Aviation Mission Planning Forms

AUGUST 2016

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Aviation Mission Planning Forms

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Preface

TC 3-04.12, in conjunction with TC 3-04.11 and AR 95-1, establishes the forms and documents utilized in support of aircrew mission planning and the aircrew training program (ATP). This publication was created as a result of a change to aviation publications. The aircrew training manuals (ATMs) have been taken out of the TC format and published on the DOTD webpage located at https://www.us.army.mil/suite/page/691190. Due to the removal of the ATMs, this TC is designated as the new prescribing publication for the required performance planning cards (PPCs).

This TC provides rated aviators and unmanned aircraft crewmembers (UACs) with the required and optional forms that assist in the mission planning process. The instructions for the forms located within this publication are meant to serve as general guidelines for completing the forms. The individual tasks include detailed information and in-depth procedures to obtain the information required on the forms.

As stated in AR 95-1, the ATP is in accordance with TC 3-04.11. Although AR 95-23 refers the reader to the appropriate ATM for the administration of the ATP, this document precedes the ATM in its administration of forms. If a conflict exists between this publication and any other aviation training publication (with the exception of ARs and TC 3-04.11), this publication takes precedence.

This TC applies to Active Army, Army National Guard (ARNG)/Army National Guard of the United States (ARNGUS), United States Army Reserve (USAR), and all other individuals flying Army aircraft unless otherwise stated.

The proponent for this publication is the United States Army Training and Doctrine Command (TRADOC). Waiver authority for items other than those listed in AR 95-1/AR 95-23 and contained in this publication, individual tasks, or documents resides with the Directors of the Directorate of Training and Doctrine (DOTD) and Directorate of Evaluation and Standardization (DES). All waiver requests must be endorsed by the commander or senior leader of the requesting activity and forwarded to usarmy.rucker.avncoe.mbx.atzq-tdt-fi@mail.mil for disposition. Send comments and recommendations on Department of the Army (DA) Form 2028 (Recommended Changes to Publications and Blank Forms) through the aviation unit commander to Commander, United States Army Aviation Center of Excellence (USAACE), ATTN: ATZQ-TDT-F, Fort Rucker, Alabama 36362-5000, or via digital means to http://www.apd.army.mil/da2028/daform2028.asp. Questions may also be directly emailed to usarmy.rucker.avncoe.mbx.atzq-tdt-fi@mail.mil.

This publication has been reviewed for operations security considerations.
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Introduction

To understand TC 3-04.12, the reader must first understand why the document was created in the first place. All Department of the Army forms require a prescribing publication that instructs the user on how to fill the form out. Due to the TC 3-04.11, placing all tasks in the digital realm and with it the rescission of all of the ATMs, the prescribing publications for all of the PPCs were lost. This publication was created to be the prescribing publication for all aviation related planning forms. This document does not include the in-depth instructions for all forms, as that information is still located within the individual tasks located on the DOTD website at https://www.us.army.mil/suite/page/691190.
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Chapter 1

Department of the Army Form 7750

1-1. Figure 1-1 provides a sample DA Form 7750 (Emergency Global Positioning System Approach Card).

Figure 1-1. Sample of DA Army Form 7750 (front)
1-2. **Top Portion (Approach Title).** Figure 1-2 provides an example of the top portion of the form:

- **Top Left.** Record city, state, and country or area and country.
- **Top Center.** Record unit.
- **Top Right.** Record approach information or airport/location information.

![Figure 1-2. Top margin information](image)

1-3. **Pilot Briefing Information.** The pilot briefing information format consists of three horizontal rows of boxed procedure-specific information along the top edge of the chart. Altitudes, frequencies/channel, and course and elevation values (except height above touchdown [HATs] and height above airport [HAAs]) are charted in bold type. The top row contains the primary procedure navigation information, final approach course, landing distance available, touchdown zone, and airport elevations. The middle row contains procedure notes and limitations, icons indicating if nonstandard alternate and/or take-off minimums apply, approach lighting symbology, and the full text description of the missed approach procedure. The bottom row contains air to ground communication facilities and frequencies in the order in which they are used during an approach with the tower frequency box bolded.

- **Item 1:** APP CRS. Enter the approach course.
- **Item 2:** RWY ldg. Enter the length of the runway or landing area.
- **Item 3:** TDZE. Enter the touchdown zone elevation.
- **Item 4:** APT elev. Enter airport/landing area elevation.
- **Item 5:** REMARKS. Enter any special instructions or remarks (figure 1-3).
- **Item 6:** MISSED APPROACH. Enter missed approach instructions (figure 1-3).

![Figure 1-3. Special instructions and missed approach](image)

- **Items 7 through 11:** Frequency blocks. Enter agency and frequency as required.
- **Item 12:** Plan view. Create plan view diagram in accordance with appropriate task. This section provides the plan view of the approach, along with navigation aids, heading, altitudes, radials, radar required, holding, distances, and/or obstacles (figure 1-4).

![Figure 1-4. Plan view](image)
1-4. **Airport Diagram.** The objective of the airport diagram is to provide a seamless transition from the en route structure to the terminal environment for arriving aircraft equipped with flight management system (FMS) and/or global positioning system (GPS) navigational equipment.

- **Item 13:** Airport elevation. The highest point of elevation on the airport.
- **Item 14:** Airport diagram. Location for airport diagram.

1-5. **Profile View.** The following items aid in the completion of the profile view section:

- **Item 15:** Create profile view in accordance with appropriate task (figure 1-5).

![Figure 1-5. Profile view](image)

- **Item 16:** Missed approach instructions. Enter missed approach icons.
- **Item 17:** Category and approach. In the top row enter aircraft category as applicable for the approach flown. The left column will contain the type of approach being flown. In the center, and separated into columns as applicable will be the decision height (DH) or minimum descend altitude (MDA) (as applicable) (figure 1-6).

![Figure 1-6. Category and approach sample](image)

1-6. Figure 1-7, page 1-4, provides a sample of the back of DA Form 7750.
<table>
<thead>
<tr>
<th>Approach Title</th>
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<th>(26)</th>
<th>(27)</th>
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<tr>
<td>(IAF) R</td>
<td>(19)</td>
<td>(26)</td>
<td>(27)</td>
</tr>
<tr>
<td>(IAF) L</td>
<td>(20)</td>
<td>(26)</td>
<td>(27)</td>
</tr>
<tr>
<td>(IF/IAF)</td>
<td>(21)</td>
<td>(26)</td>
<td>(27)</td>
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<td>(PAF)</td>
<td>(22)</td>
<td>(26)</td>
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<tr>
<td>(MAP)</td>
<td>(23)</td>
<td>(26)</td>
<td>(27)</td>
</tr>
<tr>
<td>(FLY-BY)</td>
<td>(24)</td>
<td>(26)</td>
<td>(27)</td>
</tr>
<tr>
<td>(FLY-BY)</td>
<td>(25)</td>
<td>(26)</td>
<td>(27)</td>
</tr>
</tbody>
</table>

Developer: (29)  Sig:  Date:  
Fit Check: (30)  Sig:  Date:  
Approval: (31)  Sig:  Date:  

Figure 1-7. Department of the Army Form 7750 (back)
1-7. **Course information.** The following items aid in the completion of course information:

- **Item 18:** (IAF)-R. Enter initial approach fix-right waypoint name.
- **Item 19:** (IAF)-L. Enter initial approach fix-left waypoint name.
- **Item 20:** (IF/IAF). Enter intermediate fix/initial approach fix waypoint name.
- **Item 21:** (FAF). Enter final approach fix waypoint name.
- **Item 22:** (MAP). Enter missed approach point waypoint name.
- **Item 23:** (FLY-BY). Enter fly-by waypoint name.
- **Item 24:** (FLY-BY). Enter fly-by waypoint name.
- **Item 25:** (MAHF). Enter missed approach holding fix waypoint name.
- **Item 26:** Latitude. Enter latitude coordinates.
- **Item 27:** Longitude. Enter longitude coordinates.
- **Item 28:** Military grid reference system (MGRS). Enter MGRS coordinates.

1-8. **RNAV (GPS) Developer, Flight Check, and Approval.** The following items aid in the completion of RNAV developer, flight check, and approval:

- **Item 29:** Developer. Enter developer name, signature, and date.
- **Item 30:** Flt Check. Enter flight checked by name, signature, and date.
- **Item 31:** Approval. Enter approval authority name, signature, and date.

1-9. **Item 32:** Warning Dialogs, Status Indicators. Enter appropriate warnings, or other applicable information.

1-10. **Item 33:** Free Text Note Section. Enter notes, remarks, or other pertinent information regarding this approach.
2-1. Figure 2-1 provides a sample DA Form 5701-17 (Mi-17 Performance Planning Card [PPC]).

![Sample DA Form 5701-17](image)

**Figure 2-1. Sample DA Form 5701-17**
2-2. Departure data. The following items aid in the completion of departure data:

- **Item 1:** PA. Record the pressure altitude (PA) forecast for the time of departure.
- **Item 2:** FAT. Record the free air temperature (FAT) forecast for the time of departure.
- **Item 3:** WIND. Record the current wind direction and speed for the time of departure.
- **Item 4:** WEIGHTS.
  - OPERATING. Record the operating weight of the aircraft.
  - FUEL. Record the takeoff (T/O) fuel weight.
  - PAX. Record the maximum anticipated weight of the number of passengers (PAX) during the mission profile.
  - LOAD. Record the maximum anticipated weight of the load during the mission profile.
  - TAKEOFF. Record the T/O gross weight (GWT).
- **Item 5:** Start.
  - APU AIR LINE PRESSURE. Record the air pressure for engine start.
  - MAX PTIT for Start. Record the maximum (MAX) power turbine inlet temperature (PTIT) for engine start.
  - ENGINE IDLE (gas producer [speed] [N1]). Record the minimum and maximum engine idle speed.
  - PTIT-Partial Accel check. Record the maximum PTIT temperature for the test.
- **Items 6a and 6b:** Hover.
  - IGE. Record the takeoff weight.
  - OGE. Record the takeoff weight.

