

CoA/M/M+P-14

ST. NO. R
U.D.C. 30501
AUTH.



M and P Memo No. 14
December, 1963

THE COLLEGE OF AERONAUTICS

DEPARTMENT OF PRODUCTION AND INDUSTRIAL ADMINISTRATION



TEST REPORT NO. PLBO/6

Wear tests of PERPRO tools grade CLV, machining Meehanite

S U M M A R Y

Tools of grade CLV were tested at 300 fpm cutting speed, 0.010 in./rev. feed and 0.10 in. depth of cut to 0.030 in. flankwear. The results gave a mean tool life of 37 minutes which should be compared with the results given in Report No. PLBO/1 for grades CLV 403, A, B and C.

R
30501

Test conditions

The following conditions were used during the tests:

Work material:	Meehanite
Cutting speed:	300 fpm
Depth of cut:	0.10 in.
Feed:	0.010 in./rev.

and the following tools were used:

CLV NT127
CLV NT128

Test results

The wear of the tools was measured as in figure 1 at intervals of three minutes cutting time and the results are given in Tables 1 and 2.

Figure 2 shows the growth of the flankwear from which it can be seen that the mean tool life to 0.030 in. wear was 37 minutes.

Figure 3 shows photographs of the tools at the end of the tests.

Conclusions

The results showed that grade CLV gave a mean tool life for the cutting conditions stated of 37 minutes; this should be compared with the life of CLV 403 A of 24 minutes, CLV 403 B of 24 minutes, CLV 403 D of 37 minutes and CLV 403 C of between 24 and 37 minutes as given in test report No. PLBO/1.

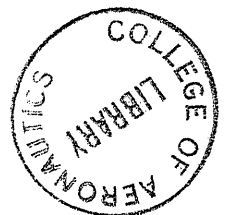


Table 1

Material: Meehanite
Tool: CLV NT127
Feed: 0.010 in./rev.

Date: 14/11/63
Cutting speed: 300 fpm
Depth of cut: 0.10 in.

TIME MIN.	FLANKWEAR - in.			HARDNESS vhn	REMARKS
	Fa	Fb	Fc		
3	.0045	.004	.004		Built up edge
6	.0055	.004	.004		Built up edge
9	.008	.006	.0045	254	Built up edge
12	.0095	.007	.0045		Built up edge
15	.011	.008	.0045		Built up edge
18	.014	.012	.005		Built up edge
21	.0165	.013	.0055		Built up edge
24	.019	.016	.006		Built up edge
27	.020	.019	.007		Built up edge
30	.022	.021	.008		Built up edge
33	.026	.024	.0105		Built up edge
36	.0285	.0265	.0115		Built up edge
39	.0295	.028	.012		Built up edge
42	.0315	.0305	.014		Built up edge

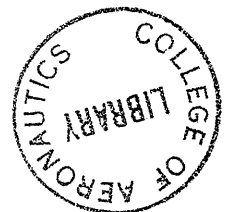


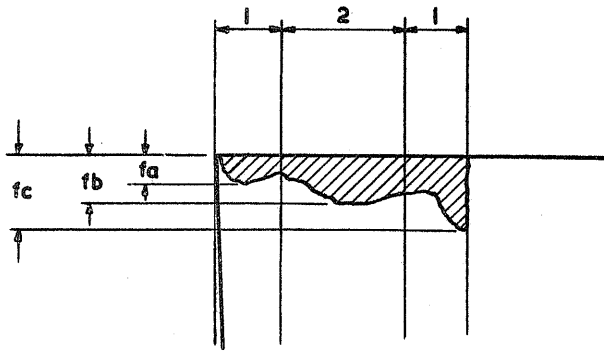
Table 2

Material: Meehanite
Tool: CLV TN128
Feed: 0.010 in./rev.

Date: 14/11/63
Cutting speed: 300 fpm
Depth of cut: 0.10 in.

TIME MIN.	FLANKWEAR - in.			HARDNESS vhn	REMARKS
	Fa	Fb	Fc		
3	.0045	.004	.004		Built up edge
6	.006	.004	.004		Built up edge
9	.010	.007	.005	260	Built up edge
12	.0105	.008	.005		Built up edge
15	.013	.011	.005		Built up edge
18	.017	.0135	.006		Built up edge
21	.019	.016	.007		Built up edge
24	.021	.018	.008		Built up edge
27	.024	.021	.008		Built up edge
30	.028	.0255	.0105		Built up edge
33	.0295	.0275	.0105		Built up edge
36	.0335	.0315	.015		Built up edge





