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SECURITY CLASSIFICATION ~~CONFIDENTIAL~~

SUBJECT Addendum to:
Directional stability tests at M = 1.57 on a 1/80 scale model of the Avro C-105 aircraft with certain modifications

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1. Configuration and balance

A sixth modification on a 1/80 scale model of the Avro C-105 aircraft was tested in the same manner as the previous modifications.

This modification (configuration f) consisted of extensions to the tail pipes, fig.1 and 2. The extensions were cut out of a brass tube and fitted on the outside of the conical tail pipe. Thus these pieces extended the tail pipes on the outside. Plasticine was used to fair these extensions in the fuselage contour.

The balance was the same as used in the previous tests, except that by electrical means the balance resolving centre was moved closer to the model centre of gravity. The uncertainty of C_n was there-by reduced from ± 0.00057 to ± 0.00027 for the typical case considered in Lab. Memo AE-81b (HSAL-M-83), p.13. The other uncertainties remained the same.

2. Test results

The lateral characteristics are plotted versus yaw angle in fig.3, 4 and 5, both for fin-on and fin-off condition. In fig.6 and 7 a comparison is made with the standard configuration data, as given in the Lab. Memo AE-81b. The effects of the present modification are in general small and slightly unfavourable in the fin-off condition. With the fin-on, the yawing moment remains highly non-linear with the yaw angle.

