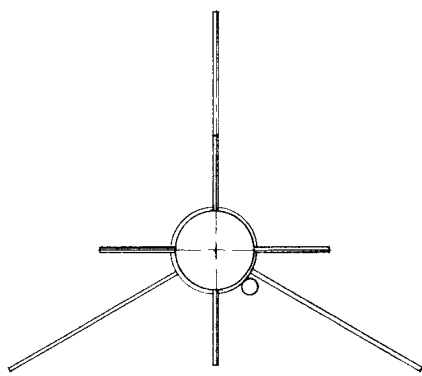
1/2"

3/4"

1 3/16"

GRAIN

TOP STAGE FIN PATTERN  
Full size



FRONT VIEW Half Size

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**NATIONAL ASSOCIATION OF ROCKETRY**  
**PLAN PROGRAM**

WHISPERING EAGLE

MODEL SCALE: Not appl.      DRAWING SCALE: As noted

SCALE SOURCE: Not applicable

DESIGN BY: Steve Kushnir      DRAWN BY: GHS

CHECKED BY: *Steve Kushnir*      RELEASED: Jan 1961

DRAWING NUMBER: NAR- 204