FLANKWEAR MEASUREMENT

FIG. 1

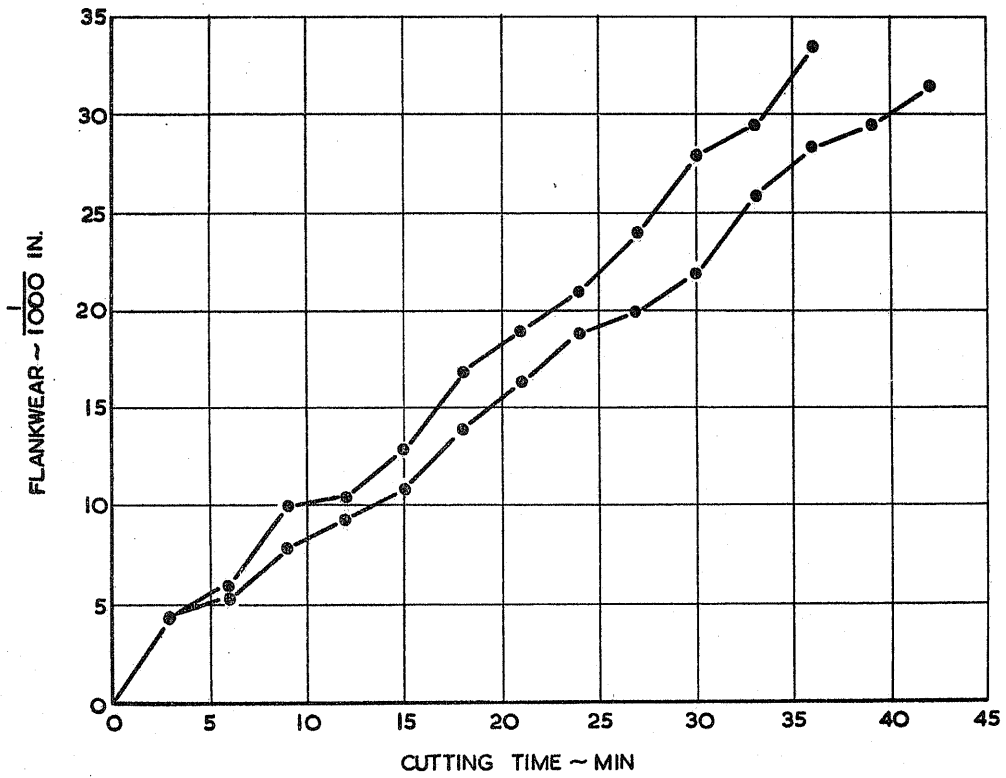
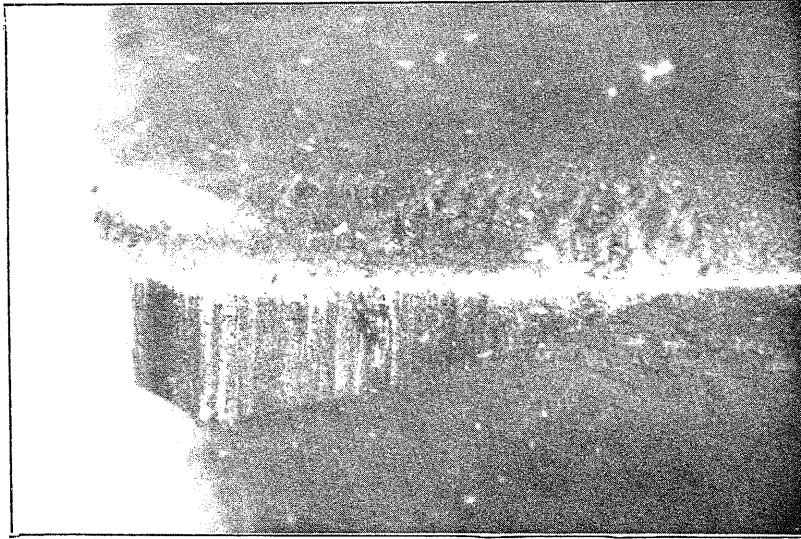
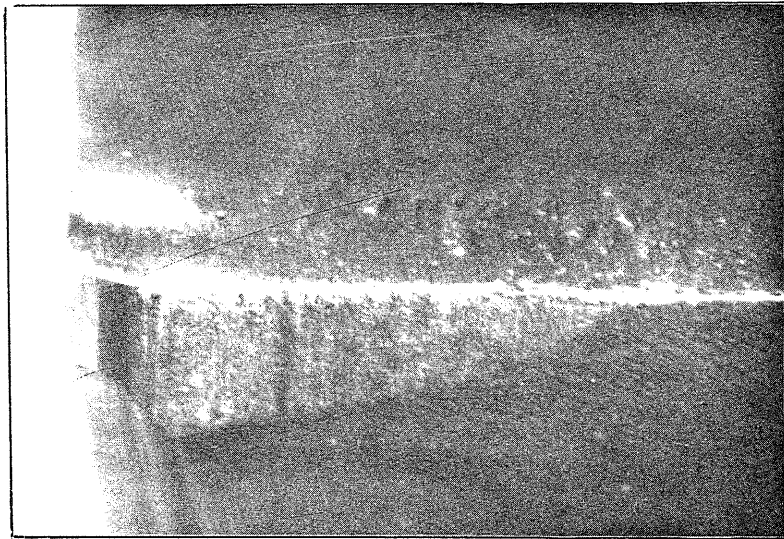


FIG. 2



Tool NT 127



Tool NT 128

Fig. 3 Tool Grade CLV
.030 in flank wear

