

Image Cover Sheet

CLASSIFICATION

UNCLASSIFIED

SYSTEM NUMBER

139987



TITLE

EFFECT OF IMMISCIBLE LIQUID OVER THE DISC IN COOLING TRIAL WITH 500 LB. S.C.I.

\(BOLINGBROKE\)

System Number:

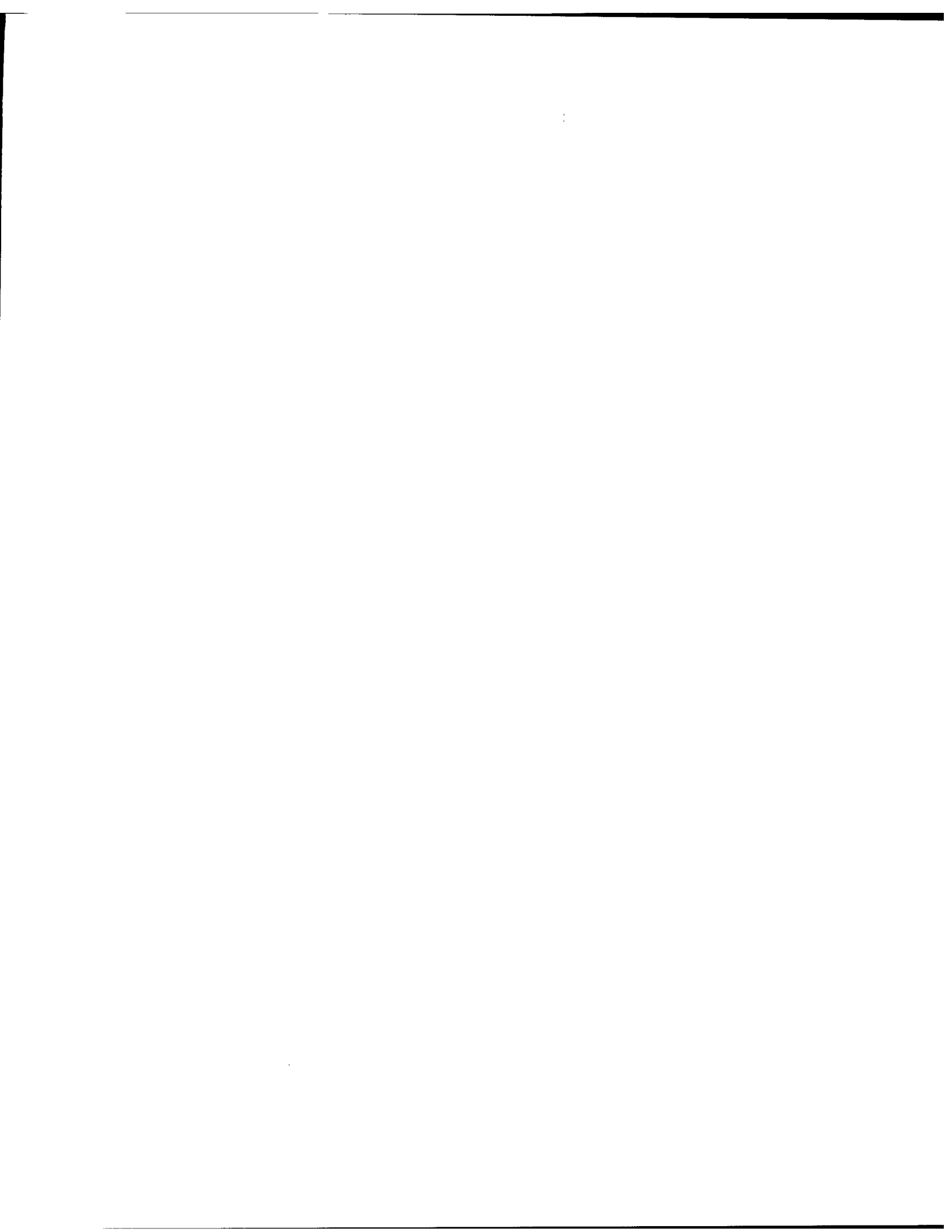
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54354-29-13-1



