

**Re: Pilot training and airline safety including consideration of the Transport Safety Investigation Amendment (Incident Reports) Bill 2010**

**Submission from:**

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**About Oxford Aviation Academy**

The Oxford Aviation Academy ('OAA') is a training institution of global standing in the aviation training sector. OAA's core business is teaching pilots how to fly (ab initio and type specific) but it also trains cabin crew and aircraft maintenance engineers. The organisation's reputation has however been built on training the pilots for the world's major commercial airlines.

OAA has its UK origins in 1939 in the Oxford Flying Club. After the war it became the Oxford Aeroplane Club, and by 1960 it had become a fully-fledged airline flying school providing training for professional pilots. In May 1962, under the name of British Executive Air Services Ltd, the organisation was providing the World's first fully integrated Commercial Pilot's Licence and Instrument Rating courses.

By 1966 OAA was training over 100 cadet pilots a year for British European Airways and British Overseas Airways Corporation, and thereafter Swissair, Olympic Airways, All-Nippon Airways, Iraqi Airways and Libyan Arab Airlines. By 1972 OAA had contracts with 46 major airlines and during the 1980s and 1990s it began relationships with new airlines like Air Algerie, Gulf Air, China Airlines, Garuda Indonesia and Kuwait Airways further reinforcing the strength of the brand in new Middle East and Asia markets.

By 2008, the entities of GE Commercial Aviation Training, SAS Flight Academy, Oxford Aviation Training, BAE Systems Flight Training (Manchester), Parc Aviation and General Flying Services had amalgamated to form the significantly enhanced Oxford Aviation Academy Group as it is today.

Today, the OAA Group trains pilots routinely for: British Airways, bmi, SAS, Norwegian, Qantas, QantasLink Thomas Cook, flybe, Netjets Europe, Gulf Air, Iraqi Airways, Vietnam Airlines and in significant volume for the now well established Low Cost Carriers of easyJet, Jetstar and Ryanair to name but a few.

OAA is now one of the World's leading independent providers of: innovative airline pilot, cabin crew, maintenance training and aviation resourcing services. It is truly unique in its ability to offer a fully integrated global flight crew supply chain.

With locations in Beijing, Copenhagen, Dublin, Hong Kong, London (Gatwick), London (Heathrow), Manchester, Melbourne, Oslo, Oxford, Phoenix, Shannon, Stockholm and Tokyo, OAA is able to provide integrated “Total Training Solutions” tailored to meet the particular needs of any airline customer worldwide.

OAA currently operates: 105 training aircraft, 64 simulators and 10 training centres delivering an innovative and comprehensive portfolio of aviation training courses.

OAA’s 3 ab Initio airline pilot training schools are amongst the World’s most respected and have now trained over 26,000 professional pilots during the past 50 years.

Parc Aviation, OAA’s resourcing division, is the global market leader in providing aviation personnel on lease to airlines and aviation support organisations; currently providing more than 800 personnel contracted to 50 airlines in 30 different countries.

OAA is currently a supplier of Cadet/Trainee Pilot Training courses to: Qantas, QantasLink and Jetstar in Australia.

### **Ab initio cadet pilot training models and evolution into MPL**

1. Europe is constituted of a large number of small independent countries all of whom have their own aviation infrastructure of varying degrees.
2. Until 1999, each European country had an independent regulator of pilot training with an equally independent set of flight crew licencing rules. Therefore, only pilots licenced for a specific country could fly an aircraft registered in that specific country. This changed in 1999 to a common set of Joint Aviation Requirements for Flight Crew Licencing (JAR-FCL) with the primary course of ab initio ATPL training being the Integrated 195 hour (55 in simulators) course through which most of Europe’s airline pilots are trained.
3. Because of the relatively small size of European countries, European air travel is mainly conducted by commercial airlines as opposed to the use of General Aviation Charter Operations (albeit that has changed somewhat over the past 10 years with the advent of companies like NetJets).
4. Air Forces of European countries tend to be highly selective and protective of their pilots and are required to commit to long periods of service as military pilots before retirement.
5. Many countries in Asia have no General Aviation infrastructure at all and all airline pilots must, by definition, be trained through ab initio cadet programmes.

