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NPIC/R-58/65
March 1965

PHOTOGRAPHIC INTERPRETATION REPORT

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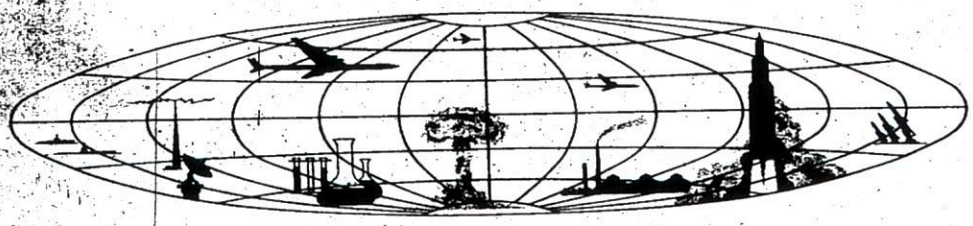
S-17027

GOA MISSILE, MOSCOW PARADE
7 NOVEMBER 1964

CIA

DIA

NATIONAL PHOTOGRAPHIC INTERPRETATION CENTER



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PREFACE

This report is in response to CIA requirement C-SI4-82,030 requesting mensuration and line drawings of the GOA missile and its transporter.

The mensural data contained in this report were obtained from photographic graphical solutions coupled with scaling and ratio techniques. Because of the geometrical problems involved in mensural analysis of oblique ground photography, some degree of error is inherent. The reader is cautioned that, while in many instances dimensions are carried to the one-hundredth part of a foot, the degree of accuracy is not that reliable. The following is a general guideline in determining what degree of confidence can be placed in the data.

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The reader is further cautioned that the graphics presented with the accompanying mensural data are not intended to be used for detailed engineering analysis.

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Attache photography of the 7 November 1964 Moscow parade revealed 4 transporters carrying 2 SA-3 GOA missiles--the first such missiles to be publicly displayed. They bore serial numbers 745203, 422556, 222050, 450007, 334005, 447752, 555700, and 557440. Photographs and detailed line drawings with complete mensural data are shown on the following pages (Figures 1-7).

The SA-3 GOA is a 2-stage missile with an overall length of 19.30 feet. The first stage, or booster, is 5.70 feet long, with the main portion of its cylinder being 1.73 feet in diameter but the nozzle end tapered to 1.52 feet. The booster has 4 generally rectangular fins positioned on a 45-degree axis to the missile centerline. Each fin measures approximately 2.05 feet by 2.85 feet and is 5.85 square feet in area. As displayed on the transporter, the longer side parallels the booster body; however, the pivot union of the fin to the booster body and the design of the rear of each fin, shown clearly in Figure 7, indicate that the position of the fins changes for flight, during which the longer side is perpendicular to the body.

The second stage, consisting of sustainer and warhead, is 12.45 feet in length, and the widest portion of the cylinder is 1.20 feet in diameter. The sustainer has 2 sets of 4 fins, the smaller, forward ones each with a surface area of .31 square feet and designed to pivot on a control-fin shaft protruding from the sustainer. The 4 rear fins on the sustainer are each 2.58 square feet in area. An appendage on the outer edge, possibly an antenna, measures 1.3 feet in length and .16 feet in diameter. Two of the fins have aileron control surfaces, each .38 square

