ADAMS & PETERSON, LLC
AVIATION ATTORNEYS
7512 Stanich Avenue, Suite Two
Gig Harbor, WA 98335
(253) 853-4171 Toll free (800) 398-1293 Fax (253) 853-4172

FACSIMILE COVER SHEET

DATE: December 10, 2002

TO: Mr. Arnold Scott
NTSB Investigator. PAGES: 12 including cover

FAX NO.: [redacted] PHONE NO.: [redacted]

RE: Medical information regarding Paul Vogel
NTSB ID: DEN02GA039

Dear Mr. Scott;

This is a fax copy of the report by Dr. Snyder, M.D. that we discussed this afternoon. My partner, Dan Peterson, will be personally delivering the signed hardcopy to your office tomorrow.

The hardcopies of documents supporting Dr. Snyder's report were sent yesterday via first class mail but without a cover letter of explanation. You should be receiving these documents via mail by Thursday, December 12th.

While you are awaiting the hardcopies of the relevant documents, I am faxing the copies of the relevant documents for your review. These documents include the following: 1)Authorization for Special Issuance of Medical Certificate; 2) Summary letter from Dr. Snyder, M.D. to the FAA requesting the Special Issuance; 3) Letter from Mr. Vogel's Cardiac Surgeon, Dr. Miller, M.D., Ph. D. FACP, in support of the Special Issuance; and 4) report of the Radio Nuclide Stress Test administered to Mr. Vogel on July 9, 2001.

We sincerely appreciate you courtesy and consideration in this matter. Please do not hesitate to call if you have any questions.

Sincerely,

[redacted]

C. Edward Adams

Cardiac Catheterization Report on Paul Vogel 7/10/01
DOB: [redacted]

INDICATIONS: Evaluate bypass and a pilot and carotid disease, s/p carotid endarterectomy.

FINDINGS: The patient was brought to the cardiac catheterization lab, prepped and draped in the usual sterile fashion. A 6-French sheath was placed retrogradely in the right common femoral artery. A JL-4 was used to cannulate the left coronary system. The left main was 50% distally stenosed. The LAD had 80% mid stenosis. The circumflex was 70% mid stenosed. The RCA was 100% totally occluded. The LIMA was cannulated with a LIMA catheter, and the LIMA to the LAD was patent. The OM saphenous vein graft to the circumflex was patent. The radial bypass was difficult to cannulate and required a multipurpose catheter. This was 100% occluded to the RCA. The multipurpose catheter was used to perform the LV angio. EF of 60%. EDP was 14. There was no valve gradient. A JR4 was used to selectively cannulate the bilateral carotid common carotid arteries. The right internal carotid was 10% proximally stenosed. The right external carotid was 20% proximally stenosed. The right common carotid had mild plaquing. Then the left common carotid was cannulated. The left internal carotid was 30% proximally stenosed. The left external carotid was 70% proximally stenosed. The left common carotid was 30% distally stenosed.

IMPRESSION:
1. Radial to the RCA is 100% totally occluded. Other bypasses widely patent.
2. Bilateral internal carotids without significant stenosis.

PLAN: Per Dr. Miller.

[redacted]

Joseph R. Lee, M.D./ljl

PENROSE-ST. FRANCIS HEALTH SERVICES

PROCEDURE: Coronary artery bypass graft x3 on December 30, 2000.

HISTORY OF PRESENT ILLNESS: The patient is a 71-year-old gentleman who has been very healthy. He has a history of typical angina on exertion that has become progressively more prominent. On the day of admission, he had an episode of angina at rest. A treadmill test had been done that was markedly positive. He, therefore, underwent coronary angiography and left heart catheterization during this admission that showed a very irregular 75% or greater stenosis of the left main coronary artery with a dominant left coronary artery circulation. Left ventricular angiogram showed normal left ventricular function. The patient was, therefore, referred for surgical intervention.

The patient was taken to the operating room on December 30, 2000, at which time he underwent CABG x3 utilizing the left internal mammary artery to the left anterior descending coronary artery, the right radial artery from the aorta to the posterior descending coronary artery, and saphenous vein graft to the obtuse marginal branch of the circumflex. The intraoperative course was uncomplicated. The patient did well and was taken to the intensive care unit in stable condition. The patient awoke alert and neurologically intact shortly after his surgery. He was extubated immediately following surgery. His cardiac output remained stable through postoperative day #1. He was, therefore, found suitable for transfer to the stepdown floor with all chest tubes and significant lines discontinued. The patient continued to do well. He slowly weaned from oxygen. He responded well to gentle diuresis. His examination was suspicious for a left pleural effusion. On chest x-ray it was not large enough to perform thoracentesis. The patient did not suffer any significant rhythm problems. However, he did have some bigeminy early in his postoperative course. This did not persist, however. On the morning of discharge, the patient did have an episode of a short run of atrial tachycardia after walking. He remained stable with this, however. He continued to do well and was found suitable for discharge on postoperative day #5 without suffering significant postoperative complications.