2-3. Cruise data. The following items aid in the completion of cruise data:

- **Item 6c:** PA. Record the pressure altitude for cruise data.
- **Item 6d:** FAT. Record the free air temperature.

2-4. Continuous operations. The following items aid in the completion of continuous operations:

- **Item 7:** CRUISE II. Record the minimum NG (N1). Record the maximum NG (N1).
- **Item 8:** CRUISE I. Record the minimum NG (N1). Record the maximum NG (N1).

2-5. Limited operations. The following items aid in the completion of limited operations:

- **Item 9:** MAX CONTINUOUS (Normal power maximum speed). Record the minimum NG (N1). Record the maximum NG (N1).
- **Item 10:** TAKE-OFF POWER. Record the minimum NG (N1). Record the maximum NG (N1).
- **Item 11:** CONTINGENCY POWER. Record the minimum NG (N1). Record the maximum NG (N1).
- **Item 12:** AIRSPEED. Record the airspeed limitations.
- **Items 13 and 14:** OEI (SINGLE Engine). Record the maximum aircraft weight during single engine operation.

2-6. Arrival data. The following items aid in the completion of arrival data:

- **Item 15:**
  - PA. Record the pressure altitude.
  - FAT. Record the free air temperature.
  - WIND. Record the wind.
  - LDG GWT. Record the estimated landing GWT.
- **Item 16:** Hover.
  - IGE. Record the landing weight.
  - OGE. Record the landing weight.
Chapter 3
Department of the Army Form 5701-58

3-1. Figure 3-1 provides a sample of DA Form 5701-58 (OH-58D Performance Planning Card).

![Sample DA Form 5701-58](image)

Figure 3-1. Sample of DA Form 5701-58, page 1
3-2. **Departure/Maximum Data.** The following items aid in the completion of departure/maximum data:

- **Item 1:** TAKEOFF PA. Record the pressure altitude at the departure point at the estimated time of departure.
- **Item 2:** TAKEOFF FAT. Record the temperature at the departure point at the estimated time of departure.
- **Item 3:** MAX PA. Record the forecasted maximum pressure altitude for the duration of the mission.
- **Item 4:** MAX FAT. Record the forecasted maximum temperature for the duration of the mission.
- **Item 5:** PLANNED T/O WEIGHT. Record the gross weight of the aircraft at departure.
- **Item 6:** PLANNED MAX WEIGHT. Record the heaviest gross weight that may occur for the duration of the mission.
- **Item 7:** FUEL REQUIRED. Record the estimated fuel required (including reserve) at takeoff to complete the mission.
- **Item 8:** IGE (Optional). Used to record the maximum allowable fuel weight at takeoff if fuel must be limited to meet takeoff in ground effect (IGE) maximum gross weight requirements.
- **Item 9:** OGE (Optional). Used to record the maximum allowable fuel weight at takeoff if fuel must be limited to meet takeoff out of ground effect (OGE) maximum gross weight requirements.
- **Item 10:** C.G. CONDITION (Optional). Check the appropriate lateral center of gravity (CG) condition.
- **Item 11:** MAX TQ AVAIL-30 MIN. Record the maximum torque available for 30 minute operation at takeoff.
- **Item 12:** MAX TQ AVAIL-CONT. Record the maximum torque available for continuous operations.
- **Item 13:** PREDICTED HOVER TQ-T/O-IGE. Record the estimated mast torque required to hover in ground effect (3 feet).
- **Item 14:** PREDICTED HOVER TQ-MAX -IGE. Record the estimated mast torque required to hover in ground effect (3 feet).
- **Item 15:** PREDICTED HOVER TQ-T/O-OGE. Record the estimated mast torque required to hover out of ground effect.
- **Item 16:** PREDICTED HOVER TQ-MAX -OGE. Record the estimated mast torque required to hover out of ground effect.
- **Item 17:** MAX ALLOWABLE G.W.-T/O-IGE. Record the maximum allowable gross weight in ground effect.
- **Item 18:** MAX ALLOWABLE G.W.-MAX-IGE. Record the maximum allowable gross weight in ground effect.
- **Item 19:** MAX ALLOWABLE G.W.-T/O-OGE. Record the maximum allowable gross weight out of ground effect.
- **Item 20:** MAX ALLOWABLE G.W.-MAX-OGE. Record the maximum allowable gross weight out of ground effect.

3-3. **Cruise Data.** The following items aid in the completion of cruise data:

- **Item 21:** ALTITUDE. Record the planned cruise altitude.
- **Item 22:** FAT. Record the forecasted or estimated temperature at cruise altitude.
- **Item 23:** DRAG SQ. FT. Record the net change in square feet (sq ft) of flat plate drag between the standard drag configuration and the configuration to be flown.
- **Item 24:** TQ Δ FOR CRUISE AIRSPEED. Record the predicted increase or decrease in mast torque necessary to maintain cruise airspeed as required for nonstandard drag configurations.
- **Item 25:** CRUISE-IAS. Record the planned indicated airspeed (IAS) for cruise.
- **Item 26:** CRUISE-TORQUE. Record the mast torque required to maintain cruise airspeed.
- **Item 27:** CRUISE-FUEL FLOW. Record the predicted fuel flow at the torque setting (item 26) to maintain cruise airspeed.
- **Item 28:** MAX RANGE-IAS. Record the indicated airspeed for maximum range.
- **Item 29**: MAX RANGE-TORQUE. Record the mast torque required to maintain maximum range airspeed.

- **Item 30**: MAX RANGE-FUEL FLOW. Record the predicted fuel flow at the torque setting (Item 29) to maintain cruise airspeed.

- **Item 31**: MAX R/C or END-IAS. Record the indicated airspeed for maximum (MAX) rate of climb (R/C) or maximum endurance (END).

- **Item 32**: MAX R/C or EN-TORQUE. Record the mast torque required to maintain maximum endurance airspeed.

- **Item 33**: MAX R/C or EN-FUEL FLOW. Record the predicted fuel flow at the torque setting (item 32) to maintain cruise airspeed.

- **Item 34**: VNE-IAS. Record the indicated airspeed for velocity not to exceed (V<sub>NE</sub>).

- **Item 35**: VNE-TORQUE (Optional). Record the predicted mast torque required to maintain V<sub>NE</sub> airspeed.

- **Item 36**: VNE-FUEL FLOW (Optional). Record the predicted fuel flow at the torque setting (item 35) to maintain maximum V<sub>NE</sub> airspeed.

3-4. **Arrival Data.** Compute data for separate arrival locations, such as FARPs, airports, or other desired locations, if environmental conditions are higher by 5 degrees Celsius, 500 feet PA, or if aircraft weight increases by 200 pounds. Three separate areas are provided on the performance planning card to be recorded as annotated above.
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Chapter 4
Department of the Army Form 5701-72

4-1. Figures 4-1 and 4-2, page 4-2, provide a sample of DA Form 5701-72 (UH-72A Performance Planning Card).

**Figure 4-1. Sample DA Form 5701-72 (front)**
4-2. **Departure/Maximum Data.** The following items aid in the completion of departure data:

- **Item 1:** Aircraft GWT (kilograms [kgs]). Record total planning aircraft gross weight at takeoff.
- **Item 1a:** Aircraft GWT (pounds [lbs]). Record total planning aircraft gross weight at takeoff in lbs.
- **Item 2:** Max PA. Record forecast maximum pressure altitude.
Item 2a: PA. Record forecasted pressure altitude for time of departure.
Item 3: Max FA. Record forecast maximum free air temperature for time of departure.
Item 3a: FAT. Record forecast free air temperature for time of departure.
Item 4: Zero Fuel Weight (kgs). Record zero fuel weight.
Item 4a: Zero Fuel Weight (lbs). Record zero fuel weight.
Item 5: Max TQ Avail AEO. Record the maximum torque available with all engines operating (AEO).
Item 6: Max GWT-IGE (kgs). Record maximum gross weight (IGE) in kilograms.
Item 6a: Max GWT-IGE (lbs). Record maximum gross weight (IGE) in pounds.
Item 7: Max GWT-OGE (kgs). Record maximum gross weight (OGE) in kilograms.
Item 7a: Max GWT-OGE (lbs). Record maximum gross weight (OGE) in pounds.
Item 8: GO/NO GO TQ-IGE. Record Go NO/GO torque value (IGE).
Item 9: GO/NO GO TQ-OGE. Record Go NO/GO torque value (OGE).
Item 10: Max GWT OGE w/ MCP (kgs). Record max GWT OGE w/ MCP in kilograms.
Item 10a: Max GWT OGE w/ MCP (lbs). Record max GWT OGE w/ MCP in pounds.
Item 11: Predicted Hover TQ. Record the torque value.
Item 12: H/V Altitude (AGL). Enter the minimum altitude at a stationary hover from which a safe landing can be expected after a single engine failure. Enter “NONE” to indicate no avoidance area.

4-3. Cruise Data. The following items aid in the completion of cruise data:

Item 13: Aircraft GWT. Record cruise aircraft gross weight.
Item 14: PA. Record the planned cruise pressure altitude.
Item 15: FAT. Record forecast free air temperature at cruise altitude.
Item 16: CRUISE-IAS. Record cruise indicated airspeed.
Item 17: CRUISE-TA. Record true airspeed.
Item 18: CRUISE-TQ. Record cruise torque.
Item 19: CRUISE-FUEL FLOW. Record cruise fuel flow.
Item 20: MAX ENDURANCE-IAS. Record maximum endurance indicated airspeed.
Item 21: MAX ENDURANCE-TAS. Record maximum endurance true airspeed.
Item 22: MAX ENDURANCE-TORQUE. Record maximum endurance torque.
Item 23: MAX ENDURANCE-FUEL FLOW. Record maximum endurance fuel flow.
Item 24: MAX RANGE-IAS. Record maximum range indicated airspeed.
Item 25: MAX RANGE-TAS. Record maximum range true airspeed.
Item 26: MAX RANGE-TQ. Record the maximum range torque.
Item 27: MAX RANGE-FUEL FLOW. Record the maximum range fuel flow.
Item 28: OEI IAS-MIN/MAX-min. Record minimum OEI indicated airspeed.
Item 29: OEI IAS-MIN/MAX-max. Record maximum OEI indicated airspeed.
Item 30: Provides an area for pertinent notes on information found within the form, and is continued on page 2 of the form.