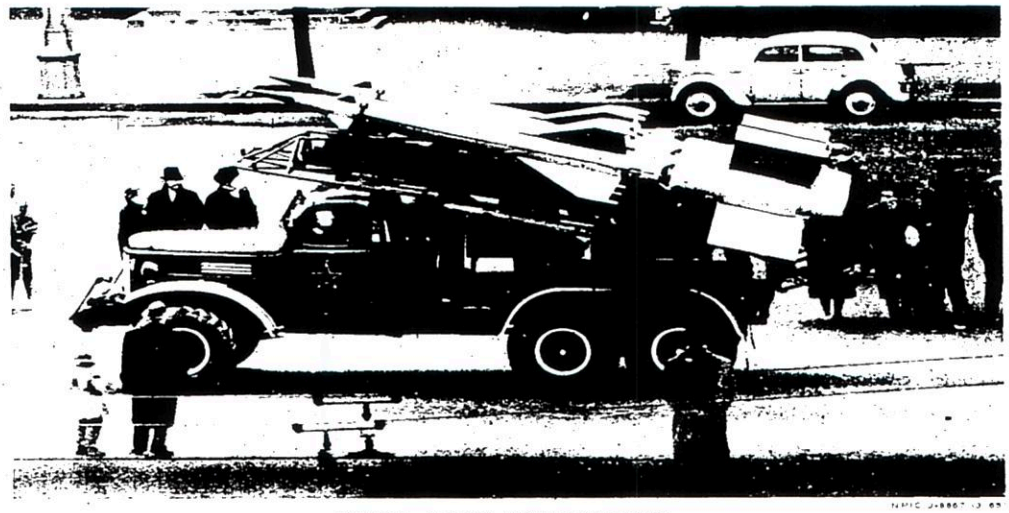

FIGURE 1. SA-3 GOA MISSILES ON PARADE.

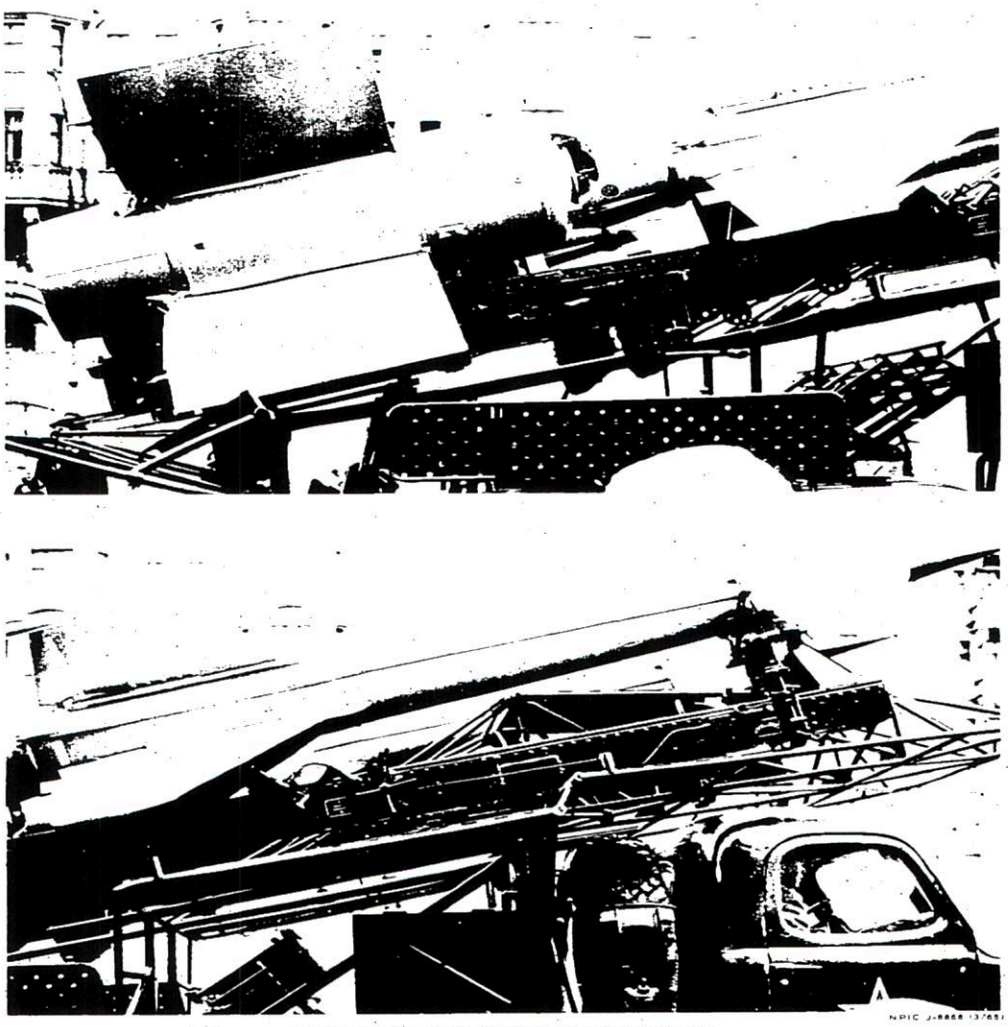

FIGURE 2. SIDE VIEWS OF BOOSTER AND SUSTAINER.

