INSTRUCTIONS FOR PREPARATION OF
CRAF AIRCRAFT REVALIDATION DATA SHEET 81,
CRAF AIRCRAFT BASIC DATA SHEET 82,
CRAF AIRCRAFT PERFORMANCE DATA SHEET 83,
and
COMPUTERIZED FLIGHT PLAN (CFP)

1. Aircraft offered in response to the Charter Airlift Services in Support of the Civil Reserve Air Fleet (CRAF) solicitation must be submitted using appropriate tabs of the most current Microsoft Excel-based file, available by calling the CRAF Branch of the Commercial Airlift Division at (618) 229-1751 or by submitting a request by email to the following address: AMC.A3BC.CIVIL.RESERVE.AIR.FLEET.BRANCH@us.af.mil.

   a. For aircraft that were successfully submitted to the previous solicitation, complete the CRAF Aircraft Revalidation Data Sheet 81, listing all aircraft with identical type, performance capability and equipment, including newly offered aircraft tail numbers of equivalent capability, on one sheet.

   b. For aircraft that were not part of the previous year’s submission nor equivalent to aircraft in the previous year’s submission, or aircraft that have received physical modifications affecting inherent performance capabilities or benefit from newly purchased enhanced performance data, the CRAF Aircraft Basic and Performance Data Sheets 82 and 83, as well as a CFP, must be prepared for each model and series aircraft committed to the CRAF. Carriers that have been granted new operations specification paragraphs that impact demonstrable aircraft performance may also elect to submit new Data Sheets 82/83. An example of this would be the addition of paragraph B044, Planned Redispatch or Rerelease En Route. In this case, a written explanation of the specific performance improvement must also be included. In addition, unique to the International Segment of CRAF, carriers may be required to submit CRAF Data Sheets for those model and series aircraft that are capable of qualifying for these two sections, but are not being offered to the CRAF program. This allows AMC’s CRAF office to accurately assess the airline’s total fleet wide-body equivalence and verify the minimum submission requirements have been met.

      (1) Cargo aircraft data is computed using the 463L pallet (88” x 108” in size).
      (2) Passenger data is computed using 400 pounds per passenger (includes baggage).

2. CRAF Aircraft Revalidation Data Sheet 81

   a. This Data Sheet is only used to revalidate/resubmit aircraft tail numbers that were successfully submitted to the previous solicitation. “Successful submission” is defined as
having submitted CRAF Data Sheets 82/83 and CFPs that were accepted by AMC/A3BC as “complete and accurate”.

b. **Top of Data Sheet.** Provide aircraft model and series, total number of this type aircraft in the carrier’s fleet, and the number that are overwater capable. “Overwater capable” means the aircraft can operate in trans-oceanic airspace, has necessary navigation, communication, life support and emergency equipment to do so, and is Federal Aviation Administration (FAA)-certificated for such operations. Indicate the type(s) of engines on each aircraft and the overwater navigation equipment currently installed, e.g., INS, GPS, etc.

c. **Body of Data Sheet.** List aircraft tail numbers in numerical order. Aircraft included must be of identical type, performance capability and equipage. Aircraft not previously submitted may be included.

3. **CRAF Aircraft Basic Data Sheet 82 – Front**

d. **Top of Data Sheet.** Provide aircraft model and series, total number of this type aircraft in the carrier’s fleet, and the number that are overwater capable. “Overwater capable” means the aircraft can operate in trans-oceanic airspace, has necessary navigation, communication, life support and emergency equipment to do so, and is Federal Aviation Administration (FAA)-certificated for such operations. Indicate the type(s) of engines on each aircraft and the overwater navigation equipment currently installed, e.g., INS, GPS, etc.

e. **Design and Operational Data.** Base all data on current certified maximum takeoff gross weight and international standard atmospheric conditions. Enter data only in the column applicable to your aircraft, leaving the other column completely empty. For Combi aircraft, enter as a cargo aircraft, but include “Seats – Company Standard” information on Line 9.

   (1) **Maximum Takeoff Gross Weight (MTOW)** (line 1). The maximum weight authorized at takeoff brake release by applicable (FAA, International Civil Aviation Organization (ICAO), etc.) regulations.

   (2) **Maximum Landing Gross Weight (MLW)** (line 2). The maximum weight authorized at touchdown by applicable (FAA, ICAO, etc.) regulations.