4-4. Arrival data. Item 31 through 39: Filled out with the appropriate information for the destination conditions.
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Chapter 5

Department of the Army Form 5701-47

5-1. Figure 5-1 provides an example of DA Form 5701-47 (CH-47 Performance Planning Card)

![CH-47 PERFORMANCE PLANNING CARD]

For use of this form, see TC 3-04.12, the proposing agency is TRADOC.

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**FUEL MANAGEMENT**

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**Cruise Data**

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**ARRIVAL DATA**

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<td>(83)</td>
<td>(84)</td>
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</tbody>
</table>

Figure 5-1. Sample DA Form 5701-47
Note. If any computed value exceeds operating limitations, enter “UA” (unable). Additionally, enter “N/A” (not applicable) when it does not apply.

5-2. Departure data. The following items aid in the completion of departure data:

- **Item 1**: OPERATING WT. Record the operating weight of the aircraft.
- **Item 2**: T/O FUEL WT. Record the takeoff fuel weight.
- **Item 3**: LOAD. Record the maximum anticipated weight of the load(s) during the mission profile.
- **Item 4**: PRESSURE ALT. Record the pressure altitude forecast for the time of departure.
- **Item 5**: FAT. Record the free air temperature forecast for the time of departure.
- **Item 6**: TAKEOFF GWT-NO LOAD. Record the takeoff gross weight.
- **Item 7**: TAKEOFF GWT-LOAD. Record the takeoff gross weight.
- **Item 8**: FUEL MANAGEMENT. Use this space to record the inflight fuel consumption check.
  - TIME.
  - QTY. Quantity.
  - PPH. Rate.
  - BURNOUT.
  - RSV. Reserve.
- **Item 9**: MAX TQ AVAIL-10 MIN/SE-DUAL ENGINE. Record the maximum 10 minute torque limit available for dual engine operation.
- **Item 10**: MAX TQ AVAIL-10 MIN/SE-SINGLE ENGINE. Record the maximum torque available for single engine operation.
- **Item 11**: MAX TORQUE AVAIL-30 MIN-DUAL ENGINE. Record the maximum 30 minute torque limit available for dual engine operation.
- **Item 12**: CONTINUOUS TORQUE AVAIL-DUAL ENGINE. Record continuous torque available for dual engine operation.
- **Item 13**: CONTINUOUS TORQUE AVAIL-SINGLE ENGINE. Record continuous torque available for single engine operation.

Note. The procedure for calculating items 14 thru 29 apply to both “NO LOAD” and “WITH LOAD.”

- **Items 14 and 15**: MAX GWT TO HVR 10 MIN/SE IGE/OGE-DUAL ENGINE (NO LOAD). Record the maximum IGE/OGE gross weight for the desired wheel height without a load.
- **Items 16 and 17**: MAX GWT TO HVR 10 MIN/SE IGE/OGE-DUAL ENGINGE (WITH LOAD). Record the maximum IGE/OGE gross weight for the desired wheel height with a load.
- **Items 18 and 19**: MAX GWT TO HVR 10 MIN/SE IGE/OGE-SINGLE ENGINGE (NO LOAD). Record the maximum gross weight to hover single engine IGE/OGE.
- **Items 20 and 21**: MAX GWT TO HVR 10 MIN/SE IGE/OGE-SINGLE ENGINGE (WITH LOAD). Record the maximum allowable gross weight to hover for single engine operation IGE/OGE for forecast conditions.
- **Items 22 and 23**: MAX GWT TO HVR 30 MIN IGE/OGE-DUAL ENGINE (NO LOAD). Record the maximum gross weight to hover IGE/OGE.
- **Items 24 and 25**: MAX GWT TO HVR 30 MIN IGE/OGE-DUAL ENGINE (WITH LOAD). Record the maximum gross weight to hover IGE/OGE.
- **Items 26 and 27**: MAX GWT TO HVR 30 MIN IGE/OGE-SINGLE ENGINE (NO LOAD). Record the maximum gross weight to hover IGE/OGE.
- **Items 28 and 29**: MAX GWT TO HVR 30 MIN IGE/OGE-SINGLE ENGINE (WITH LOAD). Record the maximum gross weight to hover IGE/OGE.
- **Item 30**: PREDICTED HVR TQ-IGE/OGE-DUAL ENGINE (NO LOAD). Record the torque required to hover at the desired wheel height IGE.
- **Item 31**: PREDICTED HVR TQ-IGE/OG-E-DUAL ENGINE (NO LOAD). Record the torque required to hover at the desired wheel height OGE.
- **Item 32**: PREDICTED HVR TQ-IGE/OG-E-DUAL ENGINE (WITH LOAD). Record the torque required to hover at the desired wheel height IGE.
- **Item 33**: PREDICTED HVR TQ-IGE/OG-E-DUAL ENGINE (WITH LOAD). Record the torque required to hover at the desired wheel height OGE.
- **Item 34**: PREDICTED HVR TQ-IGE/OG-E-SINGLE ENGINE (NO LOAD). Record the torque required to hover at the desired wheel height IGE.
- **Item 35**: PREDICTED HVR TQ-IGE/OG-E-SINGLE ENGINE (NO LOAD). Record the torque required to hover at the desired wheel height OGE.
- **Item 36**: PREDICTED HVR TQ-IGE/OG-E-SINGLE ENGINE (WITH LOAD). Record the torque required to hover at the desired wheel height IGE.
- **Item 37**: PREDICTED HVR TQ-IGE/OG-E-SINGLE ENGINE (WITH LOAD). Record the torque required to hover at the desired wheel height OGE.
- **Item 38**: GO/NO-GO TQ (NO LOAD). Record the GO/NO-GO torque value.
- **Item 39**: GO/NO-GO TQ (WITH LOAD). Refer to item 38 for definition.
- **Item 40**: MAX MSN PROFILE GWT/VALIDATION-DUAL ENGINE (NO LOAD). Record the maximum allowable gross weight for mission profile.
- **Item 41**: MAX MSN PROFILE GWT/VALIDATION-DUAL ENGINE (NO LOAD). Record the validation factor.
- **Item 42**: MAX MSN PROFILE GWT/VALIDATION-DUAL ENGINE (WITH LOAD). Record the maximum allowable gross weight for the entire mission profile at the appropriate hover altitude.
- **Item 43**: MAX MSN PROFILE GWT/VALIDATION-DUAL ENGINE (WITH LOAD). Record the predicted torque required to hover at the appropriate hover altitude and at the maximum allowable gross weight for the mission profile.

5-3. **Cruise data.** The following items aid in the completion of cruise data:
- **Item 44**: AIRSPEED LIMIT (NO LOAD). Record the maximum airspeed for forecast cruise conditions.
- **Item 45**: AIRSPEED LIMIT (WITH LOAD). Record the maximum AIRSPEED for forecast cruise conditions.
- **Item 46**: LCT RET VNE (NO LOAD). Record the maximum airspeed for forecast cruise conditions with longitudinal cyclic trims (LCTs) retracted (RET) with velocity never exceed (V_{NE}).
- **Item 47**: LCT RET VNE (WITH LOAD). Record the maximum airspeed for forecast cruise conditions with LCTs retracted.
- **Items 48 and 49**: DRAG FACTOR. Record the drag factor value.
- **Item 50**: PRESSURE ALT. Record the planned cruise or highest pressure altitude along the route.
- **Item 51**: FAT. Record the forecast free air temperature at cruise or at the highest pressure altitude.
- **Item 52**: MAX TQ AVAIL–10 MIN/SE-DUAL ENGINE. Record the maximum 10 minute torque limit available for dual engine operation.
- **Item 53**: MAX TQ AVAIL–10 MIN/SE-SINGLE ENGINE. Record the maximum torque available for single engine operation.
- **Item 54**: CONTINUOUS TORQUE AVAIL-DUAL ENGINE. Record continuous torque available for dual engine operation.
- **Item 55**: CONTINUOUS TORQUE AVAIL-SINGLE ENGINE. Record continuous torque available for single engine operation.
- **Item 56**: MAX GWT CONT PWR-DUAL ENGINE (NO LOAD). Record maximum gross weight for continuous power.
- **Item 57**: MAX GWT CONT PWR-DUAL ENGINE (WITH LOAD). Record maximum gross weight for continuous power.
- **Item 58**: MAX R/C AND ENDURANCE IAS-DUAL ENGINE (NO LOAD). Record the maximum rate of climb and endurance airspeed for the aircraft weight.
Item 59: MAX R/C AND ENDURANCE IAS-DUAL ENGINE (NO LOAD). Record the maximum rate of climb and endurance airspeed for the aircraft weight.

Item 60: MAX RANGE IAS-DUAL ENGINE (NO LOAD). Record the maximum range airspeed for the aircraft weight.

Item 61: MAX RANGE IAS-DUAL ENGINE (WITH LOAD). Record the maximum range airspeed for the aircraft weight.

Item 62: CRUISE SPEED-IAS-DUAL ENGINE (NO LOAD). Record the desired cruise speed.

Item 63: CRUISE SPEED-IAS-DUAL ENGINE (WITH LOAD). Record the desired cruise speed.

Item 64: CRUISE SPEED-IAS-SINGLE ENGINE (NO LOAD). Record the desired cruise speed.

Item 65: CRUISE SPEED-IAS-SINGLE ENGINE (WITH LOAD). Record the desired cruise speed.

