

SUBJECT: OEM MULTICREW BASIC SKILLS

DATE: SEPT 24

RECOMMENDATION:

MULTICREW SKILLS AS PRE-REQUISITE FOR COMMENCEMENT OF A TYPE RATING ON MULTI-PILOT CS25 TRANSPORT CATEGORY AEROPLANE

CONTEXT

Present recommendations do not clearly specify specific training or previous experience for multi-pilot operations before the issue of a Type Rating on a Multi-pilot CS25 transport category airplane. Consequently, the applicant may only hold a CPL as single pilot before undergoing a Type Rating course on CS25 aircraft.

PROBLEM STATEMENT

Lack of exposure to Multi-Crew training & experience could lead to an impact to safe flight operations and the following consequences:

⇒ Consequences: lack of basic knowledge on Multi-Crew, Human factors, workload management, communication...

OBJECTIVES (VISION & OBJECTIVES)

Implement Multi-Crew training & competencies as mandatory prerequisites prior to commercial aircraft Type Rating training, develop & train commercial airline pilots according to the following skills (as recommended by ICAO):

- Communicate through appropriate means in the operational environment, in both normal and abnormal operations **(COM)**
- Perceives, comprehends and manages information and anticipate its effect on the operation **(SAW)**
- Enhance the implementation of sound judgement and airmanship in commercial operations **(PSD)**
- Maintains available workload capacity by prioritising and distributing tasks using appropriate resources **(WLM)**
- Influence others to contribute to a shared purpose. Collaborates to accomplish the goal of the team **(LTW)**
- Identifies and applies appropriate procedures in accordance with published operating instructions and applicable regulations **(PRO)**

COMPETENCIES* TARGETED (*ICAO ref 9868)

- WLM; PSD; KNO; PRO; SAW; COM; LTW

*ICAO competencies: WLM: work load management- PSD: Problem solving Decision making - KNO: Application of knowledge - PRO: Application of procedures and compliances with regulations- COM: communication - LTW: Leadership and teamwork

AIRCRAFT MANUFACTURERS RECOMMENDATIONS

Recommendation for Aircraft Manufacturer on Minimum Prerequisites for Type Rating

To uphold the high standards of safety and efficiency in multi-pilot operations of CS25 transport category aeroplanes, it is crucial to establish foundational competencies among candidates before they engage in Type Rating training. Therefore, we propose

AMFTA Recommendation reference 200409.01

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the following structured approach to guarantee that all candidates possess the necessary multicrew skills for effective training delivery:

1 Acquisition of Multicrew Skills:

- **Before Type Rating Training:** Candidates must demonstrate specific multicrew operational skills as a prerequisite to beginning their Type Rating course. This ensures that trainees possess essential teamwork and communication skills required for a multi-pilot environment.
- **Methods for Demonstrating Compliance:** Candidates can fulfill this prerequisite through one of the following avenues, which are acknowledged by aircraft manufacturers as meeting or exceeding required competency levels:
 - Completion of Multi-Crew Cooperation (MCC) training.
 - Completion of Airline Pilot Standards Multi-Crew Cooperation (APS MCC) training.
 - Previous Type Rating training and operational experience in a multicrew aircraft.

2 Advocacy at Regulatory Levels:

- **ICAO Level:** AMFTA advocates for ICAO to endorse the prerequisite of acquiring multicrew skills before initiating the Type Rating course for pilots of multi-pilot CS25 transport category aeroplanes.
- **National Authority Level:** AMFTA strongly recommends national aviation authorities to mandate that applicants demonstrate these multicrew skills as a condition for enrolment in Type Rating courses.

This framework not only aligns with EASA standards (APS or MCC) but also promotes a globally consistent level of pilot training quality, significantly enhancing the safety and operational readiness of airline operations.

AIRCRAFT MANUFACTURERS TRANSITION PHASE

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AIRCRAFT MANUFACTURERS IMPLEMENTATION

Implementation of the recommendation as a pre-requisite for advanced training by Aircraft Manufacturers Flight Training Association members - implementation of a specific module based on EASA MCC for each student pilot that does not meet this pre requisite.

