46

[redacted]

[redacted]

09/11/2005 08:07 PM

To Doug Rudolph/ACE/FAA@FAA

cc [redacted]

bcc

Subject Proposed MU-2 Grounding

Just want to add my two cents to the proposal the ground the MU-2. Since I don't know anything about the politicians involved I can't comment on their motives with any degree of certainty. However, as a professional pilot with over 35 years of experience in everything from J-3 Cubs to F-15 Eagles I feel I can make credible comments on the MU-2.

I have flown the MU-2 for almost eight years and have over 3500 hours in the aircraft. It is a high performance light twin and as such requires the same manner of care as any other light twin--good maintenance and well trained pilots. As a review of all light twin accidents will reveal, pilot error and/or maintenance problems are the cause of virtually all accidents. The MU-2 is a very straight forward flying aircraft from a pilots standpoint and I doubt that if it was not a safe aircraft the FAA would have ever allowed it to be certified in this country. I can assure you that neither I nor any of the other pilots I fly with at Air 1st would strap one on if we had any doubts about the safety of the aircraft. Our company provides us with excellent maintenance for our MU-2 fleet and we do our best as operators to maintain the skills required to safely fly our MU-2s. In my opinion there is nothing wrong with the MU-2 and this request for grounding is a misguided attempt by politicians to fix something that's not broken.

[redacted]

47

To: Doug Rudolph
FAA Small Airplane Directorate

September 11, 2005

From: [redacted]

Subject: MU-2B Safety Evaluation

Dear Mr. Rudolph,

In response to your airworthiness concern and safety evaluation dated 9/2/05 relative to Mitsubishi model MU-2B aircraft, I would like to provide the following information based upon my personal knowledge of ownership, maintenance, training and piloting of a MU-2B40 aircraft for the past four years. I will state for the record to the best of my knowledge

1. Aircraft has been manufactured and modified consistent with all approved standards as set forth by Mitsubishi and FAA requirements

2. All manufacturer documentation relative to aircraft maintenance has been complete and accurate

3. Aircraft flight characteristics are **consistent** with both written manuals and Mitsubishi approved training

4. Manufacturer has provided in depth testing and operational requirements specific to MU-2B aircraft icing and related control functions

5. Purchase of aircraft was predicated upon results of previous successful evaluations by FAA

6. Aircraft has proven to be **inherently stable** throughout complete flight operational spectrum

It is the belief of this writer that mandatory specific MU-2B approved initial training be a prerequisite for **any** pilot wishing to operate this aircraft. Approved recurrent training **must** follow on an annual basis thereafter.

If you have any questions or require clarification please contact me at [redacted] or email [redacted]

Respectfully,

[redacted]

49

[redacted].uk>
09/12/2005 06:23 AM

To Doug Rudolph/ACE/FAA@FAA
cc
bcc
Subject MU-2B experiences.

Doug Rudolph
FAA Small Airplane Directorate
Email:
Fax: 816-329-4090

[redacted]

[redacted]

Mr. Rudolph,

I am forwarding my experiences in the MU2B-60 aircraft [redacted] operated by [redacted] for the last 9 years.

I have attended Flight safety initial classes and simulator training, Howell Enterprises recurrent MU2 training and SIMCOM's recurrent training for the MU2B. I have in excess of 1000 hours in type and I hold a CPL/IR with twin rating and high attitude transition training, and I have bee flying since 1986. I currently attend recurrent training at SIMCOM annually.

The aircraft has a full professional set of avionics including of course TAWS, two moving maps and IFR GPS.

Our flight profiles are:

Single Pilot and two crew operations
Day and Night IFR / VFR
Long / Short Range flights from the aircraft's home base at EGMC to various airport throughout Europe including fully prepared major international airport and Grass strips both in flat regions and in the alps including Samaden at 5200' elevation, these flights range from hot high departures and arrivals and very cold high departures and arrivals and everything in between.

The aircraft has been flown in Low IFR to include Light to Moderate Icing conditions and even an encounter with SLD between Salzburg and Munich.

We fly the aircraft between the surface and FL 250. during this time we have experienced zero flight control issues and zero system /procedural issues with the aircraft, the aircraft flies superbly in all segments of the flight envelope and the aircraft does exactly what you tell it to do when you tell it to do

it.

The aircraft is fully controllable about all axis in all normal flight regimes.
The aircraft remains controllable below stall speed with both engines (partly due to the spoilers) operational and easily recoverable by either adding power or lowering the nose to achieve adequate airspeed / angle of attack.

The aircraft displays more than adequate warning of impending loss of control with one engine inoperable. I have flown the aircraft on numerous occasions for training with one engine shut down (right and left in sequence), nts'ing thru feather and back thru in flight restart to normal operations. The aircraft remains easily controllable these engine out operations. There is a substantially larger margin of safety than that available in aircraft such as Cessna 400 series or Beech Barons.

The aircraft is stable and easily manageable in instrument conditions and well suited to single pilot operations including precision and non-precision approaches to minimums, single and multi engine.

While the teaching for engine out control requirements to maintain actual best rate of climb are slightly different (actually more straight forward) than those for other small business twin aircraft. (wings level with aileron trim for the MU2 vs. 5 deg into the good engine/ zero side slip other cabin class and light twins). There is no difference in the concept of Blue Line operations (airspeed control) and VMC roll over. Having witnessed a MU2 turn thru greater than 40 degrees of heading prior to VMC roll over at SAT, and having flown our aircraft to the point of initial loss of heading control VMC demonstration in a simulated engine failure during my training and ATP check ride, I have personal knowledge that the aircraft is completely controllable by any trained and competent pilot.