Item 66: CRUISE TQ (+ DRAG FACTOR)-DUAL ENGINE (NO LOAD). Record the torque required to maintain the cruise airspeed listed in item 62.

Item 67: CRUISE TQ (+ DRAG FACTOR)-DUAL ENGINE (WITH LOAD). Record the torque required to maintain the cruise airspeed listed in item 63.

Item 68: CRUISE TQ (+ DRAG FACTOR)-SINGLE ENGINE (NO LOAD). Record the torque required to attain the single engine cruise airspeed listed in item 64.

Item 69: CRUISE TQ (+ DRAG FACTOR)-SINGLE ENGINE (WITH LOAD). Record the torque required to attain the SE cruise airspeed listed in item 65.

Item 70: CRUISE FUEL FLOW-DUAL ENGINE (NO LOAD). Record the predicted fuel flow.

Item 71: CRUISE FUEL FLOW-DUAL ENGINE (WITH LOAD). Record the predicted fuel flow.

Item 72: CRUISE FUEL FLOW-SINGLE ENGINE (NO LOAD). Record the predicted fuel flow.

Item 73: CRUISE FUEL FLOW-SINGLE ENGINE (WITH LOAD). Record the predicted fuel flow.

Item 74: MINIMUM SINGLE ENGINE IAS-SINGLE ENGINE (NO LOAD). Record the airspeed that will allow continued single engine operation.

Item 75: MINIMUM SINGLE ENGINE IAS-SINGLE ENGINE (WITH LOAD). Record the airspeed that will allow continued single engine operation.

Item 76: MAXIMUM SINGLE ENGINE IAS-SINGLE ENGINE (NO LOAD). Record the maximum airspeed that will allow continued single engine operation.

Item 77: MAXIMUM SINGLE ENGINE IAS-SINGLE ENGINE (WITH LOAD). Record the maximum airspeed that will allow continued single engine operation.

Item 78: MAX GWT SE/SESC-DUAL ENGINE (WITH LOAD). Record the maximum allowable gross weight that will allow sustained single engine flight.

Item 79: MAX GWT SE/SESC-SINGLE ENGINE (NO LOAD). Record the maximum altitude attainable that will allow sustained single engine flight.

Item 80: MAX GWT SE/SESC-SINGLE ENGINE (WITH LOAD). Record the maximum altitude attainable that will allow sustained single engine flight.

Item 81: LANDING GWT (NO LOAD). Record the estimated landing gross weight.

Item 82: LANDING GWT (WITH LOAD). Record the estimated landing gross weight.

Item 83: PRESSURE ALT. Record the forecast pressure altitude at destination at estimated time of arrival (ETA).

Item 84: FAT. Record the forecast free air temperature at destination at ETA.

Item 85: MAX TQ AVAIL-10 MIN/SE (DUAL ENGINE). Record the maximum torque available for dual engine operation.

Item 86: MAX TQ AVAIL-10 MIN/SE (SINGLE ENGINE). Record the maximum torque available for single engine operation.

Item 87: MAX TQ AVAIL-30 MIN (DUAL ENGINE) Record the maximum torque available (30 MIN) for dual engine operation.

Item 88: CONTINUOUS TORQUE AVAIL (DUAL ENG). Record continuous torque available for dual engine operation.

5-4. Arrival data. The following items aid in the completion of arrival data.

Item 81: LANDING GWT (NO LOAD). Record the estimated landing gross weight.

Item 82: LANDING GWT (WITH LOAD). Record the estimated landing gross weight.

Item 83: PRESSURE ALT. Record the forecast pressure altitude at destination at estimated time of arrival (ETA).

Item 84: FAT. Record the forecast free air temperature at destination at ETA.

Item 85: MAX TQ AVAIL-10 MIN/SE (DUAL ENGINE). Record the maximum torque available for dual engine operation.

Item 86: MAX TQ AVAIL-10 MIN/SE (SINGLE ENGINE). Record the maximum torque available for single engine operation.

Item 87: MAX TQ AVAIL-30 MIN (DUAL ENGINE) Record the maximum torque available (30 MIN) for dual engine operation.

Item 88: CONTINUOUS TORQUE AVAIL (DUAL ENG). Record continuous torque available for dual engine operation.
- **Item 89**: CONTINUOUS TORQUE AVAIL (SINGLE ENGINE). Record continuous torque available for single engine operation.
- **Items 90 and 91**: MAX GWT TO HVR 10 MIN/SE-IGE/OGE-DUAL ENGINE (NO LOAD). Record the maximum gross weight to hover IGE/OGE.
- **Items 92 and 93**: MAX GWT TO HVR 10 MIN/SE-IGE/OGE-DUAL ENGINE (WITH LOAD). Record the maximum gross weight to hover OGE.
- **Item 94-95**: MAX GWT TO HVR 10 MIN/SE-IGE/OGE-SINGLE ENGINE (NO LOAD). Record the maximum allowable gross weight to hover for single-engine operation at the desired wheel height IGE/OGE.
- **Item 96-97**: MAX GWT TO HVR 10 MIN/SE-IGE/OGE-SINGLE ENGINE (WITH LOAD). Record the maximum allowable gross weight to hover for single engine operation IGE/OGE.
- **Item 98-99**: MAX GWT TO HVR 30 MIN-IGE/OGE-DUAL ENGINE (NO LOAD). Record the maximum gross weight to hover IGE/OGE.
- **Item 100-101**: MAX GWT TO HVR 30 MIN-IGE/OGE-DUAL ENGINE (WITH LOAD). Record the maximum gross weight to hover IGE/OGE.
- **Item 102-103**: MAX GWT TO HVR CONT-IGE/OGE-DUAL ENGINE (NO LOAD). Record the maximum gross weight to hover IGE/OGE.
- **Item 104-105**: MAX GWT TO HVR CONT-IGE/OGE-DUAL ENGINE (WITH LOAD). Record the maximum gross weight to hover IGE/OGE.
- **Item 106**: PREDICTED HVR TQ-IGE/OGE-DUAL ENGINE (NO LOAD). Record the torque required to hover at the desired wheel height IGE for forecast arrival conditions.
- **Item 107**: PREDICTED HVR TQ-IGE/OGE-DUAL ENGINE (NO LOAD). Record the torque required to hover at the desired wheel height OGE.
- **Item 108**: PREDICTED HVR TQ-IGE/OGE-DUAL ENGINE (WITH LOAD). Record the predicted torque required to hover at a height that will place the load(s) approximately 10 feet above ground level (AGL) and IGE.
- **Item 109**: PREDICTED HVR TQ-IGE/OGE-DUAL ENGINE (WITH LOAD). Record the predicted torque required to hover OGE.
- **Item 110**: PREDICTED HVR TQ-IGE/OGE-SINGLE ENGINE (NO LOAD). Record the torque required to hover at the desired wheel height IGE.
- **Item 111**: PREDICTED HVR TQ-IGE/OGE-SINGLE ENGINE (NO LOAD). Record the predicted torque required to hover OGE.
- **Item 112**: PREDICTED HVR TQ-IGE/OGE-SINGLE ENGINE (WITH LOAD). Record the predicted torque required to hover at a height that will place the load(s) approximately 10 feet AGL and IGE.
- **Item 113**: PREDICTED HVR TQ-IGE/OGE-SINGLE ENGINE (WITH LOAD). Record the predicted torque required to hover SE OGE.
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Chapter 6
Department of the Army Form 5701-64

6-1. Figures 6-1 and 6-2 (page 6-2) provide examples of DA Form 5701-64 (AH-64 Performance Planning Card).

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**AH-64 PERFORMANCE PLANNING CARD**
For use of this form, see TC 3-04.12; the proponent agency is TRADOC.

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### REMARKS:
(45)

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### CRUISE DATA

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**DA FORM 5701-64**
MAR 2016

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**Figure 6-1. Sample DA Form 5701-64 (front)**
6-2. **Departure data.** The following items aid in the completion of departure data:

- **Item 1**: PA. Record the Pressure Altitude (PA) at the departure point at the estimated time of departure.
- **Item 2**: FAT. Record the free air temperature (FAT) at the departure point at the estimated time of departure.
- **Item 3**: TAKEOFF GWT. Record takeoff gross weight.
- **Item 4**: LOAD. Record the weight of the external stores during the mission profile that can be jettisoned.
- **Item 5**: FUEL MSN. Record fuel weight with reserve required at takeoff to complete the mission.
- **Item 6**: ATF-DUAL ENGINE. Record the aircraft torque factors.
- **Item 7**: ETF-SINGLE ENGINE. Record the individual engine torque factors.
- **Item 8**: TR-DUAL ENGINE/SINGLE ENGINE. Record the torque ratio.
- **Items 9 and 10**: MAX TORQUE AVAILABLE (DUAL ENGINE/SINGLE ENGINE). Record the maximum torque available for a dual engine and a single engine.
- **Items 11 and 12**: MAX ALLOWABLE GWT (OGE/IGE)-DUAL ENGINE. Record the maximum allowable gross weight (OGE/IGE).
- **Items 15 and 16**: PREDICTED HOVER TORQUE (OGE/IGE)-DUAL ENGINE. Record the predicted hover torque (OGE/IGE).