The additional training module should cover at least the following areas:

The Multi-Crew Training course for airplanes, (in reference with EASA regulation and as detailed in AMC1 FCL.735.A), is designed to endow pilot trainees with a broad spectrum of competencies necessary for efficient and effective operation within a multi-crew environment. This training is pivotal in preparing pilots for the complexities of modern aviation, focusing on enhancing both technical skills and the critical interpersonal dynamics required for successful team collaboration in the cockpit. Here's an overview emphasizing the competency objectives of the course:

TRAINING OBJECTIVES:

Effective Communication: Ensuring trainees can exchange information succinctly and accurately with other crew members and air traffic control to maintain operational safety and efficiency. Mastery of both verbal and non-verbal communication techniques is emphasized.

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Situational Awareness: Developing the ability to continuously monitor and comprehend the aircraft's environment and operational status, enabling pilots to foresee and adeptly manage potential flight safety challenges.

Decision Making and Problem Solving: The course prioritizes critical thinking and decision-making skills, empowering pilots to evaluate situations swiftly and make informed decisions, particularly in unexpected or emergency circumstances.

Teamwork and Leadership: Focusing on cultivating robust teamwork and leadership capabilities, the training ensures pilots can effectively collaborate, delegate responsibilities, and support one another to enhance flight safety and operational efficiency.

Management of Aircraft Systems and Procedures: Achieving a high proficiency in managing the aircraft's systems and adhering to standard operating procedures (SOPs), including the management of abnormal and emergency scenarios.

Adaptability and Flexibility: Preparing pilots to be adaptable and flexible, capable of responding to changing situations and effectively managing the dynamics within a multi-crew cockpit.

Professionalism and Work Ethic: Encouraging trainees to maintain the highest standards of professionalism and work ethic, characterized by responsibility, integrity, and a commitment to ongoing learning and improvement.

Crew Resource Management (CRM): Mastering CRM principles to effectively utilize all available resources (human, hardware, information) for safe and efficient flight operations is a key objective.

Operational Procedures Compliance: Demonstrating the ability to adhere to legal, operational, and procedural requirements, ensuring safe and efficient flight operations in line with regulatory standards.

Risk Management and Safety Awareness: Enhancing pilots' skills in identifying, assessing, and mitigating risks, promoting a culture of safety awareness and precaution in flight operations.

By focusing on these competency objectives, the Multi-Crew Training course ensures that pilot trainees are not just technically adept but also possess the vital soft skills required for effective teamwork and cooperation in the multi-crew cockpit environment. The overarching aim is to ready pilots for the demands of contemporary commercial aviation, with a strong emphasis on safety, efficiency, and collaborative teamwork.

ROADMAP

All Aircraft Manufacturers will have implemented this recommendation by end 2024.

AMFTA MEMBERS SUPPORT RECOMMENDATION

- Implementation of upgrade modules for candidates who do not meet the requisites
- Implementation letter to authorities and ICAO to advocate the necessity of such measures

All AMFTA members have decided to implement this pre-requisite as mandatory in the Manufacturer training pre-requisites. For trainees who do not have MCC competency, a Multi-Crew training module will be incorporated at the beginning of the Type Rating.

Irrespective of the AMFTA Members decision, AMFTA recommend that this pre-requisite becomes a mandatory and integral part of the National regulations for all FTO and ATOs within your jurisdiction.

See next pages for example.

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Please find below an extract of the EASA MCC regulation, for reference purposes only.



*Easy Access Rules for Aircrew
(Regulation (EU) No 1178/2011)*

*ANNEX I (Part-FCL)
SUBPART H – CLASS AND TYPE RATINGS*

- (b) When a pilot is changing from a turbo-prop to a turbo-jet aeroplane or from a turbo-jet to a turbo-prop aeroplane, additional simulator training shall be required.