DISCHARGE SUMMARY

D: 01/04/2001 10:03
T: 01/04/2001 10:17:42
MC/bb

MICHELE COX PA,

VOGEL, PAUL E
73 73 83 0 DOB: [redacted]
ADM: 12/28/2000
DIS: 1/4/2001
PENROSE HOSPITAL

DISCHARGE MEDICATIONS:
Darvocet-N 100 one to two tablets q.4-6h p.r.n. for pain.
Norvasc 5 mg 1 p.o. q.d. for 90 days.
Aspirin 325 mg p.o. q.d.
The patient should also resume his previous cholesterol medications including niacin and Colestid.

DISCHARGE INSTRUCTIONS: Followup is arranged with Dr. Anderson on January 16. The patient will also see Dr. Sherry in 4-6 weeks; he is to call for this appointment. The patient will obtain PA and lateral chest x-rays prior to his appointment with Dr. Anderson.

DISCHARGE DIAGNOSES:
1. Severe left main coronary artery disease.
2. Postoperative transfusion.

TO BE SIGNED

[redacted]

JAMES R STEWART M.D., (761)

CC: PAUL D SHERRY M.D., (795)

DISCHARGE SUMMARY

D: 01/04/2001 10:03
T: 01/04/2001 10:17:42
MC/bb

MICHELE COX PA,

VOGEL, PAUL E
73 73 83 0 DOB: [redacted]
ADM: 12/28/2000
DIS: 1/4/2001
PENROSE HOSPITAL

PENROSE-ST. FRANCIS HEALTH SERVICES

HISTORY OF PRESENT ILLNESS: This is a 71-year-old male with a vague type of chest symptoms for several months, but most recently brought on by exercise. He does a 4-mile walk through Rockrimmon and going up hills, he has chest discomfort, which slows him down and then dissipates as he goes down a hill. He had a very positive stress electrocardiogram yesterday at the Air Force Academy. Last night, while sitting in a chair about 10:00, he had recurrent vague chest symptoms. He was told to present to the emergency room should he have any recurrence of chest symptoms and he did. He was given nitroglycerin and morphine with complete relief of the symptoms.

An electrocardiogram from the emergency room last night is not on his chart. The CPK was mildly elevated at 260 with a normal myoglobin and a CKMB of 5.6.

PAST MEDICAL HISTORY: He has no risk factors other than hyperlipidemia.

CURRENT MEDICATIONS: He is on no other medications.

ALLERGIES: PENICILLIN.

SOCIAL HISTORY: He does not smoke.

FAMILY HISTORY: He has no family history.

PHYSICAL EXAMINATION: GENERAL: Reveals a well-developed, well-nourished, well-hydrated male in no acute distress. HEENT: Within normal limits. CHEST: Clear to auscultation. HEART: Auscultation is normal. ABDOMEN: Flat. EXTREMITIES: Reveal no edema.

ADMITTING DIAGNOSIS:

Unstable angina.

PLAN:

Cardiac catheterization today.

[redacted]

HISTORY AND PHYSICAL

D: 12/29/2000 08:06
T: 12/29/2000 08:13:37
JBM/nh/1642

J. BRIAN MILLER M.D., {032}

VOGEL, PAUL E.
73 73 83 0 DOB:
ADM: 12/29/2000
ROOM:
PENROSE HOSPITAL

PENROSE-ST. FRANCIS HEALTH SERVICES

DATE OF OPERATION: 12/30/00
PREOPERATIVE DIAGNOSIS: Severe left main coronary artery stenosis with unstable angina.
POSTOPERATIVE DIAGNOSIS:
OPERATION: Coronary bypass x 3 (left internal mammary artery to the left anterior descending, right radial artery from the aorta to the posterior descending coronary artery, and saphenous vein graft to the obtuse marginal branch of the circumflex).
SURGEON: JAMES T. ANDERSON, M.D. {869}
ASSISTANT: MICHELE COX PA
ANESTHESIA: General.
ANESTHESIOLOGIST: DENNIS C. RAPHAEL, M.D. {568}

INDICATIONS: This 71-year-old very healthy male has in retrospect noted typical angina on exertion that has become progressively more prominent. On the day of admission to the hospital 2 days prior to surgery, he had an episode of angina at rest. Treadmill test had been done that was markedly positive. Coronary angiography and left heart catheterization were done on the day after admission showing very irregular 75% or greater stenosis of the left main coronary artery with a dominant left coronary artery circulation. Left ventricular angiogram showed normal left ventricular function.

PROCEDURE:

The patient was taken to the general operating room. Arterial and venous lines were placed, and general anesthesia was induced without difficulty. A central venous line, Swan-Ganz catheter, and Foley catheter were placed. The anterior neck, chest, abdomen, both legs, and the right arm were prepped and draped in a sterile fashion.

Preoperative evaluation with Doppler showed good circulation to his right hand through the ulnar artery but not good circulation to his left hand through the ulnar artery.

The left saphenous vein was removed from the ankle to the mid calf and prepared for a single bypass graft. This segment of vein did not have any valves. The incision in the leg was closed in the usual way.