   (3) **Maximum Zero Fuel Weight (MZFW)** (line 3). The maximum airplane weight above which any additional weight must be useable fuel and/or consumable propulsion agents.

   (4) **Operating Empty Weight (OEW)** (line 4). The weight of the aircraft in company operating configuration except for useable fuel, other propulsion agents, and payload. **Use the specific OEW of the aircraft closest to the average weight of all the aircraft listed on the reverse of the Basic Data Sheet.** Include the weight of the aircraft structure, power plants, furnishings, systems, and other items of equipment that are considered an integral part of a particular aircraft configuration. Also, include standard items, crew, equipment, and supplies necessary for CRAF operations.
(a) **For cargo configuration:** Include the loading system for military 463L pallets and lower lobe cargo containers for wide-body aircraft. The weight of pallets and nets is not to be included.

(b) **For passenger configuration:** Use AMC contract configuration, including lower lobe baggage containers for wide-body aircraft.

(5) **Structural Weight Limit** (line 5). The maximum design payload weight of passengers and passenger baggage or cargo. Equal to MZFW minus OEW. Described as “Maximum Structural Payload” in some documents. This value is automatically calculated and the data field populated.

(6) **Maximum Landing Payload** (line 6). The maximum payload with which the aircraft is structurally capable of landing. Equal to the MLW minus OEW minus Destination Landing Fuel weight. This value is automatically calculated and the data field populated.

(7) **Weight Limited Payload** (line 7). Equal to the lesser of the Structural Weight Limit or the Maximum Landing Payload. This value is automatically calculated and the data field populated.

(8) **Number of 463L Pallets / Placement** (line 8). The maximum number of military 463L pallets that can be loaded and locked on the main deck, and the placement of the pallets.

(9) **Seats – Company Standard** (line 9). The average number of revenue seats installed in the aircraft for routine civil passenger operations. This is the total number and should not distinguish between sections (i.e., First Class, Business, Coach). If your intent at the time of offer is to reconfigure the aircraft with enough seats to meet minimum contractual requirements for CRAF activation, and you have both the FAA authority to do so and the ability to reconfigure and reposition the aircraft within the contractually mandated timelines, add a note to the remarks section on the Basic Data Sheet – Reverse indicating the number of passenger seats that would be installed in each aircraft for activated CRAF operations.

(10) **Belly Bulk Area** (line 10). The design useable belly bulk capacity. Do not include the lower lobe areas in wide-body aircraft where containers or pallets can be utilized since these will be annotated in (15) below.

(11) **Useable Fuel Capacity**. The design useable fuel capacity in pounds. Use 6.8 pounds per gallon.

(12) **Destination Landing Fuel**. Use 14 CFR Part 121, Domestic or International Requirements, as appropriate. The distance to alternate is in accordance with company directives and FAA/ICAO requirements. The distance to destination for aircraft assigned to the International Long Range section is 3,500 nautical miles (NM); for aircraft assigned to the International Short Range section or the Domestic Services section, the distance is 1,500 NM. **This block should reflect the actual landing fuel from the associated CFP, and should include fuel to fly to the destination alternate, holding fuel, reserve fuel, and any discretionary reserves.**

(13) **Cruise Speed**. The normal cruise speed at the range standard for the CRAF segment and section to which the aircraft is committed. Record true airspeed (TAS) in knots and Mach number for jet aircraft. Record TAS in knots for turboprop aircraft. This should be the speed reflected on the CFP.
(14) **Initial Cruise Altitude.** The initial cruise altitude for optimum flight operation.

(15) **Wide-body Aircraft Lower Lobe (cargo and passenger aircraft).**

   (a) **Number of Containers / Type.** The maximum number and type of baggage/cargo containers that can be carried in the lower lobe. Report the type most commonly used by your company.

   (b) **Tare Weight per Container.** The average tare weight, in pounds, of the type container named above.

   (c) **Number of 463L Pallets.** The maximum of military 463L pallets that can be loaded and locked in the lower lobe. Identify the area in the lower lobe.

(16) **Communications Equipment.** The number of UHF/VHF/HF radios onboard, and the make and/or manufacturer.