FCL.735.A Multi-crew cooperation training course – aeroplanes

Regulation (EU) No 1178/2011

- (a) The MCC training course shall comprise at least:
- (1) 25 hours of theoretical knowledge instruction and exercises; and
 - (2) 20 hours of practical MCC training, or 15 hours in the case of student pilots attending an ATP integrated course.
- An FNPT II MCC or an FFS shall be used. When the MCC training is combined with initial type rating training, the practical MCC training may be reduced to no less than 10 hours if the same FFS is used for both the MCC and type rating training.
- (b) The MCC training course shall be completed within 6 months at an ATO.
- (c) Unless the MCC course has been combined with a type rating course, on completion of the MCC training course the applicant shall be given a certificate of completion.
- (d) An applicant having completed MCC training for any other category of aircraft shall be exempted from the requirement in (a)(1).

AMC1 FCL.735.A; FCL.735.H; FCL.735.As Multi-crew cooperation (MCC) training course

ED Decision 2020/005/R

- (a) Competency is a combination of knowledge, skills and attitudes required to perform a task to the prescribed standard.
- (b) The objectives of MCC training are to develop the technical and non-technical components of the knowledge, skills and attitudes required to operate a multi-crew aircraft.
- (c) Training should comprise both theoretical and practical elements and be designed to achieve the competencies/training objectives (see Table 1 below).

Table 1 — Competencies/training objectives			
Competency/objective	Performance indicators	Knowledge	Practical exercises
Communication	(a) Know what, how much and who to communicate to; (b) Ensure the recipient is ready and able to receive the information; (c) Pass messages and information clearly, accurately, timely and adequately; (d) Check if the other person has the correct understanding when passing important information; (e) Listen actively, patiently and demonstrate	(a) Human Factors, TEM and CRM; (b) Application of TEM and CRM principles to training.	In a commercial air transport environment, apply multi-crew procedures, including principles of TEM and CRM to the following: (a) Pre-flight preparation: (1) FMS initialisation; (2) radio and navigation equipment preparation; (3) flight documentation; (4) computation of take-off performance data. (b) Take-off and climb:

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Table 1 — Competencies/training objectives

Competency/ objective	Performance Indicators	Knowledge	Practical exercises
	understanding when receiving information; (f) Ask relevant and effective questions, and offer suggestions; (g) Use appropriate body language, eye contact and tone; (h) Open and receptive to other people's view.		(1) before take-off checks; (2) normal take-offs; (3) rejected take-offs; (4) take-offs with abnormal and emergency situations included. (c) Cruise: emergency descent. (d) Descent and approach:
Leadership and team working	(a) Friendly, enthusiastic, motivating and considerate of others; (b) Use initiative, give direction and take responsibility when required; (c) Open and honest about thoughts, concerns and intentions; (d) Give and receive criticism and praise well, and admit mistakes; (e) Confidently do and say what is important to him or her; (f) Demonstrate respect and tolerance towards other people; (g) Involve others in planning and share activities fairly.		(1) instrument flight procedures; (2) holding; (3) 3D Operations using raw data; (4) 3D Operations using flight director; (5) 3D Operations using autopilot; (6) one-engine-inoperative approach; (7) 2D Operations and circling; (8) computation of approach and landing data; (9) all engines go-around; (10) go-around with one engine inoperative; (11) wind shear during approach.
Situational awareness	(a) Be aware of what the aircraft and its systems are doing; (b) Be aware of where the aircraft is and its environment; (c) Keep track of time and fuel; (d) Be aware of the condition of people involved in the operation including passengers; (e) Recognise what is likely to happen, plan and stay ahead of the game; (f) Develop what-if scenarios and make pre-decisions; (g) Identify threats to the safety of the aircraft and of the people.		(e) landing: transition from instrument to visual flight on reaching decision altitude or height or minimum descent altitude or height; (f) after landing and post flight procedures; (g) selected emergency and abnormal procedures.
Workload management	(a) Be calm, relaxed, careful and not impulsive;		