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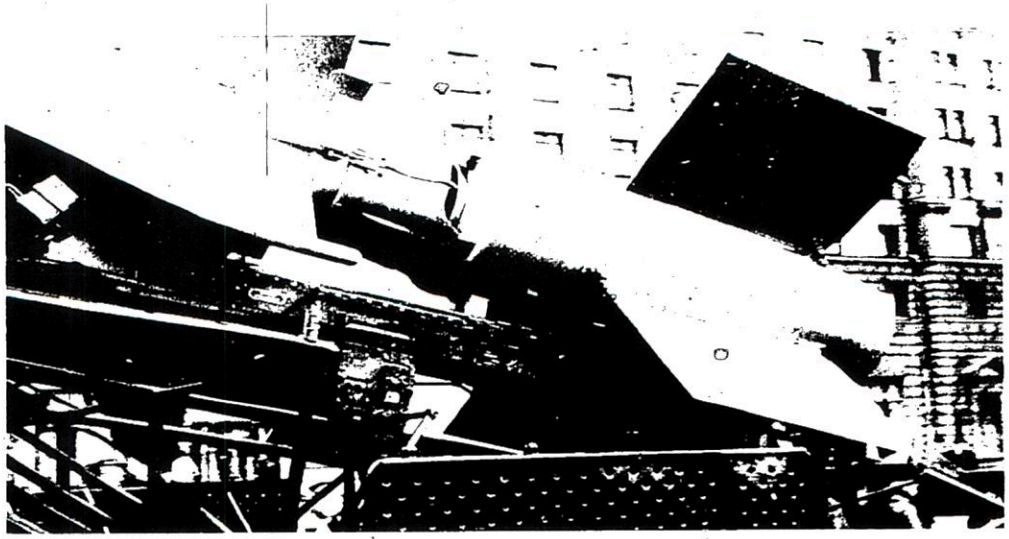

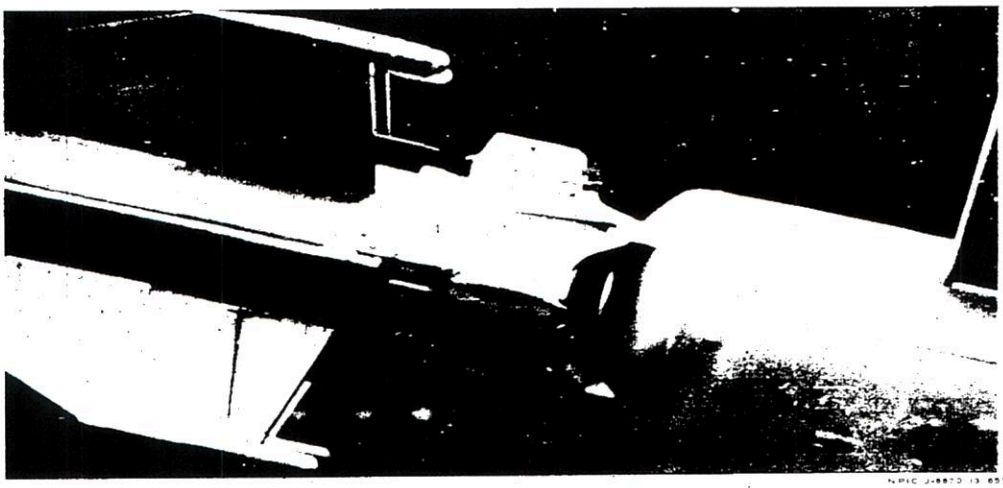

FIGURE 4. DETAILS OF THE MISSILE.

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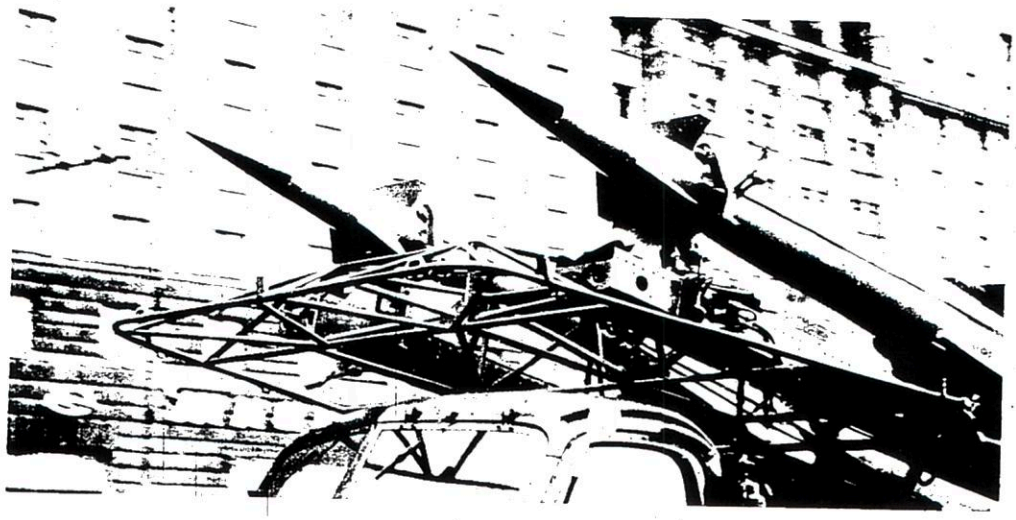