### Cruise data

- **Item 17**: PA. Record the maximum pressure altitude.
- **Item 18**: FAT. Record the maximum free air temperature.
- **Item 19**: $V_{nc}$. Record the $V_{nc}$ true airspeed.
- **Item 20**: $V_{h}$. Record the $V_{h}$ true airspeed.
- **Item 21**: TR-DUAL ENGINE/SINGLE ENGINE. Record the torque ratio.
- **Items 22 and 23**: MAX TORQUE AVAILABLE (DUAL ENGINE/SINGLE ENGINE). Record the maximum torque available for a dual engine and a single engine.
- **Item 24**: CRUISE SPEED TAS (DUAL ENGINE). Record the cruise speed.
- **Item 25**: CRUISE TORQUE (DUAL ENGINE). Record the cruise torque.
- **Item 26**: CRUISE FUEL FLOW (DUAL ENGINE). Record the predicted dual engine fuel flow.
- **Item 27**: CONT TORQUE AVAILABLE (DUAL ENGINE). Record the continuous torque available.
- **Item 28**: MAX R/C OR ENDURANCE TAS (DUAL ENGINE). Record the maximum rate of climb (R/C) or endurance true airspeed.
- **Item 29**: MAX RANGE TAS (DUAL ENGINE). Record the maximum range true airspeed.
- **Items 30 and 31**: SINGLE-ENG CAPABILITY TAS (MIN/MAX) (SINGLE ENGINE). Record the minimum and maximum single engine capability true airspeed.
- **Item 32**: MAX ALLOWANCE GWT-SINGLE ENG (SINGLE ENGINE). Record the maximum allowable gross weight (single engine).
- **Item 33**: SINGLE-ENG MAX R/C TAS (MAX GWT) (SINGLE ENGINE). Record the single engine maximum rate of climb true airspeed at maximum gross weight.
- **Item 34**: FUEL MANAGEMENT-Use this space to record the in-flight fuel consumption check, to include fuel burnout and appropriate VFR or IFR reserve.

### Arrival

- **Item 35**: PA. Record the forecast pressure altitude at the destination at the estimated time of arrival.
- **Item 36**: FAT. Record the forecast free air temperature at the destination at the estimated time of arrival.
- **Item 37**: LANDING GWT. Record the estimated landing gross weight.
- **Item 38**: TR (DUAL ENGINE/SINGLE ENGINE). Record the torque ratio for both dual engine and single engine.
- **Item 39**: MAX TORQUE AVAILABLE (DUAL ENGINE). Record the maximum dual engine torque available.
- **Item 40**: MAX TORQUE AVAILABLE (SINGLE ENGINE). Record the maximum single engine torque available.
- **Items 41 and 42**: MAXIMUM ALLOWABLE GWT (OGE/IGE) (DUAL ENGINE). Record the maximum allowable gross weight (OGE/IGE).
- **Item 43 and 44**: PREDICTED HOVER TORQUE (IGE) (DUAL ENGINE). Record the predicted hover torque (IGE/IGE).
- **Item 45**: REMARKS. Use this area to record various pertinent performance planning remarks.
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Chapter 7

Department of the Army Form 5701-228

7-1. Figures 7-1 and 7-2 (page 7-2) provide samples of DA Form 5701-228 (OH-58A/C and TH-67 Performance Planning Card). Instructions for completing the form are provided below.

![OH-58A/C AND TH-67 PERFORMANCE PLANNING CARD](image)

**Figure 7-1. Sample DA Form 5701-228 (front)**
7-2. Hover data.

- **Item 1**: AIRCRAFT GWT. Record the gross weight at the departure point.
- **Item 2**: FUEL LB/GAL. Record fuel loading restrictions.
- **Item 3**: FUEL LB/GAL. Record the estimated fuel (including reserve) required for the mission.
- **Item 4**: PA CUR/MAX. Record the actual or forecast pressure altitude for the departure point at the time of departure. Record the maximum PA forecast for the duration of the mission.
- **Item 5**: FAT CUR/MAX. Record the actual or forecast free air temperature for the departure point at the time of departure. Record the maximum free air temperature forecast for the duration of the mission.
- **Item 6**: LOAD AVAIL CUR PA/FAT-IGE/OGE. Record the available load.
Department of the Army Form 5701-228

7-3. Cruise data.

- **Item 14:** GWT. Record the estimated GWT for the cruise or en route portion of the mission.
- **Item 15:** ALT. Record the planned altitude.
- **Item 16:** FAT. Record the forecasted or estimated FAT at the planned cruise altitude.
- **Item 17:** $V_{\text{max}}$. Record the maximum indicated airspeed.
- **Item 18:** IAS. Record the planned indicated airspeed for the initial planned cruise altitude.
- **Item 19:** TAS. Record TAS.
- **Item 20:** FUEL. Record the cruise fuel flow.
- **Item 21:** TORQUE. Record the cruise torque.
- **Item 22:** MAX R/C/ENDURANCE-IAS. Record the maximum rate of climb and endurance airspeed.
- **Item 23:** MAX R/C/ENDURANCE-FUEL. Record the fuel flow at maximum endurance airspeed.
- **Item 24:** MAX R/C/ENDURANCE-TORQUE. Record the torque required to maintain the maximum endurance airspeed.
- **Item 25:** MAX RANGE-IAS. Record the maximum range airspeed.
- **Item 26:** MAX RANGE-FUEL. Record the fuel flow at maximum range airspeed.
- **Item 27:** MAX RANGE-TORQUE. Record the torque required to maintain the maximum range airspeed.

7-4. Fuel management.

- **Item 28:** START (TIME lbs/gal). Record the current time upon initiating the in-flight fuel check.
- **Item 29:** START (TIME lbs/gal). Record the indicated fuel upon initiating the in-flight fuel check.
- **Item 30:** STOP (TIME lbs/gal). Record the current time upon concluding the in-flight fuel check.
- **Item 31:** STOP (TIME lbs/gal). Record the indicated fuel upon concluding the in-flight fuel check.
- **Item 32:** RESERVE (TIME). Record the time the aircraft will enter the reserve fuel time.
- **Item 33:** FUEL FLOW (PPH/GPH). Record the fuel flow.
- **Item 34:** BURNOUT (TIME). Record the time the aircraft will run out of fuel.
- **Item 35:** BINGO/RESERVE lbs/gal. Record the bingo fuel.

7-5. Arrival data.

- **Item 36:** PA MAX. Record the maximum pressure altitude forecast for the destination at the estimated time of arrival.
- **Item 37:** FAT MAX. Record the maximum free air temperature forecast for the destination at the estimated time of arrival.
- **Item 38:** LANDING GWT. Record the estimated gross weight of the aircraft at landing.
- **Item 39:** MAX TORQUE AVAIL (MAX). Record the maximum torque available.
- **Item 40:** CONT TORQUE AVAIL (MAX). Record the continuous torque available.
- **Item 41:** HOVER IGE TORQUE (MAX). Record the torque required to hover IGE.
- **Item 42:** HOVER OGE TORQUE (MAX). Record the torque required to hover OGE.
7-4 TC 3-04.12
3 August 2016

**Item 43:** MAX ALLOWABLE GWT IGE (MAX). Record the maximum allowable gross weight to hover IGE.

**Item 44:** MAX ALLOWABLE GWT OGE (MAX). Record the maximum allowable gross weight to hover OGE.

### 7-6. Weight and balance–departure data.

- **Items 45 and 46:** BASIC WEIGHT (OIL INCLUDED). Record the aircraft basic weight and moment.
- **Items 47 and 48:** CREW AND FLIGHT EQUIPMENT FORWARD. Record crew and equipment weight and moment.
- **Items 49 and 50:** OPERATION WEIGHT. Record the weight and moment.
- **Items 51 and 52:** CREW/PAX/CARGO AFT. Record the crew, passenger, and cargo weight and moment.
- **Items 53 and 54:** BAGGAGE/CARGO. Record the baggage and cargo weight and moment.
- **Items 55 and 56:** ZERO FUEL WEIGHT. Record the weight and moment.
- **Items 57 and 58:** TAKEOFF FUEL (GAL/LB). Record the takeoff fuel weight and moment.
- **Items 59 and 60:** EXTERNAL LOAD. Record the external load weight and moment.
- **Items 61 and 62:** DEPARTURE GROSS WEIGHT. Record the weight and moment.
- **Item 63:** DEPARTURE CG. Record the departure CG.
- **Items 64 and 65:** ALLOWABLE CG RANGE. Record the allowable CG for VMC and IMC.

### 7-7. Weight and balance–landing data.

- **Items 66 and 67:** OPERATING WEIGHT. Record the weight and moment.
- **Items 68 and 69:** ARRIVAL FUEL (GAL/LB). Record the arrival fuel weight and moment.
- **Items 70 and 71:** CREW/PAX/CARGO AFT. Record the crew, passenger, and cargo weight and moment.
- **Items 72 and 73:** BAGGAGE/CARGO. Record the baggage and cargo weight and moment.
- **Items 74 and 75:** EXTERNAL LOAD. Record the external load weight and moment.
- **Items 76 and 77:** ARRIVAL GROSS WEIGHT. Record the weight and moment.
- **Item 78:** ARRIVAL CG. Record the arrival CG.
- **Items 79 and 80:** ALLOWABLE CG RANGE. Record the allowable CG for VMC and IMC.
8-1. Figures 8-1 and 8-2, page 8-2, provide samples of DA Form 5701-60 (H-60 Performance Planning Card).

![Sample DA Form 5701-60 (front)](image)

Figure 8-1. Sample DA Form 5701-60 (front)
8-2. Departure data.

- **Item 1**: PA. Record the forecast maximum pressure altitude (PA) for the mission and current pressure altitude for time and location of departure.
Item 2: FAT. Record the forecast maximum free air temperature (FAT) for the mission and free air
temperature for time and location of departure.

Item 3: AIRCRAFT GWT. Record the total planned aircraft gross weight (GWT) at takeoff.

Item 4: STORES WEIGHT. Record the planned weight of any jettisonable items.

Item 5: FUEL WEIGHT. Record the total planned fuel weight (internal and external) at takeoff.

Item 6: ATF/ETF. Record the aircraft torque factor (ATF) and engine torque factor (ETF).

Item 7: TORQUE RATIO. Record the torque ratio (TR).

Item 8: MAX TORQUE AVAILABLE. Record the maximum torque available.

Item 9: MAX ALLOWABLE GWT OGE/IGE. Record the maximum allowable gross weight
(OGE/IGE).

Item 10: GO/NO GO TORQUE OGE/IGE. Record the GO/NO GO torque.

