Safety Committee Statement of Position:
The Multi-crew Pilot License (MPL)
April 2008

BACKGROUND

In November 2006, the International Civil Aviation Organization (ICAO) amended Annex 1 to include a new grade of pilot certificate called the Multi-crew Pilot License (MPL). This new grade of certificate is the result of work done by ICAO's Flight Crew Licensing and Training Panel (FCLTP). The Air Line Pilots Association, International (ALPA) served as a consultant to the FAA on this panel.

The MPL initiative at ICAO was driven in part by international consensus that existing training and licensing standards needed amendment to take advantage of changes in technology and training methodology over the past 40 years. It was recognized that ICAO Annex 1 and Annex 6 were not keeping up with current industry practices and did not reflect the capabilities of advanced simulator training devices in a*b initio* training.

Individual countries, "states" in ICAO-speak, such as Canada and the United States may incorporate the MPL into their licensing structure as they find necessary. Upon successful completion of a MPL training program the pilot will be licensed to act as first officer in a commercial air carrier operation, and will possess an instrument rating for multi-crew operations, and a second-in-command aircraft type rating.

The ICAO amendment for the MPL defines this licensing standard as an alternative to traditional licensing methodologies for a*b initio* training. The goal of MPL training is to take a candidate with no prior aircraft flight experience and train them to be a competent flight crew member in today's commercial aviation environment. The MPL training program uses a competency-based approach in lieu of the "required hours" approach in traditional training methodologies.

The ICAO MPL standard specifies the minimum number of actual and simulated flight hours as 240 hours. However, the ICAO Standards do not specify the breakdown between actual and simulated flight hours and thus allows part of the training curriculum that has traditionally been done in the airplane to be done on flight training devices. Since the industry has very little experience in the use of flight simulation training devices in the earliest phases of airline pilot career training, specific guidance on how to transfer flight hours from the airplane to simulated flight (similar to the ETOPS approach) is provided in Appendix 3 of Chapter 3 of the ICAO PANS-TRNG manual.

MPL training includes instruction in core flying skills, multi-crew operations, instrument flight, high-performance turbine aircraft operations, as well as Crew Resource Management (CRM) and Threat and Error Management (TEM) practices. A

potential strength of the MPL licensing process allows a candidate to receive structured multi-crew/multi-engine training tailored to commercial airline operations versus having to accumulate flight hours that are often flown unsupervised in a single-engine/single pilot airplane.

ALPA recognizes that carefully chosen MPL candidates could complete a focused training program incorporating many of the significant training advances developed during the past several decades. It may be possible to use these concepts and employ other innovative technologies to efficiently train competent flight crewmembers in commercial air operations through a focused and expedited training program.

However, ALPA believes that the MPL standard contained in ICAO Annex I may be subject to varying interpretation by individual countries wishing to incorporate MPL into their licensing structure. Some MPL training programs may have already compromised safety by ignoring the guidance in Appendix 3 of Chapter 3 of the ICAO PANS-Training manual and have opted to maximize the use of flight simulation training devices, while minimizing training in actual aircraft in order to save costs without conducting any scientific study. It is imperative that countries incorporating the MPL use a collaborative approach by engaging all stakeholders in the MPL development process. This collaborative process should include the country's regulator, flight training organizations (FTO), airlines, pilot labor groups, safety organizations, and training experts.

In addition, ALPA believes that a data-driven approach is necessary to ensure that MPL candidates will meet or exceed the standards currently required in traditional training methodologies. This data-driven approach has been successfully applied to other certification endeavors such as extended twin-engine operations (ETOPS). It is necessary that the MPL concept be demonstrated and proven using quantifiable metrics before a candidate in this program is permitted to perform flight deck duties in commercial air transport operations.

AB INITIO TRAINING

The MPL training concept is a new form of *ab initio* training. The concept of training pilots a*b initio* is not new, and*, in the airline context allows a candidate with no previous aviation experience to be evaluated by an airline and if selected, begin a stringent training program for the purpose of qualifying as a crewmember in that airline's cockpits. It separates the casual pilot applicants (weekend flights with the wife and kids) from those wanting the most direct route to a professional airline pilot career.

Airlines in the 1960's, particularly United Airlines, experimented in *ab initio* training by taking selected candidates with little or no experience and moving them through an optimized training program that would have them obtain the necessary FAA certificates in minimal time and enter the company seniority list as flight engineers. That program was short-lived, as the up and down economic cycles in aviation soon allowed United to hire enough qualified, already experienced pilots for their cockpits.

However, in Europe, where general aviation is much less prevalent than in the United States and Canada, *ab initio* training programs are the norm, with airlines such as Lufthansa having successfully used them for decades to supply the qualified pilots they need to fly their airplanes. These programs permit the airline to oversee the pilot's progress through both their primary and advanced training and to evaluate their potential to be a competent flight crewmember throughout the entire program.

Today, flight training schools in the United States, such as the Delta Connection Academy, provide airline oriented training to individuals intent on earning primary and advanced FAA pilot certificates. Students who successfully complete the training program and are hired back as instructors are promised job interviews with regional airlines such as SkyWest, Comair, and American Eagle when they have met their experience requirements.

In addition to the *ab initio* flight training programs sponsored by a particular airline or group of airlines, a number of universities throughout the United States, such as Embry Riddle and the University of North Dakota, as well as several universities in Canada, offer training programs focused on producing professional airline pilots. Although the relationship is not as formal as the programs sponsored by the airlines, the airlines nevertheless find candidates graduating from these university programs appealing, as they receive academic training in subjects such as Crew-Resource-Management (CRM) and advanced aviation technologies taught in conjunction with a focused flight training program.

Generally, airlines in North America have not needed to train pilots through *ab initio* programs. Until recently, there existed a relatively robust general aviation environment with experienced pilots. With hundreds of previously qualified airline pilots also furloughed from major carriers, there was no apparent shortage of experienced pilots waiting to be hired by the airlines. However, current aviation forecasts predict a shortage of airline pilots worldwide by the year 2015.

With the mandatory retirement age for airline pilots extended to 65, it is not clear how this will affect pilot hiring and progression. However, several aviation forecasts predict over 100,000 new pilots may be needed in the United States alone by 2017. The need for pilots has been created ironically by the past aviation economic downturn which decimated the working conditions and financial security of many airline pilot groups. Many lost their company defined benefit retirement plans while accepting lower wages and flying more days per month. An increasing number of pilots are also leaving North America and accepting employment overseas for higher wages or simply leaving the piloting profession entirely for other higher paying jobs.

Additionally, pilot candidates who might once have been leaning towards airline careers are now becoming discouraged by the high costs of training (due to fuel), low initial pay scales, coupled with the prospect of an uncertain and insecure career with any of the major airlines. The shrinking pool of experienced pilots in North America might drive some airlines to consider starting *ab initio* training, including MPL programs.

HISTORY OF ADVANCED SIMULATION IN FLIGHT TRAINING

In the late 60's and early 70's motion simulators began to be incorporated into airline pilot training. These simulators held the promise of better training. Better technology allowed a more realistic training environment. The high price of fuel meant conducting training in the simulator, as opposed to an airplane, was much less expensive and so allowed for additional training experiences. Such training provided safety benefits by allowing the practice of simulated failures that would accurately represent important control concepts and procedures necessary to handle the aircraft in an actual emergency.

Initially, simulation was used solely as an adjunct to training in the actual aircraft. However, in 1980, the FAA issued Appendix H to FAR 121 permitting 100% of the required new hire initial pilot training to be conducted in an advanced simulator if the airline chose to specially qualify instructors to accomplish this new type of training and to formalize simulator maintenance programs. This represented a huge leap of faith in airline pilot training since the airlines would no longer have to pull an actual aircraft out of the hanger for pilot training. However, Appendix H simulator training was only given to pilots who had already gained valuable flying skills by flying hundreds, sometimes thousands, of hours in airplanes and who had already demonstrated their aviation acumen by having earned their private, instrument and commercial licenses prior to being hired by the airlines.

As many simulator instructors and check airman have heard from pilots, "the simulator just doesn't fly like the airplane." The most important element to remember about advanced simulation is that simulators were originally designed to enhance the EXISTING skills that the pilot already possessed from experience in an actual aircraft, not to teach initial primary flying skills.

Some useful by-products came out of advanced simulation such as Line Oriented Flight Training (LOFT) where technical piloting skills could be evaluated and integrated with Crew Resource Management (CRM) skills. These concepts would be cornerstones in the 1990's to develop the Advanced Qualification Program (AQP).

Until the late 1980's, FAA and Transport Canada required airlines to train pilots in ground and flight programs that contained a minimum number of training hour requirements, much like the experience requirement for pilot certificates and ratings. These programs stipulated that the airline's pilots completed a set number of hour requirements in ground school subjects and received a minimum number of flight training hours in the simulator and/or aircraft. In many instances, the FAA would allow airlines to reduce the standard number of FAA required training hours if the airline training department developed a means to improve the delivery of training such as by incorporating advanced audio and visual training media into their programs.

In 1996 the FAA created FAR 142 which allowed approved training centers a greater use of simulators and training devices to meet the certification requirements of FAR 61

in lieu of actual aircraft training hours. ALPA made the following comments to the FAA in response to the creation of FAR 142:

"While it is true that advanced simulation reached unparalleled levels of realism, and we strongly support increased use of advanced simulation, there are other factors which are important, especially for low-time pilots. One factor is familiarity with the air traffic control (ATC). Unless every simulator flight is conducted as line oriented flight training (LOFT), a great deal of required ATC interaction is missed. It is the operation and decision-making experience which one receives in an aircraft and in an ATC environment, including interaction with other aircraft, which makes them a safer pilot."

It is appropriate to keep these comments in mind as ALPA considers the use of MPL as a licensing standard for *ab initio* training.

MPL IN AN ENVIRONMENT OF SAFETY

ALPA may accept the MPL concept of training and licensing provided that an equivalent or enhanced environment of safety occurs as compared to traditional licensing. This environment of safety can occur when the Flight Training Organization (FTO) providing the training is directly linked to the airline that will employ the successful MPL pilot candidate. Supervision, control, and feedback on the training program cannot be assured if such a linkage between the airline and the FTO is not maintained. This is expected in a Safety Management System (SMS) environment under the concept of an Accountable Executive.

Quantifiable data must demonstrate that such pilots are capable of competently functioning as required flight deck crewmembers in today's civil air transportation environment. As airplanes become more automated, coupled with an increasingly complex and saturated National Airspace System that increasingly requires the use of flight path management systems (i.e., RNAV/RNP approaches), the required pilot skills and experience of today's ab initio pilot needs to be greater than in the past. Effective data collection on the performance of all MPL-trained pilots during their first few years as First Officers will help identify any training deficiencies in pilot skills or experience.

Because the MPL concept is new and unproven, airlines employing MPL certificated pilots must provide additional oversight, including 6-month simulator evaluations, and mentoring of those pilots for a period of twenty four (24) consecutive months after they have completed the carrier's approved flight training program (IOE) and been assigned as an active flight crew member. The de-identified feedback generated from this oversight, along with de-identified copies of all training program/line evaluations must be provided to the FTO and national MPL Advisory Board (discussed below). The FTO, using a continuous improvement methodology, must consider this feedback. Clearly common threads of deficient or weak areas must be incorporated into their MPL training curriculum and the program modified as appropriate. The MPL Advisory Board will serve to ensure the quality of the continuous improvement process.

TENETS OF AN MPL TRAINING PROGRAM

The MPL training program must incorporate and continuously improve on these four (4) elements:

1. Utilization of certificated instructors and evaluators who regularly participate in an approved instructor training and evaluation program. Such a program must include regular observation of line operations from the flight deck and quality assurance for their on-going suitability in training MPL candidates. ALPA recognizes the different requirements for instructors at the various stages of MPL training. For example, instructors teaching in the final type rating phase of the course need a different skill set and knowledge base compared to instructors teaching in the core flying skill phase. However, due to the focus on multi-crew competencies throughout the MPL, all instructors need to have experience in 121 multi-crew operations or at least have undergone training in this area before conducting MPL training.

2.   Initial implementation includes a minimum of 140 hours of actual aircraft experience until quantifiable data, collected over an acceptable period of time, demonstrates that MPL can achieve established proficiency standards with less actual aircraft experience while maintaining or exceeding the current level of safety associated with the training of pilots.

3. Flight simulation training devices appropriate to obtaining the required proficiency in aeronautical tasks and cognitive skill sets. This includes all skill sets expected of any airman in actual line operations.

4. Full-motion flight simulation representative of the aircraft the candidate will fly at the completion of training throughout the basic, intermediate, and advanced phases of flight training to ensure that a solid foundation of aeronautical abilities as well as skills specific to that aircraft are acquired.

NEED FOR AN MPL ADVISORY BOARD

A national MPL Advisory Board is empowered as a means to define proper standards and to monitor the implementation process of MPL and provide oversight and quality assurance of MPL training programs. An Advisory Board(s) for North America should include members from the Regulator(s), ALPA, and airline training and operations representatives. Additional members should include knowledgeable representatives from flight training, aviation safety, and expert training and education organizations.

