

RESTRICTED

~~CRASH~~ COMMENT



APRIL MAY JUNE 1950

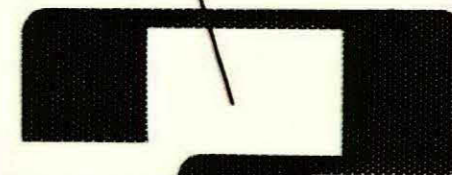


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R.C.A.F. HEADQUARTERS OTTAWA ONT



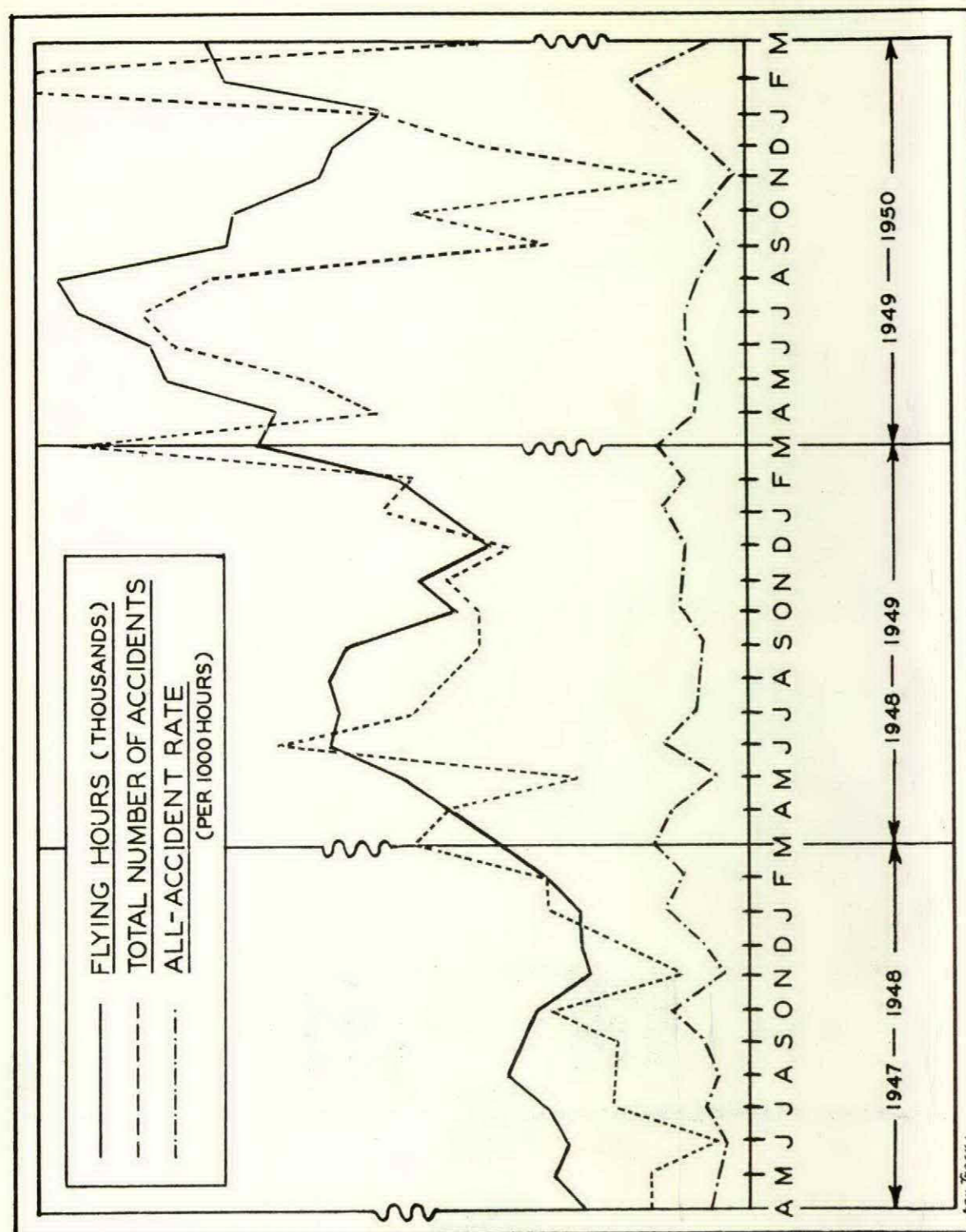
THINK SAFETY
TALK SAFETY
PRACTISE SAFETY

