

PILOT/ CONTROLLER

***COLLABORATION INITIATIVES:
Enhancing Safety and Efficiency***



First Edition • June 2003

005503.qxd

Disclaimer

Unless otherwise specifically stated, the information contained within this report is made available by the Global Aviation Information Network (GAIN) for information purposes only. Neither GAIN nor any of its participants or entities thereof, assumes any legal liability or responsibility for the report's accuracy, completeness, or usefulness of any information, product, or process disclosed. References within this report to any specific product, process, service by trade name, trademark, manufacturer, individual, or otherwise, does not constitute or imply its endorsement, recommendation, or favouring by GAIN or any entities thereof. Any views, analysis, and opinions expressed are the sole responsibility of their authors. In all cases, any initiatives developed should be consistent with prevailing agreements, regulations, and instructions set out in appropriate controlling documentation.

Pilot/Controller Collaboration Initiatives: *Enhancing Safety and Efficiency*



*Prepared by: GAIN Working Group E,
Flight Ops/ATC Ops Safety Information Sharing*

First Edition · June 2003

This report is available online at www.gainweb.org

THIS PAGE INTENTIONALLY LEFT BLANK

Table of Contents

	Page
Acknowledgments	iii
Executive Summary	vii
1.0 Introduction	1
1.1 Purpose of Report.....	1
1.2 GAIN Overview	1
1.3 Working Group E (WG E): Flight Ops/ATC Ops Safety Information Sharing	2
1.4 Overview of Common Issues Facing the Controller and Pilot Communities	3
1.5 Turning Roadblocks into Opportunities for Success	5
1.6 Common Elements of Successful Collaboration Initiatives	7
1.7 Summary	8
2.0 National and Multi-National Pilot/Controller Initiatives	9
2.1 Operation Raincheck: Pilots seeing the controller’s point of view	9
2.2 Jumpseat Programs: Controllers seeing the pilot’s point of view	10
2.3 NATCA Safety Committee’s “Communicating for Safety”: An open industry forum for dialogue	11
2.4 TCAS Transition Program: Assessing operational performance of newly introduced safety system.....	11
2.5 Runway Incursion Reduction Programs: Investigating emerging safety problems	12
2.6 ICAO GREPECAS Aviation Safety Board: Collaboratively identifying deficiencies in the air navigation plan for immediate State resolution.....	15
2.7 Air Transport Operations Consultation Committee (ATOCC): Providing a forum of consultation between NAV CANADA and its major customers	16
2.8 Air Navigation System National Advisory Committee (ANSNAC): Providing a forum for exchange of technical views on the delivery of Air Navigation Services.....	17
3.0 Local Pilot/Controller Collaboration Initiatives	19
3.1 Amsterdam, Netherlands (EHAA) “Reducing Approach and Landing Accidents through Communicating and Understanding”	21
3.2 Atlanta ARTCC (ZTL) “A Day at Delta”	25
3.3 Atlanta ATCT (KATL)/TRACON (KA80) “Maximizing Operational Efficiency at Hartsfield Atlanta International Airport”	27
3.4 Auckland, New Zealand (NZAA) “Aviation Reform Results in Collaboration”	29

Table of Contents

(continued)

	Page
3.5 Charlotte (KCLT) “RESAFE”	33
3.6 Cleveland ATCT (KCLE) “The Pilot’s Journey through the ATC System”	37
3.7 Copenhagen, Denmark (EKCH) “Changes to Air Navigation Order Results in Safety Forum”	41
3.8 Dallas/Fort Worth TRACON (KD10) “Collaboration with Southwest Airlines”	43
3.9 Daytona Beach International Airport (KDAB) “Addressing Problems Proactively”	47
3.10 Frankfurt, Germany (EDDF) “Joint Operational Incidents Training: Linking Simulators”	49
3.11 Houston (KIAH)/TRACON (KI90) “Day 1 at Continental”	53
3.12 Jacksonville ATCT (KJAX) “JAX Customer Relations Team”	57
3.13 Mexico (MMEX) “Improving Safety By Joining Forces”	59
3.14 New York ARTCC (ZNY) “Oceanic Operations Familiarization Program”	61
3.15 North Las Vegas Airport (KVG T) “Collaboration Leads to Reduction in Runway Incursions”	63
3.16 Orlando ATCT (KMCO) “Adopt-an-Airline & Adopt-a-Pilot Program”	67
3.17 Pittsburgh ATCT (KPIT) “Collaboration and Communication”	71
3.18 Riga International Airport (EVRA) “Collaboration with air Baltic”	73
3.19 Singapore Changi International Airport (WSSS) “Pilot/Controller Working Relationships Improve Services”	75

Appendices

Appendix A: List of Acronyms and Abbreviations	A-1
Appendix B: Survey Form for Submitting Information on Pilot/Controller Collaboration Initiatives	B-1
Appendix C: Report Feedback Form	C-1

Acknowledgements

The co-chairs and members of the Flight Ops/ATC Ops Safety Information Sharing Working Group (WG E) of Global Aviation Information Network (GAIN) would like to thank all of the individuals and organisations that made this report possible:

Developers

Al Garin, Check Airman A330, US Airways (*WG E co-chair*)

Peter Stastny, Safety Regulation Unit, EUROCONTROL (*WG E co-chair*)

Chris Baum, Air Line Pilots Association, International

Luis Castro, Air Traffic Services, Federal Aviation Administration

Carolyn Edwards, Office of System Safety, Federal Aviation Administration

Margaret Ann Johnson, Independent Studies, Human Factors and Ethics

Trin Mitra, Boeing Air Traffic Management

Patrick Moylan, Abacus Technology Corporation

Bert Ruitenbergh, International Federation of Air Traffic Controllers' Associations

Jef Solomon, National Air Traffic Controllers Association

Catherine Welsh, Air Traffic Services, Federal Aviation Administration

Reviewers/Contributors

Holger Ahrens, International Federation of Air Traffic Controllers' Associations

Sharon Beavan, Air Traffic Services, Federal Aviation Administration

Eduardo Chacin, International Air Transport Association

Radu Cioponea, EUROCONTROL (Performance Review Unit)

Florin Cioran, EUROCONTROL (Safety Regulation Unit)

Heinz Früehwirth, Austrian Airways/International Federation of Air Line Pilots Associations

David Kountz, Flight Standards, Federal Aviation Administration

Tony Licu, Safety Regulation Unit, EUROCONTROL

Geert Maesen, International Federation of Air Traffic Controllers' Associations

Monica Mullane, NAV CANADA

Lee Nguyen, Aircraft Certification, Federal Aviation Administration

Robbie Robinson, Flight Standards, Federal Aviation Administration

Ingrid Russell, SRA International, Inc.

Dan Smiley, Air Traffic Services, Federal Aviation Administration

Dragica Stankovic, International Air Transport Association

Jack Wojciech, JIL Information Systems

Dale Wright, National Air Traffic Controllers Association

Independent Review Team Members

Keith Hagy

Air Line Pilots Association, International

George Hurlong

Comair, Inc.

Leslie McCormick

Federal Aviation Administration

Linda M. Schuessler

Federal Aviation Administration

Randy Weiland

National Air Traffic Controllers Association

Acknowledgements

GAIN Working Group E, Flight Ops/ATC Ops Safety Information Sharing would also like to thank those who responded to requests for information on their efforts to increase pilot/controller collaboration. While the Flight Ops/ATC Ops Safety Information Sharing Working Group was not able to include all survey submissions, all responses contributed to this final product:

air Baltic - Riga, Latvia (EVRA) Artis Riekstins Albany ATCT (KALB) James L. Arnold Allegheny ATCT (KAGC) Brooks Tickel Allentown ATCT (KABE) John Herber Amsterdam, Netherlands (EHAA) Dick van Ek Ann Arbor ATCT (KARB) Jim Schneider Atlanta ARTCC (ZTL) Elizabeth Ray Michael Ehrlich Alton Self Atlanta Large TRACON (KA80) Richard McClelland Bill Joyce Ron Caraway Auckland, New Zealand (NZAA) Captain Stu Juliam Austin ATCT (KAUS) Joe Bialek Bangor ATCT (KBGR) Allan R. Turmelle Camarillo ATCT (KCMA) Don Hiebert Charleston ATCT (KCRW) Randy Clark	Charlotte ATCT (KCLT) Thomas Denny Jeffrey Solomon Cleveland AFSS (KCLE) Kris Palcho Dominique Sorbo Cleveland ARTCC (KZOB) Rick Sorbo Cleveland Hopkins ATCT (KCLE) Keith Alvers-Retired Mark Reeves Karl Aber Bill Vogelgesang Corpus Christi ATCT/TRACON (KCRP) Warren Meehan Dallas/Fort Worth FSDO (KDFW) Gordon Taylor Dallas/Fort Worth TRACON (KD10) Ross Schulke Chuck Frankenfield Greg Juro Daytona Beach ATCT (KDAB) Lee Nichols Erie ATCT (KERI) Dana Young Fargo ATCT (KFAR) Jim Swenberger Fort Lauderdale Executive ATCT (KFXE) Bonnie Schultz Fort Smith ATCT (KFSM) Roger C. Luck
--	---

Acknowledgements

(continued)

Frankfurt, Germany (EDDF) Hans Juergen Morscheck	New York ARTCC (KZNY) Michael Golden
Grand Forks ATCT (KGFK) David W. Cink	Northeast Philadelphia ATCT (KPNE) Melveice Harris
Houston Int'l ATCT (KIAH/KI90) Craig Wooldridge – Retired Caroline Carey Luke Ball	Orlando ATCT (KMCO) Donna Gropper
Huntington ATCT (KHTS) James Stark	Phoenix TRACON (KP50) Skip Paschke
Jacksonville ARTCC (KZJX) Miles R. Miller	Pittsburgh ATCT (KPIT) Richard Pelkowski Greg Dunne
Jacksonville ATCT (KJAX) Bob Kamm Shawn Fields	Prescott AFSS (KPRC) Kevin Harrington
Kankakee AFSS (KIKK) David Carmona	San Antonio ATCT (KSAT) Tom Bowman John Reagan
Las Vegas ATCT (KVGX) Thomas Petrakis	Scottsdale ATCT (KSDL) John Brett
Las Vegas TRACON (L30) David L. Tyson	Singapore Changi (WSSS) Ho See Hai
Los Angeles ARTCC (KZLA) Brent W. Shively	Sioux Falls ATCT (KFSD) David J. Meyer
Manassas ATCT (KHEF) Daniel Laswell	Southern California TRACON (KSCT) Richard A. Gutterud
Memphis ATCT (KMEM) Michael W. Baker	Tucson TRACON (KU90) Kleve Record
Mexico (MMEX) Anguiano T. Victor Victor Hernandez Sandoval	Wichita ATCT (KICT) Dale Mleynek
Naviar – Copenhagen, Denmark (EKCH) Peter Majgard Norbjerg	Wilkes-Barre, Scranton ATCT (KAVP) Joseph Scaduto
	Wilmington ATCT (KILG) Arthur Olsen

THIS PAGE INTENTIONALLY LEFT BLANK

Executive Summary

This report documents examples of successful pilot/controller collaboration initiatives throughout the world and details characteristics of these efforts. It illustrates the effectiveness of collaboration between pilots and air traffic controllers in addressing common issues, thus enhancing safety and the efficiency of operations.

The report was developed by the Global Aviation Information Network (GAIN) Working Group E, Flight Ops/ATC Ops Safety Information Sharing. The Working Group hopes that by using ideas documented in this report, others can develop or improve collaboration initiatives tailored to the specific requirements of their organisations. The document does not intend to capture and present all or even a majority of the global collaboration initiatives between pilots and controllers. Rather, it aims to present a set of examples of current practice.

A total of twenty-seven initiatives are highlighted, including eight at the national or multi-national level and nineteen at the local, operational level. To obtain information about the initiatives, members of Working Group E surveyed pilots, air traffic controllers, airlines, unions, and air traffic service providers around the world. The group received approximately 50 total responses to the survey. After reviewing the survey results, the group selected a sample of the responses to obtain a representative cross section of initiatives and, in some cases, conducted telephone interviews with the involved parties. The group then prepared summaries of these initiatives.

The summaries provide an overview of how safety and efficiency are positively affected when controllers and pilots increase their knowledge of the other's job responsibilities, capacities, and limitations. Although pilots and controllers throughout the world work together on a daily basis to transport millions of passengers safely and efficiently to their destinations, the examples in this report show the related, but often overlooked, importance of effective communication between the two groups outside the cockpit, radar room, and control tower. Examples of issues addressed during this collaboration include varying aircraft performance characteristics, approach procedures, cockpit automation, changes to equipment/ATC procedures, landing and runway exiting procedures, and training.

The collaboration initiatives range from high-technology formal training sessions to low-technology informal discussions of operational concerns between controllers and pilots. The report presents a representative range of programs between these two extremes. Despite the wide diversity, there were some common elements among all of these successful collaboration efforts. First, someone took the initiative to begin a collaboration interaction; often this began with an idea, then a phone call or visit. Second, two very important groups were involved – unions and management. Third, participants created a targeted agenda and purpose for their effort. Fourth, participants were persistent in overcoming any initial obstacles; and finally, the initiatives were continued on a regular basis.

Many of the initiatives were begun in response to a specific operational event, but were continued when the benefits and low cost of such collaboration and communication quickly became apparent.

Participants reported that these collaboration efforts:

- Give the operators (pilots and controllers) a better appreciation for the workspace conditions of the other group;
- Provide insight on how the actions (or inactions) of one operator can greatly affect the other;
- Reduce or eliminate misperceptions;
- Establish cooperative relationships between pilots and controllers; and,
- Ultimately, enhance safety and efficiency when procedures, policies, and operational norms are changed as a result of this interaction.

All of the information contained in the report is based on successful pilot/controller collaboration that is already taking place, but may not be widely known. Working Group E hopes that by disseminating this information to the broader aviation community it will:

- Give pilots, controllers, trade groups, schools, dispatchers, facility managers, airlines, and others ideas for developing or expanding their own collaboration programs, based on the successes elsewhere;
- Share the lessons learned during the formation and implementation of initiatives;
- Demonstrate the potential benefits of focused training for pilots and controllers in each other's capabilities, responsibilities and limitations;
- Highlight some of the common problems in the aviation community that can be addressed through the increased interaction between pilots and controllers;
- Improve understanding between the pilot and controller communities; and
- Provide an opportunity for those involved in these programs to publicize their efforts to the worldwide aviation community.

One item that stands out in the responses received and outlined in case studies is that once pilots and controllers decide to address and resolve any issue collaboratively, there are many benefits to them and ultimately, the flying public. It is one of the goals of GAIN to continue to capture and disseminate how pilots and controllers have overcome roadblocks and turned them into opportunities to improve aviation safety.

1.0 Introduction

1.1 Purpose of Report

This report was developed by the Global Aviation Information Network (GAIN) Working Group E (Flight Ops/ATC Ops Safety Information Sharing Working Group) and is intended as an overview of how pilots and controllers are collaborating to improve safety and operations. The Working Group hopes that by using ideas documented in this report, others can develop or improve collaboration initiatives tailored to the specific requirements of their organisations. There is no regulatory or standards development intent within the document; in fact, this document often contains alternative practices in use by controllers, pilots, and others throughout the world. This document does not intend to capture and present all or even a majority of the global collaboration initiatives between pilots and controllers. Rather, it aims to present a set of examples of current practice.

The objectives of this report include the following:

- Give pilots, controllers, trade groups, schools, dispatchers, facility managers, airlines, and others ideas for developing or expanding their own collaboration programs, based on the successes elsewhere.
- Share the lessons learned during the formation and implementation of pilot/controller collaboration efforts.
- Demonstrate the potential benefits of focused training for pilots and controllers in each other's capabilities, responsibilities, and limitations.
- Highlight some of the common problems in the aviation community that can be addressed through the increased interaction between pilots and controllers.
- Improve understanding between the pilot and controller communities.
- Provide an opportunity for those involved in these programs to publicize their efforts to the worldwide aviation community.

One item that stands out in the responses received and outlined in case studies is that once pilots and controllers decide to address and resolve any issue collaboratively, there are many benefits to them and ultimately, the flying public. It is one of the goals of GAIN to continue to capture and disseminate how pilots and controllers have overcome roadblocks and turned them into opportunities to improve aviation safety.

1.2 GAIN Overview

GAIN is an industry-led initiative to promote and facilitate the voluntary collection and sharing of safety information by and among users in the international aviation community to improve safety. GAIN was first proposed by the Federal Aviation Administration (FAA) in 1996, but has now evolved into an international industry-wide endeavour that involves the participation of professionals from airlines, air traffic service providers, employee groups, manufacturers, major airframe and equipment suppliers and vendors, and other aviation organisations. To date, six world conferences have been held to promote the GAIN concept and share GAIN products with the aviation community to improve safety. Since 1996, nearly 900 aviation safety professionals from over 350 organisations in 49 countries have participated in GAIN.

The GAIN organisation consists of an industry-led Steering Committee, three working groups, a Program Office, and a Government Support Team. The GAIN Steering Committee is composed of industry stakeholders that set high-level GAIN policy, issue action plans to direct the working groups, and guide the program office. The Government Support Team consists of representatives from government organisations that work together to promote and facilitate GAIN in their respective countries. The working groups are interdisciplinary industry and government teams that accomplish the GAIN tasks outlined in the action plans established by the Steering Committee. The current GAIN working groups are: Working Group B--Analytical Methods and Tools, Working Group C--Global Information Sharing Systems, and Working Group E--Flt Ops/ATC Ops Safety Information Sharing. The Program Office provides technical and administrative support to the Steering Committee, working groups and Government Support Team.

