NATIONAL TRANSPORTATION SAFETY BOARD
OFFICE OF AVIATION SAFETY
WASHINGTON, D.C.

FEBRUARY 22, 2000

MAINTENANCE RECORDS GROUP FACTUAL REPORT OF INVESTIGATION

A. ACCIDENT : DCA00MA005

LOCATION : Aberdeen, South Dakota

DATE : October 25, 1999

TIME : 1313 Eastern Daylight Time (EDT)

AIRCRAFT : Learjet 35, N47BA, Serial Number: 35-060, Operated by Sun Jet Aviation Inc.

B. MAINTENANCE RECORDS GROUP

Alan J. Yurman Chairman	Air Safety Investigator National Transportation Safety Board Miami, Florida
Ike Gray	Aviation Safety Inspector Federal Aviation Administration Flight Standards District Office Orlando, Florida
Ralph Witzke	Field Service Representative Learjet/ Bombardier Fort Lauderdale, Florida
Mike A. Cummins	Manager Product Safety Allied Signal Inc. Phoenix, Arizona

C. SUMMARY

A Learjet model 35, N47BA, crashed near Aberdeen, South Dakota, on October 25, 1999, about 1313 eastern daylight time. The airplane departed Orlando, Florida, for Dallas, Texas, at 0920. There were 4 hours 45 minutes of fuel on board. The FAA air traffic control (ATC) lost radio contact in the area north of Gainesville, Florida, after clearing the airplane to flight level (FL) 390. The airplane was observed by ATC radar to continue on a straight line course from Gainesville to the accident site. It was intercepted by several USAF fighter aircraft about FL450 as it proceeded along the course. The military pilots observed the forward windshields of the Learjet to be frosted on the inside. They could not see into the cabin. The airplane's altitude was erratic. The military pilots did not observe any structural anomaly or any other unusual condition, and the powerplants appeared to be operating. The airplane was observed to depart controlled flight and spiral to the ground. It impacted in an open field. There were four passengers and flight crew, and all were fatally injured. The airplane was owned and operated by Sun Jet Aviation of Sanford, Florida.

The Maintenance Records Group examined the actual hard-copy records, which were furnished by Sun Jet, and hand carried from Sanford, Florida, to the FAA Flight Standards District Office, Orlando, Florida. Sun Jet maintenance personnel were interviewed at Sun Jet's facility in Sanford, Florida.

D. DETAILS OF MAINTENANCE RECORDS EXAMINATION

Airplane History

The certificate of Airworthiness for N47BA was issued April 4, 1976, and the original operator was Mesa Petroleum Company, Amarillo, Texas. The following is a list of operators that followed the original:

December 1984-	Brunswick Hospital Center, Amittyville, New York January 1990, Breed Automotive, Boonton, New Jersey
December 1992-	Breed Automotive, Lakeland, Florida
June 1995-	Chrysler Aviation Inc., Van Nuys, California
November 1996-	Jetwest International, Van Nuys, California
April 1998-	Northwest Jet Inc, Chino, California
December 1998-	Aircraft Sales Inc.

Sun Jet acquired the aircraft January 1999. As of October 23, 1999 (not including the last flight), N47BA had a total time of 10,505.8 hours, and 8,043 total landings.

Cabin Pressurization System History

The airplane's records revealed the following entries reference the pressurization system (See Logbook excerpt, Attachment No. 1):

4/13/76-	Replaced R/H Reg- modulation valve S/N [on] P160 S/N 292 [off]. Aircraft total time (ACTT) 12.35 hours Landings; 12.
6/28/86-	In-flight loss of cabin pressurization. Replaced outflow valve Correct leak at frame 5 bulkhead wire bundle.
7/14/86-	R&R (remove and replace) pilot's and co-pilot's O2 masks.
4/28/87-	Replace pressure module P/N 2614007-12-601, S/N (off) 100, S/N (on) 57. Ref. w/o No. C49-1714. Aircraft total time (ACTT) 4560.9 hours Landings; 4099.
5/08/87-	Pressurization module. R&R vacuum regulator. Aircraft total time (ACTT) 4556.3 hours. Landings; 4090.
4/12/88-	Replaced the oxygen pressure gauge capillary line from frame 5 to the indicator (Line P/N 173379-68). ACTT; 4720 hours. Landings; 4267.
11/21/88-	R&R left hand engine mod valve. ACTT; 4974.4 hours.
2/20/89-	Installed loaner pressurization module. ACTT; 5083.7 hours.
3/27/89-	Installed pressurization module. ACTT; 5145.9 hours.
8/18/90-	Cleaned outflow valve.
1/7/95-	C/W (complied with) AD-94-26-01, aircraft limited to 41,000 feet. [Cypress Aviation] ACTT; 7694.4 hours. Landings; 5960.
4/12/95-	Pre-purchase inspection performed by Learjet at their facility

