DEPARTMENT OF CIVIL AVIATION MALAYSIA

AIRCRAFT ACCIDENT

REPORT NO: 07 / 85

OPERATOR	:	ROYAL SELANGOR FLYING CLUB
AIRCRAFT	:	TYPE : CESSNA 152
		NATIONALITY : MALAYSIAN
		REGISTRATION : 9M - AXP
PLACE OF ACCIDENT	:	SEMPANG AIRFIELD
DATE AND TIME OF ACCIDENT	:	3rd. Oct, 1985 at 1432
		Local time (LT) (+8hr UTC)

SYNOPSIS

The office of Air Accidents investigation was advised of the accident at 1600 LT on 3rd. Oct, 1985. The on site investigation of the occurrence was commenced on 4th. Oct, 1985.

A heavy nose gear contact was made during landing at Sempang by the Captain of 9M - AXP a student pilot. The aircraft bounced 4 times however came to a rest on the left hand edge of the runway, approximately 120 ft. after the first prop slash mark. The propeller and nose wheel were substantially damaged but the student escaped unhurt.

Factual Information

1.1 History of flight

The purpose of the flight was to conduct a first navigational solo sortie from Sempang to Malacca and to Sempang. As the forecasted weather was good the student decided to conduct the flight at 3000 feet amsl flying visually on a direct track to Malacca via Kajang and Seremban. The departure at approximately 1400 hrs was normal, however on attaining 3000 feet, the student requested to further climb to 4000 feet due to presence of scattered cumulus cloud.

Abeam Kajang at 4000 feet the student aborted the sortie and returned to Sempang as visual meteorological condition (VMC) could not be maintained. A request to descend to 3000 feet was made, however, Lumpur radar cleared the aircraft to descend to 1500 feet. Apart from this, the situation was uneventful. Having the airfield in sight the student joined downwind leg for a full stop landing. The student carried out all neccessary checks and claimed that the downwind and base leg was flown normally. This was confirmed by the duty controller who visually monitored the aircraft since rejoining. Eventually a descent was made at base leg where flap 10 degrees was claimed to have been selected. As the aircraft aligned on final, the student realised that the glide path was steep which was also noticed by the controller. Attempt was made to correct the approach, however the actions taken were not adequate.

As a result of the steep approach, the aircraft made the touchdown at around the 2000 foot marker, Heavy landing was made on the nose wheel and bounced repeatedly before coming to a complete stop approximately 270 feet from the touch-down point. When the aircraft came to a complete rest, shut down drills inclusive of distress call were made. Fortunately the student was uninjured and this helped him to disembark rapidly.

1.2 Damage to aircrat

The nose section inclusive of propeller and engine was substantially damaged due to the impact.

1.3 Other damage

There were slash marks found on the runway caused by the nose oleo and propeller.

1.4 Personnel Information

Commander (Student pilot)	Male aged - 40
Licence	Student Pilot's Licence 4317
Medical Certificate	Last Medical on 27th.June, 1984
Total hours	35 hours 10 mins
Hours on Cessna 152	35 hrs 10 mins
Total hours last 28 days	2 hours

The captain was a student pilot who had been having landing difficulties eversince he started flying. His flying instructor disclosed that most of his landing were 'three pointers' and having an ability which was erratic. Records also revealed that he lacked flying continuity due to inavailability of aircraft. This had adversely affected his flying performance. A study on the clubs authorisation sheet indicated that he had not flown for 12 days prior to the accident.

1.5 Aircraft Information

Aircraft Type	Cessna 152 M
Registration	9M - AXP
Construction Date	Nov, 1977

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Construction No.	15281146
Registered Owner	Royal Selangor Flying Club
Cert. of Registration	No. M 373 issued on 28th. March, 1980
Cert. of Airworthiness	No. M 327 dated 10th. May, 1985 issued as replacement of the original certificate issued on 28th. March, 1980
	Category : Transport (passenger)
	Validity : Valid until 9th. May, 1986
Aircraft total hrs	3376 : 44 hours

The aircraft was maintained by Wira Kris Sdn Bhd under a contract with the owner, to an approved maintaince schedule.

Current airframe hours	3376 : 44 hours
Last Check	Check 2 on 21st. September, 1985 at 3342.14 A/F hours
Next Check due	Check 1 due on 21st. November, 1985 or at 3392.14 A/F hours

1.6 Meteorological Information

Sempang Airfield

Surface wind	light and variable
Visibility	more than 10 km
Weather	Fine
Cluod	2 octas at 4000 feet
QNH	1010

Route

Scattered cumulus cloud were found between 3000 ft to 6000 ft.