Item 11: MAX HOVER HEIGHT IGE. Record the maximum hover height IGE.

Item 12: PREDICTED HOVER TORQUE. Record the estimated torque required for a stationary
hover.

Item 13: MIN SE AIRSPEED–AIRSPEED–IAS–WO/W STORES. Record the minimum (MIN)
airspeed to sustain level flight single engine (SE) without or with stores.

Item 14: ZERO FUEL WEIGHT: Record the zero fuel weight.

Item 15: REMARKS: Enter any applicable remarks.

8-3. Cruise data.

Item 16: PA. Record the planned cruise pressure altitude.

Item 17: FAT. Record the forecast FAT at the planned cruise pressure altitude.

Item 18: MIN/MAX-IAS (DUAL ENGINE). Record the minimum and maximum airspeeds.

Item 19: CRUISE SPEED-IAS/TAS (DUAL ENGINE). Record the selected IAS.

Item 20: MAX TORQUE AVAILABLE (DUAL ENGINE). Record the maximum torque available.

Item 21: CRUISE TORQUE/CONT TORQUE AVAILABLE (DUAL ENGINE). Record the
continuous torque available.

Item 22: CRUISE FUEL FLOW (DUAL ENGINE). Record the fuel flow.

Item 23: MAX RANGE-IAS/TORQUE (DUAL ENGINE). Record the maximum range indicated
airspeed and torque.

Item 24: MAX ENDURANCE-IAS/TORQUE (DUAL ENGINE). Record the maximum endurance
indicated airspeed and torque.

Item 25: CRITICAL TORQUE (DUAL ENGINE). Record the critical torque (CT).

Item 26: MAX ALLOWABLE GWT and OPTIMUM IAS AT MAX ALLOWABLE GWT (DUAL
ENGINE). Record the maximum allowable gross weight the aircraft is capable of flying at cruise
conditions and the associated maximum endurance airspeed.

Item 27: MAX R/C-IAS/TORQUE (DUAL ENGINE). Record the maximum rate of climb indicated
airspeed and torque.

Item 28: MAX ALTITUDE-MSL/MAX ENDURANCE-IAS (DUAL ENGINE). Record the
maximum altitude the aircraft is capable of flying at maximum endurance airspeed.

Item 29: MIN/MAX-IAS (SINGLE ENGINE). Record the minimum and maximum airspeeds.

Item 30: CRUISE SPEED-IAS (SINGLE ENGINE). Record the selected cruise speed.

Item 31: MAX TORQUE AVAILABLE (SINGLE ENGINE). Record the maximum torque available.

Item 32: CRUISE TORQUE/CONT TORQUE AVAILABLE (SINGLE ENGINE). Record the
continuous torque available.

Item 33: CRUISE FUEL FLOW (SINGLE ENGINE). Record the fuel flow.

Item 34: MAX ALLOWABLE GWT and OPTIMUM IAS AT MAX ALLOWABLE GWT (SINGLE
ENGINE). Record the maximum allowable gross weight the aircraft is capable of flying at maximum
endurance airspeed.

Item 35: MAX ALTITUDE-MSL/MAX ENDURANCE-IAS (SINGLE ENGINE). Record the
maximum altitude the aircraft is capable of flying at maximum endurance airspeed single engine.
- **Item 36**: MAX ANGLE. Record the level flight angle of bank at which blade stall will begin to occur.
- **Item 37**: $V_{ne}$-IAS. Record the velocity never to exceed.

8-4. **Arrival data.**
- **Item 38**: PA. Record the forecast pressure altitude for time of arrival.
- **Item 39**: FAT. Record the forecast free air temperature for time of arrival.
- **Item 40**: LANDING GWT. Record the estimated gross weight for arrival.
- **Item 41**: TORQUE RATIO. Record the torque ratios for dual and single engine.
- **Item 42**: MAX TORQUE AVAILABLE. Record the maximum torque available for dual and single engine.
- **Item 43**: PREDICTED HOVER TORQUE. Record the predicted hover torque.
- **Item 44**: MAX ALLOWABLE GWT OGE/IGE. Record the maximum allowable gross weight.
- **Item 45**: MAX HOVER HEIGHT IGE. Record the maximum hover height.
- **Item 46**: MIN SE AIRSPEED IAS-WO/W STORES. Record the minimum single-engine airspeed.
Figure 9-1 and 9-2, page 9-2, provide samples of DA Form 7739 (C-12 Takeoff and Landing Data Card).

C-12 TAKEOFF AND LANDING DATA CARD
For use of this form, see TC 3-04.12; the proponent agency is TRADOC.

<table>
<thead>
<tr>
<th>TAKEOFF CONDITIONS</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>STATION (1)</td>
<td>RUNWAY AVAIL (2)</td>
</tr>
<tr>
<td>TEMP °C° (3)</td>
<td>PA (4)</td>
</tr>
<tr>
<td>TAKEOFF WEIGHT (5)</td>
<td>TAKEOFF POWER (6)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>FLAPS</th>
<th>0%</th>
<th>40%</th>
</tr>
</thead>
<tbody>
<tr>
<td>$V_1$</td>
<td>(7)</td>
<td></td>
</tr>
<tr>
<td>$V_{ase}$</td>
<td>(8)</td>
<td>(10)</td>
</tr>
<tr>
<td>$V_{yse}$</td>
<td>(11)</td>
<td></td>
</tr>
<tr>
<td>Takeoff Distance</td>
<td>(12)</td>
<td>(13)</td>
</tr>
<tr>
<td>Accelerate - Stop</td>
<td>(14)</td>
<td>(15)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LANDING DATA</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Vref (16)</td>
<td>LAND DISTANCE (17)</td>
</tr>
<tr>
<td>OPTIONAL (18)</td>
<td></td>
</tr>
</tbody>
</table>

DA FORM 7739   MAY 2015

Figure 9-1. Sample DA Form 7739 (front)
## ONE ENGINE INOPERATIVE TAKEOFF CONDITIONS

<table>
<thead>
<tr>
<th>FLAPS</th>
<th>0%</th>
<th>40%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive Climb at Lift-off</td>
<td>(4)</td>
<td>(9)</td>
</tr>
<tr>
<td>Accelerate - Go</td>
<td>(5)</td>
<td>(10)</td>
</tr>
<tr>
<td>Single Engine Gradient of Climb ($V_2$)</td>
<td>(6)</td>
<td>(11)</td>
</tr>
<tr>
<td>Climb One Engine Inoperative ($V_{yse}$)</td>
<td>(7)</td>
<td></td>
</tr>
<tr>
<td>Adjusted Takeoff Weight</td>
<td>(8)</td>
<td>(12)</td>
</tr>
</tbody>
</table>

### REMARKS

(13)
9-2. Front.

- **Item 1**: STATION. Record the three-letter or ICAO identifier for the departure airport.
- **Item 2**: RUNWAY AVAIL. Record the runway length of the planned departure runway.
- **Item 3**: TEMP °C. Record the temperature in °C forecast for the time of departure.
- **Item 4**: PA. Record the pressure altitude forecast for the time of departure.
- **Item 5**: TAKEOFF WEIGHT. Record the takeoff weight.
- **Item 6**: TAKEOFF POWER. Record the takeoff power.
- **Item 7**: FLAPS UP V1. Record the flaps up V1 speed.
- **Item 8**: FLAPS 40% V1. Record the flaps 40% V1 speed.
- **Item 9**: FLAPS UP V2. Record the flaps up V2 speed.
- **Item 10**: FLAPS 40% V2. Record the flaps 40% V2 speed.
- **Item 11**: $V_{ysa}$. Record $V_{ysa}$.
- **Item 12**: TAKOFF DISTANCE FLAPS 0%. Record the runway distance required for takeoff.
- **Item 13**: TAKOFF DISTANCE FLAPS 40%. Record the runway distance required for takeoff.
- **Item 14**: ACCELERATE−STOP FLAPS 0%. Record the accelerate-stop distance.
- **Item 15**: ACCELERATE−STOP FLAPS 40%. Record the accelerate-stop distance.
- **Item 16**: $V_{ref}$. Record the $V_{ref}$ speed.
- **Item 17**: LAND DISTANCE. Record the runway distance required for a landing at the destination.
- **Item 18**: OPTIONAL. Use this area as desired.


- **Item 1**: FLAPS-Accelerate Go (table 4-2, page 4-17). Record the Accelerate-Go distance.
- **Item 2**: FLAPS-Single Engine Gradient of Climb (V2) %. Record the minimum gradient of climb for the segment.
- **Item 3**: FLAPS-Climb One Engine Inoperative (Vysa) %. Record the minimum gradient of climb for the segment.
- **Item 4**: Positive Climb at Lift-off-0%. Record the takeoff weight.
- **Item 5**: Accelerate-Go 0% (table 4-2, page 4-17). Record the distance.
- **Item 6**: Single Engine Gradient of Climb 0%. Record the climb gradient.
- **Item 7**: Climb One Engine Inoperative (Vysa) 0%. Record the $V_{ysa}$ climb gradient.
- **Item 8**: Adjusted Takeoff Weight 0%. Record the takeoff weight.
- **Item 9**: Accelerate-Go 40%. Record the takeoff weight.
- **Item 10**: Accelerate-Go 40%. Record the distance.
- **Item 11**: Single Engine Gradient of Climb-Flaps 40%. Record the climb gradient.
- **Item 12**: Adjusted Takeoff Weight 40%. Record the planned departure weight.
- **Item 13**: REMARKS. Space available for crewmember entries.
10-1. Figures 10-1 and 10-2, page 10-2, provide examples of DA Form 7345 (GR/CS Takeoff and Landing Data Card).

![Sample DA Form 7345 (front)](image)

Figure 10-1. Sample DA Form 7345 (front)
Chapter 10

10-2. Front (figure 10-1, page 10-1).

