MEMORANDUM OF UNDERSTANDING
between
FEDERAL EXPRESS CORPORATION
and
THE AIR LINE PILOTS
in the service of
FEDERAL EXPRESS CORPORATION
as represented by
THE AIR LINE PILOTS ASSOCIATION, INTERNATIONAL

COLLECTION OF HUMAN PERFORMANCE/ALERTNESS DATA

This Memorandum of Understanding ("MOU") is made and entered into in accordance with the provisions of Title II of the Railway Labor Act, as amended, by and between FEDERAL EXPRESS CORPORATION (hereinafter referred to as the "Company") and the pilots in the service of FEDERAL EXPRESS CORPORATION, as represented by the AIR LINE PILOTS ASSOCIATION, INTERNATIONAL (hereinafter referred to as "ALPA").

WHEREAS, the Company and ALPA are parties to a collective bargaining agreement setting forth the rates of pay, rules, and working conditions for the Company's pilots ("Basic Agreement"), effective _____, 2011; and

WHEREAS, the Company has developed a Fatigue Risk Management Plan ("FRMP") and is developing a Fatigue Risk Management System ("FRMS"), which include methodologies for continually assessing their ability to improve alertness, mitigate performance errors, and improve pilot recovery; and

WHEREAS, the collection of human performance/alertness data will contribute to the Company and ALPA's interest in ensuring safe flight operations and will provide the data necessary to evaluate and improve the Company's FRMP and FRMS, to evaluate and improve existing pairing design and line construction parameters, and to analyze potential pairing design that the parties agree are appropriate for study and potential use but are not currently utilized.

NOW, THEREFORE, the parties agree as follows:

A. Data Collection Steering Committee ("DCSC")

1. The parties shall establish a Data Collection Steering Committee ("DCSC"). The DCSC, in conjunction with the Primary Research Partner and the Scientific Advisory Committee, shall be responsible for administering the data collection efforts authorized by this MOU and for creating the methodology for de-identifying and protecting those data in accordance with the Data Security and Protection provisions of this MOU.

   In order for the parties to apply the scientific conclusions and opinions

derived from the Primary Research Partner's analysis of the collected data and thereby improve pilot alertness and mitigate fatigue risks, the DCSC, by consensus, may also make recommendations to the parties on:

a. Improvements to pairing design regardless of when built;

b. Improvements to line construction parameters;

c. The implementation of prescriptive fatigue mitigation schemes by the Company;

d. The creation of new pairing designs that the Company does not currently utilize and/or modifications to existing pairings used by the Company; and

e. Training for pilots on fatigue risk management.

2. Nothing in this MOU or any recommendations from the DCSC shall override any of the rights or procedures in Section 25.BB. of the Basic Agreement.

3. The DCSC shall include 2 ALPA representatives and 2 alternates, chosen by the FedEx MEC Chairman, and 2 Company representatives and 2 alternates, chosen by the Vice President, Flight Operations. The parties shall consult with each other before selecting their respective DCSC representatives and alternates. ALPA DCCS representatives shall be removed from flying in accordance with Section 18.A.4. of the Basic Agreement and shall be compensated in accordance with Section 18.B.2 of the Basic Agreement. After consultation with and written notice to the other party, a party may replace its representative(s) on the DCSC.

4. The Company shall provide office space to ALPA DCSC representatives.

5. DCSC members must sign an agreed-upon non-disclosure agreement prohibiting use or disclosure of data or analyses to anyone other than the Company or ALPA without the written consent of the Company and the FedEx MEC Chairman.

6. The DCSC will solicit pilots scheduled to operate specifically identified pairings/sequences of pairings to participate voluntarily in an effort to collect data concerning: patterns of sleep, cognitive alertness, cumulative fatigue, mood, circadian rhythm disruption, and recovery before, during, and after flight operations.

   If deemed appropriate by the DCSC, participation in any data collection

efforts may be conditioned on compliance with specified fatigue mitigation strategies in order to evaluate whether those strategies improve pilot alertness. The parameters of any compulsory fatigue mitigation strategies will be clearly defined and made known to the pilots prior to solicitation of volunteers.

7. The DCSC will initially collect data on the following types of pairings/sequences of pairings, which have been identified by the Company and ALPA as appropriate for analysis by the Primary Research Partner:

Domestic	**Night**	**Split Duty**
		No Split Duty
		Multiple Landings
		Length of Duty
		Consecutive Nights
	Early Starts	**Split Duty**
		No Split Duty
		Multiple Landings
		Length of Duty
		Consecutive Early Starts
	Rest	**24 hour Body Clock Swaps**
		Short Layovers
	Deadheading (Prior to Revenue Flight Segment)	**Multiple Days Before**
		Day Before
		Day Of
International	**Duty**	**Grid System**
	Rest	**24 hour Body Clock Swaps**
		Mid-Trip Reset Rest
		Post-Trip Recovery Rest
	Augmentation	**Balancing**
		In-Flight Sleep and Nutrition
		Pre- and Post-Flight Rest

8. By consensus, the DCSC may identify additional types of pairings/sequences of pairings for data collection and analysis by the Primary Research Partner and, after consultation with the Scientific Advisory Committee, may direct the Primary Research Partner to conduct follow-up data collection efforts or analysis.