Meanwhile, the right radial artery was harvested in the standard fashion with a longitudinal incision in the right forearm. The

branches of the artery were coagulated with electrocautery unit. The proximal and distal ends were suture ligated. The artery was then prepared with intraluminal and a soak of nitroprusside solution. The vessel had no intrinsic lesions and was approximately 2.5 to 3 mm in diameter. The incision in the forearm was closed in the standard fashion.

A standard midline sternotomy incision was made. The left side of the sternum was elevated, and the left internal mammary artery was taken down in the usual fashion. This was a nice vessel of approximately 2 to 2.5 mm in diameter.

The pericardium was then opened, and external examination of the heart showed all chambers of the heart to be of normal size with no evidence of previous myocardial infarction.

Preparations were made for cardiopulmonary bypass, and 3 mg/kg of heparin was given intravenously. The arterial return cannula was placed through a stab incision high in the ascending aorta, and a two-stage venous cannula was placed through an atriotomy incision in the right atrial appendage. The patient was begun on cardiopulmonary bypass. Total body temperature was lowered to 31 degrees centigrade. The aorta was crossclamped just proximal to the arterial return cannula. Then 1500 cc of cold blood cardioplegia was flushed through the aortic root. Two additional doses of cardioplegia were given later. The saphenous vein graft was anastomosed in an end-to-side fashion to a 5 mm arteriotomy in the obtuse marginal branch of the circumflex. The right radial artery was anastomosed in an end-to-side fashion to a 4 mm arteriotomy in the posterior descending coronary artery. The left internal mammary artery was brought lateral to the thymus and medial to the pleural through a hole in the pericardium laterally and then was carried down and anastomosed in an end-to-side fashion to a 5 mm arteriotomy in the mid to distal portion of the left anterior descending coronary artery. All of the distal anastomoses were completed with running 7-0 Prolene.

Flow was then released from the mammary graft, the aortic crossclamp was removed, and a partial occlusion clamp was placed on the ascending aorta. Two aortotomies were made with a circular punch, and the proximal ends of the vein grafts were sewn to these openings using running 6-0 Prolene for the vein graft and running 7-0 Prolene for the proximal radial artery. Flow was then released in these grafts.

The patient was then taken off cardiopulmonary bypass without difficulty. The venous and arterial lines were removed, and the insertion sites were secured with the previously placed pursestring sutures. Heparin was reversed with the appropriate dose of protamine. The pericardium was reapproximated with interrupted sutures. A chest tube was placed in the anterior mediastinum. The sternum was then reapproximated with 8 interrupted sutures of #5 wire. The rest of the incision was closed in the usual way.

The patient was taken to the intensive care unit, extubated on the operative table, breathing well, and in stable and satisfactory condition.

Total cardiopulmonary bypass time was 1 hour 12 minutes; total aortic crossclamp time was 47 minutes. Myocardial protection was by cold blood cardioplegia plus hypothermia. The patient received no blood or blood products during the procedure.

CC: J. BRIAN MILLER M.D., {032}

OPERATIVE REPORT

D: 12/30/2000 16:31
T: 12/30/2000 16:36:41
JTA/pf

JAMES T. ANDERSON M.D., {869}

VOGEL, PAUL E
73 73 83 0 DOB: [redacted]
ADM: 12/28/2000
ROOM: ICU PICU-23
PENROSE HOSPITAL

PENROSE-ST. FRANCIS HEALTH SERVICES

REASON FOR cath: Unstable angina.

NOTE: Patient brought to cardiac catheterization lab. Prepped and draped in usual sterile fashion. Six-French sheaths placed retrograde in right common femoral artery. JL4 used to cannulate left coronary system. Left main was a complex lesion. It was best noted in the LAO caudal. Had a 50-60% stenosis involving mostly the distal left main. The LAD proper and circumflex proper had mild plaquing with a dominant circumflex. The RCA was cannulated JR4 and was nondominant. EF was 70%. EDP was 18. There was no aortic valve gradient.

ASSESSMENT:
1. Moderate left main disease.
2. Normal EF.
3. Left dominant.

PLAN: Consideration for aortocoronary bypass. Dr. Anderson's office has been called. Patient is a pilot. He is not keen on the recovery time from ACB.

CC: J. BRIAN MILLER M.D. {032}
PAUL D. SHERRY M.D. {795}
CATH LAB {CATH}

TO BE SIGNED

Lee

JOSEPH LEE, M.D.

CATHETERIZATION REPORT

D: 12/29/2000 12:30
T: 12/30/2000 18:59:40
JL/br

JOSEPH LEE M.D., {1400}

VOGEL, PAUL E.
73 73 83 0 DOB: [redacted]
ADM: 12/28/2000
ROOM: ICU PICU-23
PENROSE HOSPITAL

History & Physical on Paul E. Vogel 7/5/01

Paul Vogel is a 72 y/o gentleman who had bypass surgery last December at Memorial Hospital. He is a Class I aircraft pilot and needs to have coronary angiography prior to returning to the cockpit. He had a negative stress Cardiolite done this month at the Air Force Academy Hospital. At the time of bypass surgery on December 30, 2000, the patient had a left internal mammary graft placed in the LAD, a right radial graft placed in the aorta to the posterior descending coronary artery, and a saphenous vein graft to the obtuse marginal branch of the circumflex. The intraoperative and postoperative course were uncomplicated and the patient remains asymptomatic.