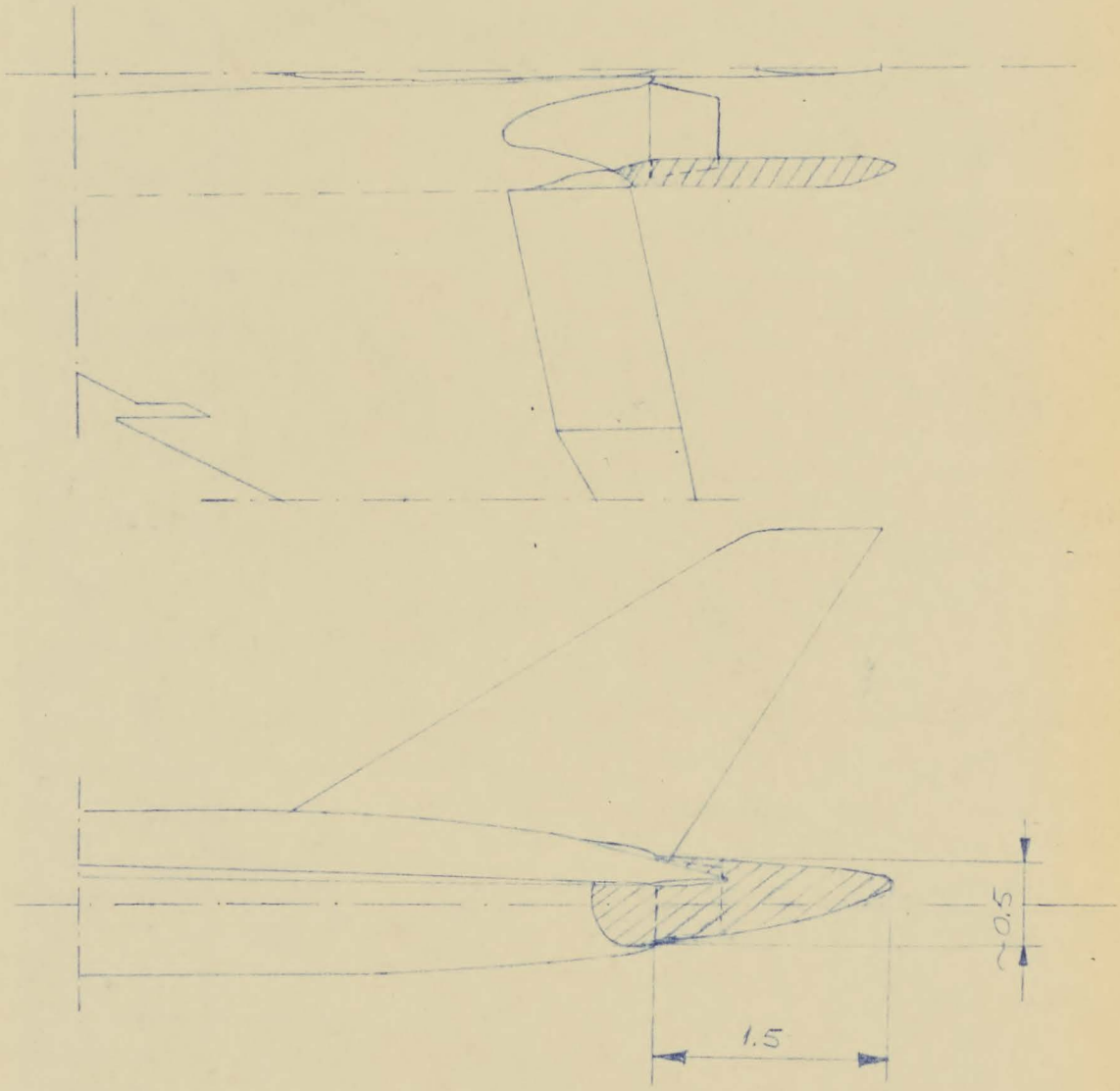

FIG. 1 POSITION OF TAIL PIPE EXTENSION.