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(i)

R.C.A.F. Accident Trends



Produced by CAS/AIB

(ii)

Editorial

MYSTERY

One of the most mysterious aspects of AIB work is the phenomenal number of graphs, like the one on the opposite page, which appear on our desk accompanied by the proverbial chit of paper, "Why the rise in October?" "Why the dip in November?" "Why the continuously high accident rate for December through April?"

Perhaps the answer lies in that numb feeling experienced when flying along at 40 below. Perhaps it is the transition from "chair borne" to "air borne" as the flying time curve climbs from December onward. Perhaps it is too little practice or too few check flights in the "valley" between September and February. Maybe its that Xmas feeling which reaches its crest on the 2nd of January. Undoubtedly the effect of winter weather on both man and machine is a factor, but as we glance through the accidents we note that non-seasonal causes repeat themselves with great frequency.

The mystery can only be solved by you, the technicians, the aircrew, the OC. It would be folly for us to suggest the detail of the action which you, under your special operating conditions, should take. However, we do suggest certain basic principles:-
Get the most recent publications; review your past winter maintenance difficulties; understand your engine handling; practise your emergency procedures; check your meteorology; know your engine operation; do more practice flying during the winter months; and ask for a check flight occasionally.

The high winter accident rate is your problem.

WINTERIZE

- Your Flying
- Your Aircraft
- Your Aerodrome
- Your Clothing

NOW

(iii)



THE CRYSTAL BALL

Although this issue of "Crash Comment" is mainly concerned with accidents occurring during the hot summer quarter, by the time publication is completed and the magazine reaches all units, King Winter will certainly be poking his nose into a few northern outposts and his arrival at other stations will be only a matter of a short time.

We certainly don't claim to be able to look into the crystal ball like the fortune teller and predict what will happen in the future, but what we can do is remind everyone that cold weather sets the stage for certain seasonal accidents which have a habit of recurring every winter period. A short review of a few pertinent points would appear to be well in order.

FLIGHT PLANNING

Every good pilot knows that winter weather is subject to abrupt changes and that there is no better life insurance than sound pre-flight planning.

- * Check the weather in detail.
- * Avoid known icing regions.
- * Choose the best alternate available and be sure that forecast conditions will be above limits.
- * Do not flight plan into instrument conditions beyond your rating or capability.
- * Be sure you will have plenty of fuel.
- * Don't take your emergency equipment for granted.

GROUND HANDLING

Every winter the usual crop of accidents occur because pilots neglect to be more cautious in their ground handling.

- * Nelson heaters - heat when not properly applied can damage ignition harness, flexible lines, priming solenoids and other accessories.
- * Hydraulicing - can increase in severity during cold weather. Make sure those cylinders are cleared before starting.
- * Chocks - Icy ground reduces braking efficiency. Ensure chocks are the right type and properly positioned.
- * Icy Tarmac - Remember taxiing is especially hazardous. If you have any doubts be sure the wingwalkers remain in position.
- * Snow banks - Be sure your wing will clear that snow bank, and also be careful when you swing the tail around.
- * Slush and water - If possible avoid taxiing through slush and water on days when the temperature is at the freezing point.
- * Exercise controls - Constant speed units become very sluggish at low temperatures. Exercising the pitch during oil dilution produces excellent results.
- * Boil off - Be sure you read and follow the appropriate EO on this subject.

ICING

This is undoubtedly one of winter's tougher hazards and unless handled properly certainly won't be conducive to longevity.

- * Remove frost and snow before take-off.
- * Do not take off in wet snow unless absolutely necessary.
- * Know your de-icing equipment and how to use it.
- * Remember carburettor ice can occur over a wide range of temperatures.
- * Always use pitot heat when flying in icing zones.
- * Ice increases the aircraft's stalling speed. Make sure you have sufficient airspeed on approach and make your turns gentle.
- * Have a talk with your forecaster and get all the met gen on icing.