9. In the event the DCSC is unable to reach consensus, the issue will be presented to the Vice President, Flight Operations and the FedEx MEC Chairman, who shall meet at a mutually acceptable date and time to discuss the parties' problems/concerns and the options for resolving the issue. After this meeting, the Vice President, Flight Operations shall advise the FedEx MEC Chairman in writing of what actions, if any, the Company shall take to address the issue or concern.

B. Primary and Alternate Research Partners

1. The Company and ALPA agree to the following approved research partners:

Primary Research Partner (selected by the Company)	**Alternate Research Partner** (selected by ALPA)
Pulsar Informatics, Inc. 3624 Market Street, Suite 5E Philadelphia, PA 19104	Institute for Behavior Resources 2104 Maryland Avenue Baltimore, MD 21218
Principal Investigators: Gregory Belenky, M.D. and Hans P.A. Van Dongen, Ph.D.	Principal Investigator: Steven R. Hursh, Ph.D.

After consultation with the other party, either party may remove its research partners from this list and replace them with new research partners and/or include additional research partners on this list.

2. The Primary Research Partner ("PRP") and its research associates shall be responsible for analyzing the data collected by the DCSC in accordance with research protocols approved by the SAC. The Company shall bear the cost of analyses performed on these data by the PRP.

3. At the conclusion of any particular study, the PRP shall prepare a report for the DCSC, which shall include recommendations on additional studies that could be performed and, if appropriate, on potential fatigue risk mitigation strategies that could improve pilot alertness when operating pairings/sequences of pairings.

4. ALPA may direct the Alternate Research Partner ("ARP") to conduct a second analysis of the data reviewed by the PRP. The ARP shall

prepare a report for the DCSC. Any analysis performed by the ARP shall be at ALPA's expense.

5. Research analyses and reports prepared by the PRP (or the ARP) shall meet generally accepted scientific research standards for qualitative and quantitative research so that, if both the Company and ALPA consented, the analyses and reports could be accepted for publication in a peer-reviewed scientific journal.

6. The PRP and the ARP must sign an agreed-upon non-disclosure agreement prohibiting use or disclosure of data or analyses to anyone other than the Company or ALPA without the written consent of the Company and the FedEx MEC Chairman.

C. Scientific Advisory Committee ("SAC")

1. The parties shall establish a collaborative Scientific Advisory Committee ("SAC") to provide advice and guidance to the DCSC on scientific questions/issues, such as the parameters of scientifically valid data collection protocols and the appropriate equipment necessary to collect the data required for any particular study. The SAC may also make recommendations to the DCSC regarding additional data to be collected and/or studies to be performed that may be used to evaluate and assess pilot alertness in addition to those initially agreed upon by the Company and ALPA in paragraph A.7 of this MOU.

2. The SAC shall initially include the following sleep scientists: Gregory Belenky, M.D. and Hans P.A. Van Dongen, Ph.D., (for the Company) and Steven R. Hursh, Ph.D. (for ALPA). Each party shall bear its own cost of providing SAC representatives. After consultation with and written notice to the other party, a party may replace its representative on the SAC.

3. SAC members must sign an agreed-upon non-disclosure agreement prohibiting use or disclosure of data or analyses to anyone other than the Company or ALPA without the written consent of the Company and the FedEx MEC Chairman.

D. Data Collection Protocol

1. All data collection shall conform to the protocol(s) developed by the SAC, provided that such protocol(s) satisfies the requirements of this MOU, meets generally accepted scientific standards for qualitative and quantitative research, and is approved by the DCSC.

2. Pilots who volunteer to participate in data collection efforts will be briefed by the DCSC (or its designee) on the nature and requirements

of the data collection effort and will be permitted to ask questions concerning participating pilots' data collection responsibilities and obligations under the data collection protocol. Each participating pilot will be provided with detailed information concerning the data collection effort and must review and sign a DCSC-approved "Consent to Voluntary Participation" form, which must fully describe the pilot's responsibilities and obligations during the data collection effort. The parties will be provided with copies of each participating pilot's executed Consent to Voluntary Participation form.

3. A pilot may withdraw from the data collection effort at any time by notifying the DCSC (or its designee) by telephone or by electronic mail. The DCSC may terminate a pilot's participation in the data collection effort if it determines that continued participation in the data collection effort is not in the pilot's best interest.