Wichita, Kansas. The following items reference the pressurization system were noted during the Learjet pre-purchase inspection; "...Cabin pressure follows throttles-2,000 feet bump both directions...R/H engine mod...Valve does not shift when power is brought up...when moving cabin air switch to max flow you get no increase of air flow...with cabin pressure at 1 pound in auto, cabin will not up rate when selecting a higher altitude...should up rate depending on where rate knob is at...emergency exit seal...coming loose...main cabin door is smashed at split line area...O2 need serviced...." (Note: according to Learjet, "squawks" that were written up were not corrected "...per the customer's request." WO No. 35-060-10. (See excerpt of Learjet pre-purchase inspection, Attachment No. 2).
ACTT; 7839.5 hours.

7/23/95 C/W AD 94-26-01 N/A by serial numbers
ACTT; 7884.6. [Galvin Aviation]

7/28/95- R&R right hand mod valve with an overhauled unit P/N 3213736-1-1, S/N P-168.
ACTT; 7884.6 hours.

11/9/95- C/W AD 95-20-03. (See Attachment No. 3).

2/9/98- Cabin occasionally will not hold pressure at low altitude.
ACTT; 9797.9 hours.
Landings; 7501.

3/11/99- Replaced co-pilot's O2 mask regulator.
ACTT; 10473.1 hours.
Landings; 7782.

7/23/99- Check operation of pressurization system.

8/1/99- Gained access to frame 5 out flow valve & cleaned, operational check good, closed aircraft Ref. 21-30-01.

10/12/99- Replaced leaking flow gasket.
ACTT; 10473.1 hours.
Landings; 8013.

10/23/99- R&R left hand engine mod valve.
ACTT; 10505.8 hours.
Landings; 8043.

Pressurization Maintenance Checks

The maintenance records that were reviewed included the pressurization maintenance checks required by Learjet, and revealed that the following were the last checks that had been complied with (c/w) before the accident:

A. Pressurization Control System Filters- c/w November 13, 1998, 600 hr.
B. Cabin air exhaust control valve- c/w August 22, 1997, 1200 hr.
C. Cabin altitude limiter inlet screen- c/w November 13, 1998.
D. Pressurization control system jet pump- c/w November 18, 1998.

Recent Maintenance History

According to the maintenance records Sun Jet performed a prepurchase inspection January 31, 1999 (See Attachment No. 4), and completed the inspection on February 8, 1999. The last AAIP (approved aircraft inspection program) 300 hour/12 month inspection was completed on June 12, 1999, and 179 hours had accumulated since that date.

The logbooks revealed the following items that were related to the pressurization system during Sun Jet's prepurchase inspection:

Item No. 2)- "Replaced lower cabin door catch P/N 3111602-007 I.A.W. 52-11—02."

Item 26)- "Serviced oxygen I.A.W. 12-10-09." (WO No.5776).

The following logbook entries associated with the airplane's pressurization system were entered by Sun Jet after they purchased the airplane January 1999.

April 10, 1999, aircraft total time (ACTT) 10,224.8 hours:

Item 4)- "Serviced emergency air I.A.W. 12-10-07."
Item 6)- "Installed repaired lower cabin door actuator P/N 6600233-1, S/N 0832, I.A.W. 52-11-02. Ops. OK."
Item 12)- "Serviced oxygen I.A.W. 12-10-09." (WO No.5829).

May 19, 1999, ACTT 10,302.2 hours:

Item 1)- "Replaced Capillary line from O2 bottle to frame 5 IAW MM 35-00-00."
Item 2)- Serviced oxygen bottle IAW MM 12-10-09." (WO No.5848).