Any pilot may make an error, however the MU2 is not subject to any greater risk of error from a current competent pilot than any of the other twins I have experience with. When flying any aircraft, if one makes continual mistakes it will eventually turn into an accident, the MU2 does not force pilots into mistakes, it is a very good and responsive aircraft to fly and in my opinion, if flown correctly, one of the safest aircraft, please do not blame the aircraft for poor pilots, possible errors of airport equipment, faulty avionics or substandard maintenance.

[redacted]

[redacted]

Yours sincerely

[redacted]

[redacted]

[redacted]

[redacted]

E-mail: [redacted]

****

[redacted]

[redacted]

09/08/2005 05:29 PM

To Doug Rudolph/ACE/FAA@FAA

cc [redacted]

bcc

Subject MU-2 RESPONSE

DEAR MR. RUDOLPH,

[redacted]

AS per your request for MU-2 responders, PLEASE READ THE ABOVE ATTACHMENT consisting of the following:

I. MY RESUME – [MU-2 2,000+ hours] [LEAR 36 2,000+ hours] – 45 years flying experience

II. PRIVATE NARRATIVE NOTES ON MU-2 ENGINE FAILURE AT WORST MOMENTS

III. PRIVATE MU-2 FLYING TRAITS TRAINING SYLLABUS SUPPLEMENT – in addition to insurance industry approved annual training

IV. FACTUAL POINT COUNTER POINT RESPONSE TO U.S. CONGRESSMEN'S "EXPERT" - ROBERT CADWALADER

V. FACTUAL POINT COUNTER POINT RESPONSE TO CONGRESSMEN'S LETTER TO FAA

[redacted]MU-2 RESPONSE fm [redacted]

Doug Rudolph
FAA Small Airplane Directorate
Email: doug.rudolph@faa.gov
Fax: 816-329-4090

RE: REQUEST FOR RESPONSES TO FAA MU-2 INQUIRY

From:
RESPONDER: [redacted]
Pilot License # [redacted]

I. RESPONDER RESUME

BUSINESS Resume: CEO & founder of Global Capital Corporation & its subsidiaries which currently provides aviation related equipment financing and fuel truck manufacturing worldwide through two wholly owned entities – Omni American Inc. and General Transervice, Inc. (dba Rampmaster). Since 1980, Rampmaster has produced more commercial airline refuelers above 7,000 gallons than anyone else in the world. Fifteen percent of all airline jet fuel sold in America flows through Rampmaster's leased fleet. www.rampmasters.com

PILOT Resume: Forty five years total flight experience – 35 years managing corporate flight – 29 years turboprop and jet – full service Flight Safety client.

MU-2 EXPERIENCE. **Flew MU-2P 2,000 hours single pilot in the 1980s, safely in high density, Northeast environment without incident, including STOL operations. Current owner of an MU-2 -40 SOLITAIRE.** [redacted]

LEAR 36 EXPERIENCE: 2,100 hours Type Rated Transoceanic – Worldwide operations **Current owner of LEAR 36** [redacted]

RVSM PIONEER. Initiated and pioneered the experimental program with Learjet…authored, articles about RVSM which were published in Business and Commercial Aviation. Our Lear was the world's first RVSM 30 series.

SAMPLE INTERNATIONAL LEAR FLIGHTS. Several trans-Atlantic crossings. Philadelphia to Buenos Aires. Non-stop Manaus on the Amazon to Miami…Asuncion to Curacao, Barbados to Corumba, Anchorage Alaska to Philadelphia several times, Shannon to Gander, Gander to Paris, Paris to Helsinki, and Rio to Philadelphia in a day.

PRECISION LONG RANGE Coast to coast U.S. non-stop flights. Descending Mach pressure pattern techniques. Custom Jeppesen Data Plan bias to predict non-stop flights within 2 minutes and 100 lbs of fuel burn. Based upon history, created actual aircraft cruise charts to tighter tolerance than Learjet factory data.

II. NARRATIVE MU-2 NOTES ON ENGINE FAILURES AT THE WORST MOMENTS.

Compared to a jet, SUDDEN ENGINE FAILURE FROM A MISS at the bottom of a tight 20 degree flap approach is going to have a lot less raw power, and whole lot more yaw. The first step is leave the flaps where they are at 20 degrees.

Simply:

1. **POWER UP (both levers)**
2. **8 deg pitch angle**
3. **GEAR UP**
4. **Spoiler trim, and then.....**
5. **Feather.**

This is a step up to the plate, fly the plane situation. The torque indicator – mounted high in the pilot's view – is your best friend and best visual on which engine quit. In our MU-2 they are **religiously calibrated and working**. On take off, **fly the torque meters to 100%,** rather than to some targeted fuel flow setting, which may not result in 100% being there during the excitement of an engine failure. Expect a whole lot more roll and yaw than a jet so stuff the rudder early. **The secret is** – if you get the **deck angle, gear,** and **spoiler** right, the pressure is over, because the rate of climb is more than enough at any normal landing weight.

Feathering becomes very anti-climatic, except of course you don't want to NTS in the 18 to 28% range – which is the least concern – since this engine is going to have to be fixed anyway!

One could debate placing "feathering" last. My reasoning is: (1) Statistics of simultaneous NTS & engine failure are nil...so train for the likely event. (2) Without exception, no MU-2 should be flown without passing a successful NTS test before every flight; (3) MOST IMPORTANTLY: It makes no aerodynamic sense to raise a spoiler to the max behind the only remaining running engine!!!! I proved this time and time again in the Flight Safety simulators at Houston as follows:

TAKE OFF

- From sea level
- 10,520 lbs ramp weight
- 20 degree flaps
- Air temp - 90F
- **TORQUE 100% AT ROTATION**
- Engine failure at 103 knots right at rotation.....