1.3 Working Group E (WG E): Flight Ops/ATC Ops Safety Information Sharing

In January 2002, the GAIN steering committee formed a new working group to foster increased collaboration on safety and operational information exchange between flight operations and air traffic control operations. The basis for forming this new working group, designated “Working Group E: Flight Ops/ATC Ops Safety Information Sharing,” was a very successful workshop at the Fifth GAIN World Conference in Miami in December 2001, which highlighted the need for improved interaction between air traffic controllers and pilots on safety issues. A quote from “Crossed Wires: What do pilots and controllers know about each other’s jobs?” Flight Safety Australia, May-June 2001, by Immanuel Barshi and Rebecca Chute, succinctly captures the need seen by many attending the workshop. The authors introduce the article with, *“It is often said that pilots and controllers talk at each other all day long, but rarely communicate.”*

The working group has four main focus areas:

1. Promote confidential, non-punitive reporting and exchange of safety information between the Flt Ops and ATC Ops communities
2. Identify initiatives that promote and facilitate communication and safety information exchange between Flt Ops and ATC Ops
3. Facilitate the establishment or enhancement of Flt Ops/ATC Ops safety information collection and exchange programs
4. Promote increased collection and sharing of safety information throughout the international Flt Ops and ATC Ops communities

This report was prepared specifically to address the second, third, and fourth focus areas. Another Working Group E product, entitled “Engineering a Just Culture in Safety Data Reporting” is under development to address the first focus area.

The working group consists of representatives from airlines, pilot and controller unions, air traffic service providers, regulatory agencies, governments, and other aviation organisations.

1.4 Overview of Common Issues Facing the Controller and Pilot Communities

Members from this working group have spent over 14 months interviewing and surveying controllers, pilots, and other aviation professionals from around the world to understand some of the common issues affecting pilots and controllers, and how collaboration between these groups have improved mutual understanding and ultimately had a positive affect on operations and safety. Topics that pilots and controllers could benefit by collaborating on may be divided into two general categories. The first category concerns problems that can be better addressed through each discipline's increased exposure to the other's equipment capabilities, job functions, and responsibilities. Examples of this may include the final approach speed capabilities of a particular aircraft being outside the scope of the controllers' area of expertise, or that a controller's separation requirements during simultaneous ILS approaches may be outside the scope of the pilot's area of expertise. The second category of topics includes problems that may be described as "systemic" or "institutional" in nature. These are problems that result from technology and equipment changes that take place without thorough participation from either the air traffic or pilot communities, such as the development and establishment of RNAV routes. While the majority of local collaboration initiatives presented in this report address issues that fall into the first category, the collaboration processes and techniques described herein are applicable to both.

Topics Addressed in the Collaboration Initiatives Contained in this Document

Aircraft Performance Characteristics

One common issue that many of the initiatives in this document address is varying aircraft performance characteristics. This is especially important when controllers use speed control, one of their primary tools to maintain longitudinal (in-trail) separation. Because controllers communicate with and direct a very broad range of aircraft types from the global air fleet, they may not be aware of performance limitations of every type of aircraft encountered. Today's aircraft types include a wide range of large and small turbojets, piston-powered general aviation aircraft, military and cargo aircraft, modified and experimental aircraft, and turboprops that, in some cases, have markedly different performance characteristics. These aircraft use widely different flight deck procedures and have widely different levels of cockpit automation, all of which may impact the aircrews' ability to comply with a given ATC instruction. There are also differences in manufacturer-recommended speeds to be flown and in equipment operating speed limitations that must be observed. All of these differences may be relatively invisible to controllers and, therefore, make it difficult for controllers to issue appropriate instructions at appropriate times to ensure that a constant interval is maintained during the final approach queue.

Approach Procedures

Another issue that is often the subject of discussion in pilot/controller meetings is the effort to minimize aircraft noise and fuel consumption, which tends to keep aircraft higher on arrival profiles. The newer generation aircraft, particularly the turbojet fleet, are very efficient, or "clean." Their ability to "go down and slow down" simultaneously is significantly reduced, so getting down on profile may require significant advance planning. A controller may issue a speed reduction and a descent clearance at the same time, and naturally expects compliance. If

the aircrew cannot or does not comply, inefficiencies or even hazards may be introduced into the system. Unless action is taken to help controllers understand why pilots are slow to comply with clearances, such problems will invariably continue and may worsen.

Cockpit Automation

High levels of cockpit automation in modern aircraft may also contribute to these types of problems. At busy airports with complex arrangements of runways and, therefore, arrival and departure flows, controllers must perform a delicate balancing act to ensure the flight paths of aircraft going to and from all runways are safely and efficiently integrated. Changes anywhere in that system, especially unforeseen changes, can change the controllers' plans and requirements dramatically, leading to the need for changes in aircraft flight paths. If the aircrew must effectively "reprogram" onboard systems to accommodate such changes, a finite amount of time may be required before the aircrew can comply. If the controller has never been made aware of this time delay, he/she may expect a response far sooner than it can happen, resulting in frustration, replanning, and inefficiency.

Introduction of New Aircraft

The introduction of a new type of aircraft to an airport may precipitate the need for different procedures for both controllers and pilots. For example, at an airport that has been served exclusively by turboprop aircraft for many years, controllers will have become accustomed to the performance characteristics of that aircraft and will have, either consciously or not, incorporated those characteristics into their own decision-making and planning processes. If a new airline enters that market with a turbojet aircraft, existing practices may no longer be appropriate. An even more difficult situation would occur if the "traditional" carrier begins to upgrade its fleet. A given flight may be one type aircraft one day and an entirely different type the next. Unless there is an established pattern of continuous controller/pilot interaction, incompatibilities between the "old" practice and the "new" airplane may go unnoticed until operations are affected. Absent any pre-coordination, controllers will logically expect the same performance from the aircrew today as they saw yesterday, and pilots may well assume that the controller's instructions will be appropriate for the new flight deck. Neither may be the case.

Changes to Equipment/ATC Procedures

There are sometimes difficulties in accommodating aircraft with exemptions for certain categories of equipage in the same airspace. For example, there are some aircraft that cannot comply with RVSM spacing requirements, there are other aircraft that cannot fly RNAV routes, there are some aircraft that are not equipped with radios with 8.33 kHz spacing, and there are some aircraft that are limited to certain airspeeds. Add to these challenges differences in radio transmission in various regions around the world, the use of languages other than English for radio transmissions, and the emerging use of non-verbal communications (e.g. data link) in operations, and the benefits of increased collaboration between pilots and controllers become apparent.

Landing & Runway Exiting Procedures

There are times when increased interaction among pilots and controllers could positively affect mutual understanding of landing roll speed reduction procedures as well as runway exiting procedures. For example, a controller may anticipate that an aircraft will exit at a particular turnoff, resulting in a runway clear for departures, and plan his or her departure sequence accordingly. However, the aircraft may roll by the expected taxiway, or may not be able to accept an exiting instruction due to the aircraft's speed or turn capability. Turn and braking capability can vary considerably based on aircraft type, company policy, weather, landing weight, or even pilot preference. All these differences may affect runway exiting. When an aircraft doesn't exit the runway where the controller expects, it can cause a go-around, an unexpected immediate takeoff clearance, or require a departure to taxi off the runway. Pilots are sometimes unaware of controllers' requirements generated by airspace sectorization, configurations of approach paths relative to departures or other approaches, etc. What appear to be optimal climb or descent profiles to the pilot may present controllers with difficult or dangerous situations that should be avoided. Such lack of mutual understanding can result in unnecessary radio transmissions or delayed compliance with instructions, resulting in confusion and reduced effectiveness of ATC procedures. These all have potential safety implications as well as affecting operational efficiency.

Training

In addition to the vast amount of technical training in subjects unique to their own job responsibilities and equipment, pilots and controllers share many subjects in their initial and recurrent training. However, the depth and regularity of this instruction differs. For example, pilots receive in-depth training and have more experience in subjects such as stabilized approach requirements, crew approach briefing requirements and the ramifications of last minute runway assignments, rates of turn vs. bank angle and airspeed, true airspeed vs. indicated airspeed, weather-related issues affecting aircraft performance, etc. Likewise, controllers receive more in-depth training and have more experience in other subjects such as airspace limitations, spacing and separation requirements, problems caused by making last minute clearance requests, coordination and limitations between sectors, dynamics associated with controlling multiple aircraft types, etc. While both pilots and controllers receive phraseology training, it is done at different stages of their respective training cycles and to a different degree. Many of the initiatives in this report were developed to address communication concerns involving phraseology.

1.5 Turning Roadblocks into Opportunities for Success

On a daily basis, pilots and air traffic controllers throughout the world work collaboratively to move millions of passengers safely and efficiently to their destinations. Pilots and controllers know that efficient and accurate exchange of information is critical to maintaining the highest possible level of safety at all times. The examples illustrated in this report show the related, but often overlooked, importance of effective communication between pilots and controllers outside the cockpit, radar room, and control tower.

Roadblocks

Some of the roadblocks that many of the initiatives documented herein overcome include:

- Corporate culture issues – Pilots and controllers may have a difficult time enlisting the help and support of management in their own organisations to facilitate problem solving and outreach to other organisations or groups that can assist in reaching a solution. Also, if employees feel disenfranchised, overworked, or feel that good ideas have not been implemented in the past, they may be more reluctant to begin or participate in a collaboration effort.
- Resource issues – Many times it is very difficult for controllers and pilots to get away from their normal duties to devote the time necessary to plan strategies and work towards resolving outstanding issues. As issues surface, it is important to clearly define those issues and bring them to the attention of management and other co-workers to gather the necessary support to address the issues.
- Language/cultural issues – Aviation has “shrunk” the world. Language and cultural issues can arise when pilots and controllers from many nationalities, speaking many languages, and with different views of authority, interact with each other on a daily basis. As specific issues arise, it is important to work collaboratively to resolve them, often through existing organisations and initiatives when possible.

Turning Roadblocks into Opportunities

While the roadblocks listed above and others exist, many of these same roadblocks serve as opportunities for successful collaboration. In fact, the case studies outlined in this report illustrate how pilots and controllers are using these opportunities. Many controllers interviewed indicated that by their addressing an issue and working collaboratively with pilots, they discovered more about the flying environment and how the controllers’ actions affect it. Likewise, many pilots indicated how much they learned about the controllers’ workload and how their actions in flight affected the controllers’ environment as well. As outlined in many case studies, by working together, controllers and pilots gained a new understanding and appreciation of the other’s work and have utilized this knowledge to help them be more proficient in their jobs.

1.6 Common Elements of Successful Collaboration Initiatives

The wide variety of collaborative efforts contained in this report all started with a basic element: the desire and initiative on the part of at least one controller and at least one pilot to begin a dialogue to find solutions to common problems. Many of these initiatives were begun because of a single event or a series of events that created the need to cooperatively search for a solution. Other initiatives were started proactively, beginning with dialogue between pilots and controllers to improve relations not only in safety, but also for operational efficiency or other areas. Despite the wide diversity, there were some common elements among all of these successful collaboration initiatives:

First, individuals took the **initiative** to begin a collaborative interaction. Often, this began with an idea, then a phone call or a visit.

Second, successful programs involved two very important groups early in the process: their respective **unions and management**. These groups have the resources and scheduling responsibilities necessary for collaboration to occur, and could allocate the time of experienced personnel to their effort.

Third, the individuals involved created a targeted **agenda and purpose** for their efforts. This created an urgency and incentive for others to participate, and it allowed the group to measure its successes, whether that meant the resolution of a specific problem or simply increasing contact, awareness, or understanding between the two groups.

Fourth, initial **obstacles were overcome**. Many initiatives reported experiencing some sort of “roadblock.” Examples included low participation or interest, lack of resources or time, or feelings that the problems were too big to tackle at the local level. Note that in each of these initiatives, the participants overcame these obstacles.

Finally, the initiatives are being continued on a **regular basis**. This sometimes was done weekly, monthly, or even less often. *The important element is regularity, not interval.* Regularity ensures that the results of initial collaboration are not lost, and also that new employees who enter facilities and airlines are brought into the effort and learn the benefits of collaboration. In some cases, the collaboration initiatives became “institutionalized,” continuing after the original members have left their organisation.

The process for starting and maintaining a collaboration initiative between pilots and controllers has proven to be successful in most instances, from large airlines and high-traffic TRACON's, to small pilot groups and low-traffic control towers. The members of the GAIN Program hope that these successes will encourage others to apply the techniques used by their professional colleagues from around the world, and that more initiatives will be created to increase mutual understanding and collaboration between pilots and controllers.

1.7 Summary

This report includes programs ranging from one-day training visits by pilots to air traffic control facilities – designed to allow them to experience the controller environment first-hand – to flight simulator training for controllers that helps them better understand cockpit procedures and workload during various phases of flight. Initiatives such as informal meetings with pilots and controllers have been successful in raising safety and operational concerns, recommending changes in local procedures, and alleviating misunderstandings between the groups. This report covers various initiatives that can be instituted at many types of facilities around the world, and highlights successful local initiatives that foster increased communication and understanding between pilots and air traffic controllers through safety information exchange.

If you have an initiative that you would like to see included in the next edition of this report, please complete the preliminary survey in Appendix B, or call Patrick Moylan, Working Group E Secretary, at +1 (301) 951-1701. This survey is also available online at <http://www.abacustech.com/gain.htm>.

Members of GAIN Working Group E hope you find this document interesting and useful in your profession. All feedback is welcome, and a report feedback form for this purpose is included in Appendix C. All correspondence can be sent to the following address:

Global Aviation Information Network (GAIN)
c/o Abacus Technology Corporation
5454 Wisconsin Ave., Suite 1100
Chevy Chase, MD 20815 U.S.A.
+1 (301) 951-1701
gain_team@gainweb.org
www.gainweb.org

2.0 National and Multi-National Pilot/Controller Initiatives

The collaboration of pilots and controllers for the improvement of aviation safety is being accomplished formally in a variety of contexts around the world. This section highlights some examples of situations where pilots and controllers have formally worked together on a large (national or multi-national) scale and outlines the benefits drawn from the interaction. In section 3, local initiatives are documented, showing how individuals and small groups of people can make improvements in their local operating environment.

The examples in this section demonstrate that pilot/controller collaboration has been employed in a variety of situations to provide insight into the other groups' day-to-day work, as well as to deal directly with safety issues. While there are many national and multi-national programs, eight examples are discussed in this section:

- Operation Raincheck: Pilots seeing the controller's point of view
- Jumpseat Program: Controllers seeing the pilot's point of view
- NATCA Safety Committee's Communicating for Safety: An open industry forum for dialogue
- TCAS Transition Program: Assessing operational performance of newly-introduced safety system
- Runway Incursions Working Groups: Investigating emerging safety problems
- ICAO GREPECAS Aviation Safety Board: Collaboratively identifying deficiencies in the air navigation plan for immediate State resolution in Latin America & Caribbean
- Air Transport Operations Consultation Committee (ATOCC): Providing a forum of consultation between NAV CANADA and its major customers
- Air Navigation System National Advisory Committee (ANSNAC): Providing a forum for exchange of technical views on the delivery of Air Navigation Services

2.1 Operation Raincheck: Pilots seeing the controller's point of view

Operation Raincheck is a program begun in the 1960's and administered by the Federal Aviation Administration in the United States for pilots. It is designed to familiarize pilots with air traffic control: its benefits, responsibilities, functions, problems, services available and relationship with all facets of aviation. It is intended for pilots of all skill levels, from the student pilot to the most senior commercial pilot to gain a quick overview of what a controller does and how it affects them as a pilot. Operation Raincheck is a free one-day seminar generally given at the various FAA Air Route Traffic Control Centers. Historically, the sessions were large gatherings of over 100 pilots to learn about air traffic control. Recently, a number of centers have restructured into smaller classrooms with about 15 pilots allowing for one-on-one interaction and answering questions.

The Operation Raincheck program generally runs once a month on a Saturday. While the program is different for each center, it often includes tours of the FAA's Air Route Traffic Control Center, a Flight Service Station, a tower and approach control. There are numerous learning objectives of Operation Raincheck:

- Learn how TRACONs, centers and FSSs operate
- Learn about radar control and vectors
- Learn about VFR flight following
- Learn why aircraft are delayed and/or rerouted
- Learn about weather and its effects on ATC
- Learn about bottleneck problems, conflict alerts, handoffs, and what is required to separate aircraft in the sky

The program is designed to be multi-media and as hands-on as possible. Participants in Operation Raincheck have an opportunity to monitor an active sector and hear first hand from the working controller about what they are doing. Many centers have a lab of training radar scopes available to the Operation Raincheck program. Participants have an opportunity to set up a stream of arrivals for approach control in the simulation lab.

Pilots state that the primary benefit of the Operation Raincheck program is to see first hand just how challenging the controller's job is. Feedback from pilots includes:

- "I had no idea that so much went on behind the scenes,"
- "It was the best learning experience that I have ever had in ground school," and
- "I have learned things that will make me more aware of how to make me a safer pilot as well as being more in tune to controller constraints."