May 21, 1999, ACTT 10,326.0 hours:

Item 4)- "Complied with Phase A1-6 inspection per MM 05—10-01 thru 05-10-06." (See Learjet inspection manual attachment No. 5)

Item 12)- "Serviced oxygen I.A.W. 12-10-09." (WO No.5875).

August 1, 1999, ACTT 10,373.0 hours:

Item 1)- "Gained access to frame 5 out flow valve & cleaned, operational check good, closed aircraft Ref. 21-30-01." (WO No. 5929).

Note: An interview with the Sun Jet Maintenance Supervisor, on November 15, 1999, at Sanford, Florida, conducted by the NTSB Maintenance Records Group Chairman, revealed the following, reference to the August 1, 1999, entry:

> The maintenance supervisor stated that a pilot, Bill Schwab, gave him a "verbal squawk" (discrepancy) on July 28, 1999, that retarding the throttles on descent into Aspen, Colorado, "with anti-ice ON," the cabin would "climb." On August 1, 1999, the outflow valve was cleaned using a "Q" tip and alcohol.
>
> Edward Berkley, maintenance inspector, in his revised statement dated September 15, 2000, stated, "...In addition, they also dropped the cabin pressurization controller module to check for loose connections and condition of lines."

September 3, 1999, ACTT 10,401.2 hours:

Item 2) - "Serviced oxygen I.A.W. 12-10-09." (WO No.5974).

October 12, 1999, ACTT 10,473.1 hours:

Item 3)- "replaced gasket P/N 2319116-4 on inter cooler aft fuselage access piping, ref. 36-10-00." The specific gasket (IPC 36-11-30). (WO No. 6009).

On November 15, 1999, the maintenance supervisor stated that while doing power runs for a power split, October 12, 1999, he found a bleed air leak in the tailcone. A gasket was replaced in the "V" clamp at the flow control valve. They replaced the gasket and ran the engines to check for leaks.

Other maintenance personnel were interviewed reference the "V" clamp at the flow control valve. Mr. Ricky Brooks, a technician, of 5 years with Sun Jet stated he replaced the gasket and torqued the "V" clamp per the maintenance manual.

Mr. Edward Berkley, an inspector, of 5 ½ years at Sun Jet stated he inspected the "V" clamp and checked the torque. Mr. Berkeley stated in his revised written statement dated September 15, 2000. In addition, they also dropped the cabin pressurization controller module to check for loose connections and condition of the lines. No defects were noted.

October 23, 1999, ACTT 10,505.8 hours, total landings: 8,043, the last logbook entry before the accident, revealed:

9/15/00

RE: N47BA

Learjet 35
S/N 35-060

Maintenance Records Group Factual Report Of Investigation
Dated February 22,2000
Page 6

Dear Mr. Benzon,

After review of the Maintenance Records Factual Report, I noticed my statements were not attached to the proper dates.
The correct statement dates are as follows:
August 1, 1999, ACTT 10,373.0
(In addition, they also dropped the cabin pressurization controller module to check for loose connections and condition of lines.)
October 12, 1999, ACTT 10,473.1
(Mr. Edward Berkley, an inspector, of 5 ½ years at Sunjet stated he inspected the "V" clamp and checked the torque. No defects were noted.)
October 23, 1999, ACTT 10,505.8
(During the engine run Mr. Berkley visually checked the modulating valve, and found " the spring not functioning on the LH engine.")

Thank you,

[redacted]
Edward Berkley
Inspector

6-1

Complied with the following maintenance items:

Item 1)- "Removed upper engine cowlings, reset manual mode adjustment left and right engines ran aircraft to power, left engine leads (bleed off). Removed left modulating valve P/N 3213736-1-1 and installed overhauled valve P/N 3213736-1-1 S/N P-181, performed power runs operational leak checks, good, cowled engine, Ref. 36-10-01."

Item 2)- "Removed lower cowling, right engine, removed starter for access to heat valve & pressure switch, removed pressure switch P/N P22B-11, S/N 1749 and installed new switch P/N P20M30, S/N 1632. Reinstalled starter, ground runs leak checks, good, Ref 30-21-02."

"I certify that this aircraft work scope was completed in accordance with current Federal Aviation Regulations and is determined to be in airworthy condition and approved for return to service."

The work order No. 6056, Date: 10-23-99, and the signature appears to be Ron Tass.