- **Item 1:** TEMP °C. Record the temperature in degrees Celsius forecast for the time of departure.
- **Item 2:** PA. Record the pressure altitude forecast for the time of departure.
- **Item 3:** TAKEOFF WEIGHT. Record the takeoff weight.
- **Item 4:** RUNWAY AVAIL. Record runway length.
- **Items 5 and 6:** STATIC POWER. Record the engine torque in percent.
- **Item 7**: FLAPS-Tire Speed Limit-0%. Record the tire speed limit.
- **Item 8**: FLAPS-V$_1$-0%. Record the flaps-up V$_1$ for the takeoff gross weight.
- **Item 9**: FLAPS-V$_R$-0%. Record the flaps-up V$_R$ for the takeoff weight.
- **Item 10**: FLAPS-V$_2$-0%. Record the flaps-up V$_2$ for the takeoff weight.
- **Item 11**: FLAPS-Takeoff Distance-0%. Record the distance required for takeoff.
- **Item 12**: FLAPS-Accelerate–Stop-0%. Record the accelerate–stop distance.
- **Item 13**: FLAPS-Tire Speed Limit-40%. Record the tire speed limit.
- **Item 14**: FLAPS-V$_1$-40%. Record the Flaps-Approach V1 for the takeoff gross weight.
- **Item 15**: FLAPS-V$_R$-40%. Record the Flaps-Approach VR for the takeoff weight.
- **Item 16**: FLAPS-V$_2$-40%. Record the Flaps-Approach V2 for the takeoff weight.
- **Item 17**: FLAPS-Takeoff Distance-40%. Record the runway distance required for takeoff.
- **Item 18**: FLAPS-Accelerate–Stop-40%. Record the accelerate-stop distance.
- **Item 19**: V$_{ref}$. Record the V$_{ref}$ as required.
- **Item 20**: LAND DISTANCE. Record the runway distance required for landing at the destination.
- **Item 21**: OPTIONAL. Use this area as desired.

10-3. **Back** (figure 10-2, page 10-2).
- **Item 2**: FLAPS-Accelerate–Go. Record the maximum distance of accelerate-go allowed if required by the commander’s policy.
- **Item 3**: FLAPS-Net Takeoff Flight Path First Segment. Record the gradient of climb.
- **Item 4**: FLAPS-Net Takeoff Flight Path Second Segment (V$_2$). Record the gradient of climb.
- **Item 5**: FLAPS-Net Takeoff Flight Path Third Segment (V$_{max}$). Record the gradient of climb.
- **Item 6**: FLAPS-Max Takeoff Weight for One Engine Climb at Lift-off-0%. Record the maximum weight.
- **Item 7**: FLAPS-Accelerate–Go-0%. Record the total takeoff distance.
- **Item 8**: FLAPS-Net Takeoff Flight Path First Segment-Flaps 0%. Record the gradient of climb.
- **Item 9**: FLAPS-Net Takeoff Flight Path Second Segment-0%. Record the gradient of climb.
- **Item 10**: FLAPS-Net Takeoff Flight Path Third Segment-0%. Record the gradient of climb.
- **Item 11**: FLAPS-Adjusted Takeoff Weight-0%. Record the adjusted takeoff weight.
- **Item 12**: FLAPS-Max Takeoff Weight for One Engine Climb at Lift-Off-40%. Record the weight.
- **Item 13**: FLAPS-Accelerate–Go-40%. Record the distance.
- **Item 14**: FLAPS-Net Takeoff Flight Path First Segment-40%. Record the gradient of climb.
- **Item 15**: FLAPS-Net Takeoff Flight Path Second Segment-40%. Record the gradient of climb.
- **Item 16**: FLAPS-Adjusted Takeoff Weight-40%. Record the adjusted takeoff weight.
Chapter 11
Department of the Army Form 7740

11-1. Figures 11-1 and 11-2, page 11-2, provide a sample of DA Form 7740 (MQ-1C Performance Planning Card).

---

**Figure 11-1. Sample DA Form 7740 (front)**
11-2. **Departure data.**

- **Item 1:** ENGINE LITER CONFIGURATION. Record aircraft engine type (liter size).
- **Item 2:** PAYLOAD DRAG INDEX (PDI). Record the payload drag index of the current aircraft configuration.
- **Item 3:** T/O FREE AIR TEMP. Record the takeoff free air temperature at the departure point.
- **Item 4:** T/O DA. Record the takeoff density altitude at the departure point.
- **Item 5:** PLANNED AIRCRAFT T/O WEIGHT. Record the gross weight of the aircraft at departure.
- **Item 6:** PLANNED FUEL T/O WEIGHT. Record the estimated fuel required (including reserved) at takeoff to complete the mission.
- **Item 7:** RUNWAY WIND COMPONENT. Record the predicted runway wind component.
- **Item 8:** T/O GROUND RUN WITH ATLS. Record the predicted length of runway required for takeoff.
● Item 9: T/O GROUND RUN FOR RUNWAY SLOPE. Record the predicted takeoff ground run correction.
● Item 10: T/O DISTANCE > 50-FT OBSTACLE WITH ATLS. Record the predicted takeoff distance.
● Item 11: T/O ABORT DISTANCE WITH ATLS. Record the predicted distance the aircraft will need to accelerate to rotational speed.
● Item 12: ROTATION SPEED. Record the predicted rotation speed.
● Item 13: LIFT-OFF SPEED. Record the predicted lift off speed for takeoff.
● Item 14: SPEED FOR BEST RATE OF CLimb (V_Y). Record the predicted speed for best rate of climb.

11-3. Cruise data.
● Item 15: MAX TEMP. Record the max free air temperature for the duration of the mission.
● Item 16: MAX DA. Record the forecasted max density altitude for the duration of the mission.
● Item 17: MAX ALTITUDE. Record the max altitude for the duration of the mission.
● Item 18: FUEL TO ALTITUDE. Record the predicted fuel needed to reach the desired mission altitude.
● Item 19: TIME TO ALTITUDE. Record the estimated time needed to reach the desired mission altitude.
● Item 20: DISTANCE TO ALTITUDE. Record the predicted distance needed to reach the desired mission altitude.
● Item 21: BEST (V_Y) @ MAX CONTINUOUS POWER. Record the predicted best rate of climb.
● Item 22: CLIMB GRADIENT @ MAX CONTINUOUS POWER. Record the predicted climb gradient at maximum continuous power.
● Item 23: MAX TRUE AIRSPEED. Record the predicted maximum true airspeed.
● Item 24: STALL SPEED. Record the predicted maximum stall speed.
● Item 25: SERVICE CEILING. Record the predicted maximum service ceiling.
● Item 26: BEST RANGE SPEED. Record the predicted best range speed.
● Item 27: SPECIFIC RANGE @ BEST RANGE SPEED. Record the predicted specific range (nautical miles per pound of fuel burned) at best range speed.
● Item 28: SPECIFIC RANGE WITH INDICATED AIRSPEED. Record the predicted specific range for a given indicated airspeed (KIAS).
● Item 29: FUEL FLOW @ BEST ENDURANCE SPEED. Record the predicted fuel flow at best endurance speed.
● Item 30: BEST ENDURANCE SPEED. Record the predicted best endurance speed.
● Item 31: TIME ON STATION VERSUS MISSION RADIUS. Record the predicted time on station.

11-4. Inflight fuel consumption check.
● Item 32: FUEL AMOUNT. Record the amount of fuel in the aircraft at the start of the fuel consumption check.
● Item 33: START TIME. Record the start time the fuel consumption check was initiated.
● Item 34: STOP TIME. Record the stop time the fuel consumption check was completed.
● Item 35: FUEL AMOUNT. Record the amount of fuel remaining at the completion of the fuel consumption check.
● Item 36: BURN RATE. Use this space to determine and record the in-flight fuel consumption rate (pounds per hour) results.

11-5. Arrival data.
● Item 37: LANDING TEMP. Record the forecast free air temperature at the destination point.
● Item 38: LANDING DA. Record the forecast density altitude at the destination point.
● Item 39: LANDING GROSS WT. Record the estimated landing gross weight.
- **Item 40:** DESCENT RATE. Record the predicted rate of descent.
- **Item 41:** DESCENT DISTANCE. Record the predicted descent distance.
- **Item 42:** DESCENT TIME. Record the predicted descent time.
- **Item 43:** PROJECTED FUEL USED. Record the projected fuel used.
- **Item 44:** ENGINE OUT GLIDE RANGE. Record the predicted engine out glide range.
- **Item 45:** ENGINE OUT BEST RANGE AIRSPEED. Record the predicted engine out glide best range airspeed (KIAS).
- **Item 46:** APPROACH AIRSPEED WITH ATLS. Record the predicted approach airspeed with ATLS.
- **Item 47:** APPROACH STALL AIRSPEED WITH ATLS. Record the predicted approach stall airspeed with ATLS.
- **Item 48:** LANDING GROUND ROLL WITH ATLS. Record the predicted length of runway required for ATLS.
- **Item 49:** LANDING GROUND ROLL CORRECTION FOR SLOPE. Record the predicted landing ground roll corrections for slopes.
- **Item 50:** LANDING GROUND ROLL CORRECTION FOR RUNWAY CONDITION RATING (RCR). Record the predicted landing ground roll.
- **Item 51:** LANDING DISTANCE > 50-FT OBSTACLE WITH ATLS. Record the predicted landing distance.
- **Item 52:** Notes. Area for additional information as needed.
Chapter 12

Department of the Army Form 7748

12-1. Figure 12-1 provides a sample of DA Form 7748 (Army Aviation Instrument Flight Log).

![Sample DA Form 7748](image-url)
12-2. Instructions for completing DA Form 7748 are as follows:

- **Item 1**: ATIS. Record ATIS frequency.
- **Item 2**: CLNC DEL. Record the clearance delivery frequency.
- **Item 3**: GROUND. Record the ground control frequency.
- **Item 4**: TOWER. Record the tower frequency.
- **Item 5**: DEP CON. Record the departure control frequency.

*Note.* Items 6 through 10 are generally used to record departure clearance instructions.