4. **CRAF Aircraft Basic Data Sheet 82 – Reverse**

   a. **Tail Number.** List FAA N-registration numbers of each aircraft being offered to the CRAF program. Use additional sheets as necessary. Note: the first N-registration number listed will be auto-filled to the front of the Basic Data Sheet (near upper right corner), to the other Basic Data Sheets - Reverses (near upper right corner), and to the Performance Data Sheet (below Destination Landing Fuel block).

   b. **Nose Loader.** Annotate if that particular aircraft has a nose-loading capability (primarily B-747s).

   c. **RVSM.** Annotate if that particular aircraft is reduced vertical separation minimum (RVSM)-equipped and certified.

   d. **RNP-5.** Annotate if that particular aircraft is RNP-5 equipped and certified to fly RNP-5 routes. Aircraft must not be dependent upon ground-based aids for navigation equipment updates.

   e. **RNP-10.** If that particular aircraft is RNP-10 equipped and certified to fly RNP-10 routes, annotate the number of hours the capability can be maintained without a ground station-provided update. Aircraft must not be dependent upon ground-based aids for navigation equipment updates.

   f. **8.33 MHz.** Annotate if that particular aircraft is equipped with 8.33 MHz frequency spacing VHF communications radio(s).

   g. **FM Immune.** Annotate if that particular aircraft is equipped with VHF radios that are immune from FM interference.

   h. **Mode S.** Annotate if that aircraft is Mode S-ELS (elementary surveillance) or -EHS (enhanced surveillance) equipped. (Note: Much of Eurocontrol (EC) airspace now requires at least Mode S-ELS. Additionally, for Mode S-EHS capable aircraft, as defined by EC specifications, EHS is also required. If your aircraft are non-Mode S-EHS capable, exemptions from the appropriate EC-member nations must be submitted with this form. For the long-range international section, Mode S-ELS or -EHS, as stated above, is required. Otherwise, qualified aircraft without Mode S-ELS or -EHS, as appropriate, will be assigned to the short-range section.

   i. **TCAS II (7.1).** Annotate if that aircraft is compliant with Traffic Alert and Collision Avoidance System (TCAS II), version 7.1 requirements.
5. CRAF Aircraft Performance Data Sheet 83

a. **Top of Data Sheet.** The top of the data sheet will be automatically filled from data entered on the Basic Data Sheet tab.

b. **Computations.** Computations occur automatically based upon the data entered. Once all data has been entered, the following will be presented on the Performance Data Sheet: Payload at Target Distance (i.e. Creditable Payload), Average Block Speed, 75% of Maximum Payload, Range at 75% Payload, Payload at CFP Distance, CFP Payload Variance, Approximate Base MV Points, and Approximate MV Points with Range Bonus (for long-range only).

c. **Tab Selection.** Select a Performance Data Sheet worksheet with graph ordinates that provide the best representation of the aircraft’s payload and range capabilities. The following worksheets, with noted payload ordinates, are provided:

1. **B-747 Variable Zero Fuel Weight aircraft.** This tab is for VZFW aircraft only.
   The bottom line of the graph is 55,000 pounds and the top line is 320,000 pounds.
   Each heavy line subdivision is 15,000 pounds and each light line subdivision is 3,000 pounds.

2. **B-747s, MD-11s, and similar.** The bottom line of the graph is 55,000 pounds and the top line is 320,000 pounds.
   Each heavy line subdivision is 15,000 pounds and each light line subdivision is 3,000 pounds.

3. **B-777s and similar.** The bottom line of the graph is 30,000 pounds and the top line is 240,000 pounds.
   Each heavy line subdivision is 10,000 pounds and each light line subdivision is 2,000 pounds.

4. **A-330s, B-767s, and similar.** The bottom line of the graph is zero (0) and the top line is 160,000 pounds.
   Each heavy line subdivision is 10,000 pounds and each light line subdivision is 2,000 pounds.

5. **Short Range and Domestic.** Intended for A-320s, B-737s, MD-80s, L-100s, and other similar type aircraft assigned in the Short-Range International Section or National Segment.
   The bottom line of the graph is zero (0) and the top line is 55,000 pounds.
   Each heavy line subdivision is 2,500 pounds and each light line subdivision is 500 pounds.