The MPL Advisory Board should provide expertise, assessments, and valuable advice on proposed new MPL programs prior to their approval by Transport Canada Civil Aviation (TCCA) or the Federal Aviation Administration (FAA). This Board should assist the regulatory authorities in ensuring that the proposed MPL program produces at least an equivalent level of safety and professionalism as the current training and certification programs, and facilitate harmonized implementation of the MPL with other Training Organizations and countries.

In addition to involvement in the implementation phase the Advisory Board must continue to monitor the quality assurance and oversight of all MPL programs within the country, as well as the maturation of MPL pilots as their careers progress. The Advisory Board should remain active until such time that sufficient data and experience exists which accurately demonstrates that MPL programs can produce pilots at a level of safety and professionalism equivalent to the traditional ATPL. At a minimum, the national MPL Advisory Board should remain until ICAO completes its MPL review in the FCLTP and any recommended changes are implemented and validated.

SAFETY AND BACKGROUND CHECKS OF MPL CANDIDATES

MPL candidates must successfully complete appropriate security and criminal background checks prior to being accepted into the training program to ensure they don't pose an aviation security risk, regardless of their progress in the program. They must successfully demonstrate the ability to speak, read, and write in the English language to the existing State standard, but not less than the ICAO Level 4 proficiency. This must be completed prior to commencing the MPL course; not achieved concurrently or as part of it.

CONCLUSION

ALPA acknowledges that MPL training may offer the promise of potential benefits if developed and implemented in a manner that incorporates the proven flight training concepts developed under traditional training methodologies during the past 30 years, coupled with carefully chosen MPL candidates who possess the acumen to complete the MPL program. The new Multi-Crew Pilot License (MPL), if applied correctly and subjected to careful monitoring of the competency of the newly trained pilots, could produce a highly qualified new hire first officer for the airlines. However, if applied incorrectly in response to cost or time pressures designed to simply address the current pilot shortage, it could have a detrimental impact on flight safety. Improper application may also erode current, time-proven training standards

As the MPL training concept is, as yet, an untried and unproven flight training program, close regulatory oversight will be critical in ascertaining whether those graduating from the programs leave with the knowledge and skills necessary to serve as a safe and competent member of an airline flight deck crew.

The MPL should not be considered as simply a new licensing standard, but rather as a totally new training process and methodology. To have a chance at being successful, this training process must be constructed with input from all stakeholders, including training device manufacturers, training providers, regulators, ALPA and other labor groups, and most importantly, the airlines that may hire the future MPL pilots. Only a well-devised MPL process will help overcome the challenges posed by a flight training program that purports to utilize minimal actual aircraft training.

General Information regarding the Safety Committee of ALPA, Int'l

Safety Committee Mission Statement:

The mission of the Air Line Pilots Association, International Air Safety Committee is to apply our professional experience and expertise to manage risks in the air transportation industry. Those risks include both historical and newly identified risks that derive from an evolving aviation system. This mission ensures our members' ability to safely and reliably operate in the world's dynamic aviation environment which benefits all crewmembers and the traveling public.

ALPA ardently pursues advancing the art and science of aviation safety through a myriad of activities with fellow stakeholders in the complex aviation industry. ALPA always supports the pursuit of ideas that advance the level of performance of those who work in it. ALPA supports ideas that increase the margin of safety from current practice. However, ALPA cannot support those ideas which do not maintain an equivalent or better level of safety. When ALPA does not agree on a safety issue, the explanation of that point of view will not be vague. It will often be based on data, but when it is not, it will be based on the collective experience of our over 60,000 members accumulated over a period of 77 years.

In order to understand the subtle differences when we refer to our "policy" or our "position," this written policy definition is provided. It is extracted from:

ALPA Administrative Manual
Section 80 – Engineering and Air Safety
PART 1 – Organization and Administration

E. AIR SAFETY DEFINITIONS
SOURCE - Executive Board May 1978; AMENDED - Executive Board November 1999

1. ALPA POLICY - Any Action which provides a position on an issue, a procedure to be followed or general guidance for pilot representatives, officers and staff. Policy shall remain in effect until amended or rescinded.

2. ALPA DIRECTIVE - A statement approved by the Board of Directors or Executive Board which specifies action to be taken on a specific issue by ALPA officers, designated pilot representatives or staff.

3. GROUP POSITION - A statement approved by a Group, but which has not been considered by the Board of Directors or Executive Board for approval as a statement of ALPA Policy or Directive. A Group statement of position represents group opinion based on current knowledge and applied expertise on a particular issue.

Our White Paper series will mention policy, and where necessary will provide an extract for reference. By its nature, a white paper is a medium for conveying a particular position, and its content should be thought of in that light.