

NATIONAL TRANSPORTATION SAFETY BOARD

PILOT/OPERATOR AIRCRAFT ACCIDENT/INCIDENT REPORT

This form to be used for reporting civil and public aircraft accidents and incidents

BASIC INFORMATION

Accident/Incident Location

Nearest City/Place: Benson State: AZ

ZIP: 85602 Country: USA

Latitude: N31:59:97 Longitude: W110:21:48

(Enter in decimal degrees or degrees:minutes:seconds)

Accident/Incident Date/Time

Date: 08/19/2020 Local Time: 21:50
mm/dd/yyyy

Time Zone: MST

Collision with Other Aircraft: ☐ Midair ☐ On-ground ☒ None

AIRCRAFT INFORMATION

Registration Number: N386MA

Manufacturer: Diamond

Model: DA-40

Serial Number: 40.449

Year of Manufacture: 2004

Amateur-Built: ☐ Yes ☒ No If Yes: ☐ Kit/Plans ☐ Original Design Make: _____

- ☒ IFR-Equipped and Certified
☐ Commercial Space Flight
☐ Unmanned Aircraft

Maximum Gross Weight: 2535 lbs

Weight at Time of Accident/Incident: 2320 lbs

Number of Seats: 4 Flight Crew Seats: 2

Cabin Crew Seats: _____ Passenger Seats: 2

Number of Engines: 1

Category of Aircraft

- ☒ Airplane
☐ Balloon
☐ Blimp/Dirigible
☐ Glider
☐ Gyroplane
☐ Helicopter
☐ Powered Lift
☐ Rocket
☐ Ultralight
☐ Unknown

Type of Airworthiness Certificate (Check all that apply)

- | Standard | Special |
|--|---|
| ☒ Normal | ☐ Restricted |
| ☐ Aerobatic | ☐ Limited |
| ☐ Balloon | ☐ Provisional |
| ☐ Commuter | ☐ Special Flight |
| ☐ Transport | ☐ Experimental |
| ☐ Utility | ☐ Special Light-Sport |
| | ☐ Experimental Light-Sport |
- ☐ Certificate of Authorization or Waiver (COA)
☐ None ☐ Unknown

Landing Gear

- (Check all that apply)
☐ Retractable
☒ Tricycle ☐ Tailwheel
☐ Amphibian ☐ High Skid
☐ Emergency Float ☐ Skid
☐ Float ☐ Ski
☐ Hull ☐ Ski/Wheel
☐ Other Launch/Recovery System
☐ None ☐ Unknown

Engine Type (Select one)

- | | |
|--|-------------------------------------|
| ☒ Reciprocating | ☐ Liquid Rocket |
| ☐ Turbo Shaft | ☐ Solid Rocket |
| ☐ Turbo Prop | ☐ Hybrid Rocket |
| ☐ Turbo Jet | ☐ None |
| ☐ Turbo Fan | ☐ Unknown |
| ☐ Electric | |

Fuel System Type (Reciprocating)

- ☐ Carburetor ☒ Fuel-Injected

Engine	Engine Manufacturer	Engine Model/Series	Manufacturer's Serial Number	Date of Mfg. mm/dd/yyyy	Rated Power ☒ Horsepower or ☐ lbs of Thrust	Total Time (hours)	Time Since: Inspection (hours) Overhaul (hours)
Eng. 1	<u>Lycoming</u>	<u>I0-360-M1A</u>	<u>RL-34070-51E</u>	<u>8/4/17</u>	<u>180</u>	<u>3371.6</u>	<u>39.8</u> <u>N/A</u>
Eng. 2							
Eng. 3							
Eng. 4							

Last Inspection Type

- ☐ 100-Hour ☐ Continuous Airworthiness
☒ AAIP ☐ Conditional Inspection
☐ Annual ☐ Unknown

Date Last Inspection: 08-10-2020

mm/dd/yyyy

Airframe Total Time: 8528.3 hrs

hours measured at (Select one)

☐ Last Inspection ☒ Time of Accident/Incident

Type of Maintenance Program (Select one)

- ☐ Annual
☐ Conditional (Amateur-built only)
☐ Manufacturer's Inspection Program
☒ Other Approved Inspection Program (AAIP)
☐ Continuous Airworthiness
☐ Other, specify: _____

Description of Fire Extinguishing System

- ☒ None
☐ Specify: _____

Propeller 1

- ☐ Fixed Pitch
☒ Controllable Pitch
☐ Ground Adjustable

Manufacturer: Hartzell

Model: HL-225R-18FP/F7497

Propeller 2

- ☐ Fixed Pitch
☐ Controllable Pitch
☐ Ground Adjustable

Manufacturer: _____

Model: _____

ELT Installed: ☒ Yes ☐ No

If Yes:

ELT Manufacturer: ACK

Model or Part No.: E-01

TSO No.: ☐ C91 (121.5 MHz) ☐ C91a (121.5 MHz)
☐ C126 (406 MHz)

Was ELT still mounted in aircraft? ☒ Yes ☐ No

Was ELT still connected to antenna? ☒ Yes ☐ No

Did ELT Activate? ☐ Yes ☒ No

If activated:

Did ELT Aid in Locating Aircraft: ☐ Yes ☒ No

If not activated:

- Indicate Reason: ☐ Impact Damage
☐ Fire Damage
☐ Battery Expired/Damaged
☒ Unknown

Additional Equipment (Check all that apply)

- ☒ ADS-B
☐ Airframe Parachute
☐ Angle of Attack Indicator
☐ Autopilot
☐ Data Recorder
☐ Electronic Flight Bag or Handheld Device
☒ Electronic Multifunction Display
☒ Electronic Primary Flight Display
☐ Handheld GPS
☐ Heads Up Display
☐ Onboard Weather
☐ Satellite Tracking Device
☐ Stall Warning System
☐ Video Recording Device
☐ Other, Specify: _____

OWNER/OPERATOR INFORMATION**Registered Aircraft Owner**Name: Chandler Knop KC Aviation LLCCity: Castle RockState: COZIP: 80104Fractional Ownership Aircraft: ☐ Yes ☒ NoCountry: USA**Operator of Aircraft**☐ Same As Registered Owner☐ Same Address as Registered OwnerName: CAE Oxford Aviation Academy Phoenix Inc.City: MesaDoing Business As: CAE Oxford Aviation AcademyState: AZZIP: 85215Air Carrier/Operator Designator (4 Character Code): 47015Country: USA**Operating Certificates Held**

(Check all that apply)

- ☐ None
☐ Flag Carrier Operating Certificate (FAR 121)
☐ Supplemental
☐ Air Cargo
☐ Foreign Air Carriers (FAR 129)
☐ Rotorcraft External Load (FAR 133)
☐ Commuter Air Carrier (FAR 135)
☐ On-Demand Air Taxi (FAR 135)
☐ Commercial Air Tour (FAR 136)
☐ Agricultural Aircraft (FAR 137)
☒ Pilot School (FAR 141)
☐ Certificate of Authorization or Waiver (COA)
☐ Commercial Space Transportation
Experimental Permit
☐ Commercial Space Transportation License
☐ Other Operator of Large Aircraft

Regulation Flight Conducted Under

- ☒ FAR 91 ☐ FAR 129 ☐ FAR 415
☐ FAR 103 ☐ FAR 133 ☐ FAR 431
☐ FAR 121 ☐ FAR 135 ☐ FAR 435
☐ FAR 125 ☐ FAR 137 ☐ FAR 437

- ☐ FAR 91 Special Flight
☐ Non-US, Commercial
☐ Non-US, Non-commercial

☐ Public Aircraft (Select one)

- ☐ Armed Forces
☐ Federal
☐ State
☐ Local

☐ Unknown**Revenue Operation for FAR 121, 125, 129, 135**

(Select one for each group)

- ☐ Scheduled or Commuter ☐ Domestic
☐ Non-Scheduled or Air Taxi ☐ International

- ☐ Passenger
☐ Cargo
☐ Mail Contract Only

Purpose of Flight for FAR 91, 103, 133, 137

(Select one)

- ☐ Aerial Application ☐ Firefighting ☐ Unknown
☐ Aerial Observation ☐ Flight Test
☐ Air Drop ☐ Glider Tow
☐ Air Race/Show ☒ Instructional
☐ Banner Tow ☐ Other Work Use
☐ Business ☐ Personal
☐ Executive/Corporate ☐ Positioning
☐ External Load ☐ Skydiving
☐ Ferry

Revenue Sightseeing Flight☐ Yes ☒ No**Air Medical Flight**☐ Yes ☒ No**AIRPORT INFORMATION (Fill in if accident/incident occurred on approach, landing, takeoff, departure, or within 3 miles of an airport)**Airport Name: Benson MunicipalAirport Identifier: E95Proximity to Airport: ☐ Off Airport/Airstrip ☒ On Airport/Airstrip ☐ N/ADistance From Airport Center: 0 sm

Direction From Airport: _____ degrees true

Airport Elevation: 3831 ft. msl**Runway Information**Runway ID: 10 (L/R/C) Length: 4002 ft Width: 75 ft**Runway/Landing Surface (Check all that apply)**

- ☒ Asphalt ☐ Grass/Turf ☐ Macadam ☐ Water
☐ Concrete ☐ Gravel ☐ Metal/Wood
☐ Dirt ☐ Ice ☐ Snow ☐ Unknown

Condition of Runway/Landing Surface (Check all that apply)

- ☒ Dry ☐ Snow-Compacted ☐ Water-Calm
☐ Holes ☐ Snow-Crusted ☐ Water-Choppy
☐ Ice Covered ☐ Snow-Dry ☐ Water-Glassy
☐ Rough ☐ Snow-Wet ☐ Wet
☐ Rubber Deposits ☐ Soft
☐ Slush-Covered ☐ Vegetation ☐ Unknown

Approach/Departure Segment (Select one)