MANIFOLD PRESSURE

The record shows that numerous engine failures have occurred because the pilots did not know that maximum permissible manifold pressures vary with the outside temperature. Consult your engine charts!

SKI FLYING

Several major accidents occurred last winter because pilots were not versed in the special techniques required for ski flying. For instance various combinations of light and snow can play funny tricks on your depth of perception and unless you know the answers you are a sure ticket to the hospital. Take-offs and landings at isolated points often pose special problems so make sure you have thoroughly completed your conversion before you tackle any tough assignments.

SIMULATED FORCED LANDINGS

Clear those engines! Every winter the maintenance crews have to do a Cook's tour of the local flying area in order to haul in aircraft whose engines refused to catch after being neglected during a prolonged glide in sub zero weather.

SNOW CLEARANCE

In addition to pilot and crew responsibilities the aerodrome maintenance personnel responsible for snow clearance must know and carry out their job. It is agreed that the primary responsibility for avoiding snow banks rests on the pilot's shoulders, but those responsible for snow clearance can help tremendously.

- * Don't leave snow banked on the ends of the runways. If it freezes it can tear off an undercarriage.
- * Avoid high shoulders on the runway edges.
- * Taxiing and parking areas must be cleared sufficiently.
- * Ensure the runway lighting system is not obscured.
- * Make sure your snow removal is adequate to suit all types which will be operating off your station.

These are a few basic rules, attention to which will eliminate the cause of the majority of our winter accidents. In addition it is suggested that every unit carry out extensive gen sessions on winter operations.

"DO YOUR PART - BE SAFETY CONSCIOUS"

Comments regarding this publication and suggestions for the "Good Show" page are welcomed and should be addressed to CAS AFHQ Ottawa, Att'n AIB.

ACCIDENT RESUMÉ



VAMPIRE

* No. 1 -- DISOBEDIENCE OF ORDERS



Prior to his second hour of familiarization in the Vampire the pilot was briefed to carry out exercises as set forth in the syllabus and to complete two circuits and landings. He was instructed to be on the ground one hour after first take-off.

Almost exactly one hour after engine starting the pilot had completed the sequences as authorized and landed, but contrary to orders, took off for a third time.

After his third take-off he climbed to seven thousand feet and carried out a few exercises similar to those carried out during the first hour. On returning to the aerodrome, the pilot was advised that

the runway had been changed and as a result he completed a dummy circuit to ascertain the amount of drift.

After a total running time of one hour and twenty-eight minutes the engine failed on final approach due to lack of fuel. The Vampire crashed and was totally demolished. The pilot received serious injuries and one civilian was killed.

Adherence to briefing instructions would have prevented this accident!

* NO. 2 -- LOST AND FOUND



It is remarkable how some people can tempt fate and get away with it.

Lady luck - certainly not good management - was on the side of the pilot who walked away with minor scratches from the Vampire crash pictured above.

This accident happened at night as a result of the pilot becoming lost, running out of fuel, and having to carry out a forced landing. Damage was estimated at \$85,000.00.

There is little to be said for the brand of airmanship displayed by a pilot who became lost while carrying out local flying under VFR conditions.

* NO. 3 -- CHOCKS HAVE A PURPOSE

Disregard of the age old order regarding chocks invariably invites disaster. Here is an example:-

Serious damage to two Vampires resulted when the NCO carrying out a ground test on one of the Vampires failed to have chocks placed in front of the wheels.

During run-up the starboard brake failed and the aircraft swung violently to port colliding with a Vampire parked alongside. The collision swung the second Vampire about so that it in turn struck a compressor. This resulted in three mainplanes being damaged.

The NCO was awarded a reprimand as a result of his negligence.

* NO. 4 -- STALL ON APPROACH

The pilot was in the final stages of what he considered to be a normal approach when the aircraft began to sink rapidly. The pilot opened the throttle fully whereupon the Vampire began a roll to starboard. He then applied full port aileron and partial port rudder but this action aggravated the already stalled condition of the starboard wing.