Current medications include aspirin, Ramipril 5 mg q.d., and Niacin 1 gram b.i.d.

Examination reveals a pleasant male with a blood pressure of 104/62, in no acute distress. Examination of the head and neck are within normal limits. His chest is clear to auscultation. Cardiovascular auscultation is normal. His abdomen is flat. His extremities reveal no edema.

Impression: Coronary artery disease with the above mentioned bypass grafts, assumed to be widely patent.

[redacted]

James B. Miller, M.D./ljl

Ramapril discontinued
7/5/01
QCS

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Donald E. Hudson, M.D. W. Keith Martin, M.D. Quay C. Snyder, M.D. Thomas T. Yasuhara, M.D.

July 18, 2001

Stephen Carpenter, M.D.
Medical Appeals AAM 322
Federal Aviation Administration
CAMI Bldg., Room B-59
6700 S. MacArthur Blvd.
Oklahoma City, OK 73169

via Overnight Mail

RE: Paul E. Vogel
[redacted]

Dear Dr. Carpenter:

This is a medical information letter on the above-captioned pilot. Mr. Vogel has requested the assistance of our office in reporting his history of angina pectoris, coronary artery disease requiring coronary artery bypass graft surgery, and right carotid endarterectomy. Mr. Vogel is employed as a corporate King Air E-90 pilot and also a glider tow pilot at the US Air Force Academy and requires consideration for a second class aeromedical certificate. On behalf of Mr. Vogel, we are requesting a Special Issuance Authorization for the above condition.

Attached is the following data:
1) FAA Form 8500-20 Operational Questionnaire
2) Clinical summary from cardiologist, Dr. J. B. Miller, dated July 17, 2001
3) Laboratory reports dated July 13, 2001
4) Coronary and carotid angiogram report and CD-ROM dated 7/10/01
5) Cardiolite stress test reports, tracings and scintigrams dated 7/5/01
6) Operative note, discharge instructions, pathology report and lab reports from 6/5/01 carotid endarterectomy
7) Outpatient progress note, carotid duplex study report from May 2001
8) Complete hospital records from 12/30/00 hospitalization for coronary artery bypass grafting.
9) 35mm films from 12/29/00 coronary angiography

To briefly summarize, Mr. Vogel presented with unstable angina last December. A stress test was positive and an angiogram demonstrated left main coronary artery stenosis and right coronary artery disease with good collateralization. Ejection fraction was 75%. Enzymes were negative for myocardial infarction. He underwent coronary artery bypass grafting times three on 12/30/00 without complications. He had a left internal mammary graft placed to the LAD, a right radial graft placed to the posterior RCA, and a saphenous vein graft to the obtuse marginal branch of the circumflex. He did have limited post-operative ectopy and a minimal pleural effusion that resolved without treatment.

An asymptomatic right carotid bruit was discovered in May 2001 with duplex imaging and angiography demonstrating a significant lesion of the right carotid tree. An elective right internal carotid endarterectomy was completed on 6/5/01 and he was discharged to home in stable condition. He has never had any neurologic symptoms of his carotid disease, either before or after surgery. His cardiac rehab has been uneventful.

Current radionuclide stress testing to 110% of the predicted maximum heart rate was negative for ischemia, angina or arrhythmias. Coronary and carotid angiography showed two patent grafts and an occlusion of the radial artery graft to the RCA, but good collateral flow. Mr. Vogel's laboratory reports show excellent control of lipids. Other cardiac risk factors have been minimized with an active lifestyle of walking 4 miles per day, a life long history of non-smoking and maintenance of ideal body weight (ht= 6'0", Wt=180#, BMI= 24) Mr. Vogel takes Niacin SR, and ASA. He has experienced no side effects from the use of these medications and remains asymptomatic. Dr. Miller's prognosis for Mr. Vogel is good. He expects him to be at low risk for any occlusive disease over the next few years and is comfortable with his return to normal activity without occupational restrictions.

I trust this information will allow you to affirm this airman's eligibility for a Second Class FAA aeromedical certificate under Special Issuance. If not eligible for unrestricted second class privileges, the pilot would accept a restricted second class certificate. Upon favorable notification from your office, he will present to his AME for Second Class certification, if otherwise qualified. Please copy this office of your final determination. If you have additional questions concerning his condition, please do not hesitate to call the pilot at ([redacted] or me.

Sincerely,

[redacted]

Quay C. Snyder, M.D.

QCS:q:ct

enclosures

c: Paul E. Vogel

14707 E. 2nd Avenue, Suite 210, Aurora, CO 80011
E-mail: consult@virtualfs.com

(303) 341-4435
(303) 341-4803 fax

PIKES PEAK CARDIOLOGY
A Professional LLP

David I. Greenberg, M.D., FACC • Ronald D. Blonder, D.O., FACC • Ted E. Eastburn, M.D., FACC • G. Scott Smith, M.D., FACC • David J. Schwartz, M.D., FACC
James B. Miller, M.D., Ph.D., FACP • James M. Glass, M.D., Ph.D., FACC • Paul D. Sherry, M.D., FACC • Joseph R. Lee, M.D.
E. David Ascarelli, M.D., FACC • Maureen A. Smithers, M.D.