The MU-2P walked away every time...by sucking the gear up in ground effect, and purposely never feathering the engine on climb out up to 1,500 feet. Hand motion from the power to the **gear switch** to the **spoileron trim,** while holding **8 degrees deck angle,** is executed in concert as one orchestrated, smooth event. It's really easy.

Always take off with the V bars set to 8 degrees and FD HDG mode engaged. On one engine, rotate smoothly into the V bars and park the pitch. **No porpoising** . Airspeed will be

about 125 knots after the gear stows. You will be standing on a rudder – about 150 lbs worth and looking at a comfortable 500 fpm after you get the spoiler on the running engine stowed. Now why not reach up and (ho-hum) feather the dead engine. However, my style was to trim out all that rudder pressure first – which will be full travel at take off – and feather last. Working the speed to Vxse 130 – flaps 5…then 135 – flaps up is a completely peaceful, no rush procedure. You might want to consider stopping at 5 degree flaps on one engine. That way you have a lot bigger wing and are already set up for the single engine ILS approach.

Much like a jet, you don't want to think about banking with one engine greater than 15 degrees until the airspeed is well past 135 knots, flaps are retracted to 5 or less, and some altitude is present. **Low to the ground STEEP TURNS into a dead engine at slow speed can produce a vertical crash because; in knife edge the rudder will be: (1) a woefully inadequate elevator, and (2) fully displaced with no more travel countering the dead engine. RESULT? - The upper wing running engine twists the nose & trajectory of the aircraft downward, around the vertical axis straight into the ground.**

HISTORICAL NOTES ON 40 DEGREE FLAP LANDINGS

The MU2 short body is a phenomenal short take off and landing airplane. I always used 40 degree flap landings….but unlike a jet ONLY when landing assured. However; just like a jet, a weight determined 1.3 VSO approach speed was always targeted for the threshold crossing speed, and set as an index that was installed on the airspeed indicator. A power on technique was developed to achieve smooth main gear only landings, by gradually, continually lifting the nose beginning ¼ mile from threshold. The only time you want to elect 20 degree landings is in very tough cross winds or tight ILS approaches.

Why 40? (1) Because when you really have to land short field – you will be excellent. (2) Tires last longer. (3) As we have learned in jet flying, high or excess speed & distances on landings/take offs have their own set of safety exposures; such as tire blowout mgmt., high accelerate-stops, or runway overruns, (4) Beta/reverse is always available instantly below 90kts.

Full span flaps are there to avoid all that. Watch a bird land. Check out closely the technique and wing feathers. The MU2 is just a big bird with equally clever wing feathers.

Back in the 1980s flown as originally approved by the FAA, no other twin piston, turboprop, or jet could ever out perform the MU2 short body in the landing and take off environment, period. Here is an interesting real world story. In 1985, Atlantic City Bader field (2,600 foot runway) banned all turboprops from landing, except PT-6 Dehaviland STOL commuters. I petitioned the airport manager for permission on the basis that I could equal or beat the commuters. He agreed and we set up a demo. I was light of course, still a little faster…but with real time reverse came to a stop virtually identical in distance. The airport manager gave me permission to land from that time forward, while King Airs and any other kind of turboprop were relegated to the big Atlantic City Airport. True story.

III. The following MU-2 flight training is incorporated into our corporate syllabus and provides an excellent introduction to the MU-2 aircraft:

1. **WEATHER VANING: Downwind weather vaning on cross wind take off. This occurs because the short body MU-2 square feet sum of the fuselage fwd of the main gear, plus the engine nacelles, plus the tip tanks....exceed the square feet sum of the fuselage aft of the main gear, plus the vertical stab and rudder. Related note: The crown of the runway can be used to help keep a wing down into a crosswind.**

WEATHER VANING DEMO

FIND A GOOD CROSSWIND RUNWAY AND TAKE OFF.
Observe aircraft tendency to weather vane downwind

2. **CROSS WIND LANDING: Streamline nose wheel before touching runway. (Just release pedals) Alternatively, use asymmetric power to mitigate centering the nose wheel on landing. Relative power lever position can be maintained into reverse.**

CROSS WIND LANDING DEMO

FIND A GOOD CROSSWIND RUNWAY AND LAND BY:
Asymmetric Power
By centering the nose wheel.

3. **TRIM changes in power, speed, and flap settings.**

TRIM DEMO

START FROM ILS APPROACH CONFIGURATION 120KTS - LEVEL FLIGHT.
TURN AUTOPILOT OFF TO CANCEL PITCH AND RUDDER TRIM.
ACCELERATE TO 250KTS .
Observe requirements for trim.

4. **FLT IDLE 40 degree flaps, landing configuration, 100kts**

FLIGHT IDLE DEMO

NOTE SINK RATE AT FLIGHT IDLE.
THEN NOTE TORQUE SETTING FOR 500fpm SINK RATE.

5. **FLYING THE ILS: In addition to airspeed, POWER also affects altitude on the glideslope, unlike other aircraft. The MU2 with all those props, covering most of the wing span with 20 degree flaps, produces instant, vertical response to power changes on approach. Like a helicopter. [Note: Torque meters must be aligned and set properly to fly torque in lieu of fuel flow.]**

ILS DEMO - FLAPS 20

LEVEL FLT:	Fuel Flow	Torque	Speed	Flaps	GEAR
	300lbs ea.	55%	200	0	UP
	270lbs ea.	40%	160	0	UP
			150	5	UP
			135	20	UP
			120	20	DN
	Glide slope intercept – gear down				
	250lbs. ea.	30%	120	20	DN

For demo only, fly Glide-slope solely with fuel flow.

