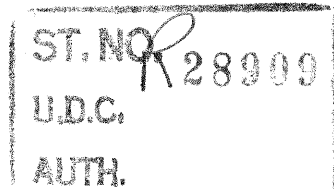


CoA/M/MHP- 28



CoA Memo M and P No. 28

May, 1964

THE COLLEGE OF AERONAUTICS
DEPARTMENT OF PRODUCTION AND INDUSTRIAL ADMINISTRATION

Test Report No. PLB0/11

Comparison of PERPRO grade WK8/T0354 against grade
CLV when machining Meehanite.



S U M M A R Y

Tools of grade WK8/T0354 and CLV were tested at 300 f.p.m. cutting speed, 0.10 in. depth of cut and 0.010 in/rev. feed to 0.030 in. flankwear. The two bars of Meehanite used for the tests gave different results but in each case the performance of CLV was slightly better than that of WK8/T0354; this difference was more pronounced with the less easy to machine material.

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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:-

WK8/T0354 NT75	CLV NT208
WK8/T0354 NT76	CLV NT209
WK8/T0354 NT78	
WK8/T0354 NT79	

Test results

The flankwear of the tools was measured as shown in figure 1, at intervals of three minutes cutting time and the results are given in tables 1-6.

During the tests two bars of Meehanite were used and as they appeared to give different tool lives figures 2 and 3 show the growth of the flankwear of WK8/T0354 for the two bars together with results for CLV as a comparison. (The CLV results for figure 2 have been taken from report PLBO/6).

The figures show that WK8/T0354 had a slightly inferior tool life to that of CLV especially with the more difficult to machine material.

Figure 4 shows photographs of WK8/T0354 at the end of the test.

Conclusions

The results showed that the tool life of grade WK8/T0354 was slightly less than that of grade CLV for the cutting conditions investigated. The difference between the two grades was more marked with the more difficult to machine sample of Meehanite.

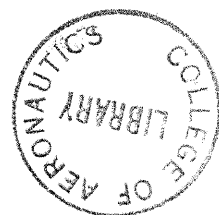


Table 1

Material: Meehanite
Tool: WK8/T0354 NT76
Feed: 0.010 in/rev.

Date: 18/3/64
Cutting speed: 300 fpm
Depth of cut: 0.10 in.

TIME min.	FLANKWEAR			REMARKS
	Fa	Fb	Fc	
3	.004	.003	.003	First bar
6	.007	.006	.0045	
9	.008	.009	.007	
12	.013	.013	.010	
15	.0155	.0155	.0115	
18	.0175	.0175	.013	
21	.021	.021	.0155	
24	.022	.024	.019	
27	.024	.027	.020	
30	.025	.0285	.0235	
33	.025	.030	.025	
36	.025	.0315	.025	

Table 2

Material: Meehanite
Tool: WK8/T0354 NT75
Feed: 0.010 in/rev.

Date: 18/3/64
Cutting speed: 300 fpm
Depth of cut: 0.10 in.

TIME min.	FLANKWEAR			REMARKS
	Fa	Fb	Fc	
3	.005	.005	.004	First bar
6	.008	.008	.006	
9	.0115	.0115	.009	
12	.014	.014	.0095	
15	.0165	.0165	.012	
18	.018	.020	.0145	
21	.022	.022	.0175	
24	.0225	.024	.019	
27	.023	.0265	.022	
30	.023	.0275	.024	
33	.026	.029	.026	
36	.0275	.0305	.027	

Table 3

Material: Meehanite Date: 24/4/64
Tool: WK8/T0354 NT78 Cutting speed: 300 fpm
Feed: 0.010 in/rev. Depth of cut: 0.10 in.

TIME min.	FLANKWEAR			REMARKS
	Fa	Fb	Fc	
3	.0105	.011	.008	Second bar
6	.018	.019	.0145	
9	.024	.026	.020	
12	.029	.034	.029	

Table 4

Material: Meehanite Date: 27/4/64
Tool: WK8/T0354 NT79 Cutting speed: 300 fpm
Feed: 0.010 in/rev. Depth of cut: 0.10 in.