The aircraft struck the ground heavily with resultant damage to the starboard wing and undercarriage.

The cause of the accident was considered to be an error in judgement on the part of the pilot in that he allowed the aircraft to stall on the approach to land.

* NO. 5 -- WRONG LEVER

Nearing the end of the landing run and with the Vampire rolling at about 15 mph the pilot reached down for the flap lever but inadvertently operated the undercarriage selector.

The undercarriage collapsed with resultant damage to the aircraft.

The pilot was severely criticized, not only for selecting the wrong lever but also for attempting to raise the flaps, contrary to EO 05-10A-1, before the aircraft had been brought to a stop.

* NO. 6 -- JET WASH

During a series of formation take-offs one of the Vampires encountered jet wash from the preceding section. The pilot momentarily lost control and allowed the port undercarriage, which was partially retracted, to strike the ground.

This contact resulted in damage to the undercarriage locking mechanism and as a result the undercarriage collapsed on landing with accompanying extensive damage to the aircraft.

A tendency on the part of the pilot to retract the wheels very early during take-off was a contributing factor to the accident.

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Don't Be a "DIDN'T BOY" ...

I didn't **KNOW**

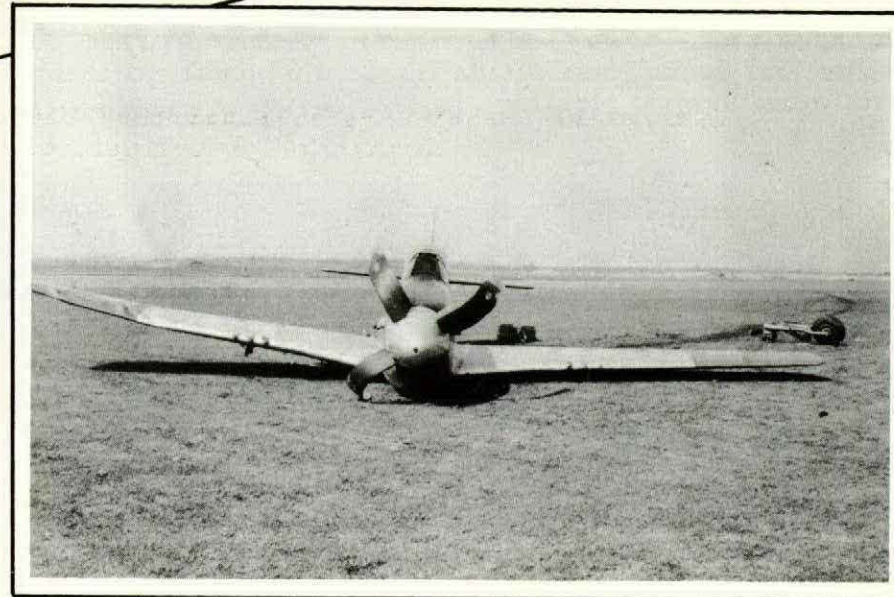
I didn't **THINK**

I didn't **HEAR**

I didn't **SEE**

MUSTANG

* NO. 7 -- STALL ON TAKE-OFF



During the take-off run the Mustang was observed to become airborne in a very left wing low and three point attitude.

Almost immediately after becoming airborne the port wing struck the ground. The aircraft then rocked violently on to the starboard wing and slid forward on its belly for about 150 yards. Extensive damage was done to the airframe and ancillaries.

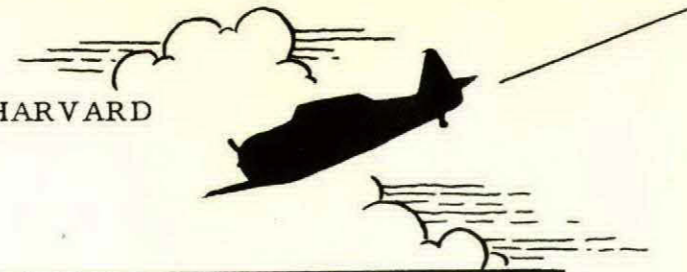
The cause of the accident was an error in judgement on the part of the pilot in that he attempted to take the aircraft off in a tail-down attitude with insufficient power.