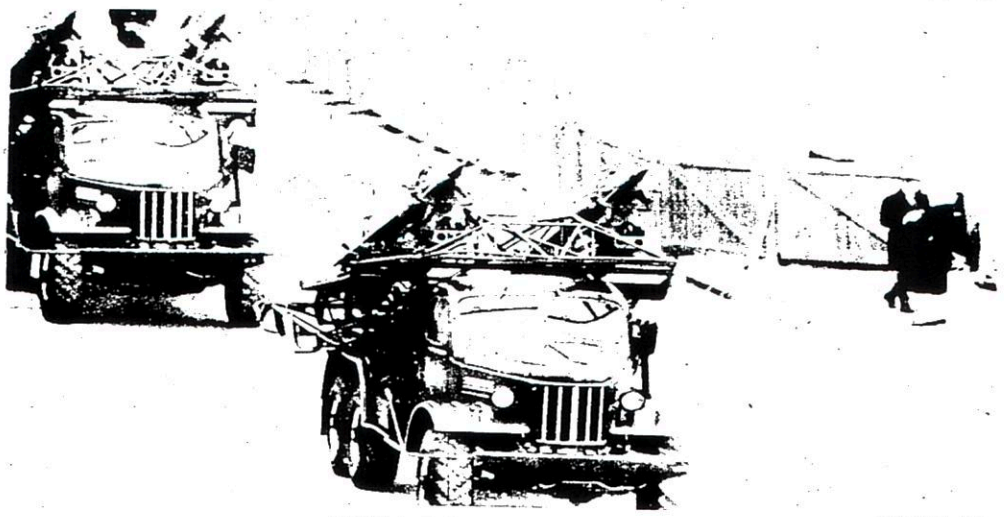

FIGURE 5. THE GOA ON TRANSPORTER

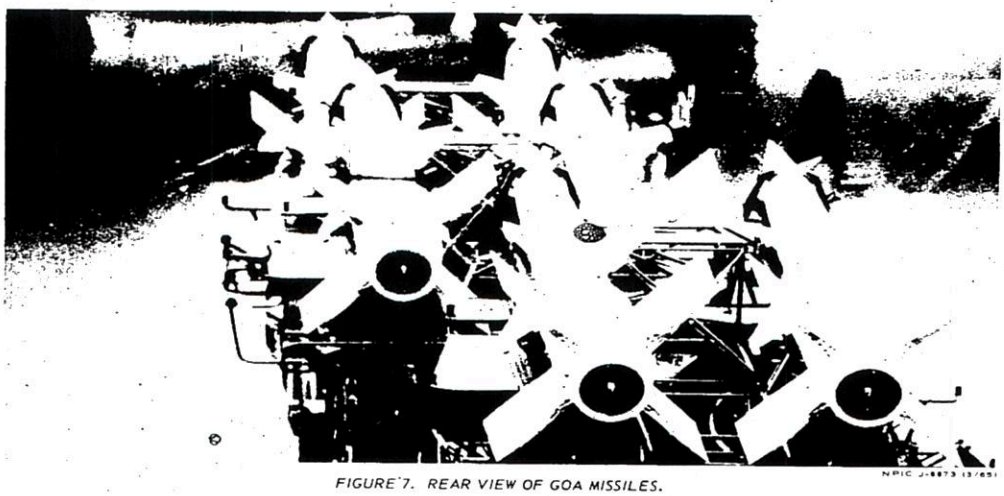

FIGURE 7. REAR VIEW OF GOA MISSILES.

feet in area, and the alternate fins each has a fixed tab 0.8 square feet in area (Figure 4).