4. The Company shall compensate each participating pilot for each day of their participation in the data collection effort as follows:

<table>
<tr><th><u>Required Data Collection Activities</u></th><th><u>Daily Special Project Pay</u></th><th><u>Maximum Bid Period Compensation</u></th></tr>
<tr><td>Actigraph and Sleep Log</td><td>1 hour</td><td rowspan="3">$500*</td></tr>
<tr><td>Actigraph, Sleep Log, and PVT</td><td>1.5 hours</td></tr>
<tr><td>Actigraph, Sleep Log, PVT, and Prescriptive Fatigue Mitigation Measures</td><td>2.5 hours</td></tr>
<tr><td colspan="3">*In extenuating circumstances, the Company may increase the maximum bid period compensation.</td></tr>
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A pilot who withdraws from the data collection effort prior to completion of his data collection shall be entitled to compensation set forth in this paragraph on a pro rata basis.

a. Failure of the participating pilot to complete all required documentation will be considered withdrawal from the data collection effort, and the pilot will be compensated on a pro rata basis for the documentation that was completed.

b. Intentional efforts to skew actigraph and/or human performance alertness data will be considered withdrawal from the data collection effort, and the pilot will not be compensated for any participation in the data collection effort.

c. Pay accrued under this paragraph shall be paid after the data is received and validated by the DCSC, and may require the submission of a pay log.

E. Data Security and Protection

1. All data collected pursuant to this MOU shall:

   a. be de-identified by the DCSC (or its designee) to the maximum extent possible (e.g., participant data for compensation purposes only will not be de-identified);

   b. be stored in electronic format on a secure server or in hard copy under lock and key;

   c. be considered "inflight data," as that term is defined in Section 26.A.1. of the Basic Agreement, except as provided in paragraph E.1.f. of this MOU (below);

   d. not be used in discipline/discharge action or investigation, including System Board of Adjustment proceedings;

   e. not be audited to evaluate or monitor the judgment or performance of an individual pilot or crew as set forth in Section 26.A.4. of the Basic Agreement; and

   f. only be released by the PRP (or ARP) (in de-identified format) to an individual or entity other than the Company, ALPA, or the PRP's (or ARP's) research associates for the purpose of analyzing data in accordance with this MOU, or if required by law, notwithstanding Section 26.A.5. of the Basic Agreement.

      In the event the PRP (or ARP) intends to make such a disclosure, the Company and ALPA shall be notified in advance of the individual or entity to whom the disclosure would be made and the scope of the disclosure. The parties shall have an opportunity to object to the proposed disclosure. If either party objects, the PRP (or the ARP) shall not make the proposed disclosure.

2. Data collected by the DCSC and the analyses of those data by the PRP (or the ARP) that are shared with the DCSC may be disclosed to ALPA representatives who have agreed not to use or disclose the analyses, conclusions, recommendations, or opinions of the PRP (or the ARP) without the written consent of the Company and the FedEx MEC Chairman.

3. Any final reports prepared by the PRP (or the ARP) shall be made available to any Company pilot for review on Company property at mutually agreeable times, provided that the pilot has signed an agreed-upon non-disclosure agreement prohibiting the use of or disclosure of data or analyses to anyone other than the Company or ALPA without the written consent of the Company and the FedEx MEC Chairman.

4. The data collected by the DCSC and the analyses of the PRP (or the ARP) shall not be used by the Company or ALPA to support changes to the FARs (proposed or otherwise) or to existing law. Neither party shall use the data collected or analyses of the PRP (or the ARP) in litigation of any type, including but not limited to grievances and System Board of Adjustment proceedings conducted pursuant to Sections 19, 20, and 21 of the Basic Agreement, without the written consent of the Company and the FedEx MEC Chairman.

5. The Company may use the data collected by the DCSC and the analyses of the PRP to support the approval of its FRMS by the FAA. In the event that the Company's FRMS submission utilizes analyses, conclusions, recommendations, or opinions of the PRP, which led to the preparation of a report on the same subject by the ARP, the Company, in its FRMS submission to the FAA, must include the analyses, conclusions, recommendations, or opinions from both research partners.

6. The PRP and/or the ARP may publish their final reports in a peer-reviewed scientific journal, provided that both the Company and ALPA consent and have an opportunity to review the written work product prior to its submission for publication.

F. Ongoing Implementation Measures

The parties recognize that the details involved in conducting scientifically-valid data collection and analysis are varied and fluid. Other measures facilitating the parties' efforts to study and understand the scientific bases for improving pilot alertness throughout the Company's air network may be implemented if agreed upon in writing by the Vice President, Labor Relations and the FedEx MEC Chairman.

G. Termination and Duration

This Memorandum of Understanding concerning the Collection of Human Performance/Alertness Data will become effective on _____ 201_ and will remain in effect concurrent with the Basic Agreement.

[SIGNATURE PAGE TO FOLLOW]