- **Item 6**: CLNC LIMIT. Record ATC assigned clearance limit.
- **Item 7**: ROUTING. Record ATC assigned routing.
- **Item 8**: ALTITUDE. Record ATC assigned altitude.
- **Item 9**: FREQUENCY. Record ATC assigned departure frequency.
- **Item 10**: TRANSPONDER. Record ATC assigned transponder code.
- **Item 11**: CP. Record checkpoints or identifiers.
- **Item 12**: FIX INFORMATION. Record fix information.
- **Item 13**: TIME. Record time as applicable.
- **Item 14**: TRK. Record track or heading.
- **Item 15**: DIST. Record distance.
- **Item 16**: GS. Record ground speed.
- **Item 17**: ETE. Record estimated time en route.
- **Item 18**: REMARKS. Used to record any desired remarks.
Chapter 13
Department of the Army Form 7749

13-1. Figure 13-1 provides a sample of DA Form 7749 (Army Aviation Instrument Flight Log, Alternate).

![Sample DA Form 7749]

**Figure 13-1. Sample DA Form 7749**

13-2. Instructions for completing DA Form 7749 are as follows:

- **Item 1:** Used to record any desired remarks.
- **Item 2:** TAKEOFF. Record the takeoff time.
● **Item 3**: LANDING. Record the landing time.
● **Item 4**: TOTAL. Record the total distance.
● **Item 5**: REQUIRED. Record the required fuel.
● **Item 6**: AVAILABLE. Record the available fuel.
● **Item 7**: ROUTE (Check Point). Record checkpoints or identifiers.
● **Item 8**: IDENT. Record navigational aid identifier.
● **Item 9**: FREQ. Record frequency as required.
● **Item 10**: MAG COURSE. Record leg magnetic course.
● **Item 11**: LEG. Record leg distance.
● **Item 12**: REMAINING. Record remaining distance.
● **Item 13**: ETE. Record estimated time en route.
● **Item 14**: ATE. Record actual time en route.
● **Item 15**: ETA. Record estimated time of arrival.
● **Item 16**: ATA. Record actual time of arrival.
● **Item 17**: ALTITUDE. Record altitude as required.
● **Item 18**: GND SPEED. Record ground speed as required.
● **Item 19**: REMARKS. Used to record any desired remarks.
Glossary

AAF
Army air field

ACFT
aircraft

AEO
all engines operating

AGL
above ground level

ALT
altitude

APP
approach

APT
airport

APU
auxiliary power unit

ARNG
Army National Guard

ARNGUS
Army National Guard of the United States

ATA
actual time of arrival

ATC
air traffic control

ATE
actual time en route

ATF
aircraft torque factor

ATIS
automatic terminal information service

ATLS
automatic take-off/landing system

ATM
aircrew training manual

ATP
aircrew training program

ATS
air traffic services

C
Celsius

CE
crew chief

CG
center of gravity

CID
combat identification

CLNC
clearance

CONT
continuous

CP
checkpoint

CRS
course

CT
critical torque

CUR
current

DA
density altitude

DEL
delivery

DEP
departure

DES
Directorate of Evaluation and Standardization

DH
decision height

DIST
distance

DME
Distance measuring equipment

DOTD
Directorate of Training and Doctrine

ETA
estimated time of arrival

ETE
estimated time en route
<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ETF</td>
<td>engine torque factor</td>
</tr>
<tr>
<td>FAF</td>
<td>final approach fix</td>
</tr>
<tr>
<td>FARP</td>
<td>forward arming and refueling point</td>
</tr>
<tr>
<td>FAT</td>
<td>free air temperature</td>
</tr>
<tr>
<td>Flt</td>
<td>flight</td>
</tr>
<tr>
<td>FMS</td>
<td>flight management system</td>
</tr>
<tr>
<td>FREQ</td>
<td>frequency</td>
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<td>feet</td>
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<td>ground</td>
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<tr>
<td>GPS</td>
<td>global positioning system</td>
</tr>
<tr>
<td>GS</td>
<td>ground speed</td>
</tr>
<tr>
<td>GWT</td>
<td>gross weight</td>
</tr>
<tr>
<td>HAA</td>
<td>height above airport</td>
</tr>
<tr>
<td>HAT</td>
<td>height above touchdown</td>
</tr>
<tr>
<td>HVR</td>
<td>hover</td>
</tr>
<tr>
<td>IAF</td>
<td>initial approach fix</td>
</tr>
<tr>
<td>IAS</td>
<td>indicated airspeed</td>
</tr>
<tr>
<td>ICAO</td>
<td>International Civil Aviation Organization</td>
</tr>
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<td>IDENT</td>
<td>identifier</td>
</tr>
<tr>
<td>IF</td>
<td>intermediate fix</td>
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<td>instrument flight rules</td>
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<td>kilogram</td>
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<td>KTAS</td>
<td>knots true airspeed</td>
</tr>
<tr>
<td>lb</td>
<td>pound</td>
</tr>
<tr>
<td>LCT</td>
<td>longitudinal cyclic trim</td>
</tr>
<tr>
<td>LDG</td>
<td>landing</td>
</tr>
<tr>
<td>m</td>
<td>meter</td>
</tr>
<tr>
<td>MAG</td>
<td>magnetic</td>
</tr>
<tr>
<td>MAHF</td>
<td>missed approach holding fix</td>
</tr>
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<td>MAP</td>
<td>missed approach point</td>
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<tr>
<td>MAX</td>
<td>maximum</td>
</tr>
<tr>
<td>MCP</td>
<td>maximum continuous power</td>
</tr>
<tr>
<td>MDA</td>
<td>minimum descend altitude</td>
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<tr>
<td>MGRS</td>
<td>military grid reference system</td>
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<tr>
<td>MIN</td>
<td>minimum</td>
</tr>
<tr>
<td>MSN</td>
<td>mission</td>
</tr>
<tr>
<td>N1</td>
<td>gas producer (speed)</td>
</tr>
<tr>
<td>NG</td>
<td>National Guard</td>
</tr>
<tr>
<td>Abbreviation</td>
<td>Definition</td>
</tr>
<tr>
<td>--------------</td>
<td>------------</td>
</tr>
<tr>
<td>OEI</td>
<td>one engine inoperative</td>
</tr>
<tr>
<td>OGE</td>
<td>out of ground effect</td>
</tr>
<tr>
<td>PA</td>
<td>pressure altitude</td>
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<tr>
<td>PDI</td>
<td>payload drag index</td>
</tr>
<tr>
<td>PPC</td>
<td>performance planning card</td>
</tr>
<tr>
<td>PPH</td>
<td>pounds per hour</td>
</tr>
<tr>
<td>PTIT</td>
<td>power turbine inlet temperature</td>
</tr>
<tr>
<td>R/C</td>
<td>rate of climb</td>
</tr>
<tr>
<td>RCR</td>
<td>runway condition rating</td>
</tr>
<tr>
<td>RET</td>
<td>retracted</td>
</tr>
<tr>
<td>RNAV</td>
<td>area navigation</td>
</tr>
<tr>
<td>RWY</td>
<td>runway</td>
</tr>
<tr>
<td>SE</td>
<td>single engine</td>
</tr>
<tr>
<td>SESC</td>
<td>single-engine service ceiling</td>
</tr>
<tr>
<td>Sig</td>
<td>signature</td>
</tr>
<tr>
<td>SPD</td>
<td>speed</td>
</tr>
<tr>
<td>SQ FT</td>
<td>square feet</td>
</tr>
<tr>
<td>TAS</td>
<td>true airspeed</td>
</tr>
<tr>
<td>T/O</td>
<td>takeoff</td>
</tr>
<tr>
<td>TDZE</td>
<td>touchdown zone elevation</td>
</tr>
<tr>
<td>TQ</td>
<td>torque</td>
</tr>
<tr>
<td>TR</td>
<td>torque ratio</td>
</tr>
<tr>
<td>TRADOC</td>
<td>Training and Doctrine Command</td>
</tr>
<tr>
<td>TRK</td>
<td>track</td>
</tr>
<tr>
<td>UAC</td>
<td>unmanned aircraft crewmember</td>
</tr>
<tr>
<td>USAACE</td>
<td>United States Army Aviation Center of Excellence</td>
</tr>
<tr>
<td>USAR</td>
<td>United States Army Reserve</td>
</tr>
<tr>
<td>$V_1$</td>
<td>the maximum speed in the takeoff at which the pilot must take the first action</td>
</tr>
<tr>
<td>$V_2$</td>
<td>takeoff safety speed</td>
</tr>
<tr>
<td>VFR</td>
<td>visual flight rules</td>
</tr>
<tr>
<td>$V_h$</td>
<td>horizontal velocity</td>
</tr>
<tr>
<td>VMC</td>
<td>visual meteorological conditions</td>
</tr>
<tr>
<td>$V_{ne}$</td>
<td>velocity never exceed</td>
</tr>
<tr>
<td>$V_r$</td>
<td>rotation speed</td>
</tr>
<tr>
<td>$V_{ref}$</td>
<td>landing reference speed</td>
</tr>
<tr>
<td>$V_y$</td>
<td>best rate of climb speed</td>
</tr>
<tr>
<td>$V_{yse}$</td>
<td>best rate of climb speed with a single operating engine</td>
</tr>
<tr>
<td>WT</td>
<td>weight</td>
</tr>
</tbody>
</table>
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DA Form 5701-58. OH 58D Performance Planning Card.
DA Form 5701-60. H-60 Performance Planning Card.
DA Form 5701-64. AH-64 Performance Planning Card.
DA Form 5701-72. UH-72A Performance Planning Card.
DA Form 7345. GR/CS Takeoff and Landing Data Card.
DA Form 7739. *C-12 Takeoff and Landing Data Card.*
DA Form 7740. *MQ-1C Performance Planning Card.*
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DA Form 7749. *Army Aviation Instrument Flight Log, Alternate.*

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