TIME min.	FLANKWEAR			REMARKS
	Fa	Fb	Fc	
3	.007	.0095	.0065	Second bar
6	.0115	.015	.012	
9	.018	.021	.017	
12	.0235	.027	.022	
15	.028	.034	.032	

Table 5

Material: Meehanite Date: 1/5/64
Tool: CLV NT208 Cutting speed: 300 fpm
Feed: 0.010 in/rev. Depth of cut: 0.10 in.

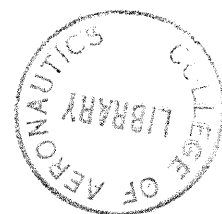
TIME min.	FLANKWEAR			REMARKS
	Fa	Fb	Fc	
3	.005	.0055	.004	Second bar
6	.010	.010	.0075	
9	.014	.015	.0105	
12	.0185	.0195	.0135	
15	.0215	.025	.017	
18	.027	.032	.025	

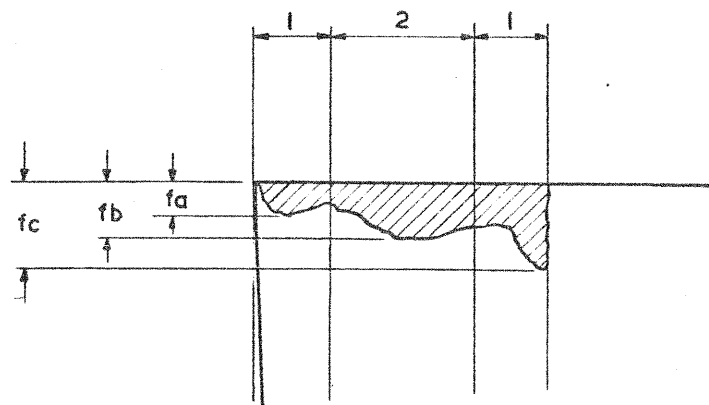
Table 6

Material: Meehanite
Tool: CLV NT209
Feed: 0.010 in/rev.

Date: 1/5/64
Cutting speed: 300 fpm
Depth of cut: 0.10 in.

TIME min.	FLANKWEAR			REMARKS
	Fa	Fb	Fc	
3	.006	.007	.0045	Second bar
6	.011	.013	.009	
9	.014	.015	.012	
12	.018	.021	.0145	
15	.022	.025	.018	
18	.024	.0285	.021	
21	.026	.032	.0275	





FLANKWEAR MEASUREMENT

FIG. 1

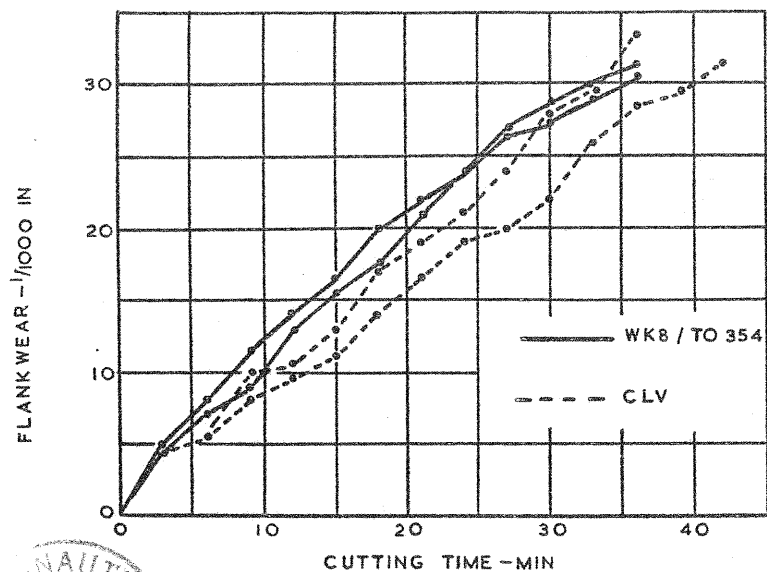


FIG. 2.

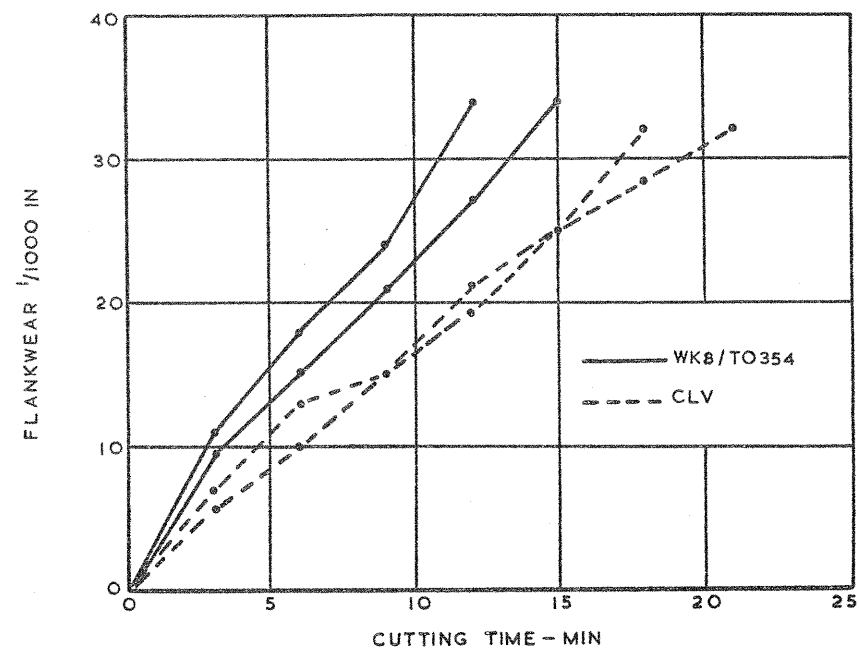


FIG. 3.

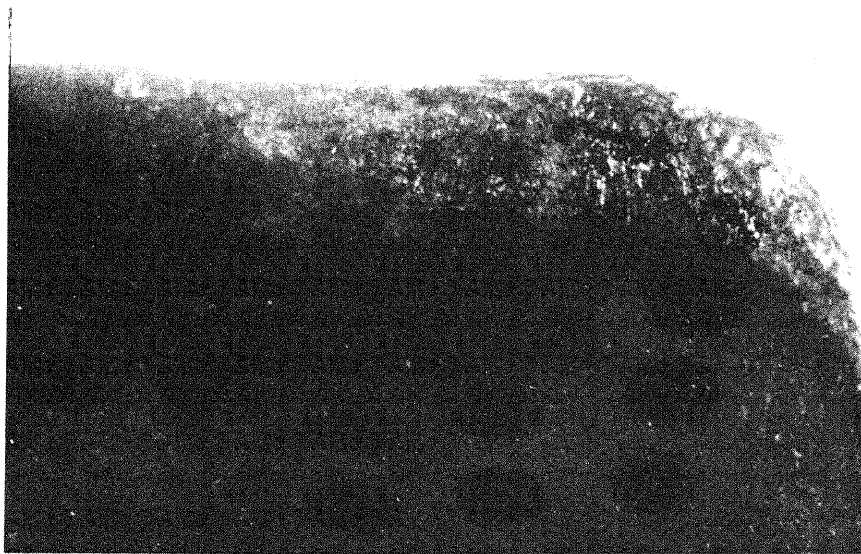


FIG. 4 Flank and Crater Wear of WK8/T0354
at .030 in flankwear.