6. **ROLL axis**

ROLL DEMO

Configure for ILS approach – gear down flaps 20 deg.

- **Balance fuel flow/torque.**
- **Generate a 15 degree bank and release wheel.**
- **Note no tendency to return to level flight.**
- **Make pitch inputs and then compare to roll inputs.**
- **Note spoilers compared to ailerons are less effective first 1/3rd and more effective last 2/3rds than ailerons.**

7. **FUEL FLOW roll trim**

FUEL ROLL TRIM DEMO

Configure for ILS approach – gear down flaps 20 deg.

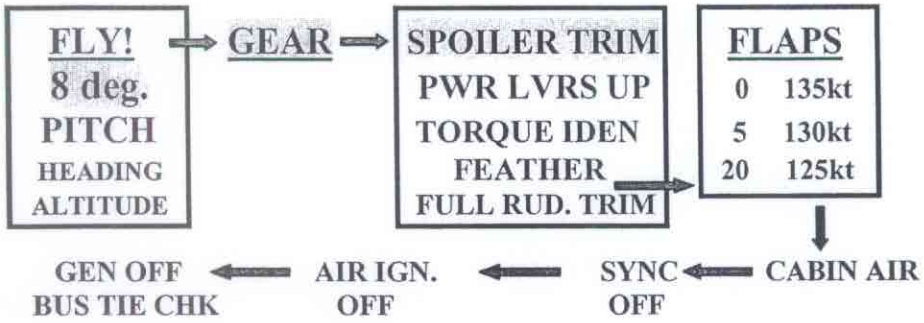
Balance fuel flow.
Unbalance fuel flow in various amounts
Note roll rate of aircraft.

8. **ENGINE FAILURE. Working from left to right on the panel, and then back to the left again, the following items are to be acted/decided upon. The procedure is valid for take-off, cruise, or landing. Critical items begin at the ADI and flow right – less critical to the left:**

NOTE: MAKE SURE ENGINES PRODUCE AT LEAST 100.5%RPM but not greater than 101% on takeoff, and are at 100% torque.

ENGINE FAILURE IN FLIGHT – GEAR IS UP!!

(UNABLE TO RE-LAND ON RUNWAY)



9. **SINGLE ENGINE ILS. For minimum speed set VREF, but THE SECRET IS fly over the outer marker trimmed hands off at 135 knots – flaps 5. All you have to do is drop gear to follow glideslope. You've got plenty of speed, so let it fluctuate as you follow the glideslope with constant power. Varying power inside the outer marker, only unbalances MU2 trim settings and is unnecessary. 5 deg flaps, and 135 knots, gear down – is a peaceful, trimmed-out ride to the runway; plus a perfect configuration for a very boring missed approach. Center the nose wheel on landing. Trimming out the rudder while slowing to VREF is okay & possible – but trimming/work load increases – both on the approach and on the go around.**

IN FLIGHT DEMO 1,500 AGL

Configure for S.E. ILS approach – flaps 5 deg. – 135knots

TRIM HANDS OFF to INTERCEPT G/S

SET FUEL FLOW: 320 &/OR SET TORQUE: 60%

AT G/S INTERCEPT – GEAR DOWN

IV. FACTUAL POINT – COUNTER POINT COMMENTARY TO ROBERT CADWALADER, cited as an aviation expert by U.S. Congressmen Tom Tancredo, et al (Mark Udall and Bob Beauprez , Diana DeGette, and Senator Ken Salazar)

By: [redacted]

9/8/2005

EXCERPTS AS FOLLOWS:

"The only corner of the MU-2's flying envelope that distresses me is the one from which no one can recover...so I don't plan to put myself there to prove that it is deadly." **All aircraft possess this corner. The fat wing airplanes (Aztecs, Citations, King Airs) have slower reacting corners that still kill. The skinny wing airplanes (Cessna 310, Barons – once called the doctor killers, – Learjets, & MU-2s) have faster reacting corners that kill. USAF fighter jets are even skinnier wing planes – but by comparison the training is spectacular and the maintenance budget is unlimited.**

"It does not account for the physical facts that suggest a power reduction in one engine that caused the aircraft to slow to the point where the pilot could retain control." **The MU-2 flies fantastically well from sea level on one engine with, (1) eight degrees deck angle, (2) the gear up, and (3) the spoiler trimmed out.**

"The MU-2 can be impossible to control under a very narrow set of circumstances." **Correct. – You just defined the goal of good engineering. Drive the danger into a narrow set of circumstances. But the "set" itself is not really the issue. It's how "narrow", and then how "reactive" the dynamic is, once you cross the line. What I like about the MU-2 is, that the engineers pushed the set narrower than other aircraft (therefore safer). But a difficulty arises with all skinny wing aircraft. Once you cross the line the reactive dynamic is usually quicker.**

Example: Full span, double slotted flaps, lowers the stalling speed (increasing stall margin safety) so dramatically that for years I flew true STOL takeoff and landings into and out of 2,600 feet – way too dangerous for a King Air to attempt. But the downside was this: At sea level, heavy weight, flaps 20, with an engine failure on takeoff, any climb necessitated rotating accurately like a jet into pre-set go around V bars at 8 degrees, (not 5 or not 10). The MU-2 performs nicely single engine, certainly better than any piston twin using this discipline. Every MU-2 takeoff should begin with the V bars set at 8 degrees in anticipation of engine failure. Flight Safety taught this for years.