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Competency/ objective	Performance Indicators	Knowledge	Practical exercises
	(b) Prepare, prioritise and schedule tasks effectively; (c) Use time efficiently when carrying out tasks; (d) Offer and accept assistance, delegate when necessary and ask for help early; (e) Review and monitor and cross-check actions conscientiously; (f) Follow procedures appropriately and consistently; (g) Concentrate on one thing at a time, ensure tasks are completed and does not become distracted; (h) Carry out instructions as directed.		
Problem-solving and decision-making	(a) Identify and verify why things have gone wrong and do not jump to conclusions or make assumptions; (b) Seek accurate and adequate information from appropriate resources; (c) Persevere in working through a problem; (d) Use and agree an appropriate decision making process; (e) Agree essential and desirable criteria and prioritises; (f) Consider as many options as practicable; (g) Make decisions when they need to, reviews and changes if required; (h) Consider risks but do not take unnecessary risks.		
Monitoring and cross-checking	(a) Monitor and cross-checks all actions; (b) Monitor aircraft trajectory in critical flight phases; (c) Take appropriate actions in response to deviations from the flight path.	(a) SOPs; (b) Aircraft systems; (c) Undesired aircraft states.	

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Competency/ objective	Performance indicators	Knowledge	Practical exercises
Task sharing	(a) Apply SOPs in both PF and pilot monitoring (PM) roles; (b) Makes and responds to standard call-outs.	(a) PF and PM roles; (b) SOPs.	
Use of checklists	Utilise checklists appropriately according to SOPs.	(a) SOPs; (b) Checklist philosophy.	
Briefings	Prepare and deliver appropriate briefings.	(a) SOPs; (b) Interpretation of FMS data and In-flight documentation.	
Flight management	(a) Maintain a constant awareness of the aircraft automation state; (b) Manage automation to achieve optimum trajectory and minimum workload; (c) Take effective recovery actions from automation anomalies; (d) Manage aircraft navigation, terrain clearance; (e) Manage aircraft fuel state and take appropriate actions.	(a) Understanding of aircraft performance and configuration; (b) Systems; (c) SOPs; (d) Interpretation of FMS data and In-flight documentation; (e) Minimum terrain clearance; (f) Fuel management IFR and VFR regulation.	
FMS use	Programme, manage and monitor FMS in accordance with SOPs.	(a) Systems (FMS); (b) SOPs; (c) Automation.	
Systems normal operations	Perform and monitor normal systems operation in accordance with SOPs.	(a) Systems; (b) SOPs.	
Systems abnormal and emergency operations	(a) Perform and monitor abnormal systems operation in accordance with SOPs; (b) Utilise electronic and paper abnormal checklists in accordance with SOPs.	(a) Systems; (b) SOPs; (c) Emergency and abnormal procedures and checklists; (d) Recall items.	
Environment, weather and ATC	(a) Communicate effectively with ATC; (b) Avoid misunderstandings by requesting clarification; (c) Adhere to ATC instructions;	(a) Systems; (b) SOPs; (c) ATC environment and phraseology; (d) Procedures for hazardous weather conditions.	

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Table 1 — Competencies/training objectives			
Competency/ objective	Performance indicators	Knowledge	Practical exercises
	(d) Construct a mental model of the local ATC and weather environment.		

CERTIFICATE OF COMPLETION FORM

CERTIFICATE OF COMPLETION OF MCC			
Applicant's last name(s):		First name(s):	
Type of licence:		Number:	State:
ME/IR training completed		OR	ME/IR validity date: ME/IR skill test date:
Issued on:		passed on:	
	Signature of applicant:		

The satisfactory completion of MCC-Training according to requirements is certified below:

TRAINING			
Multi-crew co-operation training received during period:			
from:		at:	
			ATO / operator*
Location and date:		Signature of head of ATO or authorised instructor*:	
Type and number of licence and state of issue:		Name(s) in capital letters of authorised instructor:	

** Delete as appropriate*

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