- ☐ Taxi ☐ VFR Departure ☐ On Instrument Approach ☐ Downwind ☐ Low Approach
☐ Takeoff ☐ IFR Departure Procedure/Clearance ☒ Landing ☐ Base ☐ Go Around
☐ Initial Climb ☐ Final ☐ Aborted Landing (after touchdown)
☐ Crosswind ☐ Unknown

IFR Approach (Check all that apply)

- ☒ None
☐ ADF/NDB ☐ PAR ☐ MLS ☐ Practice
☐ SDF ☐ Sidestep ☐ LDA ☐ GPS
☐ VOR/TVOR ☐ ILS ☐ ASR ☐ Visual
☐ VOR/DME ☐ Localizer Only ☐ Contact
☐ TACAN ☐ LOC-back course ☐ Circling
☐ RNAV ☐ Unknown

VFR Approach (Check all that apply)

- ☐ None
☒ Traffic Pattern ☐ Stop and Go
☐ Straight-In ☐ Touch and Go
☐ Valley/Terrain Following ☐ Simulated Forced Landing
☐ Go Around ☐ Forced Landing
☒ Full Stop ☐ Precautionary Landing
☐ Unknown

"FLIGHT CREWMEMBER 1" INFORMATION

"Flight Crewmember 1" Responsibilities at the Time of Accident/Incident

☐ Pilot ☐ Co-Pilot ☐ Student Pilot ☒ Flight Instructor ☐ Check Pilot ☐ Flight Engineer ☐ Other Flight Crew

"Flight Crewmember 1" was pilot flying ☐ Yes ☒ No

"Flight Crewmember 1" Identification

First Name: Eric

City of Residence: Apache Junction

Middle Initial: S

State: Arizona ZIP: 85119

Last Name: Holt

Country: USA

Age at time of Accident/Incident: 33 Date of Birth: [REDACTED] mm/dd/yyyy

Certificate Number: [REDACTED]

Degree of Injury

☒ None ☐ Fatal
☐ Minor ☐ Unknown
☐ Serious

Seat Occupied

☐ Left ☐ Front ☐ Unknown
☒ Right ☐ Rear
☐ Center ☐ Single

Restraint Type

Available

☐ None
☐ Lap only
☒ 3-point
☐ 4-point
☐ 5-point
☐ Unknown

Used

☐ None
☐ Lap only
☒ 3-point
☐ 4-point
☐ 5-point
☐ Unknown

Inflatable Restraints

☒ Not Installed
☐ Installed
☐ Not Deployed
☐ Deployed
☐ Unknown

Pilot Certificate(s) (Check all that apply)

☐ None ☒ Flight Instructor ☒ Commercial ☐ US Military
☐ Private ☐ Recreational ☐ Airline Transport ☐ Foreign
☐ Student ☐ Sport ☐ Flight Engineer

Principal Occupation

☒ Pilot
☐ Other
☐ Unknown

Medical Certificate

☐ None ☐ Class 3
☒ Class 1 ☐ Driver's License (Sport Pilot only)
☐ Class 2 ☐ Unknown

Medical Certificate Validity

☐ Without limitations/waivers ☐ Unknown
☒ With limitations/waivers ☐ N/A
☐ Special Issuance

Date of Last Medical

08/31/2020
mm/dd/yyyy

Medical Certificate Limitations

Must wear corrective lenses.

Medical Certificate Special Issuance

Date of Last Flight Review
or Equivalent, Including
FAR 121/135 Checks: 01/29/2020
mm/dd/yyyy

Flight Review Aircraft

Make: Piper

Model: Arher PA-28-180

Airplane Rating(s) (Check all that apply)

☐ None
☒ Single-Engine Land
☐ Single-Engine Sea
☐ Multiengine Land
☐ Multiengine Sea

Other Aircraft Rating(s) (Check all that apply)

☐ None
☐ Airship
☐ Balloon
☐ Glider
☐ Gyroplane
☐ Helicopter
☐ Powered Lift

Instrument Rating(s) (Check all that apply)

☐ None
☒ Airplane
☐ Helicopter
☐ Powered Lift

Instructor Rating(s) (Check all that apply)

☐ None
☒ Airplane Single-Engine ☐ Instrument Airplane
☐ Airplane Multi-Engine ☐ Instrument Helicopter
☐ Gyroplane ☐ Helicopter
☐ Powered Lift ☐ Glider
☐ Sport

Type Ratings

Student Endorsements (Include dates)

Flight Time (Enter appropriate number of hours in each box)	All Aircraft	This Make & Model	Airplane Single Engine	Airplane Multiengine	Night	Instrument		Rotorcraft	Glider	Lighter Than Air
						Actual	Simulated			
Total Time	375	22	375		30		52			
Pilot in Command (PIC)	336	22	336		27					
Time as Instructor	10	10	10		1					
This Make/Model					7					
Last 90 Days	23	23	23		7		3			
Last 30 Days	22	22	22		7					
Last 24 Hours	0	0	0		0					

"FLIGHT CREWMEMBER 2" INFORMATION**"Flight Crewmember 2" Responsibilities at the Time of Accident/Incident**

☒ Pilot ☐ Co-Pilot ☐ Student Pilot ☐ Flight Instructor ☐ Check Pilot ☐ Flight Engineer ☐ Other Flight Crew

"Flight Crewmember 2" was pilot flying ☒ Yes ☐ No

"Flight Crewmember 2" Identification

First Name: Arjun

City of Residence: Mesa

Middle Initial: K

State: Arizona ZIP: _____

Last Name: Jambhale

Country: USA

Age at time of Accident/Incident: _____ Date of Birth: _____ mm/dd/yyyy

Certificate Number: _____

Degree of Injury

☒ None ☐ Fatal
☐ Minor ☐ Unknown
☐ Serious

Seat Occupied

☒ Left ☐ Front ☐ Unknown
☐ Right ☐ Rear
☐ Center ☐ Single

Restraint Type**Available**

☐ None
☐ Lap only
☒ 3-point
☐ 4-point
☐ 5-point
☐ Unknown

Used

☐ None
☐ Lap only
☒ 3-point
☐ 4-point
☐ 5-point
☐ Unknown

Inflatable Restraints

☐ Not Installed
☐ Installed
☐ Not Deployed
☐ Deployed
☐ Unknown

Pilot Certificate(s) (Check all that apply)

☐ None ☐ Flight Instructor ☐ Commercial ☐ US Military
☒ Private ☐ Recreational ☐ Airline Transport ☐ Foreign
☐ Student ☐ Sport ☐ Flight Engineer

Principal Occupation

☐ Pilot
☒ Other
☐ Unknown

Medical Certificate

☐ None ☐ Class 3
☐ Class 1 ☐ Driver's License (Sport Pilot only)
☐ Class 2 ☐ Unknown

Medical Certificate Validity

☐ Without limitations/waivers ☐ Unknown
☐ With limitations/waivers ☐ N/A
☐ Special Issuance

Date of Last Medical

mm/dd/yyyy

Medical Certificate Limitations**Medical Certificate Special Issuance****Date of Last Flight Review
or Equivalent, Including
FAR 121/135 Checks:**

mm/dd/yyyy

Flight Review Aircraft

Make: _____

Model: _____

Airplane Rating(s)

(Check all that apply)

☐ None
☒ Single-Engine Land
☐ Single-Engine Sea
☐ Multiengine Land
☐ Multiengine Sea

Other Aircraft Rating(s)

(Check all that apply)

☒ None
☐ Airship
☐ Balloon
☐ Glider
☐ Gyroplane
☐ Helicopter
☐ Powered Lift

Instrument Rating(s)

(Check all that apply)

☐ None
☐ Airplane
☐ Helicopter
☐ Powered Lift

Instructor Rating(s)

(Check all that apply)

☐ None ☐ Instrument Airplane
☐ Airplane Single-Engine ☐ Instrument Helicopter
☐ Airplane Multi-Engine ☐ Helicopter
☐ Gyroplane ☐ Glider
☐ Powered Lift ☐ Sport

Type Ratings**Student Endorsements** (Include dates)**Flight Time** (Enter appropriate
number of hours in each box)

All
Aircraft

This Make
& Model

Airplane
Single
Engine

Airplane
Multiengine

Night

Instrument

Actual

Simulated

Rotorcraft

Glider

Lighter
Than Air

	All Aircraft	This Make & Model	Airplane Single Engine	Airplane Multiengine	Night	Actual	Simulated	Rotorcraft	Glider	Lighter Than Air
Total Time										
Pilot in Command (PIC)										
Time as Instructor										
This Make/Model										
Last 90 Days										
Last 30 Days										
Last 24 Hours										

ADDITIONAL FLIGHT CREWMEMBERS (Exclusive of cabin crew, complete the following information)

Crew Name and Address

First Name: _____ City of Residence: _____
 Middle Initial: _____ State: _____ ZIP: _____
 Last Name: _____ Country: _____

Seat Occupied

☐ Left ☐ Front
☐ Center ☐ Rear
☐ Right ☐ Single
☐ Unknown

Injury

☐ None
☐ Minor
☐ Serious
☐ Fatal
☐ Unknown

Pilot Certificate(s) (Check all that apply)

☐ None ☐ Flight Instructor ☐ Commercial ☐ US Military
☐ Private ☐ Recreational ☐ Airline Transport ☐ Foreign
☐ Student ☐ Sport ☐ Flight Engineer

Restraint Type:

Available **Used**
☐ None ☐ None
☐ Lap Only ☐ Lap Only
☐ 3-point ☐ 3-point
☐ 4-point ☐ 4-point
☐ 5-point ☐ 5-point
☐ Unknown ☐ Unknown

Inflatable Restraints

☐ Not Installed
☐ Installed
☐ Not Deployed
☐ Deployed
☐ Unknown

Type Rating/Endorsement for Accident/Incident Aircraft?

