

Image Cover Sheet

CLASSIFICATION

UNCLASSIFIED

SYSTEM NUMBER

140012



TITLE

DETERMINATION OF VAPOUR DANGER IN PILOT'S COCKPIT FROM UNDERCARRIAGES OF
KITTYHAWK AND HURRICANE AIRCRAFT CONTAMINATED BY CONTACT WITH CONTAMINATED AEROD

System Number:

Patron Number:

Requester:

Notes:

DSIS Use only:

Deliver to:



UNCLASSIFIED

UNLIMITED

ABSTRACTED BY 44
Date MAR 23 1953

COPY NO. 41
24th August 1943

EXPERIMENTAL STATION
SUFFIELD, ALBERTA

FIELD EXPERIMENT NO. 150.

DETERMINATION OF VAPOUR DANGER IN PILOT'S COCKPIT FROM UNDERCARRIAGES
OF KITTYHAWK AND HURRICANE AIRCRAFT CONTAMINATED BY CONTACT WITH
CONTAMINATED AERODROMES.

OBJECT
As title.

REFERENCE
Request from A.F.H.Q. Telegram Q 4175.
Part (a) Turf aerodromes.

MATERIALS
1 Kittyhawk and spare set of tires.
1 Hurricane and spare set of tires.
HS (U.S. Levinstein) as required for contaminating runway
(about 400 lbs.)

SITE
Emergency landing ground on A - 4.

METEOROLOGICAL CONDITIONS
Wind Speed - 10 mi/hr or greater.
Wind Direction - any.

DATE
Week of Aug. 22 - 28

EXPERIMENTAL PROCEDURE

- (1) At the upwind end of the landing area a strip of ground 25 ft. wide & 200 feet long (long dimension in direction of take-off) will be contaminated as uniformly as possible to 500 grams HS/sq.m. The mustard will be laid down using "watering can" technique.
- (2) Immediately after the contamination has been laid down the 2 fighter aircraft will take off in such a manner that they leave the ground while in contact with the contaminated strip. At least one half of the contaminated strip should be traversed while landing gear is in contact with the ground.
- (3) Pilots of aircraft will wear respirators and impregnated clothing.
- (4) Flight procedure will be normal flight procedure for fighter aircraft (i.e. cockpit open during take-off, closed when landing gear has been raised).

Karch

DEFENCE SCIENTIFIC INFORMATION SERVICE	
DEFENCE RESEARCH BOARD	
Date:	DEC 23 1952
From:	SFS
Copy No.:	1, 2
ACC. No.:	52/14488

Dish Copy 2 - Ref file (904)

Classification / Designation U/U
 Changed to / Remplacés par _____
 By Authority of C. Laforce
 Sur l'Autorité de _____
 Date 25 Feb 98
 Appointment D. Kuseler
 Fonction _____

Field Experiment No. 150 (cont.)

- (5) Aircraft will fly at normal cruising speed for forty minutes. Aircraft will not indulge in any aerobatics or unnecessary turns during trial. Flight will be carried out away from populated places.
- (6) Aircraft will land at Camp Area.
- (7) Two bubblers and one injector will be installed in the aircraft to sample air in cockpit at height of pilot's head. Chem. S. and Air Force will install and remove sampling equipment.
- (8) Sampling will be from time when landing gear is retracted until 20 minutes later. Bubblers will then be changed (automatic device of Chem. S.) and sampling will be carried on for another 20 minutes. Sampling tube will then be shut off and aircraft will land.

ADMINISTRATION

Officer in charge of trial - A.F.E.O.

Section responsible for final report - P.R.S.

C.E.O.

Decision as to time of trial. Provision of transport. Collection of reports.

A.F.E.O.

Provision and flying of aircraft. Decontamination of aircraft. Report.

M.E.O.

Contamination of strip under direction of P & M. S. representative. Report.

CHEM. S.

Installation of sampling equipment in conjunction with R.C.A.F. Detachment. Analysis of samples. Report.

O. M. & E.

Provision of mustard for contamination of runway.

P & M. S.

Supervision of laying down of mustard.

Field Experiment No. 150 (continued)

PART B Asphalt Runway.

SITE: S.W. end of runway.

METEOROLOGICAL CONDITIONS

Wind Speed - less than 10 mi/hr.
Wind Direction - North of W & E.

DATE: Week of Aug. 22 - 28.

MATERIALS: As in Part (a).

EXPERIMENTAL PROCEDURE

- (1) At the South-West end of the runway, on the East side, a strip of runway 25 feet wide and 150 feet long will be contaminated as uniformly as possible to approximately 500 grams HS/sq.m. The mustard will be laid down using "watering can" technique.
- (2) Immediately after the contamination has been laid down the 2 fighter aircraft will taxi as rapidly as possible through the contaminated strip in succession and take off.
- (3) - (6) Pilot's instructions same as in Part (a).
- (7) - (3) Chemical sampling in A/C will be the same as in Part (a).
- (9) Immediately after A/C has taken off a ten minute vapour sample will be taken at the centre of the contaminated strip. Samples will be taken at the same point 1 hour later, (after earth-bleach mixture has been applied) and 4 hours later after earth has been cleaned off and before bleach slurry is applied.

ADMINISTRATION

- (10) Will be as in Part (a) but in addition A.F.E.O. will decontaminate runway.

AWB/REA

A.W. Birnie
(A.W. Birnie) Capt.
P.R.S.
Experimental Station