Contact: Operation Raincheck and similar programs are administered by individual air traffic control facilities. Please contact the relevant facility for more information.

2.2 Jumpseat Programs: Controllers seeing the pilot's point of view

The complement to the Operation Raincheck program is the Jumpseat, or Familiarization Program. A familiarization flight is one in which an air traffic controller is permitted to observe the pilots in the aircraft cockpit during flight. This allows the controller to experience the operation of the aircraft, see the interaction with the air traffic control system first hand, and better understand cockpit procedures and piloting. Familiarization flights have historically been provided by the many agencies and organizations (e.g. FAA and NAV CANADA) to controllers on a periodic, ongoing basis. The flights are considered a key component of on-the-job training.

From their perspective, controllers have provided similar feedback about this program that pilots often provide about their experience with Operation Raincheck. They say that the experience is often eye opening for them as it helps them to truly visualize the cockpit environment better than solely ground-based training sessions. They report that when they return to their workplace to control air traffic, they have a much better picture of the environment in which the pilot is operating, and this aids their interaction with the pilots.

Contact: Jumpseat Programs are administered by individual airlines, government agencies, air traffic control providers and facilities, and others. Please contact the relevant organization for more information.

2.3 NATCA Safety Committee’s “Communicating for Safety”: An open industry forum for dialogue

Each year the National Air Traffic Controllers Association Safety Committee puts on a seminar called “Communicating for Safety.” This is a two-day meeting on issues that are important to both pilots and controllers. It is open to all pilots and controllers and encourages discussion and an open forum to ask questions of industry and government decision makers.

The conference objective is for pilots and controllers to help plot the course of the industry through the open exchange of information. Participants are encouraged to interact with speakers and other conference attendees and work together to develop new ideas for the future of aviation safety.

The topics of discussion for the 2003 conference in Denver (April 29-30, 2003) included national airspace redesign, RNP/RNAV, Operational Evolution Plan (OEP), ADS-B, and runway safety. Generally, the focus is on system, procedures, and communication problems. The discussions focus on reasons why errors occur and solutions to prevent them from happening in the future. Air traffic controllers, pilots, Federal Aviation Administration officials, and other industry stakeholders attend to share their thoughts and experiences as speakers or panel members.

Contact: Additional information on the NATCA Safety Committee and the Communicating for Safety Conferences can be found at the NATCA website: www.natca.org.

2.4 Traffic Alert and Collision Avoidance System (TCAS) Transition Program: Assessing operational performance of newly introduced safety system

In 1991 the TCAS Transition Program (TTP) was established to assess the performance of TCAS as it was introduced to comply with the U.S. law requiring TCAS equipage. Because of the cooperation between pilots, controllers, airlines, industry organisations, and the FAA, the TTP has been very successful. The data that have been collected and analyzed have resulted in modifications to the TCAS logic to address operational and technical issues, enhancements to TCAS training programs, changes in operational procedures and displays, and improved guidance on the use of TCAS in various types of airspace.

Aeronautical Radio Incorporated (ARINC) of Annapolis, Maryland, coordinates the TCAS TTP for the FAA. Pilots and controllers are requested to complete a questionnaire following a "TCAS event" that

describes the event. These event reports are analyzed and significant results are disseminated in various ways within the aviation community, including the publication of periodic newsletters.

One of the premises that has made the TTP a success is that the FAA agreed that information provided to the TTP regarding TCAS use and performance would not be used to initiate or pursue enforcement action. These agreements have been upheld in the past, continue to remain in force, and are expected to remain as new versions of TCAS are introduced.

A similar operational evaluation program was recently introduced in Europe known as the EUROCONTROL Airborne Collision Avoidance System (ACAS) Transition Programme. Airlines in Europe are now required to equip with ACAS. ACAS and TCAS are synonymous from a design and operation standpoint.

Contact: Dan Tillotson
ARINC Incorporated
+1 (215) 493-8016
dtillots@arinc.com

2.5 Runway Incursion Reduction Programs: Investigating emerging safety problems

The problem of runway incursions is an aviation phenomenon that has received great industry attention in recent years. Most incursions are attributed to pilot deviation or air traffic controller error. The FAA, in an Aviation News article, suggested that "...one of the most effective ways to reduce runway incursions is through one-on-one discussion about the problem with pilots and others who operate on or about a runway safety area." It is not surprising that much attention has been paid to getting pilots and controllers to work together on alleviating the incursion problem. The issue is highlighted here because of the number of collaborative working groups that have emerged globally to deal with incursions. These working groups bring together pilots and controllers (as well as many other industry stakeholders) to address runway incursions.

Examples of the global working groups include:

- *Canada*

IPAT: Incursion Prevention Action Team

On July 13, 1999, the Transport Canada Subcommittee on Runway Incursions (SCRI) was formed. The purpose of the SCRI was to assemble and review Canadian data relevant to runway incursions in order to identify hazards, assess risks and develop mitigating actions. The SCRI final report presented to the National Civil Aviation Safety Committee (NCASC) on September 14, 2000, made a total of 23 recommendations to assess and understand the factors contributing to runway incursions, and to examine and enhance air traffic control procedures, aerodrome standards, and educational/promotional programs.

As a direct result of the concerns expressed by safety officials at the July 13, 1999, NCASC meeting, the NAV CANADA Director of Air Traffic Services (DAT) requested that a plan be developed to study and address the problem of runway incursions. The NAV CANADA final report was released in April 2001 and contained 27 recommendations. On April 26, 2001, Transport Canada and NAV CANADA formed the Incursion Prevention Action Team (IPAT) for the purpose of finalizing the implementation plan of the combined recommendations made in both the final report of the SCRI and the follow-on final report of the NAV CANADA DAT.

The IPAT is comprised of two Co-Chairpersons, The Transport Canada Civil Aviation Director of Safety Services Branch and the NAV CANADA Director of Standards, Procedures and ATS Operations. The remaining team members are comprised from both NAV CANADA and from the following divisions within Transport Canada Civil Aviation:

- Aerodrome Safety
- Air Navigation Services and Airspace
- Commercial and Business Aviation
- Aviation Enforcement
- Safety Services/System Safety
- General Aviation
- Other attendants or observers as invited by the IPAT for on-going or special needs.

There are numerous objectives of the IPAT:

- Oversee and track the implementation of the recommendations from the Transport Canada and NAV CANADA reports on runway incursions.
- Monitor runway incursion data.
- Initiate requests for risk assessments where incursion data indicates an abnormal pattern of incursion activity.
- Recommend safety changes to appropriate agencies, when required.
- Oversee the development of awareness initiatives, including the publishing of incursion data in safety newsletters.
- Coordinate IPAT activities and initiatives with regional offices, industry stakeholders and other agencies, etc.
- Establish procedures to ensure all runway incursion occurrences are comprehensively reviewed and recommended corrective actions are conducted.

IPAT meetings are held quarterly as a minimum, or more frequently if deemed necessary by the Co-Chairpersons or the members of the IPAT. The IPAT has no specific end date, but the Co-Chairpersons will evaluate and assess the need to continue the program after 24 months.

Contact: Monica Mullane
NAV CANADA
+1 (613) 563-5614
mullanm@navcanada.ca

- *Europe*

EUROCONTROL conducted an international workshop on incursions in Brussels in September 2002 to bring together airlines, air navigation service providers (ANSP) and a variety of other industry stakeholders. The seminar was the outcome of a Task Force of regulators, ANSPs, and airlines set up in July of 2001. The Task Force carried out a survey to collect detailed information on incursions. The seminar resulted in a variety of recommendations including runway safety programs at individual airports; investigation of phraseology, procedures, information provision; and the opportunity to incorporate new technologies to improve runway safety.

Contact: Peter Stastny
EUROCONTROL
+32 2729 3270
peter.stastny@eurocontrol.int

- *Latin America & Caribbean*

At IATA, runway incursions are still an urgent concern worldwide and improvements are considered absolutely necessary; therefore, the prevention of runway incursions is included in the safety objectives of the regional awareness campaign. A prevention program in Latin America and the Caribbean – the FAA-IATA Runway Incursion Prevention Program – was launched in May 2001. Efforts focus on pilot familiarity with airports, pilot/controller memory and attention, controller skill development, and compliance with regulations by pilots and controllers. In October 2002, IATA and the FAA jointly hosted an international meeting of the prevention program in Mexico City.

The FAA-IATA Runway Incursion Prevention Program (FAA-IATA RIPP)

The Federal Aviation Administration (FAA) and the International Air Transport Association (IATA), in an ongoing and successful partnership program, have devoted considerable effort to the runway incursion issue. The goal of this program is to involve the air carriers, international aviation organisations, and industry on safe airport operations.

The FAA-IATA Runway Incursion Prevention Program - Education, Awareness and Training Aid (CD-ROM) emphasizes the “Safety Gate to Gate” concept and the need for surface operation training and evaluation, in order to prevent incidents/accidents from occurring. Over 1000 copies of the successful FAA-IATA RIPP version 1.0 and 2.0 (not copyrighted) have been delivered not only in the Latin America & Caribbean Regions but also worldwide. As a regional initiative, some airlines have already adopted and incorporated the program into the annual pilots’ recurrent training, and some States have adopted the program for controllers’ training. Based on this success, FAA and IATA decided to launch an updated version 3.0, with wider scope by including ATC, ground operators, and airports. Also in the interest of safety, IATA prepared Surface Safety Airline Survey 2003 to assess airline status on this relevant issue.

The Pan American Aviation Safety Team (PAAST) is a non-political and non-commercial organisation with the mission to provide leadership and assistance to the regional aviation

community. PAAST has Action Team Leaders that are expected to provide IATA Regional Safety, Operations & Infrastructure Latin America & Caribbean with periodic reports of runway incursion training and deliver meaningful safety feedback.

IATA considers that by joining forces and integrating efforts, it stands a better chance of lowering accident rates.

Contact: Capt. Eduardo Chacin
Manager Safety, Operations & Infrastructure
Latin America & Caribbean
International Air Transport Association
Tel: +1 (305) 266 7552
Chacine@iata.org

- *United States*

In the United States, the FAA created a Runway Safety Office to deal with the runway incursion issue. Various airports have dealt with the problem through hands-on participation of pilots and controllers. For example, Los Angeles International (KLAX) brought controllers together with pilots from United, American, and Southwest Airlines to develop an airfield simulation model with NASA to better mitigate the incursion issue. Also, the FAA Runway Safety Office has offered free “Create Your Own Airport Safety Runway Website” to list hotspots and local airport procedures. These websites include information from both pilots and controllers on what to watch for at an airport.

Contact: Michael Lenz
Federal Aviation Administration
+1 (202) 385-4796
Michael.lenz@faa.gov

Various regions of the world have realized that to effectively deal with the safety problem of runway incursions, it is paramount to bring together the pilots and controllers that face the problem each day into a collaborative working environment.

2.6 ICAO GREPECAS Aviation Safety Board: Collaboratively identifying deficiencies in the air navigation plan for immediate State resolution in Latin America & Caribbean

At the August 2000 meeting of GREPECAS (The Caribbean and South America Regional Planning and Implementation Group of the ICAO), the Aviation Safety Board was established. It provides a forum where the deficiencies in the air navigation plan, characterized as safety impairments, can be identified for immediate State resolution.

The Aviation Safety Board is a relatively small group where pilots, controllers, and airlines are represented by IFALPA, IFATCA and IATA. The Regional Office Safety, Operations and Infrastructure Latin America & Caribbean of IATA has been the promoter of this initiative, becoming

the first region in the world to have an ICAO Aviation Safety Board that provides a direct link to the States to deal with safety deficiencies.

Contacts:	Raymond Ibarra Director ICAO NACC Regional Office +1 (525) 250-3211 rybarra@un.org.mx icao_nacc@mexico.icao.int	Peter Cerda Director Safety, Operations & Infrastructure Latin America & Caribbean International Air Transport Association +1 (305) 266-7552 cerdap@iata.org
-----------	--	---

2.7 Air Transport Operations Consultation Committee (ATOCC): Providing a forum of consultation between NAV CANADA and its major customers

The purpose of the ATOCC is to provide a forum for consultation on technical and operational issues, together with their financial impacts, between NAV CANADA and major commercial Air Navigation System (ANS) users and customers on a regular and ongoing basis. Because of the significant changes likely to occur over the next 10-20 years, frank and open consultation with the committee on changing requirements and infrastructure is important. This forum also helps to identify the priorities and requirements of the main system customers. Subcommittees may be formed to examine specific issues.

The NAV CANADA Vice-President of Operations is chairperson of the ATOCC, with other members coming from different departments in NAV CANADA, the International Air Transport Association (IATA), the Air Transport Association of Canada (ATAC), the Air Transport Association (ATA), Air Canada, Canadian Airlines International (CAI), US Airways, Air Nova, Canadian Regional Airlines, Alaska Airlines, Delta Air Lines and United Airlines and Air Transat. At the Chair's discretion, and in consultation with ATOCC members, other customers may be invited to participate in the work of the committee when applicable. Committee members who are not NAV CANADA employees serve without NAV CANADA compensation and bear all costs related to their participation on the committee.

There are numerous objectives of the ATOCC:

- Identify ANS issues that are of concern to the member organisations and examine options of addressing them.
- Examine ways of enhancing traffic flow, safety and operational efficiency.
- Discuss ANS related topics such as air navigation, airspace management, communications, air traffic control, and flight information services.
- Examine specific ANS plans and programs and the various options for their implementation.
- Examine proposed changes to existing facilities and services and strive to implement a smooth transition to any new infrastructure.
- Examine ways of minimizing the impact of system changes on human resources.

The Air Transport Operations Consultation Committee (ATOCC) became effective May 8, 1997. The duration of the committee will be as required and as determined by a consensus of the members. Meetings are held as needed and at least twice a year.

Contact: Monica Mullane
NAV CANADA
+1 (613) 563-5614
mullanm@navcanada.ca

2.8 Air Navigation System National Advisory Committee (ANSNAC): Providing a forum for exchange of technical views on the delivery of Air Navigation Services

The original Air Navigation System National Advisory Committee (ANSNAC) was established in April 1992, under the auspices of the Air Navigation System, Transport Canada. Its purpose is to provide a forum for exchange of technical views on the delivery of ANS services. The Committee is composed of representatives from the three main Branches of ANS (i.e., Air Traffic Services, ANS Requirements, and Technical Services) and representatives from those associations and/or agencies that deal with ANS on a regular basis.

The ANSNAC provides users and providers of ANS in Canada with the capability to jointly address future matters of concern and interest. The committee reviewed ANS issues as they became available and made recommendations as required to change procedures, practices, regulations and orders. There are numerous objectives of the ANSNAC:

- Identify ANS issues that are of concern to the aviation community and make recommendations for their resolution, as appropriate.
- Act in an advisory capacity on ANS issues such as air navigation, airspace management, air traffic control, and flight information services.
- Provide advice on specific ANS plans, programs, and proposed changes to the existing infrastructure of facilities and services.
- Provide advice on future ANS operating concepts, possible new requirements, and support for specific areas of research and development in Canada.
- Serve as the Advisory Committee for the implementation of the CNS/ATM and provide guidelines and direction as to priorities to the ANS CNS/ATM Working Group on Implementation.
- Establish working groups or sub-committees to undertake detailed studies and/or analysis of ANS plans and programs, as appropriate.

The ANS National Advisory Committee (ANSNAC) became effective January 1, 1997. The duration of the committee will be "as required" or "as determined" by the Vice-President Operations, NAV CANADA.

Contact: Monica Mullane
NAV CANADA
+1 (613) 563-5614
mullanm@navcanada.ca

THIS PAGE INTENTIONALLY LEFT BLANK

3.0 Local Pilot/Controller Collaboration Initiatives

This section contains summaries of a sample of 19 existing local pilot/controller collaboration initiatives from around the world. Working Group E collected information on these initiatives through a survey of pilots, air traffic controllers, airlines, and air traffic facility managers. The survey consisted of questions addressing:

- Motivation for the initiative
- The individuals and organisations involved in setting up and participating in the initiative
- Process used for getting pilots and controllers working together
- Benefits received from the initiative, and
- Lessons learned/advice that the participants would give to someone else considering a pilot/controller collaboration effort.

A copy of the survey form is contained in Appendix B.

The Working Group received approximately 50 total responses to the survey. However, not all initiatives described by respondents are included in this report since many were similar. After reviewing the survey results, the Working Group selected a sample of the responses to obtain a representative cross section of initiatives and in some cases conducted telephone interviews with the involved parties. The working group then prepared summaries of the initiatives, which were provided to the original submitters for review.

In addition to the above requested information, each summary contains the facility or airport location, and contacts for additional information.