Neither plane can survive a VMC rollover 100 feet up - which will always be properly ruled as pilot error. However, my guess is once you cross the line the MU-2 roll reaction will be

quicker than the King Air's long wing. Whether the difference makes the King Air survivable, I don't know. I've never flown a King Air. The real key is don't go below VMC. Needless to say, the first thing I did when I bought my Solitaire was to check the go around setting. Guess what. The bars only went 2 degrees up!

"This very narrow envelope occurs when the aircraft is either flying very slow with reduced power, or has just taken off. How the power has been reduced, or what causes a reported loss of power just after takeoff is still a mystery to me and to the NTSB. READ THE REPORTS! "Loss of engine power for undetermined reasons." **Garrett/Honeywell T331 engines are bullet proof!! Proven on many other airplanes. They are rugged and have taken tons of abuse in the commuter airline industry. In reality there have been only 4 unexplained engine failures, (1/22/00 & 1/28/93 - which occurred after dual engine replacement, and then two in 1/7/77 & 2/8/76. But I would look for maintenance reasons...overhauls done by lesser qualified shops...or fungus in the tanks. The MU-2 just like any plane cannot tolerate a lack of proper maintenance. I'm sure you would agree that no one should be in any plane if they don't have the budget to pay for proper maintenance.**

"Because of the MU-2 flight control surfaces and it's wing design it can very quickly reach a condition where no one, regardless of experience and skill can control the aircraft." **With all due respect, the wing and control surfaces are what I like the most! The wing gives you much more stall margin safety than any other piston, turboprop or jet in existence when expressed as a ratio of stall speed to cruise speed. The spoilers are better than ailerons for three reasons: (1) No adverse yaw, (2) same roll rate at 100kts or 250kts, (3) outstanding roll control up to a stall, and into the stall.**

However, on an engine out at takeoff, in order to climb the spoiler behind the running engine does have to be stowed with the spoiler roll trim switch, which is my third step after first pitching to 8 degrees and raising the gear. Spoiler trim is essential for climb, and yet is foreign and not instinctive to pilots, and not required in other aircraft. In other cockpits, some aileron trim is usually needed after engine failure, but whether you get right to it or not doesn't really affect rate of climb. Therefore, spoiler trim must become a trained auto response peculiar to the MU-2. Functioning spoiler roll trim is part of my pilot walk around – and a definite no go for flight if inoperative.

V. FACTUAL POINT – COUNTER POINT REPLY TO U.S. Congressmen Tom Tancredo, et al (Mark Udall and Bob Beauprez , Diana DeGette, and Senator Ken Salazar)

- By: [redacted]

9/8/2005

Congress of the United States
Washington, DC 20515
June 23, 2005

Ms. Marion Blakey
Federal Aviation Administration
800 Independence Avenue, SW
Washington, DC 20519

Dear Madam Administrator..... **EXCERPTS AS FOLLOWS:**

"To obtain some background on this particular aircraft, a member of my staff talked with Mr. Robert Cadwalader, an experienced MU-2B pilot and columnist for the Atlantic Flyer magazine. He stated that the aircraft is a 1950s" **First prototype flight was 1963.**

The design that employs a very small, straight wing in order to achieve impressive in-flight performance. However, because of this design feature, the aircraft needs very large flaps to allow for slower takeoff and landing speeds. This, in turn, necessitated the use of spoilers rather than the normal ailerons. **The design logic was actually reversed - They began with full span double slotted Fowler flaps and spoilers for superior roll control and STOL performance. Once the flap and spoiler design was established, they determined they had no need for a wing any longer than 36 feet to fly slower.**

Unfortunately, in certain low altitude, low airspeed conditions deflecting a spoiler will increase drag at a time when additional lift is required." **Not an issue at any time at all, except when flying on one engine, when the pilot has to trim the spoiler out as part of the engine shut down procedure.**

This situation is exacerbated if an engine is lost on takeoff, the landing gear is raised, the aircraft is at its maximum gross weight, and the airfield's elevation is above 5,000' MSL." **Like all FAA Part 23 airplanes, climb is never guaranteed after engine failure, including high altitude takeoffs. FAA instructions are to reduce power maintain control and land.**

Mr. Cadwalader also stated that post-accident reports that blame the pilot for "failing to maintain aircraft control" are far too simplistic—this aircraft can put a pilot in a position that is impossible

to control! Because an entire wing can stall 'all at once," **An entire wing stall all at once is true with all symmetrically built wings flown straight ahead** "the MU-2B can go completely out of control" **No, the MU-2 spoilers still control roll through a stall, distinctly superior to all other aircraft that use ailerons which are totally useless during stall** "in less than one second" **what is the source of a one second time frame?** "at least two flipped upside down before the pilots could react" **Many other twin engine aircraft have also done VMC rollovers (flipped upside down) and crashed to the ground.**

"another crash claimed four more lives in Oregon (the pilot had 17,000 flight hours!" **The 17,000 hour pilot had not saw fit to graduate from any MU-2 training school.** "I also noted that several MU-2B incidents involved propeller failures," **Reasons for propeller failure has been solved and eliminated. The same problem existed with Fairchild Metroliners and was similarly corrected** "while others involved what pilots described as a "loss of power" or "loss of torque." Therefore, it may very well be that there is a much more insidious problem inherent in this aircraft" **there is no insidious problem. But there can be bad engine overhauls and/or fungus fuel contamination in the tanks which is easy to clean out if caught early** — something having to do with fuel or air flow disruption to engines. **the air flow to the engines is the same as thousands of the same engines installed on other aircraft.**

"it is my firm conviction that a special MU-2 series "type rating" be established." **I agree with the type rating recommendation. Although not full proof, a type rating will eliminate a level of non professionalism and create <u>standard reactions for single engine events</u> among the pilot population…or if not a type rating, training equivalent to a type rating. The airplane is rugged and exceptionally built, well beyond other competing designs. However, I also believe that proper maintenance as recommended by both MHI and Honeywell must be enforced and <u>committed to be paid for by the owners</u> to mitigate any chain of events that could cause future accidents.**

"This pilot certification must be completed before any pilot is allowed to resume MU-2 flight operations." **I don't agree with grounding of the fleet. Any such grounding will cause accelerated deterioration from lack of use, which will also increase the probabilities of maintenance induced accidents.**

By -

[redacted]

9/8/05

57

[redacted]

09/09/2005 12:34 AM

To [redacted]

cc

bcc

Subject Mitsubishi MU-2B Flying

Dear Doug Rudolph, **Corrected copy (below)**

I have just received notice from another MU-2 pilot that you are soliciting flight testimonials for the Mitsubishi MU-2B.

This apparently is being spurred by some elected politician's urgings. I am sincerely hoping this is not a political mission against this one particular type of aircraft for some obscure reason. **I hope you will take my facts and report with as much validity or more than the (likely) non pilots Tancredo, Salazar, Udall, Beauprez and DeGette.** Their approach is suspicious as there are many incidents (unfortunately) in the aviation world that would warrant a deep investigation. To my Knowledge the facts of the two MU-2 Colorado crashes are still not known to be caused by the aircraft's defect or failure; but so far, more obviously they were both a piloting malfunction. I have also been exposed, though my close association with many flying the MU-2, to the other downed MU-2's in the last few years. A "problem aircraft" would greatly concern me. In so far as my cautious self has evaluated, **I've not seen any evidence of the MU-2 showing fatal flaws in it's flight characteristics. I have purchased two MU-2's and have spent my money on these aircraft because they have proven to be safe and of the best utility in the turboprop and light jet world. In Four years and 300 hours now I am looking forward to every flight.**

I offer for your review my history and experience:

[redacted] (Yes a "Doctor with and Airplane") BUT PLEASE ... DO NOT CALL ME "DOCTOR" around the airport or aircraft. Those Doctor-Airplane connections don't have the best record either... I am a humble pilot who feels that if I don't learn something each flight then I must have missed something.

- **MEL and SEL INST PVT.**
- **~ 1700 hours TT**
- **~ 800 hours AEROSTAR 601P / 700**
- **~ 300 hours MITSUBISHI MU-2**
- **Owned** Cessna 310, Cessna 340, Aerostar 601P / 700 (for 12 years), Mitsubishi MU-2 (1977 P model)(2 years), Mitsubishi MU-2 (1979 Solitaire)(Feb 2004 to Present)
- **Annual training with Reece Howell / Howell Enterprises** of Smyrna Tennessee. Probably the most knowledgeable and highest time MU-2 pilot flying. His world wide training and ~20,000 hours in type have got to count for something.
- **PROP Seminars sponsored by Mitsubishi Heavy Industries. 2000, 2002, 2004 and will be at 2006**. Contact Pat Cannon et.al. (Turbine Aircraft Support, Addison Texas) Highly Knowledgeable on all MU-2 events.

For 12 years I flew an AEROSTAR WITHOUT ANY INCIDENTS OR ACCIDENTS, (known in the Twin Cessna circles as "Deathstar") Guess What -- They are incredibly easy to fly and land. But paying attention is required. With 350 HORSEPOWER on each side a pilot has got to be RESPECTFUL AND ATTENTIVE. NOW FLYING THE MU-2 I am gradually feeling the same confidence that I acquired in the Aerostar. BUT NOW I HAVE TWO MUCH MORE RELIABLE TURBINES with which to fly my family. **YES I FEEL SAFE FLYING THE MU-2.** In July I took my spouse and mother and father to Alaska. HARD IFR into Juneau, Marginal VFR into the very tight canyon of Skagway, to Fairbanks across hundreds of miles of jagged mountains and glaciers, then Homer and across a thousand miles of open ocean back to the lower 48. I can't wait to do this again.

My MU-2 can turn gently inside a half a mile, take off and land in under 2000 feet, touch down at 87 kts. There's not a light jet in the sky with the utility of an MU-2. In the pattern with 20 degrees flaps

and gear down it is amazingly docile. When I practice engine cuts and other single engine operations with Reece the plane does exactly what it's supposed to do. No Surprises in what you tell it to do. PLEASE CALL REECE HOWELL OR PAT CANNON OR BOB KIDD at Intercontinental Jet over in Tulsa AND ARRANGE A DEMONSTRATION; **LEARN FIRST HAND FOR YOURSELF HOW AND WHY AN MU-2 FLIES CORRECTLY AND SAFELY.**

The Aerostar I'd hung my life on many times was an old friend, unfortunately the subsequent owner (ATP rated) and another ATP pilot killed themselves and destroyed the plane when losing an engine on takeoff ....

READ THE REPORT on N869CC from March of 04.
Whose at fault ??? This "loss of control of the airplane" was pre set by the pilot !!

What of the two light jets that cost a group of people their lives in Aspen Colorado and the crew of two in Texas. The Aspen plane was a **Gulfstream and the Texas plane was a Gulfstream** and incidentally the article stated that the Texas **Gulfstream** was headed to pick up former President George Bush Sr. when it hit towers only a few hundred feet off of the ground. Do these (and many more) really bad accidents fit the "loss of control of the Airplane" description?? It is obvious that they do. **More people died in a highly regarded Gulfstream Jet with a greater seating capacity to take innocent people to their deaths than a Mitsubishi. Why is there not an "Airworthiness Concern Sheet" for the Gulfstream????**

Flying AND DRIVING have inherent risks. **We have to pay attention !**
I've just spent TWO hours writing this as it's VERY IMPORTANT --- I'm hoping that I'm heard.

Most Sincerely and Thank You, [redacted]

[redacted]

[redacted]
09/08/2005 09:05 PM

To Doug Rudolph/ACE/FAA@FAA
cc [redacted]
bcc
Subject MU2 Safety Review

My name is [redacted] and I am an owner and pilot of an MU-2 "J" model aircraft.

I hold an ATP pilot's license with 8000+ flying hours and have about 200 hours in the MU-2.

Most of my flying experience has been in turboprop aircraft ranging from the a Beech 99 to a Saab 340 B.

After reviewing the most recent MU-2 crashes at the Centennial airport, I have come up with my opinion what happened in each case:

- **The crash that happened while on approach, the aircraft was last reported at 140 knots. The flaps were found at 5 degrees. I use flaps 20 degrees and when I reach speeds below 140 knots to stabilize the aircraft. Like with any aircraft, If the pilot is not paying attention while on the approach and gets to slow the aircraft becomes unstable.**
- **The crash that happened after engine failure shows a misjudgment from the pilot when he overshot the centerline on the runway which caused him to try to perform an unstable approach (single engine).**

I flew freight for 2 1/2 years and know the pilot training is sometimes not as at through as the airlines. Many times the freight pilot gets a check ride during a fright run.

I did my initial and do my recurrent training at Howell Enterprises. During the training we practiced every type of scenario in the MU-2. I didn't find any quarks or anything different than other turboprop aircraft I have flown except not having to bank into the good engine (due to the spoiler flight controls).

It is in my opinion that the two accidents were due to pilot error and not aircraft handling problems. As with any aircraft, the MU-2 aircraft requires the proper flight and emergency training. I fly the MU-2 aircraft by the numbers and procedures the way I was thought and I don't hesitate to load my family into the aircraft for a trip.

Sincerely,

[redacted]
ATP
CFII MEI

59

[redacted]

[redacted]
09/08/2005 03:14 PM

To Doug Rudolph/ACE/FAA@FAA
cc
bcc
Subject MU2

MR. Rudolph, My nave is [redacted] I'm writing this in response to the rumored grounding of the MU2. As a matter for the record, I'm a retired airline Cap. with over 30,000 hrs in various large and small aircraft. I have a MU2-B and have never noticed any unusual flight characteristics other than those that any trained MU2 pilot should be aware of. If the FAA goes around grounding every aircraft that is rumored to have bad flight habits Boeing and Airbus would be in big trouble. I am not aware of what axe these congressmen have to grind, but I'm quite sure there time would be much better spent in attending to the business they are being paid to perform and let the people who know the aircraft attend to the aircraft issues.

Let me further state I am current in the MU2, and that I go to Mr. Reece Howell's MU2 school every year to maintain my proficiency. I have aprox 350 hrs in various models or the aircraft and consider it to be one of the finest turbo props I have ever flown. If I can be or any assistance in any way please let me know. One more point I'd like to make is this. With the price of fuel being what it is and the cost of aircraft ownership rising almost daily those in position of leadership have an obligation to make sure they don't unnecessarily add to the problem.

Thank You

[redacted]

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Northern Jet Sales, LLC

www.northernjetsales.com (615) 217-1006 (615) 890-8192 (fax)

Doug Rudolph
Aerospace Engineer
Small Airplane Directorate
ACE-112
901 Locust Street, Room 301.
Kansas City, MO 64106

September, 7, 2005

Ref: MU2 B

Dear Doug,
I have approximately 1500 hours over 25 years in the operation of MU2 series aircraft, and have flown almost all models of these planes. I am currently involved in aircraft sales, primarily of business twins, and turboprops including the MU2s.

I fly most of the planes we sell and have the opportunity to see the conditions of many planes in our fleet. I also get to see how a lot of people respond to the MU2 in flight demonstrations and of course get asked numerous questions about its history, flight characteristics, etc.

Over the 25 years, I believe I have explored the entire flight envelope and find it to be a very stable, predictable aircraft. It like all high wing loaded aircraft does however require attention to the 'numbers'. It is not a 'fly by the seat of your pants' airplane, and I find those people who have previous 'heavy' or Jet experience can quickly understand and adapt to the flight characteristics of the MU2. Those who are challenged to operate an aircraft, something like a Twin Cessna, require additional training to properly operate the plane. I do feel pilot's need proper training and understanding of this plane and its systems. The MU2 is an advanced design aircraft incorporating control systems well known in Commercial and Military aircraft and certainly provides a wide envelope of safe operations when properly maintained, rigged and operated!!

I find a lot of the planes I fly are not properly 'rigged' even though Mitsubishi has well detailed the proper procedures to have the fuel controls, flight controls, and propellers properly set so as to prevent adverse flight conditions. I find many operators who do not have this work done and in many cases do not know what a properly rigged plane feels

like. They have heard for years that the plane has 'squirrelly' characteristics and then continue to fly the plane when the rigging is seriously out of adjustment!!

I am also a supporter of a 'type rating' for this plane. The current FAA requirements do not place this plane in the area of requiring a type rating. I feel there is enough difference in the plane that a specialized training (i.e.: Type Rating) would improve the safety operation and keep many marginal pilots out of the planes. The typical light twin pilot is certainly not competent to get in the aircraft and fly away after only 3 standard takeoffs and landings!!

Recently I was asked by a client if it is true that the VMC on the MU2 is really 153 knots? He had the conversation with a 135 MU2 pilot and knew that if a 135 pilot told him then it must be true. The insurance industry has done a very good job of requiring good transition training and annual recurrent training for those who choose to purchase insurance, however there are many who operate without insurance and feel that they are 'highly skilled' pilots who do not need training!!

The MU2 is a well engineered and constructed aircraft but should have required adequate training from the beginning. I believe the efficiency of this fleet of planes is still unsurpassed. The construction and engineering have shown that even after 20,000 hours the plane is still structurally sound and has encountered no design flaws requiring spar straps, wing spar modifications and other engineering repairs as required by most of the General Aviation fleet we have flying today.

I think it would be a real tragedy to ground these planes but I do strongly feel that the plane needs proper training. I describe it to my clients as a "Lear Jet' with propellers!! Everyone knows and respects the flight characteristics of the Lear, but the MU2 does not receive the proper respect, nor do many pilots/operators.

Thanks for the opportunity to express my views on this great aircraft.

Sincerely,

[redacted]
www.northernjetsales.com
[redacted]

61

[redacted]
09/09/2005 11:09 AM
Please respond to [redacted]

To Doug Rudolph/ACE/FAA@FAA
cc
bcc
Subject MU2 Operation

[redacted]

Mr. Doug Rudolph
FAA Small Aircraft Directory

My name is [redacted] and I have been operating an MU2 - P ([redacted]) since January 1998 .

The aircraft is Owner Flown and operated mainly for Business between Caracas Venezuela and Fort Lauderdale flying around 120 Hrs./year.

Before the MU2, I operated a King Air E90 and several piston twins (Seneca, Baron , Cessna 402 and Cessna 404)

My experience with the airplane has been excellent. The reliability of the aircraft surpasses any other airplane I have flown and the performance is hard to beat by any other turboprop.

Regarding the handling of the aircraft , I have found no problems with it although is important to receive proper flight/simulator training as in any other high performance turboprop airplane. I personally have attended Flight Safety in Houston and recently SIMCOM in Orlando.

In early January of this year , I departed Fort Lauderdale (FXE) IFR for Puerto Plata in Dominican Republic with 4 people on board and a full load of fuel. About 60 miles out while climbing through 14.000 ft , I had a complete failure of the left engine. I proceeded to feather the prop and asked Miami Center to return to Tamiami Airport and reported that I had lost an engine.

The airplane performed flawlessly on one engine and even better than what I had experienced in the simulator. After flying for about 10 minutes and leveling off at 12.000 Ft , Miami Center asked if I wanted to declare an emergency. Based on the performance that I was getting from the airplane I answered that it was not necessary and I proceeded back to Tamiami , which gave me a straight in (priority) downwind approach . I refused the straight in downwind approach and flew the pattern and landed without incident. I was even able to taxi back to my parking in one engine , which the MU2 does very well because the dual front tires.
This whole emergency was a non-event due to proper training and having experienced an engine out in the simulator training.

Another aspect of the airplane that I can compare to the King Air and Commanders that I have flown , is that the MU2 does better than most during bad weather due to their high wing loading. If you have to be IFR in convective weather , this is the airplane I want to be in. It goes through

weather like a tank !!!!!

I hope the above comments will help in your assessment of the aircraft.

Regards,

[redacted]

62

[redacted]

09/09/2005 11:44 AM

Please respond to [redacted]

To Doug Rudolph/ACE/FAA@FAA

cc [redacted]

bcc

Subject MU2 Concerns

1. The request by the CO congressional delegation to perform a safety investigation of subject aircraft is yet another area where elected representatives have no expertise or business.
2. The MU2 has been subjected to two such investigations in the past in addition to an extensive icing examination. In all cases the FAA judged that the aircraft surpassed certification requirements and required no type rating of its pilots.
3. I have flown a short body MU2 (single pilot) for the past five years, accumulated just over 2,000 hours in all sorts of weather conditions and have never experienced any loss of control on the ground or in the air (including simulated engine failures and actual flying with one engine purposely shut down).
4. I submit that the aircraft is NOT the problem. I don't have to remind anyone that knows anything about aviation that roughly 80 percent of all aircraft accidents are pilot related. If an aircraft is well maintained and operated in accordance with the limitations in the airplane flight manual one would expect few mechanical problems - certainly nothing that would be a direct cause of a crash. I have been most impressed with the continued support by the aircraft manufacturer in the areas of parts support and pilot support.
5. I do not profess to know all the facts concerning the incidents in question, but I do know (generally) that operators like the ones who had the accidents normally train their pilots in house and may employ pilots without a great deal of experience. If these pilots were required to attend SIMCOM - or even better Howell Enterprises, Inc. initial and recurrent training, I submit that they will then have been properly trained how to operate this aircraft.
6. I have seen "check carriers" who operate long body MU2 aircraft. Every time I see one of these aircraft up close I wonder who in their right mind would get into one of those aircraft with the intent to fly - they don't seem well maintained. The MU2 is built like an army tank and can take a great deal of abuse, but if it is not properly maintained little things can occur that distract the pilot. This could happen in any aircraft. I wonder what the FAA will do when very light jets start falling out of the sky on a daily basis - take another look at the certification process!
7. This investigation will be a huge waste of time and money. The airplane is not the problem, it is, as usual, the ability of the pilot at the controls to fly the thing properly and/or make sound decisions.

[redacted]