July 17, 2001

To Whom It May Concern:

RE: Paul E. Vogel [redacted]

Paul Vogel is a 73 y/o gentleman who had coronary artery bypass surgery last December at Penrose Hospital for the sudden onset of angina pectoris without infarction. The patient had a left internal mammary graft placed to the LAD, a right radial graft placed to the posterior descending coronary artery, and a saphenous vein graft to the obtuse marginal branch of the circumflex. The intraoperative and postoperative course were uncomplicated. He subsequently developed a bruit in the right carotid and this was investigated and he was found to have a physiologically significant lesion of the right carotid tree. A right carotid endarterectomy was accomplished subsequently in this asymptomatic gentleman this past May.

Because he is completely asymptomatic with a normal stress Cardiolite study, he desires to return to flying status. Repeat catheterization was done 7/10/01 and revealed the left main coronary artery to be 50% stenosed, the LAD had an 80% mid stenosis, the circumflex had a 70% mid stenosis, and the right coronary artery was totally occluded. The left internal mammary graft was grossly patent without obstruction. The obtuse marginal vein graft was widely patent. The radial bypass graft to the posterior descending coronary artery was essentially totally occluded. Good left ventricular function was found with an ejection fraction of 60%, and this correlated well with the recent stress Cardiolite study.

At the time of the above catheterization, the coronary arteries were restudied and the patient had a 10% proximal right internal carotid stenosis with a 20% external carotid stenosis. The right common carotid had mild plaquing. The left internal carotid showed a 30% proximal stenosis, not clinically significant. There were no other significant problems in the carotid vasculature.

1633 Medical Center Point, Suite 183 • Colorado Springs, CO 80907
(719) 635-7172 • FAX (719) 444-3747

Because of the above coronary and carotid flows, I feel this man is of minimal risk for occlusive disease sequelae in the next year or two. I, therefore, humbly submit him as a candidate for favorable consideration of flying Class I privileges.

Respectfully,

[redacted]

James B. Miller, M.D., Ph.D., FACP

JBM/ljl

Personal Data - Privacy Act 1974 (PL 93-579) Printed date: 10 Jul 2001@1056
Page: 1

RADIOLOGIC EXAMINATION REPORT

Patient: VOGEL,PAUL EDWARD FMP/SSN: [redacted]

AIR FORCE ACADEMY HOSPITAL
Procedure: NM CARDIAC SCAN a STRESS/REST (MIBI)
Requested by: FLOOD,D. KEVIN
Ward/Clinic: A INTERNAL MED

A NUCLEAR MEDICINE
Exam Date: 05 Jul 2001@0822
Status: COMPLETE
Exam #: 01058892
Pregnant:

Reason for Order:
FAA required nuc med cardiac scan. h/o 3vCAGB 12/00. Asymptomatic. No history of MI.

Order Comment:

Result Code: SEE RADIOLOGIST'S REPORT

Report:

SPECT STRESS TECHNETIUM-99M CARDIOLITE HEART:

TECHNIQUE: The rest study was accomplished first, 1 hour after the intravenous administration of 10.08 mCi of Tc-99m Sestamibi. The patient was stressed approximately 1-1/2 to 3 hours after the rest injection, and, at peak stress, was then injected with 32.5 mCi of Tc-99m Sestamibi. SPECT tomographic acquisition and reconstruction was performed after each injection in the horizontal short, vertical long and horizontal long axes.

FINDINGS: There is no evidence of reversible or fixed perfusion defects. The left ventricular chamber is normal in size. LVEF equals 51%.

IMPRESSION: No evidence of stress induced ischemia or previous myocardial infarction.

tmt/dictated 5 Jul 2001

Transcription Date/Time: 06 Jul 2001@0818

Interpreted by: CHRISTOPHER A. NUSSER, MAJ,USAF,MC
Supervised by:

Approved by: CHRISTOPHER A. NUSSER, MAJ,USAF,MC 06 Jul 2001@1505

[redacted] VOGEL,PAUL EDWARD USAF RET PDRL OFFICER
[redacted] / MALE [redacted]
LOC:
Spon: VOGEL,PAUL EDWARD Rank: LIEUTENAN D:
SF519-B Unit: SPONSOR RETIRED RR: A INTERNAL MEDICINE RECORD

U.S. Department of Transportation
Federal Aviation Administration

Mike Monroney Aeronautical Center
Civil Aeromedical Institute (CAMI)
Aeromedical Certification Division

P.O. Box 26080
Oklahoma City, OK 73126

AUG 10 2001

AUTHORIZATION FOR SPECIAL ISSUANCE OF A MEDICAL CERTIFICATE (AUTHORIZATION)
AAM-320

PAUL EDWARD VOGEL
[redacted]
COLORADO SPRINGS CO 80919-1702

Ref: PI# 2019789

Dear Mr. Vogel:

I have reviewed the information submitted by you in support of your request for an airman medical certificate. The medical evidence reveals a history of **angina pectoris and coronary artery disease that required bypass surgery and carotid stenosis requiring carotid endarterectomy**. You are ineligible for second-class medical certification under Title 14 of the Code of Federal Regulations (CFR's), Section 67.111(a)(2)(3), 67.211(b)(c), 67.311(b)(c), and 67.113(b), 67.213(b) and 67.313(b). However, based on the complete review of the available medical evidence, I have determined that you may be granted authorization for special issuance of the enclosed second-class airman medical certificate under Title 14 of the CFR's, Section 67.401. **This certificate is not valid for any class after August 31, 2001 and supersedes any previously issued medical certificates.**

Since the enclosed medical certificate expires for second-class purposes on **August 31, 2001**, it will be necessary for you to undergo a current physical examination during that month. The Aviation Medical Examiner (AME) is authorized by this letter to issue you a second-class airman medical certificate bearing the limitation **"NOT VALID FOR ANY CLASS AFTER AUGUST 31, 2002"**, provided he finds you otherwise qualified.

This authorization expires on August 31, 2002.

Consideration for a new Authorization will be contingent upon the following, (performed in accordance with the enclosed specifications):

1. On or about **July 1, 2002**, and at subsequent **12-month intervals**, a current cardiovascular evaluation and current lab report.

2. On or about **July 1, 2002**, and at subsequent **12-month intervals**, a current exercise stress test.

3. On or about **July 1, 2003**, and at subsequent **24-month intervals**, a current stress SPECT radionuclide myocardial perfusion study.

If there have been no significant adverse changes in your medical status, you have complied with all conditions of certification described in your Authorization, and we are satisfied that the duties permitted by the medical certificate can be performed without endangering public safety, the Medical Appeals Branch may then grant you a new Authorization for an additional period. You will still be required to have your regular second-class physical examinations at the frequency prescribed under the provisions of Title 14 of the CFR's, Section 61.23.

In order to avoid a lapse in certification, the necessary testing should be completed near the date noted above and forwarded in one package to the following office:

Medical Appeals Branch, AAM-320
Aeromedical Certification Division
FAA Civil Aeromedical Institute
Post Office Box 26080
Oklahoma City OK 73126

OR

Medical Appeals Branch, AAM-320
Aeromedical Certification Division
FAA Civil Aeromedical Institute
6700 S MacArthur Blvd., B-13
Oklahoma City OK 73169

You must promptly report any adverse changes in your medical condition or medications to the FAA Medical Appeals Branch, AAM-320.

Use of the above reference number and your full name on any reports or correspondence will aid us in locating your file and expediting a reply to you.

Sincerely,

ORIGINAL SIGNED BY
HENRY K. BOREN, D.O.

Warren S. Silberman, D.O., M.P.H.
Manager, Aeromedical Certification Division
Civil Aeromedical Institute

Enclosure

cc: Richard A. Di Asio, M.D.
Quay C. Snyder, M.D. ✓

GR/jac

SPECIFICATIONS

12-MONTHS

1. An assessment and statement from your physician regarding general physical and cardiac examination, to include symptoms or treatment referable to the cardiovascular system; your interim and current cardiac condition, functional capacity, medical history, and medications.

   A current report of fasting blood sugar and a blood lipid profile to include total cholesterol, HDL, LDL and triglycerides.

2. A current maximal treadmill stress test. An electrocardiographic (ECG) treadmill stress test should achieve 100 percent of predicted maximal heart rate unless medically contraindicated or prevented either by symptoms or medications. Beta blockers and calcium channel blockers (specifically diltiazem and verapamil), or digitalis preparations should be discontinued for 48 hours prior to testing (if not contraindicated) in order to obtain maximum heart rate and only with consent of the treating physician. An applicant will be expected to demonstrate a minimum functional capacity by achieving a double product of 25,000 (maximum rate X maximum systolic pressure) and completing stage 3 of the Bruce protocol or 10 METs on other protocols. (Failure to achieve these levels is not necessarily disqualifying but will have to be considered on an individual basis.) The worksheet with blood pressure/pulse recordings at various stages, interpretive report, and copies of actual ECG tracings must be submitted. Tracings must include a rhythm strip, a full 12-lead ECG recorded at rest (supine and standing) and during hyperventilation while standing, one or more times during each stage of exercise, at the end of each stage, at peak exercise, and every minute during recovery for at least five minutes or until the tracings return to baseline level. Computer generated, sample-cycle ECG tracings are unacceptable in lieu of the standard tracings and if submitted alone may result in deferment until this requirement is met.

24-MONTHS

3. A report of current SPECT radionuclide myocardial perfusion study, to include the actual scintigram images (full study-all slices-processed cut film or grey scale images, not photocopies), for permanent retention in your file, in conjunction with a current maximal treadmill stress test.

VIRTUAL FLIGHT SURGEONS® INC. www.AviationMedicine.com

Donald E. Hudson, M.D. W. Keith Martin, M.D. Quay C. Snyder, M.D. Robert W. Weien, M.D. Thomas T. Yasuhara, M.D.