EXPERIMENTAL STATION

SUFFIELD ALBERTA

FIELD EXPERIMENT NO. 182-25 Feb 98

 Classification / Declaration 25 Jan. 1944
 Changed to / Declassified per
 By Authority
 Sur l'Autorisation

COPY NO

40

Signature

D. Kuseler

Appointment
FunctionUnit
Grade

1. TRIAL: Effect of immiscible liquid over the disc in cooling trial with 500 lb. S.C.I. (Bolingbroke)
2. OBJECT: Field Experiment 115 has been done and was inconclusive. It appears however that the 200 c.c. of Zinc chloride solution was not enough to give the effect desired. The trial will be repeated using a larger quantity of the solution.
3. REFERENCE: Field Experiment No. 115.
There is no Project number for this trial. (Ref. A9709)
4. WEATHER:

Wind Direction	any but NEly (mean to 10,000 ft)
Wind Speed	below 20 mi/hr.
Air Temperature	mean to 10,000 ft. minus 20°C at height not greater than 12,000 ft.
5. SITE: Track to be determined by O.C. RCAF Detachment, in consultation with P & M. S. and M.E.O., towards upwind boundary of area.
6. MATERIAL: Two S.C.I. Type S/G 500 lb. Mk. III charged HTV 6p ; one dyed green and other dyed red.
The S.C.I. with green dyed charging will have half a gallon of aqueous solution of zinc chloride (50%) added through the charging hole shortly before bombing up.
7. Both S.C.I. will be fitted with two thermocouples in the emission disc, one reaching to $3\frac{1}{2}$ ins above the disc and one on the surface of the disc. Both S.C.I. will be stored at 0°C before flight.
8. Two Bolingbroke aircraft: No. 1 : for prolonged flight.
No. 2 : for photography and observation.

PROCEDURE

9. The S.C.I. will be loaded on to Bolingbroke aircraft No. 1; the green to starboard and red to port. Thermocouples will be connected and the aircraft will climb as quickly as possible to the height at which -20°C obtains. The bomb doors will be removed.
10. The Bolingbroke aircraft No. 1 will fly for 3 hours at -20°C and will then be joined over the camp by a Bolingbroke No. 2 carrying photographer and observer.
11. The No. 2 aircraft will formate on No. 1 over an area to be decided by O.C. RCAF Detachment.
12. The two aircraft in formation will then fly on an agreed track along the upwind boundary of the range. On entering the range, and if cameraman on No. 2 aircraft is ready, the S.C.I. with red charging will be fired.
13. Film of the discharge will be exposed and a second observer in the No. 2 aircraft will time the emission.

Field Experiment No. 182 (continued)

- 14. The aircraft will then turn over the range and repeat the procedure without delay with the S.C.I. with green charging.
- 15. The No. 2 aircraft will return to base.
- 16. The No. 1 aircraft will fly at 500 to 1000 ft. over a prearranged part of the range for $\frac{1}{2}$ hour to ensure drainage of the S.C.I. and will then return to base.
- 17. The S.C.I. will then be unloaded immediately and photographs taken of the emission hole. Samples of the solid near the disc will be removed for analysis.

ADMINISTRATION

18. O.C. RCAF Detachment

Organization of flight. Communication between aircraft, intercommunication telephones, and radio to ground. Plans for forming of aircraft. Determination of safe track and area (paras 12 & 16) with M.E.O. and P & M. S. Log of flight every 10 minutes. Height. Speed.

P & M. S.

Fixing thermocouples. Readings of charging and air temperatures.

PHOTO. S.

Film of discharges. Stills of discs.

O. M. & E.

Provision of weapons. Examination of discs. Sample of solid. Report on functioning. Observation in No. 2 aircraft.

HJH:rea

H. J. Hadow

(H. J. Hadow)
P.R.S.
Experimental Station

K. Birchall w/c

(K. Birchall) W/Cmdr.
C.E.O.
Experimental Station

139987

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