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MINISTRY OF SUPPLY

**AEROPLANE AND ARMAMENT
EXPERIMENTAL ESTABLISHMENT**

BOSCOMBE DOWN

TESTS OF NEW TYPE ENGINES TO REPLACE THE B.M.W. ENGINES
IN THE AIRCRAFT "ALBATROSS"

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SECURITY INFORMATION

Report No. A.A.E.E./Arm/116.

29. JAN. 1953

AEROPLANE AND ARMAMENT EXPERIMENTAL ESTABLISHMENT
BOSCOMBE DOWN

Tests of new type clips to replace the spring clip
on retractable fuzing wires

A. & A.E.E. Ref: AAEE/5915/44
M. O. S. Ref: 7/Armt/1852/1388
Period of Test: May - November, 1952.

Summary

Trials of new type clips to replace the standard spring clip (widely known as the 'Buggins' clip) on retractable fuzing wires have been completed.

It is concluded that the double corkscrew type as modified is satisfactory, it may however be considered advisable to use the corkscrew idea as a basis of design of a smaller clip.

This report is issued with the authority of



Air Commodore,
Commanding A. & A.E.E.

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1. Introduction

1.1 As a result of experience over a long period, the standard spring clip (widely known as the 'Buggins' clip) is considered to be inefficient.

1.2 Ministry of Supply letter reference 7/Armt/1852/1388 and trials proforma R.D.Arm.4/124 dated 23rd April, 1952 call for tests of new clips supplied by D.R.A.E., Farnborough.

2. Object of trial

2.1 To ascertain which of the clips submitted for test proves a satisfactory replacement of the Buggins clip in general use.

3. Method of trial

3.1 Fourteen types of clips were tested. (Fig.1)

Clips 4(a) and (b) were not flight tested due to the difficulty in attaching the loop of the safety wire to the clip.

3.2 The remainder were used as replacement clips during bombing trials of Vampire aircraft, and release sorties were carried out at indicated airspeeds of 450 knots and in angles of dive to 60°.

3.3 The double corkscrew type clips were modified (Fig.2) the pitch of the coils being increased to $\frac{1}{2}$ " and the lead bent parallel to the axis, this ensures ease of attachment to the loop of the safety wire and prevents the inadvertent engagement of more than one coil.

3.4 Subsequent to this modification, four handling and eight release sorties were completed at an indicated airspeed of 450 knots and in dives of 60°, 9th part of Report No. AARE/819,1, refers.

4. Results of trial

4.1 With the exception of the double corkscrew clips 3(a) and (b) (Fig.1) all the clips tested opened on or after the release of the bombs, in some cases failing to retain the safety wire. It became apparent that the corkscrew clip was the most satisfactory and subsequent to the modification as at paragraph 3, the fuzing arrangements using the steel double corkscrew were satisfactory, the safety wires being retained.

5. Conclusions

5.1 It is concluded that:

The modified steel double corkscrew clip (Fig.2) is satisfactory as a replacement of the 'Buggins' type spring clip in general use on retractable fuzing wires.

6. Recommendations

6.1 It is recommended that the modified steel double corkscrew clip be:

- (a) Accepted as a replacement of the 'Buggins' type spring clip.
- (b) Be used as a basis of design for a clip to replace the 'Buggins' type clip.