December 10, 2002

Mr. C. Edward Adams
Adams & Peterson, LLC
Aviation Attorneys
7512 Stanich Avenue, Suite Two
Gig Harbor, WA 98335

RE: Paul Vogel
DOI: April 26, 2002

Dear Mr. Adams:

Per your request, I have reviewed medical documents, FAA correspondence and an autopsy report on Mr. Paul Vogel. I have also consulted with Dr. Warren S. Silberman, Manager, FAA Aeromedical Certification Division. Based on my review of these documents, my communication with Dr. Silberman and my personal training and experience in aircraft mishap investigation, I am providing you with an opinion as to the probability of an incapacitating cardiovascular event being a contributory cause to Mr. Vogel's death as a result of an aircraft mishap.

My medical qualifications to render an opinion in this case include board certification in Aerospace Medicine, Family Practice and Occupational Medicine. During my specialty training in aviation medicine, I have completed courses in aircraft mishap investigation through the University of Southern California and the Air Force Safety Agency. I have also completed training in aircraft accident forensic pathology and forensic dentistry. My experience in the area of aviation medicine includes twenty years as a military flight surgeon and eight years as an Associate Aeromedical Advisor to the Air Line Pilots Association and several other airline pilot unions. I have also served as a board member and interim board member of several U.S. Air Force aircraft mishap investigation boards.

Our office currently assists over 7,200 pilots per year in obtaining information and assistance regarding FAA aeromedical certification. In this capacity, I personally reviewed all of Mr. Vogel's documentation of medical treatment for his coronary artery disease and coronary artery bypass grafting. I advised Mr. Vogel as to FAA protocols to petition for a Special Issuance Authorization medical certificate and reinstatement of his Second Class medical privileges following his coronary artery bypass grafting. I served as Mr. Vogel's representative with the FAA Aeromedical Certification Division from January through August 2001 in his successful quest for reinstatement of his medical certificate.

Finally, I have been an FAA certified flight instructor in gliders since 1975 and have served as an attached officer/instructor pilot at the Air Force Academy from 1985 through 1991 and 1993 through October 2002. I was not present at the Air Force Academy on the day of Mr. Vogel's mishap. I did learn of Mr. Vogel's mishap through secondhand information from cadets, officers, tow pilots and an NTSB accident investigator. I have excluded all information from secondhand sources in forming my opinion.

I have provided your office and the offices of Hall & Evans, LLC, copies of all documents I reviewed in support of my petition to the FAA on behalf of Mr. Vogel. Please see my July 28, 2001 letter to Dr. Stephen Carpenter requesting a Second Class Special Issuance Authorization for Mr. Paul Vogel as a synopsis of the aeromedically relevant facts in his case. My petition and the supporting documentation resulted in the FAA's August 10, 2001 Special Issuance Authorization for Second Class medical certification. This Special Issuance Authorization was valid through August 31, 2002.

Please note that my petition included a report of Mr. Vogel's supramaximal Cardiolyte stress test dated July 5, 2001 and his coronary and carotid angiogram reports dated July 10, 2001. Of particular note, the radionuclide stress test was completed to 110% of Mr. Vogel's age-predicted maximum heart rate. Mr. Vogel's exercise ability is unique in that in my many years of practice and submitting FAA petitions for coronary artery bypass grafting, I can not recall ever having seen a pilot, other than Mr. Vogel, able to achieve 110% of the age-predicted maximum heart rate. Mr. Vogel's double product during this evaluation (maximum heart rate times maximum systolic blood pressure) was 31,675. The ejection fraction was estimated to be 51%.

Mr. Vogel's July 2001 coronary angiogram, as required by the FAA, showed the underlying native atherosclerotic coronary artery disease of his left main coronary artery, left anterior descending coronary artery, circumflex artery and right coronary artery. The grafts to the left anterior descending and the obtuse marginal branch of the circumflex were patent at the time of this study. The bypass graft to the right coronary artery was 100% occluded during the same procedure. The resting ejection fraction from this study was 60%, reflecting a remarkably good cardiac function. The left internal carotid did not have significant narrowing. The pilot's physician, Dr. J. B. Miller, felt that the pilot was at low risk for any occlusive vascular disease over the next few years.

Supported by Mr. Vogel's excellent cardiovascular test results and opinion from his cardiologist, his entire file including angiographic images was forwarded to the FAA Aeromedical Certification Division for review. Based on the data provided, Mr. Vogel was granted a Special Issuance Authorization by the FAA Aeromedical Certification Division Medical Review and Appeals Branch for a Second Class medical certification valid through August 31, 2002. Mr. Vogel was operating the towplane on a valid Second Class medical certificate at the time of the mishap.

I discussed the FAA's basis for granting Special Issuance medical certification in the presence of known coronary artery disease treated with revascularization with Dr. Warren S. Silberman, Manager, FAA Civil Aeromedical Institute, Aeromedical Certification Division, on December 9, 2002. Dr. Silberman confirmed that the FAA policy was derived from a study at Duke University on individuals with known, treated coronary artery disease who were evaluated for the risk of subsequent cardiovascular events by exercise stress testing.

