



Government Update for Business Aviation

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MOVING FORWARD – GLOBAL CHALLENGES

- Demographic and shortage of personnel in aviation
- Training challenges in dealing with a new generation of employees and a new generation of technological products
- More bilaterals so to be effective with a set level of funding
- Supply chain consolidation
- International business alliances between several certificate holders under different regulators.
- Certification of products with highly complex technology
- Cyber security



MOVING FORWARD - INITIATIVES

- Civil Aviation Service Integration Project
- Manual Review Project
- Minimum Equipment List (MEL) Approval Project
- Delegation of Professional Exams to Industry
- Approved Check Pilot Delegation
- Surveillance Program Evaluation and Update Project
- Strategic Planning and Resource Alignment Project
- SMS: Upcoming Policy Decision
- Completing TCCA Transformation Project
- Reinvestment



SAFETY MANAGEMENT SYSTEMS (SMS): AREAS OF IMPROVEMENT

- Based on our experience with SMS over the past 12 years, TCCA has identified the following areas of improvement:
 - Ensure links between regulations and practical applications are clear and concrete. A standard can be written to clearly explain the intent of the CARs for users
 - Development of formal training for managers regarding their role in the program
 - Report writing training to be developed for inspectors and team members
 - Ensure timely review of Canadian Aviation Regulations (CARs), especially for 107.02, 573.10 and 403.08
 - Ensure Inspectors have tools required to do their jobs properly. In particular, TC has identified that access to mobile internet is required for inspectors, perhaps via a tablet. This is imperative to increase time efficiency.
 - A cost/benefit analysis should be conducted to determine whether the current format of assessment for some activities can be adjusted to increase efficiency



SAFETY MANAGEMENT SYSTEMS (SMS): POLICY

- With the adoption and implementation of the International Civil Aviation Organization (ICAO) Annex 19 – Safety Management, a renewed interest has been sparked in assessing SMS for other sectors including, design and manufacturing.
- When TCCA first rolled out safety management systems we did so with a phased-in oversight program.
- This proved to be a useful on-the-job-training for our inspectors to learn more about SMS.
- However, this saw TCCA certifying every SMS component over 3 to 4 years, which may not provide TC resources to high risk areas.
- Transport Canada is reviewing how best to expand SMS to other sectors and expects to complete this work by March 31, 2018, at which time we will be able to discuss options more fully with industry.
- Other sectors include design and manufacturing organizations to ensure continued and seamless access to foreign markets for Canadian aerospace products.
- All of this would enable TCCA to reap the benefits of SMS while allowing a mix of oversight tools to verify compliance with the Canadian Aviation Regulations more efficiently and effectively.



SURVEILLANCE 2.0

- TCCA is updating its surveillance program by:
 - Using leaner more efficient tools to effectively determine compliance and risk;
 - Providing a balance between system and process level (e.g. ramp inspections) oversight;
 - Continuing the use system level surveillance (PVI's and Assessments) only when supported by enterprise risk and compliance data;
 - Making extensive use of data to determine surveillance intervals;
 - Providing TC with a proactive understanding of risk areas through targeted inspections.



REGULATORY PROGRAM PRIORITIZATION

- Focus on mitigating system-level safety risks through regulatory and non-regulatory action:
 1. **Approach and Landing:** assessing potential regulatory changes, including approach ban requirements, enhancements to runway end safety areas, and increase education and awareness
 2. **Unmanned Aircraft Systems:** implementing a more rigorous regulatory framework to strengthen safety, while providing the regulatory conditions to support economic growth in the sector
 3. **Loss of Control In-Flight:** supporting international efforts to reduce accidents by focusing primarily on enhancing pilot training
 4. **Human Performance Factors:** addressing risks that can affect an individual's performance through regulatory initiatives, including "Flight Crew Fatigue Management" and "Crew Resource Management"



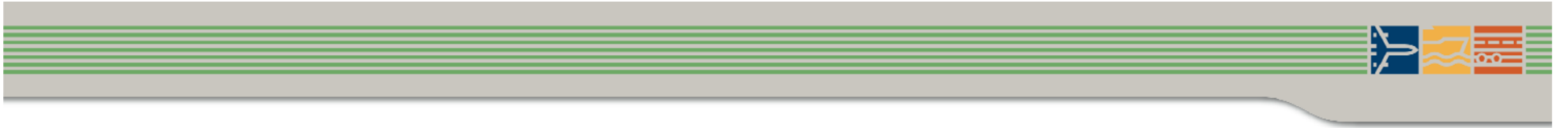
RECENT ACCOMPLISHMENTS

- Signed a Bilateral Technical Arrangement (BATA) with China
- Progress on bilateral technical agreement with Japan
- Re-strengthening international engagement with other authorities in Asia, Europe, North America, and the Caribbean
- Progress in adopting into the Canadian Aviation Regulations the new international standards on carbon dioxide for airplanes and particulate matter for aircraft engines
- Creation of Unmanned Aircraft Systems (UAS) Task Force
- Online payments now available through TC's Online Payment System
- Revitalisation of safety promotion and education activities:
 - UAS Education and Awareness campaigns
 - Laser Strike Safety Awareness Campaign
 - General Aviation Safety campaign
 - Fit to Fly Workshop