6. **Short Range, High Capacity.** Intended for B-757s and similar aircraft assigned in the Short-Range International Section or National Segment.
   The bottom line of the graph is zero (0) and the top line is 120,000 pounds.
   Each heavy line subdivision is 7,500 pounds and each light line subdivision is 1,500 pounds.

d. **Data Entry Requirements**

1. **Range/Payload Data Points.** The Range/Payload Graph is automatically plotted based on the four specified data points (five for the B-747 variable zero fuel weight (VZFW)), which are defined below. When determining the range data points, you may use manufacturer’s data or an iterative flight planning process; however, the resulting graph will be validated through comparison with the payload on the associated CFP. We will accept a variance of no more than 1.75 percent between the
CFP payload and the plotted payload at the same range. (Note: on the Performance Data Sheet, you need only fill the tan shaded fields. All other fields are automatically filled from data pulled from the CRAF Aircraft Basic Data Sheet or computed on the Performance Data Sheet.)

(a) **MZFW:** The range for this data point is automatically set to zero (0) NM. The payload is automatically filled from Basic Data Sheet data and corresponds to the Weight Limited Payload calculated on line 7 of the Basic Data Sheet, meaning that the aircraft is loaded with the maximum payload (structural or landing-limited) and no fuel.

(b) **MZFW & MTOW:** This data point corresponds to the condition where the aircraft is loaded with the maximum payload (structural or landing-limited) and enough fuel to cause the aircraft to reach its MTOW. The payload data will be automatically filled (except for the VZFW B-747), and the Performance Data Sheet requires entry of the appropriate range data. From this range data point forward, cargo will have to be displaced by fuel in order for the aircraft to fly further.

(c) **MTOW and Maximum Fuel Capacity:** This data point corresponds to the point where the aircraft is at its MTOW and has reached its maximum fuel capacity. Payload weight has been reduced to allow for the increase in fuel weight. A good starting point for calculating the payload is MTOW minus OEW minus Useable Fuel Capacity. Both the appropriate range and payload data require entry.

(d) **Maximum Range with no Payload (Maximum Ferry Range):** This data point corresponds to the maximum range the aircraft can fly carrying no payload. The payload data is set at zero (0) pounds, and the Performance Data Sheet requires entry of the appropriate range data.

(e) **B-747 VZFW ONLY:** Alternate Zero Fuel Weight (AltZFW) & MTOW: This data point will be positioned between points (2) and (3) above and will correspond to the point where the aircraft is at its MTOW and has reached the maximum payload permitted by its lower MZFW. This calculation requires entry of an additional field on the Performance Data Sheet entitled “Enter AltZFW (lbs.)”.

(2) **CFP Data.** In the tan shaded blocks to the left of the form, enter the flight time hours (HR) and minutes (MIN) from the associated CFP, the actual route distance in NMs, and the payload in pounds. The application determines the Performance Data Sheet Payload from the plotted data at the same range, and then calculates the variance between the two. Finally, the application determines the Average Block Speed.

6. **Computer Flight Plans:** In addition to the Basic and Performance Data Sheets, each carrier will submit a validated CFP based on the specific aircraft whose OEW is reflected on the Basic Data Sheet (Ref. Para. 2.b.(4)). The CFP will conform to the following requirements:
a. The range for the submitted CFP will approximate the required range for the intended CRAF segment and section (i.e., Long-range section = 3,500 +/- 100 NMs; Short-range section and Domestic segment = 1,500 +/- 100 NMs.

b. Optimally, the CFP will be completed using zero wind and standard International Standard Atmosphere (ISA) temperatures. If a carrier’s flight planning software does not provide this capability, the CFP will provide Nautical Air Mile (NAM) data in order to provide a “zero wind equivalent” distance. Additionally, the CFP temperature deviation will be zero (0) degrees or above to ensure that no performance advantage is provided. For carriers who cannot meet any of the above options, the CFP provided may have a wind component (overall headwind only) and a temperature deviation of zero or above so as not to provide a performance advantage.

c. Destination alternate airfield locations will be selected and annotated in accordance with documented company policy and FAA/ICAO directives.

d. If carrier operation specifications allow, fuel management procedures (such as Planned Re-dispatch/Rerelease En Route (OPSS B044)) may be utilized when completing the CFP.

e. The CFP must demonstrate a maximum payload capability.

7. For questions concerning preparation of these forms, please contact the CRAF office (AMC/A3BC) via phone at (618) 229-1751 or e-mail at AMC.A3BC.CIVIL.RESERVE.AIR.FLEET.BRANCH@us.af.mil.