The Maintenance Records Group Chairman spoke with Dan Cox, Maintenance Supervisor, at Sunjet, on October 27, 1999. Mr. Cox said that when the above work was performed they were troubleshooting for an engine power problem. The throttles were not lined up. After checking the computerized fuel flow of the engines they realized that the problem was the modulating valve. The troubleshooting was performed on October 22, 1999, they ordered the part that day from Learjet, and received it over night delivery on October 23. (See Attachment No. 6, 1).

Mr. Cox told the Maintenance Records Group Chairman that because they were troubleshooting for a power problem the aircraft was ground tested and not altitude checked. However, after the airplane was placed back in service it flew that afternoon to St. Augustine. The pilot that flew N47BA that afternoon said, "...the flight to St. Augustine was flown at altitudes of 12,000 and 13,000 feet. The bleed air and pressurization system were operating normally. Sea level cabin pressure was selected with normal differential indicated." (See Attachment No. 6, 2).

During the engine run Mr. Berkley, maintenance inspector, visually checked the modulating valve, and found "the spring not functioning on the LH engine."

According to the Learjet maintenance manual, 36-10-00, page 1:

"...A. Aircraft 35-002 thru 35-106...have two basically independent bleed air distribution systems connected at a common distribution point. Each system consists of a bleed air shutoff and pressure regulator valve installed on the engine, a bleed air check valve installed in the ducting adjacent to the bleed air manifold, a bleed air manifold (the common distribution point) installed in the tailcone, and a two-position control switch. A modulating valve control and warning box

adjacent to the bleed air manifold, a bleed air manifold (the common distribution point) installed in the tailcone, and a two-position control switch. A modulating valve control and warning box installed on the right hand side of the tailcone is shared by both systems' bleed air shutoff and pressure regulator valves."

The service oxygen system was serviced by Sun Jet January 30, 1999, during the pre-by inspection, and on the following dates:

March 10, 1999
May 19, 1999
June 11, 1999
September 3, 1999

The last time the oxygen (O2) system was refilled was September 3, 1999, and 104.6 hours had accumulated on the airplane since the O2 system was last refilled. On October 28, 1999, inspectors from the FAA, Orlando Flight Standards District Office traveled to Sun Jet's facilities in Sanford, Florida, to inspect the O2 refill system for purification. They found that the O2 used to refill N47BA was 99.9 percent pure.

Airworthiness Directive (AD)

Two ADs applied to the aircraft's outflow and safety valves, AD 94-26-01, and AD 95-20-03. (See Attachment No. 7).

AD 94-26-01, effective date, January 3, 1995, required inspection of the outflow and safety valve on Learjet models 24,25,28,29,31,35,36 and 55. The outflow & safety valves had to be inspected per AlliedSignal Alert Service Bulletins 130406-21-A4011 and 102850-21-A4021 (See Attachment No. 8). If the aircraft had an outflow/safety valve that matched certain serial numbers, the aircraft was restricted to 41,000 feet maximum operating altitude and a temporary flight manual revision with this limitation was to be inserted into the AFM (aircraft flight manual), until the outflow/safety valve were replaced with a serviceable valve.

AD 95-20-03 superseded AD 94-26-01; "...to prevent rapid decompression of the airplane due to cracking and subsequent failure of certain outflow/safety valves, accomplish the following...(a) Within 30 days after January 3, 1995 (the effective date of AD 94-26-01, amendment 39-9097), revise the Limitations Section of the FAA-approved Airplane Flight Manual (AFM) to include the following. This may be accomplished by inserting a copy of this AD in the AFM...'Operation of the airplane at any altitude above 41,000 feet is prohibited.'...(b) within 18 months of the effective date of the AD, replace the outflow/safety valves, P/N 130406-1 and 102850-5, as identified in Allied Signal Aerospace Alert SB 130406-21-A4011, Revision 3, dated January 5, 1995, or 102850-21-A4021, Revision 2, dated October 6, 1994, as applicable; or as identified in Learjet SB 35/36-21-19, dated January 3, 1995, as applicable; with serviceable parts in accordance with procedures described in the applicable service bulletin. Accomplishment of this replacement constitutes terminating action for the requirement of paragraph (a) of this AD; after the replacement has been accomplished, the previously required AFM limitation may be