As a consequence of the above circumstances both in Europe and Asia, commercial airlines have been unable to rely upon an adequate volume of pilots (and more specifically of the right quality) either from the General Aviation community or the retiring Military to meet their crewing needs, hence the concept of the ab initio cadet pilot training course was born in the early 1960s.

Actually born as a concept at the UK Oxford Air Training School in 1964, the UK Air Ministry approved a 200 hour ‘Integrated’ Course of full time focussed airline pilot training leading to the issue of a Commercial Pilots Licence with Instrument Rating as an entry requirement into airliner type

endorsement training. The concept works because the cadets are trained as airline pilots from day 1 and are totally inculcated with airline flying techniques, safety procedures, standard operating procedures and reporting systems. Essentially, they are trained as multi-pilot aircraft crews 'ab initio' and since 1964 pilots trained this way have become Captains, Trainers, Examiners, Chief Pilots, Directors of Flight Operations and even CEOs (Willie Walsh as CEO of BA was a Cadet Pilot).

The system works very well and has proven over the past 5 decades to deliver exceptionally well trained, safe pilots for some of the most well known flag carrying airlines in the World: 75% of BA pilots were trained as Cadet Pilots, 95% of both Lufthansa and Swiss pilots were trained as Cadet pilots. Lufthansa still operates its own ab initio schools based in Phoenix Arizona and Bremen Germany. The biggest airline in the world, AirFranceKLM employs the majority of its pilots (>90%) through ab initio cadet pilot programmes. Any balance of pilots are recruited from other airlines or retiring military pilots. More recently in 2007, the fractional aircraft operator/airline NetJets Europe (operating 160 business jet aircraft) flying VIPs: Government Officials, Members of Parliament and Celebrities all over the world adopted the ab initio Cadet pilot model for 50% of its new First Officer intake (48 pa) – what better endorsement of this training system!

By employing pilots trained this way, the airline training departments can thus continue the concept into: aircraft base, safety procedures and line route flying training with relative ease under the careful eye and experience of highly selected training captains. Once all stages of ab initio training have been completed –licence, type and line training, the First Officer will have accumulated approximately 400 hours of training experience (approx 25% of which is in a purpose built simulator). Thereafter, recurrent checks and training are conducted routinely at 6 month intervals.

This training concept was quickly adopted as an effective airline pilot training concept by many other European countries and then soon progressed into many Asian countries such as Hong Kong, Singapore, Indonesia and Vietnam and now is used as a system throughout China, India and many other large Asian countries.

In 2003, a new concept of training airline pilots called the Multi Crew Pilot's Licence (MPL) was developed by ICAO which is a 240 hour course with approximately 90 hours of flight training in aircraft (the balance of hours in simulators) and has already been adopted by a number of major airlines, including Lufthansa, Swiss, flybe and is a natural progression of the Integrated 200 hour cadet programme described previously.

OAA participated in many of the ICAO/EASA MPL studies, development work and committees from the outset and launched an inaugural MPL course with large UK airline flybe in September 2009 and more recently Hong Kong Dragonair Airlines for the Airbus A320 aircraft.

The new MPL is designed to place greater emphasis upon the training of cadet airline pilots as a working crew at an even earlier stage in the course and thus reducing the amount of flight training necessary in small light aircraft (approximately 50% fewer hours of actual aircraft flight time).

The consequence of this approach is that training is more relevant to airline operations, teaches the students how to maximise the aircraft automatic systems more effectively and efficiently and overall produces a safer and more rounded airline pilot. However the underlying principles of ab initio training courses – both Integrated and MPL are the same – high quality and relevant airline pilot training as opposed to building hours in a log-book.

Of importance to note is that the licence is not designed to enable a graduate to work in General Aviation on single-pilot operations and is designed for airline operations only and cadets must be backed by an airline from the commencement of the course.

### Generic MPL course design

**Oxford**  
aviation academy

## Generic MPL design - Competency Based

PHASE 1	CORE SKILLS	AIRCRAFT – Single Pilot (SPA)
PHASE 2	BASIC	FNPTII MCC SIMULATOR & Aircraft
PHASE 3	INTERMEDIATE	FULL FLIGHT SIMULATOR – Multi Pilot
PHASE 4	ADVANCED	FULL FLIGHT SIMULATOR & AIRCRAFT – Multi Pilot

PLUS:

1. ATPL Theoretical Knowledge
2. Type Theoretical Knowledge
3. Threat & Error Management (TEM)
4. Interactive ATC Communications

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### Example - MPL Course design for Dragonair (Hong Kong CAD)

**Oxford** MPL Course Design #1(mod) – 240 hours  
aviation academy

Training Activity	Training Device	Hours	Notes
CORE PHASE - Dual	C172 EFIS Aircraft	65	Inc GFPT Skills Test
CORE PHASE - Dual	Bellanca 8KCAB aircraft	5	Upset recovery training
CORE PHASE - Solo	C172 EFIS Aircraft	14	Towards 15 hours PIC min (tbc)
CORE PHASE - SPIC	C172 EFIS Aircraft	1	Towards 15 hours PIC min (tbc)
CORE PHASE - Dual	C172 EFIS FNPTII	5	Instrument Ground Training
BASIC PHASE – PF/PNF	EFIS CRJ FNPTIIMCC	74	Instrument training as a crew
BASIC PHASE – Dual/PF	BE90 EFIS King Air Aircraft	16	Inc MET MPA Skills Test
INTER PHASE – PF/PNF	A320 Full Flight Simulator	20	MPA IF/MCC skills on type
ADV PHASE – PF/PNF	A320 Full Flight Simulator	40	Delivered by OAA or KA
Aircraft Base Training	Dragonair - A320 Aircraft	12 Idgs	As required / by the Regulator

**Notes:**

1. Dragonair SOPs will be incorporated into all MPA training activities

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19

**Conclusion :** It can be stated quite clearly, that pilots trained through ab initio cadet programmes (Integrated or MPL), as described above, are used more extensively to crew airliners than the pathway of gaining experience through either General Aviation or the Military. The pathway to training is proven to be completely safe and effective and has stood the test of time for 50 years. It works best when licence training is dovetailed straight into type endorsement and airline route line flying without any ‘dilution’ from single-pilot operations

### **Regulatory Position**

The regulatory flight training hours position for CPL/IR licence issue is governed through Annex 1 of the International Civil Aviation Organisation (ICAO) and has been adopted by the majority of countries throughout the world; including CASA in Australia.

The flying hour requirements for CPL licence, IR and type endorsements issued by CASA in Australia has not changed since 1986 and all holders of these CASA approved qualification are entitled to be employed by any Australian airline, to carry passengers for hire and reward following airline standardisation and safety and emergency procedures training prior to commencing route line flying training.

**Conclusion:** There are no stated regulatory requirements which requires pilots holding these initial professional qualifications to gain subsequent experience flying single-pilot charter operations before progressing onto multi-pilot airline operations. This is a misnomer which has come about through a ‘tradition’ that pilots in both Australia and the USA will often ‘serve time’ (albeit not exclusively) flying single pilot operations before progressing onto larger multi-pilot airline operations. Whilst this pathway does yield crewing sources for airlines in Australia, it does not make it either the only pathway to airline flying and for that matter the most suitable (see below). Ab initio cadet programmes are also entirely legitimate pathways to multi pilot airline flying operations and both pathways require pilots to have identical CASA issued licences and endorsements.

### **General Aviation flying experience – Single Pilot Operations**

Both Australia and the USA have strong General Aviation infrastructures which naturally require a healthy supply of commercial pilots to operate aircraft certified for ‘single-pilot’ operations (unlike airliners which are certified for multi-pilot operations). There is no dispute that pilots are required for these operations and the experience gained flying such operations is valuable.

However, there are drawbacks of gaining early flying experience this way for pilots who aspire to become pilots of multi-pilot aircraft operations:

1. The flying is largely conducted in older analogue cockpits which bear no resemblance to airliner flight decks – particularly in terms of automation and navigation.
2. Being single pilot operations, all decisions are made by the single pilot and has the effect of developing an autonomous approach to decision making which needs to be addressed when entering airline operations.
3. Operating into non-controlled airfields/strips, very often without any instrument approach procedures, there can be a tendency for pilots to descend/make approaches below minimums and develop a mentality to take unacceptable risks – once again unsuitable attitudes for airline multi-pilot operations.
4. Many aircraft used for single pilot charter operations are not high performance powered and bear no resemblance whatsoever to the operation to modern multi-pilot automated airliners.

**Conclusion:** Whilst General Aviation pilots develop skills and experience that is suitable for single-pilot operations on low performance aircraft, it cannot be claimed (as is often thought) that much of this experience is necessarily transferable to modern, highly automated airline flight deck multi-pilot operations where team decision making/communication, use of automation and strict adherence to standard operations is essential.

Whilst the GA pathway to becoming an airline pilot has existed for many years in Australia and yielded many capable operators, the ab initio cadet pilot route also has a proven track record and validity to the same First Officer role and should not be discounted in Australia as unsafe because it does not require flight hours experience to be gained in GA flying. Both systems have merit and should be allowed to run in parallel and airlines be permitted to hire new pilots as they desire from either system without suffering detriment from uninformed comment.

### **Funding of pilot training programmes**

Prior to 2001, airline cadet pilot training programmes were largely funded in Europe by sponsoring airlines either at their own schools or third party schools such as OAA. After 911, the responsibility for funding shifted from the airline to the student but there was no change to the training course design other than to place greater emphasis upon extra multi-pilot training skills to enable entry into type endorsement training and then airline service to be seamless.

In Asia, airline cadet pilot programmes are still funded by airline sponsors.

In the world of General Aviation flying, training courses have always been funded by the student albeit large breaks can often occur between training modules as further funds are earned – which is not entirely satisfactory due to the potential for skills fade between modules.

**Conclusion:** There is no evidence to indicate that the source of funding for ab initio airline pilot training courses has any impact upon either the quality of training or safety of pilots who have self funded their training course rather than an airline. Quite the opposite as these courses are full-time duration over 18

months requiring real commitment and devotion to achieving the standards. Airlines receive a more motivated pilot as a consequence.

### **Pilot Supply in Australia**

General Aviation flying is reducing in Australia and more passengers are travelling by commercial airline operations – both Regional and City pairs. The GA industry in Australia (unlike the USA) has insufficient capacity to provide the number of flying opportunities necessary for pilots seeking to gain 1,500 hours of flight experience; if such a rule was introduced in Australia.

**Conclusion:** Insufficient qualified pilots in Australia will result in pilots needing to be recruited from overseas with unknown training records/backgrounds which could be argued will reduce flight safety standards. Insufficient pilots will also result in an eventual skills shortage which will increase salaries and air fares and a consequential detrimental effect upon air travel and communication within Regional Australia due to the tyranny of distance; not to mention the economic impact upon Australia overall.

**Overall conclusions derived from above in reference to specific Senator Xenophon points:**

1. The pilot experience requirements stipulated by CASA to fly as a professional pilot of aircraft certified for multi-pilot operations has not changed. There is no regulatory requirement for any experience to be gained in 'traditional' single-pilot operations. Given the significant and widening gap between the nature of the two types of operations and the methods of operation of the aircraft involved, it can be argued quite persuasively that experience gained in operating single pilot aircraft will develop skills and attitudes which are counter-intuitive to the operation of highly automated, team managed, high performance multi-pilot airliner types.
2. The USA FAA Act requiring 1,500 hours of experience was brought about as a 'knee-jerk' reaction to the Colgan Q400 crash in Buffalo. NTSB investigation has shown that this airliner crashed due to poor crew co-ordination/fatigue and inappropriate control inputs by the Captain (full pro-spin controls) at low altitude. Both pilots had come from previous GA flying experience (both with >1,500 hours) and this previous experience would have made no difference whatsoever to their actions on that fatal flight. What would have had an impact is more relevant training. Had they communicated better as a team from this more relevant training and made better use of the aircraft automation, the event is unlikely to have occurred. Adoption of this rule in Australian will yield no benefits to flight safety and should be resisted.

Interestingly, neither the FAA, unions nor the airlines in the USA appear to support the new 1,500 hour rule and already airline ab initio cadet programmes are being considered as an alternative to building to 1,500 hours in GA flying:

**Extract from the Washington Post (14 October 2010)**

*"FAA spokeswoman Laura Brown said in a statement that the panel's recommendations won't be the sole factor in the agency's determination of how to implement the new law.*

*FAA Administrator Randy Babbitt, a former airline pilot, has expressed skepticism about the 1,500-hour requirement, saying it is more important to improve the quality of the pilot training than to increase the amount of experience in the cockpit.*

*That has also been the industry position. "The number of hours flown should not be the sole measure of qualification and proficiency," said David Castelveter, a spokesman for the Air Transport Association.*

*Roger Cohen, president of the Regional Airline Association, said money had nothing to do with the recommendation. He said academic training is "far more useful in training pilots for modern airline operations" than hours amassed "towing banners above the beach."*



3. Industry practice for students to pay for their ab initio airline pilot training has been in existence in Europe for over 10 years and there is no evidence to support any argument that the requirement so to do has had any detrimental impact upon safety standards.
4. How a pilot was trained actually can have a bearing upon the airline's ability to retain a pilot in employment. It can be argued that a mentored ab initio airline programme (still student funded) that leads into the aspired airline flying career earlier than following a traditional GA experience route will lead to significantly improved morale, greater loyalty to the airline, improved commitment and therefore improved professional conduct and commitment to airline standard operating procedures on the flight deck – thus improved flight safety. Poorly paid, unsupported pilots on the flight deck can have a deleterious impact upon flight deck performance and communication due to poor morale and dissatisfaction. Long service commitment to an airline as consequence of a Cadet Programme opportunity will result in Captains with the airline remaining with positive outlooks and behaviour thus improving flight safety as consequence. This is evidenced by the length of service of many of the pilots with major flag carrier airlines (BA, Qantas, Lufthansa, Air France/KLM etc) which were trained through ab initio cadet programmes
5. These programmes and recurrent training requirements have not changed at all and the point is not understood.
6. From our experience, CASA provide appropriate oversight albeit somewhat traditional and GA focussed and the regulations do need updating to reflect lessons learned by other regulators – in particular JAA/EASA in Europe. Where CASA could make a fundamental improvement to flight safety is to **MANDATE** Multi-Crew Co-operation (MCC), Crew Resource Management (CRM) and Human Factors training for all CPL/IR licence holders **PRIOR** to entering into multi-pilot type endorsement training. In so doing, the pilots enter the endorsement training with communication and operating skills which make the type specific training more relevant and efficacious. This training was mandated when JAR-FCL was introduced in Europe in 1999 and has been proven to improve efficacy of training and flight safety in multi-pilot airline operations. The model already exists and it would be such a simple and highly beneficial requirement for CASA to implement.
7. N/A