THIS PAGE INTENTIONALLY LEFT BLANK

3.1 Amsterdam, Netherlands (EHAA) “Reducing Approach and Landing Accidents through Communicating and Understanding”



Reason for Initiative:	The need to improve pilot/controller understanding in an effort to reduce approach and landing accidents.
Groups Involved:	Air Traffic Controllers (ATC) The Netherlands KLM, The Netherlands Pilots from Several Dutch Airlines Training Managers, Amsterdam ATC (EHAA and EHAM) EUROCONTROL IANSS, Luxembourg
Location:	Amsterdam, Netherlands

The Flight Safety Foundation (FSF) International Approach and Landing Accident Reduction (ALAR) Task Force’s goal is to reduce by 50 percent the worldwide fatal approach and landing accident rate. One of the major conclusions of the task force, based on an analysis of worldwide accidents was, ***“Improving communication and mutual understanding between air traffic control services and flight crews of each other’s operational environments will improve approach and landing safety.”***

The tasks of pilots and air traffic controllers are complex and each task is executed under heavy workloads, along with a major overlap of shared tasks and responsibilities. The development of crew resource management (CRM) has improved communications between crewmembers immensely and has already paid back initial investments. Results of the ALAR studies reveal that the next challenge is to create a CRM-like program between pilots and controllers. Two different mental worlds exist for pilots and controllers:

- The pilot's world: focused on one airplane with its complexity, pressure of time restrictions, shortened turn-around-times, shortened flight times, and demands for high productivity.
- The controller's world: focused on traffic flow with multiple aircraft present on his/her scope, pressure to increase capacity of landing/take-off runways, reduce landing intervals, reduce radar separation minima, use complex multiple runway combinations.

To contribute to the accomplishment of the ALAR goal and to help achieve and share a common mental model between pilots and controllers, in 1993 ATC The Netherlands training department in conjunction with KLM Royal Dutch Airlines developed a training program focusing on the theme of "Aircraft Emergencies and the Role of ATC." The program had two main elements: (1) flight simulator sessions for air traffic controllers and (2) mutual discussion meetings between pilots and controllers.

Flight Simulator Sessions for Air Traffic Controllers : The objective of this element of the training program was to promote the understanding of limitations, workloads and operational requirements of the flight deck crewmembers during unusual situations. To achieve the objective, controllers played the role of pilots in scenarios involving emergency situations (e.g. engine fire, arrival segment encountering landing gear problems) and an ATC instructor simulated ATC.

The sessions began with the ATC instructor explaining the purpose of the session to a pair of controllers who were playing the role of pilots. This was followed by a KLM flight instructor providing a 30- minute basic Boeing 737 cockpit training course to the controllers. The roles and tasks to be completed during the emergency were made clear to the participants. By actually experiencing the workload, task complexity, limitation of time and variety of decision making of the pilot's tasks in the flight simulator, the controllers' reactions were encouraging. Examples of comments from the controllers include: "Better than my familiarization flights so far," "actually an eye opener," and "objectives of this training session are reached and beyond that many more."

Mutual Pilot and Controller Meetings: Pilots and controllers were invited to participate in discussion sessions related to "Aircraft Emergencies and the Role of ATC." The main objective of the discussions was to keep both parties informed of current procedures and common programs to improve communications during an unusual event.

In preparing for the meetings, KLM and ATC Netherlands worked together with pilots and controllers to find an incident that would be of interest to the participants. An actual incident in which one of the controllers and one of the pilots had been involved was selected for discussion. Although the incident involved a departing aircraft, the communication and interplay between ATC and the cockpit crew were the main topics and could be freely transferred to the approach and landing phase of flight. The incident was made known to the meeting participants, open discussions were held and the current procedures were "mirrored."

**Benefits/
Outcomes**

In total 321 ATC personnel and 243 pilots have attended these meetings and concluded that they were extremely successful. Very useful recommendations were made to improve ATC procedures and were promptly introduced by management. The meetings were successful in creating awareness and understanding among aviation professionals. One output from the meetings is a very useful tool for ATC controllers encountering a Pan Pan or Mayday call:

- A – Acknowledge** - make sure you understand the nature of the emergency.
- S - Separate** - don't forget to establish or maintain separation with other aircraft or terrain.
- S – Silence** - impose silence on your frequency.
- I – Inform** - supervisor, colleagues and airport concerned.
- S – Support** - give maximum support to pilot and crew.
- T – Time** - allow pilots sufficient time to work on their problem.

Teamwork in aviation normally creates synergy and wonderful ideas. The ultimate challenge is to work together towards an even safer aviation industry.

Contact(s):

Dick van Eck, Air Traffic Controller (ATC) The Netherlands, d.j.vaneck@lvnl.nl

THIS PAGE INTENTIONALLY LEFT BLANK

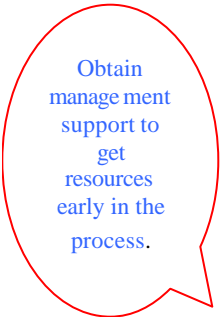
3.2 Atlanta ARTCC (ZTL) “A Day at Delta”



Reason for Initiative:	To provide controllers a better understanding of an airline’s operations
Groups Involved:	Atlanta ARTCC Management and Staff Atlanta TRACON Management and Staff Delta Air Lines National Air Traffic Controllers Association (NATCA)
Location:	Delta Air Lines Atlanta, Georgia, USA

For many years the Operations Supervisor at the Atlanta Air Route Traffic Control Center (ZTL) had wanted to start a program to provide his colleagues a better understanding of an airline’s operations. He felt that most controllers were not aware of the role the dispatcher and the Operations Control Center (OCC) play in an airline’s operation. With the cooperation of his colleagues and Delta Air Lines personnel, his wish has finally been realized with a program called “A Day at Delta.”

To begin the program, the Operations Supervisor got approval from his facility manager to plan a meeting with the Delta Air Lines ATC representative, dispatcher training representative, and system manager for the OCC. He also involved the National Air Traffic Controllers Association (NATCA) union in the very early stages of planning the program. With the assistance of the global ATM Manager, the System Manager of Flight



Obtain
manage ment
support to
get
resources
early in the
process.

Control-ATC, and the Manager of Dispatcher Training of Delta Air Lines, “A Day at Delta” program was initiated. Under the program the ZTL sends up to three controllers on every third day to spend the day at Delta Air Lines.

The ZTL Operations Supervisor has been able to coordinate with Delta pilot training in order to have the controllers spend time in a flight simulator under the guidance of an instructional pilot. The controllers’ agenda for “A Day at Delta” consists of attending a system wide briefing, touring the entire Operations Control Center, monitoring the activities of a dispatcher, spending time at the ATC desk, and spending time in a flight simulator.

Plans for the future include extending the program to have the dispatchers spend time in the ARTCC during their refresher training. Plans are also underway for more formal aircraft simulator training in order to give the controllers hands-on experience of the cockpit workload during different phases of flight.

**Benefits/
Outcomes:**

Although the program is just starting, the Operations Supervisor hopes to continue the program every third day until every ARTCC employee has an opportunity to attend. He sees the benefits as having a workforce that is better educated in the way the dispatcher and the OCC of an airline are affected by ATC operations and understands how important it is that the two work together to make the system safe and efficient.

Contact(s):

Michael Ehrlich, Operations Supervisor/Special Projects, +1 (770) 210-7690,
Michael.I.Ehrlich@faa.gov

David Spanjers, System Manager, Flight Control Operations, Delta Air Lines, +1 (404) 705-0208, David.Spanjers@Delta.com

Hank Echols, Director, Flight Control, Delta Air Lines, +1 (404) 715-0209,
Hank.Echols@Delta.com

John Talmadge, System Manager, Flight Control ATC, Delta Air Lines,
+1 (404) 715-1009, John.Talmadge@Delta.com

Ellis Thorp, Manager, Global Air Traffic Management, Delta Air Lines,
+1 (404) 715-1995, Ellis.Thorp@Delta.com

George Blosser, B727 Fleet Captain, Delta Air Lines, +1 (404) 715-0338,
George.Blosser@Delta.com

Jim Gaudet, Air Traffic Operations, Delta Air Lines, +1 (404) 715-0054,
Jim.Gaudet@Delta.com

3.3 Atlanta ATCT/TRACON (KATL / KA80) “Maximizing Operational Efficiency at Hartsfield Atlanta International Airport”



Reason for Initiative:	Need identified for increased pilot/ATC communications and dialogue to maximize operational efficiency at KATL
Groups Involved:	Atlanta Large TRACON (LTRACON) Management and Staff Air Tran Airways Atlantic Southeast Airlines Delta Air Lines Atlanta Air Route Traffic Control Center (ARTCC) (ZTL) Management and Staff
Location:	Hartsfield Atlanta International Airport Atlanta, Georgia, USA

During Hartsfield Atlanta International Airport (KATL) Capacity Enhancement Work Group meetings between Atlanta LTRACON (KA80), Atlanta ARTC Center (ZTL) and airport users, a need was identified for increased pilot/ATC communications and dialog to

maximize the operational efficiency at KATL. The team determined that several of the operational enhancements being pursued were contingent upon an improved understanding between pilots and ATC about what was expected and needed by the respective parties to minimize delays and increase airport efficiency.

To address this need the Atlanta LTRACON, along with Atlanta ARTCC, coordinated with Delta Air Lines, Atlantic Southeast Airlines, and Air Tran Airways (KATL's top three users) to provide ATC briefings during their pilot recurrent training classes, which are mandatory for all pilots.



Atlanta LTRACON and Atlanta ARTCC are allotted approximately one hour during the pilot recurrent training at Delta, Atlantic Southeast, and Air Tran Airlines to provide a briefing. The briefings provide an overview of KATL operations, explain what pilots can expect when flying through KATL and surrounding airspace, and provide an opportunity for open discussion on any operational issues of concern.

Since the training began in March 2002, over 350 briefings have been completed and over 7,000 pilots have been briefed. KA80/ZTL are scheduled to participate in over 300 briefings at Delta Air Lines, 40 at Atlantic Southeast Airlines, and 20 at Air Tran Airways annually.

**Benefits/
Outcomes:**

This initiative has resulted in improved pilot/ATC communications on operational issues, open exchange of information, and an enhanced working relationship. The briefings are an ongoing effort designed to improve pilot/controller communications and cooperation to maximize the KATL airport runway and surrounding airspace utilization while reducing misunderstandings that may lead to operational errors, deviations, and runway incursions. Pilots have consistently identified the ATC briefings as the highlight of the recurrent training.

Pilot/controller collaboration is a critical component to obtaining the optimum solution to issues that affect both groups. Although the initiative represented a huge commitment in time and resources for the LTRACON, Atlanta ARTCC, and the airlines, the benefits have made it well worth the effort.

Contact(s):

Bill Joyce, Traffic Management Officer (TMO), Atlanta LTRACON/ATCT, KA80, +1 (678) 364-6210, BillyCJoyce@faa.gov
Ron Caraway, STMC, KA80, +1 (678) 364-6227, Ron.Caraway@FAA.Gov
Leroy Naumann, Assistant Manager Pilot Training Programs, Delta Air Lines, +1 (404) 715-0406, Leroy.Naumann@Delta.com
Brad Sheehan, Flight Training and Standards, Atlantic Southeast Airlines (ASA), +1 (678) 613-6603, Brad.Sheehan@Delta.com
Steve Clements, Ground Training Manager, AirTran Airways, +1 (770) 994-6344, Sclements@Airtranairways.com
Alton Self, Traffic Management Officer, Atlanta ARTCC (ZTL), +1 (770) 210-7883, Alton.Self@faa.gov

3.4 Auckland, New Zealand (NZAA) “Aviation Reform Results in Collaboration”



Reason for Initiative: Changes to aviation businesses affected the relationships between airline operators and air traffic controllers and several labor law changes brought pilots and air traffic controllers closer together.

Groups Involved: Operators and Pilots
Air Traffic Controllers

Location: Auckland, New Zealand

Since the mid 1980's New Zealand underwent significant reform in the way it conducted business and in the role of government. Significant change occurred that touched almost every New Zealander particularly as the concept of “user pays” took hold. Changes to aviation business models affected the relationships between airline operators and air traffic providers and several labor law changes brought pilots and air traffic controllers closer together. This had the unexpected result of breaking down barriers, which brought about closer working relationships and a greater depth of interaction on safety issues.

Background: There are over 3,300 registered aircraft and over 10,000 licensed pilots in New Zealand. Nearly 150 of the registered aircraft are over 5670 kg and over 3,000 commercially licensed pilots, including 1,500 Airline Transport Pilots and nearly 300 Air Traffic Controllers.

Aviation System Changes :

Overall this provides for some interesting levels of aviation activity since this country has one licensed pilot per 400 people and one registered aircraft per 1,333 people living in New Zealand. They also have one of the highest ratios of air travel per person in the world.

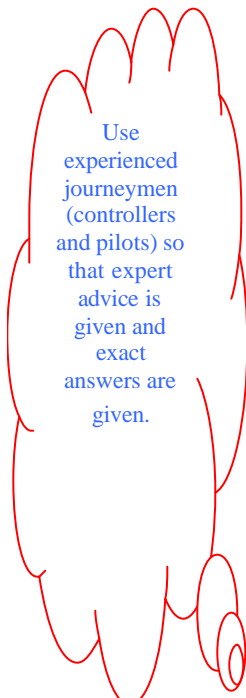
The Air Traffic Control system was upgraded in the late 1980's from a sparsely populated navigation system using only primary radar to an integrated and modernized navigation aids and new primary radars combined with transponder based radar and software package system. Airways were redesigned during this period, which required a heavy emphasis on consultations with the users. The users included operators, pilots and other users of the system.

Significant levels of consultation occurred across the aviation industry and were a reflection of the size and significance of change. Consultation went as far as listening to everyone who may be affected whereas the final decision to make, change or develop a new solution was still retained by the provider.

During this same period, New Zealand labor law changed a number of times, resulting in the controllers joining the New Zealand Airline Pilots Association (NZALPA). The joining of the two aviation labor groups proved to be highly successful as they became integrated into the executive and safety structure of NZALPA. The NZALPA magazine provided a means for line pilots to regularly read about controller issues and controllers to regularly read about pilot issues. This allowed for a regular cross pollenization of topics and a forum for exchanging ideas.

Examples of Joint

Safety Programs: Extensive changes in the air navigation system generated significant consultation within the aviation industry. This consultation process set the groundwork for future working relationships at a design planning and implementation level.



Use experienced journeymen (controllers and pilots) so that expert advice is given and exact answers are given.

Within the NZALPA, the monthly discourse of executive meetings harnessed the benefits of having pilots and controllers in a new working relationship. The initial outcome was the formation of policy, which created an Accident Incident Safety Group (AISG) consisting of pilots from each airline and controllers. The mandate of the AISG was to advance safety issues through the combined working knowledge of pilots and controllers.

Within the Airways Corporation, "User Meetings" for customers were developed. These meetings, attended by air traffic control specialists and pilots (ranging from heavy jet transport to turbo prop and general aviation pilots to glider pilots) provided an exhaustive canvassing of issues, concerns, and consensus.

Other safety programs include the regular visits to the control center for pilots during the annual "refresher course," where controllers brief on ATC subjects. Controllers were also invited to attend simulator sessions to provide communication to the pilots (in training) in the use of Precision Radar Approach (PRA) procedures. This allowed the pilot to be issued a new approach qualification once this was successfully completed within the prescribed regulatory limitations.

A more recent example of co-operative efforts includes the program to use a parallel taxiway as a runway to allow work to be conducted on the main runway. This provided an opportunity to get the air traffic provider, pilots and the airport company together to work through the large number of issues to be addressed in a project of this nature. This program was completed successfully with no major incidents and has highlighted a need for a focused approach to airport signage and emphasized how important these elementary aspects are.

One example of working co-operatively was naming a reporting point. The pilots wanted a reporting point somewhere north of an arrival navigation aid. The point was identified loosely as “some where up there.” The name of the point became “SWUTH” **S**ome **W**here **U**p **T**here.

Conclusion:

New Zealand is an aviation conscious nation that underwent significant reform to a market economy during the 1980's. This change presented opportunities to get personnel within airlines, pilot union's, air traffic providers and controllers to interact on an operational and policy planning level. Significant gains continue to accrue due to the interaction and higher levels of understanding among these personnel. Examples highlight the level of working relationships that have developed to produce significant enhancements to aviation safety development and to the ongoing open levels of communication within these groups. Dichotomies still occur where priorities diverge on issues so we still strive to do better next time.

Contact(s):

Captain Stu Julian, +64 9 534 9126, stujulian@compuserve.com

THIS PAGE INTENTIONALLY LEFT BLANK

3.5 Charlotte ATCT (KCLT) “RESAFE”



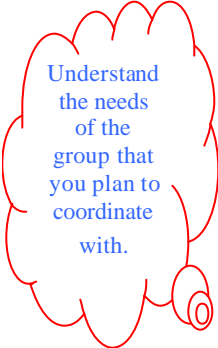
Reason for Initiative:	Excessive steep approach profiles, unstable approaches, and go-arounds on Runway 23 at KCLT were revealed through analysis of US Airways FOQA/Digital Flight Data Analysis.
Groups Involved:	Charlotte Air Traffic Control Tower Management and Staff Air Line Pilots Association, International (ALPA) National Air Traffic Controllers Association (NATCA) US Airways Safety Group
Location:	Douglas International Airport Charlotte, North Carolina, USA

Involve
bargaining
units early
in the
process.

Analyzing Flight Operational Quality Assurance (FOQA) data from its Boeing 737 fleet, safety experts at US Airways noticed a trend at its major East Coast hub at Charlotte, North Carolina (KCLT). The data showed that higher-than-average percentage of flights going into KCLT were experiencing steep approach profiles, unstable approaches, and go-arounds on runway 23. A member of the US Airways Safety Group contacted KCLT and set up a meeting with NATCA and management to discuss, and hopefully solve, these issues.