The transporter is a ZIL-157 truck tractor which has been modified to transport 2 GOA missiles but not to launch them. Overall length of the transporter with missiles emplaced is 24.70 feet, maximum height is 11.50 feet, and maximum width is 10.30 feet.

The transporter has 2 rails, each one similar to the single rail on the transporter for the SA-2 GUIDELINE missile, and each rail supports one missile. Separation of these rails to correspond to the dual rails of a GOA launcher, and layout of the inner service roads at SA-3 sites to allow turnout space near each launch position, indicate that the missiles are offloaded by backing the transporter to the front of the launcher, elevating the twin rails of the launcher to match the angle of the transporter rails, and sliding the missiles backward down the rails onto the launcher.

REFERENCES

PHOTOGRAPHY

Selected attache photography of 7 November 1964 (SECRET, [redacted])

REQUIREMENT

CIA. C-SH-82,030

NPIC PROJECT

11955/64 (partial answer)

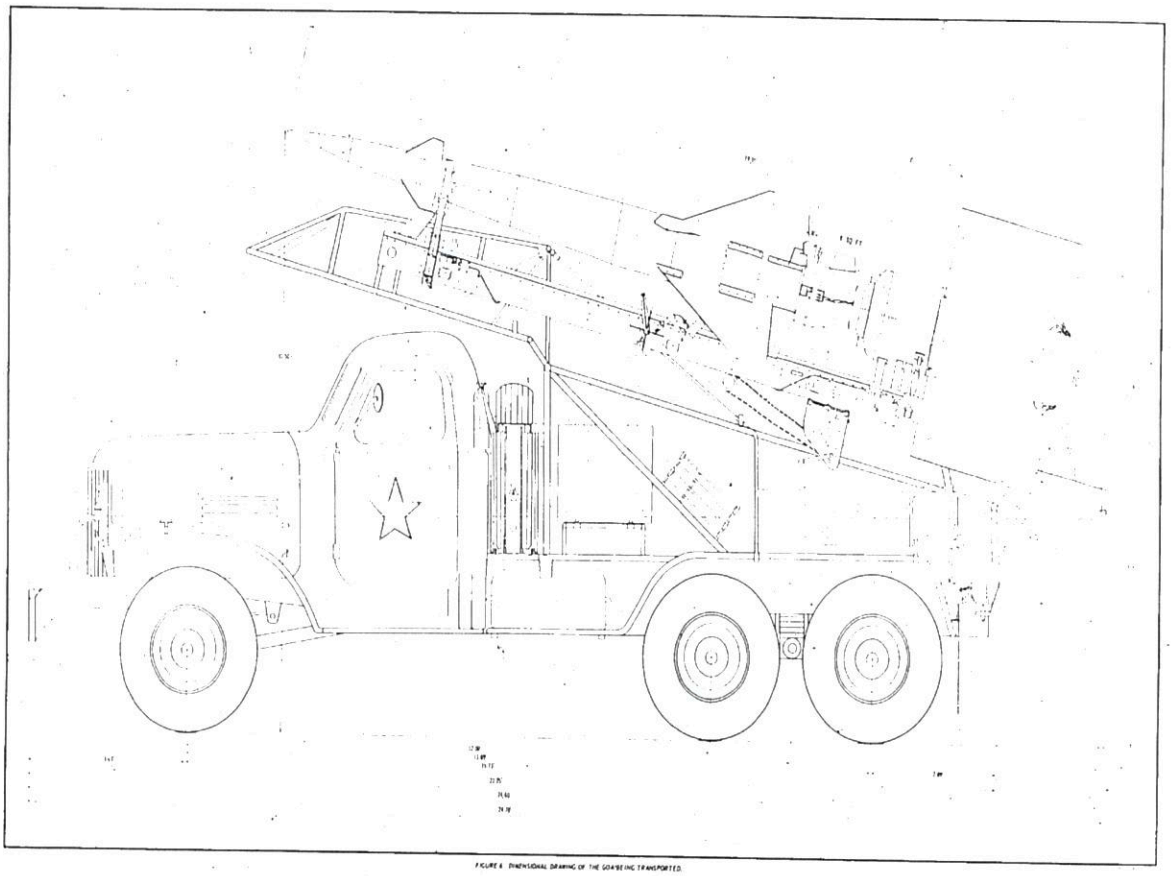

FIGURE 6. DIMENSIONAL DRAWING OF THE SOA SEING TRANSPORTED.