removed...(c) As of January 3, 1995 (the effective date of AD-94-26-01, amendment 39-9097), no person shall install an outflow/safety valve, part number 130406-1 or 102850-5, as identified in Allied Signal Aerospace Alert Service Bulletin 130406-21-A4011, Revision 3, dated January 5, 1995, or 102850-21-A4021 Revision 2, dated October 6, 1994, as applicable; or as identified in Learjet Service Bulletin...SB 35/36-21-19...on any airplane unless that valve is considered to be serviceable in accordance with the specifications contained in the Accomplishment Instructions of the applicable service bulletin...(d) An alternative method of compliance or adjustment of the compliance time that provides an acceptable level safety may be used if approved by the Manager, Los Angles Aircraft Certification Office...FAA...Transport Airplane Directorate...Compliance: Required as indicated, unless accomplished previously...Note 2: Paragraph (a) of this AD merely restates the requirements of paragraph (a) of AD 94-26-01, amendments 39-9097. As allowed by the phrase, 'unless accomplished previously,' if those requirements of AD 94-26-01 have already been accomplished...."

According to the records, AD 94-26-01 was complied with by two different maintenance facilities January 7, 1995, and July 23, 1995. The records showed that on January 7, 1995, AD 94-26-01 had been signed off by Cypress Aviation Inc., Lakeland, Florida, as "being limited to 41,000 feet." Cypress Aviation, according to their WO No. 2484, under corrective action taken; "...inspected A/C for AD as required. Found P/N 130406-1 installed 27 January, 1986, S/N 25-3127 [that S/N was not applicable per AlliedSignal SB 130406-21-A4011]. Per AD this aircraft limited to flight below 41,000 feet." (See Cypress WO No 2484, Attachment 9, page 2). AD 94-26-01 was signed off as being "N/A" (not applicable) to serial numbers by Galvin Flying Service, Seattle, Washington, July 23, 1995 (See Attachment No. 9, page 1). A search of the aircraft's records revealed there were no logbook entries found for the installation of outflow valve S/N 25-3127, nor was there any logbook entry found for January 27, 1986. The logbooks showed an outflow valve being replaced by AMR Combs, Indianapolis, Indiana on June 28, 1985, P/N 2419249-9 (vendor P/N 130406-1), S/N 74-2868, which is a serial number not applicable per AlliedSignal SB 130406-21-A4011. The original outflow valve installed by Learjet production in 1976 was P/N 102850-5, S/N 25-817, and the safety valve was P/N 102850-5, S/N 95-906. Neither the original outflow valve, or the safety valve, were applicable per AlliedSignal SB 130406-21-A4011 to either AD. In addition, the logbooks do not indicate that the safety valve was ever replaced up to the time of the accident.

AD 95-20-03 was complied with on November 9, 1995, as per LASER (Learjet aircraft status evaluation report). However, AD 95-20-03 superseded AD 94-26-01, and according to AD 95-20-03, if those requirements of AD 94-26-01 have already been accomplished previously, AD 95-20-03 is considered to be in compliance.

In summary, it appears that on January 7, 1995, Cypress Aviation Inc., Lakeland, Florida, initially took the first step in compiling with AD 94-26-01, by adding the "41,000 feet" restriction to the AFM. Cypress Aviation Inc., also stated according to their WO No. 2484, that 9 years earlier January 27, 1986, an outflow valve S/N 25-3127 was installed, which was a numbered valve that was not applicable per AlliedSignal SB 130406-21-A4011. However, a search for a logbook entry dated January 27, 1986, was not found with the aircraft's records, so it is not

known where Cypress Aviation Inc., obtained the information that outflow valve S/N 25-3127 was installed on that date.

The entry by Galvin Flying Service, on July 23, 1995, which stated that AD 94-26-01 was complied with, and signed off as being "N/A" (not applicable) according to serial numbers, does not indicate what serial numbers were in place at the time of their inspection. However, there was never a logbook entry verifying what serial number outflow valve was observed at the time of the inspection. Additionally, the records did not mention the safety valve as being in compliance, or noncompliance.

When the NTSB Maintence Records Group examined the AFM for N47BA after the accident, the restriction "Operation of the airplane at any altitude above 41,000 feet is prohibited," was still displayed in the AFM, and had not yet been removed.

E. POWERPLANT RELATED INFORMATION

The powerplant configuration consists of two AlliedSignal TFE731-2-2B, engines.