To briefly summarize, the study demonstrated that individuals who were able to complete exercise stress testing (non-radionuclide study) to 100% of their age-predicted maximum heart rate or, who are able to achieve a double product of 25,000 or greater, had less than a 1% likelihood of having a cardiac event (angina, arrhythmia, myocardial infarction or cardiac death) within the 12 months following the test. You will note that Mr. Vogel achieved 110% of his age-predicted maximum heart rate and a double product significantly greater than 25,000. The exercise stress test on Mr. Vogel was completed approximately 8½ months prior to the time of his aircraft mishap. This study is the basis of the FAA's requirement for annual exercise stress testing in pilots who have known coronary artery disease. Additionally, the study found that individuals with known treated coronary artery disease who were able to complete an exercise stress test to 100% of the predicted maximum heart rate or a double product of 25,000 or greater had less than a 6% likelihood of a subsequent cardiac event in the four years following completion of exercise stress testing to this level. Dr. Silberman confirmed that the FAA's threshold for disqualifying pilots for medical certification is a 1% or greater likelihood of an incapacitating event in the following year. Clearly, the physicians at the FAA felt that Mr. Vogel had less than a 1% chance of suffering an incapacitating cardiac event occurring in this pilot prior to August 2002.

The Duke University study did not address the value of radionuclide imaging in conjunction with exercise stress testing. The FAA cardiology consultant advisory panel has recommended to the FAA that radionuclide stress testing be required for pilots holding First and Second Class medical certification because of the increased sensitivity and ability to detect coronary artery disease in those pilots who would otherwise have normal non-radionuclide exercise stress testing. Because of the higher level of public safety required by the FAA for pilots participating in commercial operations, the FAA policy mandates that radionuclide stress testing be done prior to granting initial Special Issuance for First and Second Class medical certification. Furthermore, the FAA requires that radionuclide stress testing be done every 24 months in pilots holding First and Second Class Special Issuance Authorizations with known coronary artery disease. Dr. Silberman confirmed that the two year requirement for

radionuclide stress testing was compatible with a predicted risk of a subsequent cardiovascular event of less than 1% within the 24 months following the procedure. The results of Mr. Vogel's radionuclide portion of his exercise stress test were entirely normal.

The FAA was aware of the completely occluded graft to the right coronary demonstrated in Mr. Vogel's coronary angiogram of July 10, 2001. Despite the occlusion, the results of the radionuclide stress test showed adequate collateral blood flow and the absence of any area of ischemic myocardium. The FAA Special Issuance letter required Mr. Vogel to report any change in his medical status or any new symptoms and to stop flying immediately. I am confident, based on my personal knowledge of Mr. Vogel, that he would immediately comply with any of these requirements. In my conversations to him following his certification, he proudly told me that he tried to run several miles every day and did so without difficulty.

I turn my attention now to the coroner's report by Dr. Deborah G. Johnson, M.D., completed on April 27, 2002 (Autopsy No. 02A-160).

Dr. Johnson states that the pilot was "unequivocally still alive at the time of impact of the plane...." Her examination found that the bypass graft to the right coronary artery "was completely occluded by a buildup of atherosclerotic plaque". This correctly reflects the finding that coronary angiography in July 2001 and is not a new occurrence of disease.

Dr. Johnson also states, "while no thrombus or organized blood clot was found in any of the coronary arteries or bypass grafts that would prove he had an acute myocardial infarction or "heart attack" (and such proof is often missing at autopsy even when the clinical evidence is incontrovertible that a blockage did occur in life) the likelihood is high that he did suffer some sort of cardiac event which, while not immediately fatal, did so incapacitate him that he was unable to control the plane or to even use his radio to alert anyone." Although the conclusion by Dr. Johnson cannot be absolutely excluded, based on the results of the Duke University study of individuals with known treated coronary artery disease who successfully complete exercise stress testing, the likelihood is less than 1% that Mr. Vogel suffered "some sort of cardiac event" that incapacitated him.

Dr. Johnson further states, "To date, no other cause for the plane crash has surfaced from the investigation. Thus the atherosclerotic cardiovascular disease must be considered a contributory factor to this accident." It appears that Dr. Johnson reached her conclusion based on information she had available from non-eyewitnesses one day following the aircraft accident. The autopsy does not demonstrate any cardiovascular pathology that was not present at the time of Mr. Vogel's comprehensive July 2001 cardiovascular evaluation which formed the basis for the FAA's granting Mr. Vogel's Special Issuance Authorization.

I, therefore, disagree with Dr. Johnson's assessment that "cardiovascular disease ***must*** be considered a contributory factory to this accident". Based on peer reviewed scientific research, I believe that the medical documentation, clinical history and autopsy report lead to a conclusion that there was less than a 1% likelihood of an incapacitating cardiovascular event as a proximate contributory factor to this accident. There is no evidence in the autopsy report of any other pathology leading to a sudden incapacitating event which might otherwise have contributed to this accident.

Thank you for the opportunity to review Mr. Vogel's autopsy report. Should you have any questions or if I may provide further clarification, please do not hesitate to contact me.

Respectfully,

[redacted]

Quay C. Snyder, M.D., M.S.P.H.

QCS:ct