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1.7 Aids to navigation

Nil

1.8 Communication

Nil

1.9 Aerodrome and ground facilities

Not applicable

1.10 Flight recorders

The aircraft was not equipped with a flight data recorder or a cockpit voice recorder, nor were these required to be fitted.

1.11 Wreckage and impact information

The nose gear had broken away at the joint between the lower fork and the oleo strut. The flange of the fork broke into two, causing the fork/wheel assembly to separate from the oleo strut. The fork retaining bolt remained on the strut which was forced back against the engine bulkhead/fire wall when the aircraft skidded.

The damage to the bulkhead and the belly skin immediately behind it was quite substantial. It was probable that the internal support structure behind the bulkhead was also badly damaged. The propeller damage indicated that it was turning normally under engine power when it impacted the runway surface. One blade curled back 180 degrees, starting approximately 12 inches from the tip whilst the other was bent 90 degrees back approximately 8 inches from the tip. The engine would have been subjected to a high shock loading during propeller ground contact.

A cursory inspection of the aircraft including the main landing gears and wheel assemblies did not reveal any other damage which could contribute to or be the effect of the accident.

There were 4 deep slash marks on the runway surface in a straight line approximately 2½ feet apart. These marks would have been caused by a turning propeller contacting the ground while the aircraft was moving forward. These slash marks which were 15 feet from the left hand edge of the runway were followed by a deep single straight line mark on the surface. This mark was caused by the failed nose oleo strut.

There were also impact marks to indicate that the aircraft had made four bounches covering a distance of 270 feet before coming to a complete stop. The first bounce was the longest which was measured at 150 feet.

1.13 Medical and Pathological information

A review of the students medical record revealed no evidence to indicate any pre-existing disease that would have affected the performance of his duties.

1.14 Fire

There was no fire.

1.15 Survival aspects

The accident was survivable

1.16 Test and research

Not applicable

2. Analysis and Conclusions

2.1 Analysis

The evidence indicated that the aircraft was in an airworthy condition prior to the accident and no malfunctioning or defect was found in any

of the aircraft systems.

Examination of the wreckage revealed that heavy landing was made on the nose wheel. The damage to the aircraft was confined to the nose section of the aircraft, particularly the nose wheel assembly and propeller. There was no evidence of pre-impact damage on the failed nose landing gear.

The student admitted and was confirmed by the controller that the final approach was extremely high. Though full flap was said to have been used, it was found out that flap was at 10 degrees position, consistent with the selector position. The landing was about 2000 feet from the threshold and throughout the landing, the student could not recall whether the flare was sufficient.

The student had been having landing problem eversince he started flying. All the flying instructors agreed that most of his landing were 'three pointers' and having a performance which was inconsistent. Since the ability of the student was erractic the assessment by the instructor to allow for solo should have been more stringent.

Records also revealed that the student lacked flying continuity due to aircraft inavailability. This had drastically affected his flying standard aggravated by insufficient policies as regards determining the level of competency for subsequent solo flying.

2.2 Conclusions

a) Findings

i) There was no failure or malfunction of the aircraft or any of its systems or components prior to the accident.

ii) The aircraft was properly certificated and in airworthy condition.

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iii) The student pilot was properly certificated to conduct the flight.

iv) The final approach was extremely steep and only 10 degrees flap was used for the landing.

v) The touch down was 2000 feet from the threshold and a heavy landing was made on the nose wheel.

vi) The student pilot lacked flying continuity and his ability to fly safely for that particular flight was questionable.

vii) The flying instructor failed to determine the students ability for that particular flight after a break of 12 days of no flying.

viii) Club's policies and procedures governing the above was found to be inadequate.

b) Probable Cause

The probable cause of this accident was the inability of the student pilot to make a safe landing due to lack of flying continuity.

3. Recommendation

a. Royal Selangor Flying Club is to introduce policies and procedures in ensuring that all student pilots are subject to measures to determine their level of competency prior to solo flight particularly if there is interuption in flying continuity.

b. Royal Selangor Flying Club is to monitor and record student's flying progress and flying instructors should be stressed to be more professional and honest in making assessment on student's ability.

c. Royal Selangor Flying Club is to review teaching technique on landing adopted by flying instructors inorder to eradicate this problem which is commonly found in student pilot.