To begin the effort, the facility manager at KCLT provided space for the meetings to take place, and both US Airways and FAA management authorized personnel time to attend the meetings. With management support and active participation of both NATCA and Air

Line Pilots Association, International (ALPA), several air traffic controllers and pilots met to find the cause or causes of the problems experienced by US Airways.



Understand
the needs
of the
group that
you plan to
coordinate
with.

Although those that met thought that the solutions would be developed quickly, they found that there were going to be no simple solutions to the complex issues facing them, and there were more questions than answers being produced. They realized that there needed to be a significant improvement in education and communication between the pilots and air traffic controllers. Beginning in the fall of 1996, representatives from US Airways, ALPA, NATCA, and the staff at KCLT began working diligently to enhance their interaction, particularly in the area of training and quality assurance. In addition to these training classes, the pilots and controllers developed training sessions for each other:

- Pilots from US Airways prepared training sessions that covered aircraft performance characteristics, error management, effective communication, and flight crew responsibilities. They also held training classes at the US Airways' Training Center in Charlotte for the air traffic controllers and staff, and US Airways provided flight simulator time for controllers to experience first-hand the dynamics of aircraft approach capabilities and limitations.
- The air traffic controllers at KCLT developed a training session for the US Airways Check Airmen on topics such as airspace allocation, radar procedures, controller responsibilities, workload issues, and emergencies. The controllers offered pilots the opportunity to participate in Enhanced Target Generator (ETG) air traffic control simulations. Also, joint training sessions were conducted for US Airways Ramp Controllers and FAA Ground Controllers.

The program has been formalized, with numerous documents, training surveys, questionnaires, and statistical analyses on hand at the facility that testify to the tremendous value of these efforts to date. It has also garnered national attention and support from organizations such as NASA, FAA, ALPA, NATCA, and many other airlines and airports that have seen the value of this collaboration. Since its inception, classes have been expanded to other airlines flying into KCLT and attendees have included training check airmen, airline pilots, corporate pilots, medical crews, and dispatchers.

The combined training sessions revealed many areas where significant misunderstandings existed. In many cases, controllers had wide varying levels of knowledge of aircraft performance and stabilized approach criteria and requirements. Issues, such as, rate of turn, rates of descent while slowing, maximum acceptable speed of the final approach fix, and approach stabilization were discussed at length. Other topics included radio navigation capabilities, and cockpit workload ramifications during last minute runway changes, especially in highly automated aircraft.

Flight crews were found to be lacking in their understanding of airspace limitations, the importance of using proper phraseology, the use of call sign on clearance readback, and the impact on controller workload when they are unable to comply with a request and do not give adequate notification.

The combined training sessions revealed many areas where significant misunderstandings existed. In many cases, controllers had widely varying levels of knowledge of aircraft performance and stabilized approach criteria and requirements. Issues such as rate of turn, rates of descent while slowing, maximum acceptable speed to the FAF, and approach stabilization were discussed at length. Other topics included RNAV capabilities, and cockpit workload ramifications during last minute runway changes, especially in highly automated aircraft.

Flight crews were found to be lacking in their understanding of airspace limitations, the importance of using proper phraseology, the use of call sign on clearance readback, and the effect on controller workload when failing to provide adequate notification when deviating for weather, or when unable to comply with an ATC clearance.

Benefits/

Outcomes:

These efforts have produced dramatic results, but also revealed areas where much improvement is needed. The most impressive result has been the significant reduction in go-arounds at KCLT. Since this program began, go-arounds have decreased 21% while the volume of air traffic increased 10%. Much of this reduction is due to air traffic controllers at KCLT developing a better understanding of the performance characteristics of the B737. Operational errors involving communication discrepancies have also been reduced and this initiative contributed to the successful modification of an ILS to runway 23 and the development of additional training programs.

In addition, US Airways has reported significant savings from reduced fuel consumption due to fewer go-arounds. Customer satisfaction has also been positively affected through more efficient landings on runway 23 at KCLT. This program has opened up channels of communication between the US Airways pilots and the KCLT controllers. In 2000, US Airways pilots and KCLT controllers jointly produced a video that addressed some of the unique performance characteristics of the new Airbus aircraft. This video was distributed to all ATC facilities where US Airways' Airbus aircraft operate.

One of the major keys to the success of this program has been the wide support of all parties involved. The unions, management, and employees all had a common interest in supporting this collaborative effort and all parties have benefited from it. Both safety and operational efficiency have improved and future problems are much more likely to be either resolved quickly or avoided altogether because of the open channels of communication and the spirit of cooperation that has been developed.

Contact(s):

Jeffrey Solomon, Air Traffic Control Specialist, NATCA,

Jeffrey.Solomon@faa.gov

Thomas Denny, Charlotte Air Traffic Manager, +1 (704) 359-1000,

Thomas.Denny@faa.gov

Al Garin, Check Airman, Airbus 330, US Airways, +1 (704) 846-2704,

agarin1945@aol.com

John Duncan, ALPA Safety Representative, US Airways, +1 (704) 553-8251,

jcduncan@carolina.rr.com

THIS PAGE INTENTIONALLY LEFT BLANK

3.6 Cleveland ATCT (KCLE)

“Complete ATC Seminar: The Pilot's Journey through the ATC System”



Reason for Initiative:	Controllers from the Cleveland Tower were experiencing problems such as poor radio technique, misinterpreted maps and runway diagrams, inadequate pre-flight briefings, and apprehension among general aviation and corporate aviation pilots when dealing with air traffic control.
Groups Involved:	Cleveland ATCT Management and Staff Cleveland Air Route Traffic Control Center Cleveland Automated Flight Service Station Cleveland Flight Standards District Office
Location:	Various locations in Ohio and surrounding states Cleveland, Ohio, USA

Don't
assume
someone
else is
addressing
a problem.

When the air traffic controllers in the Cleveland Airport Traffic Control Tower heard many stories about how general aviation and charter pilots viewed the air traffic control system with apprehension and fear, they decided to do something about it. Representatives from each air traffic control facility in the Cleveland area met with the Safety Program Manager at the Flight Standards District Office. Each facility provided for consideration a list of the most common misunderstandings/mistakes made by pilots in the general aviation community. Some examples were: poor radio technique, misinterpreted charts and runway diagrams, and inadequate pre-flight briefings. These representatives from the Cleveland

Flight Standards District Office, Cleveland Air Traffic Control Tower, Cleveland Automated Flight Service Station, and Cleveland Center worked together to develop an informative program oriented to encompass the entire realm of air traffic services, packaged it, and presented it to the flying public in a two hour program-delivered to THEIR location. This program is known as "The Complete ATC Seminar, *The Pilot's Journey through the ATC System.*"

"The Complete ATC Seminar, The Pilot's Journey through the ATC system" is a culmination of years of experience, from both the pilot and controller side of aviation. A panel of six air traffic controllers presents this "skit," representing how the ATC system really works anywhere in the U.S.

The ATC controllers are placed on one side of the stage and the "pilot" on the other. The separation between the two simulates the separation between a pilot in an aircraft and the controller in the ATC facility. Neither would acknowledge each other's presence except through telephone or radio transmissions. Additionally, each controller would only communicate with the other controllers via a simulated "landline." This would simulate the intra-facility communication between controllers via the computer. When the pilot contacts each different ATC specialty for the first time, that controller would give the audience a brief description of the function they perform in the system. For example, when the pilot calls the AFSS, he/she is placed on hold and the AFSS specialist that responds explains the services they provide. Throughout this skit the pilot acts as the director, initiating controller responses and actions, requesting routing, and obtaining needed information.

Solicit volunteers instead of assigning people. Those who volunteer do the best job, and it creates a sense of ownership for the initiative.

The participants conduct themselves just as they would in real life. The pilot calls for a weather briefing, files a flight plan, and simulates the communications normally made during an IFR cross-country flight. The controllers handle this flight just as they normally do, making radio transmissions, issuing clearances, and coordinating changes in the route of flight. The only difference is that all parties would be "thinking out loud" to the audience. The flight is planned: a rented single engine airplane is being used over a familiar route of flight at a low en route altitude. At no time is this flight any different than the thousands that are taken daily throughout the U. S.

One of the most unique aspects of this presentation is that the entire ATC system is represented. Flight Service, En Route/Center, Approach Control, and Control Tower are brought to the audience to present their area of expertise. During the entire "flight," mistakes are made and corrected by members of the team, but no sermons or criticisms are made, only straightforward and honest advice. No questions are addressed during the "flight," but afterward a question and answer session is held for members of the audience.

Benefits/ Outcomes:

The primary benefit of this program is to de-mystify the air traffic control system and those who work in it. The pilots become familiar with the controllers, common misperceptions, workload issues, and what happens "behind the scenes" when they are flying through controlled airspace. The team of air traffic controllers and pilots have presented this seminar to over two thousand pilots, who have in turn given praise at all levels about the

quality and content of the presentation. The seminars greatly bolster pilot/controller respect because they present everything and everyone at one place and time. Although never intended as such, this program has proven most effective in presenting all of the above material WITHOUT entering an Air Traffic Control facility. Therefore, security measures and costs are not a factor while every facet of the system is explored.

"The Complete ATC Seminar, *The Pilot's Journey through the ATC System*" is both informative and entertaining. It can be presented anywhere there is a need, and adaptation to local areas is possible.

Contact(s):

Kris Palcho, Safety Program Manager, Cleveland FSDO, +1 (440) 686-2023
Karl Aber, Support Specialist, Cleveland ATCT, +1 (216) 265-1336

THIS PAGE INTENTIONALLY LEFT BLANK

3.7 Copenhagen, Denmark (EKCH)

“Changes to Air Navigation Order Results in Safety Forum”



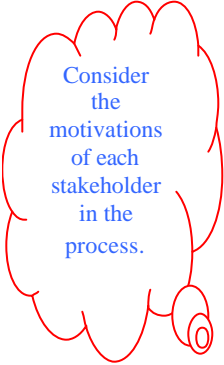
Reason for Initiative: Large base of information on pilot/controller interface issues generated following change in Air Navigation Order

Groups Involved: Naviair
Major Air Carriers Operating out of Denmark

Location: Naviair
DK-2770 Kastrup
Copenhagen, Denmark

In June of 2001, a change to the Air Navigation Order, the law that governs aviation in Denmark, was passed by the Danish parliament. The new law made it possible for the confidential, non-punitive reporting of deviations from Standard Operating Procedures (SOP's) by pilots, aircraft maintenance personnel, airport personnel, and air traffic controllers. The reports involve events that could have or actually had an impact on flight safety. The number of reports in Danish air traffic control rose significantly, from approximately 35 per year to more than 900 for the first year after the introduction of the new law.

This large increase in the number of air traffic control reports identified significant issues related to procedures, deviations from SOP's, and the interface between controllers and pilots. The information regarding the interface between pilots and controllers led



Consider
the
motivations
of each
stakeholder
in the
process.

representatives of Naviair to realize that they had to look at the aviation system as a whole. In the words of Mr. Norbjerg, “we in ATC, for instance, could change procedures from now on and to the end of the world, but if we do not share knowledge with the flying community the essence of many problems would not be solved. That was our prime motivation for information sharing.”

Mr. Norbjerg, as head of the Naviair investigation team, and personnel in his department began their initiative by inviting flight safety personnel from the major air carriers operating out of Denmark to participate in a flight safety forum where general and special matters are discussed. These carriers account for approximately 60 percent of the air traffic volume in Danish airspace.

The forums are held biannually and the intent of the Naviair representatives is to communicate relevant matters from these forums to their operational staff, as they expect the flight safety personnel from the airlines do in their organizations. The participants feel that they should go beyond familiarization flights for controllers and visits to control rooms and towers for the pilots to discussing relevant flight safety matters. Examples of issues discussed in the forums include human factors, use of TCAS, clearance compliance, phraseology, etc.

Mr. Norbjerg has also given lessons to every pilot from one of the participating airlines. The topics covered during these sessions include findings from the runway incursion accident at Milan’s Linate Airport in October 2001 and the Lake Constanzt midair collision in July 2002.

**Benefits/
Outcomes:**

Naviair representatives report that they have gained valuable knowledge to use in their work with runway safety. They have learned that the clearances they give to pilots, the signs and lighting at airports, and sometimes their procedures are not always beneficial to maintaining good situational awareness in a cockpit.

While not all flight safety problems have been solved, the collaboration initiative has been beneficial in sharing information between pilots and controllers and increasing awareness of issues affecting both groups.

The advice that Naviair representatives would give to others wishing to establish a pilot/controller collaboration initiative includes:

- Be clear on what you want to achieve
- Identify the stakeholders and address them directly
- Address specific safety issues

Contact(s):

Peter Majgard Norbjerg, +45 32478216,
PMN@naviair.dk

3.8 Dallas/Fort Worth TRACON (KD10) “Collaboration with Southwest Airlines”



Reason for Initiative:	Controllers at DFW TRACON (KD10) were experiencing problems with aircraft descents and excessive vectoring of aircraft landing at Dallas Love Airport. This resulted in safety issues, apprehension on the part of the controllers and pilots, delays and increased customer operating expense.
Groups Involved:	DFW TRACON Management and Staff Dallas FSDO Management and Staff Southwest Airlines
Location:	Dallas Love Field Dallas/Fort Worth, Texas, USA

Southwest Airlines, B737 aircraft arriving via the Glen Rose STAR (southwest of KDFW) were routinely vectored to a downwind leg west of KDFW. From that downwind leg, the aircraft are turned and descended directly over KDFW airport to a point east where the aircraft would join the final approach course to Dallas Love Field (KDAL) runways 13L or 13R.

The issues were:

Identify a
“go team”
for
implement-
ing
proposals.

- Aircraft in IFR weather joining the final approach course were sometimes joining the glide slope from an altitude above and not from an altitude below as required.
- There was no positive course guidance for the aircraft to follow for routing over KDFW to join the final approach course at KDAL.

This operation required controllers to vector aircraft during the entire route to a point where it joins the final approach course. Often the controller was unable to clear the aircraft to descend because of KDFW arrivals below it or the turn east bound to proceed over the top of KDFW was delayed. If delayed, the controller had two options:

1. Take the aircraft to the “north airway” north of KDFW (approximately an additional 40 flying miles); or
2. Attempt to vector aircraft through a complex section of airspace that included three final approach courses to KDFW.

Solutions:

The first step was to provide the aircraft a positive guidance/course that it could count on. This was accomplished by moving the Glen Rose STAR termination point to an intersection (HURBS) just northeast of KDFW. The aircraft would proceed inbound on the Glen Rose Star to DELMO intersection, direct to the Ranger VORTAC (FUZ), then via the FUZ 064 degree radial to HURBS intersection where the aircraft is turned to join the ILS final to KDAL.

This eliminated the problems of excessive vectoring, late turns, and increased flying miles north of KDFW and then back south into KDAL. This also allowed the pilot to expect a predictable flight path each time the route was flown.

The outcome was the publication of a charted visual approach procedure that was published in February 1998. This solved only part of the problem – there was a VFR procedure but they still needed to develop an IFR procedure.

Second, two routes were tested: Glen Rose VORTAC (Southwest of KDFW) direct Cedar Creek VORTAC (Southeast of KDFW), and routing the arrival aircraft through Waco airspace (Waco located south of KDFW) to Cedar Creek VORTAC. These routes were tested July 14, 1999. Both routes worked to a limited extent. However, the new routes would have resulted in increasing the annual operating costs for the customers by three to four million dollars.

A waiver to raise the glide slope to runways 13L/R at KDAL above the normal 3-degree angle was requested. The intent was to raise the glide slope angle enough so the arrival aircraft could join final from below the glide slope – not from above as had been previously done. For human factors reasons, this was not considered to be a successful solution.

The next attempt was to lower all missed approach altitudes for aircraft landing KDFW. This would allow the KDAL arrival aircraft to descend to a lower altitude over KDFW with

Don't overlook the potential contributions of non-pilots and non-controllers, (e.g., dispatchers, flight service workers, airport workers, cabin crew, etc.)

the intent to permit aircraft to join the glide slope from an altitude below. First, this would have involved costly charting changes (due to the large number of approaches at KDFW), and secondly, it would not allow prop aircraft to continue to transition from east to west over the top of KDFW airport. This would have significantly increased the operating cost for numerous general aviation customers.

The final step was the development of a “special” instrument approach to be used by Southwest Airlines. The approach was designed with collaboration from Air Traffic, Flight Standards, and Southwest Airlines. The design was tested in the B737 flight simulator under the observation of the Southwest Airlines Principal Operating Inspector (POI). Additionally, Southwest placed notes on the approach charts such as “Cross Hurbs intersection at final approach speed configured for landing” that provided the pilot with critical information to make the approach successfully.

After many hours of flight simulation, numerous flight tests, and controller and pilot briefings, the new approach was published February 16, 2001. The new approach has all but eliminated the high glide slope intercepts that had been occurring. Moreover, the new procedures permitted Southwest Airlines to continue utilizing an efficient, economic routing when transitioning between the en route to terminal environment. All of the other alternatives would have increased the flying miles for the route and subsequently the approach by a minimum of 50 flying miles.