A. Position 1- S/N: P74265C
TSN (time since new) 10,099.1 hours. CSN (cycles since new)- 7,875 (as of October 12, 1999).
Time Since October 12 (not including the accident flight)- 34.2 hours.

Engine S/N P74265C was installed new on aircraft 35-060, at the No. 2 position (right). The location summary of engine S/N: P74265C was; February 9, 1976 to May 23, 1997, installed on the RIGHT (No. 2) side of aircraft S/N 35-060. August 14, 1997, to August 27, 1997, installed on the RIGHT (No. 2) side of aircraft S/N 35-041. September 5, 1997, to the present installed on the LEFT (No. 1) side of aircraft S/N 35-060.

Engine-related logbook entries.

October 7, 1999, ACTT 10,465.5:

Item 7) - "Gained access to left fuel computer, ran aircraft at power (N1 94 % power of the day engine was at only 86 % power, adjusted fr/mn schedule and engine flat rate adjustment.* Matched engines at 94.5 % N1. Power checks good. Closed area for flight computer, ref. AlliedSignal M.M. 72-00-00 Page 512 thru 531." (WO No. 6009).

*FR/MN, is the relationship between the engine Flat Rating (FR) and Max Speed (MN). The flat rate point is the "cold day" maximum-rated power line, which is held constant to the break point Outside Air Temperature (OAT). The max speed line is the "hot day" sloped line from the break point OAT to the max defined OAT. The MN line is derived by maintaining a constant Interturbine Temperature (ITT) by allowing speed to decrease, as

OAT increases. The FR/MN adjustment in the Electronic Engine Control (EEC) allows this relationship to be fine tuned (trimmed) to accurately set the break point.

October 12, 1999, [Time] 10,099/7,875- 150-hour inspection.
October 21, 1999- No. 1 and No. 2 engine checked out for throttle splits. Replaced L/H Mod Valve, 3213736-1-1.

All applicable engine ADs through 97-04-03, and service bulletins (SB) have been found to be in compliance.

B. Position 2- S/N: P74264C
TSN- 10,122 hours CSN- 8,172
Time Since October 12 (not accident flight) - 34.2 hours

Engine S/N P74264C was installed new on aircraft 35-060, at the No. 1 position (left). The location summary of engine S/N: P74264C was; February 9, 1976 to September 5, 1997, installed on the LEFT (No. 1) side of aircraft S/N 35-060. October 4, 1997, to the present installed on the RIGHT (No. 2) side of aircraft S/N 35-060.

All applicable engine ADs through 97-04-03, and service bulletins (SB) have been found to be in compliance.

F. ADDITIONAL INFORMATION

Two Learjet mechanics from Bombardier Aerospace, Fort Lauderdale, Florida, were at Sun Jet's facilities October 5, 1999, (See Attachment No.6, 3) and according to there statements; "...[they were] working on Learjet Serial 60-047...we were approached by a Sun Jet mechanic who asked us if we knew anything about a Learjet model 35 pressurization systems. We informed him that we were engine shop specialist and had limited knowledge on airframe pressurization system...."

Interviews with Sun Jet maintenance and operation personnel on November 15, 1999, revealed that at the time of the accident Sun Jet had in place a Flight Discrepancy Log (see attachment 10) for us by all flightcrew members to write up any discrepancies for a given flight. The form consisted of two pages, one white and one yellow. According to the Sun Jet personnel one copy was to be kept in the airplane for 3-5 days, the other copy was to go to maintenance, and when the discrepancy was corrected, the copy was to go to operations to be kept on file for an unspecified time. When the Sun Jet operations person was asked to produce the Flight Discrepancy Logs for N47BA going back to January 1999, the date when Sun Jet purchased the airplane, he said they "did not have them." The discrepancy logs for the last 5 days were still on the accident airplane at the time of the accident. There was an additional mix up between maintenance personnel and operations personnel on were the duplicate copy of the form went. Maintenance said the duplicate went to operations, and operations said the duplicate went to maintenance. In addition, the maintenance supervisor revealed that it was more common for a flightcrew member not use a Flight Discrepancy Log to write up problems after a specific flight.

He said, usually a crewmember would verbally tell maintence the problem, or if there was no maintence personnel available, the discrepancy would be put on a piece of paper.

Alan J Yurman
Maintenance Records Group Chairman