☐ Yes ☐ No

Total Flight Time at the Time

of this Accident/Incident: _____ hrs

Crew Name and Address

First Name: _____ City of Residence: _____
 Middle Initial: _____ State: _____ ZIP: _____
 Last Name: _____ Country: _____

Seat Occupied

☐ Left ☐ Front
☐ Center ☐ Rear
☐ Right ☐ Single
☐ Unknown

Injury

☐ None
☐ Minor
☐ Serious
☐ Fatal
☐ Unknown

Pilot Certificate(s) (Check all that apply)

☐ None ☐ Flight Instructor ☐ Commercial ☐ US Military
☐ Private ☐ Recreational ☐ Airline Transport ☐ Foreign
☐ Student ☐ Sport ☐ Flight Engineer

Restraint Type:

Available **Used**
☐ None ☐ None
☐ Lap Only ☐ Lap Only
☐ 3-point ☐ 3-point
☐ 4-point ☐ 4-point
☐ 5-point ☐ 5-point
☐ Unknown ☐ Unknown

Inflatable Restraints

☐ Not Installed
☐ Installed
☐ Not Deployed
☐ Deployed
☐ Unknown

Type Rating/Endorsement for Accident/Incident Aircraft?

☐ Yes ☐ No

Total Flight Time at the Time

of this Accident/Incident: _____ hrs

PASSENGER(S) / OTHER PERSONNEL (Include cabin crew; continue on separate sheet if necessary)

Name and Address

First Name: _____ City: _____
 Middle Initial: _____ State: _____ ZIP: _____
 Last Name: _____ Country: _____
☐ Crew ☐ Passenger ☐ Other

Seat

☐ Left
☐ Center
☐ Right
☐ Unknown
 Row: _____

Injury

☐ None
☐ Minor
☐ Serious
☐ Fatal
☐ Unknown

Restraint Type

Available **Used**
☐ None ☐ None
☐ Lap Only ☐ Lap Only
☐ 3-point ☐ 3-point
☐ 4-point ☐ 4-point
☐ 5-point ☐ 5-point
☐ Unknown ☐ Unknown

Inflatable Restraints

☐ Not Installed
☐ Installed
☐ Not Deployed
☐ Deployed
☐ Unknown

Age

☐ Under 5 years
 If Under 5,
☐ Child Restraint
☐ Lap-Held
☐ Unknown

First Name: _____ City: _____
 Middle Initial: _____ State: _____ ZIP: _____
 Last Name: _____ Country: _____
☐ Crew ☐ Passenger ☐ Other

☐ Left
☐ Center
☐ Right
☐ Unknown
 Row: _____

☐ None
☐ Minor
☐ Serious
☐ Fatal
☐ Unknown

Available **Used**
☐ None ☐ None
☐ Lap Only ☐ Lap Only
☐ 3-point ☐ 3-point
☐ 4-point ☐ 4-point
☐ 5-point ☐ 5-point
☐ Unknown ☐ Unknown

☐ Not Installed
☐ Installed
☐ Not Deployed
☐ Deployed
☐ Unknown

☐ Under 5 years
 If Under 5,
☐ Child Restraint
☐ Lap-Held
☐ Unknown

First Name: _____ City: _____
 Middle Initial: _____ State: _____ ZIP: _____
 Last Name: _____ Country: _____
☐ Crew ☐ Passenger ☐ Other

☐ Left
☐ Center
☐ Right
☐ Unknown
 Row: _____

☐ None
☐ Minor
☐ Serious
☐ Fatal
☐ Unknown

Available **Used**
☐ None ☐ None
☐ Lap Only ☐ Lap Only
☐ 3-point ☐ 3-point
☐ 4-point ☐ 4-point
☐ 5-point ☐ 5-point
☐ Unknown ☐ Unknown

☐ Not Installed
☐ Installed
☐ Not Deployed
☐ Deployed
☐ Unknown

☐ Under 5 years
 If Under 5,
☐ Child Restraint
☐ Lap-Held
☐ Unknown

First Name: _____ City: _____
 Middle Initial: _____ State: _____ ZIP: _____
 Last Name: _____ Country: _____
☐ Crew ☐ Passenger ☐ Other

☐ Left
☐ Center
☐ Right
☐ Unknown
 Row: _____

☐ None
☐ Minor
☐ Serious
☐ Fatal
☐ Unknown

Available **Used**
☐ None ☐ None
☐ Lap Only ☐ Lap Only
☐ 3-point ☐ 3-point
☐ 4-point ☐ 4-point
☐ 5-point ☐ 5-point
☐ Unknown ☐ Unknown

☐ Not Installed
☐ Installed
☐ Not Deployed
☐ Deployed
☐ Unknown

☐ Under 5 years
 If Under 5,
☐ Child Restraint
☐ Lap-Held
☐ Unknown

FLIGHT ITINERARY INFORMATION

Last Departure Point Airport ID: <u>KFFZ</u> City: <u>Mesa</u> State: <u>AZ</u> Country: <u>USA</u>	Time of Departure Time: <u>20:35</u> Time Zone: <u>MST</u>	Destination Airport ID: <u>E95</u> City: <u>Benson</u> State: <u>AZ</u> Country: <u>USA</u>	Type Flight Plan Filed ☐ None ☐ VFR/IFR ☐ Company VFR ☐ IFR ☐ Military VFR ☐ Unknown ☒ VFR Activated? ☐ Yes ☒ No ☐ Unknown
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Type of ATC Clearance/Service (Check all that apply) ☐ None ☐ Special VFR ☐ Special IFR ☒ VFR Flight Following ☐ Cruise ☒ VFR ☐ IFR ☐ VFR On Top ☐ Traffic Advisory ☐ Unknown / NA			
Airspace where the accident/incident occurred (Check all that apply) ☐ Class A ☒ Class G ☐ Military Operations Area (MOA) ☐ Special ☐ Class B ☐ Demo Area ☐ Airport Advisory Area ☐ Air Traffic Control Area ☐ Class C ☐ Warning Area ☐ Jet Training Area ☐ Unknown ☐ Class D ☐ Prohibited Area ☐ TRSA ☐ Class E ☐ Restricted Area ☐ FAR 93			Altitude of In-Flight Occurrence: <u>3831</u> ft msl

WEATHER INFORMATION AT THE ACCIDENT/INCIDENT SITE

Source of Pilot Weather Information (Choose all that apply) ☐ National Weather Service ☐ Company ☐ Flight Service Station ☐ Military ☐ TV/Radio ☐ Internet ☒ Automated Report ☐ None ☐ Commercial Weather Service (DUATS) ☐ Unknown ☐ On-Board Weather	Weather Observation Facility Facility ID: <u>E95 AWOS-3118.475</u> Observation Time: _____ Time Zone: <u>MST</u> Distance from Accident Site: <u>0</u> nm Direction from Accident Site: _____ degrees true
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Basic Conditions ☒ VMC ☐ IMC ☐ Unknown	Light Condition ☐ Dawn ☐ Dusk ☐ Dark Night ☐ Unknown ☐ Day ☒ Night ☐ Bright Night
Sky/Lowest Cloud Condition ☒ Clear ☐ Thin Broken ☐ Few ☐ Thin Overcast ☐ Partial Obscuration ☐ Unknown ☐ Scattered Lowest Cloud Condition Height _____ ft agl	Ceiling ☒ None (Clear) ☐ Obscured ☐ Broken ☐ Indefinite ☐ Overcast ☐ Unknown Ceiling Height _____ ft agl
Temperature: _____ (C) or _____ (F) Dew Point: _____ (C) or _____ (F) Altimeter Setting: _____ in. Hg or _____ MB	

Wind Direction ☐ Variable - or - Direction: _____ degrees true	Wind Speed ☒ Calm ☐ Light and Variable - or - Speed: _____ kts	Wind Gusts ☐ Not Gusting - or - Speed: _____ kts	Visibility <u>10</u> miles RVR: _____ feet RVV: _____ miles Density Altitude: _____ ft
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Intensity of Precipitation ☐ Light ☐ Moderate ☐ Heavy ☒ N/A ☐ Unknown	Type of Precipitation (Check all that apply) ☒ None ☐ Drizzle ☐ Freezing Rain ☐ Rain ☐ Ice Pellets ☐ Snow Shower ☐ Snow ☐ Snow Pellets ☐ Ice Pellets Shower ☐ Hail ☐ Snow Grains ☐ Freezing Drizzle ☐ Rain Showers ☐ Ice Crystals	Restriction to Visibility (Check all that apply) ☒ None ☐ Fog ☐ Blowing Dust ☐ Ground Fog ☐ Blowing Sand ☐ Haze ☐ Blowing Snow ☐ Ice Fog ☐ Blowing Spray ☐ Smoke ☐ Dust ☐ Unknown
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Icing Forecast Amount Type ☒ None ☒ N/A ☐ Trace ☐ Rime ☐ Light ☐ Clear ☐ Moderate ☐ Mixed ☐ Severe ☐ Unknown ☐ Unknown	Icing Actual Amount Type ☒ None ☒ N/A ☐ Trace ☐ Rime ☐ Light ☐ Clear ☐ Moderate ☐ Mixed ☐ Severe ☐ Unknown ☐ Unknown	Turbulence Type (Check all that apply) Severity ☐ None ☒ Light ☐ Clear Air ☐ Moderate ☒ Terrain-Induced ☐ Severe ☐ Convective Turbulence ☐ Extreme
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NOTAMs (D and FDC), AIRMETs, SIGMETs, PIREPs in effect at the time of the accident/incident:

DAMAGE TO AIRCRAFT AND OTHER PROPERTY**Aircraft Damage**

- ☐ None ☒ Substantial
☐ Minor ☐ Destroyed
☐ Unknown

Aircraft Fire

- ☒ None ☐ Both Ground and In-Flight
☐ In-Flight ☐ Fire at Unknown Time
☐ On-Ground ☐ Unknown

Aircraft Explosion

- ☒ None ☐ Both Ground and In-Flight
☐ In-Flight ☐ Explosion at Unknown Time
☐ On-Ground ☐ Unknown

Description of Damage to Aircraft and Other Property (Use additional sheet if necessary)

Maintenance Supervisor, A&P-IA wrote regarding the hidden damage inspection: "[u]pon inspection of Diamond DA40 N386MA S/N 40.449 located at Benson, AZ E95. Attached photos show the nose gear collapsed and folded to the aft underneath the airplane. The firewall has no sign of damage as well as the engine cradle. The exhaust collector, airbox, propeller, fuel pump panel, nose gear panel, and lower cowling are significantly damaged. The damper rod is broken, and the gear leg is broken above the fork and gear leg tube. Bottom section removed to aid in inspection all parts accounted for and in aircraft. The gear leg has torn the belly skin aft of the nose gear to the edge of the fuel pump access panel. The bulkhead between the nose gear compartment and the fuel pump compartment has been crushed. All other structure within the fuel pump access appears to be sound. The only damage to the upper hat profile is where the bolt holding the spanner tube in the nose gear has over rotated and the nut tore a hole above it that appears to go all the way through."

