Aerospace Industry Reference Committee

The Australian Industry and Skills Committee (AISC) commissioned the **Future Skills and Training Resource** which summarises data on current and future Australian and international megatrends, to support Industry Reference Committees (IRCs) in developing their Industry Skills Forecasts and Proposed Schedules of Work.

Future Skills Workshop Outcomes

The following trends and considerations are based on Aerospace IRC discussions. This document presents the preliminary and developmental thinking of IRC members in order to stimulate broad discussion in industry.

The IRC welcome feedback in developing the Industry Skills Forecast.

Society and Culture

The key trends affecting the Aerospace Industry are:

Ageing Population: The industry's current workforce is ageing, and this has an urgent and critical impact on training investment as well as attracting new, younger entrants into the industry. Aspects of the industry's multigenerational workforce also pose challenges to ways of working, communication and learning within the industry.

Global Mobility: The industry operates within a global framework and standards which promote global mobility of the workforce. There is currently a discrepancy between Civil Aviation Safety Authority (CASA) (knowledge focus) and Australian vocational standards (practical focus). Australian expertise is highly sought after which results in experienced aircraft maintenance engineers leaving for lucrative overseas roles that offer higher remuneration and lifestyle benefits.

Changing Work and Career Values: New entrants to the industry have different career expectations with respect to long term tenure and no longer expect to see out their career with any one organisation. New entrants also bring a different range of practical knowledge with them as the definition of 'common sense' is changing.

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Political and Institutional

The key trend affecting the Aerospace Industry is:

Innovation Ahead of Regulation: CASA licensing requirements drive the skills needs and training for the industry. The Australian regulation and licensing requirements need to be harmonised to International Standards to enable the sector to capitalise on growth opportunities in South East Asia and to enhance mobility of the skilled workforce. There is also a discrepancy in relation to General Aviation requirements compared to other sectors which can hamper worker mobility in the industry.

Technology

The key trends affecting the Aerospace Industry are:

Digitisation: Artificial Intelligence and automation is impacting on the work of Aircraft Maintenance Engineers. There is also an increased use of tablets and devices to complete work such as scheduling, reporting, diagnosis and sign-off on maintenance.

Mobility and Connectivity: The industry is seeing an increased use of Unmanned Aerial Vehicles as well as integrated systems.

Augmented and Virtual Reality: The Defence sector has augmentation and virtual reality qualifications which are aligned to AQF4 level.

Cross-Disciplinary Science: An emerging cross disciplinary skill need in the industry is the requirement for workers to be able to work on both mechanical and avionic technologies.

Resources and Environment

The key trends affecting the Aerospace Industry are:

Financial Viability: Increased cost pressures have resulted in limited investment in new technologies by General Aviation. The General Aviation sector is particularly sensitive to rising operational costs.

In regard to training, funding only full qualifications is a barrier to industry as some workers may only require upskilling in key areas. Employers prefer just in time training so the cost can spread over a greater time period. The rising cost of delivery and thin markets has resulted in the increased opportunity to utilise simulation for training delivery, however this requires a costly initial investment. Assessment needs to be conducted in a 'real' workplace.

International Sustainability Action: Sustainability has a significant impact across the industry and operational environment. One industry consideration is the disposal of airline componentry, such as carbon fibre casings, which can have negative environmental impacts if not disposed of correctly.

Business and Economics

The key trends affecting the Aerospace Industry are:

Empowered Customers: Demand for lower airfares continues to put pressure on airlines operating in a highly competitive global market.

Emerging Markets: The forecasted growth of the aviation industry in South East Asia is expected to impact the Australian industry. Demand for skilled workers in the region is outstripping training capacity.

Changing Workplace Dynamics: Industry and employers are taking less responsibility in ensuring career pathways exist for industry entrants, with their focus being on the 'just-in-time' training of key skills that meet compliance requirements.

Skills Mismatch: This mismatch exists between expectations of new workforce entrants, the maintenance of ageing aircraft and the use of old tooling and traditional hand skills and work practices. The industry is grappling with skills to operate and maintain both ageing and emerging aircraft technologies.

Considerations for Training

Employers / Industry

In the past, regional and general aviation communities were the 'breeding ground' for the Aviation industry but these sectors are having difficulty in attracting people to work regionally and remotely and on ageing fleets.

Employers and industry need a fresh approach to attract new talent and retain experience in the industry. Training needs to be viewed as value creation and not simply an incurred expense.

With increased competition from emerging markets and an ageing workforce, the industry needs to consider how to attract new entrants to the industry. One solution is for larger airlines (Commercial Aviation) to investigate partnerships with the General Aviation sector to create career pathways for people. The industry has well defined career pathways for pilots but hasn't considered similar channels for aircraft maintenance engineers.

Learners / Workers

Access to quality training which leads to a licence outcome is important to learners and workers as licensing drives the ability to work in the industry.

Younger generations have a different, less structured, approach to work and the industry and training organisations need to be more versatile and flexible to meet these changing attitudes.

The lack of career pathways has seen experienced, trained people start their careers in Aviation and move to other industries. More recently, there has been a shift of people drawn to the industry as unlicensed Aircraft Maintenance Engineers later in their careers from other sectors, such as mining.

Government

Lack of harmonisation with International Aviation Safety Assessment (IASA) standards is costing the industry money.

As Aircraft Maintenance Engineers and other new entrants often come from a mechanical or technical background this situation poses funding implications that governments need to consider. Funding to upskill these new entrants is limited as they often already possess a trade level qualification.

Younger generations wanting to undertake micro skill sets to build up to a qualification or upskill also have similar funding implications.

Education and training

The biggest issue is the current rigidity of the Vocational Education and Training (VET) system to absorb the CASA/IASA regulations. The main difficulty is in trying to match the theoretical regulatory outcomes to a competency-based model. New approaches such as a 'best practice' skills framework need to be considered.

The specificity of the MEA Aeroskills Training Package, where learners need to demonstrate the use of specific tools in an aerospace environment, makes it difficult to encourage new entrants through Recognition of Prior Learning (RPL) of common skills. To assist transition to the industry, the training package needs to be reviewed to ensure there are cross-discipline linkages to other areas such as the use of standard tools in a maintenance environment.

The Training Package has attempted to shoehorn specific and general licences together, but this approach hasn't been successful. With general licences not being a regulatory requirement, consideration need to be given to the development of skill set or a general qualification to cover the functional role requirements in general aviation and provide entry and exit points that build skill level to a licensed occupation.

Currently, the VET system does not support ongoing professional development for post trade job roles in the Aerospace industry.

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