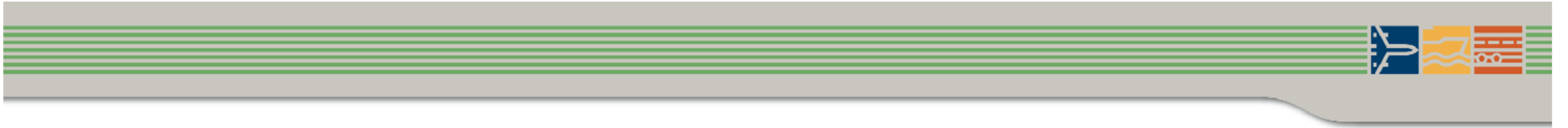


TOPICS RAISED BY CBAA

- Flight and Duty Times (*Flight Crew Member Hours of Work and Rest Periods*)
- Canadian Business Aviation Association White Papers
- Canadian version of the FAA's Aviation Safety Information Analysis and Sharing (ASIAS)
- TC surveillance plan respecting CAR 704 on demand charter and private operators
- Service delivery and level improvements
- Delegation to industry opportunities for CAR 704 on demand charter and private operators operations



QUESTIONS?



ANNEXES



AIR SECTOR BY THE NUMBERS

- Industry size and diversity is reflected in the numbers:
 - 36,450 Canadian registered aircraft
 - 68,546 licensed pilots
 - 2,324 air carriers (59.5% Canadian; 40.5% Foreign)
 - 15,839 aircraft maintenance engineers and 1,001 approved maintenance organizations
 - 1,213 Approved Check Pilots
 - 155 Advanced Qualification Program Evaluators
 - 76 Design Approval Representatives
- 567 certified aerodromes (306 airports, 261 heliports) and 1,820 non-certified aerodromes
- 15,000,000 km² of airspace managed by the largest single Air Navigation Service provider in the world (NAV CANADA)



AIR SECTOR IMPACT ON CANADA AND CANADIANS

- Airlines, airports and related services employ 140,000 Canadians
- Air transport jobs represent 5% of employment in the North
- \$29.8B in annual revenues generated by the third largest aerospace sector in the world, which:
 - Exports 80% of its output
 - 211,000 direct and indirect jobs created in Canada (2015)
 - Number one in R&D investment across manufacturing industries
 - Makes up only 5% of Canada's overall manufacturing activity, aerospace accounts for nearly 30% of all R&D investments across the manufacturing sector
 - Aerospace R&D intensity and productivity growth are 5 times and 2.5 times higher than the Canadian manufacturing average, respectively
- 1st in the world in flight simulators and pilot training
- 2nd in small engine (helicopter and turboprop), business aircraft and regional aircraft production
- 3rd in overall civil aircraft and engine production



TRANSPORT CANADA CIVIL AVIATION BY THE NUMBERS

- 1,261* employees
- 1,078* employees responsible for oversight
- Approximately \$116.4M budget
- Average Inspector age is above 50 years old
- Attrition-recruitment rate over 25% for the last 3 years
 - Same rate expected to follow for several more years
- Comprehensive Review completed
- Reinvestment Plan underway

* As of July 31, 2017



TRANSFORMATION

- Transport Canada Civil Aviation Transformation Project launched in April 2015
- Issues/challenges were identified, including:
 - Limited leadership/management capacity
 - Gaps in governance
 - Oversight challenges
 - Lengthy and inefficient regulatory program
- **38** projects in total, including budgetary adjustments and initiatives from the Comprehensive Review projects
- **9** projects have been closed
- Upcoming big projects include:
 - Surveillance Planning Evaluation and Update (SPEU) Project
 - Strategic Planning and Resource Alignment (SPARA) Phase 2
 - Manual and Minimum Equipment Approval
 - NASIMS Risk Indicator Review
 - Oversight Planning Process Review
 - Regulatory Framework Program Modernization



OVERSIGHT PROGRAM IMPROVEMENTS

- Transport Canada has taken steps to modernize and update the civil aviation oversight system in an effort to continuously improve services provided to the aviation industry, surveillance of the aviation system and the overall safety of the air sector for the travelling public.
- The creation of an Oversight Advisory Board (OAB) allows for more interaction between front line inspectors and senior management. This helps to support rapid decision making required to address complex certificate actions and to ensure timely action is taken against certificate holders that are not operating within regulatory requirements
- The National Oversight Office (NOO) has created a standardized costing methodology for Operational Branches to utilize for oversight reporting. Consistent reporting parameters were also created to support effective and efficient delivery of the oversight program.
- The Surveillance and Program Evaluation Update (SPEU) Project will assist in updating the surveillance program by analysing opportunities for improvement identified via inspector feedback, analysing lessons- learned, and leveraging business intelligence.
- Civil Aviation implemented a formalized process to track and report on its entire oversight regime. This formalized process also serves to better link safety data, identify area where risk intelligence data is gathers, and helps to allocate resources where they have maximum impact.



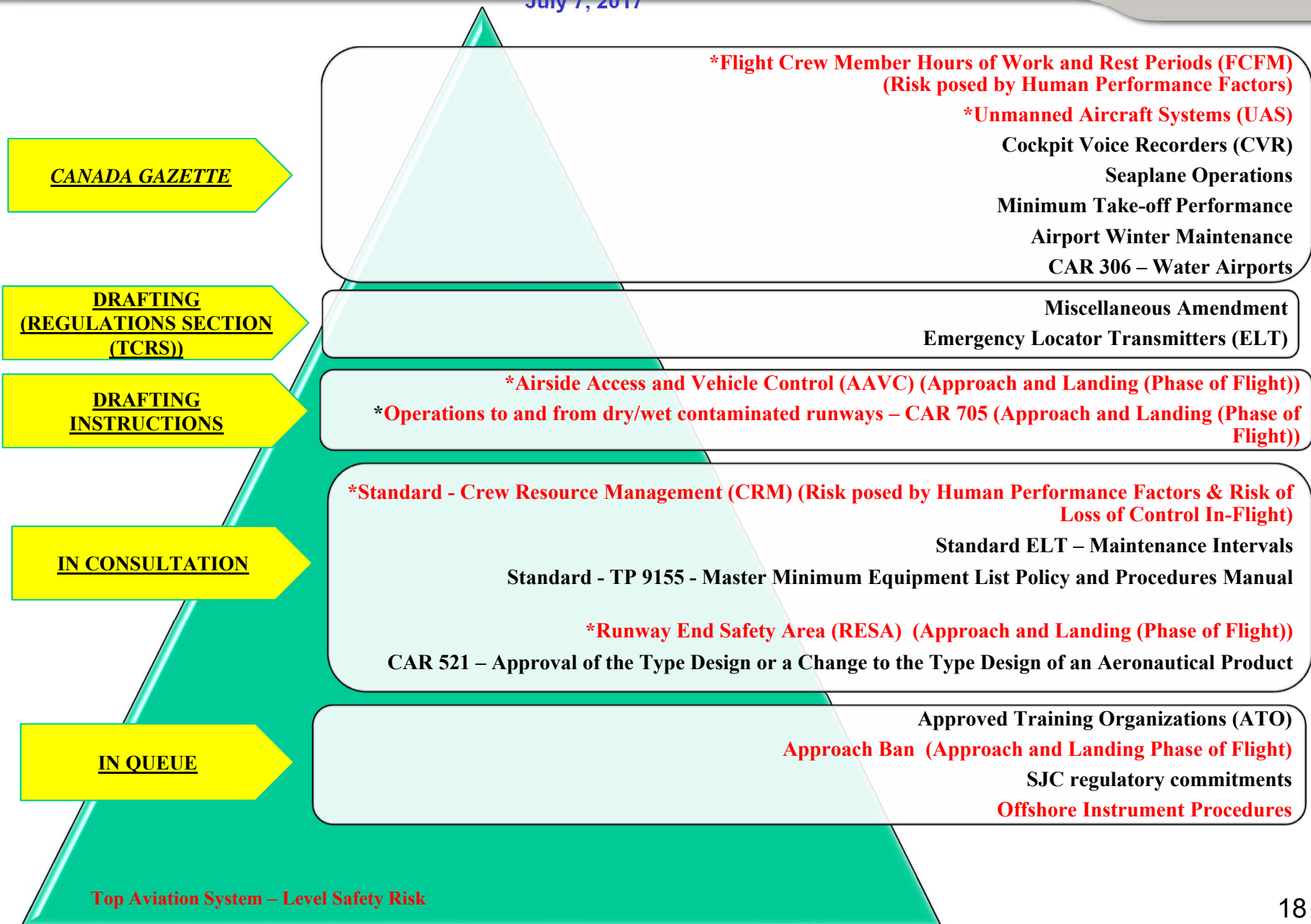
REGULATORY FRAMEWORK PROGRAM MODERNIZATION

- As part of the Transport Canada Civil Aviation (TCCA) Transformation project, steps have been taken to modernize the civil aviation regulatory framework
- The TCCA regulatory development has evolved; by integrating governance, risk management and TC policy objectives, TC will be able to:
 - Provide a holistic approach to regulatory development that is both flexible and nimble
 - Move from a reactive towards an increasingly predictive approach
 - Align with the life-cycle approach guidelines as per the Cabinet Directive on Regulatory Management (CDRM), and ICAO Annex 19 – Safety Management requirements
 - Promote an open and accountable government through early consultations with all relevant stakeholders and continual safety communications

CIVIL AVIATION REGULATORY PRIORITIES



July 7, 2017





REGULATORY FRAMEWORK – UPDATES

- 2016-2017 Accomplishments:
 - Minimum Equipment List – Notice of Proposed Amendment consulted – February 2016
 - Crew Resource Management (CRM) – Notice of Proposed Amendment consulted – February 2016
 - Runway End Safety Area (RESA) – Notice of Proposed Amendment consulted – May 2016
 - Seaplane Operations – *Canada Gazette*, Part I, May 2016
 - Winter Maintenance – *Canada Gazette*, Part I, May 2016
 - Minimum Take-Off Performance - *Canada Gazette*, Part I, May 2016
 - Aerodrome Work Consultations – *Canada Gazette*, Part II, October 2016
 - Notice of Intent – Flight Crew Fatigue Management – *Canada Gazette*, Part I, March 2017
 - Interim Orders Respecting the Use of Model Aircraft – *Canada Gazette*, Part I, April 2017



REGULATORY FRAMEWORK – UPDATES (CONT'D)

- 2017 Coming Products:
 - Unmanned Aircraft Systems (UAS) – *Canada Gazette*, Part I, July 15, 2017
 - Approach Ban – Notice of Proposed Amendment for consultation – Summer 2017
 - Crew Resource Management (CRM) – Publication of amended standards – Summer 2017
 - Minimum Equipment List – Publication of amended standards – Fall 2017
 - Flight Crew Member Hours of Work and Rest Periods – *Canada Gazette*, Part I, Spring 2017
 - Cockpit Voice Recorders (CVR) – *Canada Gazette*, Part I, Fall 2017
 - Emergency Locator Transmitters (ELT) – *Canada Gazette*, Part I, Fall 2017
 - Water Airports – *Canada Gazette*, Part I, Winter 2017
 - Seaplane Operations – *Canada Gazette*, Part II, Fall 2017
 - Winter Maintenance – *Canada Gazette*, Part II, Fall 2017
 - Minimum Take-Off Performance – *Canada Gazette*, Part II, Fall 2017



REGULATORY FRAMEWORK – UPDATES (CONT'D)

- Other Activities Underway (2018)
 - Runway End Safety Area (RESA) – for anticipated publication in *Canada Gazette, Part I*
 - CAR 521 Approval of the Type Design or a Change to the Type Design of an Aeronautical Product – for anticipated publication in *Canada Gazette, Part I*
 - Airside Access and Vehicle Control (AAVC) – for anticipated publication in *Canada Gazette, Part I*
 - CAR 705 Operations to and from Dry/Wet Contaminated Runways– for anticipated publication in *Canada Gazette, Part I*



CANADA'S SUPPORT TO ICAO

- Canada participates on 11 of the International Civil Aviation Organization (ICAO)'s Air Navigation Commission (ANC) Panels, including:
 - Remotely Piloted Aircraft Systems
 - Flight Operations
 - Air Traffic Management Operations
 - Instrument Flight Procedures
 - Aerodrome Design & Operations (TCCA is Canadian Member & Vice-Chair)
 - Frequency Spectrum Management
 - Communications
 - Navigation Systems
 - Meteorology (TCCA is Canadian Member & Vice Chair)
 - Airworthiness
 - Safety Management



PERFORMANCE RESULTS: AVIATION SAFETY

	2011	2012	2013	2014	2015	2016
Canadian-registered aircraft accidents	227	232	231	204	222	193
Canadian-registered fatal aircraft accidents	29	32	30	10	23	23
*Accident Rate per 100,000 hours flown	5.3	5.3	5.4	4.8	5.2	4.5

Accident Source: Transportation Safety Board

*Source: Transport Canada 2014-2016 hours flown are estimated

Canadian-registered aircraft, excluding ultralights, balloons, gyroplanes, dirigibles, hang gliders and similar aircraft types



PERFORMANCE RESULTS: CERTIFICATION AND APPROVAL

- Certification of CS100 and CS300
- The yearly average number of services delivered in Civil Aviation is approximately 120,000.
- Volume of services delivered as of June 30:
 - **321** Operating Certificates Air Operator Certificates (AOCs), Private Operating Certificates (POCs), Foreign Air Operator Certificates , (FAOCs) Flight Training Units (FTUs) and Approved Maintenance Organizations (AMOs)
 - **1,101** UAV Special Flight Operating Certificates (SFOCs)
 - **5,245** Licensing requests
 - **1,793** Aircraft registration requests
 - **199** Aircraft Inspections
 - **491** Delegate nominations/ appointments and renewals
 - **814** Manuals approved or amended
 - **570** Approvals, authorizations and assessments conducted (includes Obstacle Assessments)
 - **24** new and amended Type Certificates
 - **36** new and amended Supplemental Type Certificates
 - **8,967** Medical Assessments (As of May 31)



PERFORMANCE RESULTS: OVERSIGHT

- As of June 30, 2017, **25%** of the National Oversight Plan was completed.
 - Compared to **21.6%** last year
- Enforcement actions due to investigations (2016-17):
 - **192** oral counselling
 - **222** monetary penalties
 - **14** punitive CAD suspensions
 - **15** prosecutions
- To date, **38** Oversight Advisory Board (OAB) meetings have been held for over 19 enterprises ranging across several sectors from across the country.
- All regions have convened an OAB.



PERFORMANCE RESULTS: CANADA AND ICAO

- The International Civil Aviation Organization (ICAO) recognizes Canada as a world leader in aviation safety.
- According to ICAO's Universal Safety Oversight Audit Program (USOAP), Canada's current overall result is **95.28%** effective implementation of ICAO requirements.
- Canada is ranked **4th** worldwide, behind United Arab Emirates, Republic of Korea, and Singapore.



NATIONAL SERVICE PERFORMANCE

Average Working Days

	2014-15		2015-16		2016-17		Net Change (Days)
	Vol.	Days	Vol.	Days	Vol.	Days	
Private, Glider, Balloon, Ultralight, Gyrop, Rec. Licence / Permit Issue	2,980	22.6	3,209	19.6	3,288	27.9	+8.3
Commercial, Flight Engineer Licence	1,299	25.2	1,339	18.5	1,438	30.0	+11.5
Airline Transport Pilot Licence	783	27.6	574	25.6	616	31.0	+5.4
Flight Crew Rating Initial Issue	8,057	20.6	7,981	16.2	8,712	27.5	+11.3
Manual Amendments	2,344	40.8	2,104	26.4	3,391	29.1	+2.7
Issue Continuing C of R	2,999	16.9	3,145	23.0	3,367	39.8	+16.8



NATIONAL SERVICE PERFORMANCE (CON'T)

Special Authorizations – Average Working Days

Operator Type	2015-16		2016-17		Net Days	% Net Change
	Volume	Days	Volume	Days		
702	48	75.4	53	74.9	-0.5	-1%
703	62	71.7	97	69.4	-2.3	-3%
704	35	53.0	56	68.0	-15.0	-28%
705	89	27.0	146	19.5	-7.5	-28%
POCs	71	36.1	130	44.2	+8.1	+22%



NATIONAL SERVICE PERFORMANCE (CON'T)

Current processing times compared to this time last year – Average Working Days

April 1 to June 30	2016-2017		2017-2018		Net Days	% delivered within Service Standard
	Volume	Days	Volume	Days		
Private, Glider, Balloon, Ultralight, Gyrop, Rec. Licence / Permit Issue	729	21.6	378	30.5	+8.9	81%
Commercial, Flight Engineer Licence	444	21.8	216	29.9	+8.1	81%
Airline Transport Pilot Licence	145	27.6	107	29.8	+2.2	77%
Flight Crew Rating Initial Issue	2,592	23.0	1,465	30.1	+7.1	74%
AME Licence Renewal	804	7.3	320	7.6	+0.3	63%
Manual Amendments	866	33.2	773	13.9	-19.3	99%
Issue Continuing C of R	1,033	37.9	559	27.6	-10.3	99%
AOC Amendments (702, 703, 704, 705)	94	41.7	77	21.5	-20.2	94%
Maintenance Schedule	154	33.5	136	11.9	-21.6	97%
SFOCs for UAVs	1,744	18.9	1,134	20.7	+1.8	54%