Contact(s):

Chuck Frankenfield, Support Manager, Airspace and Procedures, DFW Tower/TRACON, +1 (972) 615-2530,

Chuck.Frankenfield@faa.gov

Greg Juro, DFW Tower/TRACON Traffic Management, +1 (972) 615-2550,

Greg.Juro@faa.gov

Bob Dombrowski, Chief Pilot Southwest Airlines, +1 (214) 792-5654,

Bob.Dombrowski@wnco.com

Gordon Taylor, Dallas FSDO, +1 (214) 767-5850,

Gordon.Taylor@faa.gov

THIS PAGE INTENTIONALLY LEFT BLANK

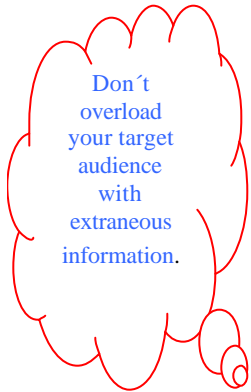
3.9 Daytona Beach International Airport (KDAB) “Addressing Problems Proactively”



Reason for Initiative:	Inexperienced/low time pilots operating in high traffic environment.
Groups Involved:	Daytona Beach ATCT Management and Staff Local Flight School Instructors and Safety Personnel Operations Personnel, Daytona Beach Int’l. Airport Airport Management Representatives Embry-Riddle Aeronautical University
Location:	Daytona Beach International Airport Daytona Beach, Florida, USA

The primary users of the Air Traffic System in and around the Daytona Beach International Airport (KDAB) are flight schools and general aviation. The constant turnover of flight instructors and the influx of new student pilots each semester provide an environment where inexperienced/low time pilots advance their skill levels in a high traffic environment.

To address this situation, some years ago KDAB began an effort to meet weekly with safety personnel and chief flight instructors from the local flight schools and with management representatives from the airport. The meetings provided an opportunity for KDAB personnel to communicate face-to-face with their customers. Quarterly, this group



is expanded to include flight instructors, operations personnel from the local airports involved with flight training and additional ATC personnel.

Additionally, KDAB was the charter facility for the East Coast Flight Training and Safety Group (ECFTSG). Along with Embry-Riddle Aeronautical University, KDAB began an effort to include other flight schools into a common work group for safety related issues.

The majority of KDAB traffic remains within 30 miles of the primary airport. Over two hundred training aircraft are based at Daytona Beach, not counting the satellite airfields. Participants in the ECFTSG now come from as far away as Flight Safety International in Vero Beach, Florida, the Florida Institute of Technology in Melbourne, and Comair Flight Academy in Sanford.

**Benefits/
Outcomes:**

Benefits have ranged from simply establishing personal relationships where KDAB personnel can put a face with a name during phone conversations, to standardization of training areas, sharing common radio frequencies, and formulating a joint hurricane evacuation plan. The groups have presented a proactive, rather than a reactive, means to solve problems and address issues.

Listening to the users' needs has enabled KDAB to allocate resources to meet their needs. KDAB has developed "training only" instrument approach procedures, modified local sector boundaries to more evenly distribute traffic, and worked with the airport/user groups to design new taxiways, thus eliminating many runway crossings.

The advice of KDAB personnel to other ATC personnel considering establishing a pilot/controller collaboration initiative is to listen to the people whose livelihood depends on operating in your airspace. Often their suggestions not only save them money, it will also simplify the facility's operation if one is willing to attempt change.

Contact(s):

Lee Nichols, Support Manager, Daytona Beach ATCT, +1 (382) 226-3900,
Lee.Nichols@faa.gov

Grant Brophy, University Aviation Safety Manager, ERAU, +1 (386) 226-6800

Dr. Richard Theokas, Director Flight Dept., ERAU, +1 (386) 226-7949

Michael Powell, Director, Airside Operations, Daytona Beach Airport, +1 (386) 248-8069

3.10 Frankfurt, Germany (EDDF) “Joint Operational Incidents Training: Linking Simulators”

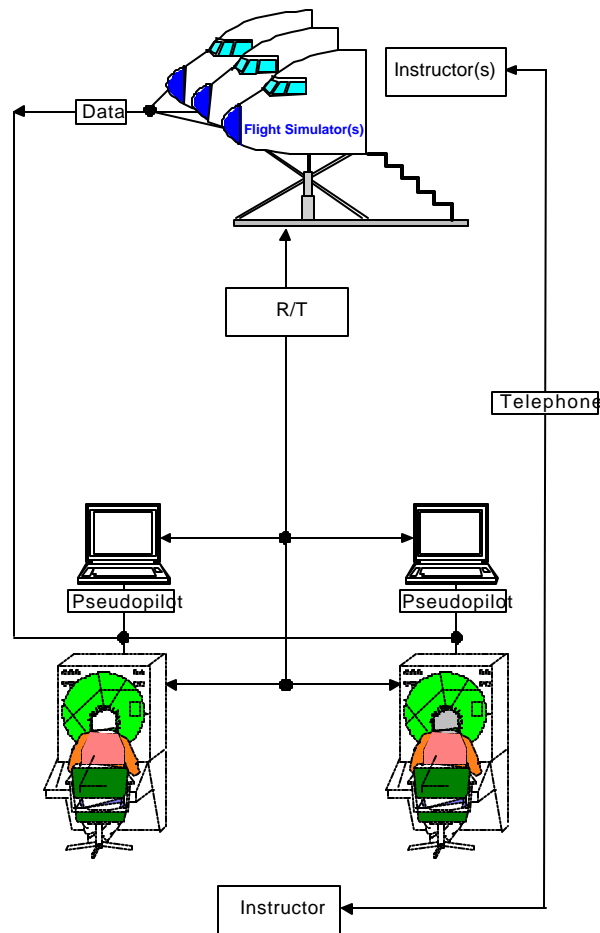


Reason for Initiative:	Develop a shared training program for air traffic controllers and pilots based on a network of an ATC radar simulator and different flight simulators.
Groups Involved:	Air Traffic Controllers Pilots
Location:	Frankfurt, Germany

Joint Operational Incidents Training is a shared training program for air traffic controllers and pilots based on a network consisting of an ATC radar simulator and different flight simulators. JOINT was developed on the basis of the realisation that any simulation in this field can only be as good as the simulation environment. While simulator performance has become better during the last years, the simulation environment has not received the attention it deserves. Normally in flight simulation, there is no ATC environment at all, or it is simulated by the flight instructor only; in this case, other traffic is not simulated. In ATC radar simulations, pseudo pilots play the role of real pilots by steering targets on a computer. However, they are not under the same level of stress as is experienced in real emergency situations in a real cockpit. Therefore, it was only logical to combine both simulation systems and improve the training of unusual situations on both sides.

Hardware:

A Deutsche Flugsicherung (DFS) radar simulator has been installed for the JOINT program in the Lufthansa Flight Training (LFT) Center at Frankfurt Airport. The system is comprised of two radar controller and two coordinator positions to enable simulation of two different sectors at the same time: an approach sector and an area control sector. The radar simulator is linked to the flight simulation network of LFT by two interface computers. Position data from the flight simulators are transferred by this interface to the radar simulator so that the positions provided by the flight simulators are displayed on the radar screen together with the simulated traffic of the pseudo pilots. The frequency is also linked by one interface so the pilots can hear all other traffic and can communicate with their respective controller of the simulated sector. The DFS instructors can talk to the training captain in the flight simulator by telephone. Currently, eight different flight simulators can be connected and participate at the same time.

**Scenarios:**

At this time, a scenario of Langen ACC sectors is simulated in combination with either Frankfurt, Nürnberg or Stuttgart APP. Expansion to Berlin ACC sectors in combination with Berlin APP is planned and will start shortly. There are plans to expand the JOINT program to other DFS control units in Germany.

Emergencies:

The kind of emergencies which are simulated vary from aircraft type to aircraft type and also change from time to time. All flight simulators encounter programmed emergencies as a function of prescribed times, positions or altitudes. Some examples:

B747: Take-off at EDDF. Loss of thrust in one engine in the late take-off phase (after decision speed V1). Departure on either SID or EOSID (engine out SID) and possibly fuel dumping in the ACC sector (about 30 minutes)

Crew: Decision about route (SID), fuel jettison yes/no. Ask for instruction and help by ATC about dumping area and return to EDDF.

ATC: Use checklist "Engine Failure and Fuel Dumping" part.

A300: Entry into Frankfurt FIR. Approach to EDDF without delay. In the late approach phase in the APP area, go-around due to flap problems. Another approach to EDDF.

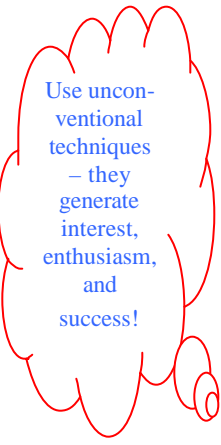
Crew: Decision for a go-around, thereafter delay in order to be able to deal with the problem. It is not an imminent emergency.

ATC: Emergency, yes or no? Delay vector required?

B737: After take-off when passing FL130, loss of both main hydraulic systems, leading to enormous steering pressure, difficult landing with likeliness to crash. The cabin has to be prepared for this purpose and high stress level in the cockpit. ("Manual Reversion," about 20 minutes until "ready for approach")

Crew: Request of level band and delay vectors by ATC to get time for the preparation of the cabin.

ATC: Checklist A15 "Hydraulic Problems." Assigning a level band, no regular holding.



Use unconventional techniques – they generate interest, enthusiasm, and success!

Training Objectives:

The major objective of JOINT is:

Maintenance and improvement of professionalism and competency of air traffic controllers, in particular, in the handling of emergency and unusual situations.

Thanks to the JOINT program, air traffic controllers can now perform training together with airline pilots in a realistic scenario; this will help controllers deal with unusual situations that may occur in the cockpit, for example, by:

- assessing the requirements of pilot and aircraft;
- assessing and considering the workload of the cockpit crew;
- offering immediate and efficient support.

In the JOINT program, the above-mentioned objectives are achieved by means of the following training contents and processes:

1. Improving communication and/or making it more objective by unambiguous and unmistakable communication between cockpit crew and air traffic controllers;
2. Complying with the prescribed procedures and standards (phraseology, separation, operational regulations, etc.) by efficient coordination, cooperation and communication (Team Resource Management - TRM);
3. Learning how to safely apply the emergency checklist which is available at all controller working positions of DFS;

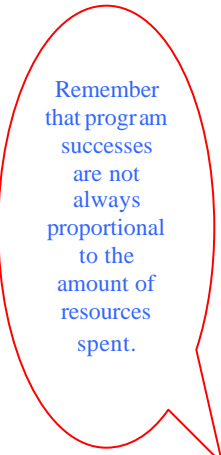
4. Accompanying pilots in the flight simulator and observing the work flows in the cockpit during an emergency;
5. Exchange of experience and information between cockpit crews and air traffic controllers by holding a concluding debriefing together.

This module plays an important part in the JOINT program. The personal contact helps air traffic controllers to understand processes and workloads in the cockpit and also to describe their own problems in ATC. A better understanding of each other's job can be gained by mutual discussions. The debriefing takes place in the room where the radar simulator is installed. The recorded run can thus be replayed to the cockpit crew for illustration purposes.

**Feed-back by
Air Traffic
Controllers:**

Participants of the JOINT program have completed feedback forms on a voluntary basis since the beginning of 1997. The purpose of the feedback form was to document the acceptance and execution of the program.

The general question concerning the JOINT program has had a 100% positive feedback; this is also in line with the experience of JOINT instructors. The following answers are excerpts from completed forms:



Remember
that program
successes
are not
always
proportional
to the
amount of
resources
spent.

- "I think the program is very well suited to provide a realistic course of events in an emergency situation (for both sides, pilot and controller)."
- "The JOINT program is a good tool to keep up or even improve the skills of air traffic controllers in the case of emergencies! It is even a good opportunity to keep in touch with the pilots!"
- "JOINT is a very useful supplement to simulator-flying and familiarisation flights. A good opportunity to share experiences of both controllers and pilots, observing each other performing their job."
- "Excellent, since very close to reality."
- "All air traffic controllers should take part in JOINT on a regular basis."

Contacts:

Hans Juergen Morscheck, hans-juergen.morscheck@dfs.de

3.11 Houston ATCT/TRACON (KIAH / KI90) “Day 1 at Continental”



Reason for Initiative:	Continental Airlines uses a multi-tiered approach to building and maintaining relationships between its flight crews and air traffic controllers.
Groups Involved:	Houston ATCT Management and Staff George Bush Intercontinental Airport Management Continental Airlines Houston FSDO National Air Traffic Controllers Association (NATCA) Southwest Airlines
Location:	George Bush Intercontinental Airport Houston, Texas, USA

When the pilots of Continental Airlines report to their two day recurrent training each year, they can expect to see on the agenda, for Day 1, at least one hour of air traffic control training and discussion. This initiative, dubbed “Continental Day 1” has successfully been implemented through cooperation among Continental Airlines, the Federal Aviation Administration (FAA), and air traffic controllers at Continental’s four hubs (Houston,

If you are doing presentations (at recurrent training, for example) practice first.

Cleveland, Newark and Honolulu). A controller speaks during the first day of pilot training about air traffic control and addresses common misconceptions and misunderstandings between pilots and controllers. Then the pilots are given an opportunity to ask questions. This question-and-answer period usually extends past the allotted time for discussion – indicating a genuine thirst for this type of information by pilots in the program.

An always-discussed topic in Houston classes is the "no-speed limit" test being conducted in Houston approach control airspace. During this test, when the air traffic controller determines that traffic conditions warrant, the 250-knot speed restriction below 10,000 MSL may be lifted for departure aircraft. Upon receipt of specific phraseology, the flight crew may accelerate the aircraft to its most efficient climb speed (often greater than 250 KT) as determined by onboard equipment. Since these speeds vary from aircraft to aircraft, controllers must apply comparable speeds to ensure longitudinal separation. Discussion usually addresses the factors that determine application or non-application of the procedure and factors that preclude uniform, unrestricted use.

Additional conversation normally occurs on the likes and dislikes within the ATC system, the Houston/Gulf Coast Airspace Project, simultaneous/triple simultaneous ILS approaches, construction projects of the new parallel runway and extension of an existing runway.

After this initial training, a small team of controllers and management take turns participating in Continental Airline's pilot recurrent training. They are on the agenda for each session and share current procedures and concerns that have been raised by both pilots and controllers. One limitation to this training has been the time available, due to competing, often mandated, training topics that can fill the syllabus. However, air traffic control training has been added whenever time allows.

In addition to Continental Airlines' effort at Houston and its other hubs, other users of the aviation system in Houston have participated in similar collaborative programs to bring pilots and controllers together. With the cooperation of the Air Traffic Control representative at Continental Airlines, the Federal Aviation Administration's local officials at the Flight Standards District Office (FSDO), Southwest Airlines, the National Air Traffic Controllers Association (NATCA), and the members of the Houston Airport management team, two other initiatives have shown success as well:

- Personnel from the air traffic control facility attend meetings of the Intercontinental Airport Facility Operators' Association, an organization that consists of the chief pilots of the corporate operators at KIAH. The controllers make short presentations at each of their monthly luncheon meetings and have initiated a number of changes/improvements based on the operator's input at these meetings.
- Two of Houston's controllers are designated as Aviation Safety Advisors by the local FAA Flight Standard District Office (FSDO), and several ATC specialists have spoken at meetings of general aviation pilots throughout the Houston area. In

addition, they participate in the Greater Houston Area Flight Instructor Association's refresher clinics.

The operators of these programs have reported that they have avoided many potential problems and improved operations by being proactive with their aviation counterparts. While there is no way to measure how many problems a good interactive relationship with one's customers prevents, the participants of these programs have reported that they have made improvements and that they have benefited from the first-hand explanation of procedures and plans. Another reason these programs have been successful is that they have been run by volunteers - employees with a desire to work with the various pilot groups.

Contact(s):

Caroline Carey, Support Manager IAH/I90 Tower/TRACON, +1 (281) 230-8430, Caroline.Carey@faa.gov

Tom Bartlett, IAH Airport Manager, +1 (281) 230-3017, tom.bartlett@cityofhouston.net

Eric Owens, I90 NATCA Facility Representative, 281-230-8408, eric.owens@faa.gov

Luke Ball, IAH NATCA Facility Representative, +1 (281) 209-8644, luke.ball@faa.gov

Don Gunther, Continental Airlines, +1 (281) 553-2629, dgunth@coair.com

THIS PAGE INTENTIONALLY LEFT BLANK

3.12 Jacksonville ATCT (KJAX) “JAX Customer Relations Team”

Reason for Initiative: To increase the dialogue among JAX controllers and pilots using JAX TRACON

Groups Involved: JAX Customer Relations Team
Area Flight Schools
Navy Squadrons
Flying Clubs
Pilots in the Jacksonville area

Location: Jacksonville International Airport
Jacksonville, Florida, USA

Operation Rain Check is a national program in the U.S. designed to familiarize pilots with air traffic control, its benefits, functions, problems, services available and relationship with other facets of aviation. In 2001, a group of controllers and managers from the Jacksonville TRACON organized “Operation Rain Check” sessions for pilots in the Jacksonville area. During early presentations, the KJAX participants recognized that due to the unique aspects of Jacksonville Approach, an informal approach to meeting with pilots would be much more effective and efficient in increasing the dialogue between the two groups.

To get these informal meetings with the pilot community started, KJAX personnel telephoned and e-mailed pilot groups in the area with whom they were familiar. The group also contacted the Navy Logistics Office (NAVLO) to assist in arranging the meetings. The JAX team, which consists of three controllers, the operations manager, and a supervisor, came to be known as the “JAX Customer Relations Team.”