Contributing factors were: Inadequate pre-flight briefing in that the pilot was briefed to take the aircraft off in a three point attitude and the fact that the pilot aggravated the stalled condition of the port wing by attempting to raise it with the use of aileron.

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Don't Take Chances!

HARVARD



* NO. 8 -- OBSCURE



An experienced instructor was demonstrating a precautionary landing. After completion of the final approach, at approximately 100 feet he carried out normal overshoot action. The engine however failed to respond.

There was not sufficient time to select undercarriage up before the aircraft touched down. The wheels sank in the soft ground and the Harvard overturned.

Neither of the occupants was hurt but the aircraft was damaged to the extent of a "B" category assessment.

During the subsequent investigation a serviceable propeller was installed and the engine started without difficulty and ground tested satisfactorily.

Investigating authorities were unable to determine definitely the cause of the engine failure.

The approved proceedings of the investigation contained the following recommendation, "Practice precautionary landings be made with wheels up unless on a recognized aerodrome."

NOTE: Cases have occurred in connection with Harvard aircraft, while with the engine operating at low power the fuel pressure has dropped during slow selection. In such instances the pressure has failed to build up without the assistance of the wobble pump. As the fuel selector lever on this aircraft was very stiff to operate, slow selection may have occurred, with a resultant drop in fuel pressure at low power. It is suggested that pilots of Harvard aircraft should not change fuel tanks in the air unless enough altitude is available to give the pilot sufficient time to build up the pressure by use of the wobble pump.

* NO. 9 -- HEADS DOWN AND LOCKED

Insufficient lookout resulted in two experienced pilots taxiing a Harvard into a boundary marker, in broad daylight, with subsequent serious damage to the propeller.

There were no extenuating circumstances to this example of poor airmanship.

The captain was reprimanded.

* NO. 10 -- TREE TROUBLE

Following a formation attack at 200 feet on a convoy, the leader made a sharp turn to port, directly into sun and over a hilltop 200 feet in height.

No. 3, on encountering slipstream, momentarily lost control and struck a tree on the hilltop.

The pilot had his rabbit's foot with him - he was able to return to base.

The complete port wing assembly required replacement.

The unit attributed the accident to lack of experience and error in judgement.

* NO. 11 -- ALL CLEAR?

The pilot neglected the fundamental rule of having a wing man in position while taxiing in a congested area. He was unable to zig zag and thus did not see the tractor which was directly in his path.

Result - almost fifteen hundred dollars worth of damage to the Harvard.

* * * * *

* NO. 12 -- MATERIEL FAILURE

During a practice forced landing the instructor detected a strong odor of gasoline. Course was immediately altered for base and a subsequent check failed to disclose the origin of the fumes.

On the final cross-wind leg at the main aerodrome, the fuel warning light came on and the fuel pressure dropped to zero. The student switched the fuel selector to the reserve tank and operated the wobble pump with no effect as far as the fuel warning light and fuel pressure gauge were concerned, although the engine continued to function normally.

Almost immediately after turning in on final, a fire broke out in the vicinity of the bulkhead. The instructor ordered the student to remain in the cockpit, however the student abandoned the aircraft at an estimated altitude of 500 feet with fatal results.

The instructor then sideslipped the aircraft to the ground, landing 200 yards short of the aerodrome. The fire subsided shortly after landing.

The cause of the fire was fatigue fracture of a work hardened fuel pressure line between the carburettor and the bulkhead allowing fuel to be sprayed over the hot engine.

AMC signal T475 dated 27 Jun 50 outlines the immediate action to be taken to prevent recurrence of this failure.

* NO. 13 -- DREAMER BOY

The cadet was carrying out simulated forced landings at an auxiliary aerodrome. He made a beautiful job of landing on the chosen spot but he forgot one little item - the undercarriage.

Apparently the warning horn was very bothersome on final approach so the occupant pushed the cut-out button.

The usual wheels-up damage occurred and another very unnecessary accident was entered in the record book.

The cadet voluntarily assigned \$50.00.