NARRATIVE HISTORY OF FLIGHT (Please type or print in ink)

Describe what occurred in chronological order, including circumstances leading to and nature of accident/incident. Describe terrain and include wreckage distribution sketch if pertinent. Attach extra sheets if needed. State departure time and location, services obtained, and intended destination. Provide as much detail as possible.

Activity Details - Flight - Night Dual Start - Stop: 19 Aug 19:35 - 19 Aug 23:25 Falcon Field KFFZ to Benson Municipal E95.

A Dual mission to E95 Benson Municipal airport under night VMC conditions ended when the aircraft's nosewheel assembly separated from the nose gear leg tubular strut after the landing flare & touchdown, resulting in a propeller strike sequence and the strut collapsing & folding backwards. Additional damage to the lower cowling was observed. At the time of this preliminary ROI, the hidden damage inspection on the aircraft is still underway and the full extent of damage is undetermined. Fatigue specific to the nose landing gear is suspected. The "runway width illusion" and "featureless Terrain Illusions" (aka "black hole illusion") are believed to have played a role in this event, as well as the crew's reluctance to execute a go-around when the approach was unstable.

MFD data was unavailable for this flight due to what is believed to be a technical issue that corrupted the data in-flight. Alternatively, Foreflight data from the instructor's iPad and OpsVue Radar flight trails were reviewed for analysis. These systems provide only limited information and provide speeds referenced to ground speed only.

The aircraft was observed descending for a straight-in approach before climbing and executing a teardrop entry from overhead the airport. The teardrop turn was initiated 2.5 NM from the airport. The aircraft was still in a wide-arc Base-to-Final turn, well off of the centerline, when it descended through the 300 ft altitude above the runway touchdown elevation.

The location of the flare and touchdown cannot be determined with accuracy. The runway surface was inspected and photographed (see attachments.) The path depicted along the ground by OpsVue is consistent with the markings made on the surface by the propeller and nosegear leg tubular strut. The nosegear fork and tire assembly was recovered from the scene by the airport manager, and the precise location where it was found is unknown. We are thus unable to determine where the nosegear tire first set down onto the runway. The first runway contact by the strut & propeller occurred approximately 1715 feet from the threshold. The second strike sequence began approximately 1970 feet from the threshold. The aircraft came to rest 2275 feet from the threshold. OpsVue also captured the sequence where the aircraft was moved by the FBO to the apron, but this is not deemed relevant to the investigation.

The NTSB was notified of this event as per protocols, and the degree of damage was inconclusive. The NTSB thus authorized CAE to recover and inspect the airplane for damage confirmation. At the time of this Preliminary ROI that process is underway. The notion of fatigue specific to the nose landing gear was identified as a concern and the NTSB expressed guidance that CAE preserve the components suspected of fatigue for NTSB examination and analysis.

The Benson Municipal Airport (E95) is a non-towered facility that sits at an elevation of 3831' MSL. It has a single runway (RWY 10 / RWY 28) with dimensions of 4002' x 75' and a downward slope of 0.7% to the east. The runway is comprised of recently-resurfaced asphalt. Weather data is available on AWOS-3. The Chart Supplement notes that there are potentially "ERRATIC WIND CURRENTS .5 NM FM THRESHOLD WHEN WINDS ARE IN EXCESS OF 10 KTS."

as follows:

METAR KTUS 200653Z 18005KT 10SM CLR 33/11 A2990 RMK AO2 SLP064
T03280106 404390272 \$=

The Benson Municipal Airport (E95) is a non-towered facility that sits at an elevation of 3831' MSL. It has a single runway (RWY 10 / RWY 28) with dimensions of 4002' x 75' and a downward slope of 0.7% to the east. The runway is comprised of recently-resurfaced asphalt. Weather data is available on AWOS-3. The Chart Supplement notes that there are potentially "ERRATIC WIND CURRENTS .5 NM FM THRESHOLD WHEN WINDS ARE IN EXCESS OF 10 KTS."

See below for continuation.

RECOMMENDATION (How could this accident/incident have been prevented?)**Operator/Owner Safety Recommendation**

The "Runway Width Illusion" and "Featureless Terrain Illusion" (aka "black hole illusion") caused the crew to believe that they were higher on Final than they actually were, resulting in an abbreviated flare & flat landing, which in turn overloaded the weakened nosewheel assembly.

The NTSB's investigation of this incident is ongoing and as such, no conclusions about probable cause should be drawn from this investigative report.

The Chief Flight Instructor (or his designee) shall ensure that the student and instructor have received appropriate remedial training on spatial illusions such as the "Runway Width" and "Featureless Terrain" illusions, the Stabilized Approach criteria, and go-around procedures. Ideally and program requirements permitting, the instructor shall prepare the lesson plan and teach it to both his student and a TED instructor, to the TED instructor's satisfaction. SMS-000879.

The Chief of Maintenance (or his designee) shall ensure the all Diamond (DA-40) aircraft's nose gear be checked and inspected due to the possibility of cracks due to metal fatigue.

MECHANICAL MALFUNCTION/FAILURE (If more space is needed, continue on separate sheet)

Was there Mechanical Malfunction/Failure? ☒ Yes ☐ No

(If yes, list the name of the part, manufacturer, part no., serial no., and describe the failure.)

Fatigue specific to the nose landing gear is suspected, resulting in the nosewheel assembly separating from the nose gear leg tubular strut upon being subjected to the forces of a firm landing. The metal to metal fatigue is still a prudent possibility and is still under suspicion.

Total Time/Cycles
On Part

3371 Hours

N/A Cycles

Time Since This Part
Inspected/Overhauled

39 Hours

FUEL & SERVICES INFORMATION**Fuel on Board at Last Takeoff**

(Convert from pounds, as necessary)

Gallons

Fuel Type

☐ 80/87

☒ 100 Low Lead

☐ 100/130

☐ 115/145

☐ Jet A

☐ Jet A-1

☐ Jet B

☐ JP8

☐ Automotive

☐ Other, specify _____

Other Services, if Any, Prior to Departure

EVACUATION OF AIRCRAFT

Was an emergency evacuation of the aircraft performed? ☐ Yes ☒ No

Method of Exit – Describe how the occupants exited and how many occupants evacuated each location

2 occupants exited normally via canopy door.

OTHER AIRCRAFT – COLLISION (If air or ground collision occurred, complete this section for other aircraft)

Aircraft Registration Number

Manufacturer: _____

Model: _____

Damage to Other Aircraft

☐ Destroyed

☐ Substantial

☐ Minor

☐ None

Registered Owner of Other Aircraft

Name: _____

City: _____

State: _____ ZIP: _____

Country: _____

Pilot of Other Aircraft

Name: _____

City: _____

State: _____ ZIP: _____

Country: _____

ADDITIONAL INFORMATION (Please type or print in ink)

Use this space if additional space is needed for any answers.

The student submitted a supplemental Safety Report. The student stated, "I had night dual xc to E95. We took off at 2025(mst). Once we exited the Tucson ' s airspace, I began to descent from the gps waypoint OBISE to E95 for the TPA(4800ft). The atis mentioned that the winds were calm. I decided to make a teardrop entry for rwy10 as I was receiving 5kt headwind. The speed in the downwind, base and final was maintained. On the short final when I was at the minimums, I was a bit off the centerline but I corrected for it and got aligned to the centre. When I reached the threshold and idled the power my speed was 72kt . When I started to flare the speed was 66kt. The main gear touched down but when the nose gear touched down, a sound came. Once we noticed that we had lost our nose gear. The instructor took the control. Closed the engine and we got out off the aircraft safely."

The student was interviewed by the Safety office. The student stated that he has never flown to the Benson (E95) airport at night, but estimates that he has performed about 15 night landings during his training. He stated that the AWOS-3 (not ATIS as mistakenly written) was reporting 3-5 kts, and because his approach to RWY 10 wasn't coming together as he planned, he decided to do a teardrop entry. The teardrop was wide and he stated that he began the turn upon the instructor's prodding. The student stated that he may have been a bit lower than planned on Base and Final, but that he corrected. He felt like the approach was pretty stable. The student said that he distinctly remembers flaring the aircraft and touching down on the main gear, and that there was no bounce. Immediately after the nose came down the student heard a noise he described as a "boom." The second time the nose came down there continued to be noise and the instructor took over and began shutting down the engine during the 3rd nose drop & slide-out to the stop.

Instructor's statement: We were coming into land into E95. At minimums we were a little low and left of center, but the student was making the proper corrections and we proceeded. On landing, our mains hit, followed quickly by our nose wheel. It didn ' t feel like an excessively hard touchdown. We were about 72 knots indicated over the threshold and the student moved the power to idle, and I believe we touched down in the mid 60s indicated. When the nose hit the runway, there was a loud noise up front. The student kept the nose wheel off the ground as long as possible, but it eventually settled down. I took over when it did settle down as we heard the scraping of the nose strut. Unfortunately I was not able to shut down the engine prior to the nose pitching down, the nose strut collapsed, and the prop stuck both blades.

We exited the aircraft after securing it. We were lined up on centerline, and concerned about other aircraft, we left the lights on. A man at the airport bran out to us to make sure we were ok. Neither I nor my student had any injuries. We monitored the radio to make sure their was no incoming traffic. The manager of the FBO came out to us and helped us move the aircraft off of The runway and onto the ramp to prevent any future incidents.

I had at this point been in contact with dispatch and safety to inform them of our situation.

The Instructor Pilot was interviewed by the Safety office with the video of the approach & landing as depicted by OpsVue Radar on screen. The instructor stated that this flight was his first flight with this student. The winds (AWOS-3) were reporting calm, and that the student planned for a straight-in approach. The student began his decent, but then changed his mind and elected to do a teardrop entry. The student did not express any concerns of danger, it just appeared that he determined that the teardrop would be the better option and began a climb back to TPA. The instructor allowed the student to make the wide teardrop because he was evaluating the student's technique; he then coached him to begin the teardrop. As the student continued through Downwind to Base and then to Final, the student flew too low, but stopped his decent and corrected with the PAPI. The instructor noted that they likely experienced the effects of the black hole illusion, and that in hindsight they probably should have executed the go-around. The instructor stated that the landing was on the main gear, but was probably a bit flat. The landing was a "firm" landing but he does not believe there was a bounce. The nose gear touched down 3 times during the landing sequence. The first touch-down they noticed an odd sound and the student brought the nose back up a bit; the second time, the nose came down farther than expected and the propeller began striking the pavement and the instructor took the controls while initiating an attempted engine shut-down; the third time the strut planted itself firmly into the pavement and bent causing the propeller to again strike the pavement. The aircraft then slid out on the lower cowlings to its final stopped position on the runway.

I HEREBY CERTIFY THAT THE ABOVE INFORMATION IS COMPLETE AND ACCURATE TO THE BEST OF MY KNOWLEDGE

Date of this Report

09-17-2020

mm/dd/yyyy

Name of Pilot/Operator: _____

Signature: _____

-- or -- ☐ Check here to electronically sign this document

If a Person Other than Pilot/Operator is Filing Report

Name: Eric C. Fahrner

Title: Deputy Flight Safety Officer

Signature: _____

-- or -- ☒ Check here to electronically sign this document

FOR NTSB USE ONLY

NTSB Accident/Incident No.

WPR20LA290

Reviewed by NTSB Regional Office

WPR

Name of Investigator

Zoë Keliher

Date Report Received

09-20-20

Attachments - Report 005457 – Nose wheel blown on landing

Attachment 1

Aircraft Overview



Attachment 2

Aircraft Overview



Attachment 3

Aircraft Overview



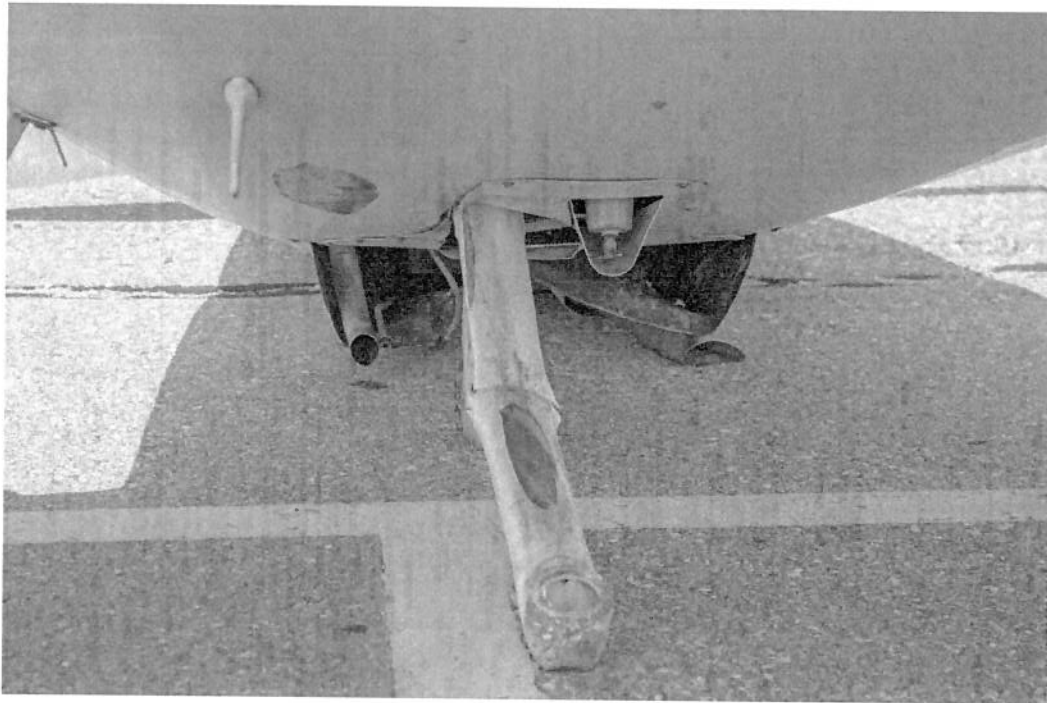
Attachment 4

Aircraft Overview



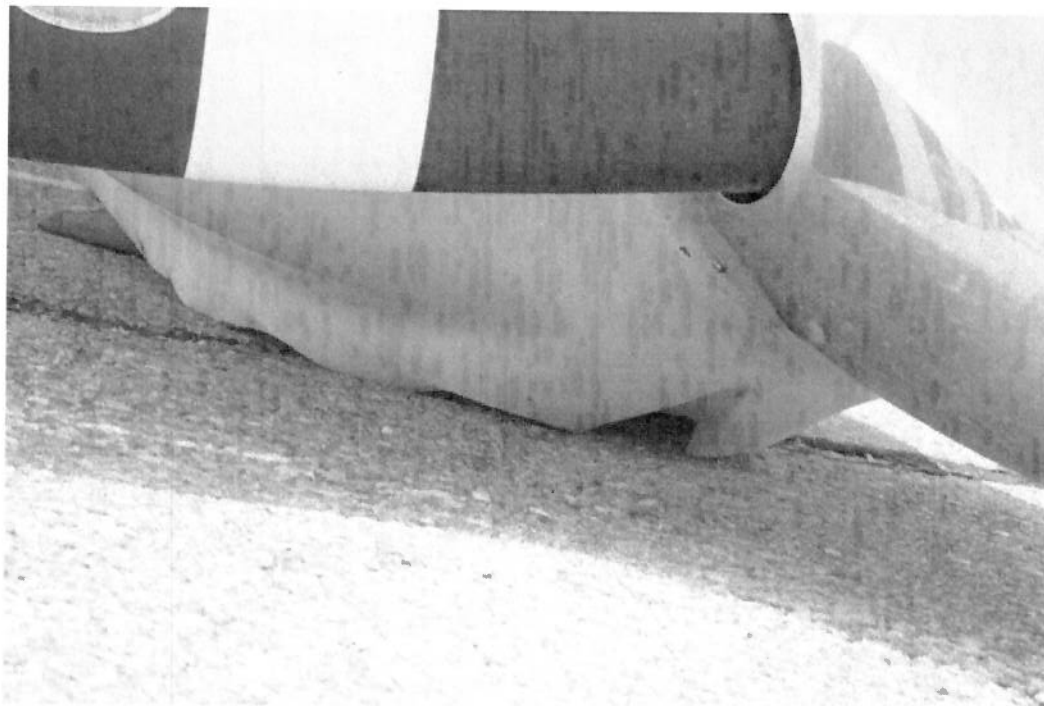
Attachment 5

Nosegear Leg folded backwards



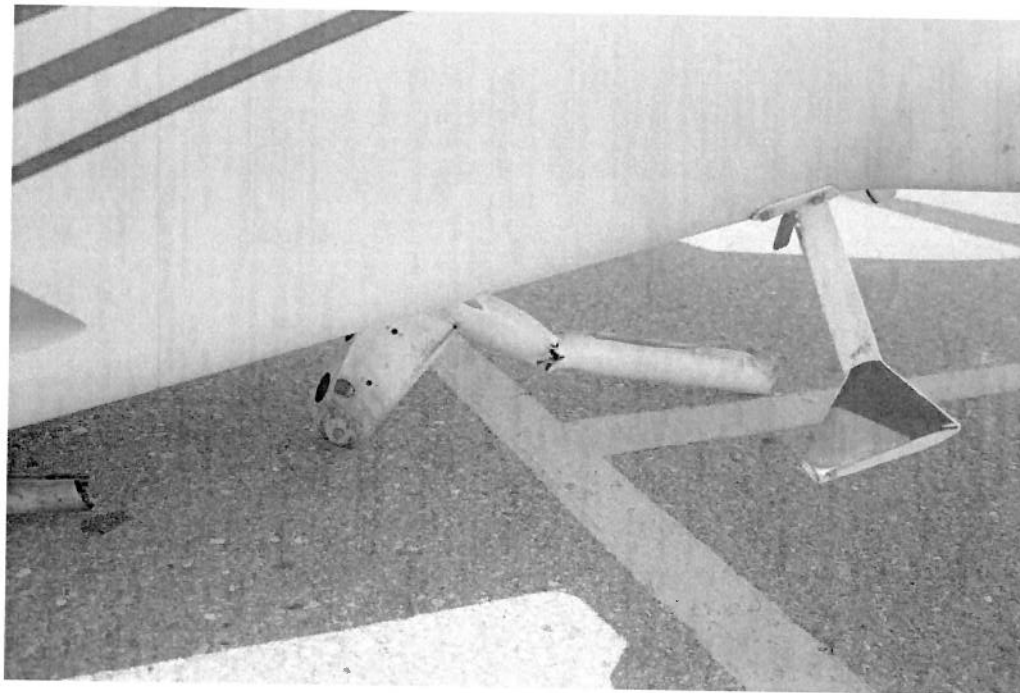
Attachment 6

Underside Of Cowling



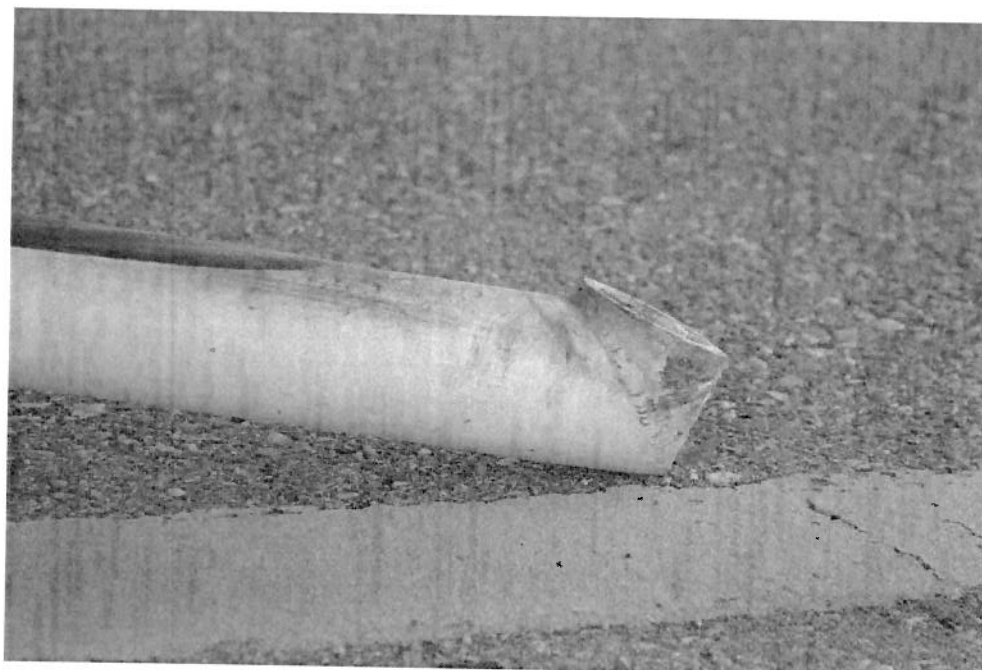
Attachment 7

Nosegear Leg



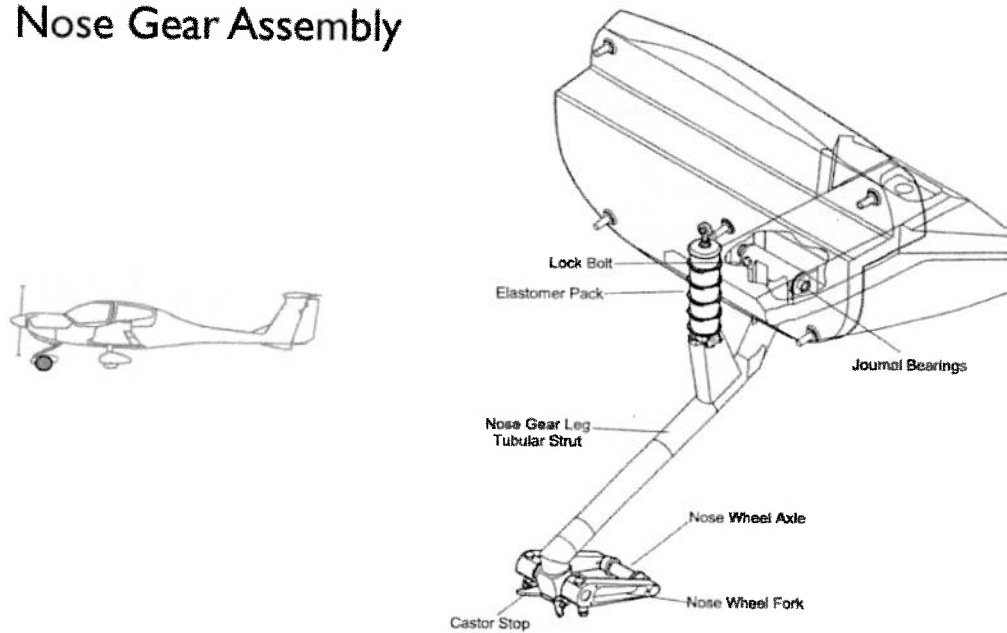
Attachment 8

Nosegear Leg end



Attachment 9

Nose Gear Assembly

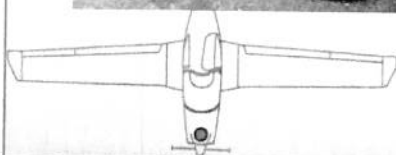


Attachment 10

Landing Gear

Nose Wheel

- Free castoring nose wheel ($\pm 30^\circ$)
- Sprung by elastomer package.
- Tire pressure 2.0 bar or 29 psi.



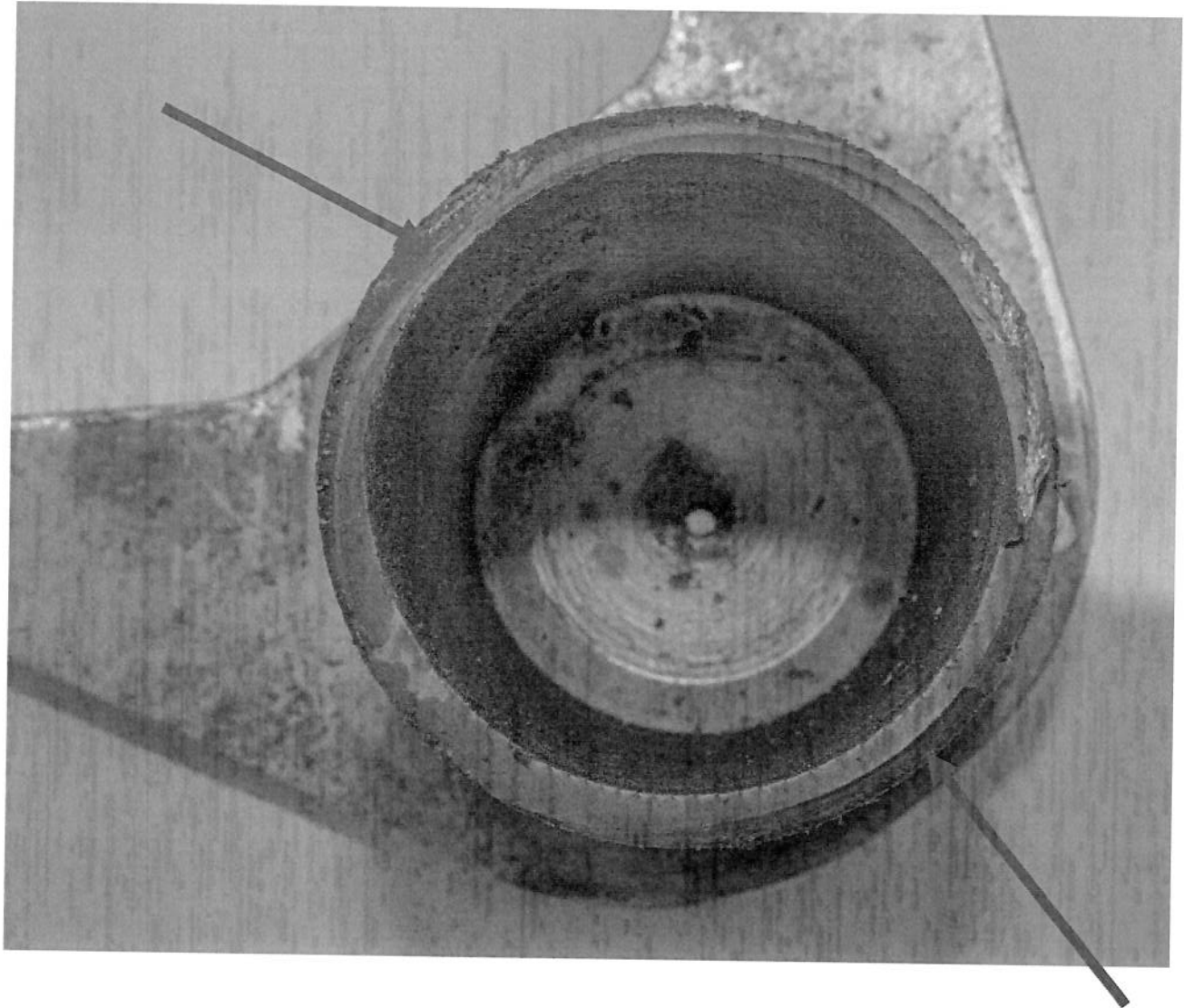
Attachment 11

Castor Stop & Pivot Axle



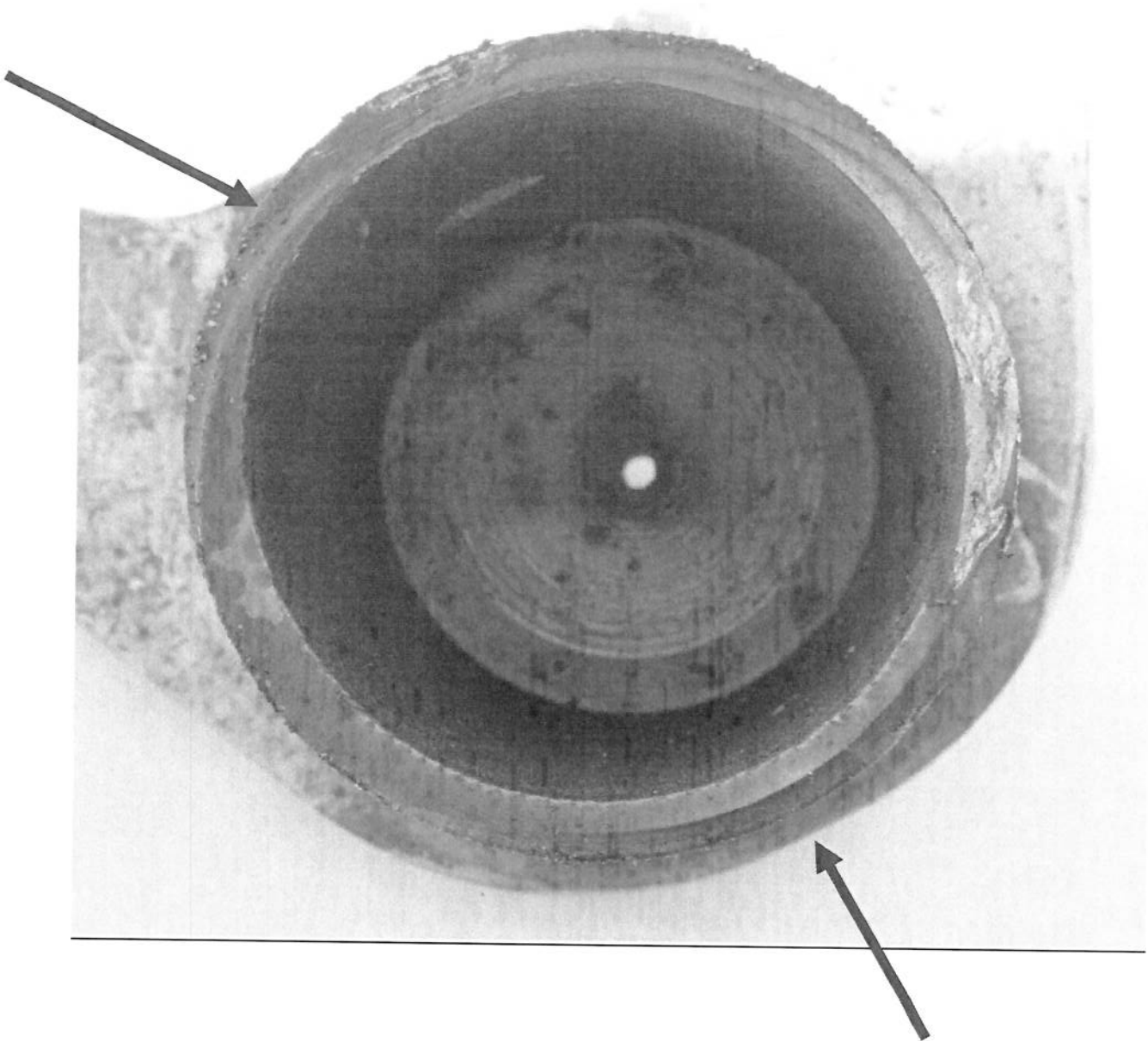
Attachment 12

Castor Stop & Pivot Axle. Note the uneven color and textures, which MAY suggest developing cracking.



Attachment 13

Castor Stop & Pivot Axle. Note the uneven color and textures, which MAY suggest developing cracking.



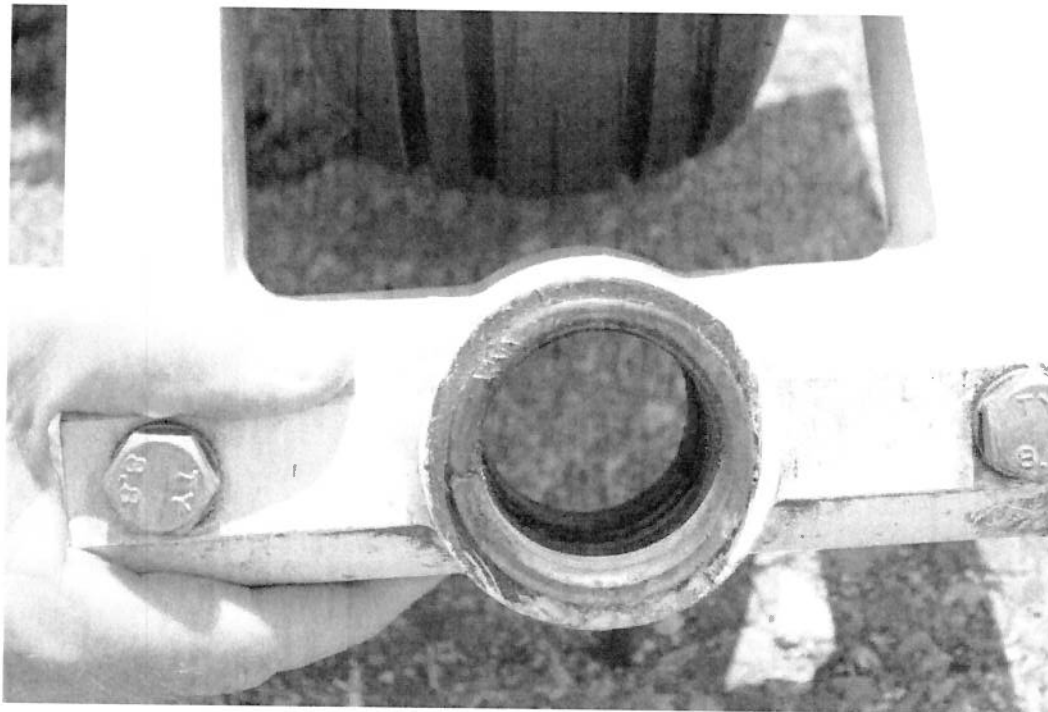
Attachment 14

Wheel & Fork Assembly



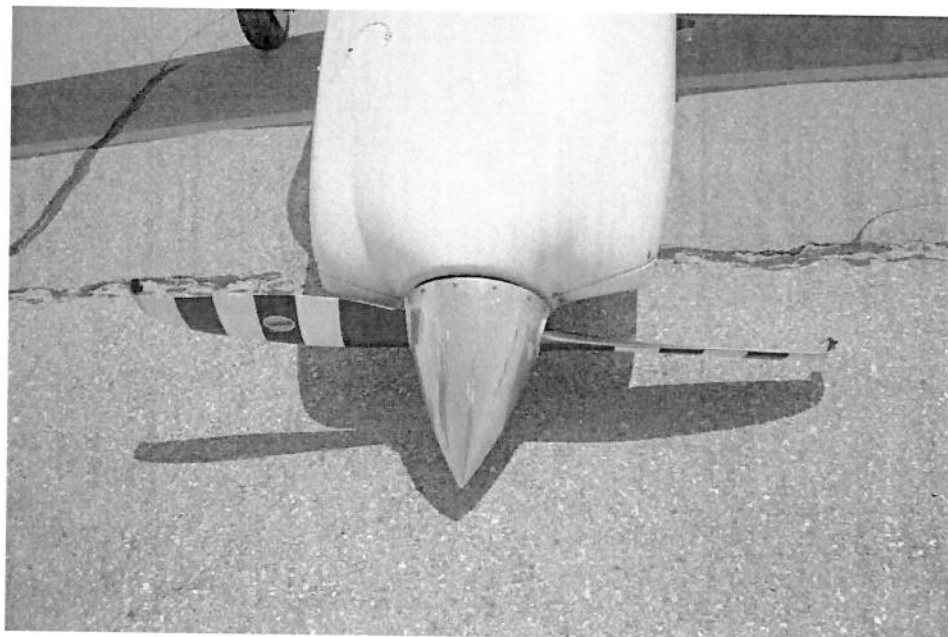
Attachment 15

Fork



Attachment 16

Propeller damage



Attachment 17

Propeller Damage



Attachment 18

OpsVue Radar flight trail: approach & landing sequence overview. Speeds are groundspeeds and thus not as informative as airspeeds.



Attachment 19

OpsVue Radar flight trail: note misalignment with runway centerline.



Attachment 20

OpsVue Radar flight trail.



Attachment 21

OpsVue Radar flight trail.



Attachment 22

OpsVue Radar flight trail.



Attachment 23

OpsVue Radar flight trail.



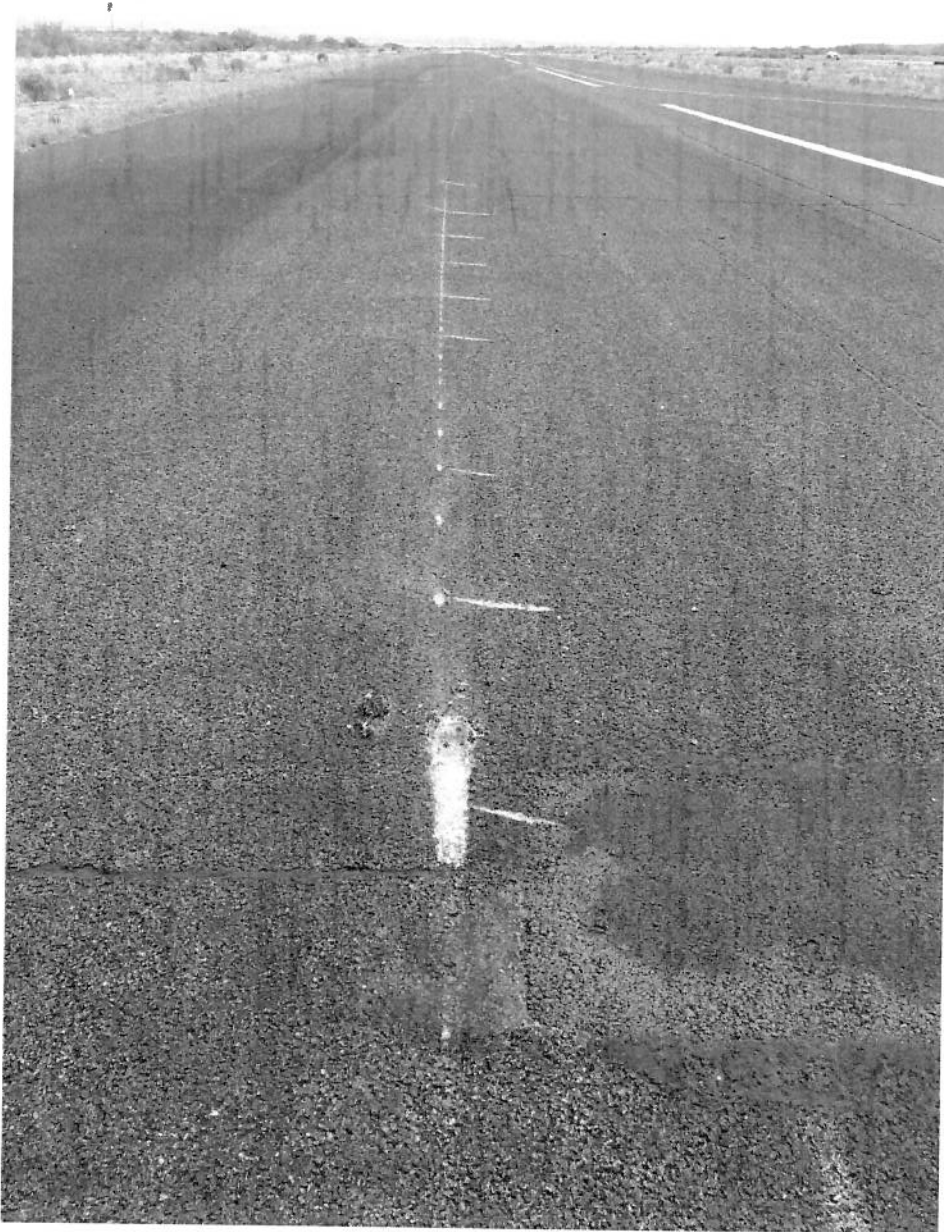
Attachment 24

First set of Prop Strikes and Nose Leg Strut markings. Looking down RWU 10 to the east.



Attachment 25

Second set of Prop Strikes and Nose Leg Strut markings. Looking down RWU 10 to the east.



Attachment 26

Leg Strut divot



Attachment 27

Final Slide-Out On Lower Cowling. Looking up RWU 10 to the west.



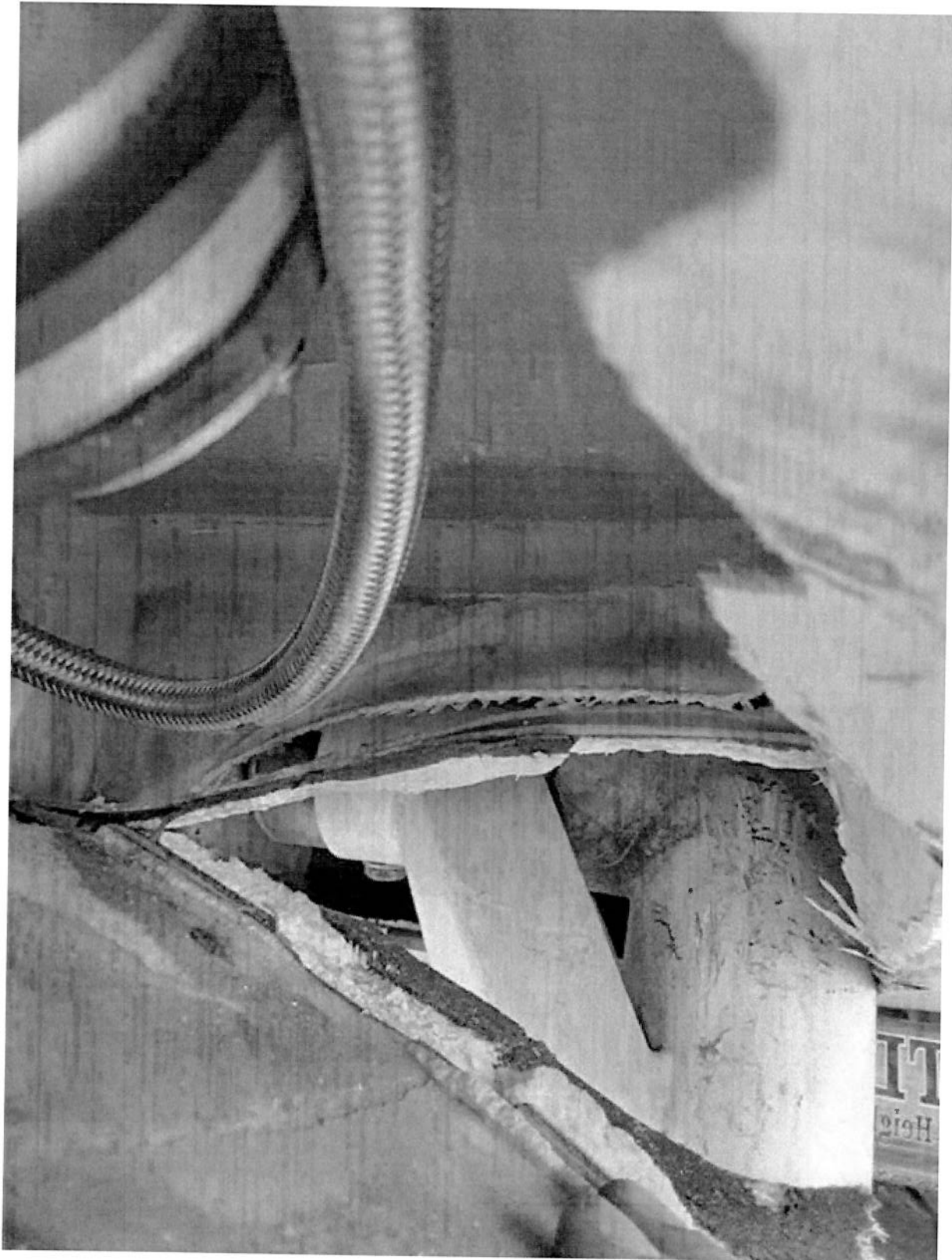
Attachment 28

Documented damage from Hidden Damage Inspection



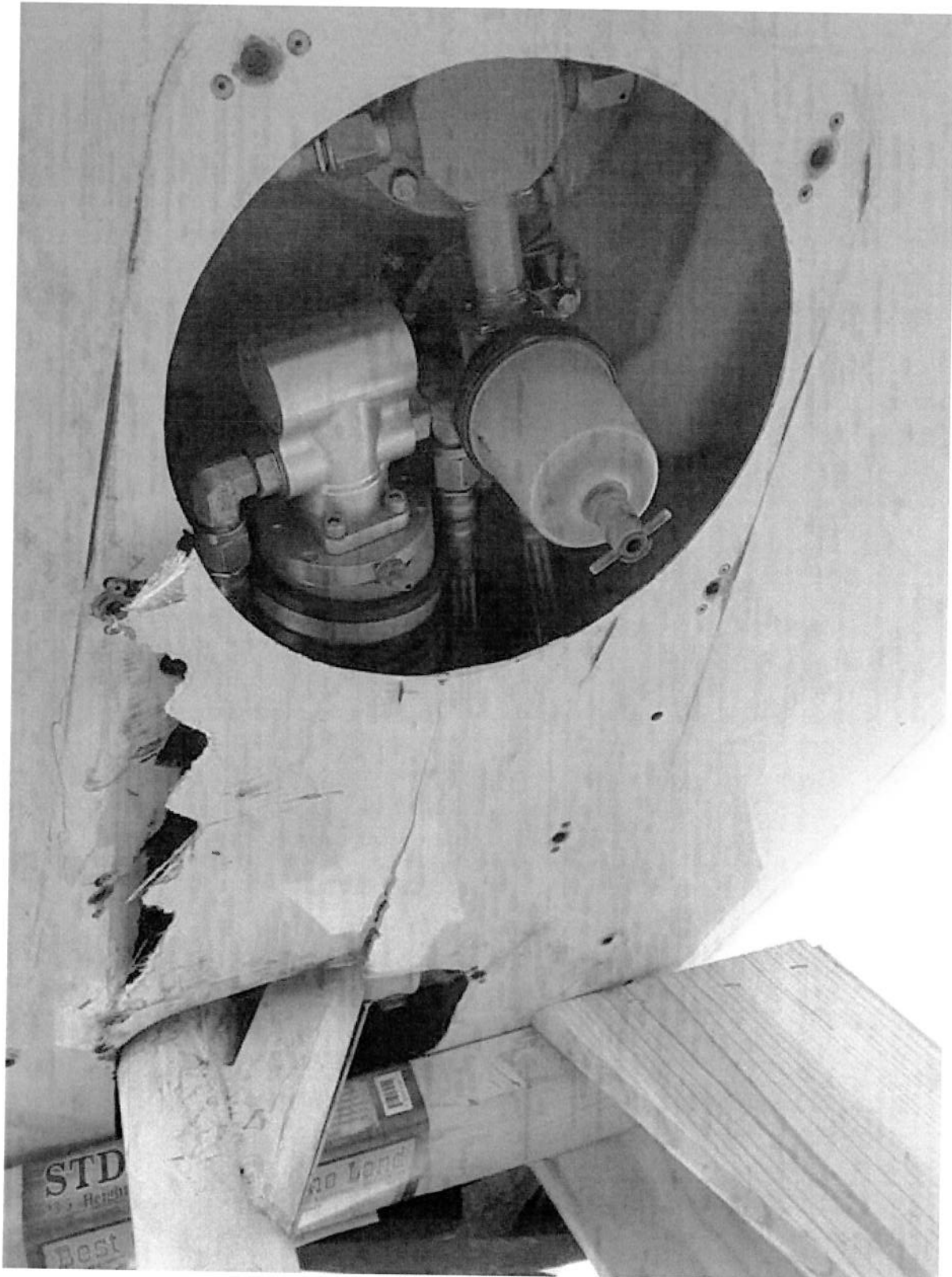
Attachment 29

Documented damage from Hidden Damage Inspection



Attachment 30

Documented damage from Hidden Damage Inspection



Attachment 31

Documented damage from Hidden Damage Inspection