The JAX Customer Relations Team determined from these initial meetings that the local pilots were apprehensive of the Federal Aviation Administration controllers. Thus the team focused on educating the pilots about the air traffic control system and alleviating their apprehension when interacting with controllers.

During meetings with the various pilot groups, the JAX Customer Relations Team briefs pilots on various topics including local procedures, basic air traffic control, air space classification, NOTAMS, weather avoidance/ deviations, and provided virtual tours of the KJAX facility, useful websites, and methods to contact the team members. The goal of the team in these presentations is to limit the briefings to 15 to 20 minutes, keep discussions informal and entertaining, and encourage Q&A. Typically the team spends an hour with the pilots, however, it is not uncommon for the sessions to last as long as two hours.

Keep in mind that your program's success is measured not only in changes that are made but also in relationships that are developed.

The pilot groups that the JAX Customer Relations Team meets with are quite diverse and, therefore, have many different requirements and concerns. The groups range from Navy squadrons to flight schools such as Embry Riddle and Comair Aviation. To address the needs of these diverse groups, the team developed over 18 different presentations focusing on the requirements of the respective groups.

The Customer Relations Team has also created forms to track each of the meetings and phone calls received from the pilots. This information has been helpful to the team for keeping in contact with the various groups following the meetings. The team also revisits the groups when requested.

Benefits/

Outcomes:

Since the inception of this initiative, the JAX Customer Relations Team has briefed over two thousand pilots. In the past year, the team briefed approximately 800 persons from the Navy Training Command (six times), a Navy reserve squadron, two general aviation flight schools, two Navy helicopter squadrons, and one flying club.

The Team realized after meeting with these pilot groups that the KJAX local procedures were developed without input from the system users. As a result of the joint meetings, KJAX began addressing the needs of the users in conjunction with the facility's requirements; the results have been positive on both sides. Through meetings with the various pilot groups, KJAX also became involved in improving the communication between the civil pilots in the Jacksonville area and a local satellite airport tower.

Additionally, KJAX personnel have participated in ten Flight Standards District Office Safety Seminars focused on runway incursion prevention. For others considering a pilot/controller collaboration effort, the JAX Customer Relations Team shares some of the things that ensured the success of this initiative:

- Knowing the needs of the groups with whom they were meeting (e.g. helicopter pilots tend not to be interested in the same topics that a student pilot might find useful).
- Ensuring that presentations were interesting and entertaining, not “monotone and dry.”
- Showing a personal side to their jobs, which tended to keep the audience interested and also allowed the pilots with whom they were meeting to approach the controllers with problems and concerns without fear of the “FAA” scrutinizing their actions.

Contact(s):

Shawn Fields, JAX Customer Relations Team, +1 (904) 741-0700
Bob Kamm, JAX Customer Relations Team, +1 (904) 741-0700,
Bob@NFHA.com

3.13 Mexico (MMEX) “Improving Safety By Joining Forces”

Reason for Initiative:	Improvements in flight safety and efficiency in the Mexican airspace have become necessary due to the increasing operations nationwide; therefore close cooperation and communication between pilots and controllers is essential.
Groups Involved:	Colegio de Pilotos Aviadores de México (CPAM) Asociación de Controladores de Tráfico Aéreo de México (ACTAM) Dirección General de Aeronáutica Civil de México (DGAC) Servicios a la Navegación en el Espacio Aéreo Mexicano (SENEAM)
Location:	Mexico City and other major cities, Mexico

Several pilot/controller initiatives have been carried out in Mexico in order to reduce incidents and accidents. This is especially important due to the dimension, topography and infrastructure of the country, diversity of air traffic, volume of operations and simultaneous use of mixed language (Spanish and English).

Pilot and controller associations have played an important role in the development of these programs, which have been recognized and supported by the Mexican authorities and the airlines.

The following programs are among the most successful:

1. Pilot/Controller Workshops: These periodic events are held once every 4 months and are sponsored by Colegio de Pilotos Aviadores de México (CPAM). The workshops are open forums created to discuss safety issues, human factors issues and the interaction between both professional groups. The main outcome of the workshops has been the development of a Pilot/Controller Human Factors Seminar on Controller/Pilot Resource Management (CPRM). This initiative has been relayed successfully throughout the country.
2. Mixed Commission Pilots/Controllers: The Commission was formed by Colegio de Pilotos Aviadores de México (CPAM), Asociación de Controladores de Tráfico Aéreo de México (ACTAM), Dirección General de Aeronáutica Civil de México and Servicios de Navegación Aérea Mexicana (SENEAM). It meets every four months with a published agenda to analyze ATS incidents. Its outcome is to provide safety/operational recommendations to the authorities and operators. It is chaired alternatively every two years by CPAM and SENEAM.

3. Pilot/Controller Annual Round Table: Sponsored by the Secretaría de Comunicaciones y Transportes, the Round Table constitutes a forum where pilots and controllers voice concerns on important professional issues such as fatigue, human error, and disability by having the opportunity to discuss them with experts in Aeronautical Psychology and Medicine.
4. Other Experiences: Cross visits of facilities and simulators, observation flights (restricted after Sep. 11 events), safety seminars and workshops, and local aerodromes/general aviation “get together” safety activities.

Benefits:

The key to success has been the wide support of these initiatives by all the participants. Their implementation resulted in the following improvements:

- Identify and address specific safety issues
- Increase awareness
- Communications between pilots, controllers, authorities and operators
- Overall flight safety
- On going cooperation
- Professional respect and recognition

Contact(s):

Victor Anguiano T., Presidente de la Asociación de Controladores de Tráfico Aéreo de México (ACTAM), +55 5271 2533, vidda4544@yahoo.com
Victor Hernandez Sandoval, Regional Officer ATM SAR, ICAO NACC Regional Office, Mexico, +55 5250 3211, Fax: +55 5203 2757, vhernandez@mexico.icao.int

3.14 New York ARTCC (ZNY) “Oceanic Operations Familiarization Program”



Reason for Initiative:	Indications of lack of familiarity of oceanic air traffic requirements by both pilots and dispatchers
Groups Involved:	New York ARTCC Management and Staff ARINC's New York Communications Center American Airlines, TWA, US Airways, Continental, Japan Airlines, United Airlines, Delta Air Lines Representatives from Corporate Aviation
Location:	New York Air Route Traffic Control Center Ronkonkoma, New York, USA

Continuing indications of lack of familiarity of the oceanic air traffic requirements (e.g. non-radar procedures, separation requirements, and communications) by both pilots and dispatchers gave impetus to the development of New York Center's Oceanic Operations Familiarization Program, dubbed "Ocean Ops," in March of 1999.

Prior to implementing the initiative, the Supervisor and Traffic Management Coordinator (TMC) at New York Center (ZNY), consulted with several airline pilots and dispatchers as well as several airline air traffic representatives to solicit their views on the requirement for such a program. Unanimously, all agreed on a need for the program and the concept proposed. The TMC solicited input from ARINC's New York Communications Center which provides the high frequency communications services for New York Oceanic. They expressed tremendous interest in becoming a partner in the program.

The TMC also solicited input from all factions of the ZNY Operation including the Operations Managers, Operations Supervisors, International Operations Manager, air traffic control specialists and ARINC operations personnel.

The Ocean Ops program is presented in a one or two day format. A one day format best meets the requirement of most users and is sometimes more desirable due to funding and staffing requirements. The general format includes a 45-minute segment encompassing New York Oceanic Airspace and Traffic Flow, Separation Standards, Oceanic ATC procedures, New York Oceanic specific issues and requirements, and ARINC Operations as well as a question and answer forum.

The program also provides for a control room tour and familiarization of both ZNY and the ARINC COMM CENTER. (ARINC is located less than one-quarter mile from ZNY). Each Ocean Ops Program has been co-hosted by the TMC, an oceanic supervisor and ARINC representatives.

Benefits/

Outcomes:

The Ocean Ops Program provides the opportunity for pilots, controllers, and ARINC radio operators to exchange information about each other's roles, responsibilities, and requirements. Pilots and dispatchers become more aware of the Oceanic ATC requirements as a result of participating in the program. They become more aware of some of the complexities of the non-radar oceanic operations related to en route altitude changes, deviation requests, emergencies, and other contingencies. The program also clarifies the unique role of ARINC and its integration into the oceanic ATC process.

The program complements the airline training efforts and provides an "operational" point of contact for all participants. Airlines have incorporated Ocean Ops into their re-qualification requirements following ATC incidents and events. Airline training subject matter experts have also attended the sessions to obtain material for updating of training manuals.

Contact(s):

Michael J. Golden, Supervisor/Traffic Management Coordinator, NY ARTCC, +1 (631) 468-1084, Michael.golden@faa.gov

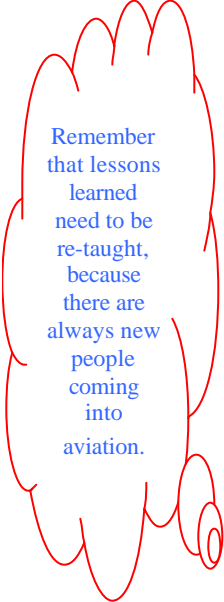
3.15 North Las Vegas Airport (KVG T)

“Collaboration Leads to Reduction in Runway Incursions”



Reason for Initiative:	Airport classified as number one general aviation airport in the US for the occurrence of runway incursions
Groups Involved:	VGT ATCT Management and Staff National Air Traffic Controllers Association (NATCA) Western Pacific Region Runway Safety Office Las Vegas Flight Standards District Office (FSDO) Western-Pacific Region Flight Standards Division Western-Pacific Region Airports Division Clark County Department of Aviation (CCDOA) Aircraft Owners and Pilots Association (AOPA) Airport Flight Schools Grand Canyon Tour Operators Locally Based EMS Operators
Location:	North Las Vegas Airport Las Vegas, Nevada, USA

During calendar year 2000, the North Las Vegas Airport (KVG T) was classified by the Federal Aviation Administration (FAA) Runway Safety Program Office as the number one general aviation airport in the U.S. for the occurrence of runway incursions. The KVG T air traffic manager determined that something had to be done to eliminate this safety issue at the airport.



Remember that lessons learned need to be re-taught, because there are always new people coming into aviation.

To begin the effort, the facility manager put out an all-points bulletin. He contacted the Regional Runway Safety Office, the local airport management, industry representatives including AOPA and airport flight schools, National Air Traffic Control Association (NATCA), controllers, pilots, Grand Canyon Tour Operators, locally based Emergency Medical Service (EMS) operators, and various FAA organizations. He scheduled informal and formal meetings to address the issues and develop a strategy.

The facility manager assumed the primary organizational role to bring this diverse group of individuals and organizations together. However, others contributed to the effort. For example, the airport manager provided meeting rooms, various airport layout charts, and ground transportation to transport work group members to locations on the airport.

For KVG, it was easy to get pilots and controllers involved and working together. Everyone working and/or operating on the airport had an interest in formulating a plan of action to address the incidence of runway incursions. Since the participants felt that these incidents represented a safety of flight concern for the airport, once asked to participate in the work groups all parties “openly” participated. The facility manager took the initiative of scheduling various meetings and attended numerous monthly user group meetings in an effort to heighten awareness among the local pilot community.

The various groups worked to develop an action plan that addressed both immediate and future corrective actions. At one of the initial meetings, the group proposed immediate actions to be taken by various entities including airport management, flight standards, and the tower. The following were some of the short-term initiatives that were initially implemented, but were only meant as temporary measures:

Short Term

Placing a “cautionary” message of the tower Automatic Terminal Information System (ATIS), regarding the runway incursion problems.

1. Repainting all runway hold short lines.
2. Visually monitoring known problem areas during busy traffic periods.
3. Conducting meeting with local airport operators, preaching “awareness” of where you are at all times on the airport.
4. Writing articles for the airport newsletter and other local publications, creating posters and placing them around the airport, all in an effort to educate pilots to the on-going problem and requesting their assistance.
5. A review of the actual airport layout. This included driving around in vehicles, aircraft, and taking overhead pictures from a helicopter. The intent was to experience “what” pilots were seeing or not seeing and “why” they were having problems.

Long Term

The long-term measures were developed after allowing individuals from other airports with the same or similar problems to provide recommendations. After many hours of monitoring pilot actions on the airport, identifying changes to airport markings and signage, a final plan was developed and put into operation. These actions included, but were not limited to:

1. Creating an “LA Green Area” around the two taxiway/runway intersections that created the majority of the runway incursions.

2. As coordinated with the FAA Airport's Division, utilizing "larger" type of runway markings on the airport. This enhanced the visibility of these markings for pilots.
3. Enhancing runway/taxiway signage to define places to stop, and assist pilots in knowing where they were on the airport.
4. Continued effort to stress "awareness" while operating on the airport.
5. Creation of a local pilot/controller phraseology "handout." This assisted pilots in becoming more familiar with what we were saying. Additionally it assisted controllers as pilots began to utilize this phraseology when communicating with them.
6. Creating locally developed airport layout charts, highlighting runway incursion hot spots and common traffic flow routes. Publishing airport layout charts and runway incursion hot spots on various internet sites.

**Benefits/
Outcomes**

The efforts of the involved parties resulted in an airport that is a much safer and a more efficient place for system users. During calendar year 2000, KVGT realized 37 pilot deviations of which 14 were identified as runway incursions. Through the direct efforts of these collaborative initiatives, during 2001, KVGT realized 11 pilot deviations (a 70 % reduction) of which 5 were classified as runway incursions (a 64% reduction). During 2002, KVGT realized only 6 pilot deviations and one runway incursion.

The primary benefit was the general feeling of "ownership" by all that took part in the effort. No one individual or organization solved the problem. It took the collaborative efforts of many individuals and organizations to produce the desired results.

Lessons Learned: Advice that participants would give to others includes utilizing every available resource. Do not assume that you have the answer. Look outside the "local" box. The participants also advise to take whatever initial actions are necessary to ensure the safety of the operation, while continuing to work towards a long-term solution.

Contact(s): Thomas K. Petrakis, Air Traffic Manager, North Las Vegas Tower, +1 (702) 648-6588, Tom.Petrakis@faa.gov
 David Kurner, Manager, Western-Pacific Regional, Runway Safety Program, +1 (310) 725-6681, Dave.Kurner@faa.gov
 Roland J. McKee, Western-Pacific Regional Flight Standards Branch, +1 (310) 725-7240, Roland.Mckee@faa.gov
 Nancy Haugarth, Las Vegas Flight Standards District Office, Safety Program Manager, +1 (702) 269-1445, Nancy.Haugarth@faa.gov
 Duane Busch, Manager, North Las Vegas Airport, Clark County Department of Aviation, +1 (702) 261-3802, duaneb@mccarran.com
 Stacy Howard, Aircraft Owners and Pilots Association, stacy.howard@aopa.org
 Lt. Timothy Leveque, Las Vegas Metropolitan Police Department, Air Support Unit, +1 (702) 229-3552, t35131@lvmp.com
 John Giles, Owner/Operator, West Air Aviation Flight School, +1 (702) 639-6800, westair@westairaviation.com
 Glen Nicoll, Chief Pilot, Scenic Airlines, Inc., +1 (702) 638-3310, res@scenic.com

THIS PAGE INTENTIONALLY LEFT BLANK

3.16 Orlando ATCT (KMCO)

“Adopt-an-Airline Program & Adopt-a-Pilot Program”



Reason for Initiative:	Customers of the Orlando ATCT requested help to improve their knowledge of ATC in the Central Florida area.
Groups Involved:	Orlando International ATCT Management and Staff National Air Traffic Controllers Association (NATCA) Airlines and Pilots in the Central Florida Area Area Flight Schools
Location:	Orlando International Airport (KMCO) Orlando, Florida, USA

Time and again the Orlando Facility Team had heard from controllers, supervisors, and staff that there were some operational issues (noise abatement, fan headings, traffic flow, and frequency management) they would like pilots to understand about the Orlando facility. There were also requests from several area flight schools and airlines for guest speakers to explain local airspace and procedures. About four years ago the Facility Team

decided to establish an “Adopt-an-Airline Program” and an “Adopt-a-Pilot Program” to help address these issues.

Publicize the activities to maximize participation and create interest.

- Facility newsletters,
- Website of facility, union, etc.,
- Flyers in lounges,
- Mailings to pilots,
- Posters,
- Emails to groups, Internet newsgroups, or discussion boards.

The Adopt-a-Pilot Program is an initiative in which a pilot visits the facility for a minimum of 4 to 6 hours. A specific controller is assigned to the pilot for this period. The pilot shadows the controller during a normal workday. This allows the pilot to experience ATC operations first-hand. This initiative also assists the pilots in meeting the Flight Standards District Office (FSDO) Wings Program initiative.

The Adopt-an-Airline Program is an initiative to educate airline flight crews in the Central Florida Area about local airspace and procedures. It is also an effort to improve system efficiency by the facility receiving feedback from flight crews regarding what is needed to improve performance.

To begin these efforts, volunteer air traffic controllers and supervisors who expressed an interest in interfacing with airlines and pilots, including general aviation, were solicited to participate in the programs. The facility advertised for volunteers in the facility newsletter and advised those who were interested to contact a member of the facility team. The facility team maintains a list of these volunteers.