* NO. 14 -- LOOKOUT

Inadequate lookout on the part of a Flight Cadet taxiing an Expeditor in rain resulted in the aircraft colliding with a chock rack.

The starboard propeller had to be replaced.

A voluntary assignment of \$25.00 will undoubtedly increase the Cadet's vision in the future.



* NO. 15 -- DOCKING DIFFICULTY

Two docking accidents occurred to Norseman aircraft during the quarter under review. Both were attributed to "error in judgment" on the part of inexperienced pilots operating under difficult water conditions.



DAKOTA

* NO. 16 -- SIMULATED ENGINE FAILURE ON TAKE-OFF



It was to have been a routine check-out flight when just after take-off, at approximately 100-200 feet and 110 knots IAS, the check pilot simulated engine failure by closing the port throttle.

The pilot undergoing the check applied full throttle and rpm to the starboard engine and feathered the port propellor, but for some unknown reason altitude could not be maintained even though the aircraft was empty. He eased back on the control column and reduced airspeed to 80 knots. The aircraft however continued to lose altitude.

The captain attempted to unfeather the port propellor but acted too late. The Dakota settled earthwards and came to a very rugged and inglorious halt surrounded by a clump of Natures' evergreens.

The investigation did not bring forth any concrete evidence as to why the aircraft would not maintain altitude on one engine. However the following remarks of the reviewing authorities indicate that there were numerous contributing factors to the accident:-

- (a) The pilot undergoing the check had never received dual instruction on simulated engine failure on take-off with Dakota aircraft, and the last time he had been briefed on single engine flying was six months previous;
- (b) The captain did not conduct a pre-flight briefing or query the pilot to be checked as to his knowledge of the exercises to be carried out;
- (c) The pilot being checked was not familiar with the procedure of decreasing the angle of attack of an aeroplane to maintain safety speed, prior to climbing, after simulating engine failure on take-off. The captain also was not aware of this procedure and in any event waited too long before taking over control;
- (d) The unit had not followed any standard procedure for single engine flying.

The proceedings of the investigation would appear to indicate the probability that the pilot reduced his airspeed to such an extent that the efficiency of the aircraft was impaired to a degree where height on one engine could no longer be maintained.

One thing is certainly evident; the pilots had lots of altitude - "above them".

* No. 17 -- ENGINE FAILURES

Successful single engine landings were carried out on four occasions following engine failure on Dakota aircraft. Three of these instances were the result of materiel failure and one the result of incorrect factory installation of an ancillary control.

Early feathering in each instance prevented serious damage.

The pilots concerned demonstrated a high degree of skill in effecting safe landings in all cases.

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SKILL COUNTS!

LANCASTER

* NO. 18 -- HEAP BIG SMOKE AND LOTS OF FIRE



The front cover photograph depicts a burning Lancaster sitting on its belly at the intersection of two runways after a rather dismal bit of airmanship on take-off. The picture above shows the remains of the same Lancaster after it had been removed from the runway.

The accident was caused by the crewman raising the undercarriage before the aircraft became airborne. The fact that the captain failed to carry out a pre-flight briefing relating to the duties of the crewman is considered to be a contributing cause.

The Lancaster was equipped with long range tanks and immediately the fuselage came in contact with the runway a fire broke out in the vicinity of the front bomb bay tank. The aircraft, burning fiercely, slid on its fuselage for approximately 1500 feet.

Subsequent efforts to extinguish the fire were unsuccessful and an urgent requirement for the runway necessitated bulldozing the burning aircraft off the intersection.

The aircraft and equipment were a complete loss and it might be said well over a quarter of a million dollars went up in smoke.

None of the crew were strapped in during take-off and all were extremely lucky that deceleration was gradual. However, two crew members were injured in abandoning the aircraft.

This accident is an excellent example of what happens when a high standard of flying discipline is not maintained.

* * * * *



...FOR DISTINGUISHED STUPIDITY!

SNOW CLEARANCE



Snow clearance would have prevented this accident.

IS YOUR STATION SNOW PLAN READY?

THE FUTURE ?

IT'S UP TO
YOU !

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