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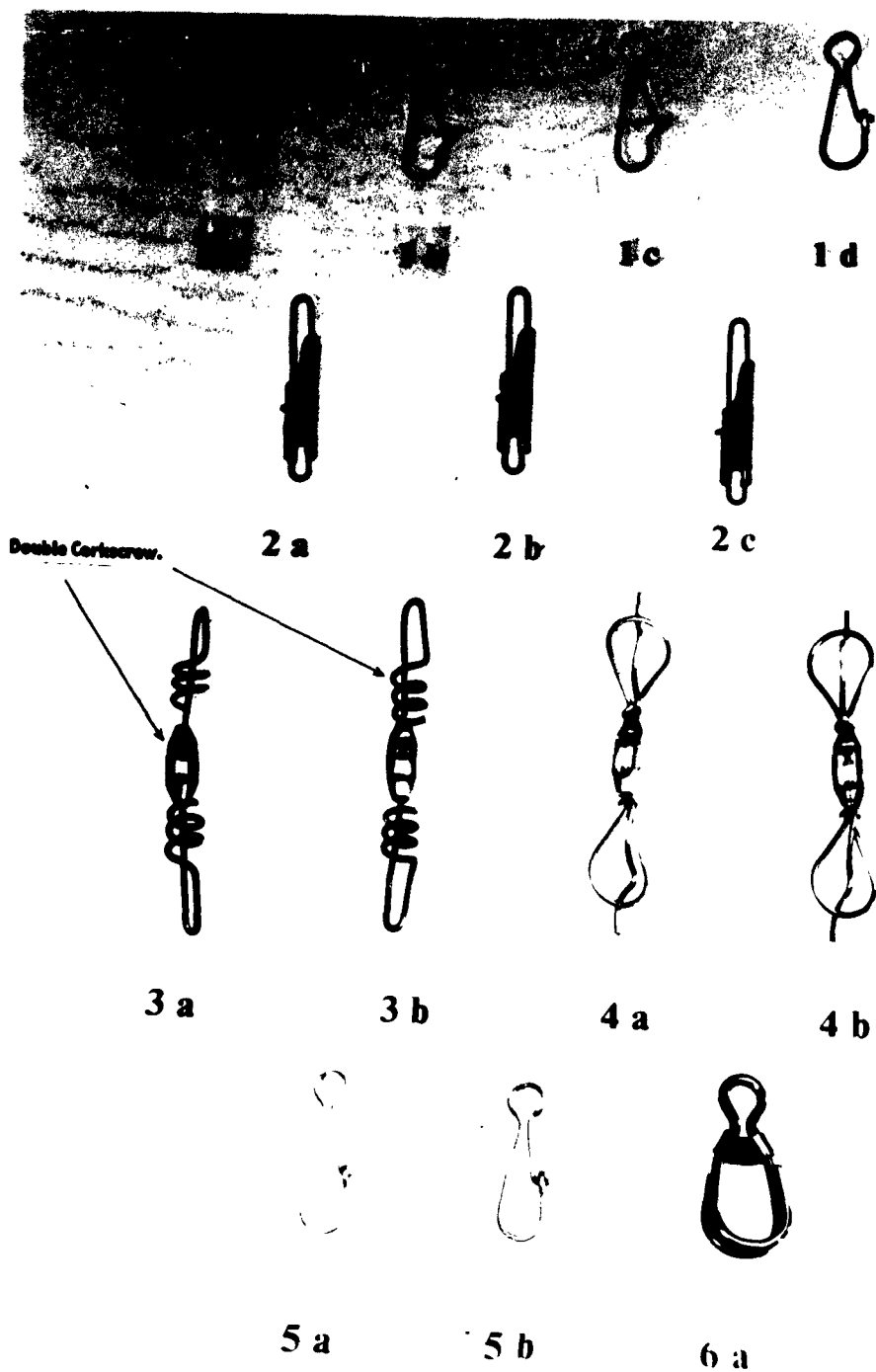


FIG. 1. Clips Submitted for Tests

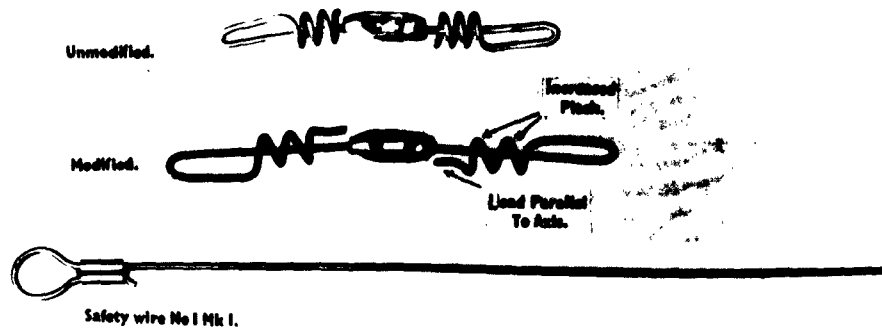


FIG. 2. Double Corkscrew Clips & Safety Wire.

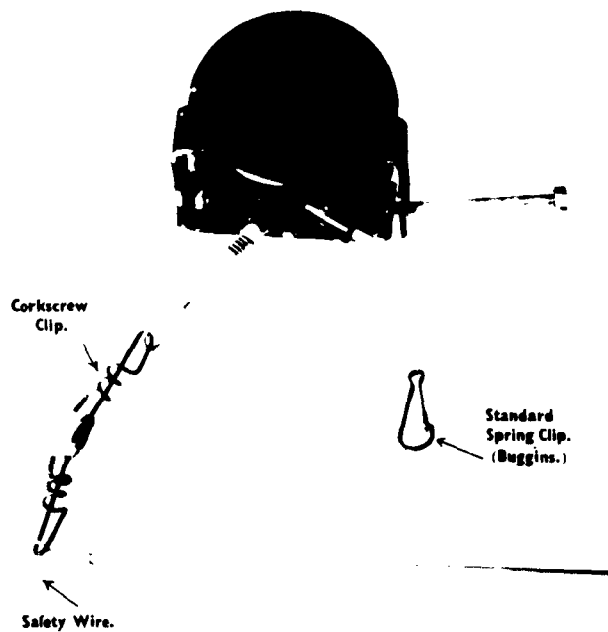


FIG. 3. Showing Attachment of Corkscrew Clip. (Standard Spring Clip Removed.)



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