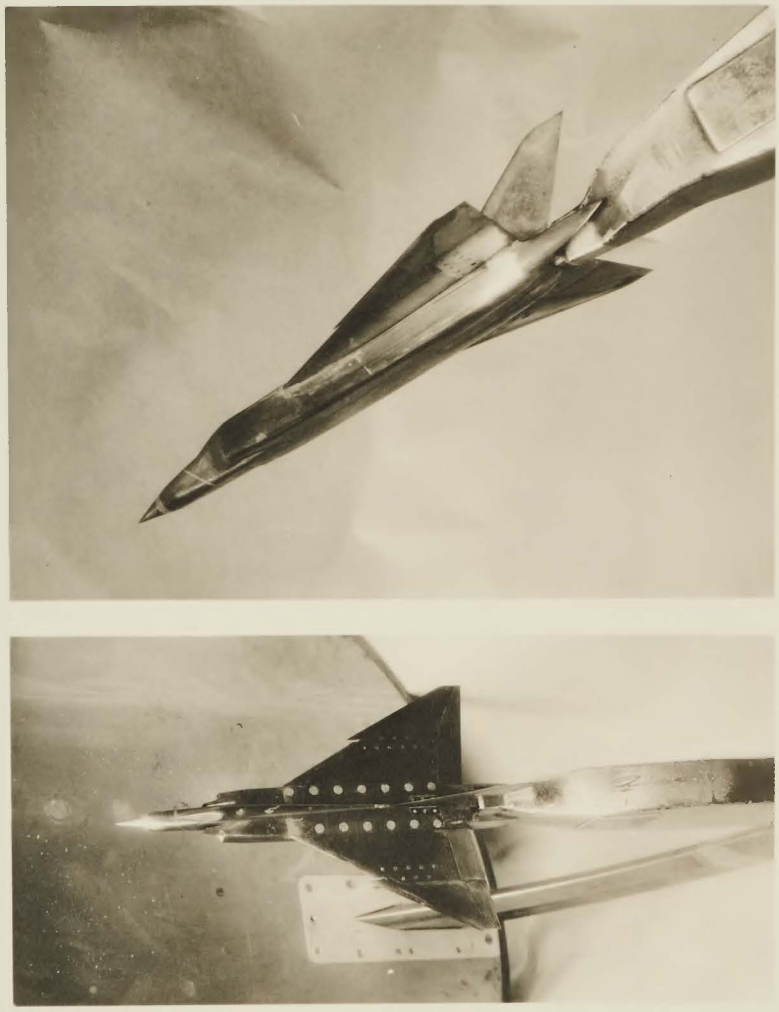

FIG. 2 PHOTOGRAPH OF MODEL WITH MODIFICATION f

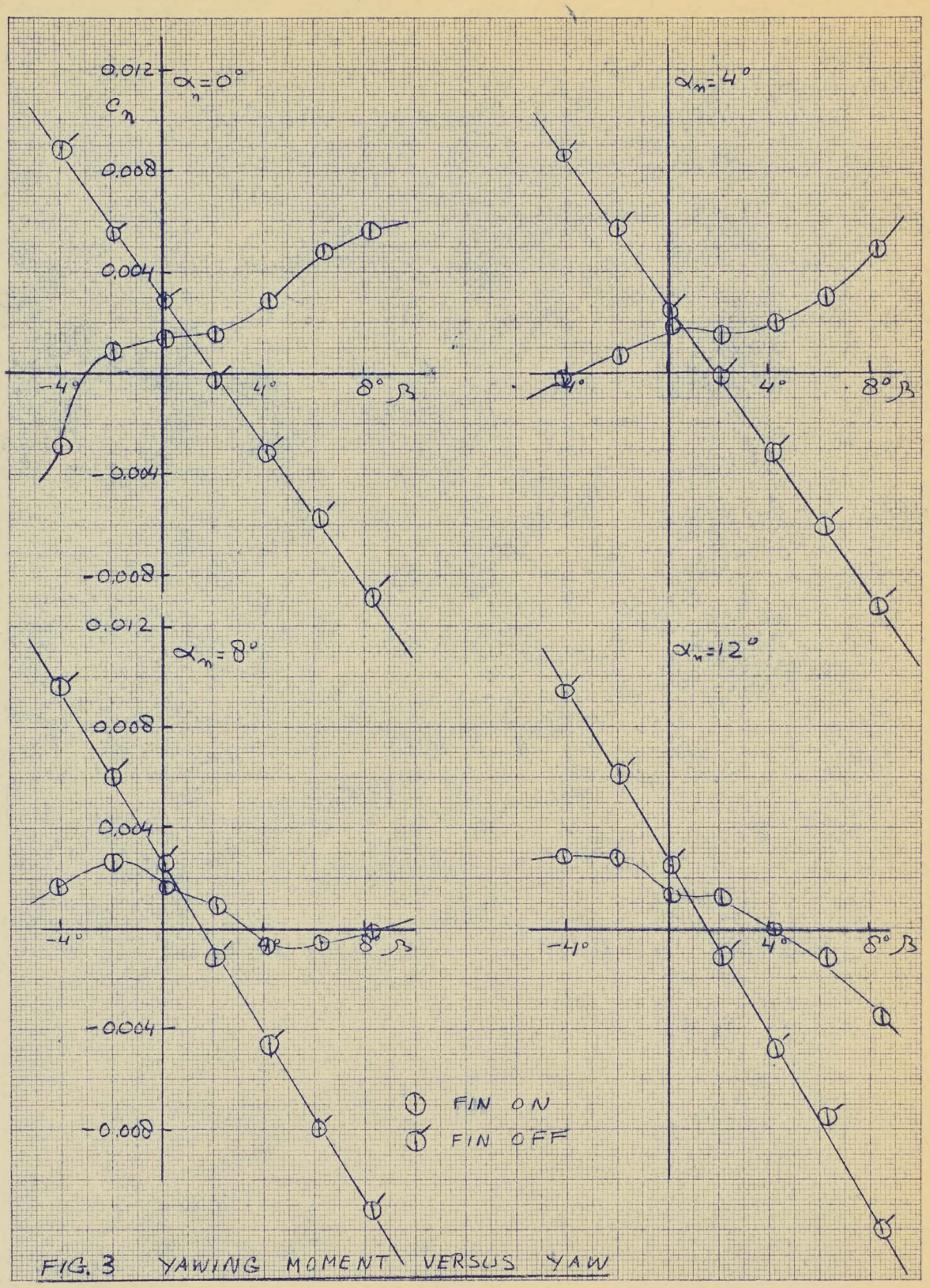

FIG. 3 YAWING MOMENT VERSUS YAW

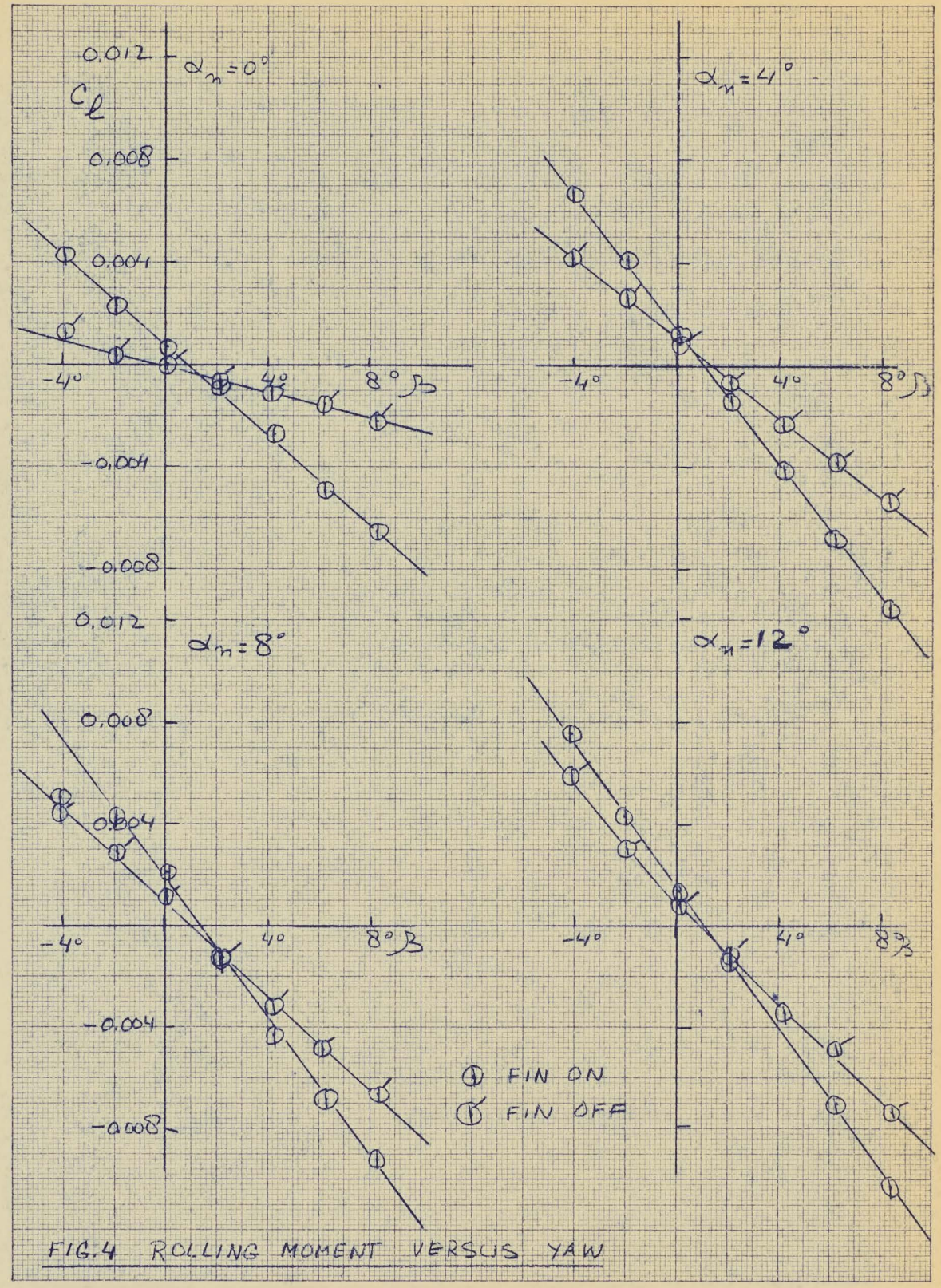

FIG.4 ROLLING MOMENT VERSUS YAW

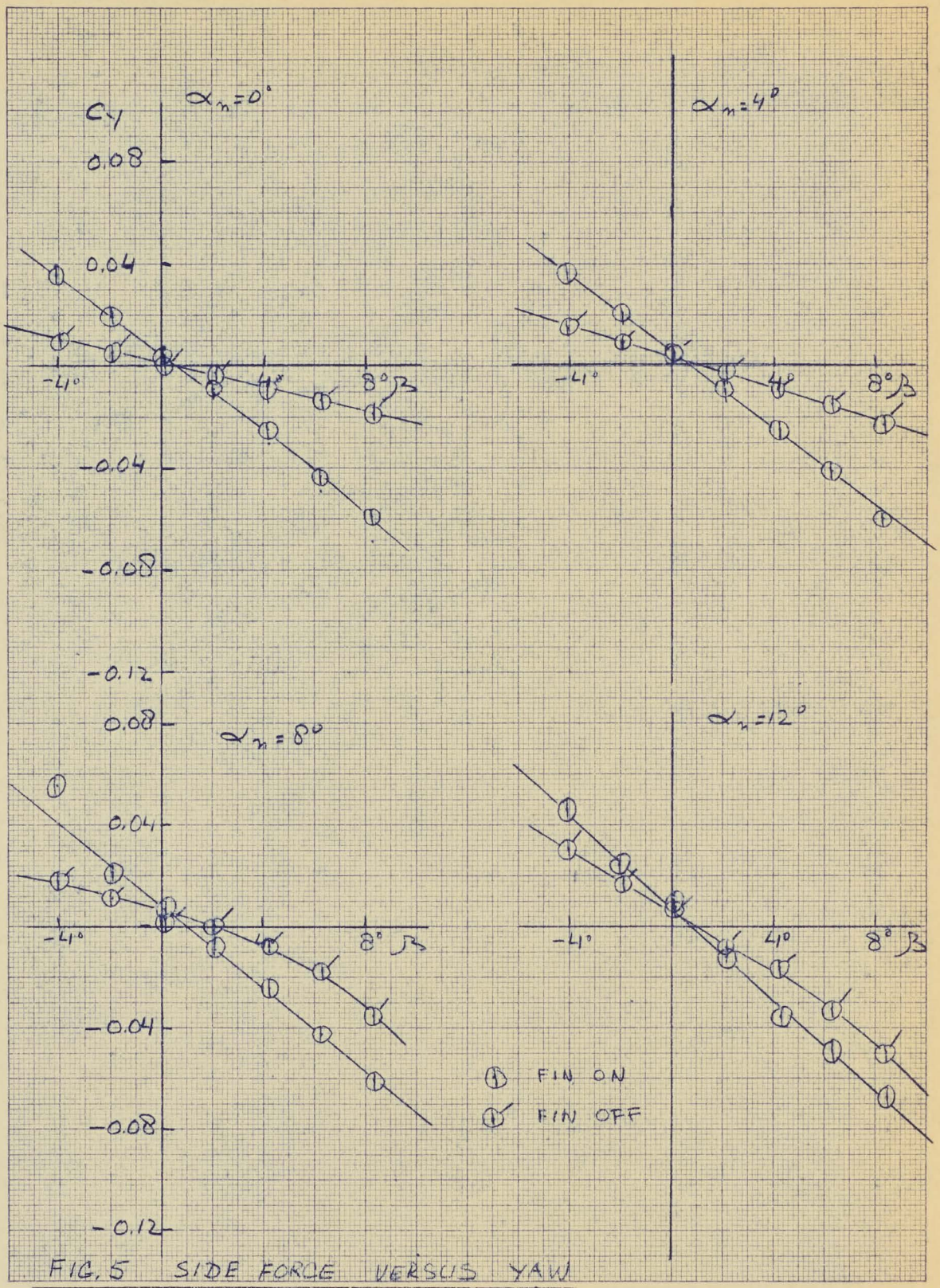

FIG. 5 SIDE FORCE VERSUS YAW

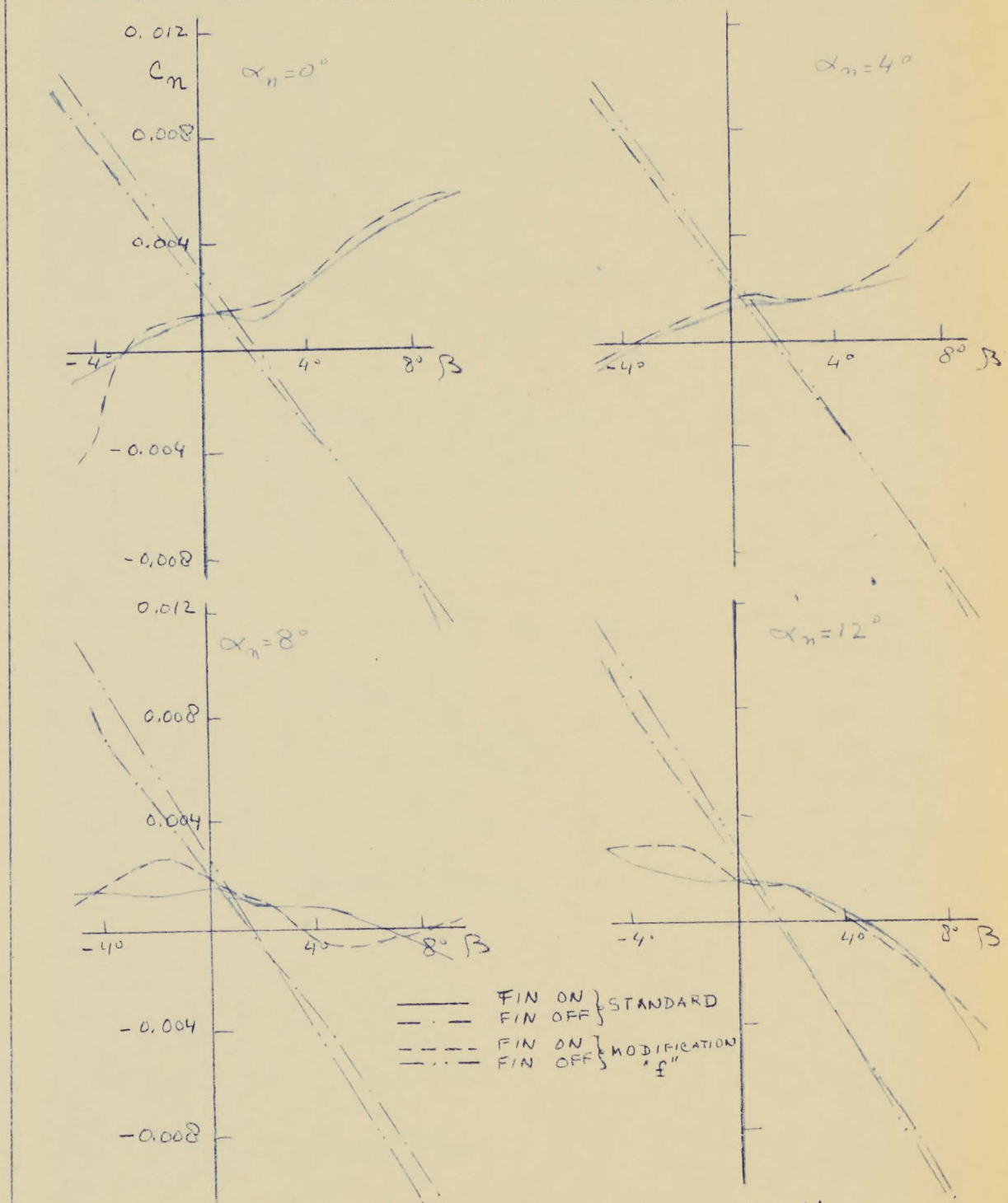

FIG. 6 COMPARISON WITH STANDARD CONFIGURATION (YAWING MOMENT)

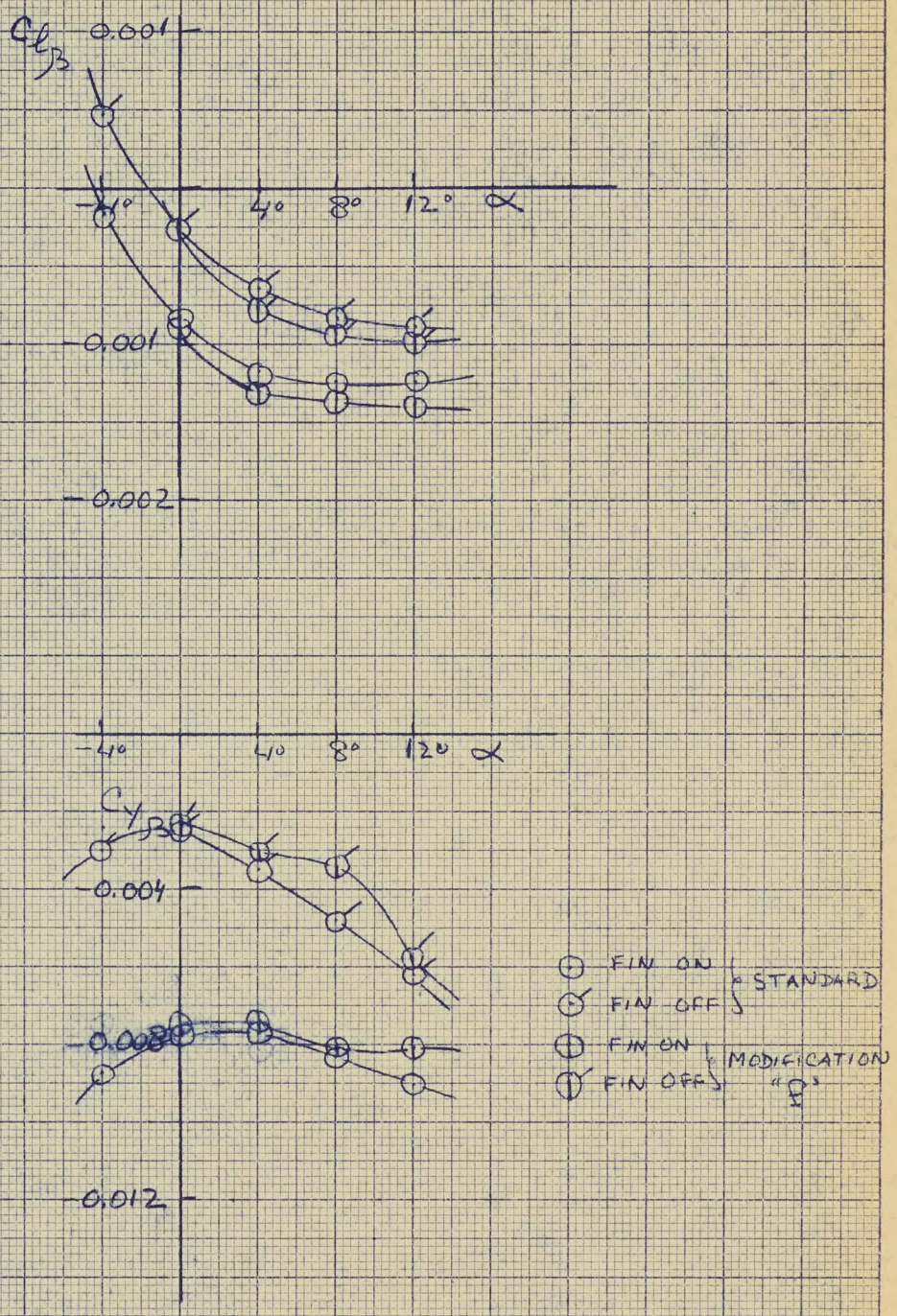

FIG. 7 COMPARISON WITH STANDARD CONFIGURATION (ROLLING MOMENT AND SIDE FORCE)