For the Adopt-an-Airline Program, volunteers were assigned to specific air carriers. The volunteers were provided the names and telephone numbers of the chief pilots. It was the responsibility of the volunteers to coordinate with the airline and advise the facility of the resources they needed to be successful in this collaborative effort.

Adopt-an-Airline:

The normal sequence of events after contacting the chief pilots was to coordinate a meeting date, a place (usually provided by the airlines, flight schools, or fixed base operators as this helps with increased participation), and a meeting time. The point of contact also advised of any specific areas of interest that should be covered. The meetings may only be between the chief pilots and the Air Traffic representatives or they may include other participants. These meetings can be formal, where the controllers give a briefing or actually teach part of a class, or informal where a question and answer booth is set up in the pilots’ debrief area, or they can be a combination of both. In the latter case, the controllers attend briefings or training sessions and are there as subject matter experts.

KMCO also has a locally developed package that is provided to the FAA employees participating in these programs. This package contains MVA charts, VFR charts, IFR charts, the different instrument approaches for specific airports, and the controlling facilities’ Standard Operating Procedures. There are also nametags and signs identifying personnel as representatives of the FAA/Orlando Approach control. After the program is established it is not unusual for the airlines to contact KMCO Approach and ask for participation.

Adopt-a-Pilot:

Use the Internet to connect people from different places and at different times.

To recruit interest in the Adopt-A-Pilot program, KMCO coordinated with the local Flight Standards District Office (FSDO) to insure this initiative would meet the requirements of FSDO's Aviation Safety Program. When a pilot participates in the Adopt-A-Pilot program, he/she may fulfil one of the requirements of the pilot proficiency award program. Adopt-a-Pilot applications were posted at all area fixed base operators, flight schools, and airlines. Pilots who wished to participate in the program completed the application and mailed/faxed the form to KMCO ATCT. The pilots were then contacted to make an appointment. After completion of the program, the pilot completes a survey that gives KMCO immediate feedback on what is good about the program and areas that need to be improved.

For the Adopt-a-Pilot Program, notices explaining the program were placed in area flight schools, local fixed base operators, and airline pilot lounges. A telephone number and a point of contact were included on the notices. When the pilots contact the facility, an appointment was made for a facility visit. Then a controller was selected as host from the list of facility volunteers.

Benefits/Outcomes:

The Adopt-a-Pilot Program feedback indicates that pilots are now less reluctant to ask ATC for assistance. It has lessened frequency congestion as a result of pilots understanding the need for proper phraseology and radio technique. Also a relationship of trust and cooperation between pilots and controllers has been developed. Area flight schools have recognized the benefits of the Adopt-a-Pilot Program and have required pilots in training to participate in at least one shadowing session.

The Adopt-an-Airline Program has resulted in flight crews better understanding the complexities of arriving and departing airports in the Central Florida area. This understanding has resulted in fewer pilot complaints, an open attitude to discuss proposed improvements, and an increased knowledge of high-density traffic areas where the flight crew needs to remain more alert.

Because of the interface between pilots and controllers and increased system safety, there has been an increase in system efficiency. There has also been an increased awareness by controllers and supervisors that they need to continue to provide a high quality of service to the user.

One of the keys to success of these initiatives has been support by facility management, the union, and other involved parties. The initiative requires considerable facility resources and constant effort and commitment. Advice to others considering such a program would include:

- Be sure that you have adequate support from the facility to ensure there are enough volunteers to support the initiatives;
- Understand that volunteers must be trusted with making presentations and answering difficult questions when interfacing with the customer; and,
- Be prepared and willing to take action on customer feedback.

Contact(s): Donna Gropper, Air Traffic Manager, Orlando Intl. ATCT, +1 (407) 852-7500,
Donna.Gropper@faa.gov
Mike Kern, Comair Academy, +1 (407) 330-7020 ext-421
Patrick Murphy, Comair Academy, +1 (407) 330-7020,
Patrick.Murphy@comairacademy.com
Capt. Kent Roper, Southwest Airlines, +1 (407) 825-7600,
kent.roper@wnco.com
Capt. Tim Leanord, Southwest Airlines, +1 (407) 825-7601,
tim.leanord@wnco.com
Eric D. Ohlwiler, Delta Air Lines, +1 (407) 825-5508,
eric.ohlwiler@delta-air.com
Thomas B. Weeks, Chautauqua Airlines, +1 (407) 825-6648,
tweeks@flychautauqua.com
Steve Setner, Jet Blue Airlines, +1 (724) 712-9468

3.17 Pittsburgh ATCT (KPIT) “Collaboration and Communication”



Reason for Initiative:	To develop further understanding of operational procedures and increase situational awareness of pilots and other users of Pittsburgh International Airport.
Groups Involved:	PIT ATCT Management and Staff National Air Traffic Controllers Association (NATCA) US Airways ATC Operations, Pilot Training and Safety Personnel
Location:	Pittsburgh International Airport Pittsburgh, Pennsylvania, USA

US Airways pilots and other users of Pittsburgh International Airport (KPIT) now have two additional ways of obtaining further understanding of operational procedures and increasing their situational awareness. US Airways pilots participate in training that covers operational procedures at KPIT when they take the Captain Upgrade Training course. US Airways pilots and other users can now visit the facility website (www.faa.gov/pitadc) to obtain operational information as well as provide feedback.

The facility manager contacted the US Airways Flight Training Department and arranged a meeting of KPIT managers, staff, controllers, and US Airway personnel to discuss the development and implementation of a syllabus of instruction for US Airways Captain Upgrade Training.



Use small group of people – this environment allows for maximum dialogue.

All First Officers at US Airways are given several days of "Captain Upgrade Training" upon promotion to Captain. Every hour in the Captain Upgrade Training course uses valuable resources for US Airways. KPIT is given a 2-hour block. Wanting to use the time effectively, the facility worked closely with US Airways to determine what types of material would be most beneficial. Because of the rare opportunity to interface directly with the Captains of the major carrier operating at the airport, KPIT made the effort to convey important air traffic perspectives. The impetus of the KPIT section is to share experiences and concerns. Safety issues and communications are discussed. Actual events are re-enacted and viewed by uniquely changing perspectives. The KPIT block continually receives complimentary reviews from the participants and US Airways training staff.

A facility website was developed and implemented by the facility manager and staff at KPIT. The website provides valuable information to KPIT users such as which areas on the airport may be most prone to runway incursions. The web site also provides answers to frequently asked questions such as what are the runway assignments and what scanner frequencies should one listen to.

**Benefits/
Outcomes:**

The benefits of these initiatives have included increased knowledge and situational awareness of users of KPIT. The ability to share with those who use the airport the most has aided both organizations in improving the services, awareness and safety at KPIT. This in turn results in decreased workload for the KPIT controllers.

One of the keys to making these initiatives successful was soliciting feedback from all facility personnel while developing the initiatives and involving representatives from all levels of the facility when implementing the initiatives. It was also important to value the input of the users of the airport.

One of the primary benefits derived from these initiatives has been the involvement of KPIT staff and NATCA personnel in communicating with the users of the system. This has enabled them to represent the facility.

Contact(s):

Richard T. Pelkowski, Air Traffic Manager, Pittsburgh Tower, +1 (412) 269-9237,
Richard.Pelkowski@faa.gov

James M. Frazier, Director Air Traffic Control & Airfield Operations, US Airways, +1 (412) 747-5021, jfrazier@usairways.com

Capt. Pete Eichenlaub, Manager Corporate Safety, USAirways, +1 (412) 747-5980,
Eichenlaub@usairways.com

Jim Patterson, Non-Aircraft Specific Training Instructor (NASTI), US Airways, +1 (412) 472-4503

3.18 Riga International Airport (EVRA) “Collaboration with air Baltic”



Reason for Initiative:	Company pilots were not satisfied with ATC services within the approach area, especially vectoring, and the absence of assigning a particular speed to arriving traffic.
Groups Involved:	Flight Safety Officer, air Baltic Air Traffic Controllers
Location:	Eastern Shore of the Baltic Sea Riga, Latvia

air Baltic’s pilots were not satisfied with Air Traffic Control services they were receiving. Communications needed to be improved, especially within the approach area while vectoring, and there was an absence of assigning a particular speed to arriving traffic. To begin this effort, the Chief Pilot arranged a meeting with managers from the ATC unit and another meeting for pilots and controllers. The Chief Pilot initiated the meetings and ATC provided briefing rooms.

Controllers are very interested to learn more about the “other side.” Therefore, during the controllers’ annual recurrent training, there is one pilot present to review with them the procedures pilots use in the course of an abnormal/emergency situation (emergency descents, engine failure in various phases of flight etc.) and what they can expect and possibly do to assist. Also, operational issues are discussed; such as, vectoring, direct to, etc. Controllers are invited to join in simulator sessions for a better insight into the pilots’ workload and priorities, specifically during emergency situations.

“Keep it going” - all successful initiatives are ongoing

Pilots in turn visit the Air Traffic Control center to learn more about what the controllers are doing, what kind of information they have, and what kind of assistance they can provide in an emergency situation.

The goal is for pilots and controllers to have a better understanding and improved communication in their day-to-day operations. Controllers and pilots both are interested in getting better insight in the other's daily job. Given the chance, they are willing to participate and share their ideas.

Contact(s): Artis Riekstins, +371 720 7271, ars@airbaltic.lv

3.19 Singapore Changi International Airport (WSSS) “Pilot/Controller Working Relationships Improve Services”



Reason for Initiative:	The objective is to get pilots’ feedback, which will help improve ATC services.
Groups Involved:	ATC Planners/Management
Location:	Singapore Changi International Airport Singapore

The objective of this initiative is to solicit feedback from pilots, which will help controllers improve air traffic control services. The initiative began with the air traffic control planners and management coordinating the following:

1. Quarterly ATC Open Houses where they invited pilots to visit facilities as well as to have an informal dialogue session to discuss issues;
2. ATC familiarization flights, where controllers visit the cockpit and observe/discuss ATC related issues with pilots; and,
3. Singapore Changi Airport Operations Committee meetings where ATC service providers meet users, pilots and airline representatives to raise and resolve operational issues.

Participants are proactively trying to resolve issues that were raised during these events. Problems are solved. For those issues that cannot be resolved, there’s a better understanding by both sides resulting from the queries.

Besides safety improvements, the participants are benefiting and learning from this initiative by having a better pilot/controller working relationship. This collaboration helps to improve services.

As this program develops, further updates will be included in future editions of this report.

Contact(s): Ho See Hai, Singapore Air Traffic Services, HO_See_Hai@mot.gov.sg

Appendix A

List of Acronyms and Abbreviations

ACC	Area Control
ACPA	Air Canada Pilots Association
ACTAM	Asociación de Controladores de Tráfico Aéreo de México
ADS-B	Automatic Dependant Surveillance - Broadcast
AISG	Accident Incident Safety Group
ALAR	Approach and Landing Accident Reduction
ALPA	Air Line Pilots Association, International
ANS	Air Navigation System
ANSNAC	Air Navigation System National Advisory Committee
ANSP	Air Navigation Service Providers
ANSR	Air Navigation System Requirements
AOGA	Aircraft Operations Group Association
APP	Approach Operation
ARINC	Aeronautical Radio Inc.
ARTCC	Air Route Traffic Control Center
ATA	Air Transport Association
ATAC	Air Transport Association of Canada
ATC	Air Traffic Control
ATCT	Airport Traffic Control Tower
ATIS	Automatic Terminal Information Service
ATOCC	Air Transport Operations Consultation Committee
ATS	Air Traffic Services
ATSAC	Air Traffic Specialist Association of Canada
CAC	Canadian Airports Council
CAI	Canadian Airlines International
CAR/SAM	Caribbean and South America
CATCA	Canadian Air Traffic Control Association
CBAA	Canadian Business Aircraft Association
CFIT	Controlled Flight Into Terrain
CNS/ATM	Communication, Navigation, Surveillance/Air Traffic Management
COMM	Communications
CPAM	Colegio de Pilotos Aviadores de México
CRM	Crew Resource Management
DAT	Director of Air Traffic Services
DFS	Deutsche Flugsicherung
DGAC	Dirección General de Aeronáutica Civil de México

List of Acronyms and Abbreviations

(continued)

ECFTSG	East Coast Flight Training and Safety Group
EDDF	Frankfurt Germany ILS Facility
EHAA	Amsterdam Airport Schiphol, Netherlands
EKCH	Copenhagen Kastrup Airport
EMS	Emergency Medical Service
EOSID	Engine Out Standard Instrument Departure
ETG	Enhanced Target Generator
EVRA	Riga International Airport, Latvia
FAA	Federal Aviation Administration
FAF	Final Approach Fix
FIR	Flight Information Region
FSDO	Flight Standards District Office
FSF	Flight Safety Foundation
FSS	Flight Service Station
GA	General Aviation
GAIN	Global Aviation Information Network
HF	High Frequency
IATA	International Air Transport Association
IBEW	International Brotherhood of Electrical Workers
ICAO	International Civil Aviation Organization
ILS	Instrument Landing System
IPAT	Incursion Prevention Action Team
JOINT	Joint Operational Incidents Training
KA80	Atlanta TRACON
KATL	Hartsfield Atlanta International Airport
KCLE	Cleveland-Hopkins International Airport
KCLT	Charlotte International Airport
KD10	Dallas/Fort Worth TRACON
KDAB	Daytona Beach International Airport
KDAL	Dallas Love Field
KDFW	Dallas/Fort Worth International Airport
KG	Kilograms
KI90	Houston TRACON
KIAH	George Bush Intercontinental Airport
KJAX	Jacksonville International Airport
KLAX	Los Angeles International Airport
KMCO	Orlando International Airport

List of Acronyms and Abbreviations

(continued)

KPIT	Pittsburgh International Airport
KVGT	North Las Vegas Airport
LFT	Lufthansa Flight Training
LTRACON	Large Terminal Radar Approach Control
MMEX	Mexico Area Control
MVA	Minimum Vectoring Altitude
NASA	National Aeronautics and Space Administration
NATCA	National Air Traffic Controllers Association
NAVLO	Navy Logistics Office
NCASC	National Civil Aviation Safety Committee
NZAA	Auckland Airport, New Zealand
NZALPA	New Zealand Airline Pilots Association
NZCAA	New Zealand Civil Aviation Authority
OCC	Operational Control Center
OEP	Operational Evolution Plan
OPI	Office of Primary Interest
OPS	Operations
PAAST	Pan American Aviation Safety Team
POI	Principal Operating Inspector
RIPP	Runway Incursion Prevention Program
RNAV	Area Navigation
RNP	Required Navigation Performance
RVSM	Reduced Vertical Separation Minimum
SCRI	Transport Canada Sub-Committee on Runway Incursions
SENEAM	Servicios a la Navegación en el Espacio Aéreo Mexicano
SID	Standard Instrument Departure
SOE	State Owned Enterprise
SOP	Standard Operating Procedure
STAR	Standard Terminal Arrival
TAIC	Transport Accident Investigation Commission
TCAS	Traffic Alert and Collision Avoidance System
TMC	Traffic Management Coordinator
TRACON	Terminal Radar Approach Control
TRM	Team Research Management
TTP	TCAS Transition Program

List of Acronyms and Abbreviations

(continued)

VFR	Visual Flight Rules
WG	Working Group
WSSS	Singapore Changi International Airport
ZNY	New York Air Route Traffic Control Center
ZTL	Atlanta Air Route Traffic Control Center

Appendix B

Survey of Pilot-Controller Collaboration Initiatives

This survey is also available online at <http://www.abacustech.com/gain.htm>

Name: _____

Telephone: _____

Position/Organization: _____

Email: _____

What motivated you to start your pilot-controller collaboration effort? (i.e., was there a specific incident or an ongoing problem that you wanted to solve?)

How did you begin your initiative?

Who was involved in setting up and participating in the initiative?

In your own words, describe how your initiative works and what the process is to get the pilots and controllers involved and working together.

What were the benefits to safety and/or solutions to the original problem?

Besides any safety improvements listed in the previous question, what other benefits or “lessons learned” resulted from this initiative?

What advice would you give to someone else considering a pilot-controller collaboration effort?

THIS PAGE INTENTIONALLY LEFT BLANK

Appendix C

Report Feedback Form

GAIN Working Group E encourages the submittal of any comments and/or suggestions that will improve the content of future issues of this report.

Please submit this form to:

GAIN Working Group E
c/o Abacus Technology Corporation
5454 Wisconsin Ave. NW, Suite 1100
Chevy Chase, MD 20815
USA
Fax: +1 (301) 907-0036

Name: _____

Title/Position: _____

Company _____

Mailing Address: _____

Phone/Fax Number: _____

E-Mail: _____

1) How useful is this report to your organization? (*Please circle one*)

not useful - 1 2 3 4 5 - very useful

Comments: _____

2) What information contained in this report is most useful to your organization?

3) What information would you like to see added to this report? _____

- 4) Are you aware of any pilot/controller collaboration initiatives similar to those documented in this report?

Please provide any details that you would like to share with WG E regarding these initiatives:

What activities should WG E undertake that would be most useful to you and your organization?

- 5) Would you or someone in your organization be interested in participating in WG E activities?

YES / NO

- 6) Would you like to be added to our mailing list? **YES / NO**

Other Comments/Suggestions: _____

THIS REPORT HAS BEEN PRINTED COURTESY OF:

